

# DDS- Planning & Zoning: Plan Review Application



Submission date: **7 November 2022, 12:00PM**  
Receipt number: **1099**  
Related form version: **2**

## Application Type

Check all that apply: **Site Plan Review**

## Property Information

Property Address: **282 Washington Street No coordinates found**  
Zoning District: **MX-2 With Campus Overlay**  
Parcel ID: **227-550-155**  
Property Owner: **Connecticut Children's**  
Address of Property Owner: **282 Washington Street, Hartford, CT 06106**  
Email: **jbratt@fando.com**

## Applicant

Name of Applicant: **Connecticut Children's**  
File Date: **11/07/2022**  
Address: **282 Washington Street No coordinates found**  
Phone: **18603053312**  
Email: **jbratt@fando.com**

## Primary Point of Contact

Name:	Jamie Bratt
Phone:	860-305-3312
Email	jbratt@fando.com

## Project Narrative

Please describe your application action(s) and provide as much detail as possible. Attach additional pages if necessary:

**Building upon the master plan application and approval issue in October 2022, this site plan application seeks approval for hospital tower addition at 282 Washington Street.**

## Zoning Map Change Application

Proposed Zone:

Describe the existing use of land and buildings in the zone change area:

Reason for this request:

## Zoning Appeal Application

Are you an aggrieved party?

Permit or Violation Number:

State your reason for appealing the decision of the administrator or enforcement officer:

## Variance Application



Please state the particular hardship\* or unnecessary difficulty that prompts this application and the site the section of the zoning regulations that you are seeking relief from:

## Subdivision Application

Number of lots to be created:

Area of each lot in square feet:

Street frontage of each of the new lots in feet:

## Lot Combination Application

Addresses of lots to be combined

Map/Block/Lot for each property to be combined:

## Liquor Permit Application

Please upload a copy of your State of CT Liquor Permit below.

## Sign Permit Application

1. Is this sign proposed outside of the building line?

Maximum extension from building line:

2. Is this sign proposed outside of the street line?

Maximum extension from the Street line

3. Is the sign luminated?

4. Engineer Name (if any):

Phone:

Address:

5. Minimum distance from lowest point to the sidewalk:

6. Maximum height of sign from lowest point of established grade:

7. Distance from the nearest outdoor sign:

8. Square feet of surface for one face of the sign:

9. Wording of the sign (include all words):

Description of work (upload additional files if necessary)

Upload any supporting materials below.

[A2-SupportLetterFHNRZ.pdf](#)

[A3-Collaboration Agreement.pdf](#)

[A1-SiteOverviewImage.pdf](#)

[C2-Transportation Management Plan.pdf](#)

[C1-Traffic Study.pdf](#)

[D1-Stormwater Management Report - 282 Washington - 11-04-2022.pdf](#)

[Site Plan Submission - Drawings 11-04-2022 - OPTIMIZED.pdf](#)

## Signatures

Signature of Applicant



[Link to signature](#)

Printed Name of Applicant:

**Jamie Bratt (as agent for applicant - see letter attached)**

Date:

**11/7/2022**

**If you are not the property owner, you must attach a Letter of Authorization from the property owner to apply.**

Letter of Authorization from Property Owner

**[A4-Agent Authorization Letter.pdf](#)**

Date:

**09/06/2022**



September 6, 2022

RE: Master Plan Special Permit Application – 282 Washington Street – Connecticut Children's

To Whom it May Concern,

Building on a century-long legacy of healing children and uplifting families throughout the region, Connecticut Children's is embarking on a proposed signature expansion to our downtown location on Washington Street.

The enclosed special permit application for campus overlay master plan has been prepared in collaboration with Connecticut Children's and our extended design team.

Fuss & O'Neill is authorized to submit this application as an authorized agent of Connecticut Children's.

Sincerely,

A handwritten signature in black ink that reads "William Agostinucci".

William Agostinucci  
VP Corporate Services

## EXECUTION COPY

### PEDIATRIC CARE ALLIANCE

#### CLINICAL AFFILIATION AND COLLABORATION AGREEMENT

This CLINICAL AFFILIATION AND COLLABORATION AGREEMENT (the "Alliance Agreement"), dated this 9<sup>th</sup> day of October, 2020 (the "Effective Date"), by and between HARTFORD HEALTHCARE CORPORATION, a Connecticut non-stock corporation with its principal place of business at One State Street, Suite 19, Hartford, CT 06103, on behalf of itself, its affiliates and all subsidiaries (collectively, "HHC"), and CONNECTICUT CHILDREN'S MEDICAL CENTER, a Connecticut non-stock corporation with its principal place of business at 282 Washington Street, Hartford, CT 06106, on behalf of itself, its affiliates and all subsidiaries (collectively "CCMC"). HHC and CCMC are each sometimes hereinafter referred to individually as a "Party" and collectively as the "Parties."

WHEREAS, HHC is the parent entity of a not-for-profit tax-exempt integrated healthcare delivery system offering a full continuum of healthcare services comprised of seven acute care hospitals, including Hartford Hospital, a behavioral health network, rehabilitation services, skilled nursing, senior living facilities and senior care services, home care services, physician organizations, a clinical integration organization, numerous ambulatory care and community service programs and facilities, a Medicare health plan, and a broad variety of other health care related programs, services and operations.

WHEREAS, CCMC is academic medical center exclusively focused on pediatric care that operates (i) a 187-bed comprehensive acute care pediatric hospital, with its main hospital facility located adjacent to Hartford Hospital on property leased from Hartford Hospital pursuant to that certain ground lease between Hartford Hospital and CCMC (under CCMC's prior name, Newington Children's Hospital), dated as of August 2, 1994 (the "Ground Lease") (such CCMC facility and all related locations where services are currently rendered by CCMC at 282 Washington Street, 85 Seymour Street, and 100 Retreat Avenue, in each case in Hartford Connecticut, including a two-hundred fifty (250) yard radius around such locations, hereinafter referred to as the "CCMC Hartford Campus"), (ii) an inpatient pediatric hospital in Waterbury, Connecticut located at Saint Mary's Hospital, (iii) a pediatric ambulatory surgery center in Farmington, Connecticut, (iv) various pediatric primary and specialty care centers located in East Hartford, West Hartford, Danbury, Fairfield, Farmington, Glastonbury Shelton and South Hadley, Connecticut, and (v) various other facilities, services and programs throughout Connecticut.

WHEREAS, HHC and CCMC share a common goal of providing high quality, affordable health care services to children in Connecticut and bordering states (the "Service Area").

WHEREAS, HHC and CCMC each believe that their common goal would be furthered and advanced by building upon the Parties' historical collaboration in the provision of pediatric healthcare services and exploring opportunities to jointly identify and establish new, and expand and enhance existing, healthcare services in the Service Area.

WHEREAS, in recognition thereof, HHC and CCMC desire to significantly expand, deepen and enhance their individual and collective ability to improve the health and well-being of children by establishing a more robust and comprehensive pediatric-focused contractual clinical

## EXECUTION COPY

shall be evidenced in definitive written agreements fully executed by the appropriate Parties (i.e., the Definitive Agreements referenced in Section 1 hereof).

3. Initial Collaborative Activities. In furtherance of this Alliance Agreement, the Parties agree to work together in good faith promptly following the Effective Date to pursue the accomplishment of the following Alliance Opportunities:

3.1. Expansion of CCMC Hartford Campus Facility and/or Services. CCMC desires to engage in reasonable and appropriate efforts and actions to:

3.1.1. expand the scope of pediatric-related services provided by CCMC at the CCMC Hartford Campus facility, including, in particular, to establish capabilities to perform high risk labor and delivery and enhanced neonatal services, and such other pediatric-related programs and services which are compliant with the use restrictions in the Ground Lease, not to be rendered to patients older than 18 years of age or competitive with services then currently provided by Hartford Hospital, except for those certain services that CCMC currently provides to patients who have a childhood disease that requires pediatric specialty care into adulthood who are older than 18 years of age as of the execution of this Alliance Agreement in those programs set forth on Schedule 3.1.1 hereof ("Grandfathered Clinical Programs") or as future services or programs otherwise agreed to by the Parties pursuant to the process set forth in Section 3.1.1.1; and

3.1.1.1. In the event that CCMC desires to develop a new clinical program (that is not included in the Grandfathered Clinical Programs) for patients who have a childhood disease that requires pediatric specialty care into adulthood who are older than 18 years of age ("New Clinical Program"), CCMC will notify HHC of the details of the proposed New Clinical Program. If HHC has any concerns about the details of such program, the Parties agree that the clinical leaders from HHC (who either currently oversee and/or would oversee a similar program at HHC) and the clinical leaders from CCMC (who would oversee the New Clinical Program) will first meet and make good faith efforts to resolve the concern to the satisfaction of both CCMC and HHC. If their efforts are unsuccessful, the Parties agree that the concern will be raised to the Alliance Committee for review and resolution.

3.1.2. renovate the existing building and/or construct one or more new buildings on the property leased by CCMC pursuant to the Ground Lease and make related required capital improvements in connection with the foregoing service expansion efforts provided for in Section 3.1.1; provided, however, that all such renovations of existing facilities, construction of new buildings and any capital improvements must be consistent with and comply with architectural standards established by HHC.

CCMC acknowledges that the actions addressed in Section 3.1.1 or Section 3.1.2 are subject to the requirements set forth in this Alliance Agreement and the Ground Lease and CCMC agrees to comply with all of such requirements prior to taking any of the aforementioned actions.

**EXECUTION COPY**

Agreement will not conflict with or violate the terms and conditions of any agreement to which such Party is a party or is otherwise bound.

18. Miscellaneous. This Alliance Agreement: (i) shall be governed by and construed in accordance with the laws of the State of Connecticut; (ii) may be amended or modified only by an agreement in writing signed by both Parties; (iii) shall be binding upon and shall inure to the benefit of the Parties hereto and their respective successors and permitted assignees, but neither Party shall assign or transfer this Alliance Agreement without the prior written consent of the other Party hereto; and (iv) may be executed in counterparts.

IN WITNESS WHEREOF, the Parties hereto have set their hands and seals the day and year first above written.

HARTFORD HEALTHCARE  
CORPORATION

By: 

Name: Jeffrey A. Flaks

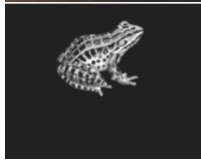
Title: President and CEO

CONNECTICUT CHILDREN'S MEDICAL  
CENTER

By: 

Name: James F. Schmerling

Title: President and CEO



*Frog Hollow  
Neighborhood Revitalization Zone*

September 23, 2022

Re: Partial Site Plan Application: Connecticut Children's Medical Center

Dear Commissioners:

On behalf of the Frog Hollow NRZ, I am writing to express our support of the partial site plan that has been developed and was presented by Connecticut Children's to our NRZ. We hesitate to refer to the plan as a master plan at this point as much of what is to be developed has not yet been presented to the community.

Connecticut Children's presented its current plans on two occasions to the FHNRZ, revealing more of the plan each time. We now understand that in addition to the building expansion CCMC also intends to build a bridge connecting the expanded portion of the hospital with a new parking garage that they anticipate having built for them across Washington Street. While a fairly detailed rendering of the expanded building and site plan on the eastern side of Washington Street was presented, there was no information presented on the parking garage. Therefore, at this time, the FHNRZ's enthusiastic support is strictly limited to support for the building expansion, changes to the street, bus lanes, and landscaping proposed for the redevelopment east of Washington Street.

Also, during subsequent conversations with members of the NRZ, support was voiced for keeping the look and feel of the medical center bright, playful and joyful. The hospital has the opportunity to continue to be a unique landmark within our city and we encourage them to do so.

Once again, we are pleased to support the site plan as presented to the FHNRZ on September 20, 2022 and we thank the professionals from CCMC for their transparency about future plans. We hope that other medical institutions in the vicinity will follow in suit.

Sincerely,

Carey Shea  
Interim Chair  
Frog Hollow NRZ









## CONNECTICUT CHILDREN'S

### NEW TOWER PROJECT

282 WASHINGTON STREET  
HARTFORD, CT 06106



Project Number : 006719.00  
SITE PLAN SUBMISSION  
NOVEMBER 4, 2022

# CANNONDESIGN

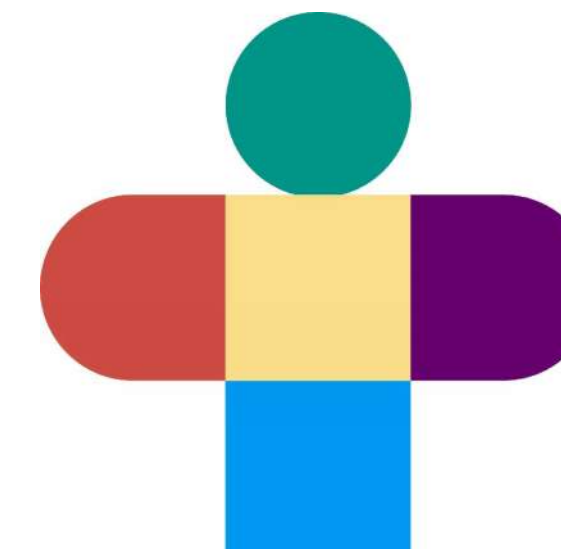
99 Summer Street Suite 600  
Boston, MA 02110  
P: 617.742.5440  
F: 617.723.8832

BOSTON NEW YORK BALTIMORE WASHINGTON DC BUFFALO TORONTO COLUMBUS PITTSBURGH DALLAS  
CHICAGO ST. LOUIS IRVINE SAN FRANCISCO DENVER HOUSTON LOS ANGELES PHOENIX PASADENA MUMBAI

Consultants:

Colliers  
Fuss & O'Neill





**CONNECTICUT CHILDREN'S  
NEW TOWER PROJECT**  
282 WASHINGTON STREET  
HARTFORD, CT 06106

## CANNONDESIGN

50 Fountain Plaza Suite 200  
Buffalo, NY 14202  
P: 716.773.8800  
F: 716.773.5909

www.cannondesign.com

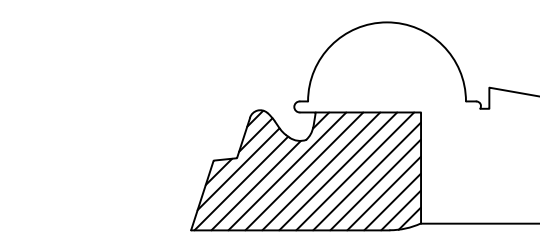
**Colliers**  
Owner's Project Manager  
160 Federal Street 11th Floor  
Boston, MA 02110  
P: 617.330.8000

**Fuss & O'Neill**  
Civil Engineering and Landscape Architecture  
146 Hartford Road  
Manchester, CT 06040  
P: 860.646.2469



**NOT FOR  
CONSTRUCTION**

Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



**KEY PLAN**

Drawing Title:

## DRAWING INDEX

Project No.: 006719.00 Checked by: RB

# G0001

## DRAWING INDEX

<u>SHEET No.</u>	<u>SHEET TITLE</u>
G0000	COVER
G0001	DRAWING INDEX
G0101	TREE MATRIX
1 OF 1	TOPOGRAPHIC SURVEY
C0001	CIVIL GENERAL NOTES
C0101	SITE PREPARATION PLAN
C0102	SITE EROSION & SEDIMENT CONTROL PLAN
C0103	SITE LAYOUT PLAN
C0103.1	SITE TURNING TEMPLATE PLAN
C0104	SITE GRADING & DRAINAGE PLAN
C0105	SITE UTILITY PLAN
C0106	SITE LANDSCAPING PLAN
C0501	SITE DETAILS
C0502	SITE DETAILS
C0503	SITE DETAILS
C0504	SITE DETAILS
C0505	SITE DETAILS
C0506	SITE DETAILS
C0507	SITE DETAILS
C0508	SITE DETAILS
C0509	SITE DETAILS
C0510	SITE DETAILS
C0511	SITE DETAILS
G0101-1	EXTERIOR VIEW
G0101-2	EXTERIOR VIEW
G0101-3	EXTERIOR VIEW
A0102-1	LEVEL 02 FLOOR PLAN
A0106-1	LEVEL 06 FLOOR PLAN
A0109-1	PENTHOUSE LEVEL FLOOR PLAN
A0110-1	ROOF PLAN
A0311-1	EXTERIOR ELEVATION
A0312-1	EXTERIOR ELEVATION
A0313-1	EXTERIOR ELEVATION
A0314-1	EXTERIOR ELEVATION
A0315-1	EXTERIOR MATERIAL BOARD
LT0001	SITE PHOTOMETRIC PLAN



TREE MATRIX					
TREES REMOVED	AMOUNT REMOVED	CAL. REMOVED	TREES ADDED	AMOUNT ADDED	CAL. ADDED
TREE #1	1	20 IN.	BETULA PLATYPHYLLA 'FARGO'	14	28 IN.
TREE #2	1	20 IN.	PLATANUS X ACERIFOLIA	9	27 IN.
TREE #3	1	24 IN.	QUERCUS ROBOR	2	5 IN.
TREE #4	1	24 IN.			
TREE #5	1	24 IN.			
TREE #6	1	24 IN.			
TREE #7	1	24 IN.			
TREE #8	1	24 IN.			
TREE #9	1	20 IN.			
TREE #10	1	20 IN.			
TREE #11	1	20 IN.			
TREE #12	1	8 IN.			
TREE #13	1	6 IN.			
TREE #14	1	4 IN.			
TOTAL	14	262 IN.	TOTAL	25	60 IN.

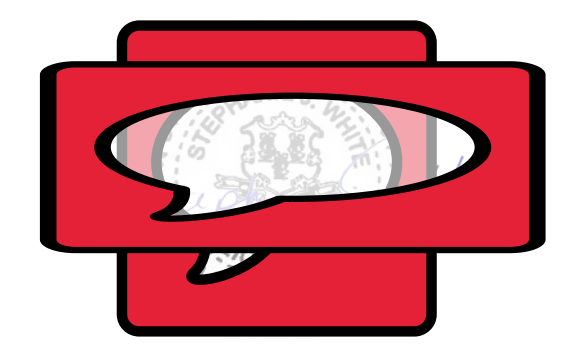
TOTAL CALIPER INCHES NOT REPLACED BY NEW PLANTING 197 CALIPER INCHES



**CONNECTICUT CHILDREN'S  
NEW TOWER PROJECT**  
282 WASHINGTON STREET  
HARTFORD, CT 06106

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**NOT FOR  
CONSTRUCTION**

Site Plan Submission Nov. 4, 2022  
Rev. Description Date

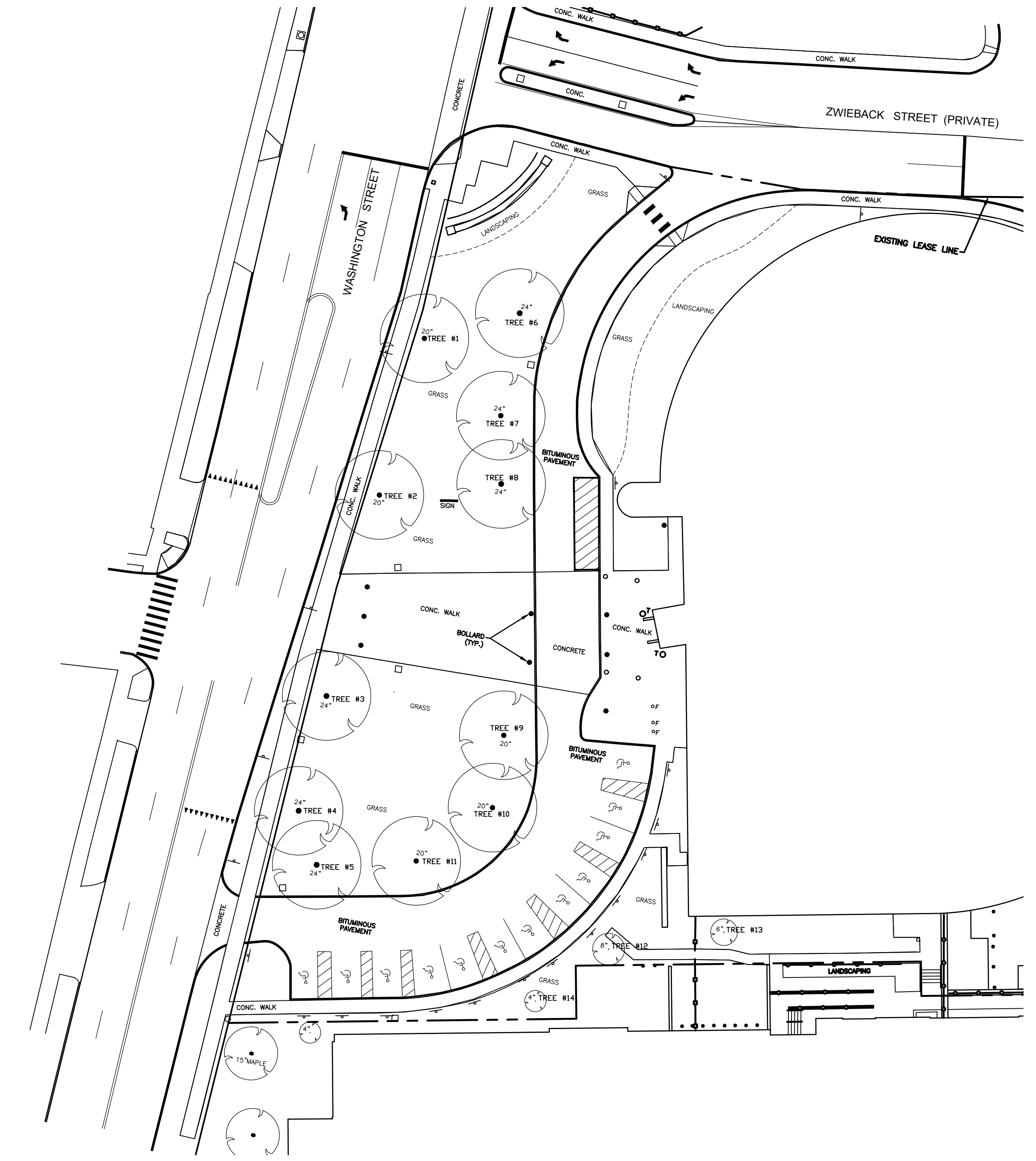
**KEY PLAN**

Drawing Title:

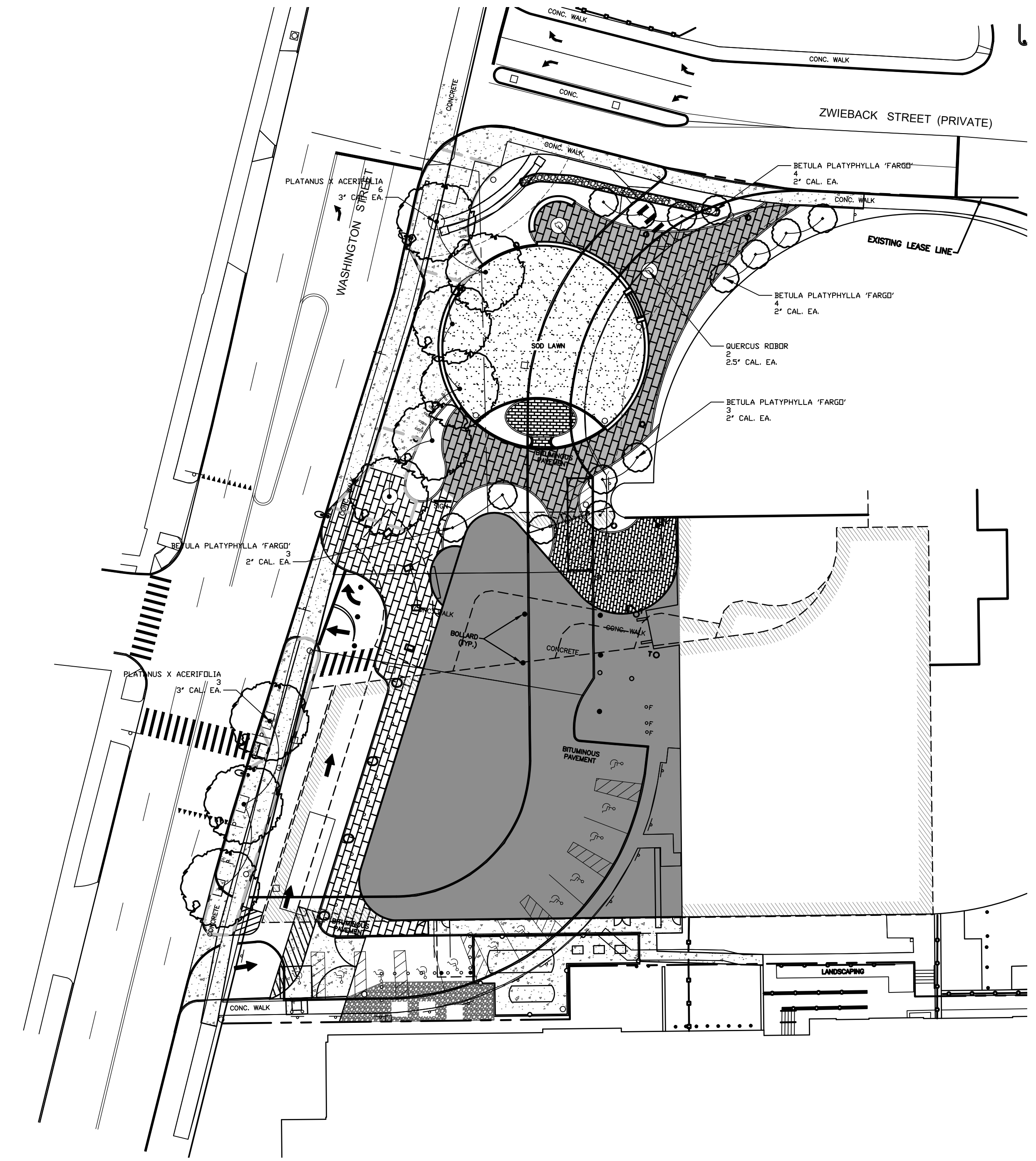
**TREE MATRIX**

Project No.: 006719.00 Checked by: RB

**G0101**



**TREES TO BE REMOVED**  
SCALE: 1" = 30'

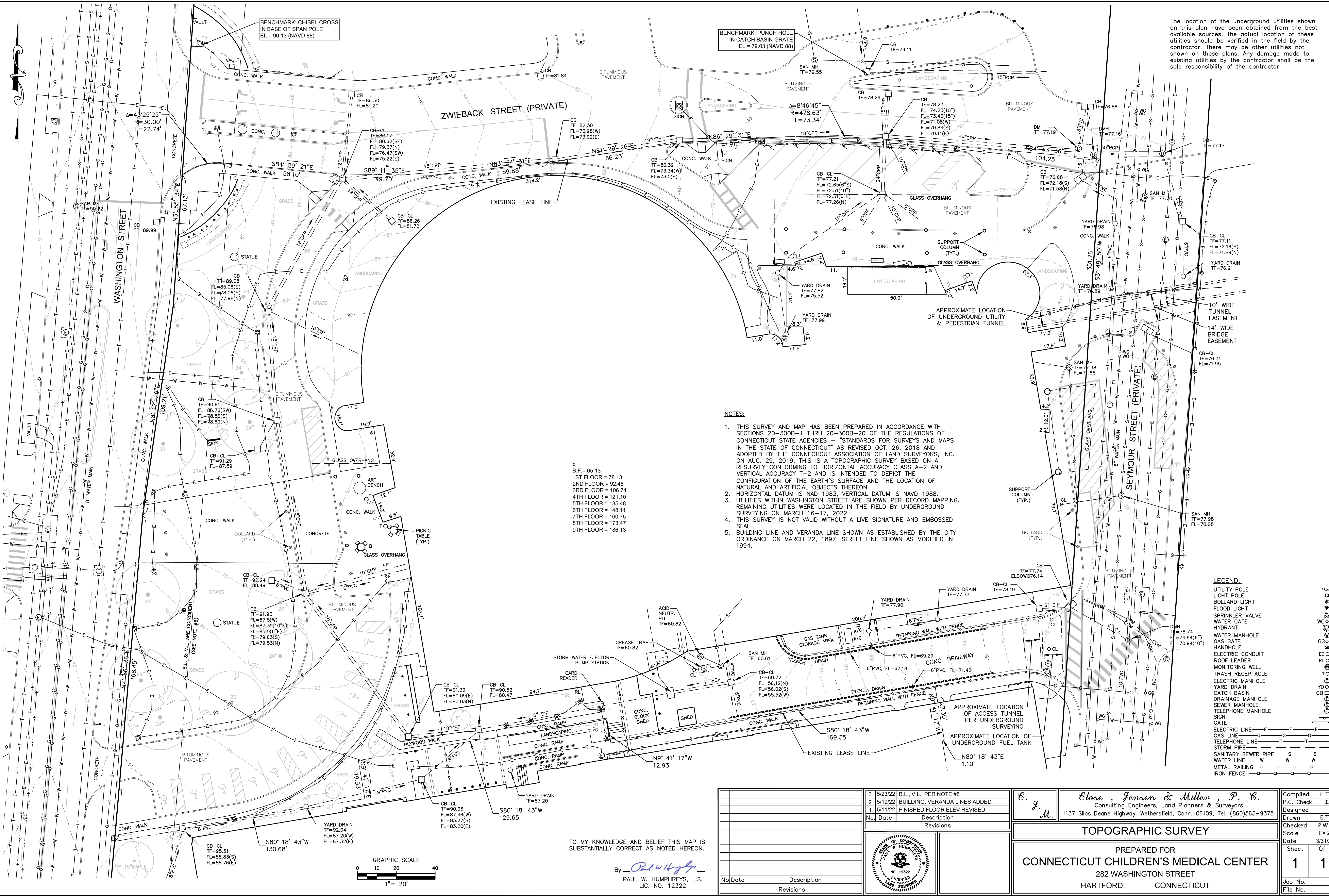


**PROPOSED TREES**  
SCALE: 1" = 30'

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R:\CAM\HARTFORD\HOSPITAL\CONC Drawings\T-SRV-CMCC R2-5-23-22.dwg



The location of the underground utilities shown on this plan have been obtained from the best available sources. The actual location of these utilities should be verified in the field by the contractor. There may be other utilities not shown on these plans. Any damage made to existing utilities by the contractor shall be the sole responsibility of the contractor.

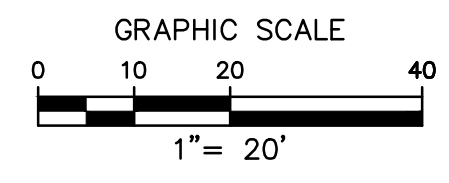
**NOTES:**

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS REVISED OCT. 26, 2018 AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON AUG. 29, 2019. THIS IS A TOPOGRAPHIC SURVEY BASED ON A RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND VERTICAL ACCURACY T-2 AND IS INTENDED TO DEPICT THE CONFIGURATION OF THE EARTH'S SURFACE AND THE LOCATION OF NATURAL AND ARTIFICIAL OBJECTS THEREON.
2. HORIZONTAL DATUM IS NAD 1983, VERTICAL DATUM IS NAVD 1988.
3. UTILITIES WITHIN WASHINGTON STREET ARE SHOWN PER RECORD MAPPING. REMAINING UTILITIES WERE LOCATED IN THE FIELD BY UNDERGROUND SURVEYING ON MARCH 16-17, 2022.
4. THIS SURVEY IS NOT VALID WITHOUT A LIVE SIGNATURE AND EMBOSSED SEAL.
5. BUILDING LINE AND VERANDA LINE SHOWN AS ESTABLISHED BY THE CITY ORDINANCE ON MARCH 22, 1897. STREET LINE SHOWN AS MODIFIED IN 1994.

X  
B.F. = 65.13  
1ST FLOOR = 78.13  
2ND FLOOR = 92.45  
3RD FLOOR = 106.74  
4TH FLOOR = 121.10  
5TH FLOOR = 135.48  
6TH FLOOR = 148.11  
7TH FLOOR = 160.75  
8TH FLOOR = 173.47  
9TH FLOOR = 186.13

**LEGEND:**

- UTILITY POLE
- LIGHT POLE
- BOLLARD LIGHT
- FLOOD LIGHT
- SPRINKLER VALVE
- WATER GATE
- HYDRANT
- WATER MANHOLE
- GAS GATE
- HANDHOLE
- ELECTRIC CONDUIT
- ROOF LEADER
- MONITORING WELL
- TRASH RECEPTACLE
- ELECTRIC MANHOLE
- YARD DRAIN
- CATCH BASIN
- DRAINAGE MANHOLE
- SEWER MANHOLE
- TELEPHONE MANHOLE
- SIGN
- GATE
- ELECTRIC LINE
- GAS LINE
- TELEPHONE LINE
- STORM PIPE
- SANITARY SEWER PIPE
- WATER LINE
- METAL RAILING
- IRON FENCE

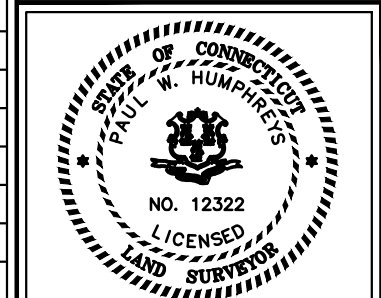


TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

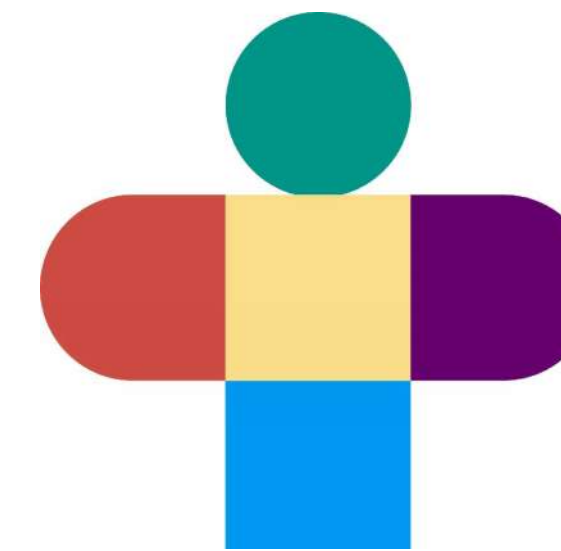
By Paul W. Humphreys, L.S.  
PAUL W. HUMPHREYS, L.S.  
LIC. NO. 12322

No.	Date	Description
3	5/23/22	B.L., V.L., PER NOTE #5
2	5/19/22	BUILDING, VERANDA LINES ADDED
1	5/11/22	FINISHED FLOOR ELEV REVISD
Revisions		

<p><b>C. J. M.</b> Close, Jensen &amp; Miller, P.C. Consulting Engineers, Land Planners &amp; Surveyors 1137 Silas Deane Highway, Wethersfield, Conn. 06109, Tel. (860)563-9375</p>	<p>Compiled E.T.J. P.C. Check I.H. Designed Drawn E.T.J. Checked P.W.H. Scale 1" = 20' Date 3/31/22 Sheet 1 of 1</p>
	<p><b>TOPOGRAPHIC SURVEY</b> PREPARED FOR <b>CONNECTICUT CHILDREN'S MEDICAL CENTER</b> 282 WASHINGTON STREET HARTFORD, CONNECTICUT</p>







**CONNECTICUT CHILDREN'S  
NEW TOWER PROJECT**  
282 WASHINGTON STREET  
HARTFORD, CT 06106

## CANNONDESIGN

50 Fountain Plaza Suite 200  
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P: 716.773.8800  
F: 716.773.5909

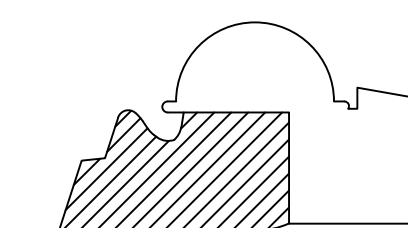
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Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



KEY PLAN

Drawing Title:

**CIVIL GENERAL NOTES**

Project No.: 006719.00 Checked by: RB

# C0001

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### CIVIL GENERAL NOTES

#### GENERAL

1. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SHOWN ON THE DRAWINGS TO SCALE OR TO THEIR ACTUAL DIMENSION OR LOCATION. COORDINATE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
2. DO NOT RELY SOLELY ON ELECTRONIC VERSIONS OF DRAWINGS, SPECIFICATIONS, AND DATA FILES THAT ARE PROVIDED BY THE ENGINEER. FIELD VERIFY LOCATION OF PROJECT FEATURES.
3. PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
4. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDINGS AND ADJACENT SITE ELEMENTS INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. BASE PLAN: INFORMATION DEPICTED ON THESE PLANS ARE BASED ON A PLAN ENTITLED "SHEET 1 OF 1, TOPOGRAPHIC SURVEY PREPARED FOR CONNECTICUT CHILDREN'S MEDICAL CENTER, 282 WASHINGTON STREET, HARTFORD, CT" DATED MARCH 31, 2022, SCALE 1"=20' PREPARED BY CLOSE, JENSEN, & MILLER, P.C., 1137 SILAS DEANE HIGHWAY, WETHERSFIELD, CT 06109.
6. TOPOGRAPHIC ELEVATIONS ARE BASED ON NAVD 88 DATUM.
7. GEOTECHNICAL DATA WAS OBTAINED FROM HALEY & ALDRICH, INC., ROCKY HILL, CT.

#### WORK RESTRICTIONS

1. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, FIRE HYDRANTS, AND UTILITIES WITHOUT APPROPRIATE PERMITS.
2. REFER TO SECTION 011000 - SUMMARY FOR ADDITIONAL WORK RESTRICTIONS.

#### REGULATORY REQUIREMENTS

1. WITHIN LOCAL RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS.
2. WITHIN STATE RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS AND ISSUED REVISIONS/SUPPLEMENTS.
3. PROVIDE TRAFFIC SIGNAGE AND PAVEMENT MARKINGS IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
4. BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
5. DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.

#### EROSION AND SEDIMENT CONTROL

1. INSTALL EROSION CONTROL MEASURES PRIOR TO STARTING ANY WORK ON THE SITE. REFER TO THE EROSION AND SEDIMENT CONTROL DRAWINGS.
2. IMPLEMENT ALL NECESSARY MEASURES REQUIRED TO CONTROL STORMWATER RUNOFF, DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE. PERFORM CORRECTIVE ACTION AS NEEDED FOR EROSION CLEANUP AND REPAIRS TO OFF SITE AREAS, IF ANY, AT NO COST TO OWNER.
3. INSPECT AND MAINTAIN EROSION CONTROL MEASURES PER THE SCHEDULE IN THE EROSION AND SEDIMENT CONTROL DRAWINGS. DISPOSE OF SEDIMENT IN AN UPLAND AREA. DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
4. PERFORM CONSTRUCTION SEQUENCING IN SUCH A MANNER TO CONTROL EROSION AND TO MINIMIZE THE TIME THAT EARTH MATERIALS ARE EXPOSED BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL MEASURES. CLEAN SEDIMENT AND DEBRIS FROM TEMPORARY MEASURES AND FROM PERMANENT STORM DRAIN AND SANITARY SEWER SYSTEMS.

#### DEMOLITION

1. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS, UNLESS OTHERWISE NOTED.
2. SITE PREPARATION PLANS ARE PROVIDED FOR INFORMATION ONLY AND MAY NOT INDICATE ALL ITEMS REQUIRED TO BE DEMOLISHED. PERFORM A PRE-BID SITE INSPECTION. COORDINATE DEMOLITION OF UNIDENTIFIED UTILITIES OR STRUCTURES WITH OWNER. DEMOLISH STRUCTURES, SITE IMPROVEMENTS, UTILITIES, ETC. AS REQUIRED TO CONSTRUCT PROPOSED FACILITY AND UTILITY SERVICES.

### CONSTRUCTION LAYOUT

1. PROVIDE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED SITE IMPROVEMENTS. FIELD VERIFY EXISTING PAVEMENT AND GROUND ELEVATIONS AT THE INTERFACE WITH PROPOSED PAVEMENTS AND DRAINAGE STRUCTURES BEFORE START OF CONSTRUCTION.
2. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, FIELD VERIFY PROPOSED UTILITY ROUTES AND IDENTIFY ANY INTERFERENCES OR OBSTRUCTIONS WITH EXISTING UTILITIES OR PUBLIC RIGHTS-OF-WAY.
3. IMMEDIATELY INFORM THE ENGINEER IN WRITING IF EXISTING UTILITY CONDITIONS CONFLICT OR DIFFER FROM THAT INDICATED AND IF THE WORK CANNOT BE COMPLETED AS INDICATED.
4. DIMENSIONS ARE FROM FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS NOTED OTHERWISE.
5. BOUNDS OR MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

### EARTHWORK

1. NOTIFY UTILITY LOCATOR SERVICE AT LEAST 72 HOURS BEFORE STARTING EXCAVATION. "CALL BEFORE YOU DIG" AT 1-800-922-4455.
2. STOP WORK IN THE VICINITY OF SUSPECTED CONTAMINATED SOIL, GROUNDWATER OR OTHER MEDIA. IMMEDIATELY NOTIFY THE OWNER SO THAT APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN. RESUME WORK IN THE IMMEDIATE VICINITY ONLY UPON DIRECTION BY THE OWNER.
3. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, PERFORM EARTHWORK OPERATIONS TO SUBGRADE ELEVATIONS. SEE DRAWINGS BY OTHERS FOR WORK ABOVE SUBGRADE.

### UTILITIES

1. TERMINATE EXISTING UTILITIES IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. COORDINATE UTILITY SERVICE DISCONNECTS WITH UTILITY REPRESENTATIVES.
2. THE TYPE, SIZE AND LOCATION OF DEPICTED UNDERGROUND UTILITIES ARE APPROXIMATE REPRESENTATIONS OF INFORMATION OBTAINED FROM FIELD LOCATIONS OF VISIBLE FEATURES, EXISTING MAPS AND PLANS OF RECORD, UTILITY MAPPING, AND OTHER SOURCES OF INFORMATION OBTAINED BY THE ENGINEER. ASSUME NO GUARANTEE AS TO THE COMPLETENESS, SERVICEABILITY, EXISTENCE, OR ACCURACY OF UNDERGROUND FACILITIES. FIELD VERIFY THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES.
3. PAY ALL FEES AND COSTS ASSOCIATED WITH UTILITY MODIFICATIONS AND CONNECTIONS, REGARDLESS OF THE ENTITY THAT PERFORMS THE WORK.
4. COORDINATE THE WORK AND WORK SCHEDULE WITH UTILITY COMPANIES. PROVIDE ADEQUATE NOTICE TO UTILITIES TO PREVENT DELAYS IN CONSTRUCTION.
5. INTERIOR DIAMETERS OF STORM DRAIN AND SANITARY SEWER STRUCTURES SHALL BE DETERMINED BY THE PRECAST MANUFACTURER, BASED ON THE INDICATED PIPE SYSTEM LAYOUT AND LOCAL MUNICIPAL STANDARDS.  
  
MINIMUM INTERIOR DIAMETERS:  
0 TO 20 FEET DEEP; 4 FEET.  
20 FEET OR GREATER; 5 FEET.
6. RIM ELEVATIONS FOR MANHOLES, VALVE COVERS, GATE AND PULL BOXES, AND OTHER STRUCTURES ARE APPROXIMATE. SET OR RESET RIM ELEVATIONS AS FOLLOWS:  
  
IN PAVEMENTS AND CONCRETE SURFACES: FLUSH  
IN SURFACES ALONG ACCESSIBLE ROUTES: FLUSH  
IN LANDSCAPE, SEEDED, AND OTHER EARTH SURFACE AREAS:  
1 INCH ABOVE SURROUNDING AREA; TAPER EARTH TO RIM ELEVATION.
7. INSTALL PROPOSED PRIVATE UTILITY SERVICES ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (WATER, SEWER, GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). COORDINATE FINAL DESIGN LOADS AND LOCATIONS WITH OWNER AND ARCHITECT.





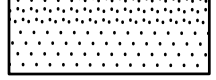
### PAVEMENT

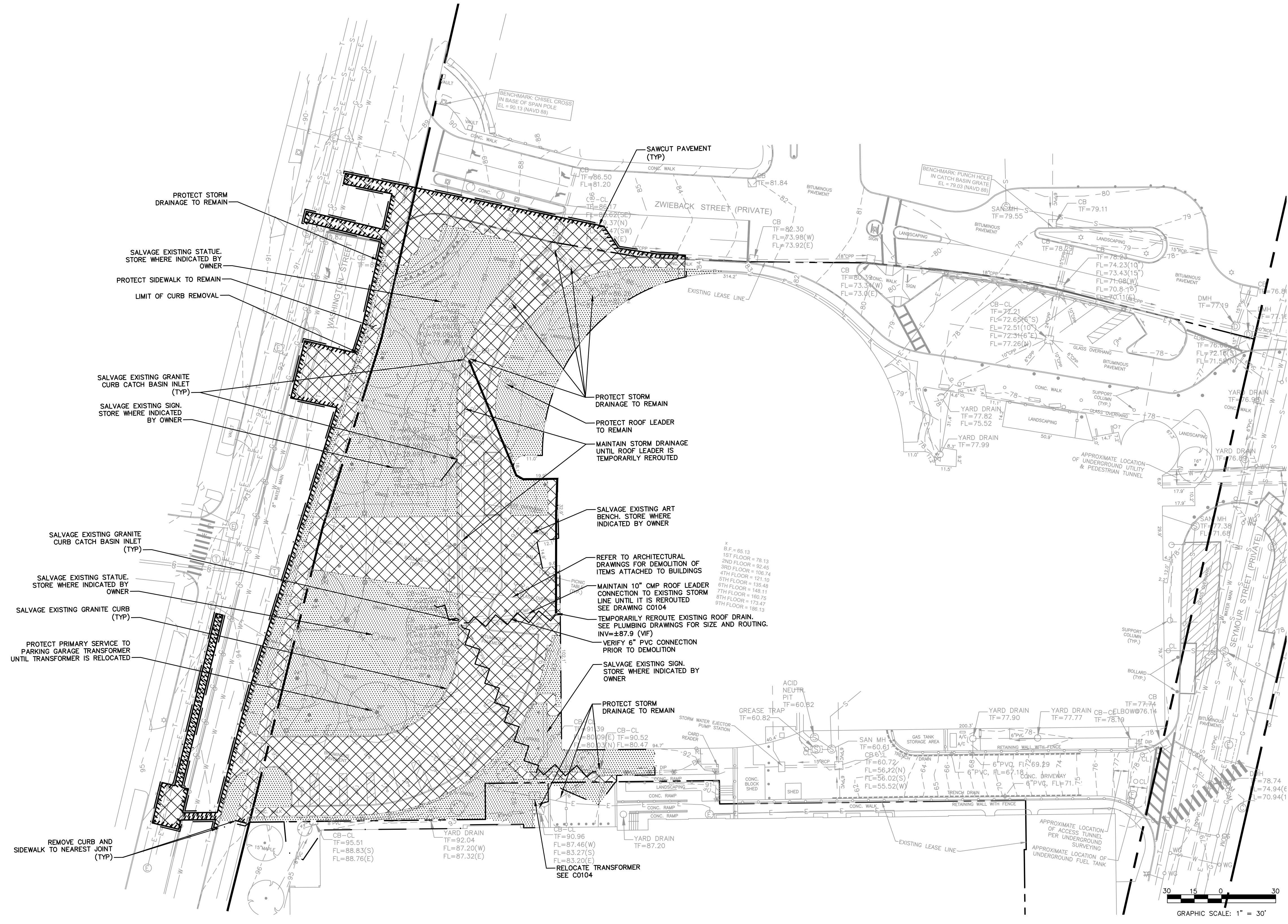
5. AT A MINIMUM, CONSTRUCT ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).

### SITE RESTORATION

1. PROVIDE 6 INCHES OF TOPSOIL AND SEED TO AREAS DISTURBED DURING CONSTRUCTION AND NOT DESIGNATED TO BE RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) UNLESS OTHERWISE NOTED.
2. REPAIR DAMAGES RESULTING FROM CONSTRUCTION LOADS, AT NO ADDITIONAL COST TO OWNER.
3. RESTORE AREAS DISTURBED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER, AT NO ADDITIONAL COST TO OWNER.



- LEGEND**
-  LIMIT OF WORK
  -  SAWCUT PAVEMENT
  -  UTILITY TO BE REMOVED
  -  EXISTING HARDSCAPE SURFACE TO BE DEMOLISHED. REMOVE ALL IMPROVEMENTS TO PERFORM NEW WORK UNLESS NOTED OTHERWISE.
  -  EXISTING VEGETATED AREA TO BE CLEARED AND GRUBBED. REMOVE ALL IMPROVEMENTS TO PERFORM NEW WORK UNLESS NOTED OTHERWISE.



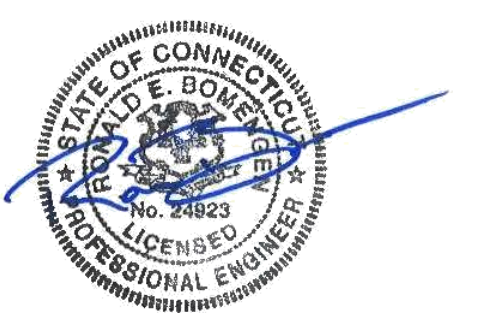
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Buffalo, NY 14202  
P: 716.773.8800  
F: 716.773.5909

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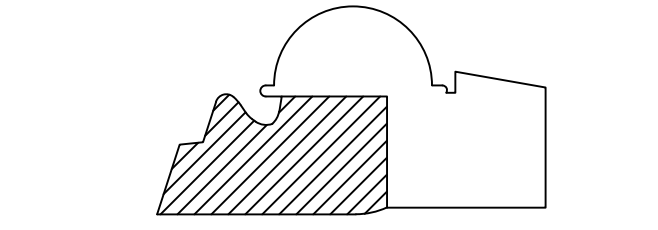
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Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



**KEY PLAN**

Drawing Title:

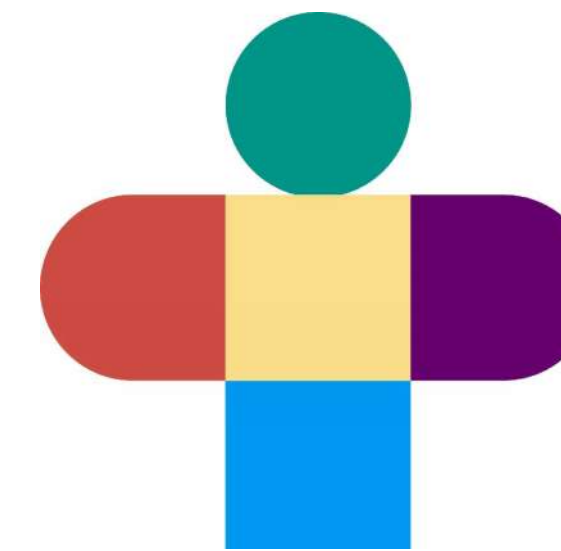
**SITE PREPARATION  
PLAN**

Project No.: 006719.00 Checked by: RB

**C0101**

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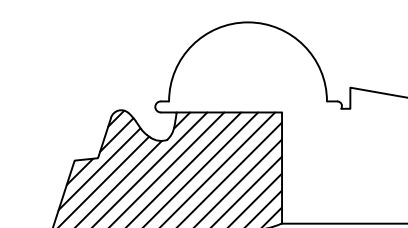
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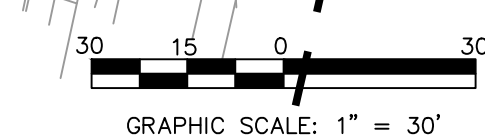
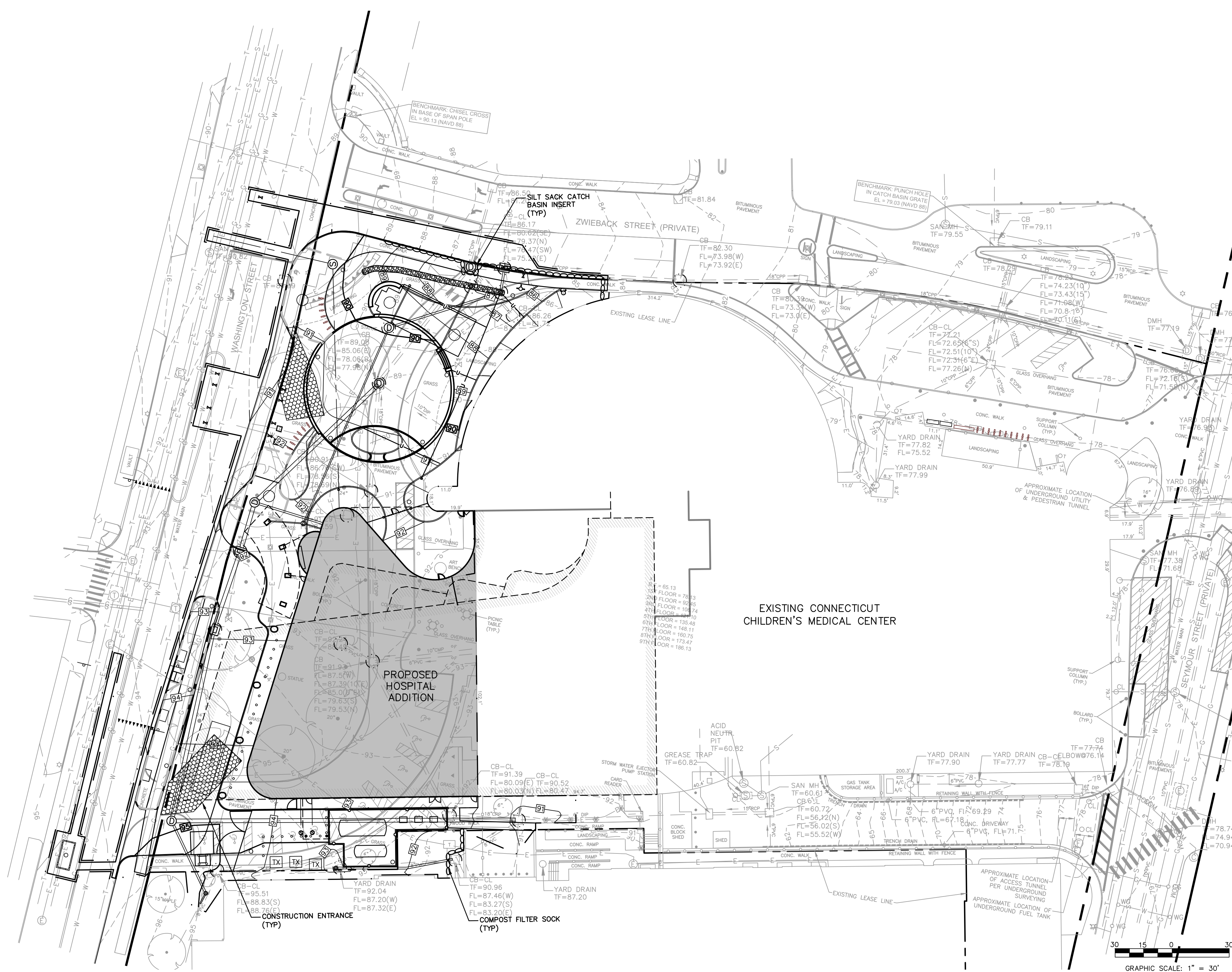
KEY PLAN

Drawing Title:

**SITE EROSION &  
SEDIMENT CONTROL  
PLAN**

Project No.: 006719.00 Checked by: RB

**C0102**

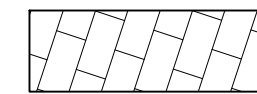
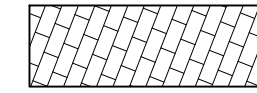
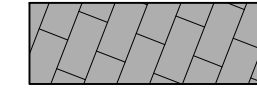
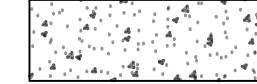


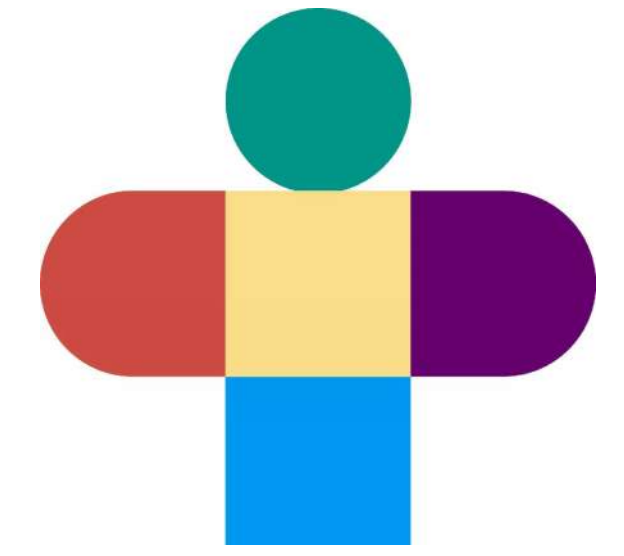
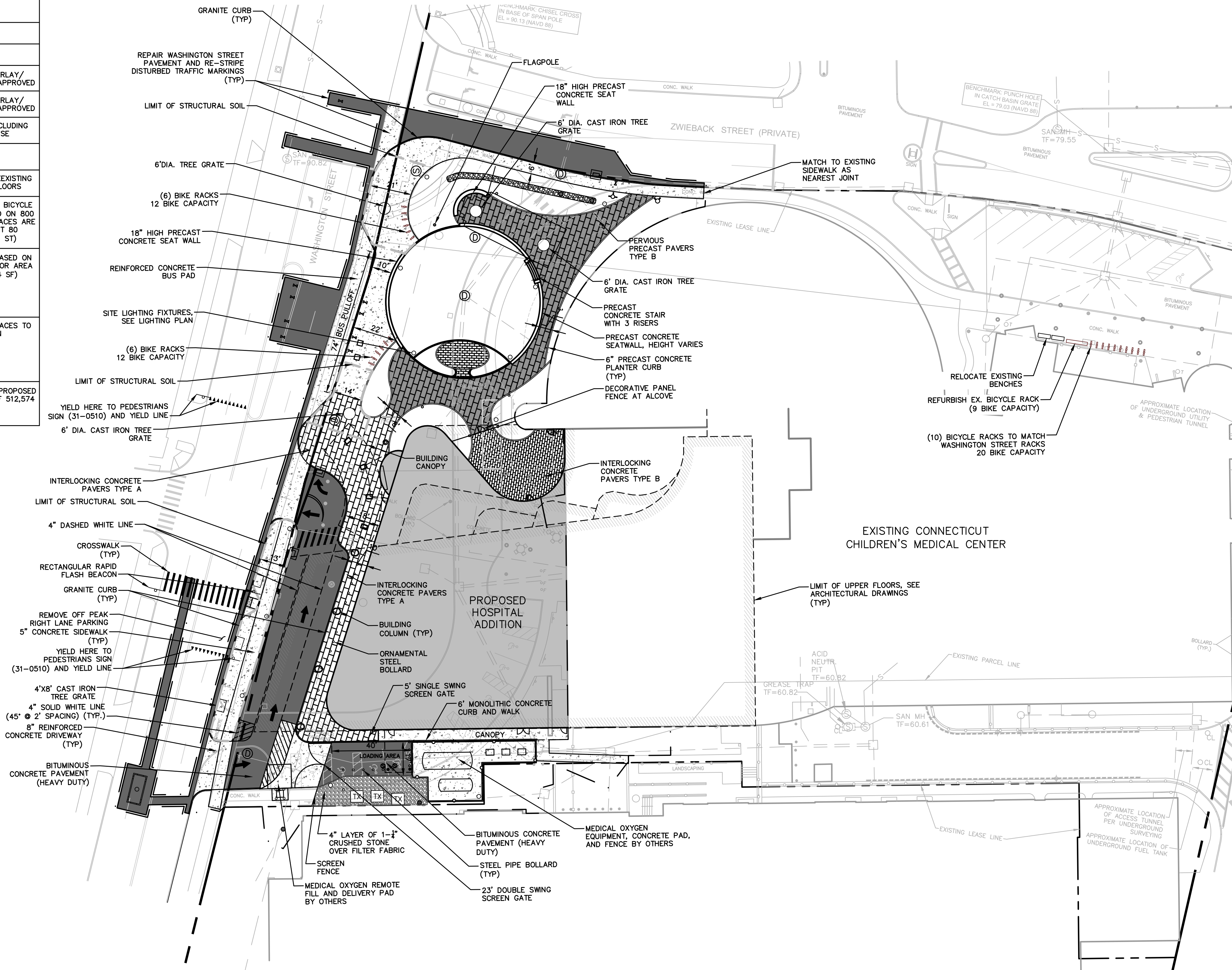
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ZONING COMPLIANCE TABLE				
ZONE: MX-2 & CAMPUS OVERLAY DISTRICT, GENERAL BUILDING TYPE				
SECTION	DESCRIPTION	REQUIRED/ALLOWED	EXISTING	PROPOSED
4.10.2 CIVIC BUILDING TYPE REGULATIONS	MINIMUM FRONT LOT LINE COVERAGE	NOT REQUIRED	NA	NA
	OCCUPATION OF CORNER	NOT REQUIRED		
	FRONT BUILD-TO ZONE		VARIES 23.6'-30'	CAMPUS OVERLAY/ MASTER PLAN APPROVED
	MINIMUM FRONT SETBACK	BEHIND THE BUILDING LINE A MINIMUM OF 5'	64'	CAMPUS OVERLAY/ MASTER PLAN APPROVED
	CORNER BUILD-TO ZONE	BEHIND THE BUILDING LINE A MINIMUM OF 5'		CAMPUS OVERLAY/ MASTER PLAN APPROVED
	MINIMUM CORNER SETBACK	BEHIND THE BUILDING LINE A MINIMUM OF 5'		CAMPUS OVERLAY/ MASTER PLAN APPROVED
	MINIMUM SIDE SETBACK	15'		CAMPUS OVERLAY/ MASTER PLAN APPROVED
	MINIMUM REAR SETBACK	15'		CAMPUS OVERLAY/ MASTER PLAN APPROVED
	MINIMUM LOT WIDTH, MAXIMUM BUILDING WIDTH	100'/NONE		CAMPUS OVERLAY/ MASTER PLAN APPROVED
	MAXIMUM BUILDING COVERAGE	60%	30%	31%
MAXIMUM IMPERVIOUS AREA	80%	61%	61%	
ADDITIONAL SEMI-PERVIOUS AREA	10%	0%	0%	
PERMITTED PARKING & LOADING LOCATIONS	REAR & SIDE YARD	REAR & SIDE YARD		CAMPUS OVERLAY/ MASTER PLAN APPROVED
PERMITTED VEHICULAR ACCESS	1 DRIVEWAY PER STREET FRONTAGE	1 VEHICULAR ACCESS DRIVES		CAMPUS OVERLAY/ MASTER PLAN APPROVED
MINIMUM OVERALL HEIGHT	1 STORY	8 STORIES		9 STORIES INCLUDING PENTHOUSE
MAXIMUM OVERALL HEIGHT	6 STORIES			
GROUND STORY MINIMUM HEIGHT	10'	VARIES, SEE DRAWING A0311-1		14'4"
GROUND STORY MAXIMUM HEIGHT	30'			
UPPER STORIES MINIMUM HEIGHT	9'	VARIES, SEE DRAWING A0311-1		MATCH TO PREEXISTING HOSPITAL FLOORS
UPPER STORIES MAXIMUM HEIGHT	14'			
7.2-B BICYCLE PARKING	MINIMUM LONG-TERM BICYCLE SPACES	1 PER 15 EMPLOYEES	NONE	62 LONG TERM BICYCLE SPACES (BASED ON 800 EMPLOYEES. SPACES ARE LOCATED AT 80 JEFFERSON ST)
	MINIMUM SHORT-TERM BICYCLE SPACES	1 PER EVERY 10,000 SQUARE FEET, WITH 10 MINIMUM	9 SPACES	52 SPACES (BASED ON PROPOSED FLOOR AREA OF 512,574 SF)
7.2-A OFF-STREET AUTOMOBILE PARKING	HOSPITAL USE	GUIDELINE IS MAXIMUM 1 SPACE PER BED	21 SPACES	9 EXISTING SPACES TO REMAIN
	GROSS FLOOR AREA: 500,001+ SF	15 (500,000+ SF: 15 SPACES PLUS ONE FOR EVERY 80,000 SF)	14	15 (BASED ON PROPOSED FLOOR AREA OF 512,574 SF)

MATERIALS LEGEND

-  INTERLOCKING CONCRETE PAVERS TYPE A
-  INTERLOCKING CONCRETE PAVERS TYPE B
-  INTERLOCKING PERMEABLE CONCRETE PAVERS
-  POURED IN PLACE CONCRETE PAVING



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Buffalo, NY 14202  
P: 716.773.8800  
F: 716.773.5909

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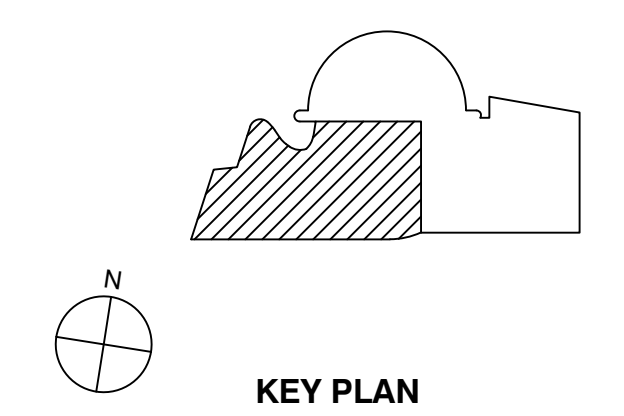
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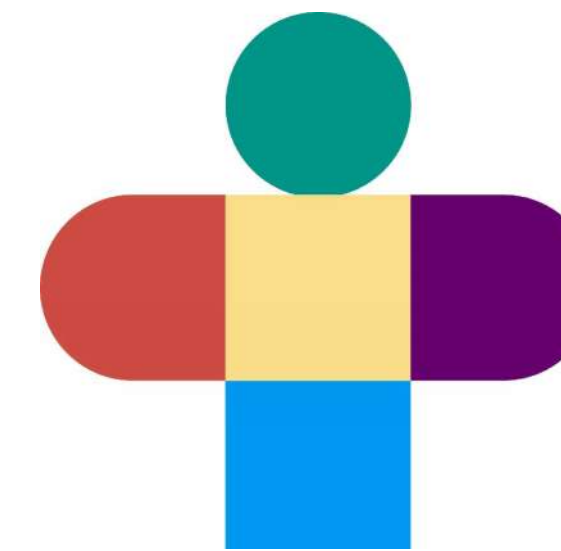
**SITE LAYOUT PLAN**

Project No.: 006719.00 Checked by: RB

**C0103**

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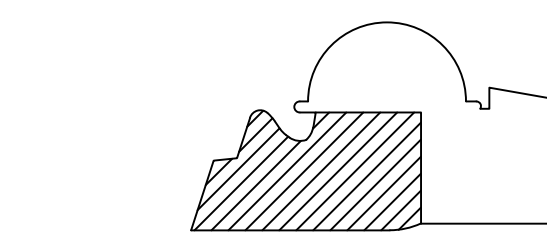
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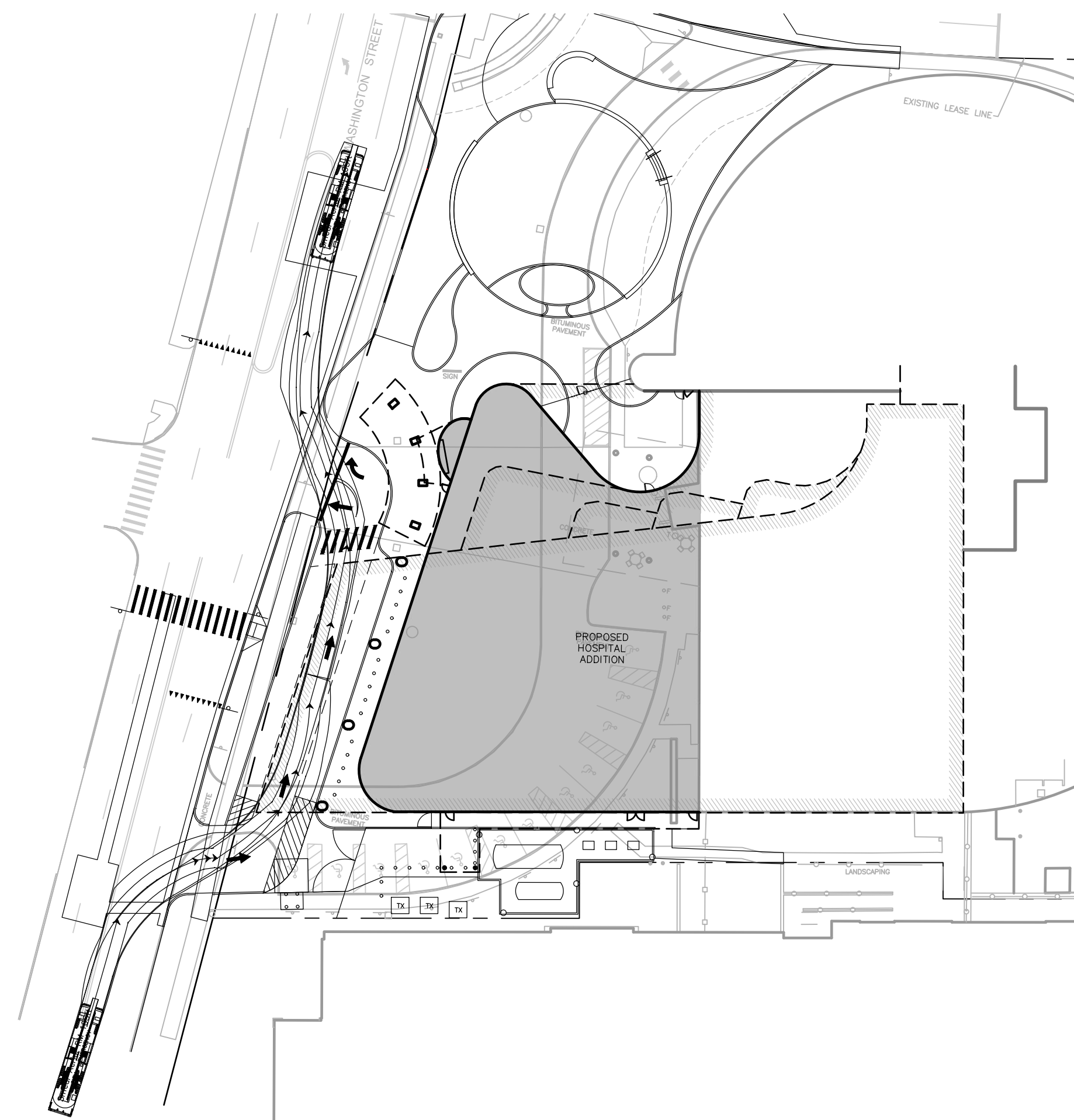
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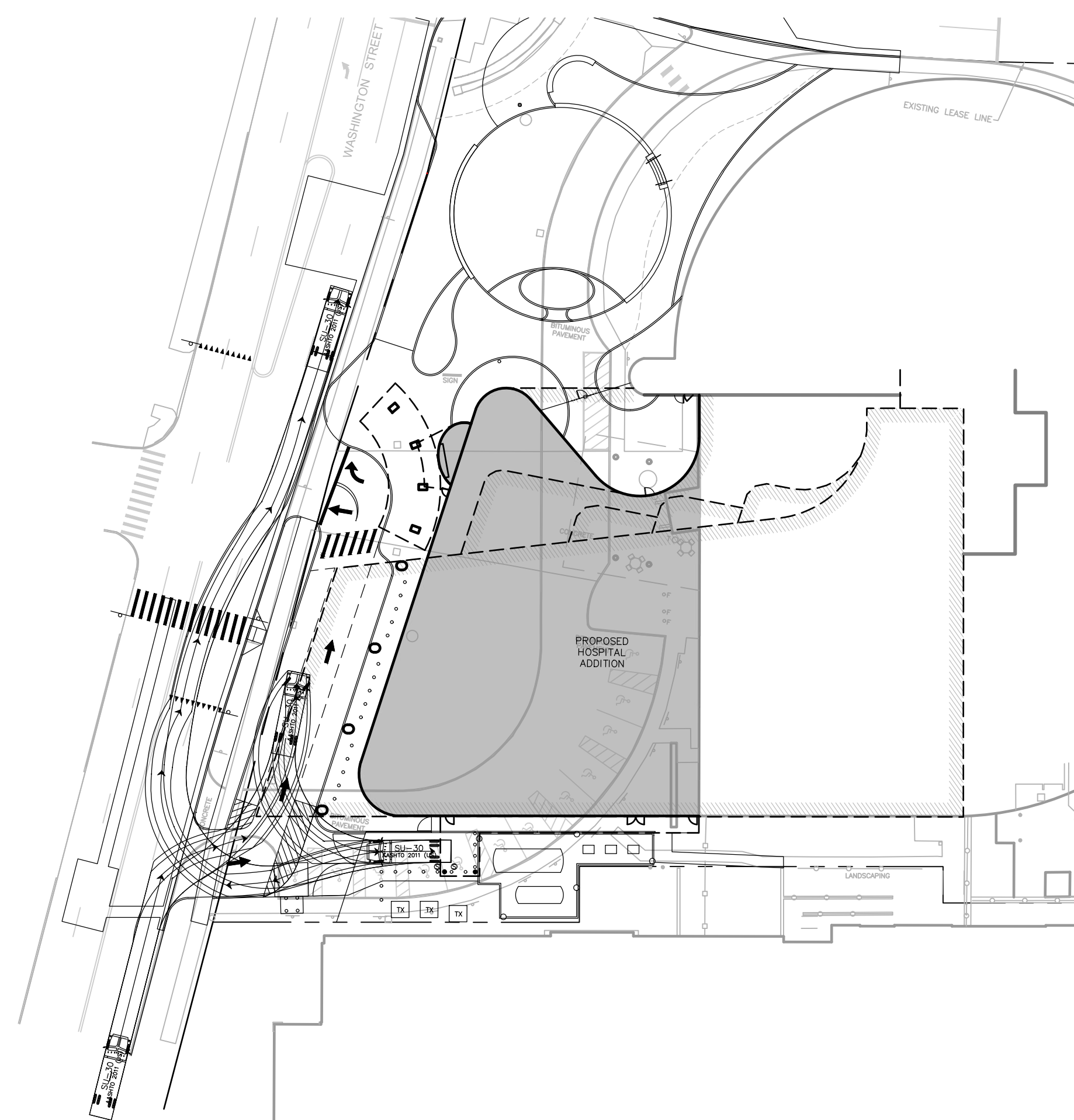
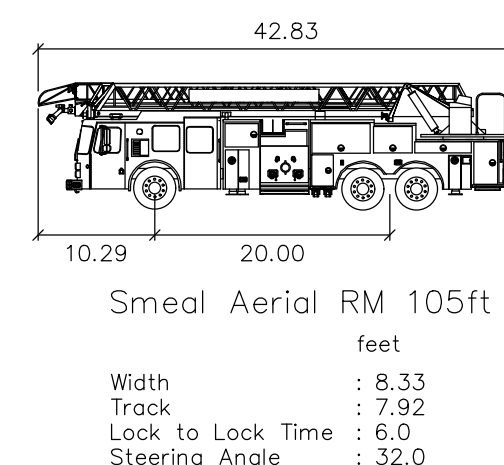
**SITE TURNING  
TEMPLATE PLAN**

Project No.: 006719.00 Checked by: RB

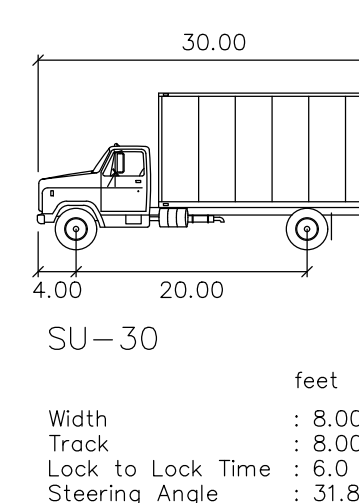
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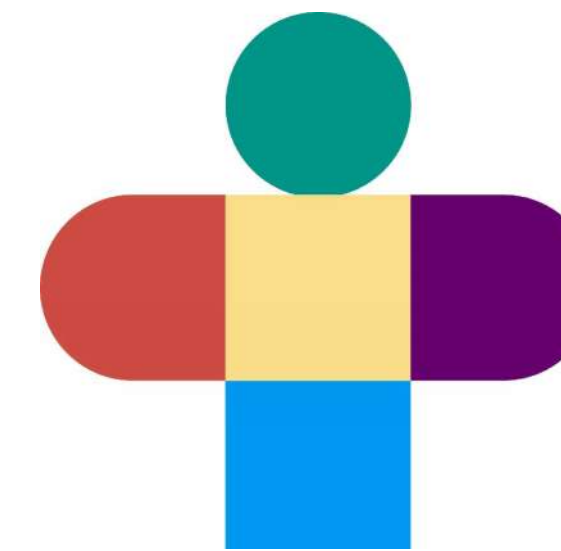
**FIRE TRUCK TURNING MOVEMENT**  
SCALE: 1" = 40'



**DELIVERY TRUCK TURNING MOVEMENT**  
SCALE: 1" = 40'







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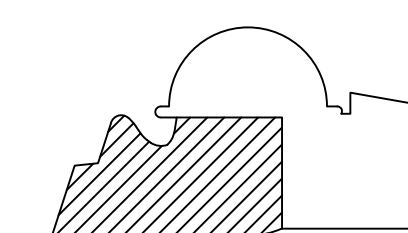
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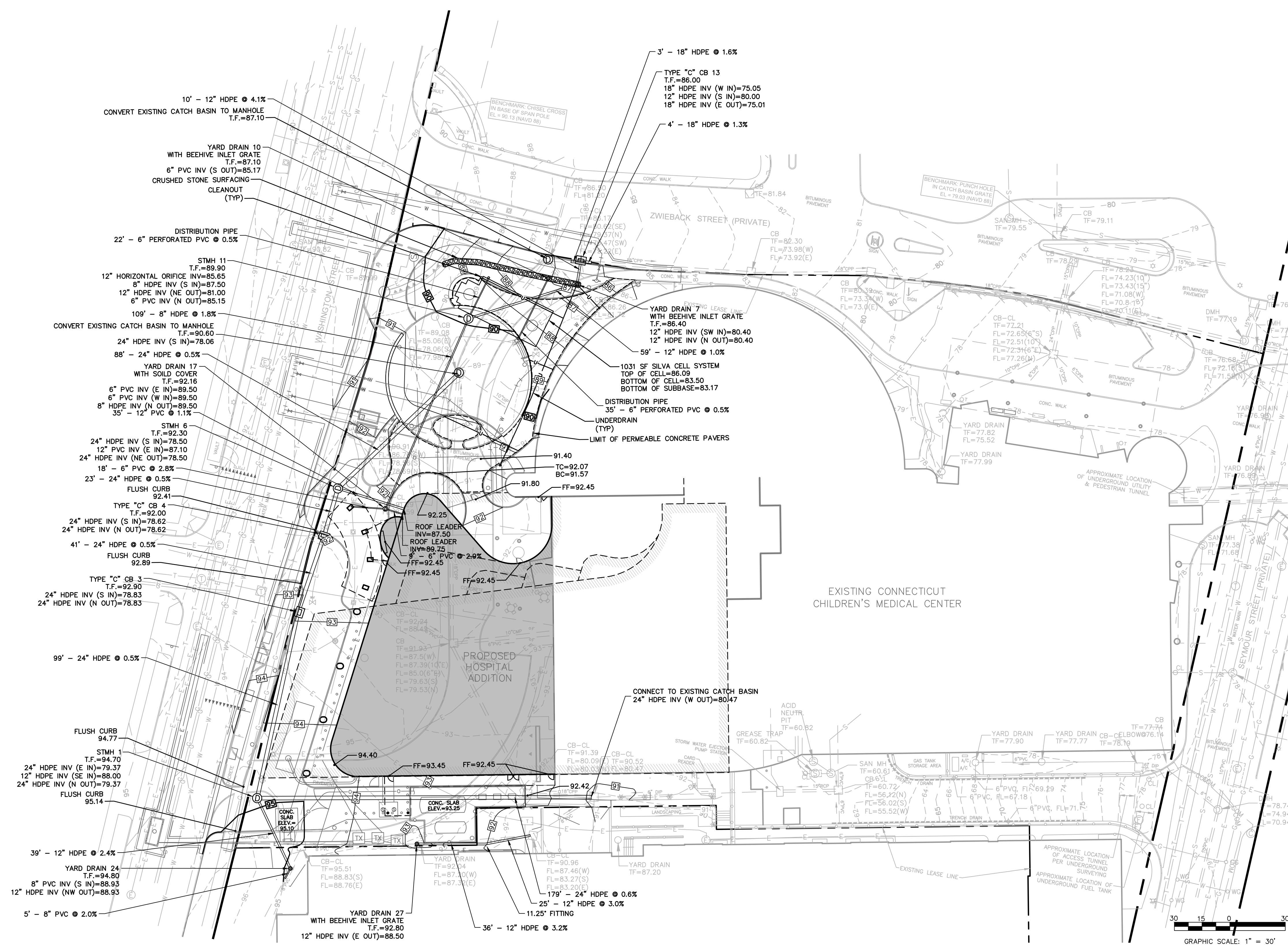
KEY PLAN

Drawing Title:

**SITE GRADING &  
DRAINAGE PLAN**

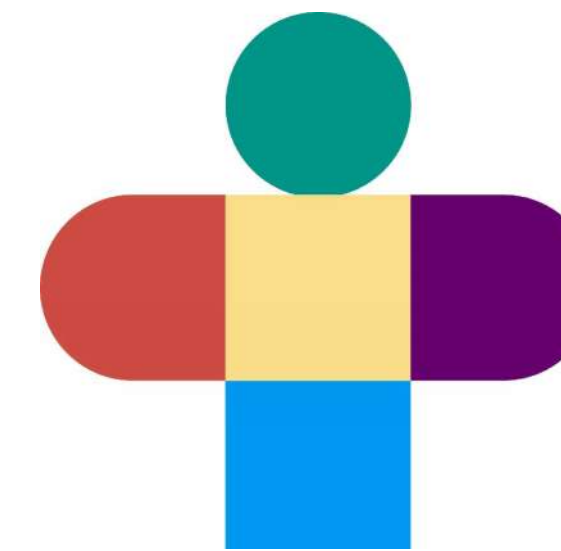
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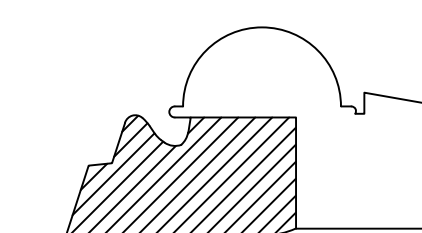
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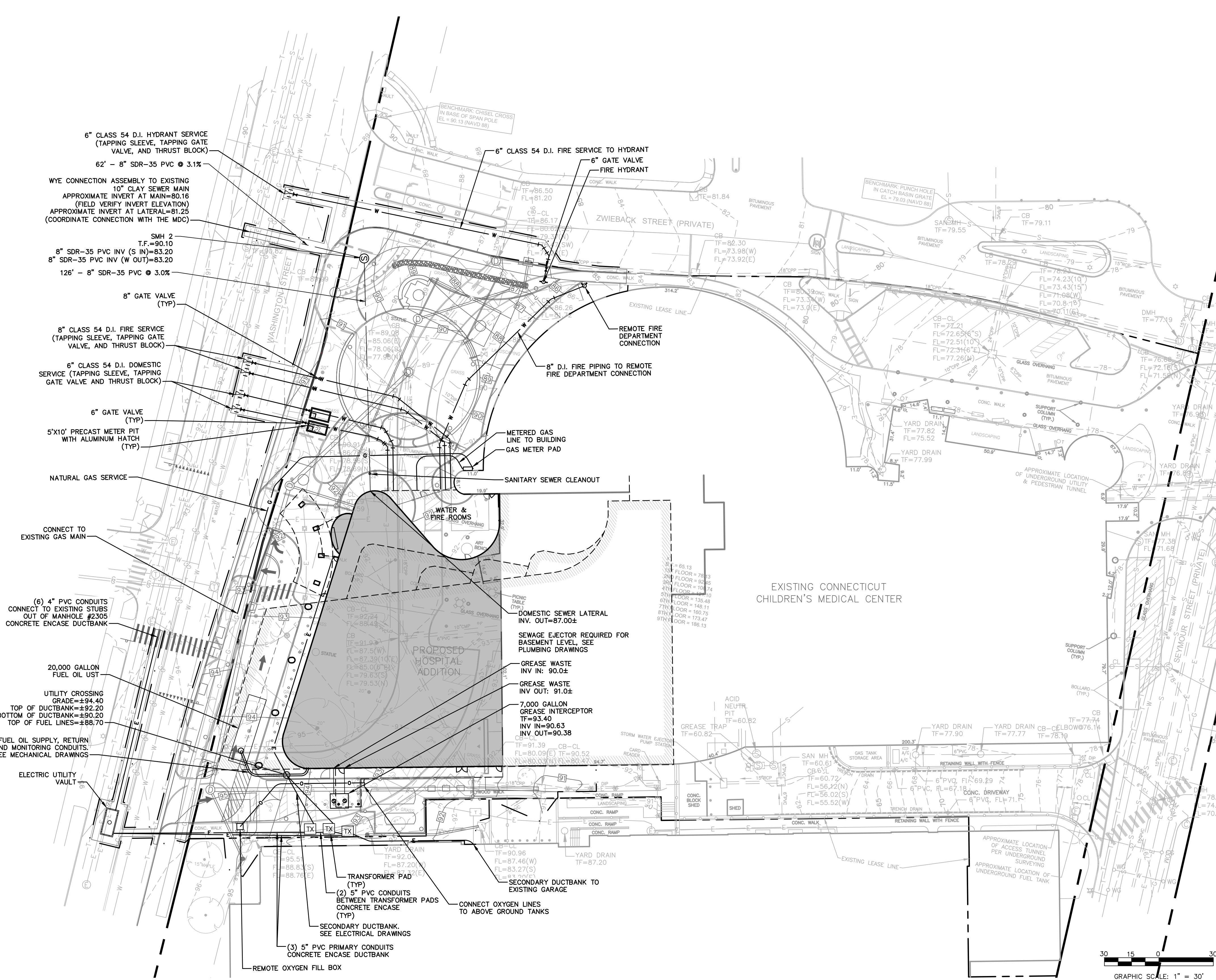
**KEY PLAN**

Drawing Title:

**SITE UTILITY PLAN**

Project No.: 006719.00 Checked by: RB

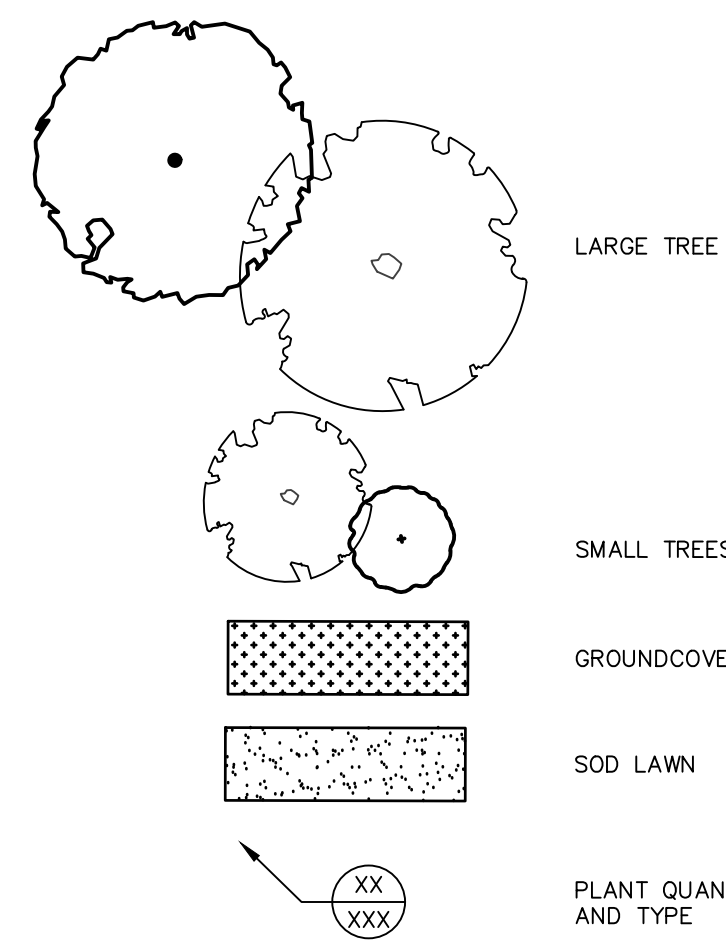
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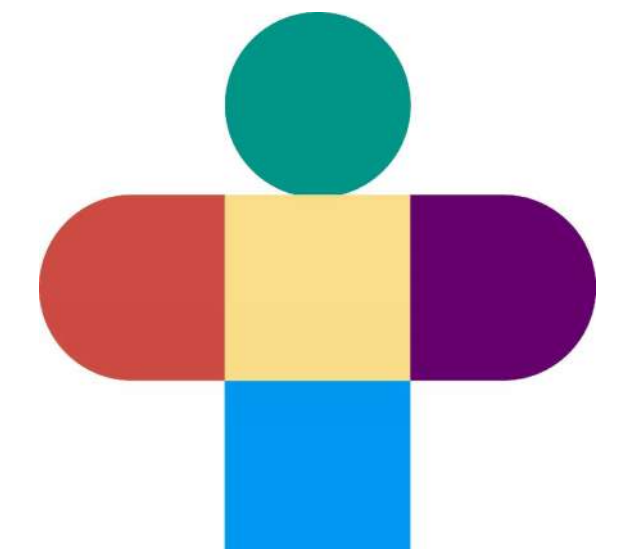
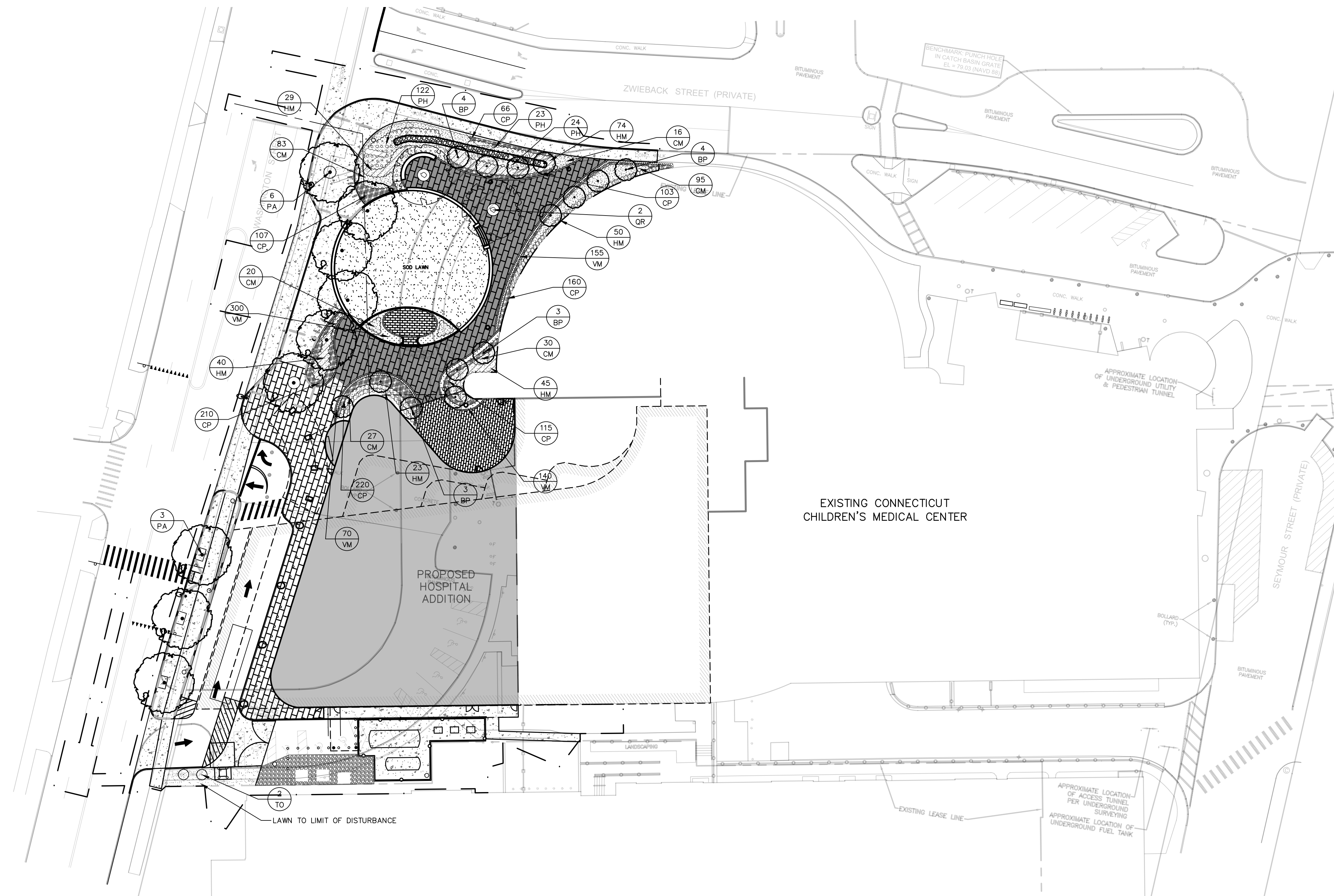


LEGEND & STANDARD ABBREVIATIONS



PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
<b>TREES</b>				
BP	BETULA PLATYPHYLLA 'FARGO'	DAKOTA PINNACLE BIRCH	14	1.5'-2' CAL., 7' CLEAR TRUNK MIN.
PA	PLATANUS X ACERIFOLIA	LONDON PLANETREE	9	2.5'-3' CAL., 7' CLEAR TRUNK MIN.
OR	QUERCUS ROBOR.	ENGLISH OAK	2	2'-2.5' CAL., 7' CLEAR TRUNK MIN.
<b>HEDGE</b>				
TD	THUJA OCCIDENTALIS 'HOLMSTRUP'	HOLMSTRUP AMERICAN ARBORVITAE	2	3' HT.
<b>GROUNDCOVER</b>				
CM	CAREX MORROWII 'ICE DANCE'	ICE DANCE JAPANESE SEDGE	271	1 GAL.
CP	CAREX PENNSYLVANICA	PENNSYLVANICA SEDGE	981	1 GAL.
HM	HAKONECHOLA MACRA	JAPANESE FOREST GRASS	261	1 GAL.
PH	PENNISETUM ALDOPECUROIDES 'HAMELN'	'HAMELN' FOUNTAIN GRASS	169	1 GAL.
VM	VINCA MINOR	COMMON PERIWINKLE	665	1 GAL.



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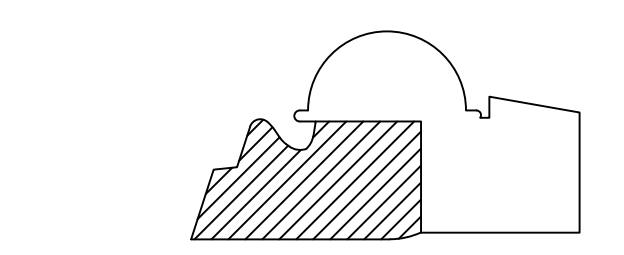
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 P: 860.646.2469

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Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



N  
**KEY PLAN**

Drawing Title:

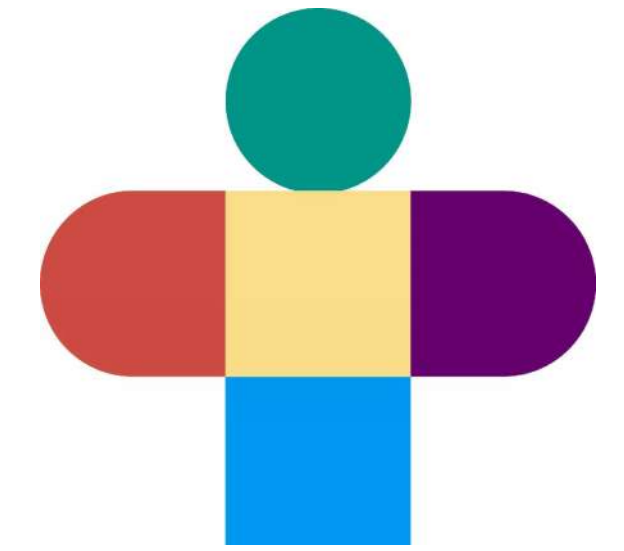
**SITE LANDSCAPE PLAN**

Project No.: 006719.00 Checked by: SW

**C0106**

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**CONNECTICUT CHILDREN'S  
NEW TOWER PROJECT**  
282 WASHINGTON STREET  
HARTFORD, CT 06106

**CANNONDESIGN**

50 Fountain Plaza Suite 200  
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P: 716.773.8800  
F: 716.773.5909

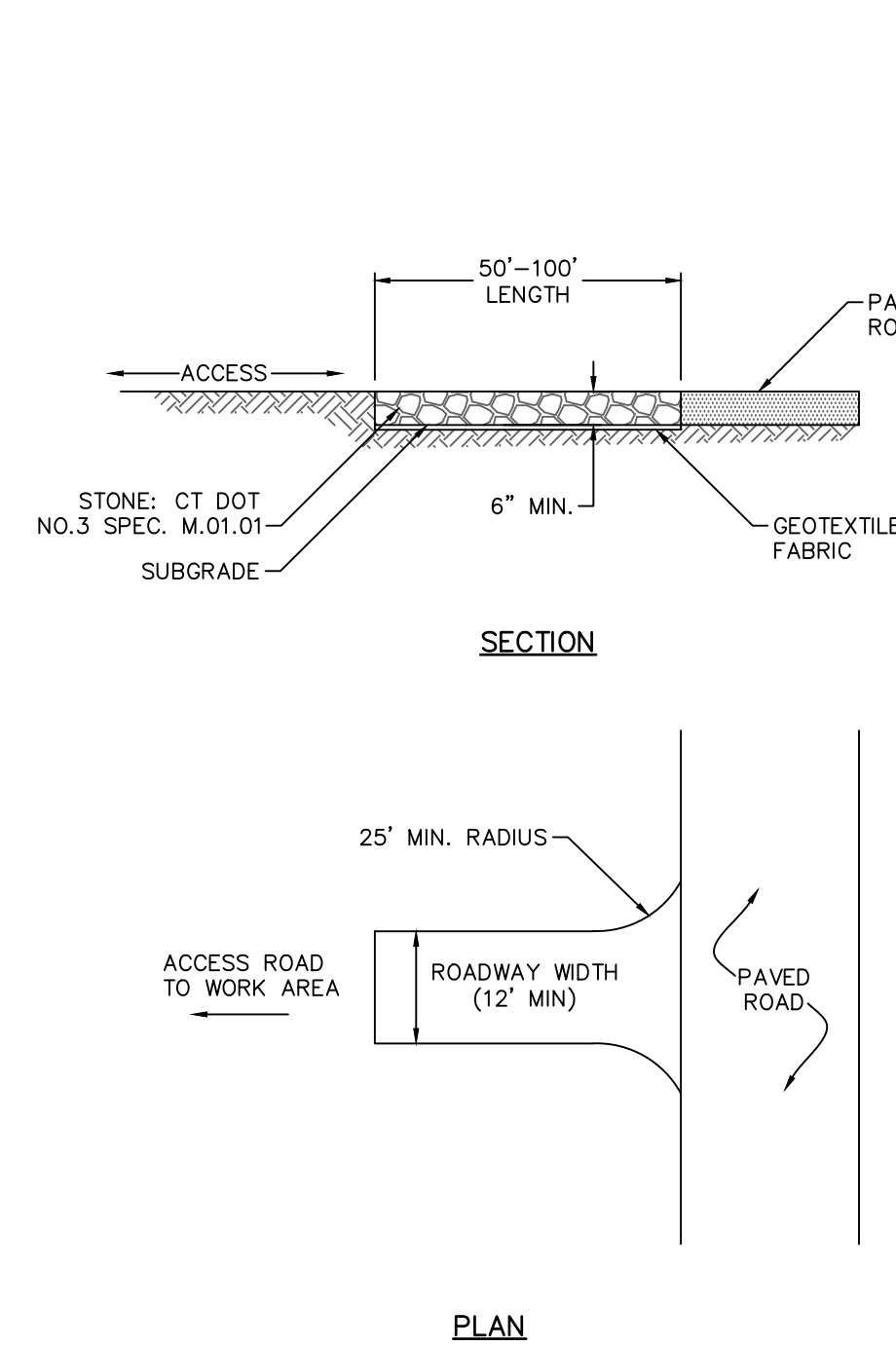
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**Colliers**  
Owner's Project Manager  
160 Federal Street 11th Floor  
Boston, MA 02110  
P: 617.330.8000

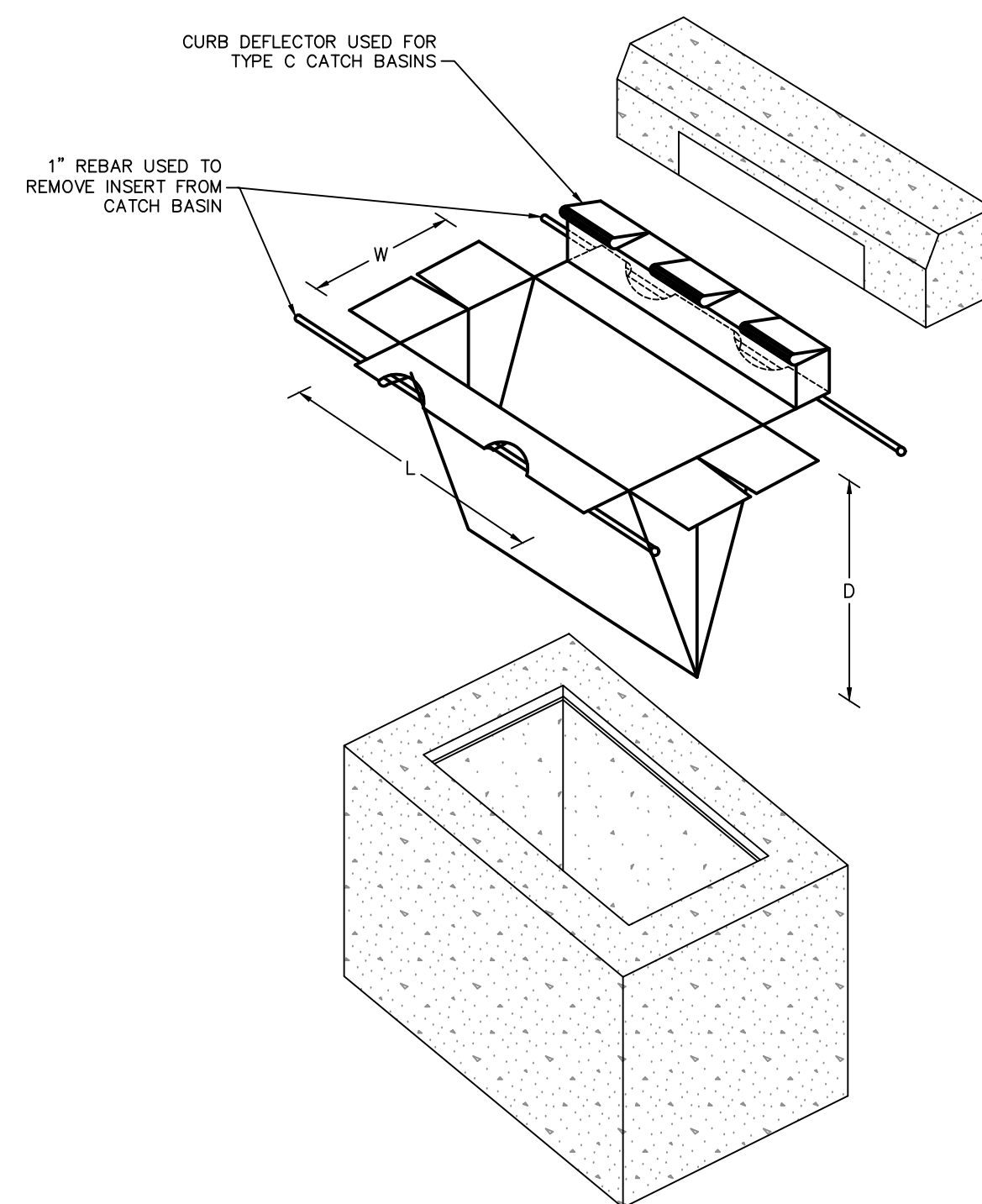
**Fuss & O'Neill**  
Civil Engineering and Landscape Architecture  
146 Hartford Road  
Manchester, CT 06040  
P: 860.646.2469

**EROSION & SEDIMENT CONTROL NOTES**

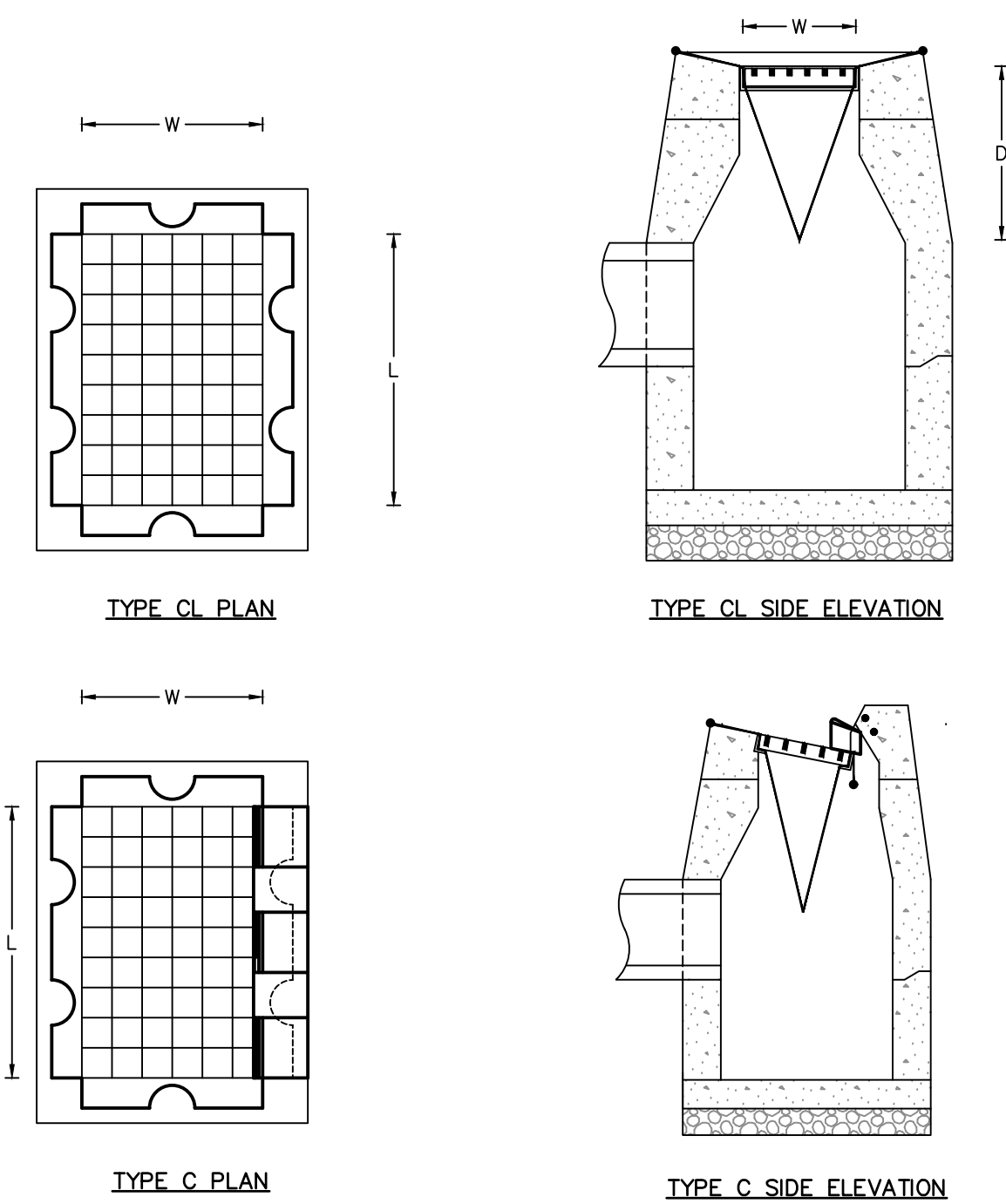
- CONSTRUCTION STANDARDS** - CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MOST RECENT EDITION OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" (CT DEP BULLETIN 34). ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.
- PLAN IMPLEMENTATION** - IMPLEMENT THIS EROSION AND SEDIMENT CONTROL PLAN. THIS IMPLEMENTATION INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES UNTIL PERMANENT STABILIZATION IS ACHIEVED, INFORMING ALL SUBCONTRACTORS OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER MUNICIPAL AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN TO THE NEW OWNER IF THE TITLE OF THE LAND IS TRANSFERRED PRIOR TO ACHIEVING PERMANENT STABILIZATION.
- INSTALLATION SCHEDULE** - INSTALL THE CONSTRUCTION ENTRANCE BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO STUMP REMOVAL AND CONSTRUCTION. INSTALL ADDITIONAL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE OWNER, HIS AGENTS OR AGENTS OF THE MUNICIPALITY.
- FUGITIVE DUST** - CONTROL FUGITIVE DUST USING WATER SPRAYS OR CALCIUM CHLORIDE ON SOIL SURFACES, SWEEPING PAVED AREAS, TEMPORARY WINDBREAKS OR NON-ASPHALTIC SOIL TAGKIFIERS.
- CATCH BASINS** - PROTECT CATCH BASINS WITH PROPER CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
- STOCKPILES**
  - CLEAN SOIL** - ENCRUST STOCKPILES OF ERODIBLE SOIL WITH A COMPOST FILTER SOCK BARRIER. THE SIDE SLOPES OF ERODIBLE STOCKPILED MATERIAL SHALL BE NO STEEPER THAN 2:1. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE SEED AND MULCHED IMMEDIATELY AFTER THEY ARE FORMED.
  - CONTAMINATED SOIL** - PLACE CONTAMINATED SOIL STOCKPILES ON 20-MIL THICKNESS POLYETHYLENE SHEETING. COVER CONTAMINATED SOIL STOCKPILES WITH 10-MIL POLYETHYLENE SHEETING TO CONTAIN SOIL AND TO PREVENT INFILTRATION OF THE ELEMENTS. SECURE IN PLACE WITH TIRES, SANDBAGS OR SIMILAR WEIGHTS. MAINTAIN CONTAMINATED SOIL STOCKPILES AND PREVENT STOCKPILES FROM RELEASING CONTAMINANTS TO THE ENVIRONMENT THROUGHOUT THE DURATION OF THE PROJECT.
- TOE OF SLOPE** - ESTABLISH AN EROSION CONTROL BARRIER (SILT FENCE OR STRAW BALE BARRIER) APPROXIMATELY 5 TO 10 FEET FROM THE PROPOSED TOE OF THE CUT OR FILL AREA PRIOR TO BEGINNING EARTHWORK.
- SEDIMENT REMOVAL** - SEDIMENT REACHING 1/2 THE HEIGHT OF THE EROSION CONTROL BARRIER SHALL BE REMOVED. REMOVE AND DISPOSE OF SEDIMENT IN A MANNER CONSISTENT WITH THE INTENT OF THE PLAN.
- SOIL STABILIZATION SCHEDULE** - APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE. APPLY TEMPORARY SOIL STABILIZATION MEASURES IF FINAL GRADING IS TO BE DELAYED MORE THAN 30 DAYS.
- TEMPORARY SEEDING** - TEMPORARILY SEED ERODIBLE SOILS THAT WILL BE EXPOSED GREATER THAN 1 BUT LESS THAN 12 MONTHS WITHIN THE FIRST 7 DAYS OF SUSPENDING GRADING OPERATIONS. APPLY LIME AT A RATE OF 90 LBS/1000 SQ. FT. APPLY 10-10-10 FERTILIZER AT A RATE OF 7 1/2 LBS/1000 SQ. FT. APPLY PERENNIAL RYE GRASS AT A RATE OF 2 LBS/1000 SQ. FT. TO A DEPTH OF 1/2 INCH. OPTIMUM SEEDING DATES ARE APRIL 1 TO JUNE 15 AND AUGUST 15 TO OCTOBER 1. MULCH FOR SEED APPLIED WITHIN THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 80%-95% SOIL COVERAGE. MULCH FOR SEED APPLIED OUTSIDE OF THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 95%-100% COVERAGE.
- PERMANENT SEEDING** - SEED PERMANENT LAWN AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.
- INSPECTION** - THE OWNER SHALL SECURE THE SERVICES OF A SOIL SCIENTIST OR PROFESSIONAL ENGINEER TO VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED AND MAINTAINED. THESE INSPECTIONS SHALL BE NOT LESS FREQUENTLY THAN WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF 0.1 INCH OR GREATER. FOLLOWING THESE INSPECTIONS, A WRITTEN REPORT SHALL BE PREPARED, INFORMING THE OWNER OR HIS AGENT NOT LESS FREQUENTLY THAN WEEKLY AND THE MUNICIPALITY NOT LESS FREQUENTLY THAN MONTHLY OF OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIVITIES UNDERTAKEN.



**CONSTRUCTION ENTRANCE**  
NOT TO SCALE

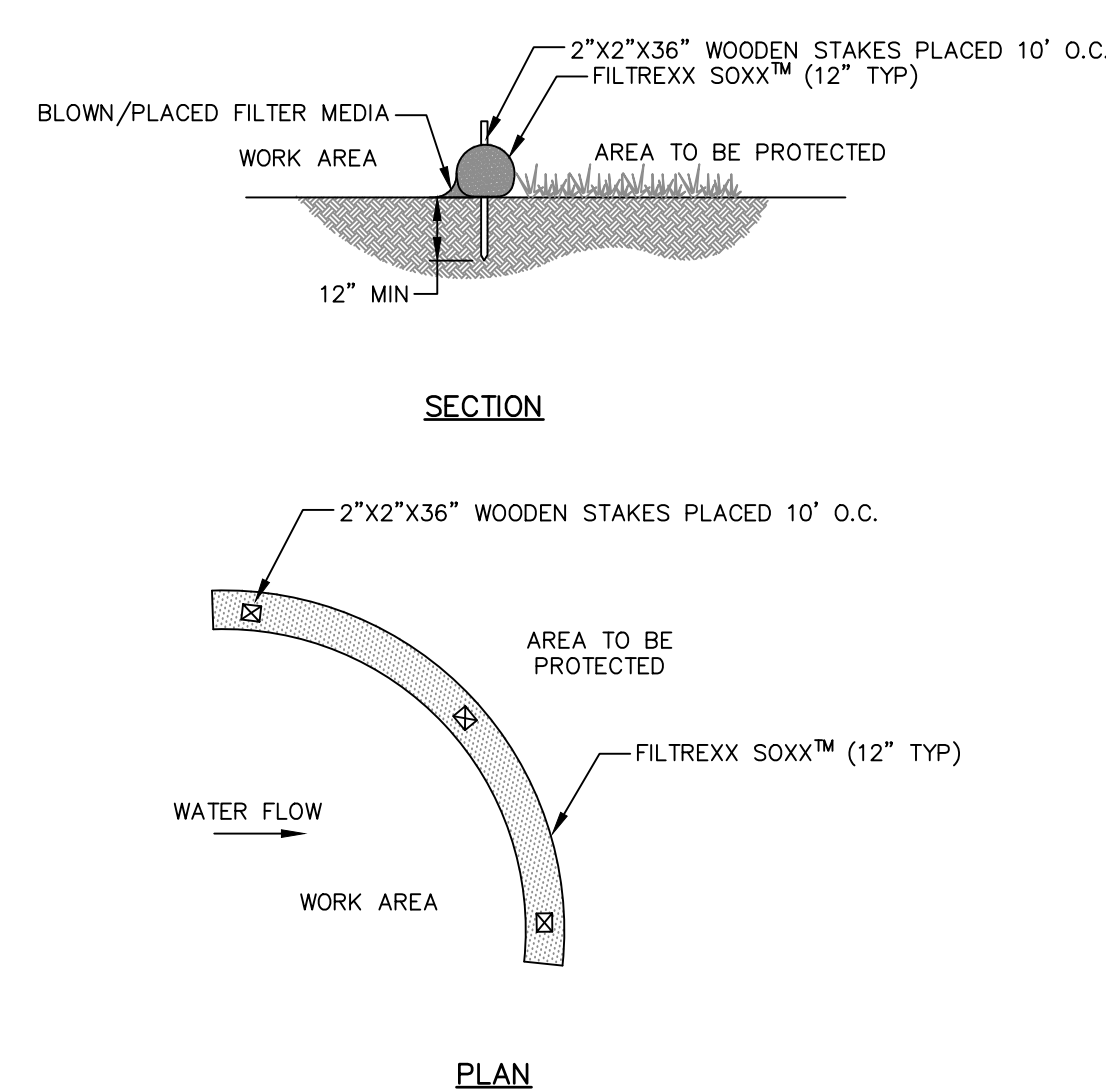


**CATCH BASIN INSERT**  
NOT TO SCALE

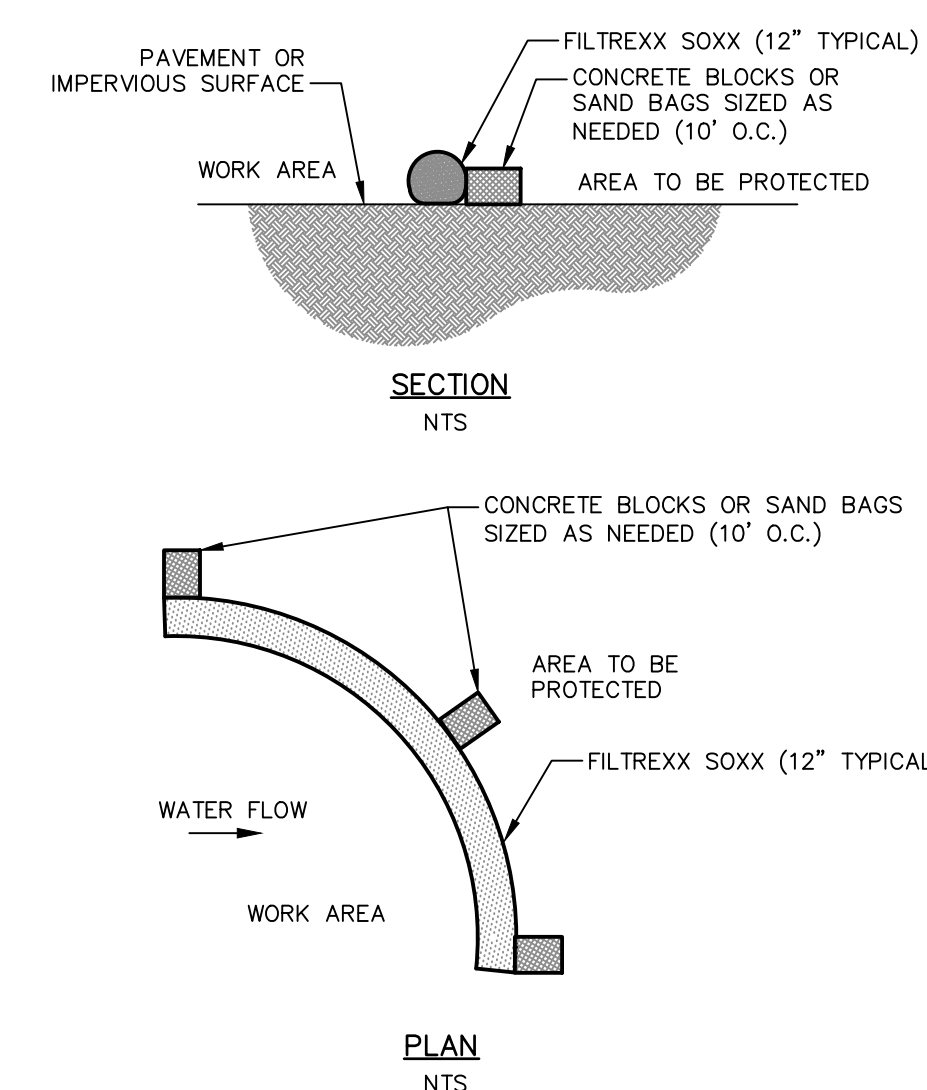


TYPE C PLAN

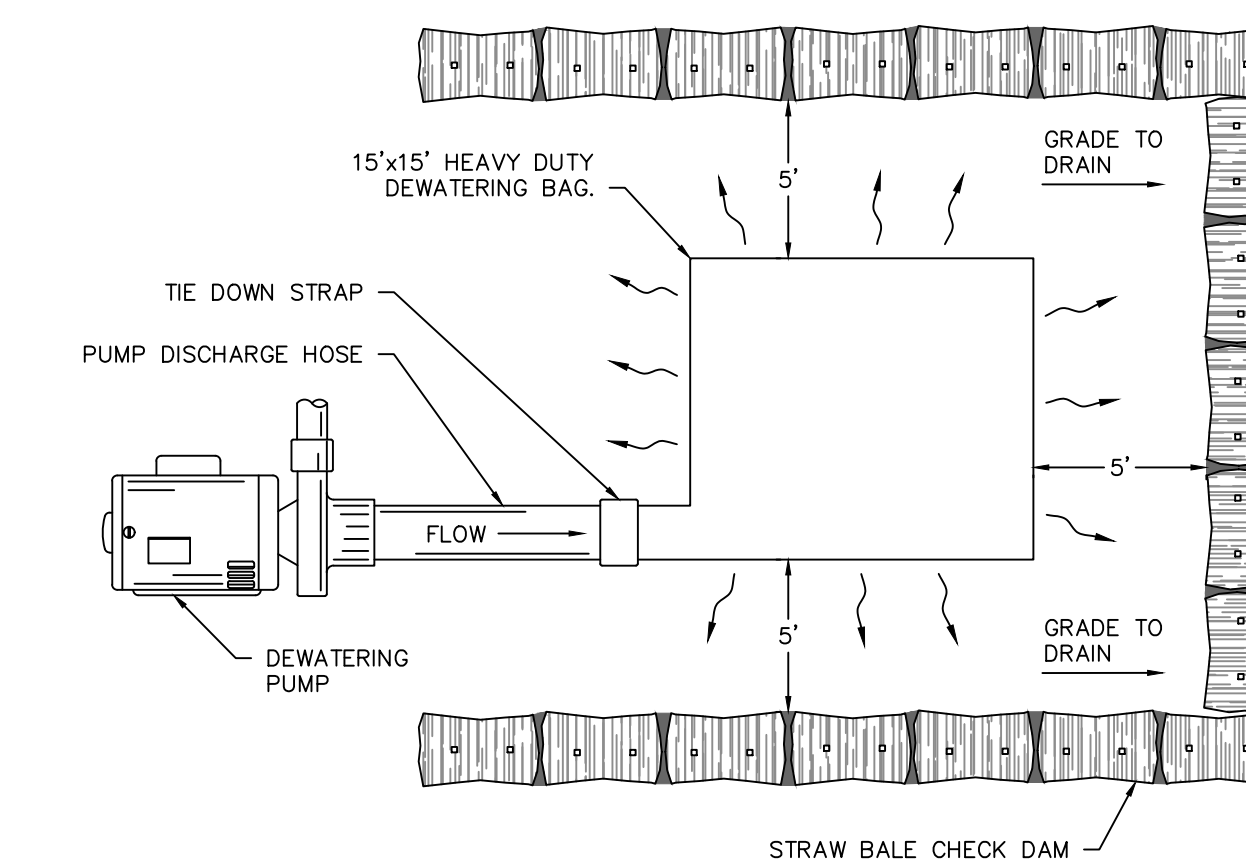
TYPE C SIDE ELEVATION



**COMPOST FILTER SOCK**  
NOT TO SCALE



**COMPOST FILTER SOCK ON PAVEMENT**  
NOT TO SCALE

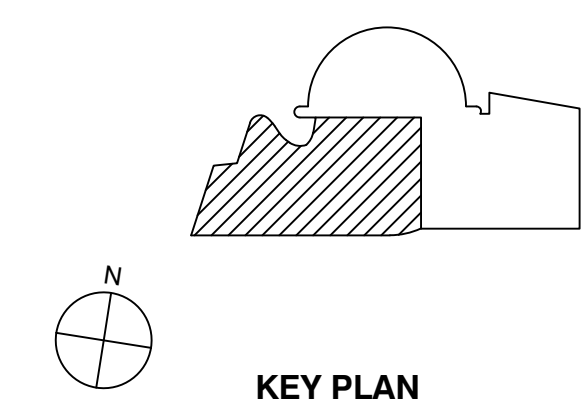


**DEWATERING BAG**  
NOT TO SCALE



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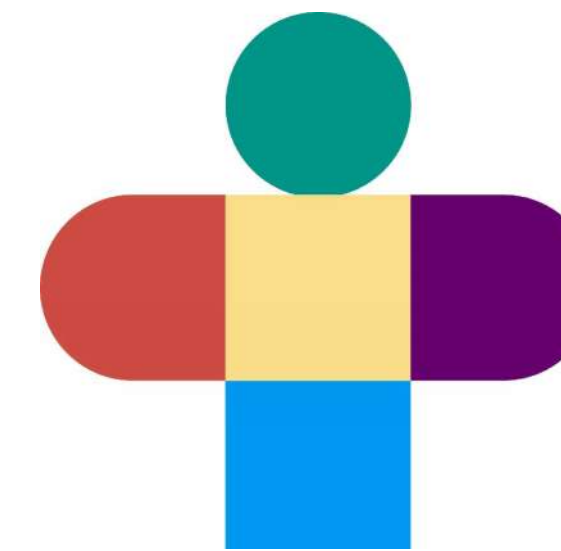
Drawing Title:

**SITE DETAILS**

Project No.: 006719.00 Checked by: RB

**C0501**





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282 WASHINGTON STREET  
HARTFORD, CT 06106

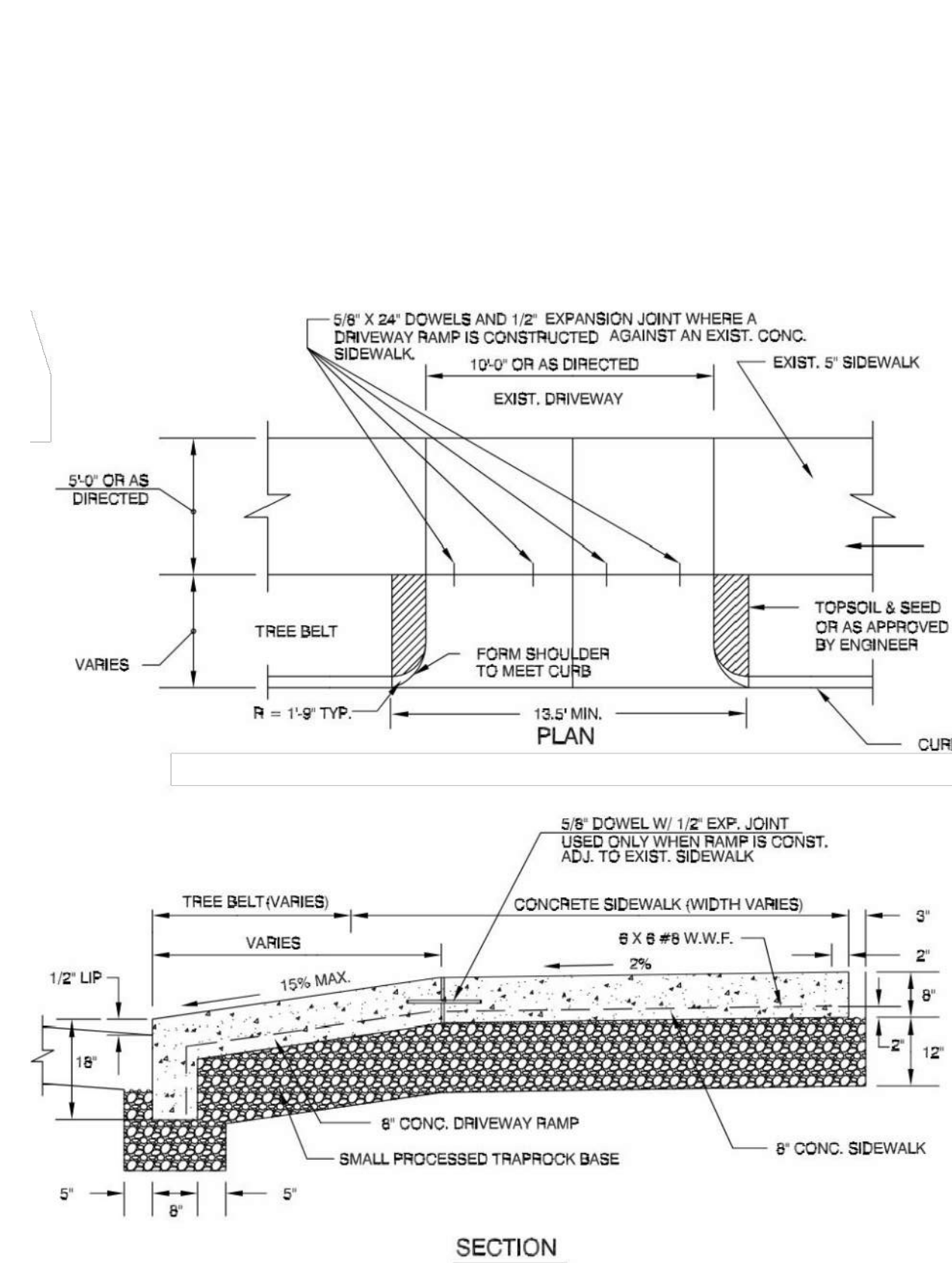
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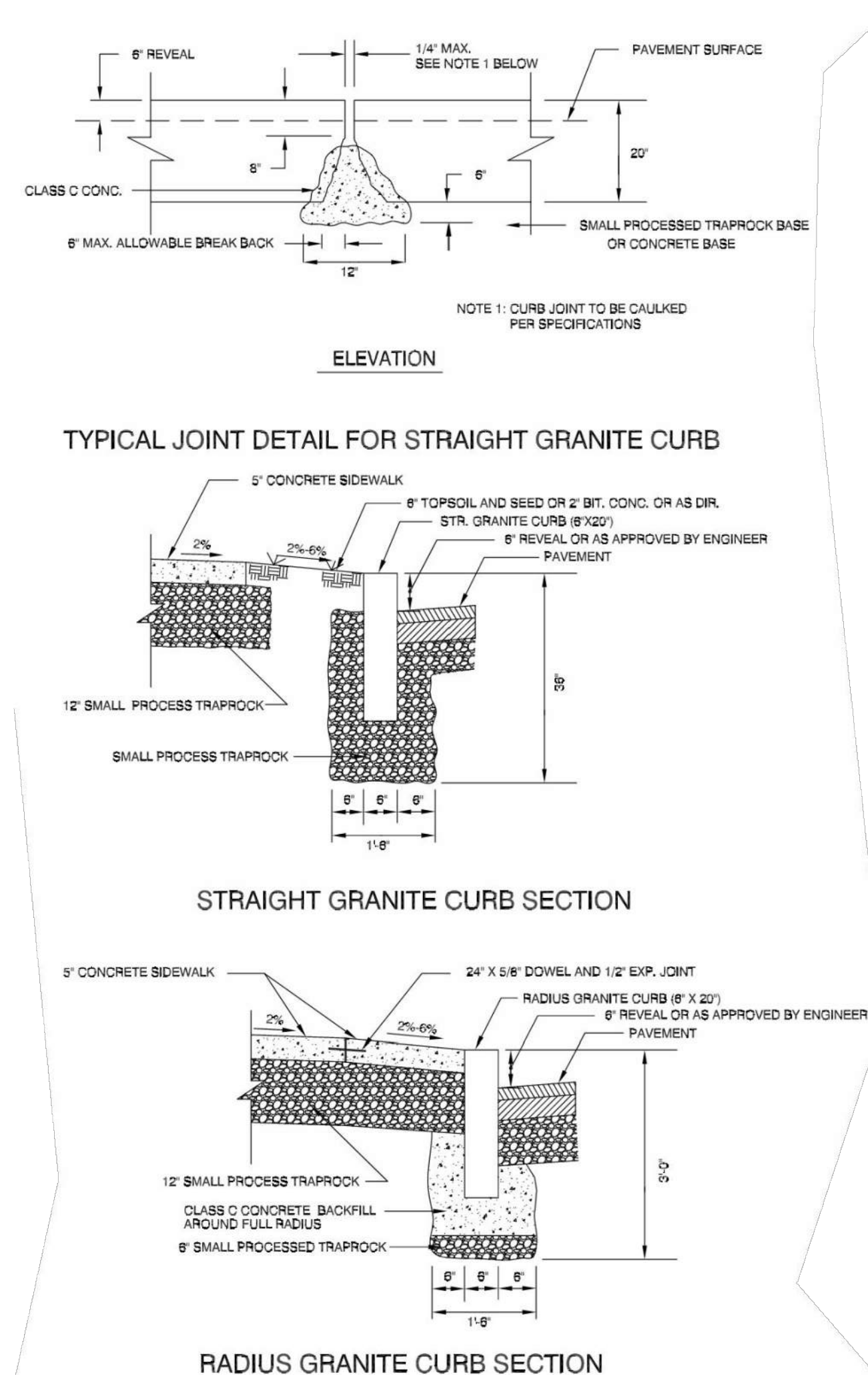
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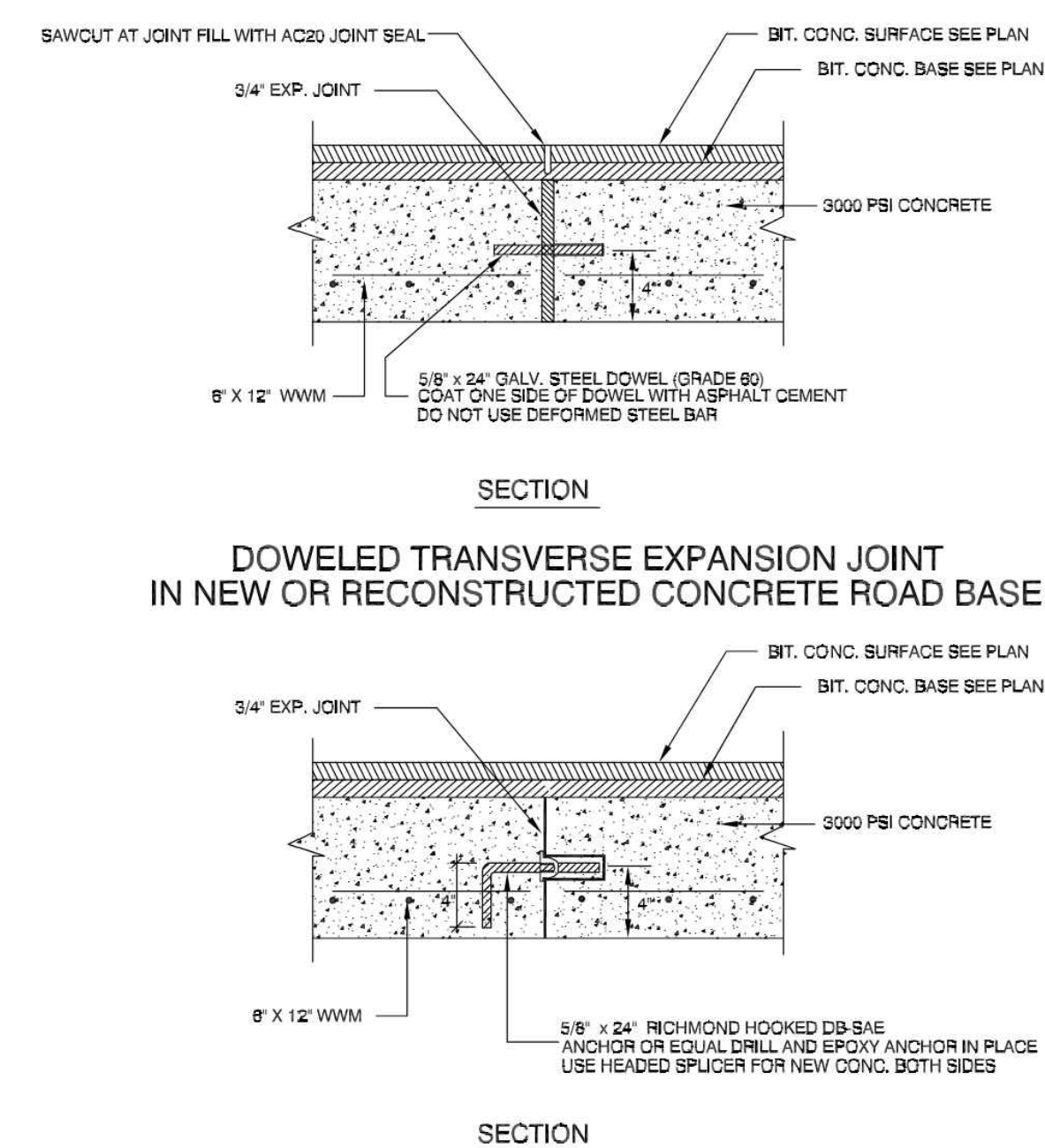
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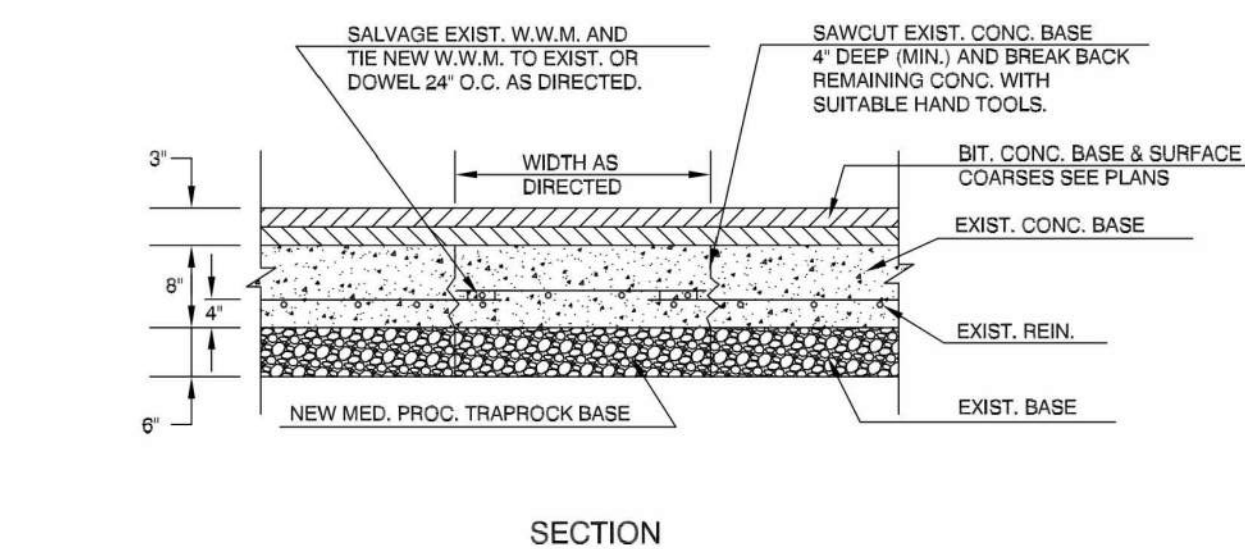
**8" REINFORCED CONCRETE DRIVEWAY**  
NOT TO SCALE



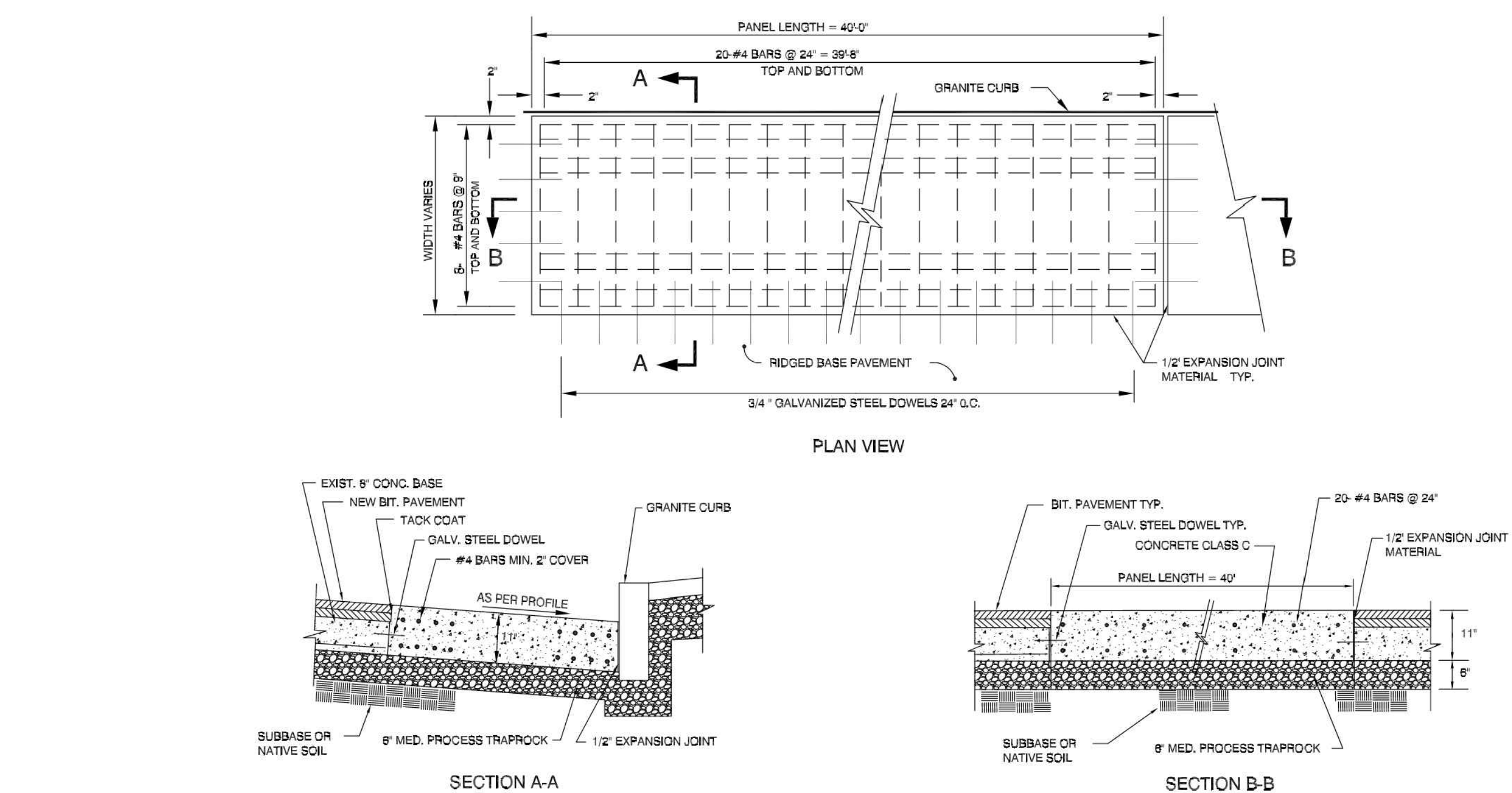
**GRANITE CURB**  
NOT TO SCALE



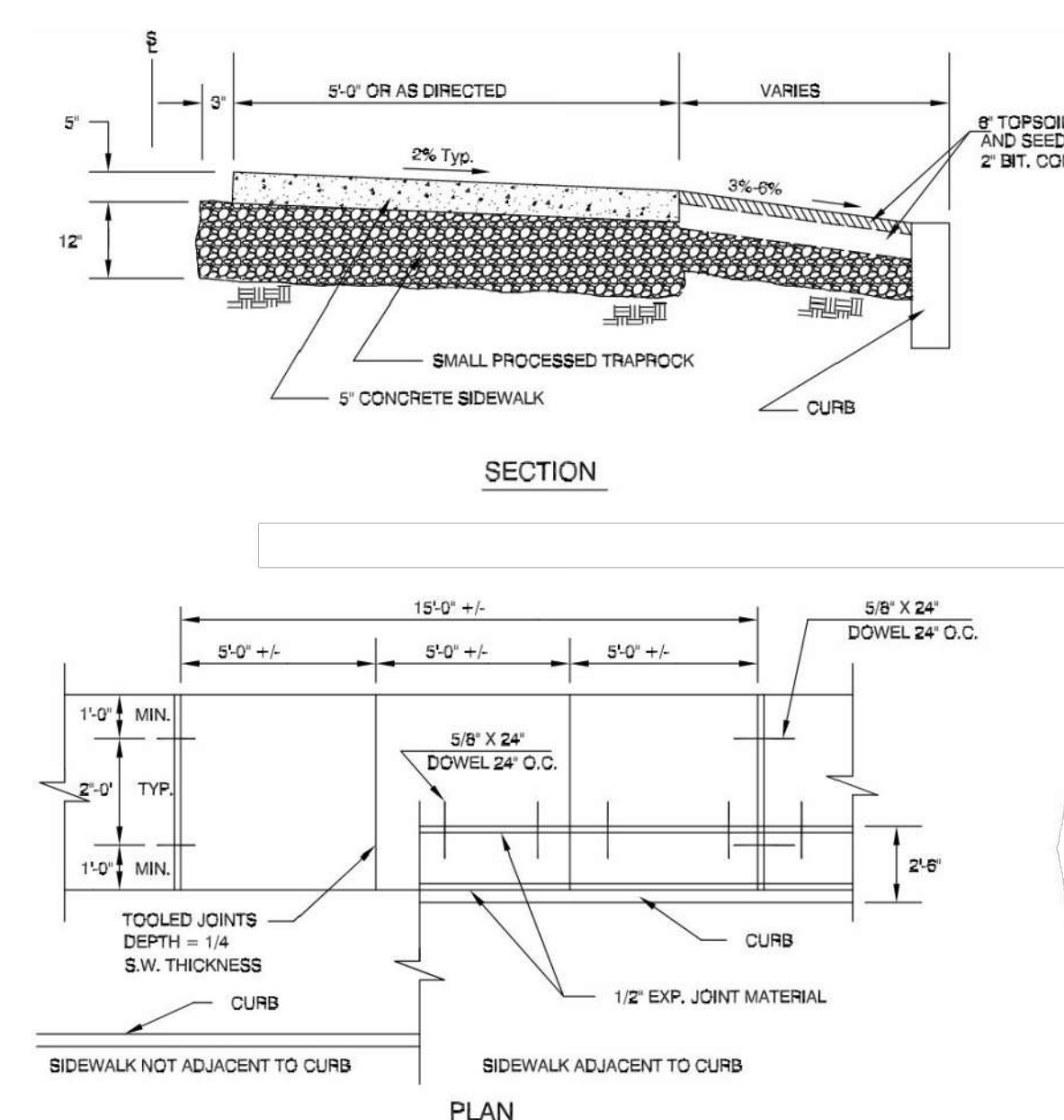
**JOINTS IN CONCRETE ROAD BASE**  
NOT TO SCALE



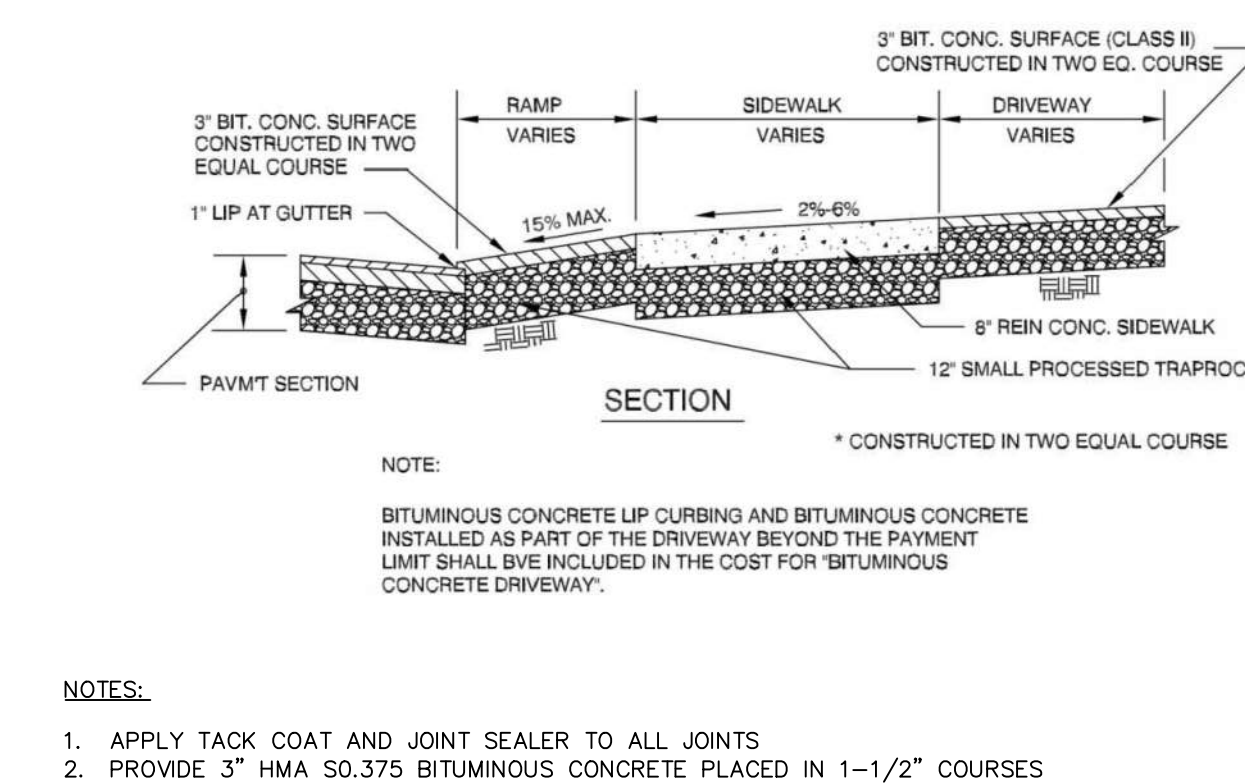
**REPAIR 8" REINFORCED CONCRETE BASE**  
NOT TO SCALE



**REINFORCED CONCRETE BUS PAD**  
NOT TO SCALE



**5" CONCRETE SIDEWALK**  
NOT TO SCALE

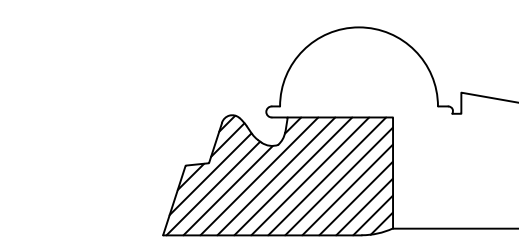


**BITUMINOUS RAMP AND DRIVEWAY**  
NOT TO SCALE



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Site Plan Submission Nov. 4, 2022  
Rev. Description Date



**KEY PLAN**

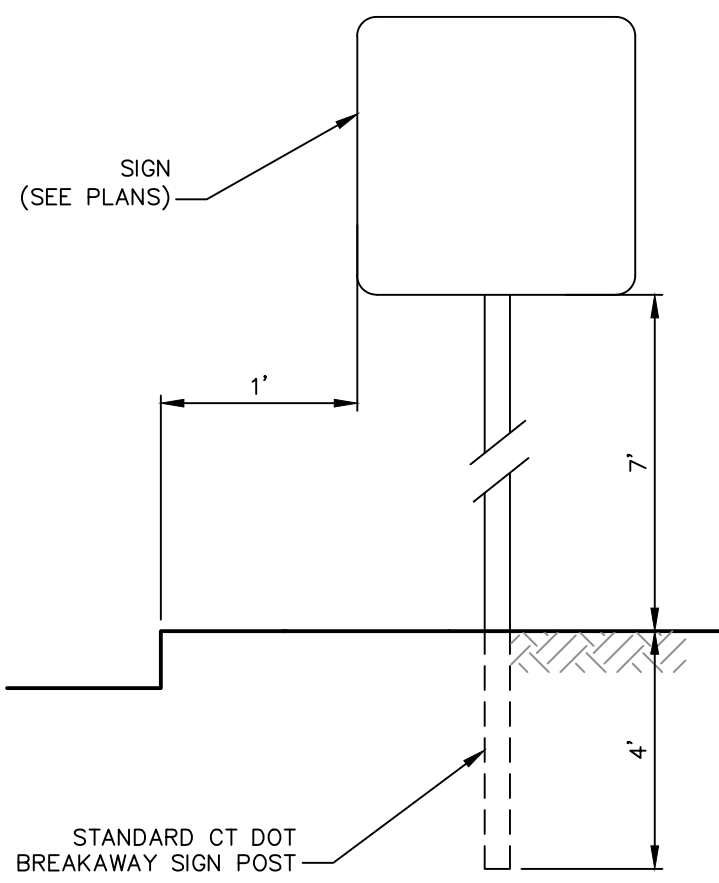
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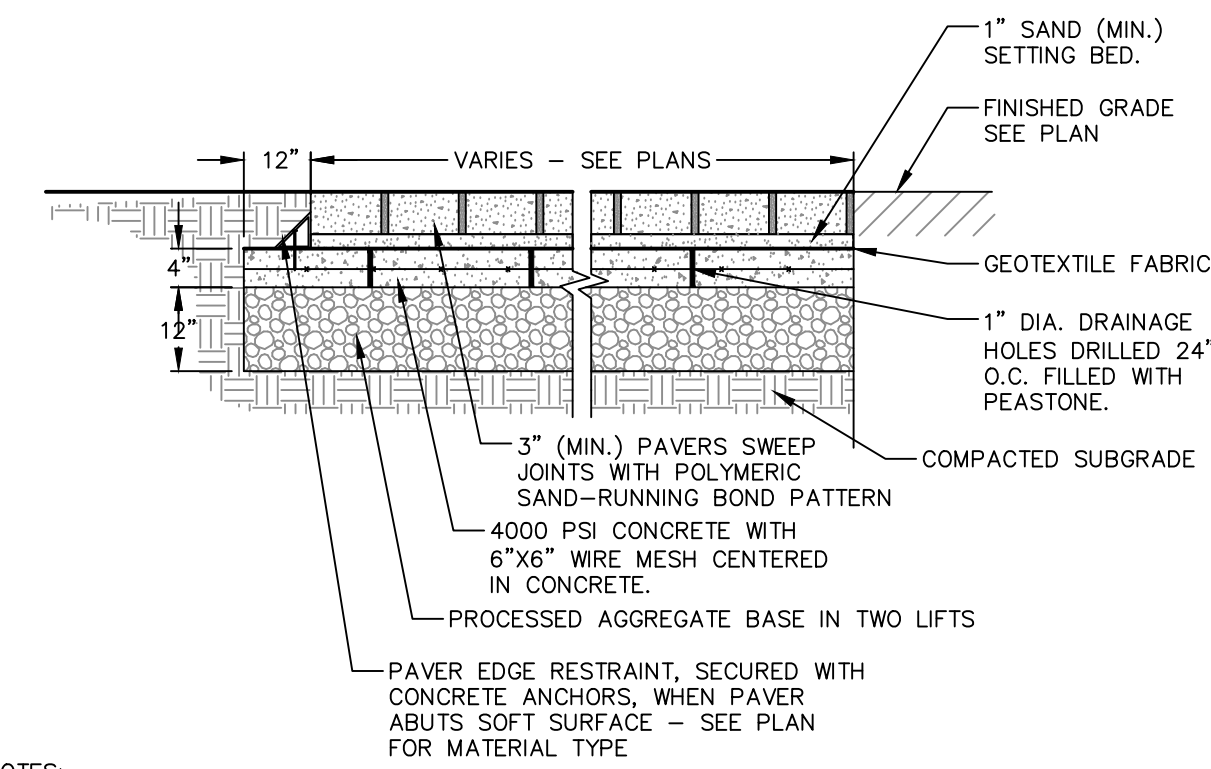
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**C0502**



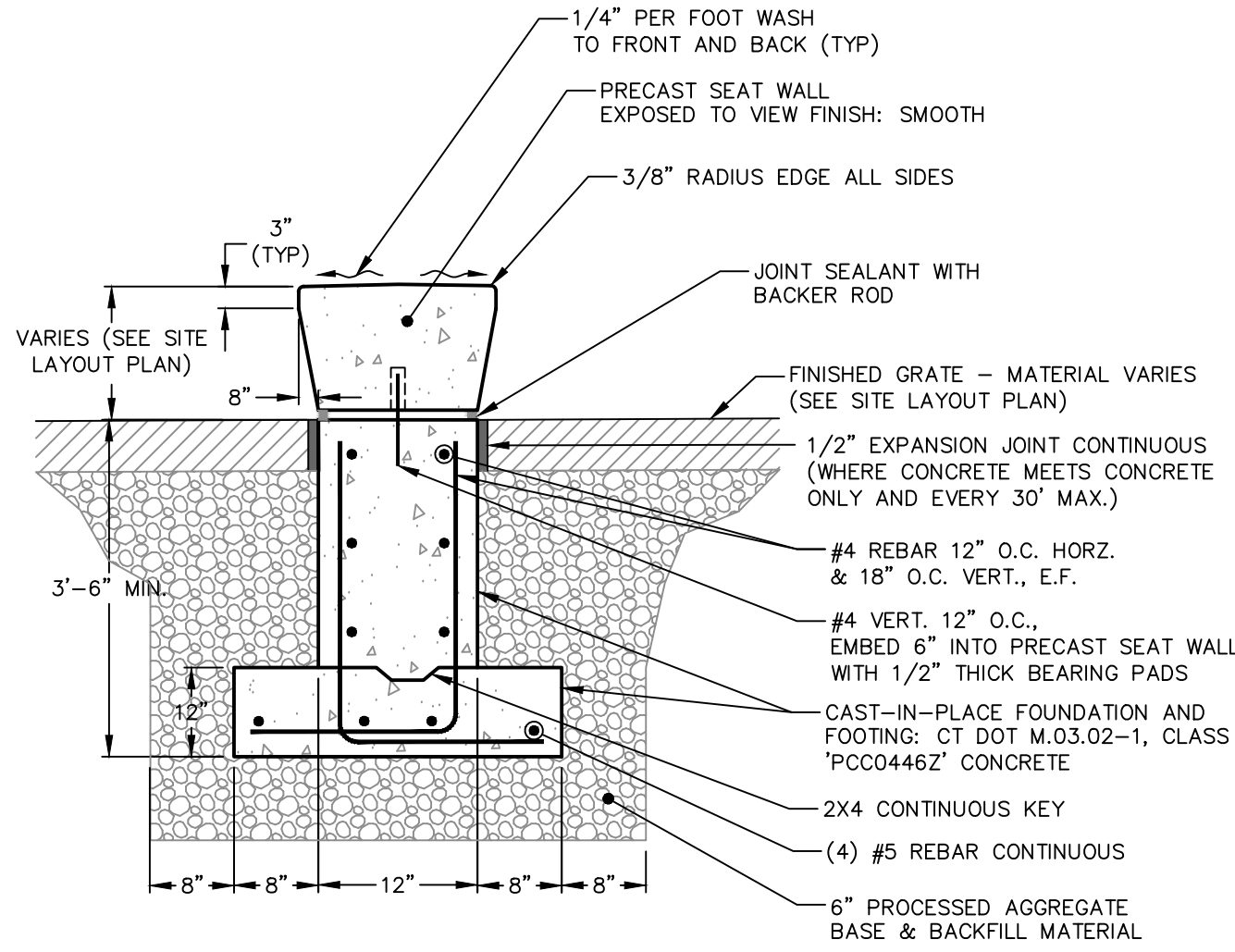


**SIGN**  
NOT TO SCALE

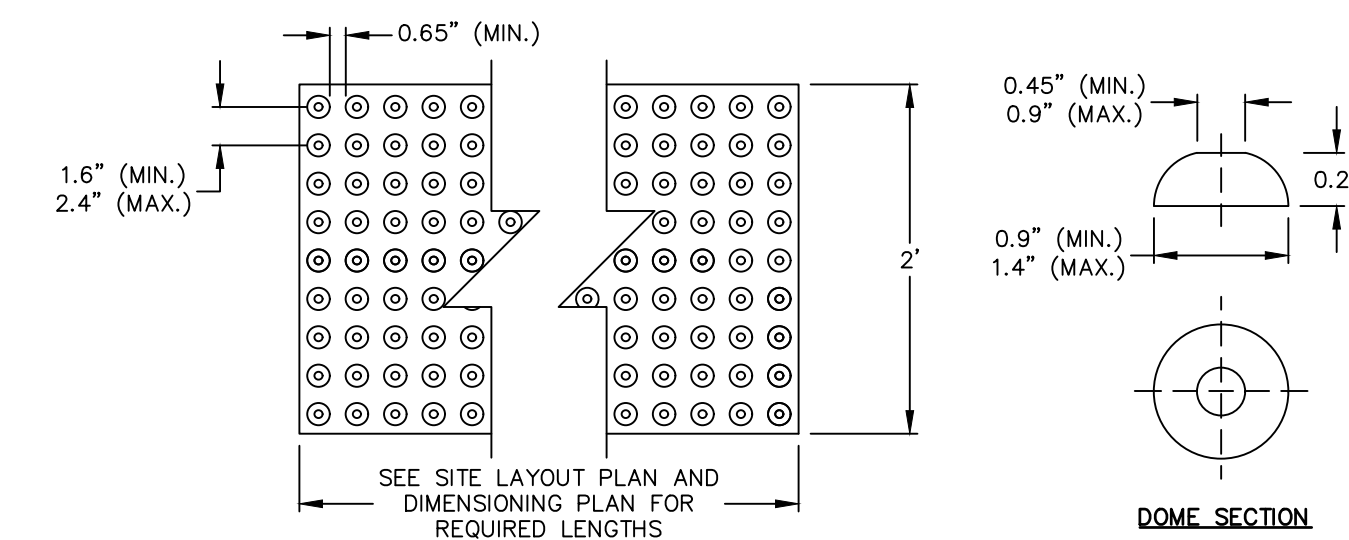


- NOTES:  
 1. INSTALL DOWELED EXPANSION JOINTS, MAXIMUM SPACING 15 FT EACH WAY.  
 2. INSTALL CONTRACTION JOINTS, MAXIMUM SPACING 5 FT EACH WAY.  
 3. HAUNCH ADJACENT CONCRETE PAVEMENT AND INSTALL DOWELED EXPANSION JOINT BETWEEN TO PAVER SLAB

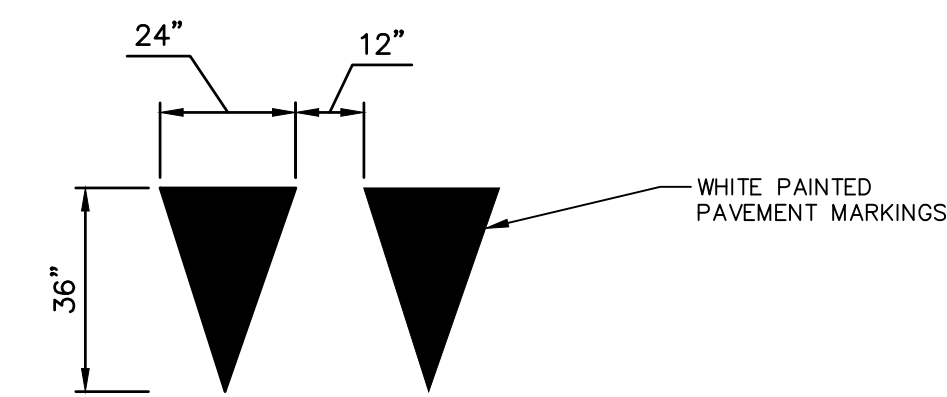
**INTERLOCKING CONCRETE PAVERS (TYPES A & B)**  
NOT TO SCALE



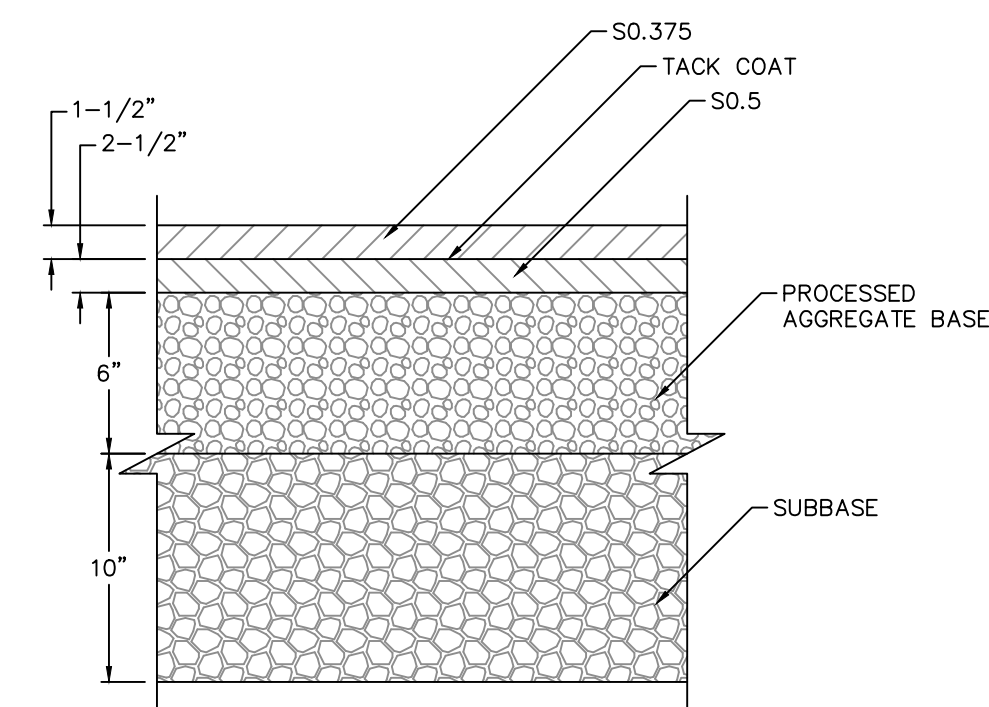
**SEAT WALL AND CAST-IN-PLACE FOOTING**  
NOT TO SCALE



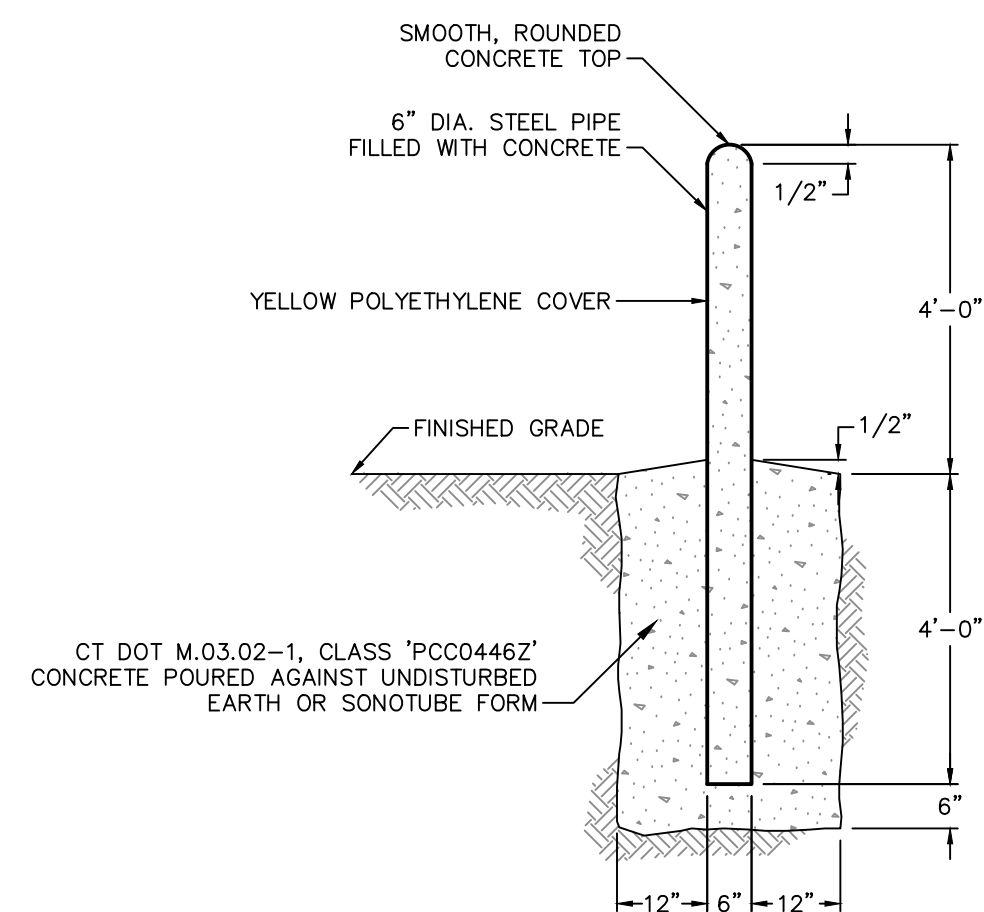
**DETECTABLE WARNING STRIP**  
NOT TO SCALE



