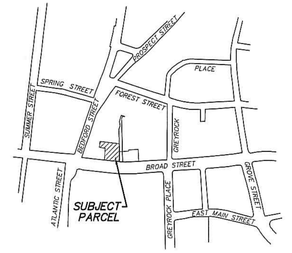
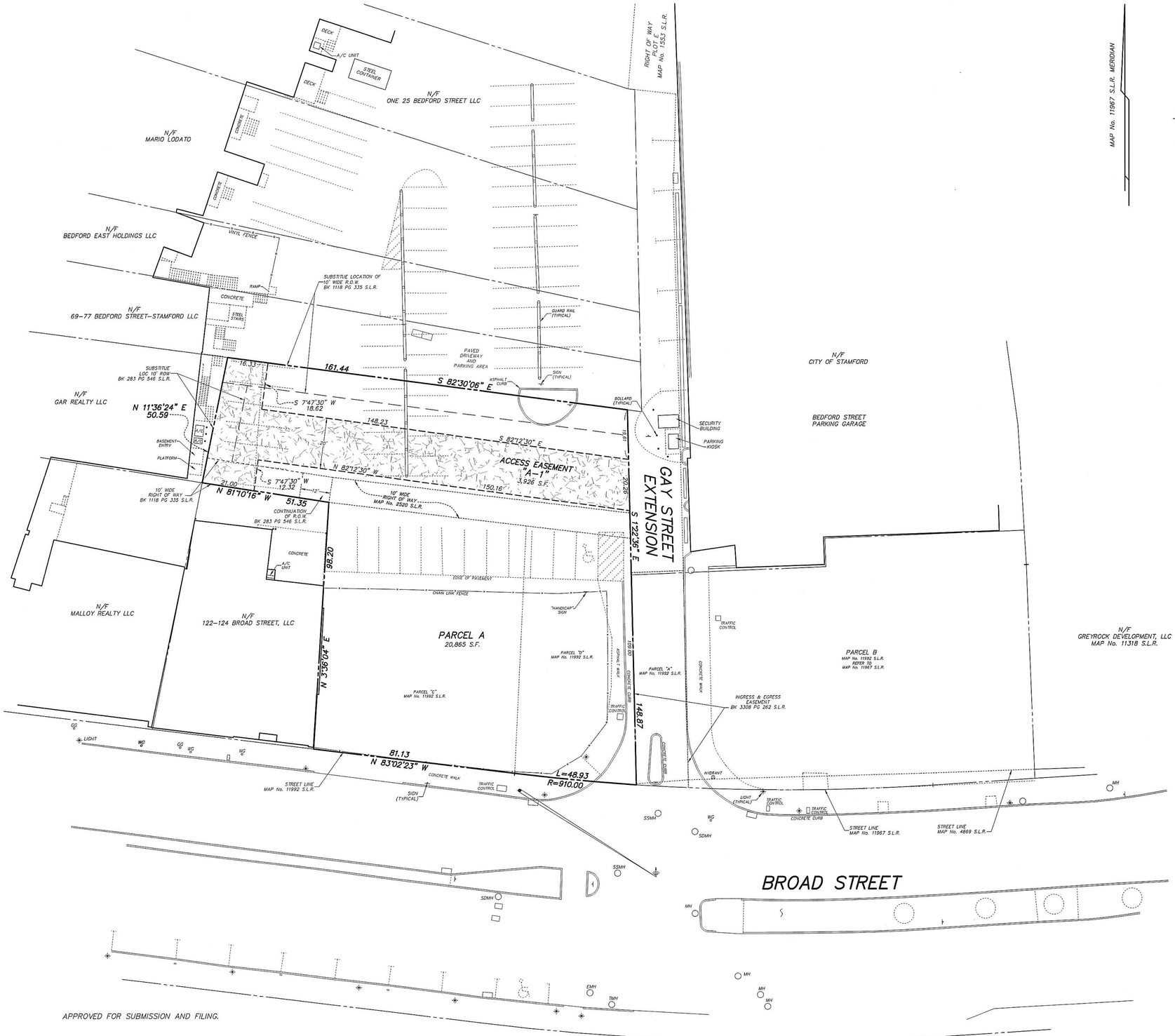
BLOCK No. 176



LOCATION MAP – 1" = 600'±



REFER TO A MAP ENTITLED "PROPERTY SURVEY PREPARED FOR BROADGAY L.L.C. STAMFORD, CT." PREPARED BY REDNISS & MEAD AND DATED FEBRUARY 24, 1995.

THIS MAP IS AN EASEMENT MAP INTENDED TO DESCRIBE ACCESS EASEMENT "A–1"AS DEPICTED HEREON. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A–2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20–300b–1 THROUGH 20–300b–20.

NEW MONUMENTATION HAS NOT BEEN SET AS A RESULT OF THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

REFER TO VOLUME 13022 PAGE 140 AND MAPS No. 11192 & 11967 S.L.R.

LAND LIES IN "C–G" ZONING DISTRICT

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

D'ANDREA SURVEYING & ENGINEERING, P.C.

_____, SURVEYOR
ROBERT L. LIDDEL JR., CT LS No. 15775
RIVERSIDE, CONNECTICUT OCTOBER 28, 2022

APPROVED FOR SUBMISSION AND FILING.

ON _____ BY _____
OWNER OR AGENT

APPROVED BY THE STAMFORD PLANNING BOARD. FOR FILING PURPOSES. (NOT A SUBDIVISION PURSUANT TO CGS 8–18)

ON _____ BY _____
CHAIR OR SECRETARY

1 INCH = 20 FEET
SCALE
20 0 20
IN FEET

EASEMENT MAP
DEPICTING
ACCESS EASEMENT
LOCATED AT
BROAD STREET
AND
GAY STREET EXTENSION
IN
STAMFORD, CONNECTICUT
PREPARED FOR
TR BROAD II LLC

BROADGAY_21UT_EM_0.DWG

21UT

STORMWATER MANAGEMENT REPORT

For

Mixed Use Development
128 Broad Street
Stamford, Connecticut

Prepared For
TR Broad II, LLC

October 28, 2022

Leonard C. D'Andrea, P.E.
CT License No. 14869

21UT_DSR_01

Table of Contents

Introduction

Project Summary	3
Watershed Analysis	4
Existing Conditions	**4**
Proposed Conditions	**5**
Summary of Compliance with Standard 1	6
Summary of Compliance with Standards 2, 3, and 4	6
Conclusion	7

Exhibits

Watershed Map – Existing Conditions	Exhibit A
Watershed Map – Proposed Conditions	Exhibit B
USDA Soil Delineation Map	Exhibit C
Site Vicinity Map	Exhibit D
FEMA FIRM Map	Exhibit E
NOAA Atlas 14 Precipitation Tables	Exhibit F

Appendices

1970 Aerial Photo	Appendix A
1985 Aerial Photo	Appendix B
City of Stamford Storm Sewer Maps	Appendix C
WQV & Drawdown Calculations	Appendix D
DCIA Tracking Worksheet	Appendix E
Boring and Test Pit Data	Appendix F
Existing Storm Drain Conveyance System Capacity	Appendix G
Conveyance Computations	Appendix H
Stage Area Storage Tables	Appendix I
HydroCAD Summary – Peak Flows and Volumes	Appendix J
HydroCAD Analysis – Existing Conditions	Appendix K
HydroCAD Analysis – Proposed Conditions	Appendix L

Project Summary

TR Broad II LLC, owners of property at #128 & #136 Broad Street in Stamford, Connecticut, are proposing to construct a thirteen-story mixed use building on the subject parcels. The parcels are located on the north side of Broad Street, approximately 350 feet east of the intersection with Bedford Street. The total combined area of the parcels is approximately 35,659 square feet, located in the C-G Zoning District. According to FEMA FIRM Map No. 09001C0516G, (revised July 8, 2013), the parcels do not lie within any Flood Hazard Zones. Refer to Exhibit "E" for a copy of the FEMA FIRM Map.

Parcel A (128 Broad Street) encompasses 20,865 square feet and is located to the west of Gay Street Extension. Currently, the southern portion of the parcel supports a lawn with an asphalt sidewalk along the eastern property line. The northern portion of the parcel supports a portion of the municipal parking lot between the Bedford Street Parking Garage and the buildings fronting Bedford Street. Under existing conditions, the total impervious coverage on Parcel A is approximately 13,000 square feet or 62% of the lot area. Historically, the parcel supported a commercial building with asphalt parking lot. The commercial building and a portion of the parking lot was previously removed circa 1996. Refer to Appendix "B" for an aerial photo of the subject parcel from 1985 depicting the previously removed commercial building.

Parcel B (136 Broad Street) encompasses 14,794 square feet and is located to the south of the Bedford Street Parking Garage. Currently, the parcel supports Gay Street Extension and a concrete sidewalk along the western property line. The remainder of the site supports a manicured lawn with ornamental trees. The total impervious coverage on Parcel B is approximately 2,800 square feet or 19% of the lot area. Historically, the parcel supported a parking lot prior to the construction of the Bedford Street Parking Garage. Refer to Appendix "A" for an aerial photo of the subject parcel from 1970 depicting the parking lot.

The proposed development will include the construction of a thirteen-story mixed use building, spanning over Gay Street Extension, which contains 196 residential units and approximately 4,284 square feet of retail space along the Broad Street frontage. An elevated garage structure will be constructed above both parcels, providing 156 parking spaces. An additional 17 parking spaces will be provided within the surface lot behind the first floor of the proposed building. Other improvements will include the construction of new concrete sidewalks and curbing along Broad Street and Gay Street Extension, installation of new storm drain conveyance systems and various underground utilities.

For a depiction of existing conditions and the proposed development, refer to a plan set prepared by D'Andrea Surveying & Engineering, PC entitled "Final Site Plan Review Set, Location 128 Broad Street Stamford, Connecticut, Prepared for TR Broad II, LLC", Sheets 1 through 6 of 6.

This report will summarize the effect of the proposed development on the surrounding watershed and downstream locations, and outline the proposed stormwater management plan designed to facilitate the proposed improvements.

Watershed Analysis

Drainage patterns for the site were analyzed using HydroCAD version 10, with runoff data generated for the 1, 2, 5, 10, 25, 50 and 100-year storm events.

In this analysis, three (3) "Points of Concern" were identified. Referring to the watershed maps in Exhibits A & B, the points of concern (POC) are designated as various drainage structures within Broad Street and Gay Street Extension.

According to the USDA soil delineation map presented in Exhibit C, the parcel lies within mapped area of Urban Land (HSG-D).

Existing Conditions

The subject parcels are part of a larger watershed, encompassing approximately 4.4 acres, tributary to the storm drainage systems within Broad Street. The watershed extends from Broad Street, north to Forest Street, and from Bedford Street, east to the Bedford Street Parking Garage (refer to Exhibit A). The above-mentioned watershed was delineated into four drainage basins under existing conditions.

Drainage Basin Ex. Area #2 encompasses the northern portion of Parcel A and Gay Street Extension, the municipal parking lot to the north of Parcel A and most buildings fronting Bedford Street from Broad Street to Forest Street. This drainage basin was delineated based on field observations, as the roof downspouts from the buildings fronting Bedford Street were observed discharging stormwater runoff at grade onto the municipal lot to the north of Parcel A. Stormwater runoff from the municipal lot to the north of Parcel A is collected by a series of catch basins and trench drains, directing all flow into an existing manhole (Ex. SDMH#1) at the southwest corner of the Bedford Street Parking Garage (POC A). Existing SDMH#1 also accepts flow from drains within the Bedford Street Parking Garage (Drainage Basin Ex. Area #3). Flows exiting SDMH#1 are routed through a 24-inch RCP sloped at 0.49% to the existing storm drain manhole at the intersection of Gay Street and Broad Street (Ex SDMH #2). Based on our analysis, the 24-inch RCP has adequate capacity to convey tributary flows up to the 5-year storm event.

Drainage basin Ex. Area #1 encompasses the southern portion of Parcel A and Gay Street Extension. Runoff from this drainage basin sheet flows to the south into the northern

gutter line of Broad Street, is collected by two existing catch basins and piped to a manhole located at the intersection of Broad Street and Gay Street Extension (Ex. SDMH#2). Flows exiting SDMH#2 are routed through a 18-inch RCP sloped at 3.9% to the existing 24" RCP storm drain within the center of Broad Street (POC B). Based on our analysis, the 18-inch RCP has adequate capacity to convey tributary flows up to the 10-year storm event.

Ultimately, all runoff from Ex. Area#1, Ex. Area #2 and Ex. Area #3 is tributary to the existing 24" RCP storm drain within Broad Street (POC B). The 24" RCP directs flows east within Broad Street and south on Greyrock Place. Based on City of Stamford Engineering Bureau records, the storm drain conveyance system within Broad Street, including the 24-inch RCP, was constructed in 1972 (Refer to Appendix "C"). Based on the records, this 24-inch RCP has a slope of 0.84% and an approximate capacity of 20.8 CFS. Based on our analysis, the 24-inch RCP does not have adequate capacity to convey tributary flows under existing conditions.

Runoff from Ex. Area #4, which encompasses the manicured lawn on Parcel B, sheet flows to the northeast and is collected by a catch basin in the northeast corner of Parcel B. Runoff entering the catch basin is piped to the south to a manhole located at the southeast corner of Parcel B (POC C). Ultimately, all runoff to POC C is tributary to an 18-inch RCP within the northern sidewalk of Broad Street, which directs flows east within Broad Street and north on Greyrock Place. Based on City of Stamford Engineering Bureau records, the 18-inch RCP was constructed in 1960 (Refer to Appendix "C") and later modified in 1972 during the above-mentioned storm drain improvements. The 18-inch RCP has a slope of 0.4% and an approximate capacity of 6.7 CFS.

Base on our analysis, the existing storm drains conveying flows from POC A to POC B are undersized. Therefore, the municipal parking lot behind Parcel A will pond during large storm events. The extend of the ponding has been modeled in the HydroCAD analysis. During extreme rainfall events (50 or 100 year storms), the water surface elevation may overtop the concrete curb on the western face of the Bedford Street Parking Garage, resulting in stormwater flooding the lower level of the garage.

Refer to the Exhibit "A" for a depiction of existing conditions. Refer to Aooendix "J" for a summary of existing conditions peaks flows to each Point of Concern. Refer to Appendix "K" for the existing conditions HydroCAD watershed analysis model.

Proposed Conditions

The proposed development will increase the total onsite impervious coverage, resulting in each parcel having almost 100% of each lot area covered by the proposed building or hardscape. The increase in impervious coverage thereby increases the volume and peak rate of runoff generated during a storm event as compared to existing conditions. However, since Parcel A and Parcel B were historically developed with 100% impervious coverage as previously discussed, the proposed development will result in a net zero increase in volume and peak rates

of runoff as compared to historical conditions. This report compares volume and peak rates of runoff from existing conditions to the proposed development.

Five drainage basins were delineated under proposed conditions. The drainage management plan developed for the proposed development involves the construction of a storm drain conveyance system to collect and route runoff to the existing storm drainage system within Broad Street. Refer to Exhibit "B" and Sheet 2 of 6 in the site plan set for a depiction of proposed conditions.

Stormwater runoff from drainage basin Pr. Area #1, which encompass hardscapes to the south of the proposed building, will be collected by the existing catch basins within Broad Street and piped to POC B. Stormwater runoff from drainage basins Pr. Area #2 and Pr. Area #3, which encompasses offsite properties to the north of the subject property and the Bedford Street Parking Garage, will be collected and piped to a manhole at the southwest corner of the Bedford Street Parking Garage. Flows exiting the manhole will be piped south through Gay Street Extension, into the existing 24" RCP within Broad Street (POC B).

Stormwater runoff from drainage basin Pr. Area #4, which encompasses the new building, will be collected and piped to Retention System #1. Retention System #1 was sized to retain and infiltrate the Water Quality Volume for the parcel. Should the system reach capacity, additional flows will be piped to the proposed twin 18" PVC storm drain within Gay Street Extension. Stormwater runoff from drainage basin Pr. Area #5, which encompasses areas to the northeast and east of the proposed building, will be collected and piped to POC C.

Refer to the Exhibit "B" for a depiction of proposed conditions. Refer to Appendix "J" for a summary of proposed conditions peaks flows to each Point of Concern. Refer to Appendix "L" for the proposed conditions HydroCAD watershed analysis model.

During the construction phase of the project, pretreatment of stormwater runoff will be provided by the use of temporary soil and erosion controls as outlined on the "Sediment and Erosion Control Plan," prepared by D'Andrea Surveying & Engineering, PC. This includes the installation of silt fence, sit sacks and periodic on-site inspections to ensure that the development of the site remains "tight" and stable throughout the construction phase.

Summary of Compliance with Standard 1

The proposed retention system has been sized to retain and infiltrate the Water Quality Volume of the parcel.

Summary of Compliance with Standards 2, 3, and 4

All standards have been achieved to the maximum extend allowable based on onsite soil conditions and limitations of the proposed development and existing infrastructure.