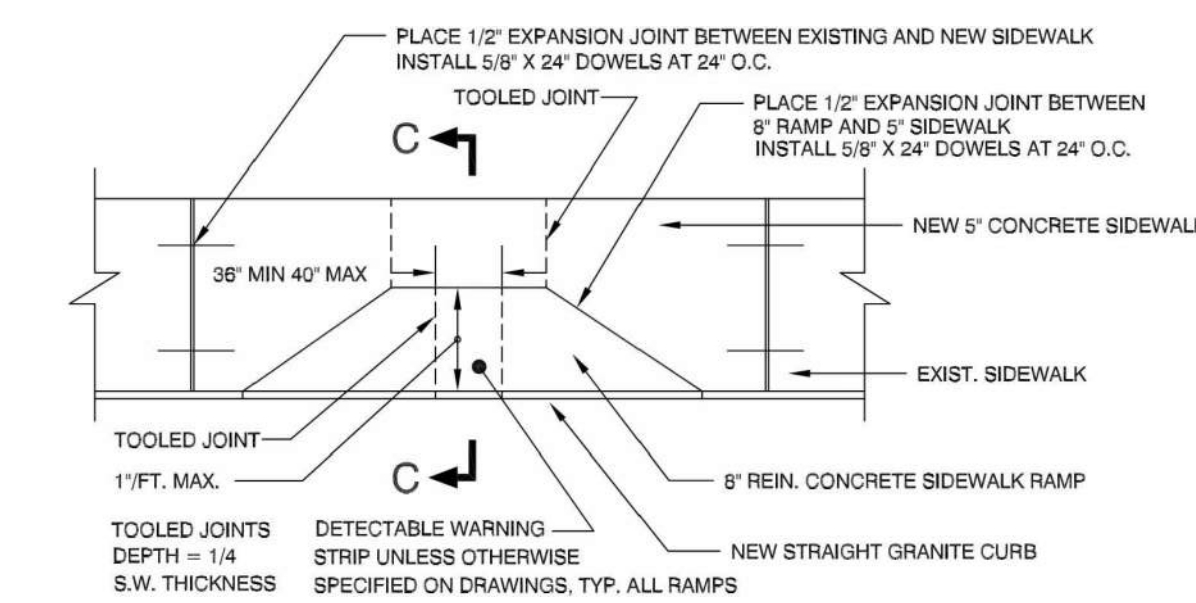
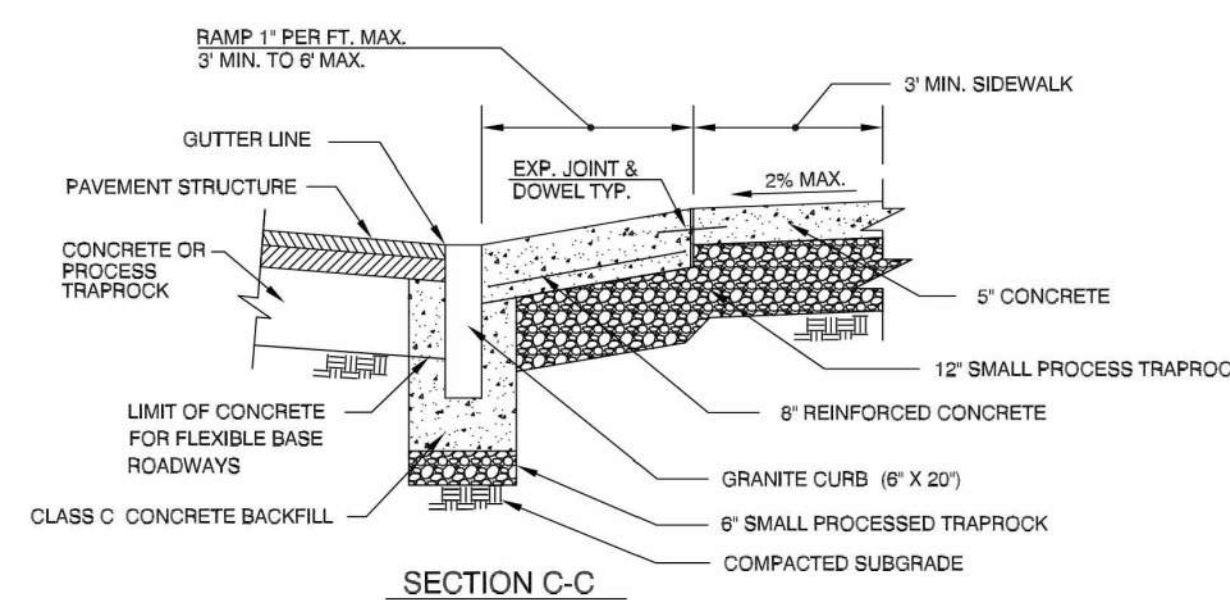
**YIELD LINES**  
NOT TO SCALE



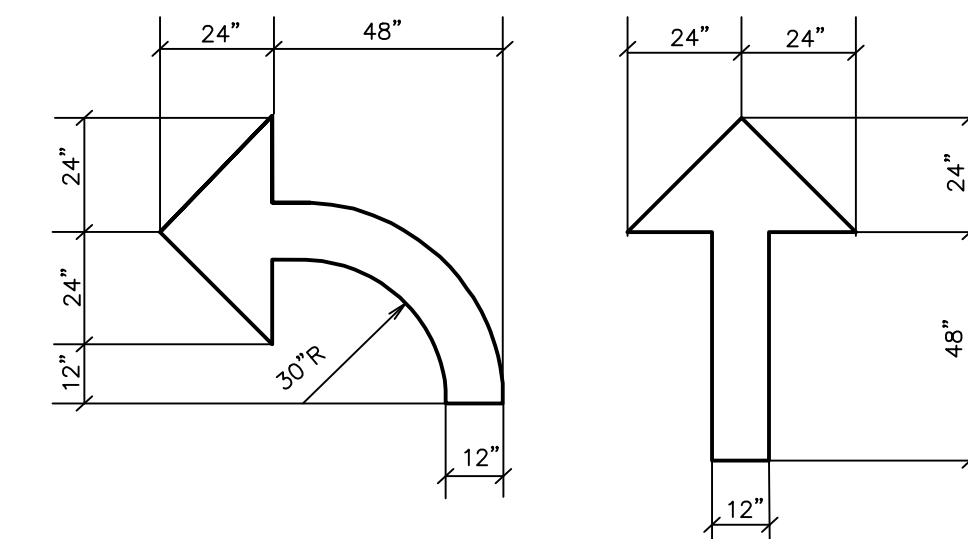
**BITUMINOUS CONCRETE PAVEMENT (HEAVY DUTY)**  
NOT TO SCALE



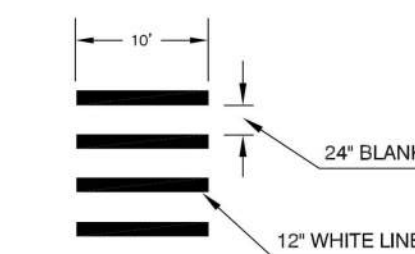
**STEEL PIPE BOLLARD**  
NOT TO SCALE



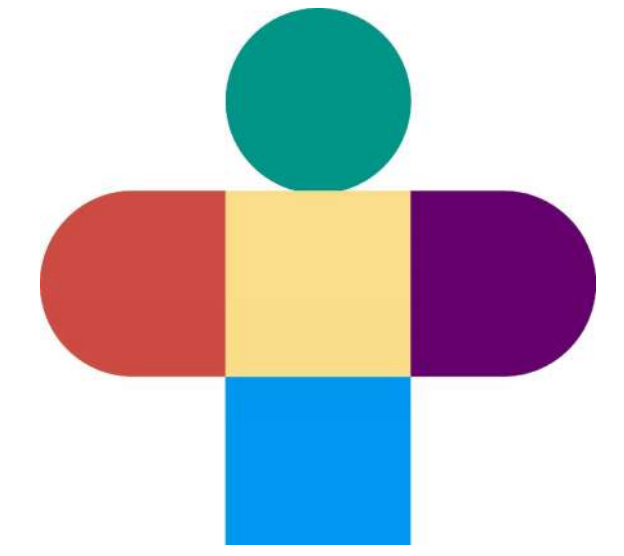
**SIDEWALK RAMP TYPE 1**  
NOT TO SCALE



**PAINTED TRAFFIC ARROWS**  
NOT TO SCALE



**PEDESTRIAN CROSSWALK TYPE 2**  
NOT TO SCALE



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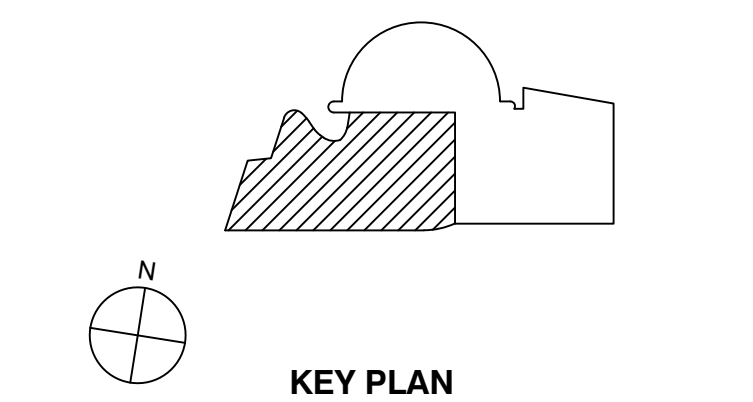
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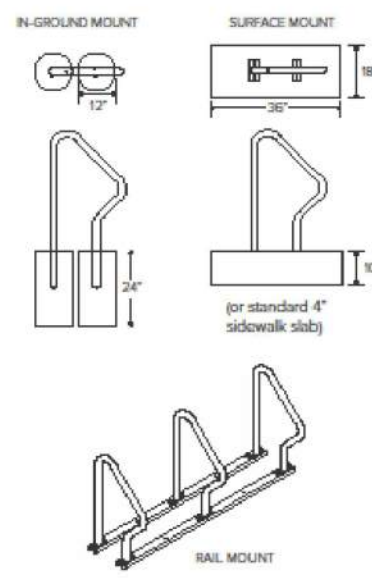
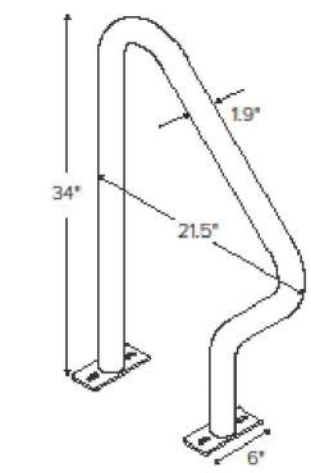
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**SITE DETAILS**

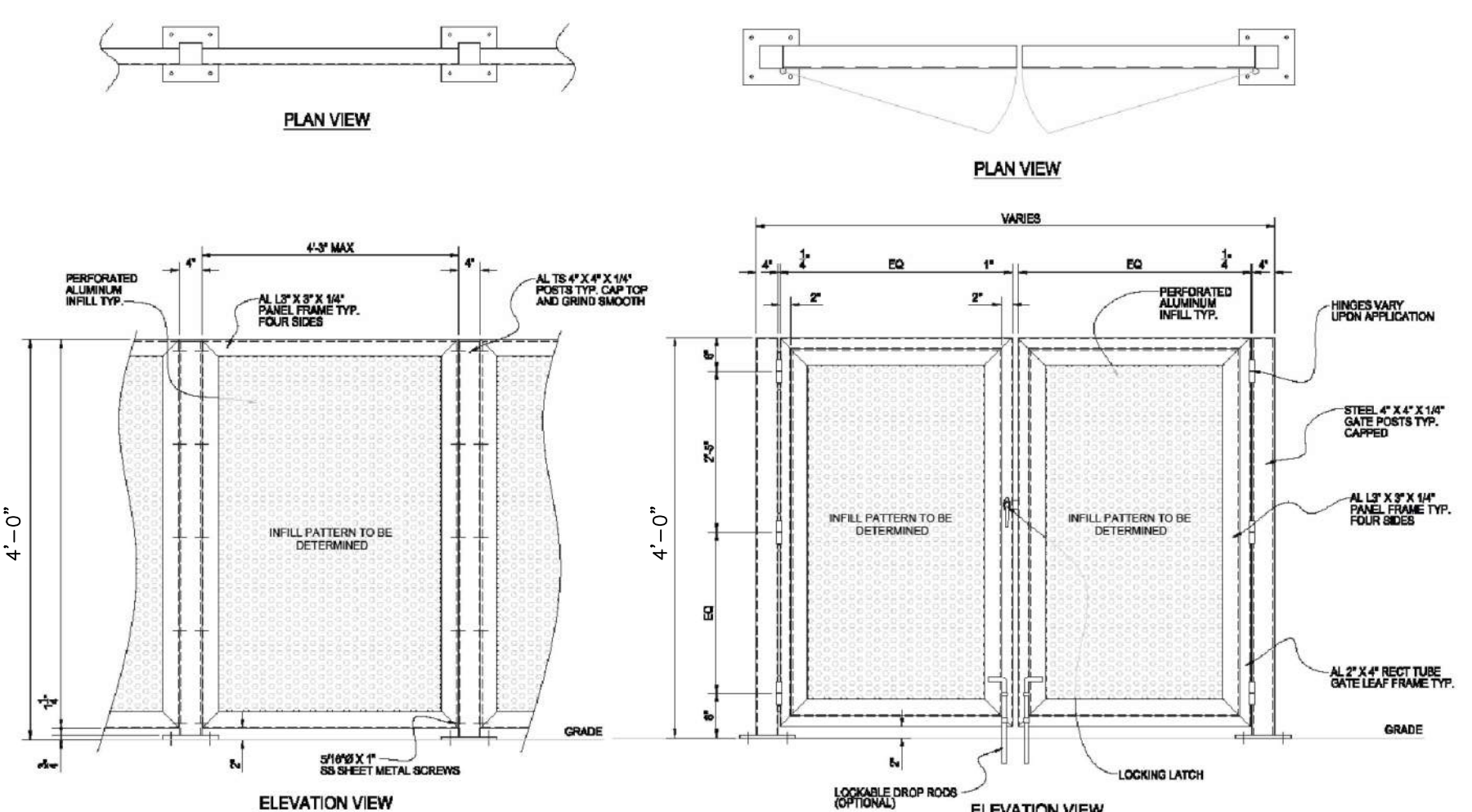
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**C0503**

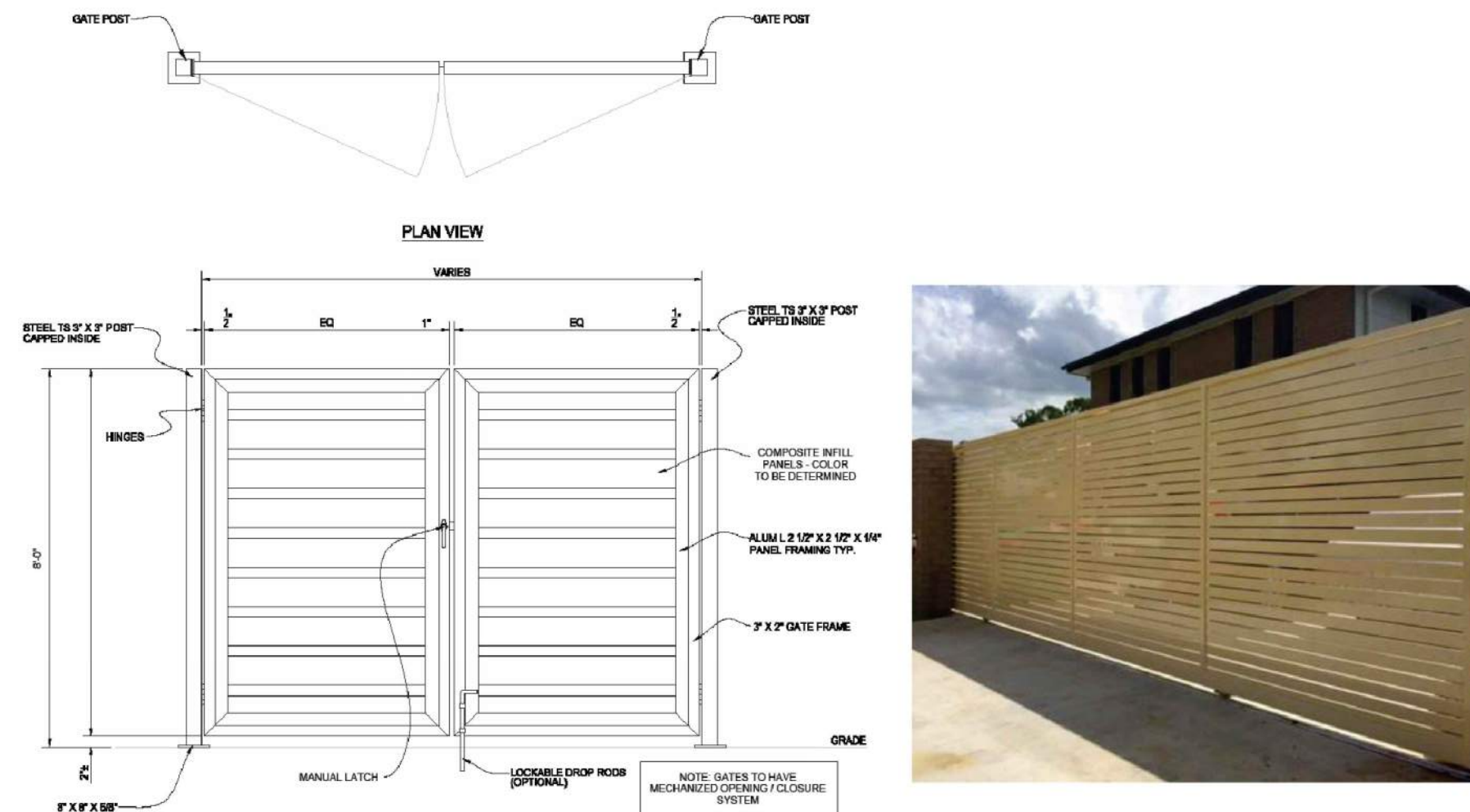




- CAPACITY** 2 Bikes
- MATERIALS** 1 1/2" OD schedule 40 pipe
- FINISHES**
- Galvanized**  
An after fabrication hot dip galvanized finish in our standard option.
  - Powder Coat**  
Our powder coat finish assures a high level of adhesion and durability by following these steps:  
1. Sandblast  
2. Epoxy primer electrochemically applied  
3. Final thick TGC polyester powder coat
  - Stainless**  
Stainless Steel 304 grade stainless steel material finished in either a high polished shine or a satin finish.
- MOUNT OPTIONS**
- Surface**  
Four Mount has two 2" x 4" x 20" feet with two anchors per foot. Specify foot mount for this option. Tamper resistant fasteners available upon request.
  - In-Ground**  
In-ground mount is embedded into concrete base. Specify in-ground mount for this option.
  - Rail**  
Mounted Downward Racks are bolted to two parallel rails which can be left freestanding or anchored to the ground. Rails are heavy duty 2" x 4" x 20" thick galvanized mounting rails. Specify rail mount for this option.
- Rack Angle:**
- 90
  - 45A
  - 45B
  - 60A
  - 60B



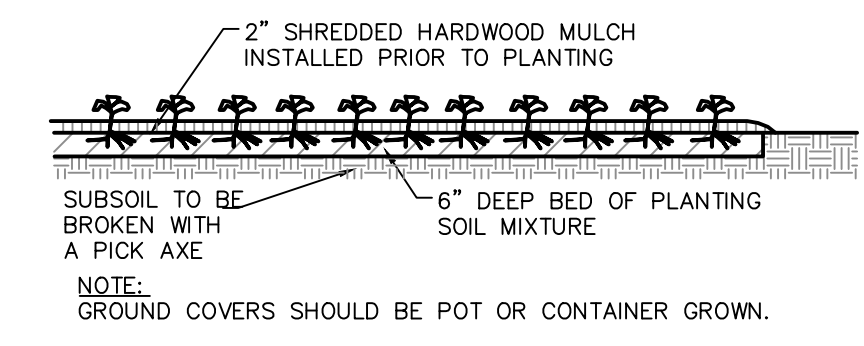
DECORATIVE FENCE / GATE AT COURTYARD  
NOT TO SCALE



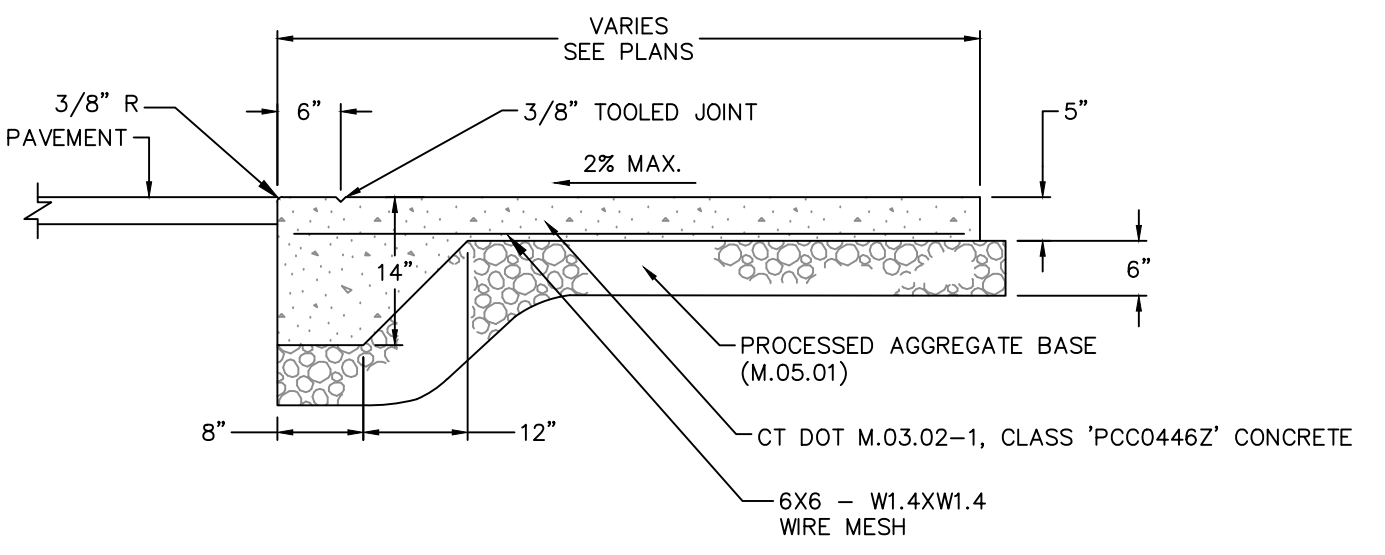
TYPICAL SCREEN FENCE / GATE AT LOADING AREA  
NOT TO SCALE



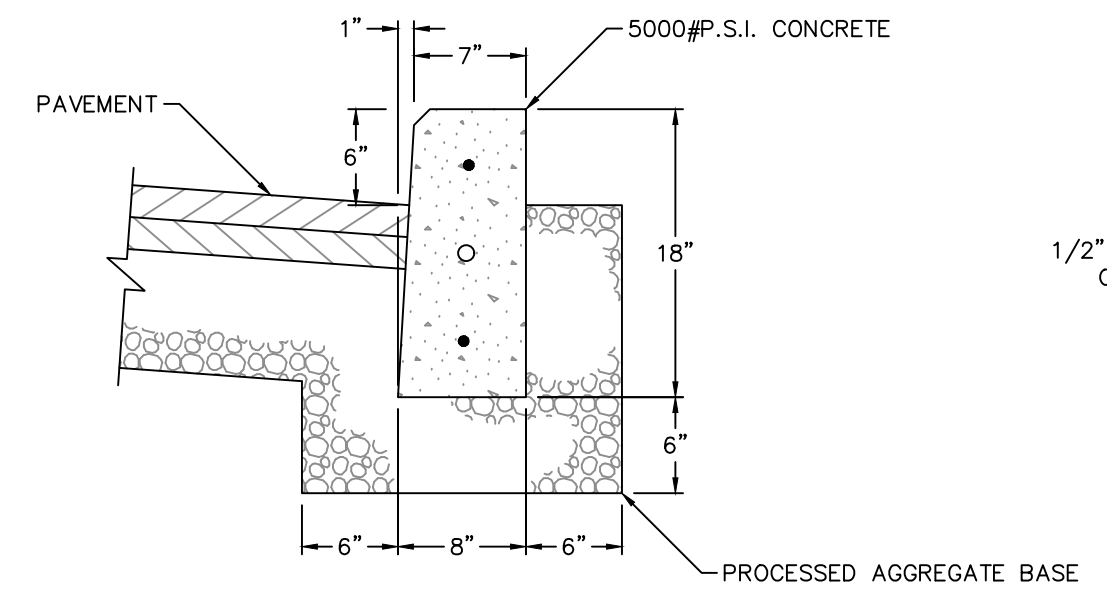
BICYCLE RACK  
NOT TO SCALE



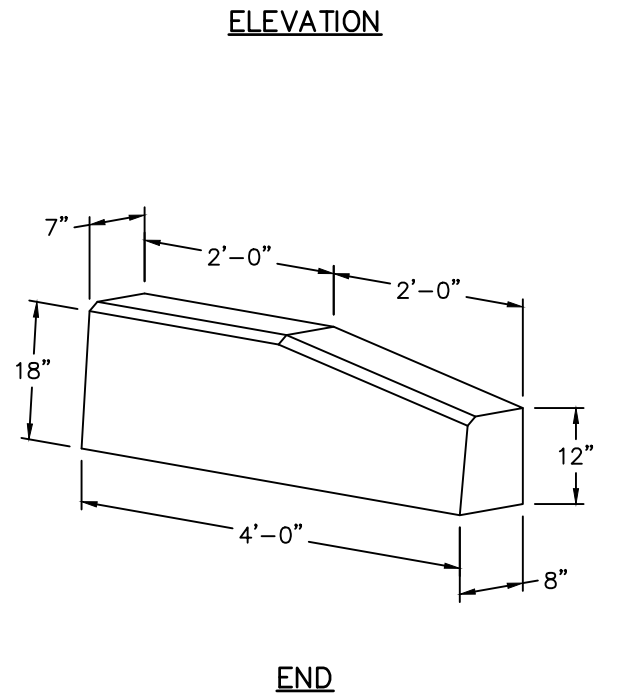
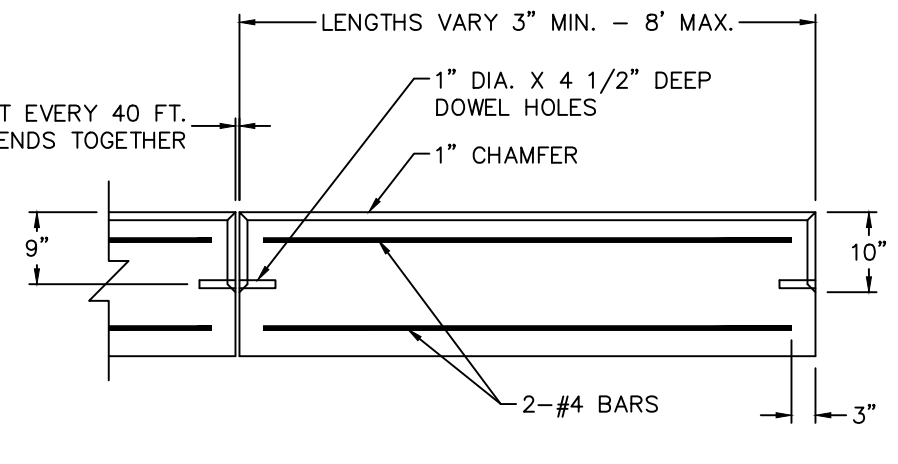
GROUND COVER PLANTING  
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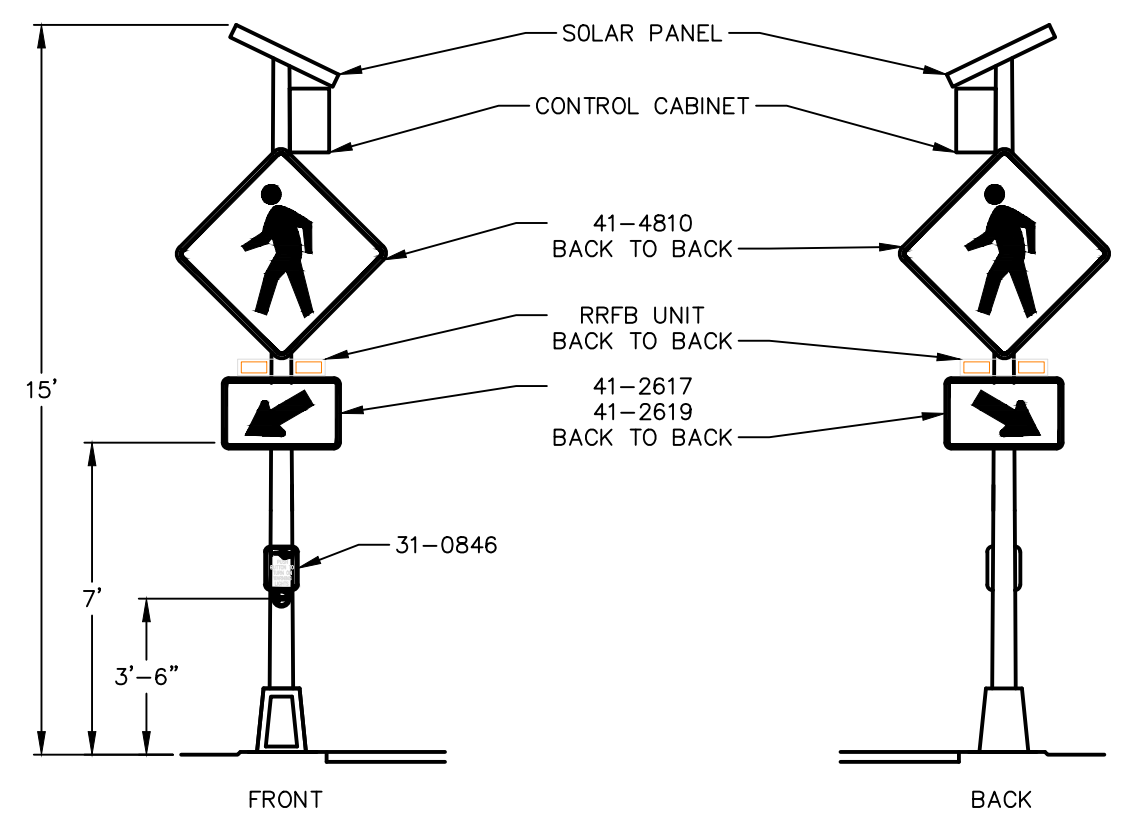
MONOLITHIC CONCRETE CURB AND WALK  
NOT TO SCALE



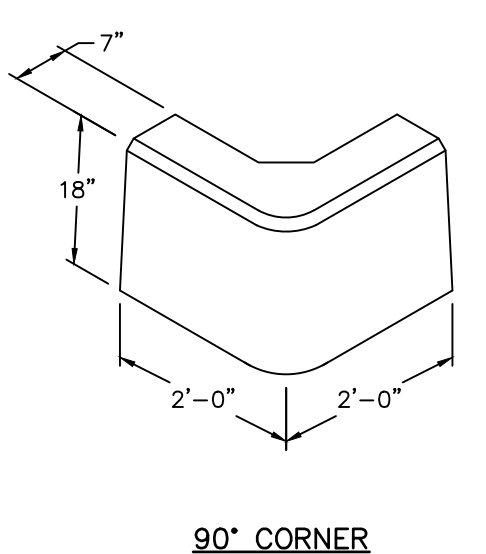
PRECAST CONCRETE CURB  
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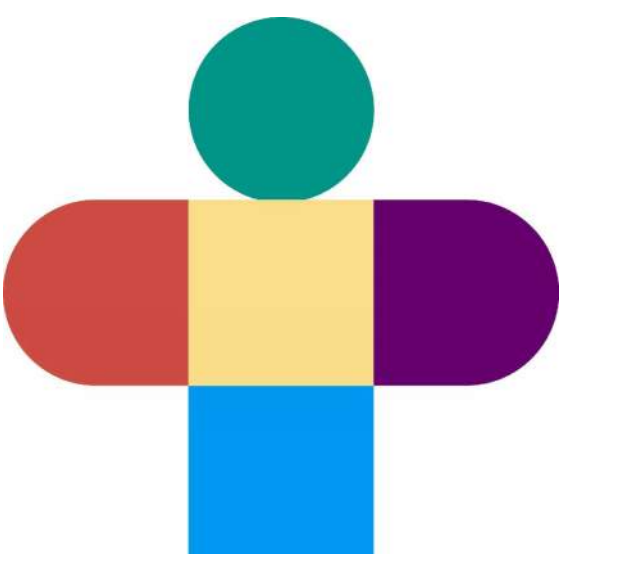
RECTANGULAR RAPID FLASH BEACON ASSEMBLY TYPE B  
NOT TO SCALE



RECTANGULAR RAPID FLASH BEACON ASSEMBLY TYPE B  
NOT TO SCALE



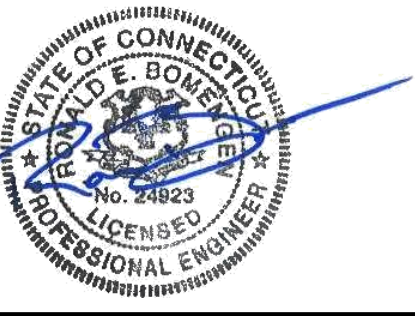
90° CORNER



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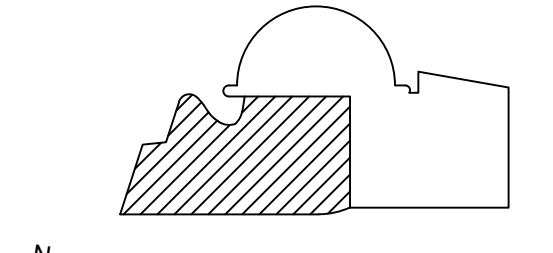
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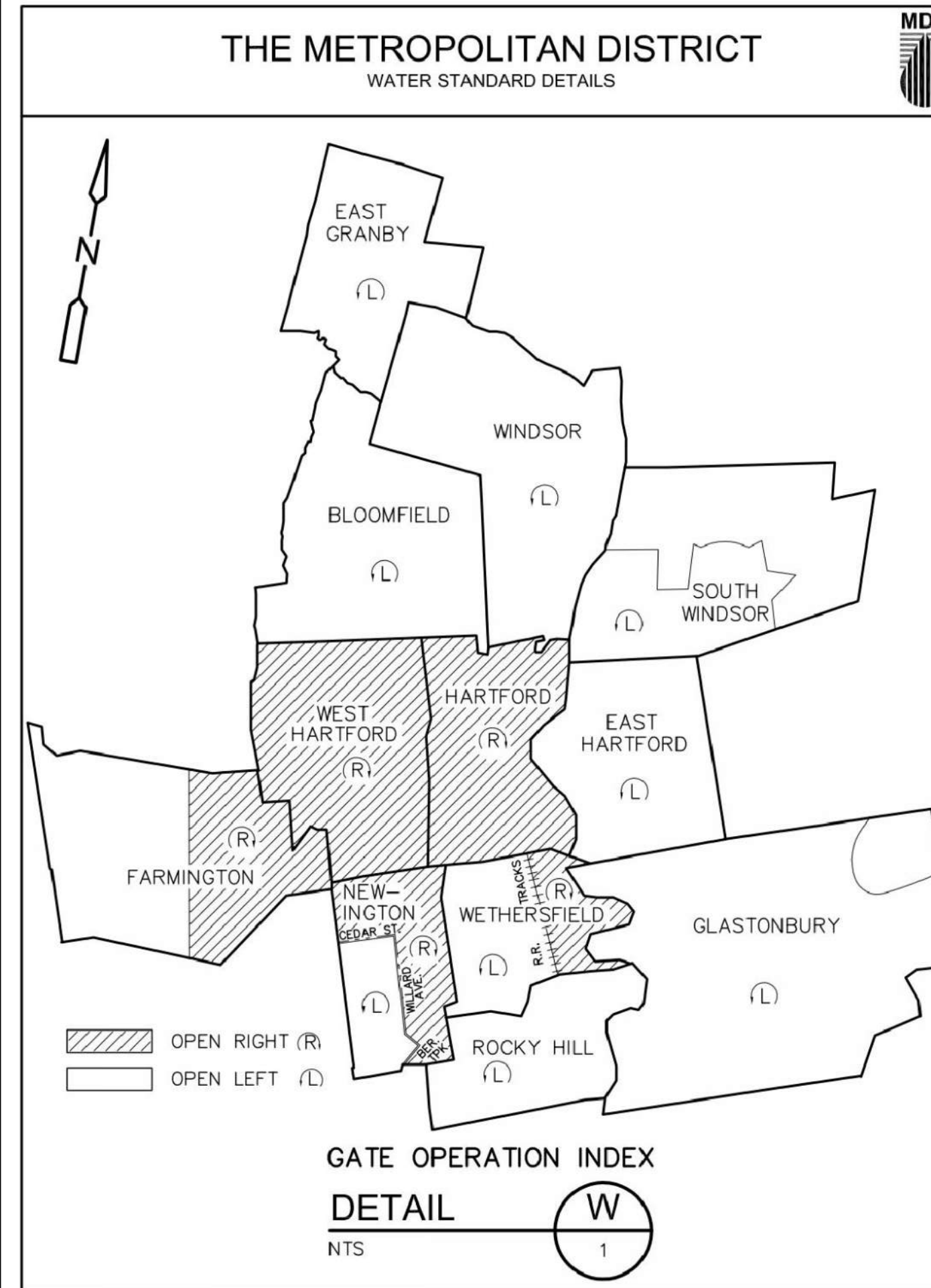
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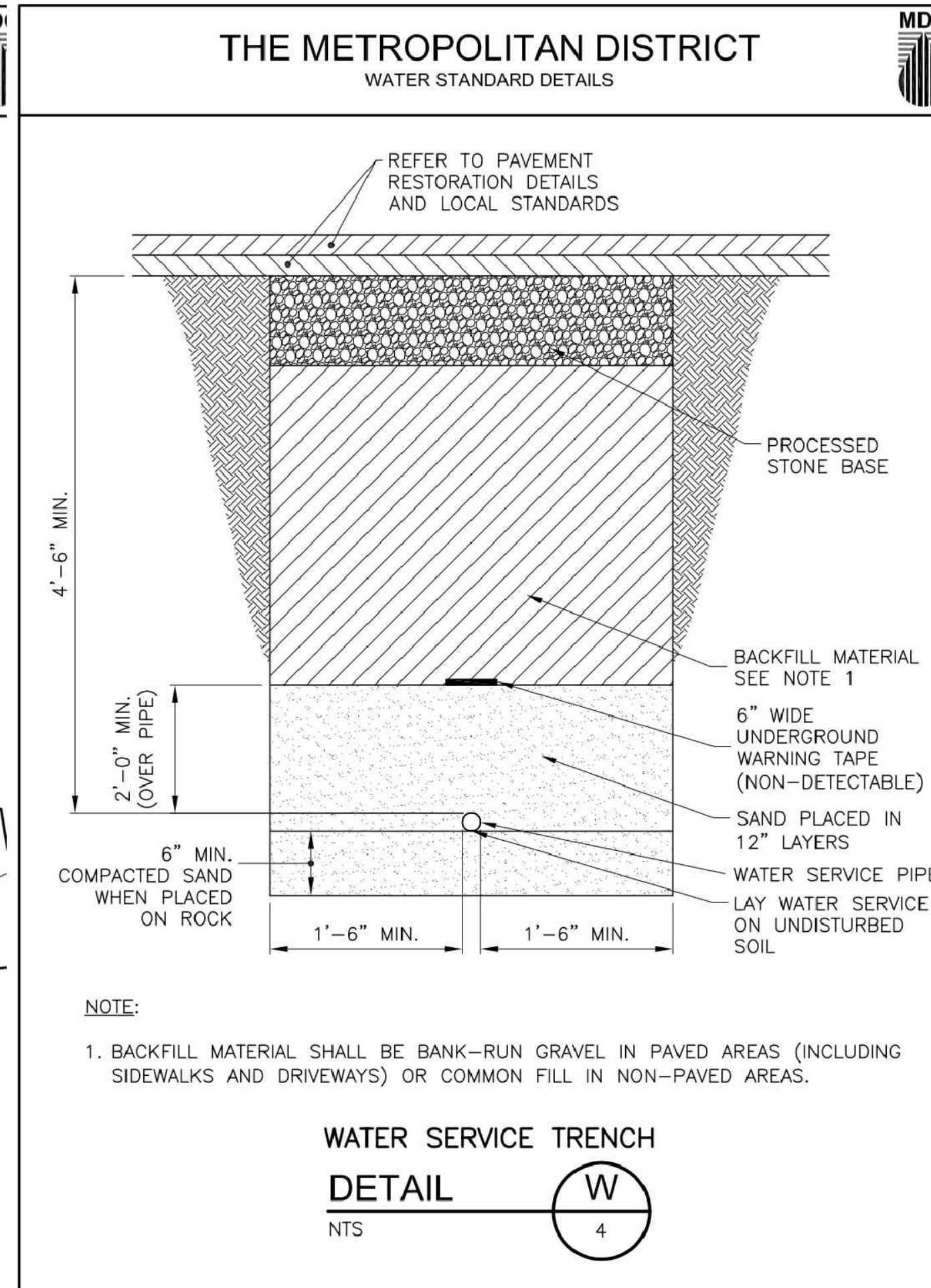
**C0504**

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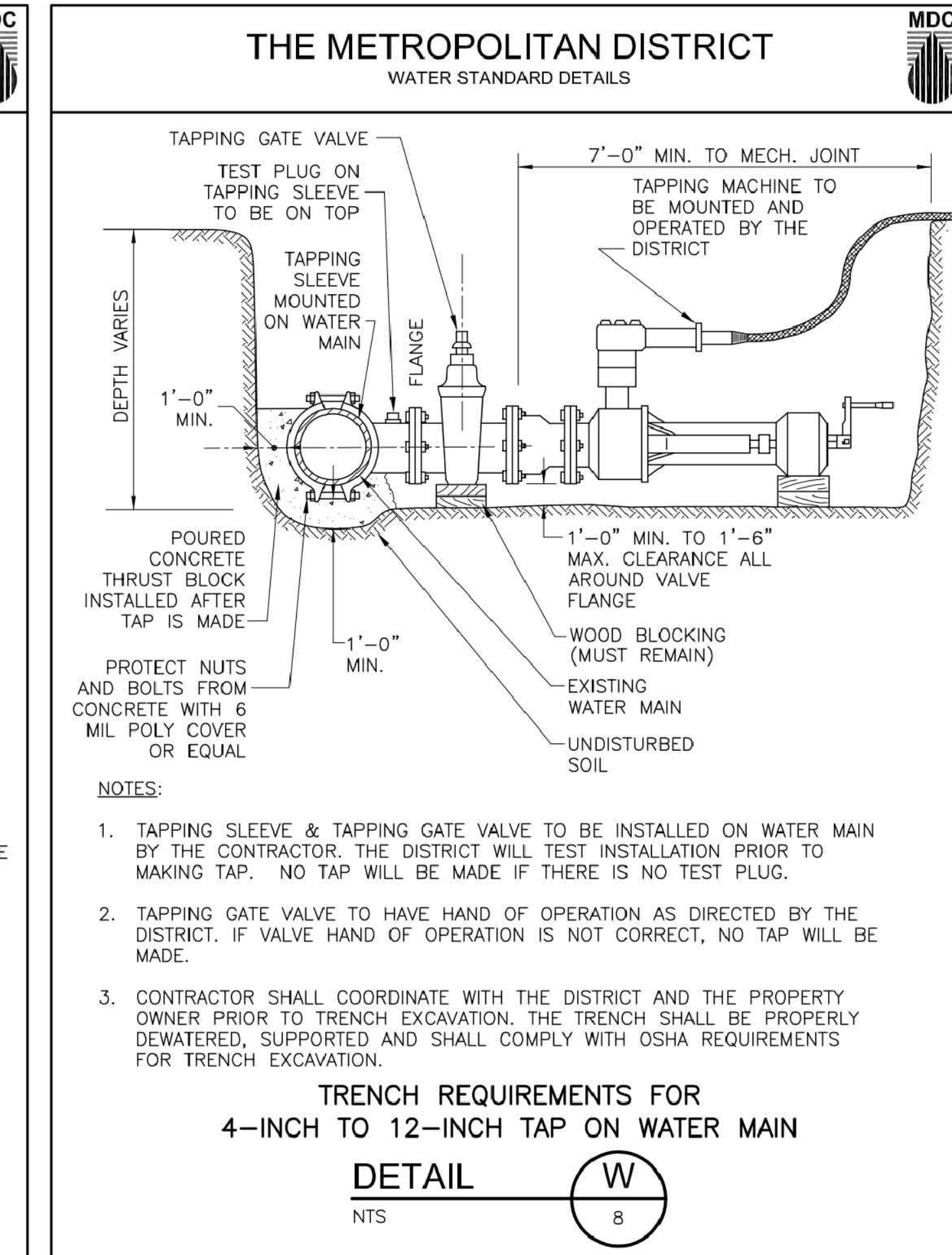




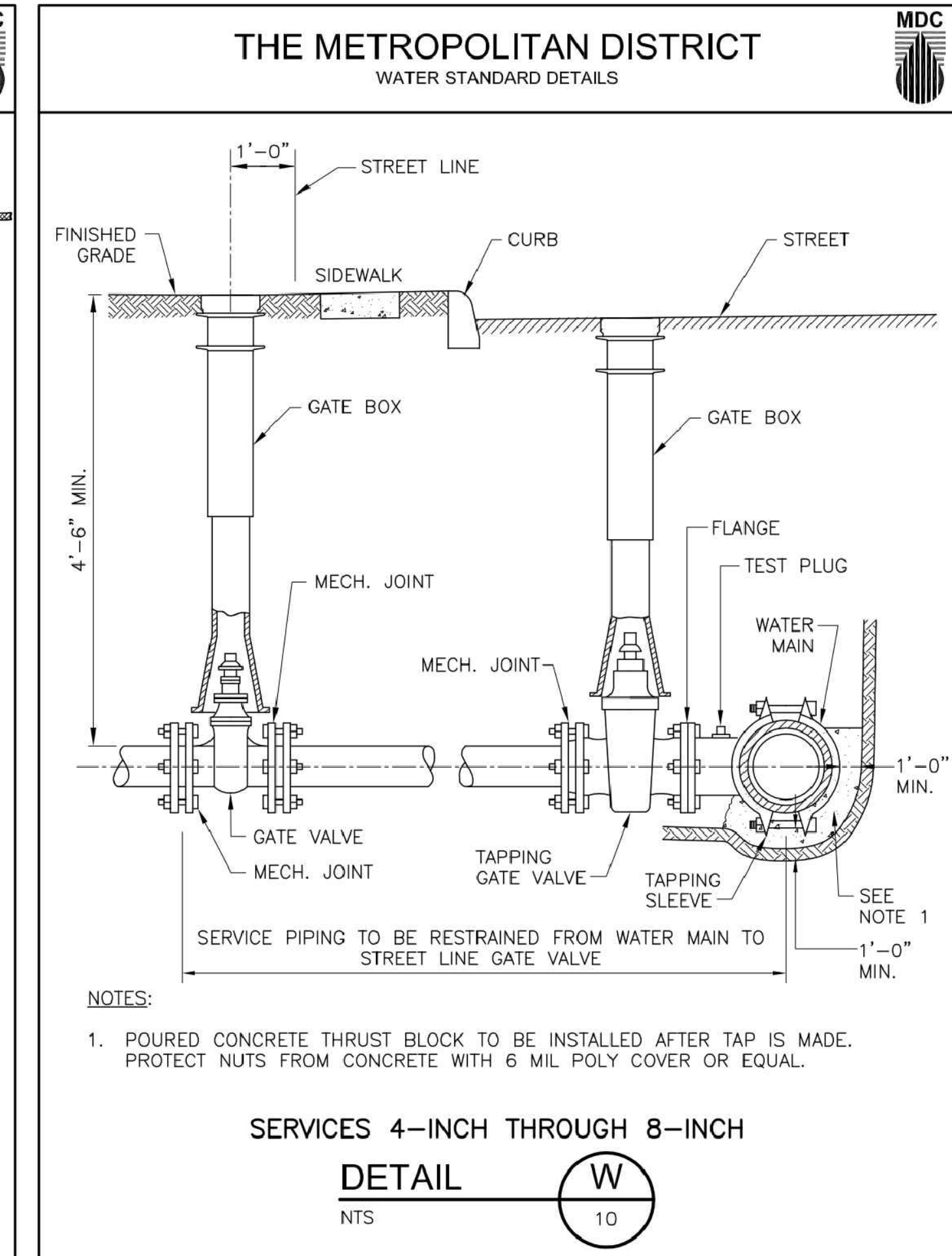
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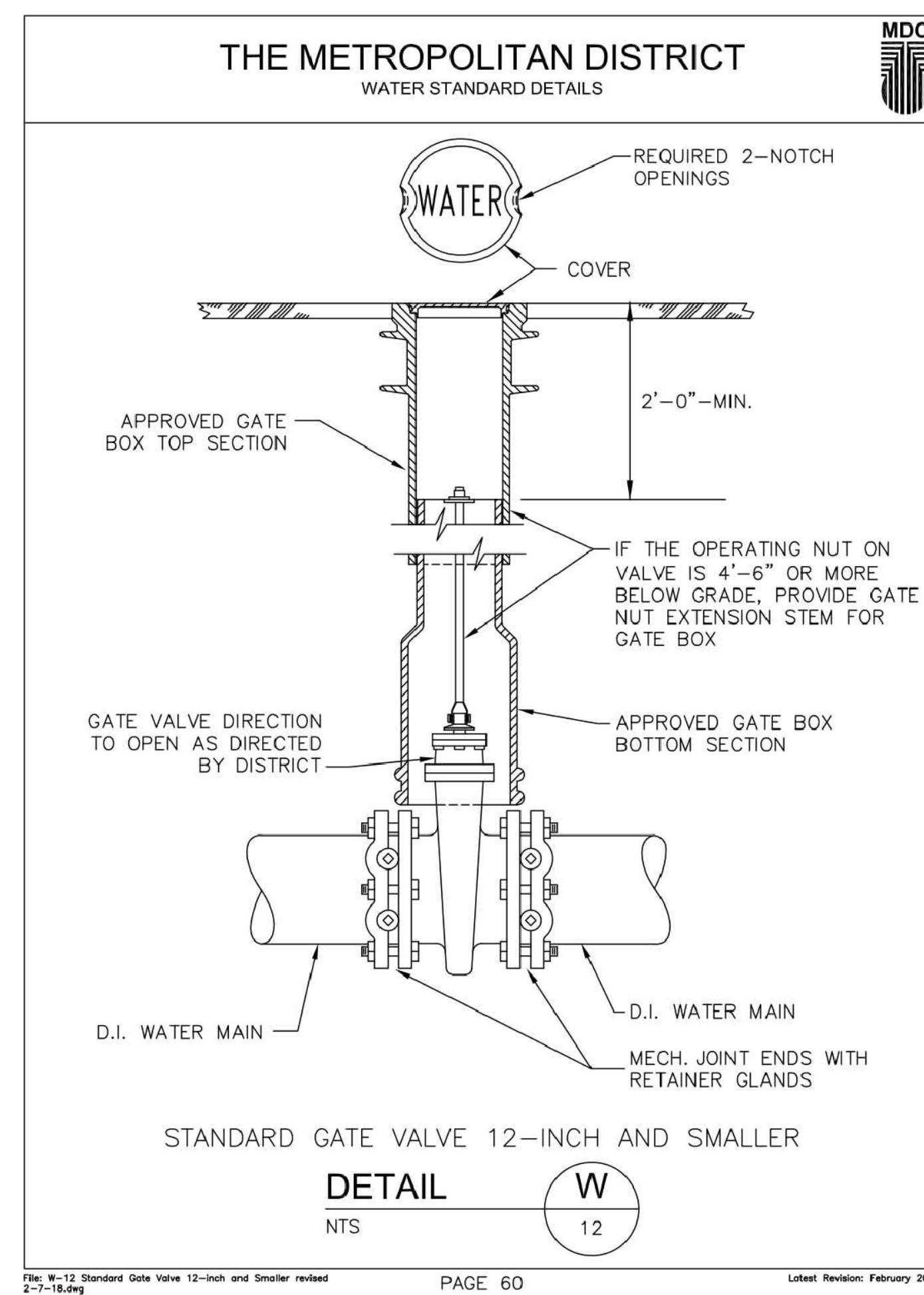
File: W-4 Water Service Trench.dwg PAGE 52 Latest Revision: JANUARY 2017



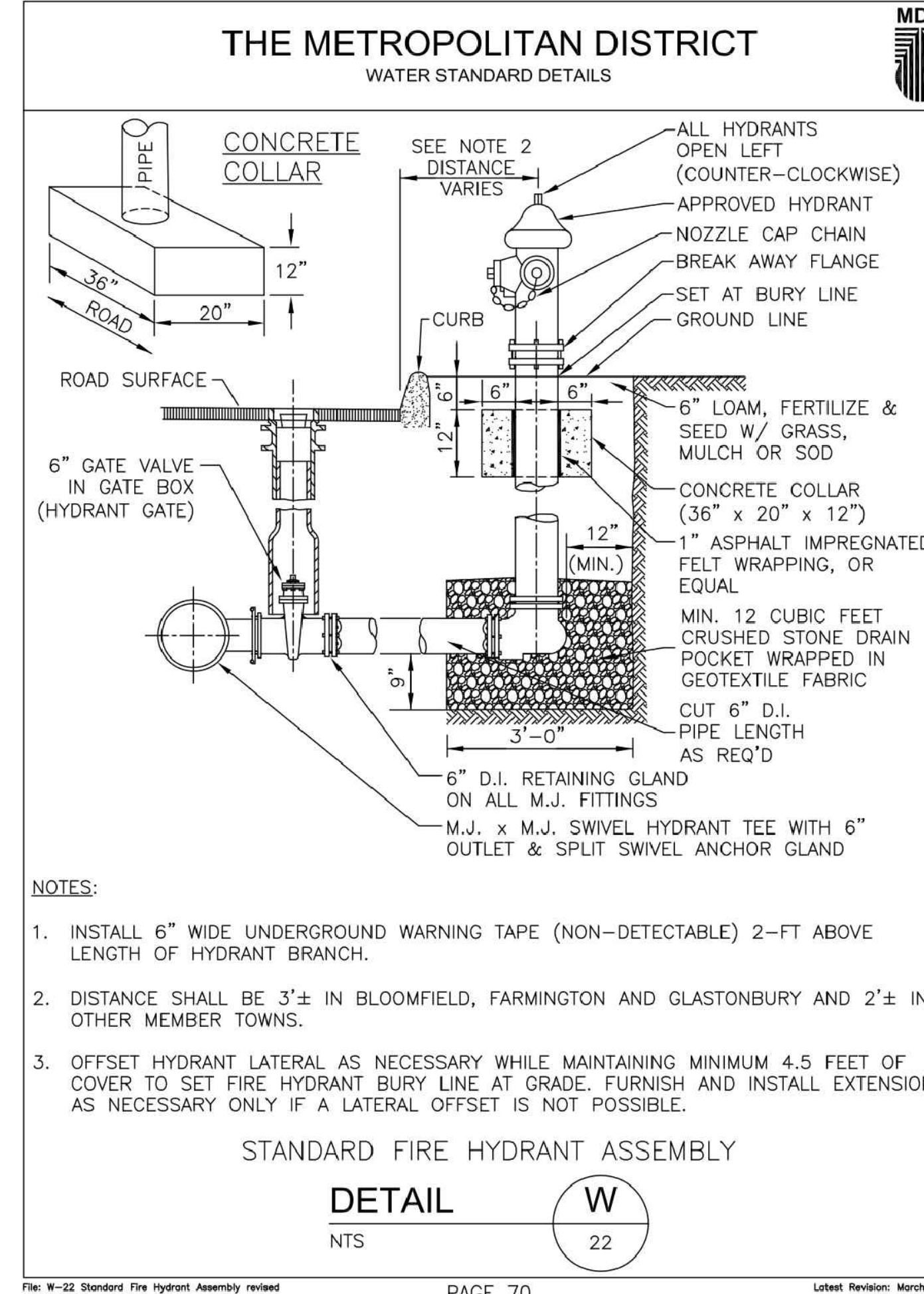
File: W-8 Trench Requirements for 4-inch to 12-inch Tap on Water Main.dwg PAGE 56 Latest Revision: JANUARY 2017



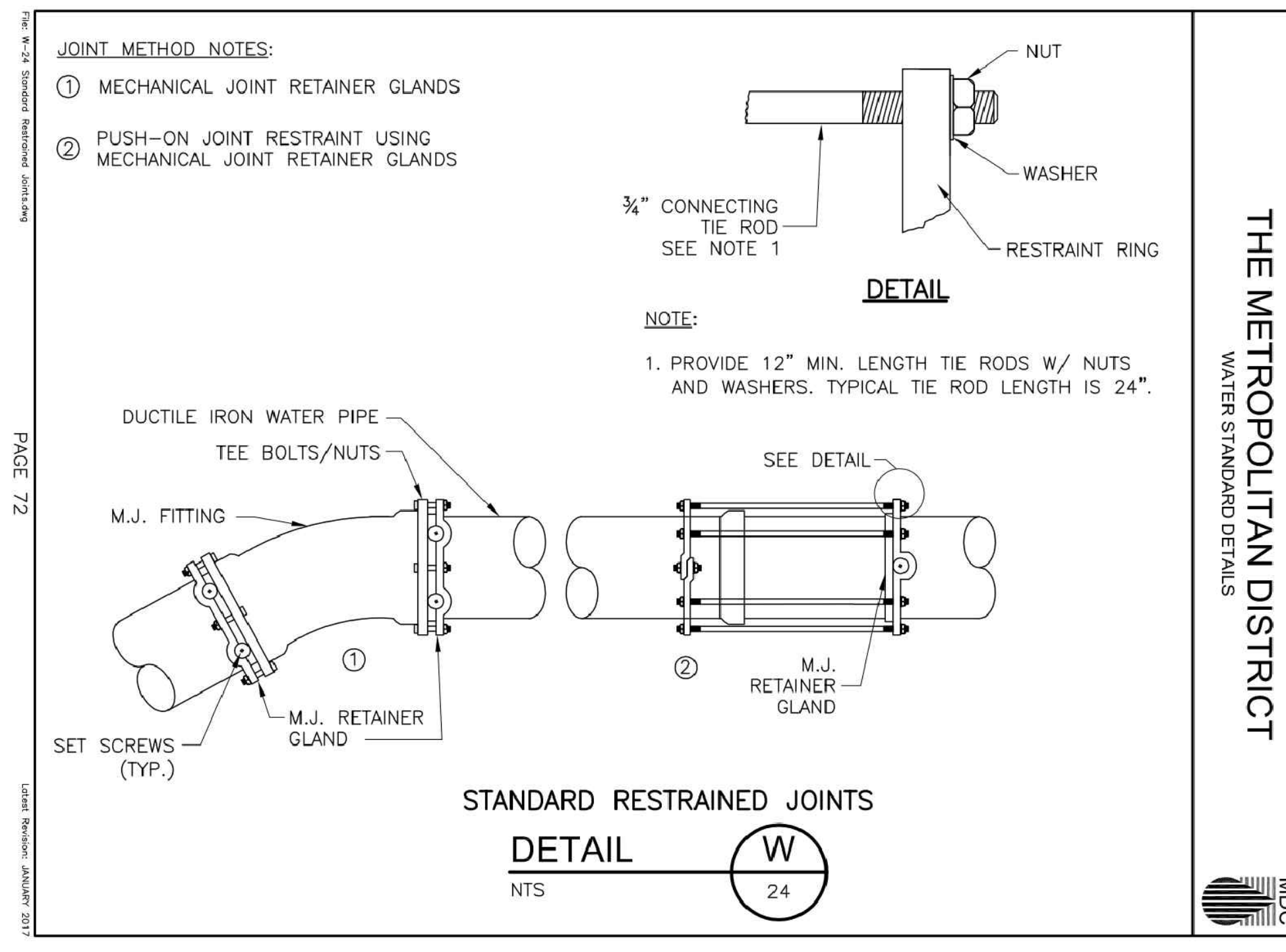
File: W-10 Services 4-inch Through 8-inch.dwg PAGE 58 Latest Revision: JANUARY 2017



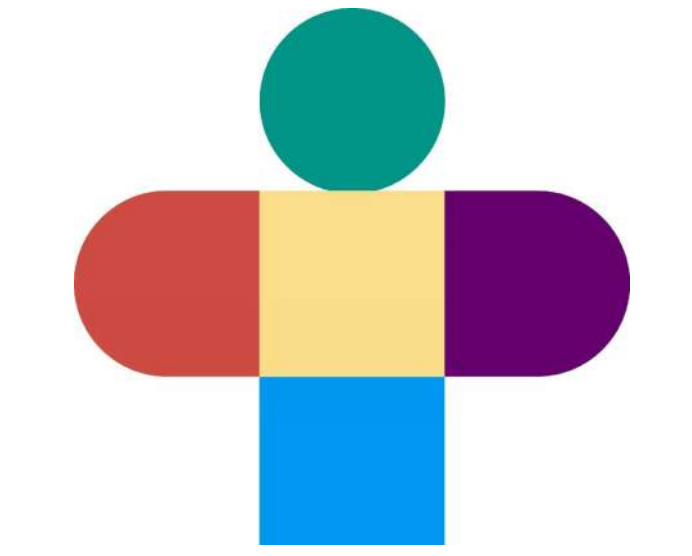
File: W-12 Standard Gate Valve 12-inch and Smaller revised 2-7-18.dwg PAGE 60 Latest Revision: February 2018



File: W-22 Standard Fire Hydrant Assembly revised 2-4-17.dwg PAGE 70 Latest Revision: March 2017



File: W-24 Standard Restrained Joints.dwg PAGE 72 Latest Revision: January 2017



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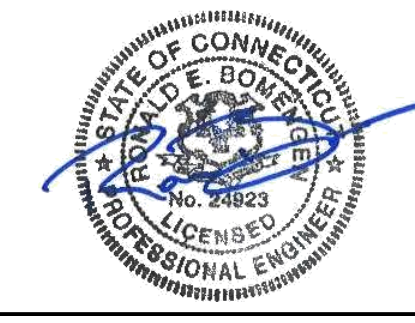
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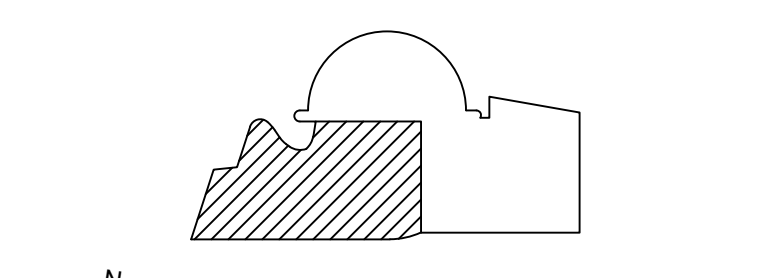
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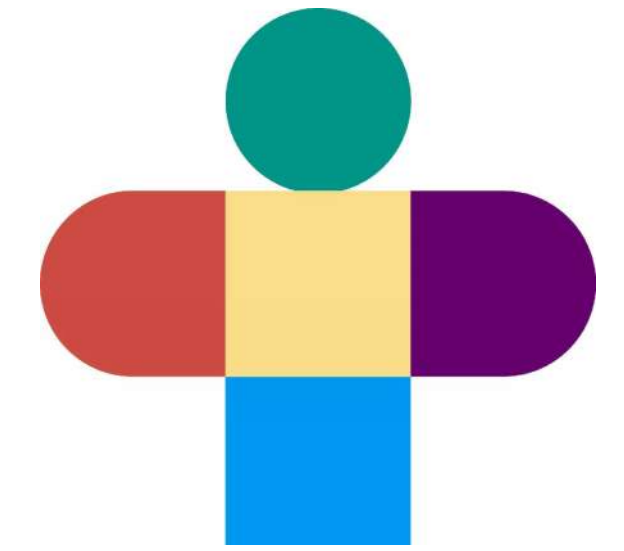
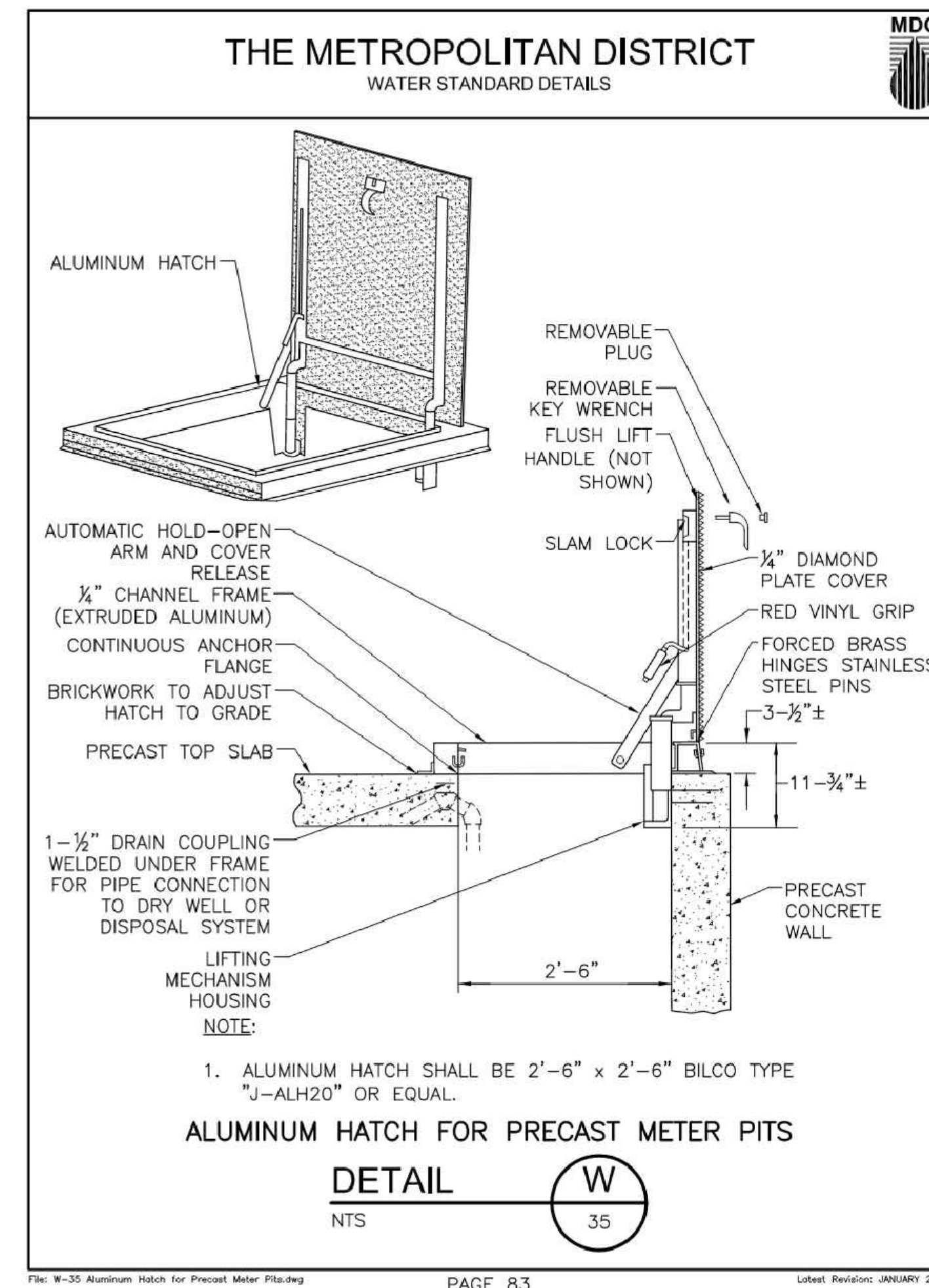
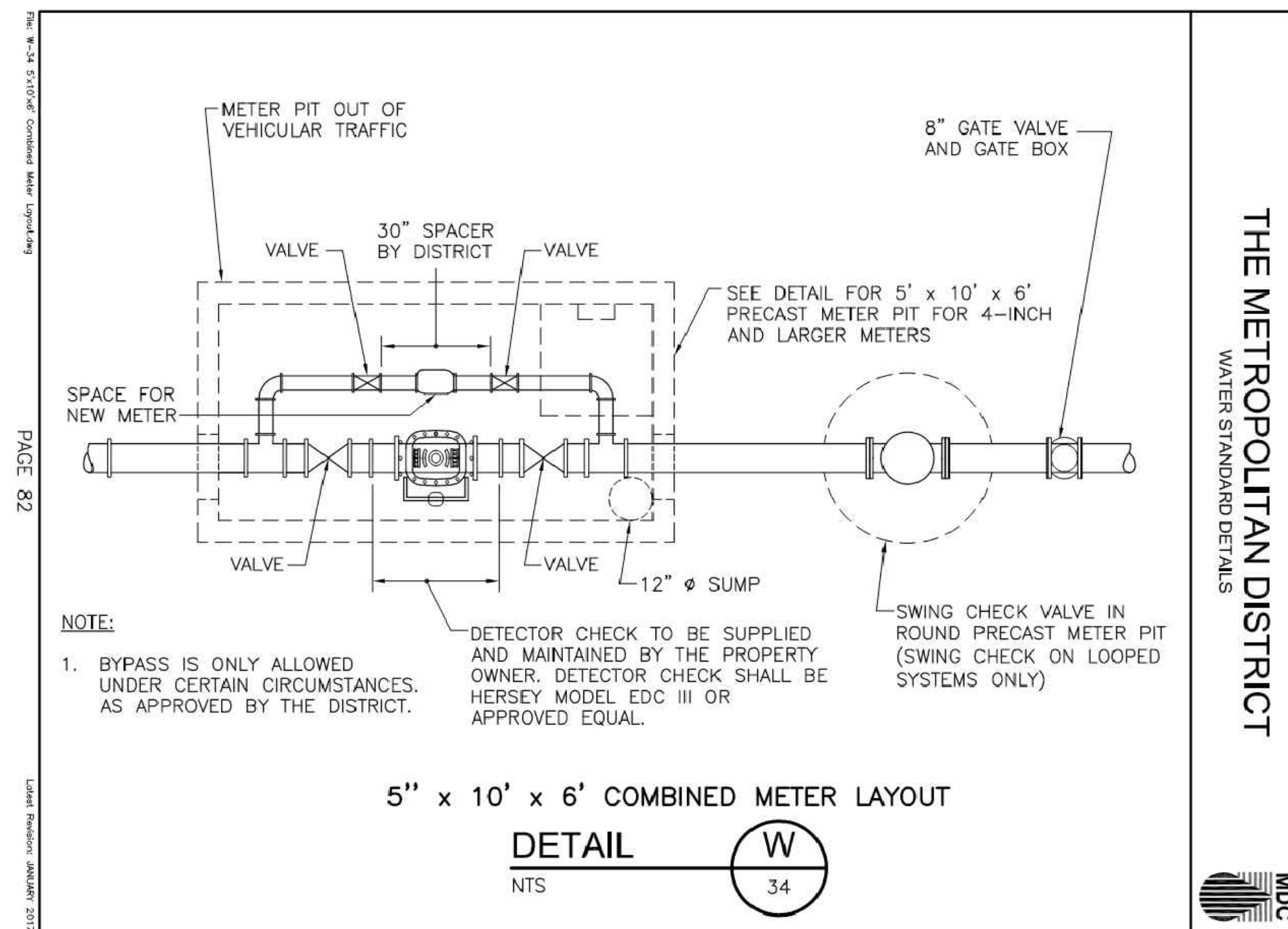
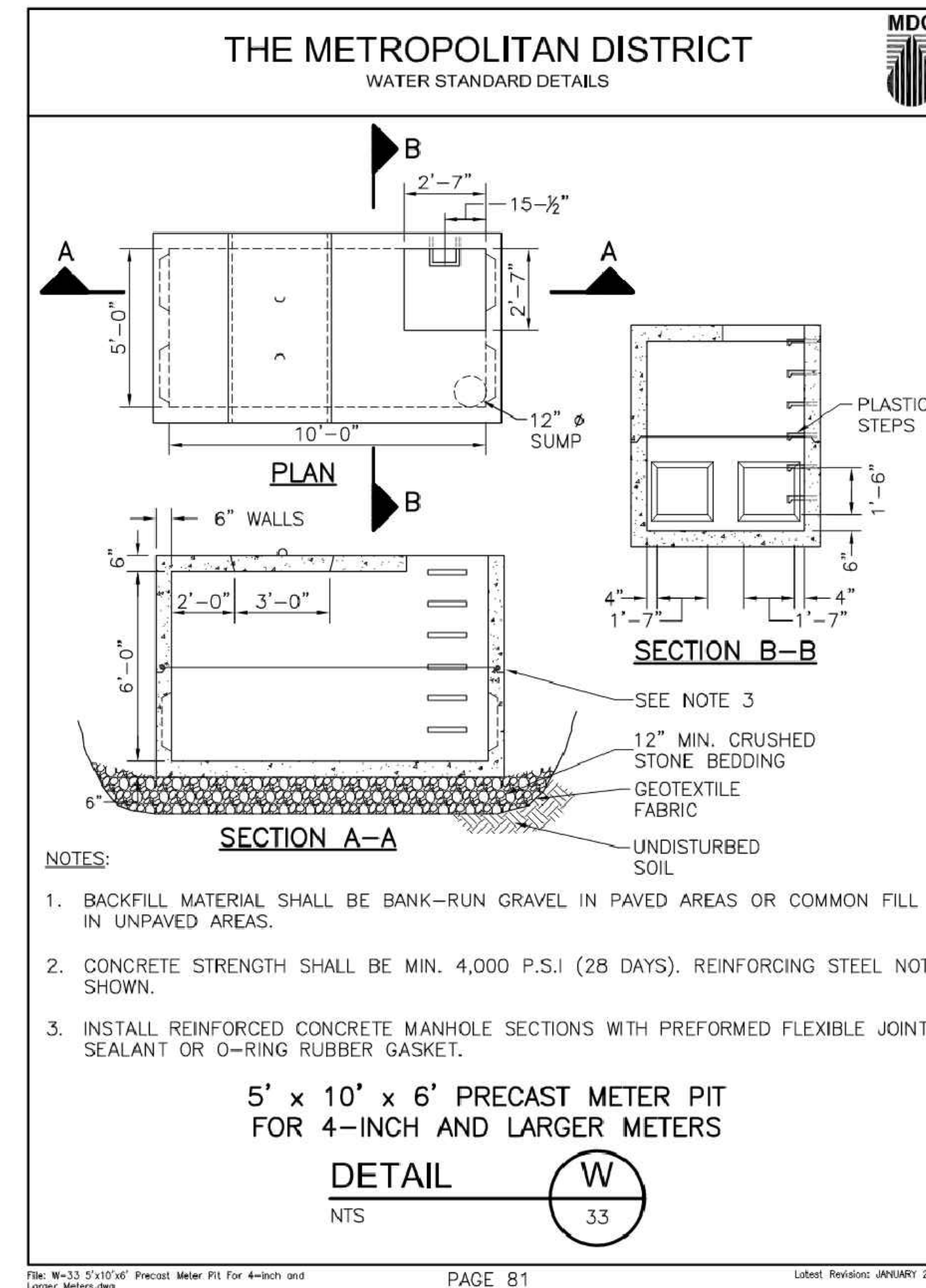
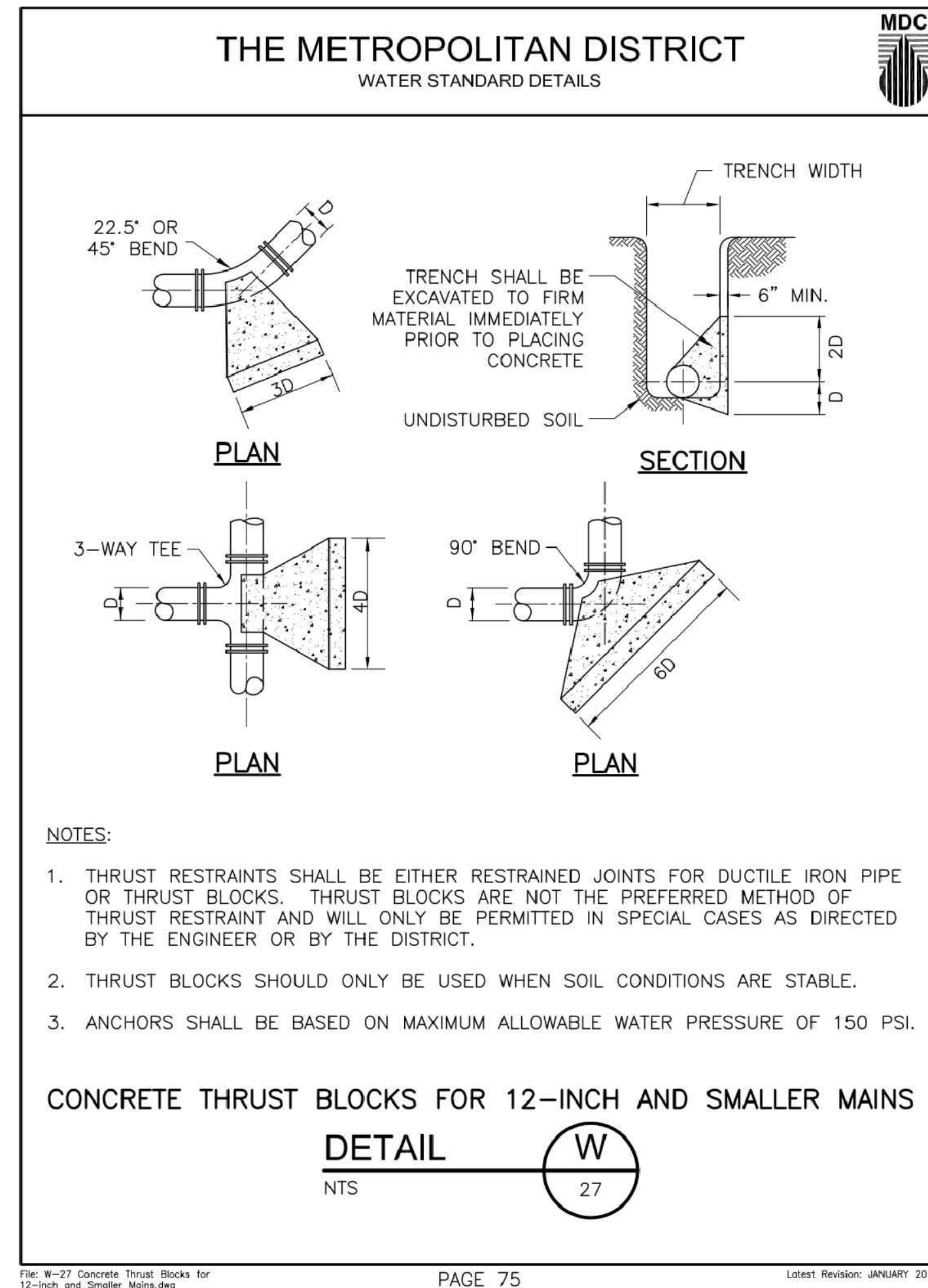
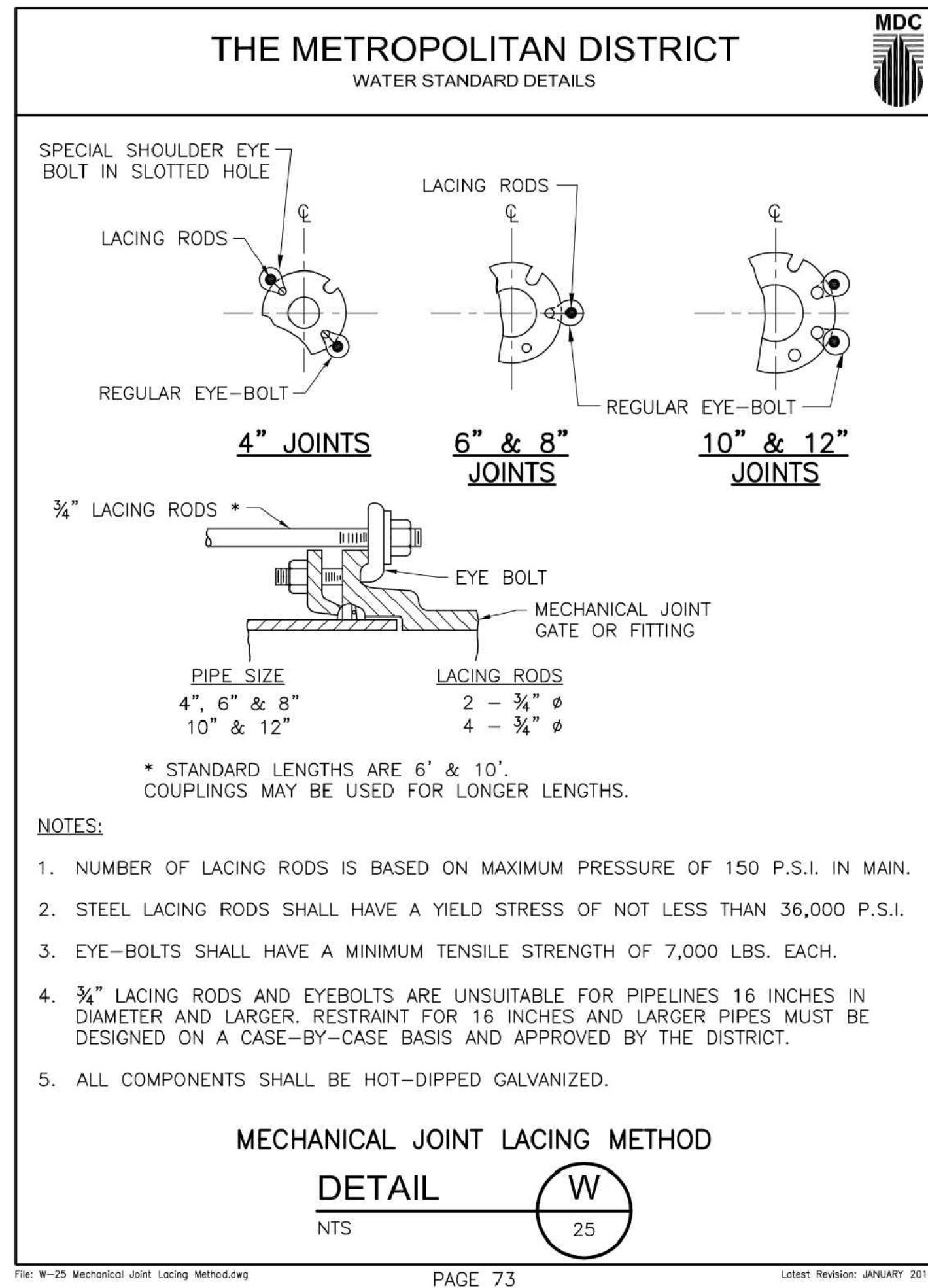
**SITE DETAILS**

Project No.: 006719.00 Checked by: RB

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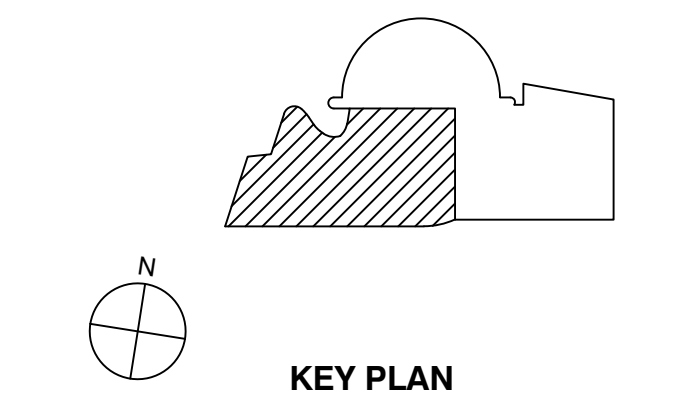
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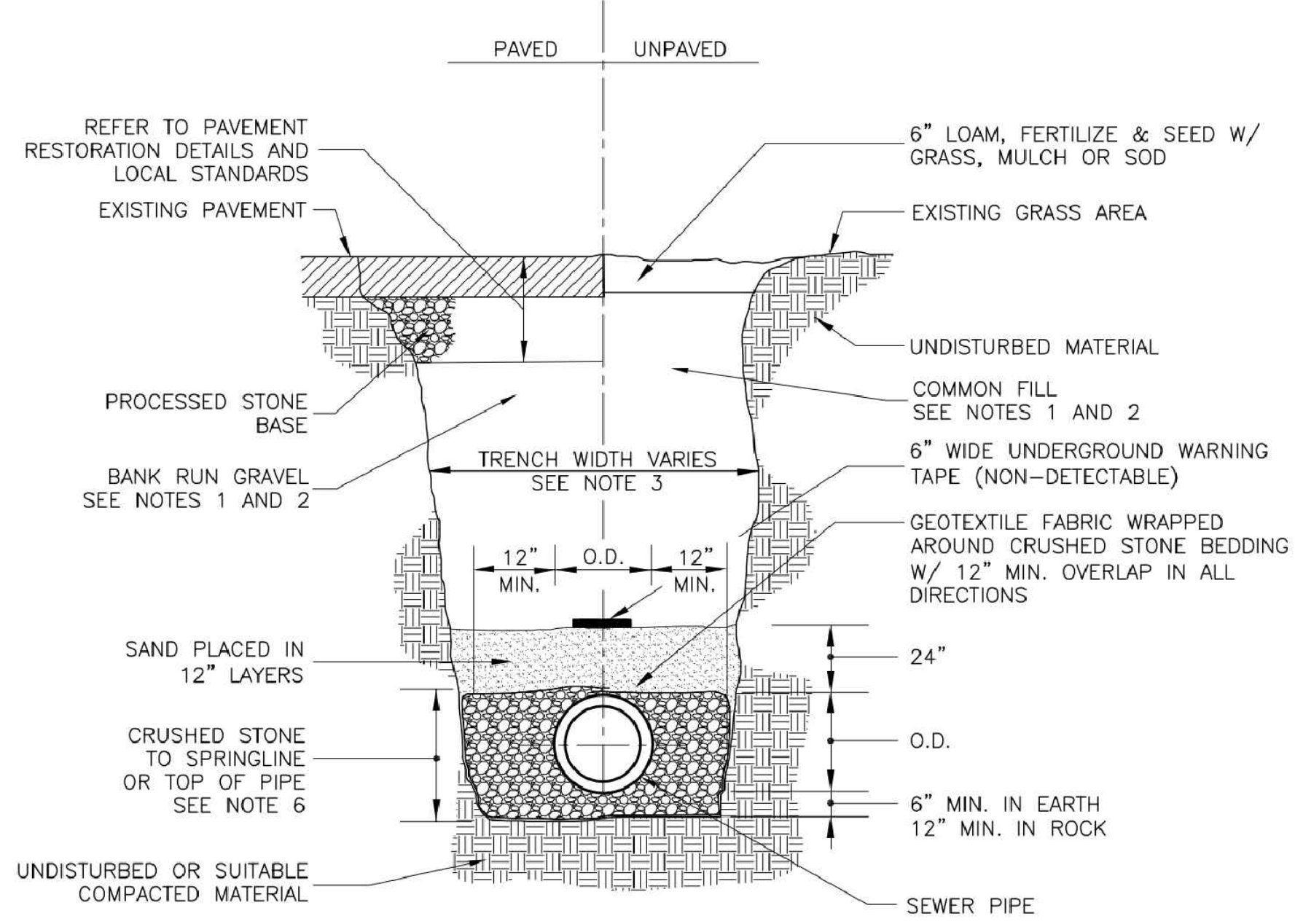
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SEWER STANDARD DETAILS

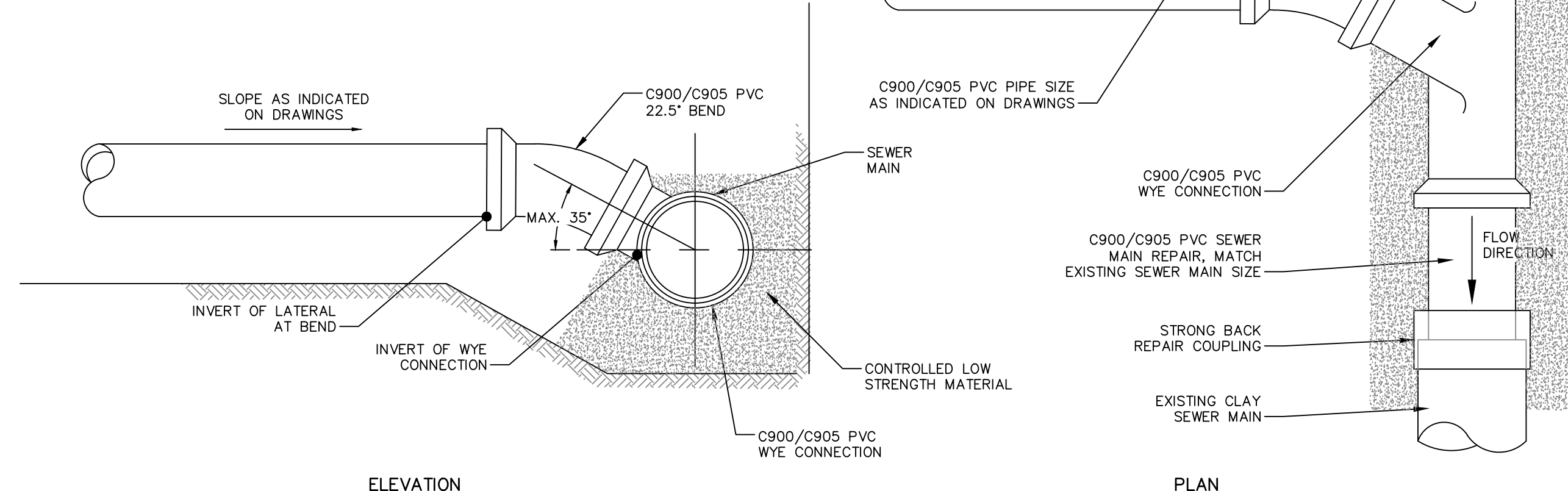


- NOTES:
1. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED.
  2. BACKFILL MATERIAL SHALL BE APPROVED BANK RUN GRAVEL IN PAVED AREAS (INCLUDING DRIVEWAYS AND SIDEWALKS) OR COMMON FILL IN UNPAVED AREAS.
  3. TRENCH WIDTH VARIES BASED ON PIPE SIZE AND DEPTH.
  4. TRENCHES LOCATED IN THE ROAD SHOULDER SHALL BE TREATED THE SAME AS TRENCHES IN THE PAVED ROADWAY EXCEPT FOR PAVEMENT AND SURFACE RESTORATION WORK.
  5. PROVIDE IMPERVIOUS TRENCH DAM(S) IN STONE BEDDING AS DIRECTED BY THE ENGINEER. SEE PIPE TRENCH DAM DETAIL.
  6. CRUSHED STONE SHALL BE INSTALLED TO TOP OF PIPE FOR PVC AND DI PIPE AND TO SPRINGLINE FOR RC PIPE.

SEWER TRENCH  
DETAIL S  
NTS 2

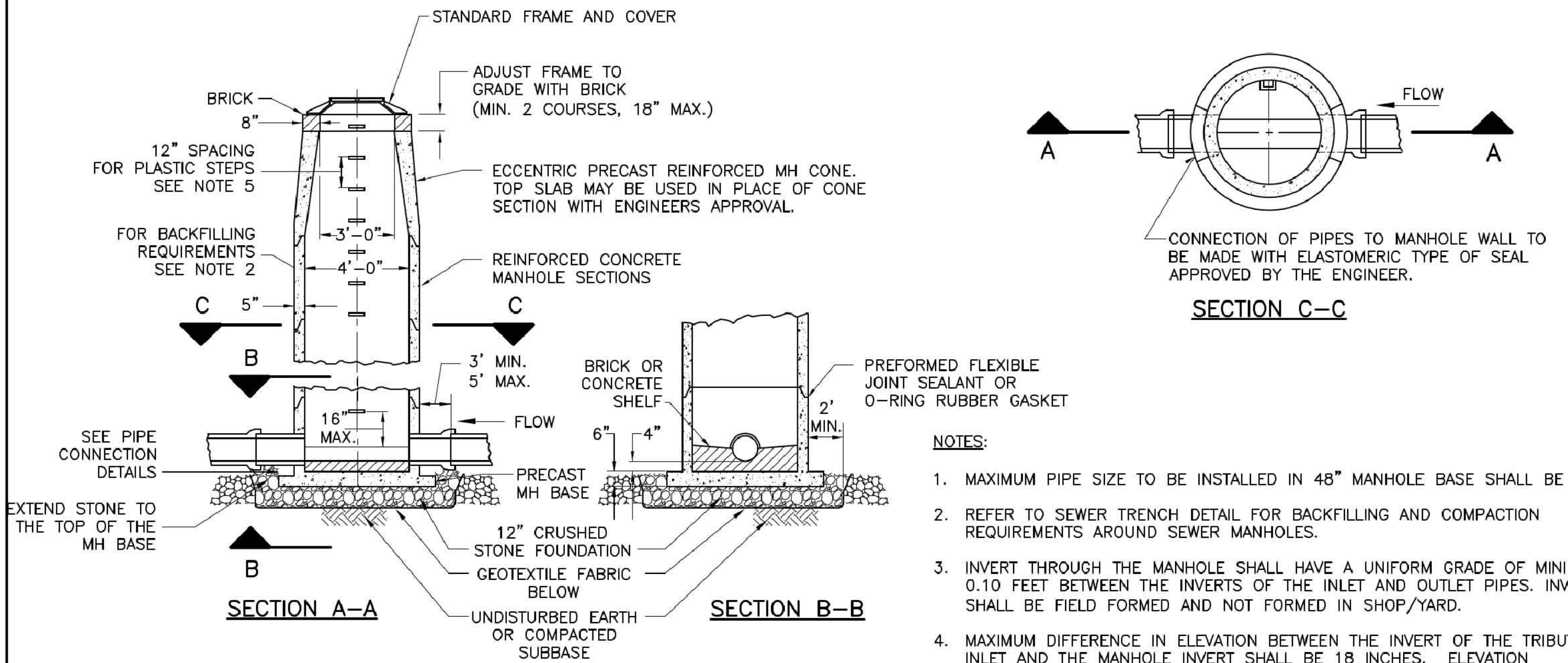
SERVICE CONNECTION NOTES

1. SEE SEWER TRENCH DETAIL FOR TRENCHING, MARKER TAPE, FILTER FABRIC, AND BEDDING/BACKFILL REQUIREMENTS.



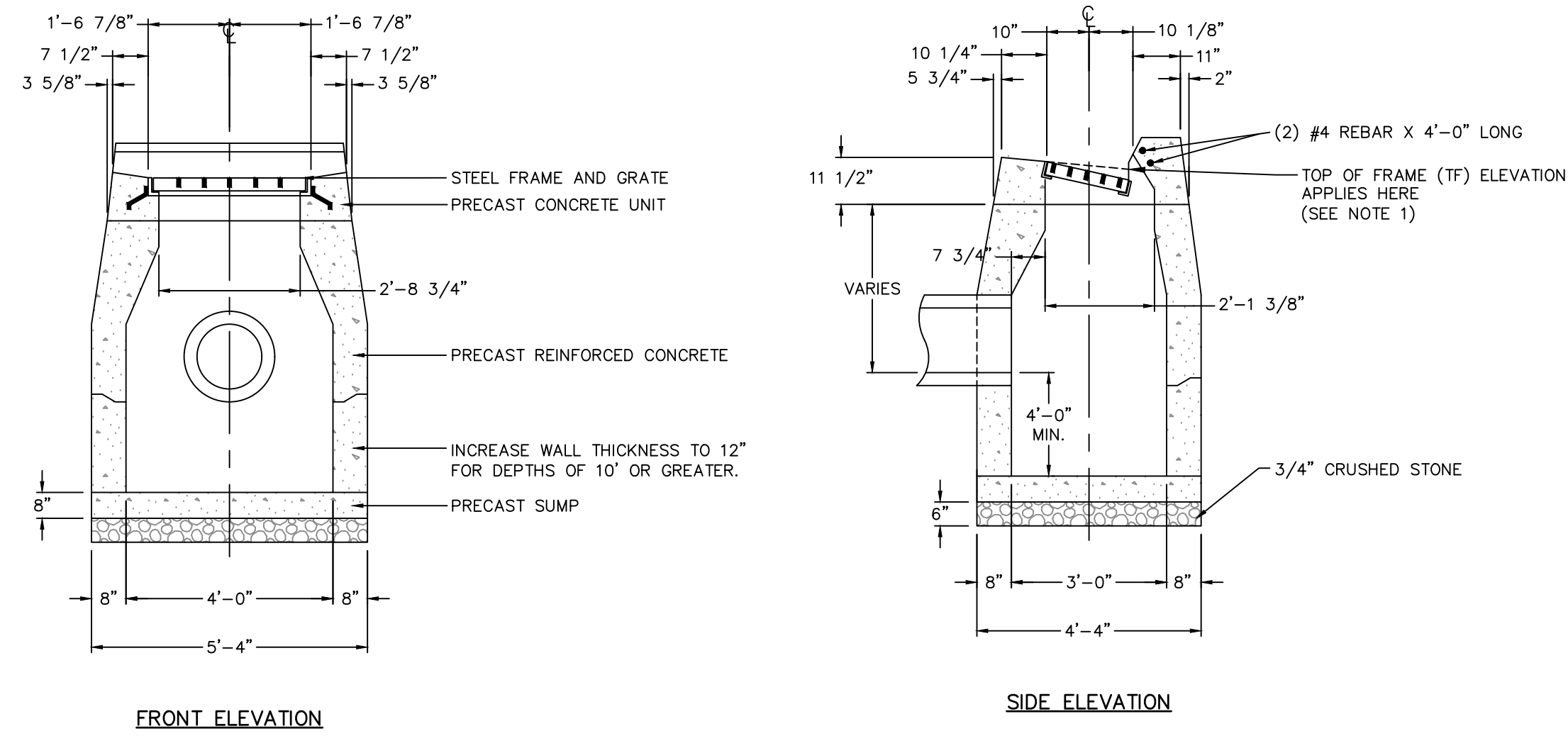
WYE CONNECTION ASSEMBLY  
NOT TO SCALE

THE METROPOLITAN DISTRICT  
SEWER STANDARD DETAILS



- NOTES:
1. MAXIMUM PIPE SIZE TO BE INSTALLED IN 48" MANHOLE BASE SHALL BE 18".
  2. REFER TO SEWER TRENCH DETAIL FOR BACKFILLING AND COMPACTION REQUIREMENTS AROUND SEWER MANHOLES.
  3. INVERT THROUGH THE MANHOLE SHALL HAVE A UNIFORM GRADE OF MINIMUM 0.10 FEET BETWEEN THE INVERTS OF THE INLET AND OUTLET PIPES. INVERTS SHALL BE FIELD FORMED AND NOT FORMED IN SHOP/YARD.
  4. MAXIMUM DIFFERENCE IN ELEVATION BETWEEN THE INVERT OF THE TRIBUTARY INLET AND THE MANHOLE INVERT SHALL BE 18 INCHES. ELEVATION DIFFERENCES GREATER THAN 18 INCHES WILL REQUIRE A DROP CONNECTION.
  5. DISTANCE FROM TOP OF MANHOLE COVER TO FIRST PLASTIC STEP SHALL BE BETWEEN 12" AND 16".

TYPE II PRECAST CONCRETE MANHOLE  
DETAIL S  
NTS 18



- NOTES:
1. TOP OF FRAME (TF) ELEVATION SHALL BE MEASURED IN THE CENTER OF GRATE AT GUTTER LINE.
  2. FOR LOCATIONS WITHIN 25 FEET OF SEPTIC TANK OR PUMP CHAMBER, CONSTRUCTION JOINTS SHALL BE SEALED WITH 6-INCH BUTYL RUBBER JOINT WRAP AND PIPE PENETRATION SEALED WITH FLEXIBLE RUBBER BOOT CONNECTOR.

TYPE "C" CATCH BASIN  
NOT TO SCALE



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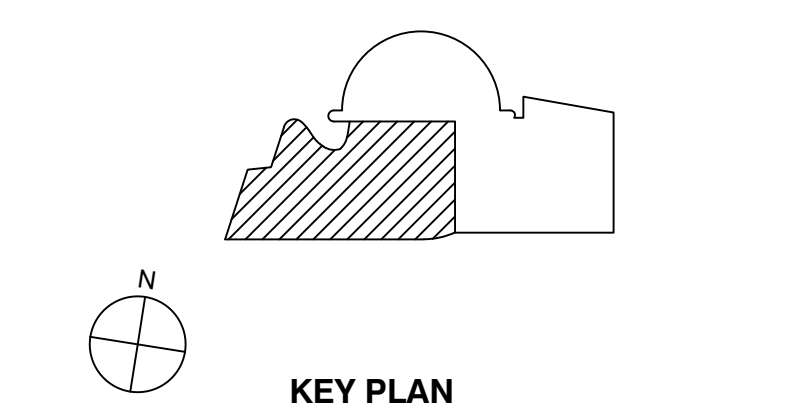
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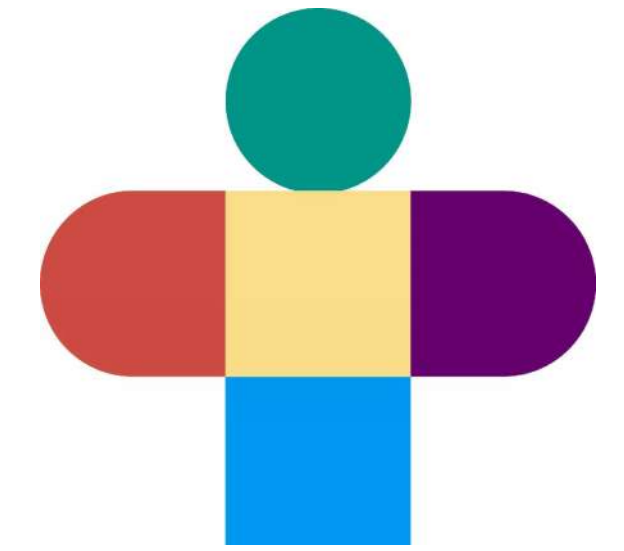
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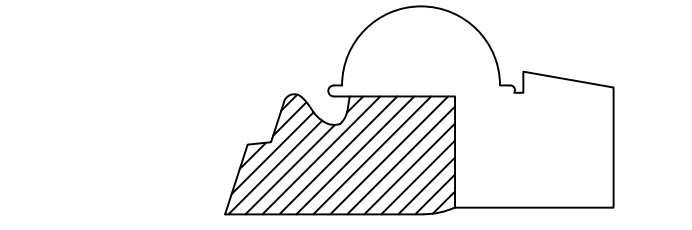
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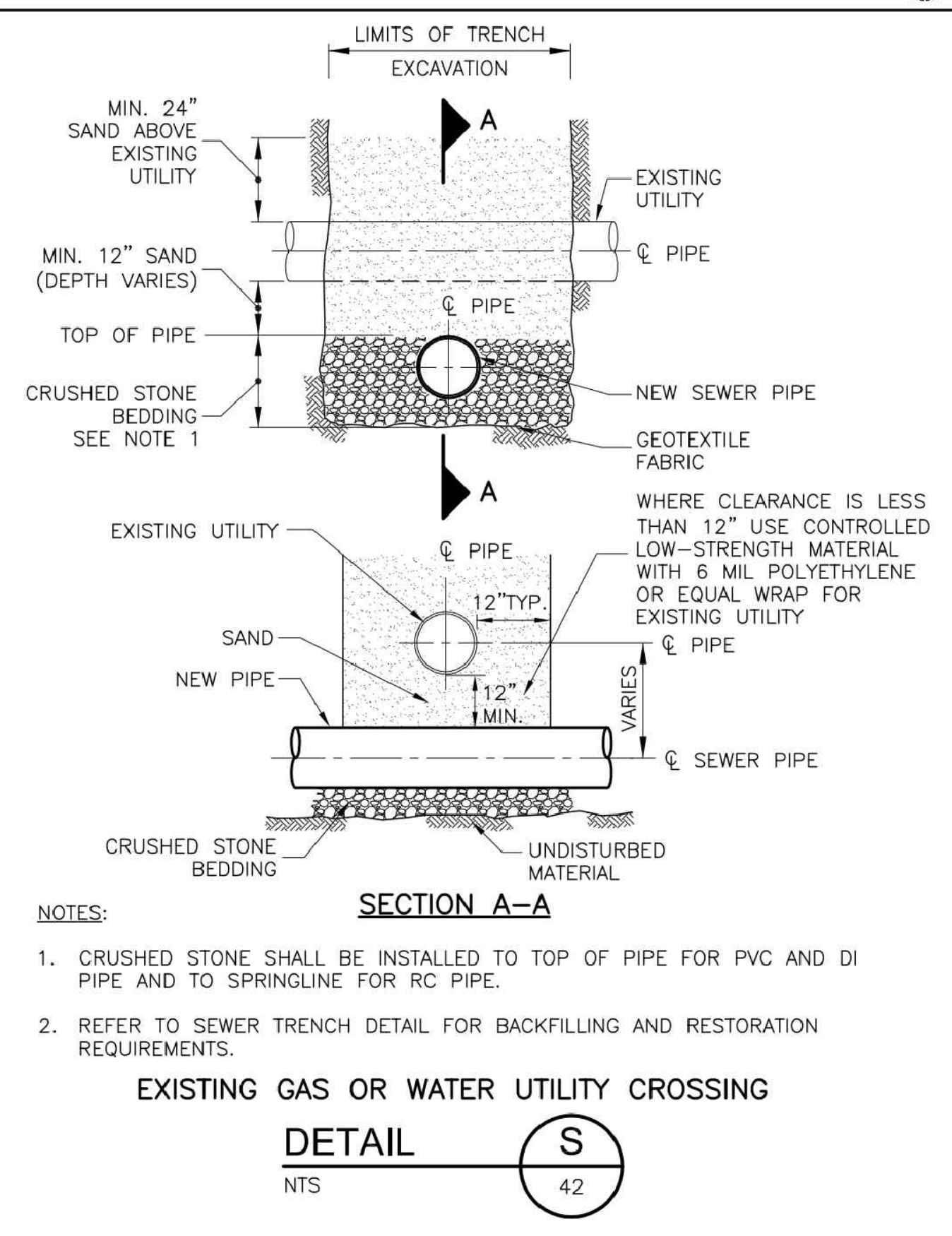
**KEY PLAN**  
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**SITE DETAILS**

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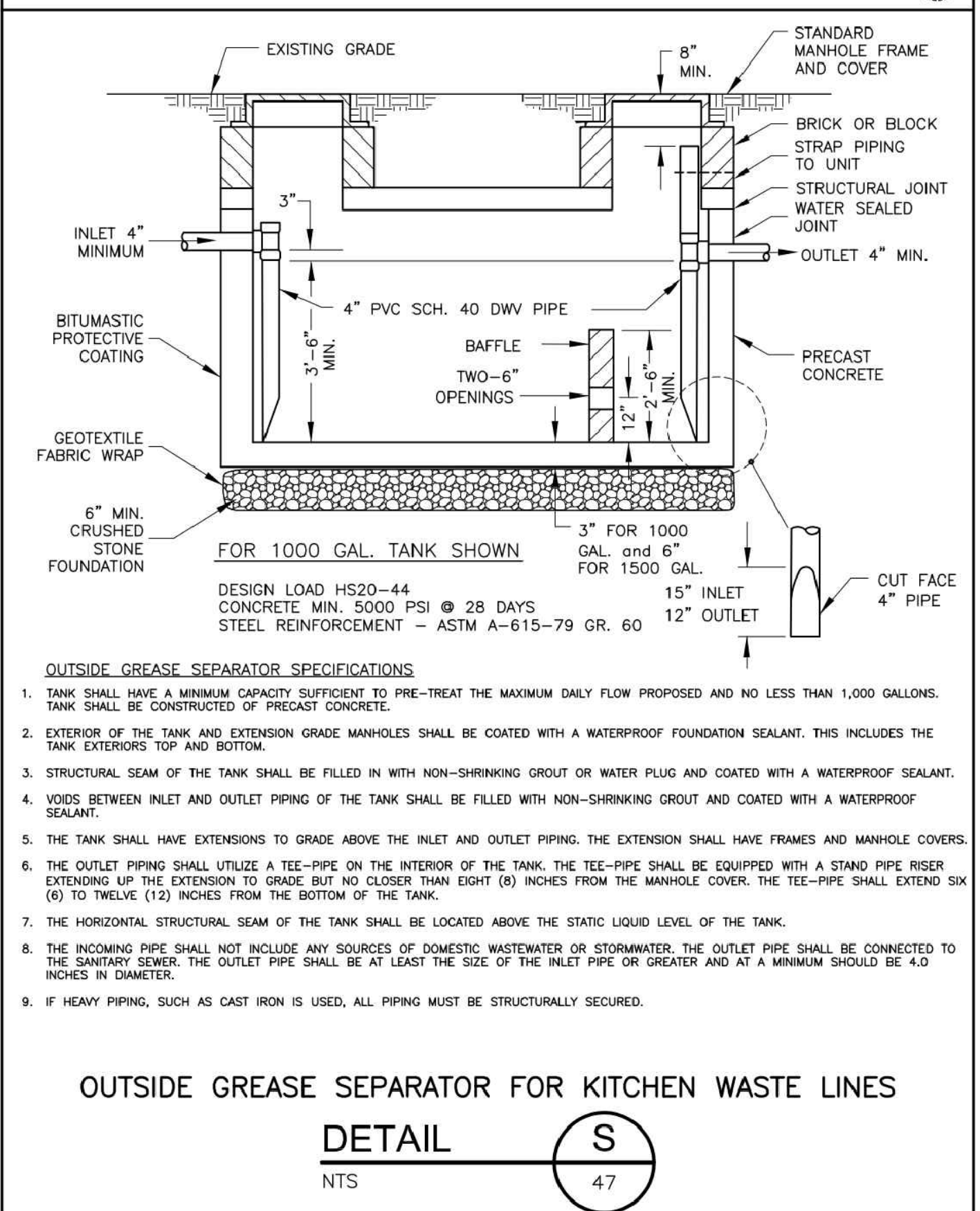
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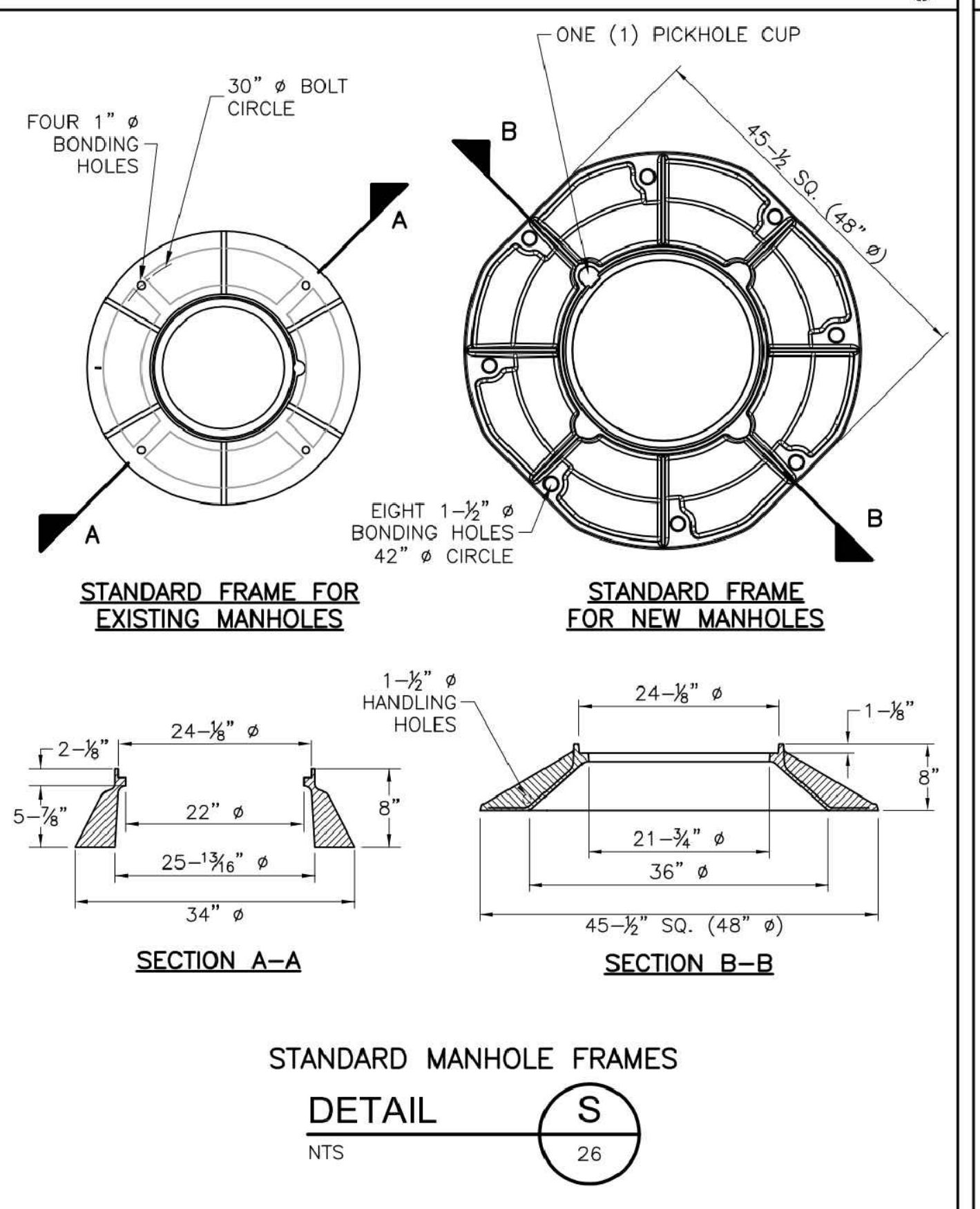
File: S-42 Existing Gas or Water Utility Crossing.dwg  
PAGE 42  
Latest Revision: JANUARY 2017

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SEWER STANDARD DETAILS



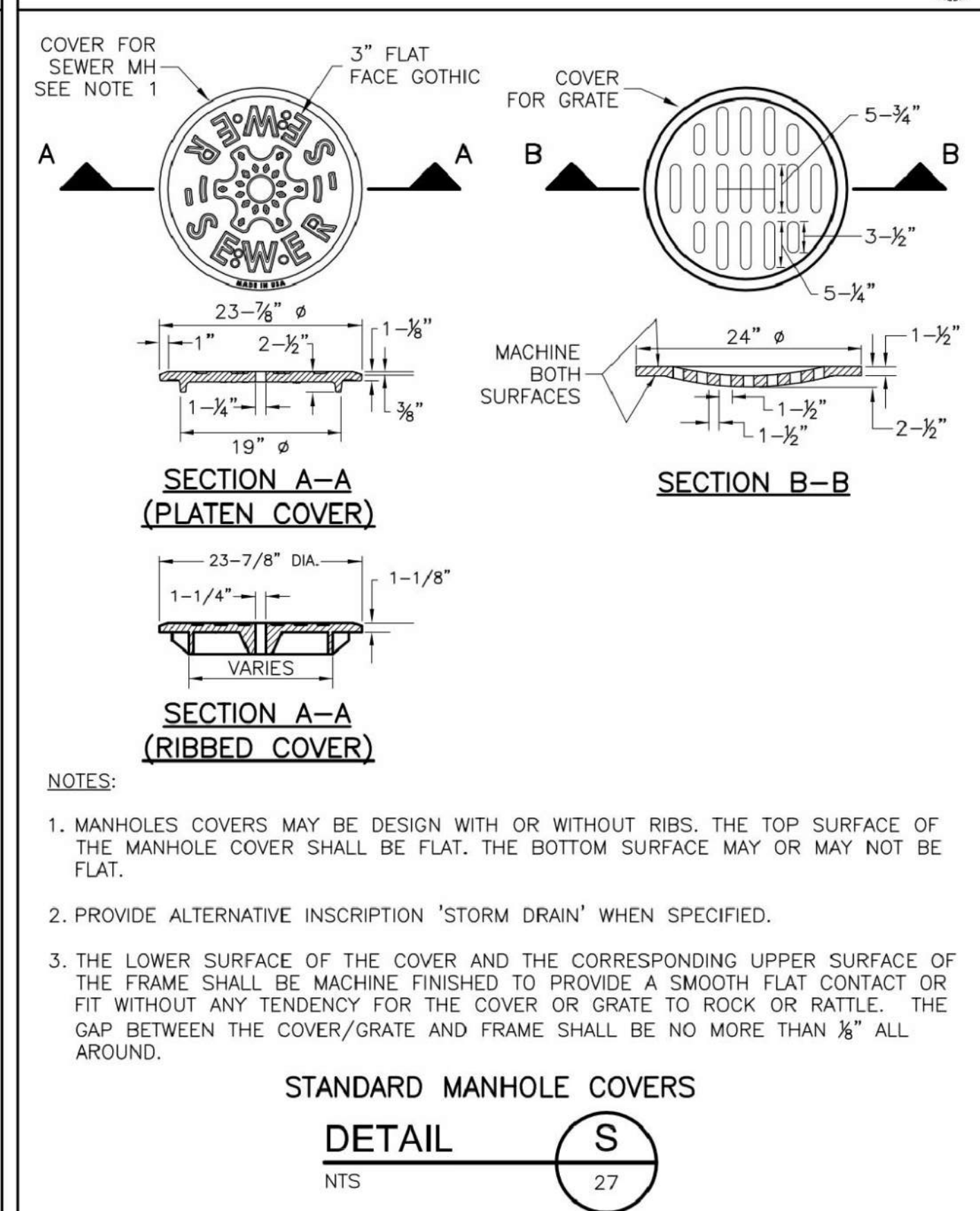
File: S-47 Outside Grease Separator for Kitchen Waste Lines.dwg  
PAGE 47  
Latest Revision: JANUARY 2017

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SEWER STANDARD DETAILS



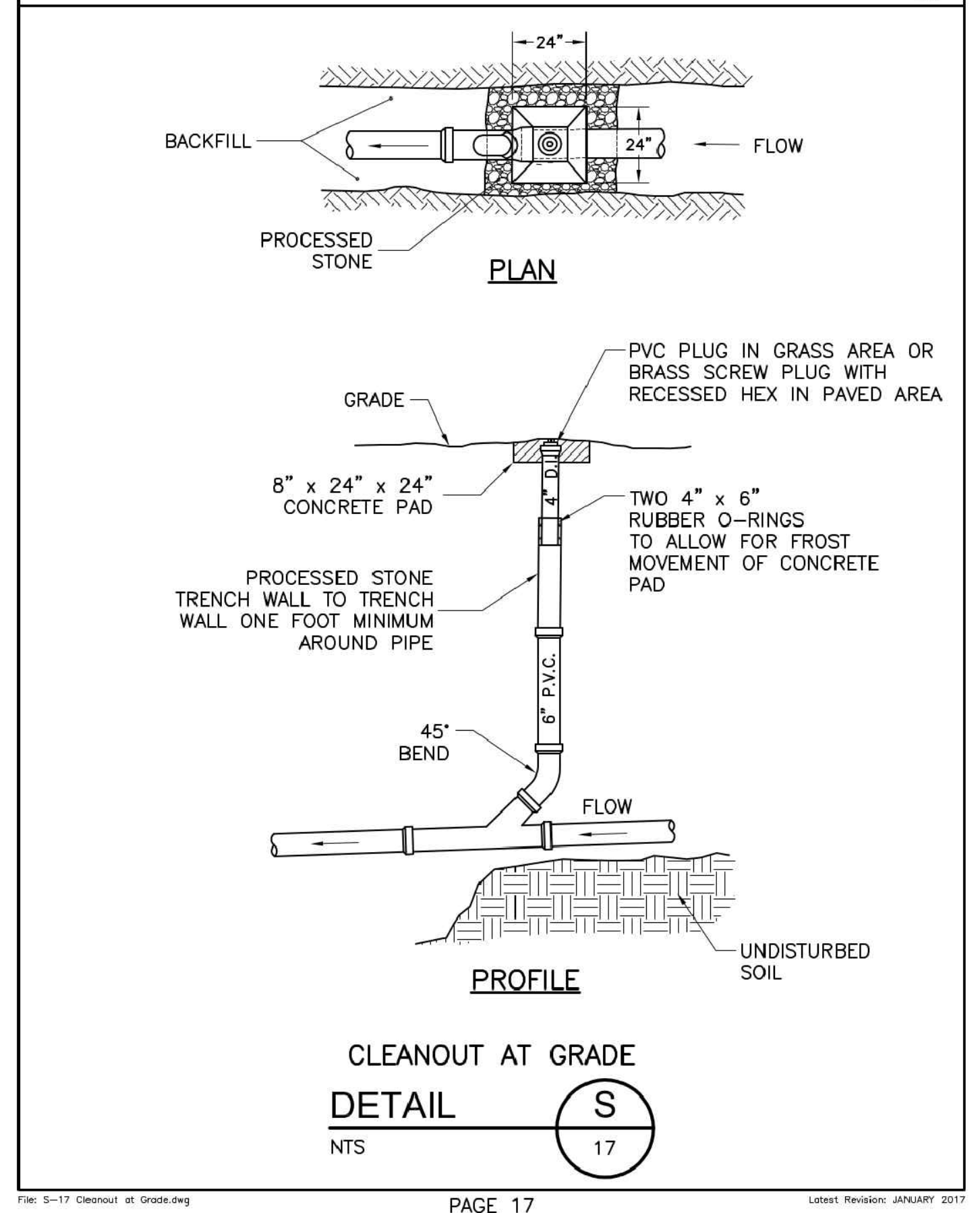
File: S-26 Standard Manhole Frames.dwg  
PAGE 26  
Latest Revision: JANUARY 2017

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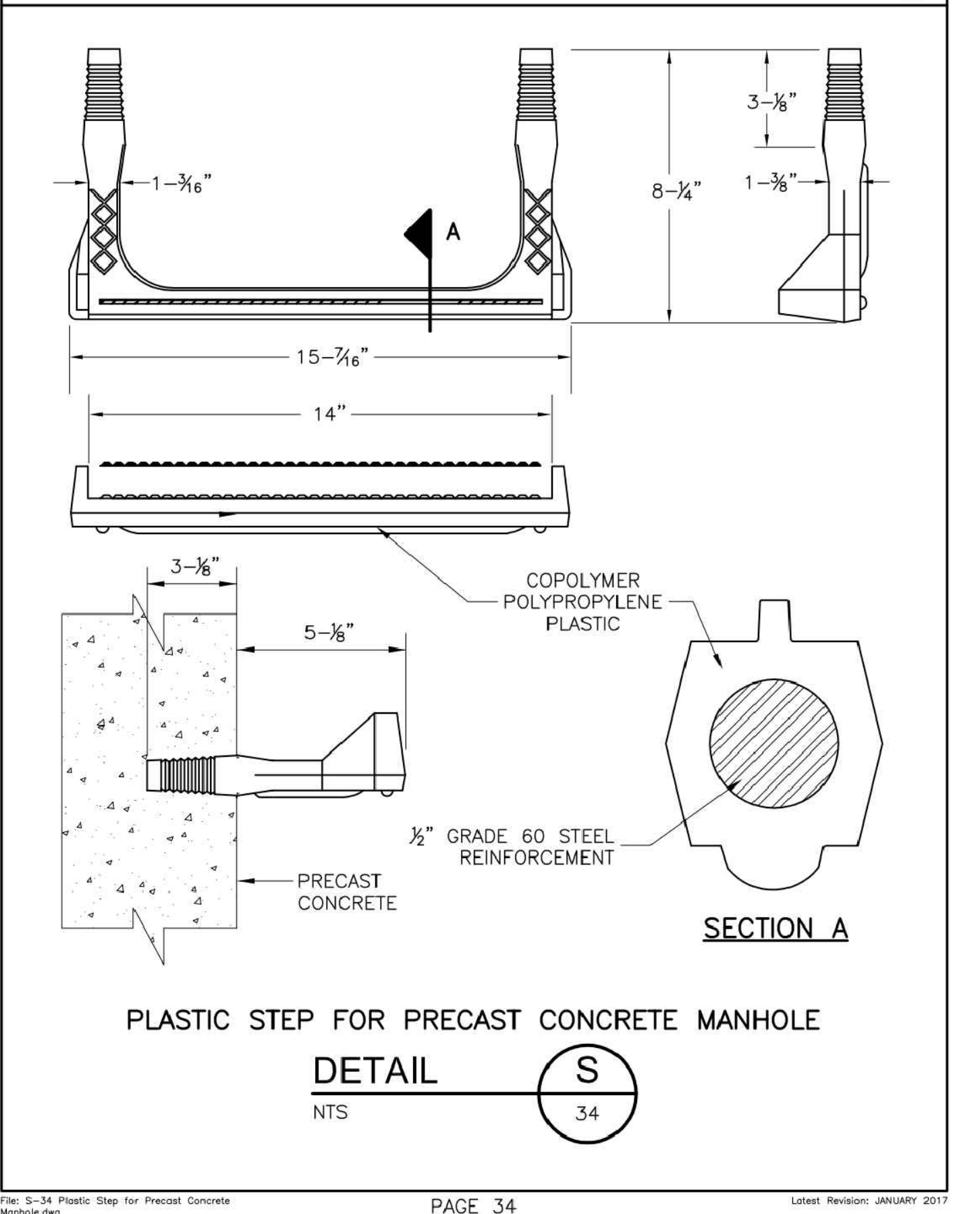
File: S-27 Standard Manhole Covers.dwg  
PAGE 27  
Latest Revision: JANUARY 2017

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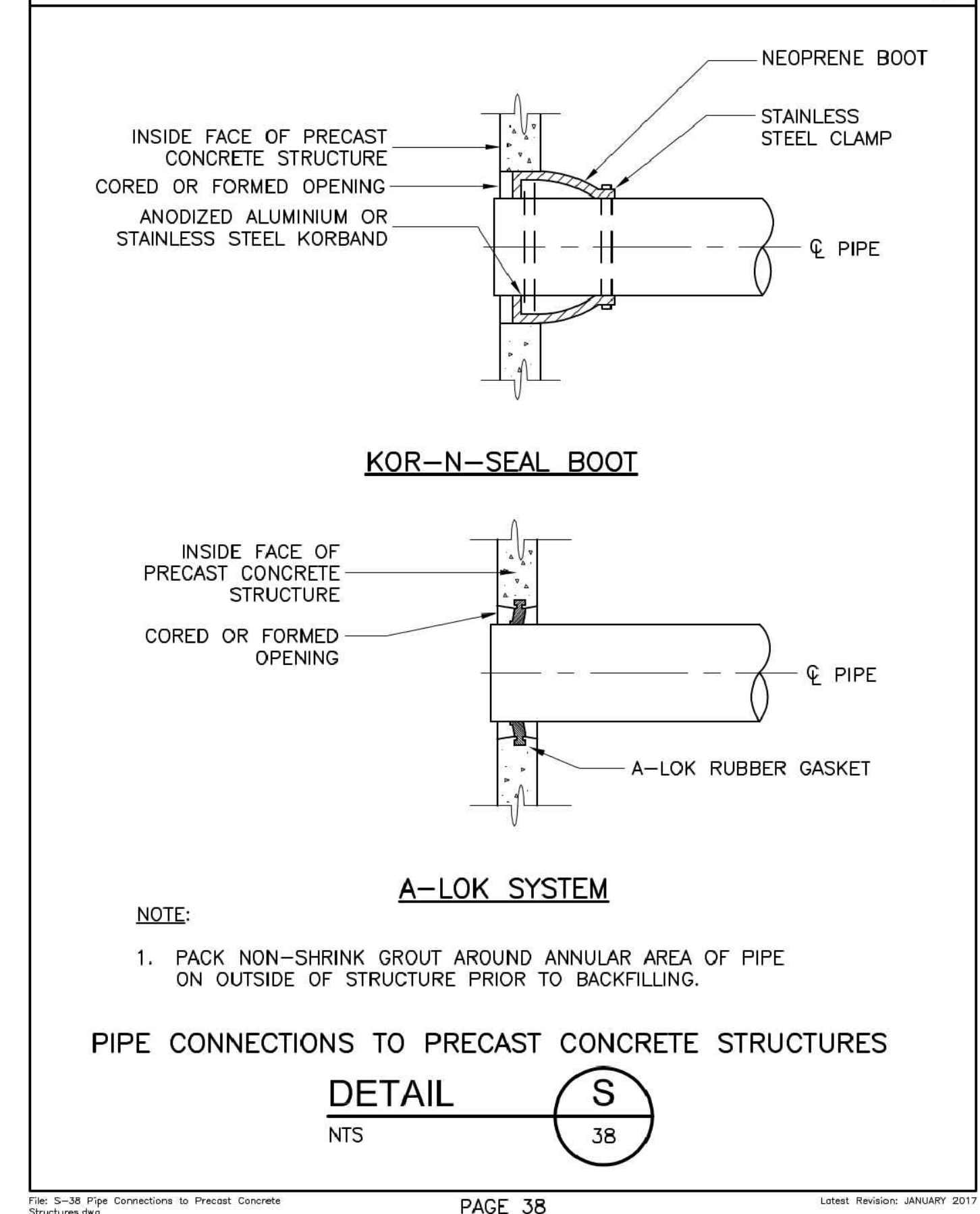
File: S-17 Cleanout at Grade.dwg  
PAGE 17  
Latest Revision: JANUARY 2017

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File: S-34 Plastic Step for Precast Concrete Manhole.dwg  
PAGE 34  
Latest Revision: JANUARY 2017

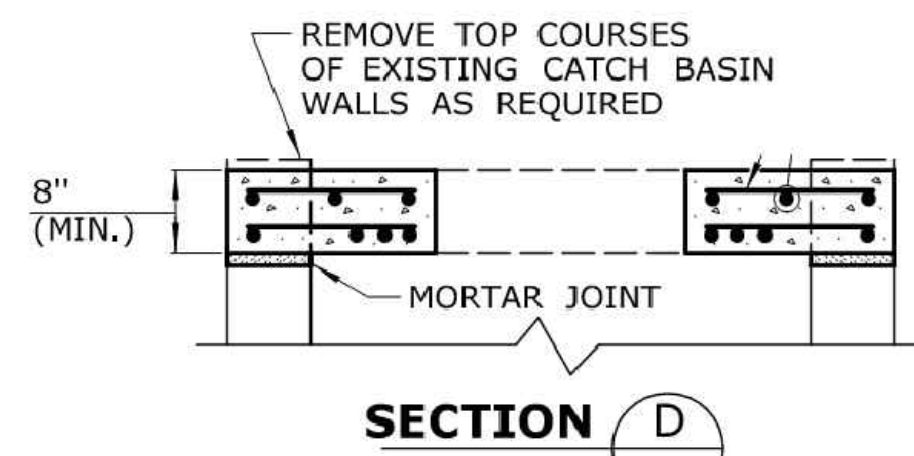
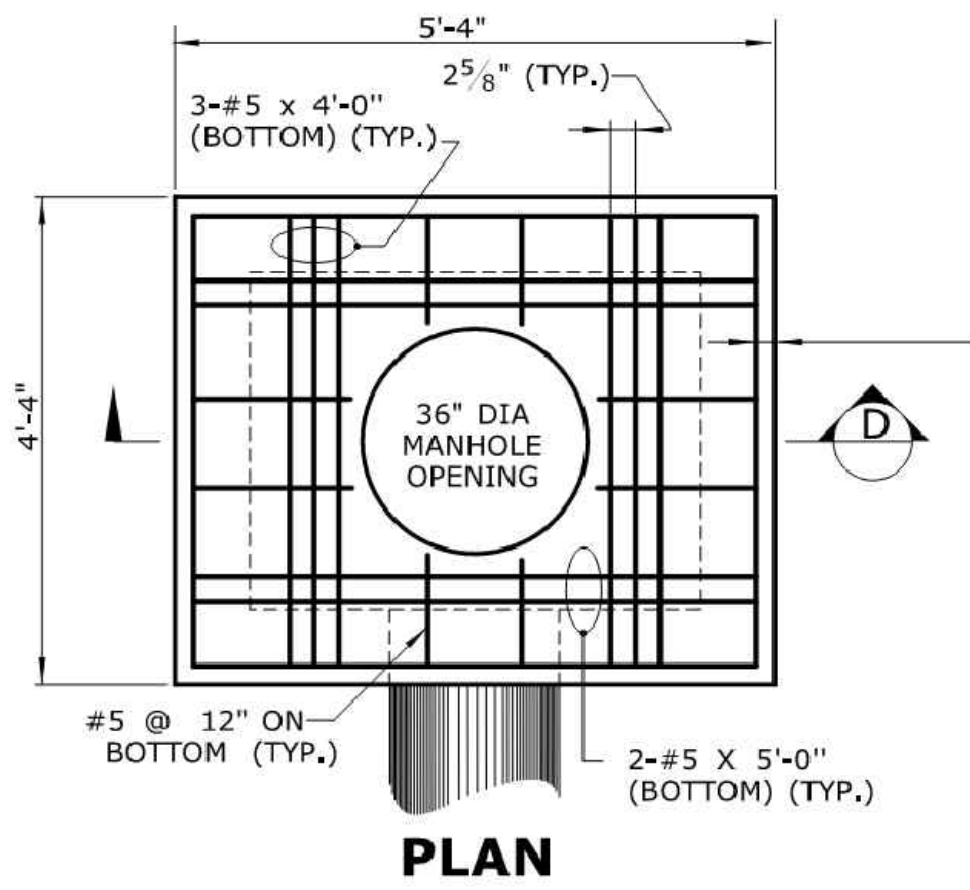
**THE METROPOLITAN DISTRICT**  
SEWER STANDARD DETAILS



File: S-38 Pipe Connections to Precast Concrete Structures.dwg  
PAGE 38  
Latest Revision: JANUARY 2017

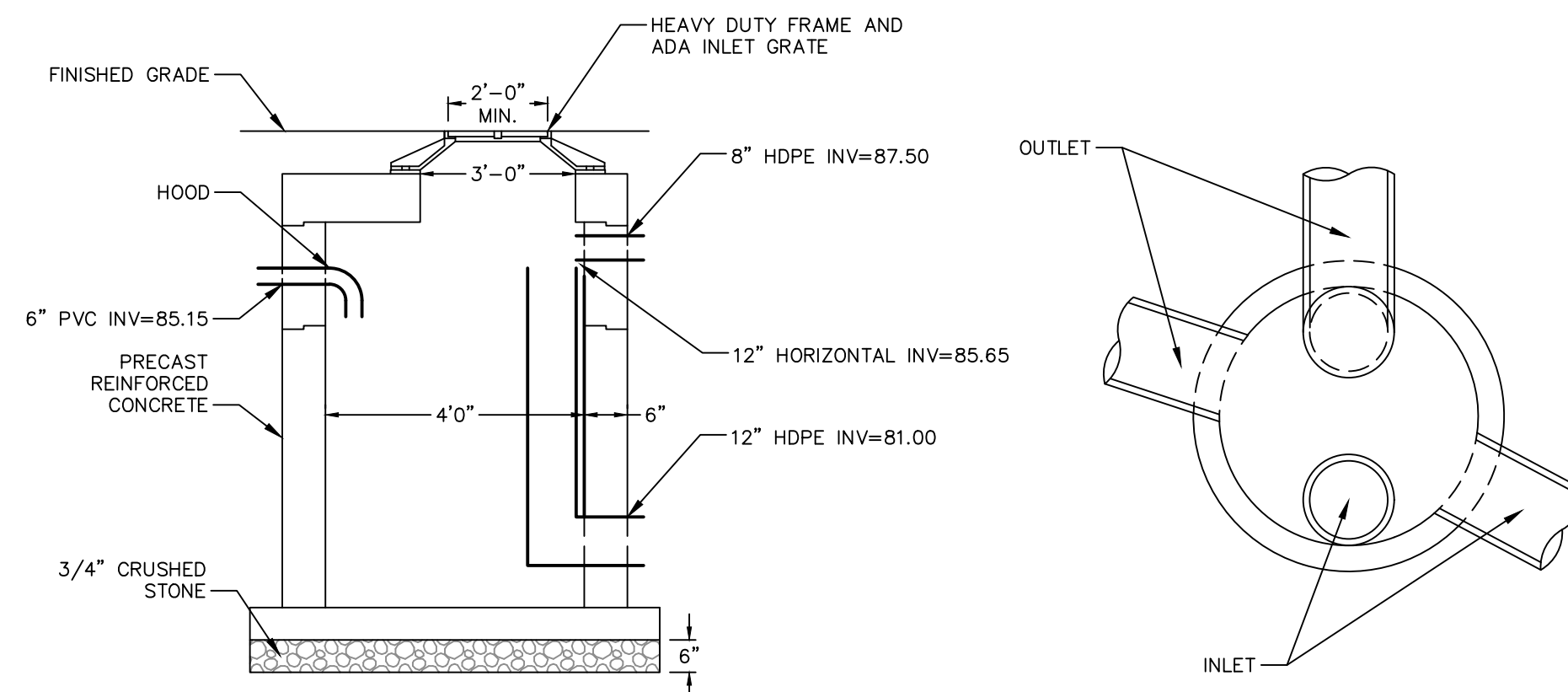
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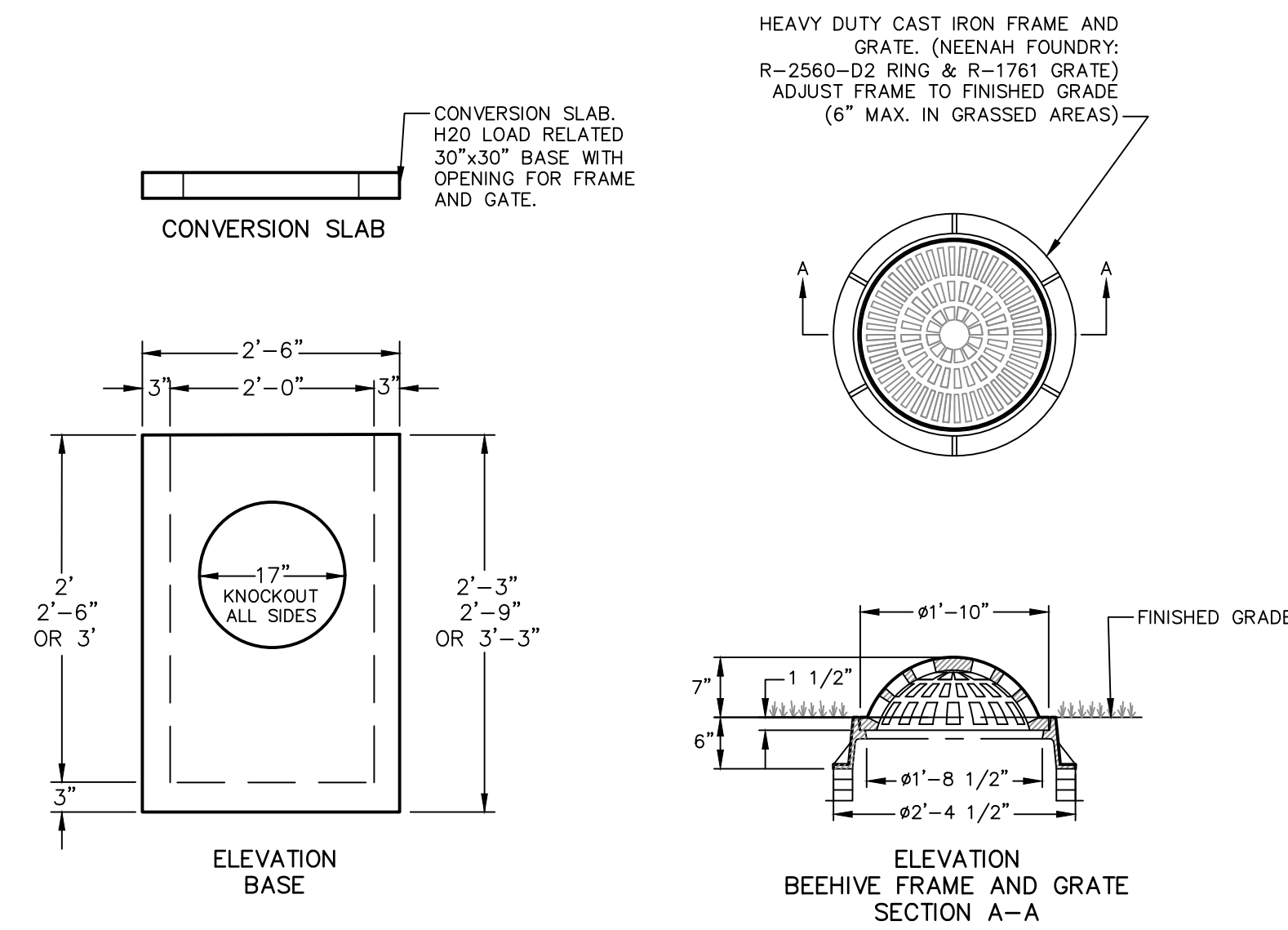


**TOP SLAB TO CONVERT  
CATCH BASIN TO MANHOLE**

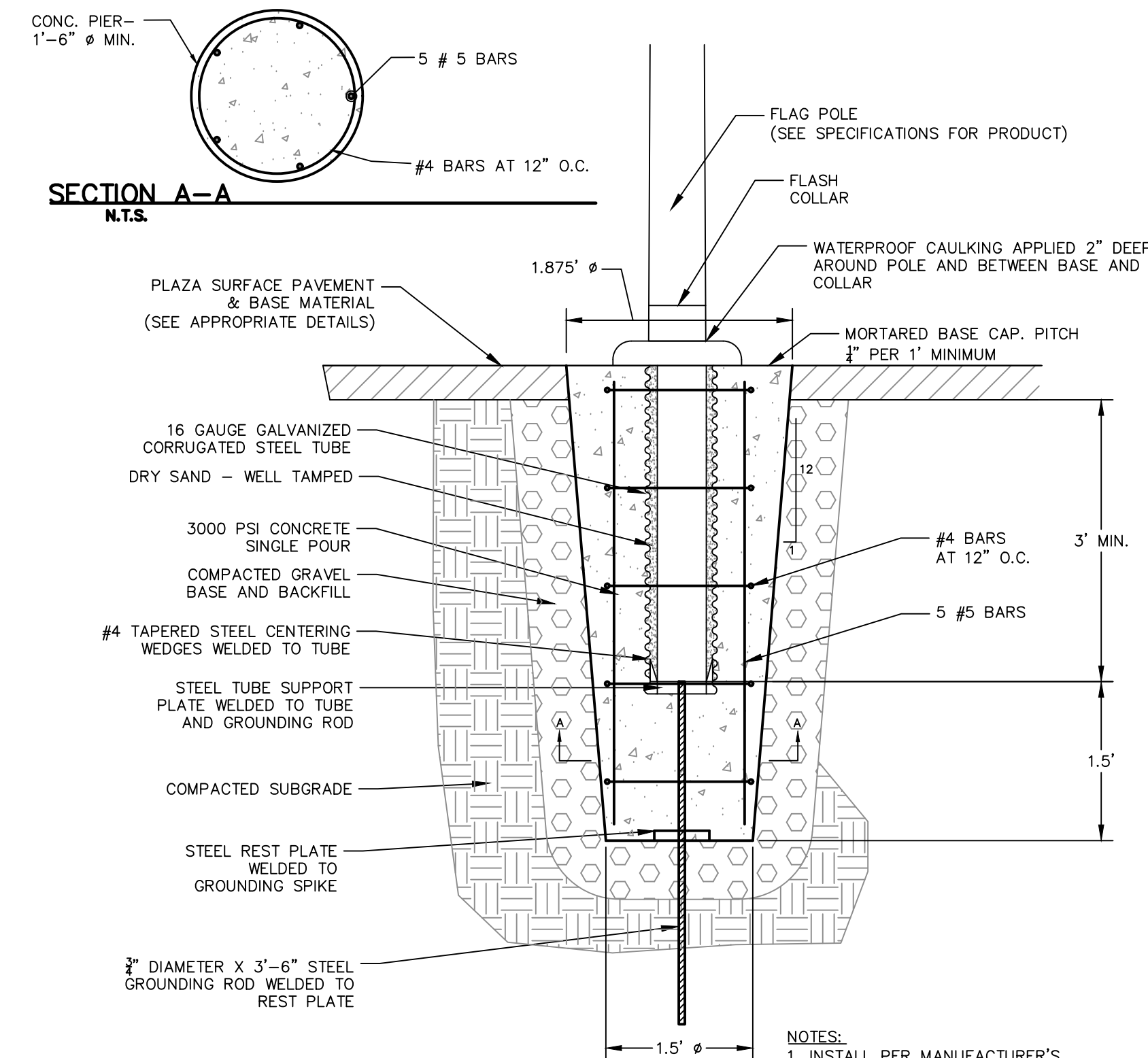
**CATCH BASIN TO MANHOLE CONVERSION  
NOT TO SCALE**



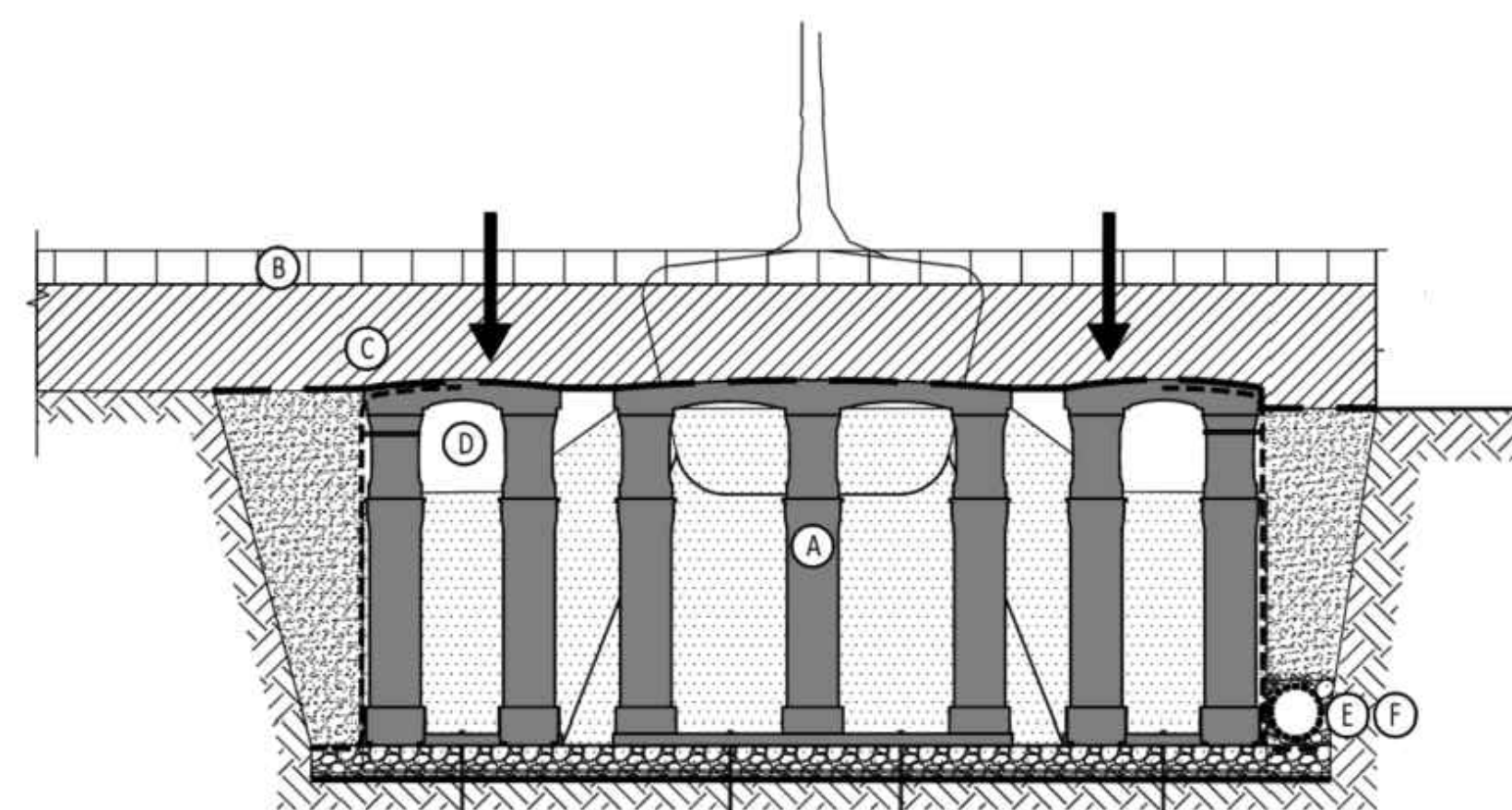
**OUTLET CONTROL STRUCTURE  
NOT TO SCALE**



**YARD DRAIN (HEAVY DUTY)  
NOT TO SCALE**

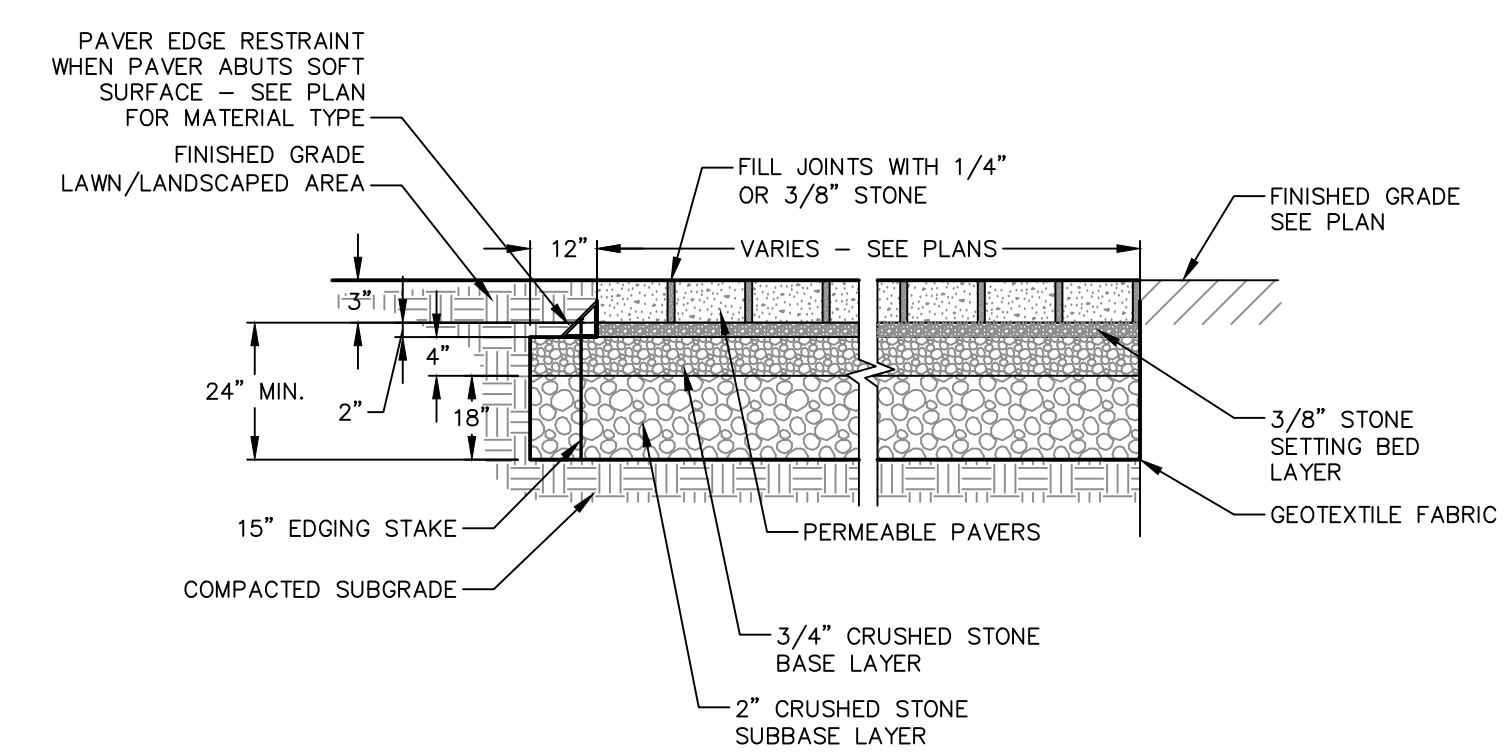


**FLAG POLE AND BASE  
N.T.S.**

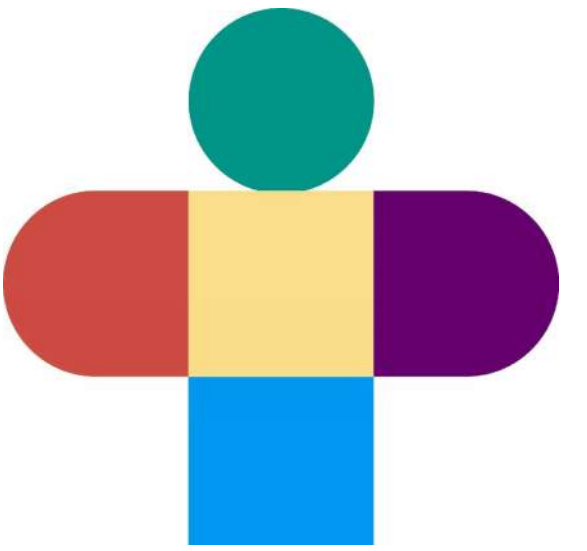


**SILVA CELL SYSTEM + PERMEABLE PAVEMENT**

- NOT TO SCALE
- KEY PLAN**
- A SILVA CELL SYSTEM (DECK, BASE, AND POSTS)
  - B PERMEABLE PAVEMENT
  - C AGGREGATE STORAGE LAYER
  - D OPTIONAL PONDING SPACE
  - E COLLECTION PIPE
  - F CONNECTION TO MUNICIPAL STORM SYSTEM
- DIRECTION OF WATER FLOW →



**INTERLOCKING PERMEABLE CONCRETE PAVERS  
NOT TO SCALE**



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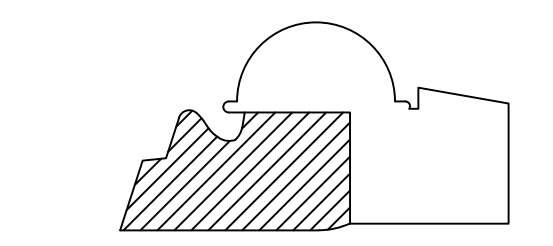
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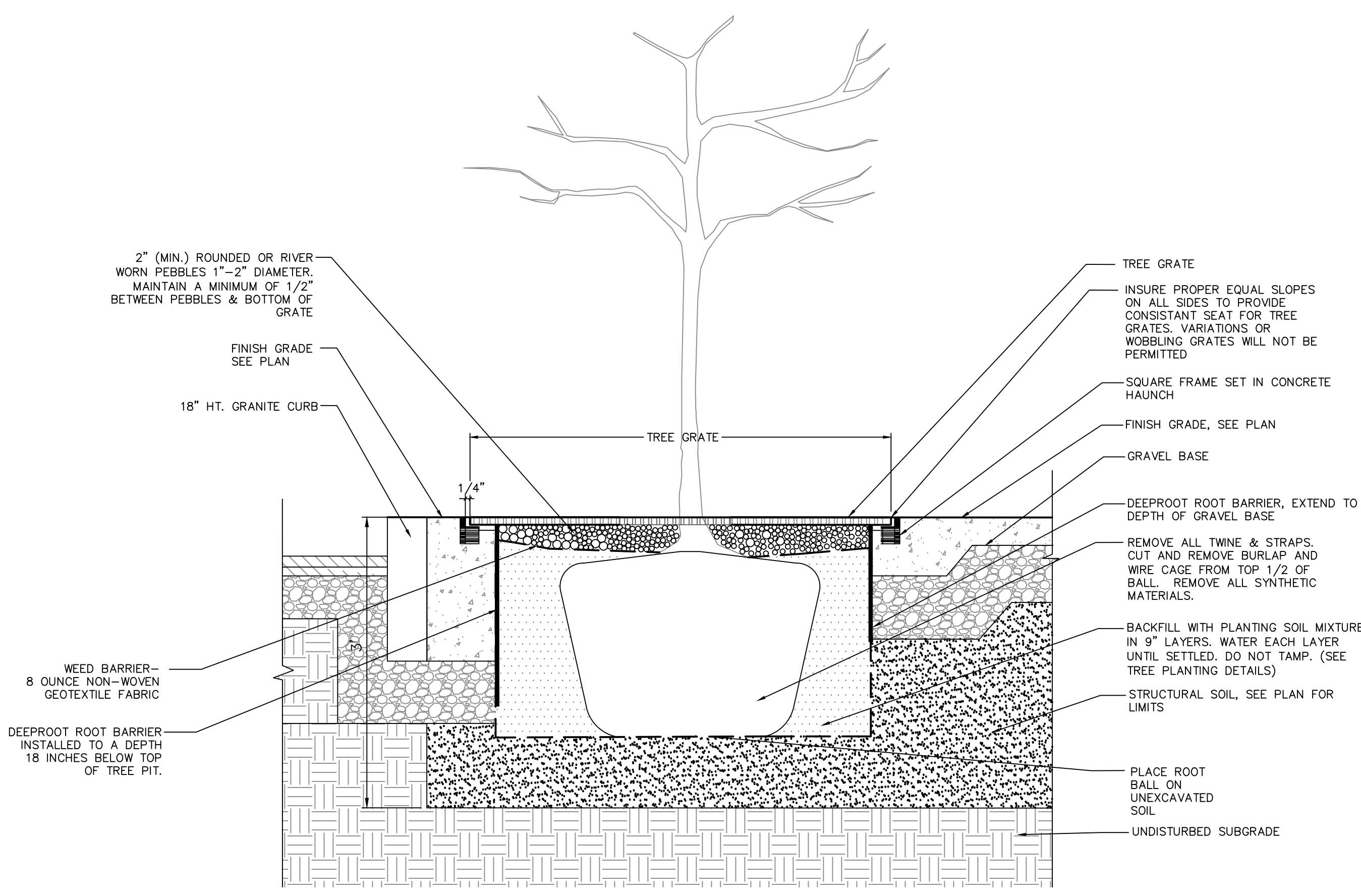
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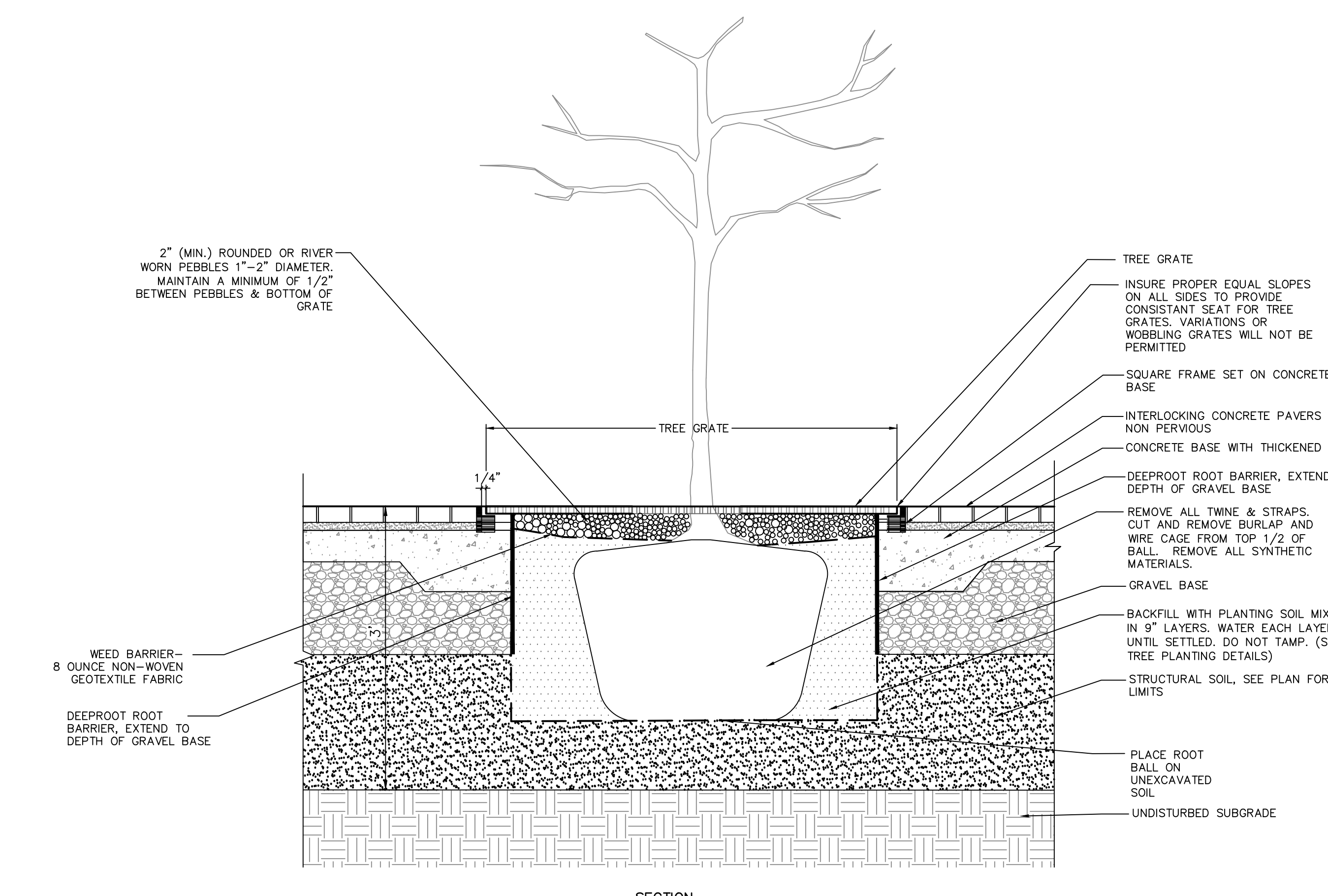
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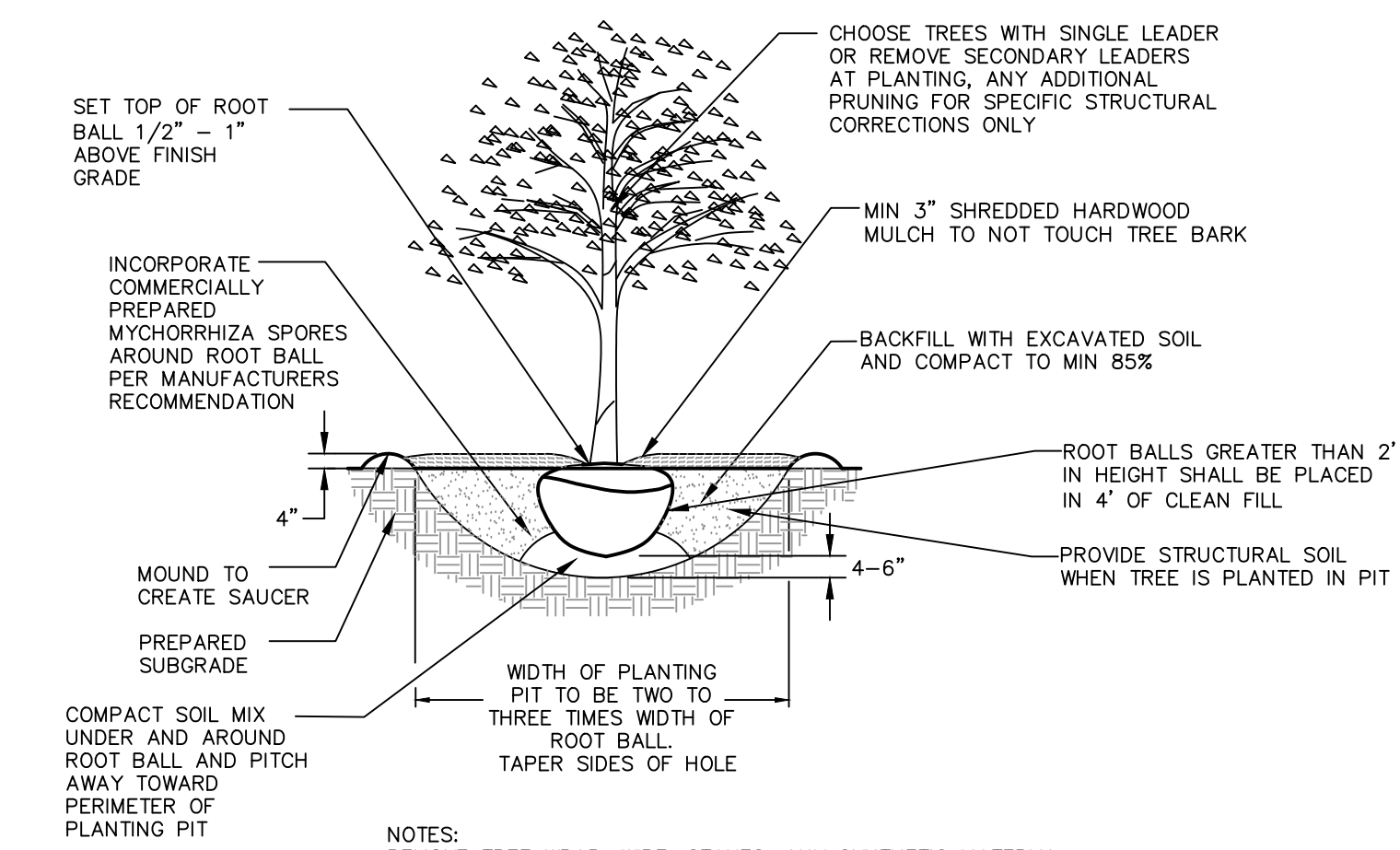