Conclusion

Based on our analysis of the aforementioned watershed, the proposed development will result in a decrease in peak flows to POC B for the 1, 2, 5-, 10-, 25- and 50-year design storms. The proposed development will also result in a decrease in peak flows to POC C for the 1- and 2-year design storms. There will be an increase in peak flows to POC C during the 5, 10, 25, 50 and 100-year design storm due to the proposed 8" PVC that will convey flows from Pr. SDMH #1 to JB #3. The 8" PVC is intended to redirect flow tributary the 24" RCP system within Broad Street, helping to decrease the hydraulic grade line within the proposed twin 18" PVC pipes within Gay Street and the ponding level in the municipal parking lot behind the proposed development.

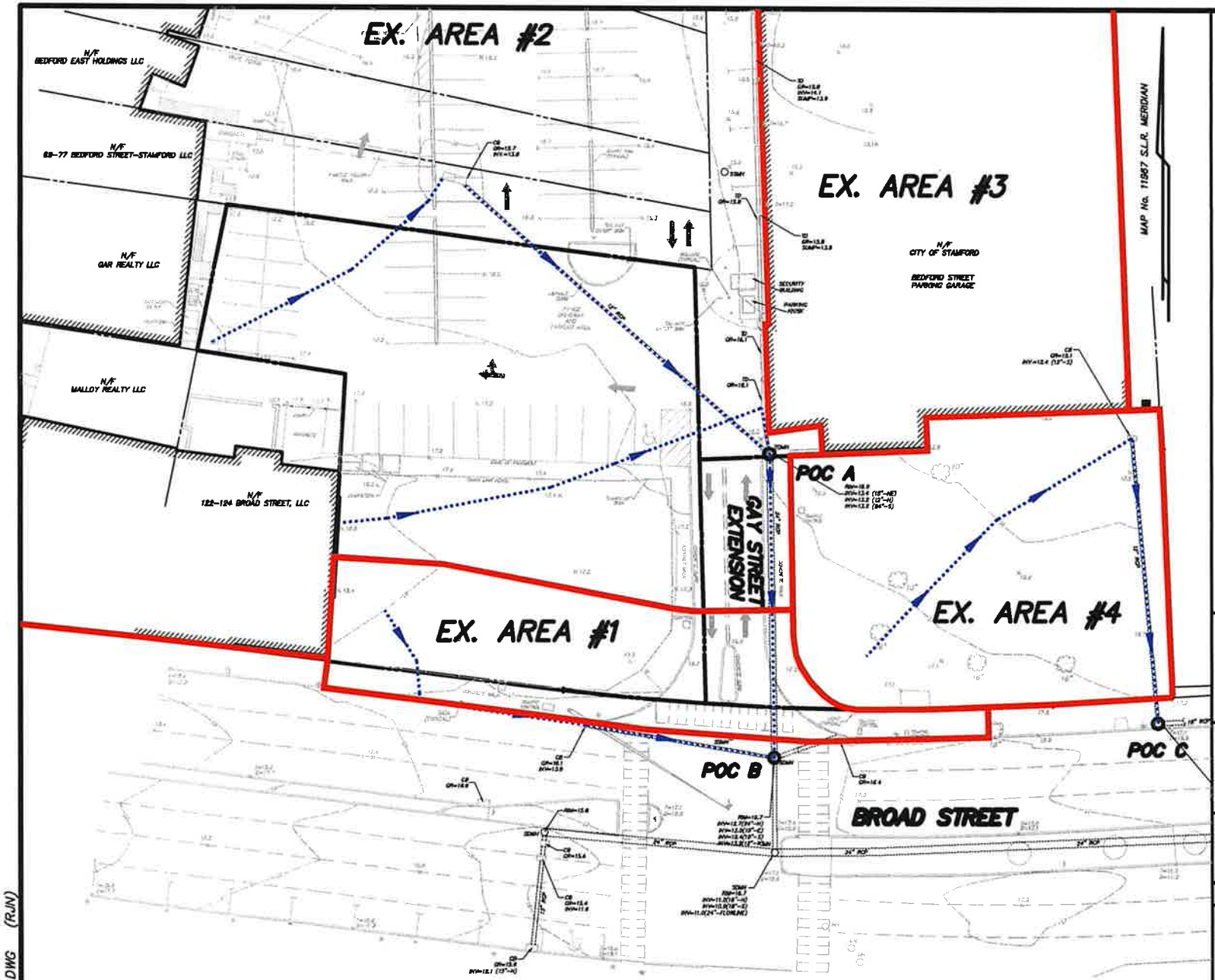
The increase in peak flows to POC C was directed to the existing 18-inch RCP within Broad Street. The 18-inch RCP conveys flows 250 feet east on Broad Street and 525 feet north on Greyrock Place. The 18-inch RCP within Greyrock Place ultimately discharges into a 60" RCP within Forest Street.

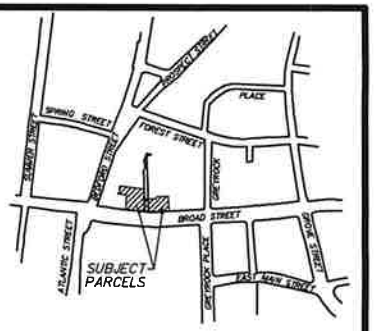
The alternative would be to direct the increase in peak flows into the existing 24-inch RCP within Broad Steet, which is currently undersized. The 24" RCP conveys flows 380 feet east on Broad Street and 1,375 feet south on Greyrock Place, where it discharges into a 84" RCP in the intersection of Tresser Boulevard and Greyrock Place.

The proposed design will maintain or reduce the water surface elevation of the ponded water in the municipal parking lot behind the proposed development for all storms excluding the 100-year storm event. The proposed design will also reduce the volume of water tributary to the Bedford Street Parking Garage for the 25- and 50-year design storms.

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

Exhibit A:
Existing Conditions
Watershed Map





LOCATION MAP

NOTES:

1. Refer to a plan entitled "Mixed Use Development, TR Broad II LLC, 128 Broad Street Stamford, Connecticut, Grading Plan, Sheet 1 of 6," as prepared by D'Andrea Surveying & Engineering, PC.

2. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).

EXISTING WATERSHED MAP

PREPARED FOR

TR BROAD II, LLC

LOCATION

128–136 BROAD STREET
STAMFORD, CONNECTICUT

D'ANDREA SURVEYING & ENGINEERING, PC

DATE: 10–3–22

SCALE: 1"=50'

SHEET No. EXH–A

BROADGAY_21UT_DP_07_REV0.DWG (RJN)

FOREST STREET

BEDFORD STREET

BROAD STREET

EX. AREA #1

EX. AREA #2

EX. AREA #3

EX. AREA #4

POC A

POC B

POC C

MAP No. 11867 S.L.R. MERIDIAN

LOCATION MAP

NOTES:

1. Refer to a plan entitled "Mixed Use Development, TR Broad II LLC, 128 Broad Street Stamford, Connecticut, Grading Plan, Sheet 1 of 6," as prepared by D'Andrea Surveying & Engineering, PC.

2. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).

EXISTING WATERSHED MAP

PREPARED FOR

TR BROAD II, LLC

LOCATION

128–136 BROAD STREET
STAMFORD, CONNECTICUT

D'ANDREA SURVEYING & ENGINEERING, PC

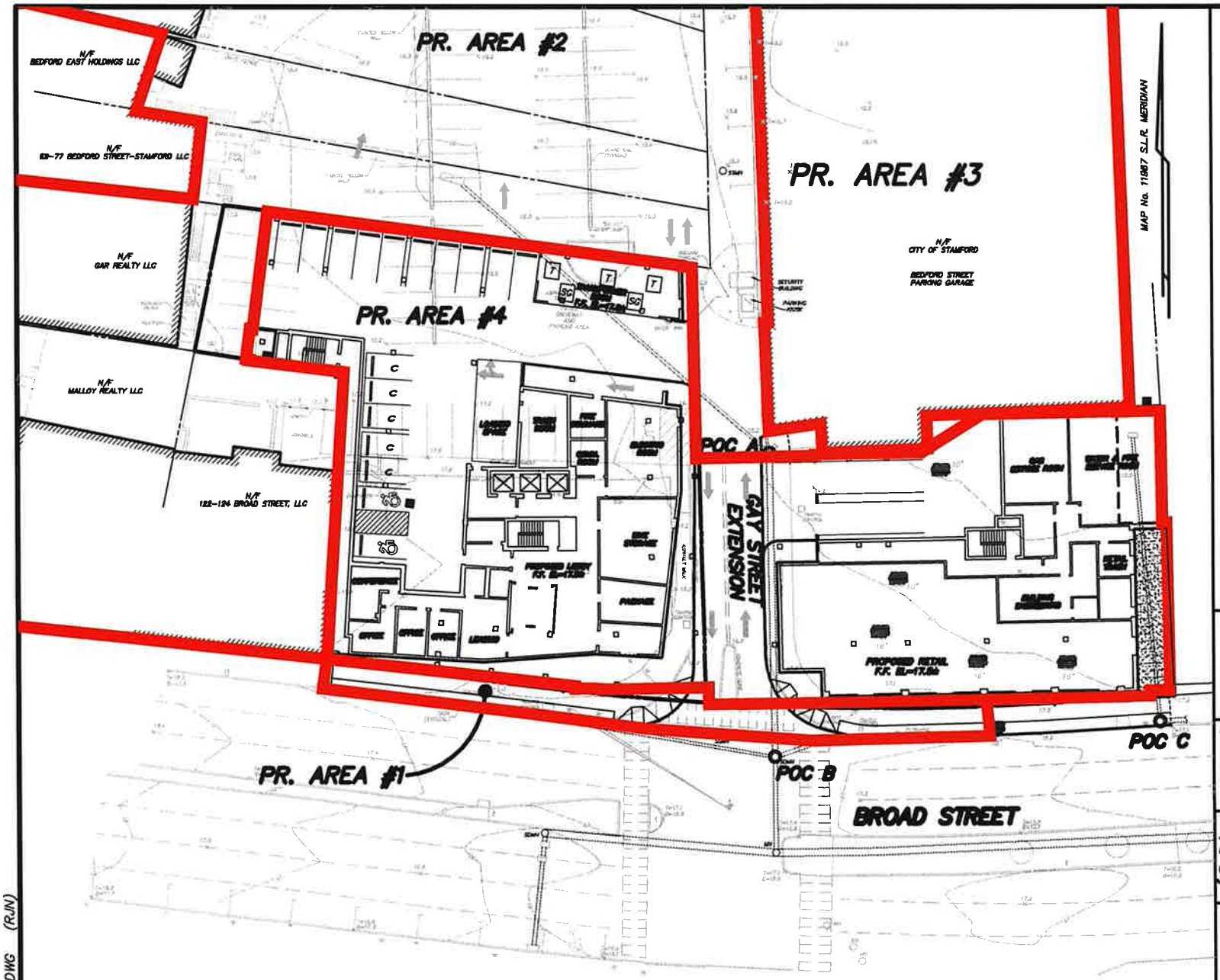
DATE: 10–3–22

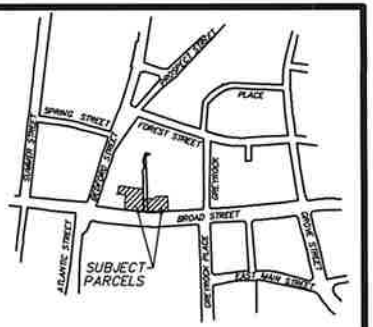
SCALE: 1"=80'

SHEET No. EXH–A

BROADGAY_21UT_DSR.DWG (RJN)

Exhibit B:
Proposed Conditions
Watershed Map





LOCATION MAP

NOTES:

1. Refer to a plan entitled "Mixed Use Development, TR Broad II LLC, 128 Broad Street Stamford, Connecticut, Grading Plan, Sheet 1 of 6," as prepared by D'Andrea Surveying & Engineering, PC.

2. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).

PROPOSED WATERSHED MAP

PREPARED FOR

TR BROAD II, LLC

LOCATION

128–136 BROAD STREET
STAMFORD, CONNECTICUT

D'ANDREA SURVEYING & ENGINEERING, PC

DATE: 10–3–22

SCALE: 1"=50'

SHEET No.

EXH–B

BROADGAY_21UT_DP_07_REVO.DWG (RJN)

FOREST STREET

BEDFORD STREET

BROAD STREET

MAP No. 11967 S.L.R. MERIDIAN

PR. AREA #2

PR. AREA #3

PR. AREA #4

PR. AREA #1

POC A

POC B

POC C

LOCATION MAP

NOTES:

1. Refer to a plan entitled "Mixed Use Development, TR Broad II LLC. 128 Broad Street Stamford, Connecticut, Grading Plan, Sheet 1 of 6," as prepared by D'Andrea Surveying & Engineering, PC.

2. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).

PROPOSED WATERSHED MAP

PREPARED FOR

TR BROAD II, LLC

LOCATION

128–136 BROAD STREET
STAMFORD, CONNECTICUT

D'ANDREA SURVEYING & ENGINEERING, PC

DATE: 10–3–22

SCALE: 1"=80'

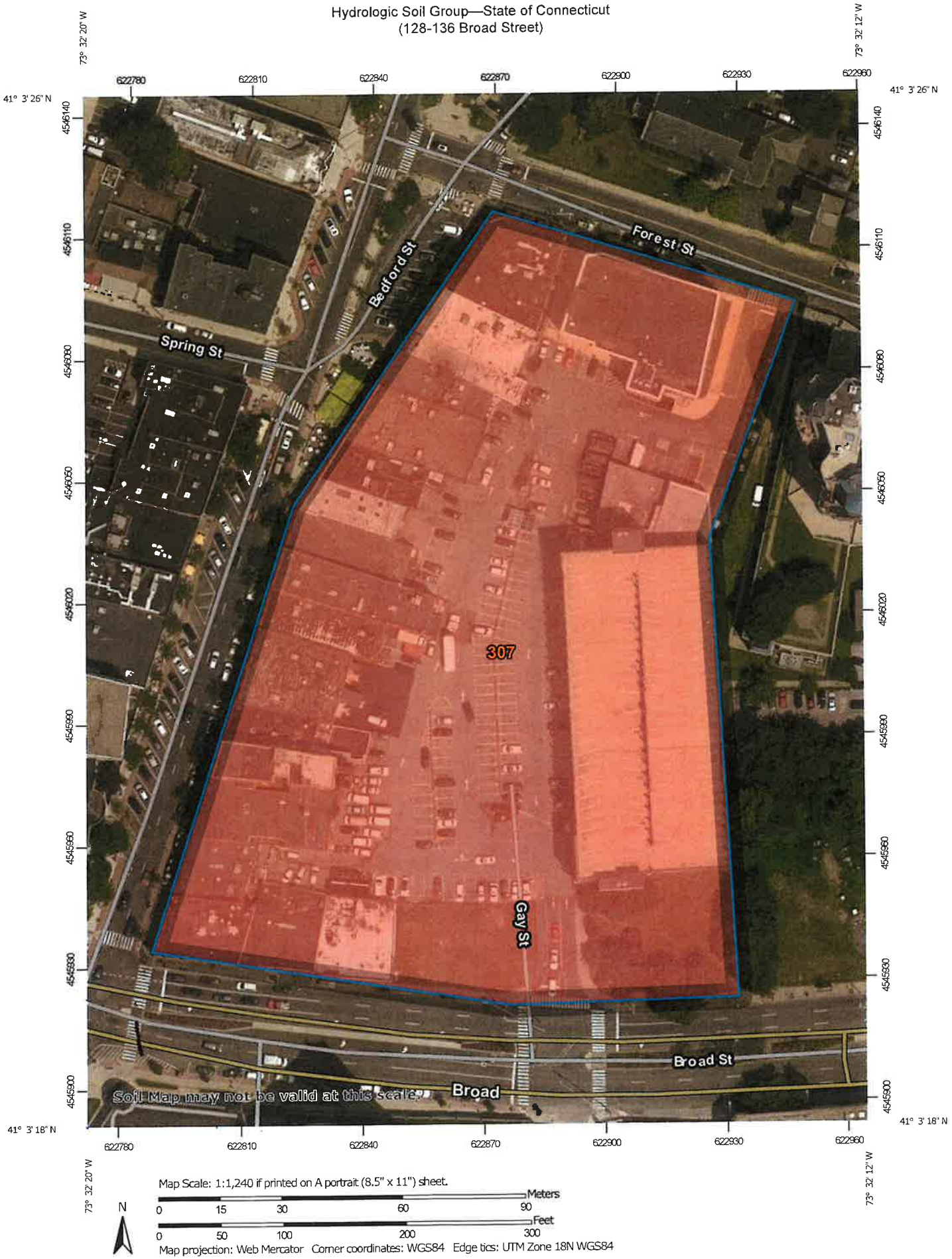
SHEET No.