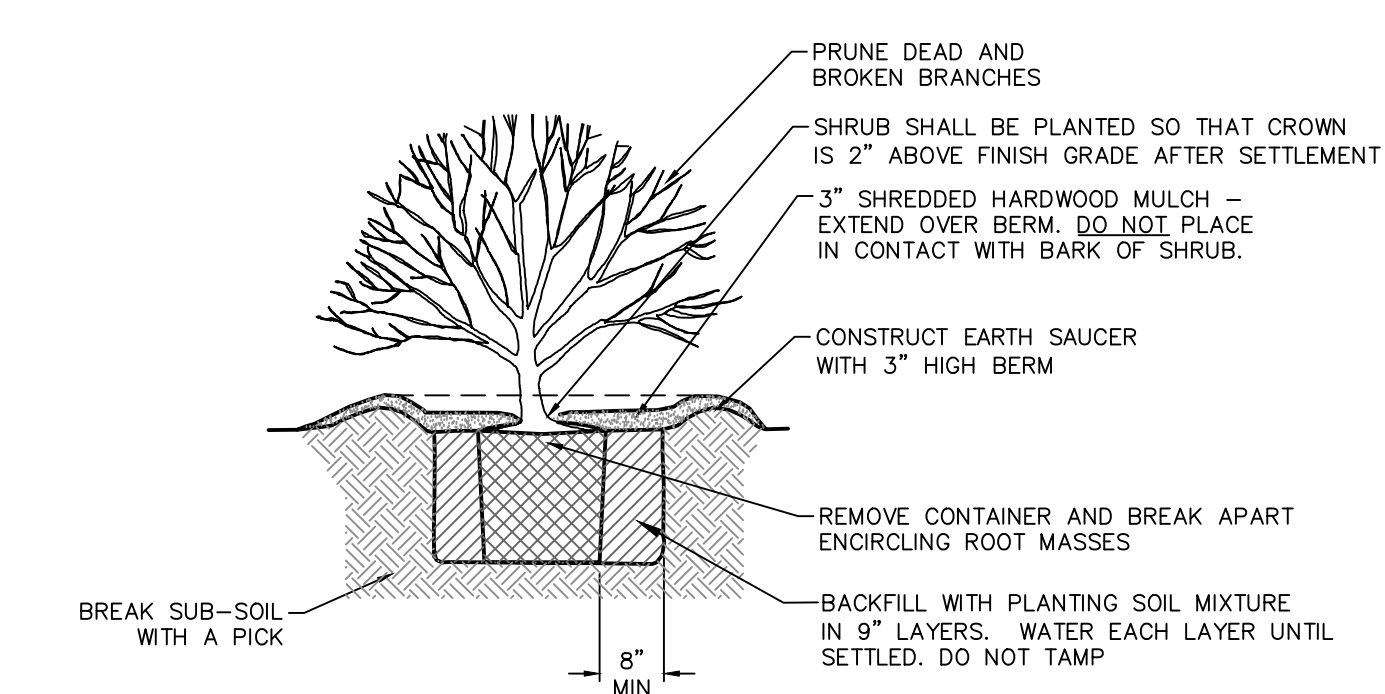
**TREE PLANTING WITH GRATE AT CURB EDGE / CONCRETE PAVING**  
NOT TO SCALE



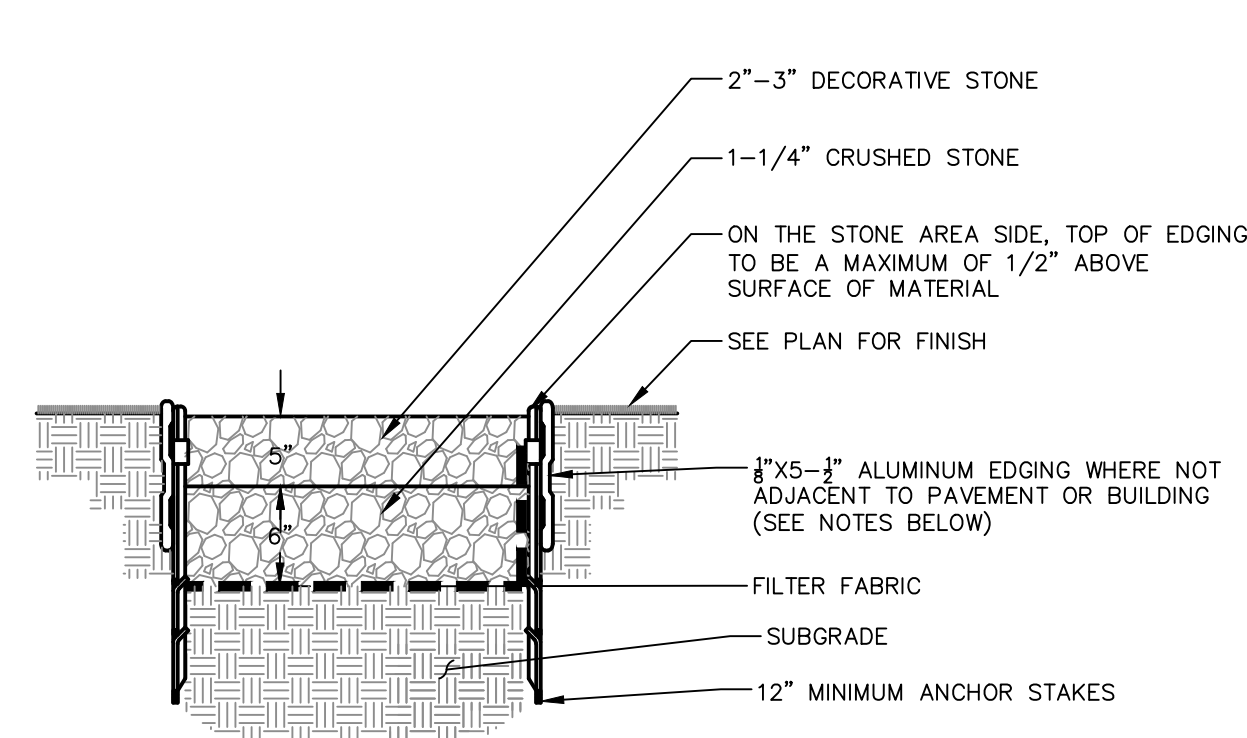
**TREE PLANTING WITH GRATE AT INTERLOCKING CONCRETE PAVERS**  
NOT TO SCALE



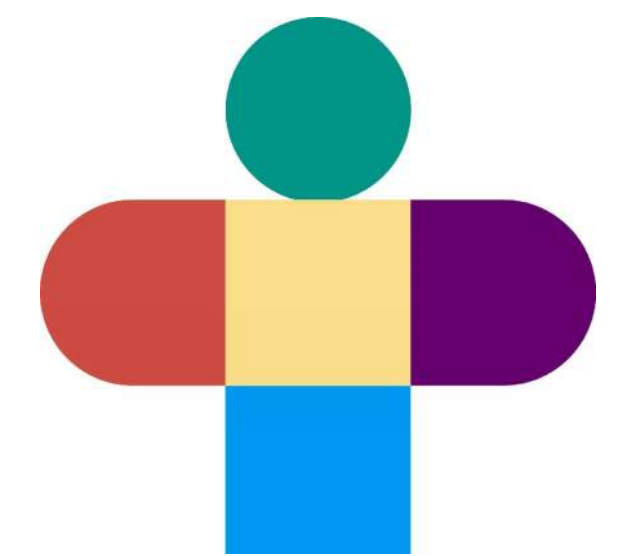
**TREE PLANTING**  
NOT TO SCALE



**CONTAINERIZED PLANT MATERIAL**  
NOT TO SCALE



**CRUSHED STONE SURFACING**  
NOT TO SCALE



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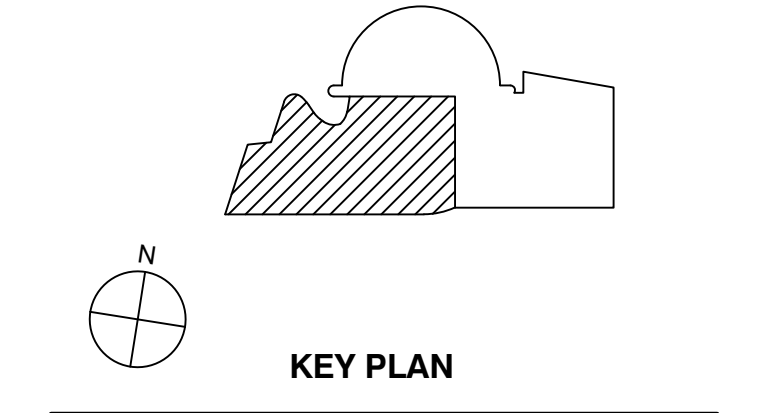
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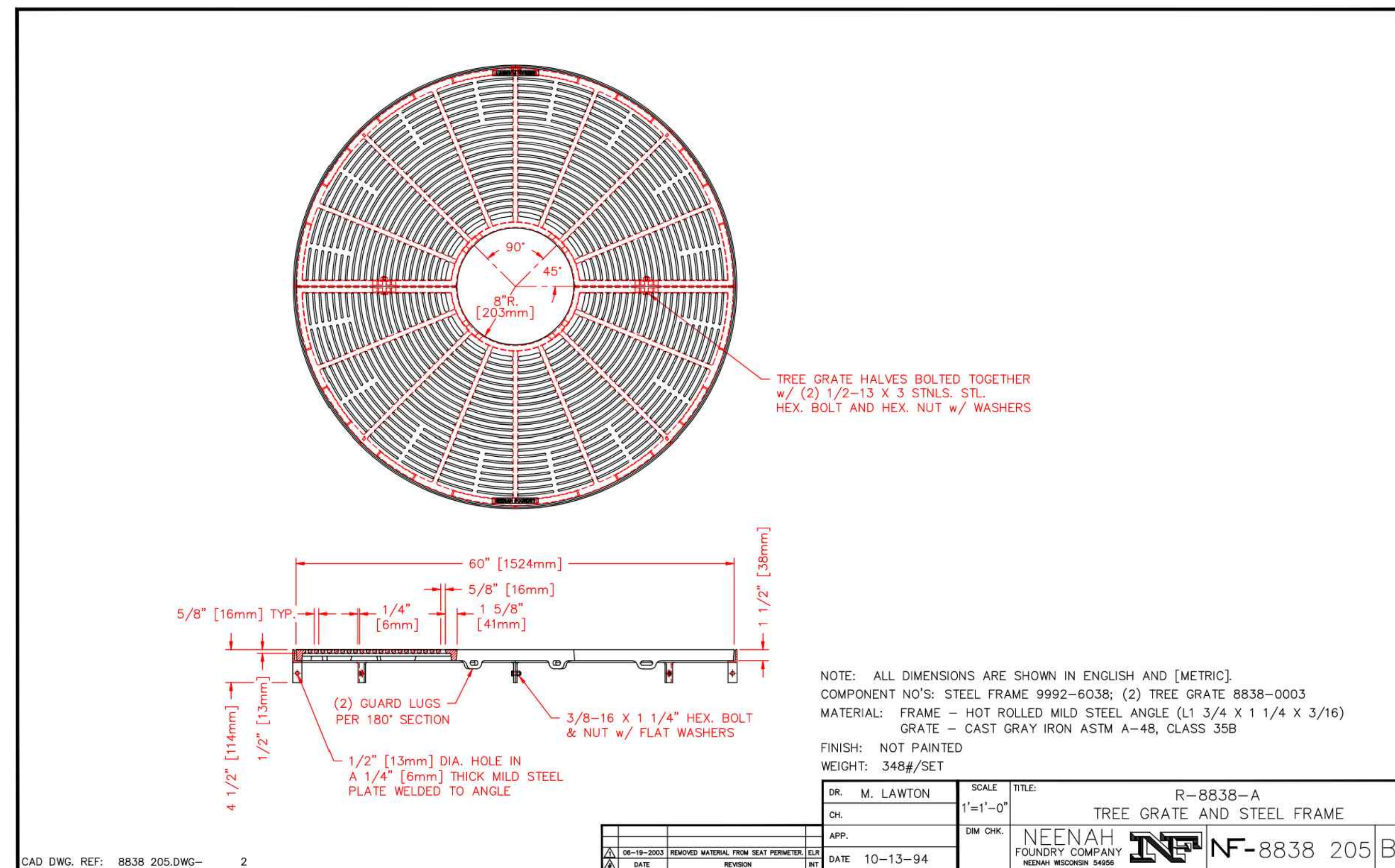
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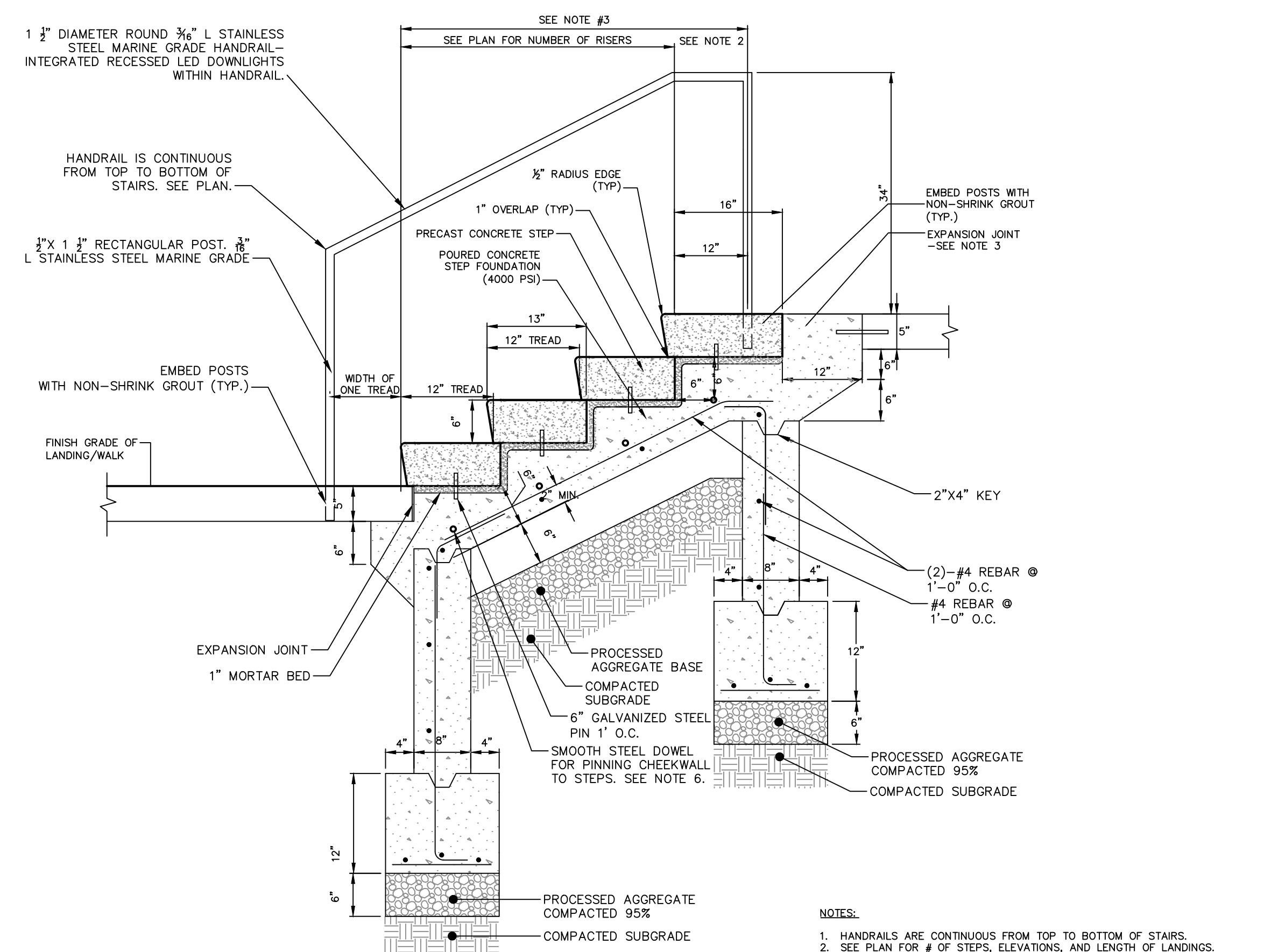
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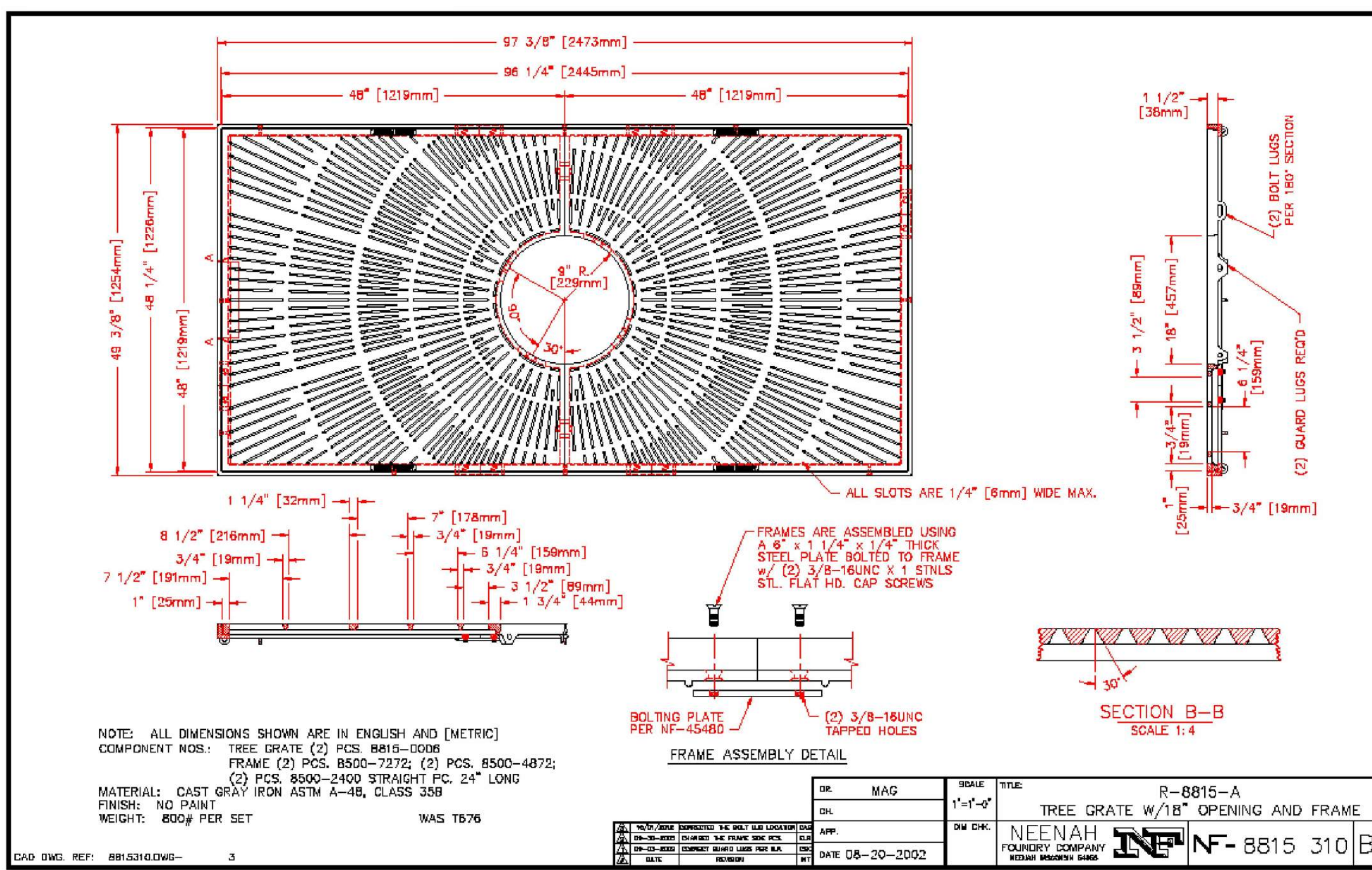




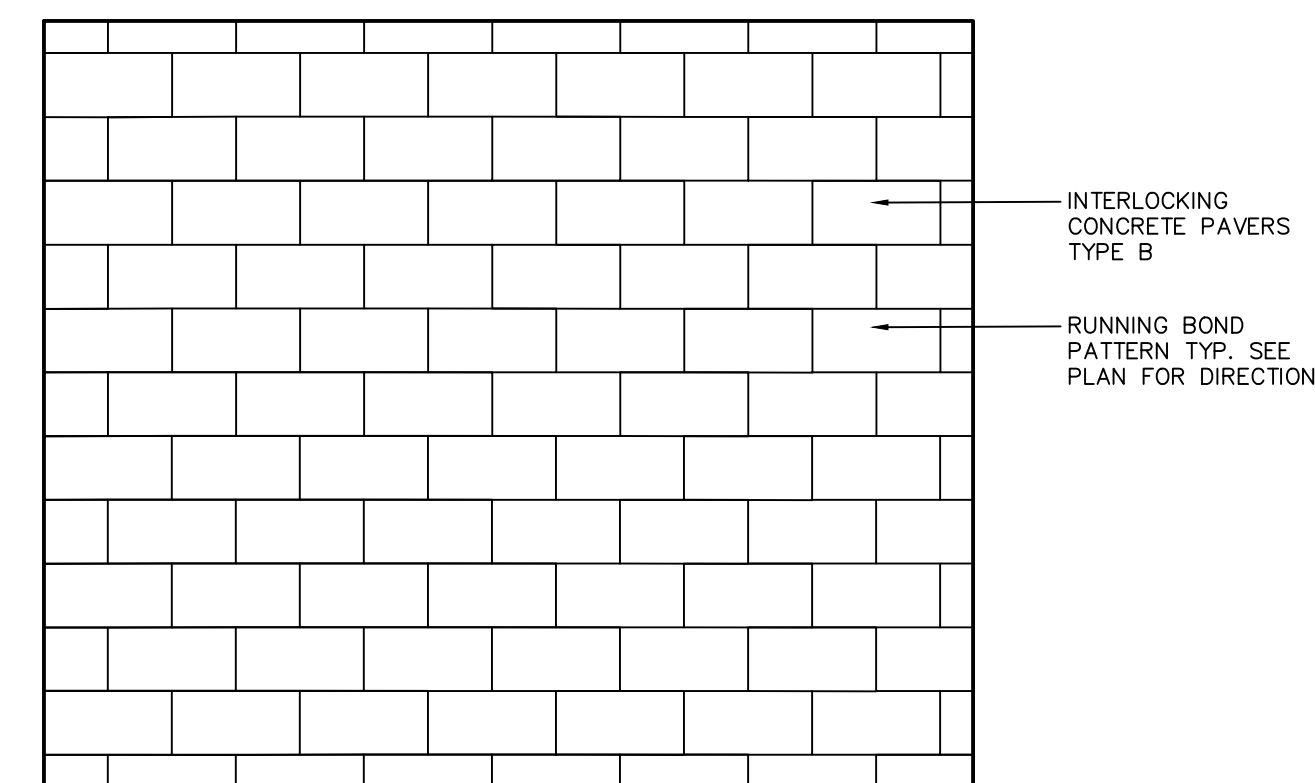
ROUND TREE GRATE  
NOT TO SCALE



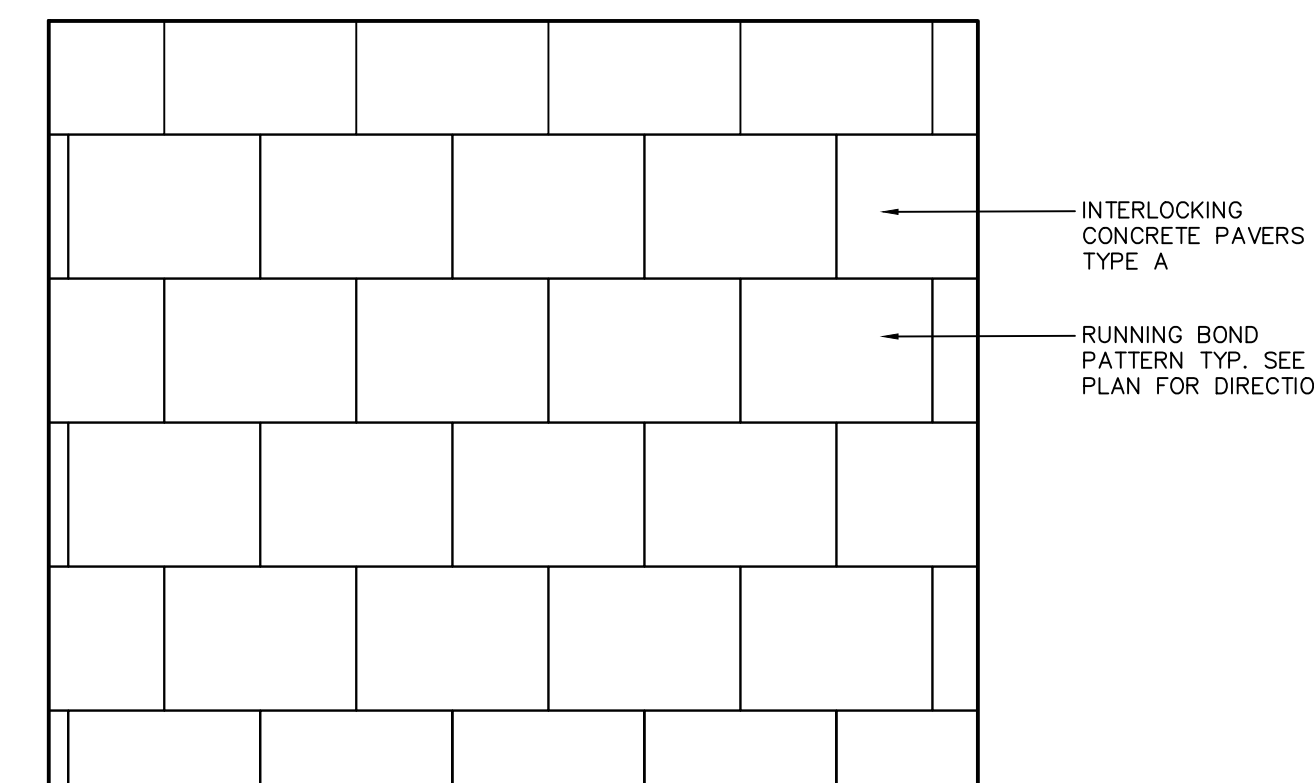
PRECAST CONCRETE STAIR AND HANDRAIL  
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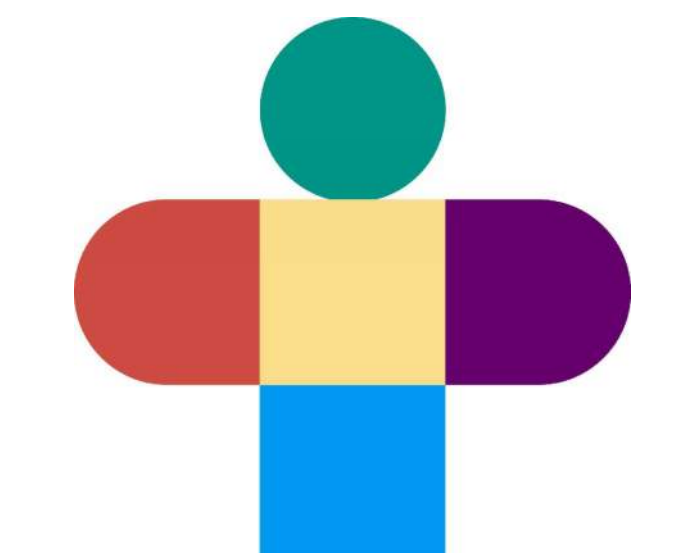
RECTANGULAR TREE GRATE  
NOT TO SCALE



PAVER LAYOUT TYPE B  
NOT TO SCALE



PAVER LAYOUT TYPE A  
NOT TO SCALE



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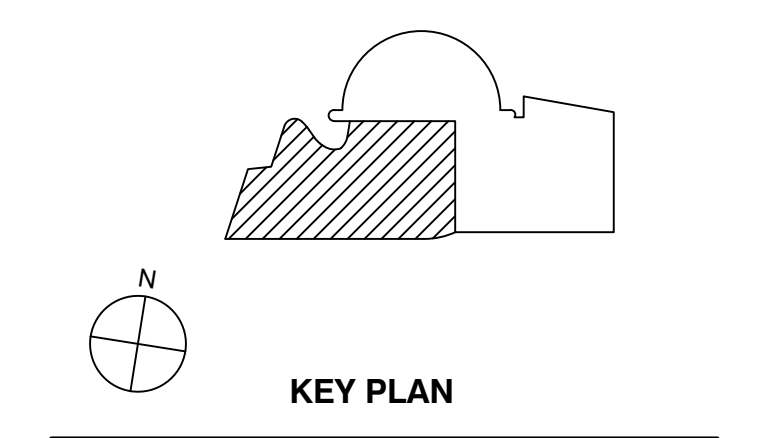
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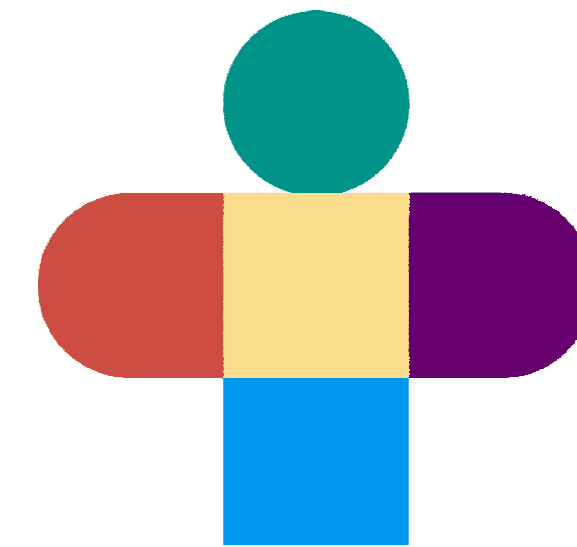
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VIEW LOOKING SOUTH FROM THE CORNER OF ZWIEBACK STREET AND WASHINGTON STREET



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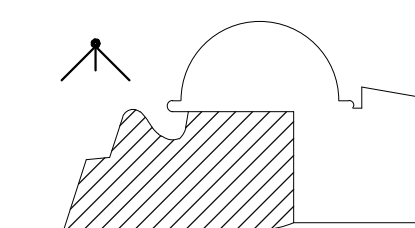
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Site Plan Submission	Nov. 4, 2022
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KEY PLAN

Drawing Title:

**EXTERIOR VIEW**

Project No.: 006719.00 Checked by: GC

**G0101-1**

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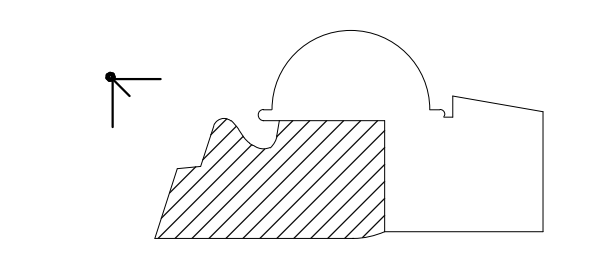
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Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



**KEY PLAN**

Drawing Title:

**EXTERIOR VIEW**

Project No.: 006719.00 Checked by: GC

**G0101-2**

VIEW ACROSS WASHINGTON STREET LOOKING SOUTHEAST AT THE NEW TOWER EXPANSION

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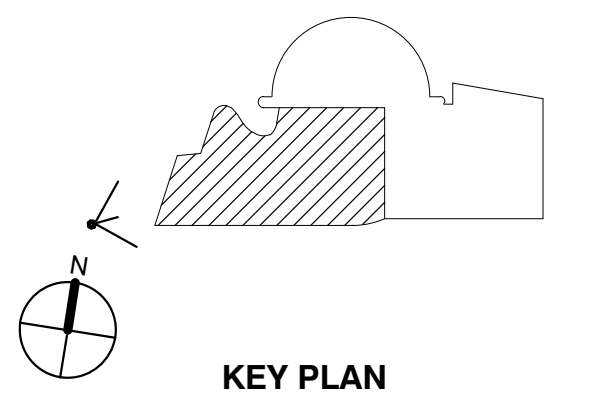
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VIEW ACROSS WASHINGTON STREET LOOKING NORTHEAST AT THE NEW TOWER EXPANSION

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Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



Drawing Title:

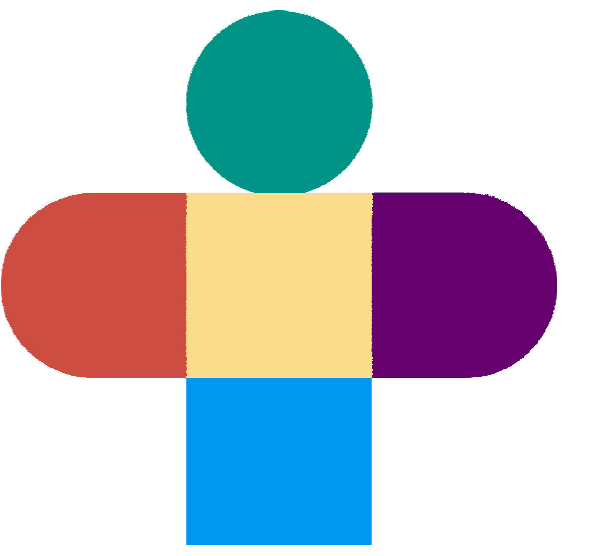
**EXTERIOR VIEW**

Project No.: 006719.00 Checked by: GC

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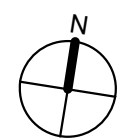
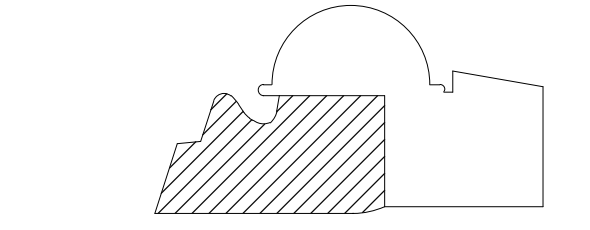
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	Site Plan Submission	Nov. 4, 2022



KEY PLAN

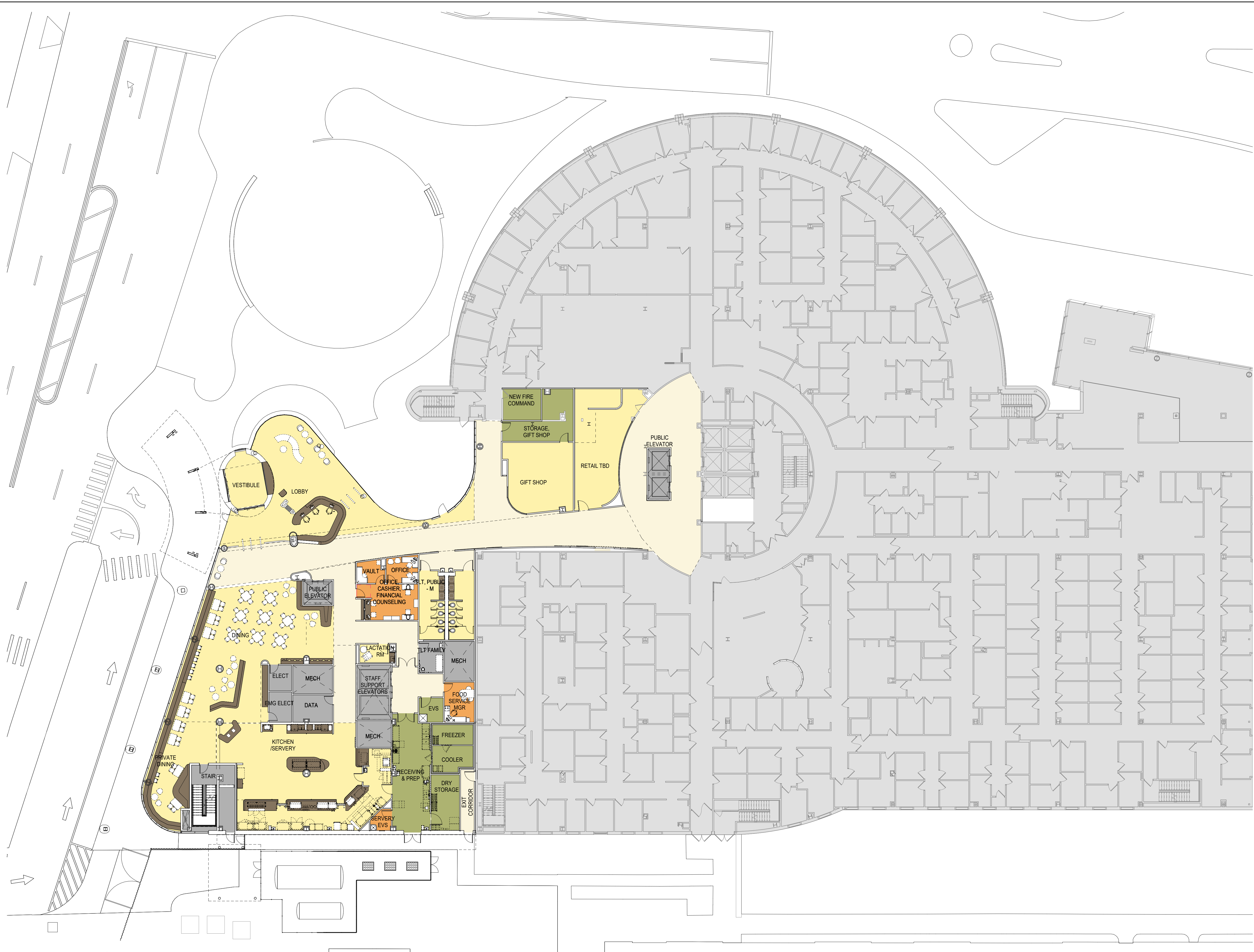
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**LEVEL 02 FLOOR PLAN**

Project No.: 006719.00 Checked by: GC

**A0102-1**

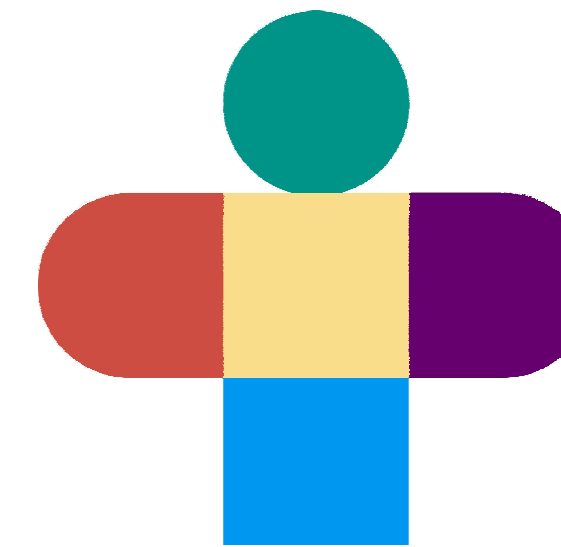
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**1 LEVEL 02 - FLOOR PLAN**  
1/16" = 1'-0"

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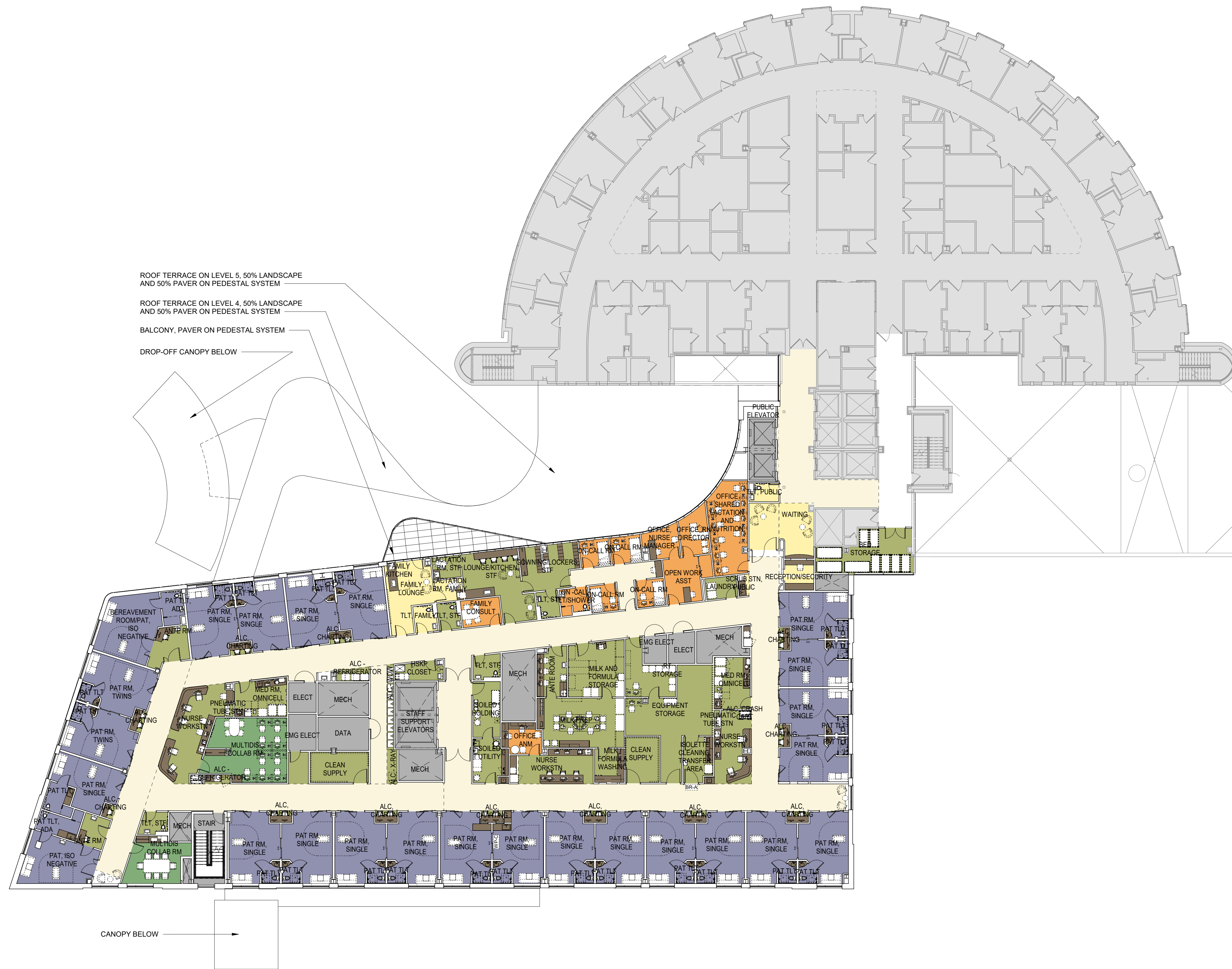
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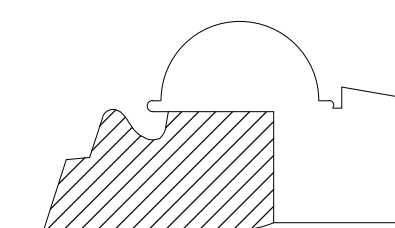
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**KEY PLAN**

Drawing Title:

**LEVEL 06 FLOOR PLAN**

Project No.: 006719.00 Checked by: GC

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**1 LEVEL 06 - FLOOR PLAN**  
1/16" = 1'-0"



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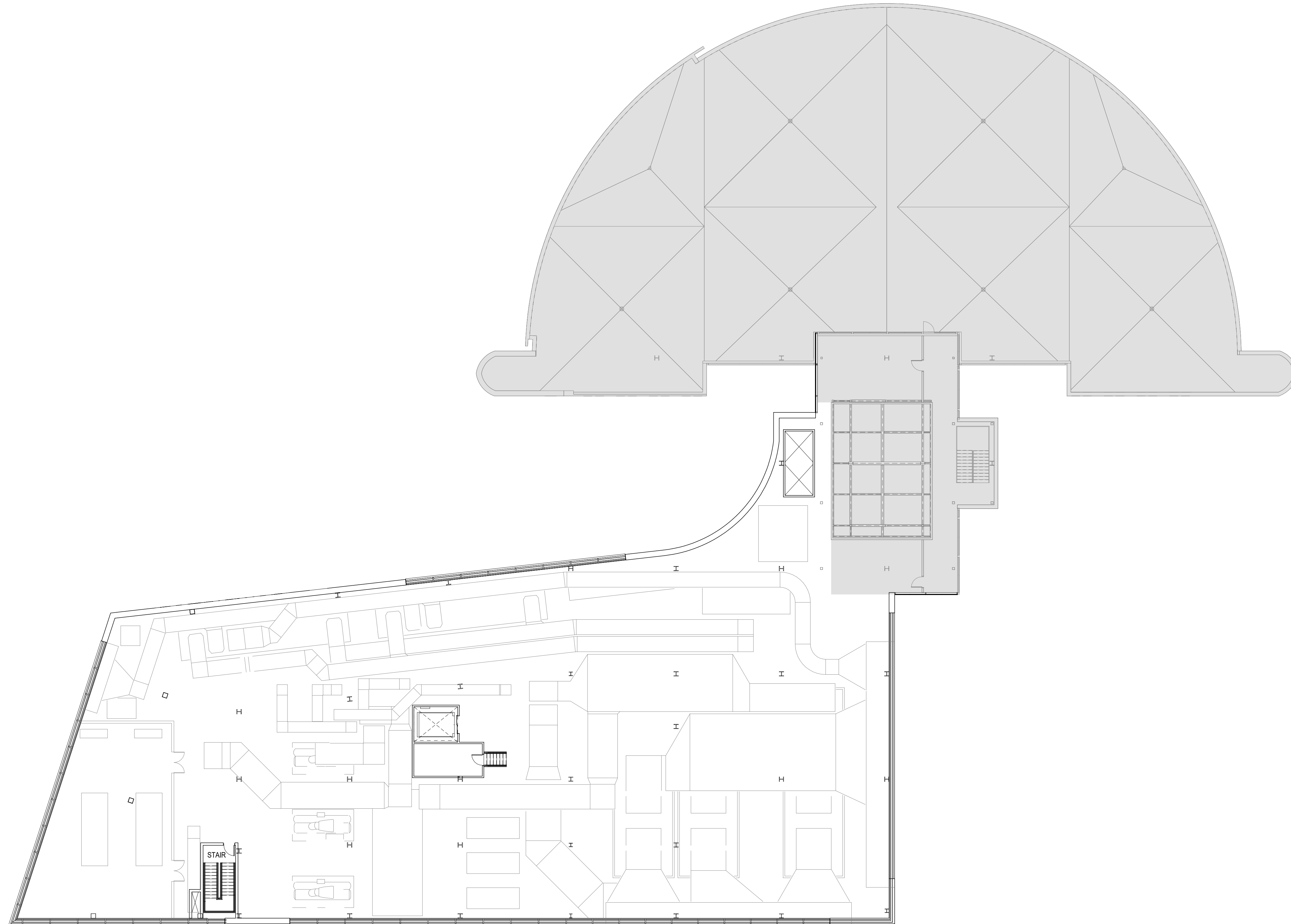
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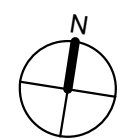
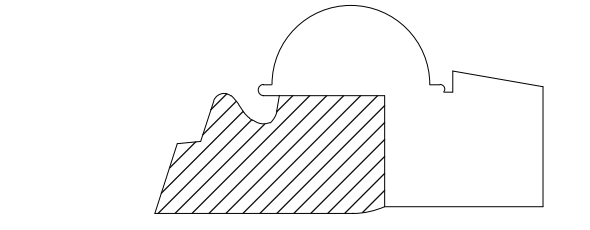
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KEY PLAN

Drawing Title:

**PENTHOUSE LEVEL  
FLOOR PLAN**

Project No.: 006719.00 Checked by: GC

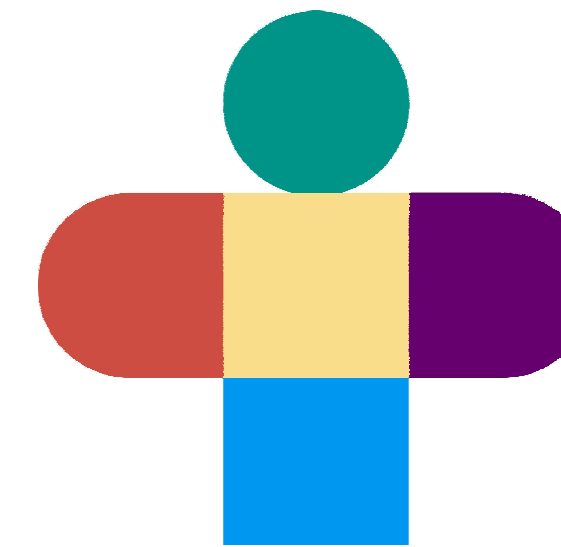
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**1 PENTHOUSE LEVEL**  
1/16" = 1'-0"





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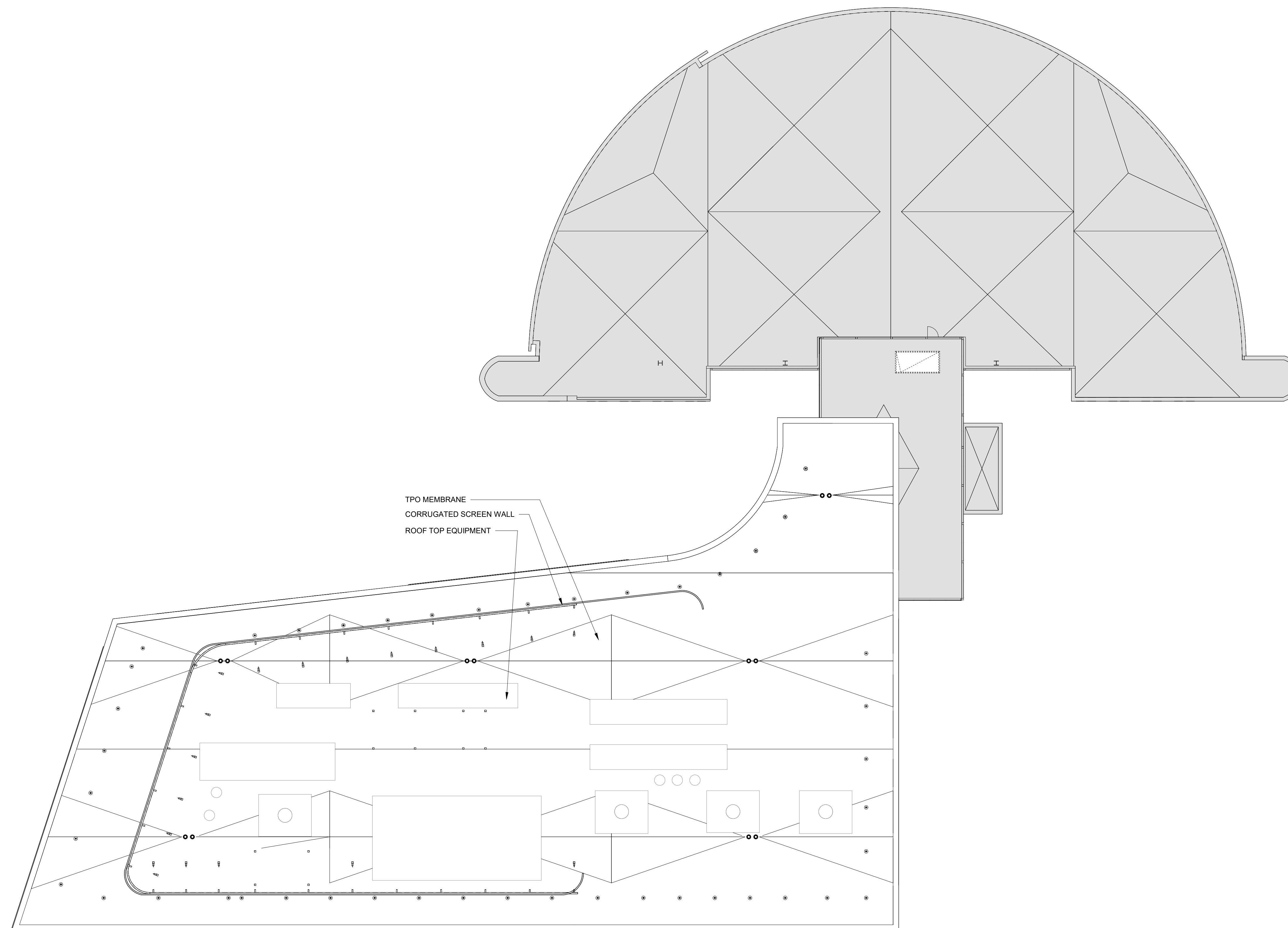
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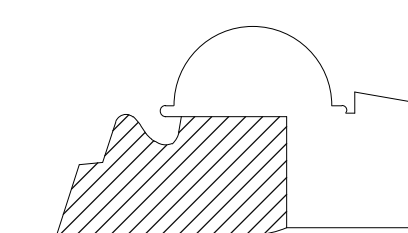
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KEY PLAN

Drawing Title:

**ROOF PLAN**

Project No.: 006719.00 Checked by: GC

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**1** ROOF PLAN  
1/16" = 1'-0"



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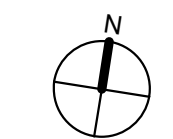
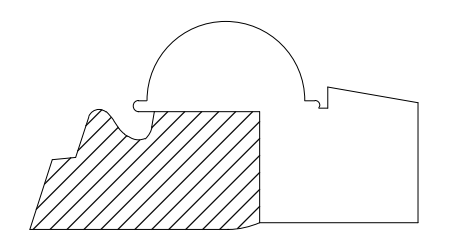
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KEY PLAN

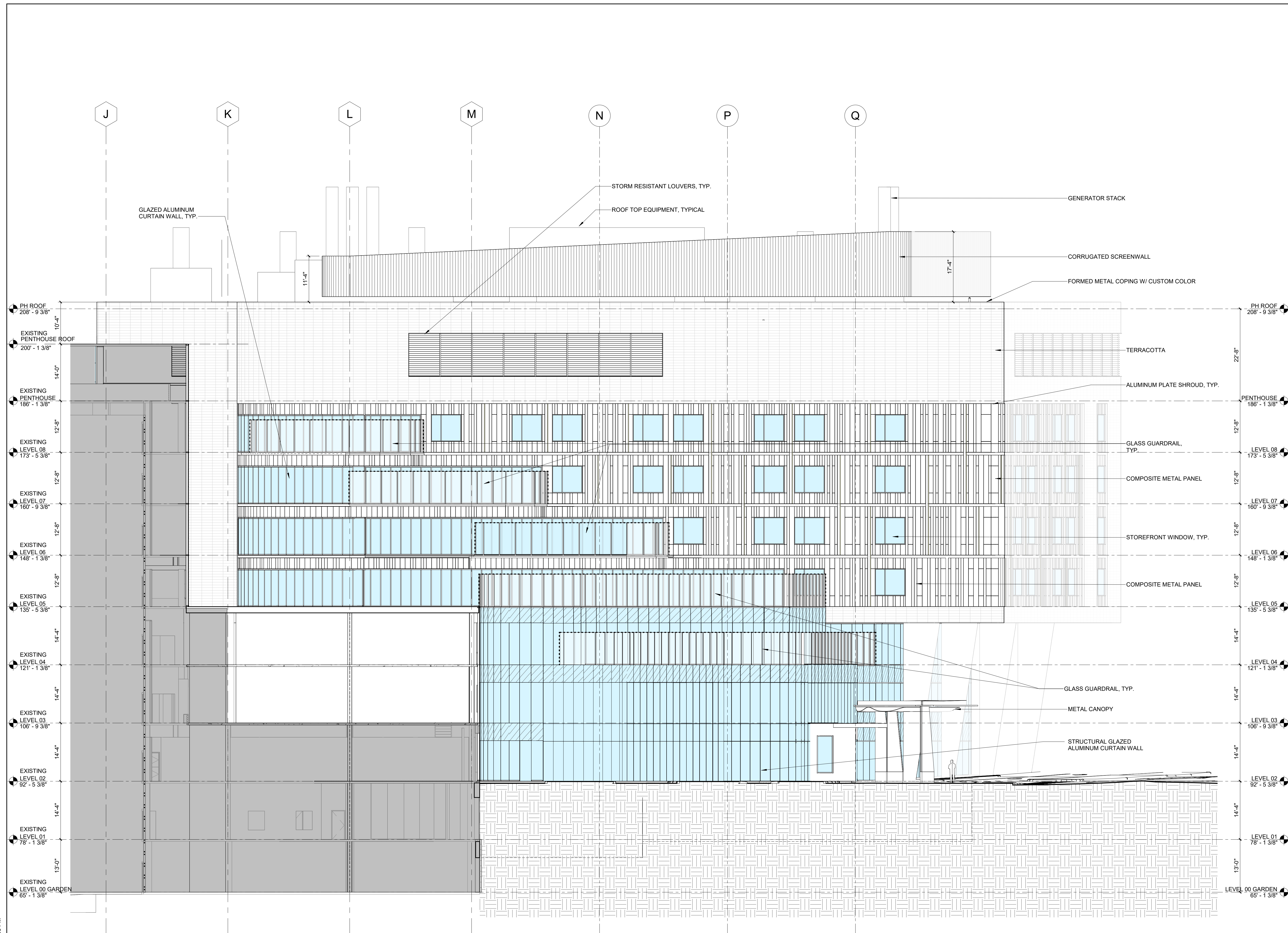
Drawing Title:

**EXTERIOR ELEVATION**

Project No.: 006719.00 Checked by: GC

**A0311-1**

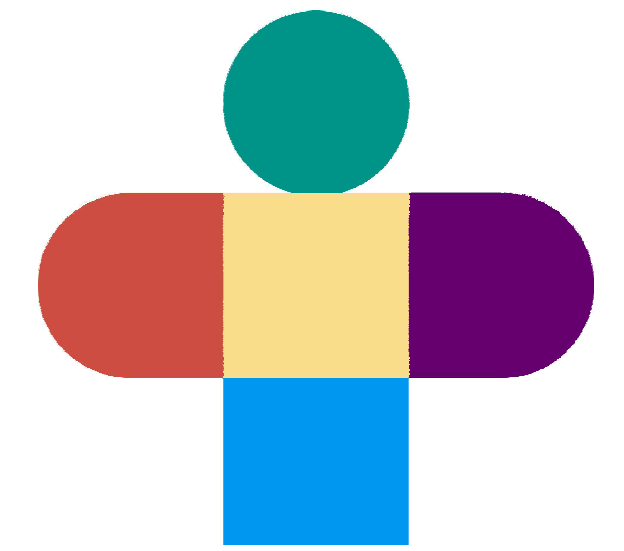
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**1 NORTH ELEVATION**  
3/32" = 1'-0"

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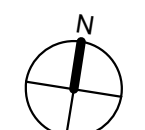
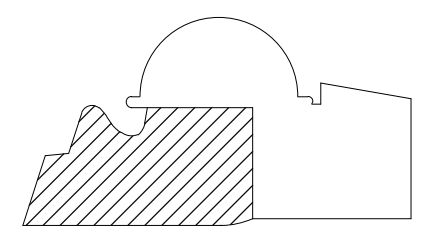
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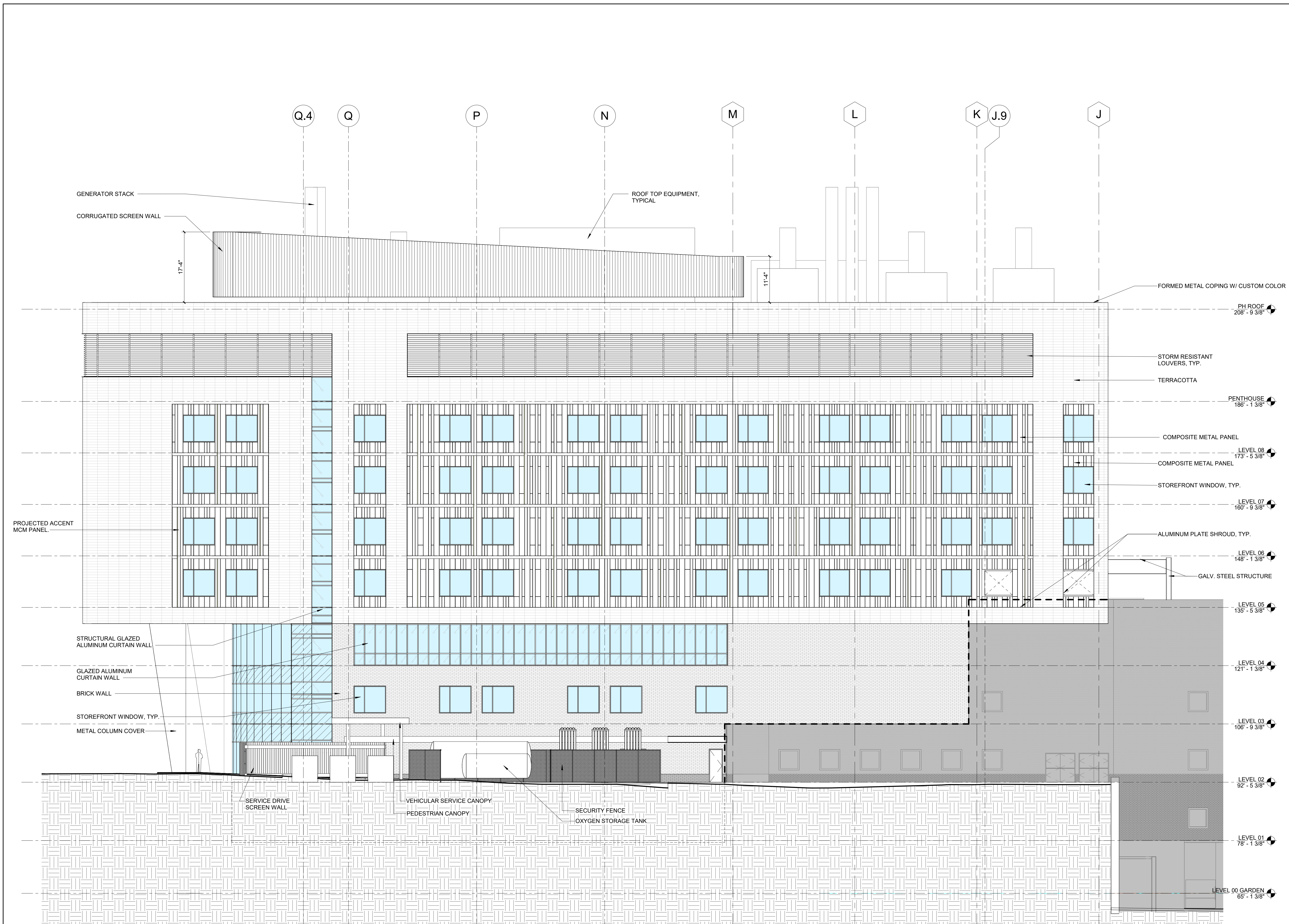
Drawing Title:

**EXTERIOR ELEVATION**

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**1 SOUTH ELEVATION**  
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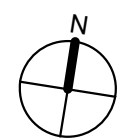
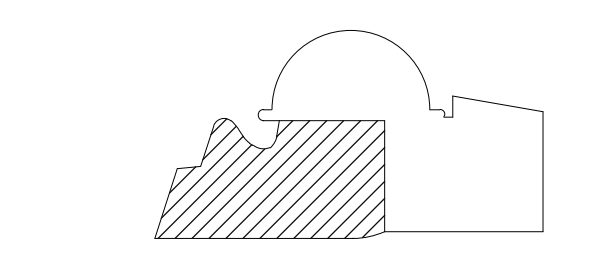
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**KEY PLAN**

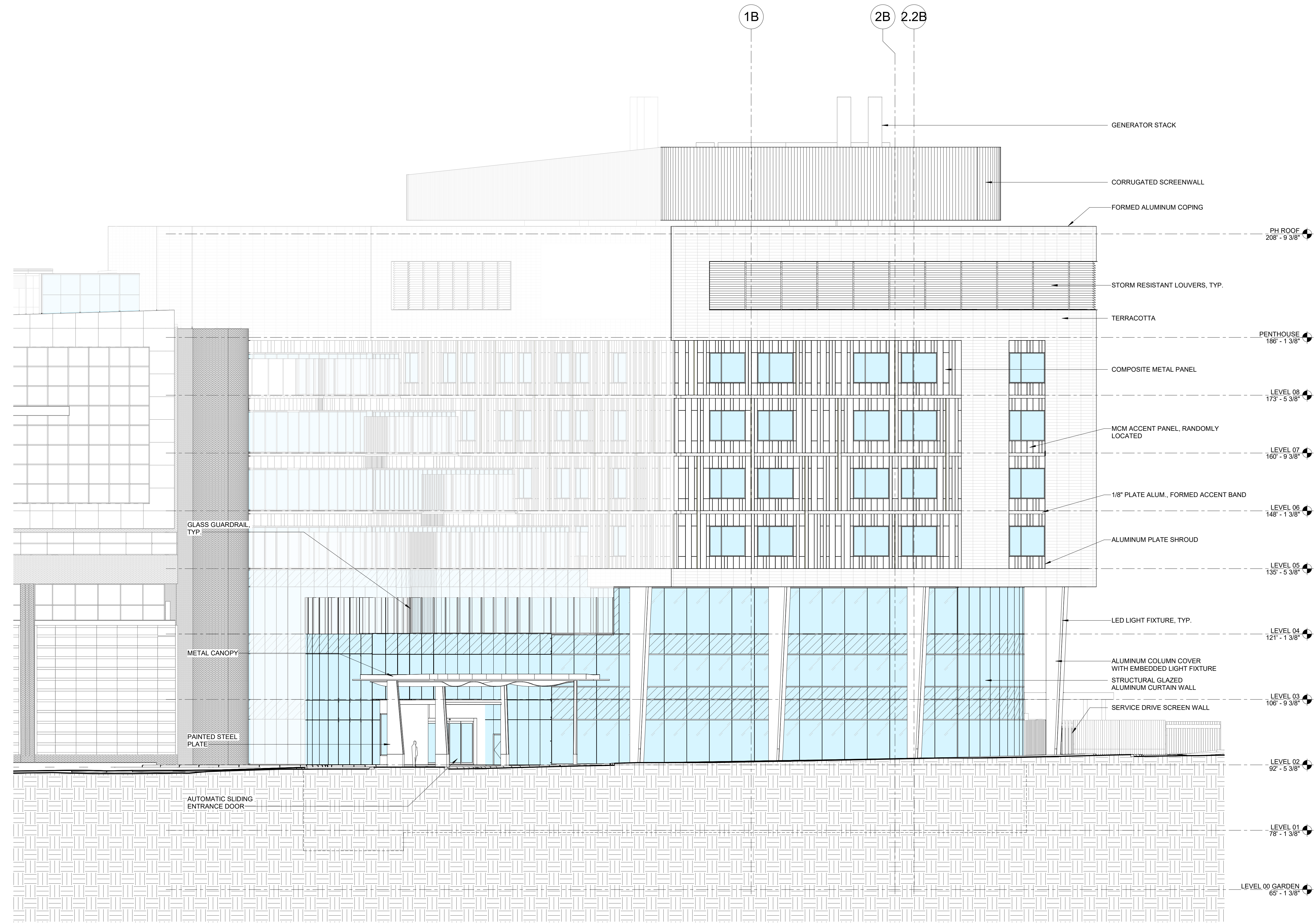
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**1 WEST ELEVATION**  
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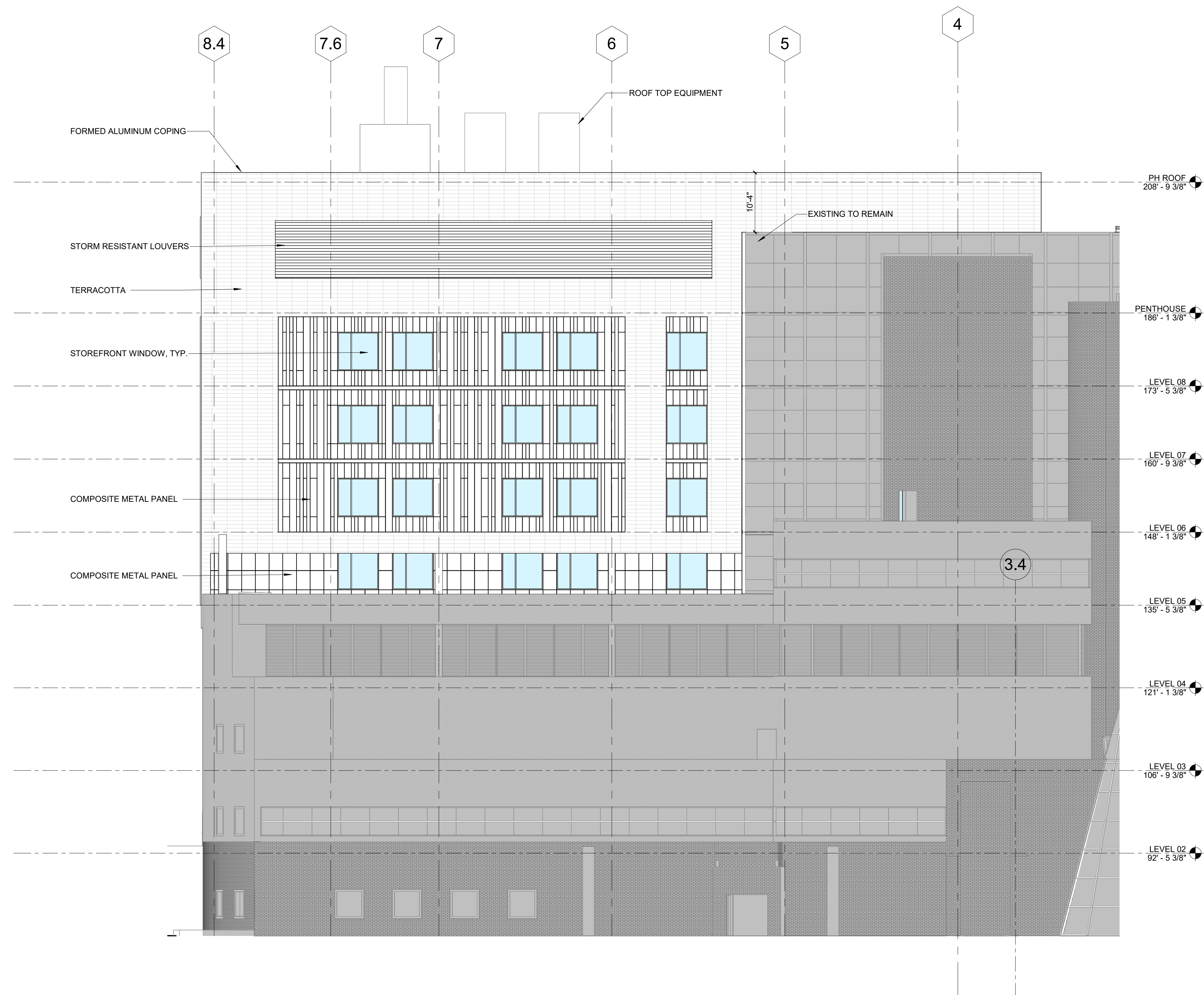
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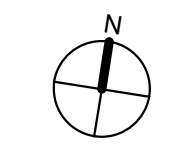
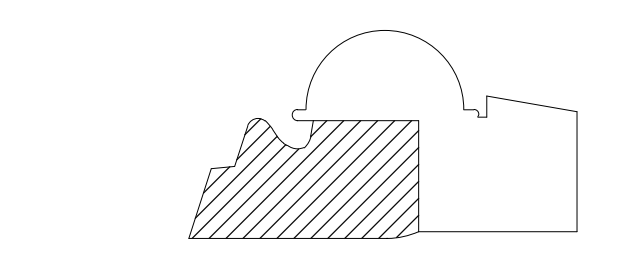
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**EXTERIOR ELEVATION**

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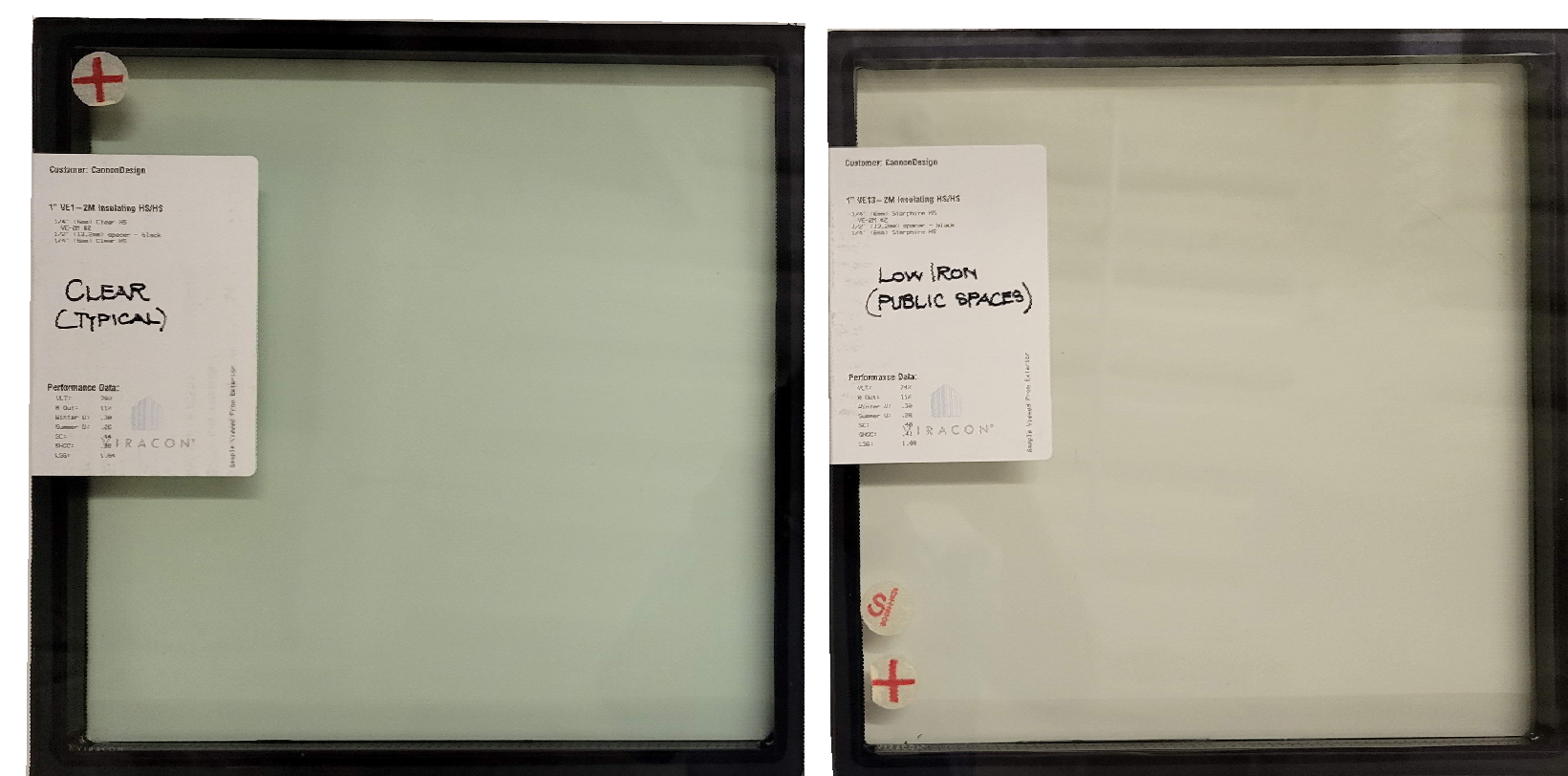
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**1 EAST ELEVATION**  
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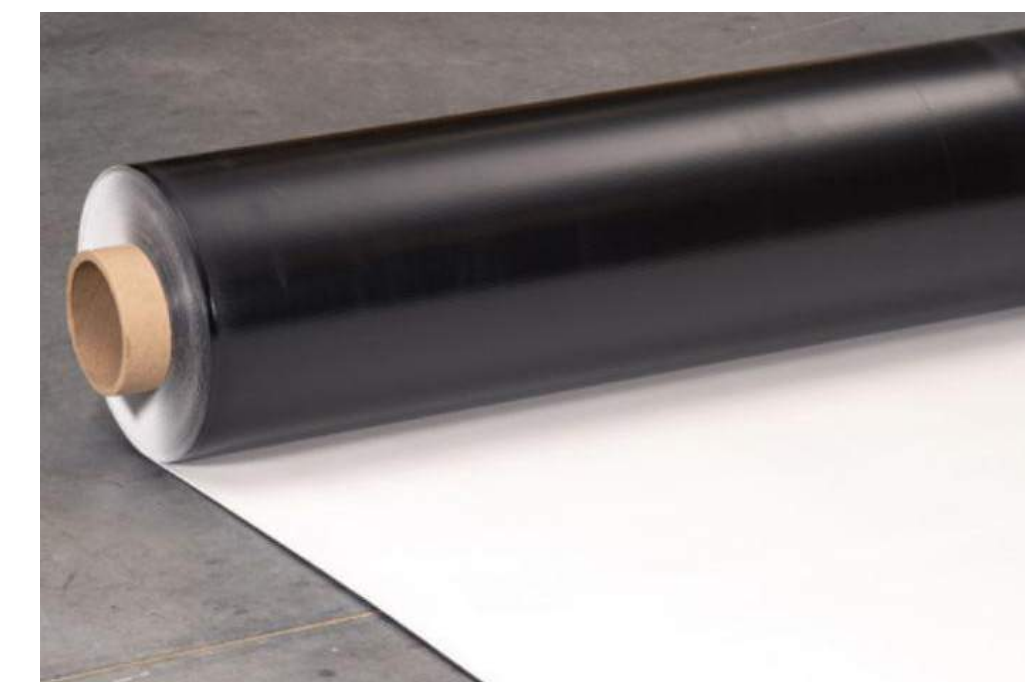




ROOFTOP CORRUGATED ALUMINUM SCREEN WALL  
CENTRIA - ECONOLAP 3/4" - 9962 SILVER GRAY



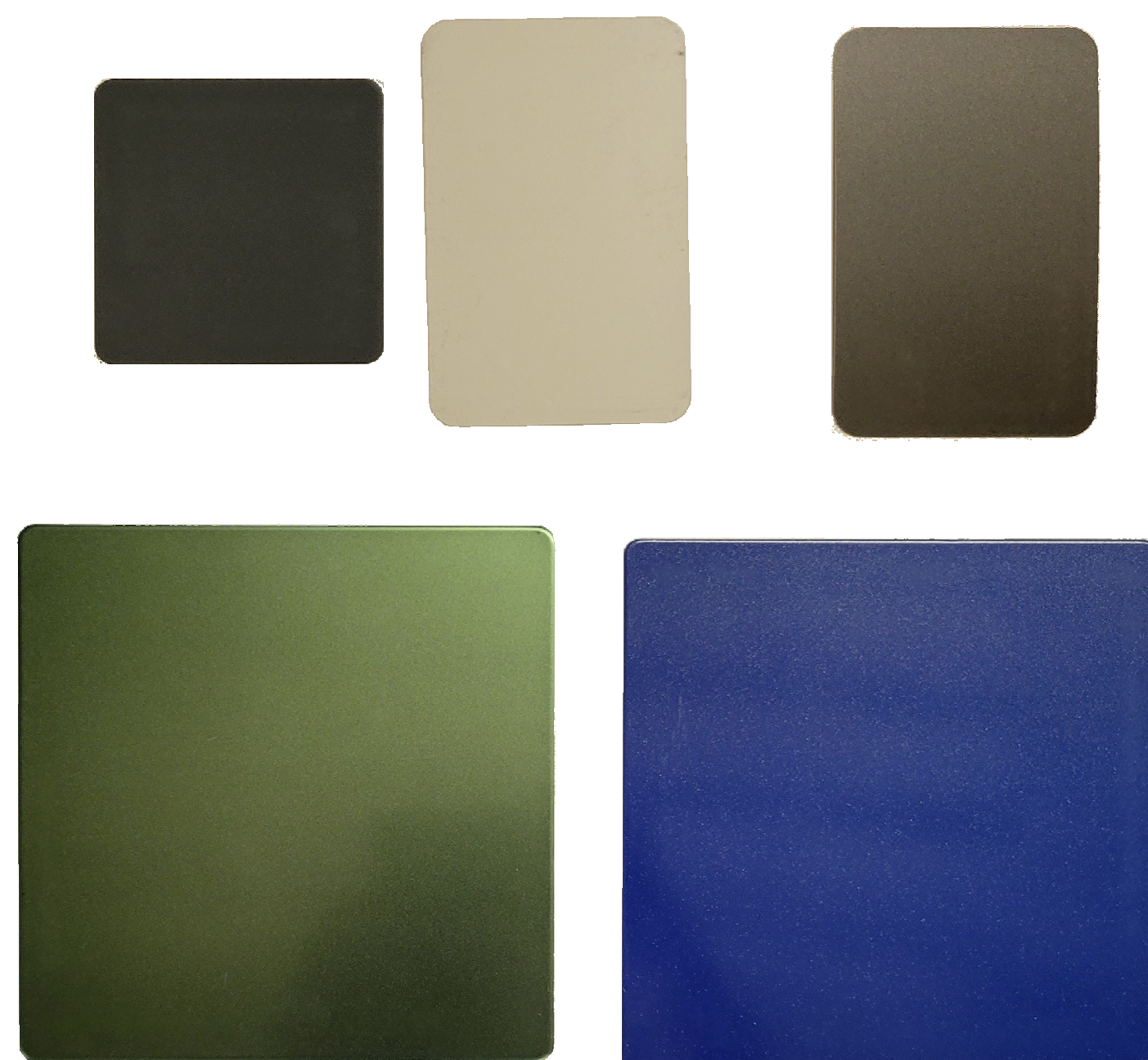
STRUCTURAL GLAZED ALUMINUM CURTAIN WALL  
GLASS  
VIRACON - VE13-2M  
VIRACON - VE1-2M



FLAT MEMBRANE ROOF  
CARLISLE - SURE WELD TPO  
REINFORCED MEMBRANE, WHITE



OCCUPIABLE ROOF TERRACE PAVER  
HANOVER - PORCELAIN PAVERS EGYPTIAN  
LIMESTONE



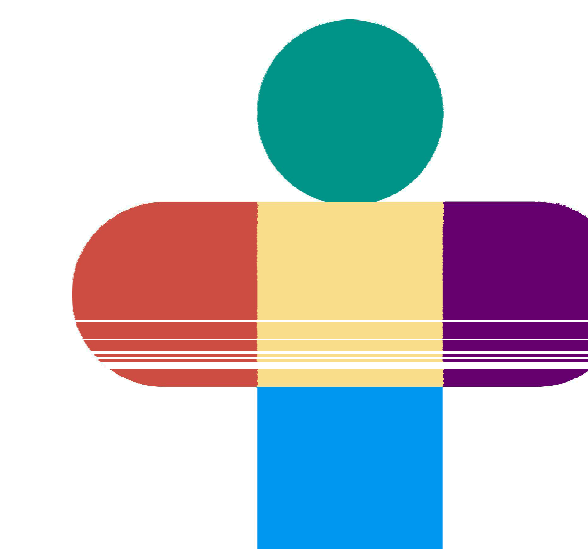
EXTERIOR FACADE COMPOSITE METAL PANEL  
ALUCOBOND - CUSTOM COLOR TO MATCH  
BENJAMIN MOORE OLD BLUE JEANS 839  
TRIM ALUCOBOND - MZG GRAY MICA II (LEXUS)  
COLOR 1ALUCOBOND - PURE WHITE (RVW WHITE)  
COLOR 2ALPOLIC - SJP LAGOON PRSMTC  
COLOR 3ALPOLIC - NAS BLUE SLVR SHMMR



EXTERIOR FACADE BRICK TO MATCH EXISTING  
GLEN GERY - WHITE W/ SPECK GLAZED BRICK  
GLEN GERY - BLACK GLAZED BRICK



EXTERIOR FACADE TERRACOTTA RAINSCREEN  
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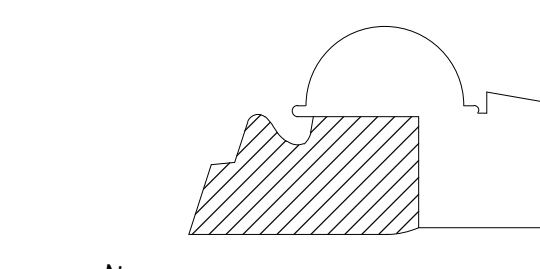
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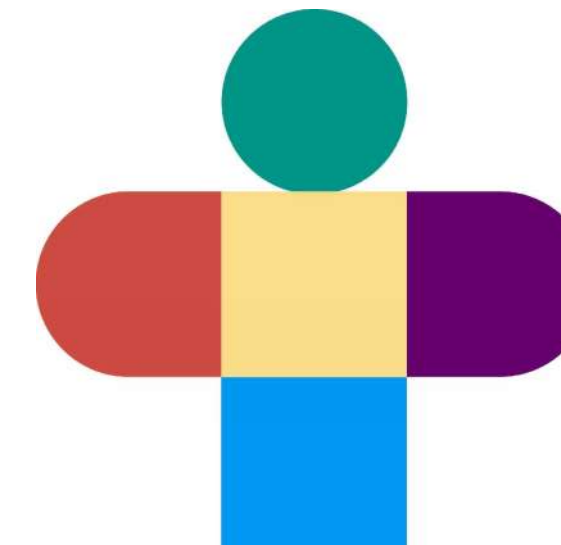
**EXTERIOR MATERIAL  
BOARD**

Project No.: 006719.00 Checked by: GC

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All calculations provided by CannonDesign (CD) are based on current and acceptable lighting practices, and recommendations provided by the Illuminating Engineering Society of North America (IESNA). The data referenced into the simulation model includes photometric performance data provided by luminaire and lamp manufacturers. CD has made every effort to ensure the reliability of all referenced data, but is not responsible for errors in data furnished by others or for equipment that does not perform as listed on published product information. The accuracy of referenced data determines the accuracy of illuminance calculations and may vary more than 10% compared to field measurements.

Tag	Description	LLF	Lum. Watts	Lum. Lumens
LX12	LOUIS POULSEN HOMANN TYPE 5 HO, 18FT TALL POLE	0.800	37	3470
LX13	COOPER GLEON-SA2A-830-U-T4W-HSS, 18FT TALL POLE	0.800	66	5491
LX2A	SELUX OGLG-F40-X-2G350-30-XX-UNV-SL, 16FT TALL POLE	0.800	14	1146
LX2B	SELUX OGLG-F80-X-2G350-30-XX-UNV, 16FT TALL POLE	0.800	14	1188
LX4	ALIGHT D54LS40UHE FOR 3000K AT CUSTOM OUTPUT	0.400	19.4	1660
LX5	TARGETTI MR BO MBB41 36L330	0.800	27	1185
LX7	BEGA 22359	0.800	10	464
LX8	GOTHAM ICO2 30_15 AR LD 5060D WITH HCL	0.400	19.8	1420

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	Illuminance	Fc	1.45	6.7	0.2	7.25	33.50

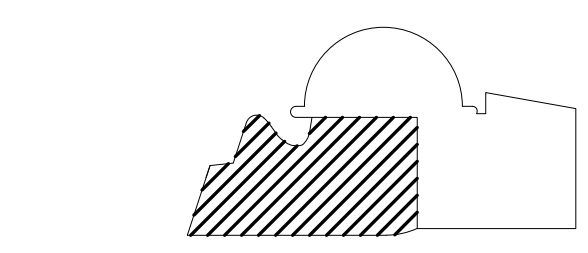
**2 LIGHTING FIXTURE SCHEDULE**  
 N.T.S.

**1 SITE PHOTOMETRIC PLAN**  
 1/16" = 1'-0"



**NOT FOR CONSTRUCTION**

Rev.	Description	Date
	Site Plan Submission	Nov. 4, 2022



**KEY PLAN**  
 Drawing Title:

**SITE PHOTOMETRIC PLAN**

Project No.: 006719.00 Checked by: Checker

**LT0001**





FUSS & O'NEILL

November 7, 2022

Paul Ashworth  
Senior Planner  
City of Hartford  
550 Main Street  
Hartford, CT 06103

Re: Transportation Management Plan  
Hartford Connecticut Children's Medical Center  
Hartford, Connecticut

Dear Mr. Ashworth:

This letter has been prepared to address the Transportation Management Requirements outlined in the City of Hartford's Zoning Regulations under Section 1.3.3.B.16.(a) and will serve to supplement the Traffic Impact Study that has been submitted in support of the land use applications for the proposed expansion of the Connecticut Children's Medical Center (CCMC) facility.

### **Introduction**

CCMC proposes to construct a new 8-story, 191,442 square foot hospital expansion to their existing 321,132 square foot facility on Washington Street in Hartford. Upon completion, the facility will provide a total of 512,574 square feet of building space. The proposed building expansion will include a dining area/kitchen, a lobby and conference space, fetal care/surgery areas, NICU, PICU, a pharmacy, and approximately 50,000 GSF of shell space. The project also includes approximately 55,000 square feet of renovation space within the existing hospital and a new pedestrian bridge will connect the building addition to a new 950+/- space parking garage proposed across the street on the west side of Washington Street under a separate project. The development full build year is assumed to be 2026.

### **Site Access/Circulation**

The development site is located on Washington Street, between Zweiback Street and Retreat Avenue. Site access on Washington Street will be provided through a new drop off loop proposed at the building entrance with one entrance only drive and one exit only drive (opposite Lincoln Street) proposed on the east side of Washington Street. Future access to the parking garage proposed on the west side of Washington Street will be provided via an entrance drive on Lincoln Street and one exit drive on Washington Street opposite the drop off loop entrance drive. New pedestrian connections between the parking garage and building addition will be provided via a

146 Hartford Road  
Manchester, CT  
06040

† 860.646.2469

800.286.2469

f 860.533.5143

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Mr. Paul Ashworth

November 7, 2022

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pedestrian overpass and an at grade crosswalk which will include pedestrian push button actuation and flashing beacons. The existing drop off loop on Zweiback Street will be maintained and utilized in the future for emergency department use only.

### **Automobile and Bicycle Parking**

In accordance with the special permit review from the City of Hartford's Zoning Regulations, the guideline suggests a maximum of one parking space be provided per bed, excluding bassinets. The proposed hospital expansion will include 50 NICU beds, 14 Acuity Adaptable Patient beds, 6 Advanced Cellular Gene Therapy (ACGT) beds, 6 Labor and Delivery/Recovery/Postpartum (LDRP) beds, and a capacity for 25 future beds (Level 5 shell). Therefore, the future 950 parking space garage will exceed the criteria for the required number of off-street parking spaces per bed. The proposed hospital expansion garage will also include a total of 30 electric vehicle charging stations to satisfy the 29 required Level 2 charging stations.

The bicycle parking requirements will apply to the hospital expansion as the floor area will be increased by more than 15 percent. The minimum long-term bicycle parking spaces require one parking space per 15 employees and the minimum short-term bicycle spaces require one parking space for every 10,000 square feet, with 10 parking spaces being the minimum. The hospital expansion will add 191,442 square feet to the existing 321,132 square foot hospital, totaling 512,574 square feet of hospital space along with anticipated growth to approximately 800 employees overall. Therefore, a minimum 52 short term bicycle parking spaces and 62 long term bicycle parking spaces are required.

The hospital expansion is proposed to provide 53 bicycle parking spaces and will therefore exceed the criteria for the minimum short-term bicycle spaces. 24 of these parking spaces (12 bike racks) will be provided at the new Washington Street entrance and 29 spaces are proposed at the existing Level 1/ER entrance (including one existing 9 space rack and ten proposed racks totaling 20 spaces). The required 62 long-term bicycle spaces will be provided by CCMC in a secure and protected 519 square foot area in the ground floor of their 80 Jefferson Street facility. Badge reader access will be provided to staff who would like to use this area for storage purposes.

The City of Hartford zoning regulations requires one shower and changing facility for every full-time occupant, up to 0.5 percent of full-time occupants for hospital related uses. Based on 800 staff, this would yield 4 changing rooms with showers. The hospital has several shower and changing rooms available to departments throughout the building, both existing and new. The new design adds a shared locker room and two shower/changing rooms for support departments that currently do not have this space or clinical requirements for this type of space on Level G. Therefore, the 4 shower/changing room requirement will be exceeded through a combination of the existing departmental changing/shower rooms and the proposed shared rooms on Level G.





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The breakdown of the specific number and types of parking spaces to be provided in the future parking garage including employee parking, transient parking for on-site uses, transient parking for off-site uses, parking for high occupancy motor vehicles, and parking for compact automobiles will be determined accordingly as the preliminary plans further develop.

### **Off-Site Parking**

Currently, Hartford CCMC provides off-site parking for employees at the employee parking garage (just south of the site), the Learning Corridor Parking Garage to the north on Washington Street, the surface parking lot on 80 Capitol Avenue, and the surface parking lot on 80 Jefferson Street. CCMC currently operates shuttles that run regularly between the hospital, TLC parking garage, and the parking lot on 80 Capitol Avenue. Employees that park in the adjacent employee parking garage and the parking lot on 80 Jefferson Street typically walk to the medical center.

### **Valet Parking**

In addition to the multitude of parking garages in the vicinity of the site, the Hartford CCMC in collaboration with LAZ parking, will continue to provide valet service for the emergency drop off loop on Zweiback Street and also expand that service to include the new main entrance drop-off loop connecting to Washington Street. Visitors entering the main drop-off loop will have the option to either drop-off patients and park their vehicles personally or utilize the provided valet service. The valet service will transport the vehicles from both the main and emergency drop-off loops to the new CCMC parking garage, directly across the street on Washington Street. Due to the short travel distance between the drop-off loops and the proposed CCMC parking garage, the valet service will have a short turnaround time in comparison to existing operations and should therefore increase the efficiency of traffic operations within the drop-off loops.

LAZ anticipates maintaining 3 valet staff to service the existing emergency drop off loop on Zweiback Street and will be providing 5 valet staff in the main drop off loop including two staff at the entrance of the loop greeting drivers and directing traffic, two drivers parking and picking up vehicles, and a person managing the key room within the new parking garage. Valet staff will be available during peak times from 6AM to 6PM. It is important to note that the valet service plan is fluid and can be adjusted based on need after the hospital expansion and new drop off loop is opened. Staff can be added or shuffled between the two drop off loops to accommodate real time demand.

It should also be noted that a loading zone for the kitchen area will be located off the main drop-off loop adjacent to the south side of the building. However, kitchen deliveries occur exclusively during off peak hours and should have no impact to drop off loop operations. In the event a delivery vehicle arrives during peak hours, valet staff at the entrance to the loop will be available to direct traffic.



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### **Alternative Modes of Transportation**

CT transit busses currently park along the site frontage on Washington Street. The proposed hospital expansion will include the relocation of the on-street bus stop into a dedicated bus pull-off area, just north of the proposed drop-off loop exit-only driveway. The new pull off area will have the capacity to store two busses. Upgraded landscaping and hardscaping as well as seat walls will be provided near the bus stop. The relocation of the on-street bus stop to a dedicated pull off area will have the secondary benefit of improving traffic and bus operations at the signalized intersection of Washington Street at Zwieback Street as well as increasing the sight distance looking right (north) out of the new drop off loop to allow for safe egress of passenger cars.

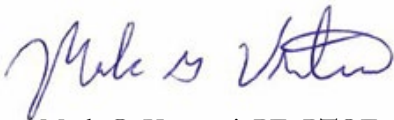
In addition to improved transit operations, safe pedestrian travel will be promoted through the addition of a dedicated pedestrian bridge between the new parking garage and hospital expansion as well as a grade level pedestrian crosswalk on Washington Street south of Lincoln Street. The new crosswalk will be push button actuated with signs and flashing beacons. As previously noted, bicycle travel will be promoted through the inclusion of additional bike parking racks at the new Washington Street drop off loop and future parking garage as well as the inclusion of shower/changing areas within the expanded hospital space.

### **Traffic Impacts**

The proposed hospital expansion is not anticipated to have a significant impact to traffic operations on the adjacent City roadway network and none of the intersections studied are expected to sustain a decrease in overall level of service (LOS) during the peak hours. Please refer to the Traffic Impact Study for a more detailed discussion on the impact of the proposed hospital expansion on the City's vehicular circulation system, including the numerical impact on the morning and afternoon peak hour volumes and intersection capacities within the study area.

Should you have any questions on this transportation management plan, please contact me at 860-783-4766.

Sincerely,



Mark G. Vertucci, PE, PTOE

Vice President



# Traffic Impact Study

## Connecticut Children's Medical Center Expansion Hartford, Connecticut

September 2022

City of Hartford  
Land Use Applications

Office of the State Traffic Administration (OSTA)  
Administrative Decision Review



146 Hartford Road  
Manchester, CT 06040

Approved by  License No. 23761  
Mark G. Vertucci, PE, PTOE

*Prepared for:*  
Cannon Design of Connecticut, Inc.  
3535 Travis, Suite 260  
Dallas, Texas 75204



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## Traffic Impact Study Connecticut Children's Medical Center Hartford, Connecticut

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#### *Appendix C*

Intersection Capacity Analysis Worksheets – Weekday Morning Peak Hour

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Intersection Capacity Analysis Worksheets – Weekday Afternoon Peak Hour

#### *Appendix E*

Turning Movement Count (TMC) Data

#### *Appendix F*

Crash Data Records



## Summary Sheet

As an aid to reviewers, this Summary Sheet has been included to outline the various study parameters utilized in this report. Although a full explanation of the study methodologies is included in the text of the report, this summary can serve as a useful reference for reviewers.

**Applicant:**

Connecticut Children's Medical Center

**Site Acreage:**

3.43

**Development Size/Type:**

New 8-story hospital expansion consisting of 191,442 GSF

**Parking:**

950 spaces (proposed in new future parking garage)

**Applications:**

City of Hartford Land Use Applications

Office of the State Traffic Administration (OSTA) Administrative Decision Review Submission

**Build Year:**

2026

**Background Traffic Growth Factor:**

0.7%

**Traffic Counts:**

Fuss & O'Neill – March 2020 and May 2022 (Turning Movement Counts)

**Peak Hours Analyzed:**

Weekday Morning Peak Hour – 7:30 a.m. – 8:30 a.m.

Weekday Afternoon Peak Hour – 4:00 p.m. – 5:00 p.m.

**Expected Trip Generation:**

Weekday Morning Peak Hour – 292 Trips (196 Entering, 96 Exiting)

Weekday Afternoon Peak Hour – 281 Trips (98 Entering, 183 Exiting)

**Capacity Analysis:**

Technique – 2000 Highway Capacity Manual and Highway Capacity Manual 6<sup>th</sup> Edition

Execution – Synchro and SimTraffic Professional Software, Version 10.0



# 1 Introduction

Connecticut Children's Medical Center (CCMC) proposes to construct a new 8-story, 191,442 square foot hospital expansion to their existing 321,132 square foot facility on Washington Street in Hartford. Upon completion, the facility will provide a total of 512,574 square feet of building space. The proposed building expansion will include a dining area/kitchen, a lobby and conference space, fetal care/surgery areas, NICU, PICU, a pharmacy, and approximately 50,000 GSF of shell space. The project also includes approximately 55,000 square feet of renovation space within the existing hospital and a new pedestrian bridge will connect the building addition to a new 950 space parking garage proposed across the street on the west side of Washington Street under a separate project. The development build year is assumed to be 2026.

The development site is located on Washington Street, between Zweiback Street and Retreat Avenue as shown on the site location map, *Figure No. 1 of Appendix B*. Site access on Washington Street will be provided through a new drop off loop proposed at the building entrance with one entrance only drive and one exit only drive (opposite Lincoln Street) proposed on the east side of Washington Street. Future access to the parking garage proposed on the west side of Washington Street will be provided via an entrance drive on Lincoln Street and one exit drive on Washington Street opposite the drop off loop entrance drive. New pedestrian connections between the parking garage and building addition will be provided via a pedestrian overpass and an at grade crosswalk which will include pedestrian push button actuation and flashing beacons. The existing drop off loop on Zweiback Street will be maintained and utilized in the future for emergency department use only.

Fuss & O'Neill has been retained to study the impact of the proposed development expansion on traffic conditions throughout the adjacent roadway network. This report has been prepared to document the findings of the study and is being submitted to the City of Hartford in support of the project's land use applications. This report is also being submitted to the Office of the State Traffic Administration (OSTA) in support of an Administrative Decision Review.

## 2 Existing Condition

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### 2.1 Site of Development

The existing site is identified as 282 Washington Street by the City of Hartford and is located in the Multi-Use Mix District (MX-2). 282 Washington Street consists of approximately 3.43 acres. The existing site contains the 321,132 square foot CCMC facility. The site is bounded by Zweiback Street to the north, the Hartford Hospital Employee Garage to the south, Seymour Street to the east, and Washington Street to the west. Drop off loops for the existing hospital are provided on both Washington Street and Zweiback Street on the west and north side of the facility, respectively. Parking for the existing hospital is shared with the Hartford Hospital visitor and employee garages located directly north and south of the CCMC site, respectively. Additional off-site employee parking is available with shuttle service provided to and from the hospital.



## 2.2 Adjacent Roadway Network

The adjacent roadway network consists of the following roadways which are all under City jurisdiction:

- Washington Street
- Jefferson Street
- Zwieback Street
- Lincoln Street
- Allen Place
- Vernon Street
- Retreat Avenue
- Seymour Street
- Maple Avenue
- Congress Street
- Main Street
- Wyllys Street
- Wethersfield Avenue

Washington Street runs primarily north/south and extends approximately one mile from its intersection with New Britain Avenue, Barnard Street, and Webster Street to its terminus at the intersection with Capitol Avenue. The roadway provides access to primarily commercial and medical land uses. In the vicinity of the site, Washington Street is classified by the Connecticut Department of Transportation (CTDOT) as an urban minor arterial that provides four 10-foot travel lanes, two in each direction, with off-peak hour restricted on-street parking available in place of the right travel lane in both directions. The roadway widens in the northbound and southbound direction as the roadway approaches Zwieback Street to provide an additional turn lane in each direction. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Washington Street.

Jefferson Street runs primarily east/west and extends approximately 3,500 feet from its intersection with Affleck Street to its terminus at the intersection with Maple Avenue, Main Street, Wyllys Street, and Congress Street. The roadway provides access to primarily medical and residential land uses. In the vicinity of the site east of Washington Street, Jefferson Street is classified by the CTDOT as an urban collector that provides three to four nine-foot travel lanes with on-street parking available on either the north or south side of the roadway. West of Washington Street, Jefferson Street reduces to one lane in each direction with parking provided on the north side of the road. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Jefferson Street.

Zwieback Street runs primarily east/west and extends approximately 500 feet from its intersection with Washington Street to its terminus at the intersection with Seymour Street. The roadway provides access to medical land uses including the Hartford Hospital Public Parking Garage and existing CCMC drop off/valet loop. Zwieback Street does not currently have a CTDOT classification. Zwieback Street provides primarily two 12-foot travel lanes, one in each direction. The speed limit is not posted. Sidewalks are provided on both sides of Zwieback Street.



Lincoln Street runs primarily east/west and extends approximately 1,700 feet from Washington Street to its terminus at the intersection with Affleck Street. The roadway is one-way westbound and provides access to mainly residential land uses. Lincoln Street is classified by the CTDOT as an urban local road and carries one lane of travel in the westbound direction and on street parking on both sides of the roadway. The posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of Lincoln Street.

Allen Place runs primarily east/west and extends approximately 2,700 feet from its intersection with Summit Street to its terminus at the intersection with Washington Street. The roadway provides access to mostly residential land uses and the Zion Hill Cemetery. Allen Place is classified by the CTDOT as an urban local road that provides two travel lanes, one in each direction, and on-street parking on one side of the roadway. The posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of Allen Place.

Vernon Street runs primarily east/west and extends approximately 1,000 feet from its intersection with Washington Street to its intersection with Broad Street. Vernon Street continues to the west of Broad Street for another approximately 1,500 feet to its terminus at Summit Street but is disconnected by a cul de sac west of Broad Street for traffic calming purposes. The roadway provides access to primarily residential land uses, the Trinity College Campus, and the Greater Hartford Academy of the Arts. In the vicinity of the site, Vernon Street is classified by the CTDOT as an urban collector that provides two 11-foot travel lanes, one in each direction. The posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of Vernon Street and on street parking is provided on the north side.

Retreat Avenue runs primarily northeast/southwest and extends approximately 2,000 feet from its intersection with Washington Street and Vernon Street to its terminus at the intersection with Maple Avenue. The roadway provides access to primarily medical land uses. In the vicinity of the site, Retreat Avenue is classified by the CTDOT as an urban minor arterial that provides one 12-foot travel lane and eight foot wide on-street parking lanes in each direction. A center median, transitioning to left turn lanes at key intersections, is also provided. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Retreat Avenue.

Seymour Street runs primarily north/south and extends approximately 1,300 feet from its intersection with Park Street to its intersection at Zwieback Street adjacent to Hartford Hospital and the CCMC. The southern portion of Seymour Street originates on Retreat Avenue and continues approximately 600 feet north to a cul de sac that prohibits through vehicle movement north to Zwieback and Jefferson Streets. The roadway provides access to primarily medical land uses. In the vicinity of the site, just north of Zwieback Street, Seymour Street is classified by the CTDOT as an urban local road that provides three 12-foot travel lanes, two in the northbound direction and one in the southbound direction. The posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of Seymour Street however parking is prohibited.

Maple Avenue runs primarily northeast/southwest and extends approximately 2.25 miles from the Wethersfield Townline to its terminus at the intersection with Jefferson Street, Main Street, Wyllys Street, and Congress Street. The roadway provides access to primarily commercial land uses, residential land uses, schools, and the Goodwin Park Golf Course. In the vicinity of the site, Maple Avenue is



classified by the CTDO T as an urban minor arterial that provides two 12-foot travel lanes, one in each direction, and on street parking in both directions along the majority of its length. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Maple Avenue.

Congress Street runs primarily north/south and extends approximately 950 feet from its intersection with Maple Avenue, Jefferson Street, Main Street, and Wyllys Street to its terminus at the intersection with Morris Street. The roadway provides access to primarily residential land uses. In the vicinity of the site, Congress Street is classified by the CTDO T as an urban local road and is a one-way street that carries one lane of travel in the southbound direction. The posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of Congress Street and parking is provided on one side of the roadway.

Main Street runs primarily north/south and extends approximately 3.3 miles from its intersection with Wyllys Street, Congress Street, Maple Avenue, and Jefferson Street to its terminus at the Windsor Townline. The roadway provides access to primarily commercial land uses, residential land uses, the Hartford City Hall, Dunkin' Donuts Park, cemeteries, and parks. In the vicinity of the site, Main Street is classified by the CTDO T as an urban principal arterial and primarily provides four nine to 11-foot travel lanes, two in each direction, along with on-street parking. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Main Street.

Wyllys Street runs primarily east/west and extends approximately 2,200 feet from its intersection with Main Street, Jefferson Street, Maple Avenue, and Congress Street to its terminus at the intersection with Charter Oak Avenue and Columbus Boulevard. The roadway provides access to primarily residential land uses and office space. In the vicinity of the site, Wyllys Street is classified by the CTDO T as an urban minor arterial and provides four 12-foot travel lanes, two in each direction. East of Lisbon Street, the roadway transitions to one travel lane, a parking lane, and a bike lane in each direction. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Wyllys Street.

Wethersfield Avenue runs primarily north/south and extends approximately 2 miles from the Wethersfield Townline to its intersection with Wyllys Street and Main Street. The roadway provides access to primarily commercial space. In the vicinity of the site, Wethersfield Avenue is classified by the CTDO T as an urban principal arterial and provides two 10-foot travel lanes, one in each direction, on-street parking in the southbound direction, a center two-way left turn lane, dedicated turning lanes at key intersections, and two bike lanes, one in each direction. The posted speed limit is 30 miles per hour. Sidewalks are provided on both sides of Wethersfield Avenue.

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## 2.3 Study Area Intersections

The following study area intersections were reviewed:

- Washington Street at Jefferson Street
- Washington Street at Zwieback Street
- Washington Street at Lincoln Street
- Washington Street at Allen Place and Hospital Garage Drive
- Washington Street at Vernon Street and Retreat Avenue
- Seymour Street at Jefferson Street



- Seymour Street at Retreat Avenue
- Maple Avenue at Retreat Avenue
- Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street
- Main Street at Wyllys Street and Wethersfield Avenue

Washington Street at Jefferson Street is a four-way signalized intersection. The intersection is part of a coordinated signal system along Washington Street. The intersection provides northbound and southbound approaches on Washington Street and eastbound and westbound approaches on Jefferson Street. Washington Street provides a combined through/left turn lane and a combined through/right turn lane in the northbound and southbound approaches. Jefferson Street provides a combined through/left/right turn lane in the eastbound approach and provides a combined through/left and a combined through/right turn lane in the westbound approach. Sidewalks are provided along both sides of each roadway and crosswalks are provided across each approach. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

Washington Street at Zwieback Street is a four-way signalized intersection. The intersection is part of a coordinated signal system along Washington Street. The intersection provides northbound and southbound approaches on Washington Street, an eastbound approach on the Dunkin' Donuts Driveway, and a westbound approach on Zwieback Street. Washington Street provides a dedicated left turn lane, a through lane, and a combined through/right turn lane in the northbound and southbound approaches. The Dunkin' Donuts Driveway provides a combined through/left/right turn lane in the eastbound approach. Zwieback Street provides a dedicated left turn lane and a dedicated right turn lane in the westbound approach. One crosswalk is provided across the southbound approach, allowing pedestrians to cross Washington Street. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Sidewalks and pedestrian ramps are provided on all four corners of the intersection. Bicycle facilities are not provided at this intersection.

Washington Street at Lincoln Street is an unsignalized t-intersection. The intersection provides northbound and southbound approaches on Washington Street and a one-way westbound lane on Lincoln Street leaving the intersection. In the vicinity of the study intersection, Washington Street is free flowing and carries two lanes of travel, one in each direction, with both approaches providing off-peak hour restricted on-street parking in the right travel lanes. One crosswalk is provided across the west leg, allowing pedestrians to cross Lincoln Street. Sidewalks are provided on both sides of the road on each leg of the intersection. Bicycle facilities are not provided at this unsignalized intersection.

Washington Street at Allen Place is a four-way signalized intersection. The intersection is part of a coordinated signal system along Washington Street. The intersection provides northbound and southbound approaches on Washington Street, an eastbound approach on Allen Place, and a westbound approach on the Hartford Hospital Employee Garage Driveway. Washington Street provides one combined through/left turn lane and one combined through/right turn lane in the northbound and southbound approaches with both approaches providing off-peak hour restricted on-street parking in the right travel lanes. Allen Place provides one combined through/left/right turn lane in the eastbound approach. The Hartford Hospital Employee Garage Driveway provides one dedicated left turn lane and one combined through/right turn lane in the westbound approach. A crosswalk is provided on the northern and western legs of the intersection, allowing pedestrians to cross Washington Street and Allen



Place. Sidewalks are provided on both sides of the road on each leg of the intersection. Push buttons for side street green are available on the northern corners of the intersection to allow pedestrians to cross Washington Street. Bicycle facilities are not provided at this intersection.

Washington Street at Vernon Street and Retreat Avenue is a signalized clustered intersection. The intersection is part of a coordinated signal system along Washington Street. The northern intersection provides northbound and southbound approaches on Washington Street, an eastbound approach on Vernon Street, and a westbound approach on Retreat Avenue. At the northern intersection, Washington Street provides a combined through/left turn lane and a through lane in the northbound approach. Washington Street also provides a combined through/left turn lane and a combined through/right turn lane in the southbound approach. Vernon Street provides a dedicated left turn lane and a combined through/right turn lane in the eastbound approach. Retreat Avenue provides a dedicated left turn lane, a combined through/left turn lane, and a dedicated right turn lane in the westbound approach. The southern intersection provides northbound and southbound approaches on Washington Street. At the southern intersection, Washington Street provides a through lane and a combined through/right turn lane in the northbound approach and provides two through lanes in the southbound approach. The eastern leg of the southern intersection is a one-way channelized slip lane to eastbound Retreat Avenue. Sidewalks are provided along both sides of each roadway and crosswalks are provided across each approach. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

Seymour Street at Jefferson Street is a four-way signalized intersection. The intersection provides a northbound approach on Seymour Street and eastbound and westbound approaches on Jefferson Street. North of the intersection, Seymour Street becomes a one-way road travelling northbound, away from the intersection. Seymour Street provides a combined through/left turn lane and one dedicated right turn lane in the northbound approach. Jefferson Street provides one combined through/left/right turn lane in the eastbound approach. Jefferson Street provides one dedicated left turn lane and one combined through/right turn lane in the westbound approach. Crosswalks are provided on the northbound, eastbound, and westbound approaches, allowing pedestrians to cross Seymour Street and Jefferson Street. Sidewalks and pedestrian ramps are provided on all four corners of the intersection. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

Seymour Street at Retreat Avenue is a four-way signalized intersection. The intersection provides a northbound approach on the Institute of Living Hartford Hospital (IOL) driveway, a southbound approach on Seymour Street, and eastbound and westbound approaches on Retreat Avenue. The IOL drive provides a combined through/left/right turn lane in the northbound approach. Seymour Street provides one combined through/left/right turn lane in the southbound approach. Retreat Avenue provides one dedicated left turn lane and one combined through/right turn lane in the eastbound and westbound approaches. Sidewalks are provided along both sides of each roadway and crosswalks are provided across each approach. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

Maple Avenue at Retreat Avenue is a signalized t-intersection. The intersection is part of a coordinated signal system along Maple Avenue/Main Street and Wyllys Street. The intersection provides northbound and southbound approaches on Maple Avenue and an eastbound approach on Retreat Avenue. Maple



Avenue provides a through lane and a combined through/left turn lane in the northbound approach. Maple Avenue provides a dedicated right turn lane and a through lane in the southbound approach. Retreat Avenue provides a dedicated left turn lane and a combined right/left turn lane in the eastbound approach. Sidewalks are provided along both sides of each roadway and crosswalks are provided across each approach. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street is a five-legged intersection. The intersection is part of a coordinated signal system along Maple Avenue/Main Street and Wyllys Street. The intersection provides a northbound approach on Maple Avenue, a southbound approach on Main Street, a southeastern leg on Congress Street, an eastbound approach on Jefferson Street, and a westbound approach on Wyllys Street. Maple Avenue provides a combined through/left turn lane, a through lane, and a right turn lane in the northbound approach. Main Street provides a combined through/left turn lane and a combined through/right turn lane in the southbound approach. Congress Street is a one-way road travelling in the southeast direction, away from the intersection. Jefferson Street and Wyllys Street each provide one combined through/left turn lane and one combined through/right turn lane in the eastbound and westbound approaches. Sidewalks are provided along both sides of each roadway and crosswalks are provided across each approach. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

Main Street at Wyllys Street and Wethersfield Avenue is a four-way signalized intersection. This intersection is part of a coordinated signal system along Maple Avenue/Main Street and Wyllys Street. The intersection provides a northbound approach on Wethersfield Avenue, a southbound approach on Main Street, and eastbound and westbound approaches on Wyllys Street. Wethersfield Avenue provides a dedicated left turn lane and on combined through/right turn lane in the northbound approach. Main Street provides a dedicated left turn lane and a combined through/right turn lane in the southbound approach. Wyllys Street provides a combined through/left turn lane and one combined through/right turn lane in the eastbound and westbound approaches. Sidewalks are provided along both sides of each roadway and crosswalks are provided across each approach. Pedestrian crossing is permitted during an exclusive pedestrian signal phase. Bike lanes are provided on Wethersfield Avenue in both directions, south of the intersection, and bike sharrows are provided on Wyllys Street, east of the intersection.

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## 2.4 Traffic Volumes, Speeds and Counts

The greatest potential for traffic impact on the roadway network by the proposed development will occur during the weekday morning and afternoon peak hours, the periods when commuter and hospital related trips are at their highest levels. In order to determine the traffic impact of the proposed development on adjacent street traffic, representatives of Fuss & O'Neill, Inc. obtained weekday morning and afternoon peak hour manual turning movement counts on March 11, 2020 (prior to the COVID-19 pandemic) at the following intersections:

- Maple Avenue at Retreat Avenue
- Maple Avenue at Jefferson Street/Main Street/Wyllys Street/Congress Street
- Washington Street at Vernon Street and Retreat Avenue



New turning movement counts were conducted on May 12, 2022 at the remaining study area intersections:

- Washington Street at Jefferson Street
- Washington Street at Zwieback Street
- Washington Street at Lincoln Street
- Washington Street at Allen Place and Hospital Garage Drive
- Washington Street at Vernon Street and Retreat Avenue
- Seymour Street at Jefferson Street
- Seymour Street at Retreat Avenue

The traffic count data collected indicates that the weekday morning peak hour of traffic is 7:30 a.m. to 8:30 a.m. and the afternoon peak hour is 4:00 p.m. to 5:00 p.m. These peak hours were subsequently analyzed for impacts. The existing traffic volumes for these peak hours are shown in *Figure No. 2 of Appendix B*. Copies of the TMC traffic data have been included in *Appendix E* of this report.

## 3 Background Traffic Conditions

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### 3.1 Growth Rate

Upon consultation with the CTDOT the 2022 existing traffic volumes were projected to the 2026 design year using a 0.7 percent per year peak hour growth factor to account for normal traffic growth in the study area. These projected grown 2026 traffic volumes were utilized as the background traffic volumes which are defined as design year traffic without the proposed development expansion. These projected background traffic volumes are shown in *Figure No. 3 of Appendix B*.

### 3.2 Other Developments

Fuss & O'Neill contacted the Office of the State Traffic Administration (OSTA) and the City of Hartford Planning Department to identify any other pending or approved developments having site related traffic in the study area. Neither OSTA nor the City of Hartford identified any other development plans that would affect background traffic volumes in the vicinity of the study area.

### 3.3 Planned Roadway Improvement Projects

Fuss & O'Neill contacted the Connecticut Department of Transportation and the City of Hartford Engineering and Public Works offices to identify any roadway improvements scheduled within the study area. Two such improvements were identified by the CTDOT.

The Connecticut Department of Transportation stated that Project #0063-0718 is currently in the contract processing phase to upgrade traffic control signals at various locations in Hartford in order to



provide signal coordination along several roadway corridors. This traffic equipment upgrade includes controllers and video detection to improve traffic management.

The Connecticut Department of Transportation also stated that Project #0063-0717 is currently in the contract processing phase to upgrade traffic control central and field communications equipment to migrate from analog to IP over copper network. The purpose of this upgrade is to support ATMS communications to traffic signal controllers and other traffic management devices at over 200 locations in Hartford, including the ten study area intersections.

Upon completion, both projects will improve the safety and efficiency of vehicular and pedestrian traffic in the City of Hartford and throughout the project study area.

## 4 Proposed Conditions

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### 4.1 Development

The development site is located on Washington Street, between Zweiback Street and Retreat Avenue as shown on the site location map, *Figure No. 1 of Appendix B*. CCMC proposes to construct a new 8-story, 191,442 square foot hospital expansion to their existing 321,132 square foot facility on Washington Street in Hartford. Upon completion, the facility will provide a total of 512,574 square feet of building space. The proposed building will include a dining area/kitchen, a lobby and conference space, fetal care/surgery areas, NICU, PICU, a pharmacy, and approximately 50,000 GSF will be shell space. The project also includes approximately 55,000 square feet of renovation space within the existing hospital. A new pedestrian bridge will connect the building addition to a new 950 space parking garage proposed across the street on the west side of Washington Street under a separate project. The development build year is assumed to be 2026.

### 4.2 Site Access and Circulation

Site access on Washington Street will be provided through a new drop off loop proposed at the building entrance with one entrance only drive and one exit only drive (opposite Lincoln Street) proposed on the east side of Washington Street. The existing drop off loop, which provides a connection to Zweiback Street, will be discontinued in lieu of the proposed building expansion. Future access to a proposed parking garage across Washington Street on the 289 Washington Street parcel will be provided via an entrance only driveway on Lincoln Street and an exit only driveway on Washington Street opposite the proposed entrance to the drop off loop. The garage will be connected to the medical center via a pedestrian walk bridge extending over Washington Street to allow for pedestrians to access the medical center. An at grade pedestrian crosswalk with push button actuation and a rectangular rapid-flashing beacon are also proposed on Washington Street, directly under the pedestrian walk bridge, to allow commuters from the first floor of the parking garage to cross the roadway directly and access the medical center.

The new drop off loop on Washington Street will include valet service and be used primarily for routine medical visits. The exit drive from the drop off loop will be located opposite Lincoln Street and provide



one combined through/left turn lane and one dedicated right turn lane. From the drop off loop exit, visitors and valet drivers are able to cross directly onto Lincoln Street to access the parking garage entrance. Similarly, the exit drive to the parking garage will align with the entrance to the drop off loop allowing easy return access for patient pick-ups.

A second drop-off area is currently located on the south side of Zweiback Street and will continue to be maintained by CCMC with vehicle drop off/pick up spaces and valet service provided. This second drop off loop will be used primarily for emergency department services in the proposed condition.

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### 4.3 Trip Generation

The expected site generated traffic volumes were calculated using existing empirical data from the Institute of Transportation Engineers (ITE) publication Trip Generation, 11th edition, 2021. This publication is an industry-accepted resource for determining trip generation.

Trip generation for the weekday morning and afternoon peak hour was calculated using the ITE land use code 610 "Hospital." Trip generation for the hospital expansion was conservatively calculated for a 193,000 square foot facility, slightly larger than what is proposed. For a 193,000 square foot hospital expansion, a total of 292 vehicle trips (196 entering, 96 exiting) is anticipated during the morning peak hour and during the afternoon peak hour, a total of 281 vehicle trips (98 entering, 183 exiting) is anticipated. A summary of the peak hour trip generation information for the proposed facility expansion is provided in *Table 1 of Appendix A*.

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### 4.4 Trip Distribution

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. During the peak hours, the following arrival distributions of traffic are anticipated:

- 30% from the north on Washington Street
- 20% from the north on Main Street
- 30% from the south on Washington Street
- 10% from the south on Maple Avenue
- 10% from the east on Wyllys Street

It should be noted that a different distribution of traffic entering and exiting the proposed site was used in the immediate vicinity of the site driveways for the morning and afternoon peak hours. Field observations revealed approximately 20% of the site generated traffic entered the existing drop-off loop on Zweiback Street during the morning peak hour and approximately 60% of the site generated traffic entered the drop-off loop during the afternoon peak hour. These percentages were assumed to be the same for the proposed main drop-off loop on Washington Street.

A regional arrival/departure distribution for the new site generated traffic traveling to and from the project site is shown in *Figures No. 4A and No. 4B of Appendix B*.



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## 4.5 Combined Volumes

The site generated traffic was distributed to the roadway system based on the arrival/departure distributions with the results shown in *Figure No. 5* of *Appendix B*. These volumes were then added to the background volumes to yield the year 2026 peak hour Combined traffic volumes shown in *Figure No. 6* of *Appendix B*.

# 5 Analyses

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## 5.1 Crash Analysis

Crash data was gathered from CTDOT via the University of Connecticut Crash Repository for the following intersections:

- Washington Street at Jefferson Street
- Washington Street at Zwieback Street
- Washington Street at Lincoln Street
- Washington Street at Allen Place
- Washington Street at Vernon Street and Retreat Avenue
- Seymour Street at Jefferson Street
- Seymour Street at Retreat Avenue
- Maple Avenue at Retreat Avenue
- Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street
- Main Street at Wyllys Street and Wethersfield Avenue

The records were gathered for the most recent three years of available data, 2019 through 2021. A summary of the crash data per intersection is provided in *Table 2* of *Appendix A*. Copies of the crash data records have been provided in *Appendix F*.

The intersection of Washington Street at Jefferson Street experienced 47 crashes during the three-year study period, averaging approximately 16 crashes per year. The majority of these crashes (24) were angle crashes. Additionally, the intersection experienced nine front to rear collisions, six same direction sideswipes, two front to front collisions, two fixed object crashes, two pedestrian crashes, and two opposite direction sideswipes. Of the total crashes reported, 18 resulted in minor injuries while the remainder were property damage only collisions.

One of the pedestrian crashes at the intersection of Washington Street and Jefferson Street occurred on September 23, 2019. The motor vehicle was travelling westbound when the pedestrian was struck at the crosswalk, located on the eastern leg of Jefferson Street. This crash resulted in a possible injury. The other pedestrian crash at this intersection occurred on February 26, 2020. The motor vehicle was travelling southbound on Washington Street, south of Jefferson Street, when the pedestrian was struck attempting to cross from the east to the west side of Washington Street. This crash resulted in a suspected minor injury.



The intersection of Washington Street at Zwieback Street experienced 22 crashes during the three-year study period, averaging approximately seven crashes per year. The majority of these crashes (7) were angle crashes. Additionally, the intersection experienced five same direction sideswipes, three front to rear collisions, three opposite direction sideswipes, two pedestrian crashes, one front to front collision, and one fixed object crash. Of the total crashes reported, seven resulted in injuries while the remainder were property damage only collisions.

One of the pedestrian crashes in the vicinity of the intersection of Washington Street and Zwieback Street occurred on July 24, 2019. The motor vehicle was turning left from Madison Street onto Washington Street when the pedestrian was attempting to cross from the east to the west side of Washington Street. This crash resulted in possible injury. Another pedestrian crash in the vicinity of this intersection occurred on December 21, 2019. The motor vehicle was travelling northbound on the southern leg of the intersection when the pedestrian was struck attempting to cross Washington Street from the southeastern corner to the southwestern corner of the intersection. This crash resulted in a suspected serious injury.

The intersection of Washington Street at Lincoln Street experienced 12 crashes during the three-year study period, averaging four crashes per year. The majority of these crashes (5) were front to rear collisions. Additionally, the intersection experienced three angle crashes, two unidentified crashes, and two same direction sideswipes. Of the total crashes reported, three resulted in injuries while the remainder were property damage only collisions.

The intersection of Washington Street at Allen Place experienced 16 crashes during the three-year study period, averaging approximately five crashes per year. The majority of these crashes (5) were front to rear and (5) same direction sideswipes. Additionally, the intersection experienced three angle crashes, one front to front collision, one non-fixed object crash, and one opposite direction sideswipe. Of the total crashes reported, six resulted in minor injuries while the remainder were property damage only collisions.

The intersection of Washington Street at Vernon Street and Retreat Avenue experienced 31 crashes during the three-year study period, averaging approximately 10 crashes per year. The majority of these crashes (10) were angle crashes. Additionally, the intersection experienced seven front to rear collisions, seven same direction sideswipes, three unidentified crashes, two front to front collisions, one fixed object crash, and one crash involving a bicyclist. Of the total crashes reported, one resulted in a fatality and 12 resulted in minor injuries, while the remainder were property damage only collisions.

The crash that involved a bicyclist at the intersection of Washington Street at Vernon Street and Retreat Avenue occurred on September 20, 2019. The motor vehicle was travelling westbound on Retreat Avenue when the bicyclist was struck at the crosswalk, located on the eastern leg of the intersection. This crash resulted in a suspected minor injury. The fatal crash was an angle collision that occurred on May 17, 2020. Two motor vehicles were entering the intersection, travelling northbound and westbound, when the vehicle travelling northbound violated traffic control, ran a red light, and collided into the side of the vehicle travelling westbound.



The intersection of Seymour Street at Jefferson Street experienced 33 crashes during the three-year study period, averaging 11 crashes per year. The majority of these crashes were (12) same direction sideswipes. Additionally, the intersection experienced nine front to rear collisions, seven angle crashes, three front to front collisions, one fixed object crash, and one unidentified crash. Of the total crashes reported, seven resulted in minor injuries while the remainder were property damage only collisions.

The intersection of Seymour Street at Retreat Avenue experienced 11 crashes during the three-year study period, averaging approximately four crashes per year. The majority of these crashes were (4) angle crashes. Additionally, the intersection experienced two front to front collisions, two fixed object crashes, one front to rear collision, one pedestrian crash, and one same direction sideswipe. Of the total crashes reported, three resulted in minor injuries while the remainder were property damage only collisions.

The intersection of Maple Avenue at Retreat Avenue experienced 29 crashes during the three-year study period, averaging approximately 10 crashes per year. The majority of these crashes were (13) front to rear collisions. Additionally, the intersection experienced eight same direction sideswipes, five angle crashes, one fixed object crash, one non-motorized scooter crash, and one opposite direction sideswipe. Of the total crashes reported, one resulted in a fatality and three resulted in minor injuries, while the remainder were property damage only collisions.

The fatal non-motorized scooter crash at the intersection of Maple Avenue and Retreat Avenue occurred on September 5, 2021. The motor vehicle was travelling southbound past the intersection when the non-motorized scooter was struck while traveling against oncoming traffic.

The intersection of Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street experienced 31 crashes during the three-year study period, averaging approximately 10 crashes per year. The majority of these crashes were (10) front to rear collisions. Additionally, the intersection experienced nine same direction sideswipes, seven angle crashes, one fixed object crash, one pedestrian crash, one crash involving a bicyclist, one unidentified crash, and one opposite direction sideswipe. Of the total crashes reported, 10 resulted in minor injuries while the remainder were property damage only collisions.

The pedestrian crash at the intersection of Main Street and Jefferson Street/Wyllys Street/Maple Avenue/Congress Street occurred on February 19, 2020. The motor vehicle was travelling northbound attempting to turn left from Main Street onto Jefferson Street when the pedestrian was struck. This crash resulted in a possible injury. The crash involving a bicyclist at this intersection occurred on October 24, 2020. The motor vehicle was travelling northbound, attempting to make a right turn from Main Street onto Wyllys Street when the bicyclist was struck attempting to cross from the west to east side of Main Street. This crash resulted in a possible injury.

The intersection of Main Street at Wyllys Street and Wethersfield Avenue experienced 63 crashes during the three-year study period, averaging 21 crashes per year. The majority of these crashes were (16) front to rear collisions. Additionally, the intersection experienced 15 same direction sideswipes, 11 angle crashes, six unidentified crashes, four pedestrian crashes, three front to front collisions, three opposite direction sideswipes, two fixed object crashes, two non-fixed object crashes, and one rear to side crash.



Of the total crashes reported, 19 resulted in minor injuries while the remainder were property damage only collisions.

One of the pedestrian crashes at the intersection of Main Street, Wyllys Street, and Wethersfield Avenue occurred on March 25, 2019. The motor vehicle was backing onto the sidewalk on the southeastern corner of the intersection when the pedestrian was struck. This crash resulted in a possible injury. The second pedestrian crash at this intersection occurred on October 10, 2019. The motor vehicle was travelling northbound in the dedicated left turn lane at the intersection when two pedestrians were struck. This crash resulted in possible injuries. Two pedestrian crashes occurred at the crosswalk on the western leg of the intersection on September 5, 2020, and December 27, 2020. In both scenarios, the motor vehicles travelling northbound was attempting to make a left turn from Wethersfield Avenue onto Wyllys Street when the pedestrian was struck on the crosswalk. Both crashes resulted in minor injuries.

The proposed hospital expansion traffic is not expected to exacerbate existing crash patterns or negatively impact overall traffic safety within the study area. As previously noted, a new actuated pedestrian crosswalk with flashing beacons and a pedestrian overpass are proposed to connect the new hospital parking garage with the CCMC building. This will significantly improve pedestrian safety in the vicinity of the site for both hospital users and the general public. In addition, the substantial traffic control system improvements proposed by two State projects underway will improve the safety and efficiency of traffic operations at all signalized intersections within the study area.

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## 5.2 Intersection Sight Distance Analysis

Intersection sight distances were calculated at the proposed drop off loop exit on Washington Street in accordance with criteria set forth in the 2003 CTDOT *Highway Design Manual*. Intersection sight distance is measured from a point 15 feet back from the edge of travel-way at a height of 3.5 feet, the standard height of a driver's eye.

Washington Street has a posted speed limit of 30 per hour in both directions in the vicinity of the proposed expansion. A design speed of 35 miles per hour, 5 miles per hour above the posted speed limit, was utilized for analysis.

In accordance with criteria set forth in the 2003 CTDOT *Highway Design Manual*, 415 feet of intersection sight distance is required for a passenger car turning left onto a four-lane facility and 390 feet of intersection sight distance is required for a passenger car turning right from the proposed exit only site driveway onto Washington Street.

At the proposed exit only site driveway, the sight distance looking right (north) and left (south) is currently obstructed by parked CTtransit busses as well as restricted on-street parking along the site frontage. It is recommended that the on-street bus stop to the north of the proposed drop off loop exit be relocated into a bus pull off area to eliminate sight line obstructions from parked buses. In addition, it is recommended that the off peak hour restricted on-street parking along the site frontage (between the proposed drop off loop entry and exit lanes) be eliminated. Upon the relocation of the bus stop and the removal of the restricted on-street parking, over 1,000 feet of intersection sight distance will be provided



looking in both directions, left (south) and right (north). Therefore, sufficient sight distance exists to allow for safe egress of passenger cars attempting to turn left, right or proceed straight across Washington Street onto Lincoln Street.

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### 5.3 Intersection Capacity Analysis

Capacity analyses for both signalized and unsignalized intersections were conducted using Synchro Professional Software, version 10.0.

In discussing intersection capacity analyses results, two terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio ( $v/c$ ) and level of service (LOS).

The  $v/c$  ratio is a ratio of the volume of traffic using an intersection to the total capacity of the intersection (the maximum number of vehicles that can utilize the intersection during an hour). The  $v/c$  ratio can be used to describe the percentage of capacity utilized by a single intersection movement, a combination of movements, an entire intersection approach, or the intersection as a whole.

LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle for unsignalized intersections and 80 seconds per vehicle for signalized intersections. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers.

LOS is generally used to describe the operation (based on delay time) of both signalized and unsignalized intersections, while  $v/c$  ratio is applied to signalized intersections only. These definitions for  $v/c$  ratio and LOS, as well as the methodology for conducting signalized and unsignalized intersection capacity analyses, are taken from the “2000 Highway Capacity Manual” and the “Highway Capacity Manual 6<sup>th</sup> Edition” published by the Transportation Research Board.

In discussing two way stop controlled unsignalized intersection capacity analyses, LOS is used to provide a description of the delay and operational characteristics of the turns from the minor street (stop sign controlled) to the major street, and turns from the major street to the minor street. Through vehicles are not delayed by the minor street and do not experience delay, therefore they are not rated with a level of service.

In discussed all-way stop controlled intersection capacity analysis, LOS provides a description of the delay for each approach as well as the overall intersection.

Using the above referenced methodologies, weekday morning and afternoon peak hour capacity analyses were conducted at the following signalized intersections:

- Washington Street at Jefferson Street
- Washington Street at Zwieback Street



- Washington Street at Allen Place and Hospital Garage Drive
- Washington Street at Vernon Street and Retreat Avenue
- Seymour Street at Jefferson Street
- Seymour Street at Retreat Avenue
- Maple Avenue at Retreat Avenue
- Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street
- Main Street at Wyllys Street and Wethersfield Avenue

Weekday morning and afternoon peak hour capacity analyses were also conducted at the following unsignalized intersections:

- Washington Street at Lincoln Street and the Proposed Drop Off Loop Exit Only Drive #2
- Washington Street at the proposed CCMC Parking Garage Exit Only Drive and the Drop Off Loop Enter Only Drive #1

*Tables No. 3 and 4 of Appendix A* present a summary of the levels of service at the unsignalized and signalized intersections, for both Background and Combined Conditions traffic volumes. Copies of the analysis worksheets can be found in *Appendices C and D*, for the weekday morning and afternoon peak hours respectively.

The determination of the traffic impact from the proposed development is made through a comparison of the Background Conditions LOS (without the proposed hospital expansion) versus the Combined Conditions LOS (with the proposed hospital expansion).

The capacity analysis at Washington Street and Jefferson Street revealed that the signalized intersection operates acceptably at an overall LOS C in the background and combined conditions during both the weekday morning and afternoon peak hours.

The capacity analysis at Washington Street and Zwieback Street revealed that the signalized intersection operates efficiently at LOS A in the background and combined conditions during the weekday morning peak hour and operates efficiently at LOS B in the background and combined conditions during the afternoon peak hour.

The capacity analysis at the unsignalized intersection of Washington Street and Lincoln Street and the proposed drop off loop exit only site drive #2 revealed that the northbound left turn movement onto Lincoln Street will continue to operate efficiently at LOS A and the westbound through/left turn movement from the proposed drop off loop exit will operate with some delay at LOS E in the background and combined conditions during both the weekday morning and afternoon peak hours. It should be noted that delays exiting the westbound approach from the drop off loop will occur primarily during the peak hours and any delayed vehicles will be queued at the end of the drop off loop and not impact traffic operations on Washington Street. Regular gaps in traffic on Washington Street are provided when the nearby traffic signals at Zwieback Street and Retreat Avenue change phase. These frequent gaps enable vehicles to safely exit from the drop off loop onto either Washington Street or Lincoln Street.



The capacity analysis at the unsignalized intersection of Washington Street and the proposed future CCMC Garage exit drive and the drop off loop enter only drive #1 revealed that the eastbound approach from the proposed garage exit will experience an acceptable LOS C operation and the southbound left turn into the proposed drop off loop entrance will experience an efficient LOS A operation in the combined condition during both the weekday morning and afternoon peak hours.

The capacity analysis at Washington Street at Allen Place and existing Hospital Garage Drive revealed that the signalized intersection operates efficiently at LOS A in the background and combined conditions during the weekday morning peak hour and operates efficiently at LOS B in the background and combined conditions during the afternoon peak hour.

The capacity analysis at Washington Street at Vernon Street and Retreat Avenue revealed that the signalized intersection operates with at LOS F with some vehicle delays under background and combined conditions during the morning peak hour. In the afternoon peak hour, the intersection experiences LOS E operations under both background and combined conditions. The additional traffic from the proposed development expansion will have little impact to the overall intersection delays and volume to capacity ratios at the intersection.

The capacity analysis at Seymour Street at Jefferson Street revealed that the signalized intersection operates acceptably at an overall LOS C in the background and combined conditions during both the weekday morning and afternoon peak hours.

The capacity analysis at Seymour Street at Retreat Avenue revealed that the signalized intersection operates acceptably at an overall LOS C in the background and combined conditions during both the weekday morning and afternoon peak hours.

The capacity analysis at Maple Avenue at Retreat Avenue revealed that the signalized intersection operates acceptably at an overall LOS C in the background and combined conditions during both the weekday morning and afternoon peak hours.

The capacity analysis at Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street revealed that the signalized intersection will continue to operate at an acceptable LOS C or LOS D operation under background and combined conditions during the weekday morning and afternoon peak hours, respectively.

The capacity analysis at Main Street at Wyllys Street and Wethersfield Avenue revealed that the signalized intersection will continue to operate at an acceptable LOS D under background and combined conditions during the weekday morning and afternoon peak hours, respectively.

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## 5.4 Queue Analysis

Background and Combined Condition 95<sup>th</sup> percentile (design) queue lengths were reviewed at each intersection in the study area. The 95<sup>th</sup> percentile (design) vehicle queue lengths represent the maximum queue lengths that can be expected at each of the critical approach lanes of the study area intersections. The queue lengths are provided in the Synchro capacity analysis worksheets, which are located in



*Appendix C and D. Tables 5 and 6 of Appendix A provide a summary of the queue lengths for the critical lanes at each intersection.*

The results of the queue analysis indicate that the proposed hospital expansion will have minimal increases in queue lengths (three vehicle lengths or less) on all study area intersection approach lanes during both peak hours. At the majority of the intersection approaches, sufficient lane storage lengths exist to accommodate both background and combined condition queues. The analysis did reveal some individual intersection approach queues within the study area that currently exceed their available lane storages in the existing condition peak hours however the projected queue increases at these locations as a result of the additional hospital traffic are negligible.

At the proposed drop off loop exit on Washington Street, queue lengths are projected to be approximately one vehicle length during the morning peak hour and up to two vehicle lengths in the afternoon peak hour. At the future parking garage exit on Washington Street, queue lengths are projected to be approximately one vehicle length during the morning peak hour and up to three vehicle lengths in the afternoon peak hour.

It should be noted that the proposed drop off loop exit will be located approximately 200 feet south of the signalized intersection of Washington Street at Zwieback Street and northbound queues from the signalized intersection may occasionally reach the exit only site driveway. However, blockages are anticipated to be infrequent and will primarily occur during the peak hours. The queues on Washington Street regularly clear when the adjacent traffic signal at Zweiback Street changes phase and gaps in traffic are subsequently provided to enable vehicles to turn out of the site. The recommendation to provide a dedicated bus pull off area and eliminate off peak hour on street parking on Washington Street adjacent to the site frontage will aid in clearing up the right northbound lane for vehicle travel and queueing. This additional travel lane storage capacity will serve to reduce the northbound queueing on Washington Street at the Zweiback Street signal. "Do Not Block the Box" pavement markings and signage should also be considered on Washington Street northbound to discourage vehicles from queueing across the intersection.

## 6 Conclusions & Recommendations

The purpose of preparing a Traffic Impact Study is to identify the impact of the proposed hospital expansion site generated traffic. The study efforts have indicated that the hospital expansion will generate up to 292 trips (196 entering, 96 exiting) during the weekday morning peak hour and up to 281 trips (98 entering, 183 exiting) during the weekday afternoon peak hour.

The capacity analysis revealed that none of the study area intersections will experience a decrease in intersection LOS as a result of the proposed hospital expansion traffic.

Upon review of the queue analysis, the proposed hospital expansion will have minimal increases in queue lengths (three vehicle lengths or less) on all study area intersection approach lanes during both peak hours. At the majority of the intersection approaches, sufficient lane storage lengths exist to accommodate both background and combined condition queues. The analysis did reveal some individual intersection approach queues within the study area that currently exceed their available lane



storages in the existing condition peak hours however the projected queue increases at these locations as a result of the additional hospital traffic are negligible.

In order to improve the safety and efficiency of vehicular and pedestrian traffic at the study area intersections in the future, CTDOT will be completing two traffic signal control upgrade projects in the City of Hartford to improve signal coordination and replace antiquated equipment along several roadway corridors. The traffic signal upgrades include new controllers, video detection to improve traffic management, and the ability to support ATMS communications to traffic signal controllers and other traffic management devices.

Review of the most recent three years of available crash data provided by the University of Connecticut Crash Data Repository indicated crash patterns that are not uncommon for urban intersections. The proposed hospital expansion traffic is not expected to exacerbate existing crash patterns or negatively impact overall traffic safety within the study area. The proposed improvements on Washington Street as part of this project along with the substantial traffic control system improvements proposed by two State projects underway will improve the safety of traffic operations within the study area in the future.

CCMC site access on Washington Street is proposed through a new drop off loop at the building entrance with one entrance only drive and one exit only drive (opposite Lincoln Street) proposed on the east side of Washington Street. Future access to a proposed 950 space parking garage across Washington Street on the 289 Washington Street parcel will be provided via an entrance only driveway on Lincoln Street and an exit only driveway on Washington Street opposite the proposed entrance to the drop off loop. The garage will be connected to the medical center via a pedestrian walk bridge extending over Washington Street to allow for pedestrians to access the medical center. An at grade pedestrian crosswalk with push button actuation and a rectangular rapid-flashing beacon are also proposed on Washington Street, directly under the pedestrian walk bridge, to allow commuters from the first floor of the parking garage to cross the roadway directly and access the medical center.

The new drop off loop on Washington Street will include valet service and be used primarily for routine medical visits. The exit drive from the drop off loop will be located opposite Lincoln Street and provide one combined through/left turn lane and one dedicated right turn lane. From the drop off loop exit, visitors and valet drivers are able to cross directly onto Lincoln Street to access the parking garage entrance. Similarly, the exit drive to the parking garage will align with the entrance to the drop off loop allowing easy return access for patient pick-ups.

A second drop-off area, currently located on the south side of Zweiback Street, will continue to be maintained by CCMC with vehicle drop off/pick up spaces and valet service provided. This second drop off loop will be used primarily for emergency department services in the proposed condition.

Sight lines and intersection safety were reviewed at the proposed drop off loop exit on Washington Street opposite Lincoln Street. Field measurements revealed that sufficient intersection sight distance exists for vehicles looking right (north) and left (south) to allow for safe egress from the drop off loop upon the relocation of the CTtransit bus stop to the north of the site driveway into a dedicated pull off area and removal of the off-peak hour restricted parking along the site frontage on the east side of Washington Street. These improvements will also free up the right northbound travel lane for use during



the peak hours and serve to reduce northbound queuing on Washington Street at the Zweiback Street traffic signal.

In summary, the following off-site improvements are recommended to safely accommodate the additional vehicular and pedestrian traffic generated by the hospital expansion:

1. Relocate the on-street CT transit bus stop on the east side of Washington Street into a dedicated bus pull off area between Zweiback Street and the proposed exit to the drop off loop.
2. Eliminate the restricted on-street parking on the east side of Washington Street along the site frontage and between the proposed drop off loop entrance and exit.
3. Consider “Do Not Block the Box” pavement markings and signage on Washington Street northbound at the intersection of Lincoln Street and the proposed drop off loop exit to discourage northbound traffic from queuing through the intersection during peak hours.
4. Provide a pedestrian bridge over Washington Street connecting the proposed parking garage and expanded CCMC facility.
5. Provide a new at grade crosswalk with push button actuation and flashing beacons on Washington Street on the south side of the Lincoln Street/drop off loop exit intersection.

Based on the results of the foregoing analysis and upon inclusion of the recommendations outlined above, it is the professional opinion of Fuss & O'Neill, Inc. that the proposed Connecticut Children's Medical Center expansion will not have a significant impact to traffic operations within the study area.



# Appendix A

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## Tables



**Table 1**

**Peak Hour Site Generated Traffic Volumes  
Connecticut Children's Medical Center Expansion  
Hartford, Connecticut**

<b>191,442 sq. ft. Hospital Expansion</b>	<b>Total Trips</b>	<b>Trips Entering</b>	<b>Trips Exiting</b>
<b>Morning Peak Hour</b>	292	196	96
<b>Afternoon Peak Hour</b>	281	98	183

Note: Trip generation based on Rate per Land use Code 610 (Hospital), as published in *Trip Generation*, 11<sup>th</sup> Edition, 2021. Trip generation rates above were conservatively calculated for 193,000 SF of building area.



**Table 2**  
**Intersection Crash Data Summary**  
**Connecticut Children's Medical Center Expansion**  
**Hartford, Connecticut**

Intersections/Road Segments	Crashes Per Year			
	2019	2020	2021	Average/Year
Washington Street at Jefferson Street	25*	16	6	16
Washington Street at Zwieback Street	5	14	3	7
Washington Street at Lincoln Street	9	2	1	4
Washington Street at Allen Place	5	11	0	5
Washington Street at Vernon Street and Retreat Avenue	17	9	5	10
Seymour Street at Jefferson Street	19	8	6	11
Seymour Street at Retreat Avenue	6	3	2	4
Maple Avenue at Retreat Avenue	13	8	8	10
Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street	14	12	5	10
Main Street at Wyllys Street and Wethersfield Avenue	27	26	10	21

\*Values indicated are number of crashes within 200 feet of each intersection during time period shown.  
 Data provided by the Connecticut Department of Transportation via the UConn Crash Data Repository.



**Table 3**

**Unsignalized Intersection Level Of Service Summary  
Connecticut Children's Medical Center Expansion  
Hartford, Connecticut**

<b>Two-Way Stop Controlled Intersections (Critical Movements)</b>	<b>2026 Weekday Morning Peak Hour</b>		<b>2026 Weekday Afternoon Peak Hour</b>	
	<b>Background</b>	<b>Combined</b>	<b>Background</b>	<b>Combined</b>
<b>Washington Street at Lincoln Street and Site Drive #2 (Drop off loop exit)</b>				
NB Left Turn	LOS A*	LOS A	LOS A	LOS A
WB Through/Left Turn	N/A	LOS E	N/A	LOS E
<b>Washington Street at CCMC Parking Garage Exit Only Drive and Site Drive #1 (Drop off loop entrance)</b>				
EB Approach	N/A	LOS C	N/A	LOS C
SB Left Turn	N/A	LOS A	N/A	LOS A

\*Values indicated are critical movement Level of Service (LOS)



**Table 4**

**Signalized Intersection Level of Service Summary  
 Connecticut Children's Medical Center  
 Hartford, Connecticut**

Signalized Intersections	2026 Weekday Morning Peak Hour		2026 Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
Washington Street at Jefferson Street	0.39/LOS C*	0.46/LOS C	0.50/LOS C	0.57/LOS C
EB Approach	LOS D	LOS C	LOS D	LOS D
WB Approach	LOS D	LOS E	LOS E	LOS E
NB Approach	LOS C	LOS C	LOS A	LOS A
SB Approach	LOS A	LOS B	LOS B	LOS B
Washington Street at Zwieback Street	0.27/LOS A	0.30/LOS A	0.33/LOS B	0.37/LOS B
EB Approach	LOS D	LOS D	LOS D	LOS D
WB Approach	LOS C	LOS C	LOS D	LOS D
NB Approach	LOS A	LOS A	LOS A	LOS A
SB Approach	LOS A	LOS A	LOS A	LOS A
Washington Street at Allen Place and Hospital Garage Drive	0.33/LOS A	0.37/LOS A	0.35/LOS B	0.37/LOS B
EB Approach	LOS D	LOS D	LOS F	LOS F
WB Approach	LOS C	LOS C	LOS D	LOS D
NB Approach	LOS A	LOS A	LOS A	LOS A



Signalized Intersections	2026 Weekday Morning Peak Hour		2026 Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
SB Approach	LOS A	LOS A	LOS A	LOS A
Washington Street at Vernon Street and Retreat Avenue	1.35/LOS F	1.40/LOS F	0.81/LOS E	0.88/LOS E
EB Approach	LOS F	LOS F	LOS D	LOS D
WB Approach	LOS F	LOS F	LOS D	LOS D
NB Approach	LOS F	LOS F	LOS F	LOS F
SB Approach	LOS F	LOS F	LOS E	LOS E
Seymour Street at Jefferson Street	0.42/LOS C	0.45/LOS C	0.53/LOS C	0.58/LOS C
EB Approach	LOS C	LOS D	LOS C	LOS C
WB Approach	LOS B	LOS C	LOS B	LOS B
NB Approach	LOS B	LOS B	LOS C	LOS C
Seymour Street at Retreat Avenue and IOL Drive	0.48/LOS C	0.50/LOS C	0.43/LOS C	0.43/LOS C
EB Approach	LOS C	LOS C	LOS C	LOS C
WB Approach	LOS C	LOS C	LOS C	LOS C
NB Approach	LOS C	LOS C	LOS C	LOS C
SB Approach	LOS C	LOS C	LOS C	LOS C
Maple Avenue at Retreat Avenue	0.39/LOS C	0.39/LOS C	0.51/LOS C	0.52/LOS C
EB Approach	LOS D	LOS D	LOS D	LOS D
NB Approach	LOS A	LOS A	LOS B	LOS B



Signalized Intersections	2026 Weekday Morning Peak Hour		2026 Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
SB Approach	LOS D	LOS D	LOS C	LOS C
Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street	0.62/LOS C	0.64/LOS C	0.62/LOS D	0.65/LOS D
EB Approach	LOS D	LOS D	LOS E	LOS D
WB Approach	LOS C	LOS C	LOS D	LOS D
NB Approach	LOS C	LOS C	LOS B	LOS C
SB Approach	LOS D	LOS D	LOS C	LOS D
Main Street at Wyllys Street and Wethersfield Avenue	0.58/LOS D	0.60/LOS D	0.66/LOS D	0.68/LOS D
EB Approach	LOS D	LOS D	LOS D	LOS D
WB Approach	LOS C	LOS C	LOS C	LOS C
NB Approach	LOS C	LOS C	LOS D	LOS D
SB Approach	LOS D	LOS D	LOS D	LOS D

\*Values indicated are intersection v/c Ratio/LOS



**Table 5**

**Weekday Morning Peak Hour Queue Length Summary**  
**Connecticut Children's Medical Center**  
**Hartford, Connecticut**

<b>Intersection</b>	<b>Approach Lane</b>	<b>2026 Background Queue</b>	<b>2026 Combined Queue</b>	<b>Available Storage</b>
Washington Street at Jefferson Street	EB Through/Left/Right Turn	120 Feet	120 Feet	>1,000 Feet
	WB Through/Left/Right Turn	105 Feet	130 Feet	430 Feet
	NB Through/Left/Right Turn	110 Feet	100 Feet	365 Feet
	SB Through/Left/Right Turn	130 Feet	145 Feet	215 Feet
Washington Street at Zwieback Street	EB Through/Left/Right Turn	70 Feet	70 Feet	>70 Feet
	WB Through/Left Turn	50 Feet	50 Feet	175 Feet
	WB Right Turn	10 Feet	10 Feet	175 Feet
	NB Left Turn	20 Feet	25 Feet	55 Feet
	NB Through/Right Turn	90 Feet	125 Feet	565 Feet
	SB Left Turn	25 Feet	25 Feet	255 Feet
Washington Street at Lincoln Street and Site Drive #2	WB Through/Left Turn	N/A	30 Feet	>80 Feet
	NB Left Turn	5 Feet	10 Feet	360 Feet
Washington Street at CCMC Parking Garage and Site Drive #1	EB Left/Right Turn	N/A	25 Feet	>50 Feet
	SB Left Turn	N/A	0 Feet	270 Feet
Washington Street at Allen Place	EB Through/Left/Right Turn	105 Feet	105 Feet	>1,000 Feet
	WB Left Turn	25 Feet	25 Feet	50 Feet
	WB Through/Right Turn	40 Feet	40 Feet	>165 Feet
	NB Through/Left/Right Turn	25 Feet	30 Feet	270 Feet
	SB Through/Left Turn	25 Feet	35 Feet	565 Feet



<b>Intersection</b>	<b>Approach Lane</b>	<b>2026 Background Queue</b>	<b>2026 Combined Queue</b>	<b>Available Storage</b>
Washington Street at Vernon Street and Retreat Avenue	EB Left Turn	60 Feet	60 Feet	85 Feet
	EB Through/Right Turn	215 Feet	215 Feet	>1,000 Feet
	WB Left Turn	180 Feet	180 Feet	90 Feet
	WB Through/Right Turn	155 Feet	155 Feet	540 Feet
	WB Right Turn	30 Feet	40 Feet	90 Feet
	NB Through/Left/Right Turn	230 Feet	285 Feet	355 Feet
	SB Through/Left/Right Turn	215 Feet	245 Feet	270 Feet
Seymour Street at Jefferson Street	EB Through/Left/Right Turn	215 Feet	260 Feet	435 Feet
	WB Left Turn	145 Feet	145 Feet	355 Feet
	WB Through/Right Turn	120 Feet	155 Feet	120 Feet
	NB Through/Left Turn	45 Feet	45 Feet	275 Feet
	NB Right Turn	70 Feet	70 Feet	275 Feet
Seymour Street at Retreat Avenue	EB Left Turn	85 Feet	85 Feet	50 Feet
	EB Through/Right Turn	215 Feet	220 Feet	560 Feet
	WB Left Turn	125 Feet	130 Feet	50 Feet
	WB Through/Right Turn	360 Feet	420 Feet	650 Feet
	NB Through/Left/Right Turn	30 Feet	30 Feet	70 Feet
	SB Through/Left/Right Turn	110 Feet	110 Feet	400 Feet
Maple Avenue at Retreat Avenue	EB Left/Right Turn	150 Feet	155 Feet	610 Feet
	NB Through/Left Turn	170 Feet	175 Feet	800 Feet
	SB Through	280 Feet	280 Feet	155 Feet
	SB Left Turn	340 Feet	340 Feet	155 Feet
Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street	EB Through/Left/Right Turn	105 Feet	120 Feet	560 Feet
	WB Left Turn	555 Feet	560 Feet	195 Feet
	WB Through/Right Turn	400 Feet	475 Feet	195 Feet
	NB Through/Left Turn	150 Feet	160 Feet	145 Feet
	NB Right Turn	310 Feet	315 Feet	145 Feet
	SB Through/Left/Right Turn	135 Feet	145 Feet	525 Feet



<b>Intersection</b>	<b>Approach Lane</b>	<b>2026 Background Queue</b>	<b>2026 Combined Queue</b>	<b>Available Storage</b>
Main Street at Wyllys Street and Wethersfield Avenue	EB Through/Left/Right Turn	190 Feet	200 Feet	195 Feet
	WB Through/Left/Right Turn	260 Feet	280 Feet	355 Feet
	NB Left Turn	100 Feet	100 Feet	170 Feet
	NB Through/Right Turn	315 Feet	315 Feet	385 Feet
	SB Left Turn	50 Feet	50 Feet	365 Feet
	SB Through/Right Turn	200 Feet	200 Feet	365 Feet

NOTE: Values indicated represent 95<sup>th</sup> percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.



**Table 6**

**Weekday Afternoon Peak Hour Queue Length Summary**  
**Connecticut Children's Medical Center**  
**Hartford, Connecticut**

<b>Intersection</b>	<b>Approach Lane</b>	<b>2026 Background Queue</b>	<b>2026 Combined Queue</b>	<b>Available Storage</b>
Washington Street at Jefferson Street	EB Through/Left/Right Turn WB Through/Left/Right Turn NB Through/Left/Right Turn SB Through/Left/Right Turn	130 Feet 215 Feet 80 Feet 120 Feet	130 Feet 240 Feet 85 Feet 125 Feet	>1,000 Feet 430 Feet 365 Feet 215 Feet
Washington Street at Zwieback Street	EB Through/Left/Right Turn WB Through/Left Turn WB Right Turn NB Left Turn NB Through/Right Turn SB Left Turn SB Through/Right Turn	35 Feet 130 Feet 55 Feet 10 Feet 75 Feet 15 Feet 35 Feet	35 Feet 130 Feet 55 Feet 10 Feet 100 Feet 15 Feet 45 Feet	>70 Feet 175 Feet 175 Feet 55 Feet 565 Feet 255 Feet 365 Feet
Washington Street at Lincoln Street and Site Drive #2	WB Through/Left Turn NB Left Turn	N/A 5 Feet	50 Feet 5 Feet	>80 Feet 360 Feet
Washington Street at CCMC Parking Garage and Site Drive #1	EB Left/Right Turn SB Left Turn	N/A N/A	70 Feet 5 Feet	>50 Feet 270 Feet
Washington Street at Allen Place	EB Through/Left/Right Turn WB Left Turn WB Through/Right Turn NB Through/Left/Right Turn SB Through/Left Turn	145 Feet 75 Feet 75 Feet 95 Feet 5 Feet	145 Feet 75 Feet 75 Feet 95 Feet 25 Feet	>1,000 Feet 50 Feet >165 Feet 270 Feet 565 Feet



<b>Intersection</b>	<b>Approach Lane</b>	<b>2026 Background Queue</b>	<b>2026 Combined Queue</b>	<b>Available Storage</b>
Washington Street at Vernon Street and Retreat Avenue	EB Left Turn	110 Feet	120 Feet	85 Feet
	EB Through/Right Turn	405 Feet	440 Feet	>1,000 Feet
	WB Left Turn	135 Feet	135 Feet	90 Feet
	WB Through/Right Turn	310 Feet	315 Feet	540 Feet
	WB Right Turn	50 Feet	55 Feet	90 Feet
	NB Through/Left/Right Turn	150 Feet	140 Feet	355 Feet
	SB Through/Left/Right Turn	215 Feet	250 Feet	270 Feet
Seymour Street at Jefferson Street	EB Through/Left/Right Turn	220 Feet	275 Feet	435 Feet
	WB Left Turn	75 Feet	75 Feet	355 Feet
	WB Through/Right Turn	175 Feet	190 Feet	120 Feet
	NB Through/Left Turn	160 Feet	160 Feet	275 Feet
	NB Right Turn	235 Feet	235 Feet	275 Feet
Seymour Street at Retreat Avenue	EB Left Turn	55 Feet	55 Feet	50 Feet
	EB Through/Right Turn	245 Feet	260 Feet	560 Feet
	WB Left Turn	35 Feet	35 Feet	50 Feet
	WB Through/Right Turn	310 Feet	320 Feet	650 Feet
	NB Through/Left/Right Turn	90 Feet	90 Feet	70 Feet
	SB Through/Left/Right Turn	160 Feet	160 Feet	400 Feet
Maple Avenue at Retreat Avenue	EB Left/Right Turn	325 Feet	340 Feet	610 Feet
	NB Through/Left Turn	130 Feet	135 Feet	800 Feet
	SB Through	465 Feet	475 Feet	155 Feet
	SB Left Turn	75 Feet	80 Feet	155 Feet
Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street	EB Through/Left/Right Turn	275 Feet	335 Feet	560 Feet
	WB Left Turn	335 Feet	335 Feet	195 Feet
	WB Through/Right Turn	325 Feet	360 Feet	195 Feet
	NB Through/Left Turn	230 Feet	260 Feet	145 Feet
	NB Right Turn	265 Feet	265 Feet	145 Feet
	SB Through/Left/Right Turn	165 Feet	170 Feet	525 Feet



<b>Intersection</b>	<b>Approach Lane</b>	<b>2026 Background Queue</b>	<b>2026 Combined Queue</b>	<b>Available Storage</b>
Main Street at Wyllys Street and Wethersfield Avenue	EB Through/Left/Right Turn	315 Feet	355 Feet	195 Feet
	WB Through/Left/Right Turn	210 Feet	220 Feet	355 Feet
	NB Left Turn	120 Feet	120 Feet	170 Feet
	NB Through/Right Turn	370 Feet	370 Feet	385 Feet
	SB Left Turn	55 Feet	55 Feet	365 Feet
	SB Through/Right Turn	255 Feet	255 Feet	365 Feet

NOTE: Values indicated represent 95<sup>th</sup> percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.