EXH–B

BROADGAY_21UT_DSR.DWG (RJN)

Exhibit C:
USDA Soil Delineation Map

Hydrologic Soil Group—State of Connecticut
(128-136 Broad Street)



Map Scale: 1:1,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 15, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
307	Urban land	D	5.1	100.0%
Totals for Area of Interest			5.1	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

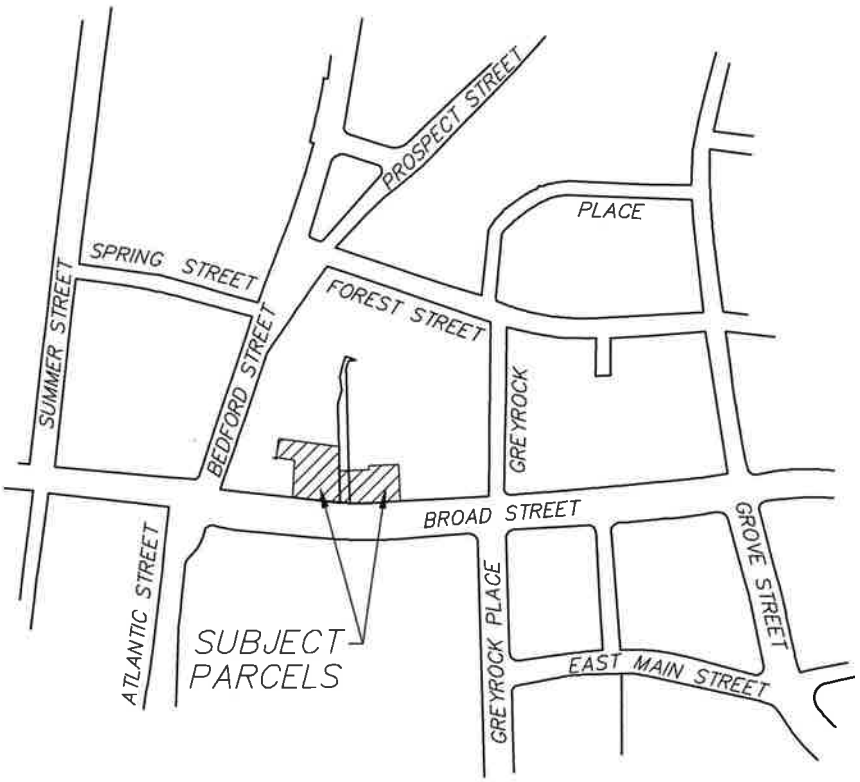
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

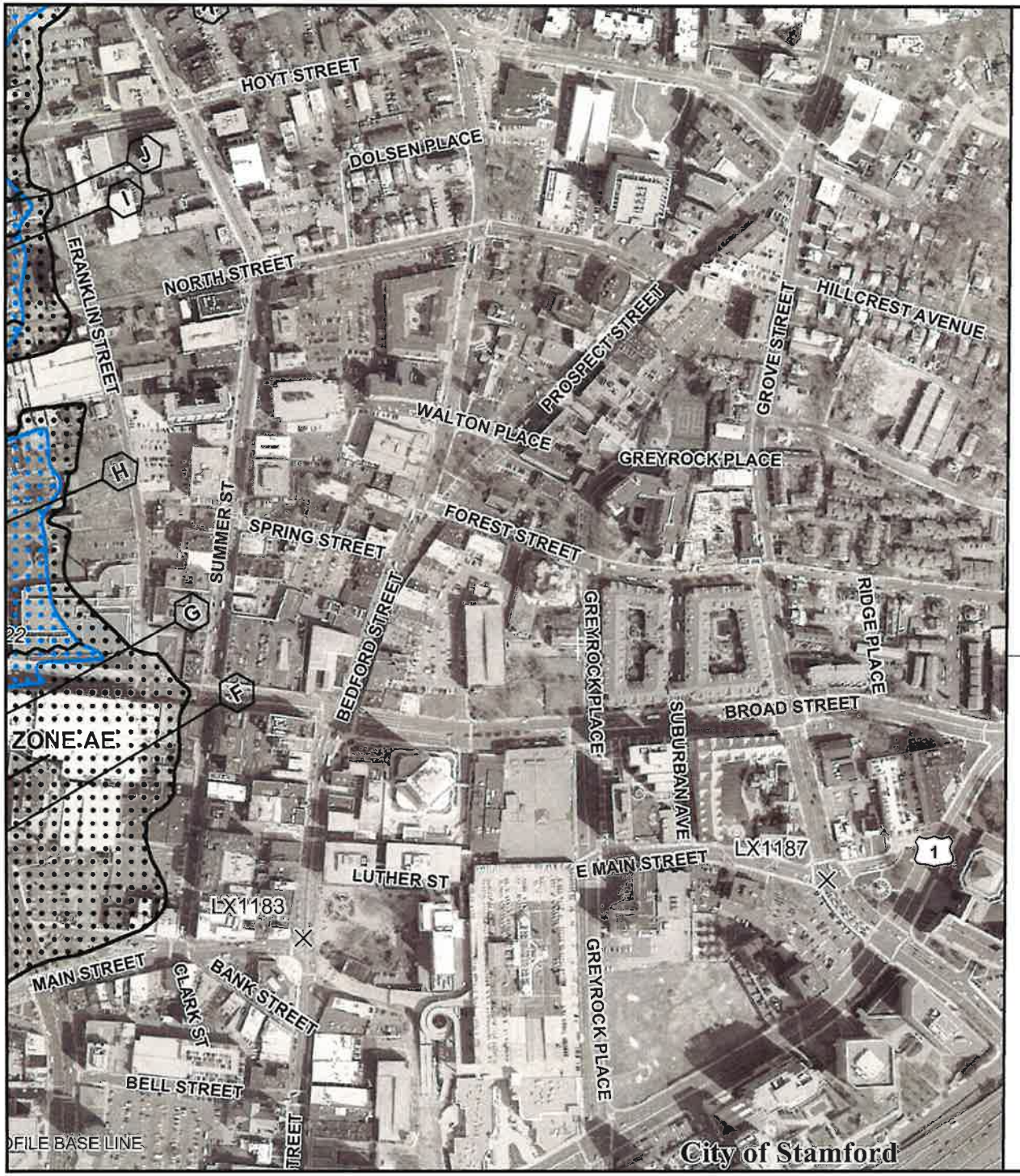
Tie-break Rule: Higher

Exhibit D:
Site Vicinity Map



LOCATION MAP

Exhibit E:
FEMA Firm Map



MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0516G

FIRM

FLOOD INSURANCE RATE MAP

FAIRFIELD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 516 OF 626

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENWICH, TOWN OF	090008	0516	G
STAMFORD, CITY OF	090015	0516	G

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
09001C0516G

MAP REVISED
JULY 8, 2013

Federal Emergency Management Agency

Exhibit F:
NOAA Atlas 14 Precipitation Tables

NOAA Atlas 14, Volume 10, Version 3
Location name: Stamford, Connecticut, USA*
Latitude: 41.0554°, Longitude: -73.5376°
Elevation: 15.78 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.365 (0.281-0.465)	0.425 (0.327-0.542)	0.523 (0.401-0.669)	0.605 (0.461-0.777)	0.717 (0.530-0.952)	0.802 (0.581-1.08)	0.889 (0.626-1.24)	0.984 (0.661-1.40)	1.12 (0.724-1.64)	1.23 (0.775-1.82)
10-min	0.517 (0.398-0.659)	0.602 (0.463-0.768)	0.741 (0.568-0.948)	0.856 (0.653-1.10)	1.01 (0.751-1.35)	1.14 (0.823-1.54)	1.26 (0.887-1.75)	1.40 (0.937-1.98)	1.58 (1.03-2.32)	1.74 (1.10-2.58)
15-min	0.609 (0.469-0.775)	0.709 (0.545-0.904)	0.872 (0.668-1.12)	1.01 (0.768-1.29)	1.19 (0.883-1.59)	1.34 (0.968-1.81)	1.48 (1.04-2.06)	1.64 (1.10-2.33)	1.86 (1.21-2.73)	2.04 (1.29-3.04)
30-min	0.851 (0.655-1.08)	0.992 (0.763-1.26)	1.22 (0.937-1.56)	1.41 (1.08-1.82)	1.68 (1.24-2.23)	1.88 (1.36-2.53)	2.08 (1.46-2.89)	2.30 (1.55-3.27)	2.60 (1.68-3.80)	2.84 (1.80-4.22)
60-min	1.09 (0.842-1.39)	1.27 (0.981-1.63)	1.57 (1.21-2.01)	1.82 (1.39-2.34)	2.16 (1.59-2.86)	2.42 (1.75-3.26)	2.68 (1.88-3.72)	2.96 (1.99-4.20)	3.34 (2.16-4.88)	3.63 (2.30-5.40)
2-hr	1.42 (1.10-1.79)	1.67 (1.29-2.11)	2.07 (1.60-2.63)	2.41 (1.85-3.08)	2.88 (2.14-3.80)	3.23 (2.35-4.34)	3.60 (2.54-4.97)	3.99 (2.69-5.64)	4.55 (2.95-6.61)	4.99 (3.17-7.38)
3-hr	1.63 (1.27-2.06)	1.93 (1.50-2.44)	2.42 (1.87-3.06)	2.82 (2.17-3.58)	3.37 (2.52-4.44)	3.79 (2.77-5.08)	4.23 (3.00-5.84)	4.71 (3.18-6.62)	5.39 (3.51-7.80)	5.94 (3.78-8.74)
6-hr	2.06 (1.61-2.58)	2.45 (1.91-3.07)	3.08 (2.40-3.88)	3.61 (2.80-4.56)	4.34 (3.26-5.68)	4.89 (3.60-6.51)	5.46 (3.91-7.51)	6.11 (4.14-8.54)	7.04 (4.60-10.1)	7.80 (4.98-11.4)
12-hr	2.54 (2.00-3.16)	3.03 (2.39-3.78)	3.85 (3.02-4.80)	4.52 (3.52-5.67)	5.44 (4.12-7.09)	6.14 (4.55-8.14)	6.87 (4.95-9.42)	7.72 (5.25-10.7)	8.94 (5.86-12.8)	9.96 (6.37-14.5)
24-hr	2.97 (2.36-3.67)	3.59 (2.85-4.45)	4.61 (3.64-5.72)	5.45 (4.28-6.80)	6.62 (5.03-8.58)	7.48 (5.58-9.89)	8.41 (6.11-11.5)	9.49 (6.49-13.1)	11.1 (7.30-15.8)	12.5 (8.01-18.0)
2-day	3.32 (2.65-4.08)	4.08 (3.26-5.02)	5.33 (4.23-6.57)	6.36 (5.03-7.88)	7.79 (5.97-10.1)	8.84 (6.65-11.6)	9.98 (7.31-13.6)	11.4 (7.78-15.6)	13.4 (8.86-19.0)	15.2 (9.81-21.8)
3-day	3.59 (2.88-4.39)	4.42 (3.54-5.42)	5.79 (4.62-7.11)	6.92 (5.49-8.53)	8.48 (6.52-10.9)	9.63 (7.26-12.6)	10.9 (8.00-14.8)	12.4 (8.51-16.9)	14.7 (9.70-20.7)	16.7 (10.8-23.8)
4-day	3.84 (3.09-4.69)	4.72 (3.79-5.77)	6.16 (4.93-7.54)	7.35 (5.85-9.04)	8.99 (6.93-11.5)	10.2 (7.72-13.4)	11.5 (8.48-15.6)	13.1 (9.02-17.9)	15.5 (10.3-21.8)	17.6 (11.4-25.0)
7-day	4.58 (3.70-5.56)	5.54 (4.47-6.73)	7.10 (5.71-8.65)	8.39 (6.71-10.3)	10.2 (7.87-13.0)	11.5 (8.72-14.9)	12.9 (9.52-17.4)	14.6 (10.1-19.8)	17.1 (11.4-23.9)	19.3 (12.5-27.3)
10-day	5.31 (4.30-6.42)	6.31 (5.11-7.64)	7.96 (6.42-9.65)	9.32 (7.47-11.4)	11.2 (8.68-14.2)	12.6 (9.56-16.2)	14.1 (10.4-18.8)	15.8 (11.0-21.3)	18.3 (12.2-25.4)	20.4 (13.2-28.8)
20-day	7.48 (6.11-8.99)	8.61 (7.02-10.4)	10.5 (8.49-12.6)	12.0 (9.68-14.5)	14.1 (11.0-17.6)	15.7 (11.9-20.0)	17.4 (12.7-22.7)	19.1 (13.3-25.6)	21.6 (14.4-29.7)	23.5 (15.3-32.9)
30-day	9.28 (7.61-11.1)	10.5 (8.59-12.6)	12.5 (10.2-15.0)	14.2 (11.5-17.1)	16.4 (12.8-20.4)	18.2 (13.8-22.9)	19.9 (14.6-25.8)	21.7 (15.2-28.9)	24.1 (16.2-33.1)	25.9 (16.9-36.2)
45-day	11.5 (9.46-13.7)	12.8 (10.5-15.3)	15.0 (12.3-17.9)	16.8 (13.7-20.2)	19.3 (15.1-23.8)	21.2 (16.2-26.6)	23.1 (16.9-29.6)	24.9 (17.5-33.0)	27.3 (18.3-37.2)	29.0 (18.9-40.3)
60-day	13.3 (11.0-15.8)	14.7 (12.2-17.5)	17.0 (14.0-20.3)	19.0 (15.5-22.7)	21.6 (16.9-26.6)	23.7 (18.1-29.5)	25.6 (18.8-32.7)	27.5 (19.4-36.4)	29.9 (20.1-40.6)	31.5 (20.6-43.7)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

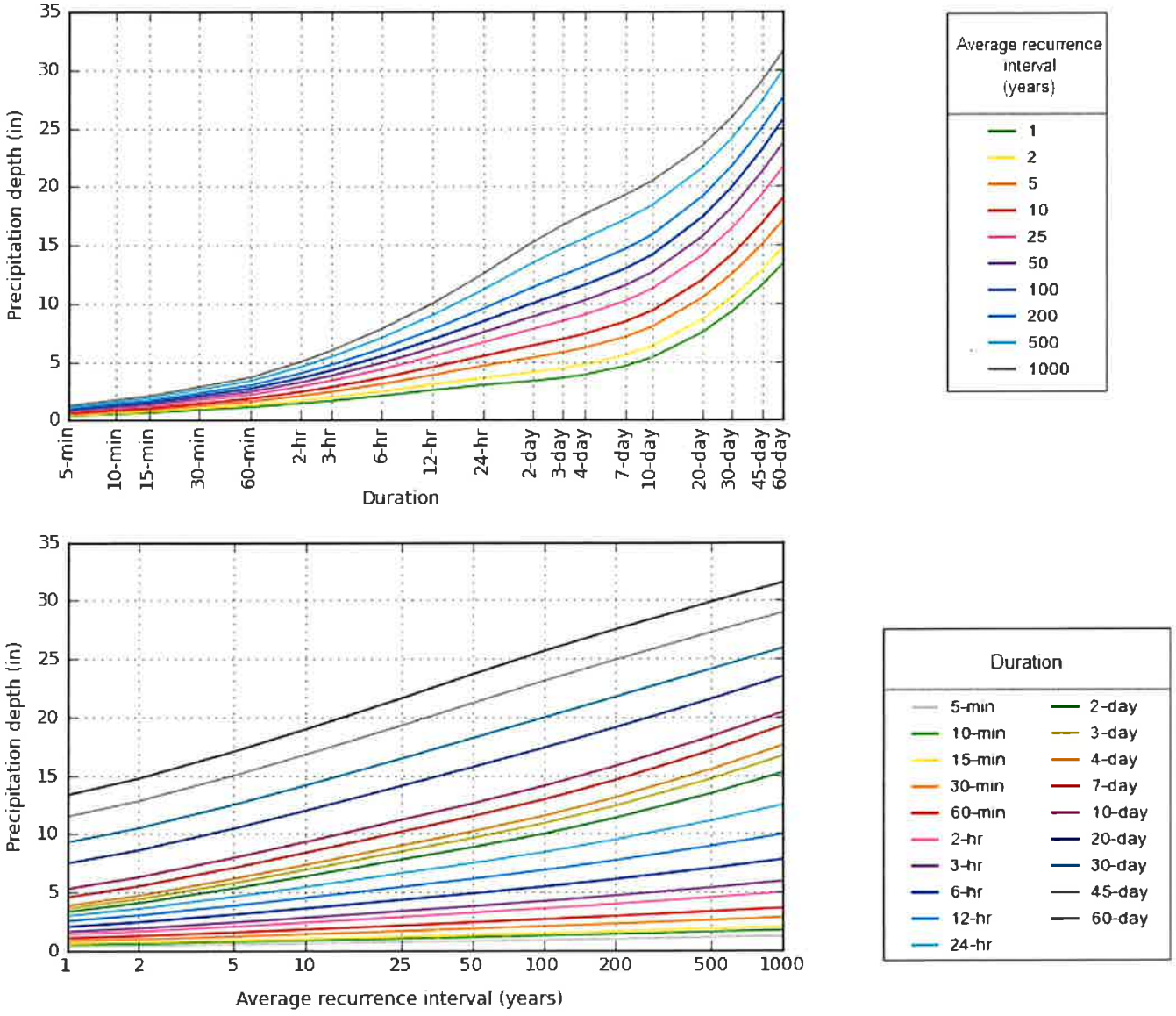
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.0554°, Longitude: -73.5376°



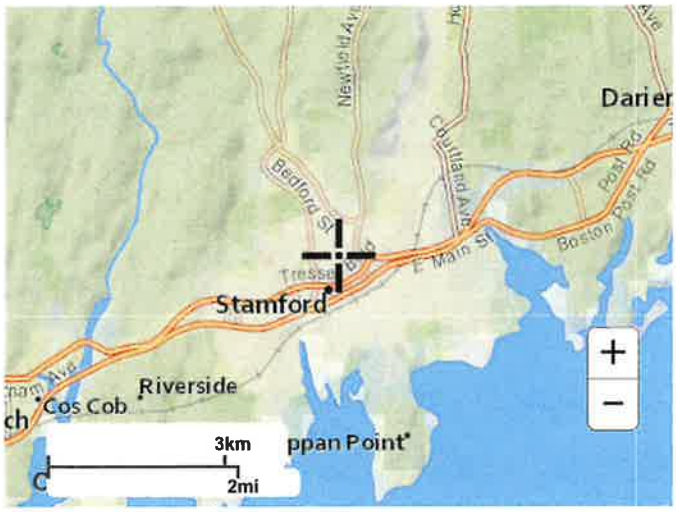
NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Mon Apr 18 15:12:51 2022

Back to Top

Maps & aerials

Small scale terrain



Large scale terrain

Large scale map

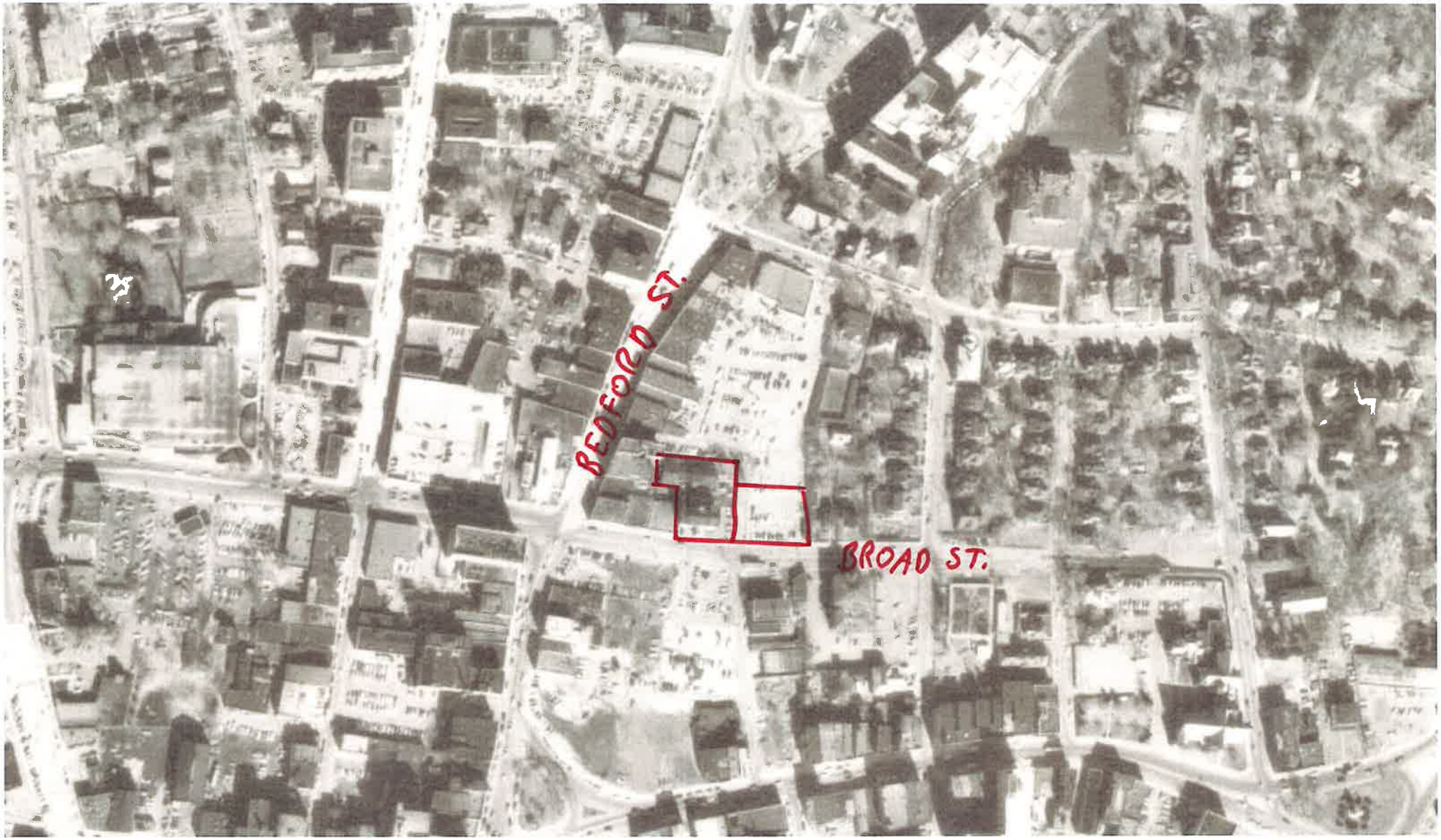
Large scale aerial

Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

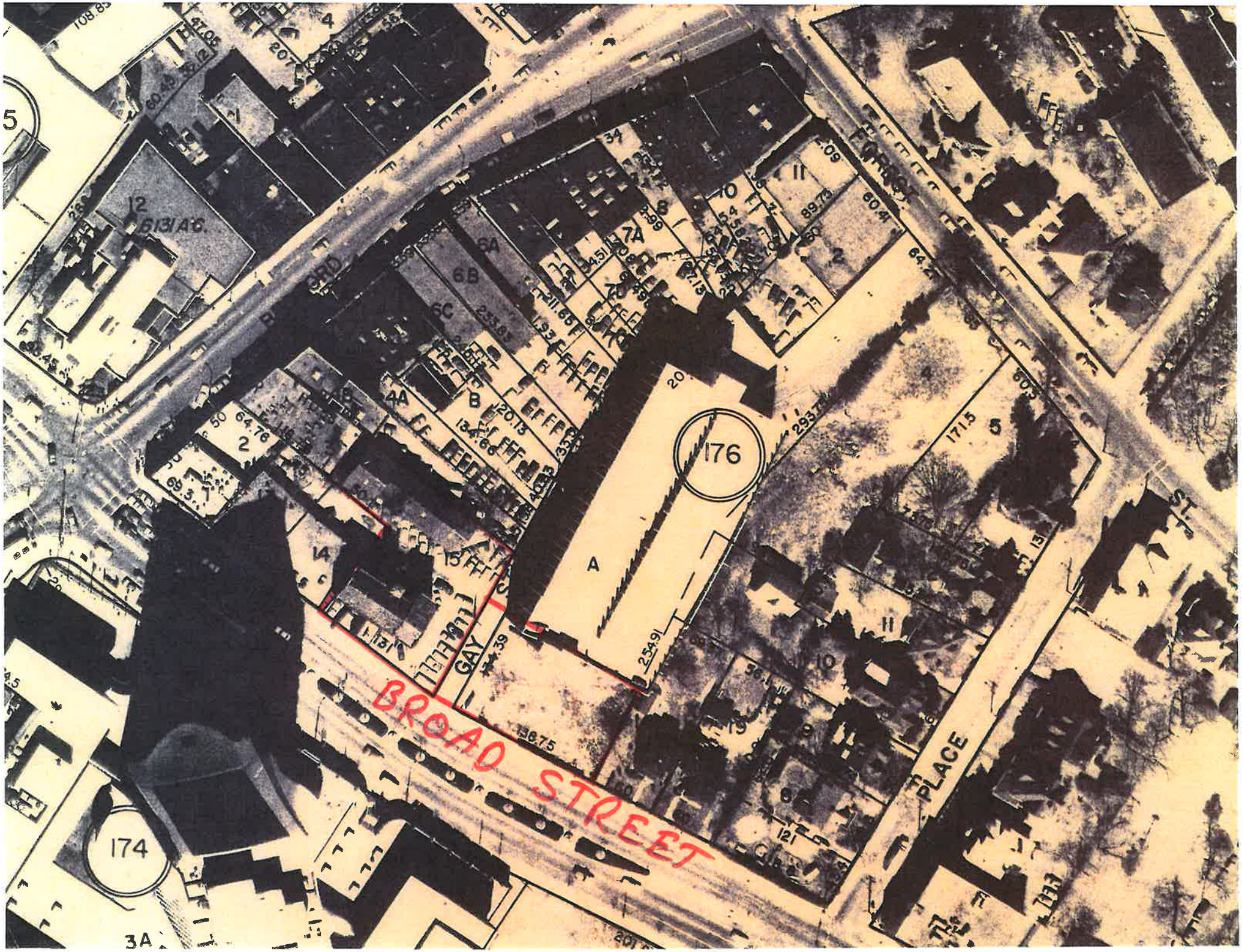
Appendix A:
1970 Aerial Photo



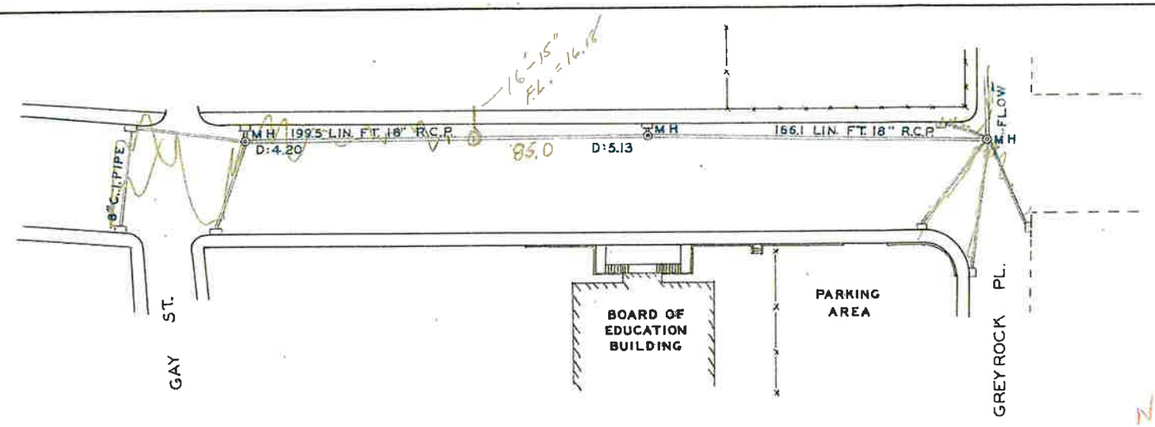
1970

Appendix B:
1985 Aerial Photo

GRADO S.r.l.


BROAD STREET
PLACE
GAY
176
174
3RD
ST.

Appendix C:
City of Stamford
Storm Sewer Maps



See New Broad St Map

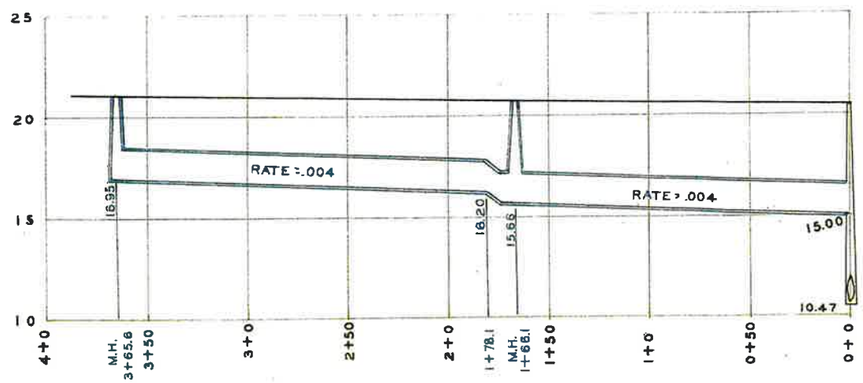
BROAD ST.

STORM WATER SEWER

SCALE = HORZ. 1" = 50'
VERT. 1" = 5'

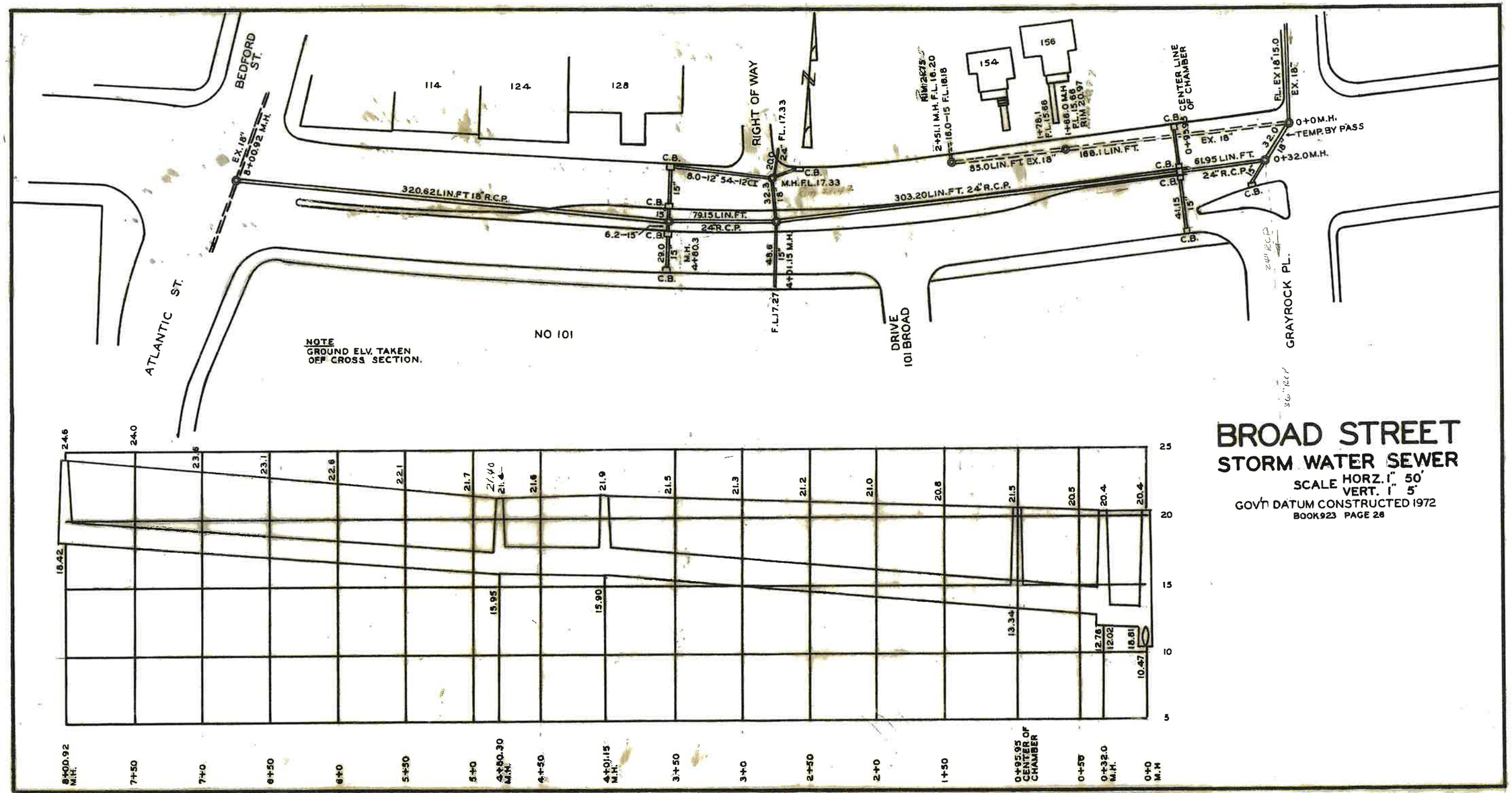
GOV'T DATUM CONSTRUCTED 1960
BOOK 714 PAGE 112

C.B. LATERALS 12" R.C.P.



020127

176A



BROAD STREET
STORM WATER SEWER

SCALE HORZ. 1" 50'
VERT. 1" 5'
GOV'T DATUM CONSTRUCTED 1972
BOOK 923 PAGE 26

020127

GREYROCK PL.