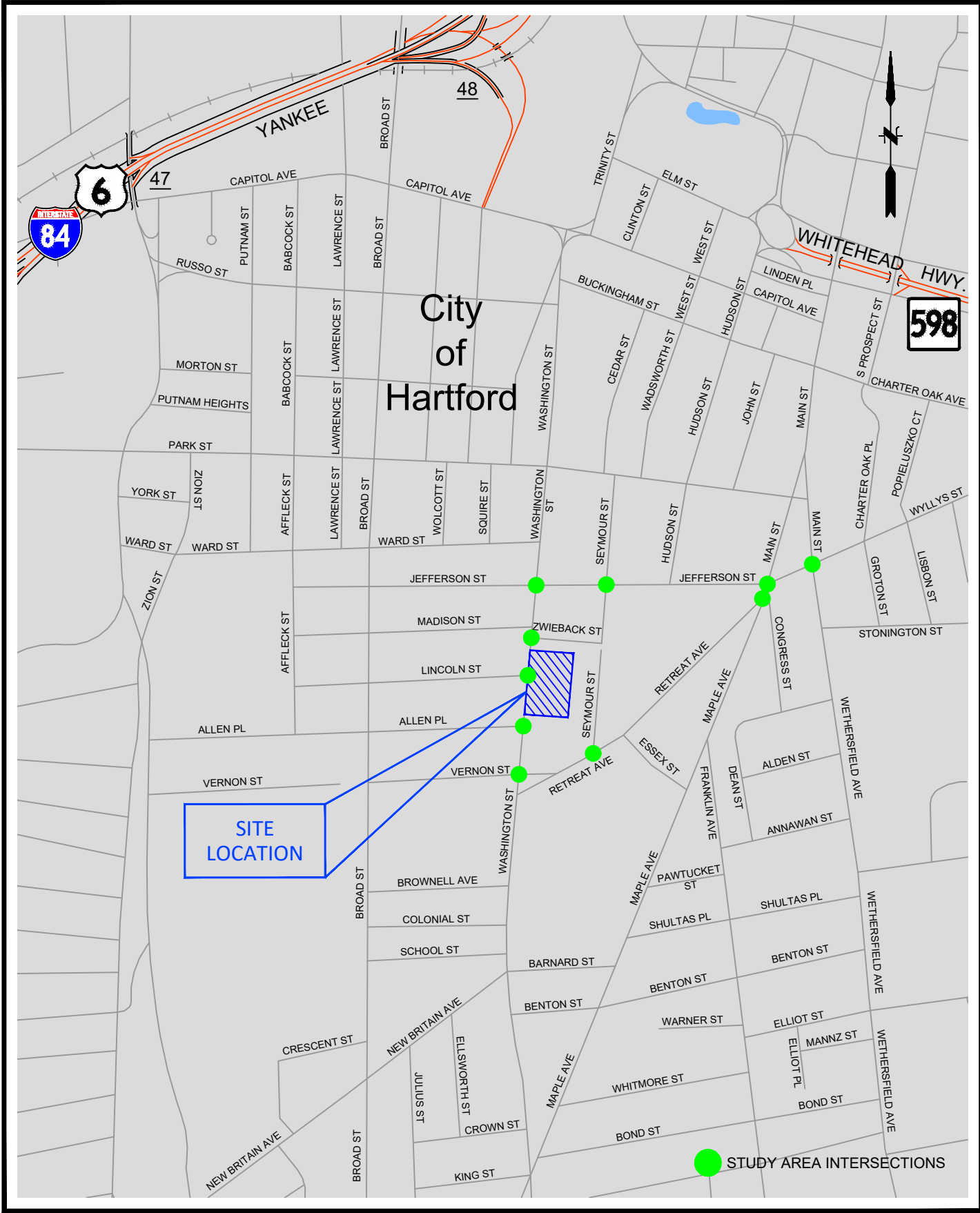
## Appendix B

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### Figures



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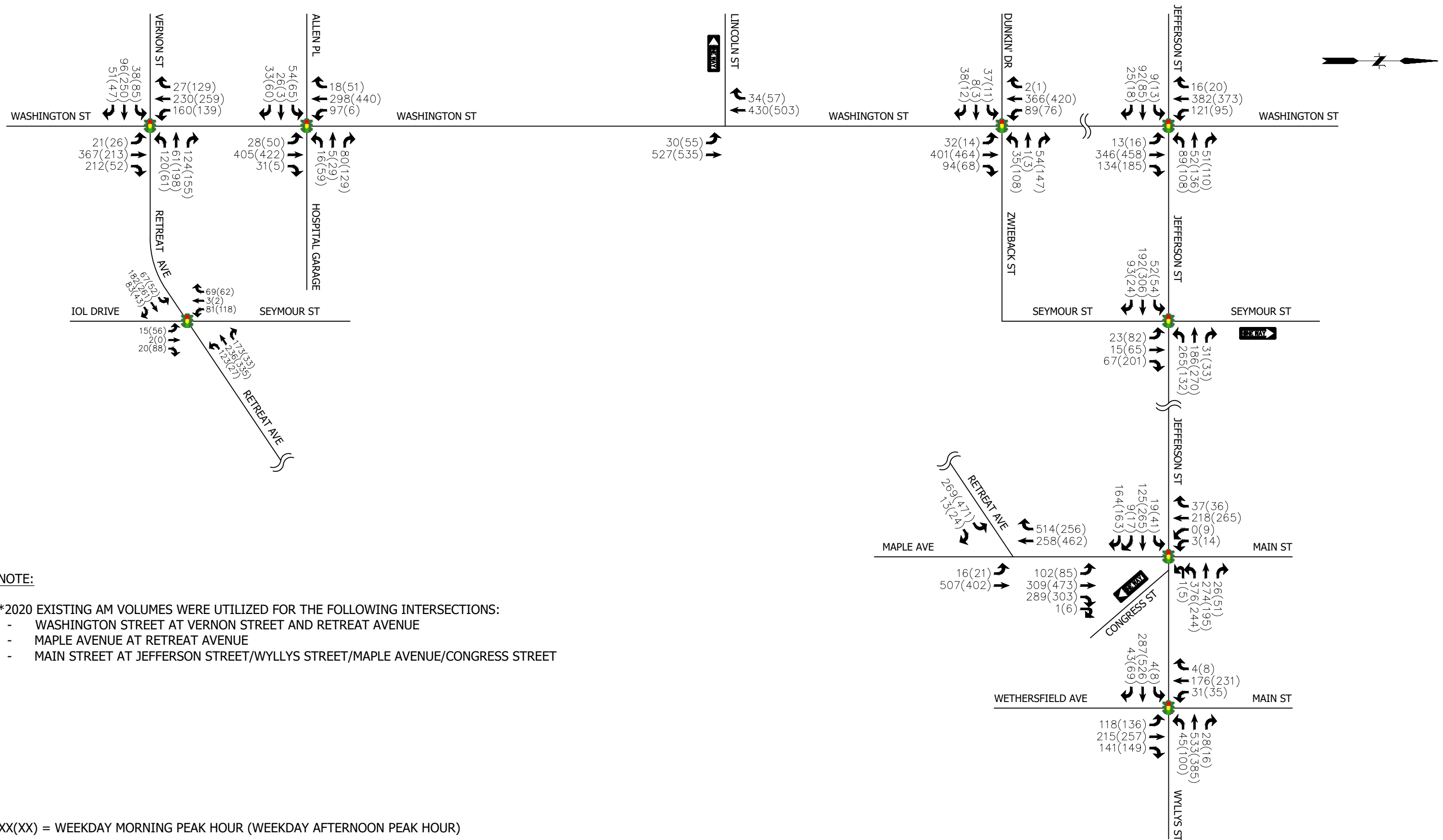


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 146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2409  
 www.fando.com

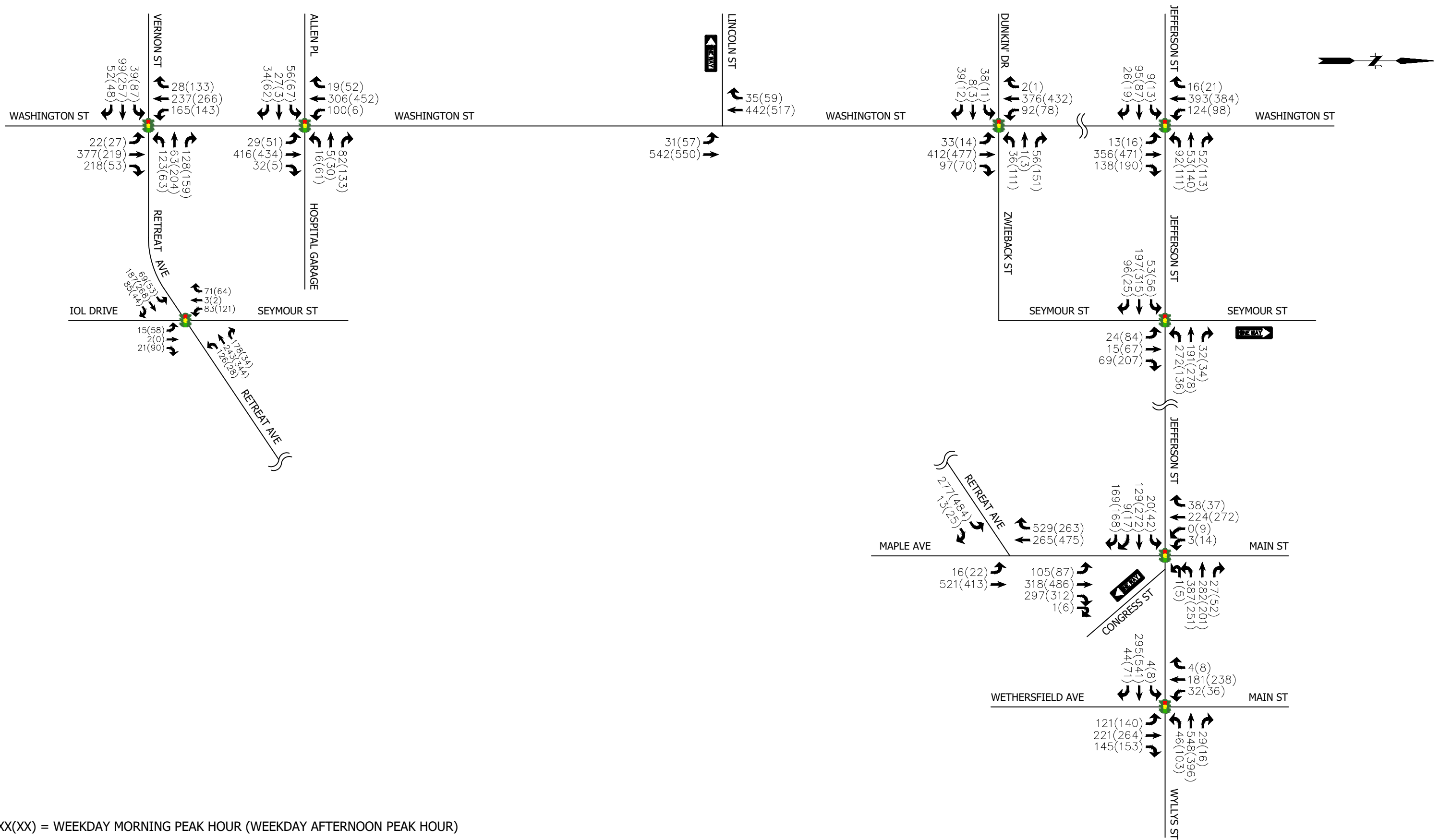
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 SITE LOCATION FIGURE  
 CONNECTICUT CHILDREN'S MEDICAL CENTER  
 HARTFORD CONNECTICUT

PROJ. No.: 20211326.A20
DATE: AUGUST 2022
<b>LOC-01</b>

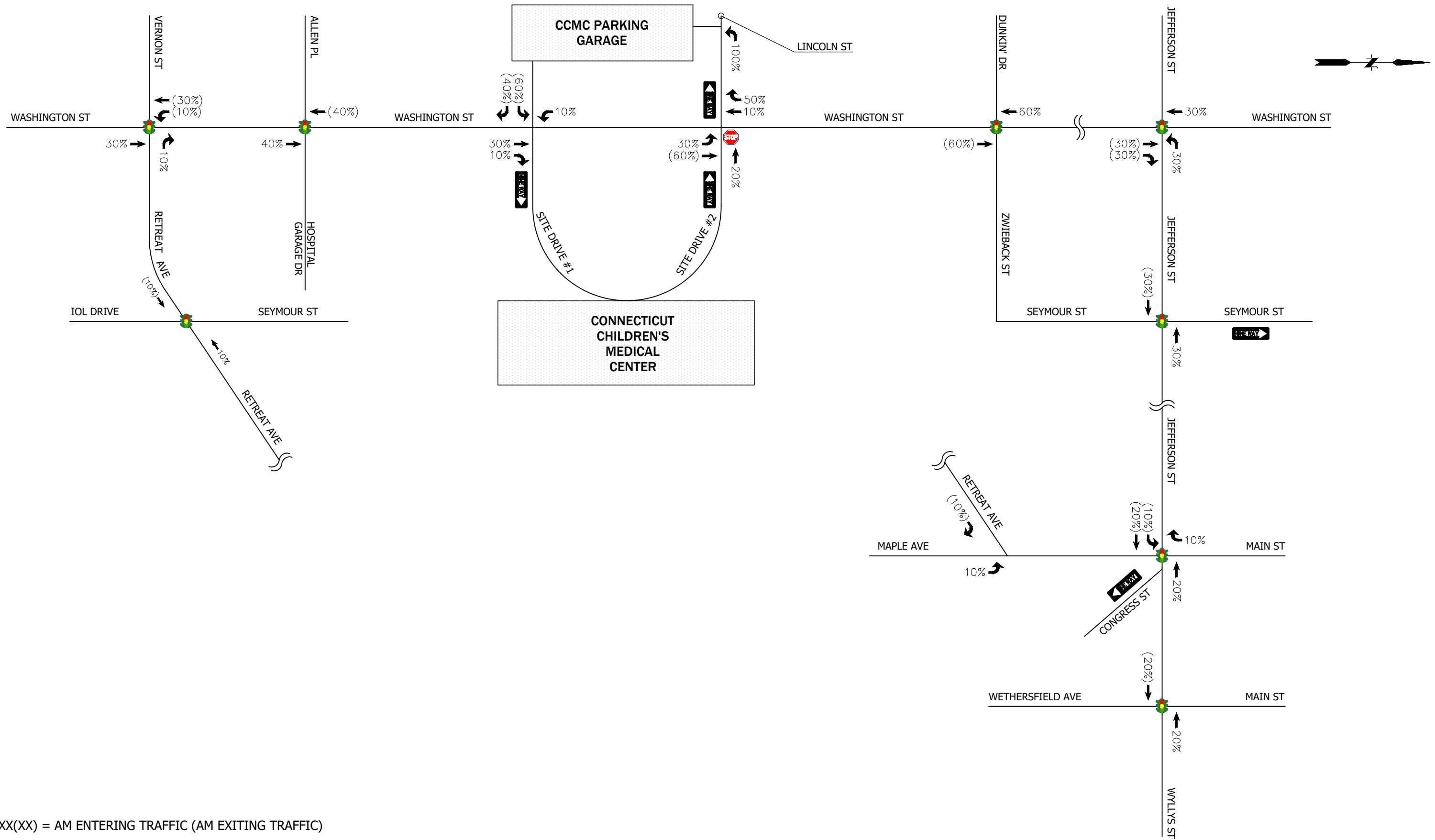






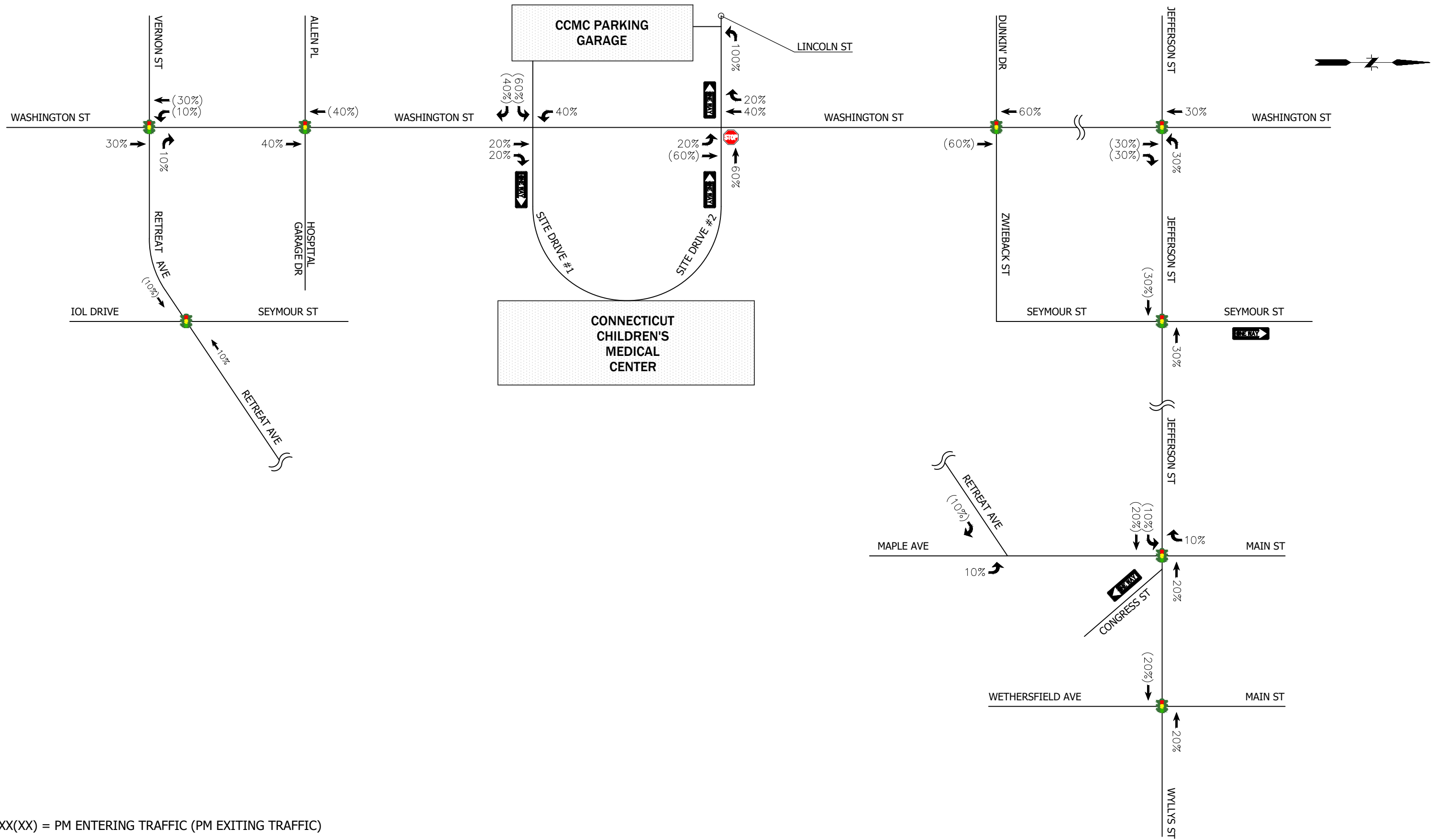




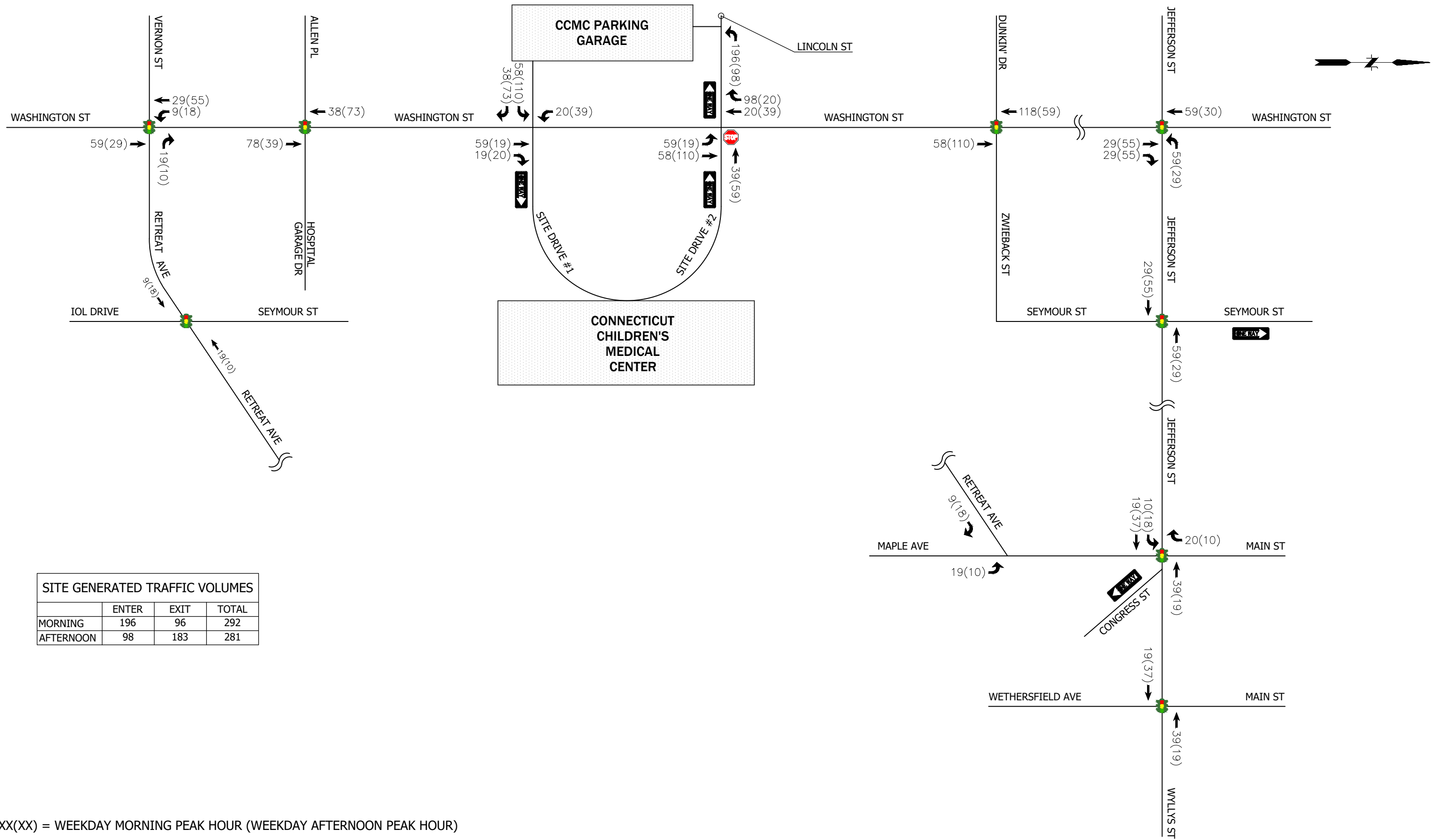


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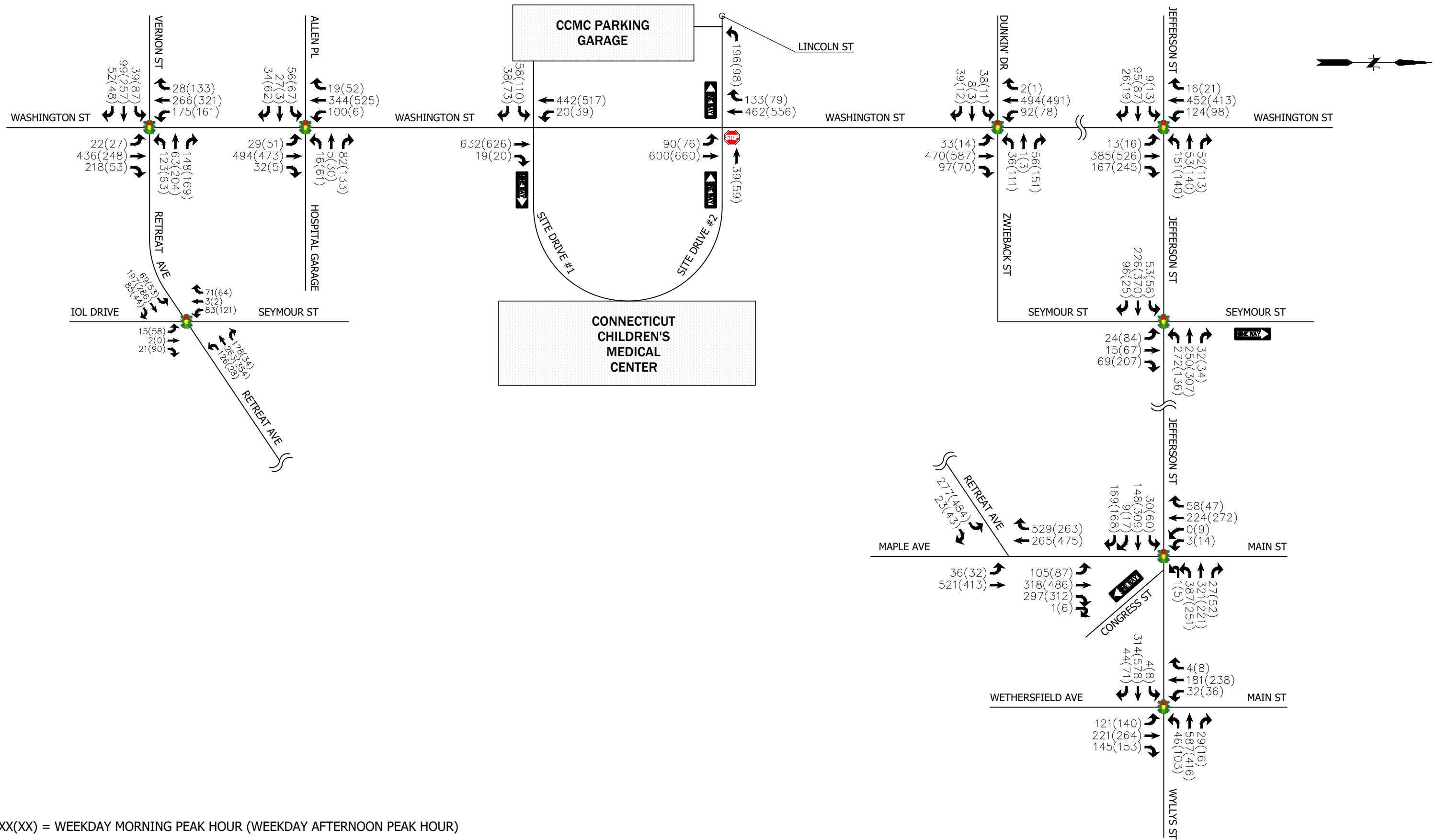












XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)



## Appendix C

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Intersection Capacity Analysis Worksheets  
2026 Background Traffic Volumes  
Weekday Morning Peak Hour



Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	9	95	26	92	53	52	13	356	138	124	393	16
Future Volume (vph)	9	95	26	92	53	52	13	356	138	124	393	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.973			0.960			0.959			0.996	
Fl <sub>t</sub> Protected		0.996			0.977			0.999			0.989	
Satd. Flow (prot)	0	1731	0	0	3180	0	0	3338	0	0	3427	0
Fl <sub>t</sub> Permitted		0.966			0.696			0.937			0.713	
Satd. Flow (perm)	0	1679	0	0	2265	0	0	3130	0	0	2471	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		12						65			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		567			531			459			319	
Travel Time (s)		12.9			12.1			10.4			7.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	10%	7%	8%	4%	0%	4%	3%	6%	3%	5%
Adj. Flow (vph)	10	102	28	99	57	56	14	383	148	133	423	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	212	0	0	545	0	0	573	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			4			2			1	1 2
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2			1	1 2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0			5.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		20.0	20.0			9.0	
Total Split (s)	23.0	23.0		23.0	23.0		36.0	36.0			14.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%		40.0%	40.0%			15.6%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.0	31.0			10.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0			1.0	
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		C-Max	C-Max			None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.6			13.6			45.3			56.6	
Actuated g/C Ratio		0.15			0.15			0.50			0.63	
v/c Ratio		0.53			0.62			0.34			0.34	
Control Delay		39.0			55.6			20.0			8.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		39.0			55.6			20.0			8.6	
LOS		D			E			B			A	
Approach Delay		39.0			55.6			20.0			8.6	



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr1	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	19%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	17
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Background Conditions  
Weekday Morning Peak Hour

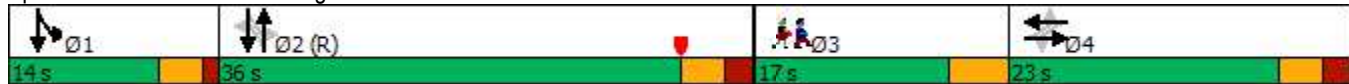


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			B			A	
Queue Length 50th (ft)		68			68			77			41	
Queue Length 95th (ft)		120			106			109			130	
Internal Link Dist (ft)		487			451			379			239	
Turn Bay Length (ft)												
Base Capacity (vph)		345			453			1607			1681	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.47			0.34			0.34	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	45 (50%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	22.5
Intersection LOS:	C
Intersection Capacity Utilization	62.1%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 1: Washington St & Jefferson St





















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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
 1: Washington St & Jefferson St




















2026 Background Conditions  
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	95	26	92	53	52	13	356	138	124	393	16
Future Volume (vph)	9	95	26	92	53	52	13	356	138	124	393	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			0.95	
Frt		0.97			0.96			0.96			1.00	
Flt Protected		1.00			0.98			1.00			0.99	
Satd. Flow (prot)		1732			3182			3338			3424	
Flt Permitted		0.97			0.70			0.94			0.71	
Satd. Flow (perm)		1680			2267			3130			2471	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	10	102	28	99	57	56	14	383	148	133	423	17
RTOR Reduction (vph)	0	10	0	0	0	0	0	34	0	0	2	0
Lane Group Flow (vph)	0	130	0	0	212	0	0	511	0	0	571	0
Heavy Vehicles (%)	0%	6%	10%	7%	8%	4%	0%	4%	3%	6%	3%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)		13.6			13.6			42.9			53.2	
Effective Green, g (s)		13.6			13.6			42.9			53.2	
Actuated g/C Ratio		0.15			0.15			0.48			0.59	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		253			342			1491			1569	
v/s Ratio Prot											c0.04	
v/s Ratio Perm		0.08			c0.09			0.16			c0.17	
v/c Ratio		0.51			0.62			0.34			0.36	
Uniform Delay, d1		35.2			35.8			14.7			9.6	
Progression Factor		1.00			1.35			1.34			1.00	
Incremental Delay, d2		1.8			3.3			0.6			0.1	
Delay (s)		36.9			51.5			20.4			9.7	
Level of Service		D			D			C			A	
Approach Delay (s)		36.9			51.5			20.4			9.7	
Approach LOS		D			D			C			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			22.3				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			62.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												



Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Background Conditions  
Weekday Morning Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	8	39	36	1	56	33	412	97	92	376	2
Future Volume (vph)	38	8	39	36	1	56	33	412	97	92	376	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	55		0	250		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			175			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.938				0.850		0.971			0.999	
Flt Protected		0.978			0.953		0.950			0.950		
Satd. Flow (prot)	0	1743	0	0	1811	1599	1805	3389	0	1805	3468	0
Flt Permitted		0.850			0.717		0.506			0.405		
Satd. Flow (perm)	0	1515	0	0	1362	1599	961	3389	0	770	3468	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41				109		35				1
Link Speed (mph)		30			30			30				30
Link Distance (ft)		151			256			229				459
Travel Time (s)		3.4			5.8			5.2				10.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	1%	0%	4%	0%
Adj. Flow (vph)	42	9	43	40	1	62	37	458	108	102	418	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	94	0	0	41	62	37	566	0	102	420	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	5.0	5.0		5.0		
Minimum Split (s)	19.0	19.0		19.0	19.0	19.0	9.0	9.0		9.0		
Total Split (s)	20.0	20.0		20.0	20.0	20.0	36.0	36.0		15.0		
Total Split (%)	22.2%	22.2%		22.2%	22.2%	22.2%	40.0%	40.0%		16.7%		
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	32.0	32.0		11.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
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		Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.0			15.0	15.0	53.9	53.9		63.0	67.8	
Actuated g/C Ratio		0.17			0.17	0.17	0.60	0.60		0.70	0.75	
v/c Ratio		0.33			0.18	0.17	0.06	0.28		0.16	0.16	
Control Delay		23.7			34.6	2.8	7.0	5.2		4.3	3.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	21%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	14
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	



Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

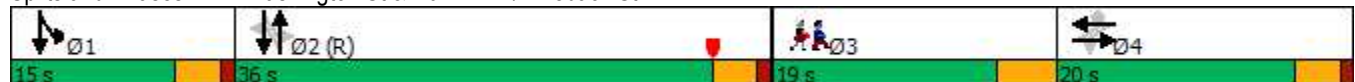
2026 Background Conditions  
Weekday Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		23.7			34.6	2.8	7.0	5.2		4.3	3.1	
LOS		C			C	A	A	A		A	A	
Approach Delay		23.7			15.4			5.3				3.3
Approach LOS		C			B			A				A
Queue Length 50th (ft)		26			20	0	4	28		14	36	
Queue Length 95th (ft)		71			50	10	18	91		25	46	
Internal Link Dist (ft)		71			176			149			379	
Turn Bay Length (ft)							55			250		
Base Capacity (vph)		303			242	373	575	2042		683	2560	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.31			0.17	0.17	0.06	0.28		0.15	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	47 (52%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	6.6
Intersection LOS:	A
Intersection Capacity Utilization	49.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: Washington St & Dunkin' Dr/Zwieback St



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

















Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Background Conditions  
Weekday Morning Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	38	8	39	36	1	56	33	412	97	92	376	2	
Future Volume (vph)	38	8	39	36	1	56	33	412	97	92	376	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95		
Frt		0.94			1.00	0.85	1.00	0.97		1.00	1.00		
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1744			1812	1599	1805	3390		1805	3469		
Flt Permitted		0.85			0.72	1.00	0.51	1.00		0.40	1.00		
Satd. Flow (perm)		1514			1362	1599	962	3390		769	3469		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	42	9	43	40	1	62	37	458	108	102	418	2	
RTOR Reduction (vph)	0	36	0	0	0	54	0	16	0	0	0	0	
Lane Group Flow (vph)	0	58	0	0	41	8	37	550	0	102	420	0	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	1%	0%	4%	0%	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D,P+P	NA		
Protected Phases		4			4			2		1	1 2		
Permitted Phases	4			4		4	2			2			
Actuated Green, G (s)		12.0			12.0	12.0	49.9	49.9		59.0	63.0		
Effective Green, g (s)		12.0			12.0	12.0	49.9	49.9		59.0	63.0		
Actuated g/C Ratio		0.13			0.13	0.13	0.55	0.55		0.66	0.70		
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0			
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		201			181	213	533	1879		608	2428		
v/s Ratio Prot								c0.16		0.02	c0.12		
v/s Ratio Perm		c0.04			0.03	0.01	0.04			0.09			
v/c Ratio		0.29			0.23	0.04	0.07	0.29		0.17	0.17		
Uniform Delay, d1		35.2			34.9	34.0	9.3	10.7		5.8	4.6		
Progression Factor		1.00			1.00	1.00	0.51	0.44		0.64	0.56		
Incremental Delay, d2		0.8			0.6	0.1	0.2	0.4		0.1	0.0		
Delay (s)		36.0			35.5	34.1	5.0	5.1		3.8	2.6		
Level of Service		D			D	C	A	A		A	A		
Approach Delay (s)		36.0			34.6			5.1			2.8		
Approach LOS		D			C			A			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			8.7									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.27										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			49.5%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
3: Washington St & Lincoln St

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	31	542	442	35
Future Volume (vph)	0	0	31	542	442	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Fr <sub>t</sub>					0.989	
Fl <sub>t</sub> Protected				0.997		
Satd. Flow (prot)	0	0	0	3463	3466	0
Fl <sub>t</sub> Permitted				0.997		
Satd. Flow (perm)	0	0	0	3463	3466	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1165			416	229	
Travel Time (s)	26.5			9.5	5.2	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	3%	4%	3%	3%
Adj. Flow (vph)	0	0	36	623	508	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	659	548	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.9%
ICU Level of Service	A
Analysis Period (min)	15



HCM Unsignalized Intersection Capacity Analysis  
3: Washington St & Lincoln St

2026 Background Conditions  
Weekday Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕↕	↕↕	
Traffic Volume (veh/h)	0	0	31	542	442	35
Future Volume (Veh/h)	0	0	31	542	442	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	36	623	508	40
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				416	229	
pX, platoon unblocked	0.97	0.97	0.97			
vC, conflicting volume	912	274	548			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	694	178	462			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	97			
cM capacity (veh/h)	358	812	1052			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>		
Volume Total	244	415	339	209		
Volume Left	36	0	0	0		
Volume Right	0	0	0	40		
cSH	1052	1700	1700	1700		
Volume to Capacity	0.03	0.24	0.20	0.12		
Queue Length 95th (ft)	3	0	0	0		
Control Delay (s)	1.5	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.6		0.0			
Approach LOS						
<b>Intersection Summary</b>						
Average Delay	0.3					
Intersection Capacity Utilization	35.9%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings  
4: Washington St & Allen PI/Hospital Garage Dr

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	56	27	34	16	5	82	29	416	32	100	306	19
Future Volume (vph)	56	27	34	16	5	82	29	416	32	100	306	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.961			0.859			0.990			0.993	
Fl <sub>t</sub> Protected		0.977		0.950				0.997			0.988	
Satd. Flow (prot)	0	1737	0	1805	1632	0	0	3435	0	0	3416	0
Fl <sub>t</sub> Permitted		0.797		0.612				0.903			0.725	
Satd. Flow (perm)	0	1417	0	1163	1632	0	0	3111	0	0	2506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			96			9			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1133			193			356			416	
Travel Time (s)		25.8			4.4			8.1			9.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	0%	6%	0%	0%	0%	4%	4%	0%	0%	5%	2%
Adj. Flow (vph)	66	32	40	19	6	96	34	489	38	118	360	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	0	19	102	0	0	561	0	0	500	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		3			3			2			1	1 2
Permitted Phases	3			3			2			2		
Detector Phase	3	3		3	3		2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0			4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		20.0	20.0			8.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0			14.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%		40.0%	40.0%			15.6%	
Maximum Green (s)	35.0	35.0		35.0	35.0		31.0	31.0			10.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag							Lag	Lag			Lead	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2			0.2	
Recall Mode	None	None		None	None		C-Max	C-Max			None	
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	14	14		14	14							
Act Effct Green (s)		11.6		11.6	11.6			58.0			65.4	
Actuated g/C Ratio		0.13		0.13	0.13			0.64			0.73	
v/c Ratio		0.67		0.13	0.35			0.28			0.26	
Control Delay		45.1		34.3	11.6			2.3			2.4	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		45.1		34.3	11.6			2.3			2.4	
LOS		D		C	B			A			A	
Approach Delay		45.1			15.2			2.3			2.4	



Lanes, Volumes, Timings  
 4: Washington St & Allen PI/Hospital Garage Dr

2026 Background Conditions  
 Weekday Morning Peak Hour

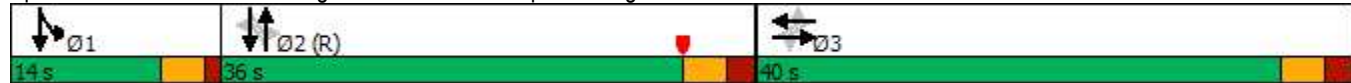


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			B			A			A	
Queue Length 50th (ft)		61		10	3			12			20	
Queue Length 95th (ft)		106		26	39			m25			25	
Internal Link Dist (ft)		1053			113			276			336	
Turn Bay Length (ft)												
Base Capacity (vph)		567		452	693			2007			2010	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.24		0.04	0.15			0.28			0.25	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 45 (50%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 8.0  
 Intersection LOS: A  
 Intersection Capacity Utilization 50.3%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Washington St & Allen PI/Hospital Garage Dr



HCM Signalized Intersection Capacity Analysis  
4: Washington St & Allen Pl/Hospital Garage Dr

2026 Background Conditions  
Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	56	27	34	16	5	82	29	416	32	100	306	19
Future Volume (vph)	56	27	34	16	5	82	29	416	32	100	306	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.96		1.00	0.86			0.99			0.99	
Flt Protected		0.98		0.95	1.00			1.00			0.99	
Satd. Flow (prot)		1736		1805	1632			3434			3418	
Flt Permitted		0.80		0.61	1.00			0.90			0.72	
Satd. Flow (perm)		1417		1163	1632			3110			2507	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	66	32	40	19	6	96	34	489	38	118	360	22
RTOR Reduction (vph)	0	24	0	0	84	0	0	3	0	0	2	0
Lane Group Flow (vph)	0	114	0	19	18	0	0	558	0	0	498	0
Heavy Vehicles (%)	2%	0%	6%	0%	0%	0%	4%	4%	0%	0%	5%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		3			3			2			1	1 2
Permitted Phases	3			3			2			2		
Actuated Green, G (s)		11.6		11.6	11.6			58.0			64.4	
Effective Green, g (s)		11.6		11.6	11.6			58.0			64.4	
Actuated g/C Ratio		0.13		0.13	0.13			0.64			0.72	
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		2.0		2.0	2.0			0.2				
Lane Grp Cap (vph)		182		149	210			2004			1858	
v/s Ratio Prot					0.01						c0.02	
v/s Ratio Perm		c0.08		0.02				c0.18			0.17	
v/c Ratio		0.63		0.13	0.09			0.28			0.27	
Uniform Delay, d1		37.2		34.7	34.5			6.9			4.5	
Progression Factor		1.00		1.00	1.00			0.27			0.64	
Incremental Delay, d2		4.8		0.1	0.1			0.2			0.0	
Delay (s)		42.0		34.9	34.6			2.1			2.9	
Level of Service		D		C	C			A			A	
Approach Delay (s)		42.0			34.6			2.1			2.9	
Approach LOS		D			C			A			A	

Intersection Summary

HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
5: Vernon St/Retreat Ave & Washington St

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	99	52	123	63	128	22	377	0	165	237	28
Future Volume (vph)	39	99	52	123	63	128	22	377	0	165	237	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Fr't		0.948				0.850						0.990
Flt Protected	0.950			0.950	0.982			0.997				0.981
Satd. Flow (prot)	1770	1760	0	1453	1635	1538	0	3532	0	0	3360	0
Flt Permitted	0.679			0.093	0.295			0.885				0.671
Satd. Flow (perm)	1265	1760	0	142	491	1538	0	3136	0	0	2298	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		23				170						7
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1103			186			140				356
Travel Time (s)		25.1			4.2			3.2				8.1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	3%	18%	3%	5%	0%	2%	8%	2%	6%	4%
Adj. Flow (vph)	46	116	61	145	74	151	26	444	0	194	279	33
Shared Lane Traffic (%)				29%								
Lane Group Flow (vph)	46	177	0	103	116	151	0	470	0	0	506	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		5			4			2			1	1 2
Permitted Phases	5			4		4	2				2	
Detector Phase	5	5		4	4	4	2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0			5.0	
Minimum Split (s)	11.0	11.0		12.0	12.0	12.0	15.0	15.0			9.0	
Total Split (s)	11.0	11.0		31.0	31.0	31.0	18.0	18.0			9.0	
Total Split (%)	12.2%	12.2%		34.4%	34.4%	34.4%	20.0%	20.0%			10.0%	
Maximum Green (s)	7.0	7.0		26.0	26.0	26.0	13.0	13.0			5.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0		2.0	2.0	2.0	2.0	2.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0				
Total Lost Time (s)	4.0	4.0		5.0	5.0	5.0		5.0				
Lead/Lag				Lag	Lag	Lag	Lag	Lag			Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2			0.2	
Recall Mode	None	None		None	None	None	C-Max	C-Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	7.0	7.0		42.8	42.8	42.8		13.0			19.0	
Actuated g/C Ratio	0.08	0.08		0.48	0.48	0.48		0.14			0.21	
v/c Ratio	0.47	1.12		1.54	0.50	0.18		1.04			0.92	
Control Delay	56.1	143.5		324.9	30.4	3.4		92.3			56.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	56.1	143.5		324.9	30.4	3.4		92.3			56.4	
LOS	E	F		F	C	A		F			E	
Approach Delay		125.4			101.3			92.3			56.4	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	



Lanes, Volumes, Timings  
5: Vernon St/Retreat Ave & Washington St

2026 Background Conditions  
Weekday Morning Peak Hour

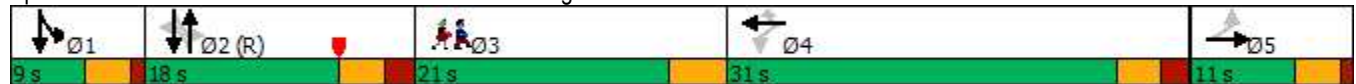


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			F			F			E		
Queue Length 50th (ft)	26	~104		~83	41	0	~153			101		
Queue Length 95th (ft)	#58	#216		#178	#154	28	#230			#217		
Internal Link Dist (ft)	1023			106			60			276		
Turn Bay Length (ft)												
Base Capacity (vph)	98	158		67	233	820	452			549		
Starvation Cap Reductn	0	0		0	0	0	0			0		
Spillback Cap Reductn	0	0		0	0	0	0			0		
Storage Cap Reductn	0	0		0	0	0	0			0		
Reduced v/c Ratio	0.47	1.12		1.54	0.50	0.18	1.04			0.92		

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 22 (24%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.54  
 Intersection Signal Delay: 87.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 52.5%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Vernon St/Retreat Ave & Washington St



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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
5: Vernon St/Retreat Ave & Washington St

2026 Background Conditions  
Weekday Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	39	99	52	123	63	128	22	377	0	165	237	28		
Future Volume (vph)	39	99	52	123	63	128	22	377	0	165	237	28		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0		5.0	5.0	5.0		5.0			4.0			
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.95			0.95			
Frt	1.00	0.95		1.00	1.00	0.85		1.00			0.99			
Flt Protected	0.95	1.00		0.95	0.98	1.00		1.00			0.98			
Satd. Flow (prot)	1770	1761		1453	1635	1538		3533			3362			
Flt Permitted	0.68	1.00		0.09	0.30	1.00		0.89			0.67			
Satd. Flow (perm)	1264	1761		143	491	1538		3137			2299			
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85		
Adj. Flow (vph)	46	116	61	145	74	151	26	444	0	194	279	33		
RTOR Reduction (vph)	0	21	0	0	0	79	0	0	0	0	6	0		
Lane Group Flow (vph)	46	156	0	103	116	72	0	470	0	0	500	0		
Heavy Vehicles (%)	2%	2%	3%	18%	3%	5%	0%	2%	8%	2%	6%	4%		
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA			
Protected Phases		5			4			2			1	1 2		
Permitted Phases	5			4		4	2			2				
Actuated Green, G (s)	7.0	7.0		42.8	42.8	42.8		9.8			14.8			
Effective Green, g (s)	7.0	7.0		42.8	42.8	42.8		9.8			14.8			
Actuated g/C Ratio	0.08	0.08		0.48	0.48	0.48		0.11			0.16			
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0		5.0						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		0.2						
Lane Grp Cap (vph)	98	136		68	233	731		341			437			
v/s Ratio Prot		c0.09									c0.06			
v/s Ratio Perm	0.04			c0.72	0.24	0.05		c0.15			0.12			
v/c Ratio	0.47	1.15		1.51	0.50	0.10		1.38			1.14			
Uniform Delay, d1	39.7	41.5		23.6	16.2	13.0		40.1			37.6			
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			0.99			
Incremental Delay, d2	1.3	121.6		293.2	0.6	0.0		187.7			88.7			
Delay (s)	41.0	163.1		316.8	16.8	13.0		227.8			126.0			
Level of Service	D	F		F	B	B		F			F			
Approach Delay (s)		137.9			98.8			227.8			126.0			
Approach LOS		F			F			F			F			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			151.8									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.35											
Actuated Cycle Length (s)			90.0								22.0			
Intersection Capacity Utilization			52.5%										ICU Level of Service	A
Analysis Period (min)			15											
c Critical Lane Group														

Lanes, Volumes, Timings  
6: Seymour St & Jefferson St

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	197	96	272	191	32	24	15	69	0	0	0
Future Volume (vph)	53	197	96	272	191	32	24	15	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.963			0.978				0.850			
Fl <sub>t</sub> Protected		0.992		0.950				0.970				
Satd. Flow (prot)	0	1730	0	1805	1732	0	0	1843	1615	0	0	0
Fl <sub>t</sub> Permitted		0.916		0.384				0.970				
Satd. Flow (perm)	0	1598	0	730	1732	0	0	1843	1615	0	0	0
Right Turn on Red			No			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		531			1134			467				822
Travel Time (s)		12.1			25.8			10.6				18.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	7%	0%	0%	7%	9%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	56	207	101	286	201	34	25	16	73	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	364	0	286	235	0	0	41	73	0	0	0
Turn Type	Perm	NA		D,P+P	NA		Perm	NA	Perm			
Protected Phases		2		1	1 2			4				
Permitted Phases	2			2			4		4			
Detector Phase	2	2		1	1 2		4	4	4			
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0			
Minimum Split (s)	9.0	9.0		9.0			9.0	9.0	9.0			
Total Split (s)	35.0	35.0		14.0			24.0	24.0	24.0			
Total Split (%)	38.9%	38.9%		15.6%			26.7%	26.7%	26.7%			
Maximum Green (s)	31.0	31.0		10.0			20.0	20.0	20.0			
Yellow Time (s)	3.0	3.0		3.0			3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0		1.0			1.0	1.0	1.0			
Lost Time Adjust (s)		0.0		0.0				0.0	0.0			
Total Lost Time (s)		4.0		4.0				4.0	4.0			
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0			
Recall Mode	C-Max	C-Max		None			Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		31.1		41.0	45.0			33.6	33.6			
Actuated g/C Ratio		0.35		0.46	0.50			0.37	0.37			
v/c Ratio		0.66		0.63	0.27			0.06	0.12			
Control Delay		29.3		21.2	14.1			21.6	22.0			
Queue Delay		0.0		0.0	0.0			0.0	0.0			
Total Delay		29.3		21.2	14.1			21.6	22.0			
LOS		C		C	B			C	C			
Approach Delay		29.3			18.0			21.9				



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	19%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	11
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
6: Seymour St & Jefferson St

2026 Background Conditions  
Weekday Morning Peak Hour

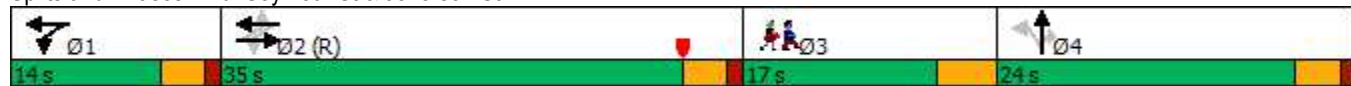


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C				B				C		
Queue Length 50th (ft)		186		92	74			14	25			
Queue Length 95th (ft)		214		147	121			46	71			
Internal Link Dist (ft)		451			1054			387			742	
Turn Bay Length (ft)												
Base Capacity (vph)		552		453	852			687	602			
Starvation Cap Reductn		0		0	0			0	0			
Spillback Cap Reductn		0		0	0			0	0			
Storage Cap Reductn		0		0	0			0	0			
Reduced v/c Ratio		0.66		0.63	0.28			0.06	0.12			

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	32.5 (36%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	22.6
Intersection LOS:	C
Intersection Capacity Utilization:	48.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Seymour St & Jefferson St





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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
6: Seymour St & Jefferson St

2026 Background Conditions  
Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↖	↗			
Traffic Volume (vph)	53	197	96	272	191	32	24	15	69	0	0	0
Future Volume (vph)	53	197	96	272	191	32	24	15	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		1.00		1.00	1.00			1.00	1.00			
Frt		0.96		1.00	0.98			1.00	0.85			
Flt Protected		0.99		0.95	1.00			0.97	1.00			
Satd. Flow (prot)		1730		1805	1732			1844	1615			
Flt Permitted		0.92		0.38	1.00			0.97	1.00			
Satd. Flow (perm)		1598		730	1732			1844	1615			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	207	101	286	201	34	25	16	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	364	0	286	235	0	0	41	73	0	0	0
Heavy Vehicles (%)	6%	7%	0%	0%	7%	9%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm			
Protected Phases		2		1	1 2			4				
Permitted Phases	2			2			4		4			
Actuated Green, G (s)		27.9		37.8	41.8			33.6	33.6			
Effective Green, g (s)		27.9		37.8	41.8			33.6	33.6			
Actuated g/C Ratio		0.31		0.42	0.46			0.37	0.37			
Clearance Time (s)		4.0		4.0				4.0	4.0			
Vehicle Extension (s)		3.0		3.0				3.0	3.0			
Lane Grp Cap (vph)		495		424	804			688	602			
v/s Ratio Prot				c0.07	0.14							
v/s Ratio Perm		c0.23		0.21				0.02	c0.05			
v/c Ratio		0.74		0.67	0.29			0.06	0.12			
Uniform Delay, d1		27.8		19.3	14.9			18.1	18.5			
Progression Factor		0.91		1.00	1.00			1.00	1.00			
Incremental Delay, d2		8.9		4.2	0.2			0.2	0.4			
Delay (s)		34.3		23.5	15.1			18.2	18.9			
Level of Service		C		C	B			B	B			
Approach Delay (s)		34.3			19.7			18.7			0.0	
Approach LOS		C			B			B			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			24.9									C
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			90.0							16.0		
Intersection Capacity Utilization			48.4%									A
Analysis Period (min)			15									
c Critical Lane Group												



Lanes, Volumes, Timings  
7: IOL Dr/Seymour St & Retreat Ave

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	187	85	126	243	178	15	2	21	83	3	71
Future Volume (vph)	69	187	85	126	243	178	15	2	21	83	3	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			45			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.953			0.937			0.924			0.939	
Flt Protected	0.950			0.950				0.981			0.974	
Satd. Flow (prot)	1770	1717	0	1805	1665	0	0	1677	0	0	1721	0
Flt Permitted	0.260			0.446				0.880			0.820	
Satd. Flow (perm)	484	1717	0	847	1665	0	0	1504	0	0	1449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41			26			46	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		456			1480			118			630	
Travel Time (s)		10.4			33.6			2.7			14.3	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	2%	7%	2%	0%	12%	0%	4%	0%	2%	1%	0%	1%
Adj. Flow (vph)	84	228	104	154	296	217	18	2	26	101	4	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	332	0	154	513	0	0	46	0	0	192	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		15.0	15.0		15.0	15.0	
Total Split (s)	40.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	43.0	43.0		43.0	43.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.35	0.35		0.35	0.35	
v/c Ratio	0.40	0.44		0.42	0.69		0.08	0.08		0.36	0.36	
Control Delay	31.5	23.2		27.8	30.1		12.7	12.7		20.4	20.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	36
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	



Lanes, Volumes, Timings  
7: IOL Dr/Seymour St & Retreat Ave

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	31.5	23.2		27.8	30.1			12.7			20.4	
LOS	C	C		C	C			B			C	
Approach Delay		24.9			29.6			12.7			20.4	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	42	155		77	277			8			67	
Queue Length 95th (ft)	83	213		126	359			29			111	
Internal Link Dist (ft)		376			1400			38			550	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	208	752		364	739			543			537	
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	0.40	0.44		0.42	0.69			0.08			0.36	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	35 (35%), Referenced to phase 1:EBWB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	26.2
Intersection LOS:	C
Intersection Capacity Utilization	62.0%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 7: IOL Dr/Seymour St & Retreat Ave



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Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
7: IOL Dr/Seymour St & Retreat Ave

2026 Background Conditions  
Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	187	85	126	243	178	15	2	21	83	3	71
Future Volume (vph)	69	187	85	126	243	178	15	2	21	83	3	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.95		1.00	0.94			0.92			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	1717		1805	1664			1676			1721	
Flt Permitted	0.26	1.00		0.45	1.00			0.88			0.82	
Satd. Flow (perm)	485	1717		848	1664			1503			1448	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	84	228	104	154	296	217	18	2	26	101	4	87
RTOR Reduction (vph)	0	15	0	0	24	0	0	17	0	0	30	0
Lane Group Flow (vph)	84	317	0	154	489	0	0	29	0	0	162	0
Heavy Vehicles (%)	2%	7%	2%	0%	12%	0%	4%	0%	2%	1%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	41.0	41.0		41.0	41.0			35.0			35.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			35.0			35.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.35			0.35	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			2.0			2.0	
Lane Grp Cap (vph)	198	703		347	682			526			506	
v/s Ratio Prot		0.18			c0.29							
v/s Ratio Perm	0.17			0.18				0.02			c0.11	
v/c Ratio	0.42	0.45		0.44	0.72			0.06			0.32	
Uniform Delay, d1	21.1	21.4		21.3	24.6			21.5			23.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	6.5	2.1		4.1	6.4			0.2			1.7	
Delay (s)	27.6	23.4		25.3	31.0			21.7			25.5	
Level of Service	C	C		C	C			C			C	
Approach Delay (s)		24.3			29.7			21.7			25.5	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.48	
Actuated Cycle Length (s)	100.0	Sum of lost time (s) 15.0
Intersection Capacity Utilization	62.0%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

Lanes, Volumes, Timings  
8: Maple Ave & Retreat Ave

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	277	13	16	521	265	529		
Future Volume (vph)	277	13	16	521	265	529		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00		
Fr <sub>t</sub>	0.993					0.850		
Fl <sub>t</sub> Protected	0.954			0.999				
Satd. Flow (prot)	3265	0	0	3377	1727	1538		
Fl <sub>t</sub> Permitted	0.954			0.945				
Satd. Flow (perm)	3265	0	0	3194	1727	1538		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)						563		
Link Speed (mph)	30			30	30			
Link Distance (ft)	1480			980	257			
Travel Time (s)	33.6			22.3	5.8			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Heavy Vehicles (%)	7%	6%	0%	7%	10%	5%		
Adj. Flow (vph)	295	14	17	554	282	563		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	309	0	0	571	282	563		
Turn Type	Prot		custom	NA	NA	Perm		
Protected Phases	4		5	2 5	6		2	3
Permitted Phases			2			6		
Detector Phase	4		5	2 5	6	6		
Switch Phase								
Minimum Initial (s)	7.0		5.0		15.0	15.0	15.0	1.0
Minimum Split (s)	11.5		9.1		19.2	19.2	19.2	33.0
Total Split (s)	19.5		12.1		42.2	42.2	42.2	33.0
Total Split (%)	18.3%		11.3%		39.5%	39.5%	40%	31%
Maximum Green (s)	15.0		8.0		38.0	38.0	38.0	29.0
Yellow Time (s)	3.2		3.1		3.2	3.2	3.2	4.0
All-Red Time (s)	1.3		1.0		1.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0				0.0	0.0		
Total Lost Time (s)	4.5				4.2	4.2		
Lead/Lag	Lag							Lead
Lead-Lag Optimize?	Yes							Yes
Vehicle Extension (s)	2.0		2.0		2.0	2.0	2.0	3.0
Recall Mode	None		None		C-Max	C-Max	C-Max	None
Walk Time (s)								7.0
Flash Dont Walk (s)								22.0
Pedestrian Calls (#/hr)								4
Act Effct Green (s)	13.7			73.6	65.0	65.0		
Actuated g/C Ratio	0.13			0.69	0.61	0.61		
v/c Ratio	0.74			0.26	0.27	0.49		
Control Delay	55.9			8.0	17.5	8.9		
Queue Delay	0.4			0.0	1.3	1.3		
Total Delay	56.3			8.0	18.8	10.2		
LOS	E			A	B	B		
Approach Delay	56.3			8.0	13.1			



Lanes, Volumes, Timings  
 8: Maple Ave & Retreat Ave

2026 Background Conditions  
 Weekday Morning Peak Hour

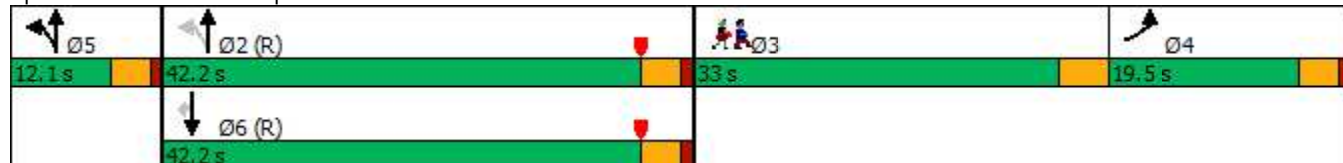


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Approach LOS	E			A		B		
Queue Length 50th (ft)	105			43	111	113		
Queue Length 95th (ft)	151			169	m280	339		
Internal Link Dist (ft)	1400			900	177			
Turn Bay Length (ft)								
Base Capacity (vph)	465			2223	1051	1156		
Starvation Cap Reductn	0			0	565	374		
Spillback Cap Reductn	19			73	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.69			0.27	0.58	0.72		

Intersection Summary

Area Type: Other  
 Cycle Length: 106.8  
 Actuated Cycle Length: 106.8  
 Offset: 50.1 (47%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 19.1 Intersection LOS: B  
 Intersection Capacity Utilization 54.6% ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Maple Ave & Retreat Ave



HCM Signalized Intersection Capacity Analysis  
8: Maple Ave & Retreat Ave

2026 Background Conditions  
Weekday Morning Peak Hour



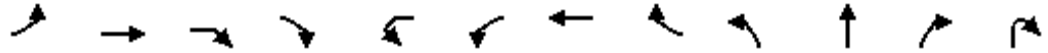
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	277	13	16	521	265	529
Future Volume (vph)	277	13	16	521	265	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.2	4.2	4.2
Lane Util. Factor	0.97			0.95	1.00	1.00
Frt	0.99			1.00	1.00	0.85
Flt Protected	0.95			1.00	1.00	1.00
Satd. Flow (prot)	3267			3375	1727	1538
Flt Permitted	0.95			0.94	1.00	1.00
Satd. Flow (perm)	3267			3194	1727	1538
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	295	14	17	554	282	563
RTOR Reduction (vph)	0	0	0	0	0	237
Lane Group Flow (vph)	309	0	0	571	282	326
Heavy Vehicles (%)	7%	6%	0%	7%	10%	5%
Turn Type	Prot		custom	NA	NA	Perm
Protected Phases	4		5	2.5	6	
Permitted Phases			2			6
Actuated Green, G (s)	13.7			70.5	61.8	61.8
Effective Green, g (s)	13.7			70.5	61.8	61.8
Actuated g/C Ratio	0.13			0.66	0.58	0.58
Clearance Time (s)	4.5				4.2	4.2
Vehicle Extension (s)	2.0				2.0	2.0
Lane Grp Cap (vph)	419			2123	999	889
v/s Ratio Prot	c0.09			c0.02	0.16	
v/s Ratio Perm				0.16		c0.21
v/c Ratio	0.74			0.27	0.28	0.37
Uniform Delay, d1	44.8			7.5	11.3	12.0
Progression Factor	1.00			1.00	1.25	4.04
Incremental Delay, d2	5.8			0.0	0.6	0.9
Delay (s)	50.6			7.5	14.8	49.5
Level of Service	D			A	B	D
Approach Delay (s)	50.6			7.5	37.9	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	106.8	Sum of lost time (s)	16.8
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↔↔				↔	↔			↔↔	↔	
Traffic Volume (vph)	20	129	9	169	1	387	282	27	105	318	297	1
Future Volume (vph)	20	129	9	169	1	387	282	27	105	318	297	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.918					0.987				0.850	
Fl <sub>t</sub> Protected		0.997				0.950				0.988		
Satd. Flow (prot)	0	3239	0	0	0	1770	1839	0	0	3497	1583	0
Fl <sub>t</sub> Permitted		0.997				0.950				0.731		
Satd. Flow (perm)	0	3239	0	0	0	1770	1839	0	0	2587	1583	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		182										
Link Speed (mph)		30					30			30		
Link Distance (ft)		1134					419			257		
Travel Time (s)		25.8					9.5			5.8		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	139	10	182	1	416	303	29	113	342	319	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	0	0	0	417	332	0	0	455	320	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Detector Phase	4	4			8	8	8		5	2.5	2.5	
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0	7.0	7.0		5.0			
Minimum Split (s)	12.4	12.4			11.1	11.1	11.1		8.2			
Total Split (s)	20.4	20.4			25.1	25.1	25.1		8.2			
Total Split (%)	19.1%	19.1%			23.5%	23.5%	23.5%		7.7%			
Maximum Green (s)	15.0	15.0			21.0	21.0	21.0		5.0			
Yellow Time (s)	3.4	3.4			3.1	3.1	3.1		3.1			
All-Red Time (s)	2.0	2.0			1.0	1.0	1.0		0.1			
Lost Time Adjust (s)		0.0					0.0		0.0			
Total Lost Time (s)		5.4					4.1		4.1			
Lead/Lag	Lag	Lag										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Recall Mode	None	None			None	None	None		None			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.6				32.6	32.6		32.7	37.8		
Actuated g/C Ratio		0.10				0.31	0.31		0.31	0.35		
v/c Ratio		0.73				0.77	0.59		0.52	0.57		
Control Delay		31.1				37.6	29.2		30.0	32.7		
Queue Delay		0.1				0.3	0.0		0.4	19.5		
Total Delay		31.2				37.9	29.2		30.3	52.2		
LOS		C				D	C		C	D		
Approach Delay		31.2					34.1		39.3			
Approach LOS		C					C		D			

Lanes, Volumes, Timings  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

2026 Background Conditions  
 Weekday Morning Peak Hour



Lane Group	SBL2	SBT	SBR	Ø2	Ø3
Lane Configurations		↕↕			
Traffic Volume (vph)	3	224	38		
Future Volume (vph)	3	224	38		
Ideal Flow (vphpl)	1900	1900	1900		
Lane Util. Factor	0.95	0.95	0.95		
Frt		0.978			
Flt Protected		0.999			
Satd. Flow (prot)	0	3458	0		
Flt Permitted		0.950			
Satd. Flow (perm)	0	3288	0		
Right Turn on Red			No		
Satd. Flow (RTOR)					
Link Speed (mph)		30			
Link Distance (ft)		614			
Travel Time (s)		14.0			
Peak Hour Factor	0.93	0.93	0.93		
Adj. Flow (vph)	3	241	41		
Shared Lane Traffic (%)					
Lane Group Flow (vph)	0	285	0		
Turn Type	Perm	NA			
Protected Phases		6		2	3
Permitted Phases	6				
Detector Phase	6	6			
Switch Phase					
Minimum Initial (s)	15.0	15.0		15.0	1.0
Minimum Split (s)	20.1	20.1		20.1	28.0
Total Split (s)	25.1	25.1		25.1	28.0
Total Split (%)	23.5%	23.5%		24%	26%
Maximum Green (s)	20.0	20.0		20.0	24.0
Yellow Time (s)	3.1	3.1		3.1	4.0
All-Red Time (s)	2.0	2.0		2.0	0.0
Lost Time Adjust (s)		0.0			
Total Lost Time (s)		5.1			
Lead/Lag					Lead
Lead-Lag Optimize?					Yes
Vehicle Extension (s)	2.0	2.0		2.0	3.0
Recall Mode	C-Max	C-Max		C-Max	None
Walk Time (s)					7.0
Flash Dont Walk (s)					17.0
Pedestrian Calls (#/hr)					19
Act Effct Green (s)		21.8			
Actuated g/C Ratio		0.20			
v/c Ratio		0.43			
Control Delay		39.8			
Queue Delay		0.3			
Total Delay		40.1			
LOS		D			
Approach Delay		40.1			
Approach LOS		D			



Lanes, Volumes, Timings  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Morning Peak Hour

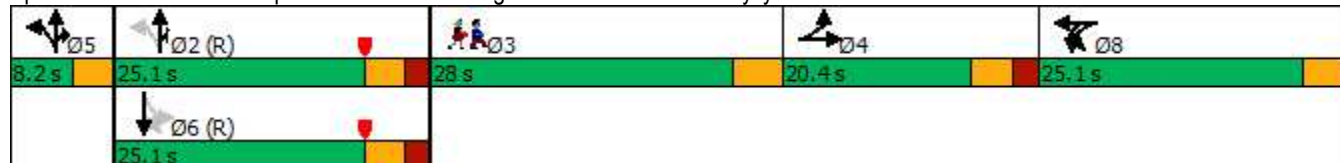


Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Queue Length 50th (ft)		59				175	116			132	186	
Queue Length 95th (ft)		104				#554	#401			#151	#312	
Internal Link Dist (ft)		1054					339			177		
Turn Bay Length (ft)												
Base Capacity (vph)		611				541	562			883	559	
Starvation Cap Reductn		0				0	0			114	229	
Spillback Cap Reductn		9				10	0			0	0	
Storage Cap Reductn		0				0	0			0	0	
Reduced v/c Ratio		0.59				0.79	0.59			0.59	0.97	

Intersection Summary

Area Type: Other  
 Cycle Length: 106.8  
 Actuated Cycle Length: 106.8  
 Offset: 23.2 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 36.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 78.7%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St



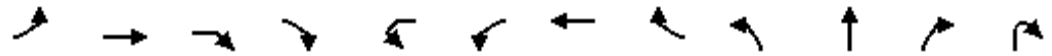


Lane Group	SBL2	SBT	SBR	Ø2	Ø3
Queue Length 50th (ft)		90			
Queue Length 95th (ft)		134			
Internal Link Dist (ft)		534			
Turn Bay Length (ft)					
Base Capacity (vph)		669			
Starvation Cap Reductn		0			
Spillback Cap Reductn		90			
Storage Cap Reductn		0			
Reduced v/c Ratio		0.49			
Intersection Summary					



HCM Signalized Intersection Capacity Analysis  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↕↕				↕	↕			↕↕	↕	
Traffic Volume (vph)	20	129	9	169	1	387	282	27	105	318	297	1
Future Volume (vph)	20	129	9	169	1	387	282	27	105	318	297	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4				4.1	4.1			5.1	5.1	
Lane Util. Factor		0.95				1.00	1.00			0.95	1.00	
Frt		0.92				1.00	0.99			1.00	0.85	
Flt Protected		1.00				0.95	1.00			0.99	1.00	
Satd. Flow (prot)		3240				1770	1838			3496	1583	
Flt Permitted		1.00				0.95	1.00			0.73	1.00	
Satd. Flow (perm)		3240				1770	1838			2588	1583	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	139	10	182	1	416	303	29	113	342	319	1
RTOR Reduction (vph)	0	164	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	189	0	0	0	417	332	0	0	455	320	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Actuated Green, G (s)		10.6				32.6	32.6			32.2	35.4	
Effective Green, g (s)		10.6				32.6	32.6			32.2	32.2	
Actuated g/C Ratio		0.10				0.31	0.31			0.30	0.30	
Clearance Time (s)		5.4				4.1	4.1					
Vehicle Extension (s)		2.0				2.0	2.0					
Lane Grp Cap (vph)		321				540	561			889	477	
v/s Ratio Prot		c0.06				c0.24	0.18			0.06	c0.20	
v/s Ratio Perm										0.09		
v/c Ratio		0.59				0.77	0.59			0.51	0.67	
Uniform Delay, d1		46.0				33.7	31.5			30.8	32.7	
Progression Factor		1.00				0.68	0.68			0.92	0.93	
Incremental Delay, d2		1.8				5.6	1.0			0.2	2.7	
Delay (s)		47.8				28.6	22.3			28.5	32.9	
Level of Service		D				C	C			C	C	
Approach Delay (s)		47.8					25.8			30.3		
Approach LOS		D					C			C		

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	106.8	Sum of lost time (s)	21.8
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

2026 Background Conditions  
 Weekday Morning Peak Hour



Movement	SBL2	SBT	SBR
Lane Configurations		↕↕	
Traffic Volume (vph)	3	224	38
Future Volume (vph)	3	224	38
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)		5.1	
Lane Util. Factor		0.95	
Frt		0.98	
Flt Protected		1.00	
Satd. Flow (prot)		3461	
Flt Permitted		0.95	
Satd. Flow (perm)		3289	
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	3	241	41
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	0	285	0
Turn Type	Perm	NA	
Protected Phases		6	
Permitted Phases	6		
Actuated Green, G (s)		19.4	
Effective Green, g (s)		19.4	
Actuated g/C Ratio		0.18	
Clearance Time (s)		5.1	
Vehicle Extension (s)		2.0	
Lane Grp Cap (vph)		597	
v/s Ratio Prot			
v/s Ratio Perm		0.09	
v/c Ratio		0.48	
Uniform Delay, d1		39.2	
Progression Factor		1.00	
Incremental Delay, d2		2.7	
Delay (s)		41.9	
Level of Service		D	
Approach Delay (s)		41.9	
Approach LOS		D	
<b>Intersection Summary</b>			



Lanes, Volumes, Timings  
10: Wethersfield Ave/Main St & Wyllys St

2026 Background Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕		↕	↕	
Traffic Volume (vph)	4	295	44	46	548	29	121	221	145	32	181	4
Future Volume (vph)	4	295	44	46	548	29	121	221	145	32	181	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.981			0.993			0.941			0.997	
Fl <sub>t</sub> Protected		0.999			0.996		0.950			0.950		
Satd. Flow (prot)	0	3384	0	0	3470	0	1719	1655	0	1570	1773	0
Fl <sub>t</sub> Permitted		0.946			0.918		0.438			0.532		
Satd. Flow (perm)	0	3205	0	0	3199	0	793	1655	0	879	1773	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		419			457			477			416	
Travel Time (s)		9.5			10.4			10.8			9.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	4%	8%	2%	3%	2%	5%	8%	8%	15%	7%	0%
Adj. Flow (vph)	4	314	47	49	583	31	129	235	154	34	193	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	365	0	0	663	0	129	389	0	34	197	0
Turn Type	Perm	NA		D,P+P	NA		D,P+P	NA		Perm	NA	
Protected Phases		4		3	3 4		1	1 2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		3	3 4		1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0			5.0			10.0	10.0	
Minimum Split (s)	15.0	15.0		9.0			9.0			15.0	15.0	
Total Split (s)	23.0	23.0		15.0			19.0			25.8	25.8	
Total Split (%)	21.5%	21.5%		14.0%			17.8%			24.2%	24.2%	
Maximum Green (s)	18.0	18.0		11.0			15.0			20.8	20.8	
Yellow Time (s)	3.0	3.0		3.0			3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		1.0			1.0			2.0	2.0	
Lost Time Adjust (s)		0.0					0.0			0.0	0.0	
Total Lost Time (s)		5.0					4.0			5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0			3.0	3.0	
Recall Mode	Max	Max		Max			Max			C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.0			39.6		36.8	40.8		20.8	20.8	
Actuated g/C Ratio		0.17			0.37		0.34	0.38		0.19	0.19	
v/c Ratio		0.68			0.54		0.32	0.62		0.20	0.57	
Control Delay		49.7			28.9		24.6	31.8		39.6	46.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		49.7			28.9		24.6	31.8		39.6	46.4	
LOS		D			C		C	C		D	D	
Approach Delay		49.7			28.9			30.0			45.4	

Lane Group	Ø5
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	5
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	22%
Maximum Green (s)	19.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	34
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	



Lanes, Volumes, Timings  
 10: Wethersfield Ave/Main St & Wyllys St

2026 Background Conditions  
 Weekday Morning Peak Hour

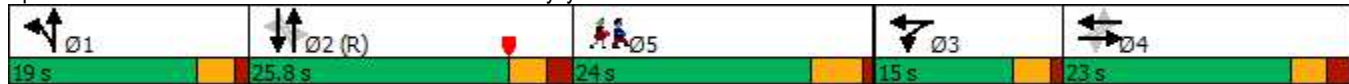


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		140			200		58	212		20	123	
Queue Length 95th (ft)		190			261		101	315		50	199	
Internal Link Dist (ft)		339			377			397			336	
Turn Bay Length (ft)												
Base Capacity (vph)		540			1238		403	632		171	345	
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		0.68			0.54		0.32	0.62		0.20	0.57	

Intersection Summary

Area Type:	Other
Cycle Length:	106.8
Actuated Cycle Length:	106.8
Offset:	0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	35.6
Intersection LOS:	D
Intersection Capacity Utilization	70.9%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 10: Wethersfield Ave/Main St & Wyllys St



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

















Lane Group	Ø5
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
 10: Wethersfield Ave/Main St & Wyllys St

2026 Background Conditions  
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	295	44	46	548	29	121	221	145	32	181	4
Future Volume (vph)	4	295	44	46	548	29	121	221	145	32	181	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			4.0		4.0	4.0		5.0	5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	1.00	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3385			3472		1719	1655		1570	1773	
Flt Permitted		0.95			0.92		0.44	1.00		0.53	1.00	
Satd. Flow (perm)		3205			3198		792	1655		879	1773	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	314	47	49	583	31	129	235	154	34	193	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	365	0	0	663	0	129	389	0	34	197	0
Heavy Vehicles (%)	6%	4%	8%	2%	3%	2%	5%	8%	8%	15%	7%	0%
Turn Type	Perm	NA		D.P+P	NA		D.P+P	NA		Perm	NA	
Protected Phases		4		3	3 4		1	1 2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)		18.0			38.6		33.8	37.8		18.8	18.8	
Effective Green, g (s)		18.0			38.6		33.8	37.8		18.8	18.8	
Actuated g/C Ratio		0.17			0.36		0.32	0.35		0.18	0.18	
Clearance Time (s)		5.0					4.0			5.0	5.0	
Vehicle Extension (s)		3.0					3.0			3.0	3.0	
Lane Grp Cap (vph)		540			1208		380	585		154	312	
v/s Ratio Prot					c0.11		0.05	c0.24			0.11	
v/s Ratio Perm		c0.11			0.09		0.06			0.04		
v/c Ratio		0.68			0.55		0.34	0.66		0.22	0.63	
Uniform Delay, d1		41.7			27.2		27.2	29.1		37.7	40.8	
Progression Factor		1.05			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.5			1.8		2.4	5.9		3.3	9.4	
Delay (s)		49.3			29.0		29.6	35.0		41.0	50.1	
Level of Service		D			C		C	D		D	D	
Approach Delay (s)		49.3			29.0			33.7			48.8	
Approach LOS		D			C			C			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			37.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			106.8				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			70.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

## **Appendix C**

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Intersection Capacity Analysis Worksheets  
2026 Combined Traffic Volumes  
Weekday Morning Peak Hour



Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	9	95	26	151	53	52	13	385	167	124	452	16
Future Volume (vph)	9	95	26	151	53	52	13	385	167	124	452	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.973			0.969			0.956			0.996	
Fl <sub>t</sub> Protected		0.996			0.971			0.999			0.990	
Satd. Flow (prot)	0	1731	0	0	3186	0	0	3328	0	0	3433	0
Fl <sub>t</sub> Permitted		0.964			0.681			0.936			0.695	
Satd. Flow (perm)	0	1675	0	0	2235	0	0	3118	0	0	2410	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		12						78			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		567			531			459			319	
Travel Time (s)		12.9			12.1			10.4			7.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	10%	7%	8%	4%	0%	4%	3%	6%	3%	5%
Adj. Flow (vph)	10	102	28	162	57	56	14	414	180	133	486	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	275	0	0	608	0	0	636	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		5.0		
Minimum Split (s)	15.0	15.0		15.0	15.0		20.0	20.0		9.0		
Total Split (s)	23.0	23.0		23.0	23.0		36.0	36.0		14.0		
Total Split (%)	25.6%	25.6%		25.6%	25.6%		40.0%	40.0%		15.6%		
Maximum Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		10.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0		
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.4			15.4			43.4			54.8	
Actuated g/C Ratio		0.17			0.17			0.48			0.61	
v/c Ratio		0.47			0.95dl			0.39			0.40	
Control Delay		35.6			59.6			19.4			9.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		35.6			59.6			19.4			9.8	
LOS		D			E			B			A	
Approach Delay		35.6			59.6			19.4			9.8	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	19%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	17
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	



Lanes, Volumes, Timings  
 1: Washington St & Jefferson St

2026 Combined Conditions  
 Weekday Morning Peak Hour

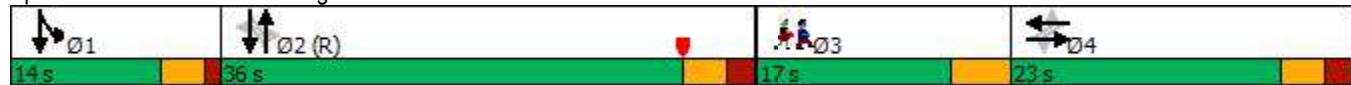


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			B			A	
Queue Length 50th (ft)		66			89			83			54	
Queue Length 95th (ft)		120			131			100			145	
Internal Link Dist (ft)		487			451			379			239	
Turn Bay Length (ft)												
Base Capacity (vph)		344			447			1544			1601	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.62			0.39			0.40	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 45 (50%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 23.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 65.5%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Washington St & Jefferson St



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














Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
 1: Washington St & Jefferson St

2026 Combined Conditions  
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	95	26	151	53	52	13	385	167	124	452	16
Future Volume (vph)	9	95	26	151	53	52	13	385	167	124	452	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			0.95	
Frt		0.97			0.97			0.96			1.00	
Flt Protected		1.00			0.97			1.00			0.99	
Satd. Flow (prot)		1732			3189			3326			3432	
Flt Permitted		0.96			0.68			0.94			0.70	
Satd. Flow (perm)		1675			2235			3117			2411	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	10	102	28	162	57	56	14	414	180	133	486	17
RTOR Reduction (vph)	0	10	0	0	0	0	0	42	0	0	2	0
Lane Group Flow (vph)	0	130	0	0	275	0	0	566	0	0	634	0
Heavy Vehicles (%)	0%	6%	10%	7%	8%	4%	0%	4%	3%	6%	3%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)		15.4			15.4			41.0			51.4	
Effective Green, g (s)		15.4			15.4			41.0			51.4	
Actuated g/C Ratio		0.17			0.17			0.46			0.57	
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		286			382			1419			1494	
v/s Ratio Prot											c0.05	
v/s Ratio Perm		0.08			c0.12			0.18			c0.19	
v/c Ratio		0.45			0.95dl			0.40			0.42	
Uniform Delay, d1		33.5			35.3			16.3			10.9	
Progression Factor		1.00			1.39			1.22			1.00	
Incremental Delay, d2		1.1			6.2			0.8			0.2	
Delay (s)		34.7			55.3			20.6			11.1	
Level of Service		C			E			C			B	
Approach Delay (s)		34.7			55.3			20.6			11.1	
Approach LOS		C			E			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			23.9									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			90.0							18.0		
Intersection Capacity Utilization			65.5%									ICU Level of Service C
Analysis Period (min)			15									
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												

Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕↔		↕	↕↔	
Traffic Volume (vph)	38	8	39	36	1	56	33	470	97	92	494	2
Future Volume (vph)	38	8	39	36	1	56	33	470	97	92	494	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	55		0	250		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			175			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.938				0.850		0.974			0.999	
Flt Protected		0.978			0.953		0.950			0.950		
Satd. Flow (prot)	0	1743	0	0	1811	1599	1805	3398	0	1805	3468	0
Flt Permitted		0.850			0.717		0.446			0.367		
Satd. Flow (perm)	0	1515	0	0	1362	1599	847	3398	0	697	3468	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41				109		30				1
Link Speed (mph)		30			30			30				30
Link Distance (ft)		151			256			229				459
Travel Time (s)		3.4			5.8			5.2				10.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	1%	0%	4%	0%
Adj. Flow (vph)	42	9	43	40	1	62	37	522	108	102	549	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	94	0	0	41	62	37	630	0	102	551	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	5.0	5.0		5.0		
Minimum Split (s)	19.0	19.0		19.0	19.0	19.0	9.0	9.0		9.0		
Total Split (s)	20.0	20.0		20.0	20.0	20.0	36.0	36.0		15.0		
Total Split (%)	22.2%	22.2%		22.2%	22.2%	22.2%	40.0%	40.0%		16.7%		
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	32.0	32.0		11.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
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		Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.0			15.0	15.0	52.5	52.5		63.0	67.8	
Actuated g/C Ratio		0.17			0.17	0.17	0.58	0.58		0.70	0.75	
v/c Ratio		0.33			0.18	0.17	0.07	0.32		0.17	0.21	
Control Delay		23.7			34.6	2.8	9.5	7.2		4.1	3.2	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	21%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	14
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Combined Conditions  
Weekday Morning Peak Hour

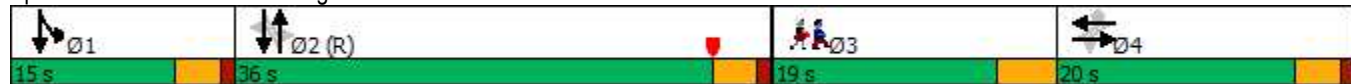


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		23.7			34.6	2.8	9.5	7.2		4.1	3.2	
LOS		C			C	A	A	A		A	A	
Approach Delay		23.7			15.4			7.3				3.3
Approach LOS		C			B			A				A
Queue Length 50th (ft)		26			20	0	4	36		13	50	
Queue Length 95th (ft)		71			50	10	23	127		m24	62	
Internal Link Dist (ft)		71			176			149				379
Turn Bay Length (ft)							55			250		
Base Capacity (vph)		303			242	373	494	1996		639	2588	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.31			0.17	0.17	0.07	0.32		0.16	0.21	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	47 (52%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	7.2
Intersection LOS:	A
Intersection Capacity Utilization:	51.1%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 2: Washington St & Dunkin' Dr/Zwieback St
























Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis  
2: Washington St & Dunkin' Dr/Zwieback St



















2026 Combined Conditions  
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	8	39	36	1	56	33	470	97	92	494	2
Future Volume (vph)	38	8	39	36	1	56	33	470	97	92	494	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.94			1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1744			1812	1599	1805	3399		1805	3470	
Flt Permitted		0.85			0.72	1.00	0.45	1.00		0.37	1.00	
Satd. Flow (perm)		1514			1362	1599	847	3399		698	3470	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	9	43	40	1	62	37	522	108	102	549	2
RTOR Reduction (vph)	0	36	0	0	0	54	0	14	0	0	0	0
Lane Group Flow (vph)	0	58	0	0	41	8	37	616	0	102	551	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	1%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2			2		
Actuated Green, G (s)		12.0			12.0	12.0	48.5	48.5		59.0	63.0	
Effective Green, g (s)		12.0			12.0	12.0	48.5	48.5		59.0	63.0	
Actuated g/C Ratio		0.13			0.13	0.13	0.54	0.54		0.66	0.70	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		201			181	213	456	1831		586	2429	
v/s Ratio Prot								c0.18		0.02	c0.16	
v/s Ratio Perm		c0.04			0.03	0.01	0.04			0.09		
v/c Ratio		0.29			0.23	0.04	0.08	0.34		0.17	0.23	
Uniform Delay, d1		35.2			34.9	34.0	10.0	11.7		5.8	4.8	
Progression Factor		1.00			1.00	1.00	0.65	0.56		0.61	0.55	
Incremental Delay, d2		0.8			0.6	0.1	0.3	0.5		0.1	0.0	
Delay (s)		36.0			35.5	34.1	6.9	7.0		3.7	2.7	
Level of Service		D			D	C	A	A		A	A	
Approach Delay (s)		36.0			34.6			7.0			2.9	
Approach LOS		D			C			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			8.9								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			90.0							16.0	Sum of lost time (s)	
Intersection Capacity Utilization			51.1%								ICU Level of Service	A
Analysis Period (min)			15									
c	Critical Lane Group											



Lanes, Volumes, Timings  
3: Washington St & Lincoln St/Site Drive #2

2026 Combined Conditions  
Weekday Morning Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	39	0	90	600	0	0	462	133
Future Volume (vph)	0	0	0	0	39	0	90	600	0	0	462	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Fr <sub>t</sub>												0.966
Fl <sub>t</sub> Protected								0.994				
Satd. Flow (prot)	0	0	0	0	1863	1863	0	3455	0	0	3386	0
Fl <sub>t</sub> Permitted								0.994				
Satd. Flow (perm)	0	0	0	0	1863	1863	0	3455	0	0	3386	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1165			174			121			229	
Travel Time (s)		26.5			4.0			2.8			5.2	
Peak Hour Factor	0.87	0.92	0.87	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	3%	4%	2%	2%	3%	3%
Adj. Flow (vph)	0	0	0	0	42	0	103	690	0	0	531	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	42	0	0	793	0	0	684	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized



















Intersection Capacity Utilization 49.5%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis  
3: Washington St & Lincoln St/Site Drive #2

2026 Combined Conditions  
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	39	0	90	600	0	0	462	133
Future Volume (Veh/h)	0	0	0	0	39	0	90	600	0	0	462	133
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.87	0.92	0.87	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.87	0.87
Hourly flow rate (vph)	0	0	0	0	42	0	103	690	0	0	531	153
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)							416			229		
pX, platoon unblocked	0.97	0.97	0.95	0.97	0.97	0.94	0.95				0.94	
vC, conflicting volume	1180	1504	342	1162	1580	345	684				690	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	883	1217	197	864	1296	188	557				553	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	100	70	100	89				100	
cM capacity (veh/h)	167	155	775	220	139	776	951				956	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2						
Volume Total	42	0	333	460	354	330						
Volume Left	0	0	103	0	0	0						
Volume Right	0	0	0	0	0	153						
cSH	139	1700	951	1700	1700	1700						
Volume to Capacity	0.30	0.00	0.11	0.27	0.21	0.19						
Queue Length 95th (ft)	30	0	9	0	0	0						
Control Delay (s)	41.7	0.0	3.7	0.0	0.0	0.0						
Lane LOS	E	A	A									
Approach Delay (s)	41.7	1.5		0.0								
Approach LOS	E											
Intersection Summary												
Average Delay	2.0											
Intersection Capacity Utilization	49.5%		ICU Level of Service				A					
Analysis Period (min)	15											



Lanes, Volumes, Timings  
 4: Washington St & CCMC Parking Garage/Site Drive #1

2026 Combined Conditions  
 Weekday Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	0	38	0	0	0	0	632	19	20	442	0
Future Volume (vph)	58	0	38	0	0	0	0	632	19	20	442	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.947						0.996				
Flt Protected		0.971									0.998	
Satd. Flow (prot)	0	1713	0	0	0	0	0	3525	0	0	3532	0
Flt Permitted		0.971									0.998	
Satd. Flow (perm)	0	1713	0	0	0	0	0	3525	0	0	3532	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		191			178			295			121	
Travel Time (s)		4.3			4.0			6.7			2.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	0	41	0	0	0	0	687	21	22	480	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	0	0	0	708	0	0	502	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**

Area Type: Other
















Control Type: Unsignalized

Intersection Capacity Utilization 39.1% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis  
 4: Washington St & CCMC Parking Garage/Site Drive #1

2026 Combined Conditions  
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	38	0	0	0	0	632	19	20	442	0
Future Volume (Veh/h)	58	0	38	0	0	0	0	632	19	20	442	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	0	41	0	0	0	0	687	21	22	480	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
								None			None	
Median storage (veh)												
Upstream signal (ft)												
								295			350	
pX, platoon unblocked	0.94	0.94	0.98	0.94	0.94	0.93	0.98			0.93		
vC, conflicting volume	868	1232	240	1022	1222	354	480			708		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	657	1044	195	822	1033	164	439			543		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	100	95	100	100	100	100			98		
cM capacity (veh/h)	324	209	800	233	212	795	1099			953		
Direction, Lane #												
	EB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	104	458	250	182	320							
Volume Left	63	0	0	22	0							
Volume Right	41	0	21	0	0							
cSH	423	1700	1700	953	1700							
Volume to Capacity	0.25	0.27	0.15	0.02	0.19							
Queue Length 95th (ft)	24	0	0	2	0							
Control Delay (s)	16.3	0.0	0.0	1.3	0.0							
Lane LOS	C			A								
Approach Delay (s)	16.3	0.0		0.5								
Approach LOS	C											
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			39.1%		ICU Level of Service					A		
Analysis Period (min)			15									



Lanes, Volumes, Timings  
5: Washington St & Allen PI/Hospital Garage Dr

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	56	27	34	16	5	82	29	494	32	100	344	19
Future Volume (vph)	56	27	34	16	5	82	29	494	32	100	344	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.961			0.859			0.991			0.994	
Fl <sub>t</sub> Protected		0.977		0.950				0.997			0.989	
Satd. Flow (prot)	0	1737	0	1805	1632	0	0	3437	0	0	3419	0
Fl <sub>t</sub> Permitted		0.797		0.612				0.905			0.713	
Satd. Flow (perm)	0	1417	0	1163	1632	0	0	3120	0	0	2465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			96			8			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1133			193			356			295	
Travel Time (s)		25.8			4.4			8.1			6.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	0%	6%	0%	0%	0%	4%	4%	0%	0%	5%	2%
Adj. Flow (vph)	66	32	40	19	6	96	34	581	38	118	405	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	0	19	102	0	0	653	0	0	545	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		3			3			2			1	1 2
Permitted Phases	3			3			2				2	
Detector Phase	3	3		3	3		2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0			4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		20.0	20.0			8.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0			14.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%		40.0%	40.0%			15.6%	
Maximum Green (s)	35.0	35.0		35.0	35.0		31.0	31.0			10.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag							Lag	Lag			Lead	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2			0.2	
Recall Mode	None	None		None	None		C-Max	C-Max			None	
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	14	14		14	14							
Act Effct Green (s)		11.6		11.6	11.6			57.6			65.4	
Actuated g/C Ratio		0.13		0.13	0.13			0.64			0.73	
v/c Ratio		0.67		0.13	0.35			0.33			0.29	
Control Delay		45.1		34.3	11.6			2.8			2.6	
Queue Delay		0.0		0.0	0.0			0.2			0.0	
Total Delay		45.1		34.3	11.6			3.1			2.6	
LOS		D		C	B			A			A	
Approach Delay		45.1			15.2			3.1			2.6	

Lanes, Volumes, Timings  
 5: Washington St & Allen PI/Hospital Garage Dr

2026 Combined Conditions  
 Weekday Morning Peak Hour

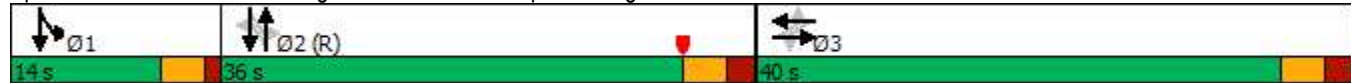


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D				B			A			A
Queue Length 50th (ft)		61		10	3			14			22	
Queue Length 95th (ft)		106		26	39			m28			35	
Internal Link Dist (ft)		1053			113			276			215	
Turn Bay Length (ft)												
Base Capacity (vph)		567		452	693			2000			1975	
Starvation Cap Reductn		0		0	0			655			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.24		0.04	0.15			0.49			0.28	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 45 (50%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 7.9  
 Intersection LOS: A  
 Intersection Capacity Utilization 53.5%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Washington St & Allen PI/Hospital Garage Dr





HCM Signalized Intersection Capacity Analysis  
5: Washington St & Allen Pl/Hospital Garage Dr

2026 Combined Conditions  
Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	56	27	34	16	5	82	29	494	32	100	344	19
Future Volume (vph)	56	27	34	16	5	82	29	494	32	100	344	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.96		1.00	0.86			0.99			0.99	
Flt Protected		0.98		0.95	1.00			1.00			0.99	
Satd. Flow (prot)		1736		1805	1632			3440			3420	
Flt Permitted		0.80		0.61	1.00			0.91			0.71	
Satd. Flow (perm)		1417		1163	1632			3122			2465	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	66	32	40	19	6	96	34	581	38	118	405	22
RTOR Reduction (vph)	0	24	0	0	84	0	0	3	0	0	2	0
Lane Group Flow (vph)	0	114	0	19	18	0	0	650	0	0	543	0
Heavy Vehicles (%)	2%	0%	6%	0%	0%	0%	4%	4%	0%	0%	5%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		3			3			2			1	1
Permitted Phases	3			3			2			2		
Actuated Green, G (s)		11.6		11.6	11.6			57.6			64.4	
Effective Green, g (s)		11.6		11.6	11.6			57.6			64.4	
Actuated g/C Ratio		0.13		0.13	0.13			0.64			0.72	
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		2.0		2.0	2.0			0.2				
Lane Grp Cap (vph)		182		149	210			1998			1836	
v/s Ratio Prot					0.01						c0.02	
v/s Ratio Perm		c0.08		0.02				c0.21			0.19	
v/c Ratio		0.63		0.13	0.09			0.33			0.30	
Uniform Delay, d1		37.2		34.7	34.5			7.4			4.6	
Progression Factor		1.00		1.00	1.00			0.33			0.68	
Incremental Delay, d2		4.8		0.1	0.1			0.1			0.0	
Delay (s)		42.0		34.9	34.6			2.6			3.2	
Level of Service		D		C	C			A			A	
Approach Delay (s)		42.0			34.6			2.6			3.2	
Approach LOS		D			C			A			A	

Intersection Summary

HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
6: Vernon St/Retreat Ave & Washington St

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	99	52	123	63	148	22	436	0	175	266	28
Future Volume (vph)	39	99	52	123	63	148	22	436	0	175	266	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Fr't		0.948				0.850						0.991
Flt Protected	0.950			0.950	0.982			0.998				0.982
Satd. Flow (prot)	1770	1760	0	1453	1635	1538	0	3535	0	0	3365	0
Flt Permitted	0.679			0.093	0.295			0.827				0.683
Satd. Flow (perm)	1265	1760	0	142	491	1538	0	2930	0	0	2341	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		23				174						6
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1103			186			140				356
Travel Time (s)		25.1			4.2			3.2				8.1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	3%	18%	3%	5%	0%	2%	8%	2%	6%	4%
Adj. Flow (vph)	46	116	61	145	74	174	26	513	0	206	313	33
Shared Lane Traffic (%)				29%								
Lane Group Flow (vph)	46	177	0	103	116	174	0	539	0	0	552	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		5			4			2			1	1 2
Permitted Phases	5			4		4	2				2	
Detector Phase	5	5		4	4	4	2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0			5.0	
Minimum Split (s)	11.0	11.0		12.0	12.0	12.0	15.0	15.0			9.0	
Total Split (s)	11.0	11.0		31.0	31.0	31.0	18.0	18.0			9.0	
Total Split (%)	12.2%	12.2%		34.4%	34.4%	34.4%	20.0%	20.0%			10.0%	
Maximum Green (s)	7.0	7.0		26.0	26.0	26.0	13.0	13.0			5.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0		2.0	2.0	2.0	2.0	2.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0				
Total Lost Time (s)	4.0	4.0		5.0	5.0	5.0		5.0				
Lead/Lag				Lag	Lag	Lag	Lag	Lag			Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2			0.2	
Recall Mode	None	None		None	None	None	C-Max	C-Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	7.0	7.0		42.8	42.8	42.8		13.0				19.0
Actuated g/C Ratio	0.08	0.08		0.48	0.48	0.48		0.14				0.21
v/c Ratio	0.47	1.12		1.54	0.50	0.21		1.27				0.99
Control Delay	56.1	143.5		324.9	30.4	4.2		174.9				69.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0				0.0
Total Delay	56.1	143.5		324.9	30.4	4.2		174.9				69.9
LOS	E	F		F	C	A		F				E
Approach Delay		125.4			96.0			174.9				69.9



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr1	
Fl1 Protected	
Satd. Flow (prot)	
Fl1 Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
6: Vernon St/Retreat Ave & Washington St

2026 Combined Conditions  
Weekday Morning Peak Hour

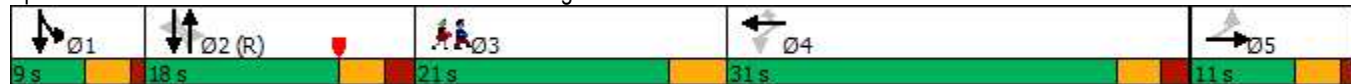


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			F			F			E		
Queue Length 50th (ft)	26	~104		~83	41	0		~205			108	
Queue Length 95th (ft)	#58	#216		#178	#154	39		#284			#247	
Internal Link Dist (ft)	1023			106			60			276		
Turn Bay Length (ft)												
Base Capacity (vph)	98	158		67	233	822		423			555	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.47	1.12		1.54	0.50	0.21		1.27			0.99	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 22 (24%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.54  
 Intersection Signal Delay: 116.3  
 Intersection LOS: F  
 Intersection Capacity Utilization 55.2%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Vernon St/Retreat Ave & Washington St


























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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
6: Vernon St/Retreat Ave & Washington St


















2026 Combined Conditions  
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	99	52	123	63	148	22	436	0	175	266	28
Future Volume (vph)	39	99	52	123	63	148	22	436	0	175	266	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	5.0		5.0			4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.95			0.95	
Frt	1.00	0.95		1.00	1.00	0.85		1.00			0.99	
Flt Protected	0.95	1.00		0.95	0.98	1.00		1.00			0.98	
Satd. Flow (prot)	1770	1761		1453	1635	1538		3534			3364	
Flt Permitted	0.68	1.00		0.09	0.30	1.00		0.83			0.68	
Satd. Flow (perm)	1264	1761		143	491	1538		2929			2341	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	46	116	61	145	74	174	26	513	0	206	313	33
RTOR Reduction (vph)	0	21	0	0	0	91	0	0	0	0	5	0
Lane Group Flow (vph)	46	156	0	103	116	83	0	539	0	0	547	0
Heavy Vehicles (%)	2%	2%	3%	18%	3%	5%	0%	2%	8%	2%	6%	4%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		5			4			2			1	1 2
Permitted Phases	5			4		4	2			2		
Actuated Green, G (s)	7.0	7.0		42.8	42.8	42.8		9.8			14.8	
Effective Green, g (s)	7.0	7.0		42.8	42.8	42.8		9.8			14.8	
Actuated g/C Ratio	0.08	0.08		0.48	0.48	0.48		0.11			0.16	
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0		5.0				
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		0.2				
Lane Grp Cap (vph)	98	136		68	233	731		318			441	
v/s Ratio Prot		c0.09									c0.07	
v/s Ratio Perm	0.04			c0.72	0.24	0.05		c0.18			0.13	
v/c Ratio	0.47	1.15		1.51	0.50	0.11		1.69			1.24	
Uniform Delay, d1	39.7	41.5		23.6	16.2	13.1		40.1			37.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			0.95	
Incremental Delay, d2	1.3	121.6		293.2	0.6	0.0		326.0			126.0	
Delay (s)	41.0	163.1		316.8	16.8	13.1		366.1			161.6	
Level of Service	D	F		F	B	B		F			F	
Approach Delay (s)		137.9			93.8			366.1			161.6	
Approach LOS		F			F			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			207.5				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.40									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		22.0			
Intersection Capacity Utilization			55.2%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												



Lanes, Volumes, Timings  
7: Seymour St & Jefferson St

2026 Combined Conditions  
Weekday Morning Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	226	96	272	250	32	24	15	69	0	0	0
Future Volume (vph)	53	226	96	272	250	32	24	15	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.965			0.983				0.850			
Fl <sub>t</sub> Protected		0.993		0.950				0.970				
Satd. Flow (prot)	0	1733	0	1805	1742	0	0	1843	1615	0	0	0
Fl <sub>t</sub> Permitted		0.912		0.354				0.970				
Satd. Flow (perm)	0	1591	0	673	1742	0	0	1843	1615	0	0	0
Right Turn on Red			No			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		531			1134			467				822
Travel Time (s)		12.1			25.8			10.6				18.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	7%	0%	0%	7%	9%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	56	238	101	286	263	34	25	16	73	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	395	0	286	297	0	0	41	73	0	0	0
Turn Type	Perm	NA		D,P+P	NA		Perm	NA	Perm			
Protected Phases		2		1	1 2			4				
Permitted Phases	2			2			4		4			
Detector Phase	2	2		1	1 2		4	4	4			
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0			
Minimum Split (s)	9.0	9.0		9.0			9.0	9.0	9.0			
Total Split (s)	35.0	35.0		14.0			24.0	24.0	24.0			
Total Split (%)	38.9%	38.9%		15.6%			26.7%	26.7%	26.7%			
Maximum Green (s)	31.0	31.0		10.0			20.0	20.0	20.0			
Yellow Time (s)	3.0	3.0		3.0			3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0		1.0			1.0	1.0	1.0			
Lost Time Adjust (s)		0.0		0.0				0.0	0.0			
Total Lost Time (s)		4.0		4.0				4.0	4.0			
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0			
Recall Mode	C-Max	C-Max		None			Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		31.0		41.0	45.0			33.6	33.6			
Actuated g/C Ratio		0.34		0.46	0.50			0.37	0.37			
v/c Ratio		0.72		0.66	0.34			0.06	0.12			
Control Delay		32.0		22.5	15.0			21.6	22.0			
Queue Delay		0.0		0.0	0.0			0.0	0.0			
Total Delay		32.0		22.5	15.0			21.6	22.0			
LOS		C		C	B			C	C			
Approach Delay		32.0			18.6			21.9				

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	19%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	11
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	



Lanes, Volumes, Timings  
7: Seymour St & Jefferson St

2026 Combined Conditions  
Weekday Morning Peak Hour

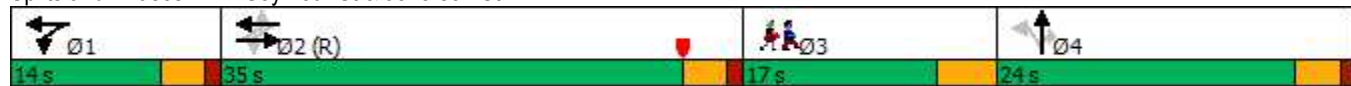


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			C					
Queue Length 50th (ft)	148			92	97	14			25			
Queue Length 95th (ft)	261			147	154	46			71			
Internal Link Dist (ft)	451			1054			387			742		
Turn Bay Length (ft)												
Base Capacity (vph)	548			432	856	687			602			
Starvation Cap Reductn	0			0	0	0			0			
Spillback Cap Reductn	0			0	0	0			0			
Storage Cap Reductn	0			0	0	0			0			
Reduced v/c Ratio	0.72			0.66	0.35	0.06			0.12			

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	32.5 (36%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	23.8
Intersection LOS:	C
Intersection Capacity Utilization:	49.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 7: Seymour St & Jefferson St



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















Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
7: Seymour St & Jefferson St

2026 Combined Conditions  
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	226	96	272	250	32	24	15	69	0	0	0
Future Volume (vph)	53	226	96	272	250	32	24	15	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		1.00		1.00	1.00			1.00	1.00			
Frt		0.97		1.00	0.98			1.00	0.85			
Flt Protected		0.99		0.95	1.00			0.97	1.00			
Satd. Flow (prot)		1734		1805	1741			1844	1615			
Flt Permitted		0.91		0.35	1.00			0.97	1.00			
Satd. Flow (perm)		1592		672	1741			1844	1615			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	238	101	286	263	34	25	16	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	395	0	286	297	0	0	41	73	0	0	0
Heavy Vehicles (%)	6%	7%	0%	0%	7%	9%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm			
Protected Phases		2		1	1 2			4				
Permitted Phases	2			2			4		4			
Actuated Green, G (s)		27.8		37.8	41.8			33.6	33.6			
Effective Green, g (s)		27.8		37.8	41.8			33.6	33.6			
Actuated g/C Ratio		0.31		0.42	0.46			0.37	0.37			
Clearance Time (s)		4.0		4.0				4.0	4.0			
Vehicle Extension (s)		3.0		3.0				3.0	3.0			
Lane Grp Cap (vph)		491		408	808			688	602			
v/s Ratio Prot				c0.08	0.17							
v/s Ratio Perm		c0.25		0.22				0.02	c0.05			
v/c Ratio		0.80		0.70	0.37			0.06	0.12			
Uniform Delay, d1		28.6		19.6	15.6			18.1	18.5			
Progression Factor		0.92		1.00	1.00			1.00	1.00			
Incremental Delay, d2		12.4		5.4	0.3			0.2	0.4			
Delay (s)		38.6		24.9	15.8			18.2	18.9			
Level of Service		D		C	B			B	B			
Approach Delay (s)		38.6			20.3			18.7			0.0	
Approach LOS		D			C			B			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			26.8									C
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			90.0								16.0	
Intersection Capacity Utilization			49.9%									A
Analysis Period (min)			15									
c	Critical Lane Group											

Lanes, Volumes, Timings  
8: IOL Dr/Seymour St & Retreat Ave

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	197	85	126	263	178	15	2	21	83	3	71
Future Volume (vph)	69	197	85	126	263	178	15	2	21	83	3	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			45			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.939			0.924			0.939	
Flt Protected	0.950			0.950				0.981			0.974	
Satd. Flow (prot)	1770	1720	0	1805	1665	0	0	1677	0	0	1721	0
Flt Permitted	0.236			0.433				0.880			0.820	
Satd. Flow (perm)	440	1720	0	823	1665	0	0	1504	0	0	1449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			37			26			46	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		456			1480			118			630	
Travel Time (s)		10.4			33.6			2.7			14.3	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	2%	7%	2%	0%	12%	0%	4%	0%	2%	1%	0%	1%
Adj. Flow (vph)	84	240	104	154	321	217	18	2	26	101	4	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	344	0	154	538	0	0	46	0	0	192	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		15.0	15.0		15.0	15.0	
Total Split (s)	40.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	43.0	43.0		43.0	43.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.35	0.35		0.35	0.35	
v/c Ratio	0.44	0.46		0.44	0.73		0.08	0.08		0.36	0.36	
Control Delay	34.0	23.6		28.4	32.0		12.7	12.7		20.4	20.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	36
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	



Lanes, Volumes, Timings  
8: IOL Dr/Seymour St & Retreat Ave

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	34.0	23.6		28.4	32.0			12.7			20.4	
LOS	C	C		C	C			B			C	
Approach Delay		25.7			31.2			12.7			20.4	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	43	163		78	301			8			67	
Queue Length 95th (ft)	87	222		128	#418			29			111	
Internal Link Dist (ft)		376			1400			38			550	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	189	753		354	736			543			537	
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	0.46		0.44	0.73			0.08			0.36	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 35 (35%), Referenced to phase 1:EBWB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 27.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 63.1%  
 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: 8: IOL Dr/Seymour St & Retreat Ave



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Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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# HCM Signalized Intersection Capacity Analysis

## 8: IOL Dr/Seymour St & Retreat Ave

2026 Combined Conditions  
Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	197	85	126	263	178	15	2	21	83	3	71
Future Volume (vph)	69	197	85	126	263	178	15	2	21	83	3	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.95		1.00	0.94			0.92			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	1719		1805	1666			1676			1721	
Flt Permitted	0.24	1.00		0.43	1.00			0.88			0.82	
Satd. Flow (perm)	439	1719		823	1666			1503			1448	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	84	240	104	154	321	217	18	2	26	101	4	87
RTOR Reduction (vph)	0	14	0	0	22	0	0	17	0	0	30	0
Lane Group Flow (vph)	84	330	0	154	516	0	0	29	0	0	162	0
Heavy Vehicles (%)	2%	7%	2%	0%	12%	0%	4%	0%	2%	1%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	41.0	41.0		41.0	41.0			35.0			35.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			35.0			35.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.35			0.35	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			2.0			2.0	
Lane Grp Cap (vph)	179	704		337	683			526			506	
v/s Ratio Prot		0.19			c0.31							
v/s Ratio Perm	0.19			0.19				0.02			c0.11	
v/c Ratio	0.47	0.47		0.46	0.76			0.06			0.32	
Uniform Delay, d1	21.6	21.5		21.4	25.2			21.5			23.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	8.6	2.2		4.4	7.6			0.2			1.7	
Delay (s)	30.1	23.8		25.8	32.8			21.7			25.5	
Level of Service	C	C		C	C			C			C	
Approach Delay (s)		25.0			31.3			21.7			25.5	
Approach LOS		C			C			C			C	

### Intersection Summary

HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
9: Maple Ave & Retreat Ave

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	277	23	36	521	265	529		
Future Volume (vph)	277	23	36	521	265	529		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00		
Fr <sub>t</sub>	0.989					0.850		
Fl <sub>t</sub> Protected	0.956			0.997				
Satd. Flow (prot)	3259	0	0	3378	1727	1538		
Fl <sub>t</sub> Permitted	0.956			0.920				
Satd. Flow (perm)	3259	0	0	3117	1727	1538		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)						563		
Link Speed (mph)	30			30	30			
Link Distance (ft)	1480			980	257			
Travel Time (s)	33.6			22.3	5.8			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Heavy Vehicles (%)	7%	6%	0%	7%	10%	5%		
Adj. Flow (vph)	295	24	38	554	282	563		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	319	0	0	592	282	563		
Turn Type	Prot		custom	NA	NA	Perm		
Protected Phases	4		5	2 5	6		2	3
Permitted Phases			2			6		
Detector Phase	4		5	2 5	6	6		
Switch Phase								
Minimum Initial (s)	7.0		5.0		15.0	15.0	15.0	1.0
Minimum Split (s)	11.5		9.1		19.2	19.2	19.2	33.0
Total Split (s)	19.5		12.1		42.2	42.2	42.2	33.0
Total Split (%)	18.3%		11.3%		39.5%	39.5%	40%	31%
Maximum Green (s)	15.0		8.0		38.0	38.0	38.0	29.0
Yellow Time (s)	3.2		3.1		3.2	3.2	3.2	4.0
All-Red Time (s)	1.3		1.0		1.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0				0.0	0.0		
Total Lost Time (s)	4.5				4.2	4.2		
Lead/Lag	Lag							Lead
Lead-Lag Optimize?	Yes							Yes
Vehicle Extension (s)	2.0		2.0		2.0	2.0	2.0	3.0
Recall Mode	None		None		C-Max	C-Max	C-Max	None
Walk Time (s)								7.0
Flash Dont Walk (s)								22.0
Pedestrian Calls (#/hr)								4
Act Effct Green (s)	13.9			73.4	64.4	64.4		
Actuated g/C Ratio	0.13			0.69	0.60	0.60		
v/c Ratio	0.75			0.27	0.27	0.49		
Control Delay	56.4			8.1	17.8	8.9		
Queue Delay	0.5			0.0	1.3	1.4		
Total Delay	56.9			8.1	19.0	10.3		
LOS	E			A	B	B		
Approach Delay	56.9			8.1	13.2			

Lanes, Volumes, Timings  
 9: Maple Ave & Retreat Ave

2026 Combined Conditions  
 Weekday Morning Peak Hour

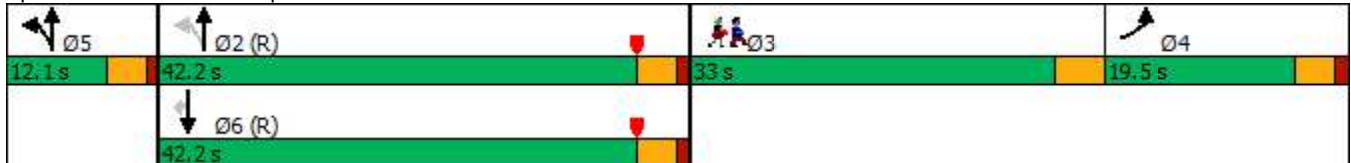


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Approach LOS	E			A	B			
Queue Length 50th (ft)	109			45	112	109		
Queue Length 95th (ft)	156			176	m279	341		
Internal Link Dist (ft)	1400			900	177			
Turn Bay Length (ft)								
Base Capacity (vph)	466			2169	1041	1150		
Starvation Cap Reductn	0			0	551	379		
Spillback Cap Reductn	20			85	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.72			0.28	0.58	0.73		

Intersection Summary

Area Type: Other  
 Cycle Length: 106.8  
 Actuated Cycle Length: 106.8  
 Offset: 50.1 (47%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 19.4 Intersection LOS: B  
 Intersection Capacity Utilization 55.2% ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Maple Ave & Retreat Ave



HCM Signalized Intersection Capacity Analysis  
 9: Maple Ave & Retreat Ave

2026 Combined Conditions  
 Weekday Morning Peak Hour



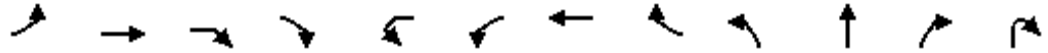
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT			TT	T	T
Traffic Volume (vph)	277	23	36	521	265	529
Future Volume (vph)	277	23	36	521	265	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.2	4.2	4.2
Lane Util. Factor	0.97			0.95	1.00	1.00
Frt	0.99			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3258			3377	1727	1538
Flt Permitted	0.96			0.92	1.00	1.00
Satd. Flow (perm)	3258			3118	1727	1538
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	295	24	38	554	282	563
RTOR Reduction (vph)	0	0	0	0	0	240
Lane Group Flow (vph)	319	0	0	592	282	323
Heavy Vehicles (%)	7%	6%	0%	7%	10%	5%
Turn Type	Prot		custom	NA	NA	Perm
Protected Phases	4		5	2.5	6	
Permitted Phases			2			6
Actuated Green, G (s)	13.9			70.3	61.2	61.2
Effective Green, g (s)	13.9			70.3	61.2	61.2
Actuated g/C Ratio	0.13			0.66	0.57	0.57
Clearance Time (s)	4.5				4.2	4.2
Vehicle Extension (s)	2.0				2.0	2.0
Lane Grp Cap (vph)	424			2074	989	881
v/s Ratio Prot	c0.10			c0.02	0.16	
v/s Ratio Perm				0.16		c0.21
v/c Ratio	0.75			0.29	0.29	0.37
Uniform Delay, d1	44.8			7.7	11.6	12.3
Progression Factor	1.00			1.00	1.25	4.05
Incremental Delay, d2	6.6			0.0	0.5	0.9
Delay (s)	51.4			7.7	15.1	50.8
Level of Service	D			A	B	D
Approach Delay (s)	51.4			7.7	38.9	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	106.8	Sum of lost time (s)	16.8
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Combined Conditions  
 Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↕↕				↕	↕			↕↕	↕	
Traffic Volume (vph)	30	148	9	169	1	387	321	27	105	318	297	1
Future Volume (vph)	30	148	9	169	1	387	321	27	105	318	297	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.925					0.988					0.850
Fl <sub>t</sub> Protected		0.996				0.950				0.988		
Satd. Flow (prot)	0	3261	0	0	0	1770	1840	0	0	3497	1583	0
Fl <sub>t</sub> Permitted		0.996				0.950				0.711		
Satd. Flow (perm)	0	3261	0	0	0	1770	1840	0	0	2516	1583	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		178										
Link Speed (mph)		30					30			30		
Link Distance (ft)		1134					419			257		
Travel Time (s)		25.8					9.5			5.8		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	159	10	182	1	416	345	29	113	342	319	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	383	0	0	0	417	374	0	0	455	320	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Detector Phase	4	4			8	8	8		5	2.5	2.5	
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0	7.0	7.0		5.0			
Minimum Split (s)	12.4	12.4			11.1	11.1	11.1		8.2			
Total Split (s)	20.4	20.4			25.1	25.1	25.1		8.2			
Total Split (%)	19.1%	19.1%			23.5%	23.5%	23.5%		7.7%			
Maximum Green (s)	15.0	15.0			21.0	21.0	21.0		5.0			
Yellow Time (s)	3.4	3.4			3.1	3.1	3.1		3.1			
All-Red Time (s)	2.0	2.0			1.0	1.0	1.0		0.1			
Lost Time Adjust (s)		0.0					0.0		0.0			
Total Lost Time (s)		5.4					4.1		4.1			
Lead/Lag	Lag	Lag										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Recall Mode	None	None			None	None	None		None			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		11.3				32.5	32.5			32.1	37.2	
Actuated g/C Ratio		0.11				0.30	0.30			0.30	0.35	
v/c Ratio		0.76				0.77	0.67			0.53	0.58	
Control Delay		34.6				37.0	31.4			31.0	33.5	
Queue Delay		0.1				0.4	0.0			0.3	17.3	
Total Delay		34.7				37.4	31.4			31.3	50.8	
LOS		C				D	C			C	D	
Approach Delay		34.7					34.6			39.3		
Approach LOS		C					C			D		

Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

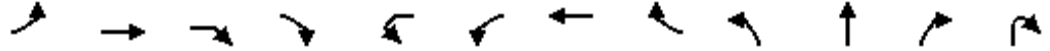
2026 Combined Conditions  
 Weekday Morning Peak Hour



Lane Group	SBL2	SBT	SBR	Ø2	Ø3
Lane Configurations		↕↕			
Traffic Volume (vph)	3	224	58		
Future Volume (vph)	3	224	58		
Ideal Flow (vphpl)	1900	1900	1900		
Lane Util. Factor	0.95	0.95	0.95		
Fr <sub>t</sub>		0.970			
Fl <sub>t</sub> Protected					
Satd. Flow (prot)	0	3433	0		
Fl <sub>t</sub> Permitted		0.950			
Satd. Flow (perm)	0	3261	0		
Right Turn on Red			No		
Satd. Flow (RTOR)					
Link Speed (mph)		30			
Link Distance (ft)		614			
Travel Time (s)		14.0			
Peak Hour Factor	0.93	0.93	0.93		
Adj. Flow (vph)	3	241	62		
Shared Lane Traffic (%)					
Lane Group Flow (vph)	0	306	0		
Turn Type	Perm	NA			
Protected Phases		6		2	3
Permitted Phases	6				
Detector Phase	6	6			
Switch Phase					
Minimum Initial (s)	15.0	15.0		15.0	1.0
Minimum Split (s)	20.1	20.1		20.1	28.0
Total Split (s)	25.1	25.1		25.1	28.0
Total Split (%)	23.5%	23.5%		24%	26%
Maximum Green (s)	20.0	20.0		20.0	24.0
Yellow Time (s)	3.1	3.1		3.1	4.0
All-Red Time (s)	2.0	2.0		2.0	0.0
Lost Time Adjust (s)		0.0			
Total Lost Time (s)		5.1			
Lead/Lag					Lead
Lead-Lag Optimize?					Yes
Vehicle Extension (s)	2.0	2.0		2.0	3.0
Recall Mode	C-Max	C-Max		C-Max	None
Walk Time (s)					7.0
Flash Dont Walk (s)					17.0
Pedestrian Calls (#/hr)					19
Act Effct Green (s)		21.2			
Actuated g/C Ratio		0.20			
v/c Ratio		0.47			
Control Delay		41.0			
Queue Delay		0.4			
Total Delay		41.5			
LOS		D			
Approach Delay		41.5			
Approach LOS		D			

Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Combined Conditions  
 Weekday Morning Peak Hour

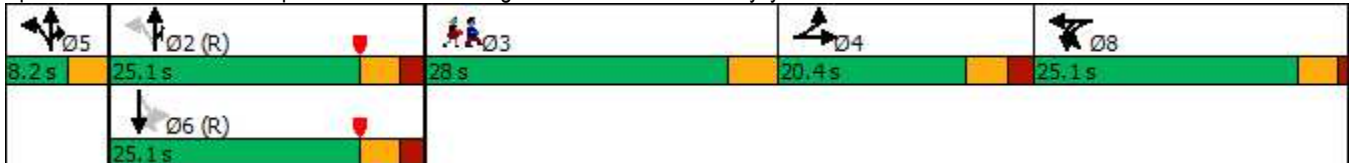


Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Queue Length 50th (ft)		71				155	139			134	189	
Queue Length 95th (ft)		120				#558	#474			#161	#315	
Internal Link Dist (ft)		1054					339			177		
Turn Bay Length (ft)												
Base Capacity (vph)		611				539	560			856	551	
Starvation Cap Reductn		0				0	0			86	217	
Spillback Cap Reductn		9				11	0			0	0	
Storage Cap Reductn		0				0	0			0	0	
Reduced v/c Ratio		0.64				0.79	0.67			0.59	0.96	

Intersection Summary

Area Type: Other  
 Cycle Length: 106.8  
 Actuated Cycle Length: 106.8  
 Offset: 23.2 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 37.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 79.5%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St



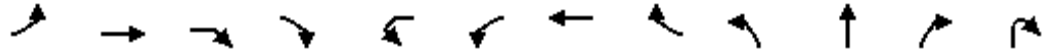




Lane Group	SBL2	SBT	SBR	Ø2	Ø3
Queue Length 50th (ft)		99			
Queue Length 95th (ft)		144			
Internal Link Dist (ft)		534			
Turn Bay Length (ft)					
Base Capacity (vph)		646			
Starvation Cap Reductn		0			
Spillback Cap Reductn		90			
Storage Cap Reductn		0			
Reduced v/c Ratio		0.55			
Intersection Summary					

HCM Signalized Intersection Capacity Analysis  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

2026 Combined Conditions  
 Weekday Morning Peak Hour



Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↔↔				↔	↔			↔↔	↔	
Traffic Volume (vph)	30	148	9	169	1	387	321	27	105	318	297	1
Future Volume (vph)	30	148	9	169	1	387	321	27	105	318	297	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4				4.1	4.1			5.1	5.1	
Lane Util. Factor		0.95				1.00	1.00			0.95	1.00	
Frt		0.92				1.00	0.99			1.00	0.85	
Flt Protected		1.00				0.95	1.00			0.99	1.00	
Satd. Flow (prot)		3259				1770	1841			3496	1583	
Flt Permitted		1.00				0.95	1.00			0.71	1.00	
Satd. Flow (perm)		3259				1770	1841			2517	1583	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	159	10	182	1	416	345	29	113	342	319	1
RTOR Reduction (vph)	0	159	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	224	0	0	0	417	374	0	0	455	320	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Actuated Green, G (s)		11.3				32.5	32.5			31.6	34.8	
Effective Green, g (s)		11.3				32.5	32.5			31.6	31.6	
Actuated g/C Ratio		0.11				0.30	0.30			0.30	0.30	
Clearance Time (s)		5.4				4.1	4.1					
Vehicle Extension (s)		2.0				2.0	2.0					
Lane Grp Cap (vph)		344				538	560			862	468	
v/s Ratio Prot		c0.07				c0.24	0.20			0.06	c0.20	
v/s Ratio Perm										0.09		
v/c Ratio		0.65				0.78	0.67			0.53	0.68	
Uniform Delay, d1		45.9				33.8	32.4			31.4	33.2	
Progression Factor		1.00				0.65	0.65			0.93	0.94	
Incremental Delay, d2		3.3				5.6	2.1			0.3	3.0	
Delay (s)		49.2				27.6	23.2			29.4	34.1	
Level of Service		D				C	C			C	C	
Approach Delay (s)		49.2					25.5			31.4		
Approach LOS		D					C			C		

Intersection Summary		
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.64	C
Actuated Cycle Length (s)	106.8	Sum of lost time (s)
Intersection Capacity Utilization	79.5%	21.8
Analysis Period (min)	15	ICU Level of Service
		D

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

2026 Combined Conditions  
 Weekday Morning Peak Hour



Movement	SBL2	SBT	SBR
Lane Configurations		↕↕	
Traffic Volume (vph)	3	224	58
Future Volume (vph)	3	224	58
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)		5.1	
Lane Util. Factor		0.95	
Frt		0.97	
Flt Protected		1.00	
Satd. Flow (prot)		3430	
Flt Permitted		0.95	
Satd. Flow (perm)		3260	
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	3	241	62
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	0	306	0
Turn Type	Perm	NA	
Protected Phases		6	
Permitted Phases	6		
Actuated Green, G (s)		18.8	
Effective Green, g (s)		18.8	
Actuated g/C Ratio		0.18	
Clearance Time (s)		5.1	
Vehicle Extension (s)		2.0	
Lane Grp Cap (vph)		573	
v/s Ratio Prot			
v/s Ratio Perm		0.09	
v/c Ratio		0.53	
Uniform Delay, d1		40.0	
Progression Factor		1.00	
Incremental Delay, d2		3.5	
Delay (s)		43.6	
Level of Service		D	
Approach Delay (s)		43.6	
Approach LOS		D	
<b>Intersection Summary</b>			



Lanes, Volumes, Timings  
11: Wethersfield Ave/Main St & Wyllys St

2026 Combined Conditions  
Weekday Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↗	↘		↗	↘	
Traffic Volume (vph)	4	314	44	46	587	29	121	221	145	32	181	4
Future Volume (vph)	4	314	44	46	587	29	121	221	145	32	181	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.982			0.993			0.941			0.997	
Fl <sub>t</sub> Protected		0.999			0.997		0.950			0.950		
Satd. Flow (prot)	0	3389	0	0	3474	0	1719	1655	0	1570	1773	0
Fl <sub>t</sub> Permitted		0.946			0.918		0.438			0.532		
Satd. Flow (perm)	0	3209	0	0	3198	0	793	1655	0	879	1773	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		419			457			477			416	
Travel Time (s)		9.5			10.4			10.8			9.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	4%	8%	2%	3%	2%	5%	8%	8%	15%	7%	0%
Adj. Flow (vph)	4	334	47	49	624	31	129	235	154	34	193	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	704	0	129	389	0	34	197	0
Turn Type	Perm	NA		D,P+P	NA		D,P+P	NA		Perm	NA	
Protected Phases		4		3	3 4		1	1 2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		3	3 4		1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0			5.0			10.0	10.0	
Minimum Split (s)	15.0	15.0		9.0			9.0			15.0	15.0	
Total Split (s)	23.0	23.0		15.0			19.0			25.8	25.8	
Total Split (%)	21.5%	21.5%		14.0%			17.8%			24.2%	24.2%	
Maximum Green (s)	18.0	18.0		11.0			15.0			20.8	20.8	
Yellow Time (s)	3.0	3.0		3.0			3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		1.0			1.0			2.0	2.0	
Lost Time Adjust (s)		0.0					0.0			0.0	0.0	
Total Lost Time (s)		5.0					4.0			5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0			3.0	3.0	
Recall Mode	Max	Max		Max			Max			C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.0			39.6		36.8	40.8		20.8	20.8	
Actuated g/C Ratio		0.17			0.37		0.34	0.38		0.19	0.19	
v/c Ratio		0.71			0.57		0.32	0.62		0.20	0.57	
Control Delay		50.6			29.6		24.6	31.8		39.6	46.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		50.6			29.6		24.6	31.8		39.6	46.4	
LOS		D			C		C	C		D	D	
Approach Delay		50.6			29.6			30.0			45.4	

Lane Group	Ø5
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr t	
Fl t Protected	
Satd. Flow (prot)	
Fl t Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	5
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	22%
Maximum Green (s)	19.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	34
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 11: Wethersfield Ave/Main St & Wyllys St

2026 Combined Conditions  
 Weekday Morning Peak Hour

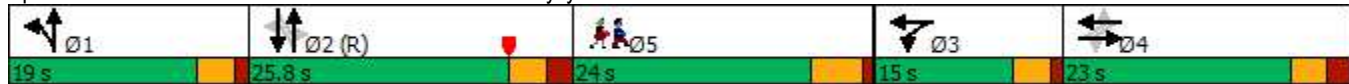


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			C				D
Queue Length 50th (ft)		147			215		58	212		20		123
Queue Length 95th (ft)		200			279		101	315		50		199
Internal Link Dist (ft)		339			377			397				336
Turn Bay Length (ft)												
Base Capacity (vph)		540			1238		403	632		171		345
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		0.71			0.57		0.32	0.62		0.20		0.57

Intersection Summary

Area Type:	Other
Cycle Length:	106.8
Actuated Cycle Length:	106.8
Offset:	0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	36.1
Intersection LOS:	D
Intersection Capacity Utilization	72.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 11: Wethersfield Ave/Main St & Wyllys St


























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Lane Group	Ø5
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
 11: Wethersfield Ave/Main St & Wyllys St

2026 Combined Conditions  
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	314	44	46	587	29	121	221	145	32	181	4
Future Volume (vph)	4	314	44	46	587	29	121	221	145	32	181	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			4.0		4.0	4.0		5.0	5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	1.00	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3389			3473		1719	1655		1570	1773	
Flt Permitted		0.95			0.92		0.44	1.00		0.53	1.00	
Satd. Flow (perm)		3208			3200		792	1655		879	1773	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	334	47	49	624	31	129	235	154	34	193	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	385	0	0	704	0	129	389	0	34	197	0
Heavy Vehicles (%)	6%	4%	8%	2%	3%	2%	5%	8%	8%	15%	7%	0%
Turn Type	Perm	NA		D.P+P	NA		D.P+P	NA		Perm	NA	
Protected Phases		4		3	3		1	1		2		2
Permitted Phases	4			4			2			2		
Actuated Green, G (s)		18.0			38.6		33.8	37.8		18.8	18.8	
Effective Green, g (s)		18.0			38.6		33.8	37.8		18.8	18.8	
Actuated g/C Ratio		0.17			0.36		0.32	0.35		0.18	0.18	
Clearance Time (s)		5.0					4.0			5.0	5.0	
Vehicle Extension (s)		3.0					3.0			3.0	3.0	
Lane Grp Cap (vph)		540			1209		380	585		154	312	
v/s Ratio Prot					c0.11		0.05	c0.24			0.11	
v/s Ratio Perm		c0.12			0.10		0.06			0.04		
v/c Ratio		0.71			0.58		0.34	0.66		0.22	0.63	
Uniform Delay, d1		42.0			27.6		27.2	29.1		37.7	40.8	
Progression Factor		1.04			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4			2.1		2.4	5.9		3.3	9.4	
Delay (s)		50.2			29.6		29.6	35.0		41.0	50.1	
Level of Service		D			C		C	D		D	D	
Approach Delay (s)		50.2			29.6			33.7			48.8	
Approach LOS		D			C			C			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			37.5				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			106.8				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			72.5%				ICU Level of Service				C	
Analysis Period (min)			15									
c	Critical Lane Group											

## Appendix D

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### Intersection Capacity Analysis Worksheets 2026 Background Traffic Volumes Weekday Afternoon Peak Hour



Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	13	87	19	111	140	113	16	471	190	98	384	21
Future Volume (vph)	13	87	19	111	140	113	16	471	190	98	384	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.978			0.953			0.958			0.994	
Fl <sub>t</sub> Protected		0.995			0.985			0.999			0.990	
Satd. Flow (prot)	0	1771	0	0	3355	0	0	3389	0	0	3492	0
Fl <sub>t</sub> Permitted		0.930			0.767			0.937			0.680	
Satd. Flow (perm)	0	1656	0	0	2613	0	0	3178	0	0	2398	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		8						70			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		567			531			459			319	
Travel Time (s)		12.9			12.1			10.4			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	1%	0%	0%	2%	2%	5%	1%	0%
Adj. Flow (vph)	14	95	21	121	152	123	17	512	207	107	417	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	396	0	0	736	0	0	547	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1	2
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		1	1	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		5.0		
Minimum Split (s)	15.0	15.0		15.0	15.0		20.0	20.0		9.0		
Total Split (s)	23.0	23.0		23.0	23.0		46.0	46.0		14.0		
Total Split (%)	23.0%	23.0%		23.0%	23.0%		46.0%	46.0%		14.0%		
Maximum Green (s)	18.0	18.0		18.0	18.0		41.0	41.0		10.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0		
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.4			18.4			50.6			61.8	
Actuated g/C Ratio		0.18			0.18			0.51			0.62	
v/c Ratio		0.42			0.82			0.45			0.34	
Control Delay		38.3			60.6			7.4			8.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		38.3			60.6			7.4			8.9	
LOS		D			E			A			A	
Approach Delay		38.3			60.6			7.4			8.9	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr1	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	17%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	16
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			A			A	
Queue Length 50th (ft)		66			140			83			57	
Queue Length 95th (ft)		128			#215			80			120	
Internal Link Dist (ft)		487			451			379			239	
Turn Bay Length (ft)												
Base Capacity (vph)		319			493			1642			1608	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.80			0.45			0.34	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 55 (55%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 21.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 62.2%  
 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: 1: Washington St & Jefferson St





















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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
1: Washington St & Jefferson St

2026 Background Conditions  
Weekday Afternoon Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	87	19	111	140	113	16	471	190	98	384	21
Future Volume (vph)	13	87	19	111	140	113	16	471	190	98	384	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			0.95	
Frt		0.98			0.95			0.96			0.99	
Flt Protected		0.99			0.98			1.00			0.99	
Satd. Flow (prot)		1771			3357			3388			3492	
Flt Permitted		0.93			0.77			0.94			0.68	
Satd. Flow (perm)		1656			2613			3177			2399	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	95	21	121	152	123	17	512	207	107	417	23
RTOR Reduction (vph)	0	7	0	0	0	0	0	36	0	0	3	0
Lane Group Flow (vph)	0	123	0	0	396	0	0	700	0	0	544	0
Heavy Vehicles (%)	0%	6%	0%	2%	1%	0%	0%	2%	2%	5%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)		18.4			18.4			48.2			58.4	
Effective Green, g (s)		18.4			18.4			48.2			58.4	
Actuated g/C Ratio		0.18			0.18			0.48			0.58	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		304			480			1531			1512	
v/s Ratio Prot											c0.04	
v/s Ratio Perm		0.07			c0.15			c0.22			0.17	
v/c Ratio		0.41			0.82			0.46			0.36	
Uniform Delay, d1		36.0			39.3			17.2			11.0	
Progression Factor		1.00			1.17			0.41			1.00	
Incremental Delay, d2		0.9			10.6			1.0			0.1	
Delay (s)		36.9			56.4			8.0			11.1	
Level of Service		D			E			A			B	
Approach Delay (s)		36.9			56.4			8.0			11.1	
Approach LOS		D			E			A			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			21.6									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			100.0								18.0	
Intersection Capacity Utilization			62.2%									ICU Level of Service B
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕	↕	↖	↕	↕
Traffic Volume (vph)	11	3	12	111	3	151	14	477	70	78	432	1
Future Volume (vph)	11	3	12	111	3	151	14	477	70	78	432	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	55		0	250		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			175			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.937				0.850		0.981				
Flt Protected		0.979			0.954		0.950			0.950		
Satd. Flow (prot)	0	1743	0	0	1813	1615	1805	3451	0	1805	3574	0
Flt Permitted		0.881			0.711		0.487			0.387		
Satd. Flow (perm)	0	1568	0	0	1351	1615	925	3451	0	735	3574	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				161		20				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		151			256			229				459
Travel Time (s)		3.4			5.8			5.2				10.4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	12	3	13	118	3	161	15	507	74	83	460	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	121	161	15	581	0	83	461	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	5.0	5.0		5.0		
Minimum Split (s)	19.0	19.0		19.0	19.0	19.0	9.0	9.0		9.0		
Total Split (s)	20.0	20.0		20.0	20.0	20.0	46.0	46.0		15.0		
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	46.0%	46.0%		15.0%		
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	42.0	42.0		11.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
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		Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.4			15.4	15.4	55.5	55.5		65.0	69.0	
Actuated g/C Ratio		0.15			0.15	0.15	0.56	0.56		0.65	0.69	
v/c Ratio		0.11			0.58	0.42	0.03	0.30		0.14	0.19	
Control Delay		25.4			51.5	9.7	8.5	7.2		4.2	3.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	19%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	23
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		25.4			51.5	9.7	8.5	7.2		4.2	3.8	
LOS		C			D	A	A	A		A	A	
Approach Delay		25.4			27.6			7.3			3.8	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		8			73	0	2	46		7	19	
Queue Length 95th (ft)		33			132	55	m10	76		m14	m36	
Internal Link Dist (ft)		71			176			149			379	
Turn Bay Length (ft)							55			250		
Base Capacity (vph)		261			216	393	512	1922		606	2432	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.11			0.56	0.41	0.03	0.30		0.14	0.19	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 51 (51%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.58  
 Intersection Signal Delay: 10.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 50.4%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Washington St & Dunkin' Dr/Zwieback St
























Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	



HCM Signalized Intersection Capacity Analysis  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Background Conditions  
Weekday Afternoon Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	11	3	12	111	3	151	14	477	70	78	432	1	
Future Volume (vph)	11	3	12	111	3	151	14	477	70	78	432	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95		
Frt		0.94			1.00	0.85	1.00	0.98		1.00	1.00		
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1744			1812	1615	1805	3451		1805	3573		
Flt Permitted		0.88			0.71	1.00	0.49	1.00		0.39	1.00		
Satd. Flow (perm)		1569			1351	1615	925	3451		736	3573		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	12	3	13	118	3	161	15	507	74	83	460	1	
RTOR Reduction (vph)	0	11	0	0	0	136	0	9	0	0	0	0	
Lane Group Flow (vph)	0	17	0	0	121	25	15	572	0	83	461	0	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA		
Protected Phases		4			4			2		1	1 2		
Permitted Phases	4			4		4	2			2			
Actuated Green, G (s)		15.4			15.4	15.4	53.1	53.1		62.6	66.6		
Effective Green, g (s)		15.4			15.4	15.4	53.1	53.1		62.6	66.6		
Actuated g/C Ratio		0.15			0.15	0.15	0.53	0.53		0.63	0.67		
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0			
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		241			208	248	491	1832		562	2379		
v/s Ratio Prot								c0.17		0.01	c0.13		
v/s Ratio Perm		0.01			c0.09	0.02	0.02			0.08			
v/c Ratio		0.07			0.58	0.10	0.03	0.31		0.15	0.19		
Uniform Delay, d1		36.2			39.3	36.3	11.2	13.2		7.5	6.4		
Progression Factor		1.00			1.00	1.00	0.55	0.50		0.50	0.51		
Incremental Delay, d2		0.1			4.1	0.2	0.1	0.4		0.1	0.0		
Delay (s)		36.3			43.4	36.5	6.2	7.0		3.9	3.3		
Level of Service		D			D	D	A	A		A	A		
Approach Delay (s)		36.3			39.5			7.0			3.4		
Approach LOS		D			D			A			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			12.5									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.33										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			50.4%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

Lanes, Volumes, Timings  
3: Washington St & Lincoln St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	57	550	517	59
Future Volume (vph)	0	0	57	550	517	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Fr <sub>t</sub>					0.985	
Fl <sub>t</sub> Protected				0.995		
Satd. Flow (prot)	0	0	0	3497	3524	0
Fl <sub>t</sub> Permitted				0.995		
Satd. Flow (perm)	0	0	0	3497	3524	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1165			416	229	
Travel Time (s)	26.5			9.5	5.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	3%	1%	0%
Adj. Flow (vph)	0	0	59	573	539	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	632	600	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
3: Washington St & Lincoln St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕↕	↕↕	
Traffic Volume (veh/h)	0	0	57	550	517	59
Future Volume (Veh/h)	0	0	57	550	517	59
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	59	573	539	61
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				416	229	
pX, platoon unblocked	0.97	0.95	0.95			
vC, conflicting volume	974	300	600			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	763	170	485			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	94			
cM capacity (veh/h)	316	811	1039			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>		
Volume Total	250	382	359	241		
Volume Left	59	0	0	0		
Volume Right	0	0	0	61		
cSH	1039	1700	1700	1700		
Volume to Capacity	0.06	0.22	0.21	0.14		
Queue Length 95th (ft)	5	0	0	0		
Control Delay (s)	2.5	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	1.0		0.0			
Approach LOS						
<b>Intersection Summary</b>						
Average Delay				0.5		
Intersection Capacity Utilization	39.7%			ICU Level of Service		A
Analysis Period (min)	15					



Lanes, Volumes, Timings  
4: Washington St & Allen PI/Hospital Garage Dr

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	67	3	62	61	30	133	51	434	5	6	452	52
Future Volume (vph)	67	3	62	61	30	133	51	434	5	6	452	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.936			0.878			0.999				0.985
Fl <sub>t</sub> Protected		0.975		0.950				0.995				0.999
Satd. Flow (prot)	0	1734	0	1805	1668	0	0	3495	0	0	3521	0
Fl <sub>t</sub> Permitted		0.493		0.602				0.845				0.952
Satd. Flow (perm)	0	877	0	1144	1668	0	0	2968	0	0	3355	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			141			1				18
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1133			193			356				416
Travel Time (s)		25.8			4.4			8.1				9.5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	71	3	66	65	32	141	54	462	5	6	481	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	65	173	0	0	521	0	0	542	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		3			3			2			1	1 2
Permitted Phases	3			3			2				2	
Detector Phase	3	3		3	3		2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0			4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		20.0	20.0			8.0	
Total Split (s)	40.0	40.0		40.0	40.0		46.0	46.0			14.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		46.0%	46.0%			14.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		41.0	41.0			10.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag							Lag	Lag			Lead	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2			0.2	
Recall Mode	None	None		None	None		C-Max	C-Max			None	
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	23	23		23	23							
Act Effct Green (s)		12.5		12.5	12.5			66.8				74.5
Actuated g/C Ratio		0.12		0.12	0.12			0.67				0.74
v/c Ratio		0.92		0.45	0.52			0.26				0.22
Control Delay		82.7		49.0	15.9			5.5				1.6
Queue Delay		0.0		0.0	0.0			0.0				0.0
Total Delay		82.7		49.0	15.9			5.5				1.6
LOS		F		D	B			A				A
Approach Delay		82.7			24.9			5.5				1.6

Lanes, Volumes, Timings  
 4: Washington St & Allen PI/Hospital Garage Dr

2026 Background Conditions  
 Weekday Afternoon Peak Hour

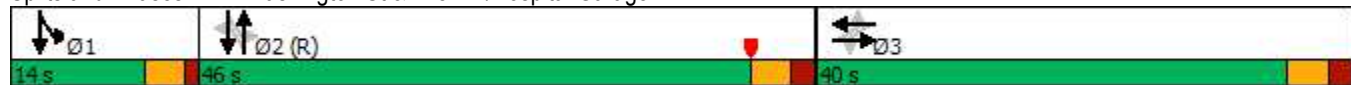


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			C			A			A	
Queue Length 50th (ft)		60		40	19			49			23	
Queue Length 95th (ft)		#144		77	75			97			6	
Internal Link Dist (ft)		1053			113			276			336	
Turn Bay Length (ft)												
Base Capacity (vph)		338		400	675			1983			2614	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.41		0.16	0.26			0.26			0.21	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 55 (55%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 14.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 61.2%  
 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: 4: Washington St & Allen PI/Hospital Garage Dr



HCM Signalized Intersection Capacity Analysis  
4: Washington St & Allen Pl/Hospital Garage Dr

2026 Background Conditions  
Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	67	3	62	61	30	133	51	434	5	6	452	52
Future Volume (vph)	67	3	62	61	30	133	51	434	5	6	452	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.94		1.00	0.88			1.00			0.98	
Flt Protected		0.98		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1735		1805	1668			3493			3522	
Flt Permitted		0.49		0.60	1.00			0.85			0.95	
Satd. Flow (perm)		877		1145	1668			2967			3354	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	71	3	66	65	32	141	54	462	5	6	481	55
RTOR Reduction (vph)	0	43	0	0	123	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	97	0	65	50	0	0	521	0	0	537	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		3			3			2			1	1
Permitted Phases	3			3			2			2		
Actuated Green, G (s)		12.5		12.5	12.5			66.8			73.5	
Effective Green, g (s)		12.5		12.5	12.5			66.8			73.5	
Actuated g/C Ratio		0.12		0.12	0.12			0.67			0.74	
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		2.0		2.0	2.0			0.2				
Lane Grp Cap (vph)		109		143	208			1981			2476	
v/s Ratio Prot					0.03						c0.01	
v/s Ratio Perm		c0.11		0.06				c0.18			0.14	
v/c Ratio		0.89		0.45	0.24			0.26			0.22	
Uniform Delay, d1		43.1		40.6	39.5			6.7			4.2	
Progression Factor		1.00		1.00	1.00			0.68			0.45	
Incremental Delay, d2		52.4		0.8	0.2			0.3			0.0	
Delay (s)		95.5		41.4	39.7			4.8			1.9	
Level of Service		F		D	D			A			A	
Approach Delay (s)		95.5			40.2			4.8			1.9	
Approach LOS		F			D			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			18.4			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)		14.0				
Intersection Capacity Utilization			61.2%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												



Lanes, Volumes, Timings  
5: Vernon St/Retreat Ave & Washington St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	257	48	63	204	159	27	219	0	143	266	133
Future Volume (vph)	87	257	48	63	204	159	27	219	0	143	266	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.976				0.850						0.963
Fl <sub>t</sub> Protected	0.950			0.950	0.998			0.995				0.987
Satd. Flow (prot)	1787	1809	0	1633	1764	1524	0	3518	0	0	3378	0
Fl <sub>t</sub> Permitted	0.609			0.137	0.564			0.817				0.698
Satd. Flow (perm)	1146	1809	0	236	997	1524	0	2888	0	0	2389	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		8				173						40
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1103			186			140				356
Travel Time (s)		25.1			4.2			3.2				8.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	3%	0%	5%	2%	6%	3%	2%	5%	5%	0%	1%
Adj. Flow (vph)	95	279	52	68	222	173	29	238	0	155	289	145
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	95	331	0	61	229	173	0	267	0	0	589	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		5			4			2			1	1 2
Permitted Phases	5			4		4	2				2	
Detector Phase	5	5		4	4	4	2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0			5.0	
Minimum Split (s)	11.0	11.0		12.0	12.0	12.0	15.0	15.0			9.0	
Total Split (s)	21.0	21.0		29.0	29.0	29.0	17.0	17.0			12.0	
Total Split (%)	21.0%	21.0%		29.0%	29.0%	29.0%	17.0%	17.0%			12.0%	
Maximum Green (s)	17.0	17.0		24.0	24.0	24.0	12.0	12.0			8.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0		2.0	2.0	2.0	2.0	2.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0				
Total Lost Time (s)	4.0	4.0		5.0	5.0	5.0		5.0				
Lead/Lag				Lag	Lag	Lag	Lag	Lag			Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2			0.2	
Recall Mode	None	None		None	None	None	C-Max	C-Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	22.5	22.5		29.1	29.1	29.1		12.0				23.0
Actuated g/C Ratio	0.22	0.22		0.29	0.29	0.29		0.12				0.23
v/c Ratio	0.37	0.80		0.90	0.79	0.31		0.77				0.87
Control Delay	39.7	53.8		123.8	55.4	6.4		58.8				42.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0				0.0
Total Delay	39.7	53.8		123.8	55.4	6.4		58.8				42.4
LOS	D	D		F	E	A		E				D
Approach Delay		50.7			46.1			58.8				42.4

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	19
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
5: Vernon St/Retreat Ave & Washington St

2026 Background Conditions  
Weekday Afternoon Peak Hour

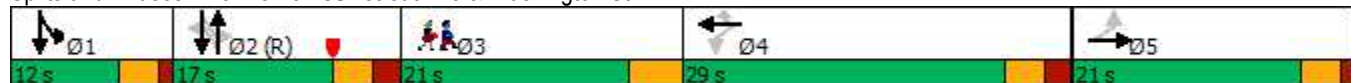


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			D			E			D		
Queue Length 50th (ft)	48	184		35	130	0		88			123	
Queue Length 95th (ft)	108	#404		#134	#309	52		#148			#216	
Internal Link Dist (ft)	1023			106			60			276		
Turn Bay Length (ft)												
Base Capacity (vph)	257	412		68	290	566		346			679	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.37	0.80		0.90	0.79	0.31		0.77			0.87	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 24 (24%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 47.9 Intersection LOS: D  
 Intersection Capacity Utilization 66.3% 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: 5: Vernon St/Retreat Ave & Washington St





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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
5: Vernon St/Retreat Ave & Washington St

2026 Background Conditions  
Weekday Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	87	257	48	63	204	159	27	219	0	143	266	133		
Future Volume (vph)	87	257	48	63	204	159	27	219	0	143	266	133		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0		5.0	5.0	5.0		5.0			4.0			
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.95			0.95			
Frt	1.00	0.98		1.00	1.00	0.85		1.00			0.96			
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.99			
Satd. Flow (prot)	1787	1809		1633	1765	1524		3516			3379			
Flt Permitted	0.61	1.00		0.14	0.56	1.00		0.82			0.70			
Satd. Flow (perm)	1146	1809		236	997	1524		2889			2389			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	95	279	52	68	222	173	29	238	0	155	289	145		
RTOR Reduction (vph)	0	6	0	0	0	123	0	0	0	0	32	0		
Lane Group Flow (vph)	95	325	0	61	229	50	0	267	0	0	557	0		
Heavy Vehicles (%)	1%	3%	0%	5%	2%	6%	3%	2%	5%	5%	0%	1%		
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D,P+P	NA			
Protected Phases		5			4			2		1	1	2		
Permitted Phases	5			4		4	2			2				
Actuated Green, G (s)	22.5	22.5		29.1	29.1	29.1		9.6			19.6			
Effective Green, g (s)	22.5	22.5		29.1	29.1	29.1		9.6			19.6			
Actuated g/C Ratio	0.22	0.22		0.29	0.29	0.29		0.10			0.20			
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0		5.0			5.0			
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		0.2						
Lane Grp Cap (vph)	257	407		68	290	443		277			567			
v/s Ratio Prot		c0.18									c0.10			
v/s Ratio Perm	0.08			c0.26	0.23	0.03		0.09			c0.09			
v/c Ratio	0.37	0.80		0.90	0.79	0.11		0.96			0.98			
Uniform Delay, d1	32.8	36.6		34.0	32.6	26.0		45.0			40.0			
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			0.84			
Incremental Delay, d2	0.3	9.8		72.3	12.4	0.0		45.6			33.4			
Delay (s)	33.1	46.4		106.3	45.0	26.0		90.6			66.8			
Level of Service	C	D		F	D	C		F			E			
Approach Delay (s)		43.4			46.0			90.6			66.8			
Approach LOS		D			D			F			E			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			59.2									HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio			0.81											
Actuated Cycle Length (s)			100.0								22.0		Sum of lost time (s)	
Intersection Capacity Utilization			66.3%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

Lanes, Volumes, Timings  
6: Seymour St & Jefferson St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕			
Traffic Volume (vph)	56	315	25	136	278	34	84	67	207	0	0	0
Future Volume (vph)	56	315	25	136	278	34	84	67	207	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.992			0.984				0.850			
Fl <sub>t</sub> Protected		0.993		0.950				0.973				
Satd. Flow (prot)	0	1806	0	1805	1831	0	0	1849	1615	0	0	0
Fl <sub>t</sub> Permitted		0.903		0.385				0.973				
Satd. Flow (perm)	0	1643	0	732	1831	0	0	1849	1615	0	0	0
Right Turn on Red			No			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		531			1134			467				822
Travel Time (s)		12.1			25.8			10.6				18.7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	62	346	27	149	305	37	92	74	227	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	435	0	149	342	0	0	166	227	0	0	0
Turn Type	Perm	NA		D,P+P	NA		Perm	NA	Perm			
Protected Phases		2		1	1 2			4				
Permitted Phases	2			2			4		4			
Detector Phase	2	2		1	1 2		4	4	4			
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0			
Minimum Split (s)	9.0	9.0		9.0			9.0	9.0	9.0			
Total Split (s)	45.0	45.0		14.0			24.0	24.0	24.0			
Total Split (%)	45.0%	45.0%		14.0%			24.0%	24.0%	24.0%			
Maximum Green (s)	41.0	41.0		10.0			20.0	20.0	20.0			
Yellow Time (s)	3.0	3.0		3.0			3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0		1.0			1.0	1.0	1.0			
Lost Time Adjust (s)		0.0		0.0				0.0	0.0			
Total Lost Time (s)		4.0		4.0				4.0	4.0			
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0			
Recall Mode	C-Max	C-Max		None			Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.0		51.0	55.0			30.2	30.2			
Actuated g/C Ratio		0.41		0.51	0.55			0.30	0.30			
v/c Ratio		0.65		0.31	0.34			0.30	0.47			
Control Delay		24.6		13.0	13.6			31.5	35.2			
Queue Delay		0.0		0.0	0.0			0.0	0.0			
Total Delay		24.6		13.0	13.6			31.5	35.2			
LOS		C		B	B			C	D			
Approach Delay		24.6			13.5			33.6				



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	17%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	17
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
6: Seymour St & Jefferson St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B			C				
Queue Length 50th (ft)		182		44	114			72	105			
Queue Length 95th (ft)		221		76	173			158	#235			
Internal Link Dist (ft)		451			1054			387			742	
Turn Bay Length (ft)												
Base Capacity (vph)		673		480	1007			558	487			
Starvation Cap Reductn		0		0	0			0	0			
Spillback Cap Reductn		0		0	0			0	0			
Storage Cap Reductn		0		0	0			0	0			
Reduced v/c Ratio		0.65		0.31	0.34			0.30	0.47			

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 45 (45%), Referenced to phase 2:EBWB, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay: 23.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 56.1%  
 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: 6: Seymour St & Jefferson St



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















Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
6: Seymour St & Jefferson St

2026 Background Conditions  
Weekday Afternoon Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	56	315	25	136	278	34	84	67	207	0	0	0	
Future Volume (vph)	56	315	25	136	278	34	84	67	207	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0				
Lane Util. Factor		1.00		1.00	1.00			1.00	1.00				
Frt		0.99		1.00	0.98			1.00	0.85				
Flt Protected		0.99		0.95	1.00			0.97	1.00				
Satd. Flow (prot)		1806		1805	1831			1849	1615				
Flt Permitted		0.90		0.39	1.00			0.97	1.00				
Satd. Flow (perm)		1642		732	1831			1849	1615				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	62	346	27	149	305	37	92	74	227	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	435	0	149	342	0	0	166	227	0	0	0	
Heavy Vehicles (%)	3%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm				
Protected Phases		2		1	1 2			4					
Permitted Phases	2			2			4		4				
Actuated Green, G (s)		38.6		48.6	52.6			30.2	30.2				
Effective Green, g (s)		38.6		48.6	52.6			30.2	30.2				
Actuated g/C Ratio		0.39		0.49	0.53			0.30	0.30				
Clearance Time (s)		4.0		4.0				4.0	4.0				
Vehicle Extension (s)		3.0		3.0				3.0	3.0				
Lane Grp Cap (vph)		633		463	963			558	487				
v/s Ratio Prot				0.03	c0.19								
v/s Ratio Perm		c0.26		0.12				0.09	c0.14				
v/c Ratio		0.69		0.32	0.36			0.30	0.47				
Uniform Delay, d1		25.7		15.8	13.8			26.8	28.4				
Progression Factor		0.83		1.00	1.00			1.00	1.00				
Incremental Delay, d2		5.6		0.4	0.2			1.4	3.2				
Delay (s)		26.8		16.2	14.0			28.1	31.5				
Level of Service		C		B	B			C	C				
Approach Delay (s)		26.8			14.7			30.1			0.0		
Approach LOS		C			B			C			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			23.3									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.53										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			56.1%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

Lanes, Volumes, Timings  
7: IOL Dr/Seymour St & Retreat Ave

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	268	44	28	344	34	58	0	90	121	2	64
Future Volume (vph)	53	268	44	28	344	34	58	0	90	121	2	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			45			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979			0.987			0.918				0.954
Flt Protected	0.950			0.950				0.981				0.969
Satd. Flow (prot)	1805	1784	0	1805	1794	0	0	1711	0	0	1756	0
Flt Permitted	0.389			0.459				0.828				0.701
Satd. Flow (perm)	739	1784	0	872	1794	0	0	1444	0	0	1271	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			5			80				27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		456			1480			118				630
Travel Time (s)		10.4			33.6			2.7				14.3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	56	285	47	30	366	36	62	0	96	129	2	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	332	0	30	402	0	0	158	0	0	199	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2				2
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		40.0	40.0		40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		38.1%	38.1%		38.1%	38.1%	
Maximum Green (s)	40.0	40.0		40.0	40.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	48.0	48.0		48.0	48.0			35.0			35.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.33			0.33	
v/c Ratio	0.17	0.40		0.08	0.49			0.30			0.45	
Control Delay	22.4	22.7		20.9	24.6			14.6			27.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	19%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	34
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	



Lanes, Volumes, Timings  
7: IOL Dr/Seymour St & Retreat Ave

2026 Background Conditions  
Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	22.4	22.7		20.9	24.6			14.6			27.5	
LOS	C	C		C	C			B			C	
Approach Delay		22.6			24.3			14.6			27.5	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	25	162		13	210			37			89	
Queue Length 95th (ft)	56	247		34	310			88			159	
Internal Link Dist (ft)		376			1400			38			550	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	337	820		398	822			534			441	
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	0.17	0.40		0.08	0.49			0.30			0.45	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	40 (38%), Referenced to phase 1:EBWB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	23.0
Intersection LOS:	C
Intersection Capacity Utilization:	62.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 7: IOL Dr/Seymour St & Retreat Ave



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Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
7: IOL Dr/Seymour St & Retreat Ave

2026 Background Conditions  
Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	268	44	28	344	34	58	0	90	121	2	64
Future Volume (vph)	53	268	44	28	344	34	58	0	90	121	2	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.92			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1805	1783		1805	1793			1711			1755	
Flt Permitted	0.39	1.00		0.46	1.00			0.83			0.70	
Satd. Flow (perm)	739	1783		872	1793			1445			1270	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	56	285	47	30	366	36	62	0	96	129	2	68
RTOR Reduction (vph)	0	5	0	0	3	0	0	53	0	0	18	0
Lane Group Flow (vph)	56	327	0	30	399	0	0	105	0	0	181	0
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	46.0	46.0		46.0	46.0			35.0			35.0	
Effective Green, g (s)	46.0	46.0		46.0	46.0			35.0			35.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.33			0.33	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			2.0			2.0	
Lane Grp Cap (vph)	323	781		382	785			481			423	
v/s Ratio Prot		0.18			c0.22							
v/s Ratio Perm	0.08			0.03				0.07			c0.14	
v/c Ratio	0.17	0.42		0.08	0.51			0.22			0.43	
Uniform Delay, d1	17.9	20.3		17.2	21.3			25.2			27.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.6		0.4	2.3			1.0			3.1	
Delay (s)	19.1	21.9		17.6	23.7			26.2			30.4	
Level of Service	B	C		B	C			C			C	
Approach Delay (s)		21.5			23.3			26.2			30.4	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.43	
Actuated Cycle Length (s)	105.0	Sum of lost time (s) 15.0
Intersection Capacity Utilization	62.6%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		



Lanes, Volumes, Timings  
8: Maple Ave & Retreat Ave

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	484	25	22	413	475	263		
Future Volume (vph)	484	25	22	413	475	263		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00		
Fr <sub>t</sub>	0.993					0.850		
Fl <sub>t</sub> Protected	0.955			0.997				
Satd. Flow (prot)	3389	0	0	3462	1845	1524		
Fl <sub>t</sub> Permitted	0.955			0.922				
Satd. Flow (perm)	3389	0	0	3202	1845	1524		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)						271		
Link Speed (mph)	30			30	30			
Link Distance (ft)	1480			980	257			
Travel Time (s)	33.6			22.3	5.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	3%	6%	3%	4%	3%	6%		
Adj. Flow (vph)	499	26	23	426	490	271		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	525	0	0	449	490	271		
Turn Type	Prot		custom	NA	NA	Perm		
Protected Phases	4		5	2 5	6		2	3
Permitted Phases			2			6		
Detector Phase	4		5	2 5	6	6		
Switch Phase								
Minimum Initial (s)	7.0		5.0		15.0	15.0	15.0	1.0
Minimum Split (s)	11.5		9.1		19.2	19.2	19.2	33.0
Total Split (s)	20.5		9.1		49.2	49.2	49.2	33.0
Total Split (%)	18.3%		8.1%		44.0%	44.0%	44%	30%
Maximum Green (s)	16.0		5.0		45.0	45.0	45.0	29.0
Yellow Time (s)	3.2		3.1		3.2	3.2	3.2	4.0
All-Red Time (s)	1.3		1.0		1.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0				0.0	0.0		
Total Lost Time (s)	4.5				4.2	4.2		
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?	Yes						Yes	
Vehicle Extension (s)	2.0		2.0		2.0	2.0	2.0	3.0
Recall Mode	None		None		C-Max	C-Max	C-Max	None
Walk Time (s)								7.0
Flash Dont Walk (s)								22.0
Pedestrian Calls (#/hr)								12
Act Effct Green (s)	21.6			64.1	57.0	57.0		
Actuated g/C Ratio	0.19			0.57	0.51	0.51		
v/c Ratio	0.80			0.24	0.52	0.30		
Control Delay	54.6			12.9	25.7	7.5		
Queue Delay	0.6			0.0	4.2	1.1		
Total Delay	55.2			12.9	29.9	8.6		
LOS	E			B	C	A		
Approach Delay	55.2			12.9	22.3			

Lanes, Volumes, Timings  
8: Maple Ave & Retreat Ave

2026 Background Conditions  
Weekday Afternoon Peak Hour

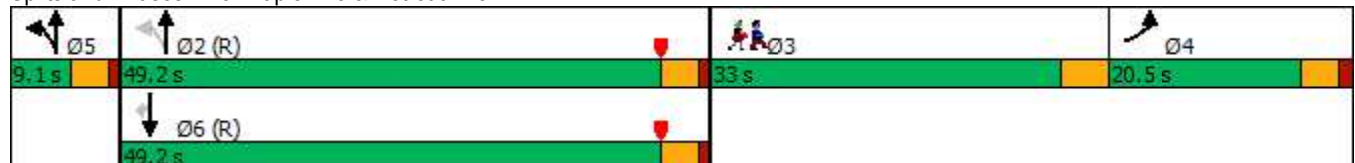


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Approach LOS	E		B		C			
Queue Length 50th (ft)	180		51		150	35		
Queue Length 95th (ft)	#326		132		m464	m77		
Internal Link Dist (ft)	1400		900		177			
Turn Bay Length (ft)								
Base Capacity (vph)	656		1851		940	909		
Starvation Cap Reductn	0		0		361	423		
Spillback Cap Reductn	18		106		0	0		
Storage Cap Reductn	0		0		0	0		
Reduced v/c Ratio	0.82		0.26		0.85	0.56		

Intersection Summary

Area Type: Other  
 Cycle Length: 111.8  
 Actuated Cycle Length: 111.8  
 Offset: 50.1 (45%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 29.8      Intersection LOS: C  
 Intersection Capacity Utilization 49.6%      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.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Maple Ave & Retreat Ave



HCM Signalized Intersection Capacity Analysis  
 8: Maple Ave & Retreat Ave

2026 Background Conditions  
 Weekday Afternoon Peak Hour



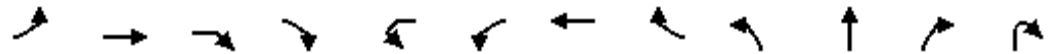
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	484	25	22	413	475	263
Future Volume (vph)	484	25	22	413	475	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.2	4.2	4.2
Lane Util. Factor	0.97			0.95	1.00	1.00
Fr <sub>t</sub>	0.99			1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95			1.00	1.00	1.00
Satd. Flow (prot)	3386			3464	1845	1524
Fl <sub>t</sub> Permitted	0.95			0.92	1.00	1.00
Satd. Flow (perm)	3386			3202	1845	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	499	26	23	426	490	271
RTOR Reduction (vph)	0	0	0	0	0	139
Lane Group Flow (vph)	525	0	0	449	490	132
Heavy Vehicles (%)	3%	6%	3%	4%	3%	6%
Turn Type	Prot		custom	NA	NA	Perm
Protected Phases	4		5	2	5	6
Permitted Phases			2			6
Actuated Green, G (s)	21.6			61.8	54.6	54.6
Effective Green, g (s)	21.6			61.8	54.6	54.6
Actuated g/C Ratio	0.19			0.55	0.49	0.49
Clearance Time (s)	4.5				4.2	4.2
Vehicle Extension (s)	2.0				2.0	2.0
Lane Grp Cap (vph)	654			1786	901	744
v/s Ratio Prot	c0.16			c0.02	c0.27	
v/s Ratio Perm				0.12		0.09
v/c Ratio	0.80			0.25	0.54	0.18
Uniform Delay, d <sub>1</sub>	43.1			13.0	19.9	16.0
Progression Factor	1.00			1.00	1.14	2.53
Incremental Delay, d <sub>2</sub>	6.7			0.0	1.8	0.4
Delay (s)	49.7			13.0	24.6	40.9
Level of Service	D			B	C	D
Approach Delay (s)	49.7			13.0	30.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	16.8
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lanes, Volumes, Timings  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↕↕				↔	↔			↕↕	↔	
Traffic Volume (vph)	42	272	17	168	5	251	201	52	87	486	312	6
Future Volume (vph)	42	272	17	168	5	251	201	52	87	486	312	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.944					0.969				0.850	
Fl <sub>t</sub> Protected		0.996				0.950				0.992		
Satd. Flow (prot)	0	3328	0	0	0	1770	1805	0	0	3511	1583	0
Fl <sub>t</sub> Permitted		0.996				0.950				0.791		
Satd. Flow (perm)	0	3328	0	0	0	1770	1805	0	0	2800	1583	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		67										
Link Speed (mph)		30					30			30		
Link Distance (ft)		1134					419			257		
Travel Time (s)		25.8					9.5			5.8		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	283	18	175	5	261	209	54	91	506	325	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	520	0	0	0	266	263	0	0	597	331	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Detector Phase	4	4			8	8	8		5	2.5	2.5	
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0	7.0	7.0		5.0			
Minimum Split (s)	12.4	12.4			11.1	11.1	11.1		8.2			
Total Split (s)	22.4	22.4			24.1	24.1	24.1		8.2			
Total Split (%)	20.0%	20.0%			21.6%	21.6%	21.6%		7.3%			
Maximum Green (s)	17.0	17.0			20.0	20.0	20.0		5.0			
Yellow Time (s)	3.4	3.4			3.1	3.1	3.1		3.1			
All-Red Time (s)	2.0	2.0			1.0	1.0	1.0		0.1			
Lost Time Adjust (s)		0.0				0.0	0.0					
Total Lost Time (s)		5.4				4.1	4.1					
Lead/Lag	Lag	Lag										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Recall Mode	None	None			None	None	None		None			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.1				19.3	19.3		43.5	48.6		
Actuated g/C Ratio		0.16				0.17	0.17		0.39	0.43		
v/c Ratio		0.88				0.87	0.84		0.52	0.48		
Control Delay		56.7				60.4	56.6		19.3	18.6		
Queue Delay		0.2				8.4	0.0		0.7	9.1		
Total Delay		56.9				68.8	56.6		20.0	27.6		
LOS		E				E	E		B	C		
Approach Delay		56.9					62.8		22.7			
Approach LOS		E					E		C			

Lanes, Volumes, Timings  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour



Lane Group	SBL2	SBL	SBT	SBR	Ø2	Ø3
Lane Configurations						
Traffic Volume (vph)	14	9	272	37		
Future Volume (vph)	14	9	272	37		
Ideal Flow (vphpl)	1900	1900	1900	1900		
Lane Util. Factor	0.95	0.95	0.95	0.95		
Fr <sub>t</sub>			0.983			
Fl <sub>t</sub> Protected			0.997			
Satd. Flow (prot)	0	0	3469	0		
Fl <sub>t</sub> Permitted			0.884			
Satd. Flow (perm)	0	0	3075	0		
Right Turn on Red				No		
Satd. Flow (RTOR)						
Link Speed (mph)			30			
Link Distance (ft)			614			
Travel Time (s)			14.0			
Peak Hour Factor	0.96	0.96	0.96	0.96		
Adj. Flow (vph)	15	9	283	39		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	346	0		
Turn Type	Perm	Perm	NA			
Protected Phases			6		2	3
Permitted Phases	6	6				
Detector Phase	6	6	6			
Switch Phase						
Minimum Initial (s)	15.0	15.0	15.0		15.0	1.0
Minimum Split (s)	20.1	20.1	20.1		20.1	28.0
Total Split (s)	29.1	29.1	29.1		29.1	28.0
Total Split (%)	26.0%	26.0%	26.0%		26%	25%
Maximum Green (s)	24.0	24.0	24.0		24.0	24.0
Yellow Time (s)	3.1	3.1	3.1		3.1	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	0.0
Lost Time Adjust (s)			0.0			
Total Lost Time (s)			5.1			
Lead/Lag						Lead
Lead-Lag Optimize?						Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	3.0
Recall Mode	C-Max	C-Max	C-Max		C-Max	None
Walk Time (s)						7.0
Flash Dont Walk (s)						17.0
Pedestrian Calls (#/hr)						19
Act Effct Green (s)			32.7			
Actuated g/C Ratio			0.29			
v/c Ratio			0.38			
Control Delay			35.6			
Queue Delay			0.1			
Total Delay			35.7			
LOS			D			
Approach Delay			35.7			
Approach LOS			D			