STORM WATER SEWER

GOV'T DATUM CONSTRUCTED 1973

SCALE HORZ. 1"-50'
VERT. 1"-5'

BOOK 923 PAGE 58

020456

Appendix D:
Design Calculations

Client: TR Broad II, LLC
Address: 128 Broad Street
Date: October 3, 2022

Water Quality Volume

Watershed Data			
Watershed Area	=	33,888	ft^2
Impervious Cover	=	33,888	ft^2
% Impervious Coverage	=	100	%

$$WQV = \frac{1in}{12\frac{in}{ft}} RA$$

$$R = 0.05 + 0.9I$$

Where:

WQV	=	Water quality volume			
R	=	Site cover runoff coefficient	=	0.95	
A	=	Watershed area	=	33,888	ft^2
I	=	% Impervious Coverage	=	100	%

$$R = 0.05 + 0.9(1) = 0.95$$

$$WQV = \frac{1}{12}(0.95)(33{,}888) = 2{,}683 ft^3$$

Water Quality Volume (WQV) = 2,683 ft^3

Storage Volume in RS #1 = 5,926 ft^3 (WQV provided)

BMP Drawdown Calculations: RS #1

$$t_{drawdown} = \frac{DV}{kA}$$

Where:

DV	=	Design Volume	=	5,926	ft^3
k	=	Infiltration (Rawl's) Rate	=	1.02	in/hr (Sandy Loam)
A	=	Infiltration (bottom) Area	=	1,940	ft^2

$$t_{drawdown} = \frac{5{,}926}{(1.02)(1/12)(1{,}940)} = 3.6$$

Drawdown time is 3.6 hours. (Standard Met)

Appendix E:
DCIA Tracking Worksheet

Directly Connected Impervious Area Tracking Worksheet
City of Stamford Drainage Manual

Note to user: complete all cells of this color only, as indicated by section headings

Part 1: General Information (All Projects)	
Project Name	Mixed Use Development
Project Address	128 Broad Street
Project Applicant	TR Broad II, LLC
Title of Plan	Site Plan Review Set
Revision Date of Plan	October 3, 2022
Tax Account Number	001-2688, 004-0515

Part 2: Project Details (All Projects)		
1. What type of development is this? (choose from dropdown)	Redevelopment	
2. What is the total area of the project site?	35,659	ft^2
3. What is the total area of land disturbance for this project?	35,659	ft^2
4. Does project site drain to High Quality Waters, a Direct Waterfront, or within 500 ft. of Tidal Wetlands? (Yes/No)	No	
Does Standard 1 apply based on information above?	Yes	

Part 3: Water Quality Target Total (Only for Standard 1 Projects)		
5. What is the current (pre-development) ***DCIA*** for the site?	14,965	ft^2
6. Will the proposed development increase ***DCIA*** (without consideration of proposed stormwater management)? (Yes/No)	Yes	
7. What is the proposed-development ***total impervious area*** for the site?	35,659	ft^2
Water Quality Volume (WQV)	2823.0	ft^3
Standard 1 requirement	Retain 1/2 WQV on-site	
Required retention volume	1411.5	ft^3
Provided retention volume for proposed development	5,926.0	ft^3

Part 4: Proposed DCIA Tracking (Only for Standard 1 Projects)		
Pre-development ***total impervious area***	14,965	ft^2
Current ***DCIA***	14,965	ft^2
Proposed-development ***total impervious area***	35,659	ft^2
Proposed-development ***DCIA*** (after stormwater management)	1,771	ft^2
Net change in ***DCIA*** from current to proposed-development	-13,194	ft^2

Part 5: Post-Development (As-Built Certified) DCIA Tracking (Only for Standard 1 Projects)		
Post-development (per as-built) ***total impervious area***		ft^2
Post-development (per as-built) ***DCIA*** (after stormwater management)		ft^2
Net change in ***DCIA*** from current to post-development		ft^2

Certification Statement

I hereby certify that the information contained in this worksheet is true and correct.

Engineer's Signature _____ Date _____ Engineer's Seal _____

Appendix F:
Boring and Test Pit Data

GENERAL NOTES

1. BASE MAP DEVELOPED FROM ELECTRONIC COPY OF TOPOGRAPHIC SURVEY, ORIGINAL SCALE: 1" = 20', PREPARED BY D'ANDREA SURVEYING & ENGINEERING, PC, DATED JULY 8, 2014.
2. THE TEST BORINGS LOCATIONS WERE OBTAINED FROM FIGURE 1: BORING LOCATION PLAN FROM GEOTECHNICAL ENGINEERING REPORT PREPARED BY HELLER AND JOHNSEN, DATED SEPTEMBER, 2014.
3. TEST PITS LOCATED IN THE FIELD BY GZA BY TAPING FROM EXISTING SITE FEATURES. LOCATIONS SHOULD BE CONSIDERED ACCURATE TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND

APPROXIMATE LOCATION OF TEST BORINGS BY HELLER AND JOHNSEN

HJ-1

APPROXIMATE LOCATION OF TEST PITS PERFORMED BY CONTE COMPANY ON 11/19/2021 AND OBSERVED BY GZA PERSONNEL.

TP-1

APPROXIMATE FOOTPRINT OF PROPOSED BUILDING.

HJ-1 HJ-2 HJ-3 HJ-4 HJ-5 HJ-6 HJ-7

TP-1 TP-2 TP-3 TP-4 TP-5

N/F CITY OF STAMFORD

BEDFORD STREET PARKING GARAGE

GAY STREET EXTENSION

BROAD STREET

N/F 122–124 BROAD STREET, LLC

PARCEL A 20,865 S.F.

PARCEL B 14,794 S.F.

APPROXIMATE FORMER BUILDING LOCATION

PAVED DRIVEWAY AND PARKING AREA

BENCHMARK
"L" CUT BASE
ELEV= 17.30
DATUM: NAVD 88

Benchmark used for GZA survey

S 82°30'06" E 161.44

N 11°36'24" E 50.59

N 81°10'16" W 51.35

N 3°36'04" E 98.20

N 83°02'23" W 148.87

S 12°22'36" E 83.44

N 87°43'40" E 77.99

N 1°58'00" W 11.33

N 87°51'05" E 79.92

S 2°18'09" E 84.99

S 86°23'42" W 49.03

L=118.87
R=910.00

0 15' 30' 60'

SCALE IN FEET 1" = 30'

NO.	ISSUE/DESCRIPTION	BY	DATE

128-132 BROAD STREET
STAMFORD, CONNECTICUT

EXPLORATION LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: F. D. RICH COMPANY	
PROJ MGR: JFD	REVIEWED BY: JFD	CHECKED BY DMB	FIG OR DWG 2
DESIGNED BY MSH	DRAWN BY: MSH	SCALE: 1"=30'	
DATE: NOVEMBER, 2021	PROJECT NO. 05.0046879.01	REVISION NO.	SHEET NO. 1 OF 1

HELLER AND JOHNSEN
FOOT OF BROAD STREET
STRATFORD, CONNECTICUT 06615

TEST BORING REPORT

BORING NO. HJ-1

PROJECT 128-136 Broad Street
LOCATION Stamford, Connecticut
CLIENT Bildner Capital Corp.
CONTRACTOR Hardiman Company & Associates, Inc.

GROUND WATER READINGS

DATE	TIME	DEPTH
6/30/04	1830	21.0'

FILE NO. 30202
SHEET NO. 1 OF 2
LOCATION See Plan
ELEVATION 17.8'
DATUM NGVD 29
DATE 06/30/04 TO 06/30/04
START 1730 FINISH 2000
DRILLER Anthony Scaife
H & J REP Ryan M. Laird

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	HSA	SS	
INSIDE DIAMETER (IN)	2-1/4	1-3/8	
HAMMER WEIGHT (LB)	--	140	
HAMMER FALL (IN)	--	30	

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: Mobile Drilling B-50
BIT TYPE:
DRILL MUD:
HAMMER TYPE: Safety hammer via Cathead and rope

DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
0							ASPHALT
		11	SS1 10"	0.5 2.5	Top 4": Dark brown, black, GRAVEL (Asphalt). Bottom 6": Dark brown, orange, fine to coarse SAND, some Silt, little Gravel.	0.4'	FILL
		8					
		6					
		4					
		7	SS2 8"	2.5 4.5	Top 6": Dark brown, orange, fine to coarse SAND, some Silt, little Gravel, trace Asphalt and White Chips (Fill). Bottom 2": Light brown, dark brown, SILT and fine to medium SAND.		
		7					
		4					
		2				4.0'	SILT AND SAND (FILL)
		3	SS3 12"	4.5 6.0	Top 4": Light brown, dark brown, SILT and fine to medium Sand. Bottom 8": Orange, brown, fine to coarse SAND, some Gravel, little Silt.		
5		22				5.0'	SILT, GRAVEL AND COBBLES
		100/6"					
10							
		20	SS4 10"	10.0 12.0	Very dense, brown, white, fine to coarse GRAVEL and fine to coarse Sand, trace Silt (encountered cobbles while sampling).		
		55					
		30					
		31					
15							
		10	SS5 18"	15.0 17.0	Medium dense, brown, fine to coarse SAND, trace fine Gravel.	15.0'	GRAVELLY SAND
		8					
		11					
		11					
20							
		6	SS6 24"	20.0 22.0	Top 12": Light brown, fine to coarse SAND. Bottom 12: Grey, brown, fine to medium SAND, little Silt.		
		8					
		9				21.0'	SILTY SAND
		11					
25							
		10	SS7 18"	25.0 27.0	Top 12": Grey, brown, fine to medium SAND, little Silt. Bottom 6": Olive brown, varved SILT and fine to medium Sand.	26.0'	SILT AND SAND
		12					
		14					
		17					

HELLER AND JOHNSEN
FOOT OF BROAD STREET
STRATFORD, CONNECTICUT 06615

TEST BORING REPORT

BORING NO. HJ-1

PROJECT 128-136 Broad Street
LOCATION Stamford, Connecticut
CLIENT Bildner Capital Corp.
CONTRACTOR Hardiman Company & Associates, Inc.

GROUND WATER READINGS

DATE	TIME	DEPTH
6/30/04	1830	21.0'

FILE NO. 30202
SHEET NO. 2 OF 2
LOCATION See Plan
ELEVATION 17.8'
DATUM NGVD-29
DATE 06/30/04 TO 06/30/04
START 1730 FINISH 2000
DRILLER Anthony Scaife
H & J REP Ryan M. Laird

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	HSA	SS	
INSIDE DIAMETER (IN)	2-1/4	1-3/8	
HAMMER WEIGHT (LB)	--	140	
HAMMER FALL (IN)	--	30	

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: Mobile Drilling B-50
BIT TYPE:
DRILL MUD:
HAMMER TYPE: Safety hammer via Cathead and rope

DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
30		7	SS8	30.0	Medium dense, brown, orange, SILT and fine to medium Sand.		
		8	18"	32.0			
		9					SILT AND SAND
		15					
35		100/6"	SS9	35.0	Medium dense, brown, fine to coarse SAND and Silt (sample penetrated rock from 5" to 6").		
			6"	35.5		36.0'	E.O.B. Auger Refusal
40							
45							
50							
55							

NOTES:
Auger refusal at 36.0'.

HELLER AND JOHNSEN
FOOT OF BROAD STREET
STRATFORD, CONNECTICUT 06615

TEST BORING REPORT

BORING NO. HJ-2

PROJECT 128-136 Broad Street
LOCATION Stamford, Connecticut
CLIENT Bildner Capital Corp.
CONTRACTOR Hardiman Company & Associates, Inc.

GROUND WATER READINGS		
DATE	TIME	DEPTH
6/30/04	1130	21.0'

FILE NO. 30202
SHEET NO. 1 OF 2
LOCATION See Plan
ELEVATION 16.8'
DATUM NGVD-29
DATE 06/30/04 TO 06/30/04
START 0945 FINISH 1245
DRILLER Anthony Scaife
H & J REP Ryan M. Laird

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	HSA	SS	
INSIDE DIAMETER (IN)	2-1/4	1-3/8	
HAMMER WEIGHT (LB)	--	140	
HAMMER FALL (IN)	--	30	

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: Mobile Drilling B-50
BIT TYPE:
DRILL MUD:
HAMMER TYPE: Safety hammer via Cathead and rope

DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
							CEDAR CHIPS
0		3	SS1	0	Top 6": Cedar Chips and Topsoil.	0.5'	FILL
		6	16"	1.6	Bottom 10": Olive brown, SILT and Sand, trace Roots, trace fine Gravel.		
		7				1.5'	
		50/1"					
							SAND, GRAVEL AND COBBLES (FILL)
		10	SS2	3.0	Very dense, black, white and orange GRAVEL (Cobbles)		
		70	12"	5.0			
		31					
		15					
5		50	SS3	5.0	Top 6": Black, white GRAVEL.		
		37	12"	7.0	Bottom 6": Grey, GRAVEL, little Silt, little Sand, trace Roots.		
		21					
		19					
		20	SS4	7.0	Dense, light grey, orange, fine to coarse SAND, some Silt, little Gravel.	7.0'	
		23	16"	9.0			
		14					
		14					
10		27	SS5	10.0	Very dense, light grey, fine to coarse SAND, some Gravel, little Silt.		
		41	14"	12.0			
		47					
		41					
15		14	SS6	15.0	Top 6": Grey, fine to medium SAND, little Gravel, little Silt.		GRAVELLY SAND
		28	18"	17.0	Bottom 10": Grey, orange, fine to coarse SAND, some Gravel, trace Silt.		
		18					
		20					
20		7	SS7	20.0	Medium dense, grey, orange, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt (Wet).		
		5	6"	22.0			
		15					
		11					
25		5	SS8	25.0	Medium dense, grey, fine to coarse SAND, trace Gravel, trace Silt (Wet).		
		5	14"	27.0			
		5					
		5					
					NOTES: Encountered cobbles while augering from 1.5' to 7.0'.		

HELLER AND JOHNSEN
FOOT OF BROAD STREET
STRATFORD, CONNECTICUT 06615

TEST BORING REPORT

BORING NO. HJ-2

PROJECT 128-136 Broad Street
LOCATION Stamford, Connecticut
CLIENT Bildner Capital Corp.
CONTRACTOR Hardiman Company & Associates, Inc.

GROUND WATER READINGS

DATE	TIME	DEPTH
6/30/04	1130	21.0'

FILE NO. 30202
SHEET NO. 2 OF 2
LOCATION See Plan
ELEVATION 16.8'
DATUM NGVD-29
DATE 06/30/04 TO 06/30/04
START 0945 FINISH 1245
DRILLER Anthony Scaife
H & J REP Ryan M. Laird

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	HSA	SS	
INSIDE DIAMETER (IN)	2-1/4	1-3/8	
HAMMER WEIGHT (LB)	--	140	
HAMMER FALL (IN)	--	30	

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: Mobile Drilling B-50
BIT TYPE:
DRILL MUD:
HAMMER TYPE: Safety hammer via Cathead and rope

DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
30		38	SS9 12"	30.0 32.0	Top 8": Olive brown, fine to coarse SAND, little Gravel. Bottom 4": Highly Weathered, black, white ROCK (gneiss).		GRAVELLY SAND
		58					
		17					
		24					
35		35	SS10 10"	35.0 37.0	Medium dense, grey, fine to coarse SAND, some fine to coarse Gravel.	38.0'	
		15					
		12					
		12					
40		15	SS11 12"	40.0 42.0	Dense, grey, fine to coarse Sand and Gravel, some Silt (Highly weathered mica gneiss).		GLACIAL TILL
		17					
		19					
		20					
45		50/0"			Fractured rock in tip, black, white, orange Gneiss.	45.0'	E.O.B. Auger Refusal
50							
55							

NOTES:
1) Cobbles encountered at 38' while augering.
2) Auger refusal at 45.0'.

HELLER AND JOHNSEN
FOOT OF BROAD STREET
STRATFORD, CONNECTICUT 06615

TEST BORING REPORT

BORING NO. HJ-3

PROJECT 128-136 Broad Street
LOCATION Stamford, Connecticut
CLIENT Bildner Capital Corp.
CONTRACTOR Hardiman Company & Associates, Inc.

GROUND WATER READINGS		
DATE	TIME	DEPTH
6/30/04	1830	21.0′

FILE NO. 30202
SHEET NO. 1 OF 2
LOCATION See Plan
ELEVATION 17.6′
DATUM NGVD-29
DATE 06/30/04 TO 06/30/04
START 0700 FINISH 0900
DRILLER Anthony Scaife
H & J REP Ryan M. Laird

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	HSA	SS	
INSIDE DIAMETER (IN)	2-1/4	1-3/8	
HAMMER WEIGHT (LB)	--	140	
HAMMER FALL (IN)	--	30	

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: Mobile Drilling B-50
BIT TYPE:
DRILL MUD:
HAMMER TYPE: Cathead with rope

DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
0							ASPHALT
		17	SS1 16″	0.5 2.5	Very dense, brown, fine to coarse SAND, some fine to coarse Gravel (Asphalt), little Silt (Fill).	0.25′	
		29					
		29					
		15					
		18	SS2 8″	2.5 4.5	Dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt (Fill).		FILL
		20					
		15					
		13					
5		5	SS3 12″	4.5 6.0	Medium dense, red, brown, fine to coarse SAND, some Silt, little Gravel.		
		22					
		100					
						7.0′	
10							
		8	SS4 12″	10.0 12.0	Top 8″: Orange, brown, medium SAND, trace Gravel, trace Silt. Bottom 4″: Grey, brown, GRAVEL, some fine to coarse Sand, trace Silt.		
		10					
		12					
		12					
15							
		32	SS5 14″	15.0 17.0	Very dense, white, brown, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt.		SAND AND GRAVEL
		36					
		38					
		47					
20							
		9	SS6 16″	20.0 22.0	Medium dense, grey, fine to coarse SAND, some fine to coarse Gravel, trace Silt (Wet).		
		9					
		8					
		8					
25							
		6	SS7 6″	25.0 27.0	Medium dense, grey, fine to coarse SAND, trace Gravel, trace Silt (Wet).		
		7					
		9					
		10					
					NOTE: Cobbles encountered at 7′ while augering.		

HELLER AND JOHNSEN
FOOT OF BROAD STREET
STRATFORD, CONNECTICUT 06615

TEST BORING REPORT

BORING NO. HJ-3

PROJECT 128-136 Broad Street
LOCATION Stamford, Connecticut
CLIENT Bildner Capital Corp.
CONTRACTOR Hardiman Company & Associates, Inc.

GROUND WATER READINGS

DATE	TIME	DEPTH
6/30/04	0810	20.5'

FILE NO. 30202
SHEET NO. 2 OF 2
LOCATION See Plan
ELEVATION 17.6'
DATUM NGVD-29
DATE 06/30/04 TO 06/30/04
START 0700 FINISH 0900
DRILLER Anthony Scaife
H & J REP Ryan M. Laird

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	HSA	SS	
INSIDE DIAMETER (IN)	2-1/4	1-3/8	
HAMMER WEIGHT (LB)	--	140	
HAMMER FALL (IN)	--	30	

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: Mobile Drilling B-50
BIT TYPE:
DRILL MUD:
HAMMER TYPE: Safety hammer via Cathead and rope

DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
30		7	SS8	30.0	Medium dense, grey, fine to coarse SAND, little fine to coarse Gravel, trace Silt (Wet).		
		10	18"	32.0			SAND AND GRAVEL
		10					
		22					
35		15	SS9	35.0	Top 6": Grey, Varved, fine to medium SAND and Silt.	35.0'	
		10	12"	37.0	Bottom 6": Reddish grey, fine to coarse SAND, little Gravel, little Silt, trace Weathered Rock (at bottom).		SILTY SAND
		14				38.0'	WEATHERED ROCK
		19				39.0'	E.O.B. Auger Refusal
40							
45							
50							
55							

NOTES:
Auger refusal at 39.0'.

TEST PIT LOG

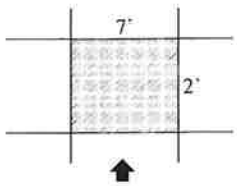
GZA GeoEnvironmental, Inc. Engineers and Scientists	PROJECT *128-132 Broad Street* *Stamford, CT*	Test Pit No. TP-2 File No. 05.0046879.01 Reviewed by J. Davis
GZA Engineer M. Harris Weather Sunny, 40°F	EXCAVATION EQUIPMENT Contractor Conte Company, LLC Operator Tim Sargent Make CAT Model 303 E Capacity 0.5 cu.yd. Reach 8 ft.	Date 11/19/21 Ground Elevation 18.3 Time Started 0830 Time Completed 0900

Depth (ft)	SUBSURFACE SKETCH (NOT TO SCALE)	Excav. Effort	Boulder Count Qty. Class	Remark No.
1	0.5' Dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, trace Glass, trace Brick, Dry (TOPSOIL/FILL)	E		
2	2' Brown, fine to coarse SAND and GRAVEL, little Silt, trace Roots, trace Bricks, trace Metal, Dry (FILL)	E		
3	Brown, fine to coarse SAND and GRAVEL, some Bricks, some Concrete, little Silt (FILL)	E		
4		E	2A	1, 2, 3
5	5'	E	2A, 5B	4, 5
6	Bottom of exploration 5.0 feet below grade.			
7				
8				
9				
10				
11				
12				

REMARKS:

1. Stacked bricks and boulders observed from 0.5 to at least 5 feet on the west test pit wall adjacent to the neighboring, existing building. Bricks and boulders could be foundation remnants of former building onsite. Adjacent building foundations were not evident due to cobbles and boulders. Exploration was terminated at 5 feet due to proximity to the adjacent building.
2. Test pit walls were screened with a 10.6 eV MiniRAE photoionization detector (PID). PID values represent meter response in parts per million (ppm) relative to benzene in air and above background readings. At 4 ft depth: North = 0.6 ppm, East = 0.9 ppm, South = 0.9 ppm. Environmental sample collected from east test pit wall at 4 feet below ground surface
3. Boulders observed at approximate 4.5 feet below ground surface, possibly foundation remnants.
4. The test pit was backfilled with approximately five, 12-inch lifts of excavated material and compacted with excavator bucket and observed to be firm and stable.

TEST PIT PLAN



Depth = 5 ft.
Volume = 2.6 cu.yd.

LEGEND

BOULDER COUNT

Size Range Classification	Letter Designation
6" - 18"	A
18" - 36"	B
36" and Larger	C

PROPORTIONS USED

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

ABBREVIATIONS

F - Fine
M - Medium
C - Coarse
F/M - Fine to Medium
F/C - Fine to Coarse
V - Very
GR - Gray
BN - Brown
YEL - Yellow

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

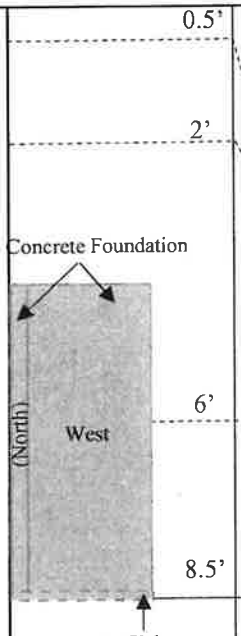
GROUNDWATER

Elapsed Time 15 mins — G.W.L. Not Encountered

TEST PIT LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists	PROJECT *128-132 Broad Street* *Stamford, CT*	Test Pit No. TP-3 File No. 05.0046879.01 Reviewed by J. Davis
GZA Engineer M. Harris Weather Sunny, 40°F	EXCAVATION EQUIPMENT Contractor Conte Company, LLC Operator Tim Sargent Make CAT Model 303 E Capacity 0.5 cu.yd. Reach 8 ft..	Date 11/19/21 Ground Elevation 17.8 Time Started 0915 Time Completed 1000

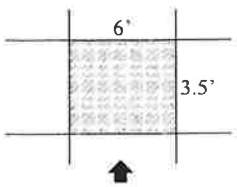
Depth (ft)	SUBSURFACE SKETCH (NOT TO SCALE)	Excav. Effort	Boulder Count Qty. Class	Remark No.
1	0.5' Dark brown, fine to coarse SAND and fine GRAVEL, some Silt, trace Roots, Dry (TOPSOIL)	E		
2	2' Light brown, fine to coarse SAND and GRAVEL, little Silt (FILL)	E		
3	Brown/dark brown, fine to coarse SAND and GRAVEL, little Silt, little Bricks, little Concrete, trace Metal, trace Plastic, Dry (FILL)	E		
4		M	2A	
5		E	2A, 5B	1
6	6' Brown, fine to coarse SAND and GRAVEL, some bricks, little Silt, little Fly Ash, trace Plastic, trace Metal, trace Wood, trace Glass (FILL)	E		2
7		M		
8	8.5' (CONCRETE SLAB)	M		
9	Bottom of exploration 8.5 feet below grade.	D		3
10				
11				
12				



REMARKS:

1. Concrete foundations encountered along north and east test pit walls extending from about 4 to 8.5 feet below grade. Horizontal limits of foundations outside of the test pit were not determined.
2. Test pit walls were screened with a 10.6 eV MiniRAE photoionization detector (PID). PID values represent meter response in parts per million (ppm) relative to benzene in air and above background readings. At 5.5 ft depth: West = 1.8 ppm, South = 1.7 ppm. Environmental samples were taken from west test pit wall from 5.5 feet below ground surface.
3. Exploration was terminated at 8.5 feet below ground surface due to bucket refusal on suspected concrete slab. The test pit was backfilled with approximately eight, 12-inch lifts of excavated material compacted with the excavator bucket and observed to be firm and stable.

TEST PIT PLAN



Depth = 8.5 ft.
Volume = 6.6 cu.yd.

LEGEND

BOUNDER COUNT

Size Range Classification	Letter Designation
6" - 18"	A
18" - 36"	B
36" and Larger	C

PROPORTIONS USED

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

ABBREVIATIONS

F - Fine
M - Medium
C - Coarse
F/M - Fine to Medium
F/C - Fine to Coarse
V - Very
GR - Gray
BN - Brown
YEL - Yellow

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

GROUNDWATER

Elapsed Time 15 mins — G.W.L. Not Encountered

Photographic Log

Client Name:	Site Location:	Project No.
F. D. Rich Construction Company	128-132 Broad Street Stamford, Connecticut	05.0046879.01

Photo No.	Date:
1	11/19/21

Direction Photo Taken:
North

Description:
TP-1

Bricks observed in Fill.

Possible Foundation Remnants

Sand and Gravel observed beneath Fill.

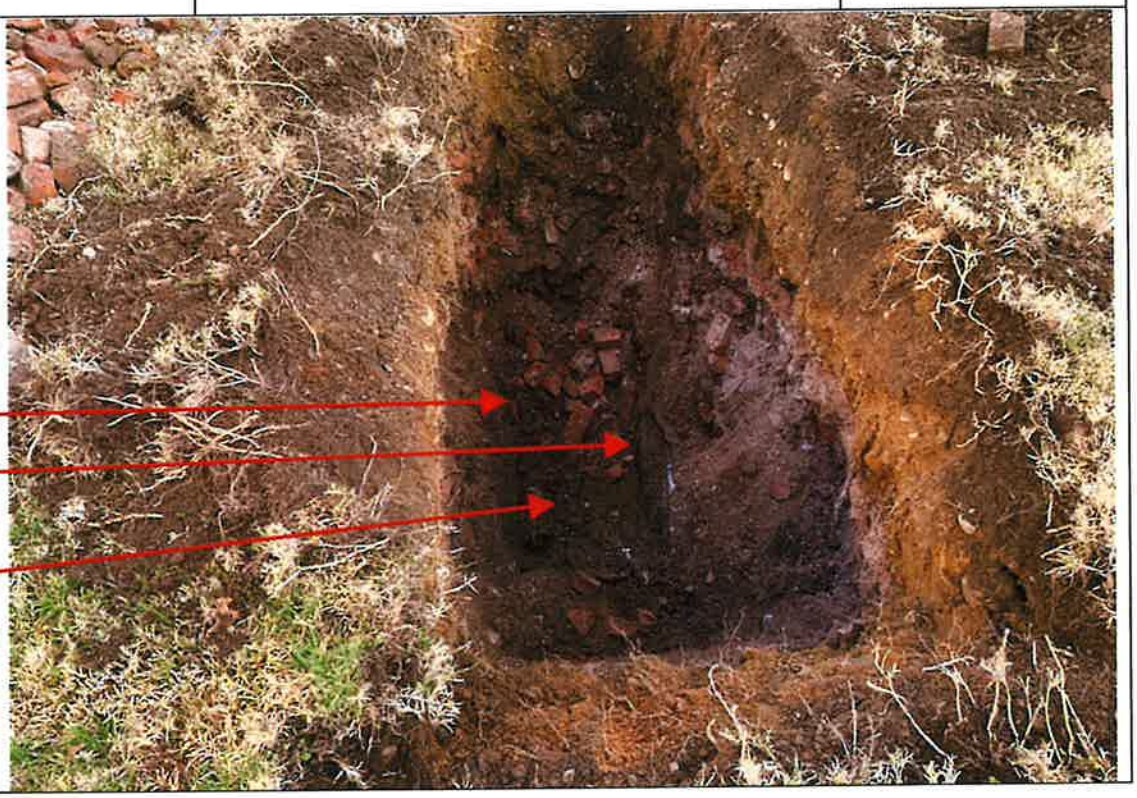


Photo No.	Date:
2	11/19/21

Direction Photo Taken:
Northwest

Description:
TP-1 Spoil Pile

Photographic Log

Client Name: F. D. Rich Construction Company	Site Location: 128-132 Broad Street Stamford, Connecticut	Project No. 05.0046879.01

Photo No.	Date:
3	11/19/21

Direction Photo Taken:
Northwest

Description:
TP-2

Stacked brick and boulders adjacent to neighboring existing building, possibly foundation remnants.

Adjacent building foundations were not evident.

Photo No.	Date:
4	11/19/21

Direction Photo Taken:
East

Description:
TP-2 spoil pile.

Photographic Log

Client Name:	Site Location:	Project No.
F. D. Rich Construction Company	128-132 Broad Street Stamford, Connecticut	05.0046879I.01

Photo No.	Date:
5	11/19/21

Direction Photo Taken:
Northeast

Description:
TP-3

Concrete foundations encountered along north and west test pit sidewalls from about 4 to 8.5 feet below ground surface.

Test pit refusal on concrete slab at approximately 8.5 feet below ground surface.

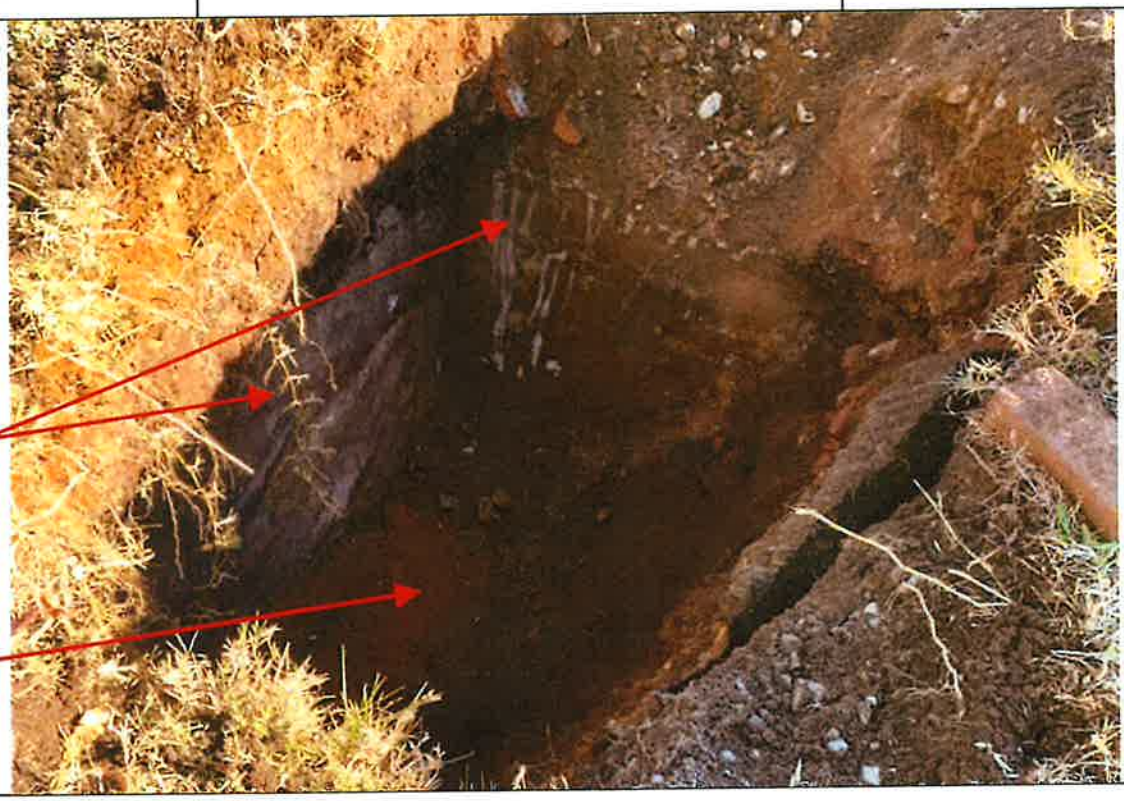


Photo No.	Date:
6	11/19/21

Direction Photo Taken:
West

Description:
TP-3 Spoil Pile

Appendix G:
Existing Strom Drain
Conveyance System Capacity

Note: All capacity calculations are based on mannings equation

Existing Storm Drainage Conveyance System

Uphill Structure	Downhill Structure	Size (in)	Type	n	Slope (ft/ft)	Existing25-yr Storm (CFS)	Qfull using Mannings Equation (CFS)
Ex. SDMH #1	Ex. SDMH #2	24	RCP	0.013	0.0049	21.31	15.9
Ex. SDMH #2	Ex. SDMH #3	18	RCP	0.013	0.0390	20.98	20.8
Ex. SDMH#3	Downstream	24	RCP	0.013	0.0084	-	20.8
Ex. CB#1	Ex. SDMH#6	12	RCP	0.013	0.006	1.09	2.8
Ex. SDMH #6	Downstream	18	RCP	0.013	0.004	1.09	6.7

Appendix H:
Conveyance Computations

The following is a summary of the computations performed to design the proposed storm drainage system drain sizes. The proposed watershed flows were taken from the results of the HyrdoCAD storm drainage analysis performed on the site. Refer to Appendix "L" for HydroCAD model input data, computations, and results. Refer to Exhibit "B" for a depiction of the proposed on-site watershed areas. HydroCAD runoff computations are based on the 25-year design storm frequency event. Culvert conveyance computations are based on the Manning's Equation.

Culvert Capacity Summary Table

Maximum pipe capacities were calculated using the Manning equation for full flow conditions. The proposed pipe information, 25-year peak design flows, and corresponding maximum capacities are summarized in the following table. Refer to the Development Plan for pipe and structure locations. All pipes have been sized to convey the flow rates for at least the 25-year design storm frequency event.