Lanes, Volumes, Timings  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour

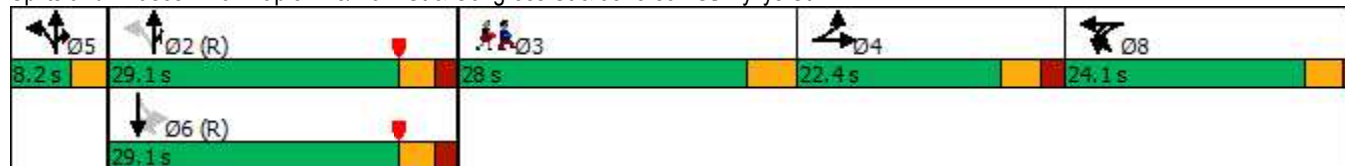


Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Queue Length 50th (ft)		164				191	186			164	215	
Queue Length 95th (ft)		#276				#335	#325			#232	m264	
Internal Link Dist (ft)		1054					339			177		
Turn Bay Length (ft)												
Base Capacity (vph)		600				323	330			1156	687	
Starvation Cap Reductn		0				0	0			257	315	
Spillback Cap Reductn		3				35	0			0	0	
Storage Cap Reductn		0				0	0			0	0	
Reduced v/c Ratio		0.87				0.92	0.80			0.66	0.89	

Intersection Summary

Area Type: Other  
 Cycle Length: 111.8  
 Actuated Cycle Length: 111.8  
 Offset: 23.2 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 41.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 77.5%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St



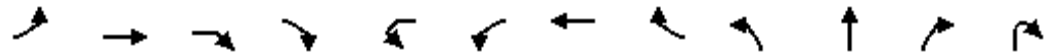




Lane Group	SBL2	SBL	SBT	SBR	Ø2	Ø3
Queue Length 50th (ft)			110			
Queue Length 95th (ft)			165			
Internal Link Dist (ft)			534			
Turn Bay Length (ft)						
Base Capacity (vph)			900			
Starvation Cap Reductn			0			
Spillback Cap Reductn			62			
Storage Cap Reductn			0			
Reduced v/c Ratio			0.41			
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↔↔				↔	↔			↔↔	↔	
Traffic Volume (vph)	42	272	17	168	5	251	201	52	87	486	312	6
Future Volume (vph)	42	272	17	168	5	251	201	52	87	486	312	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4				4.1	4.1			5.1	5.1	
Lane Util. Factor		0.95				1.00	1.00			0.95	1.00	
Frt		0.94				1.00	0.97			1.00	0.85	
Flt Protected		1.00				0.95	1.00			0.99	1.00	
Satd. Flow (prot)		3328				1770	1805			3512	1583	
Flt Permitted		1.00				0.95	1.00			0.79	1.00	
Satd. Flow (perm)		3328				1770	1805			2799	1583	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	283	18	175	5	261	209	54	91	506	325	6
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	464	0	0	0	266	263	0	0	597	331	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Actuated Green, G (s)		18.1				19.3	19.3			43.0	46.2	
Effective Green, g (s)		18.1				19.3	19.3			43.0	43.0	
Actuated g/C Ratio		0.16				0.17	0.17			0.38	0.38	
Clearance Time (s)		5.4				4.1	4.1					
Vehicle Extension (s)		2.0				2.0	2.0					
Lane Grp Cap (vph)		538				305	311			1156	608	
v/s Ratio Prot		c0.14				c0.15	0.15			0.06	c0.21	
v/s Ratio Perm										0.14		
v/c Ratio		0.86				0.87	0.85			0.52	0.54	
Uniform Delay, d1		45.6				45.0	44.8			26.4	26.8	
Progression Factor		1.00				0.78	0.78			0.61	0.59	
Incremental Delay, d2		13.0				20.0	16.0			0.1	0.5	
Delay (s)		58.6				55.1	50.8			16.4	16.4	
Level of Service		E				E	D			B	B	
Approach Delay (s)		58.6					53.0			16.4		
Approach LOS		E					D			B		

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	21.8
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour



Movement	SBL2	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Volume (vph)	14	9	272	37
Future Volume (vph)	14	9	272	37
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)			5.1	
Lane Util. Factor			0.95	
Frt			0.98	
Flt Protected			1.00	
Satd. Flow (prot)			3467	
Flt Permitted			0.88	
Satd. Flow (perm)			3075	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96
Adj. Flow (vph)	15	9	283	39
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	0	346	0
Turn Type	Perm	Perm	NA	
Protected Phases			6	
Permitted Phases	6	6		
Actuated Green, G (s)			30.4	
Effective Green, g (s)			30.4	
Actuated g/C Ratio			0.27	
Clearance Time (s)			5.1	
Vehicle Extension (s)			2.0	
Lane Grp Cap (vph)			836	
v/s Ratio Prot				
v/s Ratio Perm			0.11	
v/c Ratio			0.41	
Uniform Delay, d1			33.4	
Progression Factor			1.00	
Incremental Delay, d2			1.5	
Delay (s)			34.9	
Level of Service			C	
Approach Delay (s)			34.9	
Approach LOS			C	
<b>Intersection Summary</b>				



Lanes, Volumes, Timings  
10: Wethersfield Ave/Main St & Wyllys St

2026 Background Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔		↔	↔	
Traffic Volume (vph)	8	541	71	103	396	16	140	264	153	36	238	8
Future Volume (vph)	8	541	71	103	396	16	140	264	153	36	238	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.983			0.995			0.945			0.995	
Fl <sub>t</sub> Protected		0.999			0.990		0.950			0.950		
Satd. Flow (prot)	0	3473	0	0	3499	0	1787	1743	0	1719	1837	0
Fl <sub>t</sub> Permitted		0.946			0.578		0.344			0.439		
Satd. Flow (perm)	0	3289	0	0	2043	0	647	1743	0	794	1837	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		419			457			477			416	
Travel Time (s)		9.5			10.4			10.8			9.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	2%	2%	0%	2%	3%	1%	3%	3%	5%	3%	0%
Adj. Flow (vph)	8	564	74	107	413	17	146	275	159	38	248	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	646	0	0	537	0	146	434	0	38	256	0
Turn Type	Perm	NA		D,P+P	NA		D,P+P	NA		Perm	NA	
Protected Phases		4		3	3 4		1	1 2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		3	3 4		1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0			5.0			10.0	10.0	
Minimum Split (s)	15.0	15.0		9.0			9.0			15.0	15.0	
Total Split (s)	32.0	32.0		10.0			16.0			29.8	29.8	
Total Split (%)	28.6%	28.6%		8.9%			14.3%			26.7%	26.7%	
Maximum Green (s)	27.0	27.0		6.0			12.0			24.8	24.8	
Yellow Time (s)	3.0	3.0		3.0			3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		1.0			1.0			2.0	2.0	
Lost Time Adjust (s)		0.0					0.0			0.0	0.0	
Total Lost Time (s)		5.0					4.0			5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0			3.0	3.0	
Recall Mode	Max	Max		Max			Max			C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		27.0			43.6		37.8	41.8		24.8	24.8	
Actuated g/C Ratio		0.24			0.39		0.34	0.37		0.22	0.22	
v/c Ratio		0.81			0.54		0.43	0.67		0.22	0.63	
Control Delay		53.8			29.7		28.2	35.3		39.4	47.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		53.8			29.7		28.2	35.3		39.4	47.2	
LOS		D			C		C	D		D	D	
Approach Delay		53.8			29.7			33.5			46.2	

Lane Group	Ø5
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	5
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	21%
Maximum Green (s)	19.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	32
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 10: Wethersfield Ave/Main St & Wyllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Approach LOS		D				C				D				
Queue Length 50th (ft)		257				157			71	257			22	167
Queue Length 95th (ft)		m313				208			119	371			54	256
Internal Link Dist (ft)		339				377				397				336
Turn Bay Length (ft)														
Base Capacity (vph)		794				999			341	651			176	407
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		0.81				0.54			0.43	0.67			0.22	0.63

Intersection Summary

Area Type: Other  
 Cycle Length: 111.8  
 Actuated Cycle Length: 111.8  
 Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 40.7  
 Intersection LOS: D  
 Intersection Capacity Utilization 78.5%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Wethersfield Ave/Main St & Wyllys St























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Lane Group	Ø5
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
 10: Wethersfield Ave/Main St & Wyllys St

2026 Background Conditions  
 Weekday Afternoon Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	541	71	103	396	16	140	264	153	36	238	8
Future Volume (vph)	8	541	71	103	396	16	140	264	153	36	238	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			4.0		4.0	4.0		5.0	5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.98			1.00		1.00	0.95		1.00	1.00	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3474			3500		1787	1743		1719	1838	
Flt Permitted		0.95			0.58		0.34	1.00		0.44	1.00	
Satd. Flow (perm)		3290			2044		646	1743		794	1838	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	564	74	107	412	17	146	275	159	38	248	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	646	0	0	537	0	146	434	0	38	256	0
Heavy Vehicles (%)	7%	2%	2%	0%	2%	3%	1%	3%	3%	5%	3%	0%
Turn Type	Perm	NA		D.P+P	NA		D.P+P	NA		Perm	NA	
Protected Phases		4		3	3 4		1	1 2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)		27.0			42.6		34.8	38.8		22.8	22.8	
Effective Green, g (s)		27.0			42.6		34.8	38.8		22.8	22.8	
Actuated g/C Ratio		0.24			0.38		0.31	0.35		0.20	0.20	
Clearance Time (s)		5.0					4.0			5.0	5.0	
Vehicle Extension (s)		3.0					3.0			3.0	3.0	
Lane Grp Cap (vph)		794			982		323	604		161	374	
v/s Ratio Prot					c0.08		0.05	c0.25			0.14	
v/s Ratio Perm		c0.20			0.13		0.09			0.05		
v/c Ratio		0.81			0.55		0.45	0.72		0.24	0.68	
Uniform Delay, d1		40.0			27.1		29.4	31.8		37.2	41.2	
Progression Factor		1.16			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.1			2.2		4.5	7.2		3.4	9.8	
Delay (s)		53.3			29.2		33.9	38.9		40.6	50.9	
Level of Service		D			C		C	D		D	D	
Approach Delay (s)		53.3			29.2			37.7			49.6	
Approach LOS		D			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			42.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			111.8				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			78.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c	Critical Lane Group											

## **Appendix D**

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Intersection Capacity Analysis Worksheets  
2026 Combined Traffic Volumes  
Weekday Afternoon Peak Hour



Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	13	87	19	140	140	113	16	526	245	98	413	21
Future Volume (vph)	13	87	19	140	140	113	16	526	245	98	413	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.978			0.957			0.953			0.994	
Fl <sub>t</sub> Protected		0.995			0.983			0.999			0.991	
Satd. Flow (prot)	0	1771	0	0	3360	0	0	3371	0	0	3497	0
Fl <sub>t</sub> Permitted		0.929			0.756			0.938			0.642	
Satd. Flow (perm)	0	1654	0	0	2584	0	0	3165	0	0	2265	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		8						88			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		567			531			459			319	
Travel Time (s)		12.9			12.1			10.4			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	1%	0%	0%	2%	2%	5%	1%	0%
Adj. Flow (vph)	14	95	21	152	152	123	17	572	266	107	449	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	427	0	0	855	0	0	579	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D,P+P	NA	
Protected Phases		4			4			2		1	1	2
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		1	1	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		5.0		
Minimum Split (s)	15.0	15.0		15.0	15.0		20.0	20.0		9.0		
Total Split (s)	23.0	23.0		23.0	23.0		46.0	46.0		14.0		
Total Split (%)	23.0%	23.0%		23.0%	23.0%		46.0%	46.0%		14.0%		
Maximum Green (s)	18.0	18.0		18.0	18.0		41.0	41.0		10.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0		
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0			48.6			60.2	
Actuated g/C Ratio		0.20			0.20			0.49			0.60	
v/c Ratio		0.39			0.83			0.54			0.39	
Control Delay		36.7			60.5			7.3			9.7	
Queue Delay		0.0			0.0			0.1			0.0	
Total Delay		36.7			60.5			7.4			9.7	
LOS		D			E			A			A	
Approach Delay		36.7			60.5			7.4			9.7	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	17%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	16
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
1: Washington St & Jefferson St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			A			A	
Queue Length 50th (ft)		64			151			104			68	
Queue Length 95th (ft)		128			#242			73			127	
Internal Link Dist (ft)		487			451			379			239	
Turn Bay Length (ft)												
Base Capacity (vph)		336			516			1582			1505	
Starvation Cap Reductn		0			0			97			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.83			0.58			0.38	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	55 (55%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	21.4
Intersection LOS:	C
Intersection Capacity Utilization:	66.3%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Washington St & Jefferson St





















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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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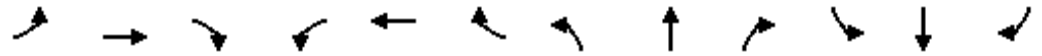
HCM Signalized Intersection Capacity Analysis  
1: Washington St & Jefferson St

2026 Combined Conditions  
Weekday Afternoon Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	13	87	19	140	140	113	16	526	245	98	413	21		
Future Volume (vph)	13	87	19	140	140	113	16	526	245	98	413	21		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		5.0			5.0			5.0			4.0			
Lane Util. Factor		1.00			0.95			0.95			0.95			
Frt		0.98			0.96			0.95			0.99			
Flt Protected		0.99			0.98			1.00			0.99			
Satd. Flow (prot)		1771			3358			3372			3496			
Flt Permitted		0.93			0.76			0.94			0.64			
Satd. Flow (perm)		1654			2583			3166			2265			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	14	95	21	152	152	123	17	572	266	107	449	23		
RTOR Reduction (vph)	0	6	0	0	0	0	0	47	0	0	3	0		
Lane Group Flow (vph)	0	124	0	0	427	0	0	808	0	0	576	0		
Heavy Vehicles (%)	0%	6%	0%	2%	1%	0%	0%	2%	2%	5%	1%	0%		
Turn Type	Perm	NA		Perm	NA		Perm	NA		D,P+P	NA			
Protected Phases		4			4			2		1	1 2			
Permitted Phases	4			4			2			2				
Actuated Green, G (s)		20.0			20.0			46.1			56.8			
Effective Green, g (s)		20.0			20.0			46.1			56.8			
Actuated g/C Ratio		0.20			0.20			0.46			0.57			
Clearance Time (s)		5.0			5.0			5.0						
Vehicle Extension (s)		3.0			3.0			3.0						
Lane Grp Cap (vph)		330			516			1459			1418			
v/s Ratio Prot											c0.04			
v/s Ratio Perm		0.07			c0.17			c0.26			0.19			
v/c Ratio		0.37			0.83			0.55			0.41			
Uniform Delay, d1		34.6			38.3			19.5			12.1			
Progression Factor		1.00			1.21			0.34			1.00			
Incremental Delay, d2		0.7			10.0			1.5			0.2			
Delay (s)		35.3			56.3			8.2			12.3			
Level of Service		D			E			A			B			
Approach Delay (s)		35.3			56.3			8.2			12.3			
Approach LOS		D			E			A			B			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			21.5									HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio			0.57											
Actuated Cycle Length (s)			100.0								18.0			
Intersection Capacity Utilization			66.3%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



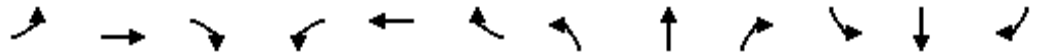
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕↔		↕	↕↔	
Traffic Volume (vph)	11	3	12	111	3	151	14	587	70	78	491	1
Future Volume (vph)	11	3	12	111	3	151	14	587	70	78	491	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	55		0	250		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			175			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.937				0.850		0.984				
Fl <sub>t</sub> Protected		0.979			0.954		0.950			0.950		
Satd. Flow (prot)	0	1743	0	0	1813	1615	1805	3459	0	1805	3574	0
Fl <sub>t</sub> Permitted		0.881			0.711		0.458			0.326		
Satd. Flow (perm)	0	1568	0	0	1351	1615	870	3459	0	619	3574	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				161		16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		151			256			229				459
Travel Time (s)		3.4			5.8			5.2				10.4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	12	3	13	118	3	161	15	624	74	83	522	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	121	161	15	698	0	83	523	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D,P+P	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	5.0	5.0		5.0		
Minimum Split (s)	19.0	19.0		19.0	19.0	19.0	9.0	9.0		9.0		
Total Split (s)	20.0	20.0		20.0	20.0	20.0	46.0	46.0		15.0		
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	46.0%	46.0%		15.0%		
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	42.0	42.0		11.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
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		Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.4			15.4	15.4	55.0	55.0		65.0	69.0	
Actuated g/C Ratio		0.15			0.15	0.15	0.55	0.55		0.65	0.69	
v/c Ratio		0.11			0.58	0.42	0.03	0.37		0.16	0.21	
Control Delay		25.4			51.5	9.7	9.4	8.4		4.2	3.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	19%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	23
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lanes, Volumes, Timings  
2: Washington St & Dunkin' Dr/Zwieback St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		25.4			51.5	9.7	9.4	8.4		4.2	3.7	
LOS		C			D	A	A	A		A	A	
Approach Delay		25.4			27.6			8.5			3.8	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		8			73	0	2	60		6	21	
Queue Length 95th (ft)		33			132	55	m11	102		m14	m43	
Internal Link Dist (ft)		71			176			149			379	
Turn Bay Length (ft)							55			250		
Base Capacity (vph)		261			216	393	478	1909		538	2415	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.11			0.56	0.41	0.03	0.37		0.15	0.22	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 51 (51%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.58  
 Intersection Signal Delay: 10.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 53.5%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Washington St & Dunkin' Dr/Zwieback St



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Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	






















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# HCM Signalized Intersection Capacity Analysis



















## 2: Washington St & Dunkin' Dr/Zwieback St

2026 Combined Conditions  
Weekday Afternoon Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	11	3	12	111	3	151	14	587	70	78	491	1	
Future Volume (vph)	11	3	12	111	3	151	14	587	70	78	491	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95		
Frt		0.94			1.00	0.85	1.00	0.98		1.00	1.00		
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1744			1812	1615	1805	3460		1805	3573		
Flt Permitted		0.88			0.71	1.00	0.46	1.00		0.33	1.00		
Satd. Flow (perm)		1569			1351	1615	871	3460		620	3573		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	12	3	13	118	3	161	15	624	74	83	522	1	
RTOR Reduction (vph)	0	11	0	0	0	136	0	8	0	0	0	0	
Lane Group Flow (vph)	0	17	0	0	121	25	15	690	0	83	523	0	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D,P+P	NA		
Protected Phases		4			4			2		1	1 2		
Permitted Phases	4			4		4	2			2			
Actuated Green, G (s)		15.4			15.4	15.4	52.6	52.6		62.6	66.6		
Effective Green, g (s)		15.4			15.4	15.4	52.6	52.6		62.6	66.6		
Actuated g/C Ratio		0.15			0.15	0.15	0.53	0.53		0.63	0.67		
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0			
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		241			208	248	458	1819		506	2379		
v/s Ratio Prot								c0.20		0.02	c0.15		
v/s Ratio Perm		0.01			c0.09	0.02	0.02			0.09			
v/c Ratio		0.07			0.58	0.10	0.03	0.38		0.16	0.22		
Uniform Delay, d1		36.2			39.3	36.3	11.4	14.0		7.7	6.5		
Progression Factor		1.00			1.00	1.00	0.60	0.54		0.49	0.50		
Incremental Delay, d2		0.1			4.1	0.2	0.1	0.6		0.1	0.0		
Delay (s)		36.3			43.4	36.5	7.0	8.2		3.9	3.3		
Level of Service		D			D	D	A	A		A	A		
Approach Delay (s)		36.3			39.5			8.2			3.4		
Approach LOS		D			D			A			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			12.3									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.37										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			53.5%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

Lanes, Volumes, Timings  
3: Washington St & Lincoln St/Site Drive #2

2026 Combined Conditions  
Weekday Afternoon Peak Hour



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	59	0	76	660	0	0	556	79
Future Volume (vph)	0	0	0	0	59	0	76	660	0	0	556	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frts												0.981
Flt Protected								0.995				
Satd. Flow (prot)	0	0	0	0	1863	1863	0	3498	0	0	3511	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	0	0	0	1863	1863	0	3498	0	0	3511	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1165			185			130			229	
Travel Time (s)		26.5			4.2			3.0			5.2	
Peak Hour Factor	0.96	0.92	0.96	0.92	0.92	0.92	0.96	0.96	0.92	0.92	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	3%	2%	2%	1%	0%
Adj. Flow (vph)	0	0	0	0	64	0	79	688	0	0	579	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	64	0	0	767	0	0	661	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Washington St & Lincoln St/Site Drive #2
















2026 Combined Conditions  
 Weekday Afternoon Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	59	0	76	660	0	0	556	79
Future Volume (Veh/h)	0	0	0	0	59	0	76	660	0	0	556	79
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.96	0.92	0.96	0.92	0.92	0.92	0.96	0.96	0.92	0.92	0.96	0.96
Hourly flow rate (vph)	0	0	0	0	64	0	79	688	0	0	579	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked	0.96	0.96	0.95	0.96	0.96	0.96	0.95				0.96	
vC, conflicting volume	1154	1466	330	1136	1507	344	661				688	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	907	1231	176	888	1273	238	526				596	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	100	57	100	92				100	
cM capacity (veh/h)	141	156	797	216	147	734	994				939	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2						
Volume Total	64	0	308	459	386	275						
Volume Left	0	0	79	0	0	0						
Volume Right	0	0	0	0	0	82						
cSH	147	1700	994	1700	1700	1700						
Volume to Capacity	0.43	0.00	0.08	0.27	0.23	0.16						
Queue Length 95th (ft)	49	0	6	0	0	0						
Control Delay (s)	46.9	0.0	2.9	0.0	0.0	0.0						
Lane LOS	E	A	A									
Approach Delay (s)	46.9	1.2		0.0								
Approach LOS	E											
Intersection Summary												
Average Delay	2.6											
Intersection Capacity Utilization	51.7%		ICU Level of Service				A					
Analysis Period (min)	15											



Lanes, Volumes, Timings  
 4: Washington St & CCMC Parking Garage/Site Drive #1

2026 Combined Conditions  
 Weekday Afternoon Peak Hour
















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	0	73	0	0	0	0	626	20	39	517	0
Future Volume (vph)	110	0	73	0	0	0	0	626	20	39	517	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Fr <sub>t</sub>		0.946						0.995				
Fl <sub>t</sub> Protected		0.971									0.997	
Satd. Flow (prot)	0	1711	0	0	0	0	0	3522	0	0	3529	0
Fl <sub>t</sub> Permitted		0.971									0.997	
Satd. Flow (perm)	0	1711	0	0	0	0	0	3522	0	0	3529	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		169			201			286			130	
Travel Time (s)		3.8			4.6			6.5			3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	0	79	0	0	0	0	680	22	42	562	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	199	0	0	0	0	0	702	0	0	604	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 4: Washington St & CCMC Parking Garage/Site Drive #1

2026 Combined Conditions  
 Weekday Afternoon Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	0	73	0	0	0	0	626	20	39	517	0
Future Volume (Veh/h)	110	0	73	0	0	0	0	626	20	39	517	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	0	79	0	0	0	0	680	22	42	562	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
								None			None	
Median storage veh												
Upstream signal (ft)												
								286			359	
pX, platoon unblocked	0.97	0.97	0.96	0.97	0.97	0.95	0.96			0.95		
vC, conflicting volume	986	1348	281	1135	1337	351	562			702		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	727	1101	164	881	1090	204	457			574		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	59	100	90	100	100	100	100			96		
cM capacity (veh/h)	291	195	817	204	198	761	1055			942		
Direction, Lane #												
	EB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	199	453	249	229	375							
Volume Left	120	0	0	42	0							
Volume Right	79	0	22	0	0							
cSH	391	1700	1700	942	1700							
Volume to Capacity	0.51	0.27	0.15	0.04	0.22							
Queue Length 95th (ft)	70	0	0	3	0							
Control Delay (s)	23.3	0.0	0.0	2.0	0.0							
Lane LOS	C			A								
Approach Delay (s)	23.3	0.0		0.8								
Approach LOS	C											
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			53.9%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings  
5: Washington St & Allen PI/Hospital Garage Dr

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	67	3	62	61	30	133	51	473	5	6	525	52
Future Volume (vph)	67	3	62	61	30	133	51	473	5	6	525	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.936			0.878			0.999			0.987	
Fl <sub>t</sub> Protected		0.975		0.950				0.995				
Satd. Flow (prot)	0	1734	0	1805	1668	0	0	3495	0	0	3531	0
Fl <sub>t</sub> Permitted		0.493		0.602				0.838			0.952	
Satd. Flow (perm)	0	877	0	1144	1668	0	0	2943	0	0	3362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			141			1			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1133			193			356			286	
Travel Time (s)		25.8			4.4			8.1			6.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	71	3	66	65	32	141	54	503	5	6	559	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	65	173	0	0	562	0	0	620	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D,P+P	NA	
Protected Phases		3			3			2			1	1 2
Permitted Phases	3			3			2				2	
Detector Phase	3	3		3	3		2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0			4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		20.0	20.0			8.0	
Total Split (s)	40.0	40.0		40.0	40.0		46.0	46.0			14.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		46.0%	46.0%			14.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		41.0	41.0			10.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag							Lag	Lag			Lead	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2			0.2	
Recall Mode	None	None		None	None		C-Max	C-Max			None	
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	23	23		23	23							
Act Effct Green (s)		12.5		12.5	12.5			66.1			74.5	
Actuated g/C Ratio		0.12		0.12	0.12			0.66			0.74	
v/c Ratio		0.92		0.45	0.52			0.29			0.25	
Control Delay		82.7		49.0	15.9			5.5			1.9	
Queue Delay		0.0		0.0	0.0			0.2			0.0	
Total Delay		82.7		49.0	15.9			5.8			1.9	
LOS		F		D	B			A			A	
Approach Delay		82.7			24.9			5.8			1.9	



Lanes, Volumes, Timings  
 5: Washington St & Allen PI/Hospital Garage Dr

2026 Combined Conditions  
 Weekday Afternoon Peak Hour

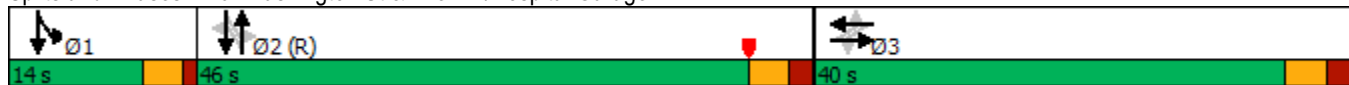


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			C			A			A	
Queue Length 50th (ft)		60		40	19			52			28	
Queue Length 95th (ft)		#144		77	75			103			23	
Internal Link Dist (ft)		1053			113			276			206	
Turn Bay Length (ft)												
Base Capacity (vph)		338		400	675			1945			2608	
Starvation Cap Reductn		0		0	0			644			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.41		0.16	0.26			0.43			0.24	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 55 (55%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 14.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 64.3%  
 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: 5: Washington St & Allen PI/Hospital Garage Dr



HCM Signalized Intersection Capacity Analysis  
5: Washington St & Allen PI/Hospital Garage Dr

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Volume (vph)	67	3	62	61	30	133	51	473	5	6	525	52
Future Volume (vph)	67	3	62	61	30	133	51	473	5	6	525	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Fr <sub>t</sub>		0.94		1.00	0.88			1.00			0.99	
Fl <sub>t</sub> Protected		0.98		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		1735		1805	1668			3494			3528	
Fl <sub>t</sub> Permitted		0.49		0.60	1.00			0.84			0.95	
Satd. Flow (perm)		877		1145	1668			2944			3362	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	71	3	66	65	32	141	54	503	5	6	559	55
RTOR Reduction (vph)	0	43	0	0	123	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	97	0	65	50	0	0	562	0	0	616	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D,P+P	NA	
Protected Phases		3			3			2			1	1
Permitted Phases	3			3			2			2		
Actuated Green, G (s)		12.5		12.5	12.5			66.1			73.5	
Effective Green, g (s)		12.5		12.5	12.5			66.1			73.5	
Actuated g/C Ratio		0.12		0.12	0.12			0.66			0.74	
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		2.0		2.0	2.0			0.2				
Lane Grp Cap (vph)		109		143	208			1945			2483	
v/s Ratio Prot					0.03						c0.02	
v/s Ratio Perm		c0.11		0.06				c0.19			0.16	
v/c Ratio		0.89		0.45	0.24			0.29			0.25	
Uniform Delay, d <sub>1</sub>		43.1		40.6	39.5			7.1			4.3	
Progression Factor		1.00		1.00	1.00			0.63			0.51	
Incremental Delay, d <sub>2</sub>		52.4		0.8	0.2			0.3			0.0	
Delay (s)		95.5		41.4	39.7			4.8			2.2	
Level of Service		F		D	D			A			A	
Approach Delay (s)		95.5			40.2			4.8			2.2	
Approach LOS		F			D			A			A	

Intersection Summary

HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
6: Vernon St/Retreat Ave & Washington St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	257	48	63	204	169	27	248	0	161	321	133
Future Volume (vph)	87	257	48	63	204	169	27	248	0	161	321	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.976				0.850						0.967
Fl <sub>t</sub> Protected	0.950			0.950	0.998			0.995				0.987
Satd. Flow (prot)	1787	1809	0	1633	1764	1524	0	3518	0	0	3394	0
Fl <sub>t</sub> Permitted	0.609			0.131	0.572			0.777				0.696
Satd. Flow (perm)	1146	1809	0	225	1011	1524	0	2747	0	0	2393	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		8				184						34
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1103			186			140				356
Travel Time (s)		25.1			4.2			3.2				8.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	3%	0%	5%	2%	6%	3%	2%	5%	5%	0%	1%
Adj. Flow (vph)	95	279	52	68	222	184	29	270	0	175	349	145
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	95	331	0	61	229	184	0	299	0	0	669	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D,P+P	NA	
Protected Phases		5			4			2			1	1 2
Permitted Phases	5			4		4	2				2	
Detector Phase	5	5		4	4	4	2	2			1	1 2
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0			5.0	
Minimum Split (s)	11.0	11.0		12.0	12.0	12.0	15.0	15.0			9.0	
Total Split (s)	18.0	18.0		28.0	28.0	28.0	21.0	21.0			12.0	
Total Split (%)	18.0%	18.0%		28.0%	28.0%	28.0%	21.0%	21.0%			12.0%	
Maximum Green (s)	14.0	14.0		23.0	23.0	23.0	16.0	16.0			8.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0		2.0	2.0	2.0	2.0	2.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0				
Total Lost Time (s)	4.0	4.0		5.0	5.0	5.0		5.0				
Lead/Lag				Lag	Lag	Lag	Lag	Lag			Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes			Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2			0.2	
Recall Mode	None	None		None	None	None	C-Max	C-Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	19.0	19.0		30.6	30.6	30.6		16.0			25.0	
Actuated g/C Ratio	0.19	0.19		0.31	0.31	0.31		0.16			0.25	
v/c Ratio	0.44	0.95		0.90	0.74	0.31		0.68			0.95	
Control Delay	45.1	78.3		124.3	50.4	6.4		48.3			53.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	45.1	78.3		124.3	50.4	6.4		48.3			53.4	
LOS	D	E		F	D	A		D			D	
Approach Delay		70.9			42.8			48.3			53.4	



Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	19
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
6: Vernon St/Retreat Ave & Washington St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E			D			D			D		
Queue Length 50th (ft)	51	194		35	128	0		95			206	
Queue Length 95th (ft)	#122	#441		#137	#314	54		142			#248	
Internal Link Dist (ft)	1023			106			60			276		
Turn Bay Length (ft)												
Base Capacity (vph)	217	349		68	309	594		439			703	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.44	0.95		0.90	0.74	0.31		0.68			0.95	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 24 (24%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 53.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 68.3%  
 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: 6: Vernon St/Retreat Ave & Washington St



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Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
6: Vernon St/Retreat Ave & Washington St


















2026 Combined Conditions  
Weekday Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	257	48	63	204	169	27	248	0	161	321	133
Future Volume (vph)	87	257	48	63	204	169	27	248	0	161	321	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	5.0		5.0			4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		1.00			0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.99	
Satd. Flow (prot)	1787	1809		1633	1765	1524		3519			3396	
Flt Permitted	0.61	1.00		0.13	0.57	1.00		0.78			0.70	
Satd. Flow (perm)	1146	1809		225	1012	1524		2747			2395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	279	52	68	222	184	29	270	0	175	349	145
RTOR Reduction (vph)	0	6	0	0	0	128	0	0	0	0	27	0
Lane Group Flow (vph)	95	325	0	61	229	56	0	299	0	0	642	0
Heavy Vehicles (%)	1%	3%	0%	5%	2%	6%	3%	2%	5%	5%	0%	1%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D,P+P	NA	
Protected Phases		5			4			2			1	1 2
Permitted Phases	5			4		4	2			2		
Actuated Green, G (s)	19.0	19.0		30.6	30.6	30.6		13.6			21.6	
Effective Green, g (s)	19.0	19.0		30.6	30.6	30.6		13.6			21.6	
Actuated g/C Ratio	0.19	0.19		0.31	0.31	0.31		0.14			0.22	
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0		5.0				
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		0.2				
Lane Grp Cap (vph)	217	343		68	309	466		373			597	
v/s Ratio Prot		c0.18									c0.09	
v/s Ratio Perm	0.08			c0.27	0.23	0.04		0.11			c0.15	
v/c Ratio	0.44	0.95		0.90	0.74	0.12		0.80			1.08	
Uniform Delay, d1	35.8	40.0		33.2	31.1	25.0		41.9			39.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			0.87	
Incremental Delay, d2	0.5	34.1		72.3	8.1	0.0		16.5			58.6	
Delay (s)	36.3	74.1		105.5	39.3	25.0		58.4			92.9	
Level of Service	D	E		F	D	C		E			F	
Approach Delay (s)		65.7			42.3			58.4			92.9	
Approach LOS		E			D			E			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			68.3									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			100.0								22.0	
Intersection Capacity Utilization			68.3%									ICU Level of Service C
Analysis Period (min)			15									
c Critical Lane Group												



Lanes, Volumes, Timings  
7: Seymour St & Jefferson St

2026 Combined Conditions  
Weekday Afternoon Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	370	25	136	307	34	84	67	207	0	0	0
Future Volume (vph)	56	370	25	136	307	34	84	67	207	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.993			0.985				0.850			
Fl <sub>t</sub> Protected		0.994		0.950				0.973				
Satd. Flow (prot)	0	1809	0	1805	1833	0	0	1849	1615	0	0	0
Fl <sub>t</sub> Permitted		0.908		0.343				0.973				
Satd. Flow (perm)	0	1653	0	652	1833	0	0	1849	1615	0	0	0
Right Turn on Red			No			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		531			1134			467			822	
Travel Time (s)		12.1			25.8			10.6			18.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	62	407	27	149	337	37	92	74	227	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	496	0	149	374	0	0	166	227	0	0	0
Turn Type	Perm	NA		D,P+P	NA		Perm	NA	Perm			
Protected Phases		2		1	1 2			4				
Permitted Phases	2			2			4		4			
Detector Phase	2	2		1	1 2		4	4	4			
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0			
Minimum Split (s)	9.0	9.0		9.0			9.0	9.0	9.0			
Total Split (s)	45.0	45.0		14.0			24.0	24.0	24.0			
Total Split (%)	45.0%	45.0%		14.0%			24.0%	24.0%	24.0%			
Maximum Green (s)	41.0	41.0		10.0			20.0	20.0	20.0			
Yellow Time (s)	3.0	3.0		3.0			3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0		1.0			1.0	1.0	1.0			
Lost Time Adjust (s)		0.0		0.0				0.0	0.0			
Total Lost Time (s)		4.0		4.0				4.0	4.0			
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0			
Recall Mode	C-Max	C-Max		None			Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.0		51.0	55.0			30.2	30.2			
Actuated g/C Ratio		0.41		0.51	0.55			0.30	0.30			
v/c Ratio		0.73		0.33	0.37			0.30	0.47			
Control Delay		28.1		13.3	14.1			31.5	35.2			
Queue Delay		0.1		0.0	0.0			0.0	0.0			
Total Delay		28.2		13.3	14.1			31.5	35.2			
LOS		C		B	B			C	D			
Approach Delay		28.2			13.9			33.6				

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr1	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	17%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	17
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
7: Seymour St & Jefferson St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			C					
Queue Length 50th (ft)	203			44	127	72			105			
Queue Length 95th (ft)	277			76	191	158			#235			
Internal Link Dist (ft)	451			1054			387			742		
Turn Bay Length (ft)												
Base Capacity (vph)	677			447	1008	558			487			
Starvation Cap Reductn	5			0	0	0			0			
Spillback Cap Reductn	0			0	0	0			0			
Storage Cap Reductn	0			0	0	0			0			
Reduced v/c Ratio	0.74			0.33	0.37	0.30			0.47			

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 45 (45%), Referenced to phase 2:EBWB, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 24.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 60.5%  
 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: 7: Seymour St & Jefferson St



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















Lane Group	Ø3
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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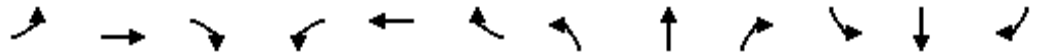
HCM Signalized Intersection Capacity Analysis  
7: Seymour St & Jefferson St

2026 Combined Conditions  
Weekday Afternoon Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	56	370	25	136	307	34	84	67	207	0	0	0	
Future Volume (vph)	56	370	25	136	307	34	84	67	207	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0				
Lane Util. Factor		1.00		1.00	1.00			1.00	1.00				
Frt		0.99		1.00	0.99			1.00	0.85				
Flt Protected		0.99		0.95	1.00			0.97	1.00				
Satd. Flow (prot)		1808		1805	1833			1849	1615				
Flt Permitted		0.91		0.34	1.00			0.97	1.00				
Satd. Flow (perm)		1653		652	1833			1849	1615				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	62	407	27	149	337	37	92	74	227	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	496	0	149	374	0	0	166	227	0	0	0	
Heavy Vehicles (%)	3%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm				
Protected Phases		2		1	1 2			4					
Permitted Phases	2			2			4		4				
Actuated Green, G (s)		38.6		48.6	52.6			30.2	30.2				
Effective Green, g (s)		38.6		48.6	52.6			30.2	30.2				
Actuated g/C Ratio		0.39		0.49	0.53			0.30	0.30				
Clearance Time (s)		4.0		4.0				4.0	4.0				
Vehicle Extension (s)		3.0		3.0				3.0	3.0				
Lane Grp Cap (vph)		638		432	964			558	487				
v/s Ratio Prot				0.03	c0.20								
v/s Ratio Perm		c0.30		0.13				0.09	c0.14				
v/c Ratio		0.78		0.34	0.39			0.30	0.47				
Uniform Delay, d1		26.9		16.2	14.1			26.8	28.4				
Progression Factor		0.85		1.00	1.00			1.00	1.00				
Incremental Delay, d2		8.3		0.5	0.3			1.4	3.2				
Delay (s)		31.1		16.7	14.4			28.1	31.5				
Level of Service		C		B	B			C	C				
Approach Delay (s)		31.1			15.0			30.1			0.0		
Approach LOS		C			B			C			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			24.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.58										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			60.5%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

Lanes, Volumes, Timings  
8: IOL Dr/Seymour St & Retreat Ave

2026 Combined Conditions  
Weekday Afternoon Peak Hour

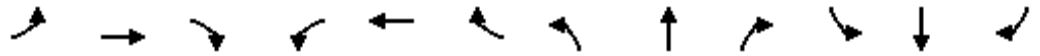


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	286	44	28	354	34	58	0	90	121	2	64
Future Volume (vph)	53	286	44	28	354	34	58	0	90	121	2	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			45			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.980			0.987			0.918			0.954	
Fl <sub>t</sub> Protected	0.950			0.950				0.981			0.969	
Satd. Flow (prot)	1805	1785	0	1805	1793	0	0	1711	0	0	1756	0
Fl <sub>t</sub> Permitted	0.378			0.439				0.828			0.701	
Satd. Flow (perm)	718	1785	0	834	1793	0	0	1444	0	0	1271	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			5			80			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		456			1480			118			630	
Travel Time (s)		10.4			33.6			2.7			14.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	56	304	47	30	377	36	62	0	96	129	2	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	351	0	30	413	0	0	158	0	0	199	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		40.0	40.0		40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		38.1%	38.1%		38.1%	38.1%	
Maximum Green (s)	40.0	40.0		40.0	40.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	48.0	48.0		48.0	48.0			35.0			35.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.33			0.33	
v/c Ratio	0.17	0.43		0.08	0.50			0.30			0.45	
Control Delay	22.6	23.1		21.0	24.9			14.6			27.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	19%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	34
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lanes, Volumes, Timings  
8: IOL Dr/Seymour St & Retreat Ave

2026 Combined Conditions  
Weekday Afternoon Peak Hour

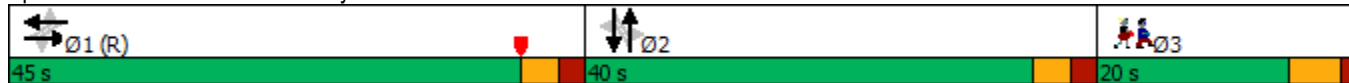


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	22.6	23.1		21.0	24.9			14.6			27.5	
LOS	C	C		C	C			B			C	
Approach Delay		23.0			24.6			14.6			27.5	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	25	174		13	217			37			89	
Queue Length 95th (ft)	56	262		34	320			88			159	
Internal Link Dist (ft)		376			1400			38			550	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	328	820		381	822			534			441	
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	0.17	0.43		0.08	0.50			0.30			0.45	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	40 (38%), Referenced to phase 1:EBWB, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	23.2
Intersection LOS:	C
Intersection Capacity Utilization:	63.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 8: IOL Dr/Seymour St & Retreat Ave





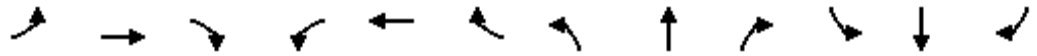
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Lane Group	Ø3
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
8: IOL Dr/Seymour St & Retreat Ave

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	286	44	28	354	34	58	0	90	121	2	64
Future Volume (vph)	53	286	44	28	354	34	58	0	90	121	2	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.92			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1805	1785		1805	1793			1711			1755	
Flt Permitted	0.38	1.00		0.44	1.00			0.83			0.70	
Satd. Flow (perm)	718	1785		835	1793			1445			1270	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	56	304	47	30	377	36	62	0	96	129	2	68
RTOR Reduction (vph)	0	5	0	0	3	0	0	53	0	0	18	0
Lane Group Flow (vph)	56	346	0	30	410	0	0	105	0	0	181	0
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	46.0	46.0		46.0	46.0			35.0			35.0	
Effective Green, g (s)	46.0	46.0		46.0	46.0			35.0			35.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.33			0.33	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			2.0			2.0	
Lane Grp Cap (vph)	314	782		365	785			481			423	
v/s Ratio Prot		0.19			c0.23							
v/s Ratio Perm	0.08			0.04				0.07			c0.14	
v/c Ratio	0.18	0.44		0.08	0.52			0.22			0.43	
Uniform Delay, d1	18.0	20.6		17.2	21.5			25.2			27.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.8		0.4	2.5			1.0			3.1	
Delay (s)	19.2	22.4		17.6	24.0			26.2			30.4	
Level of Service	B	C		B	C			C			C	
Approach Delay (s)		21.9			23.5			26.2			30.4	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.43	
Actuated Cycle Length (s)	105.0	Sum of lost time (s) 15.0
Intersection Capacity Utilization	63.1%	ICU Level of Service B
Analysis Period (min)	15	
c	Critical Lane Group	

Lanes, Volumes, Timings  
9: Maple Ave & Retreat Ave

2026 Combined Conditions  
Weekday Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	484	43	32	413	475	263		
Future Volume (vph)	484	43	32	413	475	263		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00		
Fr <sub>t</sub>	0.988					0.850		
Fl <sub>t</sub> Protected	0.956			0.996				
Satd. Flow (prot)	3372	0	0	3460	1845	1524		
Fl <sub>t</sub> Permitted	0.956			0.900				
Satd. Flow (perm)	3372	0	0	3126	1845	1524		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)						271		
Link Speed (mph)	30			30	30			
Link Distance (ft)	1480			980	257			
Travel Time (s)	33.6			22.3	5.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	3%	6%	3%	4%	3%	6%		
Adj. Flow (vph)	499	44	33	426	490	271		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	543	0	0	459	490	271		
Turn Type	Prot		custom	NA	NA	Perm		
Protected Phases	4		5	2 5	6		2	3
Permitted Phases			2			6		
Detector Phase	4		5	2 5	6	6		
Switch Phase								
Minimum Initial (s)	7.0		5.0		15.0	15.0	15.0	1.0
Minimum Split (s)	11.5		9.1		19.2	19.2	19.2	33.0
Total Split (s)	20.5		9.1		49.2	49.2	49.2	33.0
Total Split (%)	18.3%		8.1%		44.0%	44.0%	44%	30%
Maximum Green (s)	16.0		5.0		45.0	45.0	45.0	29.0
Yellow Time (s)	3.2		3.1		3.2	3.2	3.2	4.0
All-Red Time (s)	1.3		1.0		1.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0				0.0	0.0		
Total Lost Time (s)	4.5				4.2	4.2		
Lead/Lag	Lag							Lead
Lead-Lag Optimize?	Yes							Yes
Vehicle Extension (s)	2.0		2.0		2.0	2.0	2.0	3.0
Recall Mode	None		None		C-Max	C-Max	C-Max	None
Walk Time (s)								7.0
Flash Dont Walk (s)								22.0
Pedestrian Calls (#/hr)								12
Act Effct Green (s)	22.9			62.8	55.5	55.5		
Actuated g/C Ratio	0.20			0.56	0.50	0.50		
v/c Ratio	0.79			0.26	0.53	0.30		
Control Delay	52.9			13.4	25.1	7.4		
Queue Delay	0.5			0.0	7.1	1.2		
Total Delay	53.3			13.4	32.2	8.6		
LOS	D			B	C	A		
Approach Delay	53.3			13.4	23.8			

Lanes, Volumes, Timings  
 9: Maple Ave & Retreat Ave

2026 Combined Conditions  
 Weekday Afternoon Peak Hour

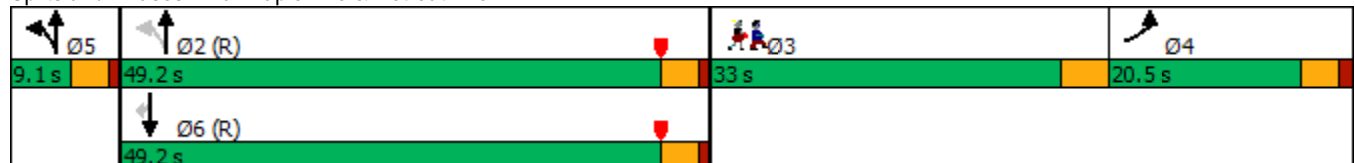


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3
Approach LOS	D			B	C			
Queue Length 50th (ft)	185			55	153	32		
Queue Length 95th (ft)	#342			135	m473	m81		
Internal Link Dist (ft)	1400			900	177			
Turn Bay Length (ft)								
Base Capacity (vph)	690			1777	916	893		
Starvation Cap Reductn	0			0	373	414		
Spillback Cap Reductn	18			147	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.81			0.28	0.90	0.57		

Intersection Summary

Area Type: Other  
 Cycle Length: 111.8  
 Actuated Cycle Length: 111.8  
 Offset: 50.1 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 30.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 58.2%  
 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.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Maple Ave & Retreat Ave





HCM Signalized Intersection Capacity Analysis  
 9: Maple Ave & Retreat Ave

2026 Combined Conditions  
 Weekday Afternoon Peak Hour

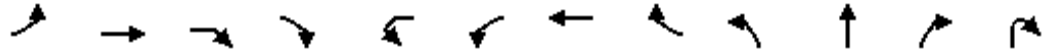


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	484	43	32	413	475	263
Future Volume (vph)	484	43	32	413	475	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.2	4.2	4.2
Lane Util. Factor	0.97			0.95	1.00	1.00
Fr <sub>t</sub>	0.99			1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3372			3461	1845	1524
Fl <sub>t</sub> Permitted	0.96			0.90	1.00	1.00
Satd. Flow (perm)	3372			3127	1845	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	499	44	33	426	490	271
RTOR Reduction (vph)	0	0	0	0	0	142
Lane Group Flow (vph)	543	0	0	459	490	129
Heavy Vehicles (%)	3%	6%	3%	4%	3%	6%
Turn Type	Prot		custom	NA	NA	Perm
Protected Phases	4		5	2	5	6
Permitted Phases			2			6
Actuated Green, G (s)	22.9			60.5	53.1	53.1
Effective Green, g (s)	22.9			60.5	53.1	53.1
Actuated g/C Ratio	0.20			0.54	0.47	0.47
Clearance Time (s)	4.5				4.2	4.2
Vehicle Extension (s)	2.0				2.0	2.0
Lane Grp Cap (vph)	690			1714	876	723
v/s Ratio Prot	c0.16			c0.02	c0.27	
v/s Ratio Perm				0.13		0.08
v/c Ratio	0.79			0.27	0.56	0.18
Uniform Delay, d <sub>1</sub>	42.1			13.8	21.0	16.8
Progression Factor	1.00			1.00	1.07	2.50
Incremental Delay, d <sub>2</sub>	5.5			0.0	2.0	0.4
Delay (s)	47.6			13.8	24.5	42.5
Level of Service	D			B	C	D
Approach Delay (s)	47.6			13.8	30.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	16.8
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Combined Conditions  
 Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↕↕				↔	↔			↕↕	↔	
Traffic Volume (vph)	60	309	17	168	5	251	221	52	87	486	312	6
Future Volume (vph)	60	309	17	168	5	251	221	52	87	486	312	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.950					0.971					0.850
Fl <sub>t</sub> Protected		0.995				0.950				0.992		
Satd. Flow (prot)	0	3345	0	0	0	1770	1809	0	0	3511	1583	0
Fl <sub>t</sub> Permitted		0.995				0.950				0.755		
Satd. Flow (perm)	0	3345	0	0	0	1770	1809	0	0	2672	1583	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		52										
Link Speed (mph)		30					30			30		
Link Distance (ft)		1134					419			257		
Travel Time (s)		25.8					9.5			5.8		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	63	322	18	175	5	261	230	54	91	506	325	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	578	0	0	0	266	284	0	0	597	331	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Detector Phase	4	4			8	8	8		5	2.5	2.5	
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0	7.0	7.0		5.0			
Minimum Split (s)	12.4	12.4			11.1	11.1	11.1		8.2			
Total Split (s)	22.4	22.4			24.1	24.1	24.1		8.2			
Total Split (%)	20.0%	20.0%			21.6%	21.6%	21.6%		7.3%			
Maximum Green (s)	17.0	17.0			20.0	20.0	20.0		5.0			
Yellow Time (s)	3.4	3.4			3.1	3.1	3.1		3.1			
All-Red Time (s)	2.0	2.0			1.0	1.0	1.0		0.1			
Lost Time Adjust (s)		0.0				0.0	0.0					
Total Lost Time (s)		5.4				4.1	4.1					
Lead/Lag	Lag	Lag										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Recall Mode	None	None			None	None	None		None			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		22.1				20.1	20.1			38.8	43.9	
Actuated g/C Ratio		0.20				0.18	0.18			0.35	0.39	
v/c Ratio		0.82				0.84	0.88			0.59	0.53	
Control Delay		51.0				55.5	59.9			23.1	21.8	
Queue Delay		1.0				6.9	0.0			0.7	13.6	
Total Delay		52.1				62.3	59.9			23.9	35.5	
LOS		D				E	E			C	D	
Approach Delay		52.1					61.1			28.0		
Approach LOS		D					E			C		

Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

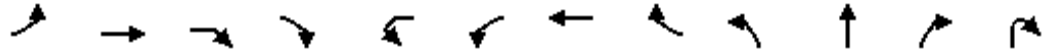
2026 Combined Conditions  
 Weekday Afternoon Peak Hour



Lane Group	SBL2	SBL	SBT	SBR	Ø2	Ø3
Lane Configurations						
Traffic Volume (vph)	14	9	272	47		
Future Volume (vph)	14	9	272	47		
Ideal Flow (vphpl)	1900	1900	1900	1900		
Lane Util. Factor	0.95	0.95	0.95	0.95		
Fr <sub>t</sub>			0.979			
Fl <sub>t</sub> Protected			0.997			
Satd. Flow (prot)	0	0	3454	0		
Fl <sub>t</sub> Permitted			0.882			
Satd. Flow (perm)	0	0	3056	0		
Right Turn on Red				No		
Satd. Flow (RTOR)						
Link Speed (mph)			30			
Link Distance (ft)			614			
Travel Time (s)			14.0			
Peak Hour Factor	0.96	0.96	0.96	0.96		
Adj. Flow (vph)	15	9	283	49		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	356	0		
Turn Type	Perm	Perm	NA			
Protected Phases			6		2	3
Permitted Phases	6	6				
Detector Phase	6	6	6			
Switch Phase						
Minimum Initial (s)	15.0	15.0	15.0		15.0	1.0
Minimum Split (s)	20.1	20.1	20.1		20.1	28.0
Total Split (s)	29.1	29.1	29.1		29.1	28.0
Total Split (%)	26.0%	26.0%	26.0%		26%	25%
Maximum Green (s)	24.0	24.0	24.0		24.0	24.0
Yellow Time (s)	3.1	3.1	3.1		3.1	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	0.0
Lost Time Adjust (s)			0.0			
Total Lost Time (s)			5.1			
Lead/Lag						Lead
Lead-Lag Optimize?						Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	3.0
Recall Mode	C-Max	C-Max	C-Max		C-Max	None
Walk Time (s)						7.0
Flash Dont Walk (s)						17.0
Pedestrian Calls (#/hr)						19
Act Effct Green (s)			27.7			
Actuated g/C Ratio			0.25			
v/c Ratio			0.47			
Control Delay			39.5			
Queue Delay			0.2			
Total Delay			39.6			
LOS			D			
Approach Delay			39.6			
Approach LOS			D			

Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Combined Conditions  
 Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Queue Length 50th (ft)		184				181	194			206	220	
Queue Length 95th (ft)		#335				#334	#361			#258	m266	
Internal Link Dist (ft)		1054					339			177		
Turn Bay Length (ft)												
Base Capacity (vph)		701				329	336			1009	621	
Starvation Cap Reductn		0				0	0			160	267	
Spillback Cap Reductn		27				35	0			0	4	
Storage Cap Reductn		0				0	0			0	0	
Reduced v/c Ratio		0.86				0.90	0.85			0.70	0.94	

Intersection Summary

Area Type: Other  
 Cycle Length: 111.8  
 Actuated Cycle Length: 111.8  
 Offset: 23.2 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 43.0 Intersection LOS: D  
 Intersection Capacity Utilization 79.6% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St





Lanes, Volumes, Timings  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

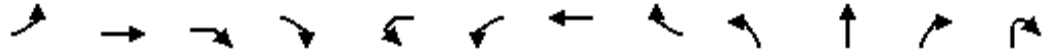
2026 Combined Conditions  
 Weekday Afternoon Peak Hour



Lane Group	SBL2	SBL	SBT	SBR	Ø2	Ø3
Queue Length 50th (ft)			120			
Queue Length 95th (ft)			170			
Internal Link Dist (ft)			534			
Turn Bay Length (ft)						
Base Capacity (vph)			758			
Starvation Cap Reductn			0			
Spillback Cap Reductn			62			
Storage Cap Reductn			0			
Reduced v/c Ratio			0.51			
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wyllys St

2026 Combined Conditions  
 Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations		↕↕				↔	↔			↕↕	↔	
Traffic Volume (vph)	60	309	17	168	5	251	221	52	87	486	312	6
Future Volume (vph)	60	309	17	168	5	251	221	52	87	486	312	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4				4.1	4.1			5.1	5.1	
Lane Util. Factor		0.95				1.00	1.00			0.95	1.00	
Frt		0.95				1.00	0.97			1.00	0.85	
Flt Protected		0.99				0.95	1.00			0.99	1.00	
Satd. Flow (prot)		3344				1770	1810			3512	1583	
Flt Permitted		0.99				0.95	1.00			0.76	1.00	
Satd. Flow (perm)		3344				1770	1810			2672	1583	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	322	18	175	5	261	230	54	91	506	325	6
RTOR Reduction (vph)	0	42	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	536	0	0	0	266	284	0	0	597	331	0
Turn Type	Split	NA			Split	Split	NA		pm+pt	NA	Prot	
Protected Phases	4	4			8	8	8		5	2.5	2.5	
Permitted Phases									2.5			
Actuated Green, G (s)		22.1				20.1	20.1			38.2	41.4	
Effective Green, g (s)		22.1				20.1	20.1			38.2	38.2	
Actuated g/C Ratio		0.20				0.18	0.18			0.34	0.34	
Clearance Time (s)		5.4				4.1	4.1					
Vehicle Extension (s)		2.0				2.0	2.0					
Lane Grp Cap (vph)		661				318	325			1010	540	
v/s Ratio Prot		c0.16				0.15	c0.16			0.07	c0.21	
v/s Ratio Perm										0.13		
v/c Ratio		0.81				0.84	0.87			0.59	0.61	
Uniform Delay, d1		42.9				44.3	44.6			30.4	30.6	
Progression Factor		1.00				0.78	0.78			0.66	0.64	
Incremental Delay, d2		7.1				14.4	18.9			0.5	1.2	
Delay (s)		50.0				48.9	53.8			20.6	20.7	
Level of Service		D				D	D			C	C	
Approach Delay (s)		50.0					51.4			20.6		
Approach LOS		D					D			C		

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	21.8
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 10: Maple Ave/Main St & Congress St & Jefferson St/Wylllys St

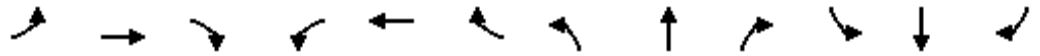
2026 Combined Conditions  
 Weekday Afternoon Peak Hour



Movement	SBL2	SBL	SBT	SBR
Lane Configurations			⇄	
Traffic Volume (vph)	14	9	272	47
Future Volume (vph)	14	9	272	47
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)			5.1	
Lane Util. Factor			0.95	
Fr <sub>t</sub>			0.98	
Fl <sub>t</sub> Protected			1.00	
Satd. Flow (prot)			3455	
Fl <sub>t</sub> Permitted			0.88	
Satd. Flow (perm)			3057	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96
Adj. Flow (vph)	15	9	283	49
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	0	356	0
Turn Type	Perm	Perm	NA	
Protected Phases			6	
Permitted Phases	6	6		
Actuated Green, G (s)			25.2	
Effective Green, g (s)			25.2	
Actuated g/C Ratio			0.23	
Clearance Time (s)			5.1	
Vehicle Extension (s)			2.0	
Lane Grp Cap (vph)			689	
v/s Ratio Prot				
v/s Ratio Perm			0.12	
v/c Ratio			0.52	
Uniform Delay, d <sub>1</sub>			38.0	
Progression Factor			1.00	
Incremental Delay, d <sub>2</sub>			2.8	
Delay (s)			40.7	
Level of Service			D	
Approach Delay (s)			40.7	
Approach LOS			D	
<b>Intersection Summary</b>				

Lanes, Volumes, Timings  
11: Wethersfield Ave/Main St & Wyllys St

2026 Combined Conditions  
Weekday Afternoon Peak Hour



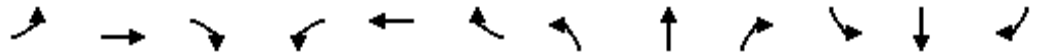
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↗	↘		↗	↘	
Traffic Volume (vph)	8	578	71	103	416	16	140	264	153	36	238	8
Future Volume (vph)	8	578	71	103	416	16	140	264	153	36	238	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.984			0.995			0.945			0.995	
Fl <sub>t</sub> Protected		0.999			0.990		0.950			0.950		
Satd. Flow (prot)	0	3477	0	0	3498	0	1787	1743	0	1719	1837	0
Fl <sub>t</sub> Permitted		0.947			0.563		0.344			0.439		
Satd. Flow (perm)	0	3296	0	0	1990	0	647	1743	0	794	1837	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		419			457			477			416	
Travel Time (s)		9.5			10.4			10.8			9.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	2%	2%	0%	2%	3%	1%	3%	3%	5%	3%	0%
Adj. Flow (vph)	8	602	74	107	433	17	146	275	159	38	248	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	684	0	0	557	0	146	434	0	38	256	0
Turn Type	Perm	NA		D,P+P	NA		D,P+P	NA		Perm	NA	
Protected Phases		4		3	3 4		1	1 2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		3	3 4		1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0			5.0			10.0	10.0	
Minimum Split (s)	15.0	15.0		9.0			9.0			15.0	15.0	
Total Split (s)	32.0	32.0		10.0			16.0			29.8	29.8	
Total Split (%)	28.6%	28.6%		8.9%			14.3%			26.7%	26.7%	
Maximum Green (s)	27.0	27.0		6.0			12.0			24.8	24.8	
Yellow Time (s)	3.0	3.0		3.0			3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		1.0			1.0			2.0	2.0	
Lost Time Adjust (s)		0.0					0.0			0.0	0.0	
Total Lost Time (s)		5.0					4.0			5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0			3.0	3.0	
Recall Mode	Max	Max		Max			Max			C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		27.0			43.6		37.8	41.8		24.8	24.8	
Actuated g/C Ratio		0.24			0.39		0.34	0.37		0.22	0.22	
v/c Ratio		0.86			0.56		0.43	0.67		0.22	0.63	
Control Delay		54.1			30.5		28.2	35.3		39.4	47.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		54.1			30.5		28.2	35.3		39.4	47.2	
LOS		D			C		C	D		D	D	
Approach Delay		54.1			30.5			33.5			46.2	



Lane Group	Ø5
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr't	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	5
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	21%
Maximum Green (s)	19.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	32
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 11: Wethersfield Ave/Main St & Wyllys St

2026 Combined Conditions  
 Weekday Afternoon Peak Hour

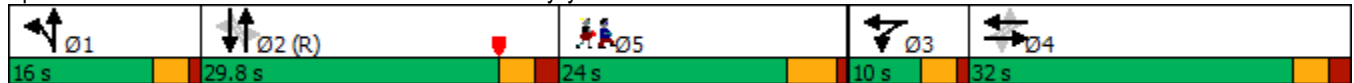


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			C				D
Queue Length 50th (ft)		268			164		71	257		22		167
Queue Length 95th (ft)		m#354			#222		119	371		54		256
Internal Link Dist (ft)		339			377			397				336
Turn Bay Length (ft)												
Base Capacity (vph)		795			986		341	651		176		407
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		0.86			0.56		0.43	0.67		0.22		0.63

Intersection Summary

Area Type: Other  
 Cycle Length: 111.8  
 Actuated Cycle Length: 111.8  
 Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 41.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 80.0%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Wethersfield Ave/Main St & Wyllys St






















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Lane Group	Ø5
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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HCM Signalized Intersection Capacity Analysis  
 11: Wethersfield Ave/Main St & Wyllys St

2026 Combined Conditions  
 Weekday Afternoon Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	8	578	71	103	416	16	140	264	153	36	238	8		
Future Volume (vph)	8	578	71	103	416	16	140	264	153	36	238	8		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		5.0			4.0		4.0	4.0		5.0	5.0			
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00			
Frt		0.98			1.00		1.00	0.95		1.00	1.00			
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00			
Satd. Flow (prot)		3478			3502		1787	1743		1719	1838			
Flt Permitted		0.95			0.56		0.34	1.00		0.44	1.00			
Satd. Flow (perm)		3294			1989		646	1743		794	1838			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96		
Adj. Flow (vph)	8	602	74	107	433	17	146	275	159	38	248	8		
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0		
Lane Group Flow (vph)	0	684	0	0	557	0	146	434	0	38	256	0		
Heavy Vehicles (%)	7%	2%	2%	0%	2%	3%	1%	3%	3%	5%	3%	0%		
Turn Type	Perm	NA		D.P+P	NA		D.P+P	NA		Perm	NA			
Protected Phases		4		3	3 4		1	1 2				2		
Permitted Phases	4			4			2			2				
Actuated Green, G (s)		27.0			42.6		34.8	38.8		22.8	22.8			
Effective Green, g (s)		27.0			42.6		34.8	38.8		22.8	22.8			
Actuated g/C Ratio		0.24			0.38		0.31	0.35		0.20	0.20			
Clearance Time (s)		5.0					4.0			5.0	5.0			
Vehicle Extension (s)		3.0					3.0			3.0	3.0			
Lane Grp Cap (vph)		795			969		323	604		161	374			
v/s Ratio Prot					c0.08		0.05	c0.25				0.14		
v/s Ratio Perm		c0.21			0.14		0.09			0.05				
v/c Ratio		0.86			0.57		0.45	0.72		0.24	0.68			
Uniform Delay, d1		40.6			27.4		29.4	31.8		37.2	41.2			
Progression Factor		1.10			1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		9.2			2.5		4.5	7.2		3.4	9.8			
Delay (s)		53.7			29.9		33.9	38.9		40.6	50.9			
Level of Service		D			C		C	D		D	D			
Approach Delay (s)		53.7			29.9			37.7			49.6			
Approach LOS		D			C			D			D			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			42.5									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			0.68											
Actuated Cycle Length (s)			111.8								23.0			
Intersection Capacity Utilization			80.0%										ICU Level of Service	D
Analysis Period (min)			15											
c	Critical Lane Group													



## **Appendix E**

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### Turning Movement Count (TMC) Data

# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

Washington St at Jefferson Street  
Hartford, Connecticut

File Name : 23021  
Site Code : 23021  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Jefferson Street From East					Washington Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	1	87	21	0	109	7	7	10	3	27	16	45	3	0	64	1	17	3	0	21	221
07:15 AM	0	95	28	0	123	10	12	17	1	40	20	64	4	0	88	5	22	1	4	32	283
07:30 AM	1	107	38	1	147	12	12	22	4	50	42	97	3	0	142	6	17	2	3	28	367
07:45 AM	5	105	23	0	133	12	14	21	1	48	32	101	2	1	136	7	28	2	3	40	357
Total	7	394	110	1	512	41	45	70	9	165	110	307	12	1	430	19	84	8	10	121	1228
08:00 AM	3	88	26	0	117	10	11	33	1	55	29	67	4	0	100	4	27	2	8	41	313
08:15 AM	7	82	34	0	123	17	15	13	3	48	31	81	4	1	117	8	20	3	1	32	320
08:30 AM	1	68	26	0	95	12	9	20	6	47	31	92	4	0	127	9	25	2	2	38	307
08:45 AM	2	97	22	0	121	16	17	16	4	53	32	68	2	1	103	2	23	0	1	26	303
Total	13	335	108	0	456	55	52	82	14	203	123	308	14	2	447	23	95	7	12	137	1243
Grand Total	20	729	218	1	968	96	97	152	23	368	233	615	26	3	877	42	179	15	22	258	2471
Apprch %	2.1	75.3	22.5	0.1		26.1	26.4	41.3	6.2		26.6	70.1	3	0.3		16.3	69.4	5.8	8.5		
Total %	0.8	29.5	8.8	0	39.2	3.9	3.9	6.2	0.9	14.9	9.4	24.9	1.1	0.1	35.5	1.7	7.2	0.6	0.9	10.4	
Lights	19	710	205	1	935	92	89	142	23	346	226	591	26	3	846	38	168	15	22	243	2370
% Lights	95	97.4	94	100	96.6	95.8	91.8	93.4	100	94	97	96.1	100	100	96.5	90.5	93.9	100	100	94.2	95.9
Trucks	1	3	1	0	5	1	0	3	0	4	2	8	0	0	10	0	0	0	0	0	19
% Trucks	5	0.4	0.5	0	0.5	1	0	2	0	1.1	0.9	1.3	0	0	1.1	0	0	0	0	0	0.8
Buses	0	16	12	0	28	3	8	7	0	18	5	16	0	0	21	4	11	0	0	15	82
% Buses	0	2.2	5.5	0	2.9	3.1	8.2	4.6	0	4.9	2.1	2.6	0	0	2.4	9.5	6.1	0	0	5.8	3.3

# Connecticut Counts LLC

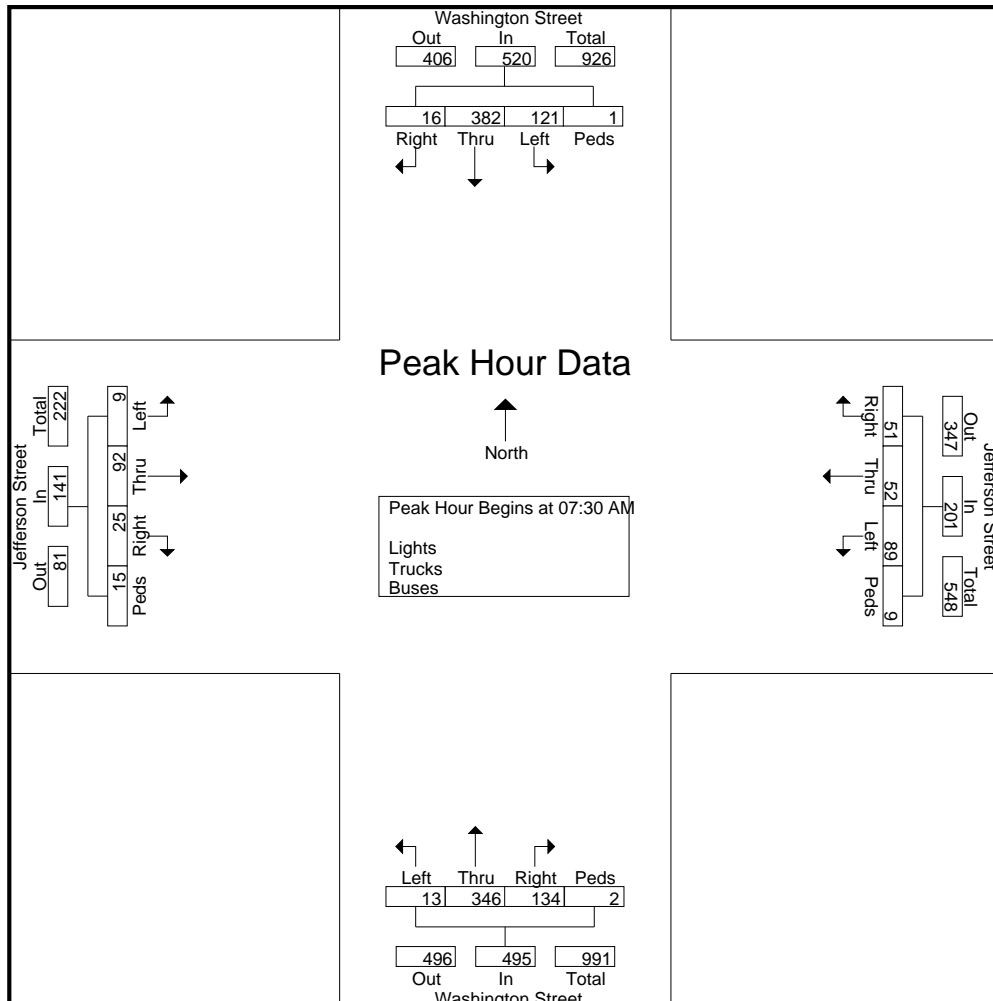
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23021  
 Site Code : 23021  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Washington Street From North					Jefferson Street From East					Washington Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	1	107	38	1	147	12	12	22	4	50	42	97	3	0	142	6	17	2	3	28	367
07:45 AM	5	105	23	0	133	12	14	21	1	48	32	101	2	1	136	7	28	2	3	40	357
08:00 AM	3	88	26	0	117	10	11	33	1	55	29	67	4	0	100	4	27	2	8	41	313
08:15 AM	7	82	34	0	123	17	15	13	3	48	31	81	4	1	117	8	20	3	1	32	320
Total Volume	16	382	121	1	520	51	52	89	9	201	134	346	13	2	495	25	92	9	15	141	1357
% App. Total	3.1	73.5	23.3	0.2		25.4	25.9	44.3	4.5		27.1	69.9	2.6	0.4		17.7	65.2	6.4	10.6		
PHF	.571	.893	.796	.250	.884	.750	.867	.674	.563	.914	.798	.856	.813	.500	.871	.781	.821	.750	.469	.860	.924



# Connecticut Counts LLC

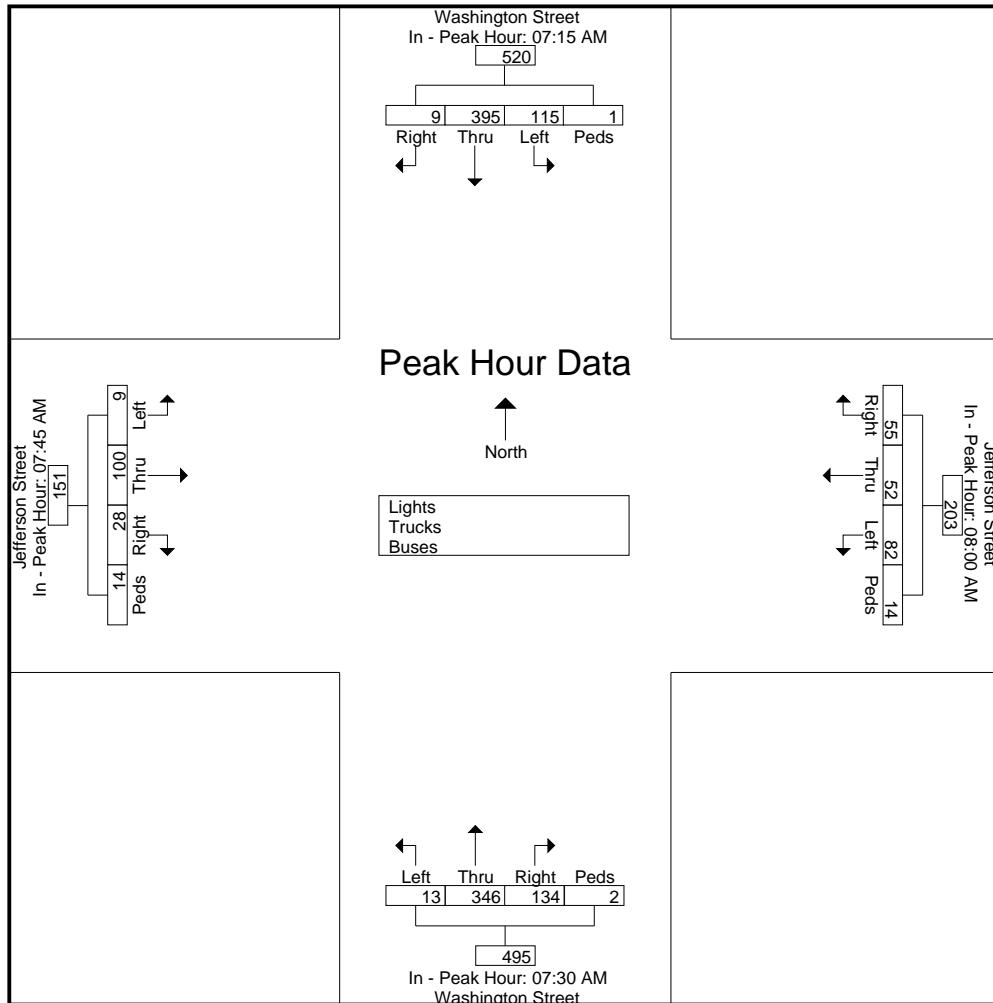
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23021  
 Site Code : 23021  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Jefferson Street From East					Washington Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					08:00 AM					07:30 AM					07:45 AM				
+0 mins.	0	95	28	0	123	10	11	33	1	55	42	97	3	0	142	7	28	2	3	40
+15 mins.	1	107	38	1	147	17	15	13	3	48	32	101	2	1	136	4	27	2	8	41
+30 mins.	5	105	23	0	133	12	9	20	6	47	29	67	4	0	100	8	20	3	1	32
+45 mins.	3	88	26	0	117	16	17	16	4	53	31	81	4	1	117	9	25	2	2	38
Total Volume	9	395	115	1	520	55	52	82	14	203	134	346	13	2	495	28	100	9	14	151
% App. Total	1.7	76	22.1	0.2		27.1	25.6	40.4	6.9		27.1	69.9	2.6	0.4		18.5	66.2	6	9.3	
PHF	.450	.923	.757	.250	.884	.809	.765	.621	.583	.923	.798	.856	.813	.500	.871	.778	.893	.750	.438	.921





**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Jefferson Street  
Hartford, Connecticut

File Name : 23022  
Site Code : 23022  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Jefferson Street From East					Washington Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	1	102	27	0	130	28	40	23	3	94	49	129	4	0	182	3	30	4	0	37	443
04:15 PM	7	91	16	1	115	18	33	37	8	96	47	111	2	1	161	2	11	1	1	15	387
04:30 PM	8	82	29	1	120	31	34	24	0	89	56	104	5	1	166	4	23	3	3	33	408
04:45 PM	4	98	23	2	127	33	29	24	1	87	33	114	5	0	152	9	21	5	2	37	403
Total	20	373	95	4	492	110	136	108	12	366	185	458	16	2	661	18	85	13	6	122	1641
05:00 PM	4	104	18	2	128	36	38	25	6	105	47	98	4	3	152	5	19	3	1	28	413
05:15 PM	3	82	30	1	116	21	30	32	0	83	30	91	5	4	130	5	16	1	4	26	355
05:30 PM	4	99	27	0	130	26	45	19	4	94	30	73	2	0	105	5	13	0	1	19	348
05:45 PM	4	70	18	0	92	27	27	22	4	80	26	62	5	0	93	4	8	3	2	17	282
Total	15	355	93	3	466	110	140	98	14	362	133	324	16	7	480	19	56	7	8	90	1398
Grand Total	35	728	188	7	958	220	276	206	26	728	318	782	32	9	1141	37	141	20	14	212	3039
Apprch %	3.7	76	19.6	0.7		30.2	37.9	28.3	3.6		27.9	68.5	2.8	0.8		17.5	66.5	9.4	6.6		
Total %	1.2	24	6.2	0.2	31.5	7.2	9.1	6.8	0.9	24	10.5	25.7	1.1	0.3	37.5	1.2	4.6	0.7	0.5	7	
Lights	35	721	178	7	941	219	272	202	23	716	312	765	32	9	1118	37	132	20	14	203	2978
% Lights	100	99	94.7	100	98.2	99.5	98.6	98.1	88.5	98.4	98.1	97.8	100	100	98	100	93.6	100	100	95.8	98
Trucks	0	1	0	0	1	0	0	0	3	3	0	2	0	0	2	0	0	0	0	0	6
% Trucks	0	0.1	0	0	0.1	0	0	0	11.5	0.4	0	0.3	0	0	0.2	0	0	0	0	0	0.2
Buses	0	6	10	0	16	1	4	4	0	9	6	15	0	0	21	0	9	0	0	9	55
% Buses	0	0.8	5.3	0	1.7	0.5	1.4	1.9	0	1.2	1.9	1.9	0	0	1.8	0	6.4	0	0	4.2	1.8

# Connecticut Counts LLC

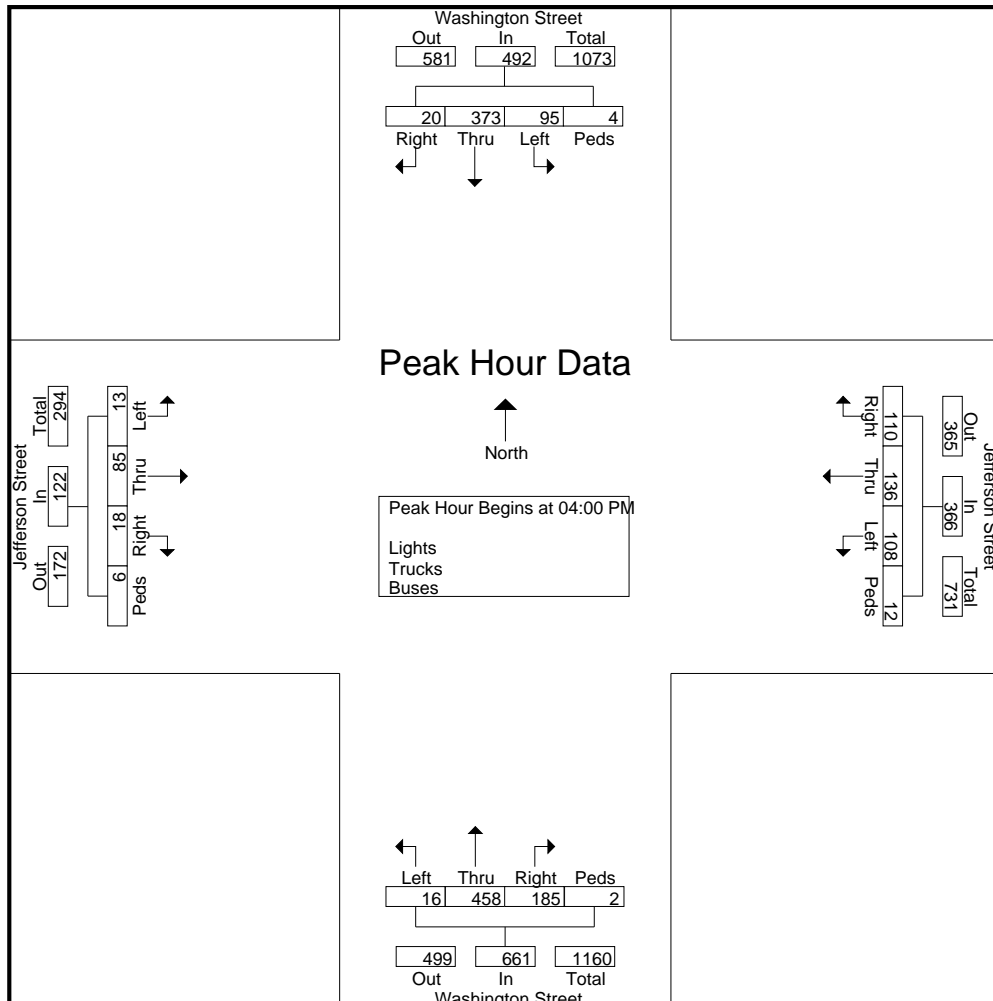
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23022  
 Site Code : 23022  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Washington Street From North					Jefferson Street From East					Washington Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	1	102	27	0	130	28	40	23	3	94	49	129	4	0	182	3	30	4	0	37	443
04:15 PM	7	91	16	1	115	18	33	37	8	96	47	111	2	1	161	2	11	1	1	15	387
04:30 PM	8	82	29	1	120	31	34	24	0	89	56	104	5	1	166	4	23	3	3	33	408
04:45 PM	4	98	23	2	127	33	29	24	1	87	33	114	5	0	152	9	21	5	2	37	403
Total Volume	20	373	95	4	492	110	136	108	12	366	185	458	16	2	661	18	85	13	6	122	1641
% App. Total	4.1	75.8	19.3	0.8		30.1	37.2	29.5	3.3		28	69.3	2.4	0.3		14.8	69.7	10.7	4.9		
PHF	.625	.914	.819	.500	.946	.833	.850	.730	.375	.953	.826	.888	.800	.500	.908	.500	.708	.650	.500	.824	.926



# Connecticut Counts LLC

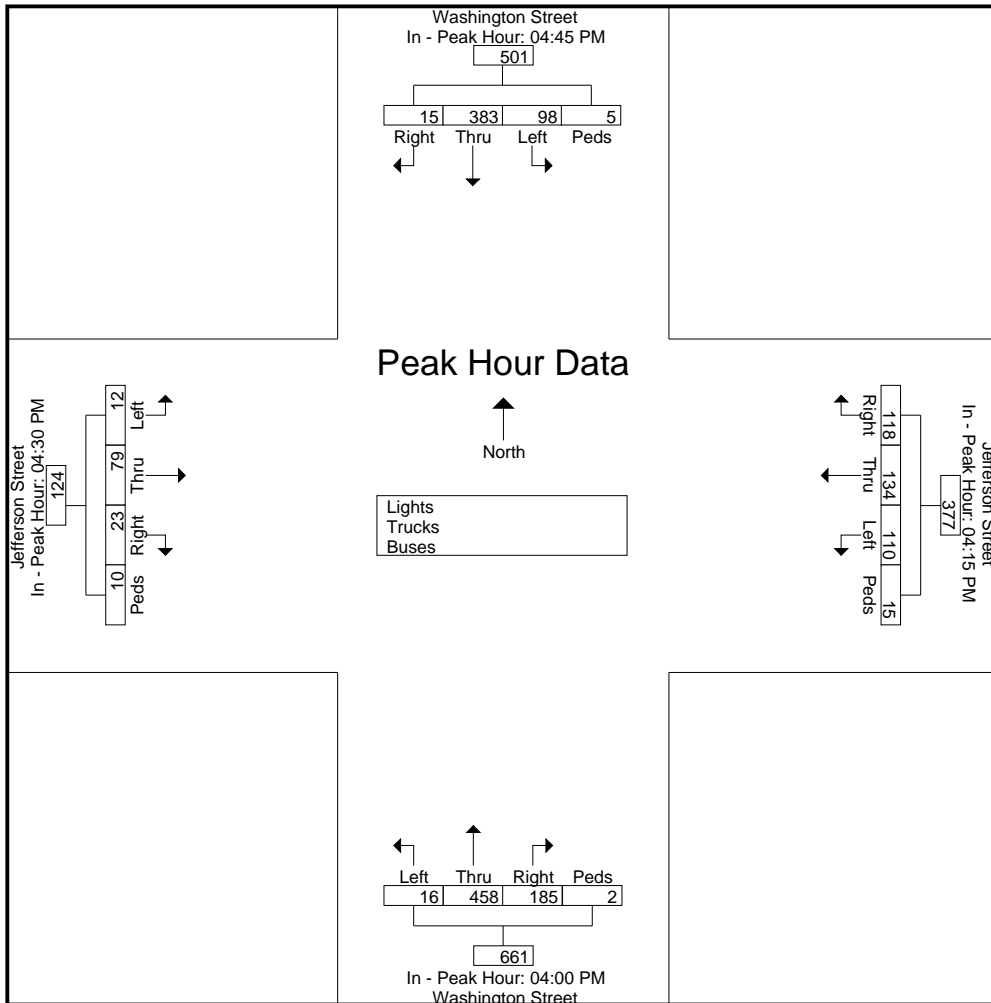
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23022  
 Site Code : 23022  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Jefferson Street From East					Washington Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM					04:15 PM					04:00 PM					04:30 PM				
+0 mins.	4	98	23	2	127	18	33	37	8	96	49	129	4	0	182	4	23	3	3	33
+15 mins.	4	104	18	2	128	31	34	24	0	89	47	111	2	1	161	9	21	5	2	37
+30 mins.	3	82	30	1	116	33	29	24	1	87	56	104	5	1	166	5	19	3	1	28
+45 mins.	4	99	27	0	130	36	38	25	6	105	33	114	5	0	152	5	16	1	4	26
Total Volume	15	383	98	5	501	118	134	110	15	377	185	458	16	2	661	23	79	12	10	124
% App. Total	3	76.4	19.6	1		31.3	35.5	29.2	4		28	69.3	2.4	0.3		18.5	63.7	9.7	8.1	
PHF	.938	.921	.817	.625	.963	.819	.882	.743	.469	.898	.826	.888	.800	.500	.908	.639	.859	.600	.625	.838



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Zwieback Street  
Hartford, Connecticut

File Name : 23023  
Site Code : 23023  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Zwieback Street From East					Private Dr From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	73	18	1	92	16	0	9	0	25	15	48	8	0	71	6	2	5	0	13	201
07:15 AM	1	89	22	1	113	10	1	9	0	20	26	76	13	0	115	6	2	9	0	17	265
07:30 AM	0	105	19	5	129	10	0	14	0	24	24	122	8	0	154	9	2	9	0	20	327
07:45 AM	1	90	22	3	116	24	0	11	2	37	32	108	11	0	151	9	3	12	0	24	328
Total	2	357	81	10	450	60	1	43	2	106	97	354	40	0	491	30	9	35	0	74	1121
08:00 AM	0	90	31	0	121	9	1	5	3	18	16	90	4	0	110	11	2	11	0	24	273
08:15 AM	1	81	17	1	100	11	0	5	0	16	22	81	9	0	112	9	1	5	1	16	244
08:30 AM	0	70	26	2	98	20	0	8	3	31	20	91	14	3	128	6	3	7	1	17	274
08:45 AM	2	79	20	0	101	19	4	13	3	39	19	73	12	0	104	11	5	6	0	22	266
Total	3	320	94	3	420	59	5	31	9	104	77	335	39	3	454	37	11	29	2	79	1057
Grand Total	5	677	175	13	870	119	6	74	11	210	174	689	79	3	945	67	20	64	2	153	2178
Apprch %	0.6	77.8	20.1	1.5		56.7	2.9	35.2	5.2		18.4	72.9	8.4	0.3		43.8	13.1	41.8	1.3		
Total %	0.2	31.1	8	0.6	39.9	5.5	0.3	3.4	0.5	9.6	8	31.6	3.6	0.1	43.4	3.1	0.9	2.9	0.1	7	
Lights	5	648	175	13	841	118	6	74	10	208	173	662	79	3	917	67	20	64	2	153	2119
% Lights	100	95.7	100	100	96.7	99.2	100	100	90.9	99	99.4	96.1	100	100	97	100	100	100	100	100	97.3
Trucks	0	8	0	0	8	1	0	0	1	2	0	6	0	0	6	0	0	0	0	0	16
% Trucks	0	1.2	0	0	0.9	0.8	0	0	9.1	1	0	0.9	0	0	0.6	0	0	0	0	0	0.7
Buses	0	21	0	0	21	0	0	0	0	0	1	21	0	0	22	0	0	0	0	0	43
% Buses	0	3.1	0	0	2.4	0	0	0	0	0	0.6	3	0	0	2.3	0	0	0	0	0	2



# Connecticut Counts LLC

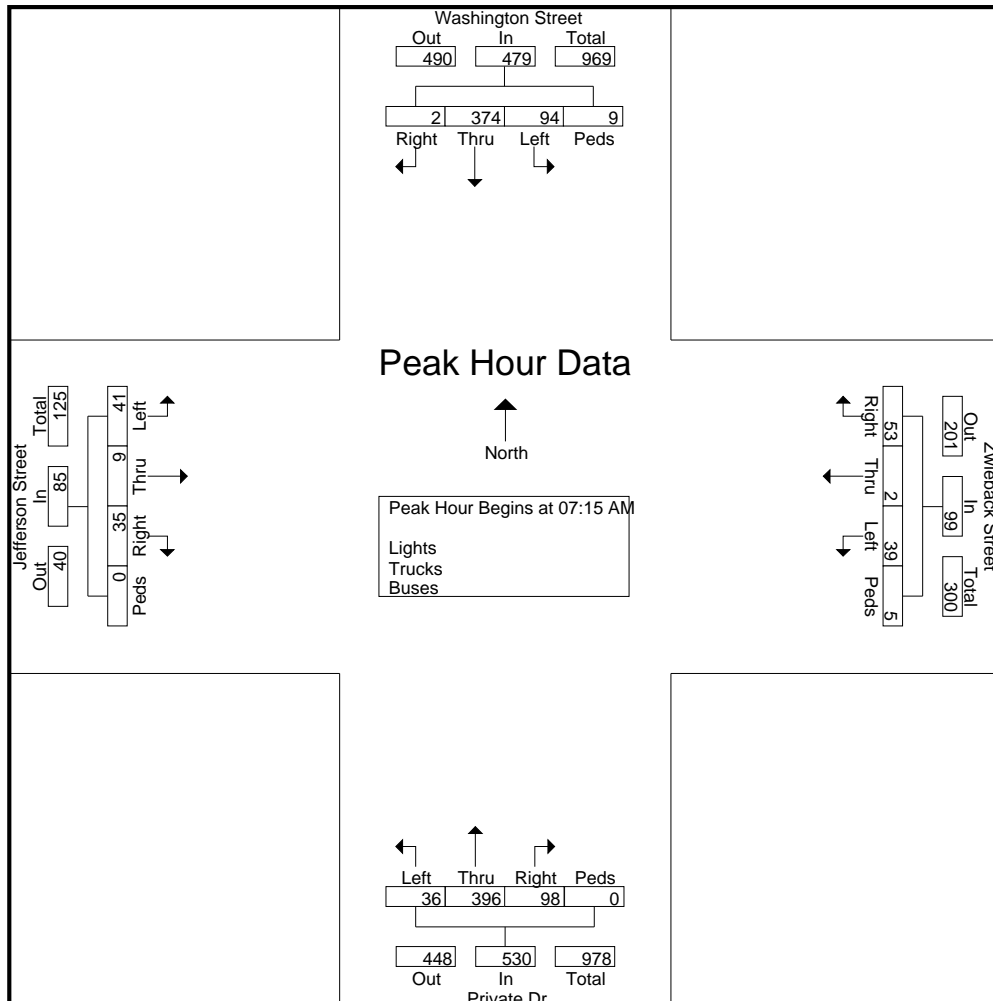
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23023  
Site Code : 23023  
Start Date : 5/12/2022  
Page No : 2

Start Time	Washington Street From North					Zwieback Street From East					Private Dr From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	1	89	22	1	113	10	1	9	0	20	26	76	13	0	115	6	2	9	0	17	265
07:30 AM	0	105	19	5	129	10	0	14	0	24	24	122	8	0	154	9	2	9	0	20	327
07:45 AM	1	90	22	3	116	24	0	11	2	37	32	108	11	0	151	9	3	12	0	24	328
08:00 AM	0	90	31	0	121	9	1	5	3	18	16	90	4	0	110	11	2	11	0	24	273
Total Volume	2	374	94	9	479	53	2	39	5	99	98	396	36	0	530	35	9	41	0	85	1193
% App. Total	0.4	78.1	19.6	1.9		53.5	2	39.4	5.1		18.5	74.7	6.8	0		41.2	10.6	48.2	0		
PHF	.500	.890	.758	.450	.928	.552	.500	.696	.417	.669	.766	.811	.692	.000	.860	.795	.750	.854	.000	.885	.909



# Connecticut Counts LLC

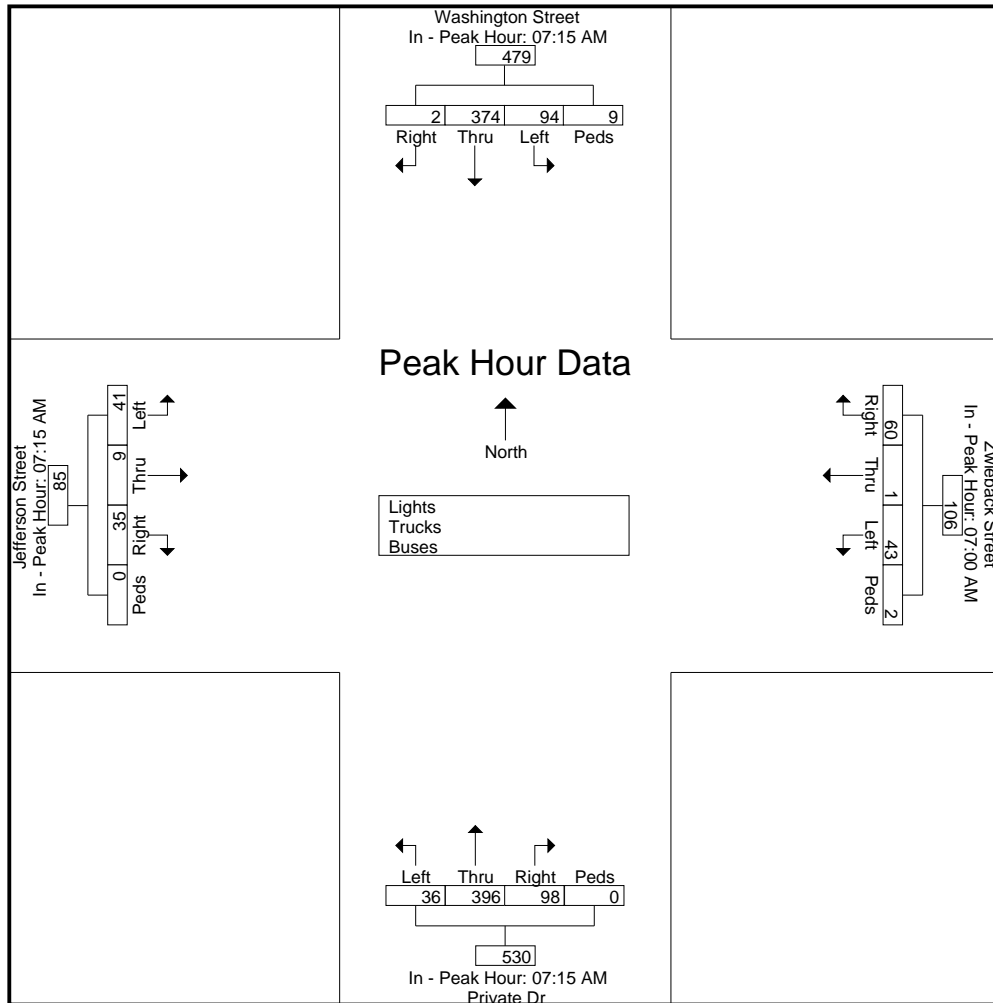
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23023  
 Site Code : 23023  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Zwieback Street From East					Private Dr From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					07:00 AM					07:15 AM					07:15 AM				
+0 mins.	1	89	22	1	113	16	0	9	0	25	26	76	13	0	115	6	2	9	0	17
+15 mins.	0	105	19	5	129	10	1	9	0	20	24	122	8	0	154	9	2	9	0	20
+30 mins.	1	90	22	3	116	10	0	14	0	24	32	108	11	0	151	9	3	12	0	24
+45 mins.	0	90	31	0	121	24	0	11	2	37	16	90	4	0	110	11	2	11	0	24
Total Volume	2	374	94	9	479	60	1	43	2	106	98	396	36	0	530	35	9	41	0	85
% App. Total	0.4	78.1	19.6	1.9		56.6	0.9	40.6	1.9		18.5	74.7	6.8	0		41.2	10.6	48.2	0	
PHF	.500	.890	.758	.450	.928	.625	.250	.768	.250	.716	.766	.811	.692	.000	.860	.795	.750	.854	.000	.885



# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

Washington St at Zwieback Street  
Hartford, Connecticut

File Name : 23024  
Site Code : 23024  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Zwieback Street From East					Private Dr From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	116	14	5	135	37	2	19	4	62	26	132	3	5	166	2	0	1	1	4	367
04:15 PM	1	108	18	0	127	38	1	25	0	64	12	110	3	0	125	5	3	3	0	11	327
04:30 PM	0	92	22	6	120	44	0	32	2	78	17	104	1	1	123	3	0	3	1	7	328
04:45 PM	0	104	22	6	132	28	0	32	0	60	13	118	7	0	138	2	0	4	0	6	336
Total	1	420	76	17	514	147	3	108	6	264	68	464	14	6	552	12	3	11	2	28	1358
05:00 PM	1	116	28	2	147	23	0	20	3	46	18	113	1	0	132	2	0	3	0	5	330
05:15 PM	1	96	19	2	118	23	0	13	0	36	9	100	1	1	111	4	0	0	0	4	269
05:30 PM	0	105	27	5	137	15	0	19	2	36	5	82	1	0	88	4	2	1	0	7	268
05:45 PM	0	78	21	4	103	15	0	12	3	30	16	71	4	0	91	3	1	2	1	7	231
Total	2	395	95	13	505	76	0	64	8	148	48	366	7	1	422	13	3	6	1	23	1098
Grand Total	3	815	171	30	1019	223	3	172	14	412	116	830	21	7	974	25	6	17	3	51	2456
Apprch %	0.3	80	16.8	2.9		54.1	0.7	41.7	3.4		11.9	85.2	2.2	0.7		49	11.8	33.3	5.9		
Total %	0.1	33.2	7	1.2	41.5	9.1	0.1	7	0.6	16.8	4.7	33.8	0.9	0.3	39.7	1	0.2	0.7	0.1	2.1	
Lights	3	804	171	30	1008	223	3	172	14	412	116	808	21	7	952	25	6	17	3	51	2423
% Lights	100	98.7	100	100	98.9	100	100	100	100	100	100	97.3	100	100	97.7	100	100	100	100	100	98.7
Trucks	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
% Trucks	0	0.1	0	0	0.1	0	0	0	0	0	0	0.4	0	0	0.3	0	0	0	0	0	0.2
Buses	0	10	0	0	10	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	29
% Buses	0	1.2	0	0	1	0	0	0	0	0	0	2.3	0	0	2	0	0	0	0	0	1.2

# Connecticut Counts LLC

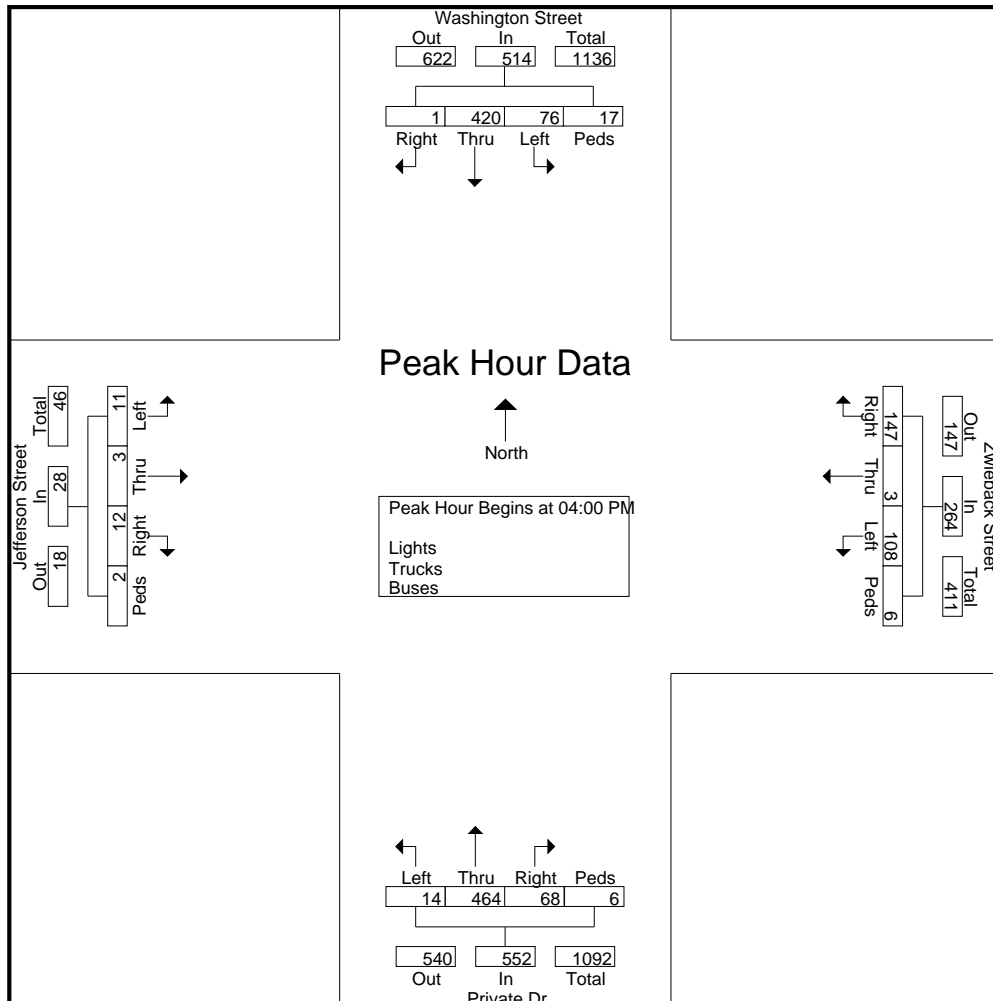
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23024  
Site Code : 23024  
Start Date : 5/12/2022  
Page No : 2

Start Time	Washington Street From North					Zwieback Street From East					Private Dr From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	0	116	14	5	135	37	2	19	4	62	26	132	3	5	166	2	0	1	1	4	367
04:15 PM	1	108	18	0	127	38	1	25	0	64	12	110	3	0	125	5	3	3	0	11	327
04:30 PM	0	92	22	6	120	44	0	32	2	78	17	104	1	1	123	3	0	3	1	7	328
04:45 PM	0	104	22	6	132	28	0	32	0	60	13	118	7	0	138	2	0	4	0	6	336
Total Volume	1	420	76	17	514	147	3	108	6	264	68	464	14	6	552	12	3	11	2	28	1358
% App. Total	0.2	81.7	14.8	3.3		55.7	1.1	40.9	2.3		12.3	84.1	2.5	1.1		42.9	10.7	39.3	7.1		
PHF	.250	.905	.864	.708	.952	.835	.375	.844	.375	.846	.654	.879	.500	.300	.831	.600	.250	.688	.500	.636	.925





# Connecticut Counts LLC

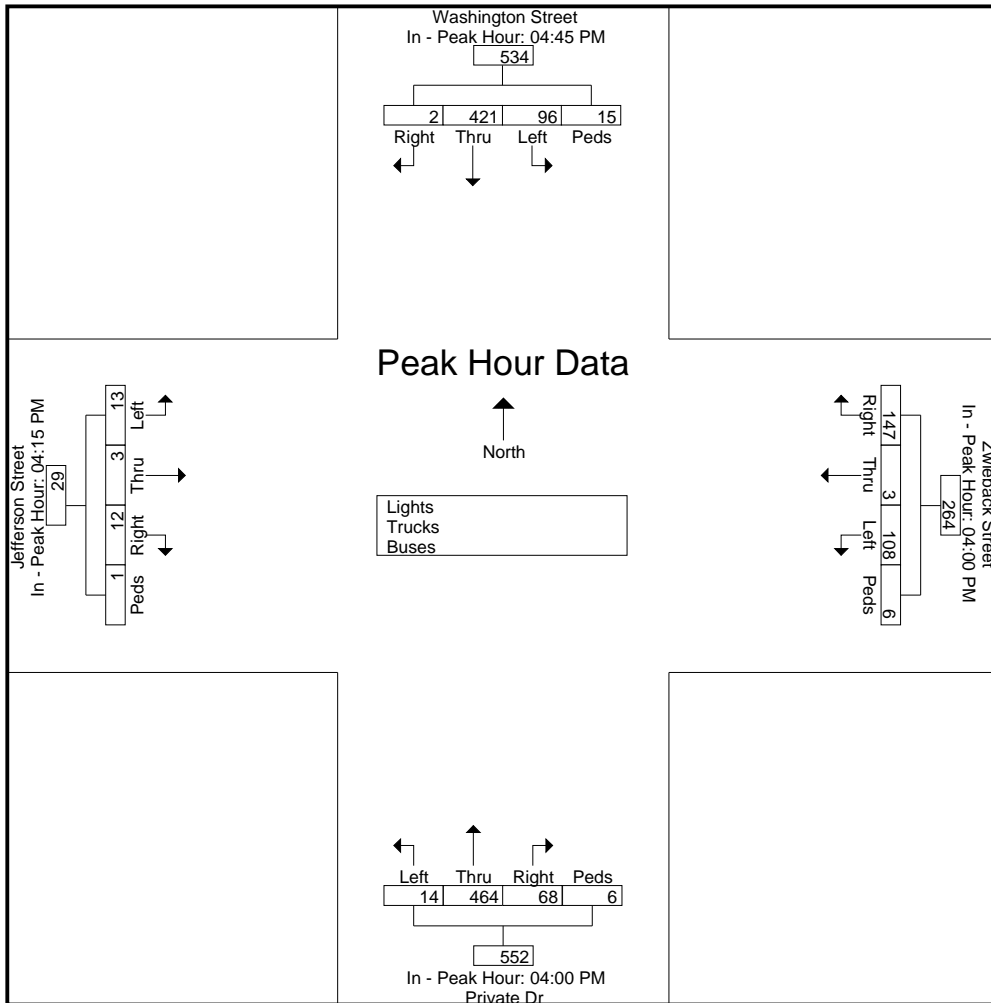
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23024  
 Site Code : 23024  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Zwieback Street From East					Private Dr From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM					04:00 PM					04:00 PM					04:15 PM				
+0 mins.	0	104	22	6	132	37	2	19	4	62	26	132	3	5	166	5	3	3	0	11
+15 mins.	1	116	28	2	147	38	1	25	0	64	12	110	3	0	125	3	0	3	1	7
+30 mins.	1	96	19	2	118	44	0	32	2	78	17	104	1	1	123	2	0	4	0	6
+45 mins.	0	105	27	5	137	28	0	32	0	60	13	118	7	0	138	2	0	3	0	5
Total Volume	2	421	96	15	534	147	3	108	6	264	68	464	14	6	552	12	3	13	1	29
% App. Total	0.4	78.8	18	2.8		55.7	1.1	40.9	2.3		12.3	84.1	2.5	1.1		41.4	10.3	44.8	3.4	
PHF	.500	.907	.857	.625	.908	.835	.375	.844	.375	.846	.654	.879	.500	.300	.831	.600	.250	.813	.250	.659



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Lincoln Street  
Hartford, Connecticut

File Name : 23025  
Site Code : 23025  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					From East					Private Dr From South					Lincoln Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	1	86	0	1	88	0	0	0	0	0	0	67	4	1	72	0	0	0	2	2	162
07:15 AM	5	114	0	0	119	0	0	0	0	0	0	98	2	0	100	0	0	0	2	2	221
07:30 AM	7	119	0	0	126	0	0	0	0	0	0	153	5	0	158	0	0	0	4	4	288
07:45 AM	4	126	0	1	131	0	0	0	0	0	0	156	7	1	164	0	0	0	0	0	295
Total	17	445	0	2	464	0	0	0	0	0	0	474	18	2	494	0	0	0	8	8	966
08:00 AM	13	98	0	0	111	0	0	0	0	0	0	105	12	2	119	0	0	0	4	4	234
08:15 AM	10	87	0	0	97	0	0	0	0	0	0	113	6	0	119	1	0	3	5	9	225
08:30 AM	8	78	0	1	87	0	0	0	0	0	0	128	8	2	138	0	0	0	7	7	232
08:45 AM	10	93	0	0	103	0	0	0	0	0	0	101	7	0	108	0	0	0	0	0	211
Total	41	356	0	1	398	0	0	0	0	0	0	447	33	4	484	1	0	3	16	20	902
Grand Total	58	801	0	3	862	0	0	0	0	0	0	921	51	6	978	1	0	3	24	28	1868
Apprch %	6.7	92.9	0	0.3		0	0	0	0		0	94.2	5.2	0.6		3.6	0	10.7	85.7		
Total %	3.1	42.9	0	0.2	46.1	0	0	0	0	0	0	49.3	2.7	0.3	52.4	0.1	0	0.2	1.3	1.5	
Lights	56	776	0	3	835	0	0	0	0	0	0	890	49	6	945	1	0	3	24	28	1808
% Lights	96.6	96.9	0	100	96.9	0	0	0	0	0	0	96.6	96.1	100	96.6	100	0	100	100	100	96.8
Trucks	1	5	0	0	6	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	16
% Trucks	1.7	0.6	0	0	0.7	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0.9
Buses	1	20	0	0	21	0	0	0	0	0	0	22	1	0	23	0	0	0	0	0	44
% Buses	1.7	2.5	0	0	2.4	0	0	0	0	0	0	2.4	2	0	2.4	0	0	0	0	0	2.4

# Connecticut Counts LLC

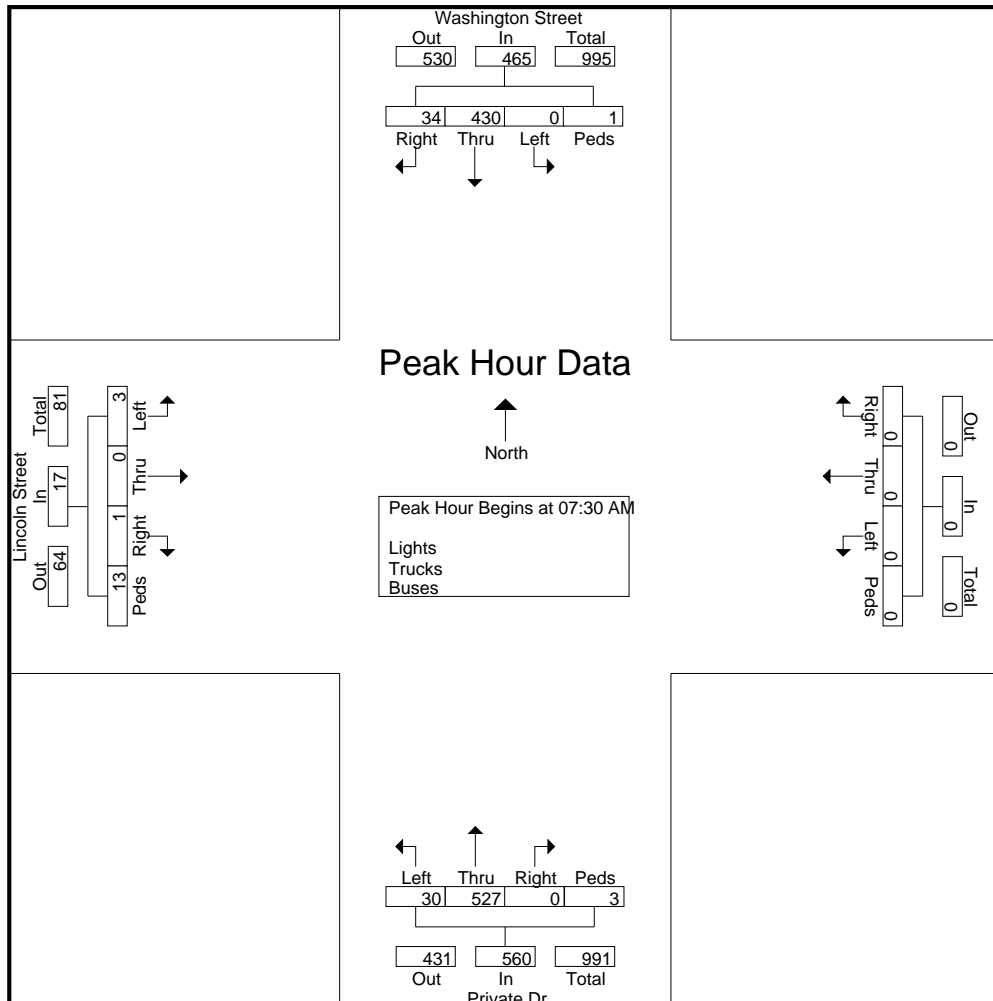
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23025  
Site Code : 23025  
Start Date : 5/12/2022  
Page No : 2

Start Time	Washington Street From North					From East					Private Dr From South					Lincoln Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	7	119	0	0	126	0	0	0	0	0	0	153	5	0	158	0	0	0	4	4	288
07:45 AM	4	126	0	1	131	0	0	0	0	0	0	156	7	1	164	0	0	0	0	0	295
08:00 AM	13	98	0	0	111	0	0	0	0	0	0	105	12	2	119	0	0	0	4	4	234
08:15 AM	10	87	0	0	97	0	0	0	0	0	0	113	6	0	119	1	0	3	5	9	225
Total Volume	34	430	0	1	465	0	0	0	0	0	0	527	30	3	560	1	0	3	13	17	1042
% App. Total	7.3	92.5	0	0.2		0	0	0	0		0	94.1	5.4	0.5		5.9	0	17.6	76.5		
PHF	.654	.853	.000	.250	.887	.000	.000	.000	.000	.000	.000	.845	.625	.375	.854	.250	.000	.250	.650	.472	.883



# Connecticut Counts LLC

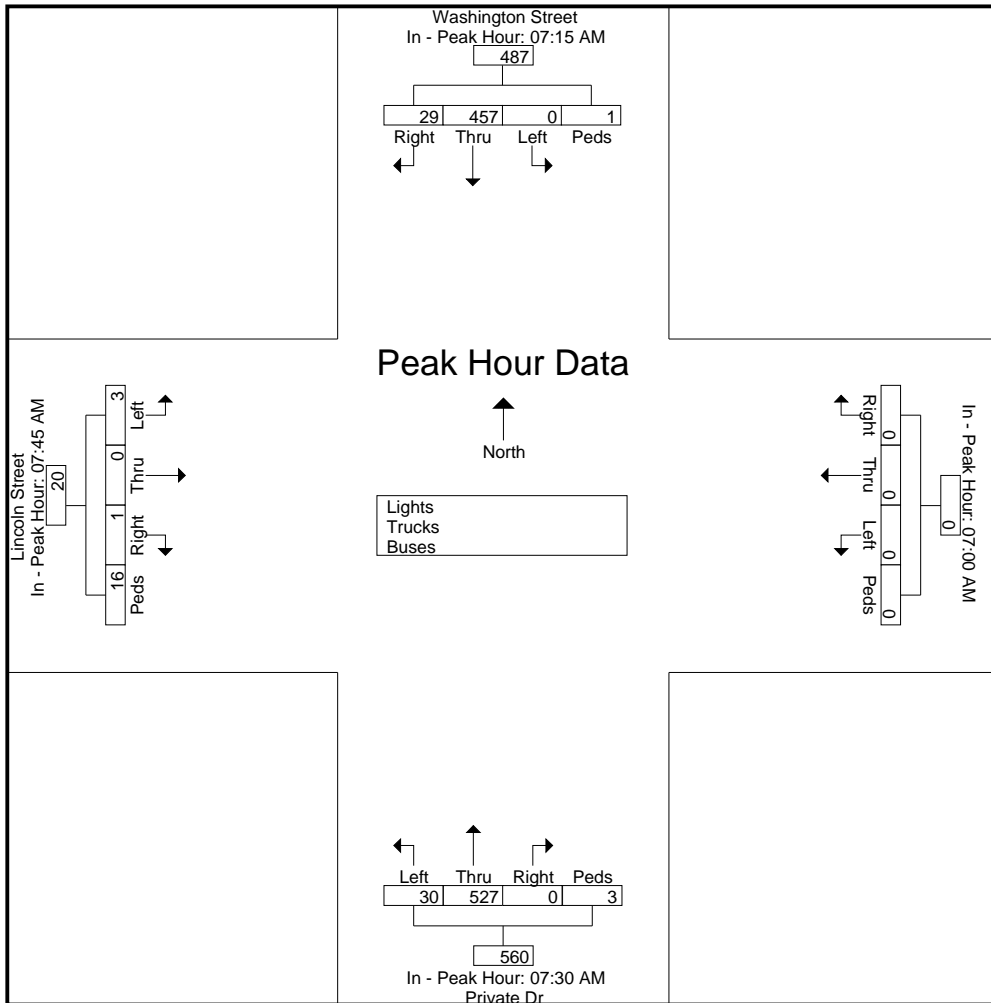
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23025  
 Site Code : 23025  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					From East					Private Dr From South					Lincoln Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					07:00 AM					07:30 AM					07:45 AM				
+0 mins.	5	114	0	0	119	0	0	0	0	0	0	153	5	0	158	0	0	0	0	0
+15 mins.	7	119	0	0	126	0	0	0	0	0	0	156	7	1	164	0	0	0	4	4
+30 mins.	4	126	0	1	131	0	0	0	0	0	0	105	12	2	119	1	0	3	5	9
+45 mins.	13	98	0	0	111	0	0	0	0	0	0	113	6	0	119	0	0	0	7	7
Total Volume	29	457	0	1	487	0	0	0	0	0	0	527	30	3	560	1	0	3	16	20
% App. Total	6	93.8	0	0.2		0	0	0	0		0	94.1	5.4	0.5		5	0	15	80	
PHF	.558	.907	.000	.250	.929	.000	.000	.000	.000	.000	.000	.845	.625	.375	.854	.250	.000	.250	.571	.556





**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Lincoln Street  
Hartford, Connecticut

File Name : 23026  
Site Code : 23026  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					From East					Private Dr From South					Lincoln Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	14	134	0	0	148	0	0	0	0	0	1	143	10	0	154	0	0	0	14	14	316
04:15 PM	12	131	0	0	143	0	0	0	0	0	0	135	12	0	147	1	0	0	12	13	303
04:30 PM	19	108	0	0	127	0	0	0	0	0	0	121	16	0	137	0	0	0	5	5	269
04:45 PM	12	130	0	0	142	0	0	0	0	0	0	136	17	1	154	1	0	0	3	4	300
Total	57	503	0	0	560	0	0	0	0	0	1	535	55	1	592	2	0	0	34	36	1188
05:00 PM	13	127	0	0	140	0	0	0	0	0	0	121	21	0	142	1	0	0	4	5	287
05:15 PM	10	110	0	0	120	0	0	0	0	0	0	119	9	0	128	0	0	0	3	3	251
05:30 PM	9	119	0	0	128	0	0	0	0	0	0	83	9	1	93	1	0	0	0	1	222
05:45 PM	8	93	0	1	102	0	0	0	0	0	0	96	7	0	103	0	0	0	0	0	205
Total	40	449	0	1	490	0	0	0	0	0	0	419	46	1	466	2	0	0	7	9	965
Grand Total	97	952	0	1	1050	0	0	0	0	0	1	954	101	2	1058	4	0	0	41	45	2153
Apprch %	9.2	90.7	0	0.1		0	0	0	0		0.1	90.2	9.5	0.2		8.9	0	0	91.1		
Total %	4.5	44.2	0	0	48.8	0	0	0	0	0	0	44.3	4.7	0.1	49.1	0.2	0	0	1.9	2.1	
Lights	97	942	0	1	1040	0	0	0	0	0	1	928	101	2	1032	4	0	0	41	45	2117
% Lights	100	98.9	0	100	99	0	0	0	0	0	100	97.3	100	100	97.5	100	0	0	100	100	98.3
Trucks	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
% Trucks	0	0.1	0	0	0.1	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.1
Buses	0	9	0	0	9	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	33
% Buses	0	0.9	0	0	0.9	0	0	0	0	0	0	2.5	0	0	2.3	0	0	0	0	0	1.5

# Connecticut Counts LLC

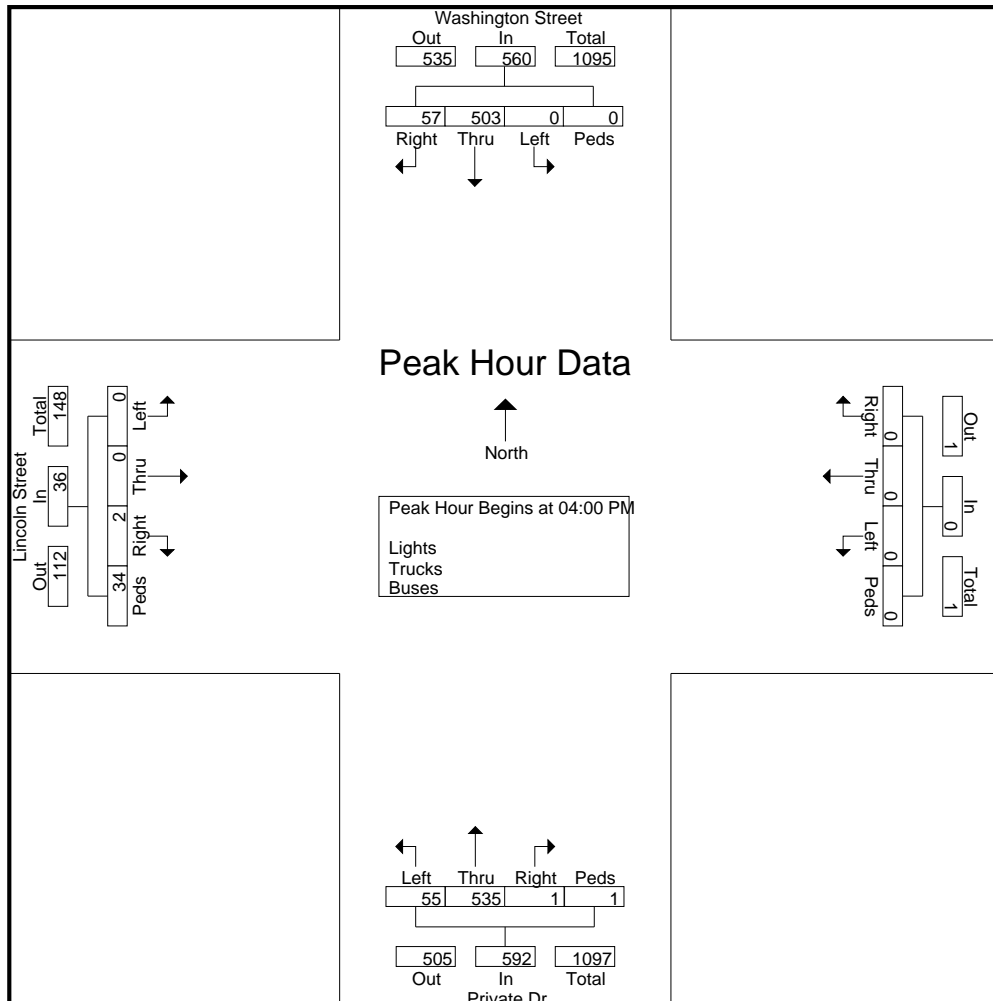
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23026  
Site Code : 23026  
Start Date : 5/12/2022  
Page No : 2

Start Time	Washington Street From North					From East					Private Dr From South					Lincoln Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	14	134	0	0	148	0	0	0	0	0	1	143	10	0	154	0	0	0	14	14	316
04:15 PM	12	131	0	0	143	0	0	0	0	0	0	135	12	0	147	1	0	0	12	13	303
04:30 PM	19	108	0	0	127	0	0	0	0	0	0	121	16	0	137	0	0	0	5	5	269
04:45 PM	12	130	0	0	142	0	0	0	0	0	0	136	17	1	154	1	0	0	3	4	300
Total Volume	57	503	0	0	560	0	0	0	0	0	1	535	55	1	592	2	0	0	34	36	1188
% App. Total	10.2	89.8	0	0		0	0	0	0		0.2	90.4	9.3	0.2		5.6	0	0	94.4		
PHF	.750	.938	.000	.000	.946	.000	.000	.000	.000	.000	.250	.935	.809	.250	.961	.500	.000	.000	.607	.643	.940



# Connecticut Counts LLC

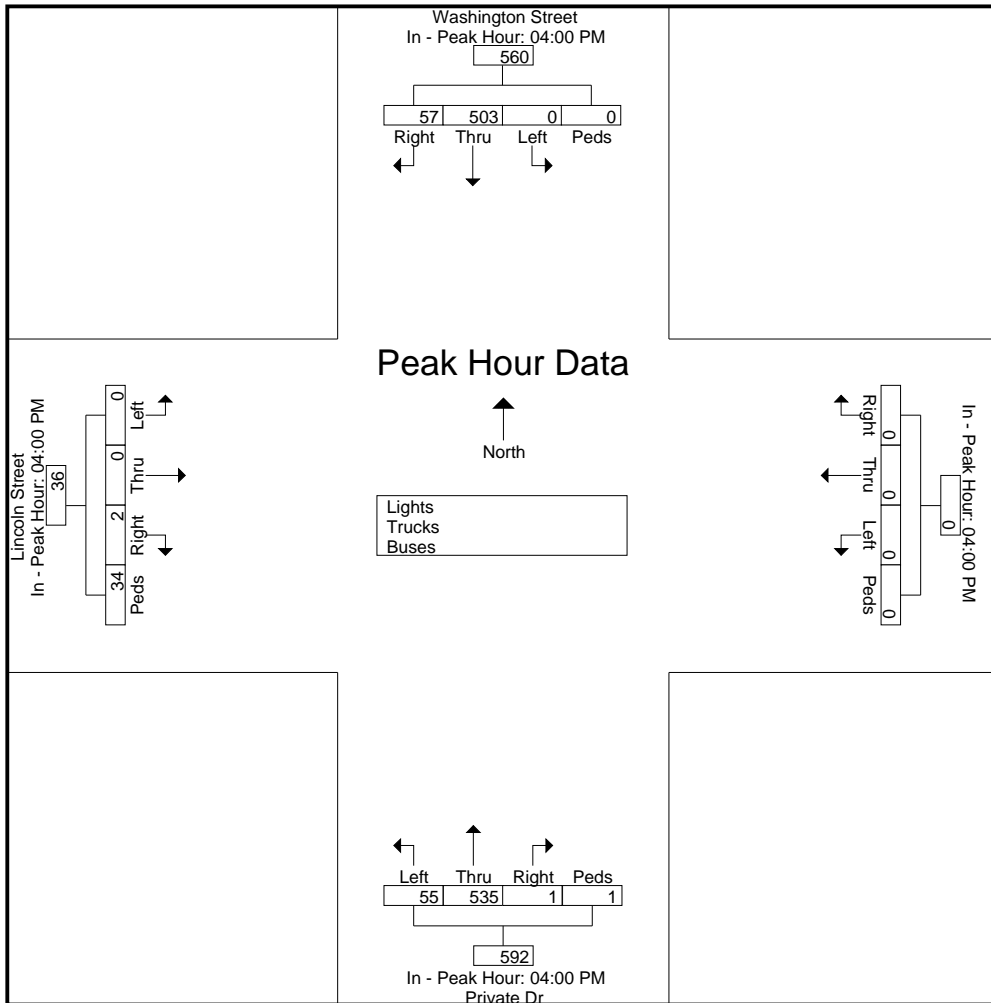
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23026  
 Site Code : 23026  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					From East					Private Dr From South					Lincoln Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM					04:00 PM					04:00 PM					04:00 PM				
+0 mins.	14	134	0	0	148	0	0	0	0	0	1	143	10	0	154	0	0	0	14	14
+15 mins.	12	131	0	0	143	0	0	0	0	0	0	135	12	0	147	1	0	0	12	13
+30 mins.	19	108	0	0	127	0	0	0	0	0	0	121	16	0	137	0	0	0	5	5
+45 mins.	12	130	0	0	142	0	0	0	0	0	0	136	17	1	154	1	0	0	3	4
Total Volume	57	503	0	0	560	0	0	0	0	0	1	535	55	1	592	2	0	0	34	36
% App. Total	10.2	89.8	0	0		0	0	0	0		0.2	90.4	9.3	0.2		5.6	0	0	94.4	
PHF	.750	.938	.000	.000	.946	.000	.000	.000	.000	.000	.250	.935	.809	.250	.961	.500	.000	.000	.607	.643



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Allen Place/Private Dr  
Hartford, Connecticut

File Name : 23027  
Site Code : 23027  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Private Drive From East					Washington Street From South					Allen Place From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	7	67	18	1	93	7	1	1	0	9	8	56	1	0	65	4	2	5	2	13	180
07:15 AM	9	71	22	0	102	15	2	3	1	21	7	87	10	0	104	18	5	7	0	30	257
07:30 AM	2	83	41	6	132	37	3	7	0	47	10	107	2	0	119	8	7	15	3	33	331
07:45 AM	7	75	29	1	112	20	2	6	0	28	10	111	6	1	128	8	10	21	0	39	307
Total	25	296	110	8	439	79	8	17	1	105	35	361	19	1	416	38	24	48	5	115	1075
08:00 AM	5	78	16	0	99	16	0	1	2	19	6	85	11	1	103	8	7	8	1	24	245
08:15 AM	4	62	11	2	79	7	0	2	0	9	5	102	9	0	116	9	2	10	1	22	226
08:30 AM	2	56	10	0	68	5	0	0	0	5	1	97	5	0	103	10	3	15	3	31	207
08:45 AM	7	73	9	0	89	2	1	1	0	4	0	90	6	0	96	5	4	5	4	18	207
Total	18	269	46	2	335	30	1	4	2	37	12	374	31	1	418	32	16	38	9	95	885
Grand Total	43	565	156	10	774	109	9	21	3	142	47	735	50	2	834	70	40	86	14	210	1960
Apprch %	5.6	73	20.2	1.3		76.8	6.3	14.8	2.1		5.6	88.1	6	0.2		33.3	19	41	6.7		
Total %	2.2	28.8	8	0.5	39.5	5.6	0.5	1.1	0.2	7.2	2.4	37.5	2.6	0.1	42.6	3.6	2	4.4	0.7	10.7	
Lights	42	539	156	10	747	109	9	21	3	142	47	705	48	2	802	66	40	84	14	204	1895
% Lights	97.7	95.4	100	100	96.5	100	100	100	100	100	100	95.9	96	100	96.2	94.3	100	97.7	100	97.1	96.7
Trucks	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	15
% Trucks	0	1.1	0	0	0.8	0	0	0	0	0	0	1.1	0	0	1	0	0	1.2	0	0.5	0.8
Buses	1	20	0	0	21	0	0	0	0	0	0	22	2	0	24	4	0	1	0	5	50
% Buses	2.3	3.5	0	0	2.7	0	0	0	0	0	0	3	4	0	2.9	5.7	0	1.2	0	2.4	2.6



# Connecticut Counts LLC

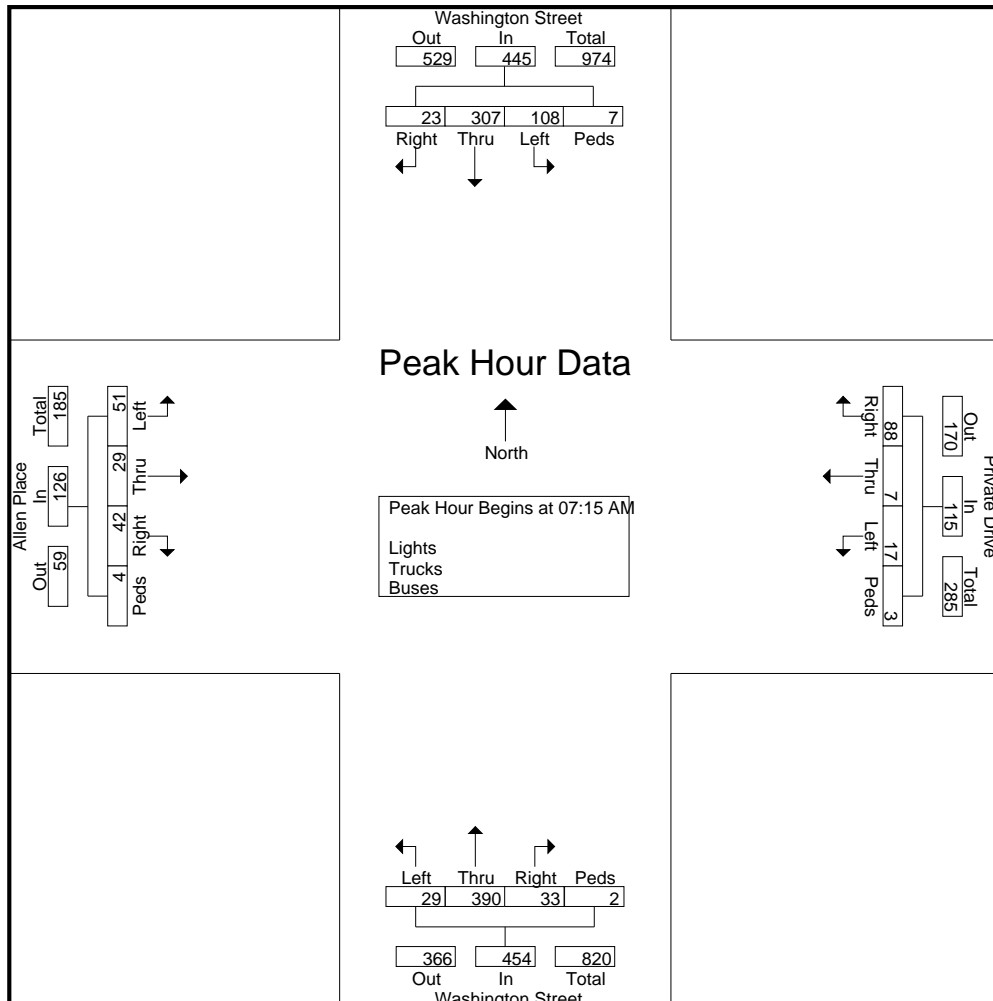
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23027  
 Site Code : 23027  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Washington Street From North					Private Drive From East					Washington Street From South					Allen Place From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	9	71	22	0	102	15	2	3	1	21	7	87	10	0	104	18	5	7	0	30	257
07:30 AM	2	83	41	6	132	37	3	7	0	47	10	107	2	0	119	8	7	15	3	33	331
07:45 AM	7	75	29	1	112	20	2	6	0	28	10	111	6	1	128	8	10	21	0	39	307
08:00 AM	5	78	16	0	99	16	0	1	2	19	6	85	11	1	103	8	7	8	1	24	245
Total Volume	23	307	108	7	445	88	7	17	3	115	33	390	29	2	454	42	29	51	4	126	1140
% App. Total	5.2	69	24.3	1.6		76.5	6.1	14.8	2.6		7.3	85.9	6.4	0.4		33.3	23	40.5	3.2		
PHF	.639	.925	.659	.292	.843	.595	.583	.607	.375	.612	.825	.878	.659	.500	.887	.583	.725	.607	.333	.808	.861



# Connecticut Counts LLC

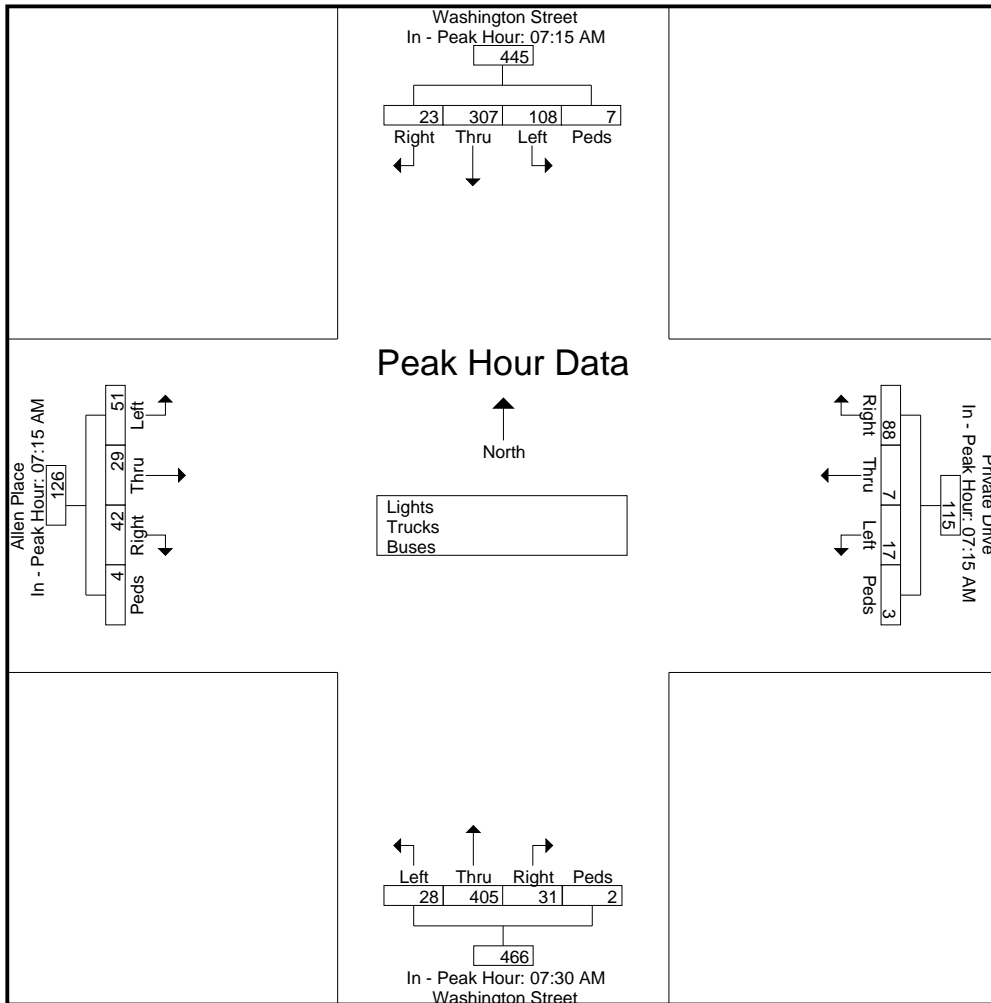
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23027  
 Site Code : 23027  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Private Drive From East					Washington Street From South					Allen Place From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					07:15 AM					07:30 AM					07:15 AM				
+0 mins.	9	71	22	0	102	15	2	3	1	21	10	107	2	0	119	18	5	7	0	30
+15 mins.	2	83	41	6	132	37	3	7	0	47	10	111	6	1	128	8	7	15	3	33
+30 mins.	7	75	29	1	112	20	2	6	0	28	6	85	11	1	103	8	10	21	0	39
+45 mins.	5	78	16	0	99	16	0	1	2	19	5	102	9	0	116	8	7	8	1	24
Total Volume	23	307	108	7	445	88	7	17	3	115	31	405	28	2	466	42	29	51	4	126
% App. Total	5.2	69	24.3	1.6		76.5	6.1	14.8	2.6		6.7	86.9	6	0.4		33.3	23	40.5	3.2	
PHF	.639	.925	.659	.292	.843	.595	.583	.607	.375	.612	.775	.912	.636	.500	.910	.583	.725	.607	.333	.808



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Allen POlace/Private Dr  
Hartford, Connecticut

File Name : 23028  
Site Code : 23028  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Private Drive From East					Washington Street From South					Allen Place From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	8	119	1	1	129	30	11	12	1	54	2	105	16	1	124	26	1	20	5	52	359
04:15 PM	14	105	2	0	121	26	7	10	1	44	2	115	12	0	129	9	0	16	5	30	324
04:30 PM	19	105	2	6	132	46	6	22	1	75	0	102	13	0	115	9	1	16	1	27	349
04:45 PM	10	111	1	2	124	27	5	15	1	48	1	100	9	0	110	16	1	13	3	33	315
Total	51	440	6	9	506	129	29	59	4	221	5	422	50	1	478	60	3	65	14	142	1347
05:00 PM	8	115	0	4	127	32	5	18	0	55	0	103	16	1	120	6	0	9	0	15	317
05:15 PM	13	92	3	0	108	25	4	10	0	39	0	88	9	1	98	4	1	15	3	23	268
05:30 PM	12	95	6	0	113	20	5	5	0	30	1	61	7	0	69	9	1	11	0	21	233
05:45 PM	4	90	2	0	96	13	4	6	2	25	2	72	5	0	79	11	1	10	3	25	225
Total	37	392	11	4	444	90	18	39	2	149	3	324	37	2	366	30	3	45	6	84	1043
Grand Total	88	832	17	13	950	219	47	98	6	370	8	746	87	3	844	90	6	110	20	226	2390
Apprch %	9.3	87.6	1.8	1.4		59.2	12.7	26.5	1.6		0.9	88.4	10.3	0.4		39.8	2.7	48.7	8.8		
Total %	3.7	34.8	0.7	0.5	39.7	9.2	2	4.1	0.3	15.5	0.3	31.2	3.6	0.1	35.3	3.8	0.3	4.6	0.8	9.5	
Lights	88	822	17	13	940	219	47	98	6	370	8	723	87	3	821	90	6	110	20	226	2357
% Lights	100	98.8	100	100	98.9	100	100	100	100	100	100	96.9	100	100	97.3	100	100	100	100	100	98.6
Trucks	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
% Trucks	0	0.1	0	0	0.1	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0.2
Buses	0	9	0	0	9	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	29
% Buses	0	1.1	0	0	0.9	0	0	0	0	0	0	2.7	0	0	2.4	0	0	0	0	0	1.2

# Connecticut Counts LLC

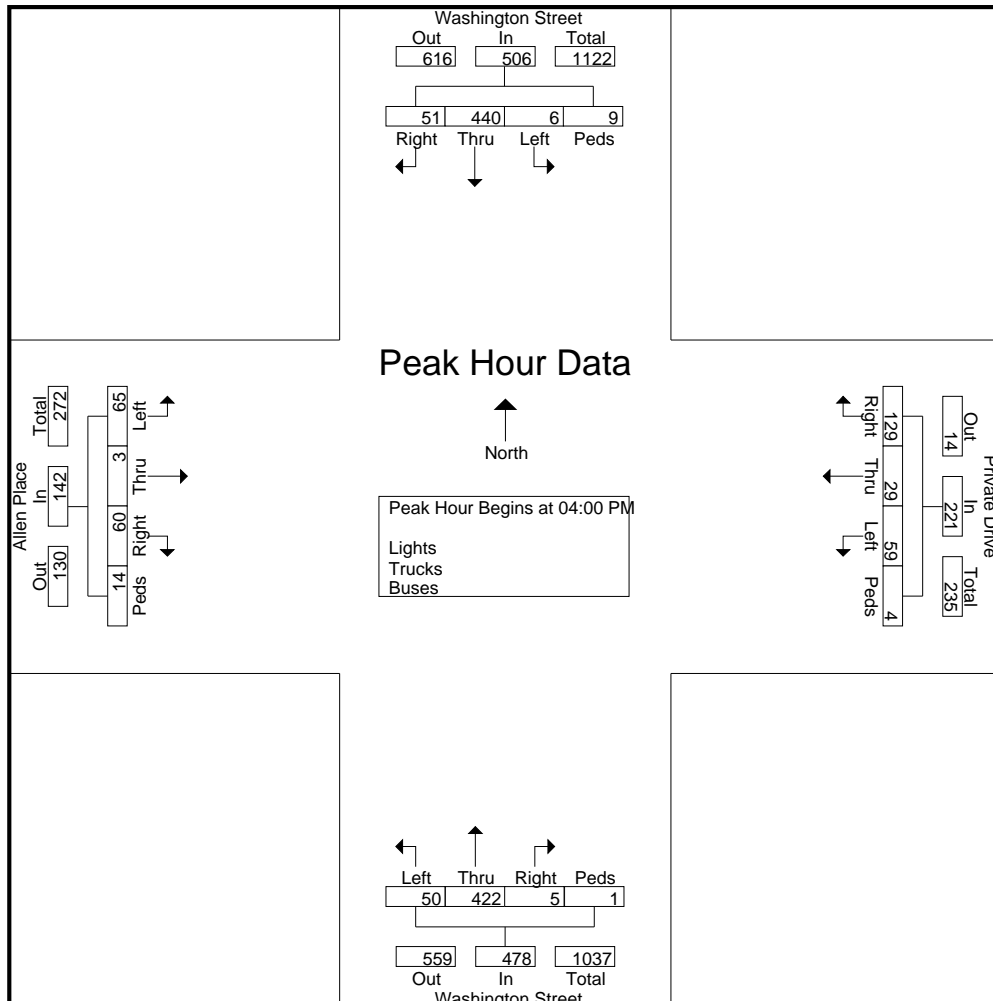
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23028  
Site Code : 23028  
Start Date : 5/12/2022  
Page No : 2

Start Time	Washington Street From North					Private Drive From East					Washington Street From South					Allen Place From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	8	119	1	1	129	30	11	12	1	54	2	105	16	1	124	26	1	20	5	52	359
04:15 PM	14	105	2	0	121	26	7	10	1	44	2	115	12	0	129	9	0	16	5	30	324
04:30 PM	19	105	2	6	132	46	6	22	1	75	0	102	13	0	115	9	1	16	1	27	349
04:45 PM	10	111	1	2	124	27	5	15	1	48	1	100	9	0	110	16	1	13	3	33	315
Total Volume	51	440	6	9	506	129	29	59	4	221	5	422	50	1	478	60	3	65	14	142	1347
% App. Total	10.1	87	1.2	1.8		58.4	13.1	26.7	1.8		1	88.3	10.5	0.2		42.3	2.1	45.8	9.9		
PHF	.671	.924	.750	.375	.958	.701	.659	.670	1.00	.737	.625	.917	.781	.250	.926	.577	.750	.813	.700	.683	.938





# Connecticut Counts LLC

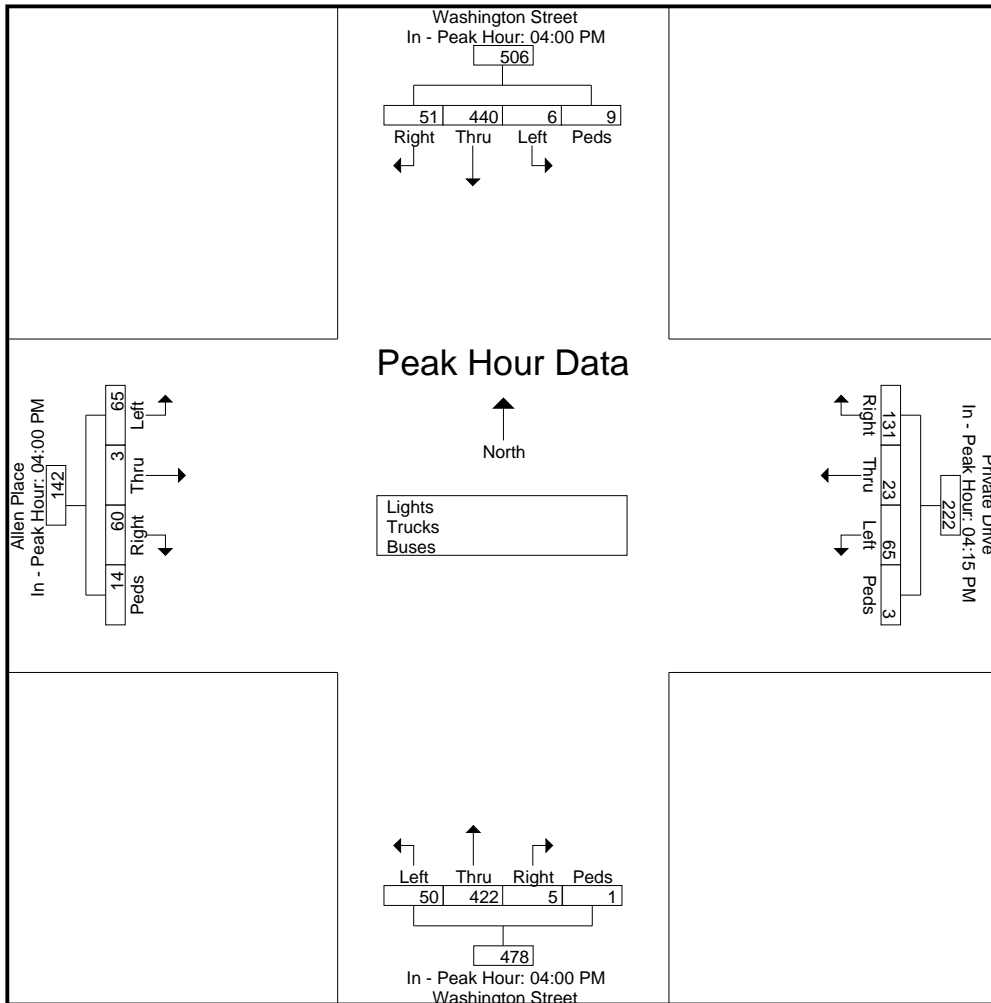
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23028  
 Site Code : 23028  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Private Drive From East					Washington Street From South					Allen Place From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM					04:15 PM					04:00 PM					04:00 PM				
+0 mins.	8	119	1	1	129	26	7	10	1	44	2	105	16	1	124	26	1	20	5	52
+15 mins.	14	105	2	0	121	46	6	22	1	75	2	115	12	0	129	9	0	16	5	30
+30 mins.	19	105	2	6	132	27	5	15	1	48	0	102	13	0	115	9	1	16	1	27
+45 mins.	10	111	1	2	124	32	5	18	0	55	1	100	9	0	110	16	1	13	3	33
Total Volume	51	440	6	9	506	131	23	65	3	222	5	422	50	1	478	60	3	65	14	142
% App. Total	10.1	87	1.2	1.8		59	10.4	29.3	1.4		1	88.3	10.5	0.2		42.3	2.1	45.8	9.9	
PHF	.671	.924	.750	.375	.958	.712	.821	.739	.750	.740	.625	.917	.781	.250	.926	.577	.750	.813	.700	.683



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Washington St at Vernon/Retreat Avenue  
Hartford, Connecticut

File Name : 23029  
Site Code : 23029  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Retreat Avenue From East					Washington Street From South					Vernon Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	6	30	33	2	71	26	15	22	0	63	20	40	2	0	62	9	17	6	2	34	230
07:15 AM	11	42	40	1	94	37	18	34	0	89	29	55	14	0	98	18	19	22	1	60	341
07:30 AM	4	51	45	3	103	53	22	23	1	99	38	79	1	0	118	14	22	4	1	41	361
07:45 AM	11	51	35	0	97	49	6	20	1	76	33	83	2	1	119	3	17	3	0	23	315
Total	32	174	153	6	365	165	61	99	2	327	120	257	19	1	397	44	75	35	4	158	1247
08:00 AM	4	55	23	1	83	32	10	30	0	72	31	75	0	0	106	5	18	2	0	25	286
08:15 AM	5	40	28	4	77	37	8	26	0	71	35	84	6	1	126	4	16	2	3	25	299
08:30 AM	3	42	24	2	71	40	8	25	0	73	38	67	2	0	107	1	15	3	4	23	274
08:45 AM	4	42	37	2	85	30	6	22	0	58	18	70	1	0	89	9	9	1	0	19	251
Total	16	179	112	9	316	139	32	103	0	274	122	296	9	1	428	19	58	8	7	92	1110
Grand Total	48	353	265	15	681	304	93	202	2	601	242	553	28	2	825	63	133	43	11	250	2357
Apprch %	7	51.8	38.9	2.2		50.6	15.5	33.6	0.3		29.3	67	3.4	0.2		25.2	53.2	17.2	4.4		
Total %	2	15	11.2	0.6	28.9	12.9	3.9	8.6	0.1	25.5	10.3	23.5	1.2	0.1	35	2.7	5.6	1.8	0.5	10.6	
Lights	46	333	259	15	653	289	90	165	2	546	222	539	28	2	791	61	130	42	10	243	2233
% Lights	95.8	94.3	97.7	100	95.9	95.1	96.8	81.7	100	90.8	91.7	97.5	100	100	95.9	96.8	97.7	97.7	90.9	97.2	94.7
Trucks	1	2	2	0	5	3	1	1	0	5	1	3	0	0	4	0	0	1	1	2	16
% Trucks	2.1	0.6	0.8	0	0.7	1	1.1	0.5	0	0.8	0.4	0.5	0	0	0.5	0	0	2.3	9.1	0.8	0.7
Buses	1	18	4	0	23	12	2	36	0	50	19	11	0	0	30	2	3	0	0	5	108
% Buses	2.1	5.1	1.5	0	3.4	3.9	2.2	17.8	0	8.3	7.9	2	0	0	3.6	3.2	2.3	0	0	2	4.6

# Connecticut Counts LLC

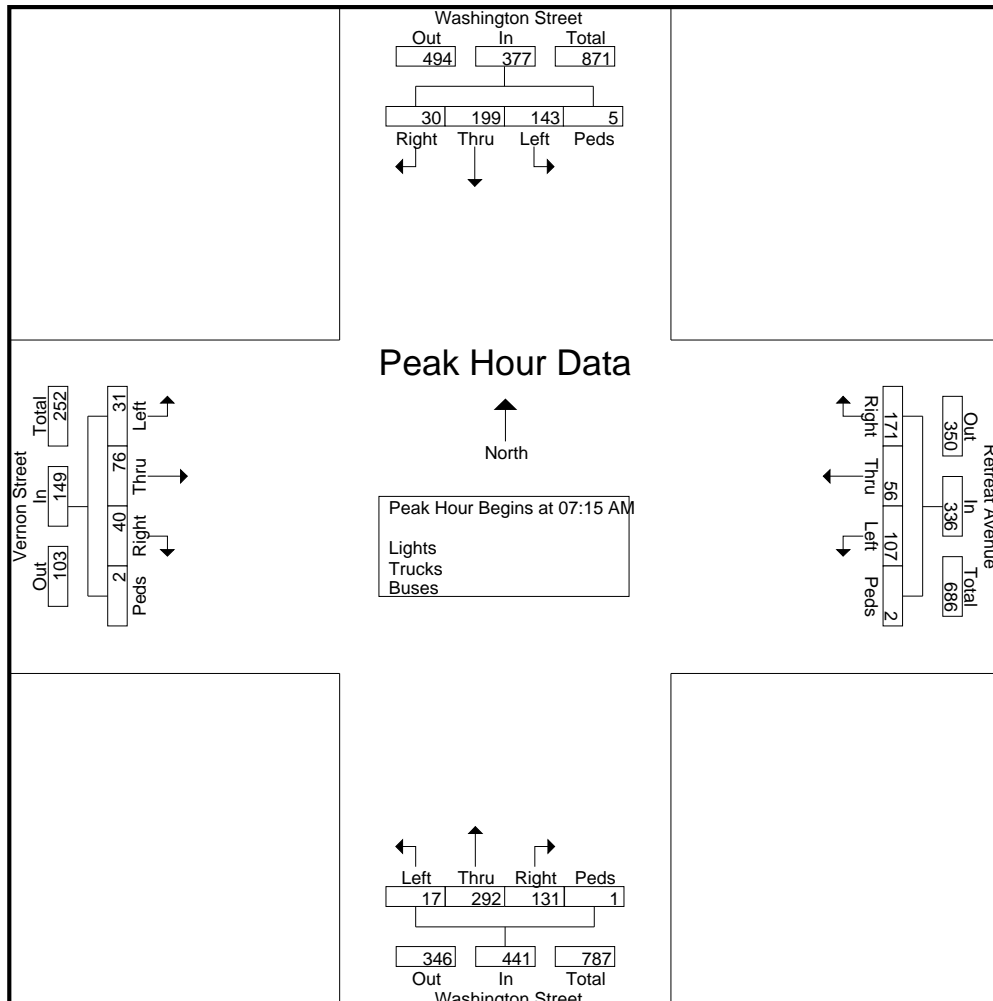
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23029  
Site Code : 23029  
Start Date : 5/12/2022  
Page No : 2

Start Time	Washington Street From North					Retreat Avenue From East					Washington Street From South					Vernon Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	11	42	40	1	94	37	18	34	0	89	29	55	14	0	98	18	19	22	1	60	341
07:30 AM	4	51	45	3	103	53	22	23	1	99	38	79	1	0	118	14	22	4	1	41	361
07:45 AM	11	51	35	0	97	49	6	20	1	76	33	83	2	1	119	3	17	3	0	23	315
08:00 AM	4	55	23	1	83	32	10	30	0	72	31	75	0	0	106	5	18	2	0	25	286
Total Volume	30	199	143	5	377	171	56	107	2	336	131	292	17	1	441	40	76	31	2	149	1303
% App. Total	8	52.8	37.9	1.3		50.9	16.7	31.8	0.6		29.7	66.2	3.9	0.2		26.8	51	20.8	1.3		
PHF	.682	.905	.794	.417	.915	.807	.636	.787	.500	.848	.862	.880	.304	.250	.926	.556	.864	.352	.500	.621	.902



# Connecticut Counts LLC

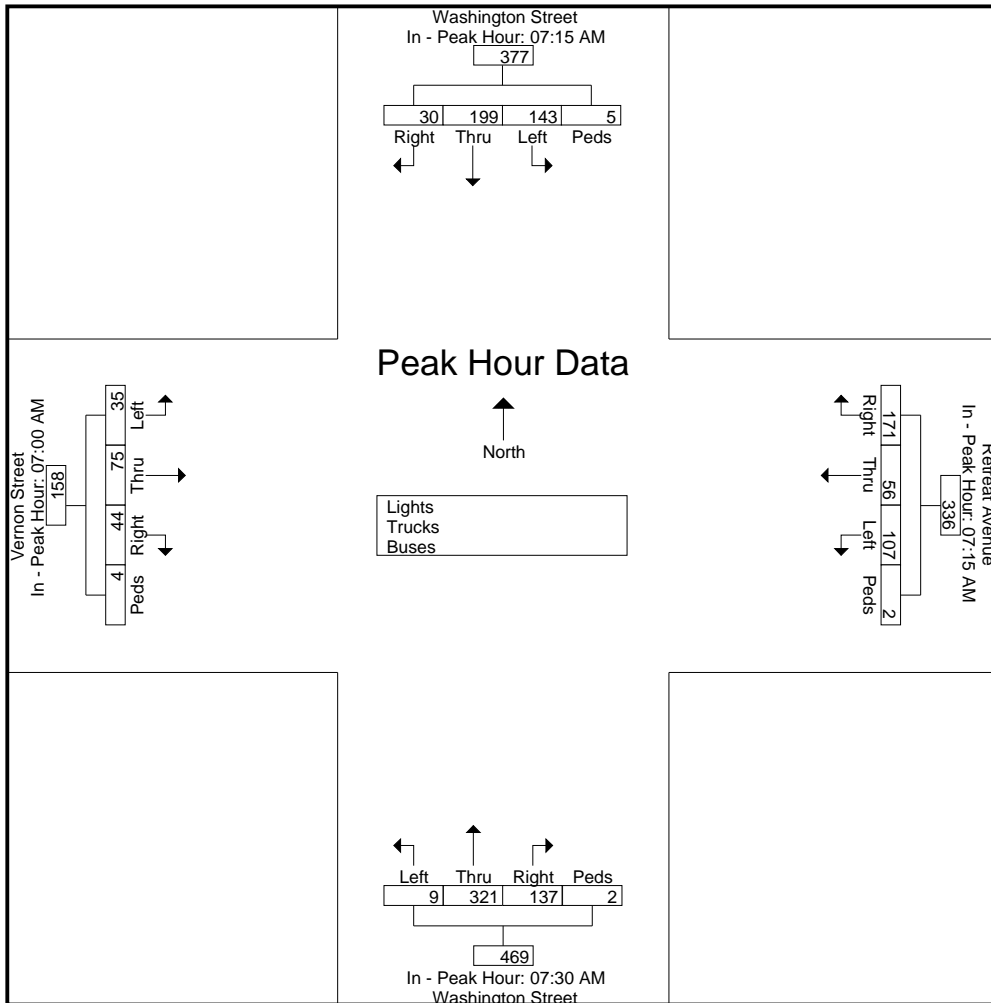
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23029  
 Site Code : 23029  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Retreat Avenue From East					Washington Street From South					Vernon Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					07:15 AM					07:30 AM					07:00 AM				
+0 mins.	11	42	40	1	94	37	18	34	0	89	38	79	1	0	118	9	17	6	2	34
+15 mins.	4	51	45	3	103	53	22	23	1	99	33	83	2	1	119	18	19	22	1	60
+30 mins.	11	51	35	0	97	49	6	20	1	76	31	75	0	0	106	14	22	4	1	41
+45 mins.	4	55	23	1	83	32	10	30	0	72	35	84	6	1	126	3	17	3	0	23
Total Volume	30	199	143	5	377	171	56	107	2	336	137	321	9	2	469	44	75	35	4	158
% App. Total	8	52.8	37.9	1.3		50.9	16.7	31.8	0.6		29.2	68.4	1.9	0.4		27.8	47.5	22.2	2.5	
PHF	.682	.905	.794	.417	.915	.807	.636	.787	.500	.848	.901	.955	.375	.500	.931	.611	.852	.398	.500	.658





Washington St at Retreat/Vernon St - TMC

Tue Jan 23, 2018

Full Length (6 AM-6 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,

Kensington, CT, 12345, US

Leg Direction	Washington Street Southbound						East Westbound						Washington Street Northbound						Vernon Street Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2018-01-23 6:00AM	0	11	30	0	41	1	8	2	6	0	16	1	24	27	0	0	51	0	0	6	1	0	7	1	115
6:15AM	1	17	23	0	41	0	10	3	6	0	19	2	22	49	0	0	71	0	1	10	3	0	14	1	145
6:30AM	1	25	36	0	62	0	12	2	7	0	21	1	39	58	4	0	101	1	1	5	2	0	8	2	192
6:45AM	1	36	56	0	93	2	20	9	13	0	42	2	32	71	2	0	105	0	0	13	4	0	17	2	257
Hourly Total	3	89	145	0	237	3	50	16	32	0	98	6	117	205	6	0	328	1	2	34	10	0	46	6	709
7:00AM	3	40	33	0	76	0	20	9	16	0	45	0	20	71	2	0	93	1	1	8	7	0	16	5	230
7:15AM	3	40	35	0	78	0	33	9	28	0	70	0	45	64	2	0	111	2	7	11	1	0	19	3	278
7:30AM	3	44	35	0	82	0	32	11	29	0	72	1	45	88	3	0	136	0	7	23	7	0	37	0	327
7:45AM	5	59	39	0	103	3	32	21	35	0	88	2	45	82	5	0	132	0	13	20	7	0	40	5	363
Hourly Total	14	183	142	0	339	3	117	50	108	0	275	3	155	305	12	0	472	3	28	62	22	0	112	13	1198
8:00AM	11	77	45	0	133	2	31	17	32	0	80	1	64	102	7	0	173	2	16	25	15	0	56	0	442
8:15AM	8	50	41	0	99	3	29	12	24	0	65	2	58	95	6	0	159	0	15	28	9	0	52	3	375
8:30AM	2	48	33	0	83	2	28	12	25	0	65	1	38	88	2	0	128	0	4	21	4	0	29	3	305
8:45AM	6	36	28	0	70	0	27	6	22	0	55	1	49	99	2	0	150	0	4	9	4	0	17	1	292
Hourly Total	27	211	147	0	385	7	115	47	103	0	265	5	209	384	17	0	610	2	39	83	32	0	154	7	1414
9:00AM	5	41	30	0	76	0	29	13	20	1	63	4	49	57	3	0	109	0	5	14	4	0	23	0	271
9:15AM	3	52	40	0	95	2	38	13	22	0	73	4	30	82	1	0	113	0	3	9	4	0	16	0	297
9:30AM	3	61	40	0	104	0	34	10	18	0	62	0	23	51	1	0	75	0	2	8	4	0	14	2	255
9:45AM	5	62	36	0	103	0	27	13	26	0	66	2	29	67	4	0	100	0	5	11	2	0	18	0	287
Hourly Total	16	216	146	0	378	2	128	49	86	1	264	10	131	257	9	0	397	0	15	42	14	0	71	2	1110
10:00AM	5	58	20	0	83	1	30	7	11	0	48	3	28	48	0	0	76	0	3	1	2	0	6	5	213
10:15AM	3	40	24	0	67	0	44	7	21	0	72	0	26	53	4	0	83	0	2	8	3	0	13	1	235
10:30AM	2	62	42	0	106	0	36	10	13	0	59	1	25	53	1	0	79	0	1	4	7	0	12	5	256
10:45AM	4	55	39	0	98	0	32	4	17	0	53	2	24	62	7	0	93	2	2	6	2	0	10	1	254
Hourly Total	14	215	125	0	354	1	142	28	62	0	232	6	103	216	12	0	331	2	8	19	14	0	41	12	958
11:00AM	2	67	26	0	95	0	34	11	26	1	72	0	26	47	3	0	76	1	2	6	3	0	11	2	254
11:15AM	1	63	20	0	84	0	33	14	16	0	63	1	18	50	3	0	71	0	6	8	1	0	15	2	233
11:30AM	7	43	27	0	77	3	36	9	18	0	63	1	19	45	2	0	66	1	1	8	4	0	13	3	219
11:45AM	7	75	27	0	109	0	41	8	25	0	74	3	23	47	4	0	74	0	7	6	3	0	16	4	273
Hourly Total	17	248	100	0	365	3	144	42	85	1	272	5	86	189	12	0	287	2	16	28	11	0	55	11	979
12:00PM	4	53	28	0	85	0	48	11	25	0	84	1	33	61	3	0	97	1	4	8	3	0	15	5	281
12:15PM	6	68	25	0	99	1	38	11	30	0	79	4	30	68	2	0	100	1	1	9	2	0	12	5	290
12:30PM	3	69	24	0	96	1	40	13	28	0	81	0	28	56	1	0	85	0	1	9	5	0	15	6	277
12:45PM	5	50	23	0	78	0	47	11	40	0	98	3	25	58	3	0	86	0	2	19	3	0	24	3	286
Hourly Total	18	240	100	0	358	2	173	46	123	0	342	8	116	243	9	0	368	2	8	45	13	0	66	19	1134
1:00PM	3	72	23	0	98	0	45	14	29	0	88	1	19	57	5	0	81	0	4	7	12	0	23	2	290
1:15PM	6	64	24	0	94	0	40	14	22	0	76	0	21	56	3	0	80	1	3	10	1	0	14	5	264
1:30PM	3	58	33	0	94	0	40	17	34	0	91	0	34	74	1	0	109	0	5	6	3	0	14	1	308
1:45PM	6	67	30	0	103	1	43	10	47	0	100	0	28	59	3	0	90	0	7	12	2	0	21	3	314
Hourly Total	18	261	110	0	389	1	168	55	132	0	355	1	102	246	12	0	360	1	19	35	18	0	72	11	1176
2:00PM	2	68	35	0	105	0	54	11	38	1	104	2	37	45	4	0	86	0	2	15	6	0	23	1	318
2:15PM	5	73	34	0	112	1	42	14	23	0	79	3	30	65	3	0	98	1	4	12	2	0	18	4	307
2:30PM	1	76	40	0	117	1	45	10	30	0	85	1	27	57	1	0	85	0	7	5	6	0	18	1	305
2:45PM	6	83	37	0	126	0	44	8	33	0	85	0	35	65	8	0	108	0	5	5	3	0	13	4	332
Hourly Total	14	300	146	0	460	2	185	43	124	1	353	6	129	232	16	0	377	1	18	37	17	0	72	10	1262
3:00PM	6	101	33	0	140	4	46	15	26	0	87	2	27	70	5	0	102	0	9	7	3	0	19	5	348
3:15PM	7	91	35	0	133	2	49	16	20	0	85	1	24	76	6	0	106	1	27	9	16	0	52	4	376
3:30PM	12	111	31	0	154	6	77	24	50	0	151	1	24	95	6	0	125	0	10	11	7	0	28	8	458
3:45PM	7	115	30	0	152	1	59	26	38	0	123	0	31	82	8	0	121	0	5	6	7	0	18	2	414
Hourly Total	32	418	129	0	579	13	231	81	134	0	446	4	106	323	25	0	454	1	51	33	33	0	117	19	1596
4:00PM	21	114	27	0	162	0	68	17	45	0	130	1	22	94	5	0	121	1	8	5	4	0	17	4	430
4:15PM	9	117	19	0	145	3	54	21	49	0	124	2	32	96	11	0	139	1	21	28	17	0	66	6	474
4:30PM	8	111	25	0	144	0	59	32	36	0	127	2	33	76	6	0	115	5	17	13	9	0	39	4	425
4:45PM	6	122	27	0	155	1	66	25	42	0	133	2	21	62	4	0	87	0	10	8	2	0	20	4	395
Hourly Total	44	464	98	0	606	4	247	95	172	0	514	7	108	328	26	0	462	7	56	54	32	0	142	18	1724
5:00PM	15	101	15	0	131	1	59	22	38	0	119	2	24	59	4	0	87	0	9	19	11	0	39	2	376
5:15PM	7	103	17	0	127	0	55	26	48	0	129	1	28	58	6	0	92	3	8	8	5	0	21	3	369
5:30PM	5	95	19	0	119	0	50	26	35	0	111	2	24	56	3	0	83	0	8	9	7	0	24	4	337
5:45PM	3	79	20	0	102	1	37	20	30	0	87	1	26	67	2	0	95	0	7	10	7	0	24	2	308

Leg Direction	Washington Street Southbound						East Westbound						Washington Street Northbound						Vernon Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
Hourly Total	30	378	71	0	<b>479</b>	2	201	94	151	0	<b>446</b>	6	102	240	15	0	<b>357</b>	3	32	46	30	0	<b>108</b>	11	<b>1390</b>
<b>Total</b>	247	3223	1459	0	<b>4929</b>	43	1901	646	1312	3	<b>3862</b>	67	1464	3168	171	0	<b>4803</b>	25	292	518	246	0	<b>1056</b>	139	<b>14650</b>
<b>% Approach</b>	5.0%	65.4%	29.6%	0%	-	-	49.2%	16.7%	34.0%	0.1%	-	-	30.5%	66.0%	3.6%	0%	-	-	27.7%	49.1%	23.3%	0%	-	-	-
<b>% Total</b>	1.7%	22.0%	10.0%	0%	<b>33.6%</b>	-	13.0%	4.4%	9.0%	0%	<b>26.4%</b>	-	10.0%	21.6%	1.2%	0%	<b>32.8%</b>	-	2.0%	3.5%	1.7%	0%	<b>7.2%</b>	-	-
<b>Lights</b>	240	3071	1418	0	<b>4729</b>	-	1791	627	1176	3	<b>3597</b>	-	1345	3037	161	0	<b>4543</b>	-	268	487	232	0	<b>987</b>	-	13856
<b>% Lights</b>	97.2%	95.3%	97.2%	0%	<b>95.9%</b>	-	94.2%	97.1%	89.6%	100%	<b>93.1%</b>	-	91.9%	95.9%	94.2%	0%	<b>94.6%</b>	-	91.8%	94.0%	94.3%	0%	<b>93.5%</b>	-	94.6%
<b>Articulated Trucks and Single-Unit Trucks</b>	4	26	25	0	<b>55</b>	-	42	8	18	0	<b>68</b>	-	12	33	4	0	<b>49</b>	-	5	1	4	0	<b>10</b>	-	182
<b>% Articulated Trucks and Single-Unit Trucks</b>	1.6%	0.8%	1.7%	0%	<b>1.1%</b>	-	2.2%	1.2%	1.4%	0%	<b>1.8%</b>	-	0.8%	1.0%	2.3%	0%	<b>1.0%</b>	-	1.7%	0.2%	1.6%	0%	<b>0.9%</b>	-	1.2%
<b>Buses</b>	3	126	16	0	<b>145</b>	-	68	11	118	0	<b>197</b>	-	107	98	6	0	<b>211</b>	-	19	30	10	0	<b>59</b>	-	612
<b>% Buses</b>	1.2%	3.9%	1.1%	0%	<b>2.9%</b>	-	3.6%	1.7%	9.0%	0%	<b>5.1%</b>	-	7.3%	3.1%	3.5%	0%	<b>4.4%</b>	-	6.5%	5.8%	4.1%	0%	<b>5.6%</b>	-	4.2%
Pedestrians	-	-	-	-	-	43	-	-	-	-	-	67	-	-	-	-	-	25	-	-	-	-	-	134	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	96.4%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	3.6%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**Washington St at Retreat/Vernon St - TMC**

Tue Jan 23, 2018

Full Length (6 AM-6 PM)

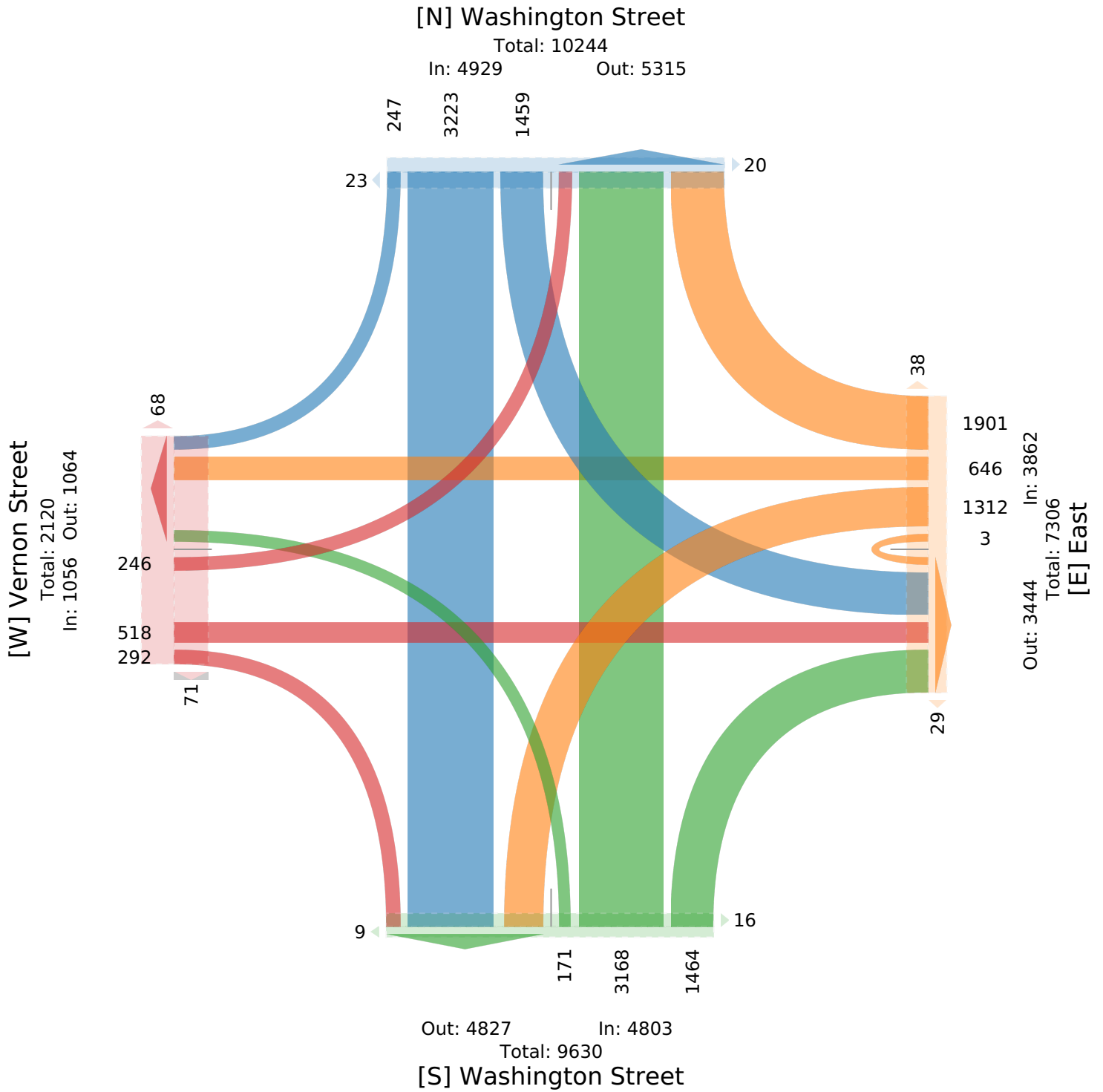
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US



**Washington St at Retreat/Vernon St - TMC**

Tue Jan 23, 2018

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,

Kensington, CT, 12345, US

Leg Direction	Washington Street Southbound						East Westbound						Washington Street Northbound						Vernon Street Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2018-01-23 7:30AM	3	44	35	0	82	0	32	11	29	0	72	1	45	88	3	0	136	0	7	23	7	0	37	0	327
7:45AM	5	59	39	0	103	3	32	21	35	0	88	2	45	82	5	0	132	0	13	20	7	0	40	5	363
8:00AM	11	77	45	0	133	2	31	17	32	0	80	1	64	102	7	0	173	2	16	25	15	0	56	0	442
8:15AM	8	50	41	0	99	3	29	12	24	0	65	2	58	95	6	0	159	0	15	28	9	0	52	3	375
<b>Total</b>	27	230	160	0	417	8	124	61	120	0	305	6	212	367	21	0	600	2	51	96	38	0	185	8	1507
<b>% Approach</b>	6.5%	55.2%	38.4%	0%	-	-	40.7%	20.0%	39.3%	0%	-	-	35.3%	61.2%	3.5%	0%	-	-	27.6%	51.9%	20.5%	0%	-	-	-
<b>% Total</b>	1.8%	15.3%	10.6%	0%	27.7%	-	8.2%	4.0%	8.0%	0%	20.2%	-	14.1%	24.4%	1.4%	0%	39.8%	-	3.4%	6.4%	2.5%	0%	12.3%	-	-
<b>PHF</b>	0.614	0.747	0.889	-	0.784	-	0.969	0.726	0.857	-	0.866	-	0.828	0.900	0.750	-	0.867	-	0.797	0.857	0.633	-	0.826	-	0.852
<b>Lights</b>	27	200	153	0	380	-	114	60	95	0	269	-	203	350	20	0	573	-	46	84	38	0	168	-	1390
<b>% Lights</b>	100%	87.0%	95.6%	0%	91.1%	-	91.9%	98.4%	79.2%	0%	88.2%	-	95.8%	95.4%	95.2%	0%	95.5%	-	90.2%	87.5%	100%	0%	90.8%	-	92.2%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	4	3	0	7	-	3	0	2	0	5	-	0	2	0	0	2	-	0	0	0	0	0	-	14
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	1.7%	1.9%	0%	1.7%	-	2.4%	0%	1.7%	0%	1.6%	-	0%	0.5%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0.9%
<b>Buses</b>	0	26	4	0	30	-	7	1	23	0	31	-	9	15	1	0	25	-	5	12	0	0	17	-	103
<b>% Buses</b>	0%	11.3%	2.5%	0%	7.2%	-	5.6%	1.6%	19.2%	0%	10.2%	-	4.2%	4.1%	4.8%	0%	4.2%	-	9.8%	12.5%	0%	0%	9.2%	-	6.8%
<b>Pedestrians</b>	-	-	-	-	-	8	-	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	8	-
<b>% Pedestrians</b>	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn



**Washington St at Retreat/Vernon St - TMC**

Tue Jan 23, 2018

AM Peak (7:30 AM - 8:30 AM)

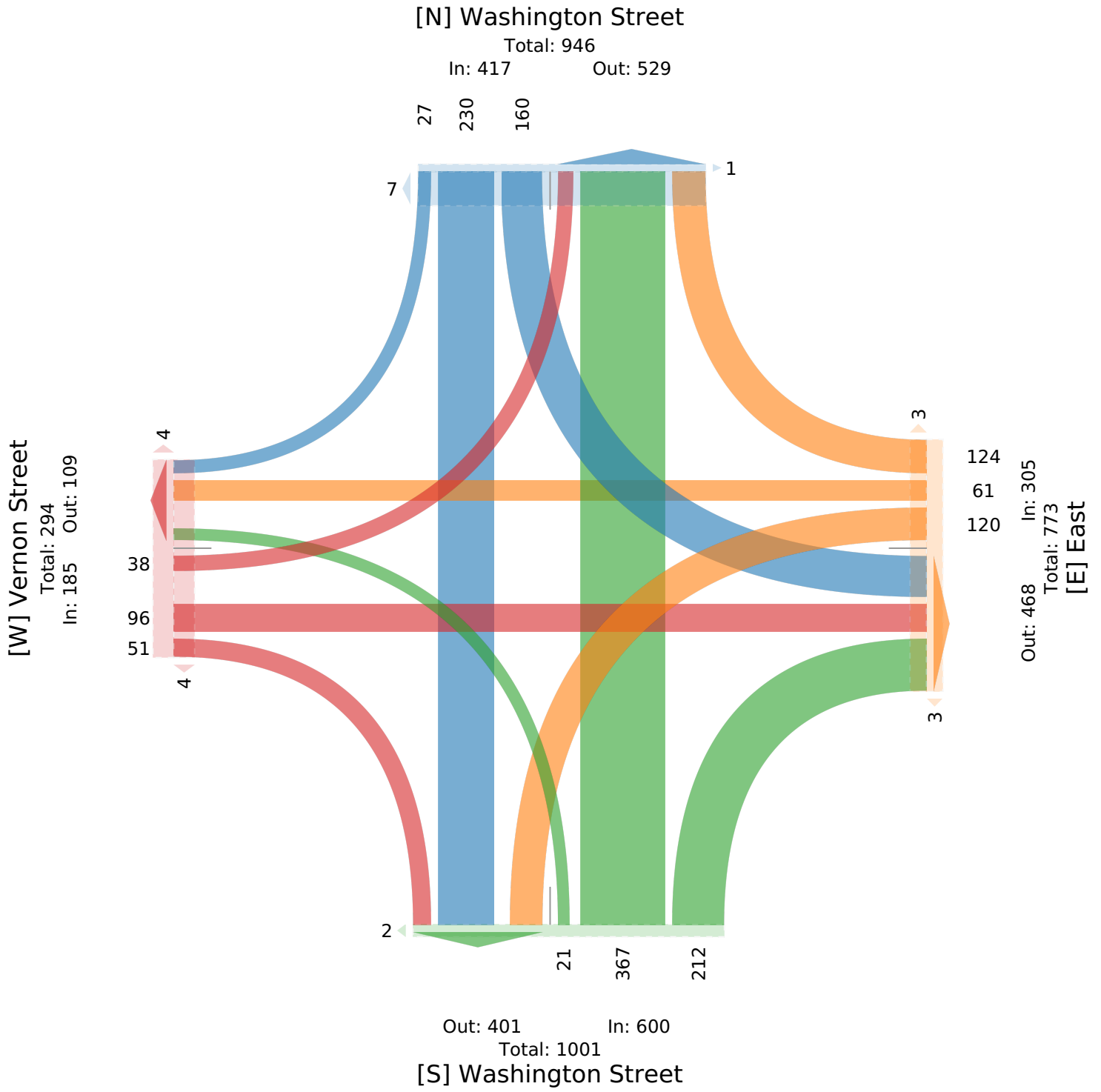
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US



Washington St at Retreat/Vernon St - TMC

Tue Jan 23, 2018

Midday Peak (1 PM - 2 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,

Kensington, CT, 12345, US

Leg Direction	Washington Street Southbound						East Westbound						Washington Street Northbound						Vernon Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2018-01-23 1:00PM	3	72	23	0	98	0	45	14	29	0	88	1	19	57	5	0	81	0	4	7	12	0	23	2	290
1:15PM	6	64	24	0	94	0	40	14	22	0	76	0	21	56	3	0	80	1	3	10	1	0	14	5	264
1:30PM	3	58	33	0	94	0	40	17	34	0	91	0	34	74	1	0	109	0	5	6	3	0	14	1	308
1:45PM	6	67	30	0	103	1	43	10	47	0	100	0	28	59	3	0	90	0	7	12	2	0	21	3	314
<b>Total</b>	18	261	110	0	389	1	168	55	132	0	355	1	102	246	12	0	360	1	19	35	18	0	72	11	1176
<b>% Approach</b>	4.6%	67.1%	28.3%	0%	-	-	47.3%	15.5%	37.2%	0%	-	-	28.3%	68.3%	3.3%	0%	-	-	26.4%	48.6%	25.0%	0%	-	-	-
<b>% Total</b>	1.5%	22.2%	9.4%	0%	33.1%	-	14.3%	4.7%	11.2%	0%	30.2%	-	8.7%	20.9%	1.0%	0%	30.6%	-	1.6%	3.0%	1.5%	0%	6.1%	-	-
<b>PHF</b>	0.750	0.906	0.833	-	0.944	-	0.933	0.809	0.702	-	0.888	-	0.750	0.831	0.600	-	0.826	-	0.679	0.729	0.375	-	0.783	-	0.936
<b>Lights</b>	18	255	105	0	378	-	157	53	118	0	328	-	95	238	12	0	345	-	17	32	16	0	65	-	1116
<b>% Lights</b>	100%	97.7%	95.5%	0%	97.2%	-	93.5%	96.4%	89.4%	0%	92.4%	-	93.1%	96.7%	100%	0%	95.8%	-	89.5%	91.4%	88.9%	0%	90.3%	-	94.9%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	3	4	0	7	-	5	2	2	0	9	-	2	5	0	0	7	-	0	1	1	0	2	-	25
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	1.1%	3.6%	0%	1.8%	-	3.0%	3.6%	1.5%	0%	2.5%	-	2.0%	2.0%	0%	0%	1.9%	-	0%	2.9%	5.6%	0%	2.8%	-	2.1%
<b>Buses</b>	0	3	1	0	4	-	6	0	12	0	18	-	5	3	0	0	8	-	2	2	1	0	5	-	35
<b>% Buses</b>	0%	1.1%	0.9%	0%	1.0%	-	3.6%	0%	9.1%	0%	5.1%	-	4.9%	1.2%	0%	0%	2.2%	-	10.5%	5.7%	5.6%	0%	6.9%	-	3.0%
<b>Pedestrians</b>	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	10
<b>% Pedestrians</b>	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	90.9%
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	1
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	9.1%

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**Washington St at Retreat/Vernon St - TMC**

Tue Jan 23, 2018

Midday Peak (1 PM - 2 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

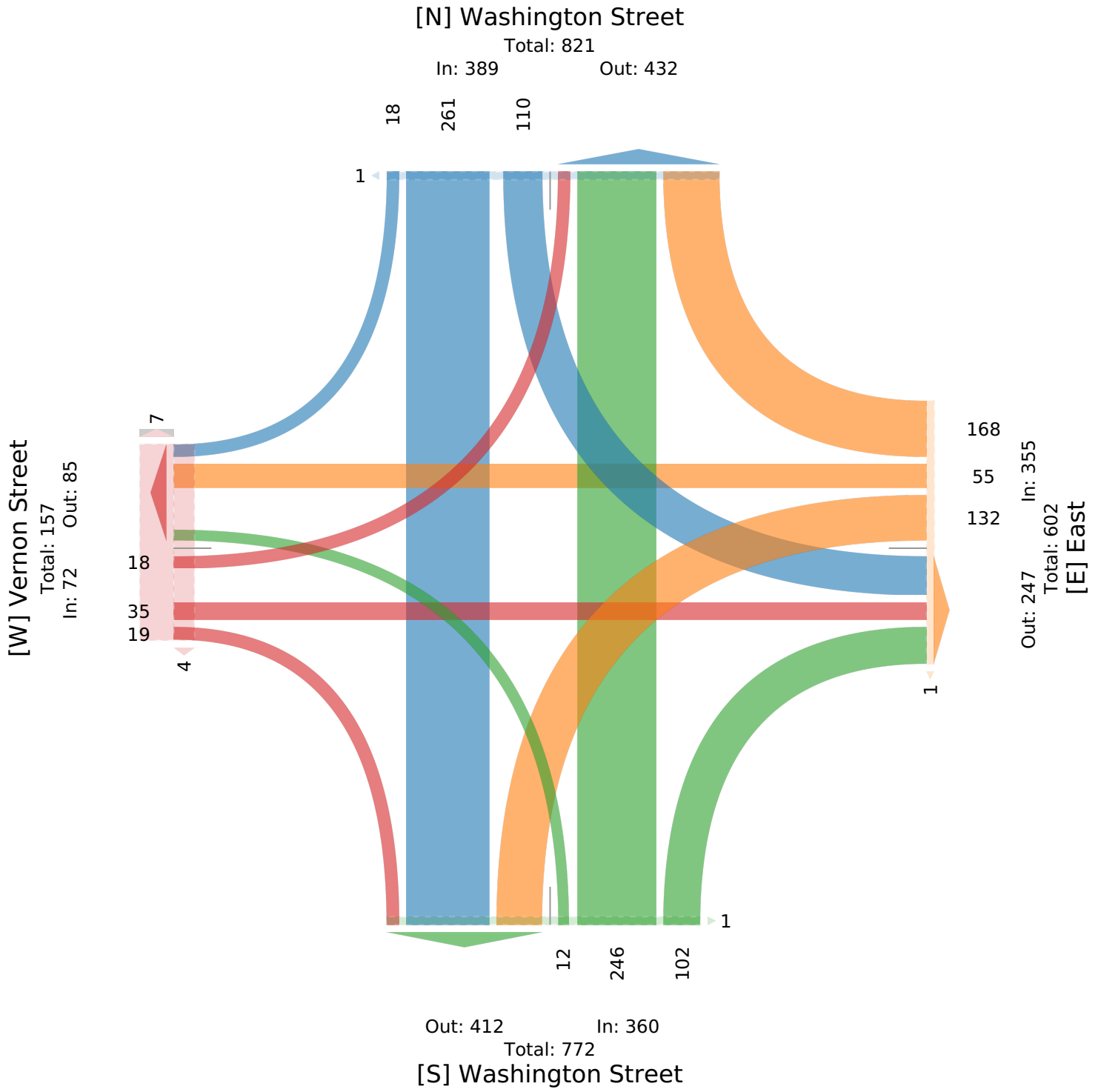
All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,

Kensington, CT, 12345, US



**Washington St at Retreat/Vernon St - TMC**

Tue Jan 23, 2018

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,

Kensington, CT, 12345, US

Leg Direction	Washington Street Southbound						East Westbound						Washington Street Northbound						Vernon Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2018-01-23 3:30PM	12	111	31	0	154	6	77	24	50	0	151	1	24	95	6	0	125	0	10	11	7	0	28	8	458
3:45PM	7	115	30	0	152	1	59	26	38	0	123	0	31	82	8	0	121	0	5	6	7	0	18	2	414
4:00PM	21	114	27	0	162	0	68	17	45	0	130	1	22	94	5	0	121	1	8	5	4	0	17	4	430
4:15PM	9	117	19	0	145	3	54	21	49	0	124	2	32	96	11	0	139	1	21	28	17	0	66	6	474
<b>Total</b>	49	457	107	0	613	10	258	88	182	0	528	4	109	367	30	0	506	2	44	50	35	0	129	20	1776
<b>% Approach</b>	8.0%	74.6%	17.5%	0%	-	-	48.9%	16.7%	34.5%	0%	-	-	21.5%	72.5%	5.9%	0%	-	-	34.1%	38.8%	27.1%	0%	-	-	-
<b>% Total</b>	2.8%	25.7%	6.0%	0%	34.5%	-	14.5%	5.0%	10.2%	0%	29.7%	-	6.1%	20.7%	1.7%	0%	28.5%	-	2.5%	2.8%	2.0%	0%	7.3%	-	-
<b>PHF</b>	0.583	0.976	0.863	-	0.946	-	0.838	0.846	0.910	-	0.874	-	0.852	0.956	0.682	-	0.910	-	0.524	0.446	0.515	-	0.489	-	0.937
<b>Lights</b>	48	439	105	0	592	-	250	88	156	0	494	-	93	349	28	0	470	-	42	47	33	0	122	-	1678
<b>% Lights</b>	98.0%	96.1%	98.1%	0%	96.6%	-	96.9%	100%	85.7%	0%	93.6%	-	85.3%	95.1%	93.3%	0%	92.9%	-	95.5%	94.0%	94.3%	0%	94.6%	-	94.5%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	1	2	0	3	-	3	0	3	0	6	-	1	0	0	0	1	-	0	0	0	0	0	-	10
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	0.2%	1.9%	0%	0.5%	-	1.2%	0%	1.6%	0%	1.1%	-	0.9%	0%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.6%
<b>Buses</b>	1	17	0	0	18	-	5	0	23	0	28	-	15	18	2	0	35	-	2	3	2	0	7	-	88
<b>% Buses</b>	2.0%	3.7%	0%	0%	2.9%	-	1.9%	0%	12.6%	0%	5.3%	-	13.8%	4.9%	6.7%	0%	6.9%	-	4.5%	6.0%	5.7%	0%	5.4%	-	5.0%
<b>Pedestrians</b>	-	-	-	-	-	10	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	19	-
<b>% Pedestrians</b>	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	95.0%	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	5.0%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn



**Washington St at Retreat/Vernon St - TMC**

Tue Jan 23, 2018

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

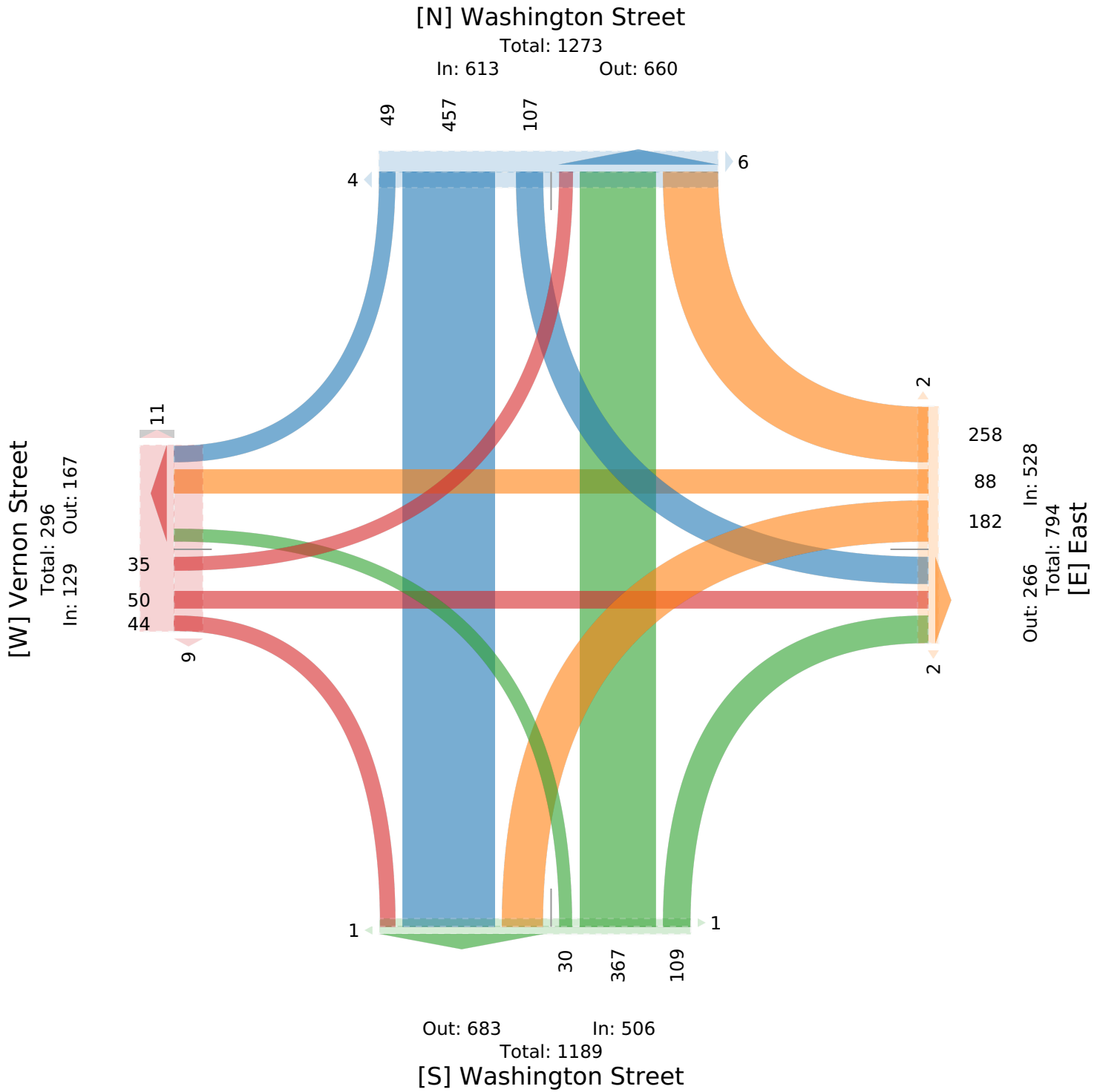
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 489863, Location: 41.751402, -72.683069

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US



# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

Washington St at Vernon/Retreat Avenue  
Hartford, Connecticut

File Name : 23030  
Site Code : 23030  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Washington Street From North					Retreat Avenue From East					Washington Street From South					Vernon Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	49	40	41	2	132	33	77	4	0	114	5	41	4	2	52	14	96	35	2	147	445
04:15 PM	48	53	42	2	145	33	57	3	0	93	10	52	15	2	79	17	84	26	2	129	446
04:30 PM	25	47	31	3	106	38	40	18	0	96	10	63	6	0	79	11	57	20	1	89	370
04:45 PM	7	119	25	3	154	51	24	36	2	113	27	57	1	1	86	5	13	4	4	26	379
<b>Total</b>	<b>129</b>	<b>259</b>	<b>139</b>	<b>10</b>	<b>537</b>	<b>155</b>	<b>198</b>	<b>61</b>	<b>2</b>	<b>416</b>	<b>52</b>	<b>213</b>	<b>26</b>	<b>5</b>	<b>296</b>	<b>47</b>	<b>250</b>	<b>85</b>	<b>9</b>	<b>391</b>	<b>1640</b>
05:00 PM	10	104	20	2	136	44	29	41	2	116	20	73	1	0	94	6	10	4	2	22	368
05:15 PM	7	76	22	1	106	35	16	34	0	85	22	53	2	0	77	3	5	1	1	10	278
05:30 PM	4	81	20	0	105	33	20	30	2	85	21	35	3	0	59	3	8	2	1	14	263
05:45 PM	12	68	20	0	100	35	16	22	1	74	20	39	2	1	62	8	8	4	2	22	258
<b>Total</b>	<b>33</b>	<b>329</b>	<b>82</b>	<b>3</b>	<b>447</b>	<b>147</b>	<b>81</b>	<b>127</b>	<b>5</b>	<b>360</b>	<b>83</b>	<b>200</b>	<b>8</b>	<b>1</b>	<b>292</b>	<b>20</b>	<b>31</b>	<b>11</b>	<b>6</b>	<b>68</b>	<b>1167</b>
<b>Grand Total</b>	<b>162</b>	<b>588</b>	<b>221</b>	<b>13</b>	<b>984</b>	<b>302</b>	<b>279</b>	<b>188</b>	<b>7</b>	<b>776</b>	<b>135</b>	<b>413</b>	<b>34</b>	<b>6</b>	<b>588</b>	<b>67</b>	<b>281</b>	<b>96</b>	<b>15</b>	<b>459</b>	<b>2807</b>
<b>Apprch %</b>	<b>16.5</b>	<b>59.8</b>	<b>22.5</b>	<b>1.3</b>		<b>38.9</b>	<b>36</b>	<b>24.2</b>	<b>0.9</b>		<b>23</b>	<b>70.2</b>	<b>5.8</b>	<b>1</b>		<b>14.6</b>	<b>61.2</b>	<b>20.9</b>	<b>3.3</b>		
<b>Total %</b>	<b>5.8</b>	<b>20.9</b>	<b>7.9</b>	<b>0.5</b>	<b>35.1</b>	<b>10.8</b>	<b>9.9</b>	<b>6.7</b>	<b>0.2</b>	<b>27.6</b>	<b>4.8</b>	<b>14.7</b>	<b>1.2</b>	<b>0.2</b>	<b>20.9</b>	<b>2.4</b>	<b>10</b>	<b>3.4</b>	<b>0.5</b>	<b>16.4</b>	
<b>Lights</b>	<b>160</b>	<b>585</b>	<b>209</b>	<b>12</b>	<b>966</b>	<b>285</b>	<b>273</b>	<b>179</b>	<b>7</b>	<b>744</b>	<b>128</b>	<b>407</b>	<b>33</b>	<b>6</b>	<b>574</b>	<b>67</b>	<b>272</b>	<b>95</b>	<b>15</b>	<b>449</b>	<b>2733</b>
<b>% Lights</b>	<b>98.8</b>	<b>99.5</b>	<b>94.6</b>	<b>92.3</b>	<b>98.2</b>	<b>94.4</b>	<b>97.8</b>	<b>95.2</b>	<b>100</b>	<b>95.9</b>	<b>94.8</b>	<b>98.5</b>	<b>97.1</b>	<b>100</b>	<b>97.6</b>	<b>100</b>	<b>96.8</b>	<b>99</b>	<b>100</b>	<b>97.8</b>	<b>97.4</b>
<b>Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>% Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7.7</b>	<b>0.1</b>	<b>0.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.1</b>
<b>Buses</b>	<b>2</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>17</b>	<b>16</b>	<b>6</b>	<b>9</b>	<b>0</b>	<b>31</b>	<b>7</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>72</b>
<b>% Buses</b>	<b>1.2</b>	<b>0.5</b>	<b>5.4</b>	<b>0</b>	<b>1.7</b>	<b>5.3</b>	<b>2.2</b>	<b>4.8</b>	<b>0</b>	<b>4</b>	<b>5.2</b>	<b>1.5</b>	<b>2.9</b>	<b>0</b>	<b>2.4</b>	<b>0</b>	<b>3.2</b>	<b>1</b>	<b>0</b>	<b>2.2</b>	<b>2.6</b>

# Connecticut Counts LLC

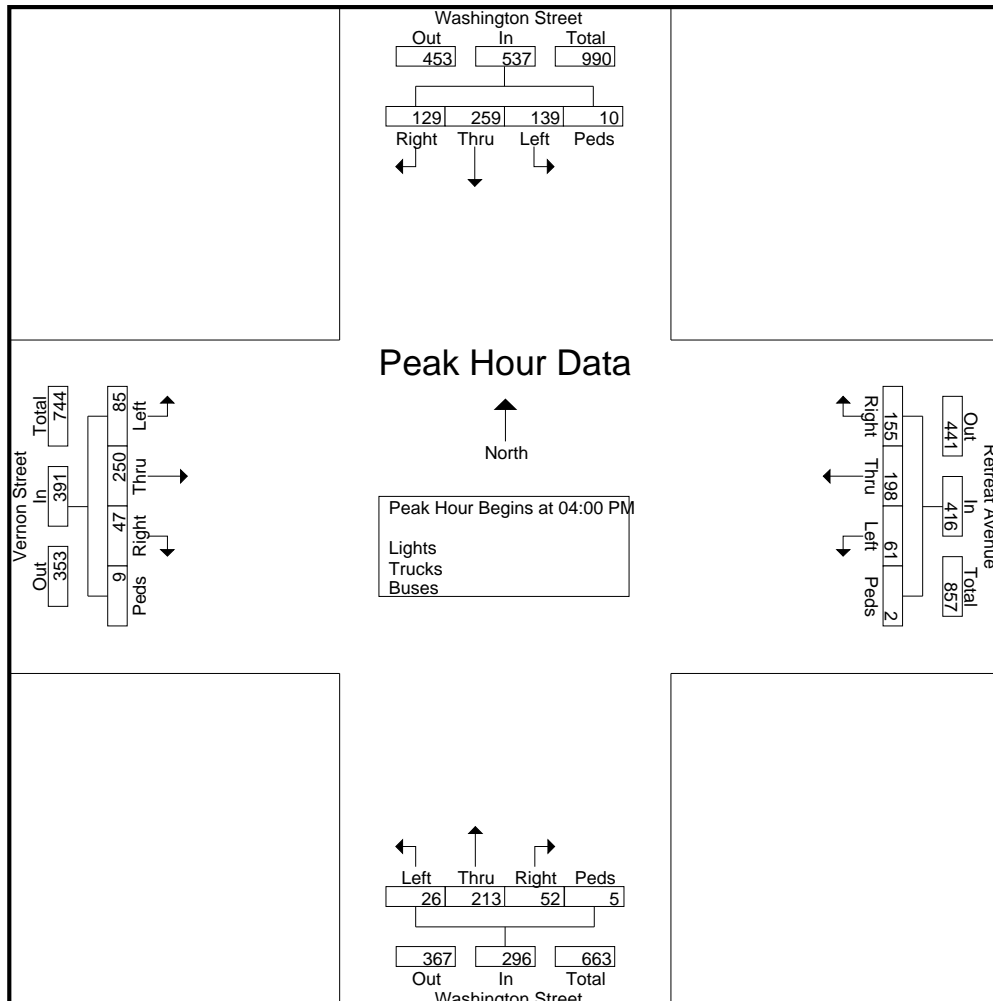
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23030  
 Site Code : 23030  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Washington Street From North					Retreat Avenue From East					Washington Street From South					Vernon Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	49	40	41	2	132	33	77	4	0	114	5	41	4	2	52	14	96	35	2	147	445
04:15 PM	48	53	42	2	145	33	57	3	0	93	10	52	15	2	79	17	84	26	2	129	446
04:30 PM	25	47	31	3	106	38	40	18	0	96	10	63	6	0	79	11	57	20	1	89	370
04:45 PM	7	119	25	3	154	51	24	36	2	113	27	57	1	1	86	5	13	4	4	26	379
Total Volume	129	259	139	10	537	155	198	61	2	416	52	213	26	5	296	47	250	85	9	391	1640
% App. Total	24	48.2	25.9	1.9		37.3	47.6	14.7	0.5		17.6	72	8.8	1.7		12	63.9	21.7	2.3		
PHF	.658	.544	.827	.833	.872	.760	.643	.424	.250	.912	.481	.845	.433	.625	.860	.691	.651	.607	.563	.665	.919



# Connecticut Counts LLC

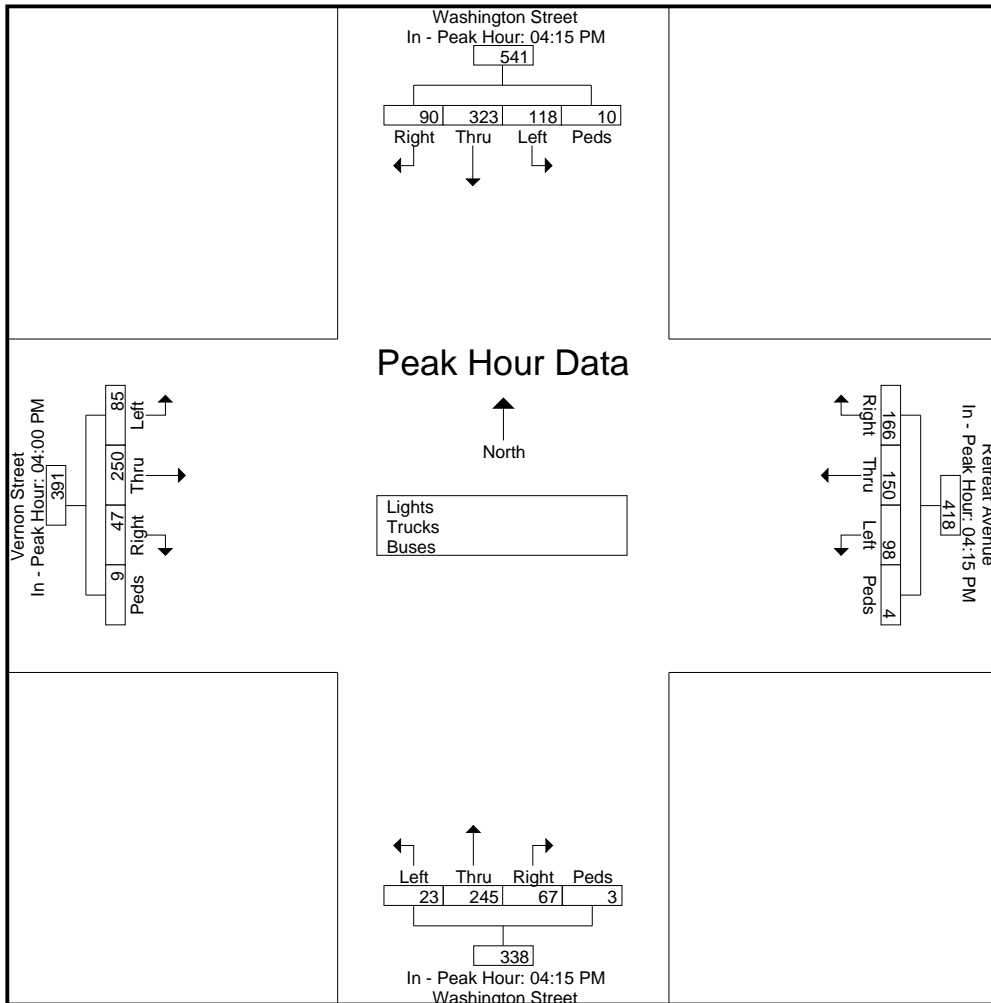
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23030  
 Site Code : 23030  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Washington Street From North					Retreat Avenue From East					Washington Street From South					Vernon Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM					04:15 PM					04:15 PM					04:00 PM				
+0 mins.	48	53	42	2	145	33	57	3	0	93	10	52	15	2	79	14	96	35	2	147
+15 mins.	25	47	31	3	106	38	40	18	0	96	10	63	6	0	79	17	84	26	2	129
+30 mins.	7	119	25	3	154	51	24	36	2	113	27	57	1	1	86	11	57	20	1	89
+45 mins.	10	104	20	2	136	44	29	41	2	116	20	73	1	0	94	5	13	4	4	26
Total Volume	90	323	118	10	541	166	150	98	4	418	67	245	23	3	338	47	250	85	9	391
% App. Total	16.6	59.7	21.8	1.8		39.7	35.9	23.4	1		19.8	72.5	6.8	0.9		12	63.9	21.7	2.3	
PHF	.469	.679	.702	.833	.878	.814	.658	.598	.500	.901	.620	.839	.383	.375	.899	.691	.651	.607	.563	.665





**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Jefferson Street at Seymour Street  
Hartford, Connecticut

File Name : 23037  
Site Code : 23037  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Seymour Street From North					Jefferson Street From East					Seymour Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	2	2	7	21	53	3	84	19	6	6	4	35	23	27	4	2	56	177
07:15 AM	0	0	0	2	2	3	31	63	1	98	17	5	10	1	33	32	29	12	0	73	206
07:30 AM	0	0	0	1	1	9	38	67	3	117	19	4	9	0	32	19	61	14	0	94	244
07:45 AM	0	0	0	2	2	6	49	85	4	144	21	3	5	1	30	20	47	6	0	73	249
Total	0	0	0	7	7	25	139	268	11	443	76	18	30	6	130	94	164	36	2	296	876
08:00 AM	0	0	0	0	0	3	56	53	0	112	14	5	4	1	24	25	45	22	2	94	230
08:15 AM	1	0	0	1	2	13	43	60	0	116	13	3	5	1	22	29	39	10	4	82	222
08:30 AM	0	0	0	0	0	6	46	59	1	112	17	4	3	4	28	13	53	12	5	83	223
08:45 AM	0	1	0	1	2	6	49	50	1	106	18	7	9	2	36	22	53	6	6	87	231
Total	1	1	0	2	4	28	194	222	2	446	62	19	21	8	110	89	190	50	17	346	906
Grand Total	1	1	0	9	11	53	333	490	13	889	138	37	51	14	240	183	354	86	19	642	1782
Apprch %	9.1	9.1	0	81.8		6	37.5	55.1	1.5		57.5	15.4	21.2	5.8		28.5	55.1	13.4	3		
Total %	0.1	0.1	0	0.5	0.6	3	18.7	27.5	0.7	49.9	7.7	2.1	2.9	0.8	13.5	10.3	19.9	4.8	1.1	36	
Lights	1	1	0	9	11	48	310	489	13	860	138	37	51	14	240	183	328	81	18	610	1721
% Lights	100	100	0	100	100	90.6	93.1	99.8	100	96.7	100	100	100	100	100	100	92.7	94.2	94.7	95	96.6
Trucks	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	2	0	1	3	8
% Trucks	0	0	0	0	0	1.9	1.2	0	0	0.6	0	0	0	0	0	0	0.6	0	5.3	0.5	0.4
Buses	0	0	0	0	0	4	19	1	0	24	0	0	0	0	0	0	24	5	0	29	53
% Buses	0	0	0	0	0	7.5	5.7	0.2	0	2.7	0	0	0	0	0	0	6.8	5.8	0	4.5	3

# Connecticut Counts LLC

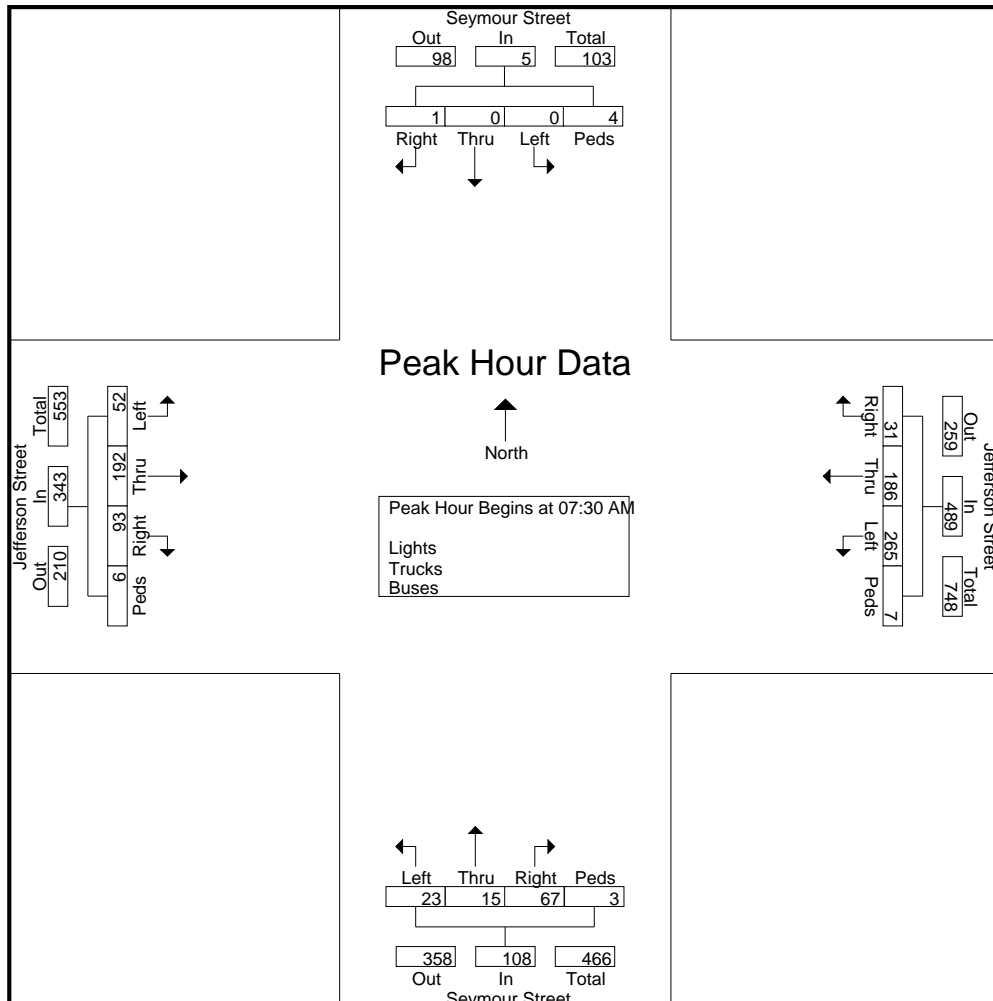
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23037  
 Site Code : 23037  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Seymour Street From North					Jefferson Street From East					Seymour Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	0	0	0	1	1	9	38	67	3	117	19	4	9	0	32	19	61	14	0	94	244
07:45 AM	0	0	0	2	2	6	49	85	4	144	21	3	5	1	30	20	47	6	0	73	249
08:00 AM	0	0	0	0	0	3	56	53	0	112	14	5	4	1	24	25	45	22	2	94	230
08:15 AM	1	0	0	1	2	13	43	60	0	116	13	3	5	1	22	29	39	10	4	82	222
Total Volume	1	0	0	4	5	31	186	265	7	489	67	15	23	3	108	93	192	52	6	343	945
% App. Total	20	0	0	80		6.3	38	54.2	1.4		62	13.9	21.3	2.8		27.1	56	15.2	1.7		
PHF	.250	.000	.000	.500	.625	.596	.830	.779	.438	.849	.798	.750	.639	.750	.844	.802	.787	.591	.375	.912	.949



# Connecticut Counts LLC

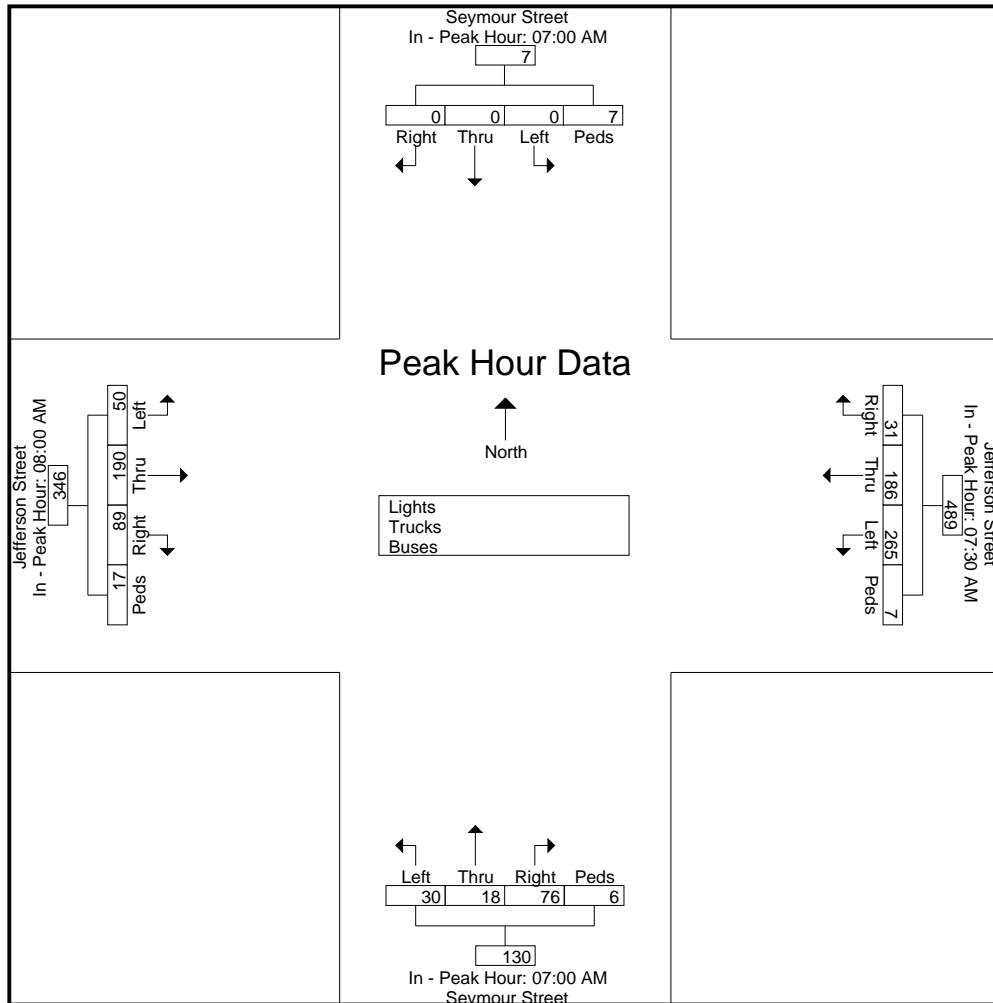
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23037  
 Site Code : 23037  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Seymour Street From North					Jefferson Street From East					Seymour Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM					07:30 AM					07:00 AM					08:00 AM				
+0 mins.	0	0	0	2	2	9	38	67	3	117	19	6	6	4	35	25	45	22	2	94
+15 mins.	0	0	0	2	2	6	49	85	4	144	17	5	10	1	33	29	39	10	4	82
+30 mins.	0	0	0	1	1	3	56	53	0	112	19	4	9	0	32	13	53	12	5	83
+45 mins.	0	0	0	2	2	13	43	60	0	116	21	3	5	1	30	22	53	6	6	87
Total Volume	0	0	0	7	7	31	186	265	7	489	76	18	30	6	130	89	190	50	17	346
% App. Total	0	0	0	100		6.3	38	54.2	1.4		58.5	13.8	23.1	4.6		25.7	54.9	14.5	4.9	
PHF	.000	.000	.000	.875	.875	.596	.830	.779	.438	.849	.905	.750	.750	.375	.929	.767	.896	.568	.708	.920



# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

Jefferson Street at Seymour Street  
Hartford, Connecticut

File Name : 23038  
Site Code : 23038  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Seymour Street From North					Jefferson Street From East					Seymour Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	3	3	10	78	39	5	132	42	12	19	5	78	3	90	20	0	113	326
04:15 PM	0	1	0	1	2	8	62	28	0	98	48	17	16	0	81	0	71	9	2	82	263
04:30 PM	0	0	0	2	2	8	69	34	0	111	54	19	25	3	101	14	86	11	4	115	329
04:45 PM	0	0	0	2	2	7	61	31	1	100	57	17	22	1	97	7	59	14	2	82	281
Total	0	1	0	8	9	33	270	132	6	441	201	65	82	9	357	24	306	54	8	392	1199
05:00 PM	1	0	0	5	6	6	79	26	2	113	53	19	22	2	96	2	60	16	2	80	295
05:15 PM	2	0	0	2	4	11	73	30	2	116	36	10	12	6	64	1	70	12	0	83	267
05:30 PM	0	0	0	1	1	13	67	26	0	106	39	10	23	5	77	6	59	10	4	79	263
05:45 PM	0	0	0	6	6	4	63	21	2	90	34	8	11	0	53	1	43	3	0	47	196
Total	3	0	0	14	17	34	282	103	6	425	162	47	68	13	290	10	232	41	6	289	1021
Grand Total	3	1	0	22	26	67	552	235	12	866	363	112	150	22	647	34	538	95	14	681	2220
Apprch %	11.5	3.8	0	84.6		7.7	63.7	27.1	1.4		56.1	17.3	23.2	3.4		5	79	14	2.1		
Total %	0.1	0	0	1	1.2	3	24.9	10.6	0.5	39	16.4	5	6.8	1	29.1	1.5	24.2	4.3	0.6	30.7	
Lights	3	1	0	20	24	65	542	235	12	854	363	112	150	14	639	34	515	92	14	655	2172
% Lights	100	100	0	90.9	92.3	97	98.2	100	100	98.6	100	100	100	63.6	98.8	100	95.7	96.8	100	96.2	97.8
Trucks	0	0	0	2	2	0	0	0	0	0	0	0	0	8	8	0	0	0	0	0	10
% Trucks	0	0	0	9.1	7.7	0	0	0	0	0	0	0	0	36.4	1.2	0	0	0	0	0	0.5
Buses	0	0	0	0	0	2	10	0	0	12	0	0	0	0	0	0	23	3	0	26	38
% Buses	0	0	0	0	0	3	1.8	0	0	1.4	0	0	0	0	0	0	4.3	3.2	0	3.8	1.7



# Connecticut Counts LLC

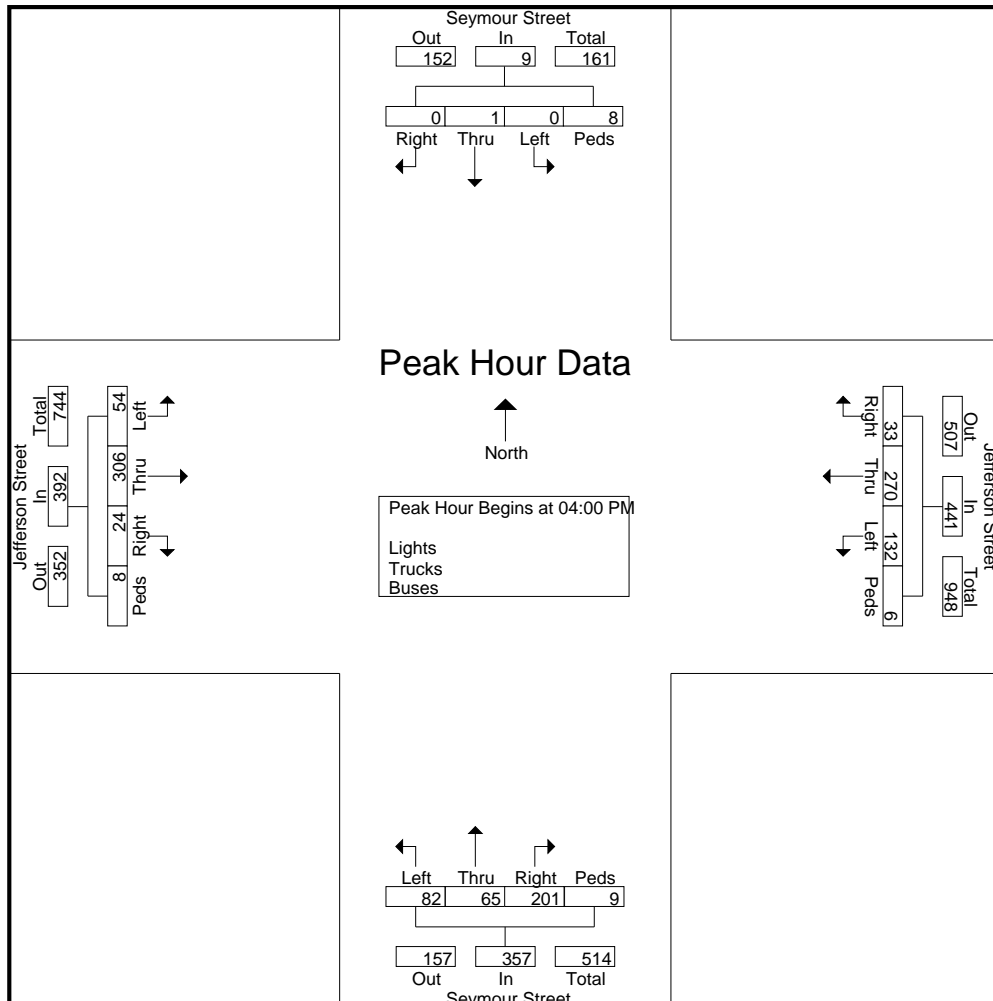
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23038  
 Site Code : 23038  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Seymour Street From North					Jefferson Street From East					Seymour Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	0	0	0	3	3	10	78	39	5	132	42	12	19	5	78	3	90	20	0	113	326
04:15 PM	0	1	0	1	2	8	62	28	0	98	48	17	16	0	81	0	71	9	2	82	263
04:30 PM	0	0	0	2	2	8	69	34	0	111	54	19	25	3	101	14	86	11	4	115	329
04:45 PM	0	0	0	2	2	7	61	31	1	100	57	17	22	1	97	7	59	14	2	82	281
Total Volume	0	1	0	8	9	33	270	132	6	441	201	65	82	9	357	24	306	54	8	392	1199
% App. Total	0	11.1	0	88.9		7.5	61.2	29.9	1.4		56.3	18.2	23	2.5		6.1	78.1	13.8	2		
PHF	.000	.250	.000	.667	.750	.825	.865	.846	.300	.835	.882	.855	.820	.450	.884	.429	.850	.675	.500	.852	.911



# Connecticut Counts LLC

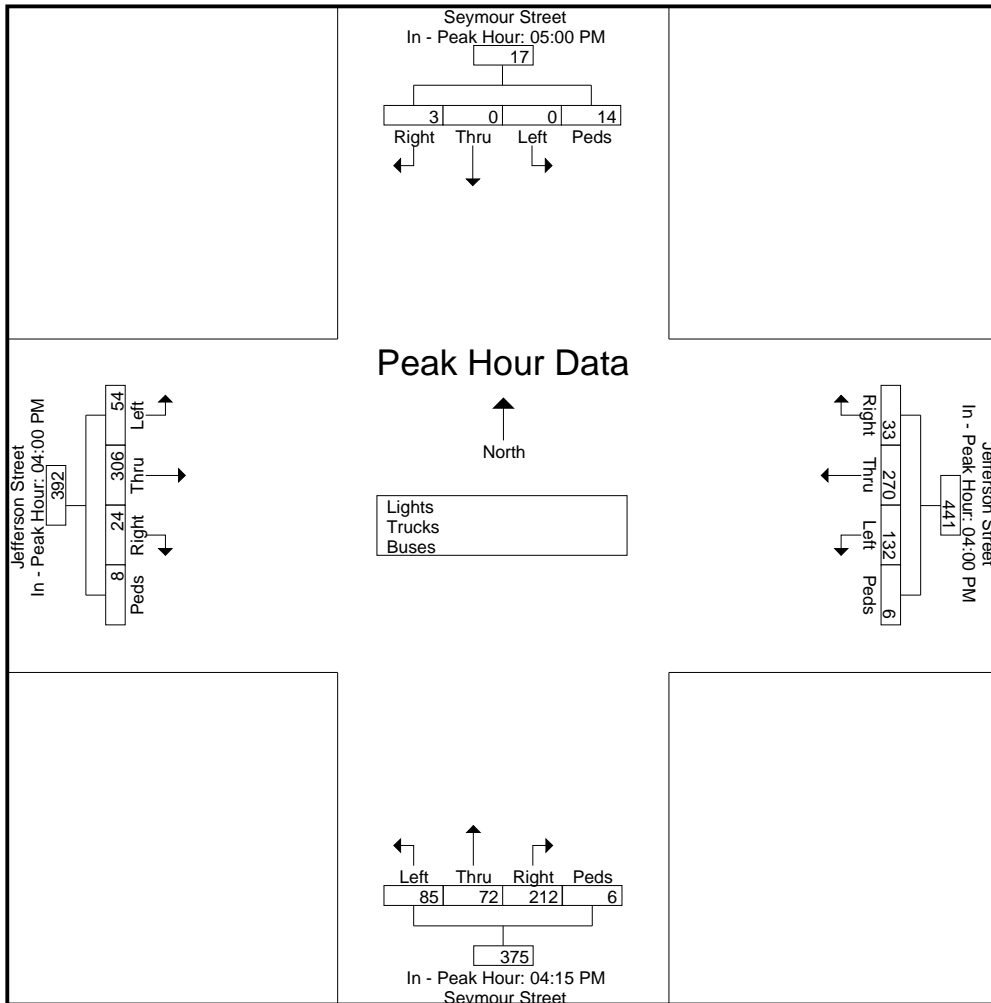
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23038  
 Site Code : 23038  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Seymour Street From North					Jefferson Street From East					Seymour Street From South					Jefferson Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM					04:00 PM					04:15 PM					04:00 PM				
+0 mins.	1	0	0	5	6	10	78	39	5	132	48	17	16	0	81	3	90	20	0	113
+15 mins.	2	0	0	2	4	8	62	28	0	98	54	19	25	3	101	0	71	9	2	82
+30 mins.	0	0	0	1	1	8	69	34	0	111	57	17	22	1	97	14	86	11	4	115
+45 mins.	0	0	0	6	6	7	61	31	1	100	53	19	22	2	96	7	59	14	2	82
Total Volume	3	0	0	14	17	33	270	132	6	441	212	72	85	6	375	24	306	54	8	392
% App. Total	17.6	0	0	82.4		7.5	61.2	29.9	1.4		56.5	19.2	22.7	1.6		6.1	78.1	13.8	2	
PHF	.375	.000	.000	.583	.708	.825	.865	.846	.300	.835	.930	.947	.850	.500	.928	.429	.850	.675	.500	.852



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Retreat Avenue at Seymour Street  
Hartford, Connecticut

File Name : 23031  
Site Code : 23031  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Seymour Street From North					Retreat Avenue From East					Parking Lot Dr From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	8	0	8	1	17	39	57	13	8	117	4	1	4	2	11	11	54	10	2	77	222
07:15 AM	22	1	16	1	40	54	66	15	6	141	7	0	1	1	9	18	46	22	10	96	286
07:30 AM	25	0	46	0	71	45	60	31	9	145	5	0	4	1	10	23	61	21	3	108	334
07:45 AM	20	0	10	2	32	43	59	30	10	142	5	1	3	0	9	27	30	21	13	91	274
Total	75	1	80	4	160	181	242	89	33	545	21	2	12	4	39	79	191	74	28	372	1116
08:00 AM	14	2	10	0	26	48	58	35	5	146	2	1	4	0	7	15	45	12	11	83	262
08:15 AM	10	1	15	2	28	37	59	27	8	131	8	0	4	1	13	18	46	13	8	85	257
08:30 AM	9	2	10	0	21	27	64	18	9	118	5	1	3	1	10	14	57	10	4	85	234
08:45 AM	6	1	6	0	13	19	56	21	8	104	4	0	1	0	5	17	34	13	1	65	187
Total	39	6	41	2	88	131	237	101	30	499	19	2	12	2	35	64	182	48	24	318	940
Grand Total	114	7	121	6	248	312	479	190	63	1044	40	4	24	6	74	143	373	122	52	690	2056
Apprch %	46	2.8	48.8	2.4		29.9	45.9	18.2	6		54.1	5.4	32.4	8.1		20.7	54.1	17.7	7.5		
Total %	5.5	0.3	5.9	0.3	12.1	15.2	23.3	9.2	3.1	50.8	1.9	0.2	1.2	0.3	3.6	7	18.1	5.9	2.5	33.6	
Lights	113	7	120	6	246	311	423	189	63	986	39	4	23	6	72	140	347	119	52	658	1962
% Lights	99.1	100	99.2	100	99.2	99.7	88.3	99.5	100	94.4	97.5	100	95.8	100	97.3	97.9	93	97.5	100	95.4	95.4
Trucks	1	0	1	0	2	1	5	0	0	6	0	0	0	0	0	0	1	2	0	3	11
% Trucks	0.9	0	0.8	0	0.8	0.3	1	0	0	0.6	0	0	0	0	0	0	0.3	1.6	0	0.4	0.5
Buses	0	0	0	0	0	0	51	1	0	52	1	0	1	0	2	3	25	1	0	29	83
% Buses	0	0	0	0	0	0	10.6	0.5	0	5	2.5	0	4.2	0	2.7	2.1	6.7	0.8	0	4.2	4

# Connecticut Counts LLC

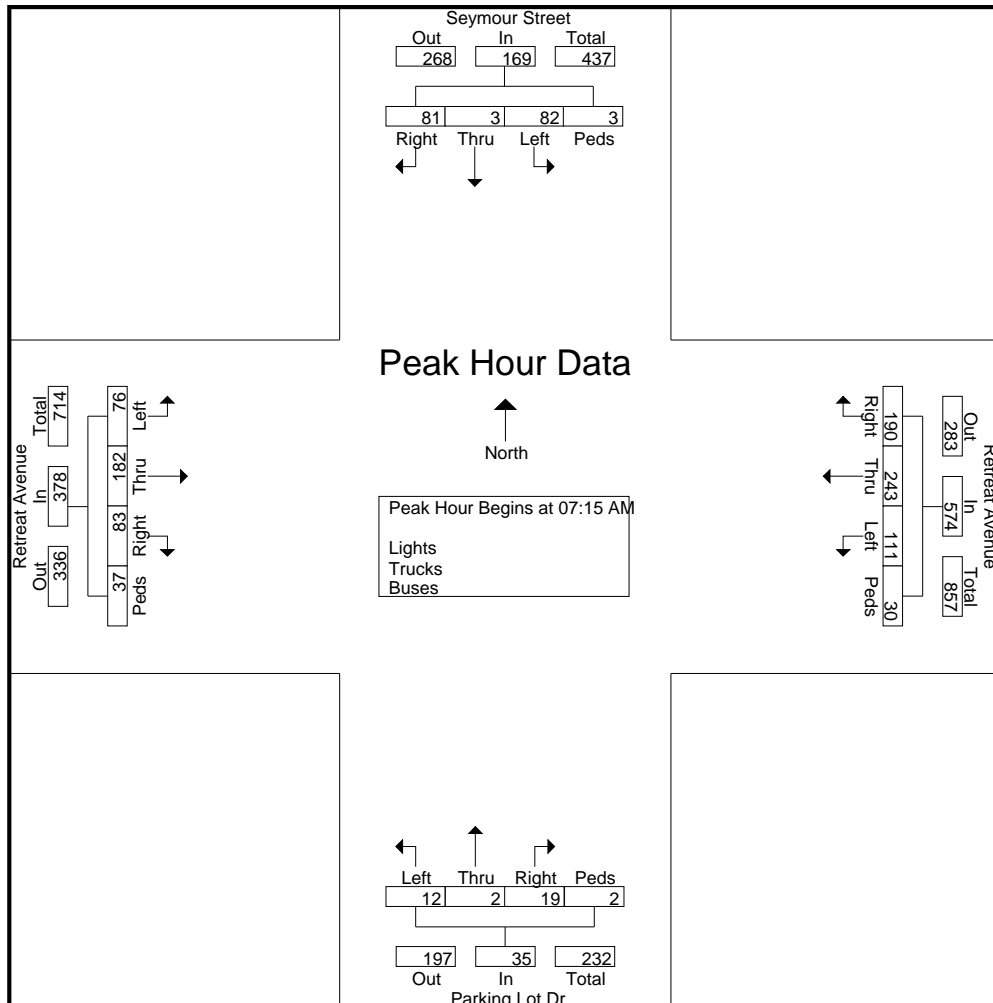
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23031  
Site Code : 23031  
Start Date : 5/12/2022  
Page No : 2

Start Time	Seymour Street From North					Retreat Avenue From East					Parking Lot Dr From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	22	1	16	1	40	54	66	15	6	141	7	0	1	1	9	18	46	22	10	96	286
07:30 AM	25	0	46	0	71	45	60	31	9	145	5	0	4	1	10	23	61	21	3	108	334
07:45 AM	20	0	10	2	32	43	59	30	10	142	5	1	3	0	9	27	30	21	13	91	274
08:00 AM	14	2	10	0	26	48	58	35	5	146	2	1	4	0	7	15	45	12	11	83	262
Total Volume	81	3	82	3	169	190	243	111	30	574	19	2	12	2	35	83	182	76	37	378	1156
% App. Total	47.9	1.8	48.5	1.8		33.1	42.3	19.3	5.2		54.3	5.7	34.3	5.7		22	48.1	20.1	9.8		
PHF	.810	.375	.446	.375	.595	.880	.920	.793	.750	.983	.679	.500	.750	.500	.875	.769	.746	.864	.712	.875	.865





# Connecticut Counts LLC

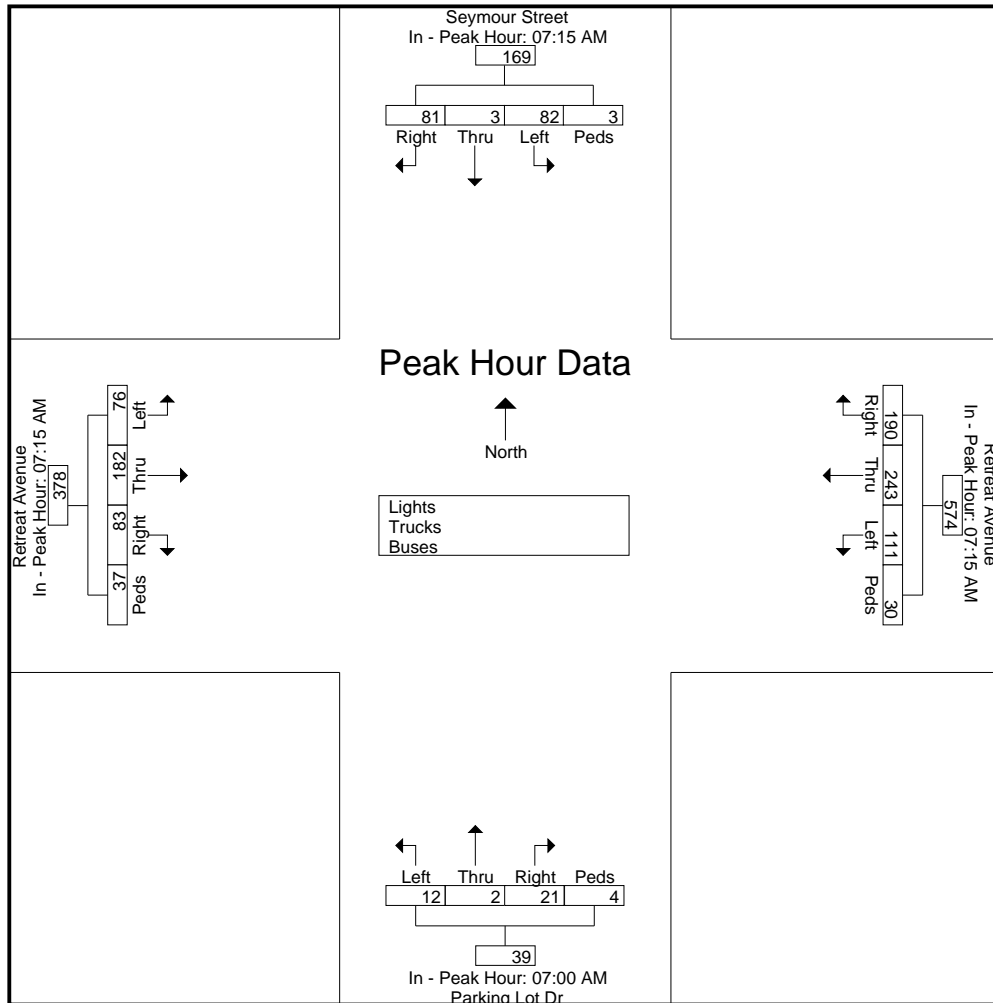
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23031  
 Site Code : 23031  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Seymour Street From North					Retreat Avenue From East					Parking Lot Dr From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					07:15 AM					07:00 AM					07:15 AM				
+0 mins.	22	1	16	1	40	54	66	15	6	141	4	1	4	2	11	18	46	22	10	96
+15 mins.	25	0	46	0	71	45	60	31	9	145	7	0	1	1	9	23	61	21	3	108
+30 mins.	20	0	10	2	32	43	59	30	10	142	5	0	4	1	10	27	30	21	13	91
+45 mins.	14	2	10	0	26	48	58	35	5	146	5	1	3	0	9	15	45	12	11	83
Total Volume	81	3	82	3	169	190	243	111	30	574	21	2	12	4	39	83	182	76	37	378
% App. Total	47.9	1.8	48.5	1.8		33.1	42.3	19.3	5.2		53.8	5.1	30.8	10.3		22	48.1	20.1	9.8	
PHF	.810	.375	.446	.375	.595	.880	.920	.793	.750	.983	.750	.500	.750	.500	.886	.769	.746	.864	.712	.875



# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

Retreat Avenue at Seymour Street  
Hartford, Connecticut

File Name : 23032  
Site Code : 23032  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Seymour Street From North					Retreat Avenue From East					Parking Lot Dr From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	17	1	34	1	53	13	79	7	3	102	23	0	12	2	37	9	66	10	2	87	279
04:15 PM	12	1	23	0	36	2	95	7	6	110	17	0	12	1	30	9	74	16	3	102	278
04:30 PM	17	0	36	0	53	11	94	5	8	118	22	0	9	2	33	13	65	13	3	94	298
04:45 PM	16	0	25	1	42	7	67	8	6	88	26	0	23	2	51	12	56	13	6	87	268
Total	62	2	118	2	184	33	335	27	23	418	88	0	56	7	151	43	261	52	14	370	1123
05:00 PM	11	1	27	0	39	8	74	5	3	90	17	0	20	0	37	8	49	11	2	70	236
05:15 PM	16	0	14	3	33	5	56	4	8	73	12	0	15	2	29	4	46	5	2	57	192
05:30 PM	13	1	22	0	36	8	54	11	4	77	8	0	14	2	24	6	46	8	1	61	198
05:45 PM	13	2	15	0	30	6	50	5	6	67	11	1	9	0	21	6	41	5	0	52	170
Total	53	4	78	3	138	27	234	25	21	307	48	1	58	4	111	24	182	29	5	240	796
Grand Total	115	6	196	5	322	60	569	52	44	725	136	1	114	11	262	67	443	81	19	610	1919
Apprch %	35.7	1.9	60.9	1.6		8.3	78.5	7.2	6.1		51.9	0.4	43.5	4.2		11	72.6	13.3	3.1		
Total %	6	0.3	10.2	0.3	16.8	3.1	29.7	2.7	2.3	37.8	7.1	0.1	5.9	0.6	13.7	3.5	23.1	4.2	1	31.8	
Lights	115	6	196	5	322	60	538	52	44	694	136	1	114	11	262	67	420	81	19	587	1865
% Lights	100	100	100	100	100	100	94.6	100	100	95.7	100	100	100	100	100	100	94.8	100	100	96.2	97.2
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	0	23	0	0	23	54
% Buses	0	0	0	0	0	0	5.4	0	0	4.3	0	0	0	0	0	0	5.2	0	0	3.8	2.8

# Connecticut Counts LLC

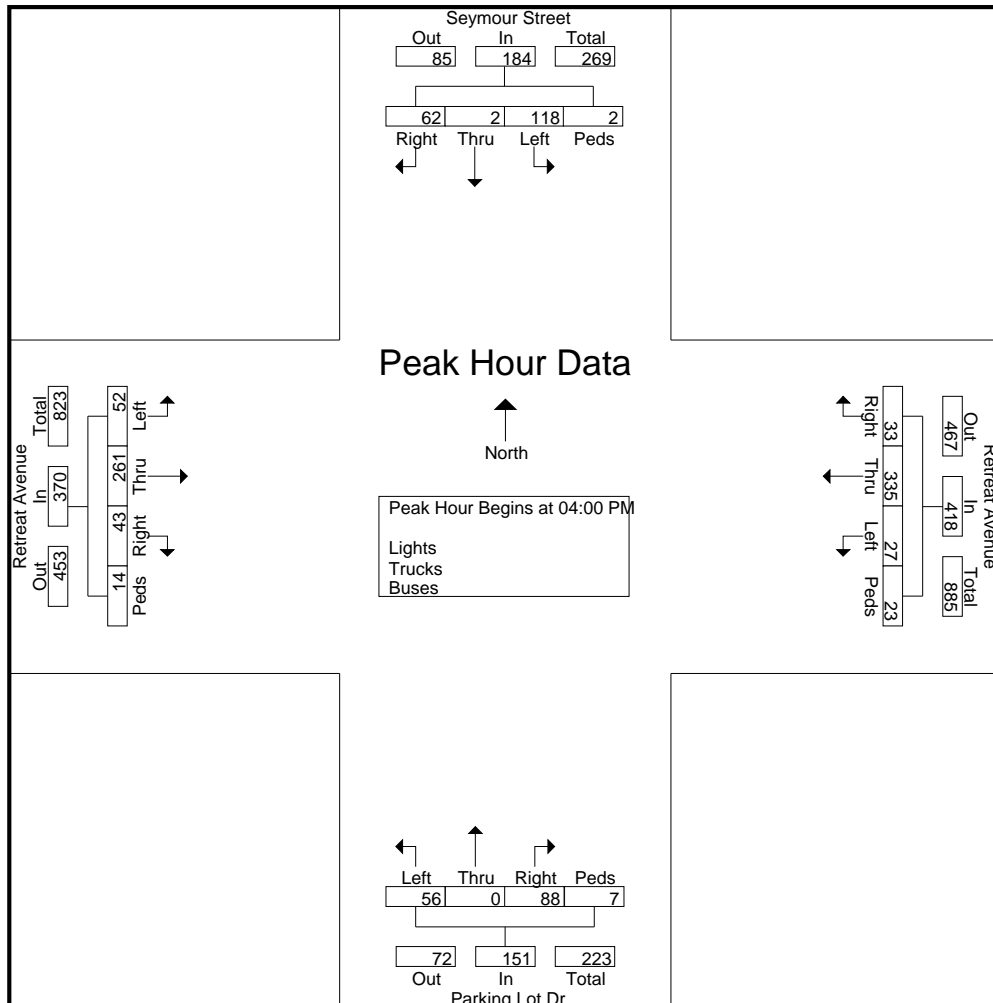
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23032  
Site Code : 23032  
Start Date : 5/12/2022  
Page No : 2

Start Time	Seymour Street From North					Retreat Avenue From East					Parking Lot Dr From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	17	1	34	1	53	13	79	7	3	102	23	0	12	2	37	9	66	10	2	87	279
04:15 PM	12	1	23	0	36	2	95	7	6	110	17	0	12	1	30	9	74	16	3	102	278
04:30 PM	17	0	36	0	53	11	94	5	8	118	22	0	9	2	33	13	65	13	3	94	298
04:45 PM	16	0	25	1	42	7	67	8	6	88	26	0	23	2	51	12	56	13	6	87	268
Total Volume	62	2	118	2	184	33	335	27	23	418	88	0	56	7	151	43	261	52	14	370	1123
% App. Total	33.7	1.1	64.1	1.1		7.9	80.1	6.5	5.5		58.3	0	37.1	4.6		11.6	70.5	14.1	3.8		
PHF	.912	.500	.819	.500	.868	.635	.882	.844	.719	.886	.846	.000	.609	.875	.740	.827	.882	.813	.583	.907	.942



# Connecticut Counts LLC

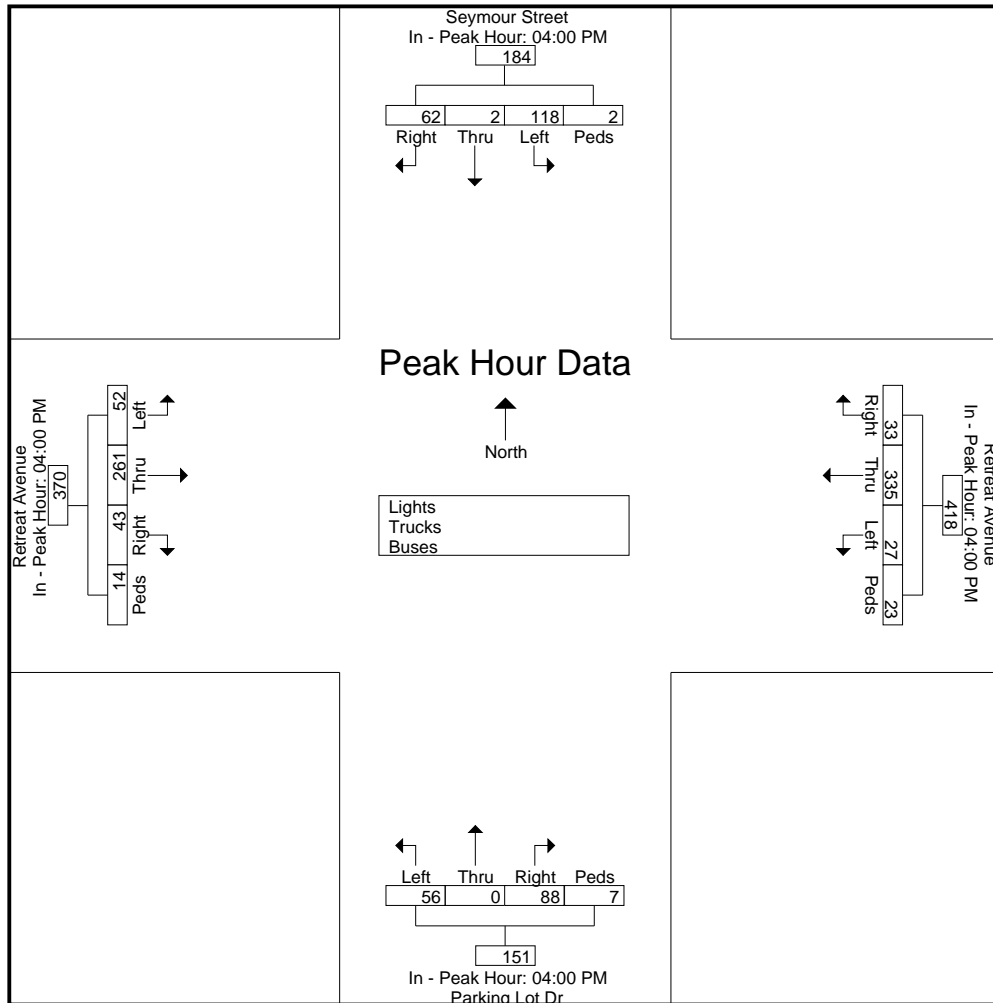
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23032  
Site Code : 23032  
Start Date : 5/12/2022  
Page No : 3

Start Time	Seymour Street From North					Retreat Avenue From East					Parking Lot Dr From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:00 PM					04:00 PM					04:00 PM					04:00 PM				
+0 mins.	17	1	34	1	53	13	79	7	3	102	23	0	12	2	37	9	66	10	2	87
+15 mins.	12	1	23	0	36	2	95	7	6	110	17	0	12	1	30	9	74	16	3	102
+30 mins.	17	0	36	0	53	11	94	5	8	118	22	0	9	2	33	13	65	13	3	94
+45 mins.	16	0	25	1	42	7	67	8	6	88	26	0	23	2	51	12	56	13	6	87
Total Volume	62	2	118	2	184	33	335	27	23	418	88	0	56	7	151	43	261	52	14	370
% App. Total	33.7	1.1	64.1	1.1		7.9	80.1	6.5	5.5		58.3	0	37.1	4.6		11.6	70.5	14.1	3.8	
PHF	.912	.500	.819	.500	.868	.635	.882	.844	.719	.886	.846	.000	.609	.875	.740	.827	.882	.813	.583	.907





**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Maple Ave at Retreat Avenue  
Hartford, Connecticut

File Name : 23033  
Site Code : 23033  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Maple Avenue From North					From East					Maple Avenue From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	105	44	0	1	150	0	0	0	0	0	0	2	0	1	3	2	0	81	0	83	236
07:15 AM	133	41	0	0	174	0	0	0	0	0	0	1	0	0	1	0	0	86	0	86	261
07:30 AM	146	58	0	0	204	0	0	0	0	0	0	6	0	1	7	6	0	138	1	145	356
07:45 AM	125	62	0	0	187	0	0	0	0	0	0	3	0	2	5	2	0	121	0	123	315
Total	509	205	0	1	715	0	0	0	0	0	0	12	0	4	16	10	0	426	1	437	1168
08:00 AM	126	51	0	0	177	0	0	0	0	0	0	0	0	0	0	6	0	97	0	103	280
08:15 AM	108	52	0	0	160	0	0	0	0	0	0	1	0	0	1	5	0	121	0	126	287
08:30 AM	109	68	0	0	177	0	0	0	0	0	0	0	0	0	0	6	0	109	0	115	292
08:45 AM	85	65	0	0	150	0	0	0	0	0	0	2	0	0	2	4	0	84	1	89	241
Total	428	236	0	0	664	0	0	0	0	0	0	3	0	0	3	21	0	411	1	433	1100
Grand Total	937	441	0	1	1379	0	0	0	0	0	0	15	0	4	19	31	0	837	2	870	2268
Apprch %	67.9	32	0	0.1		0	0	0	0		0	78.9	0	21.1		3.6	0	96.2	0.2		
Total %	41.3	19.4	0	0	60.8	0	0	0	0	0	0	0.7	0	0.2	0.8	1.4	0	36.9	0.1	38.4	
Lights	891	398	0	1	1290	0	0	0	0	0	0	14	0	4	18	29	0	782	2	813	2121
% Lights	95.1	90.2	0	100	93.5	0	0	0	0	0	0	93.3	0	100	94.7	93.5	0	93.4	100	93.4	93.5
Trucks	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	10
% Trucks	0.3	0.5	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0.6	0.4
Buses	43	41	0	0	84	0	0	0	0	0	0	1	0	0	1	2	0	50	0	52	137
% Buses	4.6	9.3	0	0	6.1	0	0	0	0	0	0	6.7	0	0	5.3	6.5	0	6	0	6	6

# Connecticut Counts LLC

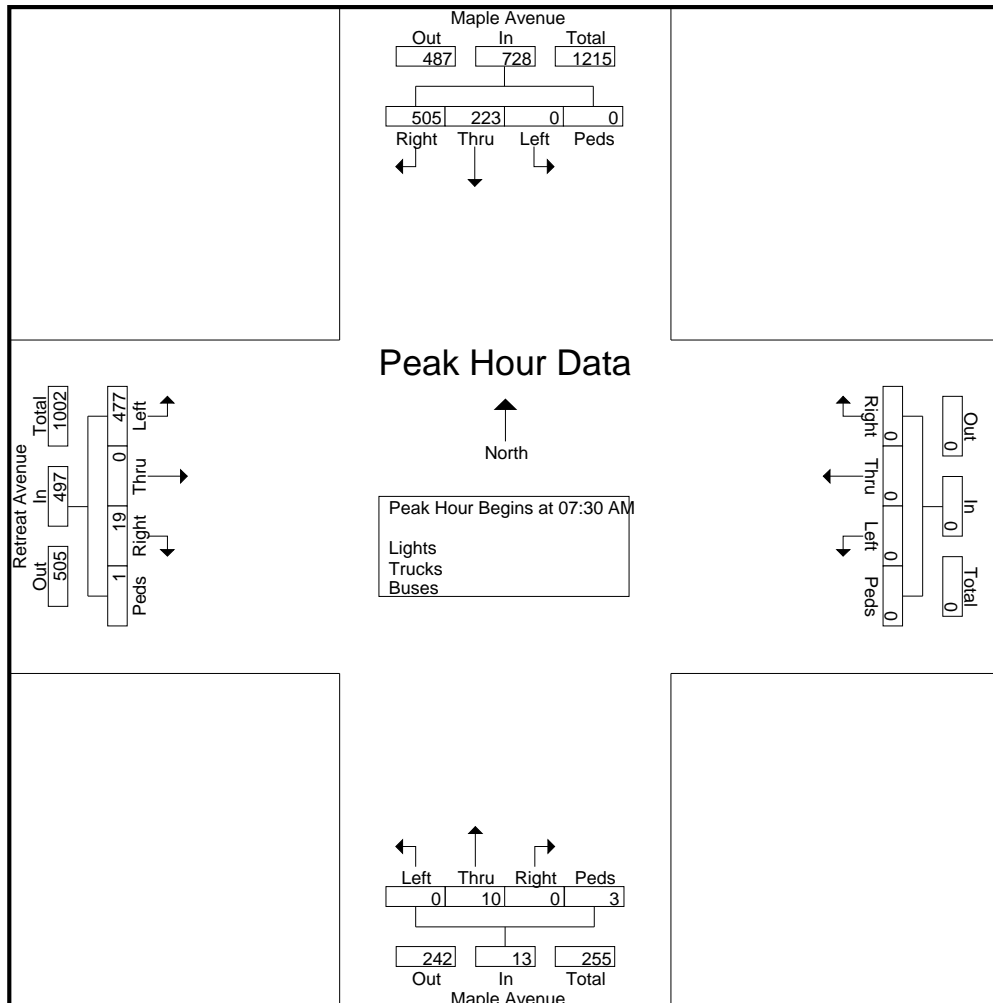
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23033  
Site Code : 23033  
Start Date : 5/12/2022  
Page No : 2

Start Time	Maple Avenue From North					From East					Maple Avenue From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	146	58	0	0	204	0	0	0	0	0	0	6	0	1	7	6	0	138	1	145	356
07:45 AM	125	62	0	0	187	0	0	0	0	0	0	3	0	2	5	2	0	121	0	123	315
08:00 AM	126	51	0	0	177	0	0	0	0	0	0	0	0	0	0	6	0	97	0	103	280
08:15 AM	108	52	0	0	160	0	0	0	0	0	0	1	0	0	1	5	0	121	0	126	287
Total Volume	505	223	0	0	728	0	0	0	0	0	0	10	0	3	13	19	0	477	1	497	1238
% App. Total	69.4	30.6	0	0		0	0	0	0		0	76.9	0	23.1		3.8	0	96	0.2		
PHF	.865	.899	.000	.000	.892	.000	.000	.000	.000	.000	.000	.417	.000	.375	.464	.792	.000	.864	.250	.857	.869



# Connecticut Counts LLC

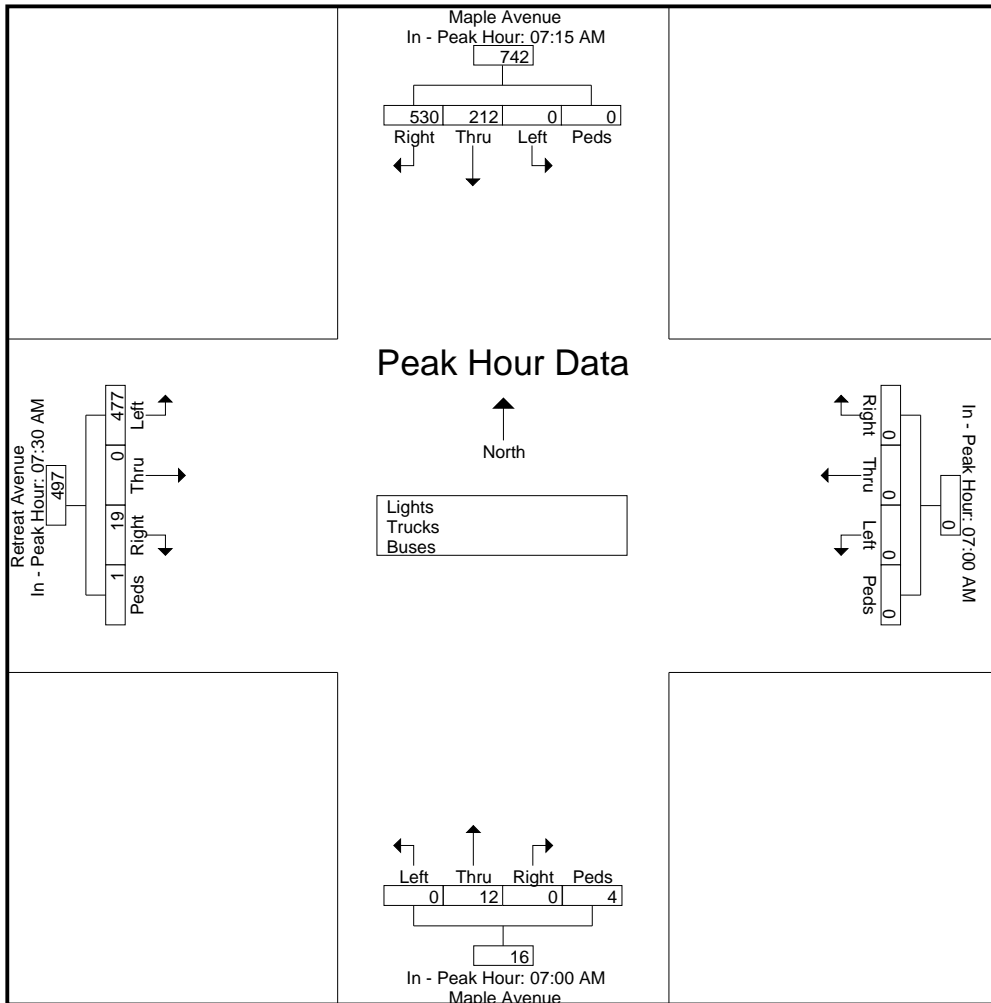
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23033  
Site Code : 23033  
Start Date : 5/12/2022  
Page No : 3

Start Time	Maple Avenue From North					From East					Maple Avenue From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	07:15 AM					07:00 AM					07:00 AM					07:30 AM				
+0 mins.	133	41	0	0	174	0	0	0	0	0	0	2	0	1	3	6	0	138	1	145
+15 mins.	146	58	0	0	204	0	0	0	0	0	0	1	0	0	1	2	0	121	0	123
+30 mins.	125	62	0	0	187	0	0	0	0	0	0	6	0	1	7	6	0	97	0	103
+45 mins.	126	51	0	0	177	0	0	0	0	0	0	3	0	2	5	5	0	121	0	126
Total Volume	530	212	0	0	742	0	0	0	0	0	0	12	0	4	16	19	0	477	1	497
% App. Total	71.4	28.6	0	0		0	0	0	0		0	75	0	25		3.8	0	96	0.2	
PHF	.908	.855	.000	.000	.909	.000	.000	.000	.000	.000	.000	.500	.000	.500	.571	.792	.000	.864	.250	.857



**Maple ave at Retreat Ave - TMC**

Wed Mar 11, 2020

Full Length (7:30 AM-9:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760701, Location: 41.754699, -72.676865

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US

Leg Direction	Maple Avenue Southbound					Maple Avenue Northbound					Retreat Avenue Eastbound					Int
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
Time																
2020-03-11 7:30AM	117	69	0	<b>186</b>	1	102	3	0	<b>105</b>	2	5	88	0	<b>93</b>	0	<b>384</b>
7:45AM	132	59	0	<b>191</b>	0	120	3	0	<b>123</b>	0	3	75	0	<b>78</b>	1	<b>392</b>
Hourly Total	249	128	0	<b>377</b>	1	222	6	0	<b>228</b>	2	8	163	0	<b>171</b>	1	<b>776</b>
8:00AM	133	73	0	<b>206</b>	0	146	4	0	<b>150</b>	1	3	60	0	<b>63</b>	2	<b>419</b>
8:15AM	132	57	0	<b>189</b>	0	139	6	0	<b>145</b>	0	2	46	0	<b>48</b>	0	<b>382</b>
8:30AM	87	52	0	<b>139</b>	0	115	6	0	<b>121</b>	1	4	48	0	<b>52</b>	3	<b>312</b>
8:45AM	107	73	0	<b>180</b>	2	125	6	0	<b>131</b>	1	7	43	0	<b>50</b>	2	<b>361</b>
Hourly Total	459	255	0	<b>714</b>	2	525	22	0	<b>547</b>	3	16	197	0	<b>213</b>	7	<b>1474</b>
9:00AM	73	75	0	<b>148</b>	0	85	6	0	<b>91</b>	2	4	35	0	<b>39</b>	4	<b>278</b>
9:15AM	65	64	0	<b>129</b>	0	88	2	0	<b>90</b>	4	7	38	0	<b>45</b>	5	<b>264</b>
Hourly Total	138	139	0	<b>277</b>	0	173	8	0	<b>181</b>	6	11	73	0	<b>84</b>	9	<b>542</b>
<b>Total</b>	<b>846</b>	<b>522</b>	<b>0</b>	<b>1368</b>	<b>3</b>	<b>920</b>	<b>36</b>	<b>0</b>	<b>956</b>	<b>11</b>	<b>35</b>	<b>433</b>	<b>0</b>	<b>468</b>	<b>17</b>	<b>2792</b>
<b>% Approach</b>	61.8%	38.2%	0%	-	-	96.2%	3.8%	0%	-	-	7.5%	92.5%	0%	-	-	-
<b>% Total</b>	30.3%	18.7%	0%	<b>49.0%</b>	-	33.0%	1.3%	0%	<b>34.2%</b>	-	1.3%	15.5%	0%	<b>16.8%</b>	-	-
<b>Lights</b>	799	483	0	<b>1282</b>	-	873	34	0	<b>907</b>	-	35	410	0	<b>445</b>	-	2634
<b>% Lights</b>	94.4%	92.5%	0%	<b>93.7%</b>	-	94.9%	94.4%	0%	<b>94.9%</b>	-	100%	94.7%	0%	<b>95.1%</b>	-	94.3%
<b>Articulated Trucks and Single-Unit Trucks</b>	13	3	0	<b>16</b>	-	8	1	0	<b>9</b>	-	0	2	0	<b>2</b>	-	27
<b>% Articulated Trucks and Single-Unit Trucks</b>	1.5%	0.6%	0%	<b>1.2%</b>	-	0.9%	2.8%	0%	<b>0.9%</b>	-	0%	0.5%	0%	<b>0.4%</b>	-	1.0%
<b>Buses</b>	34	36	0	<b>70</b>	-	39	1	0	<b>40</b>	-	0	21	0	<b>21</b>	-	131
<b>% Buses</b>	4.0%	6.9%	0%	<b>5.1%</b>	-	4.2%	2.8%	0%	<b>4.2%</b>	-	0%	4.8%	0%	<b>4.5%</b>	-	4.7%
Pedestrians	-	-	-	-	3	-	-	-	-	11	-	-	-	-	16	-
<b>% Pedestrians</b>	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	94.1%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	5.9%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn



**Maple ave at Retreat Ave - TMC**

Wed Mar 11, 2020

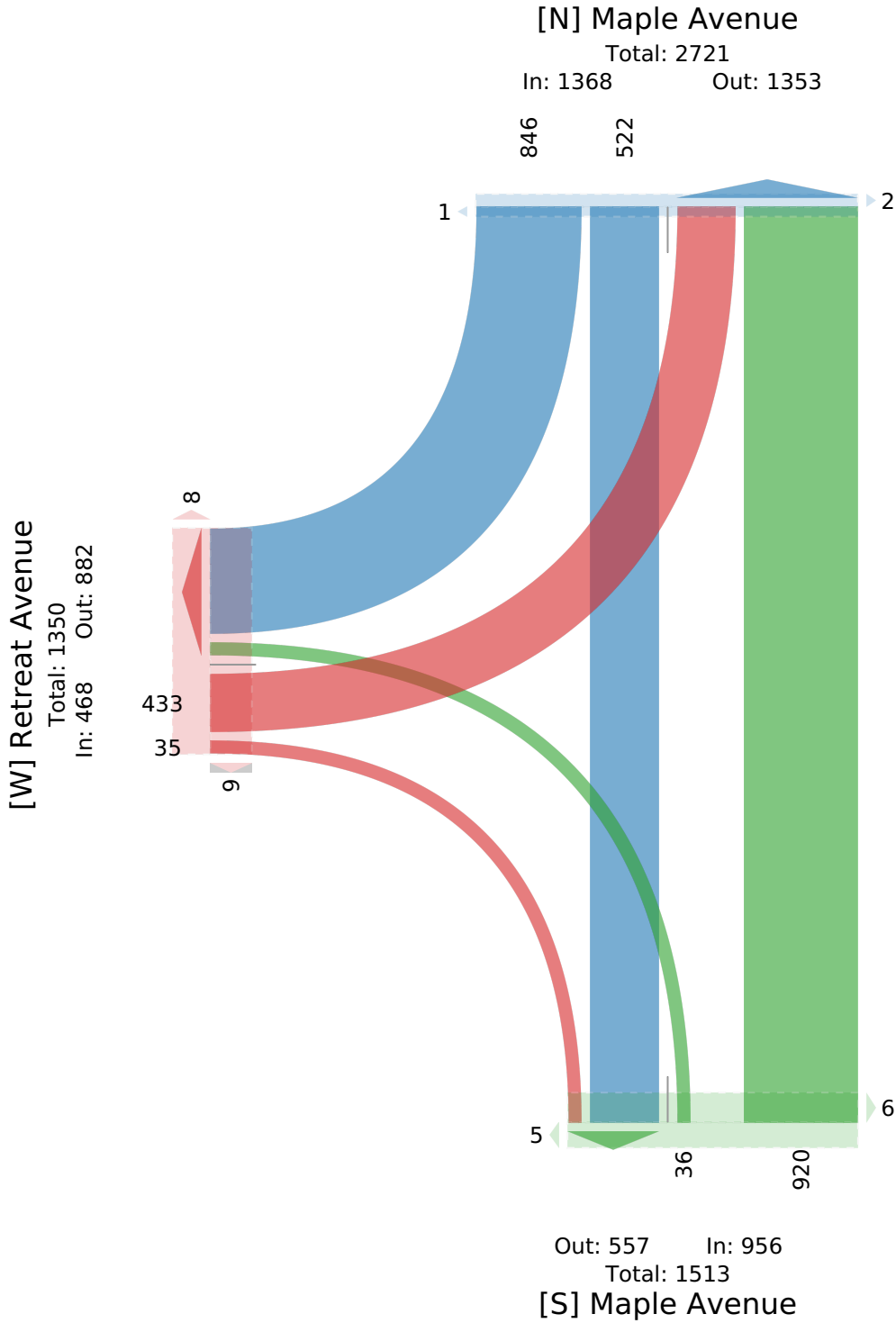
Full Length (7:30 AM-9:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760701, Location: 41.754699, -72.676865

Provided by: Connecticut Counts LLC  
63 Sugar Maple Lane,  
Kensington, CT, 12345, US



**Maple ave at Retreat Ave - TMC**

Wed Mar 11, 2020

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760701, Location: 41.754699, -72.676865

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US

Leg Direction	Maple Avenue Southbound					Maple Avenue Northbound					Retreat Avenue Eastbound					Int
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
Time																
2020-03-11 7:30AM	117	69	0	<b>186</b>	1	102	3	0	<b>105</b>	2	5	88	0	<b>93</b>	0	<b>384</b>
7:45AM	132	59	0	<b>191</b>	0	120	3	0	<b>123</b>	0	3	75	0	<b>78</b>	1	<b>392</b>
8:00AM	133	73	0	<b>206</b>	0	146	4	0	<b>150</b>	1	3	60	0	<b>63</b>	2	<b>419</b>
8:15AM	132	57	0	<b>189</b>	0	139	6	0	<b>145</b>	0	2	46	0	<b>48</b>	0	<b>382</b>
<b>Total</b>	514	258	0	<b>772</b>	1	507	16	0	<b>523</b>	3	13	269	0	<b>282</b>	3	<b>1577</b>
<b>% Approach</b>	66.6%	33.4%	0%	-	-	96.9%	3.1%	0%	-	-	4.6%	95.4%	0%	-	-	-
<b>% Total</b>	32.6%	16.4%	0%	<b>49.0%</b>	-	32.1%	1.0%	0%	<b>33.2%</b>	-	0.8%	17.1%	0%	<b>17.9%</b>	-	-
<b>PHF</b>	0.966	0.884	-	<b>0.937</b>	-	0.868	0.667	-	<b>0.872</b>	-	0.650	0.764	-	<b>0.758</b>	-	0.941
<b>Lights</b>	486	230	0	<b>716</b>	-	480	16	0	<b>496</b>	-	13	259	0	<b>272</b>	-	1484
<b>% Lights</b>	94.6%	89.1%	0%	<b>92.7%</b>	-	94.7%	100%	0%	<b>94.8%</b>	-	100%	96.3%	0%	<b>96.5%</b>	-	94.1%
<b>Articulated Trucks and Single-Unit Trucks</b>	4	3	0	<b>7</b>	-	3	0	0	<b>3</b>	-	0	1	0	<b>1</b>	-	11
<b>% Articulated Trucks and Single-Unit Trucks</b>	0.8%	1.2%	0%	<b>0.9%</b>	-	0.6%	0%	0%	<b>0.6%</b>	-	0%	0.4%	0%	<b>0.4%</b>	-	0.7%
<b>Buses</b>	24	25	0	<b>49</b>	-	24	0	0	<b>24</b>	-	0	9	0	<b>9</b>	-	82
<b>% Buses</b>	4.7%	9.7%	0%	<b>6.3%</b>	-	4.7%	0%	0%	<b>4.6%</b>	-	0%	3.3%	0%	<b>3.2%</b>	-	5.2%
Pedestrians	-	-	-	-	1	-	-	-	-	3	-	-	-	-	3	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**Maple ave at Retreat Ave - TMC**

Wed Mar 11, 2020

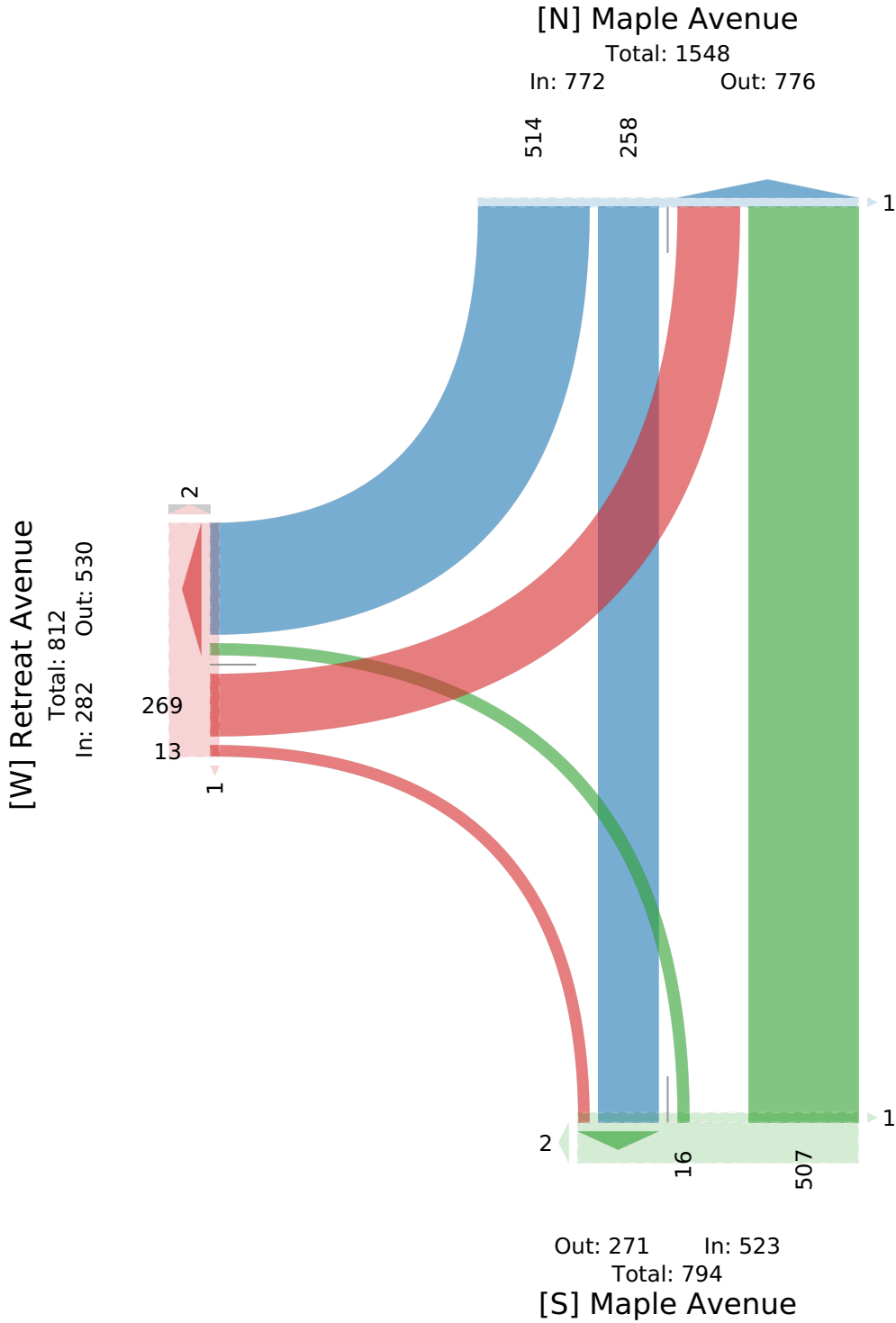
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760701, Location: 41.754699, -72.676865

Provided by: Connecticut Counts LLC  
63 Sugar Maple Lane,  
Kensington, CT, 12345, US



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Maple Ave at Retreat Avenue  
Hartford, Connecticut

File Name : 23034  
Site Code : 23034  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	Maple Avenue From North					From East					Maple Avenue From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	61	104	0	2	167	0	0	0	0	0	0	96	5	4	105	11	0	119	2	132	404
04:15 PM	77	120	1	3	201	0	0	0	1	1	0	93	4	2	99	5	0	109	2	116	417
04:30 PM	57	113	0	0	170	0	0	0	0	0	0	96	7	0	103	6	0	130	1	137	410
04:45 PM	61	125	0	1	187	0	0	0	0	0	0	117	5	0	122	2	0	113	1	116	425
Total	256	462	1	6	725	0	0	0	1	1	0	402	21	6	429	24	0	471	6	501	1656
05:00 PM	53	144	0	0	197	0	0	0	0	0	0	111	3	2	116	0	0	92	0	92	405
05:15 PM	43	122	0	0	165	0	0	0	0	0	0	93	6	0	99	5	0	81	0	86	350
05:30 PM	65	116	0	0	181	0	0	0	0	0	0	103	0	3	106	1	0	67	0	68	355
05:45 PM	47	88	0	0	135	0	0	0	1	1	0	87	9	0	96	1	0	61	0	62	294
Total	208	470	0	0	678	0	0	0	1	1	0	394	18	5	417	7	0	301	0	308	1404
Grand Total	464	932	1	6	1403	0	0	0	2	2	0	796	39	11	846	31	0	772	6	809	3060
Apprch %	33.1	66.4	0.1	0.4		0	0	0	100		0	94.1	4.6	1.3		3.8	0	95.4	0.7		
Total %	15.2	30.5	0	0.2	45.8	0	0	0	0.1	0.1	0	26	1.3	0.4	27.6	1	0	25.2	0.2	26.4	
Lights	435	903	1	6	1345	0	0	0	2	2	0	764	38	11	813	29	0	751	4	784	2944
% Lights	93.8	96.9	100	100	95.9	0	0	0	100	100	0	96	97.4	100	96.1	93.5	0	97.3	66.7	96.9	96.2
Trucks	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
% Trucks	0	0.2	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	0.2	0.1
Buses	29	27	0	0	56	0	0	0	0	0	0	32	1	0	33	2	0	21	0	23	112
% Buses	6.2	2.9	0	0	4	0	0	0	0	0	0	4	2.6	0	3.9	6.5	0	2.7	0	2.8	3.7

# Connecticut Counts LLC

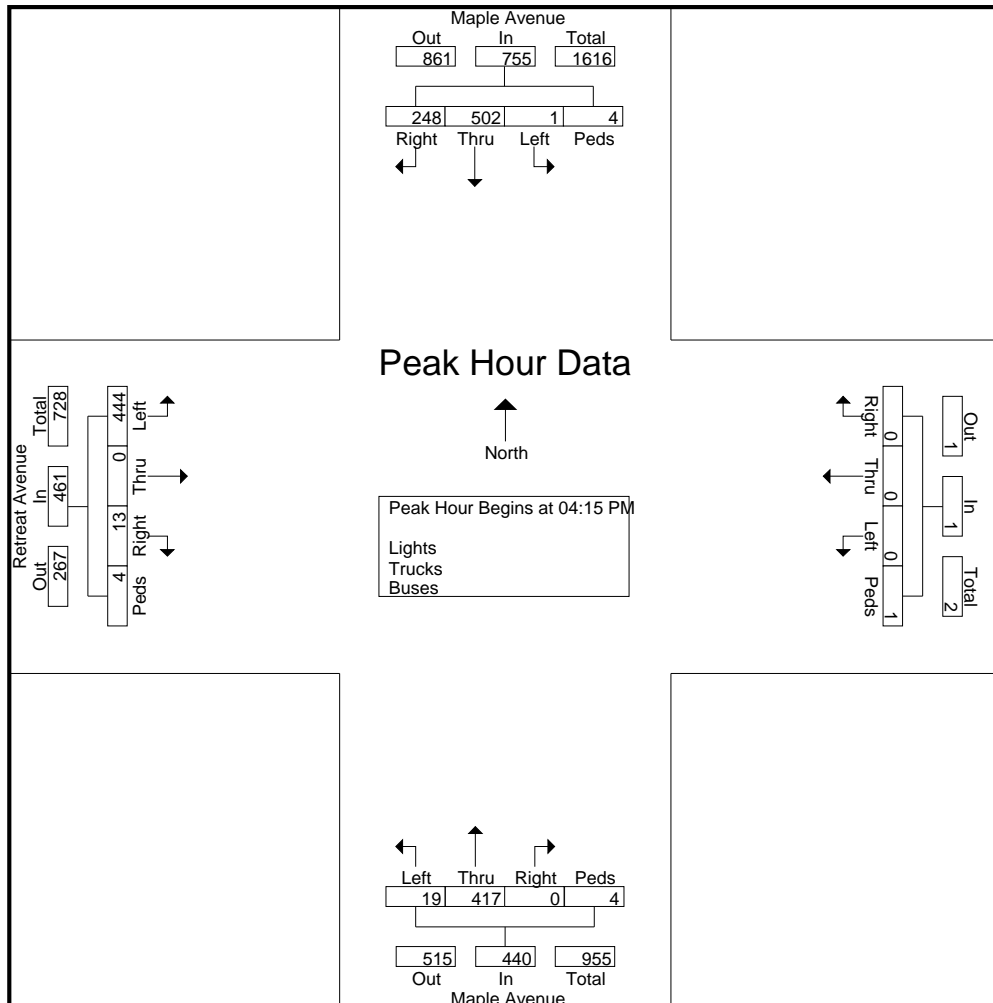
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23034  
Site Code : 23034  
Start Date : 5/12/2022  
Page No : 2

Start Time	Maple Avenue From North					From East					Maple Avenue From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:15 PM

04:15 PM	77	120	1	3	201	0	0	0	1	1	0	93	4	2	99	5	0	109	2	116	417
04:30 PM	57	113	0	0	170	0	0	0	0	0	0	96	7	0	103	6	0	130	1	137	410
04:45 PM	61	125	0	1	187	0	0	0	0	0	0	117	5	0	122	2	0	113	1	116	425
05:00 PM	53	144	0	0	197	0	0	0	0	0	0	111	3	2	116	0	0	92	0	92	405
Total Volume	248	502	1	4	755	0	0	0	1	1	0	417	19	4	440	13	0	444	4	461	1657
% App. Total	32.8	66.5	0.1	0.5		0	0	0	100		0	94.8	4.3	0.9		2.8	0	96.3	0.9		
PHF	.805	.872	.250	.333	.939	.000	.000	.000	.250	.250	.000	.891	.679	.500	.902	.542	.000	.854	.500	.841	.975





# Connecticut Counts LLC

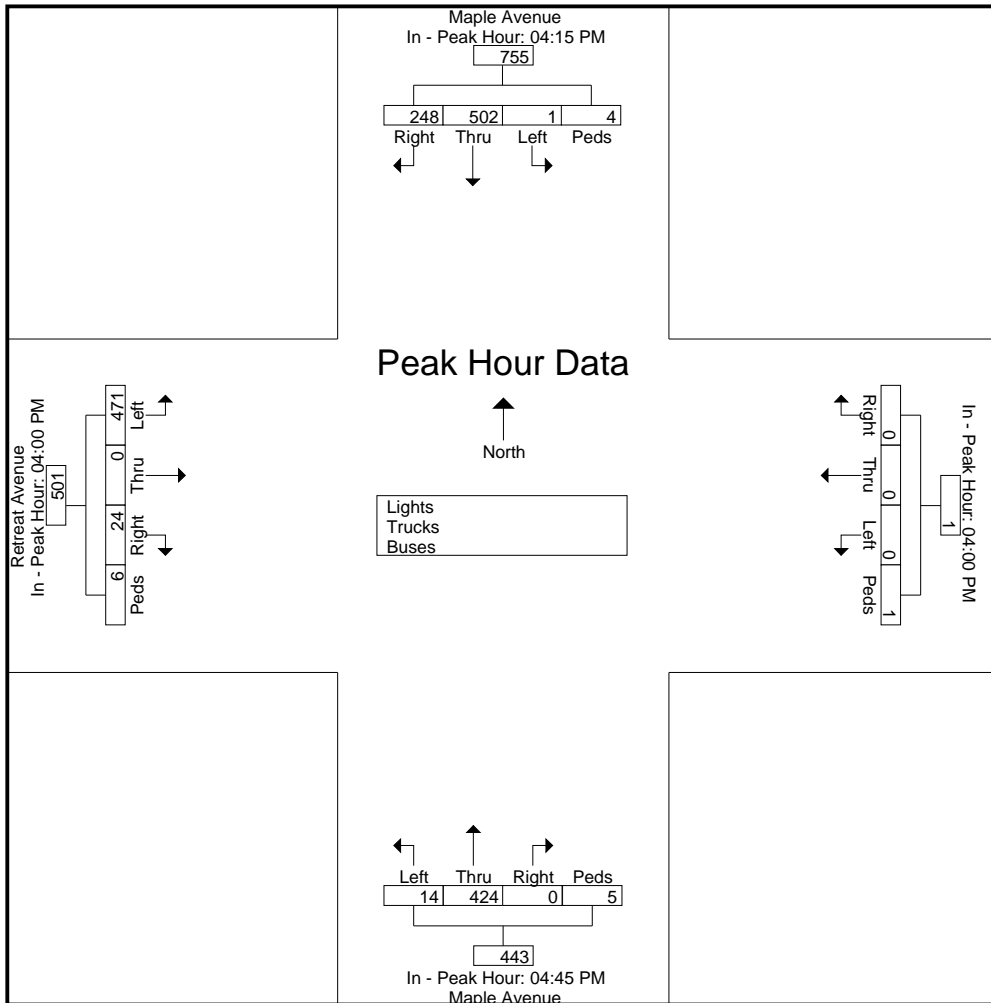
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23034  
 Site Code : 23034  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Maple Avenue From North					From East					Maple Avenue From South					Retreat Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM					04:00 PM					04:45 PM					04:00 PM				
+0 mins.	77	120	1	3	201	0	0	0	0	0	0	117	5	0	122	11	0	119	2	132
+15 mins.	57	113	0	0	170	0	0	0	1	1	0	111	3	2	116	5	0	109	2	116
+30 mins.	61	125	0	1	187	0	0	0	0	0	0	93	6	0	99	6	0	130	1	137
+45 mins.	53	144	0	0	197	0	0	0	0	0	0	103	0	3	106	2	0	113	1	116
Total Volume	248	502	1	4	755	0	0	0	1	1	0	424	14	5	443	24	0	471	6	501
% App. Total	32.8	66.5	0.1	0.5		0	0	0	100		0	95.7	3.2	1.1		4.8	0	94	1.2	
PHF	.805	.872	.250	.333	.939	.000	.000	.000	.250	.250	.000	.906	.583	.417	.908	.545	.000	.906	.750	.914



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Main/Maple at Jefferson/Wyllys/Congress  
Hartford, Connecticut

File Name : 23035  
Site Code : 23035  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Congress St

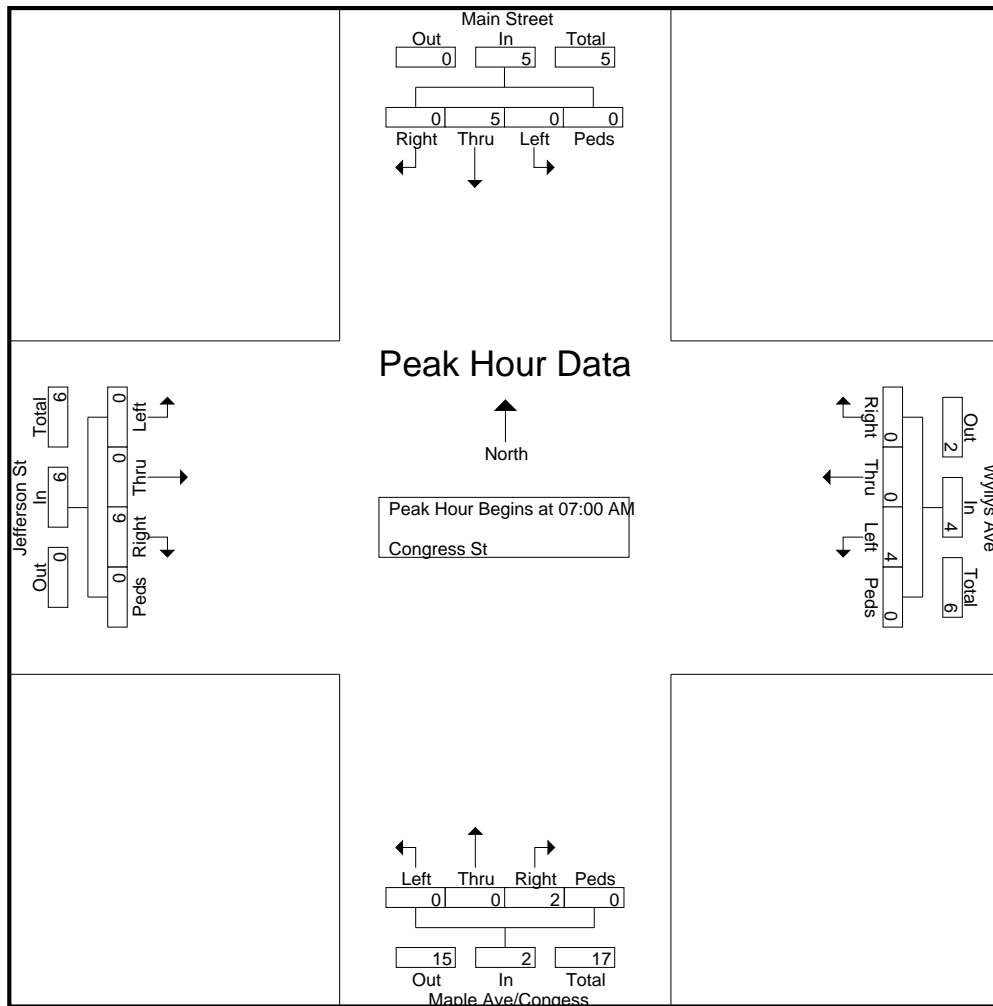
Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congress From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	3
07:15 AM	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	5
07:30 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	3
07:45 AM	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	2	0	0	0	2	6
Total	0	5	0	0	5	0	0	4	0	4	2	0	0	0	2	6	0	0	0	6	17
*** BREAK ***																					
08:15 AM	0	1	0	0	1	0	0	1	0	1	2	0	0	0	2	1	0	0	0	1	5
08:30 AM	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	6
08:45 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
Total	0	5	0	0	5	0	0	2	0	2	3	0	0	0	3	2	1	0	0	3	13
Grand Total	0	10	0	0	10	0	0	6	0	6	5	0	0	0	5	8	1	0	0	9	30
Apprch %	0	100	0	0		0	0	100	0		100	0	0	0		88.9	11.1	0	0		
Total %	0	33.3	0	0	33.3	0	0	20	0	20	16.7	0	0	0	16.7	26.7	3.3	0	0	30	

# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23035  
Site Code : 23035  
Start Date : 5/12/2022  
Page No : 2

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	3
07:15 AM	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	5
07:30 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	3
07:45 AM	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	2	0	0	0	2	6
Total Volume	0	5	0	0	5	0	0	4	0	4	2	0	0	0	2	6	0	0	0	6	17
% App. Total	0	100	0	0		0	0	100	0		100	0	0	0		100	0	0	0		
PHF	.000	.417	.000	.000	.417	.000	.000	1.00	.000	1.00	.500	.000	.000	.000	.500	.750	.000	.000	.000	.750	.708



# Connecticut Counts LLC

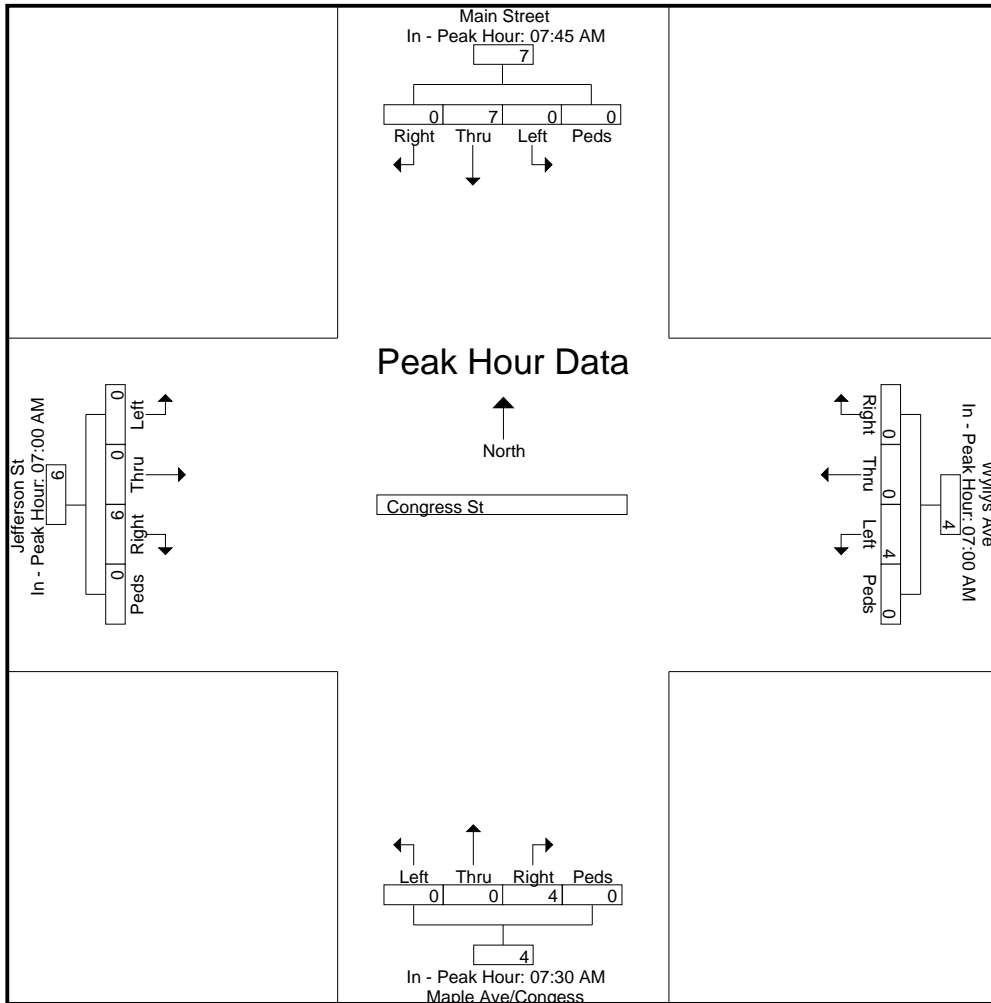
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23035  
 Site Code : 23035  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:45 AM					07:00 AM					07:30 AM					07:00 AM				
+0 mins.	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	2	0	0	0	2
+15 mins.	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1
+30 mins.	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1
+45 mins.	0	4	0	0	4	0	0	1	0	1	2	0	0	0	2	2	0	0	0	2
Total Volume	0	7	0	0	7	0	0	4	0	4	4	0	0	0	4	6	0	0	0	6
% App. Total	0	100	0	0		0	0	100	0		100	0	0	0		100	0	0	0	
PHF	.000	.438	.000	.000	.438	.000	.000	1.000	.000	1.000	.500	.000	.000	.000	.500	.750	.000	.000	.000	.750



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Main/Maple at Jefferson/Wyllys/Congress  
Hartford, Connecticut

File Name : 23035  
Site Code : 23035  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Main Int

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congress From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	7	52	1	1	61	5	44	75	1	125	24	36	9	1	70	20	19	2	0	41	297
07:15 AM	12	52	3	0	67	4	73	84	3	164	44	40	5	1	90	22	12	1	1	36	357
07:30 AM	13	82	1	1	97	3	86	90	1	180	67	62	3	1	133	37	32	5	0	74	484
07:45 AM	10	79	2	2	93	6	83	79	2	170	51	52	10	3	116	39	39	5	2	85	464
Total	42	265	7	4	318	18	286	328	7	639	186	190	27	6	409	118	102	13	3	236	1602
08:00 AM	16	62	1	5	84	3	66	79	4	152	42	53	14	5	114	33	31	4	3	71	421
08:15 AM	7	56	0	0	63	8	68	70	1	147	48	54	9	2	113	36	27	3	1	67	390
08:30 AM	8	62	1	0	71	8	81	89	0	178	55	48	11	0	114	38	31	10	0	79	442
08:45 AM	7	61	2	2	72	12	64	59	0	135	28	36	9	3	76	29	33	7	1	70	353
Total	38	241	4	7	290	31	279	297	5	612	173	191	43	10	417	136	122	24	5	287	1606
Grand Total	80	506	11	11	608	49	565	625	12	1251	359	381	70	16	826	254	224	37	8	523	3208
Apprch %	13.2	83.2	1.8	1.8		3.9	45.2	50	1		43.5	46.1	8.5	1.9		48.6	42.8	7.1	1.5		
Total %	2.5	15.8	0.3	0.3	19	1.5	17.6	19.5	0.4	39	11.2	11.9	2.2	0.5	25.7	7.9	7	1.2	0.2	16.3	



# Connecticut Counts LLC

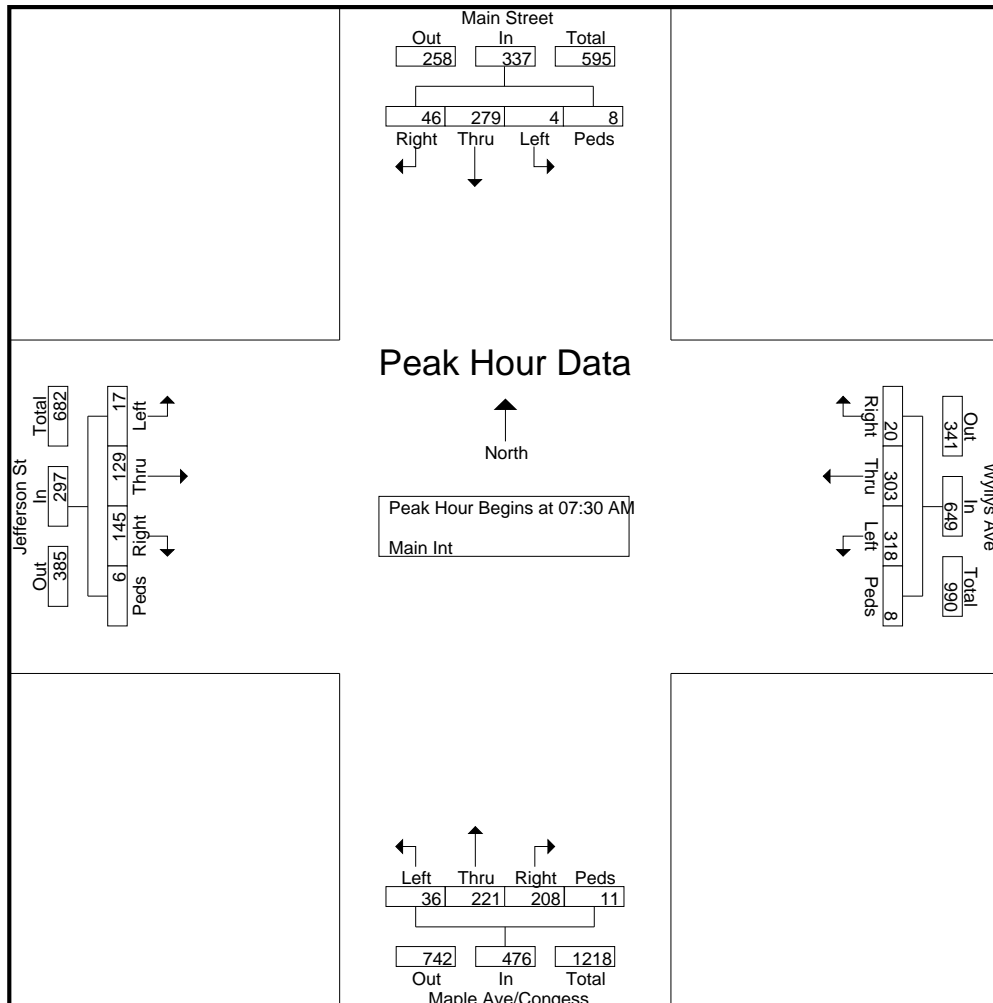
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23035  
 Site Code : 23035  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	13	82	1	1	97	3	86	90	1	180	67	62	3	1	133	37	32	5	0	74	484
07:45 AM	10	79	2	2	93	6	83	79	2	170	51	52	10	3	116	39	39	5	2	85	464
08:00 AM	16	62	1	5	84	3	66	79	4	152	42	53	14	5	114	33	31	4	3	71	421
08:15 AM	7	56	0	0	63	8	68	70	1	147	48	54	9	2	113	36	27	3	1	67	390
Total Volume	46	279	4	8	337	20	303	318	8	649	208	221	36	11	476	145	129	17	6	297	1759
% App. Total	13.6	82.8	1.2	2.4		3.1	46.7	49	1.2		43.7	46.4	7.6	2.3		48.8	43.4	5.7	2		
PHF	.719	.851	.500	.400	.869	.625	.881	.883	.500	.901	.776	.891	.643	.550	.895	.929	.827	.850	.500	.874	.909



# Connecticut Counts LLC

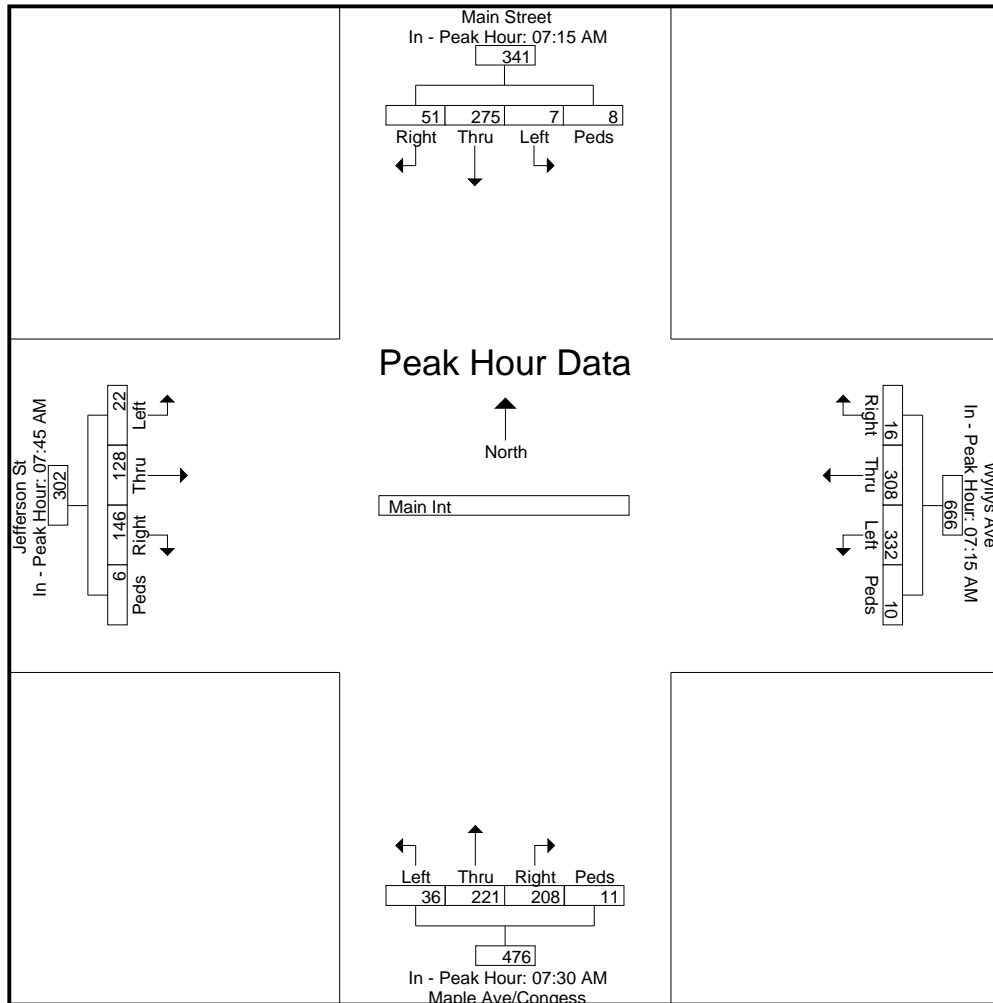
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23035  
 Site Code : 23035  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM					07:15 AM					07:30 AM					07:45 AM				
+0 mins.	12	52	3	0	67	4	73	84	3	164	67	62	3	1	133	39	39	5	2	85
+15 mins.	13	82	1	1	97	3	86	90	1	180	51	52	10	3	116	33	31	4	3	71
+30 mins.	10	79	2	2	93	6	83	79	2	170	42	53	14	5	114	36	27	3	1	67
+45 mins.	16	62	1	5	84	3	66	79	4	152	48	54	9	2	113	38	31	10	0	79
Total Volume	51	275	7	8	341	16	308	332	10	666	208	221	36	11	476	146	128	22	6	302
% App. Total	15	80.6	2.1	2.3		2.4	46.2	49.8	1.5		43.7	46.4	7.6	2.3		48.3	42.4	7.3	2	
PHF	.797	.838	.583	.400	.879	.667	.895	.922	.625	.925	.776	.891	.643	.550	.895	.936	.821	.550	.500	.888



Main St/Maple at Jefferson St - TMC

Wed Mar 11, 2020

Full Length (7:30 AM-9:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760200, Location: 41.755403, -72.676512

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US

Leg Direction	Main St Southbound							Jefferson St Westbound							Congress St Northwestbound	
	R	T	BL	L	U	App	Ped*	R	T	L	HL	U	App	Ped*	App	Ped*
2020-03-11 7:30AM	10	49	0	0	0	59	0	5	67	91	1	0	164	0	0	3
7:45AM	6	67	0	0	0	73	1	7	69	89	0	0	165	1	0	4
Hourly Total	16	116	0	0	0	132	1	12	136	180	1	0	329	1	0	7
8:00AM	10	55	0	2	0	67	2	9	57	103	0	0	169	0	0	2
8:15AM	11	47	0	1	0	59	0	5	81	93	0	0	179	0	0	3
8:30AM	14	34	1	1	0	50	0	9	42	79	1	0	131	0	0	0
8:45AM	7	49	0	2	0	58	0	9	68	98	1	0	176	0	0	2
Hourly Total	42	185	1	6	0	234	2	32	248	373	2	0	655	0	0	7
9:00AM	4	53	0	3	0	60	1	11	57	65	0	0	133	0	0	3
9:15AM	10	35	3	5	0	53	1	9	68	65	0	0	142	0	0	0
Hourly Total	14	88	3	8	0	113	2	20	125	130	0	0	275	0	0	3
<b>Total</b>	72	389	4	14	0	479	5	64	509	683	3	0	1259	1	0	17
<b>% Approach</b>	15.0%	81.2%	0.8%	2.9%	0%	-	-	5.1%	40.4%	54.2%	0.2%	0%	-	-	-	-
<b>% Total</b>	2.0%	10.8%	0.1%	0.4%	0%	13.4%	-	1.8%	14.2%	19.0%	0.1%	0%	35.1%	-	0%	-
<b>Lights</b>	62	342	4	14	0	422	-	63	486	659	3	0	1211	-	0	-
<b>% Lights</b>	86.1%	87.9%	100%	100%	0%	88.1%	-	98.4%	95.5%	96.5%	100%	0%	96.2%	-	-	-
<b>Articulated Trucks and Single-Unit Trucks</b>	4	5	0	0	0	9	-	0	6	5	0	0	11	-	0	-
<b>% Articulated Trucks and Single-Unit Trucks</b>	5.6%	1.3%	0%	0%	0%	1.9%	-	0%	1.2%	0.7%	0%	0%	0.9%	-	-	-
<b>Buses</b>	6	42	0	0	0	48	-	1	17	19	0	0	37	-	0	-
<b>% Buses</b>	8.3%	10.8%	0%	0%	0%	10.0%	-	1.6%	3.3%	2.8%	0%	0%	2.9%	-	-	-
Pedestrians	-	-	-	-	-	-	5	-	-	-	-	-	-	1	-	17
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-	0%

\* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Main St/Maple at Jefferson St - TMC

Wed Mar 11, 2020

Full Length (7:30 AM-9:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760200, Location: 41.755403, -72.676512

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US

Leg Direction	Maple Ave Northbound							Wyllys St Eastbound							Int
	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	
Time															
2020-03-11 7:30AM	1	85	64	18	0	168	1	38	3	25	6	0	72	0	463
7:45AM	0	83	64	26	0	173	3	33	1	39	5	0	78	1	489
Hourly Total	1	168	128	44	0	341	4	71	4	64	11	0	150	1	952
8:00AM	0	75	99	28	0	202	3	54	2	27	3	0	86	1	524
8:15AM	0	46	82	30	0	158	4	39	3	34	5	0	81	1	477
8:30AM	1	50	79	23	0	153	3	27	4	40	4	0	75	1	409
8:45AM	3	51	79	26	0	159	5	36	3	25	5	0	69	1	462
Hourly Total	4	222	339	107	0	672	15	156	12	126	17	0	311	4	1872
9:00AM	1	34	73	16	0	124	1	35	2	31	5	0	73	2	390
9:15AM	2	36	61	25	0	124	2	32	0	21	2	0	55	2	374
Hourly Total	3	70	134	41	0	248	3	67	2	52	7	0	128	4	764
<b>Total</b>	8	460	601	192	0	1261	22	294	18	242	35	0	589	9	3588
<b>% Approach</b>	0.6%	36.5%	47.7%	15.2%	0%	-	-	49.9%	3.1%	41.1%	5.9%	0%	-	-	-
<b>% Total</b>	0.2%	12.8%	16.8%	5.4%	0%	35.1%	-	8.2%	0.5%	6.7%	1.0%	0%	16.4%	-	-
<b>Lights</b>	7	441	555	186	0	1189	-	278	15	221	31	0	545	-	3367
<b>% Lights</b>	87.5%	95.9%	92.3%	96.9%	0%	94.3%	-	94.6%	83.3%	91.3%	88.6%	0%	92.5%	-	93.8%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	4	5	2	0	11	-	6	1	4	0	0	11	-	42
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	0.9%	0.8%	1.0%	0%	0.9%	-	2.0%	5.6%	1.7%	0%	0%	1.9%	-	1.2%
<b>Buses</b>	1	15	41	4	0	61	-	10	2	17	4	0	33	-	179
<b>% Buses</b>	12.5%	3.3%	6.8%	2.1%	0%	4.8%	-	3.4%	11.1%	7.0%	11.4%	0%	5.6%	-	5.0%
Pedestrians	-	-	-	-	-	-	22	-	-	-	-	-	-	9	-
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-

\* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

**Main St/Maple at Jefferson St - TMC**

Wed Mar 11, 2020

Full Length (7:30 AM-9:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

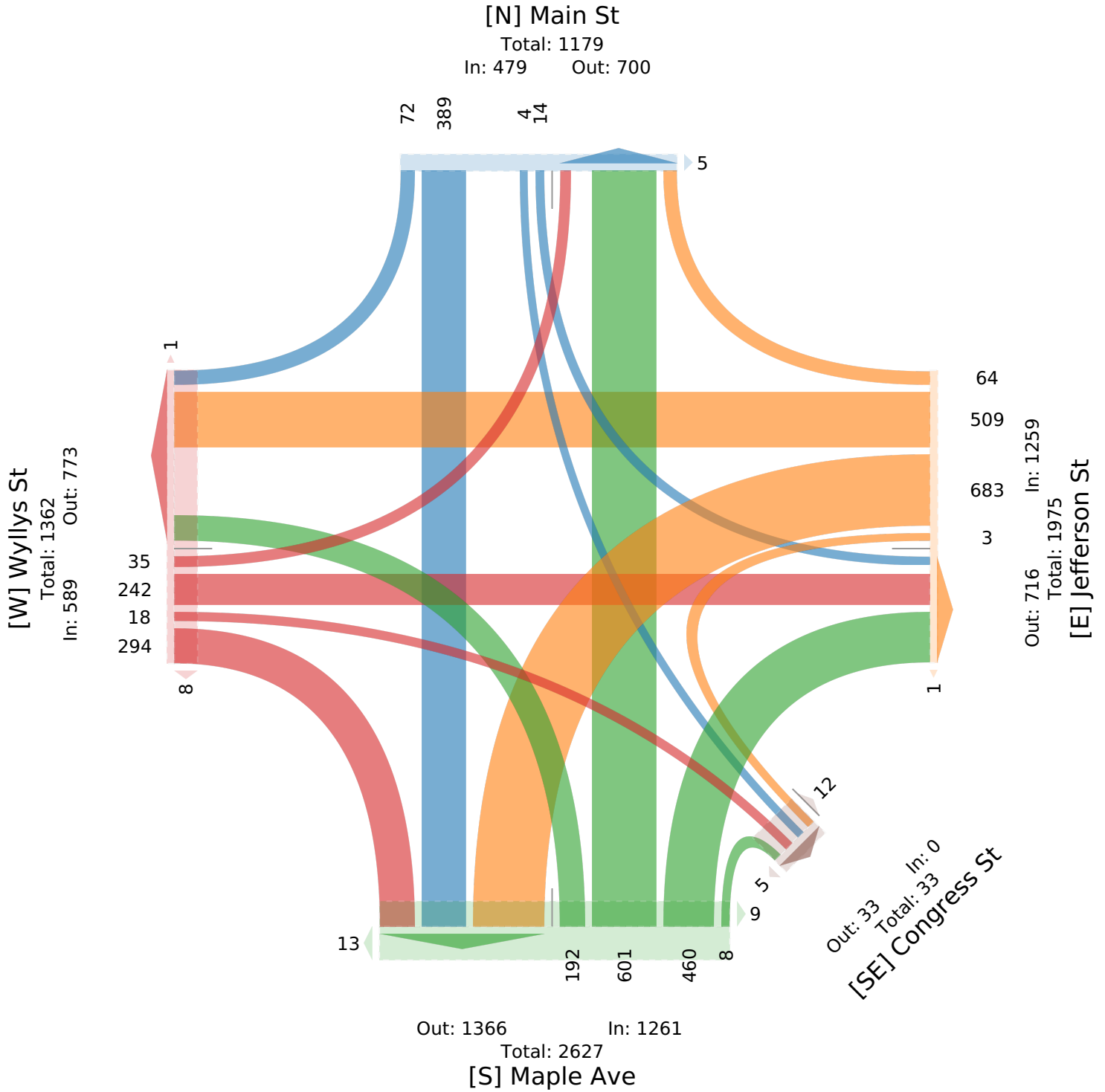
All Movements

ID: 760200, Location: 41.755403, -72.676512

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,

Kensington, CT, 12345, US





Main St/Maple at Jefferson St - TMC

Provided by: Connecticut Counts LLC

Wed Mar 11, 2020

63 Sugar Maple Lane,

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

Kensington, CT, 12345, US

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760200, Location: 41.755403, -72.676512

Leg Direction	Main St Southbound							Jefferson St Westbound							Congress St Northwestbound	
	R	T	BL	L	U	App	Ped*	R	T	L	HL	U	App	Ped*	App	Ped*
Time																
2020-03-11 7:30AM	10	49	0	0	0	59	0	5	67	91	1	0	164	0	0	3
7:45AM	6	67	0	0	0	73	1	7	69	89	0	0	165	1	0	4
8:00AM	10	55	0	2	0	67	2	9	57	103	0	0	169	0	0	2
8:15AM	11	47	0	1	0	59	0	5	81	93	0	0	179	0	0	3
<b>Total</b>	37	218	0	3	0	258	3	26	274	376	1	0	677	1	0	12
<b>% Approach</b>	14.3%	84.5%	0%	1.2%	0%	-	-	3.8%	40.5%	55.5%	0.1%	0%	-	-	-	-
<b>% Total</b>	1.9%	11.2%	0%	0.2%	0%	13.2%	-	1.3%	14.0%	19.3%	0.1%	0%	34.7%	-	0%	-
<b>PHF</b>	0.841	0.813	-	0.375	-	0.884	-	0.722	0.846	0.913	0.250	-	0.946	-	-	-
<b>Lights</b>	31	190	0	3	0	224	-	25	259	357	1	0	642	-	0	-
<b>% Lights</b>	83.8%	87.2%	0%	100%	0%	86.8%	-	96.2%	94.5%	94.9%	100%	0%	94.8%	-	-	-
<b>Articulated Trucks and Single-Unit Trucks</b>	1	3	0	0	0	4	-	0	4	2	0	0	6	-	0	-
<b>% Articulated Trucks and Single-Unit Trucks</b>	2.7%	1.4%	0%	0%	0%	1.6%	-	0%	1.5%	0.5%	0%	0%	0.9%	-	-	-
<b>Buses</b>	5	25	0	0	0	30	-	1	11	17	0	0	29	-	0	-
<b>% Buses</b>	13.5%	11.5%	0%	0%	0%	11.6%	-	3.8%	4.0%	4.5%	0%	0%	4.3%	-	-	-
Pedestrians	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	12
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-	0%

\*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Main St/Maple at Jefferson St - TMC

Wed Mar 11, 2020

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760200, Location: 41.755403, -72.676512

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US

Leg Direction	Maple Ave Northbound							Wyllys St Eastbound							Int
	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	
Time															
2020-03-11 7:30AM	1	85	64	18	0	168	1	38	3	25	6	0	72	0	463
7:45AM	0	83	64	26	0	173	3	33	1	39	5	0	78	1	489
8:00AM	0	75	99	28	0	202	3	54	2	27	3	0	86	1	524
8:15AM	0	46	82	30	0	158	4	39	3	34	5	0	81	1	477
<b>Total</b>	1	289	309	102	0	701	11	164	9	125	19	0	317	3	1953
<b>% Approach</b>	0.1%	41.2%	44.1%	14.6%	0%	-	-	51.7%	2.8%	39.4%	6.0%	0%	-	-	-
<b>% Total</b>	0.1%	14.8%	15.8%	5.2%	0%	35.9%	-	8.4%	0.5%	6.4%	1.0%	0%	16.2%	-	-
<b>PHF</b>	0.250	0.850	0.780	0.850	-	0.868	-	0.759	0.750	0.801	0.792	-	0.922	-	0.932
<b>Lights</b>	0	280	285	98	0	663	-	155	7	115	16	0	293	-	1822
<b>% Lights</b>	0%	96.9%	92.2%	96.1%	0%	94.6%	-	94.5%	77.8%	92.0%	84.2%	0%	92.4%	-	93.3%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	2	2	0	0	4	-	2	1	1	0	0	4	-	18
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	0.7%	0.6%	0%	0%	0.6%	-	1.2%	11.1%	0.8%	0%	0%	1.3%	-	0.9%
<b>Buses</b>	1	7	22	4	0	34	-	7	1	9	3	0	20	-	113
<b>% Buses</b>	100%	2.4%	7.1%	3.9%	0%	4.9%	-	4.3%	11.1%	7.2%	15.8%	0%	6.3%	-	5.8%
<b>Pedestrians</b>	-	-	-	-	-	-	11	-	-	-	-	-	-	3	-
<b>% Pedestrians</b>	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-

\*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

**Main St/Maple at Jefferson St - TMC**

Wed Mar 11, 2020

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

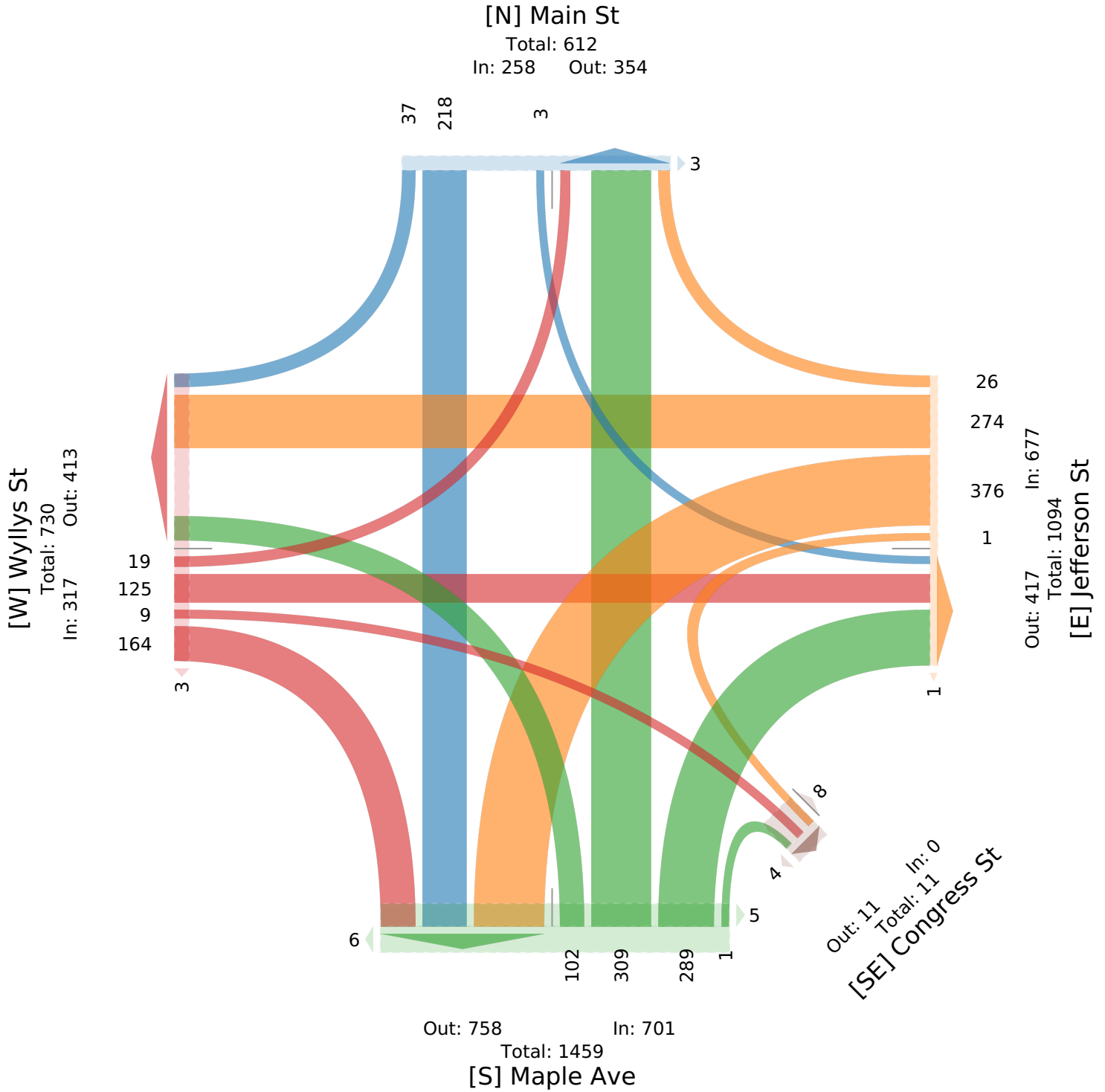
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 760200, Location: 41.755403, -72.676512

Provided by: Connecticut Counts LLC

63 Sugar Maple Lane,  
Kensington, CT, 12345, US



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Main/Maple at Jefferson/Wyllys/Congress  
Hartford, Connecticut

File Name : 23036  
Site Code : 23036  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Congress St

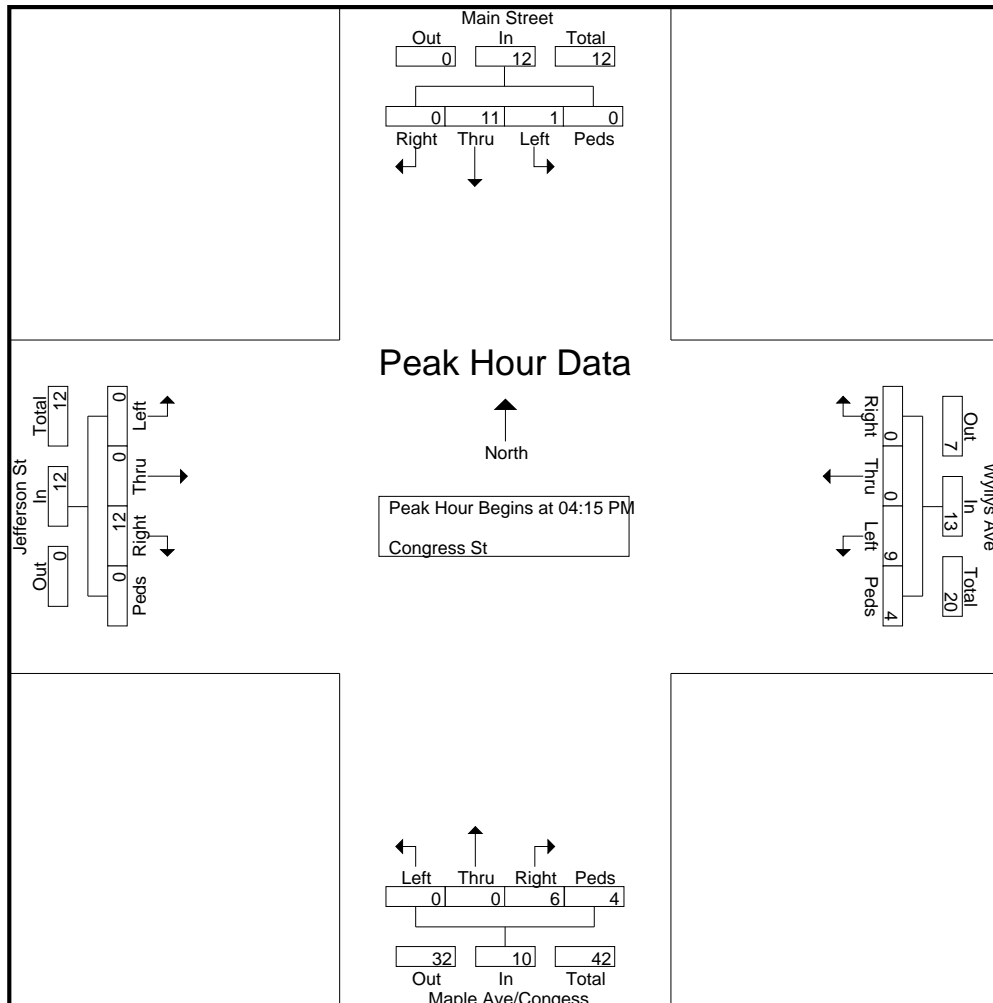
Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congress From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	1	0	0	1	0	0	1	0	1	2	0	0	0	2	7	0	0	0	7	11
04:15 PM	0	5	1	0	6	0	0	1	3	4	1	0	0	2	3	4	0	0	0	4	17
04:30 PM	0	1	0	0	1	0	0	2	0	2	1	0	0	0	1	2	0	0	0	2	6
04:45 PM	0	2	0	0	2	0	0	1	0	1	2	0	0	0	2	4	0	0	0	4	9
Total	0	9	1	0	10	0	0	5	3	8	6	0	0	2	8	17	0	0	0	17	43
05:00 PM	0	3	0	0	3	0	0	5	1	6	2	0	0	2	4	2	0	0	0	2	15
05:15 PM	0	2	0	0	2	0	0	2	0	2	0	0	0	0	0	2	0	0	0	2	6
05:30 PM	0	1	0	0	1	0	0	1	0	1	2	0	0	1	3	2	0	0	0	2	7
05:45 PM	0	3	0	0	3	0	0	1	0	1	2	0	0	0	2	1	0	0	0	1	7
Total	0	9	0	0	9	0	0	9	1	10	6	0	0	3	9	7	0	0	0	7	35
Grand Total	0	18	1	0	19	0	0	14	4	18	12	0	0	5	17	24	0	0	0	24	78
Apprch %	0	94.7	5.3	0		0	0	77.8	22.2		70.6	0	0	29.4		100	0	0	0		
Total %	0	23.1	1.3	0	24.4	0	0	17.9	5.1	23.1	15.4	0	0	6.4	21.8	30.8	0	0	0	30.8	

# Connecticut Counts LLC

Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23036  
 Site Code : 23036  
 Start Date : 5/12/2022  
 Page No : 2

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	5	1	0	6	0	0	1	3	4	1	0	0	2	3	4	0	0	0	4	17
04:30 PM	0	1	0	0	1	0	0	2	0	2	1	0	0	0	1	2	0	0	0	2	6
04:45 PM	0	2	0	0	2	0	0	1	0	1	2	0	0	0	2	4	0	0	0	4	9
05:00 PM	0	3	0	0	3	0	0	5	1	6	2	0	0	2	4	2	0	0	0	2	15
Total Volume	0	11	1	0	12	0	0	9	4	13	6	0	0	4	10	12	0	0	0	12	47
% App. Total	0	91.7	8.3	0		0	0	69.2	30.8		60	0	0	40		100	0	0	0		
PHF	.000	.550	.250	.000	.500	.000	.000	.450	.333	.542	.750	.000	.000	.500	.625	.750	.000	.000	.000	.750	.691