Uphill Structure	Downhill Structure	Diameter (in)	Type	Roughness (n)	Slope (ft/ft)	25-yr Storm (CFS)	Qfull using Mannings Equation (CFS)
JB#2	JB#1	12	PVC	0.011	0.006	2.30	3.27
JB#1	Double CB	12	PVC	0.011	0.005	2.30	2.99
Double CB	SDMH#5	18	PVC	0.011	0.005	12.82	17.60
SDMH#5	SDMH#4	18	PVC	0.011	0.005	12.82	17.60
SDMH#4	SDMH#3	18	PVC	0.011	0.005	16.97	17.60
Ex. SDMH	SDMH#3	24	PVC	0.011	0.005	5.22	18.96
SDMH#3	SDMH#2	18	PVC	0.011	0.005	21.93	17.60
SDMH#2	SDMH#1	18	PVC	0.011	0.005	21.93	17.60
SDMH#1	Ex. SDMH#2	18	PVC	0.011	0.005	20.46	17.60
Ex. SDMH#	Ex. SDMH#3	18	PVC	0.011	0.039	20.87	24.58
CB#1	JB#3	12	PVC	0.011	0.010	0.05	4.22
SDMH#1	JB#3	8	PVC	0.011	0.005	1.54	1.01
JB#3	Ex. SDMH#6	12	PVC	0.011	0.010	1.59	4.22

Appendix I:
Stage-Area-Storage Tables

Stage-Area-Storage for Pond 5P: Ex. SDMH #1 / POC A

Elevation (feet)	Storage (cubic-feet)
13.20	0
13.25	1
13.30	1
13.35	2
13.40	3
13.45	3
13.50	4
13.55	4
13.60	5
13.65	6
13.70	6
13.75	7
13.80	8
13.85	8
13.90	9
13.95	9
14.00	10
14.05	11
14.10	11
14.15	12
14.20	13
14.25	13
14.30	14
14.35	14
14.40	15
14.45	16
14.50	16
14.55	17
14.60	18
14.65	18
14.70	19
14.75	19
14.80	20
14.85	21
14.90	21
14.95	22
15.00	23
15.05	23
15.10	24
15.15	25
15.20	25
15.25	26
15.30	26
15.35	27
15.40	28
15.45	29
15.50	32
15.55	39
15.60	54
15.65	76
15.70	105
15.75	141
15.80	186
15.85	245
15.90	326
15.95	432
16.00	564
16.05	729
16.10	930
16.15	1,171
16.20	1,456
16.25	1,798
16.30	2,210
16.35	2,690
16.40	3,232
16.45	3,843
16.50	4,530
16.55	5,290
16.60	6,121
16.65	7,027
16.70	8,011
16.75	9,063
16.80	10,174
16.85	10,174
16.90	**10,175**
16.95	10,175
17.00	10,175
17.05	10,175
17.10	10,175

Stage-Area-Storage for Pond 10P: Parking Lot

Elevation (feet)	Storage (cubic-feet)
13.40	0
13.45	1
13.50	2
13.55	2
13.60	3
13.65	4
13.70	5
13.75	6
13.80	6
13.85	7
13.90	8
13.95	9
14.00	10
14.05	10
14.10	11
14.15	12
14.20	13
14.25	14
14.30	14
14.35	15
14.40	16
14.45	17
14.50	18
14.55	18
14.60	19
14.65	20
14.70	21
14.75	22
14.80	22
14.85	23
14.90	24
14.95	25
15.00	26
15.05	26
15.10	27
15.15	28
15.20	29
15.25	30
15.30	30
15.35	31
15.40	32
15.45	34
15.50	37
15.55	44
15.60	59
15.65	82
15.70	110
15.75	145
15.80	190
15.85	249
15.90	329
15.95	433
16.00	564
16.05	723
16.10	915
16.15	1,144
16.20	1,412
16.25	1,733
16.30	2,119
16.35	2,568
16.40	3,071
16.45	3,636
16.50	4,268
16.55	4,959
16.60	5,700
16.65	6,493
16.70	7,337
16.75	8,237
16.80	**9,197**
16.85	9,197
16.90	9,197
16.95	9,197
17.00	9,197
17.05	9,197
17.10	9,197

Stage-Area-Storage for Pond 17P: Retention System#1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
9.20	0	14.40	7,248
9.30	78	14.50	7,395
9.40	155	14.60	7,542
9.50	233	14.70	7,689
9.60	310	14.80	7,706
9.70	388	14.90	7,723
9.80	534	15.00	7,741
9.90	679	15.10	7,758
10.00	825	15.20	7,776
10.10	970	15.30	7,793
10.20	1,116	15.40	7,805
10.30	1,262	15.50	7,806
10.40	1,407	15.60	7,808
10.50	1,553	15.70	7,809
10.60	1,698	15.80	7,810
10.70	1,844	15.90	7,811
10.80	1,989	16.00	7,813
10.90	2,135	16.10	7,814
11.00	2,281	16.20	7,815
11.10	2,426	16.30	7,816
11.20	2,572	16.40	7,818
11.30	2,717	16.50	7,819
11.40	2,863	16.60	7,820
11.50	3,009	16.70	7,821
11.60	3,154	16.80	7,823
11.70	3,300	16.90	7,824
11.80	3,445	17.00	**7,825**
11.90	3,591		
12.00	3,736		
12.10	3,882		
12.20	4,028		
12.30	4,173		
12.40	4,319		
12.50	4,464		
12.60	4,610		
12.70	4,756		
12.80	4,901		
12.90	5,047		
13.00	5,192		
13.10	5,339		
13.20	5,486		
13.30	5,633		
13.40	5,780		
13.50	5,926		
13.60	6,073		
13.70	6,220		
13.80	6,367		
13.90	6,514		
14.00	6,661		
14.10	6,808		
14.20	6,954		
14.30	7,101		

Appendix J:
HydroCAD Summary—Peak Flows and Volumes

HydroCAD Summary

TR Broad II, LLC

128 Broad Street Stamford, CT

Project ID: 21UT

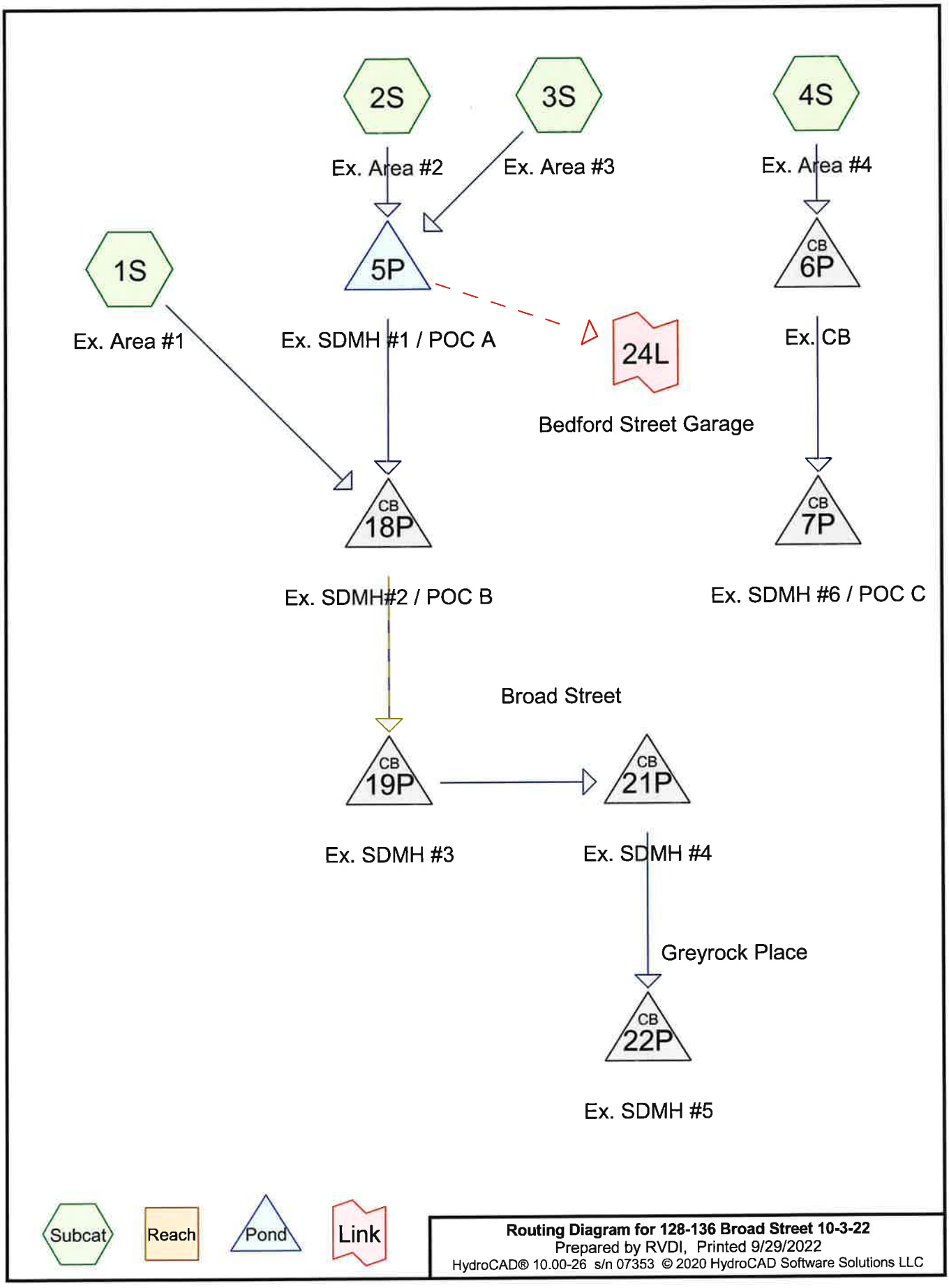
POC	1 Year Storm				2 Year Storm				5 Year Storm				10 Year Storm				25 Year Storm				50 Year Storm				100 year Storm			
	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)	q_{ex} (ft^3/s)	q_p (ft^3/s)	Δq (ft^3/s)	%Δq (ft^3/s)
A	9.65	8.76	-0.89	-9%	11.43	10.64	-0.79	-7%	15.20	13.72	-1.48	-10%	18.01	18.88	0.87	5%	21.31	21.93	0.62	3%	23.42	20.80	-2.62	-11%	25.31	33.72	8.41	33%
B	10.02	8.90	-1.12	-11%	11.91	10.67	-1.24	-10%	15.91	13.22	-2.69	-17%	18.88	17.86	-1.02	-5%	20.98	20.87	-0.11	-1%	21.26	19.79	-1.47	-7%	21.32	31.80	10.48	49%
C	0.31	0.04	-0.27	-87%	0.43	0.18	-0.25	-58%	0.65	0.82	0.17	26%	0.83	1.28	0.45	54%	1.09	1.59	0.50	46%	1.29	1.54	0.25	19%	1.50	2.04	0.54	36%
Parking Garage	0.00	0.00	0.00	0%	0.00	0.00	0.00	0%	0.00	0.00	0.00	0%	0.00	0.00	0.00	0%	1.30	0.73	-0.57	-	3.87	3.25	-0.62	-16%	7.99	9.90	1.91	24%

Table 1: Comparison of Existing and Proposed Peak Flow Rates for all Points of Concern.

POC	1 Year Storm				2 Year Storm				5 Year Storm				10 Year Storm				25 Year Storm				50 Year Storm				100 Year Storm			
	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)	v_{ex} (cf)	v_p (cf)	Δv (cf)	%Δv (cf)
A	38,300	36,837	-1,463	-4%	47,066	46,486	-580	-1%	61,709	62,381	672	1%	73,804	75,481	1,677	2%	90,293	93,553	3,260	4%	102,445	105,598	3,153	3%	115,658	115,447	-211	0%
B	39,553	37,450	-2,103	-5%	48,695	47,181	-1,514	-3%	63,974	63,004	-970	-2%	76,601	75,553	-1,048	-1%	93,174	92,894	-280	0%	103,996	104,583	587	1%	114,845	113,954	-891	-1%
C	1,239	79	-1,160	-94%	1,723	154	-1,569	-91%	2,576	484	-2,092	-81%	3,313	1,247	-2,066	-62%	4,375	2,273	-2,102	-48%	5,173	2,847	-2,326	-45%	6,049	3,560	-2,489	-41%
Parking Garage	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	666	183	-483	-	2,551	1,860	-691	-27%	5,518	6,461	943	17%

Table 2: Comparison of Existing and Proposed Runoff Volumes for all Points of Concern.

Appendix K:
HydroCAD Analysis—Existing Conditions


2S
3S
4S
Ex. Area #2
Ex. Area #3
Ex. Area #4
1S
5P
CB
6P
Ex. Area #1
Ex. SDMH #1 / POC A
24L
Ex. CB
Bedford Street Garage
CB
18P
CB
7P
Ex. SDMH#2 / POC B
Ex. SDMH #6 / POC C
Broad Street
CB
19P
CB
21P
Ex. SDMH #3
Ex. SDMH #4
Greyrock Place
CB
22P
Ex. SDMH #5
Subcat
Reach
Pond
Link
Routing Diagram for 128-136 Broad Street 10-3-22
Prepared by RVDI, Printed 9/29/2022
HydroCAD® 10.00-26 s/n 07353 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Ex. Area #1 Runoff Area=7,923 sf 51.43% Impervious Runoff Depth=1.90"
Flow Length=181' Tc=5.8 min CN=89.3 Runoff=0.40 cfs 1,253 cf

Subcatchment 2S: Ex. Area #2 Runoff Area=132,315 sf 97.01% Impervious Runoff Depth=2.68"
Tc=10.0 min CN=97.5 Runoff=7.56 cfs 29,584 cf

Subcatchment 3S: Ex. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=2.74"
Tc=5.0 min CN=98.0 Runoff=2.58 cfs 8,717 cf

Subcatchment 4S: Ex. Area #4 Runoff Area=12,053 sf 0.54% Impervious Runoff Depth=1.23"
Flow Length=119' Tc=13.7 min CN=80.1 Runoff=0.31 cfs 1,239 cf

Pond 5P: Ex. SDMH #1 / POC A Peak Elev=15.11' Storage=24 cf Inflow=9.67 cfs 38,300 cf
Primary=9.65 cfs 38,300 cf Secondary=0.00 cfs 0 cf Outflow=9.65 cfs 38,300 cf

Pond 6P: Ex. CB Peak Elev=12.70' Inflow=0.31 cfs 1,239 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0061 '/' Outflow=0.31 cfs 1,239 cf

Pond 7P: Ex. SDMH #6 / POC C Peak Elev=11.99' Inflow=0.31 cfs 1,239 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.31 cfs 1,239 cf

Pond 18P: Ex. SDMH#2 / POC B Peak Elev=14.54' Inflow=10.02 cfs 39,553 cf
Primary=10.02 cfs 39,553 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=10.02 cfs 39,553 cf

Pond 19P: Ex. SDMH #3 Peak Elev=12.46' Inflow=10.02 cfs 39,553 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=10.02 cfs 39,553 cf

Pond 21P: Ex. SDMH #4 Peak Elev=10.04' Inflow=10.02 cfs 39,553 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=10.02 cfs 39,553 cf

Pond 22P: Ex. SDMH #5 Peak Elev=9.25' Inflow=10.02 cfs 39,553 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=10.02 cfs 39,553 cf

Link 24L: Bedford Street Garage Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Ex. Area #1 Runoff Area=7,923 sf 51.43% Impervious Runoff Depth=2.47"
Flow Length=181' Tc=5.8 min CN=89.3 Runoff=0.52 cfs 1,629 cf

Subcatchment 2S: Ex. Area #2 Runoff Area=132,315 sf 97.01% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=97.5 Runoff=9.21 cfs 36,383 cf

Subcatchment 3S: Ex. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=3.36"
Tc=5.0 min CN=98.0 Runoff=3.13 cfs 10,683 cf

Subcatchment 4S: Ex. Area #4 Runoff Area=12,053 sf 0.54% Impervious Runoff Depth=1.72"
Flow Length=119' Tc=13.7 min CN=80.1 Runoff=0.43 cfs 1,723 cf

Pond 5P: Ex. SDMH #1 / POC A Peak Elev=15.65' Storage=76 cf Inflow=11.76 cfs 47,066 cf
Primary=11.43 cfs 47,066 cf Secondary=0.00 cfs 0 cf Outflow=11.43 cfs 47,066 cf

Pond 6P: Ex. CB Peak Elev=12.76' Inflow=0.43 cfs 1,723 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0061 '/' Outflow=0.43 cfs 1,723 cf

Pond 7P: Ex. SDMH #6 / POC C Peak Elev=12.05' Inflow=0.43 cfs 1,723 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.43 cfs 1,723 cf

Pond 18P: Ex. SDMH#2 / POC B Peak Elev=15.11' Inflow=11.91 cfs 48,695 cf
Primary=11.91 cfs 48,695 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=11.91 cfs 48,695 cf

Pond 19P: Ex. SDMH #3 Peak Elev=12.65' Inflow=11.91 cfs 48,695 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=11.91 cfs 48,695 cf

Pond 21P: Ex. SDMH #4 Peak Elev=10.26' Inflow=11.91 cfs 48,695 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=11.91 cfs 48,695 cf

Pond 22P: Ex. SDMH #5 Peak Elev=9.43' Inflow=11.91 cfs 48,695 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=11.91 cfs 48,695 cf

Link 24L: Bedford Street Garage Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Ex. Area #1 Runoff Area=7,923 sf 51.43% Impervious Runoff Depth=3.43"
Flow Length=181' Tc=5.8 min CN=89.3 Runoff=0.71 cfs 2,265 cf

Subcatchment 2S: Ex. Area #2 Runoff Area=132,315 sf 97.01% Impervious Runoff Depth=4.32"
Tc=10.0 min CN=97.5 Runoff=11.90 cfs 47,589 cf