# Connecticut Counts LLC

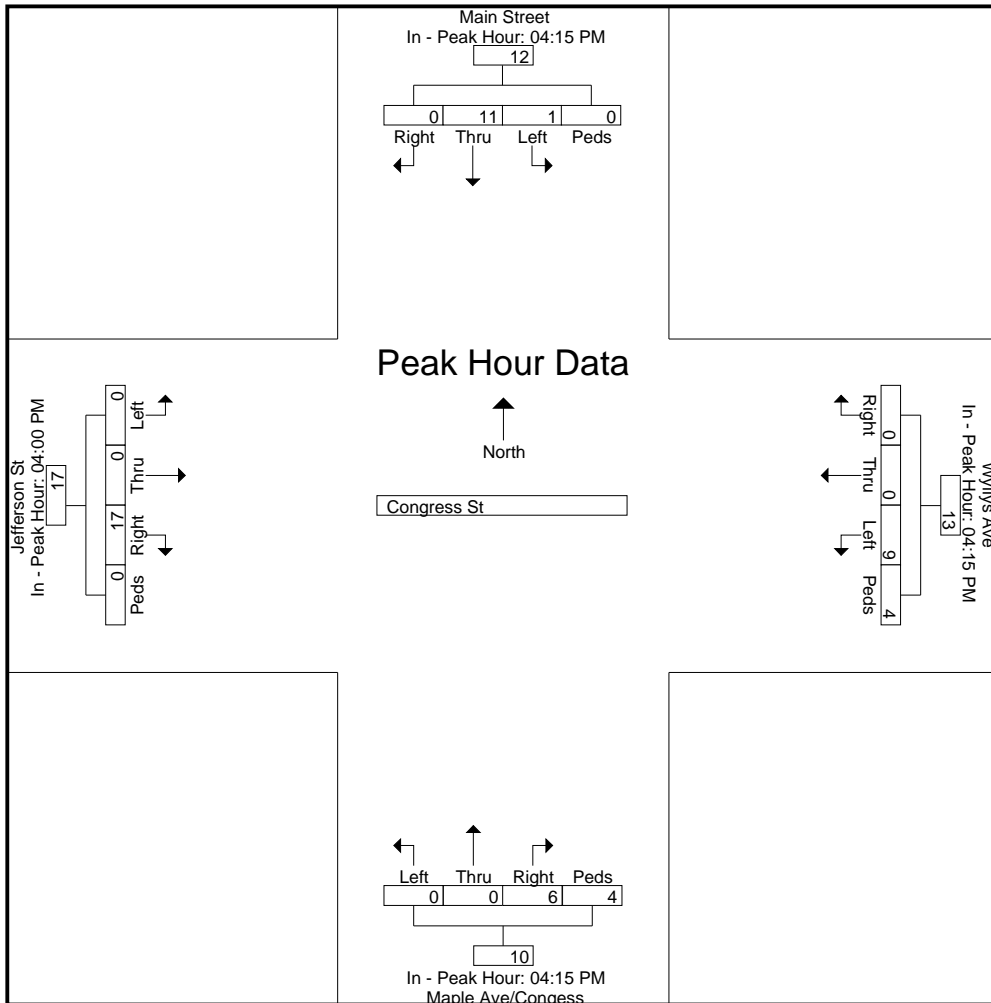
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23036  
 Site Code : 23036  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congress From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM					04:15 PM					04:15 PM					04:00 PM				
+0 mins.	0	5	1	0	6	0	0	1	3	4	1	0	0	2	3	7	0	0	0	7
+15 mins.	0	1	0	0	1	0	0	2	0	2	1	0	0	0	1	4	0	0	0	4
+30 mins.	0	2	0	0	2	0	0	1	0	1	2	0	0	0	2	2	0	0	0	2
+45 mins.	0	3	0	0	3	0	0	5	1	6	2	0	0	2	4	4	0	0	0	4
Total Volume	0	11	1	0	12	0	0	9	4	13	6	0	0	4	10	17	0	0	0	17
% App. Total	0	91.7	8.3	0		0	0	69.2	30.8		60	0	0	40		100	0	0	0	
PHF	.000	.550	.250	.000	.500	.000	.000	.450	.333	.542	.750	.000	.000	.500	.625	.607	.000	.000	.000	.607



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Main/Maple at Jefferson/Wyllys/Congress  
Hartford, Connecticut

File Name : 23036  
Site Code : 23036  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Main Int

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congress From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	8	59	2	1	70	8	64	54	0	126	65	112	20	5	202	45	79	10	2	136	534
04:15 PM	12	77	3	0	92	6	31	49	0	86	69	127	19	2	217	38	68	4	0	110	505
04:30 PM	9	55	8	0	72	17	58	62	2	139	90	127	18	3	238	43	57	15	2	117	566
04:45 PM	7	74	1	0	82	20	42	79	0	141	79	107	28	4	218	37	61	12	1	111	552
Total	36	265	14	1	316	51	195	244	2	492	303	473	85	14	875	163	265	41	5	474	2157
05:00 PM	4	84	2	3	93	8	61	59	2	130	66	132	26	2	226	54	60	7	1	122	571
05:15 PM	4	58	2	2	66	10	54	80	0	144	59	105	19	7	190	34	58	7	1	100	500
05:30 PM	4	74	2	1	81	15	39	72	1	127	74	103	22	2	201	28	54	10	0	92	501
05:45 PM	3	54	3	0	60	11	59	58	1	129	57	73	18	1	149	33	43	8	0	84	422
Total	15	270	9	6	300	44	213	269	4	530	256	413	85	12	766	149	215	32	2	398	1994
Grand Total	51	535	23	7	616	95	408	513	6	1022	559	886	170	26	1641	312	480	73	7	872	4151
Apprch %	8.3	86.9	3.7	1.1		9.3	39.9	50.2	0.6		34.1	54	10.4	1.6		35.8	55	8.4	0.8		
Total %	1.2	12.9	0.6	0.2	14.8	2.3	9.8	12.4	0.1	24.6	13.5	21.3	4.1	0.6	39.5	7.5	11.6	1.8	0.2	21	

# Connecticut Counts LLC

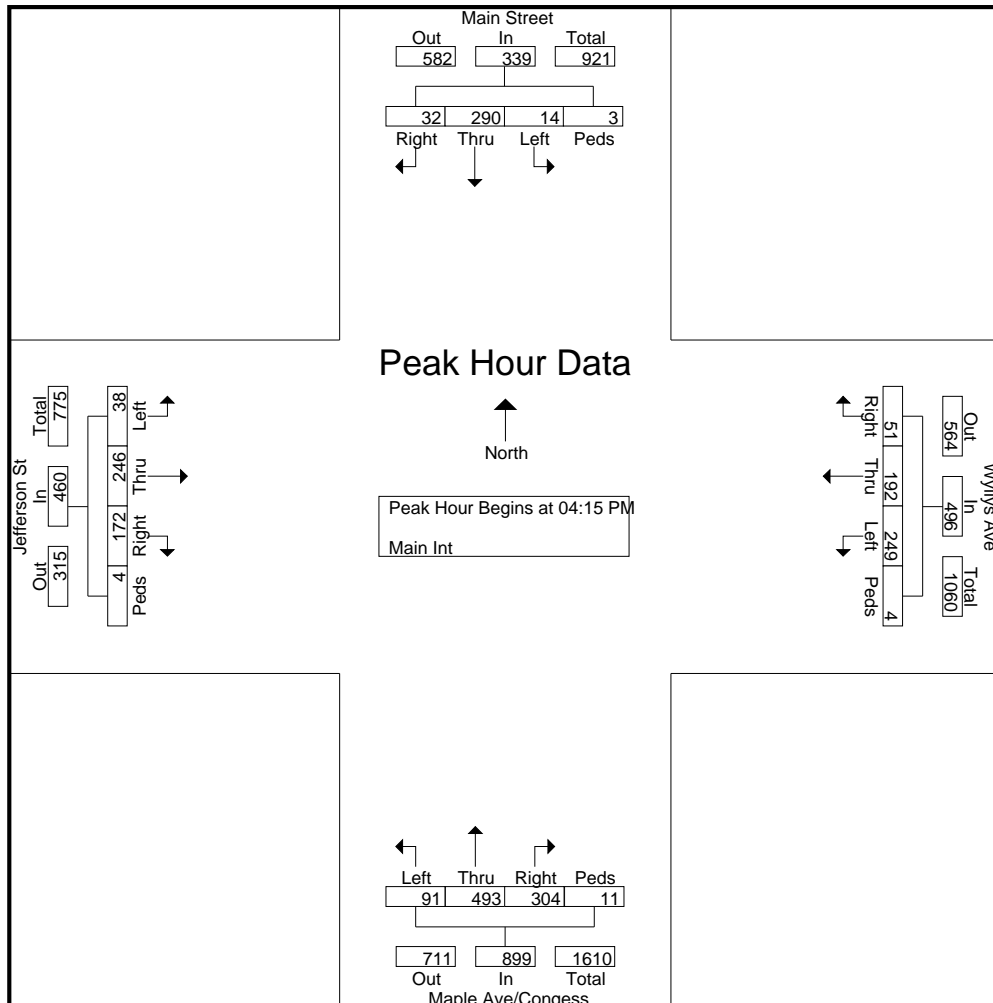
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23036  
Site Code : 23036  
Start Date : 5/12/2022  
Page No : 2

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:15 PM

04:15 PM	12	77	3	0	92	6	31	49	0	86	69	127	19	2	217	38	68	4	0	110	505
04:30 PM	9	55	8	0	72	17	58	62	2	139	90	127	18	3	238	43	57	15	2	117	566
04:45 PM	7	74	1	0	82	20	42	79	0	141	79	107	28	4	218	37	61	12	1	111	552
05:00 PM	4	84	2	3	93	8	61	59	2	130	66	132	26	2	226	54	60	7	1	122	571
Total Volume	32	290	14	3	339	51	192	249	4	496	304	493	91	11	899	172	246	38	4	460	2194
% App. Total	9.4	85.5	4.1	0.9		10.3	38.7	50.2	0.8		33.8	54.8	10.1	1.2		37.4	53.5	8.3	0.9		
PHF	.667	.863	.438	.250	.911	.638	.787	.788	.500	.879	.844	.934	.813	.688	.944	.796	.904	.633	.500	.943	.961



# Connecticut Counts LLC

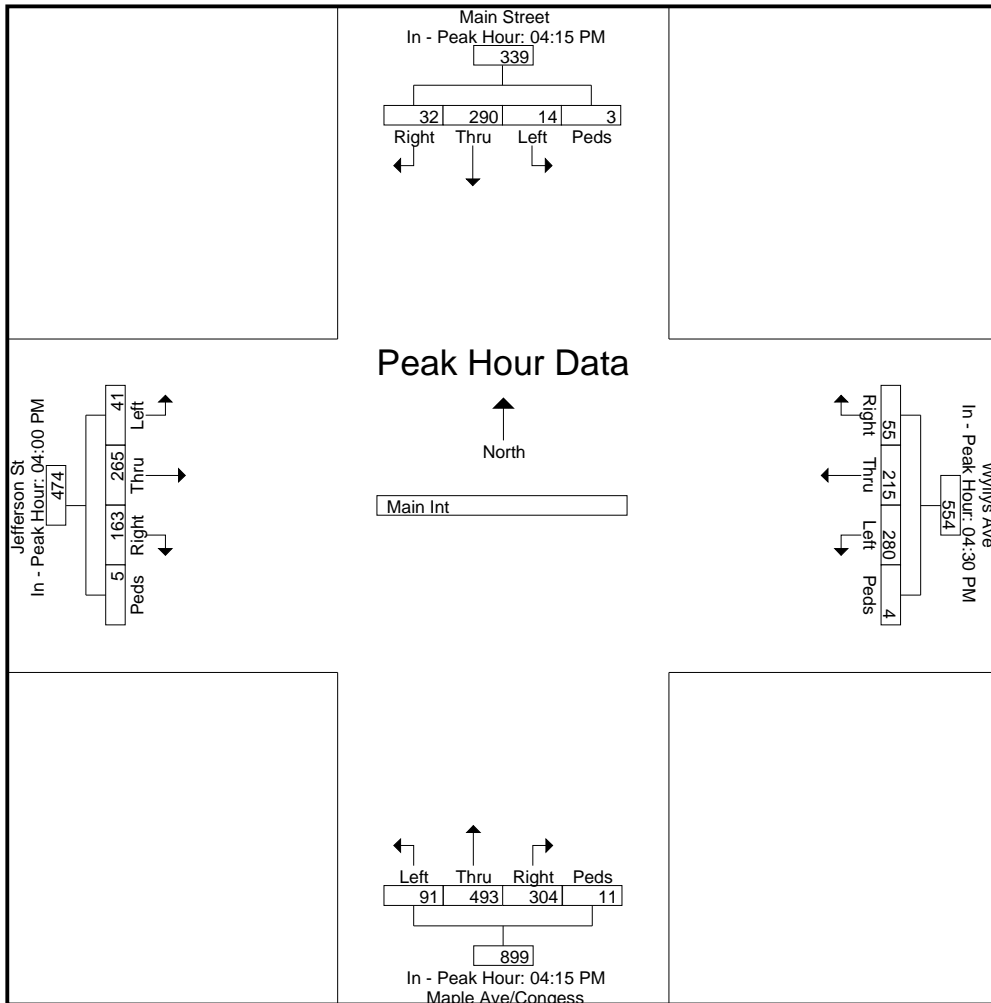
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23036  
 Site Code : 23036  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Main Street From North					Wyllys Ave From East					Maple Ave/Congess From South					Jefferson St From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM					04:30 PM					04:15 PM					04:00 PM				
+0 mins.	12	77	3	0	92	17	58	62	2	139	69	127	19	2	217	45	79	10	2	136
+15 mins.	9	55	8	0	72	20	42	79	0	141	90	127	18	3	238	38	68	4	0	110
+30 mins.	7	74	1	0	82	8	61	59	2	130	79	107	28	4	218	43	57	15	2	117
+45 mins.	4	84	2	3	93	10	54	80	0	144	66	132	26	2	226	37	61	12	1	111
Total Volume	32	290	14	3	339	55	215	280	4	554	304	493	91	11	899	163	265	41	5	474
% App. Total	9.4	85.5	4.1	0.9		9.9	38.8	50.5	0.7		33.8	54.8	10.1	1.2		34.4	55.9	8.6	1.1	
PHF	.667	.863	.438	.250	.911	.688	.881	.875	.500	.962	.844	.934	.813	.688	.944	.906	.839	.683	.625	.871



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Wyllys St at Main St/Wethersfield Ave  
Hartford, Connecticut

File Name : 23039  
Site Code : 23039  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - buses

Start Time	Main Street From North					Wyllys Avenue From East					Wethersfield Avenue From South					Wyllys Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	14	2	0	16	4	116	7	3	130	34	45	14	4	97	2	41	10	5	58	301
07:15 AM	0	29	4	0	33	3	138	11	3	155	22	48	24	1	95	5	56	0	5	66	349
07:30 AM	1	35	4	0	40	13	143	13	3	172	37	49	32	2	120	9	96	2	17	124	456
07:45 AM	2	39	6	1	48	3	134	3	0	140	30	44	33	1	108	9	77	1	6	93	389
Total	3	117	16	1	137	23	531	34	9	597	123	186	103	8	420	25	270	13	33	341	1495
08:00 AM	1	51	7	0	59	8	136	8	6	158	40	55	15	2	112	15	64	0	19	98	427
08:15 AM	0	51	14	0	65	4	120	21	2	147	34	67	38	1	140	10	50	1	6	67	419
08:30 AM	1	51	9	0	61	8	127	17	5	157	30	57	39	1	127	12	79	0	10	101	446
08:45 AM	2	38	8	0	48	5	103	20	2	130	26	70	37	2	135	15	55	2	3	75	388
Total	4	191	38	0	233	25	486	66	15	592	130	249	129	6	514	52	248	3	38	341	1680
Grand Total	7	308	54	1	370	48	1017	100	24	1189	253	435	232	14	934	77	518	16	71	682	3175
Apprch %	1.9	83.2	14.6	0.3		4	85.5	8.4	2		27.1	46.6	24.8	1.5		11.3	76	2.3	10.4		
Total %	0.2	9.7	1.7	0	11.7	1.5	32	3.1	0.8	37.4	8	13.7	7.3	0.4	29.4	2.4	16.3	0.5	2.2	21.5	
Lights	7	285	46	1	339	47	985	98	24	1154	232	400	221	14	867	71	499	15	71	656	3016
% Lights	100	92.5	85.2	100	91.6	97.9	96.9	98	100	97.1	91.7	92	95.3	100	92.8	92.2	96.3	93.8	100	96.2	95
Trucks	0	1	2	0	3	0	8	1	0	9	1	5	3	0	9	1	3	0	0	4	25
% Trucks	0	0.3	3.7	0	0.8	0	0.8	1	0	0.8	0.4	1.1	1.3	0	1	1.3	0.6	0	0	0.6	0.8
buses	0	22	6	0	28	1	24	1	0	26	20	30	8	0	58	5	16	1	0	22	134
% buses	0	7.1	11.1	0	7.6	2.1	2.4	1	0	2.2	7.9	6.9	3.4	0	6.2	6.5	3.1	6.2	0	3.2	4.2



# Connecticut Counts LLC

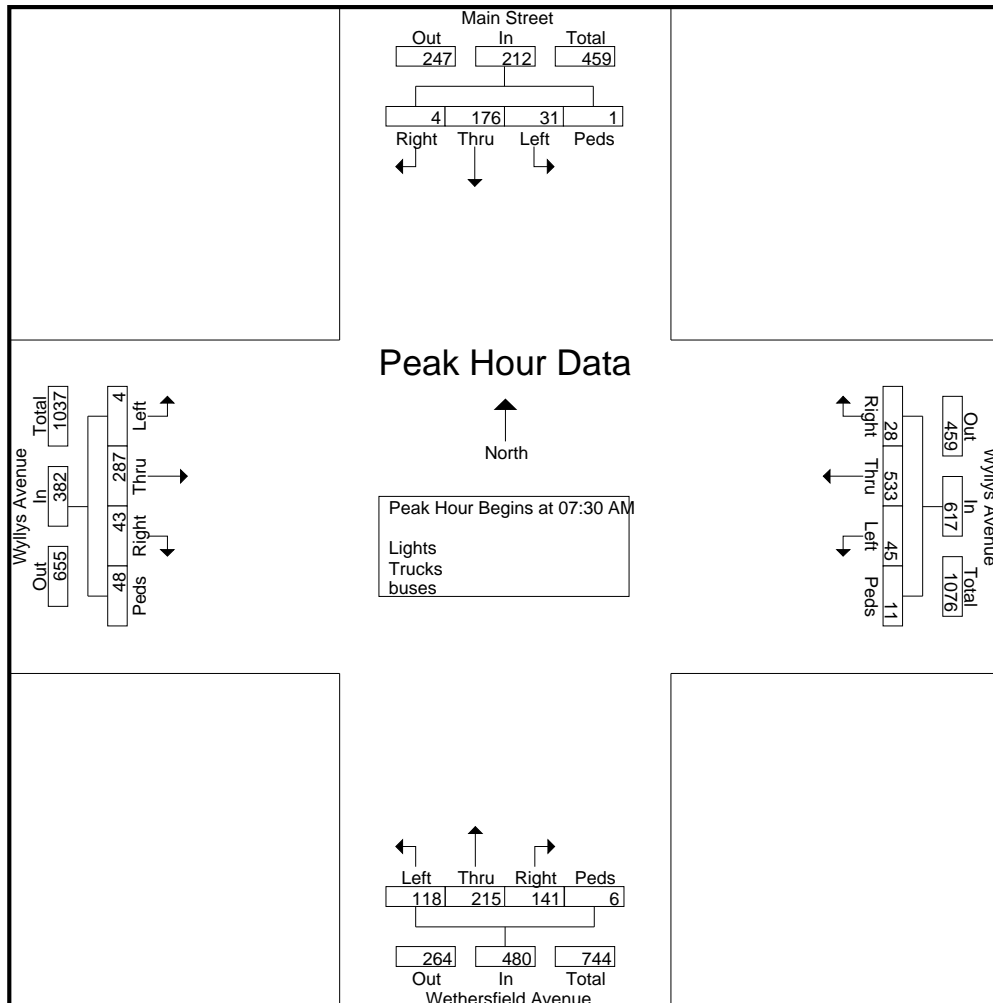
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23039  
Site Code : 23039  
Start Date : 5/12/2022  
Page No : 2

Start Time	Main Street From North					Wyllys Avenue From East					Wethersfield Avenue From South					Wyllys Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	1	35	4	0	40	13	143	13	3	172	37	49	32	2	120	9	96	2	17	124	456
07:45 AM	2	39	6	1	48	3	134	3	0	140	30	44	33	1	108	9	77	1	6	93	389
08:00 AM	1	51	7	0	59	8	136	8	6	158	40	55	15	2	112	15	64	0	19	98	427
08:15 AM	0	51	14	0	65	4	120	21	2	147	34	67	38	1	140	10	50	1	6	67	419
Total Volume	4	176	31	1	212	28	533	45	11	617	141	215	118	6	480	43	287	4	48	382	1691
% App. Total	1.9	83	14.6	0.5		4.5	86.4	7.3	1.8		29.4	44.8	24.6	1.2		11.3	75.1	1	12.6		
PHF	.500	.863	.554	.250	.815	.538	.932	.536	.458	.897	.881	.802	.776	.750	.857	.717	.747	.500	.632	.770	.927



# Connecticut Counts LLC

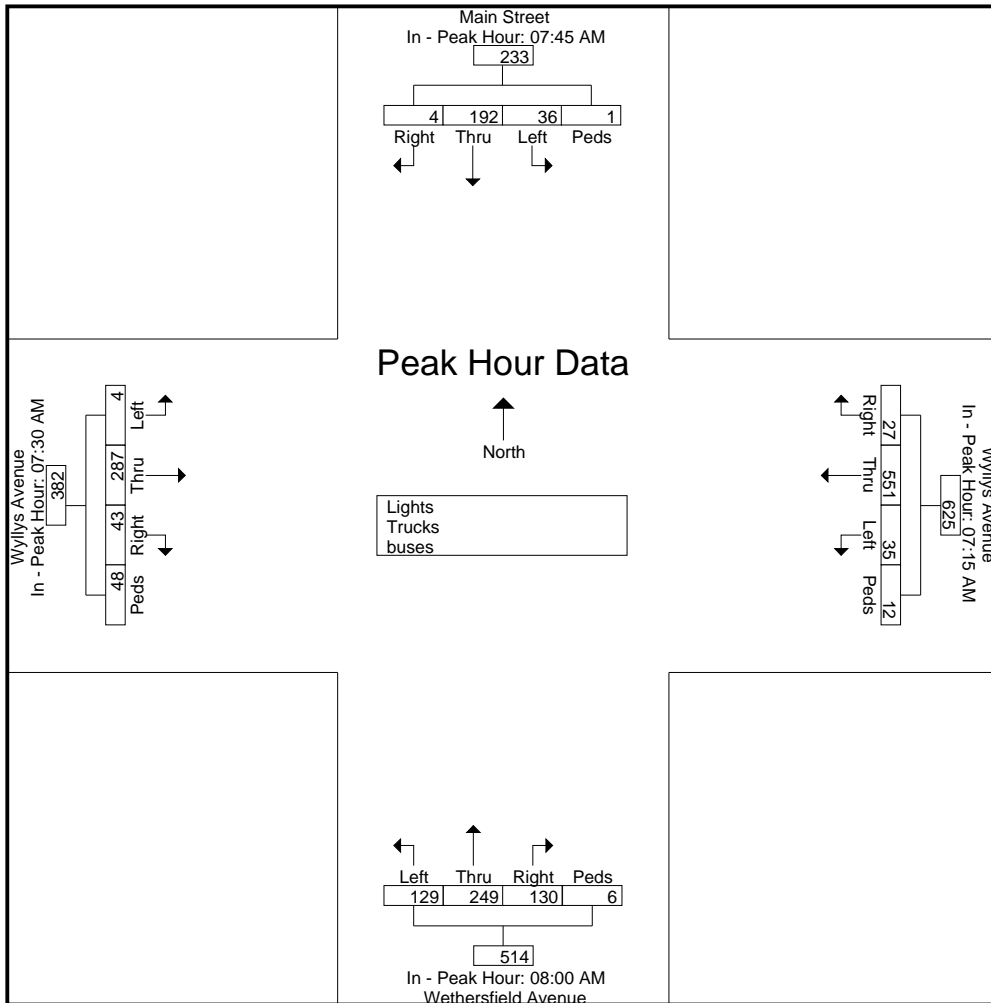
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23039  
 Site Code : 23039  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Main Street From North					Wyllys Avenue From East					Wethersfield Avenue From South					Wyllys Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:45 AM					07:15 AM					08:00 AM					07:30 AM				
+0 mins.	2	39	6	1	48	3	138	11	3	155	40	55	15	2	112	9	96	2	17	124
+15 mins.	1	51	7	0	59	13	143	13	3	172	34	67	38	1	140	9	77	1	6	93
+30 mins.	0	51	14	0	65	3	134	3	0	140	30	57	39	1	127	15	64	0	19	98
+45 mins.	1	51	9	0	61	8	136	8	6	158	26	70	37	2	135	10	50	1	6	67
Total Volume	4	192	36	1	233	27	551	35	12	625	130	249	129	6	514	43	287	4	48	382
% App. Total	1.7	82.4	15.5	0.4		4.3	88.2	5.6	1.9		25.3	48.4	25.1	1.2		11.3	75.1	1	12.6	
PHF	.500	.941	.643	.250	.896	.519	.963	.673	.500	.908	.813	.889	.827	.750	.918	.717	.747	.500	.632	.770



**Connecticut Counts LLC**  
**Kensington, Connecticut 06037**  
**(860) 828-1693**

Wyllys St at Main St/Wethersfield Ave  
Hartford, Connecticut

File Name : 23040  
Site Code : 23040  
Start Date : 5/12/2022  
Page No : 1

Groups Printed- Lights - Trucks - buses

Start Time	Main Street From North					Wyllys Avenue From East					Wethersfield Avenue From South					Wyllys Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	3	55	7	2	67	5	101	22	2	130	29	74	35	1	139	23	141	0	10	174	510
04:15 PM	2	73	12	0	87	4	82	27	1	114	36	56	30	3	125	16	109	3	17	145	471
04:30 PM	1	42	9	0	52	4	88	22	3	117	46	71	31	4	152	18	163	3	17	201	522
04:45 PM	2	61	7	1	71	3	114	29	3	149	38	56	40	3	137	12	113	2	16	143	500
Total	8	231	35	3	277	16	385	100	9	510	149	257	136	11	553	69	526	8	60	663	2003
05:00 PM	4	48	9	0	61	6	88	22	2	118	36	58	37	8	139	14	127	0	7	148	466
05:15 PM	2	75	7	2	86	6	114	29	7	156	31	59	31	1	122	25	106	2	15	148	512
05:30 PM	3	75	7	3	88	3	89	13	2	107	36	58	42	10	146	23	95	1	15	134	475
05:45 PM	2	47	7	0	56	4	91	27	0	122	26	40	32	2	100	16	93	4	18	131	409
Total	11	245	30	5	291	19	382	91	11	503	129	215	142	21	507	78	421	7	55	561	1862
Grand Total	19	476	65	8	568	35	767	191	20	1013	278	472	278	32	1060	147	947	15	115	1224	3865
Apprch %	3.3	83.8	11.4	1.4		3.5	75.7	18.9	2		26.2	44.5	26.2	3		12	77.4	1.2	9.4		
Total %	0.5	12.3	1.7	0.2	14.7	0.9	19.8	4.9	0.5	26.2	7.2	12.2	7.2	0.8	27.4	3.8	24.5	0.4	3	31.7	
Lights	19	462	62	8	551	34	756	190	20	1000	269	459	275	28	1031	144	931	14	113	1202	3784
% Lights	100	97.1	95.4	100	97	97.1	98.6	99.5	100	98.7	96.8	97.2	98.9	87.5	97.3	98	98.3	93.3	98.3	98.2	97.9
Trucks	0	1	0	0	1	0	2	0	0	2	1	0	0	4	5	1	2	1	2	6	14
% Trucks	0	0.2	0	0	0.2	0	0.3	0	0	0.2	0.4	0	0	12.5	0.5	0.7	0.2	6.7	1.7	0.5	0.4
buses	0	13	3	0	16	1	9	1	0	11	8	13	3	0	24	2	14	0	0	16	67
% buses	0	2.7	4.6	0	2.8	2.9	1.2	0.5	0	1.1	2.9	2.8	1.1	0	2.3	1.4	1.5	0	0	1.3	1.7

# Connecticut Counts LLC

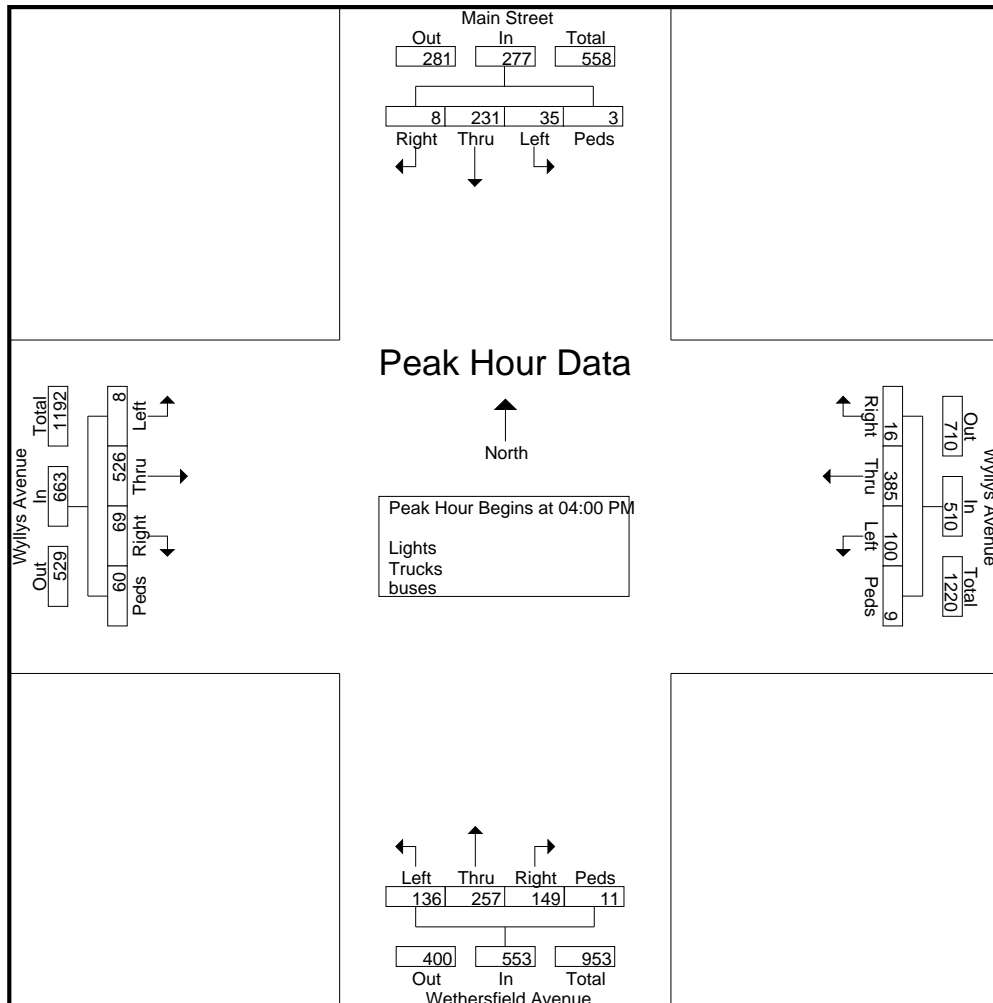
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23040  
Site Code : 23040  
Start Date : 5/12/2022  
Page No : 2

Start Time	Main Street From North					Wyllys Avenue From East					Wethersfield Avenue From South					Wyllys Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	3	55	7	2	67	5	101	22	2	130	29	74	35	1	139	23	141	0	10	174	510
04:15 PM	2	73	12	0	87	4	82	27	1	114	36	56	30	3	125	16	109	3	17	145	471
04:30 PM	1	42	9	0	52	4	88	22	3	117	46	71	31	4	152	18	163	3	17	201	522
04:45 PM	2	61	7	1	71	3	114	29	3	149	38	56	40	3	137	12	113	2	16	143	500
Total Volume	8	231	35	3	277	16	385	100	9	510	149	257	136	11	553	69	526	8	60	663	2003
% App. Total	2.9	83.4	12.6	1.1		3.1	75.5	19.6	1.8		26.9	46.5	24.6	2		10.4	79.3	1.2	9		
PHF	.667	.791	.729	.375	.796	.800	.844	.862	.750	.856	.810	.868	.850	.688	.910	.750	.807	.667	.882	.825	.959



# Connecticut Counts LLC

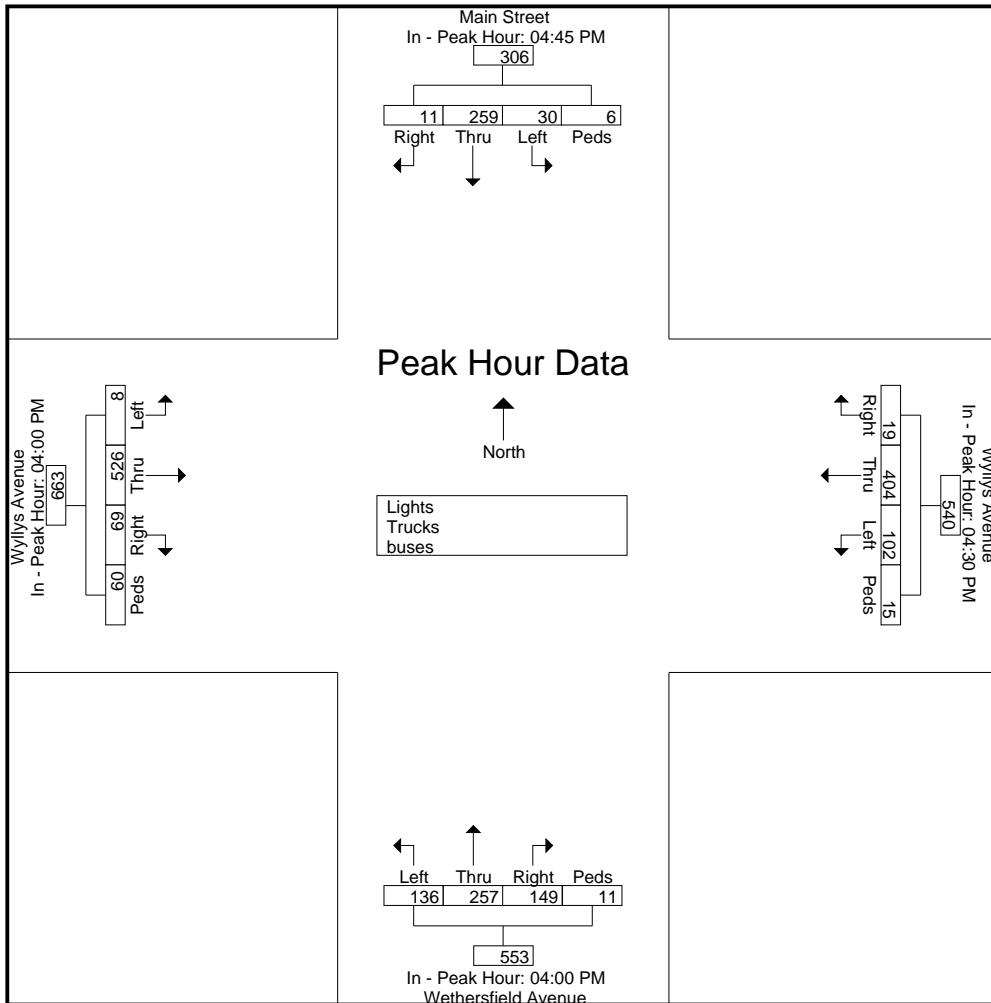
Kensington, Connecticut 06037  
(860) 828-1693

File Name : 23040  
 Site Code : 23040  
 Start Date : 5/12/2022  
 Page No : 3

Start Time	Main Street From North					Wyllys Avenue From East					Wethersfield Avenue From South					Wyllys Avenue From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM					04:30 PM					04:00 PM					04:00 PM				
+0 mins.	2	61	7	1	71	4	88	22	3	117	29	74	35	1	139	23	141	0	10	174
+15 mins.	4	48	9	0	61	3	114	29	3	149	36	56	30	3	125	16	109	3	17	145
+30 mins.	2	75	7	2	86	6	88	22	2	118	46	71	31	4	152	18	163	3	17	201
+45 mins.	3	75	7	3	88	6	114	29	7	156	38	56	40	3	137	12	113	2	16	143
Total Volume	11	259	30	6	306	19	404	102	15	540	149	257	136	11	553	69	526	8	60	663
% App. Total	3.6	84.6	9.8	2		3.5	74.8	18.9	2.8		26.9	46.5	24.6	2		10.4	79.3	1.2	9	
PHF	.688	.863	.833	.500	.869	.792	.886	.879	.536	.865	.810	.868	.850	.688	.910	.750	.807	.667	.882	.825





## Appendix F

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### Crash Data Records

### Uconn Crash Data

Connecticut Children's Medical Center  
Hartford, Connecticut  
January 1, 2019 - December 31, 2021

Date Of Crash	Time of Crash	Severity	No. Of Veh.	No. Of Non-Motorists	Town	Mileage	Roadway	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances	Contributing Circumstances Roadway
<b>01) Washington Street at Jefferson Street</b>														
1/19/2019	19:54:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Dry	None	None
3/9/2019	16:15:00	Possible Injury	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Daylight	Dry	None	None
3/22/2019	8:53:00	PDO	2	0	Hartford	0.59	WASHINGTON ST		Front to rear	Rain	Daylight	Wet	None	None
4/13/2019	5:26:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dawn	Wet	None	None
5/6/2019	8:30:00	Suspected Minor Injury	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Rain	Daylight	Dry	None	None
5/25/2019	19:36:00	PDO	2	0	Hartford	0.57	WASHINGTON ST		Front to rear	Clear	Daylight	Dry	None	None
6/2/2019	16:54:00	Possible Injury	3	0	Hartford	0.3	JEFFERSON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
6/8/2019	18:11:00	Suspected Minor Injury	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Front to rear	Clear	Daylight	Dry	None	None
6/8/2019	21:30:00	Possible Injury	3	0	Hartford	0.56	Washington St	Jefferson St	Front to rear	Clear	Dark-Lighted	Dry	None	None
6/25/2019	17:43:00	Possible Injury	2	0	Hartford	0.51	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
6/29/2019	7:29:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Daylight	Dry	None	None
7/18/2019	18:50:00	PDO	1	0	Hartford	0.36	JEFFERSON ST		Not Applicable	Clear	Daylight	Dry	None	None
7/22/2019	14:17:00	PDO	2	0	Hartford	0.53	WASHINGTON ST		Sideswipe, same direction	Cloudy	Daylight	Dry	None	None
8/4/2019	5:44:00	Suspected Minor Injury	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Front to front	Clear	Daylight	Dry	None	None
9/23/2019	19:29:00	Possible Injury	1	1	Hartford	0.31	JEFFERSON ST	WASHINGTON	Not Applicable	Clear	Dark-Lighted	Dry	None	None
9/24/2019	13:42:00	Suspected Minor Injury	2	0	Hartford	0.35	JEFFERSON ST		Front to rear	Clear	Daylight	Dry	None	None
9/27/2019	13:00:00	Suspected Minor Injury	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Sideswipe, opposite direction	Clear	Daylight	Dry	None	Backup Due to Regular Congestion
10/17/2019	9:34:00	Possible Injury	2	0	Hartford	0.57	WASHINGTON ST		Front to rear	Clear	Daylight	Dry	None	Backup Due to Regular Congestion
11/10/2019	17:08:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Front to front	Clear	Dark-Lighted	Dry	None	None
11/25/2019	15:14:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None
12/4/2019	12:00:00	PDO	2	0	Hartford	0.51	WASHINGTON ST		Sideswipe, same direction	Cloudy	Daylight	Wet	None	None
12/10/2019	17:39:00	PDO	2	0	Hartford	0.28	JEFFERSON ST		Sideswipe, same direction	Rain	Dark-Lighted	Wet	None	None
12/13/2019	17:59:00	Suspected Minor Injury	2	0	Hartford	0.53	WASHINGTON ST		Angle	Rain	Dark-Lighted	Wet	None	None
12/19/2019	10:39:00	PDO	2	0	Hartford	0.55	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
12/23/2019	23:57:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Dry	None	None
1/7/2020	19:15:00	PDO	2	0	Hartford	0.55	WASHINGTON ST		Angle	Clear	Dark-Lighted	Dry	None	None
2/11/2020	21:31:00	PDO	2	0	Hartford	0.59	Washington St		Angle	Clear	Dark-Lighted	Dry	None	None
2/12/2020	22:44:00	Possible Injury	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Dry	None	None
2/19/2020	21:19:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Dry	None	None
2/26/2020	21:10:00	Suspected Minor Injury	1	1	Hartford	0.53	WASHINGTON ST		Not Applicable	Clear	Dark-Lighted	Dry	None	None
4/27/2020	14:20:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Cloudy	Daylight	Wet	None	None
6/29/2020	22:07:00	PDO	1	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Not Applicable	Clear	Dark-Lighted	Dry	None	Unknown
8/17/2020	9:46:00	Possible Injury	2	0	Hartford	0.58	WASHINGTON ST		Angle	Clear	Daylight	Dry	None	None
8/21/2020	18:09:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Daylight	Dry	None	None
9/27/2020	22:21:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Dry	None	None
10/12/2020	18:09:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Dry	None	None
10/12/2020	22:16:00	PDO	2	0	Hartford	0.61	WASHINGTON ST		Front to rear	Clear	Dark-Lighted	Dry	None	None
11/9/2020	6:30:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Daylight	Dry	None	None
11/20/2020	20:57:00	PDO	2	0	Hartford	0.53	WASHINGTON ST		Angle	Clear	Dark-Lighted	Dry	None	None
12/4/2020	17:10:00	Possible Injury	2	0	Hartford	0.54	WASHINGTON ST		Angle	Clear	Dark-Lighted	Dry	None	Backup Due to Regular Congestion
12/22/2020	2:57:00	PDO	3	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Dark-Lighted	Ice / Frost	None	None
1/9/2021	11:49:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Angle	Clear	Daylight	Dry	None	None
1/9/2021	14:50:00	Possible Injury	2	0	Hartford	0.53	WASHINGTON ST		Front to rear	Clear	Daylight	Dry	None	None
1/15/2021	23:29:00	Possible Injury	2	0	Hartford	0.55	WASHINGTON ST		Angle	Clear	Dark-Unknown Lighting	Dry	None	None
2/10/2021	6:29:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Daylight	Wet	None	None
3/7/2021	17:50:00	PDO	2	0	Hartford	0.3	JEFFERSON ST		Front to rear	Clear	Dusk	Dry	None	None
4/2/2021	14:37:00	PDO	2	0	Hartford	0.56	WASHINGTON ST	JEFFERSON ST	Angle	Clear	Daylight	Dry	None	None
<b>02) Washington Street at Zwieback Street</b>														
1/23/2019	14:51:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Angle	Clear	Daylight	Wet	None	None
7/24/2019	8:07:00	Possible Injury	1	1	Hartford	0.5	WASHINGTON ST	MADISON ST	Not Applicable	Clear	Daylight	Dry	None	None
9/18/2019	18:22:00	Suspected Minor Injury	2	0	Hartford	0.47	WASHINGTON ST	SEYMOUR ST	Angle	Rain	Dark-Lighted	Wet	None	None
12/21/2019	21:07:00	Suspected Serious Injury	1	1	Hartford	0.47	WASHINGTON ST	ZWIEBACK ST	Not Applicable	Clear	Dark-Lighted	Dry	None	None
12/22/2019	15:37:00	PDO	2	0	Hartford	0.5	WASHINGTON ST		Front to rear	Clear	Daylight	Dry	None	None
1/20/2020	8:15:00	PDO	2	0	Hartford	0.48	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
1/20/2020	19:42:00	PDO	2	0	Hartford	0.47	WASHINGTON ST		Angle	Clear	Dark-Lighted	Ice / Frost	None	None
2/6/2020	16:10:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Angle	Rain	Daylight	Wet	None	None
2/20/2020	19:57:00	Possible Injury	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Front to rear	Clear	Dark-Lighted	Dry	None	None
3/1/2020	0:36:00	Suspected Minor Injury	3	0	Hartford	0.48	WASHINGTON ST		Sideswipe, opposite direction	Clear	Dark-Lighted	Dry	None	None
4/22/2020	13:17:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Angle	Clear	Daylight	Dry	None	None
5/21/2020	21:28:00	PDO	1	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Not Applicable	Clear	Dark-Lighted	Dry	Other	None
7/11/2020	11:56:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None
7/24/2020	8:11:00	PDO	2	0	Hartford	0.46	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
7/27/2020	17:25:00	PDO	2	0	Hartford	0.48	WASHINGTON ST		Front to front	Clear	Daylight	Dry	None	None
8/27/2020	16:09:00	PDO	2	0	Hartford	0.46	WASHINGTON ST		Sideswipe, same direction	Rain	Daylight	Wet	None	None

Date Of Crash	Time of Crash	Severity	No. Of Veh.	No. Of Non-Motorists	Town	Mileage	Roadway	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances	Contributing Circumstances Roadway
9/1/2020	10:54:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
12/18/2020	6:45:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Front to rear	Clear	Daylight	Snow	None	Road Surface Condition (wet, icy, snow, slush, etc.)
12/19/2020	6:30:00	PDO	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Sideswipe, opposite direction	Clear	Dawn	Snow	Other	Road Surface Condition (wet, icy, snow, slush, etc.)
2/4/2021	12:42:00	PDO	2	0	Hartford	0.45	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/9/2021	6:55:00	Suspected Minor Injury	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Angle	Clear	Daylight	Dry	None	None
4/8/2021	7:18:00	Suspected Minor Injury	2	0	Hartford	0.5	WASHINGTON ST	MADISON ST	Angle	Clear	Daylight	Dry	None	None
<b>03) Washington Street at Lincoln Street</b>														
3/27/2019	12:48:00	Suspected Serious Injury	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Other	Clear	Daylight	Dry	None	None
4/20/2019	15:27:00	PDO	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Angle	Cloudy	Daylight	Dry	None	None
5/11/2019	13:36:00	PDO	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
5/13/2019	16:39:00	Possible Injury	2	0	Hartford	0.39	WASHINGTON ST		Front to rear	Rain	Daylight	Wet	None	None
8/8/2019	15:55:00	PDO	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Other	Clear	Daylight	Dry	None	None
9/12/2019	20:57:00	PDO	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Angle	Clear	Dusk	Dry	None	None
9/23/2019	19:17:00	Possible Injury	3	0	Hartford	0.4	WASHINGTON ST		Front to rear	Clear	Dark-Lighted	Dry	None	None
12/13/2019	22:32:00	PDO	2	0	Hartford	0.42	WASHINGTON ST		Front to rear	Rain	Dark-Lighted	Wet	None	None
12/29/2019	15:15:00	PDO	2	0	Hartford	0.43	WASHINGTON ST	LINCOLN ST	Front to rear	Clear	Daylight	Dry	None	None
7/27/2020	3:00:00	PDO	2	0	Hartford	0.04	LINCOLN ST		Angle	Clear	Dark-Lighted	Dry	None	None
12/30/2020	8:43:00	PDO	2	0	Hartford	0.39	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
1/10/2021	22:36:00	PDO	2	0	Hartford	0.4	WASHINGTON ST		Front to rear	Clear	Dark-Lighted	Dry	None	None
<b>04) Washington Street at Allen Place</b>														
3/1/2019	7:59:00	Suspected Minor Injury	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Angle	Clear	Daylight	Wet	None	Road Surface Condition (wet, icy, snow, slush, etc.)
4/22/2019	8:16:00	PDO	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Sideswipe, same direction	Clear	Daylight	Dry	None	None
7/4/2019	4:20:00	PDO	3	0	Hartford	0.38	WASHINGTON ST		Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
8/10/2019	20:16:00	PDO	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
11/26/2019	15:20:00	PDO	2	0	Hartford	0.33	WASHINGTON ST		Not Applicable	Clear	Daylight	Dry	None	None
3/8/2020	13:20:00	PDO	3	0	Hartford	0.01	ALLEN PL		Front to rear	Clear	Daylight	Dry	None	None
3/31/2020	13:29:00	Possible Injury	2	0	Hartford	0.36	WASHINGTON ST		Sideswipe, opposite direction	Clear	Daylight	Dry	None	None
4/14/2020	20:00:00	PDO	2	0	Hartford	0.04	ALLEN PL		Front to rear	Clear	Dark-Lighted	Wet	None	None
8/6/2020	15:04:00	Possible Injury	2	0	Hartford	0.37	WASHINGTON ST		Front to rear	Clear	Daylight	Dry	None	None
8/19/2020	11:56:00	Possible Injury	2	0	Hartford	0.34	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
9/4/2020	11:30:00	PDO	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Angle	Clear	Daylight	Dry	None	None
9/19/2020	22:44:00	PDO	2	0	Hartford	0.37	WASHINGTON ST		Front to rear	Clear	Dark-Lighted	Dry	None	None
10/23/2020	12:26:00	Possible Injury	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Front to rear	Cloudy	Daylight	Dry	None	Backup Due to Regular Congestion
11/13/2020	8:14:00	Suspected Minor Injury	3	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Angle	Cloudy	Daylight	Wet	Weather Conditions	None
12/8/2020	8:39:00	PDO	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Sideswipe, same direction	Clear	Daylight	Dry	None	None
12/28/2020	14:57:00	PDO	2	0	Hartford	0.35	WASHINGTON ST	ALLEN PL	Front to front	Clear	Daylight	Dry	None	None
<b>05) Washington Street at Vernon Street and Retreat Avenue</b>														
1/23/2019	18:38:00	Possible Injury	2	0	Hartford	0.27	WASHINGTON ST		Front to rear	Clear	Dark-Not Lighted	Dry	None	None
2/3/2019	2:18:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Front to rear	Clear	Dark-Lighted	Dry	None	Backup Due to Regular Congestion
4/19/2019	16:20:00	Suspected Minor Injury	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Angle	Clear	Daylight	Dry	None	Backup Due to Prior Crash
5/1/2019	20:10:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Front to rear	Cloudy	Dark-Lighted	Dry	None	None
5/30/2019	1:17:00	PDO	1	0	Hartford	0	RETREAT AV	VERNON ST NO 2	Not Applicable	Clear	Dark-Lighted	Wet	None	None
6/20/2019	15:43:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Front to front	Clear	Daylight	Dry	None	None
7/13/2019	23:06:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Angle	Clear	Dark-Lighted	Dry	None	None
8/19/2019	7:57:00	PDO	2	0	Hartford	0.23	WASHINGTON ST		Other	Clear	Daylight	Dry	None	None
9/3/2019	21:25:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Angle	Clear	Dark-Lighted	Dry	None	None
9/20/2019	17:10:00	Suspected Minor Injury	1	1	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Not Applicable	Clear	Daylight	Dry	None	None
10/1/2019	16:55:00	PDO	2	0	Hartford	0.01	VERNON ST NO 2		Front to rear	Clear	Daylight	Dry	None	None
10/2/2019	20:07:00	PDO	2	0	Hartford	0.02	RETREAT AV	WASHINGTON ST	Front to rear	Rain	Dusk	Wet	None	None
10/3/2019	9:17:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Angle	Clear	Daylight	Dry	None	None
10/11/2019	15:38:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Sideswipe, same direction	Clear	Daylight	Dry	None	None
11/27/2019	11:44:00	Suspected Minor Injury	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Front to rear	Clear	Daylight	Dry	None	Backup Due to Regular Congestion
11/30/2019	18:41:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Sideswipe, same direction	Clear	Dark-Unknown Lighting	Dry	None	None
12/23/2019	17:40:00	Possible Injury	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Angle	Clear	Dark-Lighted	Dry	None	None
1/3/2020	15:36:00	Possible Injury	2	0	Hartford	0.24	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/1/2020	14:29:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Angle	Cloudy	Daylight	Dry	None	None
5/17/2020	4:01:00	Fatal Injury	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Angle	Cloudy	Dark-Lighted	Dry	None	None
8/14/2020	22:54:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
9/3/2020	6:58:00	Possible Injury	2	0	Hartford	0.03	RETREAT AV		Front to rear	Cloudy	Daylight	Wet	Weather Conditions	Backup Due to Regular Congestion
9/26/2020	18:26:00	Suspected Minor Injury	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Other	Clear	Daylight	Dry	None	None
10/2/2020	1:14:00	Possible Injury	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Angle	Clear	Dark-Lighted	Dry	Weather Conditions	None
10/22/2020	22:53:00	Suspected Minor Injury	3	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Front to front	Clear	Dark-Lighted	Dry	None	None
11/24/2020	8:56:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Angle	Clear	Daylight	Dry	Glare	None
1/25/2021	8:18:00	Possible Injury	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/6/2021	14:00:00	Possible Injury	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Other	Clear	Daylight	Dry	None	None
3/9/2021	17:24:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	VERNON ST NO 2	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
3/29/2021	7:27:00	PDO	2	0	Hartford	0.27	WASHINGTON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/29/2021	13:50:00	PDO	2	0	Hartford	0.28	WASHINGTON ST	RETREAT AV	Angle	Clear	Daylight	Dry	Unknown	Unknown
<b>06) Seymour Street at Jefferson Street</b>														
1/6/2019	1:57:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Sideswipe, same direction	Clear	Dark-Unknown Lighting	Ice / Frost	None	None

Date Of Crash	Time of Crash	Severity	No. Of		Town	Mileage	Roadway	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances	Contributing Circumstances Roadway
			Veh.	Motorists										
3/1/2019	13:44:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/5/2019	13:57:00	Suspected Minor Injury	2	0	Hartford	0.06	JEFFERSON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
5/20/2019	6:46:00	PDO	2	0	Hartford	0.26	JEFFERSON ST		Angle	Clear	Daylight	Dry	None	None
5/23/2019	20:05:00	Possible Injury	2	0	Hartford	0.22	Jefferson St	Seymour St	Angle	Clear	Dark-Lighted	Dry	None	None
6/13/2019	15:28:00	PDO	2	0	Hartford	0.2	Jefferson St		Sideswipe, same direction	Clear	Daylight	Dry	None	None
6/21/2019	16:30:00	PDO	2	0	Hartford	0.21	JEFFERSON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
7/19/2019	11:26:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Front to rear	Clear	Daylight	Dry	None	None
7/20/2019	11:18:00	Possible Injury	2	0	Hartford	0.19	JEFFERSON ST		Angle	Clear	Daylight	Dry	None	None
8/6/2019	11:30:00	PDO	2	0	Hartford	0.24	JEFFERSON ST		Front to rear	Clear	Daylight	Dry	None	None
8/13/2019	7:01:00	PDO	2	0	Hartford	0.25	JEFFERSON ST		Front to rear	Clear	Daylight	Dry	None	None
9/20/2019	16:34:00	Possible Injury	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
10/3/2019	7:46:00	Possible Injury	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Front to rear	Cloudy	Daylight	Dry	None	None
11/26/2019	8:52:00	PDO	2	0	Hartford	0.21	JEFFERSON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
12/9/2019	11:37:00	PDO	2	0	Hartford	0.16	JEFFERSON ST		Sideswipe, same direction	Cloudy	Daylight	Wet	None	Backup Due to Regular Congestion
12/9/2019	17:38:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Sideswipe, same direction	Rain	Dark-Not Lighted	Wet	None	None
12/18/2019	10:48:00	PDO	4	0	Hartford	0.25	JEFFERSON ST		Front to front	Clear	Daylight	Wet	Weather Conditions	Backup Due to Regular Congestion
12/21/2019	18:56:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Front to rear	Clear	Dark-Lighted	Dry	None	None
12/27/2019	17:50:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Angle	Clear	Dark-Not Lighted	Dry	None	None
1/7/2020	6:52:00	PDO	2	0	Hartford	0.21	JEFFERSON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/23/2020	23:45:00	PDO	2	0	Hartford	0.1	SEYMOUR ST		Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
4/11/2020	12:36:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Angle	Clear	Daylight	Dry	None	None
6/21/2020	16:30:00	PDO	2	0	Hartford	0.12	SEYMOUR ST		Other	Clear	Daylight	Dry	None	None
7/29/2020	17:49:00	Possible Injury	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Angle	Clear	Daylight	Dry	None	None
9/6/2020	10:31:00	PDO	3	0	Hartford	0.18	JEFFERSON ST		Front to rear	Clear	Daylight	Dry	None	Other
10/1/2020	6:43:00	PDO	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Front to rear	Clear	Daylight	Dry	None	None
10/30/2020	9:01:00	PDO	1	0	Hartford	0.26	JEFFERSON ST		Not Applicable	Rain	Daylight	Wet	Weather Conditions	None
1/26/2021	0:00:00	PDO	2	0	Hartford	0.23	JEFFERSON ST		Front to front	Snow	Dark-Unknown Lighting	Snow	Weather Conditions	Road Surface Condition (wet, icy, snow, slush, etc.)
2/25/2021	10:14:00	PDO	2	0	Hartford	0.21	JEFFERSON ST		Front to front	Clear	Daylight	Dry	None	None
3/15/2021	16:22:00	Possible Injury	2	0	Hartford	0.22	JEFFERSON ST	SEYMOUR ST	Angle	Clear	Daylight	Dry	None	None
3/25/2021	15:11:00	PDO	2	0	Hartford	0.2	JEFFERSON ST		Front to rear	Clear	Daylight	Dry	None	None
4/1/2021	12:10:00	PDO	2	0	Hartford	0.05	SEYMOUR ST		Front to rear	Cloudy	Daylight	Wet	None	None
4/18/2021	21:13:00	PDO	2	0	Hartford	0.17	JEFFERSON ST		Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
<b>07) Seymour Street at Retreat Avenue</b>														
1/3/2019	7:49:00	Possible Injury	2	0	Hartford		31 SEYMOUR ST		Front to front	Clear	Daylight	Dry	None	None
1/20/2019	19:59:00	PDO	2	0	Hartford	0.12	RETREAT AV		Front to rear	Clear	Dark-Lighted	Ice / Frost	Weather Conditions	Road Surface Condition (wet, icy, snow, slush, etc.)
4/23/2019	15:47:00	PDO	2	0	Hartford	0.15	RETREAT AV		Angle	Clear	Daylight	Dry	None	None
6/3/2019	15:54:00	PDO	2	0	Hartford	0.17	RETREAT AV	ESSEX ST	Angle	Clear	Daylight	Dry	None	None
6/8/2019	5:57:00	Suspected Minor Injury	1	1	Hartford	0.17	RETREAT AV	Essex Street	Not Applicable	Clear	Daylight	Dry	None	None
7/27/2019	12:40:00	PDO	1	0	Hartford	0.1	RETREAT AV		Not Applicable	Rain	Daylight	Wet	None	None
1/19/2020	7:36:00	Possible Injury	2	0	Hartford	0	ESSEX ST		Front to front	Clear	Daylight	Wet	None	None
11/12/2020	10:59:00	PDO	2	0	Hartford	0.17	RETREAT AV	ESSEX ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
12/30/2020	19:22:00	PDO	1	0	Hartford	0.14	RETREAT AV		Not Applicable	Clear	Dark-Lighted	Dry	None	None
3/9/2021	0:26:00	PDO	2	0	Hartford	0.15	Seymour Street		Angle	Clear	Dark-Lighted	Dry	None	None
5/6/2021	7:20:00	PDO	2	0	Hartford	0.11	RETREAT AV		Angle	Clear	Daylight	Dry	None	None
<b>08) Maple Avenue at Retreat Avenue</b>														
1/30/2019	9:25:00	PDO	2	0	Hartford	2.2	MAPLE AV		Front to rear	Clear	Daylight	Snow	Weather Conditions	Road Surface Condition (wet, icy, snow, slush, etc.)
2/8/2019	8:34:00	PDO	2	0	Hartford	2.17	MAPLE AV	RETREAT AV	Sideswipe, same direction	Rain	Daylight	Wet	None	None
2/22/2019	11:19:00	PDO	3	0	Hartford	0.4	RETREAT AV		Front to rear	Clear	Daylight	Dry	None	None
3/28/2019	23:02:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Front to rear	Cloudy	Dark-Lighted	Wet	None	None
4/6/2019	15:40:00	PDO	2	0	Hartford	0.41	RETREAT AV	MAPLE	Angle	Clear	Daylight	Dry	None	None
4/8/2019	13:31:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Front to rear	Rain	Daylight	Wet	None	None
4/17/2019	10:00:00	PDO	2	0	Hartford	2.14	MAPLE AV		Sideswipe, same direction	Clear	Daylight	Dry	None	None
6/2/2019	22:09:00	PDO	1	0	Hartford	2.19	MAPLE AV		Not Applicable	Rain	Dark-Lighted	Wet	Weather Conditions	None
7/12/2019	14:49:00	PDO	2	0	Hartford	0.4	RETREAT AV		Angle	Clear	Daylight	Dry	None	None
8/1/2019	11:20:00	PDO	4	0	Hartford	2.12	MAPLE AV		Sideswipe, same direction	Clear	Daylight	Dry	None	None
9/17/2019	15:20:00	PDO	2	0	Hartford	2.17	MAPLE AV	RETREAT	Sideswipe, same direction	Clear	Daylight	Dry	None	None
11/28/2019	15:16:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
12/5/2019	13:15:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/25/2020	15:00:00	Possible Injury	2	0	Hartford	2.15	MAPLE AV		Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/27/2020	23:41:00	Possible Injury	3	0	Hartford	2.19	MAPLE AV		Front to rear	Clear	Dark-Lighted	Dry	None	None
5/16/2020	1:33:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Front to rear	Rain	Dark-Lighted	Wet	None	None
6/7/2020	20:24:00	PDO	2	0	Hartford	2.19	MAPLE AV		Front to rear	Clear	Dark-Lighted	Dry	None	None
7/2/2020	12:00:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Angle	Clear	Daylight	Dry	None	None
10/26/2020	12:58:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Front to rear	Cloudy	Daylight	Dry	None	None
11/27/2020	9:25:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Angle	Cloudy	Daylight	Wet	None	None
12/15/2020	18:42:00	PDO	2	0	Hartford	0.4	RETREAT AV	MAPLE AV	Front to rear	Clear	Dark-Lighted	Dry	None	None
1/19/2021	10:04:00	PDO	2	0	Hartford	2.16	MAPLE AV	RETREAT AV	Sideswipe, same direction	Clear	Daylight	Dry	None	None
1/25/2021	14:41:00	Possible Injury	2	0	Hartford	2.16	MAPLE AV	RETREAT AVE	Angle	Clear	Daylight	Dry	None	None
2/9/2021	17:19:00	PDO	2	0	Hartford	0.38	RETREAT AV		Sideswipe, opposite direction	Clear	Daylight	Wet	None	None
4/8/2021	15:23:00	PDO	2	0	Hartford	2.15	MAPLE AV		Front to rear	Clear	Daylight	Dry	None	None

Date Of Crash	Time of Crash	Severity	No. Of		Town	Mileage	Roadway	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances	Contributing Circumstances Roadway
			Veh.	Motorists										
4/13/2021	9:14:00	PDO	2	0	Hartford	2.19	MAPLE AV		Front to rear	Clear	Daylight	Dry	None	None
5/14/2021	13:09:00	PDO	2	0	Hartford	2.17	MAPLE AV	RETREAT AVE	Front to rear	Clear	Daylight	Dry	None	None
5/15/2021	21:26:00	PDO	2	0	Hartford	0	MAIN ST NO 2	MAPLE AV	Front to rear	Clear	Dark-Lighted	Dry	None	None
9/5/2021	0:41:00	Fatal Injury	1	1	Hartford	2.16	MAPLE AV		Not Applicable	Clear	Dark-Lighted	Dry	None	None
<b>09) Main Street at Jefferson Street/Wyllys Street/Maple Avenue/Congress Street</b>														
1/30/2019	12:42:00	PDO	2	0	Hartford	0.01	WYLLYS ST		Front to rear	Clear	Daylight	Wet	None	None
1/31/2019	17:15:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Front to rear	Clear	Dark-Lighted	Dry	None	None
2/1/2019	19:10:00	Possible Injury	2	0	Hartford	0	WYLLYS ST	MAPLE AV	Front to rear	Clear	Dark-Lighted	Dry	None	None
2/9/2019	13:30:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/18/2019	18:38:00	PDO	2	0	Hartford	0	MAIN ST NO 2	MAPLE AV	Angle	Clear	Dusk	Dry	None	None
3/21/2019	13:25:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
4/22/2019	19:36:00	PDO	2	0	Hartford	0	MAIN ST NO 2	WYLLYS ST	Sideswipe, same direction	Rain	Dark-Lighted	Wet	None	None
4/23/2019	9:27:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Front to rear	Clear	Daylight	Dry	None	None
5/10/2019	14:17:00	Possible Injury	2	0	Hartford	0	MAIN ST NO 2	MAPLE	Front to rear	Clear	Daylight	Dry	None	None
6/16/2019	21:15:00	PDO	2	0	Hartford	0.01	JEFFERSON ST		Angle	Clear	Dark-Lighted	Wet	None	None
7/26/2019	8:38:00	PDO	2	0	Hartford	2.23	MAPLE AV	Jefferson St	Angle	Clear	Daylight	Dry	None	None
8/1/2019	13:54:00	Possible Injury	1	0	Hartford	0.02	JEFFERSON ST		Not Applicable	Clear	Daylight	Dry	None	None
11/19/2019	22:55:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
12/16/2019	10:54:00	PDO	2	0	Hartford	2.23	MAPLE AV	CONGRESS ST	Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/8/2020	19:52:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Front to rear	Clear	Dark-Lighted	Dry	None	None
2/19/2020	10:55:00	Suspected Minor Injury	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Angle	Clear	Daylight	Dry	None	None
2/19/2020	15:46:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Not Applicable	Clear	Dark-Lighted	Dry	None	None
2/19/2020	20:05:00	Possible Injury	1	2	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/26/2020	17:01:00	PDO	3	0	Hartford	0.03	JEFFERSON ST		Other	Clear	Daylight	Dry	None	None
7/6/2020	15:23:00	Suspected Minor Injury	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Angle	Clear	Daylight	Dry	None	Backup Due to Regular Congestion
7/22/2020	8:17:00	Suspected Minor Injury	2	0	Hartford	2.21	MAPLE AV		Front to rear	Clear	Daylight	Dry	None	None
7/30/2020	8:22:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Front to rear	Clear	Daylight	Dry	None	None
8/25/2020	12:35:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Front to rear	Clear	Daylight	Dry	None	None
8/26/2020	14:50:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Sideswipe, same direction	Clear	Daylight	Dry	None	None
10/24/2020	19:40:00	Possible Injury	1	1	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Not Applicable	Clear	Dark-Lighted	Dry	None	None
11/6/2020	14:01:00	PDO	2	0	Hartford	0.02	MAIN ST NO 2		Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/18/2021	7:51:00	PDO	2	0	Hartford	0	MAIN ST NO 2	WYLLYS ST	Sideswipe, opposite direction	Clear	Daylight	Ice / Frost	None	Road Surface Condition (wet, icy, snow, slush, etc.)
2/23/2021	20:03:00	Suspected Minor Injury	2	0	Hartford	2.21	MAPLE AV		Front to rear	Clear	Dark-Lighted	Dry	None	None
3/18/2021	13:09:00	Possible Injury	2	0	Hartford	0.04	JEFFERSON ST		Angle	Cloudy	Daylight	Dry	Other	None
4/24/2021	19:45:00	PDO	2	0	Hartford	0.02	JEFFERSON ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
8/31/2021	21:36:00	PDO	2	0	Hartford	2.23	MAPLE AV	MAIN ST NO 2	Angle	Clear	Dark-Lighted	Dry	None	None
<b>10) Main Street at Wyllys Street and Wethersfield Avenue</b>														
2/5/2019	17:30:00	Suspected Minor Injury	1	1	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Other	Clear	Dark-Lighted	Dry	None	None
2/25/2019	8:38:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/25/2019	12:30:00	PDO	2	0	Hartford	0.01	WETHERSFIELD AV		Sideswipe, same direction	Clear	Daylight	Dry	None	None
2/27/2019	20:49:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Not Applicable	Clear	Dark-Lighted	Wet	None	None
3/25/2019	14:10:00	Possible Injury	1	1	Hartford		Wethersfield Avenue		Not Applicable	Clear	Daylight	Dry	None	None
4/4/2019	17:19:00	PDO	2	0	Hartford	0.09	WYLLYS ST		Front to rear	Clear	Daylight	Dry	None	Backup Due to Regular Congestion
4/12/2019	11:50:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Angle	Cloudy	Daylight	Wet	None	None
4/18/2019	15:24:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Angle	Cloudy	Daylight	Wet	None	None
4/21/2019	11:58:00	Suspected Minor Injury	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Angle	Rain	Daylight	Wet	None	None
5/13/2019	16:14:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Sideswipe, same direction	Rain	Daylight	Wet	None	None
6/9/2019	13:31:00	PDO	2	0	Hartford	0.01	WETHERSFIELD AV		Angle	Clear	Daylight	Dry	None	None
6/22/2019	19:32:00	Suspected Minor Injury	2	0	Hartford	0.09	WYLLYS ST		Front to rear	Clear	Daylight	Dry	None	None
7/15/2019	15:10:00	Possible Injury	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to rear	Clear	Daylight	Dry	None	None
7/29/2019	17:04:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to rear	Clear	Daylight	Dry	None	None
8/4/2019	18:31:00	Suspected Minor Injury	2	0	Hartford	0	MAIN ST NO 3	WETHERSFIELD AV	Front to rear	Clear	Daylight	Dry	None	None
8/20/2019	15:56:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Sideswipe, same direction	Clear	Daylight	Dry	None	None
8/22/2019	4:59:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to front	Clear	Dark-Lighted	Dry	None	None
9/12/2019	8:10:00	PDO	2	0	Hartford	0.05	WYLLYS ST		Sideswipe, same direction	Rain	Daylight	Wet	None	None
9/15/2019	13:02:00	PDO	2	0	Hartford	0.01	MAIN ST NO 3		Angle	Clear	Daylight	Dry	None	None
9/16/2019	15:04:00	PDO	2	0	Hartford	0.06	WYLLYS ST	MAIN ST NO 3	Sideswipe, same direction	Clear	Daylight	Dry	None	None
9/17/2019	8:45:00	PDO	3	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to rear	Clear	Daylight	Dry	None	None
9/26/2019	5:30:00	Possible Injury	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to rear	Clear	Dawn	Dry	None	None
9/26/2019	17:37:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Other	Rain	Daylight	Wet	None	None
10/10/2019	19:05:00	Possible Injury	1	2	Hartford	0.01	WETHERSFIELD AV		Not Applicable	Clear	Dark-Lighted	Dry	None	None
11/20/2019	8:50:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Sideswipe, same direction	Cloudy	Daylight	Wet	None	None
12/1/2019	9:20:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Sideswipe, same direction	Cloudy	Daylight	Dry	None	None
12/21/2019	10:48:00	Possible Injury	2	0	Hartford	0.01	MAIN ST NO 3		Sideswipe, same direction	Clear	Daylight	Dry	None	None
1/2/2020	16:16:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Not Applicable	Clear	Daylight	Dry	None	Backup Due to Regular Congestion
2/16/2020	2:34:00	Possible Injury	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Other	Clear	Dark-Lighted	Dry	None	None
2/21/2020	10:57:00	PDO	2	0	Hartford	0.05	WYLLYS ST		Front to rear	Clear	Daylight	Dry	None	None
4/29/2020	13:50:00	PDO	2	0	Hartford	0.08	WYLLYS ST		Front to rear	Clear	Daylight	Dry	None	Backup Due to Prior Non-Recurring Incident
5/4/2020	1:56:00	Possible Injury	2	0	Hartford	0.01	WETHERSFIELD AV		Angle	Clear	Dark-Lighted	Dry	None	None
6/16/2020	23:12:00	Possible Injury	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Other	Clear	Dark-Lighted	Dry	None	None



Date Of Crash	Time of Crash	Severity	No. Of		Town	Mileage	Intersecting Roadway		Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances	Contributing Circumstances Roadway
			Veh.	Motorists			Roadway	Name						
7/3/2020	23:54:00	PDO	2	0	Hartford	0.01	WETHERSFIELD AV		Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None
7/4/2020	1:03:00	PDO	1	0	Hartford	0.04	WYLLYS ST		Not Applicable	Clear	Dark-Lighted	Dry	None	None
7/22/2020	21:45:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Angle	Clear	Dark-Lighted	Dry	None	None
8/7/2020	1:08:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Angle	Clear	Dark-Lighted	Dry	None	None
8/10/2020	8:40:00	PDO	2	0	Hartford	0.06	WYLLYS ST	WETHERSFIELD AV	Angle	Clear	Daylight	Dry	None	None
8/19/2020	6:27:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Other	Clear	Daylight	Dry	None	None
8/21/2020	18:03:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Sideswipe, same direction	Clear	Daylight	Dry	None	None
9/5/2020	20:30:00	Possible Injury	1	1	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Not Applicable	Clear	Dusk	Dry	None	None
10/14/2020	7:45:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None
10/15/2020	12:23:00	PDO	2	0	Hartford	0.03	WETHERSFIELD AV		Sideswipe, same direction	Clear	Daylight	Dry	None	None
10/21/2020	9:20:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Other	Clear	Daylight	Dry	None	None
10/31/2020	19:34:00	PDO	2	0	Hartford	0.01	WETHERSFIELD AV		Rear to side	Clear	Dark-Lighted	Dry	None	None
11/2/2020	7:32:00	PDO	2	0	Hartford	0.05	WYLLYS ST		Front to front	Clear	Daylight	Dry	None	None
11/21/2020	9:45:00	PDO	2	0	Hartford	0.03	MAIN ST NO 3		Front to rear	Clear	Daylight	Dry	None	None
12/3/2020	1:39:00	PDO	1	0	Hartford	99064	115 Main Street		Not Applicable	Clear	Dark-Lighted	Dry	None	None
12/14/2020	7:00:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Sideswipe, same direction	Clear	Dawn	Dry	None	None
12/14/2020	16:34:00	PDO	2	0	Hartford	0.08	WYLLYS ST		Front to rear	Rain	Dark-Lighted	Wet	None	None
12/18/2020	19:10:00	PDO	2	0	Hartford	0.01	WETHERSFIELD AV		Sideswipe, opposite direction	Clear	Dark-Lighted	Snow	None	None
12/27/2020	13:36:00	Suspected Minor Injury	1	1	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Not Applicable	Clear	Daylight	Dry	Weather Conditions	None
12/31/2020	10:46:00	Possible Injury	3	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Front to rear	Cloudy	Daylight	Wet	None	Backup Due to Regular Congestion
1/14/2021	21:34:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Front to rear	Clear	Dark-Lighted	Dry	None	None
1/22/2021	13:02:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Sideswipe, same direction	Clear	Daylight	Dry	None	None
3/16/2021	12:19:00	PDO	2	0	Hartford	0.02	MAIN ST NO 3		Sideswipe, same direction	Clear	Daylight	Dry	None	None
4/14/2021	5:55:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to front	Clear	Dark-Lighted	Dry	None	None
4/24/2021	1:26:00	Possible Injury	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Angle	Clear	Dark-Lighted	Dry	None	None
4/26/2021	22:11:00	PDO	2	0	Hartford	0.04	WYLLYS ST		Sideswipe, opposite direction	Clear	Dark-Lighted	Dry	None	None
5/8/2021	10:24:00	Possible Injury	2	0	Hartford	0.04	WYLLYS ST		Front to rear	Clear	Daylight	Dry	None	None
5/16/2021	13:17:00	Suspected Minor Injury	2	0	Hartford	0	WETHERSFIELD AV	WYLLYS ST	Angle	Clear	Daylight	Dry	None	None
5/23/2021	0:31:00	Suspected Minor Injury	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to rear	Clear	Dark-Lighted	Dry	None	None
10/8/2021	23:47:00	PDO	2	0	Hartford	0	WETHERSFIELD AV	MAIN ST NO 3	Front to rear	Clear	Dark-Lighted	Dry	Unknown	Unknown

PDO - Property Damage Only

# Stormwater Management Report

## Connecticut Children's Medical Center New Tower Project

282 Washington Street  
Hartford, Connecticut

November 4, 2022



**FUSS & O'NEILL**

146 Hartford Road  
Manchester, CT 06040

Project No. 20211326.A20

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## Stormwater Management Report Connecticut Children's New Tower Project

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3	FEMA Flood Insurance Rate Map	
4	Drainage Basin Map	

<b>Appendices</b>		<b>End of Report</b>
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B	Proposed Watershed Analysis	
C	Proposed Stormwater System Analysis	

## 1 Executive Summary

Connecticut Children's Medical Center (CCMC) proposes to construct a new 8-story, 191,442 square foot hospital expansion to their existing 321,132 square foot facility on Washington Street in Hartford. Upon completion, the facility will provide a total of 512,574 square feet of building space. The proposed building expansion will include a dining area/kitchen, a lobby and conference space, fetal care/surgery areas, NICU, PICU, a pharmacy, and approximately 50,000 GSF of shell space. The project also includes approximately 55,000 square feet of renovation space within the existing hospital.

The project is located on the east side of Washington Street, the south side of Zwieback Street, and west side of Seymour Street. It is bounded by the Hartford Hospital campus to the north, east, and west as well as multi-use properties to the west. Portions of the existing site will remain "as is" as part of the final design, including the existing hospital building, emergency drop off area, and loading dock. Proposed site improvements include the construction of a new building addition, valet drop-off area, concrete sidewalks, impervious and pervious concrete pavers, and landscaped areas. A location map for the project site can be found in *Figure 1*.

Overall drainage patterns of the site will be unchanged by the project. Stormwater will be collected through a series of catch basins and yard drains and conveyed through underground piping prior to discharging to the stormwater drainage system in Seymour Street. Runoff from the proposed roof will be captured through roof drains, exit the building foundation via roof leaders, and conveyed through the stormwater management system.

Existing and proposed hydrologic conditions (*Appendices A & B*) for the project area were evaluated. Due to the increase of impervious area, it will be necessary to retain and attenuate runoff volume and peak flowrate. Attenuation of runoff volume and peak flowrate will be achieved using 3,500 square feet of pervious pavers and a 1,031 square foot silva cell system providing stormwater retention as well as planting soil to support 2 shade trees.

The proposed improvements have been designed to effectively reduce runoff volume and peak flowrate leaving the site as compared to the existing conditions for the 1-, 2-, 10-, 25-, and 100-year design storm events. Additionally, the stormwater management system is adequately sized to convey stormwater for the 10-year design storm (*Appendix C*).

## 2 Existing Conditions

Approximately 77-percent of the existing project area is impervious surfaces, e.g., buildings, driveways, parking lots, and sidewalks. The remaining area of the site is lawn and planted landscape islands. The existing accessible parking lot and alley south of the existing building gently sloped with the lawn areas along Washington Street and the driveway connecting the accessible parking lot to Zwieback Street are generally sloping northeast between 3-percent and 8-percent.

Existing stormwater infrastructure includes catch basins, yard drains, underground piping, and roof leaders. An existing stormwater pump station is located at the bottom of the loading dock ramp and discharges to a catch basin to the west of the loading dock. Stormwater from the adjacent parking garage to the south of the project area also discharges through the existing drainage system. Stormwater is then



routed through an underground trap structure providing sediment and floatables removal before discharging to the stormwater drainage system in Seymour Street via twin 18-inch PVC pipes.

The existing hydrologic evaluation, included as *Appendix A*, determined the project's 3.4-acre watershed area is comprised of two subcatchment areas, which drain to one design point (DP). The design point is as follows:

- **DP-10L** is a catch basin located on the south gutter of Zwieback Street northeast of the project area. This catch basin receives a majority of the stormwater flow from the project area through an 18-inch pipe from the west and a 10-inch roof leader that drains a portion of the existing building's roof. A small amount of surface flow from Zwieback Street drains to this catch basin.

Existing conditions, drainage characteristics, and discharge locations for the subcatchments are described below. These subcatchments are illustrated on sheet DR-101, which is included in *Appendix A* along with the existing watershed model.

- **Subcatchment 10S** is the project area containing the existing site building, driveways, parking lots, sidewalks, lawn and planted landscape islands. Stormwater runoff generated is collected by a series of catch basins, yard drains, and roof drains that connect to underground piping, and roof leaders and is conveyed by an 18-inch HDPE storm line that ultimately drains to DP-10L
- **Subcatchment 11S** is the abutting parking garage roof. The 35,905 square foot roof area drains to the project area via 12-inch cast iron roof leader connecting to a catch basin on the south side of the existing building.

The NRCS soil mapping, which is attached as *Figure 2*, shows that the project area is composed of 'Urban Land' with a Hydrologic Soil Group rating of 'D'.

Federal Emergency Management Agency (FEMA) mapping shows that the project site does not lie within the 500-year flood plain. A portion of the relevant FEMA – Flood Insurance Rate Map for Hartford County, Connecticut (Panel Number 09003C0368G, Effective Date: September 16, 2011) is attached as *Figure 3*.

The project area is in the Folly Brook Local Basin (basin number 4005) and is a sub-watershed of the Connecticut Major Basin. The project location relative to the major Connecticut drainage basins is presented as *Figure 4*.

### 3 Proposed Conditions

Proposed improvements for the Connecticut Children's include the construction of a new building addition, valet drop-off area, concrete sidewalks, impervious and pervious concrete pavers, and landscaped areas.

The project area was analyzed to evaluate proposed hydrologic conditions. The proposed watershed analysis design point labels are consistent with the existing watershed analysis. Construction of the proposed development will result in an increase of approximately 0.4 acres of impervious area within the

analyzed watershed yielding a proposed impervious percentage of approximately 86%. Due to the expansion of the impervious area, it will be necessary to retain and attenuate runoff volume and peak flows. Attenuation of runoff volume and peak flows will be achieved using 3,500 square feet of pervious pavers and a 1,031 square foot silva cell system providing stormwater retention and planting soil to support 2 shade trees.

The proposed hydrologic evaluation, included as *Appendix B*, determined that the project area is comprised of four subcatchment areas, which drain to the existing design point DP-10L. The evaluated subcatchment areas are illustrated in the Proposed Watershed Analysis Map found in *Appendix B*. The design point is as follows:

- **DP-10L** is a catch basin located on the south gutter of Zwieback Street northeast of the project area. This design point is unchanged from existing conditions.

Proposed conditions, drainage characteristics, and discharge locations for the subcatchments are as follows:

- **Subcatchment 10** will be comprised of the majority of the new building addition, a portion of the existing building, a valet drop-off area, sidewalks, lawn and planted landscape islands. Stormwater runoff generated is collected by a series of catch basins, yard drains, and roof drains that connect to underground piping, and roof leaders and is conveyed by a 24-inch HDPE storm line that ultimately drains to DP-10L.
- **Subcatchment 11S** is the abutting parking garage roof. This subcatchment is unchanged from existing conditions.
- **Subcatchment 12S** will be comprised of the sidewalk north of the valet drop off exit and on the south side of Zwieback Street, a portion of the new building addition, a large circular lawn area intended to be used as a gathering space, and a planted landscape island. A 1,031 square foot area of pervious pavers will be constructed over a silva cell system providing stormwater retention as well as planting soil to support 2 shade trees. The silva cell system is identified as pond 12P in the hydrologic evaluation. Once the stormwater capacity of silva cell system is achieved stormwater will discharge via an overflow orifice to DP-10L.
- **Subcatchment 13S** will largely be comprised of pervious pavers connecting the main entrance of the new building addition to the sidewalk along Zwieback Street. A small impervious paver courtyard and two planted landscape islands are also included in subcatchment 13S as stormwater runoff from these areas will be directed to the pervious pavers. The pervious paver system is identified as pond 13P in the hydrologic evaluation and will provide stormwater retention. The pervious pavers will be installed over a 24-inch crushed stone layer providing storage volume for up to a 100-year design storm.

Results from modeling of pre- and post-development peak flow rates at the design points are shown in the following table. These results are taken from the HydroCAD models of existing and proposed conditions found in *Appendices A and B*.

### EXISTING & PROPOSED WATERSHED RESULTS

Storm Event (Year)	Design Point – '10L' Catch Basin in Zwieback Street					
	Peak Flowrate Discharge (CFS)			Volume Runoff (AF)		
	Existing Flowrate	Proposed Flowrate	Net Change	Existing Runoff	Proposed Runoff	Net Change
1	7.14	6.81	-0.33	0.56	0.54	-0.02
2	9.11	8.56	-0.55	0.74	0.70	-0.04
10	14.21	13.24	-0.97	1.18	1.12	-0.06
25	18.16	17.84	-0.32	1.53	1.46	-0.07
100	26.05	25.55	-0.50	2.23	2.14	-0.09

When compared to existing conditions, proposed watershed modeling indicates the development will match or reduce both runoff volume and peak flow rates for design point 10L for all design storm events.

## 4 Construction Stormwater Management and Soil Erosion and Sedimentation Control

A detailed Erosion and Sedimentation (E&S) control plan has been prepared for the site. During construction, measures will be taken to reduce erosion and manage sedimentation from disturbed surfaces. The following Best Management Practices (BMPs) will be employed:

- Stormwater inlet protection will be installed at all stormwater collection structures to remove sediments from the run-off prior to entering the receiving drainage systems.
- Compost filter socks will be installed at the down-gradient perimeter of the disturbed portion of the development.
- Construction entrances will be installed at main points of entry to prevent tracking of sediment into local roads.

These BMPs will protect downstream stormwater collection systems following construction. The plan has been prepared in accordance with the 2002 Erosion and Sedimentation Control Guidelines (DEEP Bulletin 34).

Erosion and sedimentation control (E&S) details and narratives for construction periods are provided in the site plans. E&S details and procedures are consistent with the 2002 Guidelines for Soil Erosion and Sedimentation Control (DEEP Bulletin 34), and Town requirements.

## 5 Post-Construction Stormwater Management

The water quality of stormwater runoff from the developed site will be improved using Best Management Practices (BMP's). Deep sumps in catch basins, vegetative swales, rip rap aprons, subsurface infiltration chambers, and hydrodynamic separators will be used to help achieve the removal of 80% of Total Suspended Solids that may be present in the stormwater runoff.

The design meets the requirements of the Connecticut General Permit of the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and the Connecticut Stormwater Quality Manual (CT SWQM). Water quality volume (WQV) treatment will be achieved through the use of hydrodynamic separators. WQV is equivalent to the first inch of rainfall in any storm event that should be captured and treated to remove a majority of the stormwater pollutants on an annual basis. Calculations based on section 7.4.1 of the CT SWQM.

To ensure these measures continue to operate adequately over time, the following maintenance procedures should be followed:

- **Inlet Sumps** - Catch basin/yard drain sumps must be inspected at regular intervals and cleaned when necessary. At a minimum, inspections should be conducted twice per year, once in the spring and again in the fall. More inspections may be required during winter months where heavy sanding operations may lead to rapid sediment accumulation within the structure. Cleaning operations are typically done using a vacuum truck.
- **Existing Trap Structure** – An existing trap structure is located in the northeast corner of the project area providing sediment and floatables removal before discharging to the stormwater drainage system. The trap structure must be inspected at regular intervals and maintained when necessary to ensure optimum performance. At a minimum, inspections should be conducted twice per year; once in the spring and again in the fall. More inspections may be required during winter months where heavy sanding operations may lead to rapid sediment accumulation within the structure. The structures should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when appreciable level of hydrocarbons and trash has accumulated. Cleaning operations are typically done using a vacuum truck.
- **Pervious Pavers** – Standard snow removal equipment can be used for pervious pavers however metal blades may scratch or leave rust marks on the paver surfaces. The use of rock salt as needed is acceptable; however, road sand should not be applied to pervious pavers. On an annual basis, in spring, the following should occur:
  - Paver joints should be inspected, and additional aggregate added if the level lower than the manufacturer's recommendations.
  - Perform a visual inspection and note any clogged or partially clogged areas, or evidence thereof (accumulated sediment or sediment rings).
  - Vacuum pavement. If vacuuming alone is ineffective, use low pressure wash followed by vacuuming.
  - Remove vegetation growing in the pavement twice per year.

- **Silva Cell System** – Tree openings at the Silva Cell system should be inspected once in the spring, once in the fall, and after major storms. Inlet and outlet structures should be inspected and cleaned in accordance with inlet sumps listed above. Distribution and underdrain pipes should be inspected annually and cleaned when stormwater is not being distributed into the Silva Cell system or draining through the system.

These design measures incorporate commonly used Best Management Practices and follows guidelines set forth by the CTDEEP Stormwater Quality Manual, the CTDEEP Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, and the Connecticut and federal stormwater regulations.

## 6 Methods

The existing and proposed drainage analysis for the development was completed using the HydroCAD Software Solutions computer program. The HydroCAD program runoff method selected for the watershed modeling is based on NRCS TR-20 methods. The methods described in the NRCS TR-55 manual were followed to calculate the curve number and time of concentration input data for this model.

The following curve numbers were used to model the impervious and pervious surfaces, and are acceptable for surfaces over Hydrological Group – ‘D’ soils per the NRCS TR-55 Drainage Manual:

Cover Type	Hydrologic Soil Type
	D
Paved Parking	98
Roofs	98
>75% Good Grass Cover	80

The drainage analysis for the proposed stormwater management system was completed using Bentley System’s StormCAD computer program. Input information for the model was derived using the Rational Formula. Times of concentration for paved areas were assumed to be the minimum allowable time of 5 minutes. The StormCAD output indicates that all of the proposed pipes and catch basins will have adequate capacity to convey and drain the 10-year design storm.

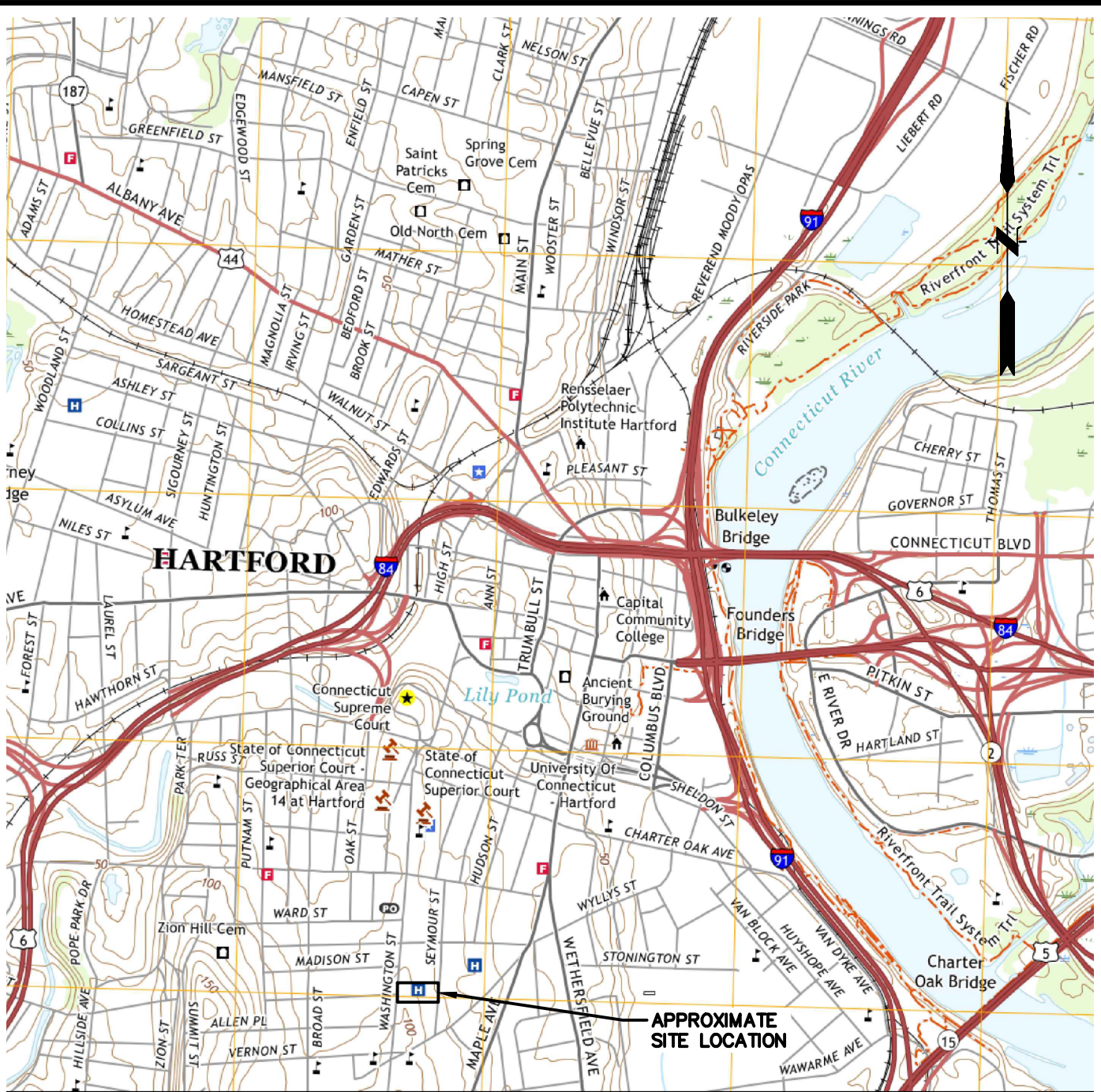
## 7 Summary

The proposed improvements have been designed to reduce runoff volume and peak flowrate leaving the site as compared to the existing conditions for the 1-, 2-, 10-, 25-, and 100-year design storm events. Deep catch basin sumps and the existing trap structure are implemented to enhance water quality. Pervious pavers and a silva cell system have been designed to enhance water quality, retain stormwater from an increase in impervious area, and attenuate the increase in peak flows for the project area. The design meets the intent of the guidelines of the 2004 Connecticut Stormwater Quality Manual. The on-site stormwater management pipe network has been designed to safely convey the NOAA Atlas-14 10-year design storm event.



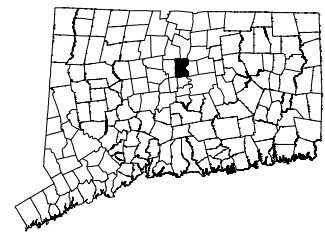
## **Figures**

---



**MAP REFERENCE**

THIS MAP WAS PREPARED FROM THE FOLLOWING  
 7.5 MINUTE USGS TOPOGRAPHICAL MAP:  
 HARTFORD NORTH, CONNECTICUT, 2021



SCALE:	
HORIZ.:	1" = 2000'
VERT.:	
DATUM:	
HORIZ.:	
VERT.:	
GRAPHIC SCALE	



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 www.fando.com

CONNECTICUT CHILDREN'S MEDICAL CENTER

SITE LOCATION MAP

282 WASHINGTON STREET

HARTFORD

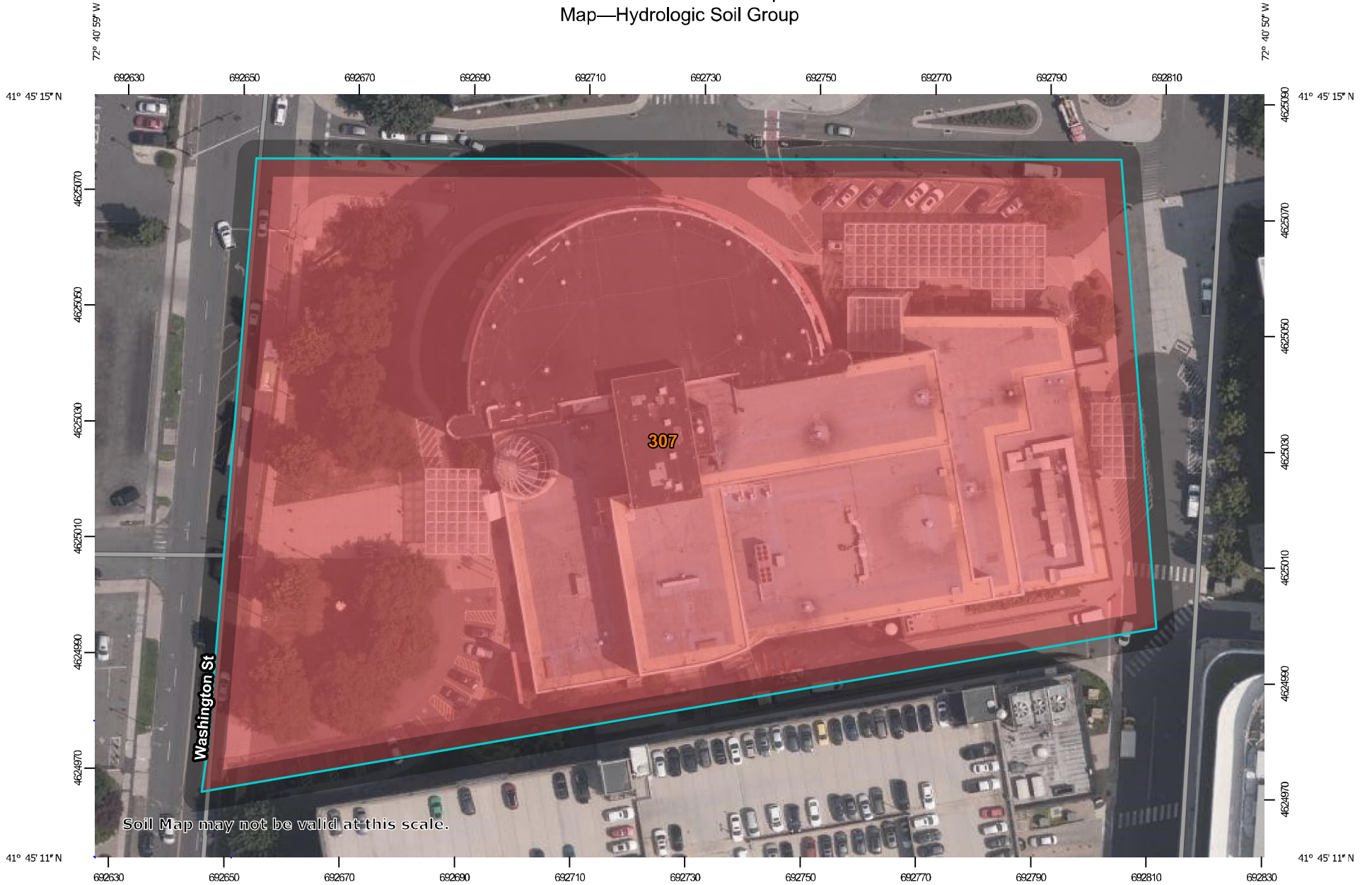
CONNECTICUT

PROJ. No.: 20211326A20  
 DATE: AUGUST 2022

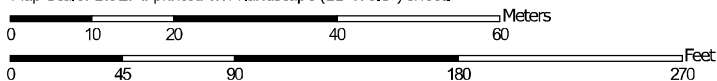
**FIGURE 1**



Custom Soil Resource Report  
Map—Hydrologic Soil Group



































Map Scale: 1:927 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

PROJ. No.: 20211326.A20
DATE: August 2022
<b>Figure 2</b>

### 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
- Water Features**
  -  Streams and Canals
- Transportation**
  -  Rails
  -  Interstate Highways
  -  US Routes
  -  Major Roads
  -  Local Roads
- Background**
  -  Aerial Photography
- Soils (continued)**
  -  C
  -  C/D
  -  D
  -  Not rated or not available

### 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 21, Sep 7, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 15, 2019—Aug 29, 2019

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.

PROJ. No.: 20211326.A20  
 DATE: August 2022  
**Figure 2**

**Table—Hydrologic Soil Group**

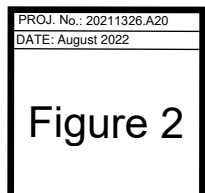
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
307	Urban land	D	3.7	100.0%
<b>Totals for Area of Interest</b>			<b>3.7</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group**

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

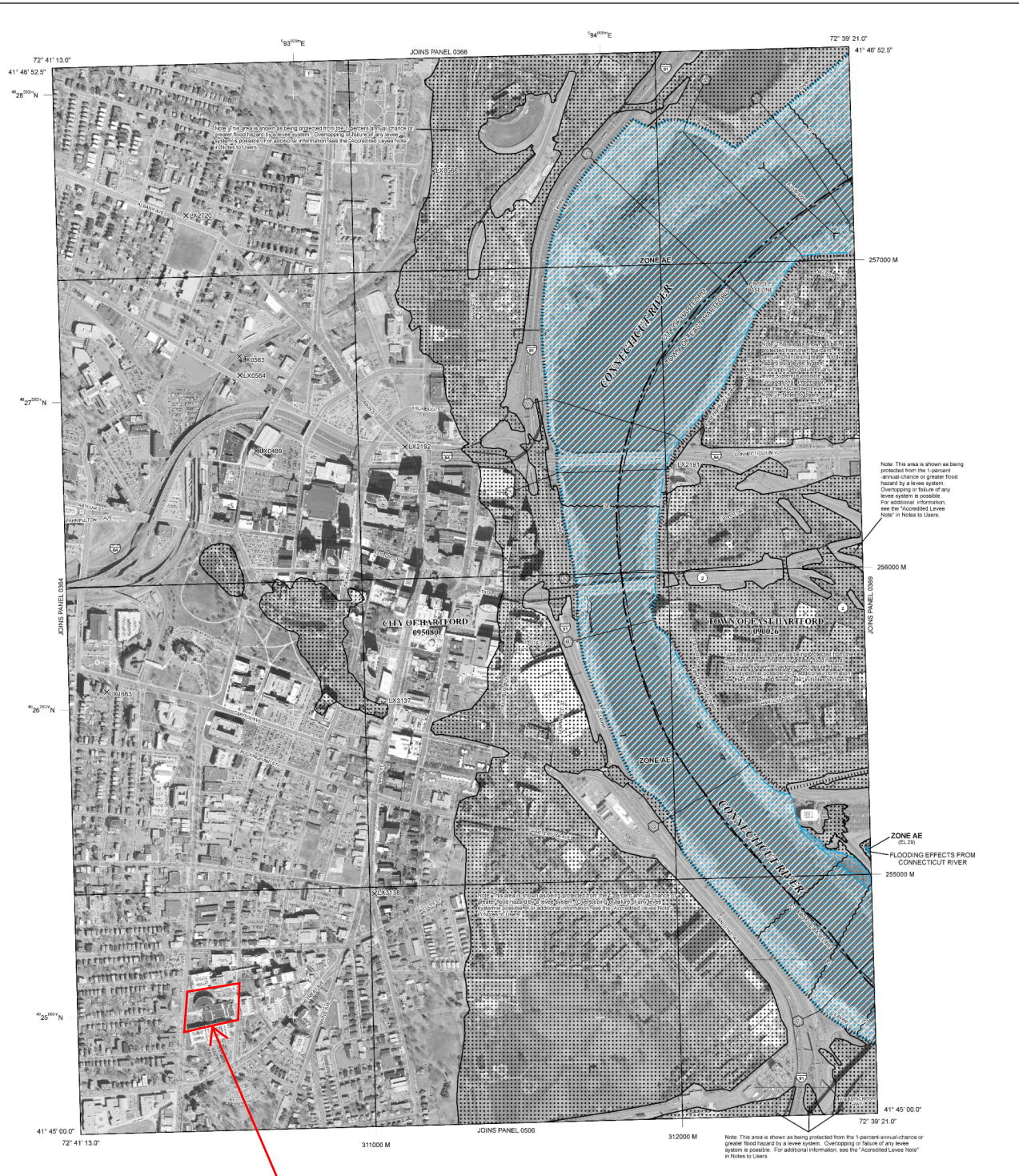




# FEMA Basin Map

282 Washington Street, Hartford, CT

## Figure 3



### LEGEND

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**  
 The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AR, AV, V, and X. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponds); Base Flood Elevations determined.
- ZONE AD** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of shallow fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently discontinued. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AV** Area to be protected from 1% annual chance flood by a hybrid flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**  
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from the 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**  
 Areas in which flood hazards are undetermined, but possible.

**OTHERWISE PROTECTED AREAS (OPAs)**  
 OPAs areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary defining Special Flood Hazard Area Zones and boundary defining Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- Base Flood Elevation line and value, elevation in feet\*
- Base Flood Elevation value where uniform within zone, elevation in feet\*

**Map Symbols:**  
 (A) Cross section line  
 (2) Traversed line  
 (C) Culvert  
 (S) Bridge  
 (E) Elevation  
 (M) Map Reproductor  
 (X) River Mile

**Map Index:**  
 Refer to Map Index for on Map Index

**EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:**  
 September 16, 2011

**EFFECTIVE DATE OF REVISIONS TO THIS PANEL:**  
 September 16, 2011. To change map covers and flood boundaries to reflect the accreditation of formerly privately-sold insured levees.

**Map Scale:** 1" = 500'  
 MAP SCALE 1" = 500'  
 0 250 500 1000 FEET  
 0 150 300 METERS

Approximate Site Location

**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0368G

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)**

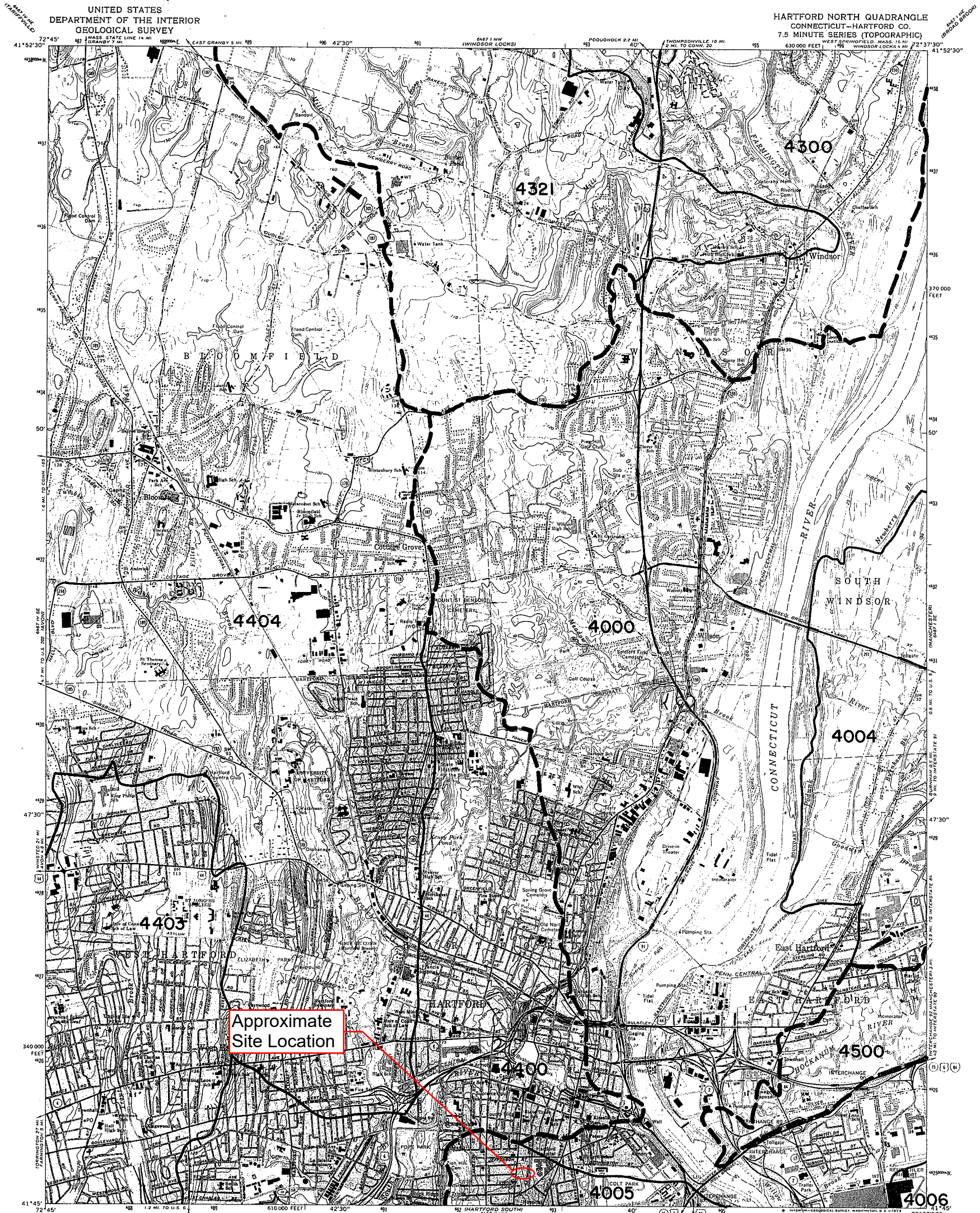
PANEL 368 OF 675  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	SUBURBS	EXCEL	DELTA
HARTFORD, CITY OF	30000	306	0

Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER 0903C0368G**  
**MAP REVISED SEPTEMBER 16, 2011**  
 Federal Emergency Management Agency





Mapped by the Geological Survey and City of Hartford  
 Edited and published by the Geological Survey  
 Revised in cooperation with Connecticut Highway Department  
 Control by USGS, USC&GS, and Connecticut Geodetic Survey  
 Planimetry by photogrammetric methods from aerial photographs  
 taken 1941. Topography by plane-table surveys 1943. Revised 1964  
 Selected hydrographic data compiled from USC&GS Chart 267 (1962)  
 This information is not intended for navigational purposes  
 Polyconic projection. 1927 North American datum  
 10,000-foot grid based on Connecticut coordinate system  
 1000-meter Universal Transverse Mercator grid ticks,  
 zone 18, shown in blue  
 Fine red dashed lines indicate selected fence and field lines where  
 generally visible on aerial photographs. This information is uncorrected  
 Red tint indicates areas in which only landmark buildings are shown  
 Area covered by dashed light-blue pattern is subject  
 to controlled inundation

UTM GRID AND 1972 MAGNETIC NORTH  
 DECLINATION AT CENTER OF SHEET

SCALE  
 0 1000 2000 3000 4000 5000 6000 7000 FEET  
 0 1 2 3 4 5 KILOMETER  
 CONTOUR INTERVAL 10 FEET  
 DATUM IS MEAN SEA LEVEL  
 DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER  
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER  
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 1.7 FEET

ROAD CLASSIFICATION  
 Heavy-duty ——— Light-duty ———  
 Medium-duty ——— Unimproved dirt ———  
 Interstate Route U.S. Route State Route

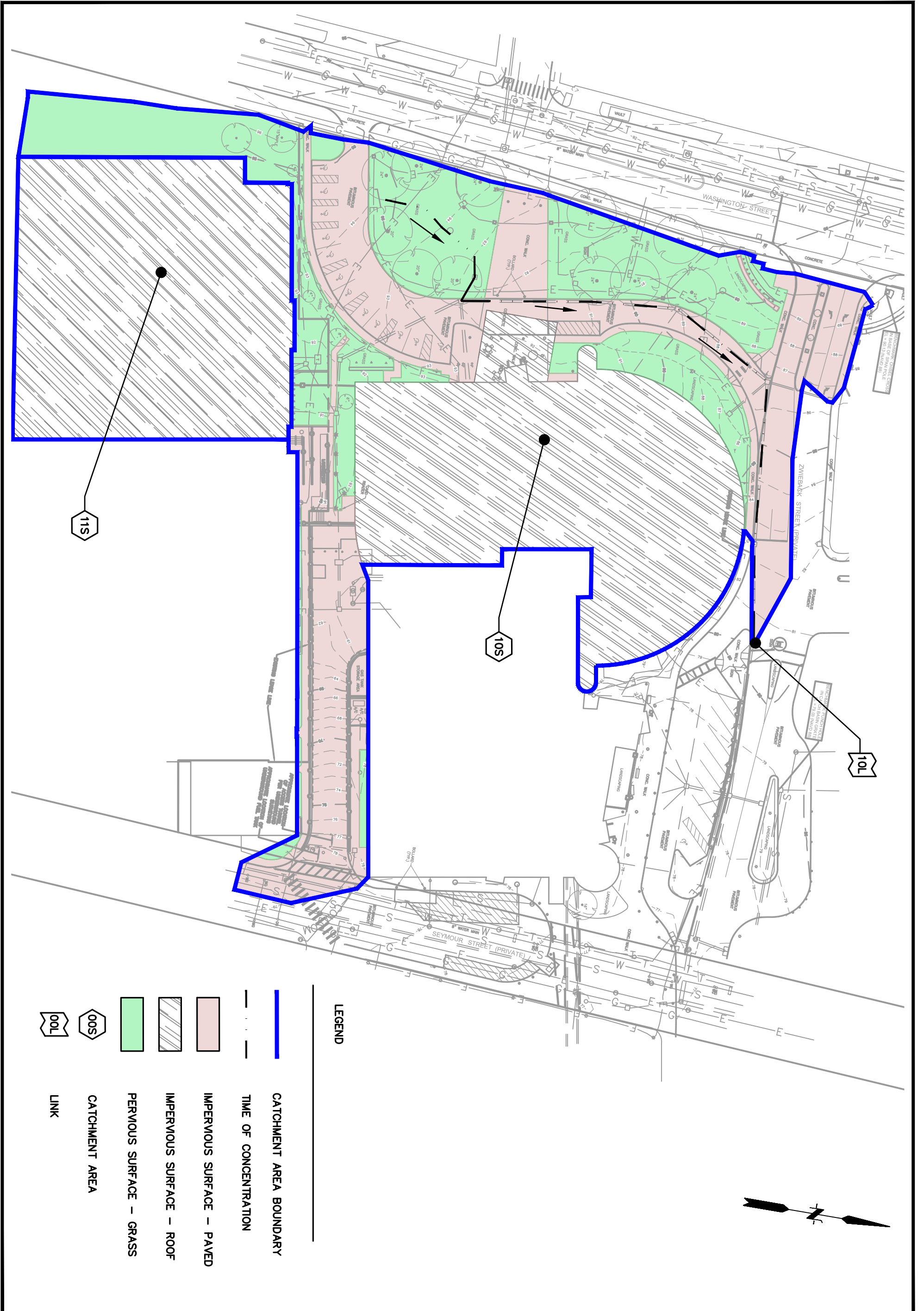
<b>Figure 4</b> DATE: August 2022 PROJ. No.: 20211326 A20	<b>Connecticut Children's Medical Center</b> <b>Drainage Basin Map</b> 282 Washington Street, Hartford, CT	<b>Notes:</b> 4 Connecticut Major Basin 40 CT Main Stem Reg. Basin 4000 Connecticut River 4005 Folly Brook
	<b>HARTFORD NORTH, CONN. - 37</b> N4145—W7237.5/7.5 1964 PHOTOREVISED 1972 AMS 6467 1 SW—SERIES V816	

## **Appendix A**

---

### Existing Watershed Analysis



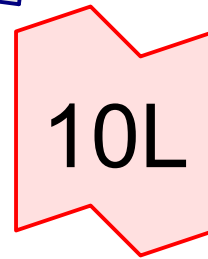
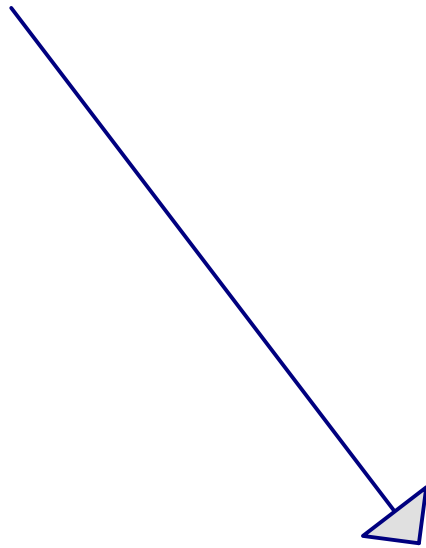
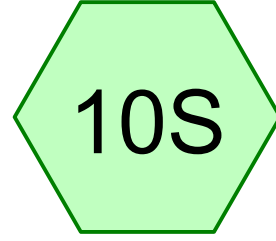
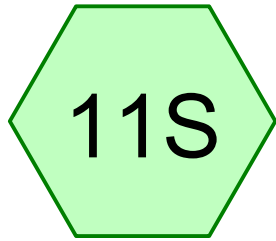


DR-101  
 PROJ. NO.: 20211326 A20  
 DATE: 10/25/2022

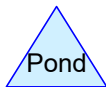
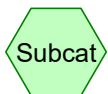
CONNECTICUT CHILDREN'S MEDICAL CENTER  
 EXISTING DRAINAGE ANALYSIS  
 282 WASHINGTON STREET  
 HARTFORD CONNECTICUT

**FUSS & O'NEILL**  
 146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
 www.fando.com

SCALE:  
 HORZ.: 1" = 60'  
 VERT.:  
 DATUM:  
 HORZ.:  
 VERT.:  
 0 30 60  
 GRAPHIC SCALE



Outgoing CB





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Page 2

**Rainfall Events Listing (selected events)**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type III 24-hr		Default	24.00	1	2.65	2
2	2-Year	Type III 24-hr		Default	24.00	1	3.26	2
3	10-Year	Type III 24-hr		Default	24.00	1	4.86	2
4	25-Year	Type III 24-hr		Default	24.00	1	6.11	2
5	100-Year	Type III 24-hr		Default	24.00	1	8.63	2

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Page 3

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.780	80	>75% Grass cover, Good, HSG D (10S)
1.716	98	Paved parking, HSG D (10S, 11S)
0.883	98	Unconnected roofs, HSG D (10S)
<b>3.379</b>	<b>94</b>	<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.379	HSG D	10S, 11S
0.000	Other	
<b>3.379</b>		<b>TOTAL AREA</b>

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.780	0.000	0.780	>75% Grass cover, Good	10S
0.000	0.000	0.000	1.716	0.000	1.716	Paved parking	10S, 11S
0.000	0.000	0.000	0.883	0.000	0.883	Unconnected roofs	10S
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>3.379</b>	<b>0.000</b>	<b>3.379</b>	<b>TOTAL AREA</b>	

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	10S	0.00	0.00	16.0	0.0619	0.010	0.0	6.0	0.0
2	10S	0.00	0.00	353.0	0.0155	0.013	0.0	18.0	0.0



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Type III 24-hr 1-Year Rainfall=2.65"

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Page 7

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:** Runoff Area=111,296 sf 69.48% Impervious Runoff Depth=1.92"  
Flow Length=458' Tc=8.4 min CN=93 Runoff=5.19 cfs 0.409 af

**Subcatchment11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=2.42"  
Tc=5.0 min CN=98 Runoff=2.18 cfs 0.166 af

**Link 10L: Outgoing CB** Inflow=7.14 cfs 0.575 af  
Primary=7.14 cfs 0.575 af

**Total Runoff Area = 3.379 ac Runoff Volume = 0.575 af Average Runoff Depth = 2.04"**  
**23.08% Pervious = 0.780 ac 76.92% Impervious = 2.599 ac**

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Type III 24-hr 1-Year Rainfall=2.65"

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Page 8

**Summary for Subcatchment 10S:**

Runoff = 5.19 cfs @ 12.12 hrs, Volume= 0.409 af, Depth= 1.92"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.65"

Area (sf)	CN	Description
38,465	98	Unconnected roofs, HSG D
38,863	98	Paved parking, HSG D
33,968	80	>75% Grass cover, Good, HSG D
111,296	93	Weighted Average
33,968		30.52% Pervious Area
77,328		69.48% Impervious Area
38,465		49.74% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	89	0.0291	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.0	16	0.0619	9.24	1.81	<b>Pipe Channel, PVC_ROUND 6"</b> 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
0.8	353	0.0155	7.40	13.08	<b>Pipe Channel, CPP_Round 18"</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
8.4	458	Total			

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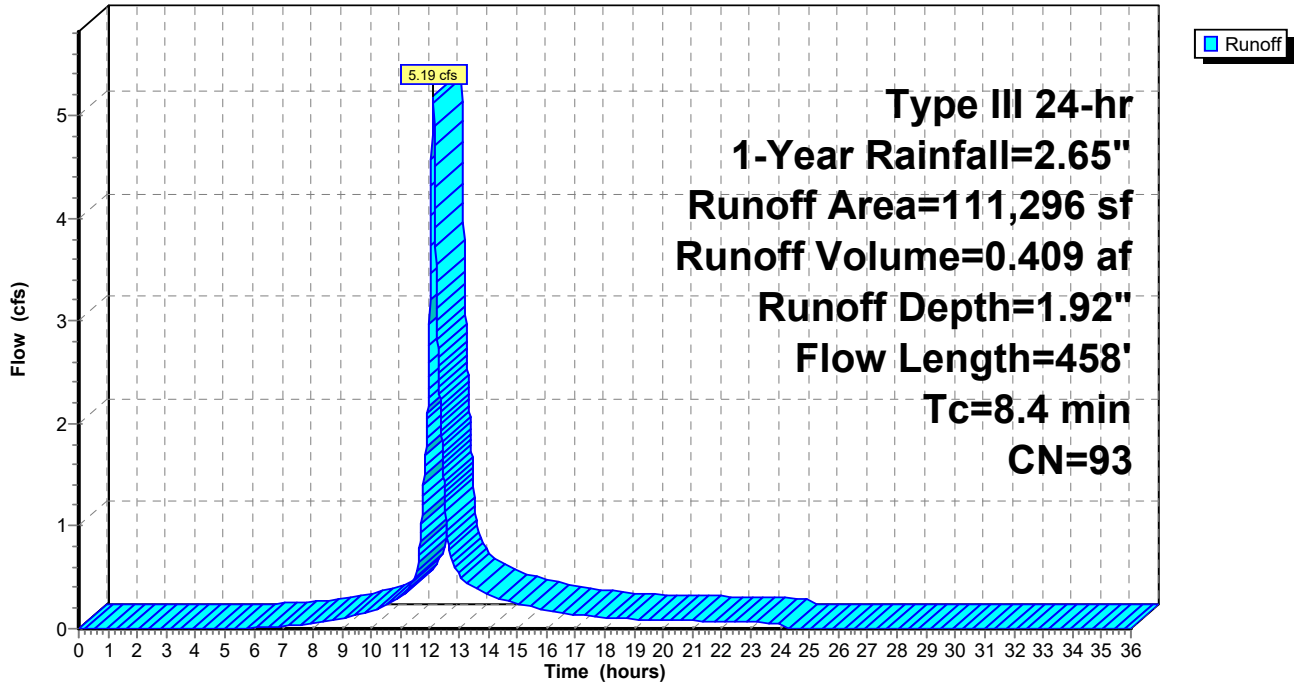
Type III 24-hr 1-Year Rainfall=2.65"

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**Subcatchment 10S:**

Hydrograph



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Proposed Conditions

Type III 24-hr 1-Year Rainfall=2.65"

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**Summary for Subcatchment 11S:**

Runoff = 2.18 cfs @ 12.07 hrs, Volume= 0.166 af, Depth= 2.42"  
Routed to Link 10L : Outgoing CB

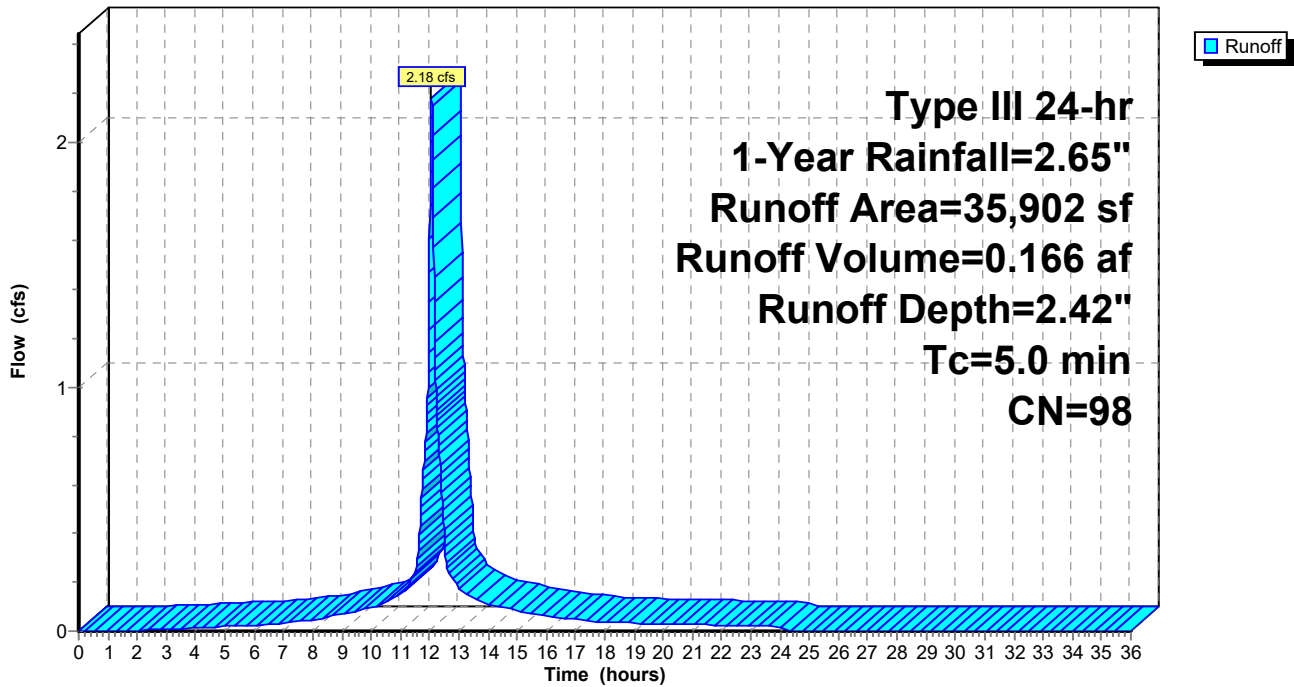
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 1-Year Rainfall=2.65"

Area (sf)	CN	Description
35,902	98	Paved parking, HSG D
35,902		100.00% Impervious Area

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

**Subcatchment 11S:**

Hydrograph



**20211326A20\_EXISTING**

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Proposed Conditions  
Type III 24-hr 1-Year Rainfall=2.65"

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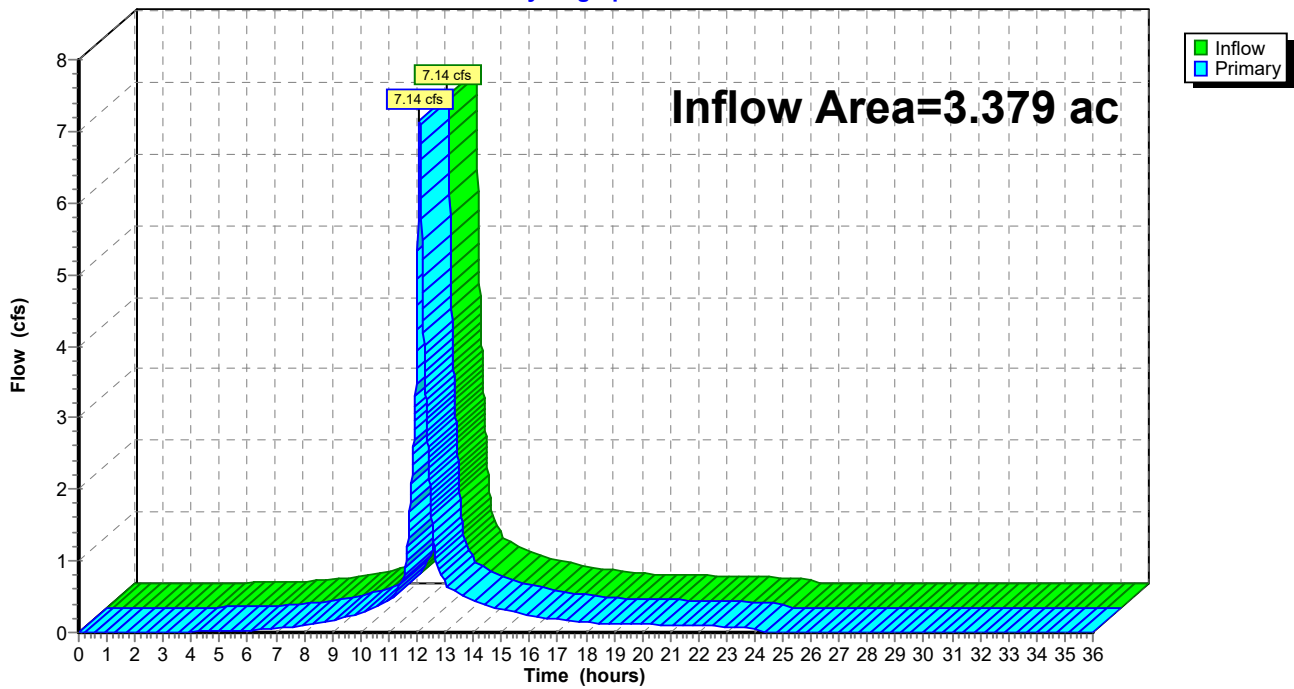
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.379 ac, 76.92% Impervious, Inflow Depth = 2.04" for 1-Year event  
Inflow = 7.14 cfs @ 12.10 hrs, Volume= 0.575 af  
Primary = 7.14 cfs @ 12.10 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

Hydrograph





**20211326A20\_EXISTING**

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Proposed Conditions

Type III 24-hr 2-Year Rainfall=3.26"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:** Runoff Area=111,296 sf 69.48% Impervious Runoff Depth=2.50"  
Flow Length=458' Tc=8.4 min CN=93 Runoff=6.69 cfs 0.533 af

**Subcatchment11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=3.03"  
Tc=5.0 min CN=98 Runoff=2.70 cfs 0.208 af

**Link 10L: Outgoing CB** Inflow=9.11 cfs 0.741 af  
Primary=9.11 cfs 0.741 af

**Total Runoff Area = 3.379 ac Runoff Volume = 0.741 af Average Runoff Depth = 2.63"**  
**23.08% Pervious = 0.780 ac 76.92% Impervious = 2.599 ac**

**20211326A20\_EXISTING**

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Proposed Conditions

Type III 24-hr 2-Year Rainfall=3.26"

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**Summary for Subcatchment 10S:**

Runoff = 6.69 cfs @ 12.12 hrs, Volume= 0.533 af, Depth= 2.50"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
38,465	98	Unconnected roofs, HSG D
38,863	98	Paved parking, HSG D
33,968	80	>75% Grass cover, Good, HSG D
111,296	93	Weighted Average
33,968		30.52% Pervious Area
77,328		69.48% Impervious Area
38,465		49.74% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	89	0.0291	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.0	16	0.0619	9.24	1.81	<b>Pipe Channel, PVC_ROUND 6"</b> 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
0.8	353	0.0155	7.40	13.08	<b>Pipe Channel, CPP_Round 18"</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
8.4	458	Total			

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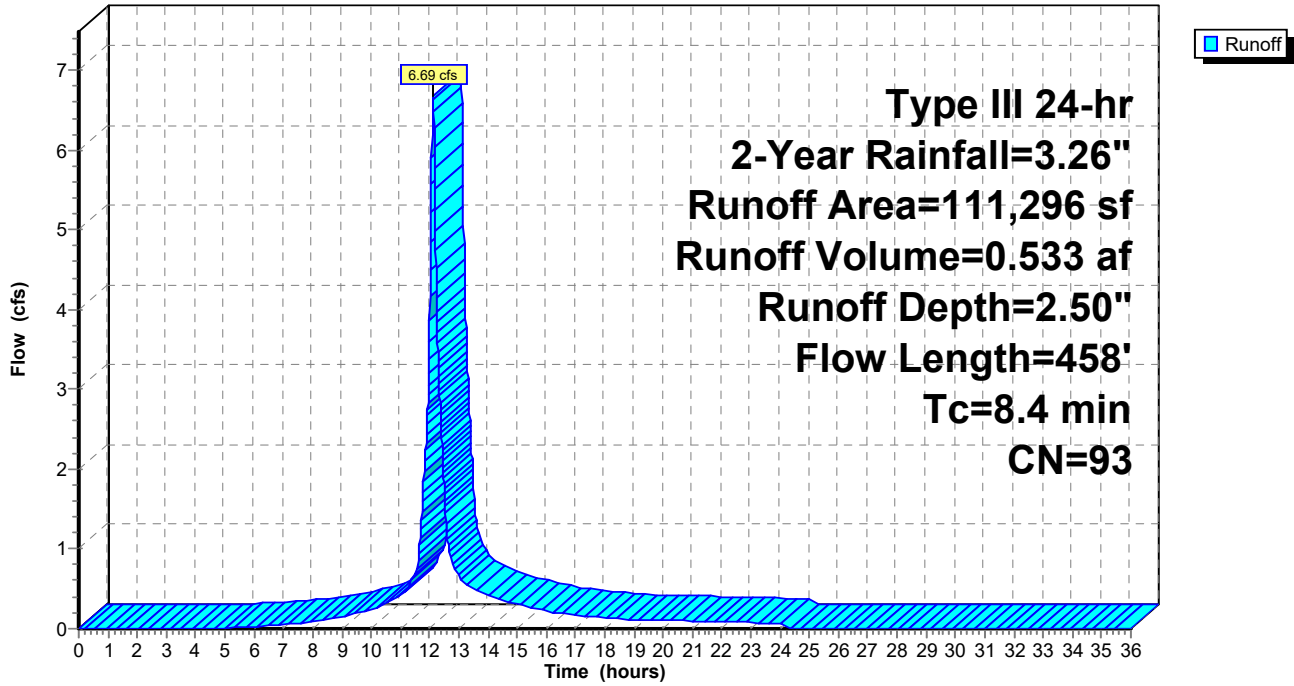
Proposed Conditions  
Type III 24-hr 2-Year Rainfall=3.26"

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**Subcatchment 10S:**

Hydrograph



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Proposed Conditions  
Type III 24-hr 2-Year Rainfall=3.26"

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**Summary for Subcatchment 11S:**

Runoff = 2.70 cfs @ 12.07 hrs, Volume= 0.208 af, Depth= 3.03"  
Routed to Link 10L : Outgoing CB

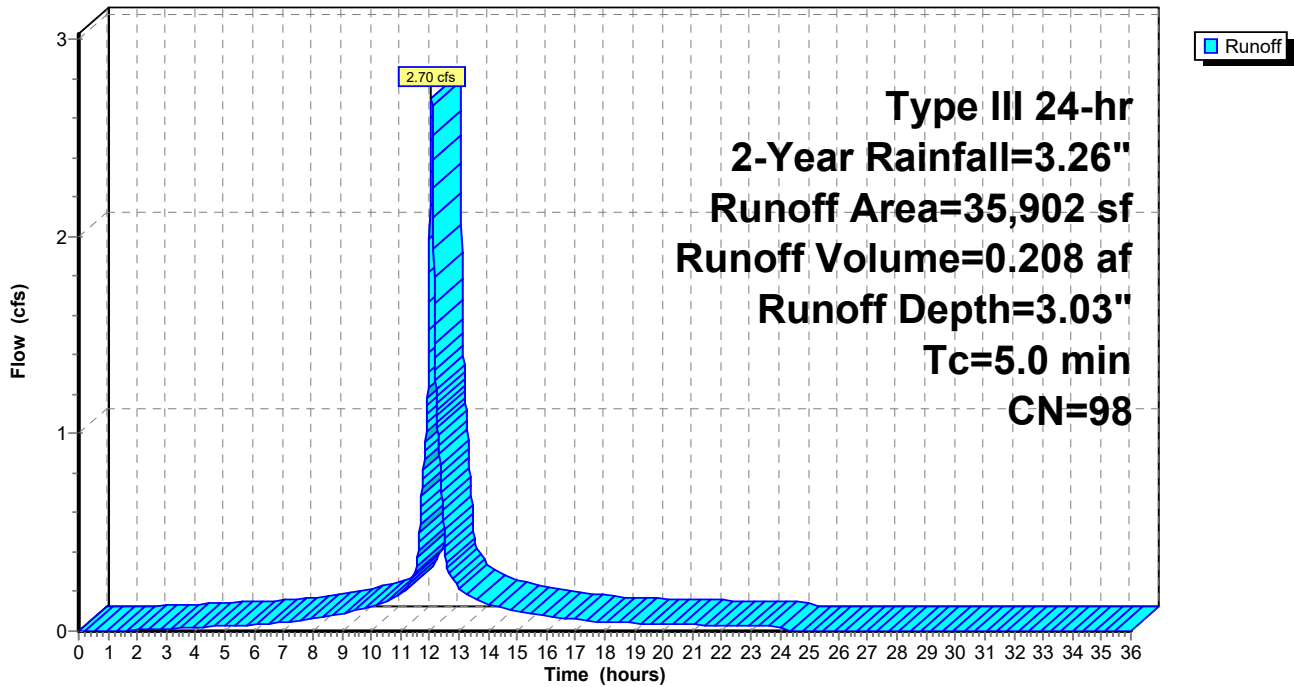
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
35,902	98	Paved parking, HSG D
35,902		100.00% Impervious Area

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

**Subcatchment 11S:**

Hydrograph



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Proposed Conditions  
Type III 24-hr 2-Year Rainfall=3.26"

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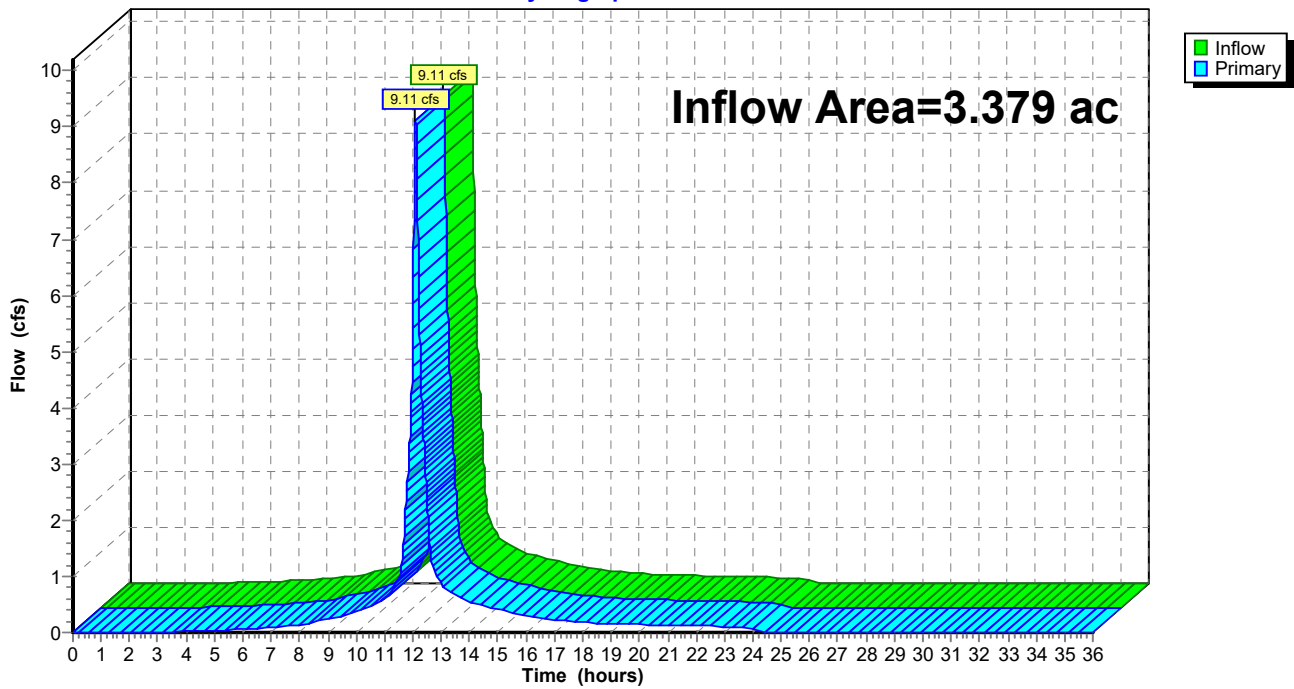
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.379 ac, 76.92% Impervious, Inflow Depth = 2.63" for 2-Year event  
Inflow = 9.11 cfs @ 12.10 hrs, Volume= 0.741 af  
Primary = 9.11 cfs @ 12.10 hrs, Volume= 0.741 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

Hydrograph





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Proposed Conditions  
*Type III 24-hr 10-Year Rainfall=4.86"*

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:**

Runoff Area=111,296 sf 69.48% Impervious Runoff Depth=4.06"  
Flow Length=458' Tc=8.4 min CN=93 Runoff=10.57 cfs 0.865 af

**Subcatchment11S:**

Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=4.62"  
Tc=5.0 min CN=98 Runoff=4.06 cfs 0.318 af

**Link 10L: Outgoing CB**

Inflow=14.21 cfs 1.182 af  
Primary=14.21 cfs 1.182 af

**Total Runoff Area = 3.379 ac Runoff Volume = 1.182 af Average Runoff Depth = 4.20"**  
**23.08% Pervious = 0.780 ac 76.92% Impervious = 2.599 ac**

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Proposed Conditions

Type III 24-hr 10-Year Rainfall=4.86"

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**Summary for Subcatchment 10S:**

Runoff = 10.57 cfs @ 12.11 hrs, Volume= 0.865 af, Depth= 4.06"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.86"

Area (sf)	CN	Description
38,465	98	Unconnected roofs, HSG D
38,863	98	Paved parking, HSG D
33,968	80	>75% Grass cover, Good, HSG D
111,296	93	Weighted Average
33,968		30.52% Pervious Area
77,328		69.48% Impervious Area
38,465		49.74% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	89	0.0291	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.0	16	0.0619	9.24	1.81	<b>Pipe Channel, PVC_ROUND 6"</b> 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
0.8	353	0.0155	7.40	13.08	<b>Pipe Channel, CPP_Round 18"</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
8.4	458	Total			

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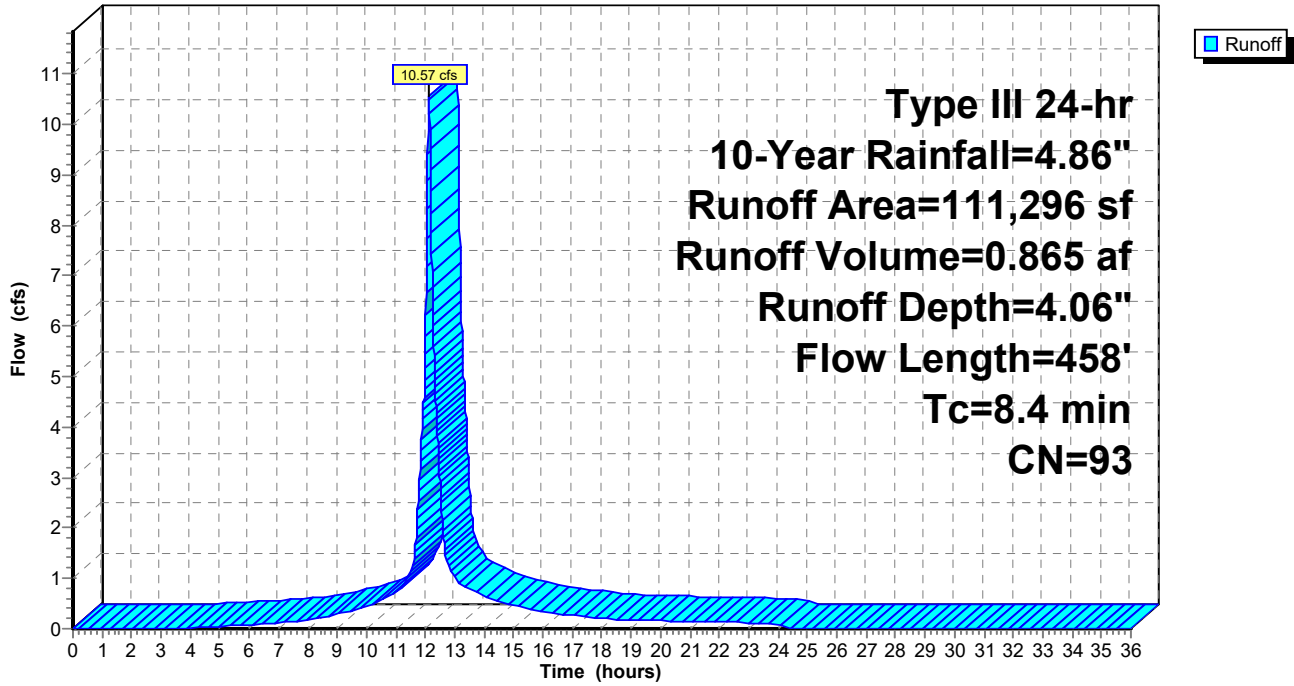
Proposed Conditions  
Type III 24-hr 10-Year Rainfall=4.86"

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**Subcatchment 10S:**

Hydrograph



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Proposed Conditions  
Type III 24-hr 10-Year Rainfall=4.86"

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**Summary for Subcatchment 11S:**

Runoff = 4.06 cfs @ 12.07 hrs, Volume= 0.318 af, Depth= 4.62"  
Routed to Link 10L : Outgoing CB

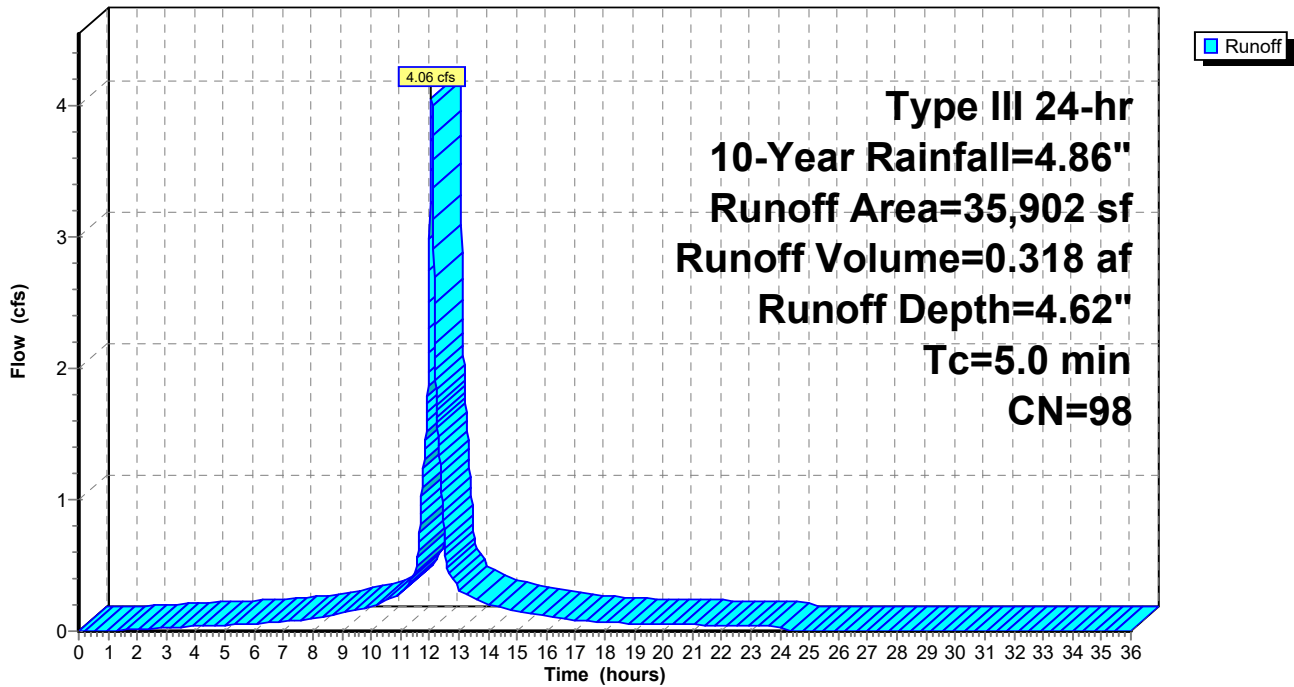
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=4.86"

Area (sf)	CN	Description
35,902	98	Paved parking, HSG D
35,902		100.00% Impervious Area

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

**Subcatchment 11S:**

Hydrograph



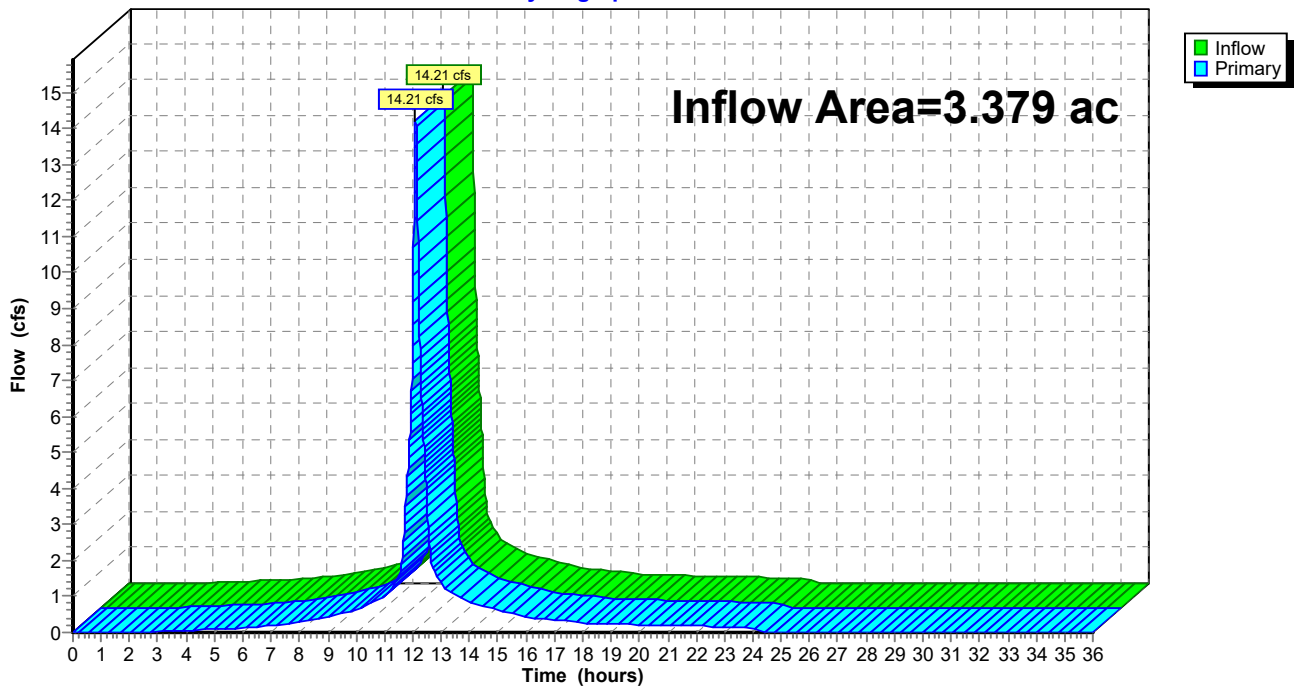
### Summary for Link 10L: Outgoing CB

Inflow Area = 3.379 ac, 76.92% Impervious, Inflow Depth = 4.20" for 10-Year event  
Inflow = 14.21 cfs @ 12.10 hrs, Volume= 1.182 af  
Primary = 14.21 cfs @ 12.10 hrs, Volume= 1.182 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link 10L: Outgoing CB

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*Type III 24-hr 25-Year Rainfall=6.11"*

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:**

Runoff Area=111,296 sf 69.48% Impervious Runoff Depth=5.29"  
Flow Length=458' Tc=8.4 min CN=93 Runoff=13.57 cfs 1.127 af

**Subcatchment11S:**

Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=5.87"  
Tc=5.0 min CN=98 Runoff=5.11 cfs 0.403 af

**Link 10L: Outgoing CB**

Inflow=18.16 cfs 1.530 af  
Primary=18.16 cfs 1.530 af

**Total Runoff Area = 3.379 ac Runoff Volume = 1.530 af Average Runoff Depth = 5.43"**  
**23.08% Pervious = 0.780 ac 76.92% Impervious = 2.599 ac**

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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Subcatchment 10S:**

Runoff = 13.57 cfs @ 12.11 hrs, Volume= 1.127 af, Depth= 5.29"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=6.11"

Area (sf)	CN	Description
38,465	98	Unconnected roofs, HSG D
38,863	98	Paved parking, HSG D
33,968	80	>75% Grass cover, Good, HSG D
111,296	93	Weighted Average
33,968		30.52% Pervious Area
77,328		69.48% Impervious Area
38,465		49.74% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	89	0.0291	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.0	16	0.0619	9.24	1.81	<b>Pipe Channel, PVC_ROUND 6"</b> 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
0.8	353	0.0155	7.40	13.08	<b>Pipe Channel, CPP_Round 18"</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
8.4	458	Total			

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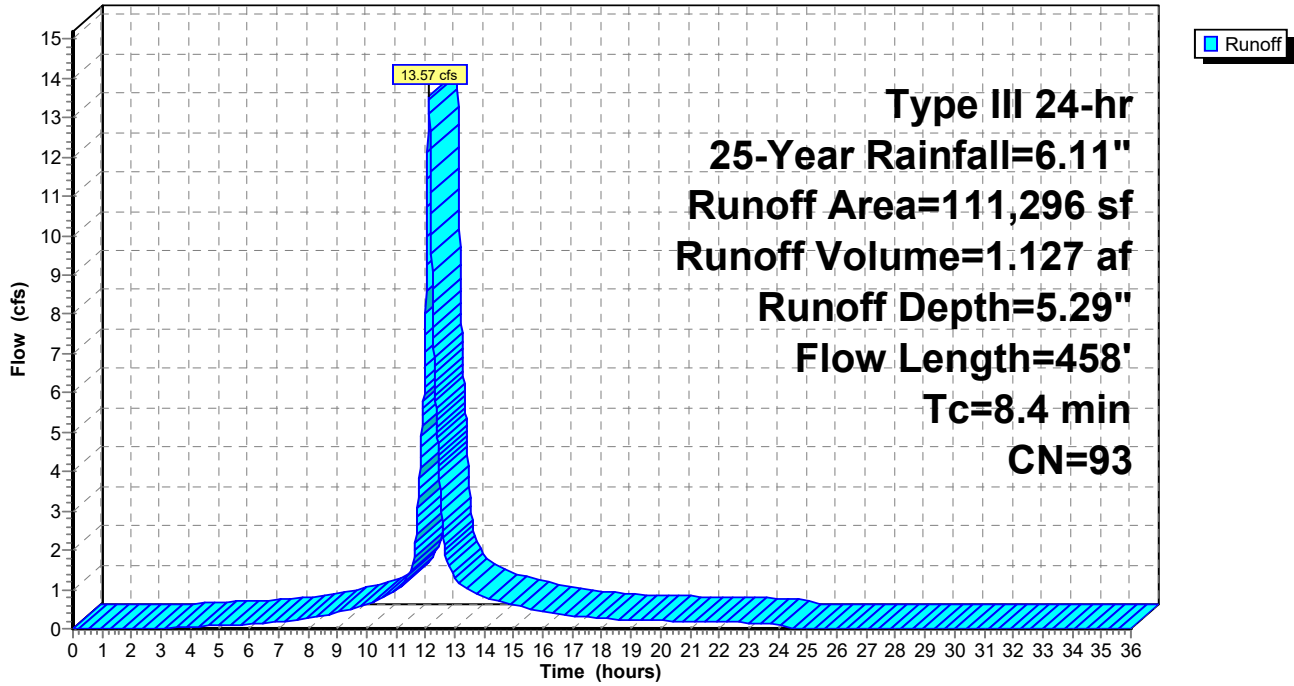
Proposed Conditions  
Type III 24-hr 25-Year Rainfall=6.11"

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**Subcatchment 10S:**

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Subcatchment 11S:**

Runoff = 5.11 cfs @ 12.07 hrs, Volume= 0.403 af, Depth= 5.87"  
Routed to Link 10L : Outgoing CB

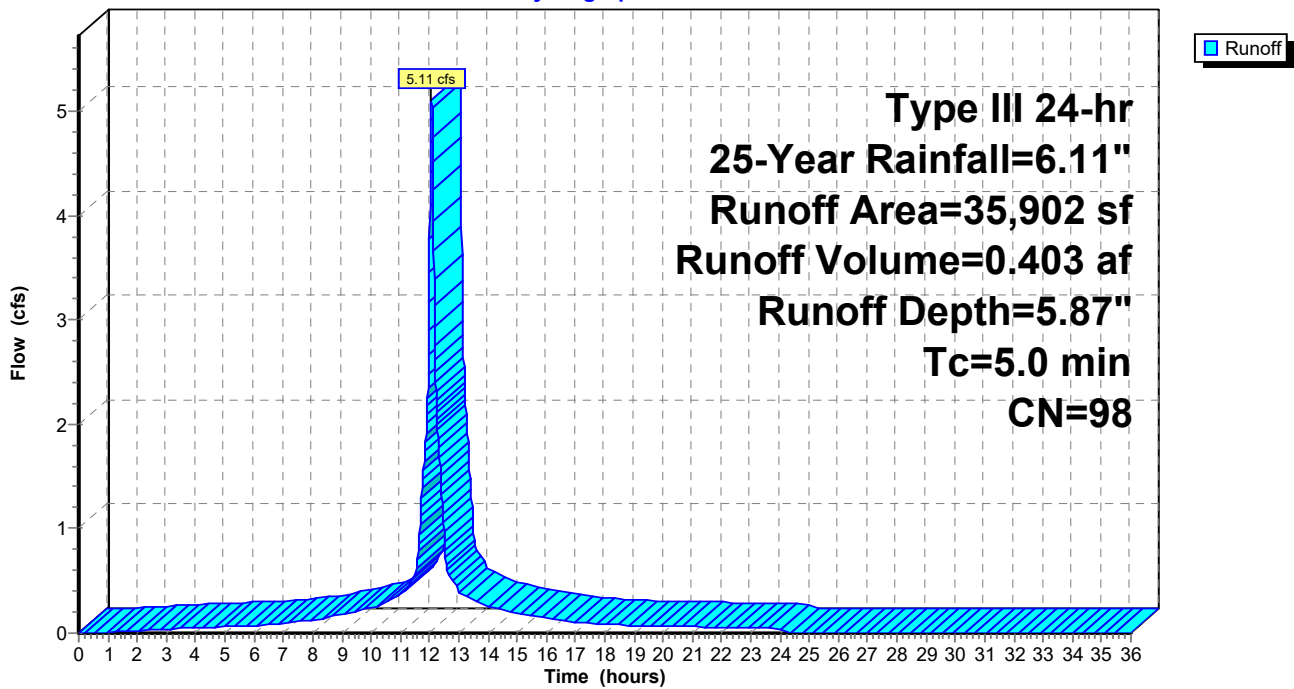
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-Year Rainfall=6.11"

Area (sf)	CN	Description
35,902	98	Paved parking, HSG D
35,902		100.00% Impervious Area

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

**Subcatchment 11S:**

Hydrograph



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Proposed Conditions  
Type III 24-hr 25-Year Rainfall=6.11"

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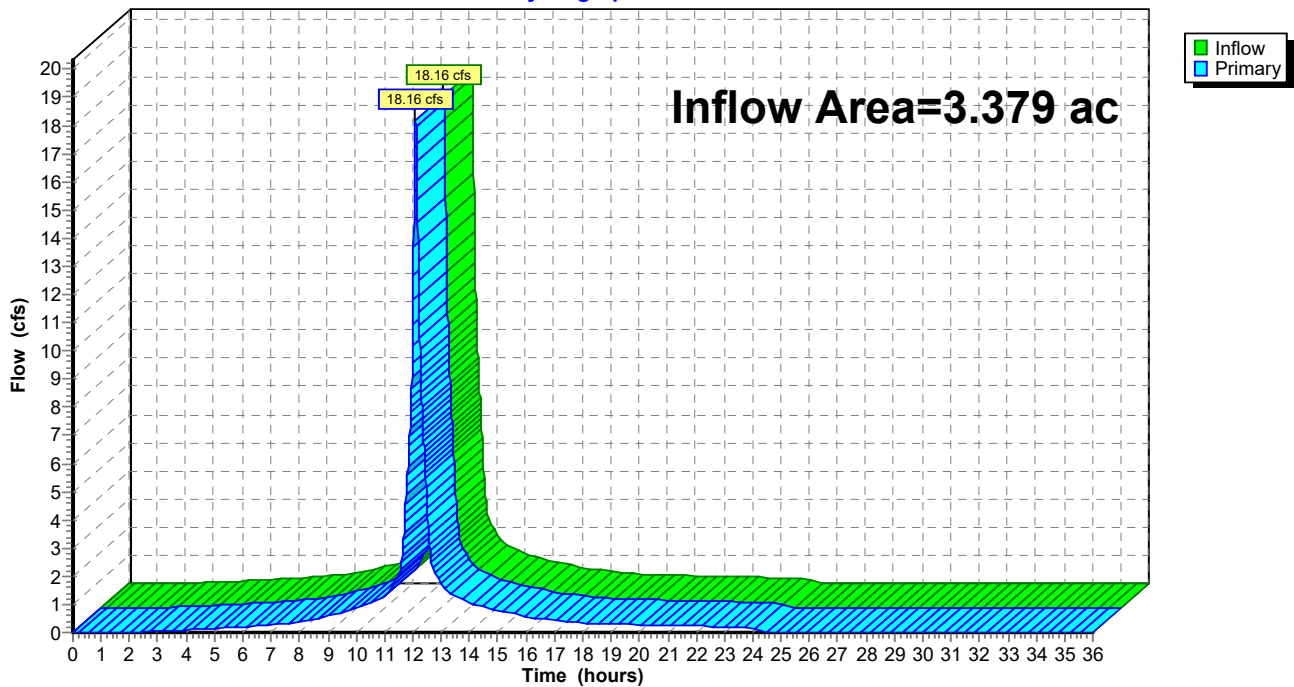
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.379 ac, 76.92% Impervious, Inflow Depth = 5.43" for 25-Year event  
Inflow = 18.16 cfs @ 12.10 hrs, Volume= 1.530 af  
Primary = 18.16 cfs @ 12.10 hrs, Volume= 1.530 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

Hydrograph





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Type III 24-hr 100-Year Rainfall=8.63"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:**

Runoff Area=111,296 sf 69.48% Impervious Runoff Depth=7.79"  
Flow Length=458' Tc=8.4 min CN=93 Runoff=19.55 cfs 1.658 af

**Subcatchment11S:**

Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=8.39"  
Tc=5.0 min CN=98 Runoff=7.24 cfs 0.576 af

**Link 10L: Outgoing CB**

Inflow=26.05 cfs 2.234 af  
Primary=26.05 cfs 2.234 af

**Total Runoff Area = 3.379 ac Runoff Volume = 2.234 af Average Runoff Depth = 7.93"**  
**23.08% Pervious = 0.780 ac 76.92% Impervious = 2.599 ac**

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Type III 24-hr 100-Year Rainfall=8.63"

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**Summary for Subcatchment 10S:**

Runoff = 19.55 cfs @ 12.11 hrs, Volume= 1.658 af, Depth= 7.79"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.63"

Area (sf)	CN	Description
38,465	98	Unconnected roofs, HSG D
38,863	98	Paved parking, HSG D
33,968	80	>75% Grass cover, Good, HSG D
111,296	93	Weighted Average
33,968		30.52% Pervious Area
77,328		69.48% Impervious Area
38,465		49.74% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	89	0.0291	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.0	16	0.0619	9.24	1.81	<b>Pipe Channel, PVC_ROUND 6"</b> 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
0.8	353	0.0155	7.40	13.08	<b>Pipe Channel, CPP_Round 18"</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
8.4	458	Total			

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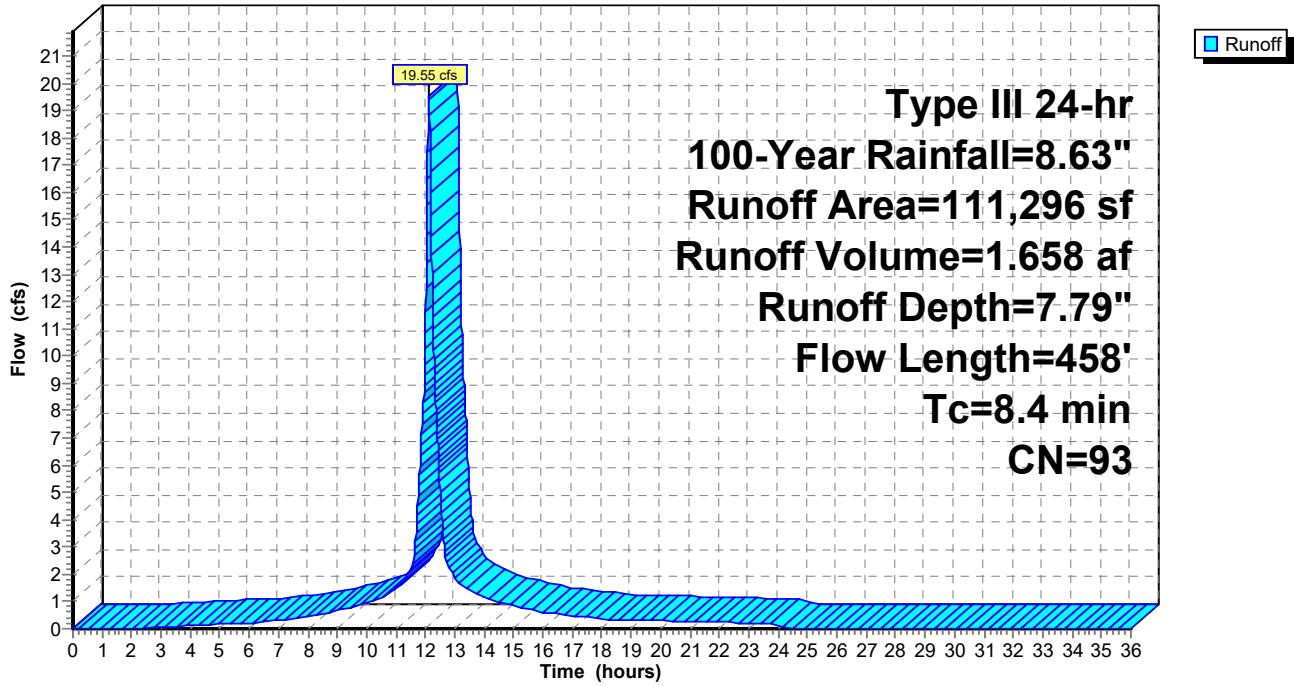
Proposed Conditions  
Type III 24-hr 100-Year Rainfall=8.63"

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**Subcatchment 10S:**

Hydrograph



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Type III 24-hr 100-Year Rainfall=8.63"

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**Summary for Subcatchment 11S:**

Runoff = 7.24 cfs @ 12.07 hrs, Volume= 0.576 af, Depth= 8.39"  
Routed to Link 10L : Outgoing CB

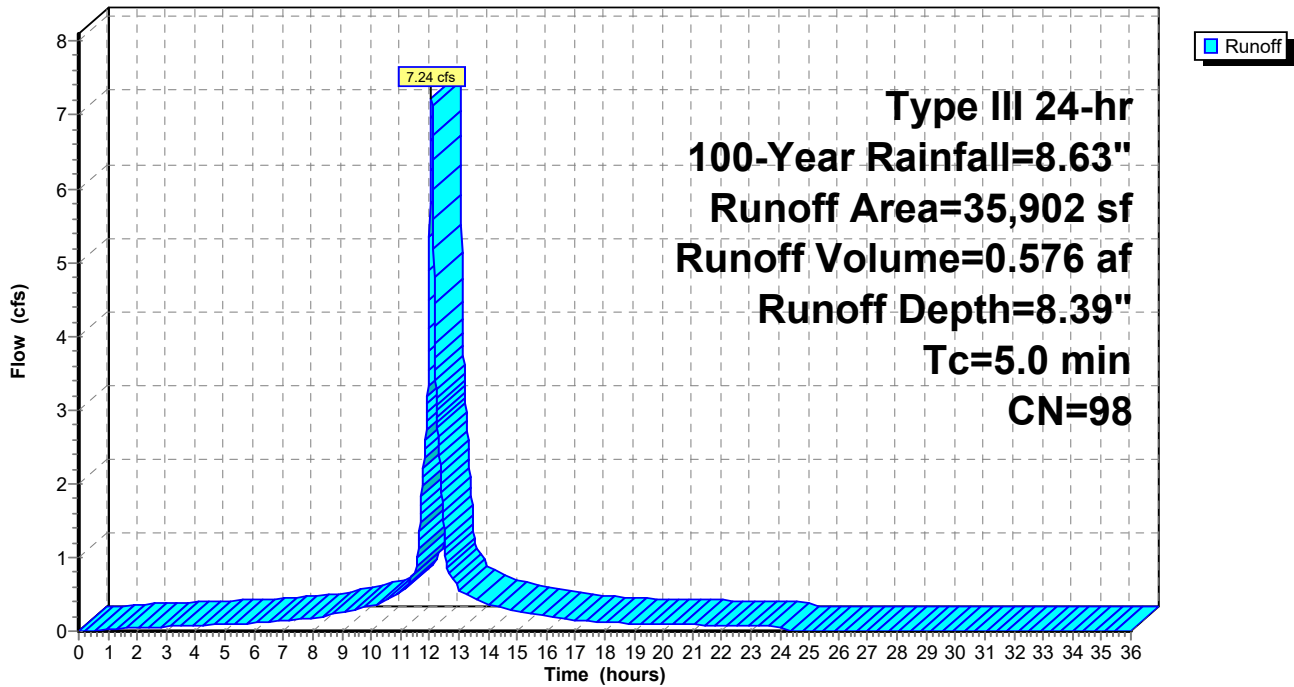
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=8.63"

Area (sf)	CN	Description
35,902	98	Paved parking, HSG D
35,902		100.00% Impervious Area

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

**Subcatchment 11S:**

Hydrograph



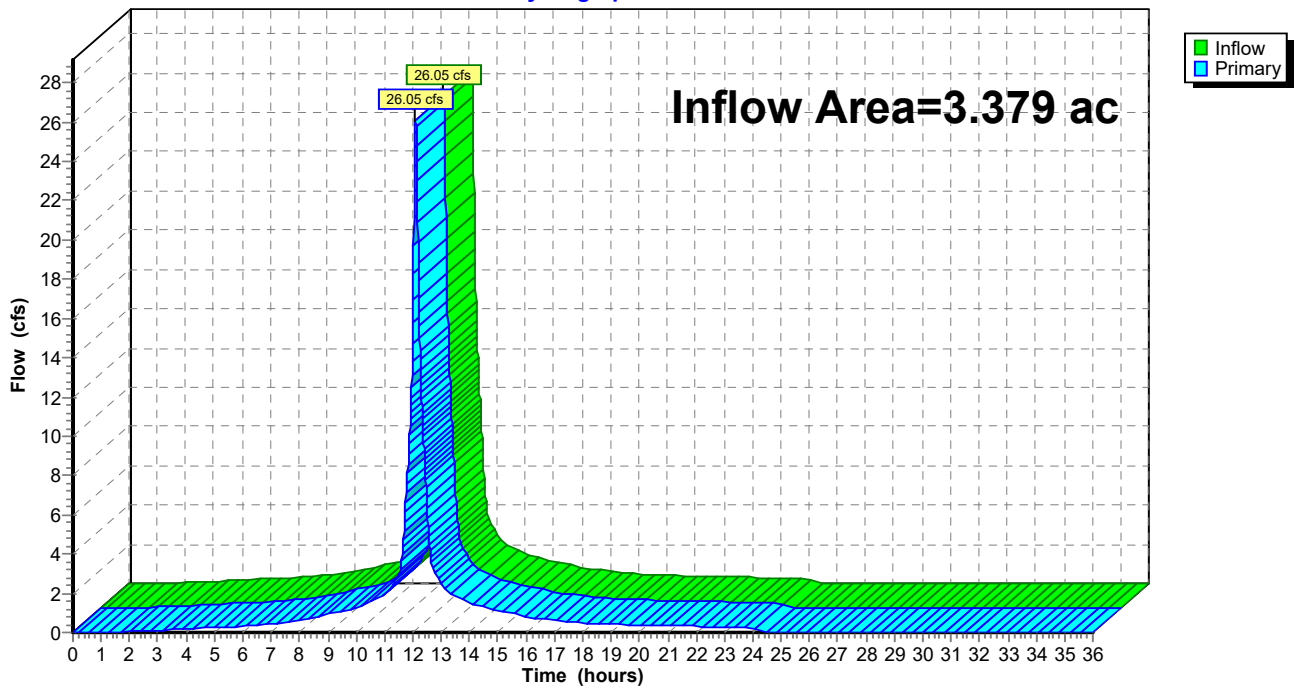
### Summary for Link 10L: Outgoing CB

Inflow Area = 3.379 ac, 76.92% Impervious, Inflow Depth = 7.93" for 100-Year event  
Inflow = 26.05 cfs @ 12.10 hrs, Volume= 2.234 af  
Primary = 26.05 cfs @ 12.10 hrs, Volume= 2.234 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link 10L: Outgoing CB

Hydrograph

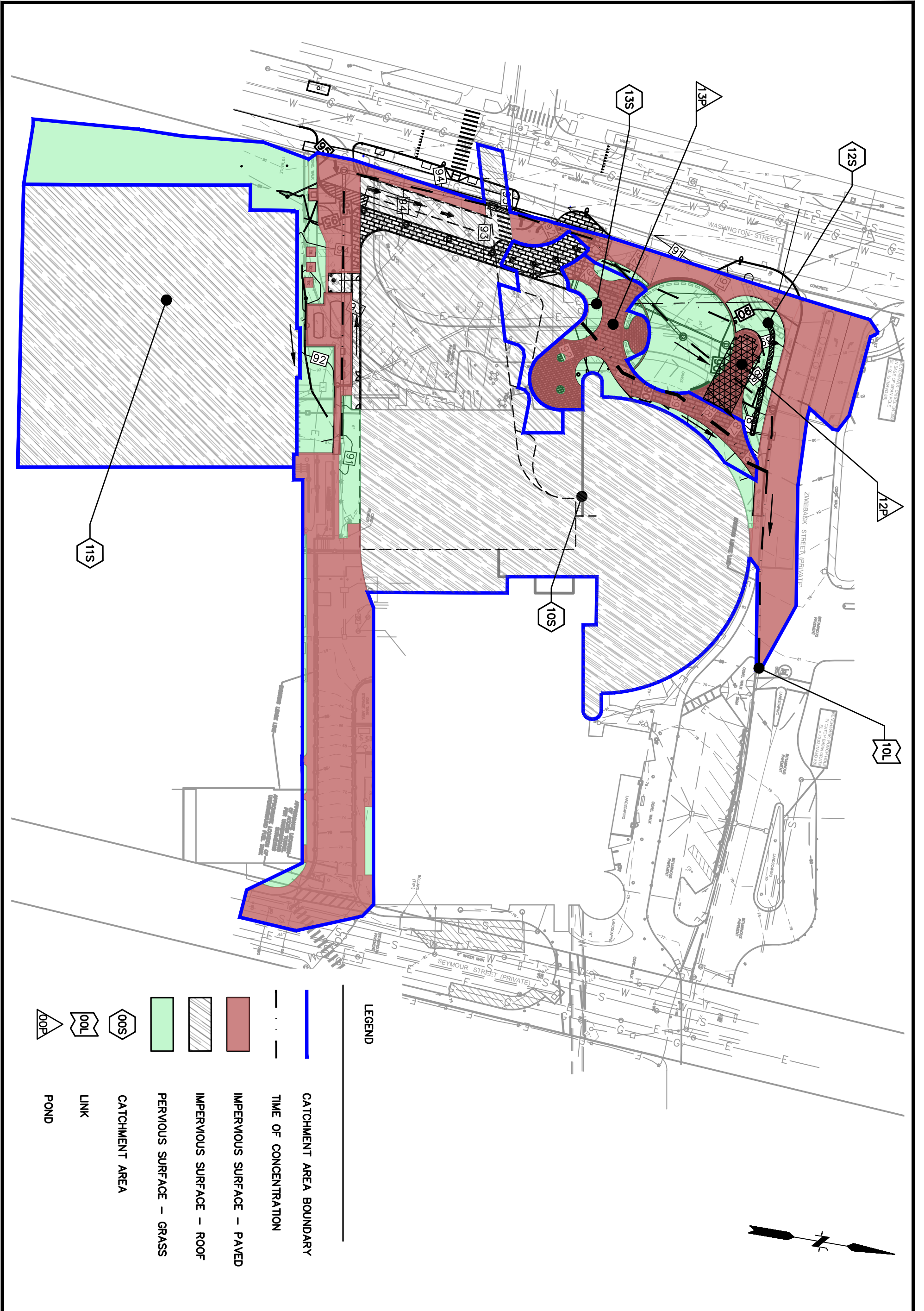




## **Appendix B**

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### Proposed Watershed Analysis



**LEGEND**

- CATCHMENT AREA BOUNDARY
- TIME OF CONCENTRATION
- IMPERVIOUS SURFACE - PAVED
- IMPERVIOUS SURFACE - ROOF
- PERVIOUS SURFACE - GRASS
- CATCHMENT AREA
- LINK
- CATCHMENT AREA
- POND

CONNECTICUT CHILDREN'S MEDICAL CENTER  
 PROPOSED DRAINAGE ANALYSIS  
 282 WASHINGTON STREET

HARTFORD

CONNECTICUT



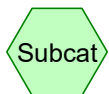
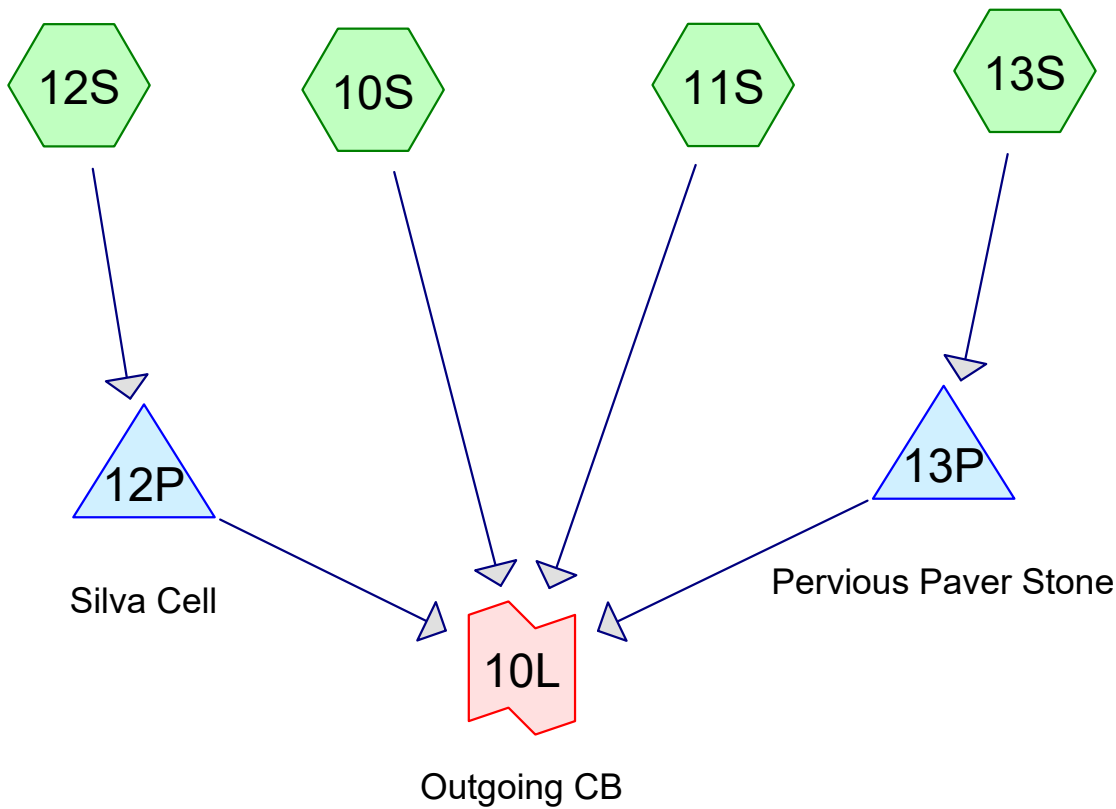
**FUSS & O'NEILL**

146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
 www.fando.com

SCALE:  
 HORZ.: 1" = 60'  
 VERT.:  
 DATUM:  
 HORZ.:  
 VERT.:  
  
 GRAPHIC SCALE

DR-201

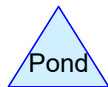
PROJ. NO.: 20211326 A20  
 DATE: 10/25/2022



Subcat



Reach



Pond



Link

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**Rainfall Events Listing (selected events)**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type III 24-hr		Default	24.00	1	2.65	2
2	2-Year	Type III 24-hr		Default	24.00	1	3.26	2
3	10-Year	Type III 24-hr		Default	24.00	1	4.86	2
4	25-Year	Type III 24-hr		Default	24.00	1	6.11	2
5	100-Year	Type III 24-hr		Default	24.00	1	8.63	2

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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.481	80	>75% Grass cover, Good, HSG D (10S, 12S, 13S)
0.844	98	Paved parking, HSG D (10S, 12S, 13S)
2.113	98	Unconnected roofs, HSG D (10S, 11S, 12S)
<b>3.439</b>	<b>95</b>	<b>TOTAL AREA</b>



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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.439	HSG D	10S, 11S, 12S, 13S
0.000	Other	
<b>3.439</b>		<b>TOTAL AREA</b>

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.481	0.000	0.481	>75% Grass cover, Good	10S, 12S, 13S
0.000	0.000	0.000	0.844	0.000	0.844	Paved parking	10S, 12S, 13S
0.000	0.000	0.000	2.113	0.000	2.113	Unconnected roofs	10S, 11S, 12S
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>3.439</b>	<b>0.000</b>	<b>3.439</b>	<b>TOTAL AREA</b>	

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	10S	0.00	0.00	36.0	0.0200	0.010	0.0	8.0	0.0
2	10S	0.00	0.00	700.0	0.0105	0.012	0.0	24.0	0.0
3	12S	0.00	0.00	143.0	0.0200	0.012	0.0	18.0	0.0
4	12P	81.00	80.40	60.0	0.0100	0.013	0.0	12.0	0.0

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Type III 24-hr 1-Year Rainfall=2.65"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 10S:** Runoff Area=92,405 sf 85.49% Impervious Runoff Depth=2.11"  
Flow Length=804' Tc=7.2 min CN=95 Runoff=4.82 cfs 0.373 af

**Subcatchment 11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=2.42"  
Flow Length=108' Slope=0.0100 '/' Tc=7.7 min CN=98 Runoff=1.99 cfs 0.166 af

**Subcatchment 12S:** Runoff Area=14,285 sf 59.89% Impervious Runoff Depth=1.75"  
Flow Length=311' Tc=10.2 min CN=91 Runoff=0.58 cfs 0.048 af

**Subcatchment 13S:** Runoff Area=7,192 sf 74.87% Impervious Runoff Depth=1.92"  
Tc=5.0 min CN=93 Runoff=0.38 cfs 0.026 af

**Pond 12P: Silva Cell** Peak Elev=85.66' Storage=1,145 cf Inflow=0.58 cfs 0.048 af  
Discarded=0.02 cfs 0.047 af Primary=0.01 cfs 0.001 af Outflow=0.03 cfs 0.048 af

**Pond 13P: Pervious Paver Stone** Peak Elev=84.27' Storage=318 cf Inflow=0.38 cfs 0.026 af  
Outflow=0.07 cfs 0.026 af

**Link 10L: Outgoing CB** Inflow=6.81 cfs 0.540 af  
Primary=6.81 cfs 0.540 af

**Total Runoff Area = 3.439 ac Runoff Volume = 0.613 af Average Runoff Depth = 2.14"**  
**13.98% Pervious = 0.481 ac 86.02% Impervious = 2.958 ac**

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**Summary for Subcatchment 10S:**

Runoff = 4.82 cfs @ 12.10 hrs, Volume= 0.373 af, Depth= 2.11"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.65"

Area (sf)	CN	Description
52,154	98	Unconnected roofs, HSG D
26,842	98	Paved parking, HSG D
13,409	80	>75% Grass cover, Good, HSG D
92,405	95	Weighted Average
13,409		14.51% Pervious Area
78,996		85.49% Impervious Area
52,154		66.02% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	68	0.0367	0.20		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.1	36	0.0200	6.36	2.22	<b>Pipe Channel, gf</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
1.5	700	0.0105	7.99	25.11	<b>Pipe Channel,</b> 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012 Corrugated PP, smooth interior
7.2	804	Total			



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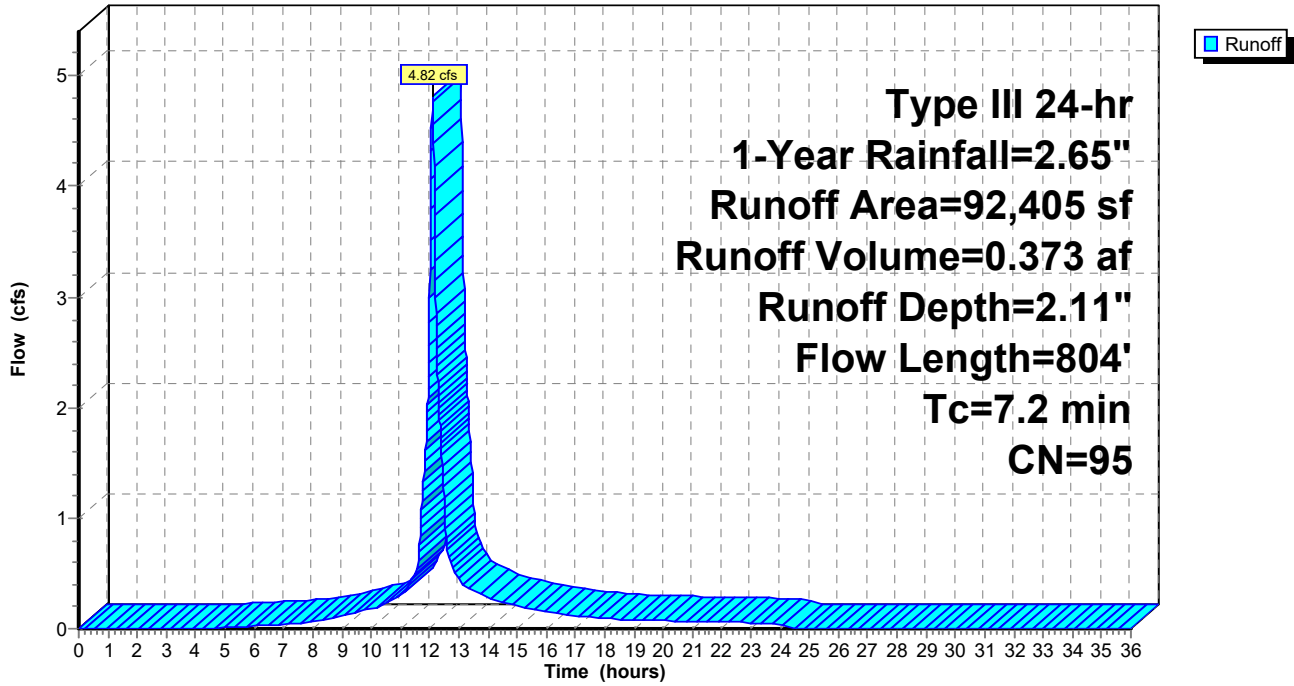
Proposed Conditions  
Type III 24-hr 1-Year Rainfall=2.65"

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**Subcatchment 10S:**

Hydrograph



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Type III 24-hr 1-Year Rainfall=2.65"

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**Summary for Subcatchment 11S:**

Runoff = 1.99 cfs @ 12.11 hrs, Volume= 0.166 af, Depth= 2.42"  
Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 1-Year Rainfall=2.65"

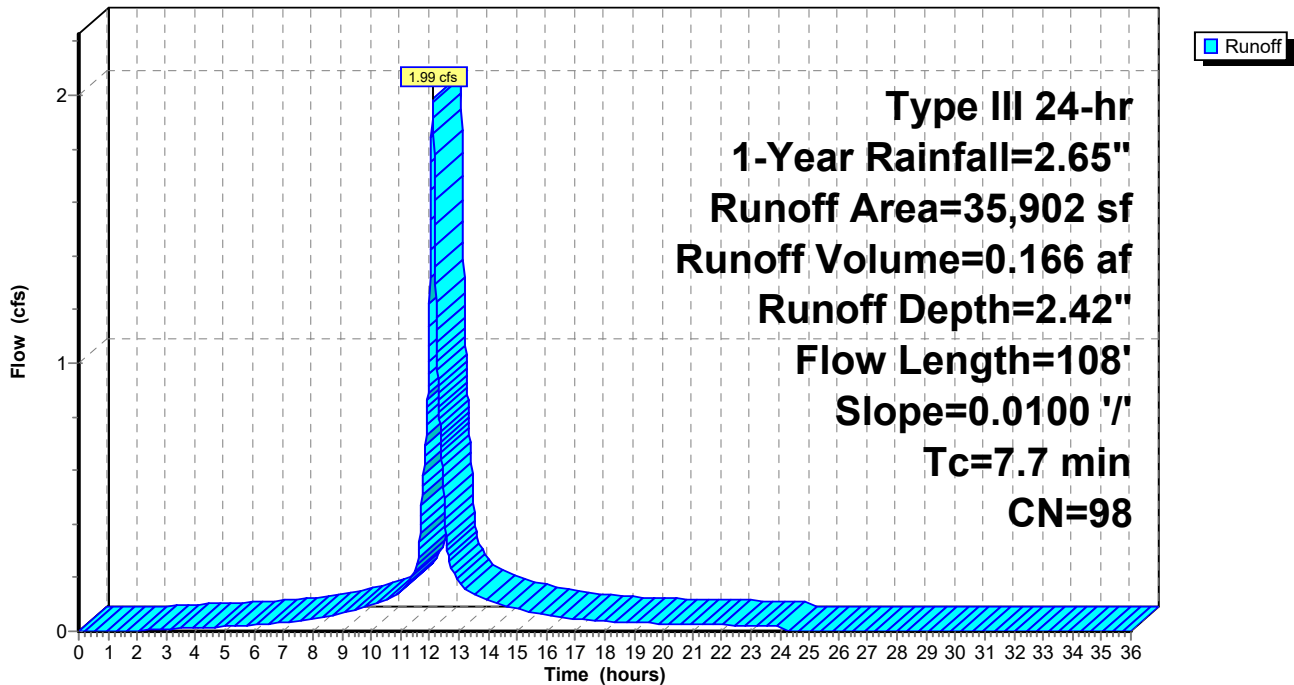
Area (sf)	CN	Description
35,902	98	Unconnected roofs, HSG D
35,902		100.00% Impervious Area
35,902		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.05		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.26"
0.1	8	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
6.0					<b>Direct Entry,</b>
7.7	108	Total			

**Subcatchment 11S:**

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Type III 24-hr 1-Year Rainfall=2.65"

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**Summary for Subcatchment 12S:**

Runoff = 0.58 cfs @ 12.14 hrs, Volume= 0.048 af, Depth= 1.75"  
 Routed to Pond 12P : Silva Cell

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.65"

Area (sf)	CN	Description
5,730	80	>75% Grass cover, Good, HSG D
4,555	98	Paved parking, HSG D
4,000	98	Unconnected roofs, HSG D
14,285	91	Weighted Average
5,730		40.11% Pervious Area
8,555		59.89% Impervious Area
4,000		46.76% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0210	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.4	68	0.0314	2.66		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.3	143	0.0200	9.11	16.09	<b>Pipe Channel,</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
10.2	311	Total			

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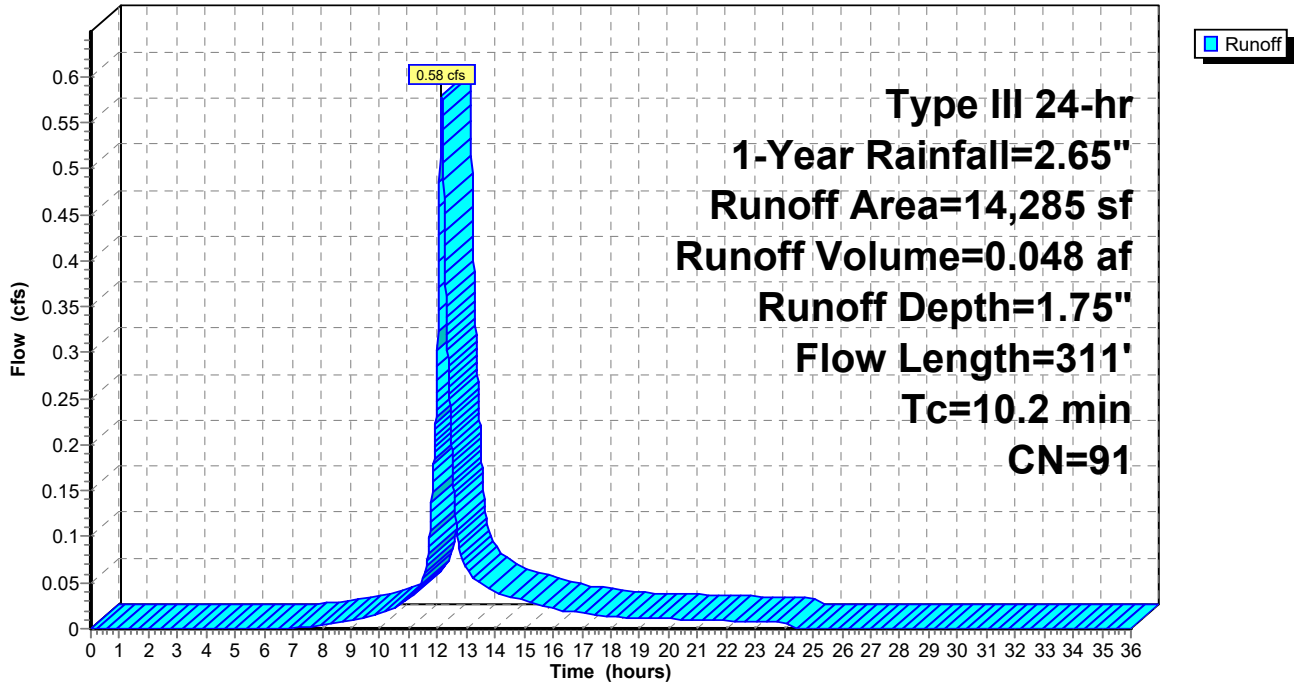
Proposed Conditions  
Type III 24-hr 1-Year Rainfall=2.65"

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**Subcatchment 12S:**

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Type III 24-hr 1-Year Rainfall=2.65"

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**Summary for Subcatchment 13S:**

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 0.026 af, Depth= 1.92"  
Routed to Pond 13P : Pervious Paver Stone

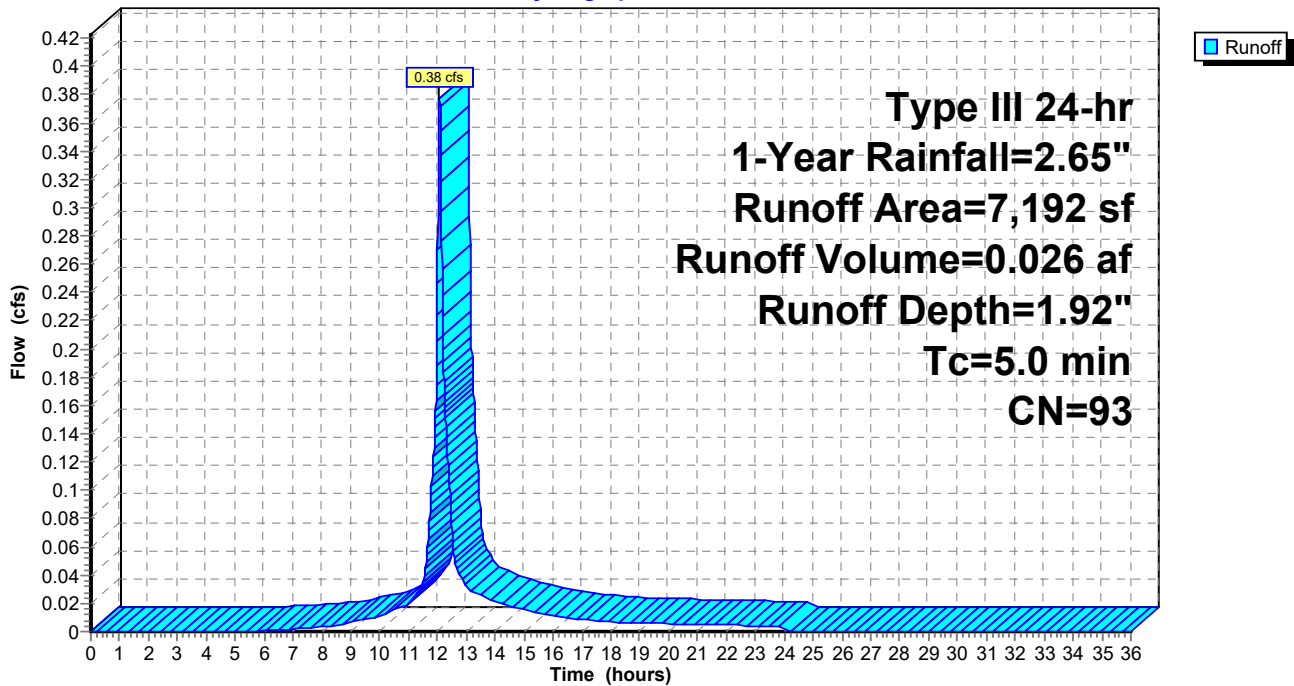
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 1-Year Rainfall=2.65"

Area (sf)	CN	Description
5,385	98	Paved parking, HSG D
1,807	80	>75% Grass cover, Good, HSG D
7,192	93	Weighted Average
1,807		25.13% Pervious Area
5,385		74.87% Impervious Area

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

**Subcatchment 13S:**

Hydrograph





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**Summary for Pond 12P: Silva Cell**

Inflow Area = 0.328 ac, 59.89% Impervious, Inflow Depth = 1.75" for 1-Year event  
Inflow = 0.58 cfs @ 12.14 hrs, Volume= 0.048 af  
Outflow = 0.03 cfs @ 14.74 hrs, Volume= 0.048 af, Atten= 94%, Lag= 155.7 min  
Discarded = 0.02 cfs @ 10.70 hrs, Volume= 0.047 af  
Primary = 0.01 cfs @ 14.74 hrs, Volume= 0.001 af  
Routed to Link 10L : Outgoing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Peak Elev= 85.66' @ 14.74 hrs Surf.Area= 1,031 sf Storage= 1,145 cf

Plug-Flow detention time= 456.7 min calculated for 0.048 af (100% of inflow)  
Center-of-Mass det. time= 456.7 min ( 1,270.3 - 813.6 )

Volume	Invert	Avail.Storage	Storage Description			
#1	83.17'	1,557 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
83.17	1,031	146.0	0.0	0	0	1,031
83.50	1,031	146.0	40.0	136	136	1,079
85.00	1,031	146.0	25.0	387	523	1,298
86.09	1,031	146.0	92.0	1,034	1,557	1,457

Device	Routing	Invert	Outlet Devices
#1	Discarded	83.17'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Device 3	85.65'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	81.00'	<b>12.0" Round Culvert</b> L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 81.00' / 80.40' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Discarded OutFlow** Max=0.02 cfs @ 10.70 hrs HW=83.20' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.01 cfs @ 14.74 hrs HW=85.66' TW=81.40' (Fixed TW Elev= 81.40')

↑3=Culvert (Passes 0.01 cfs of 7.07 cfs potential flow)

↑2=Orifice/Grate (Weir Controls 0.01 cfs @ 0.26 fps)

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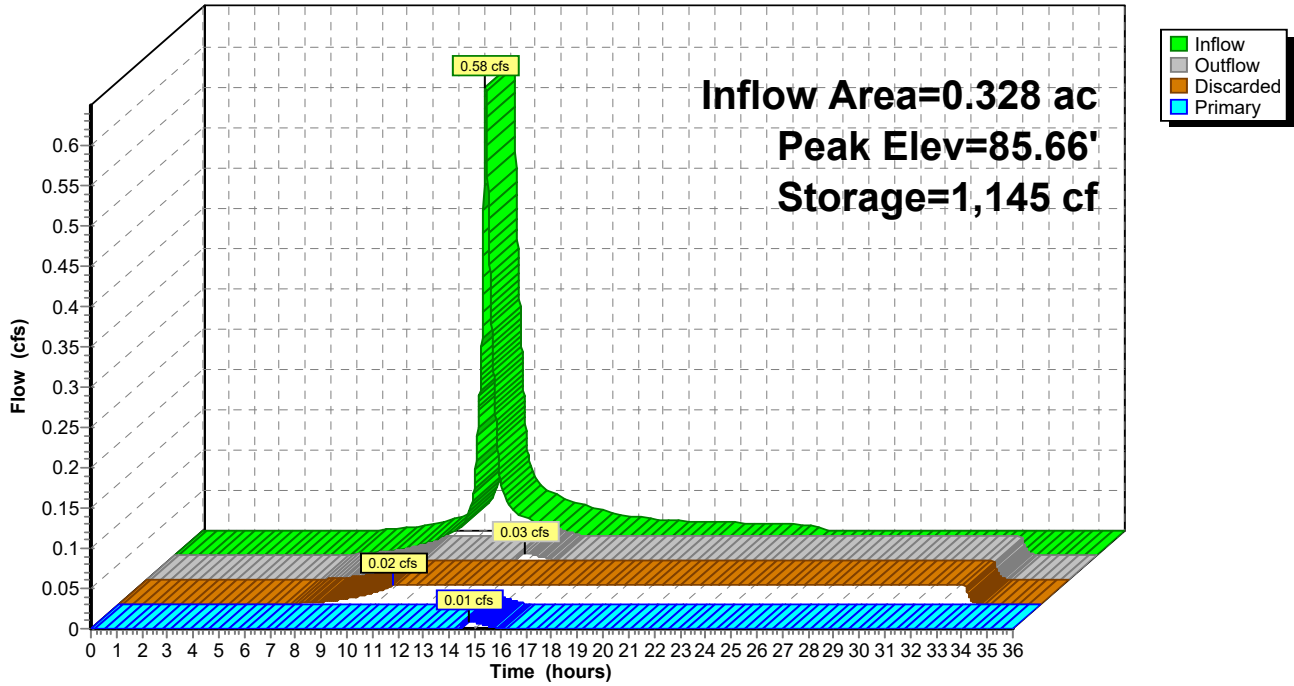
Proposed Conditions  
Type III 24-hr 1-Year Rainfall=2.65"

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**Pond 12P: Silva Cell**

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**Summary for Pond 13P: Pervious Paver Stone**

Inflow Area = 0.165 ac, 74.87% Impervious, Inflow Depth = 1.92" for 1-Year event  
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 0.026 af  
Outflow = 0.07 cfs @ 11.77 hrs, Volume= 0.026 af, Atten= 82%, Lag= 0.0 min  
Discarded = 0.07 cfs @ 11.77 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Peak Elev= 84.27' @ 12.52 hrs Surf.Area= 2,922 sf Storage= 318 cf

Plug-Flow detention time= 29.9 min calculated for 0.026 af (100% of inflow)  
Center-of-Mass det. time= 29.9 min ( 828.4 - 798.4 )

Volume	Invert	Avail.Storage	Storage Description			
#1	84.00'	2,338 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
84.00	2,922	498.7	0.0	0	0	2,922
85.00	2,922	498.7	40.0	1,169	1,169	3,421
86.00	2,922	498.7	40.0	1,169	2,338	3,919

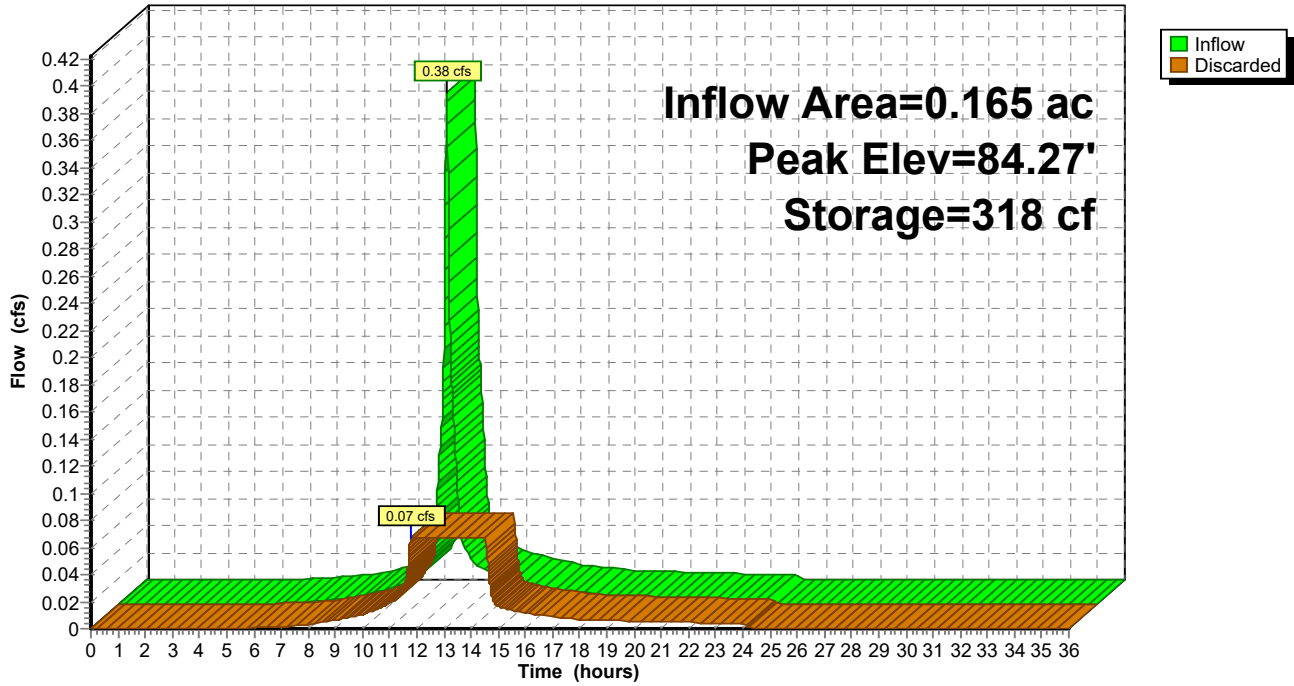
Device	Routing	Invert	Outlet Devices
#1	Discarded	84.00'	<b>1.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.07 cfs @ 11.77 hrs HW=84.02' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

### Pond 13P: Pervious Paver Stone

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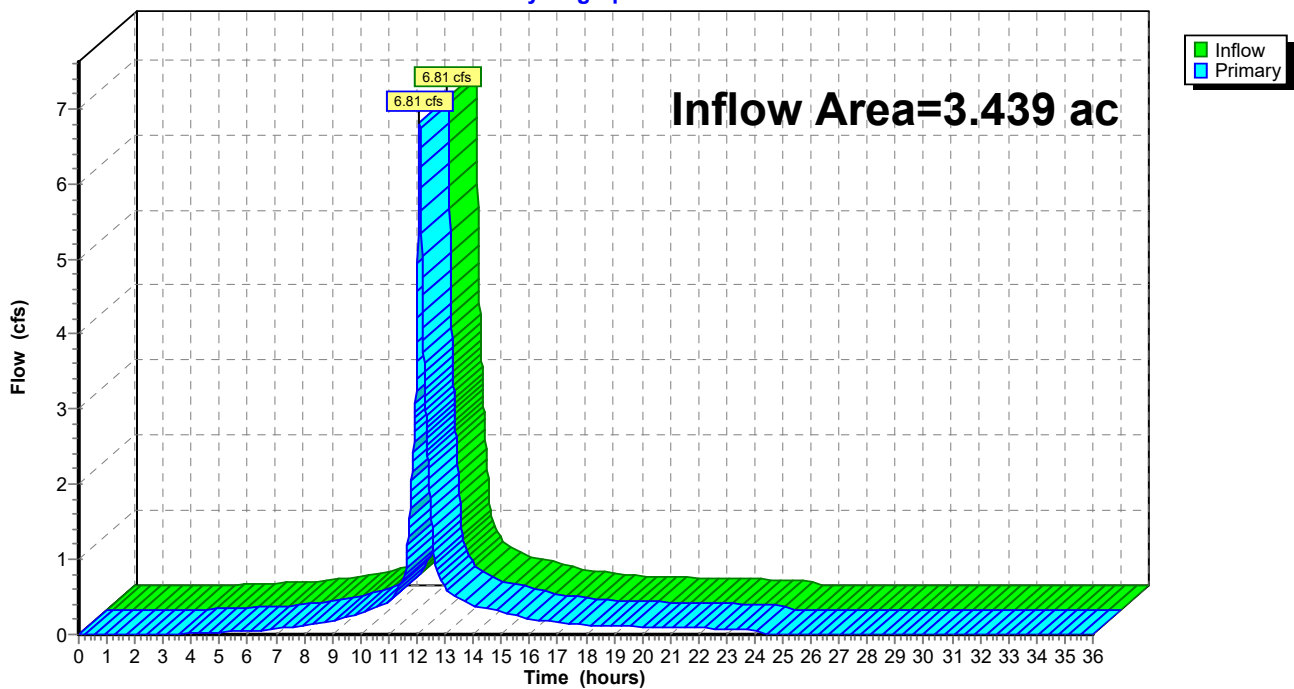
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.439 ac, 86.02% Impervious, Inflow Depth = 1.88" for 1-Year event  
Inflow = 6.81 cfs @ 12.10 hrs, Volume= 0.540 af  
Primary = 6.81 cfs @ 12.10 hrs, Volume= 0.540 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 10S:** Runoff Area=92,405 sf 85.49% Impervious Runoff Depth=2.70"  
Flow Length=804' Tc=7.2 min CN=95 Runoff=6.10 cfs 0.478 af

**Subcatchment 11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=3.03"  
Flow Length=108' Slope=0.0100 '/' Tc=7.7 min CN=98 Runoff=2.46 cfs 0.208 af

**Subcatchment 12S:** Runoff Area=14,285 sf 59.89% Impervious Runoff Depth=2.31"  
Flow Length=311' Tc=10.2 min CN=91 Runoff=0.76 cfs 0.063 af

**Subcatchment 13S:** Runoff Area=7,192 sf 74.87% Impervious Runoff Depth=2.50"  
Tc=5.0 min CN=93 Runoff=0.49 cfs 0.034 af

**Pond 12P: Silva Cell** Peak Elev=85.72' Storage=1,206 cf Inflow=0.76 cfs 0.063 af  
Discarded=0.02 cfs 0.051 af Primary=0.19 cfs 0.013 af Outflow=0.22 cfs 0.063 af

**Pond 13P: Pervious Paver Stone** Peak Elev=84.40' Storage=468 cf Inflow=0.49 cfs 0.034 af  
Outflow=0.07 cfs 0.034 af

**Link 10L: Outgoing CB** Inflow=8.56 cfs 0.699 af  
Primary=8.56 cfs 0.699 af

**Total Runoff Area = 3.439 ac Runoff Volume = 0.784 af Average Runoff Depth = 2.73"**  
**13.98% Pervious = 0.481 ac 86.02% Impervious = 2.958 ac**

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**Summary for Subcatchment 10S:**

Runoff = 6.10 cfs @ 12.10 hrs, Volume= 0.478 af, Depth= 2.70"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
52,154	98	Unconnected roofs, HSG D
26,842	98	Paved parking, HSG D
13,409	80	>75% Grass cover, Good, HSG D
92,405	95	Weighted Average
13,409		14.51% Pervious Area
78,996		85.49% Impervious Area
52,154		66.02% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	68	0.0367	0.20		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.1	36	0.0200	6.36	2.22	<b>Pipe Channel, gf</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
1.5	700	0.0105	7.99	25.11	<b>Pipe Channel,</b> 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012 Corrugated PP, smooth interior
7.2	804	Total			

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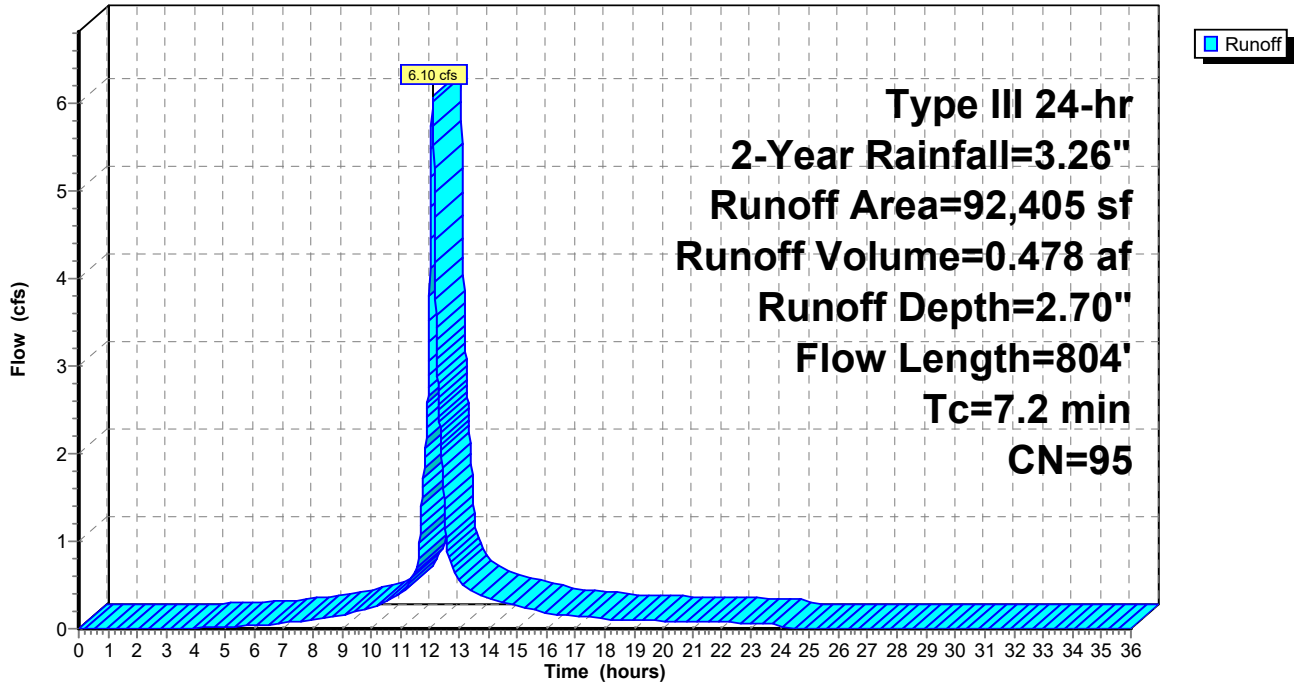
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**Subcatchment 10S:**

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## Summary for Subcatchment 11S:

Runoff = 2.46 cfs @ 12.11 hrs, Volume= 0.208 af, Depth= 3.03"  
Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.26"

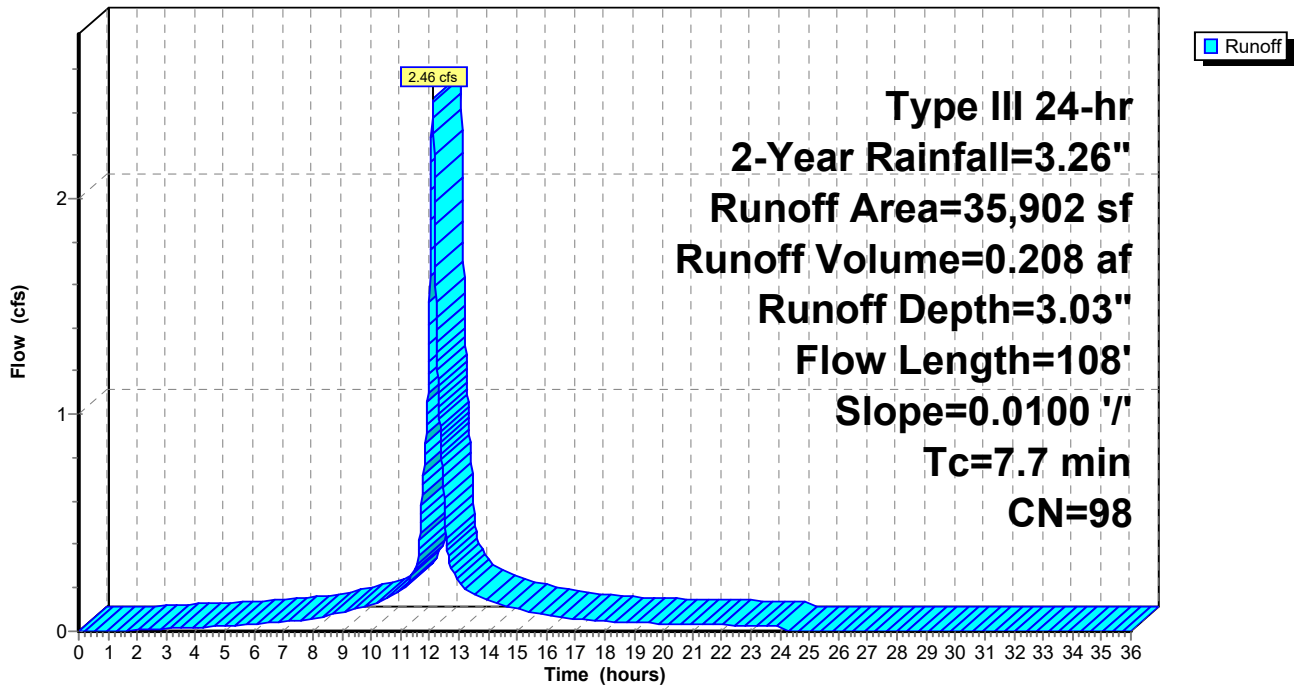
Area (sf)	CN	Description
35,902	98	Unconnected roofs, HSG D
35,902		100.00% Impervious Area
35,902		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.05		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.26"
0.1	8	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
6.0					<b>Direct Entry,</b>
7.7	108	Total			

## Subcatchment 11S:

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**Summary for Subcatchment 12S:**

Runoff = 0.76 cfs @ 12.14 hrs, Volume= 0.063 af, Depth= 2.31"  
Routed to Pond 12P : Silva Cell

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
5,730	80	>75% Grass cover, Good, HSG D
4,555	98	Paved parking, HSG D
4,000	98	Unconnected roofs, HSG D
14,285	91	Weighted Average
5,730		40.11% Pervious Area
8,555		59.89% Impervious Area
4,000		46.76% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0210	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.4	68	0.0314	2.66		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.3	143	0.0200	9.11	16.09	<b>Pipe Channel,</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
10.2	311	Total			



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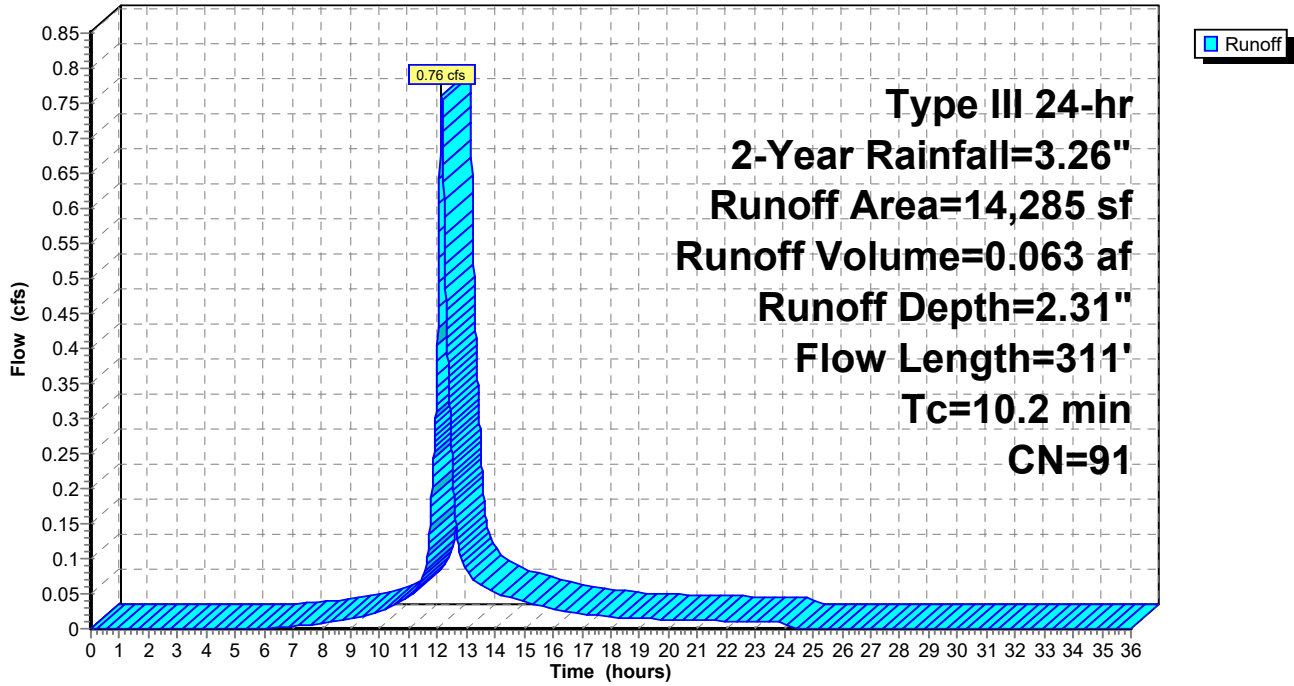
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**Subcatchment 12S:**

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Type III 24-hr 2-Year Rainfall=3.26"

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**Summary for Subcatchment 13S:**

Runoff = 0.49 cfs @ 12.07 hrs, Volume= 0.034 af, Depth= 2.50"  
Routed to Pond 13P : Pervious Paver Stone

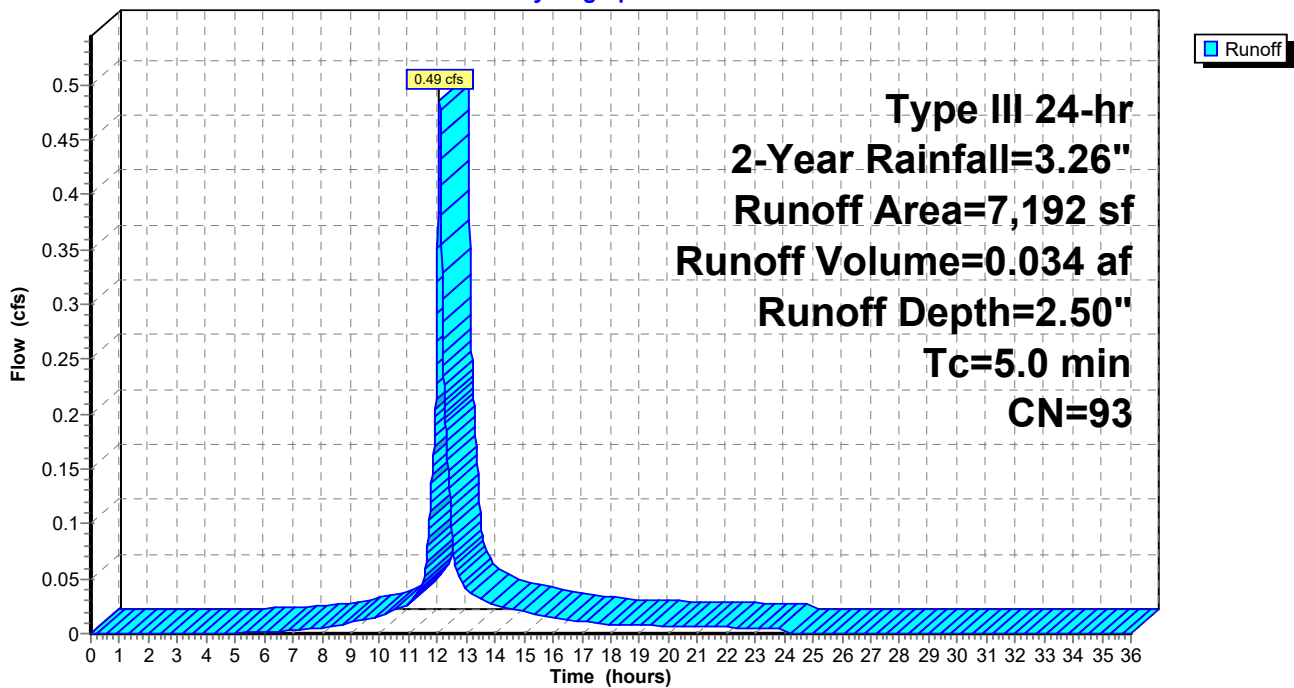
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
5,385	98	Paved parking, HSG D
1,807	80	>75% Grass cover, Good, HSG D
7,192	93	Weighted Average
1,807		25.13% Pervious Area
5,385		74.87% Impervious Area

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

**Subcatchment 13S:**

Hydrograph



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Type III 24-hr 2-Year Rainfall=3.26"

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**Summary for Pond 12P: Silva Cell**

Inflow Area = 0.328 ac, 59.89% Impervious, Inflow Depth = 2.31" for 2-Year event  
 Inflow = 0.76 cfs @ 12.14 hrs, Volume= 0.063 af  
 Outflow = 0.22 cfs @ 12.54 hrs, Volume= 0.063 af, Atten= 72%, Lag= 23.9 min  
 Discarded = 0.02 cfs @ 10.06 hrs, Volume= 0.051 af  
 Primary = 0.19 cfs @ 12.54 hrs, Volume= 0.013 af  
 Routed to Link 10L : Outgoing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 85.72' @ 12.54 hrs Surf.Area= 1,031 sf Storage= 1,206 cf

Plug-Flow detention time= 381.0 min calculated for 0.063 af (100% of inflow)  
 Center-of-Mass det. time= 381.1 min ( 1,186.8 - 805.7 )

Volume	Invert	Avail.Storage	Storage Description			
#1	83.17'	1,557 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
83.17	1,031	146.0	0.0	0	0	1,031
83.50	1,031	146.0	40.0	136	136	1,079
85.00	1,031	146.0	25.0	387	523	1,298
86.09	1,031	146.0	92.0	1,034	1,557	1,457

Device	Routing	Invert	Outlet Devices
#1	Discarded	83.17'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Device 3	85.65'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	81.00'	<b>12.0" Round Culvert</b> L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 81.00' / 80.40' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Discarded OutFlow** Max=0.02 cfs @ 10.06 hrs HW=83.20' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.19 cfs @ 12.54 hrs HW=85.72' TW=81.40' (Fixed TW Elev= 81.40')

↑**3=Culvert** (Passes 0.19 cfs of 7.12 cfs potential flow)

↑**2=Orifice/Grate** (Weir Controls 0.19 cfs @ 0.87 fps)

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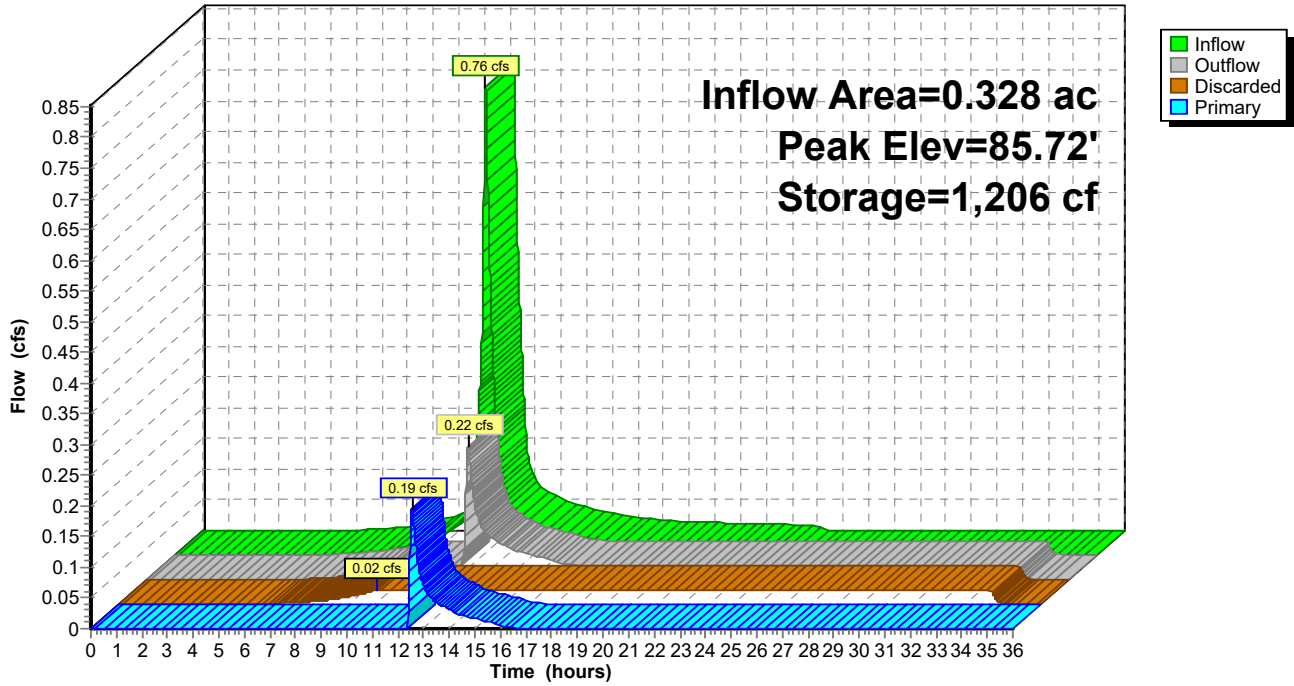
Proposed Conditions  
Type III 24-hr 2-Year Rainfall=3.26"

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**Pond 12P: Silva Cell**

Hydrograph



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**Summary for Pond 13P: Pervious Paver Stone**

Inflow Area = 0.165 ac, 74.87% Impervious, Inflow Depth = 2.50" for 2-Year event  
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 0.034 af  
Outflow = 0.07 cfs @ 11.70 hrs, Volume= 0.034 af, Atten= 86%, Lag= 0.0 min  
Discarded = 0.07 cfs @ 11.70 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Peak Elev= 84.40' @ 12.57 hrs Surf.Area= 2,922 sf Storage= 468 cf

Plug-Flow detention time= 46.4 min calculated for 0.034 af (100% of inflow)  
Center-of-Mass det. time= 46.4 min ( 837.5 - 791.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	84.00'	2,338 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
84.00	2,922	498.7	0.0	0	0	2,922
85.00	2,922	498.7	40.0	1,169	1,169	3,421
86.00	2,922	498.7	40.0	1,169	2,338	3,919

Device	Routing	Invert	Outlet Devices
#1	Discarded	84.00'	<b>1.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.07 cfs @ 11.70 hrs HW=84.02' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)



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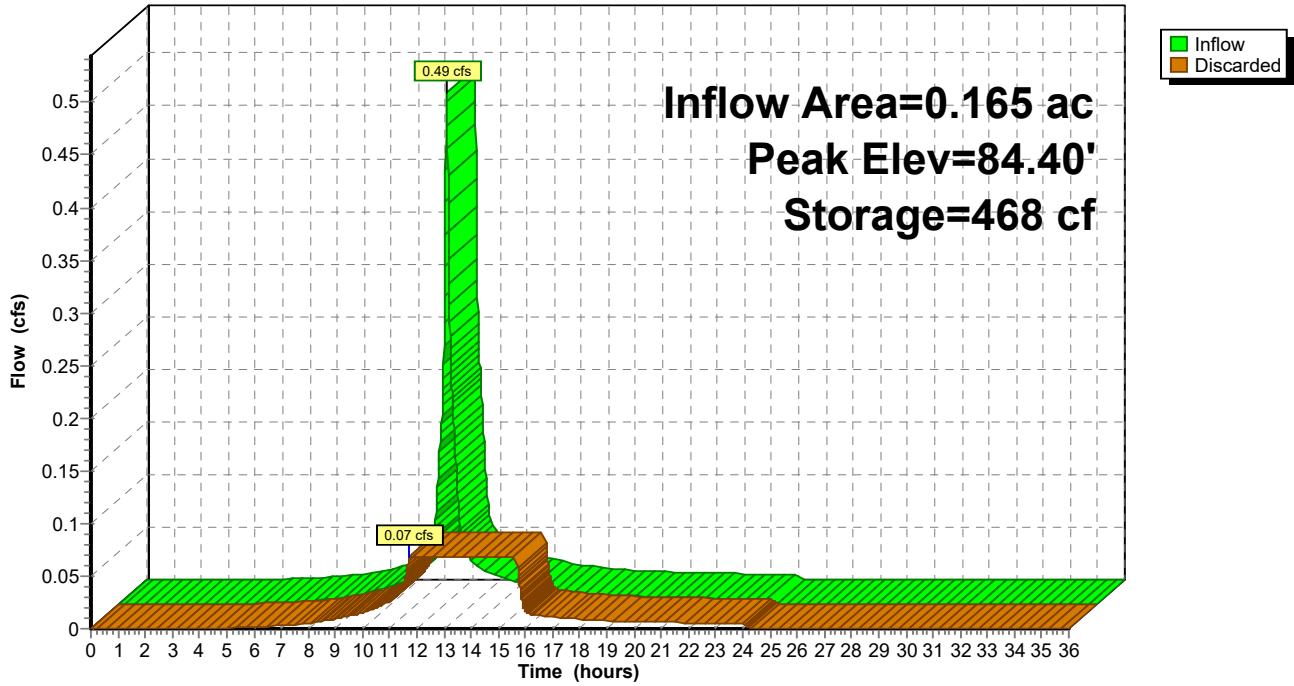
Proposed Conditions  
Type III 24-hr 2-Year Rainfall=3.26"

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**Pond 13P: Pervious Paver Stone**

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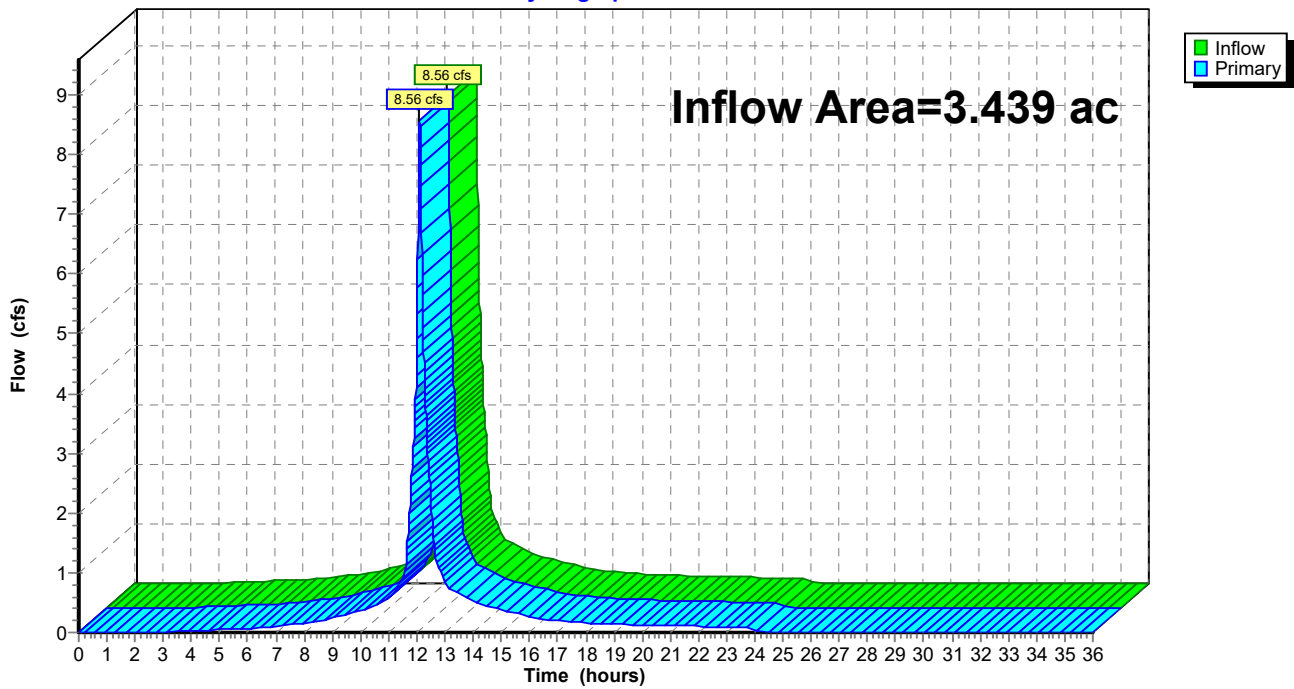
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.439 ac, 86.02% Impervious, Inflow Depth = 2.44" for 2-Year event  
Inflow = 8.56 cfs @ 12.10 hrs, Volume= 0.699 af  
Primary = 8.56 cfs @ 12.10 hrs, Volume= 0.699 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

Hydrograph



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Type III 24-hr 10-Year Rainfall=4.86"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 10S:** Runoff Area=92,405 sf 85.49% Impervious Runoff Depth=4.28"  
Flow Length=804' Tc=7.2 min CN=95 Runoff=9.40 cfs 0.757 af

**Subcatchment 11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=4.62"  
Flow Length=108' Slope=0.0100 '/' Tc=7.7 min CN=98 Runoff=3.70 cfs 0.318 af

**Subcatchment 12S:** Runoff Area=14,285 sf 59.89% Impervious Runoff Depth=3.85"  
Flow Length=311' Tc=10.2 min CN=91 Runoff=1.24 cfs 0.105 af

**Subcatchment 13S:** Runoff Area=7,192 sf 74.87% Impervious Runoff Depth=4.06"  
Tc=5.0 min CN=93 Runoff=0.77 cfs 0.056 af

**Pond 12P: Silva Cell** Peak Elev=85.87' Storage=1,344 cf Inflow=1.24 cfs 0.105 af  
Discarded=0.02 cfs 0.057 af Primary=1.03 cfs 0.048 af Outflow=1.05 cfs 0.105 af

**Pond 13P: Pervious Paver Stone** Peak Elev=84.77' Storage=897 cf Inflow=0.77 cfs 0.056 af  
Outflow=0.07 cfs 0.056 af

**Link 10L: Outgoing CB** Inflow=13.24 cfs 1.122 af  
Primary=13.24 cfs 1.122 af

**Total Runoff Area = 3.439 ac Runoff Volume = 1.235 af Average Runoff Depth = 4.31"**  
**13.98% Pervious = 0.481 ac 86.02% Impervious = 2.958 ac**

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Type III 24-hr 10-Year Rainfall=4.86"

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**Summary for Subcatchment 10S:**

Runoff = 9.40 cfs @ 12.10 hrs, Volume= 0.757 af, Depth= 4.28"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.86"

Area (sf)	CN	Description
52,154	98	Unconnected roofs, HSG D
26,842	98	Paved parking, HSG D
13,409	80	>75% Grass cover, Good, HSG D
92,405	95	Weighted Average
13,409		14.51% Pervious Area
78,996		85.49% Impervious Area
52,154		66.02% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	68	0.0367	0.20		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.1	36	0.0200	6.36	2.22	<b>Pipe Channel, gf</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
1.5	700	0.0105	7.99	25.11	<b>Pipe Channel,</b> 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012 Corrugated PP, smooth interior
7.2	804	Total			

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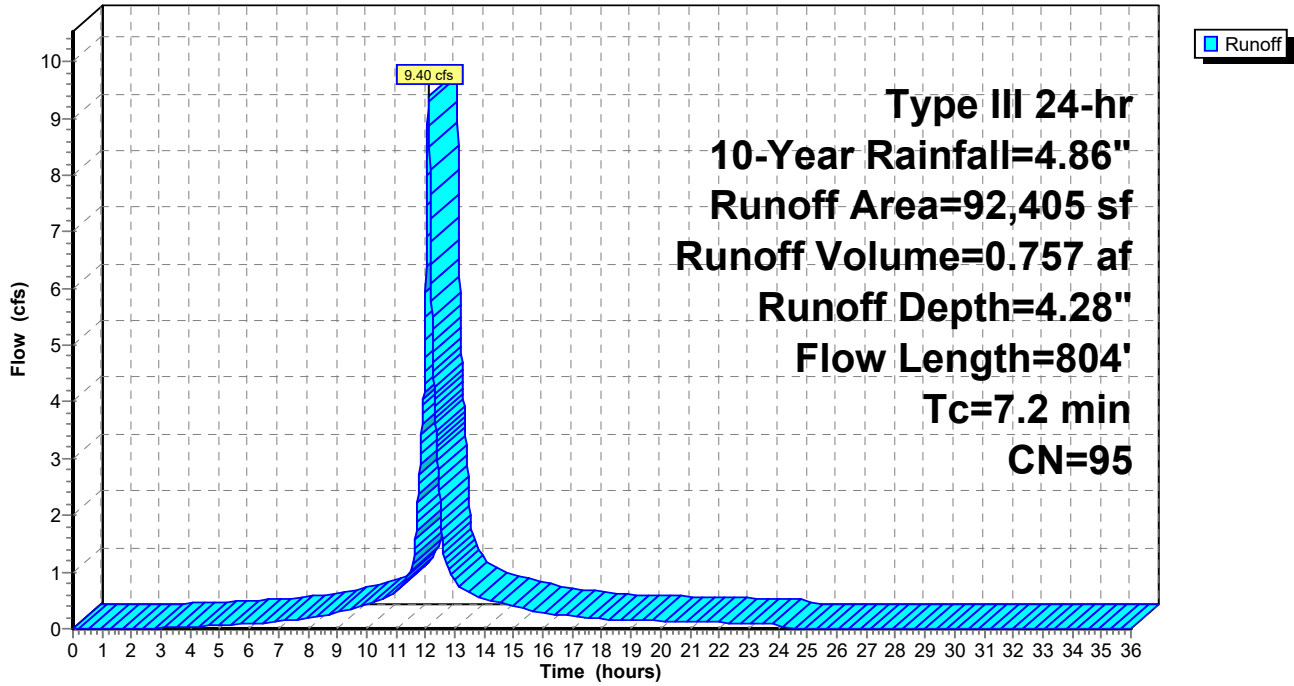
Type III 24-hr 10-Year Rainfall=4.86"

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**Subcatchment 10S:**

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Type III 24-hr 10-Year Rainfall=4.86"

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## Summary for Subcatchment 11S:

Runoff = 3.70 cfs @ 12.11 hrs, Volume= 0.318 af, Depth= 4.62"  
Routed to Link 10L : Outgoing CB

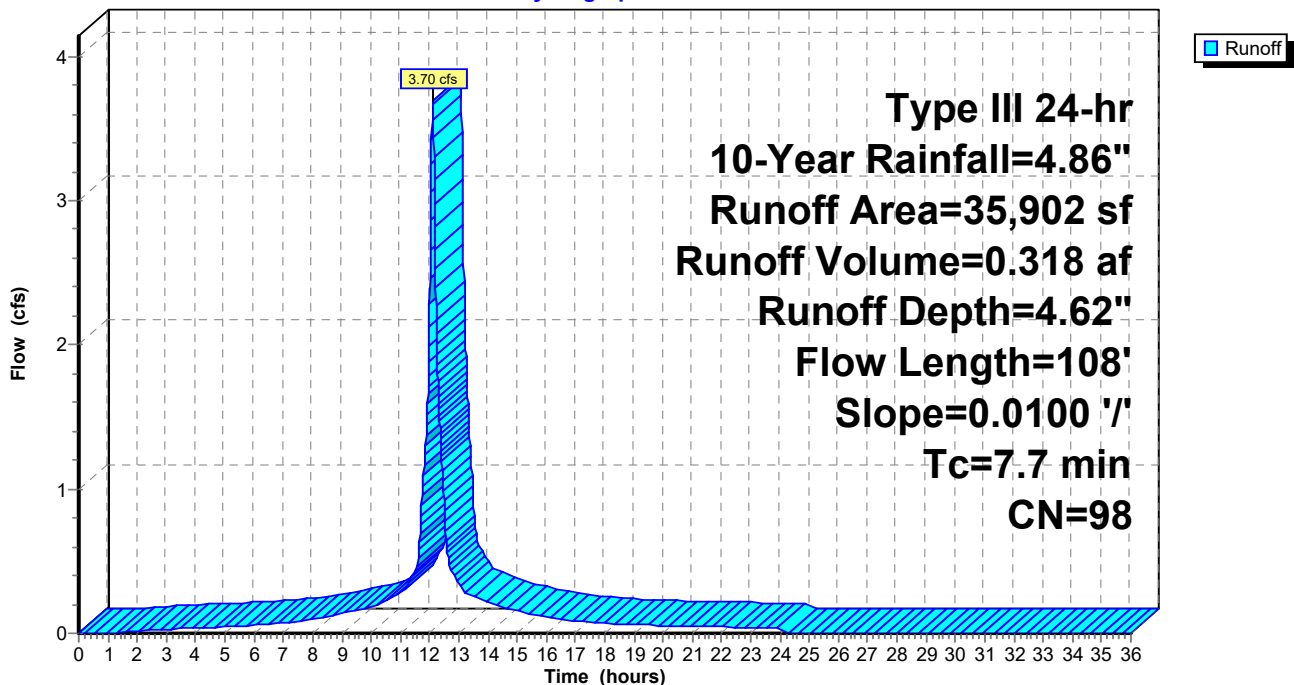
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=4.86"

Area (sf)	CN	Description
35,902	98	Unconnected roofs, HSG D
35,902		100.00% Impervious Area
35,902		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.05		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.26"
0.1	8	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
6.0					<b>Direct Entry,</b>
7.7	108	Total			

## Subcatchment 11S:

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Type III 24-hr 10-Year Rainfall=4.86"

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**Summary for Subcatchment 12S:**

Runoff = 1.24 cfs @ 12.14 hrs, Volume= 0.105 af, Depth= 3.85"  
 Routed to Pond 12P : Silva Cell

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.86"

Area (sf)	CN	Description
5,730	80	>75% Grass cover, Good, HSG D
4,555	98	Paved parking, HSG D
4,000	98	Unconnected roofs, HSG D
14,285	91	Weighted Average
5,730		40.11% Pervious Area
8,555		59.89% Impervious Area
4,000		46.76% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0210	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.4	68	0.0314	2.66		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.3	143	0.0200	9.11	16.09	<b>Pipe Channel,</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
10.2	311	Total			

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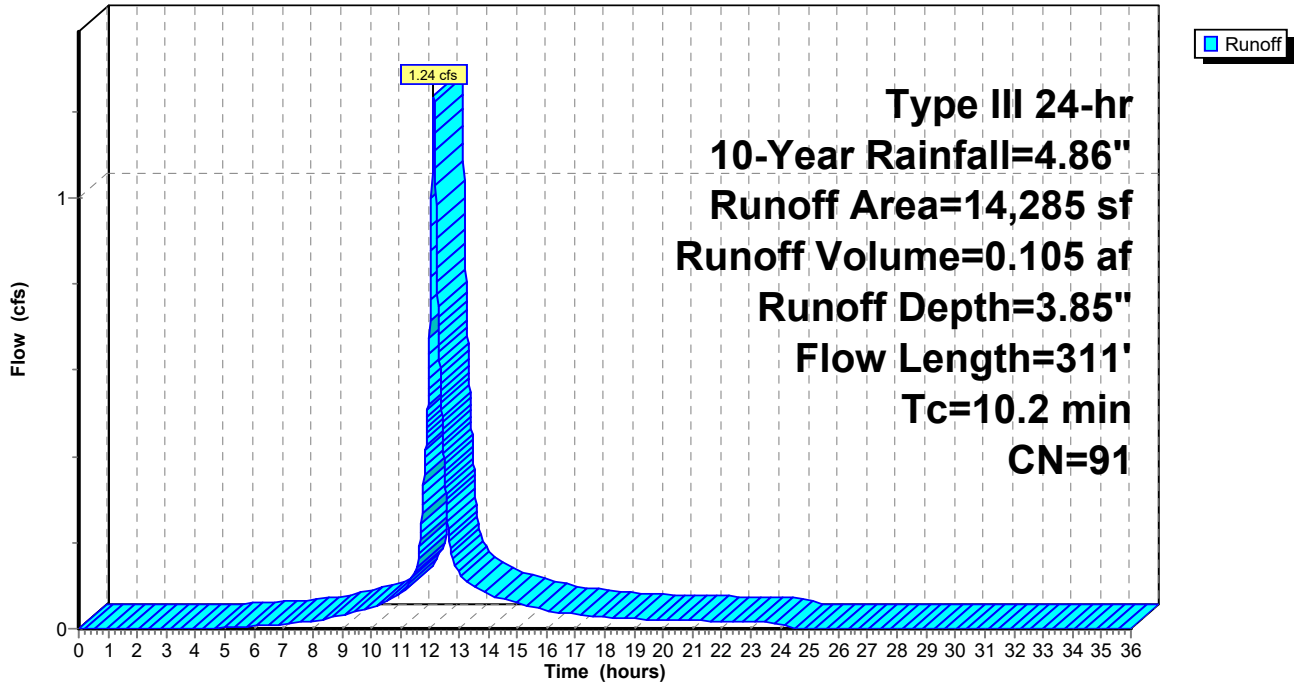
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Type III 24-hr 10-Year Rainfall=4.86"

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**Subcatchment 12S:**

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Type III 24-hr 10-Year Rainfall=4.86"

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**Summary for Subcatchment 13S:**

Runoff = 0.77 cfs @ 12.07 hrs, Volume= 0.056 af, Depth= 4.06"  
Routed to Pond 13P : Pervious Paver Stone

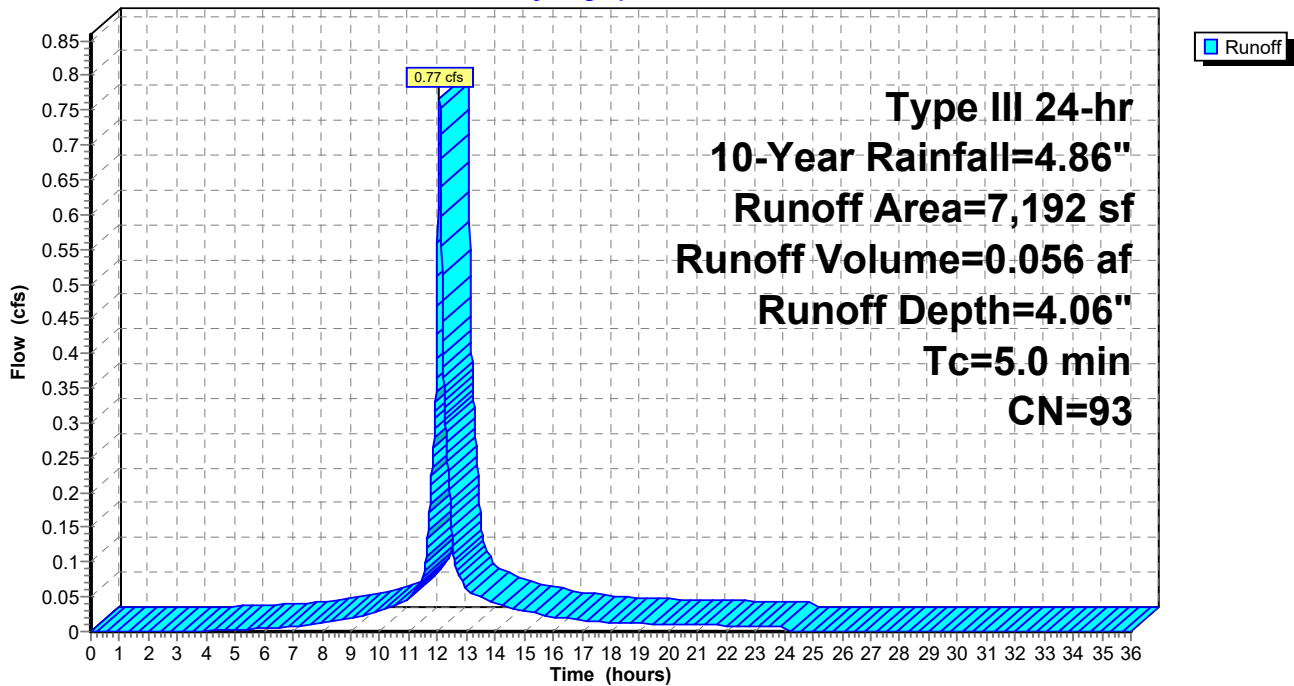
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=4.86"

Area (sf)	CN	Description
5,385	98	Paved parking, HSG D
1,807	80	>75% Grass cover, Good, HSG D
7,192	93	Weighted Average
1,807		25.13% Pervious Area
5,385		74.87% Impervious Area

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

**Subcatchment 13S:**

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**Summary for Pond 12P: Silva Cell**

Inflow Area = 0.328 ac, 59.89% Impervious, Inflow Depth = 3.85" for 10-Year event  
 Inflow = 1.24 cfs @ 12.14 hrs, Volume= 0.105 af  
 Outflow = 1.05 cfs @ 12.20 hrs, Volume= 0.105 af, Atten= 15%, Lag= 4.0 min  
 Discarded = 0.02 cfs @ 8.64 hrs, Volume= 0.057 af  
 Primary = 1.03 cfs @ 12.20 hrs, Volume= 0.048 af  
 Routed to Link 10L : Outgoing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 85.87' @ 12.20 hrs Surf.Area= 1,031 sf Storage= 1,344 cf

Plug-Flow detention time= 268.6 min calculated for 0.105 af (100% of inflow)  
 Center-of-Mass det. time= 267.4 min ( 1,059.0 - 791.7 )

Volume	Invert	Avail.Storage	Storage Description			
#1	83.17'	1,557 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
83.17	1,031	146.0	0.0	0	0	1,031
83.50	1,031	146.0	40.0	136	136	1,079
85.00	1,031	146.0	25.0	387	523	1,298
86.09	1,031	146.0	92.0	1,034	1,557	1,457

Device	Routing	Invert	Outlet Devices
#1	Discarded	83.17'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Device 3	85.65'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	81.00'	<b>12.0" Round Culvert</b> L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 81.00' / 80.40' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Discarded OutFlow** Max=0.02 cfs @ 8.64 hrs HW=83.20' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=1.03 cfs @ 12.20 hrs HW=85.87' TW=81.40' (Fixed TW Elev= 81.40')

↑**3=Culvert** (Passes 1.03 cfs of 7.24 cfs potential flow)

↑**2=Orifice/Grate** (Weir Controls 1.03 cfs @ 1.52 fps)



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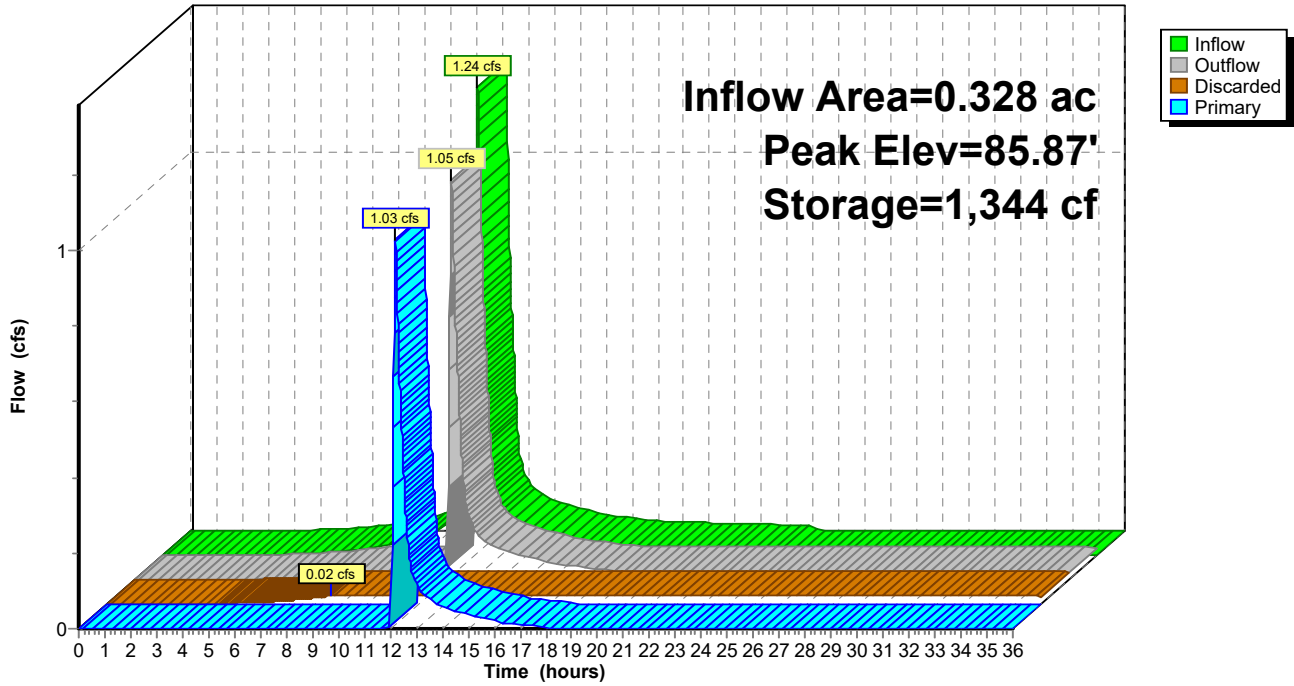
Proposed Conditions  
Type III 24-hr 10-Year Rainfall=4.86"

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**Pond 12P: Silva Cell**

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Type III 24-hr 10-Year Rainfall=4.86"

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**Summary for Pond 13P: Pervious Paver Stone**

Inflow Area = 0.165 ac, 74.87% Impervious, Inflow Depth = 4.06" for 10-Year event  
Inflow = 0.77 cfs @ 12.07 hrs, Volume= 0.056 af  
Outflow = 0.07 cfs @ 11.45 hrs, Volume= 0.056 af, Atten= 91%, Lag= 0.0 min  
Discarded = 0.07 cfs @ 11.45 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Peak Elev= 84.77' @ 12.93 hrs Surf.Area= 2,922 sf Storage= 897 cf

Plug-Flow detention time= 99.5 min calculated for 0.056 af (100% of inflow)  
Center-of-Mass det. time= 99.5 min ( 877.7 - 778.2 )

Volume	Invert	Avail.Storage	Storage Description			
#1	84.00'	2,338 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
84.00	2,922	498.7	0.0	0	0	2,922
85.00	2,922	498.7	40.0	1,169	1,169	3,421
86.00	2,922	498.7	40.0	1,169	2,338	3,919

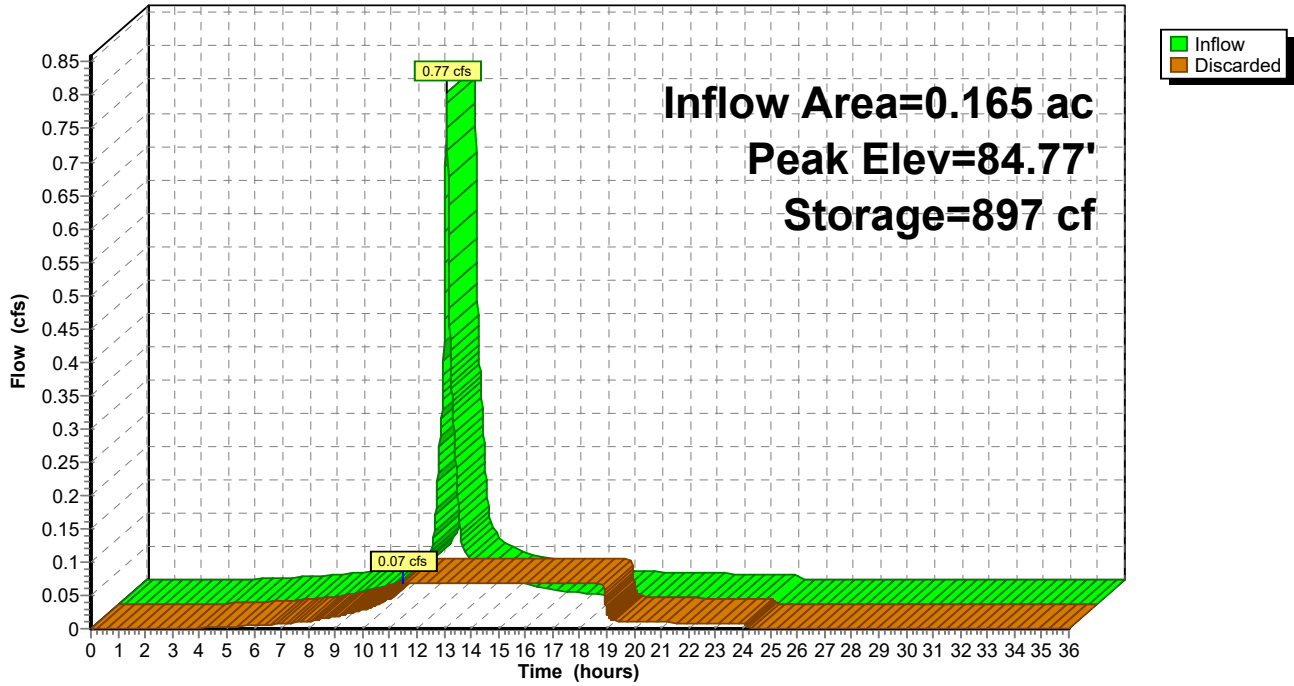
Device	Routing	Invert	Outlet Devices
#1	Discarded	84.00'	<b>1.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.07 cfs @ 11.45 hrs HW=84.02' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

### Pond 13P: Pervious Paver Stone

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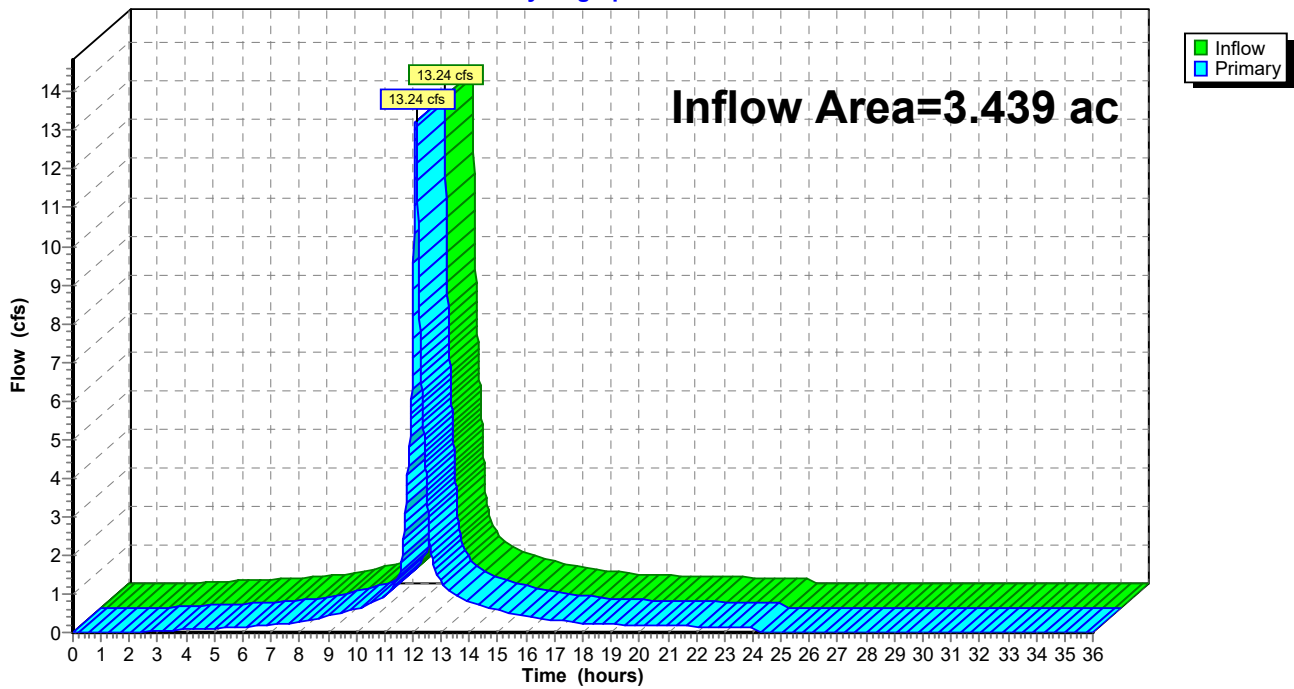
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.439 ac, 86.02% Impervious, Inflow Depth = 3.92" for 10-Year event  
Inflow = 13.24 cfs @ 12.11 hrs, Volume= 1.122 af  
Primary = 13.24 cfs @ 12.11 hrs, Volume= 1.122 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

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Type III 24-hr 25-Year Rainfall=6.11"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:** Runoff Area=92,405 sf 85.49% Impervious Runoff Depth=5.52"  
Flow Length=804' Tc=7.2 min CN=95 Runoff=11.96 cfs 0.976 af

**Subcatchment11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=5.87"  
Flow Length=108' Slope=0.0100 '/' Tc=7.7 min CN=98 Runoff=4.66 cfs 0.403 af

**Subcatchment12S:** Runoff Area=14,285 sf 59.89% Impervious Runoff Depth=5.06"  
Flow Length=311' Tc=10.2 min CN=91 Runoff=1.60 cfs 0.138 af

**Subcatchment13S:** Runoff Area=7,192 sf 74.87% Impervious Runoff Depth=5.29"  
Tc=5.0 min CN=93 Runoff=0.98 cfs 0.073 af

**Pond 12P: Silva Cell** Peak Elev=85.93' Storage=1,403 cf Inflow=1.60 cfs 0.138 af  
Discarded=0.02 cfs 0.059 af Primary=1.51 cfs 0.077 af Outflow=1.53 cfs 0.137 af

**Pond 13P: Pervious Paver Stone** Peak Elev=85.09' Storage=1,274 cf Inflow=0.98 cfs 0.073 af  
Outflow=0.07 cfs 0.073 af

**Link 10L: Outgoing CB** Inflow=17.84 cfs 1.457 af  
Primary=17.84 cfs 1.457 af

**Total Runoff Area = 3.439 ac Runoff Volume = 1.590 af Average Runoff Depth = 5.55"**  
**13.98% Pervious = 0.481 ac 86.02% Impervious = 2.958 ac**

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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Subcatchment 10S:**

Runoff = 11.96 cfs @ 12.10 hrs, Volume= 0.976 af, Depth= 5.52"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=6.11"

Area (sf)	CN	Description
52,154	98	Unconnected roofs, HSG D
26,842	98	Paved parking, HSG D
13,409	80	>75% Grass cover, Good, HSG D
92,405	95	Weighted Average
13,409		14.51% Pervious Area
78,996		85.49% Impervious Area
52,154		66.02% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	68	0.0367	0.20		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.1	36	0.0200	6.36	2.22	<b>Pipe Channel, gf</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
1.5	700	0.0105	7.99	25.11	<b>Pipe Channel,</b> 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012 Corrugated PP, smooth interior
7.2	804	Total			



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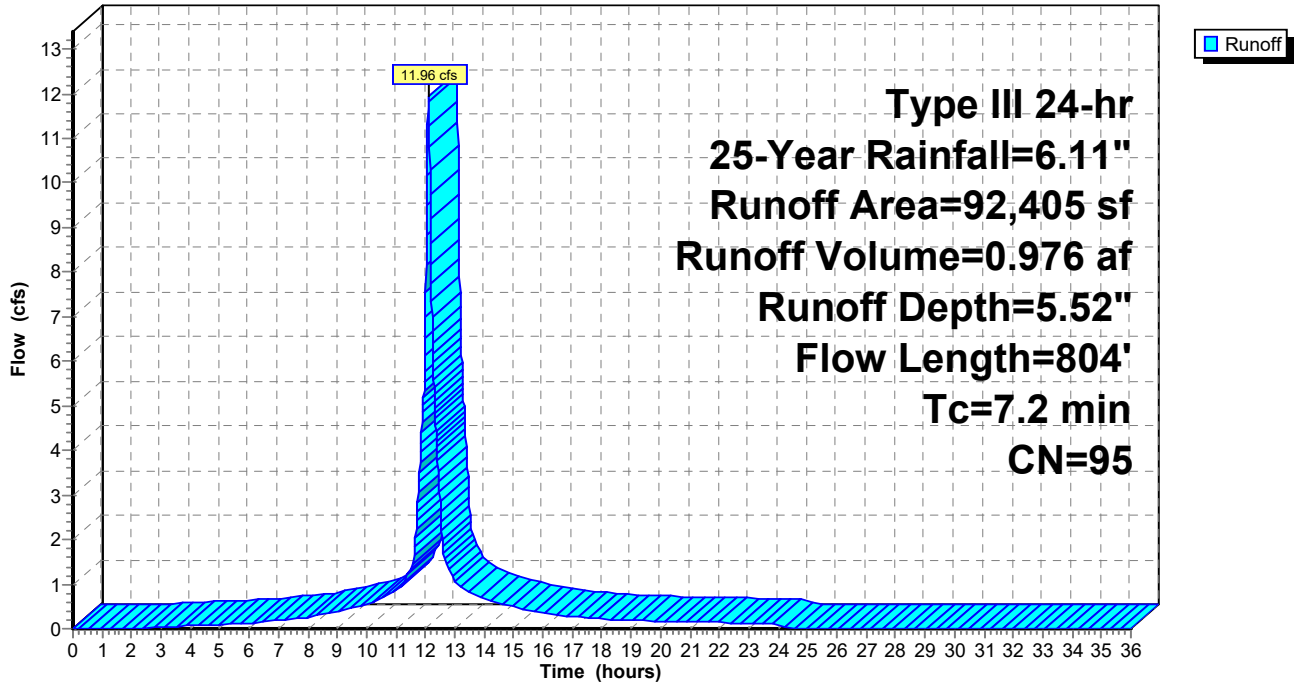
Type III 24-hr 25-Year Rainfall=6.11"

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**Subcatchment 10S:**

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Subcatchment 11S:**

Runoff = 4.66 cfs @ 12.11 hrs, Volume= 0.403 af, Depth= 5.87"  
Routed to Link 10L : Outgoing CB

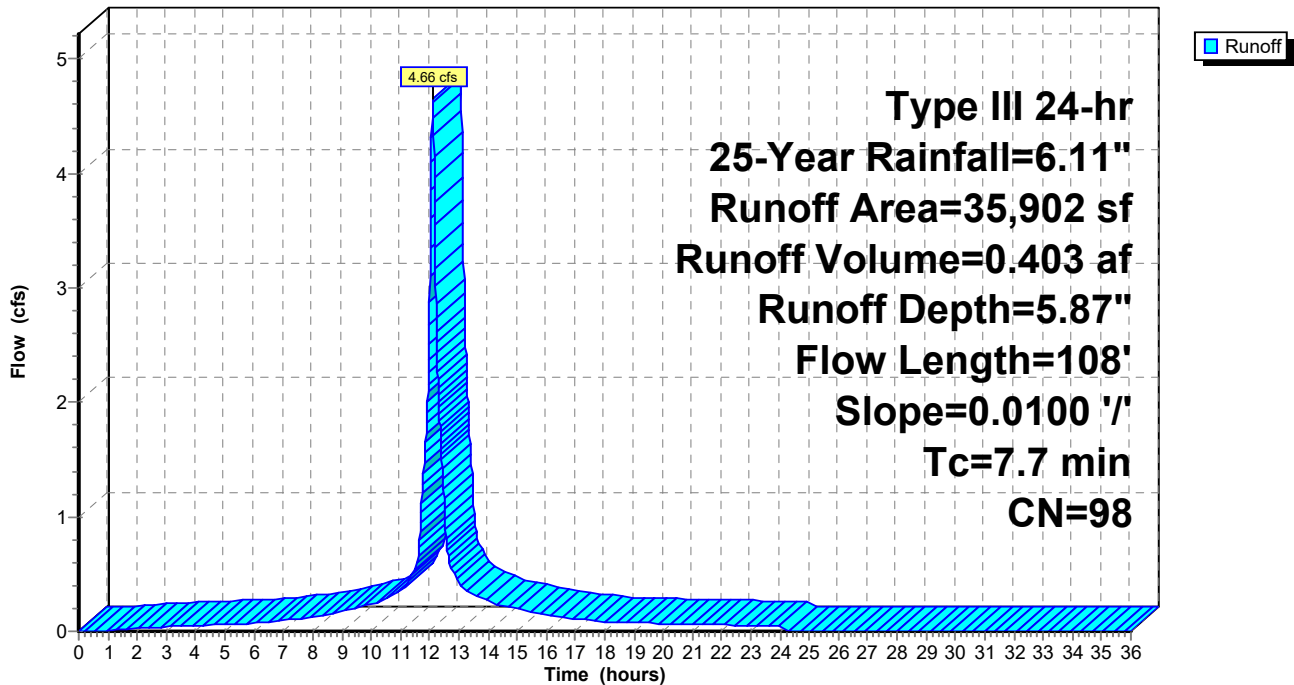
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-Year Rainfall=6.11"

Area (sf)	CN	Description
35,902	98	Unconnected roofs, HSG D
35,902		100.00% Impervious Area
35,902		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.05		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.26"
0.1	8	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
6.0					<b>Direct Entry,</b>
7.7	108	Total			

**Subcatchment 11S:**

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Subcatchment 12S:**

Runoff = 1.60 cfs @ 12.14 hrs, Volume= 0.138 af, Depth= 5.06"  
 Routed to Pond 12P : Silva Cell

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=6.11"

Area (sf)	CN	Description
5,730	80	>75% Grass cover, Good, HSG D
4,555	98	Paved parking, HSG D
4,000	98	Unconnected roofs, HSG D
14,285	91	Weighted Average
5,730		40.11% Pervious Area
8,555		59.89% Impervious Area
4,000		46.76% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0210	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.4	68	0.0314	2.66		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.3	143	0.0200	9.11	16.09	<b>Pipe Channel,</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
10.2	311	Total			

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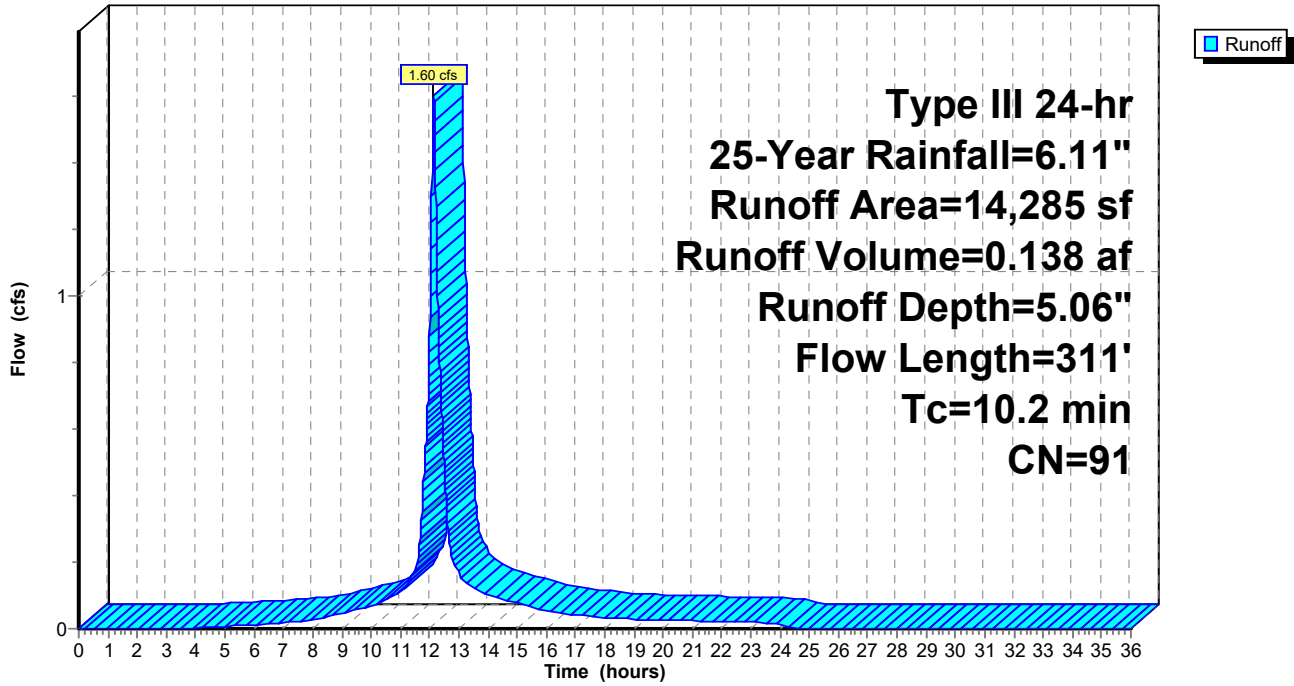
Type III 24-hr 25-Year Rainfall=6.11"

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**Subcatchment 12S:**

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Subcatchment 13S:**

Runoff = 0.98 cfs @ 12.07 hrs, Volume= 0.073 af, Depth= 5.29"  
Routed to Pond 13P : Pervious Paver Stone

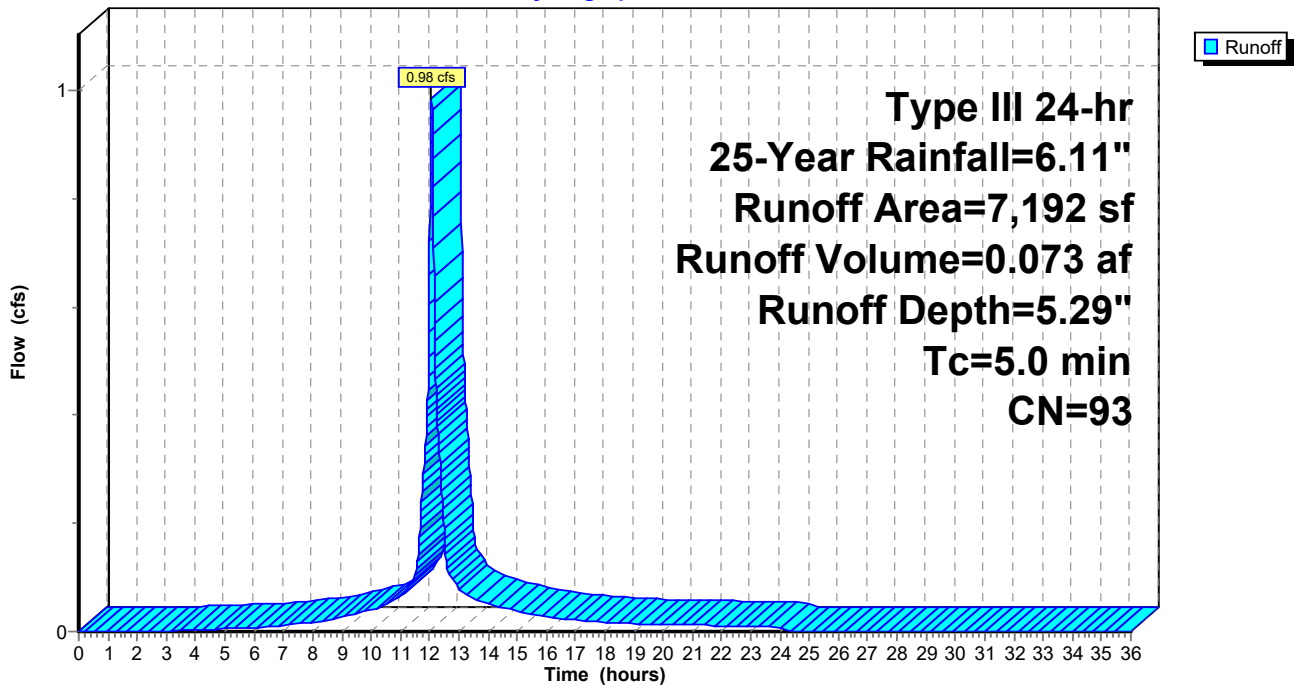
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-Year Rainfall=6.11"

Area (sf)	CN	Description
5,385	98	Paved parking, HSG D
1,807	80	>75% Grass cover, Good, HSG D
7,192	93	Weighted Average
1,807		25.13% Pervious Area
5,385		74.87% Impervious Area

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

**Subcatchment 13S:**

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.11"

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**Summary for Pond 12P: Silva Cell**

Inflow Area = 0.328 ac, 59.89% Impervious, Inflow Depth = 5.06" for 25-Year event  
Inflow = 1.60 cfs @ 12.14 hrs, Volume= 0.138 af  
Outflow = 1.53 cfs @ 12.17 hrs, Volume= 0.137 af, Atten= 4%, Lag= 1.9 min  
Discarded = 0.02 cfs @ 7.77 hrs, Volume= 0.059 af  
Primary = 1.51 cfs @ 12.17 hrs, Volume= 0.077 af  
Routed to Link 10L : Outgoing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Peak Elev= 85.93' @ 12.17 hrs Surf.Area= 1,031 sf Storage= 1,403 cf

Plug-Flow detention time= 213.7 min calculated for 0.136 af (99% of inflow)  
Center-of-Mass det. time= 205.3 min ( 989.6 - 784.4 )

Volume	Invert	Avail.Storage	Storage Description			
#1	83.17'	1,557 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
83.17	1,031	146.0	0.0	0	0	1,031
83.50	1,031	146.0	40.0	136	136	1,079
85.00	1,031	146.0	25.0	387	523	1,298
86.09	1,031	146.0	92.0	1,034	1,557	1,457

Device	Routing	Invert	Outlet Devices
#1	Discarded	83.17'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Device 3	85.65'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	81.00'	<b>12.0" Round Culvert</b> L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 81.00' / 80.40' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Discarded OutFlow** Max=0.02 cfs @ 7.77 hrs HW=83.20' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=1.51 cfs @ 12.17 hrs HW=85.93' TW=81.40' (Fixed TW Elev= 81.40')

↑**3=Culvert** (Passes 1.51 cfs of 7.29 cfs potential flow)

↑**2=Orifice/Grate** (Weir Controls 1.51 cfs @ 1.72 fps)



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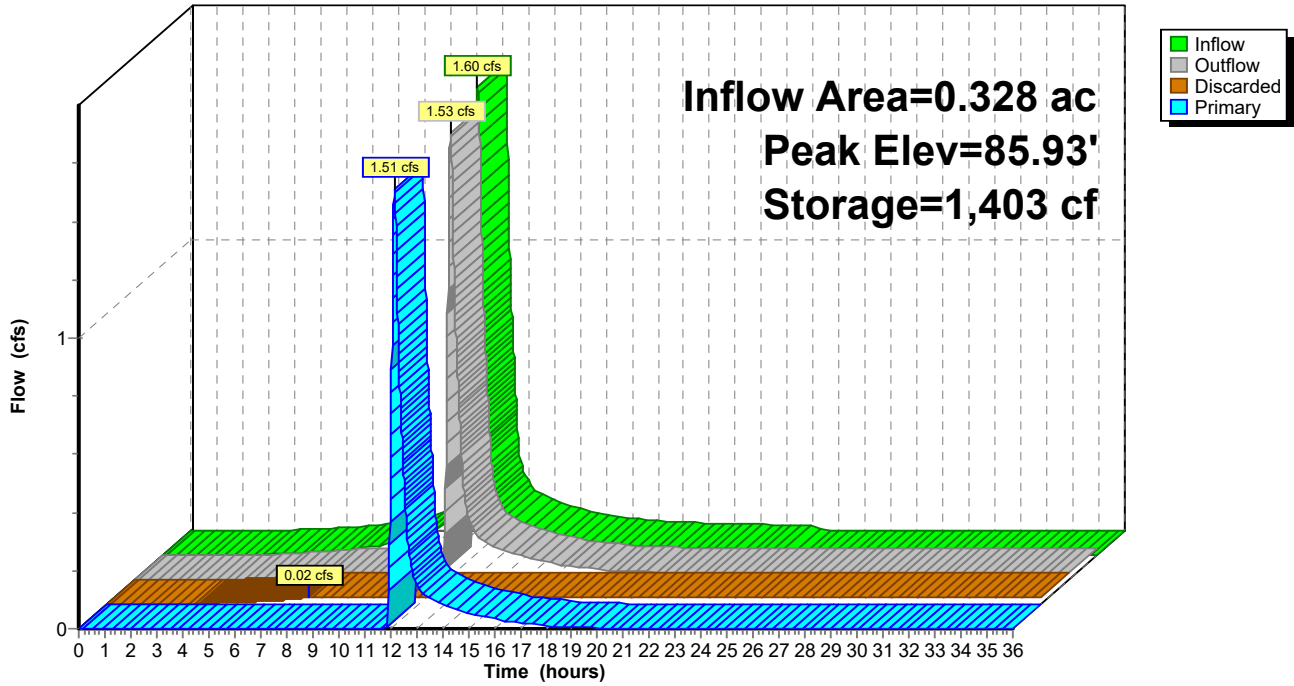
Type III 24-hr 25-Year Rainfall=6.11"

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**Pond 12P: Silva Cell**

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**Summary for Pond 13P: Pervious Paver Stone**

Inflow Area = 0.165 ac, 74.87% Impervious, Inflow Depth = 5.29" for 25-Year event  
 Inflow = 0.98 cfs @ 12.07 hrs, Volume= 0.073 af  
 Outflow = 0.07 cfs @ 11.18 hrs, Volume= 0.073 af, Atten= 93%, Lag= 0.0 min  
 Discarded = 0.07 cfs @ 11.18 hrs, Volume= 0.073 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 85.09' @ 13.29 hrs Surf.Area= 2,922 sf Storage= 1,274 cf

Plug-Flow detention time= 149.7 min calculated for 0.073 af (100% of inflow)  
 Center-of-Mass det. time= 149.6 min ( 921.2 - 771.6 )

Volume	Invert	Avail.Storage	Storage Description			
#1	84.00'	2,338 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
84.00	2,922	498.7	0.0	0	0	2,922
85.00	2,922	498.7	40.0	1,169	1,169	3,421
86.00	2,922	498.7	40.0	1,169	2,338	3,919

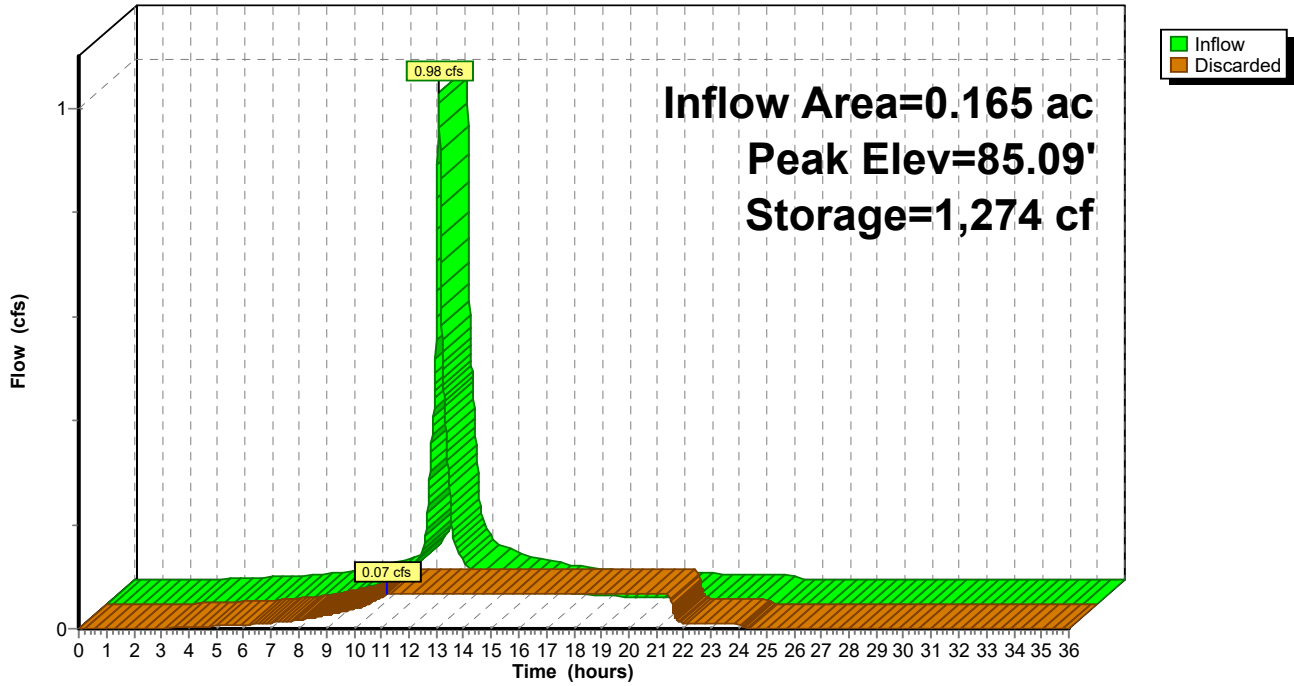
Device	Routing	Invert	Outlet Devices
#1	Discarded	84.00'	<b>1.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.07 cfs @ 11.18 hrs HW=84.02' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

### Pond 13P: Pervious Paver Stone

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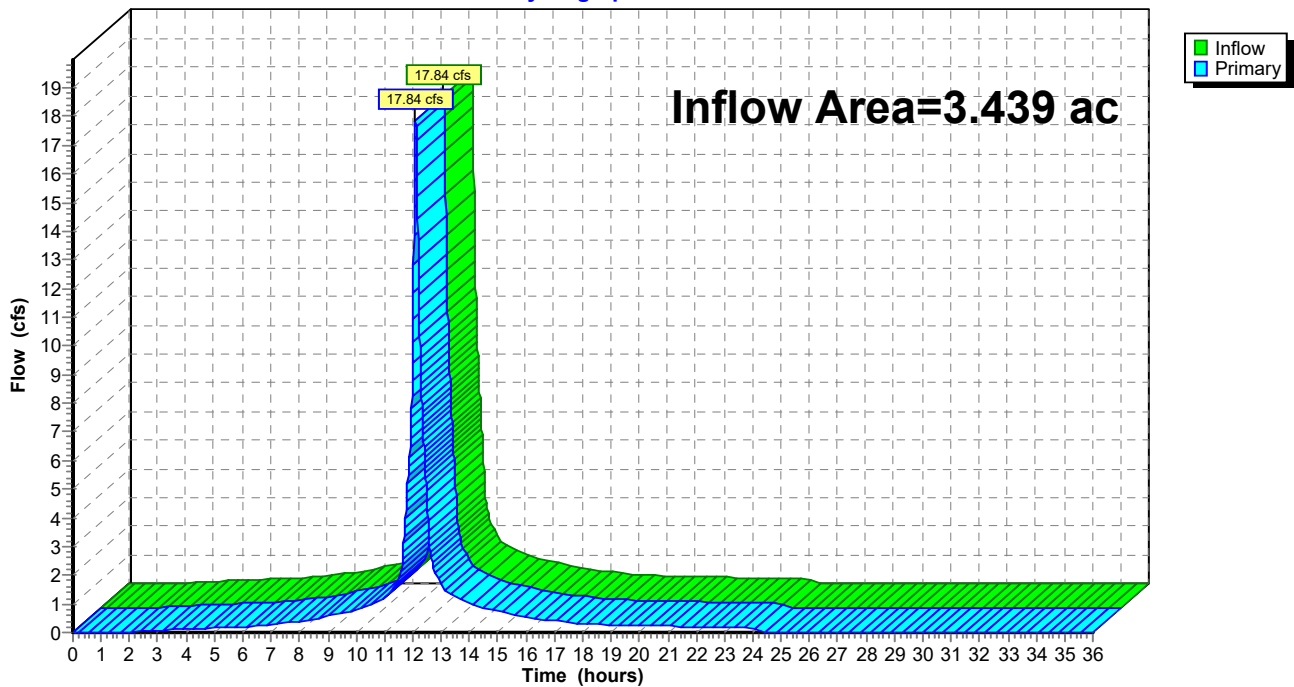
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.439 ac, 86.02% Impervious, Inflow Depth = 5.08" for 25-Year event  
Inflow = 17.84 cfs @ 12.10 hrs, Volume= 1.457 af  
Primary = 17.84 cfs @ 12.10 hrs, Volume= 1.457 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

Hydrograph



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Type III 24-hr 100-Year Rainfall=8.63"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment10S:** Runoff Area=92,405 sf 85.49% Impervious Runoff Depth=8.03"  
Flow Length=804' Tc=7.2 min CN=95 Runoff=17.08 cfs 1.419 af

**Subcatchment11S:** Runoff Area=35,902 sf 100.00% Impervious Runoff Depth=8.39"  
Flow Length=108' Slope=0.0100 '/' Tc=7.7 min CN=98 Runoff=6.60 cfs 0.576 af

**Subcatchment12S:** Runoff Area=14,285 sf 59.89% Impervious Runoff Depth=7.55"  
Flow Length=311' Tc=10.2 min CN=91 Runoff=2.34 cfs 0.206 af

**Subcatchment13S:** Runoff Area=7,192 sf 74.87% Impervious Runoff Depth=7.79"  
Tc=5.0 min CN=93 Runoff=1.42 cfs 0.107 af

**Pond 12P: Silva Cell** Peak Elev=86.01' Storage=1,484 cf Inflow=2.34 cfs 0.206 af  
Discarded=0.02 cfs 0.062 af Primary=2.22 cfs 0.141 af Outflow=2.24 cfs 0.203 af

**Pond 13P: Pervious Paver Stone** Peak Elev=85.85' Storage=2,160 cf Inflow=1.42 cfs 0.107 af  
Outflow=0.07 cfs 0.107 af

**Link 10L: Outgoing CB** Inflow=25.55 cfs 2.137 af  
Primary=25.55 cfs 2.137 af

**Total Runoff Area = 3.439 ac Runoff Volume = 2.309 af Average Runoff Depth = 8.06"**  
**13.98% Pervious = 0.481 ac 86.02% Impervious = 2.958 ac**

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**Summary for Subcatchment 10S:**

Runoff = 17.08 cfs @ 12.10 hrs, Volume= 1.419 af, Depth= 8.03"  
 Routed to Link 10L : Outgoing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.63"

Area (sf)	CN	Description
52,154	98	Unconnected roofs, HSG D
26,842	98	Paved parking, HSG D
13,409	80	>75% Grass cover, Good, HSG D
92,405	95	Weighted Average
13,409		14.51% Pervious Area
78,996		85.49% Impervious Area
52,154		66.02% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	68	0.0367	0.20		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.1	36	0.0200	6.36	2.22	<b>Pipe Channel, gf</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
1.5	700	0.0105	7.99	25.11	<b>Pipe Channel,</b> 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012 Corrugated PP, smooth interior
7.2	804	Total			



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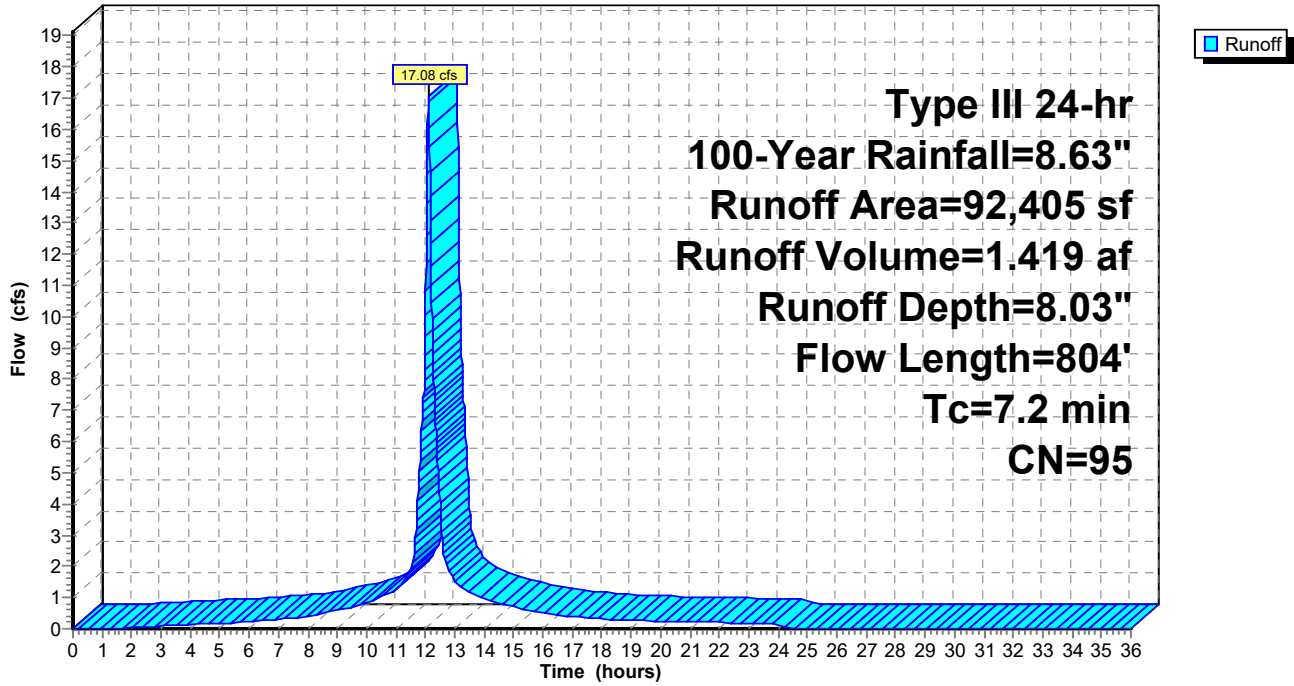
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**Subcatchment 10S:**

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**Summary for Subcatchment 11S:**

Runoff = 6.60 cfs @ 12.10 hrs, Volume= 0.576 af, Depth= 8.39"  
Routed to Link 10L : Outgoing CB

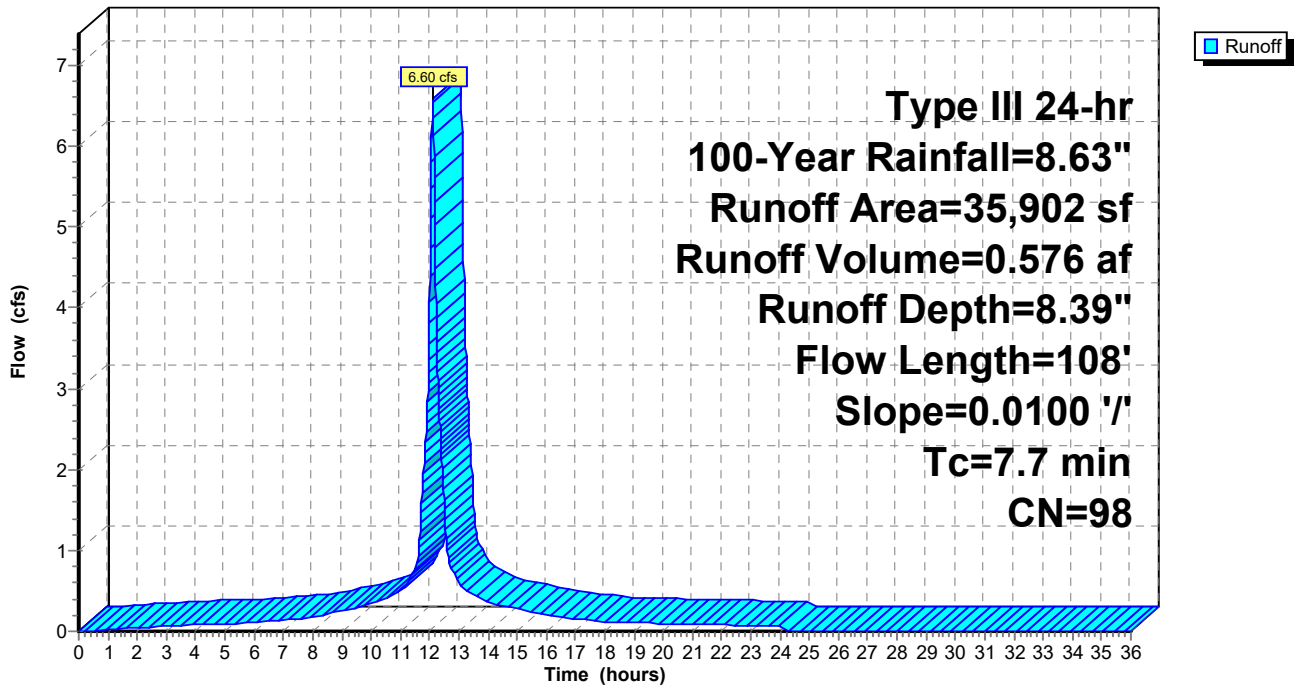
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=8.63"

Area (sf)	CN	Description
35,902	98	Unconnected roofs, HSG D
35,902		100.00% Impervious Area
35,902		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.05		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.26"
0.1	8	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
6.0					<b>Direct Entry,</b>
7.7	108	Total			

**Subcatchment 11S:**

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**Summary for Subcatchment 12S:**

Runoff = 2.34 cfs @ 12.14 hrs, Volume= 0.206 af, Depth= 7.55"  
 Routed to Pond 12P : Silva Cell

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.63"

Area (sf)	CN	Description
5,730	80	>75% Grass cover, Good, HSG D
4,555	98	Paved parking, HSG D
4,000	98	Unconnected roofs, HSG D
14,285	91	Weighted Average
5,730		40.11% Pervious Area
8,555		59.89% Impervious Area
4,000		46.76% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0210	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.26"
0.4	68	0.0314	2.66		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.3	143	0.0200	9.11	16.09	<b>Pipe Channel,</b> 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
10.2	311	Total			

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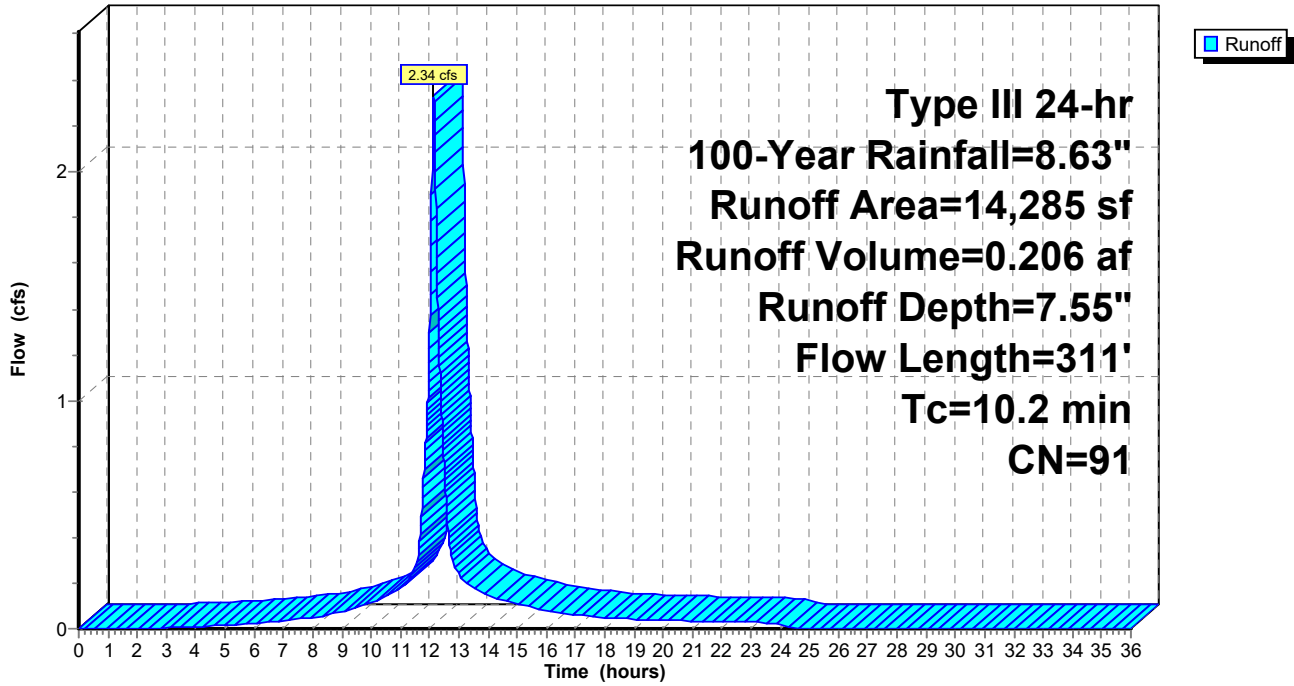
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**Subcatchment 12S:**

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Type III 24-hr 100-Year Rainfall=8.63"

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**Summary for Subcatchment 13S:**

Runoff = 1.42 cfs @ 12.07 hrs, Volume= 0.107 af, Depth= 7.79"  
Routed to Pond 13P : Pervious Paver Stone

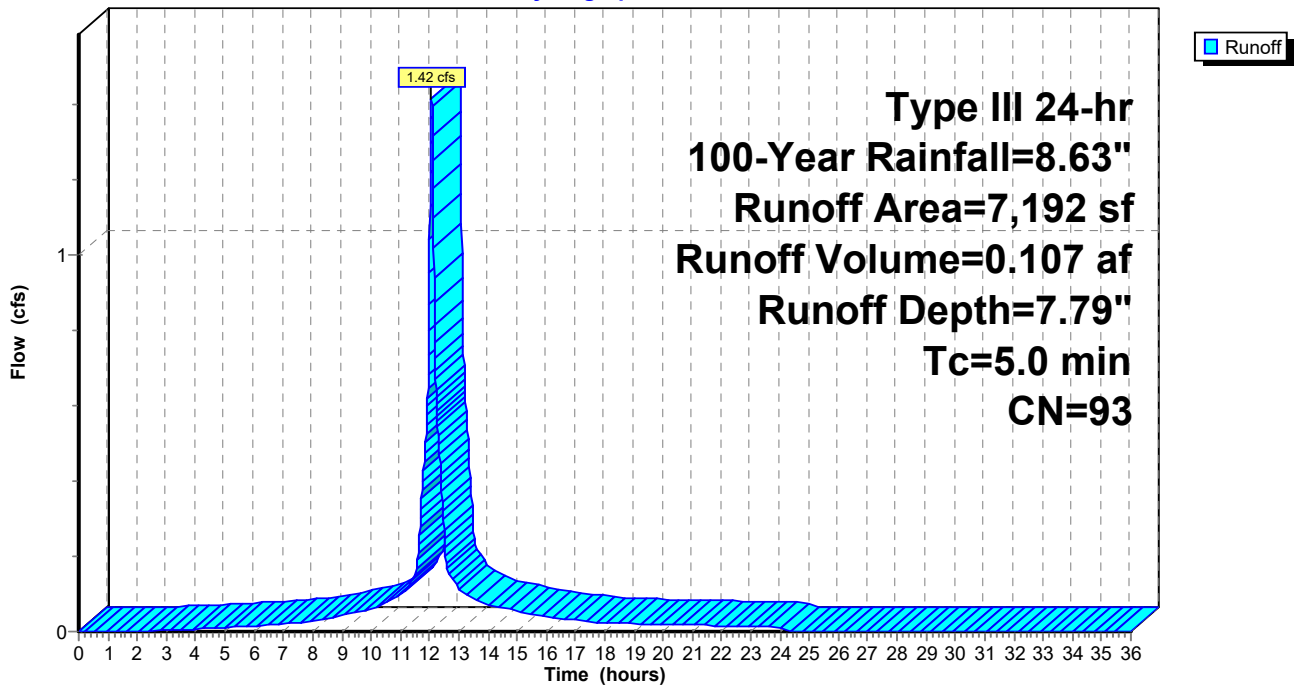
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=8.63"

Area (sf)	CN	Description
5,385	98	Paved parking, HSG D
1,807	80	>75% Grass cover, Good, HSG D
7,192	93	Weighted Average
1,807		25.13% Pervious Area
5,385		74.87% Impervious Area

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

**Subcatchment 13S:**

Hydrograph



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**Summary for Pond 12P: Silva Cell**

Inflow Area = 0.328 ac, 59.89% Impervious, Inflow Depth = 7.55" for 100-Year event  
 Inflow = 2.34 cfs @ 12.14 hrs, Volume= 0.206 af  
 Outflow = 2.24 cfs @ 12.17 hrs, Volume= 0.203 af, Atten= 4%, Lag= 1.8 min  
 Discarded = 0.02 cfs @ 6.33 hrs, Volume= 0.062 af  
 Primary = 2.22 cfs @ 12.17 hrs, Volume= 0.141 af  
 Routed to Link 10L : Outgoing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 86.01' @ 12.17 hrs Surf.Area= 1,031 sf Storage= 1,484 cf

Plug-Flow detention time= 152.8 min calculated for 0.203 af (99% of inflow)  
 Center-of-Mass det. time= 144.2 min ( 918.6 - 774.4 )

Volume	Invert	Avail.Storage	Storage Description			
#1	83.17'	1,557 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
83.17	1,031	146.0	0.0	0	0	1,031
83.50	1,031	146.0	40.0	136	136	1,079
85.00	1,031	146.0	25.0	387	523	1,298
86.09	1,031	146.0	92.0	1,034	1,557	1,457

Device	Routing	Invert	Outlet Devices
#1	Discarded	83.17'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Device 3	85.65'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	81.00'	<b>12.0" Round Culvert</b> L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 81.00' / 80.40' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Discarded OutFlow** Max=0.02 cfs @ 6.33 hrs HW=83.20' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=2.25 cfs @ 12.17 hrs HW=86.01' TW=81.40' (Fixed TW Elev= 81.40')

↑**3=Culvert** (Passes 2.25 cfs of 7.36 cfs potential flow)

↑**2=Orifice/Grate** (Weir Controls 2.25 cfs @ 1.97 fps)



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Proposed Conditions

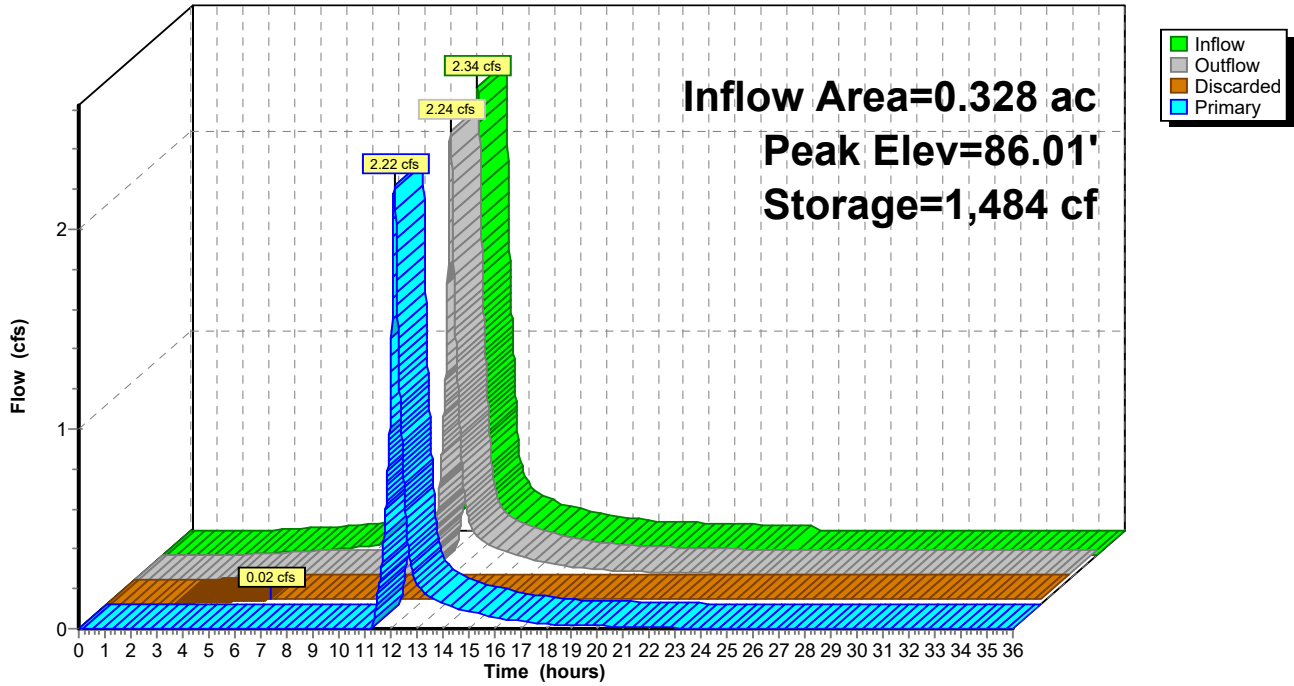
Type III 24-hr 100-Year Rainfall=8.63"

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**Pond 12P: Silva Cell**

Hydrograph



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Type III 24-hr 100-Year Rainfall=8.63"

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**Summary for Pond 13P: Pervious Paver Stone**

Inflow Area = 0.165 ac, 74.87% Impervious, Inflow Depth = 7.79" for 100-Year event  
 Inflow = 1.42 cfs @ 12.07 hrs, Volume= 0.107 af  
 Outflow = 0.07 cfs @ 10.33 hrs, Volume= 0.107 af, Atten= 95%, Lag= 0.0 min  
 Discarded = 0.07 cfs @ 10.33 hrs, Volume= 0.107 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 85.85' @ 14.20 hrs Surf.Area= 2,922 sf Storage= 2,160 cf

Plug-Flow detention time= 270.4 min calculated for 0.107 af (100% of inflow)  
 Center-of-Mass det. time= 270.4 min ( 1,032.9 - 762.6 )

Volume	Invert	Avail.Storage	Storage Description			
#1	84.00'	2,338 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
84.00	2,922	498.7	0.0	0	0	2,922
85.00	2,922	498.7	40.0	1,169	1,169	3,421
86.00	2,922	498.7	40.0	1,169	2,338	3,919

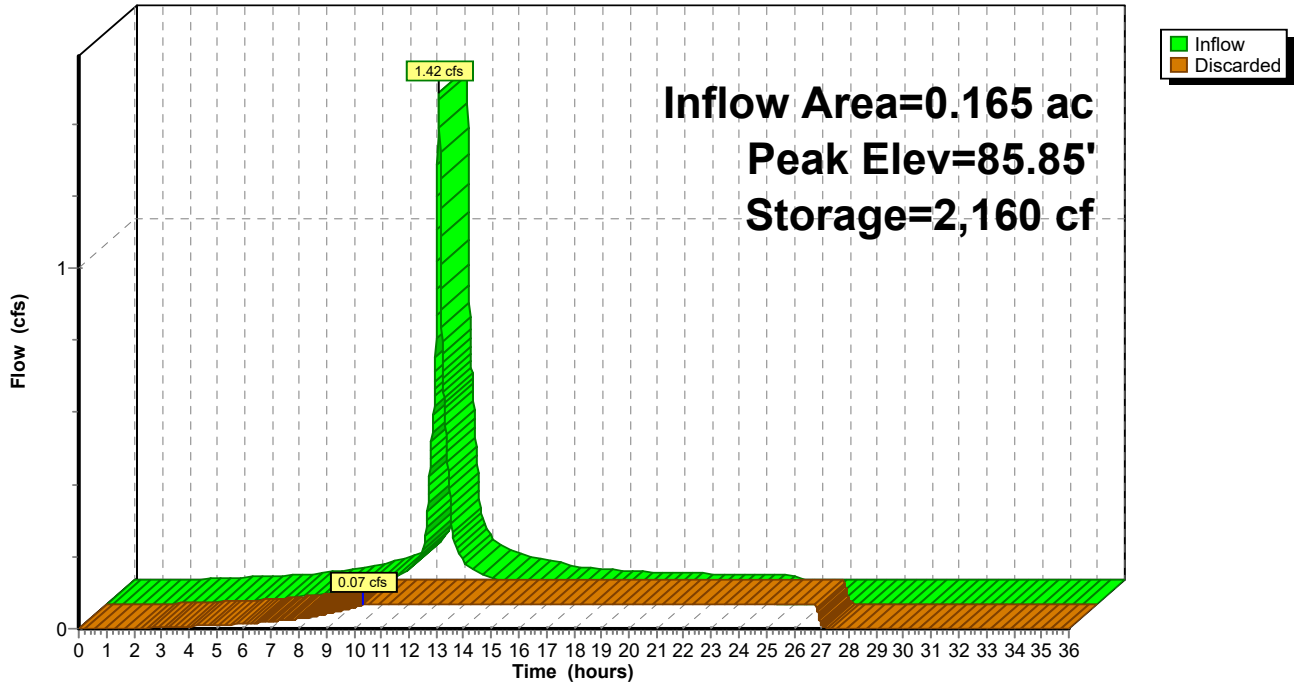
Device	Routing	Invert	Outlet Devices
#1	Discarded	84.00'	<b>1.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.07 cfs @ 10.33 hrs HW=84.02' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

### Pond 13P: Pervious Paver Stone

Hydrograph



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Proposed Conditions  
Type III 24-hr 100-Year Rainfall=8.63"

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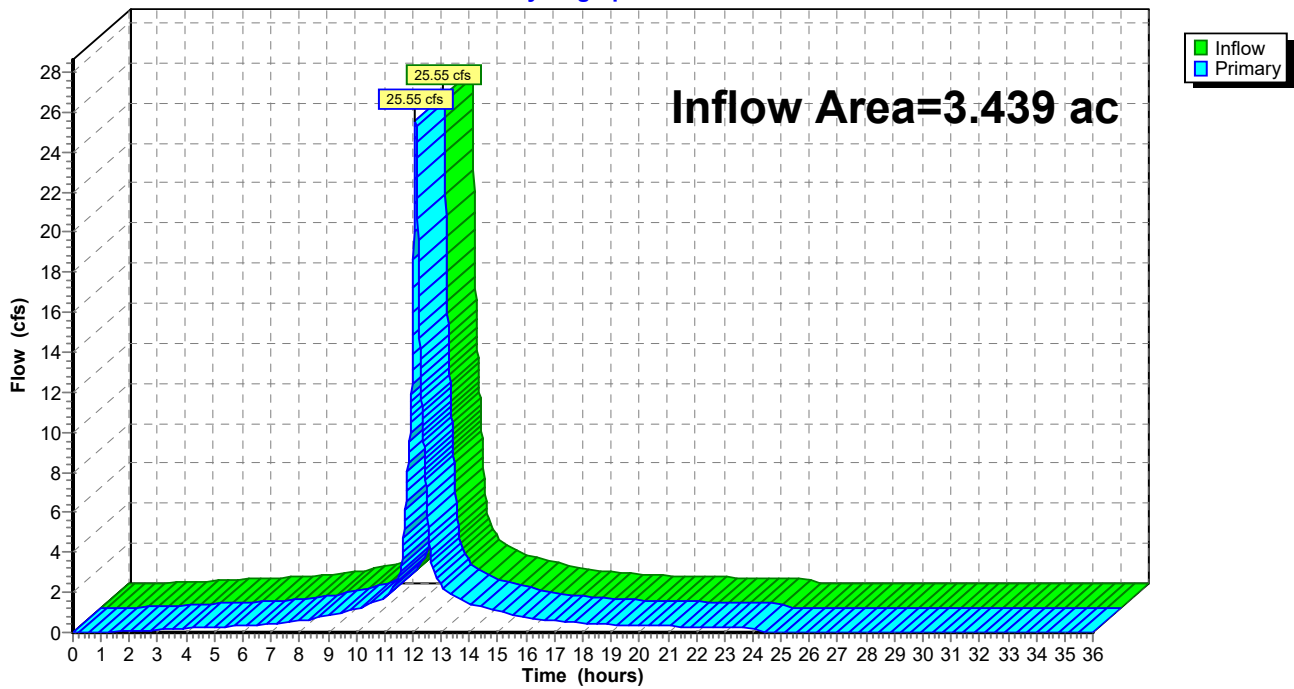
**Summary for Link 10L: Outgoing CB**

Inflow Area = 3.439 ac, 86.02% Impervious, Inflow Depth = 7.46" for 100-Year event  
Inflow = 25.55 cfs @ 12.10 hrs, Volume= 2.137 af  
Primary = 25.55 cfs @ 12.10 hrs, Volume= 2.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

**Link 10L: Outgoing CB**

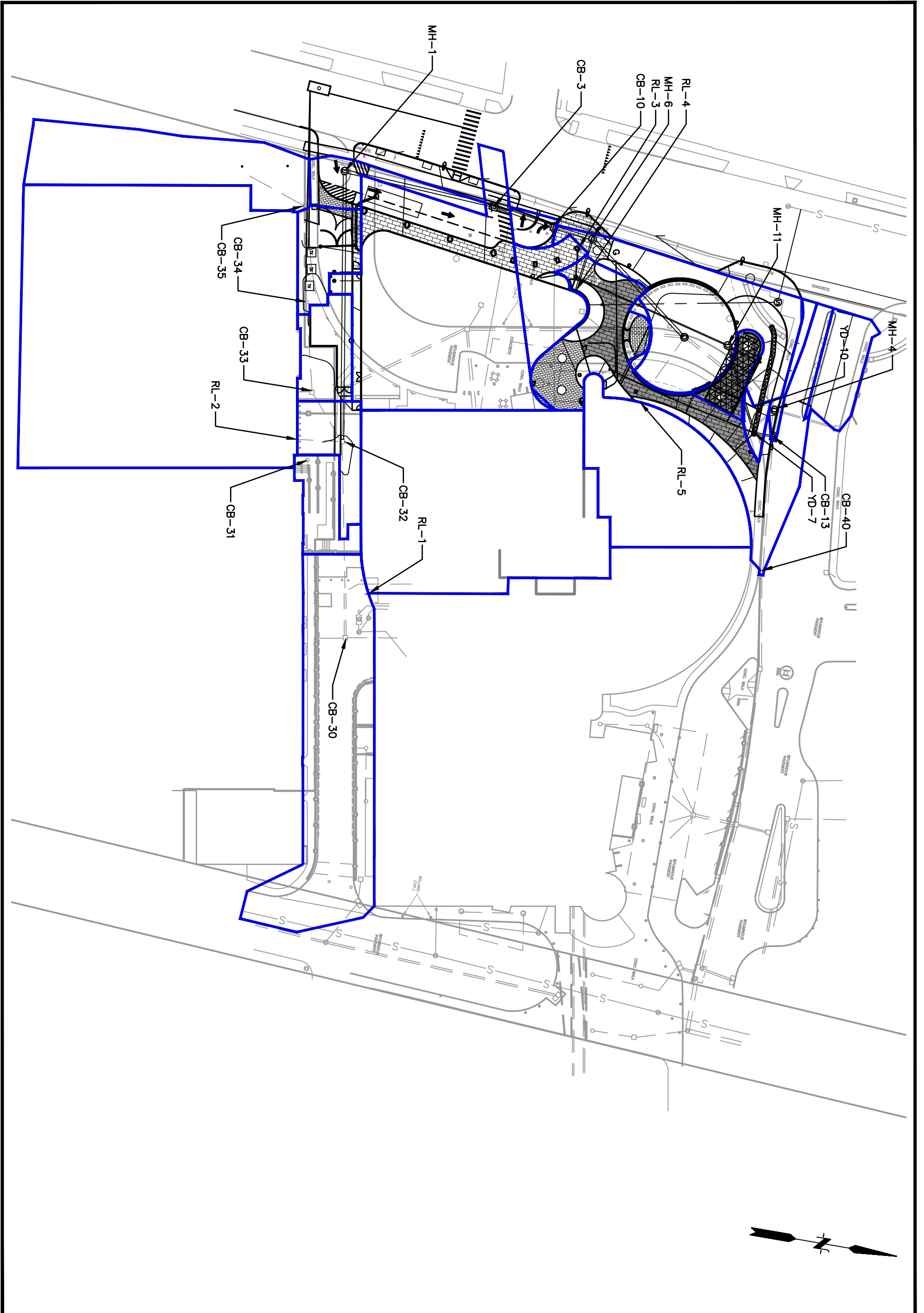
Hydrograph



## **Appendix C**

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### Proposed Stormwater System Analysis



**DR-301**

PROJ. NO.: 20211326 A20  
 DATE: 10/25/2022

CONNECTICUT CHILDREN'S MEDICAL CENTER  
 PROPOSED DRAINAGE CATCHMENT AREAS  
 282 WASHINGTON STREET  
 HARTFORD CONNECTICUT

**f FUSS & O'NEILL**  
 146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
 www.fando.com

SCALE:	HORZ.: 1" = 60'
	VERT.:
DATUM:	HORZ.:
	VERT.:
GRAPHIC SCALE	





### FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (%)	Diameter (in)	System Intensity (in/h)	System CA (ft <sup>2</sup> )	System Rational Flow (cfs)	Capacity (Full Flow) (cfs)	Velocity (ft/s)	Hydraulic Grade Line (In) (ft)	Elevation Ground (Start) (ft)	Hydraulic Grade Line (Out) (ft)	Elevation Ground (Stop) (ft)
MH-1	79.37	CB-3	78.83	103.2	0.523	24.0	7.016	39,816.687	6.46	17.73	5.56	80.74	95.00	80.70	92.90
CB-3	78.83	CB-10	78.62	42.9	0.489	24.0	6.882	42,275.486	6.73	17.14	5.46	80.70	92.90	80.66	92.00
CB-10	78.62	MH-6	78.50	27.3	0.440	24.0	6.825	45,306.688	7.16	16.25	2.88	80.66	92.00	80.62	92.30
MH-6	78.50	MH-3	78.06	91.4	0.481	24.0	6.756	79,972.887	12.50	17.00	4.58	80.62	92.30	80.30	90.50
MH-3	77.98	MH-4	76.42	77.4	2.017	18.0	6.612	87,851.483	13.44	16.16	8.68	80.30	90.50	78.88	87.10
MH-4	75.22	CB-13	75.01	17.7	1.187	18.0	6.547	89,862.991	13.62	12.40	8.77	78.88	87.10	78.55	85.10
CB-13	75.01	CB-40	73.98	92.0	1.119	18.0	6.533	99,204.583	15.00	12.04	9.56	78.55	85.10	76.51	82.30
MH-11	81.00	YD-7	80.40	62.1	0.967	12.0	7.294	3,600.000	0.61	3.79	3.54	81.32	89.90	80.91	86.80
YD-7	80.40	CB-13	80.00	13.1	3.050	12.0	7.167	8,850.194	1.47	6.74	6.86	80.91	86.80	80.35	85.10
RL-4	87.50	MH-6	87.10	38.2	1.046	12.0	7.430	34,666.200	5.96	4.74	7.59	88.71	92.00	88.05	92.30
RL-2	80.62	CB-32	80.47	57.1	0.263	12.0	7.430	32,311.801	5.56	2.37	7.07	82.31	91.00	81.49	90.52
RL-5	80.00	MH-3	77.98	50.5	3.999	12.0	7.430	7,878.600	1.35	9.26	8.42	80.49	92.00	80.30	90.50
YD-10	85.15	T-6	85.00	37.6	0.398	12.0	7.430	5,100.194	0.88	2.44	2.85	85.56	87.10	85.39	89.50
T-6	85.00	YD-7	80.40	44.1	10.431	12.0	7.334	5,100.194	0.87	12.46	9.12	85.39	89.50	80.91	86.80
CB-39	81.20	MH-4	79.37	45.2	4.047	12.0	7.430	2,011.500	0.35	7.76	4.97	81.44	86.50	79.51	87.10
CB-31	83.50	CB-32	82.87	25.1	2.512	4.0	7.430	1,781.100	0.31	0.39	4.97	83.80	87.20	83.09	90.52
CB-33	83.20	CB-32	80.47	39.0	7.002	8.0	7.277	2,771.126	0.47	4.16	7.87	83.52	90.96	81.49	90.52
CB-40	73.92	O-1	73.34	65.1	0.891	18.0	6.463	108,622.645	16.25	10.74	10.26	76.51	82.30	74.84	80.39
CB-30	55.52	O-2	54.00	31.8	4.784	15.0	7.430	11,051.892	1.90	14.13	8.02	56.07	60.72	54.31	60.50
MH-10	81.00	CB-32	80.47	40.9	1.297	12.0	7.430	0.000	0.00	4.06	5.08	81.59	91.00	81.49	90.52
CB-34	87.32	T-10	86.90	37.0	1.134	12.0	7.430	1,642.118	0.28	4.11	3.00	87.54	92.80	87.08	92.00
T-10	86.90	CB-33	86.60	26.2	1.146	12.0	7.341	1,642.118	0.28	4.13	3.00	87.12	92.00	86.78	90.96
CB-32	80.47	MH-1	79.37	182.1	0.604	24.0	7.242	37,685.185	6.32	19.05	5.84	81.49	90.52	80.74	95.00
YD-24	88.93	MH-1	88.00	41.6	2.237	12.0	7.430	2,131.500	0.37	6.93	4.67	89.18	94.80	88.16	95.00
RL-3	90.00	YD-17	89.50	18.8	2.660	6.0	7.430	1,350.000	0.23	1.19	4.69	90.24	92.10	89.87	92.10
RL-10	89.75	YD-17	89.50	9.4	2.671	6.0	7.430	2,250.000	0.39	1.19	5.43	90.07	92.10	89.87	92.10
YD-17	89.50	MH-11	81.00	113.9	7.464	8.0	7.401	3,600.000	0.62	3.58	7.68	89.87	92.10	81.19	89.90

### FlexTable: Catch Basin Table

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Downstream Conduit	Local Rational Flow (cfs)	Capture Efficiency (Calculated) (%)	Carryover Rational Flow (cfs)	Flow (Captured) (cfs)	Bypassed Rational Flow (cfs)	Hydraulic Grade Line (In) (ft)	Flow (Total Out) (cfs)	Depth (Gutter) (in)	Spread / Top Width (ft)
CB-30	60.72	60.72	55.52	CO-31	1.90	100.0	0.00	1.90	0.00	56.07	1.90	3.2	9.1
CB-32	90.52	90.52	80.47	CO-1	0.14	100.0	0.00	0.14	0.00	81.49	8.21	0.7	3.1
CB-33	90.96	90.96	83.20	CO-25	0.19	100.0	0.00	0.19	0.00	83.52	0.47	0.9	3.6
CB-34	92.80	92.80	87.32	CO-23	0.28	100.0	0.00	0.28	0.00	87.54	0.28	1.0	4.2
CB-3	92.90	92.90	78.83	CO-4	0.42	100.0	0.00	0.42	0.00	80.70	8.62	1.0	4.2
CB-10	92.00	92.00	78.62	CO-7	0.52	100.0	0.00	0.52	0.00	80.66	9.05	1.8	3.4
YD-10	87.10	87.10	85.15	CO-19	0.88	100.0	0.00	0.88	0.00	85.56	0.88	1.3	5.6
YD-7	86.80	86.80	80.40	CO-8	0.03	100.0	0.00	0.03	0.00	80.91	1.47	0.4	1.5
CB-13	85.10	85.10	75.01	CO-43	0.08	100.0	0.00	0.08	0.00	78.55	16.89	1.0	1.6
CB-40	82.30	82.30	73.92	CO-44	1.62	100.0	0.00	1.62	0.00	76.51	18.14	1.7	7.0
CB-31	87.20	87.20	83.50	CO-21	0.31	100.0	0.00	0.31	0.00	83.80	0.31	1.1	4.4
CB-39	86.50	86.50	81.20	CO-41	0.35	100.0	0.00	0.35	0.00	81.44	0.35	0.9	3.9
YD-24	94.80	94.80	88.93	CO-26	0.37	100.0	0.00	0.37	0.00	89.18	0.37	1.2	4.8

### FlexTable: Manhole Table

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Local Known Flow (cfs)	Flow (Total Out) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
MH-1	95.00	95.00	79.37	0.00	8.35	80.74	80.74
MH-6	92.30	92.30	78.50	0.00	14.39	80.62	80.62
MH-3	90.50	90.50	77.98	0.00	15.33	80.30	80.30
MH-4	87.10	87.10	75.22	0.00	15.51	78.88	78.88
MH-11	89.90	89.90	81.00	0.00	0.61	81.32	81.32
MH-10	91.00	91.00	81.00	1.89	1.89	81.59	81.59
YD-17	92.10	92.10	89.50	0.00	0.62	89.87	89.87

**FlexTable: Catchment Table**

Label	Outflow Element	Area (User Defined) (ft <sup>2</sup> )	Runoff Coefficient (Rational)	Catchment CA (ft <sup>2</sup> )	Time of Concentration (min)	Catchment Intensity (in/h)	Catchment Rational Flow (cfs)
CM-30	CB-30	12,990.000	0.851	11,051.892	5.000	7.430	1.90
CM-31	CB-31	1,979.000	0.900	1,781.100	5.000	7.430	0.31
CM-32	CB-32	2,281.000	0.360	821.160	5.000	7.430	0.14
CM-33	CB-33	2,188.000	0.516	1,129.008	5.000	7.430	0.19
CM-34	CB-34	2,652.000	0.619	1,642.118	5.000	7.430	0.28
CM-3	CB-3	2,732.000	0.900	2,458.800	5.000	7.430	0.42
CM-10	CB-10	3,368.000	0.900	3,031.200	5.000	7.430	0.52
CM-RL-2	RL-2	35,902.000	0.900	32,311.800	5.000	7.430	5.56
CM-RL-4	RL-4	38,518.000	0.900	34,666.200	5.000	7.430	5.96
CM-RL-5	RL-5	8,754.000	0.900	7,878.600	5.000	7.430	1.35
CM-RL-3	RL-3	1,500.000	0.900	1,350.000	5.000	7.430	0.23
CM-40	CB-40	11,773.074	0.800	9,418.067	5.000	7.430	1.62
CM-13	CB-13	546.000	0.900	491.400	5.000	7.430	0.08
CM-7	YD-7	500.000	0.300	150.000	5.000	7.430	0.03
CM-10	YD-10	9,793.000	0.521	5,100.194	5.000	7.430	0.88
CM-39	CB-39	2,235.000	0.900	2,011.500	5.000	7.430	0.35
CM-24	YD-24	7,105.000	0.300	2,131.500	5.000	7.430	0.37
CM-RL-10	RL-10	2,500.000	0.900	2,250.000	5.000	7.430	0.39

### FlexTable: Outfall Table

ID	Label	Elevation (Ground) (ft)	Set Rim to Ground Elevation?	Elevation (Invert) (ft)	Boundary Condition Type	Elevation (User Defined Tailwater) (ft)	Hydraulic Grade (ft)	Flow (Total Out) (cfs)
123	O-1	80.39	True	73.34	User Defined Tailwater	74.84	74.84	18.02
142	O-2	60.50	True	54.00	Free Outfall		54.31	1.89