Subcatchment 3S: Ex. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=4.37"
Tc=5.0 min CN=98.0 Runoff=4.03 cfs 13,922 cf

Subcatchment 4S: Ex. Area #4 Runoff Area=12,053 sf 0.54% Impervious Runoff Depth=2.56"
Flow Length=119' Tc=13.7 min CN=80.1 Runoff=0.65 cfs 2,576 cf

Pond 5P: Ex. SDMH #1 / POC A Peak Elev=16.27' Storage=1,930 cf Inflow=15.19 cfs 61,511 cf
Primary=18.90 cfs 61,709 cf Secondary=0.00 cfs 0 cf Outflow=18.90 cfs 61,709 cf

Pond 6P: Ex. CB Peak Elev=12.85' Inflow=0.65 cfs 2,576 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0061 '/' Outflow=0.65 cfs 2,576 cf

Pond 7P: Ex. SDMH #6 / POC C Peak Elev=12.13' Inflow=0.65 cfs 2,576 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.65 cfs 2,576 cf

Pond 18P: Ex. SDMH#2 / POC B Peak Elev=16.32' Inflow=19.21 cfs 63,974 cf
Primary=15.15 cfs 61,911 cf Secondary=4.06 cfs 2,063 cf Tertiary=0.00 cfs 0 cf Outflow=19.21 cfs 63,974 cf

Pond 19P: Ex. SDMH #3 Peak Elev=13.61' Inflow=19.21 cfs 63,974 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=19.21 cfs 63,974 cf

Pond 21P: Ex. SDMH #4 Peak Elev=11.12' Inflow=19.21 cfs 63,974 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=19.21 cfs 63,974 cf

Pond 22P: Ex. SDMH #5 Peak Elev=10.41' Inflow=19.21 cfs 63,974 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=19.21 cfs 63,974 cf

Link 24L: Bedford Street Garage Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Ex. Area #1 Runoff Area=7,923 sf 51.43% Impervious Runoff Depth=4.24"
Flow Length=181' Tc=5.8 min CN=89.3 Runoff=0.87 cfs 2,797 cf

Subcatchment 2S: Ex. Area #2 Runoff Area=132,315 sf 97.01% Impervious Runoff Depth=5.15"
Tc=10.0 min CN=97.5 Runoff=14.11 cfs 56,829 cf

Subcatchment 3S: Ex. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=5.21"
Tc=5.0 min CN=98.0 Runoff=4.78 cfs 16,592 cf

Subcatchment 4S: Ex. Area #4 Runoff Area=12,053 sf 0.54% Impervious Runoff Depth=3.30"
Flow Length=119' Tc=13.7 min CN=80.1 Runoff=0.83 cfs 3,313 cf

Pond 5P: Ex. SDMH #1 / POC A Peak Elev=16.42' Storage=3,436 cf Inflow=18.01 cfs 73,420 cf
Primary=19.76 cfs 73,804 cf Secondary=0.00 cfs 0 cf Outflow=19.76 cfs 73,804 cf

Pond 6P: Ex. CB Peak Elev=12.92' Inflow=0.83 cfs 3,313 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0061 '/' Outflow=0.83 cfs 3,313 cf

Pond 7P: Ex. SDMH #6 / POC C Peak Elev=12.19' Inflow=0.83 cfs 3,313 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.83 cfs 3,313 cf

Pond 18P: Ex. SDMH#2 / POC B Peak Elev=16.36' Inflow=20.20 cfs 76,601 cf
Primary=15.25 cfs 72,897 cf Secondary=4.96 cfs 3,704 cf Tertiary=0.00 cfs 0 cf Outflow=20.20 cfs 76,601 cf

Pond 19P: Ex. SDMH #3 Peak Elev=14.02' Inflow=20.20 cfs 76,601 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=20.20 cfs 76,601 cf

Pond 21P: Ex. SDMH #4 Peak Elev=11.26' Inflow=20.20 cfs 76,601 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=20.20 cfs 76,601 cf

Pond 22P: Ex. SDMH #5 Peak Elev=10.58' Inflow=20.20 cfs 76,601 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=20.20 cfs 76,601 cf

Link 24L: Bedford Street Garage Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Summary for Subcatchment 1S: Ex. Area #1

Runoff = 1.09 cfs @ 12.08 hrs, Volume= 3,547 cf, Depth= 5.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
3,848	80.0	>75% Grass cover, Good, HSG D
4,075	98.0	Paved parking, HSG D
7,923	89.3	Weighted Average
3,848		48.57% Pervious Area
4,075		51.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	48	0.0270	0.17		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.30"
0.1	10	0.0400	1.16		**Sheet Flow, Paved** Smooth surfaces n= 0.011 P2= 3.30"
0.6	58	0.0070	1.70		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.3	65	0.0060	3.51	2.76	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.8	181	Total			

Summary for Subcatchment 2S: Ex. Area #2

Runoff = 17.18 cfs @ 12.13 hrs, Volume= 69,707 cf, Depth= 6.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
3,953	80.0	>75% Grass cover, Good, HSG D
128,362	98.0	Paved parking, HSG D
132,315	97.5	Weighted Average
3,953		2.99% Pervious Area
128,362		97.01% Impervious Area

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

Summary for Subcatchment 3S: Ex. Area #3

Runoff = 5.81 cfs @ 12.07 hrs, Volume= 20,312 cf, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
38,197	98.0	Roofs, HSG D
38,197		100.00% Impervious Area

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

Summary for Subcatchment 4S: Ex. Area #4

Runoff = 1.09 cfs @ 12.19 hrs, Volume= 4,375 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
65	98.0	Paved parking, HSG D
11,988	80.0	>75% Grass cover, Good, HSG D
12,053	80.1	Weighted Average
11,988		99.46% Pervious Area
65		0.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	24	0.0083	0.09		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.30"
9.3	95	0.0200	0.17		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.30"
13.7	119	Total			

Summary for Pond 5P: Ex. SDMH #1 / POC A

Inflow Area = 170,512 sf, 97.68% Impervious, Inflow Depth = 6.34" for 25-Year event
Inflow = 21.93 cfs @ 12.12 hrs, Volume= 90,019 cf
Outflow = 21.31 cfs @ 12.24 hrs, Volume= 90,293 cf, Atten= 3%, Lag= 7.5 min
Primary = 20.21 cfs @ 12.16 hrs, Volume= 89,627 cf
Secondary = 1.30 cfs @ 12.25 hrs, Volume= 666 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.55' @ 12.25 hrs Surf.Area= 16,021 sf Storage= 5,357 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.5 min (750.5 - 749.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.20'	46 cf	**4.00'D x 3.70'H Mahole**
#2	15.40'	10,128 cf	**Trench Drain / Double CB (Irregular)** Listed below (Recalc)
		10,175 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
15.40	8	12.0	0	0	8
15.50	72	36.0	3	3	100
15.60	378	130.0	20	24	1,341
15.70	620	166.0	49	73	2,190
15.80	986	212.0	80	153	3,573
15.90	1,843	326.0	139	292	8,454
16.00	2,941	396.0	237	529	12,476
16.10	4,386	455.0	364	893	16,472
16.20	6,169	545.0	525	1,418	23,634
16.30	8,980	684.0	753	2,172	37,228
16.40	11,481	725.0	1,020	3,192	41,826
16.50	14,507	781.0	1,296	4,488	48,538
16.60	17,337	847.0	1,590	6,079	57,089
16.70	20,473	796.0	1,888	7,967	63,757
16.80	22,778	818.0	2,162	10,128	66,584

Device	Routing	Invert	Outlet Devices
#1	Primary	13.20'	**24.0" Round RCP_Round 24"** L= 103.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.20' / 12.70' S= 0.0049 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Secondary	16.45'	**Asymmetrical Weir, C= 3.27** Offset (feet) 0.00 9.10 17.80 26.65 36.06 43.97 53.90 62.08 71.77 Height (feet) 0.69 0.26 0.14 0.10 0.00 0.02 0.24 0.41 0.69

Primary OutFlow Max=6.50 cfs @ 12.16 hrs HW=16.49' TW=16.30' (Dynamic Tailwater)
↑—**1=RCP_Round 24"** (Outlet Controls 6.50 cfs @ 2.07 fps)

Secondary OutFlow Max=1.25 cfs @ 12.25 hrs HW=16.55' TW=0.00' (Dynamic Tailwater)
↑—**2=Asymmetrical Weir** (Weir Controls 1.25 cfs @ 0.60 fps)

Summary for Pond 6P: Ex. CB

Inflow Area = 12,053 sf, 0.54% Impervious, Inflow Depth = 4.36" for 25-Year event
Inflow = 1.09 cfs @ 12.19 hrs, Volume= 4,375 cf
Outflow = 1.09 cfs @ 12.19 hrs, Volume= 4,375 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.09 cfs @ 12.19 hrs, Volume= 4,375 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 13.01' @ 12.19 hrs
Flood Elev= 15.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.40'	**12.0" Round RCP_Round 12"** L= 98.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.40' / 11.80' S= 0.0061 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.19 hrs HW=13.00' TW=12.26' (Dynamic Tailwater)
↑—**1=RCP_Round 12"** (Outlet Controls 1.08 cfs @ 3.14 fps)

Summary for Pond 7P: Ex. SDMH #6 / POC C

Inflow Area =	12,053 sf,	0.54% Impervious,	Inflow Depth =	4.36"	for 25-Year event
Inflow =	1.09 cfs @	12.19 hrs, Volume=	4,375 cf		
Outflow =	1.09 cfs @	12.19 hrs, Volume=	4,375 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	1.09 cfs @	12.19 hrs, Volume=	4,375 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 12.26' @ 12.19 hrs
Flood Elev= 17.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	11.70'	**18.0" Round 18" RCP** L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.70' / 11.30' S= 0.0040 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=1.09 cfs @ 12.19 hrs HW=12.26' (Free Discharge)
↑—**1=18" RCP** (Barrel Controls 1.09 cfs @ 2.69 fps)

Summary for Pond 18P: Ex. SDMH#2 / POC B

Inflow Area =	178,435 sf,	95.63% Impervious,	Inflow Depth =	6.27"	for 25-Year event
Inflow =	20.98 cfs @	12.16 hrs, Volume=	93,174 cf		
Outflow =	20.98 cfs @	12.16 hrs, Volume=	93,174 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	15.32 cfs @	12.16 hrs, Volume=	88,200 cf		
Secondary =	5.67 cfs @	12.16 hrs, Volume=	4,973 cf		
Tertiary =	0.00 cfs @	0.00 hrs, Volume=	0 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.40' @ 12.16 hrs
Flood Elev= 16.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.40'	**18.0" Round RCP_Round 18"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.40' / 11.20' S= 0.0400 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Secondary	16.10'	**24.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	16.40'	**24.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.61 cfs @ 12.16 hrs HW=16.27' TW=14.08' (Dynamic Tailwater)
↑—**1=RCP_Round 18"** (Inlet Controls 12.61 cfs @ 7.14 fps)

Secondary OutFlow Max=5.67 cfs @ 12.16 hrs HW=16.38' TW=14.19' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Weir Controls 5.67 cfs @ 1.72 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.40' TW=11.00' (Dynamic Tailwater)
↑—**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 19P: Ex. SDMH #3

Inflow Area = 178,435 sf, 95.63% Impervious, Inflow Depth = 6.27" for 25-Year event
Inflow = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf
Outflow = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 14.41' @ 12.24 hrs
Flood Elev= 16.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	11.00'	**24.0" Round RCP_Round 24"** L= 303.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.00' / 8.40' S= 0.0086 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=18.25 cfs @ 12.16 hrs HW=14.12' TW=11.35' (Dynamic Tailwater)
↑—**1=RCP_Round 24"** (Outlet Controls 18.25 cfs @ 5.81 fps)

Summary for Pond 21P: Ex. SDMH #4

Inflow Area = 178,435 sf, 95.63% Impervious, Inflow Depth = 6.27" for 25-Year event
Inflow = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf
Outflow = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 11.38' @ 12.17 hrs
Flood Elev= 16.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	8.40'	**24.0" Round RCP_Round 24"** L= 62.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.40' / 7.80' S= 0.0097 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.71 cfs @ 12.16 hrs HW=11.35' TW=10.64' (Dynamic Tailwater)
↑—**1=RCP_Round 24"** (Inlet Controls 12.71 cfs @ 4.05 fps)

Summary for Pond 22P: Ex. SDMH #5

Inflow Area = 178,435 sf, 95.63% Impervious, Inflow Depth = 6.27" for 25-Year event
Inflow = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf
Outflow = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.98 cfs @ 12.16 hrs, Volume= 93,174 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 10.72' @ 12.16 hrs
Flood Elev= 16.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	7.80'	**24.0" Round RCP_Round 24"** L= 78.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.80' / 6.45' S= 0.0173 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=20.54 cfs @ 12.16 hrs HW=10.64' (Free Discharge)
↑—**1=RCP_Round 24"** (Inlet Controls 20.54 cfs @ 6.54 fps)

Summary for Link 24L: Bedford Street Garage

Inflow = 1.30 cfs @ 12.25 hrs, Volume= 666 cf
Primary = 1.30 cfs @ 12.25 hrs, Volume= 666 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Ex. Area #1 Runoff Area=7,923 sf 51.43% Impervious Runoff Depth=6.21"
Flow Length=181' Tc=5.8 min CN=89.3 Runoff=1.25 cfs 4,102 cf

Subcatchment 2S: Ex. Area #2 Runoff Area=132,315 sf 97.01% Impervious Runoff Depth=7.18"
Tc=10.0 min CN=97.5 Runoff=19.43 cfs 79,178 cf

Subcatchment 3S: Ex. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=7.24"
Tc=5.0 min CN=98.0 Runoff=6.57 cfs 23,047 cf

Subcatchment 4S: Ex. Area #4 Runoff Area=12,053 sf 0.54% Impervious Runoff Depth=5.15"
Flow Length=119' Tc=13.7 min CN=80.1 Runoff=1.29 cfs 5,173 cf

Pond 5P: Ex. SDMH #1 / POC A Peak Elev=16.62' Storage=6,493 cf Inflow=24.80 cfs 102,225 cf
Primary=20.63 cfs 99,894 cf Secondary=3.87 cfs 2,551 cf Outflow=23.42 cfs 102,445 cf

Pond 6P: Ex. CB Peak Elev=13.07' Inflow=1.29 cfs 5,173 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0061 '/' Outflow=1.29 cfs 5,173 cf

Pond 7P: Ex. SDMH #6 / POC C Peak Elev=12.31' Inflow=1.29 cfs 5,173 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=1.29 cfs 5,173 cf

Pond 18P: Ex. SDMH#2 / POC B Peak Elev=16.42' Inflow=21.26 cfs 103,996 cf
Primary=15.30 cfs 98,824 cf Secondary=5.96 cfs 5,172 cf Tertiary=0.00 cfs 0 cf Outflow=21.26 cfs 103,996 cf

Pond 19P: Ex. SDMH #3 Peak Elev=14.50' Inflow=21.26 cfs 103,996 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=21.26 cfs 103,996 cf

Pond 21P: Ex. SDMH #4 Peak Elev=11.46' Inflow=21.26 cfs 103,996 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=21.26 cfs 103,996 cf

Pond 22P: Ex. SDMH #5 Peak Elev=10.77' Inflow=21.26 cfs 103,996 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=21.26 cfs 103,996 cf

Link 24L: Bedford Street Garage Inflow=3.87 cfs 2,551 cf
Primary=3.87 cfs 2,551 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Ex. Area #1 Runoff Area=7,923 sf 51.43% Impervious Runoff Depth=7.13"
Flow Length=181' Tc=5.8 min CN=89.3 Runoff=1.42 cfs 4,705 cf

Subcatchment 2S: Ex. Area #2 Runoff Area=132,315 sf 97.01% Impervious Runoff Depth=8.11"
Tc=10.0 min CN=97.5 Runoff=21.87 cfs 89,422 cf

Subcatchment 3S: Ex. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=8.17"
Tc=5.0 min CN=98.0 Runoff=7.39 cfs 26,006 cf

Subcatchment 4S: Ex. Area #4 Runoff Area=12,053 sf 0.54% Impervious Runoff Depth=6.02"
Flow Length=119' Tc=13.7 min CN=80.1 Runoff=1.50 cfs 6,049 cf

Pond 5P: Ex. SDMH #1 / POC A Peak Elev=16.69' Storage=7,735 cf Inflow=27.91 cfs 115,428 cf
Primary=20.48 cfs 110,140 cf Secondary=7.99 cfs 5,518 cf Outflow=25.31 cfs 115,658 cf

Pond 6P: Ex. CB Peak Elev=13.13' Inflow=1.50 cfs 6,049 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0061 '/' Outflow=1.50 cfs 6,049 cf

Pond 7P: Ex. SDMH #6 / POC C Peak Elev=12.36' Inflow=1.50 cfs 6,049 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=1.50 cfs 6,049 cf

Pond 18P: Ex. SDMH#2 / POC B Peak Elev=16.43' Inflow=21.32 cfs 114,845 cf
Primary=15.31 cfs 109,536 cf Secondary=6.01 cfs 5,308 cf Tertiary=0.00 cfs 0 cf Outflow=21.32 cfs 114,845 cf

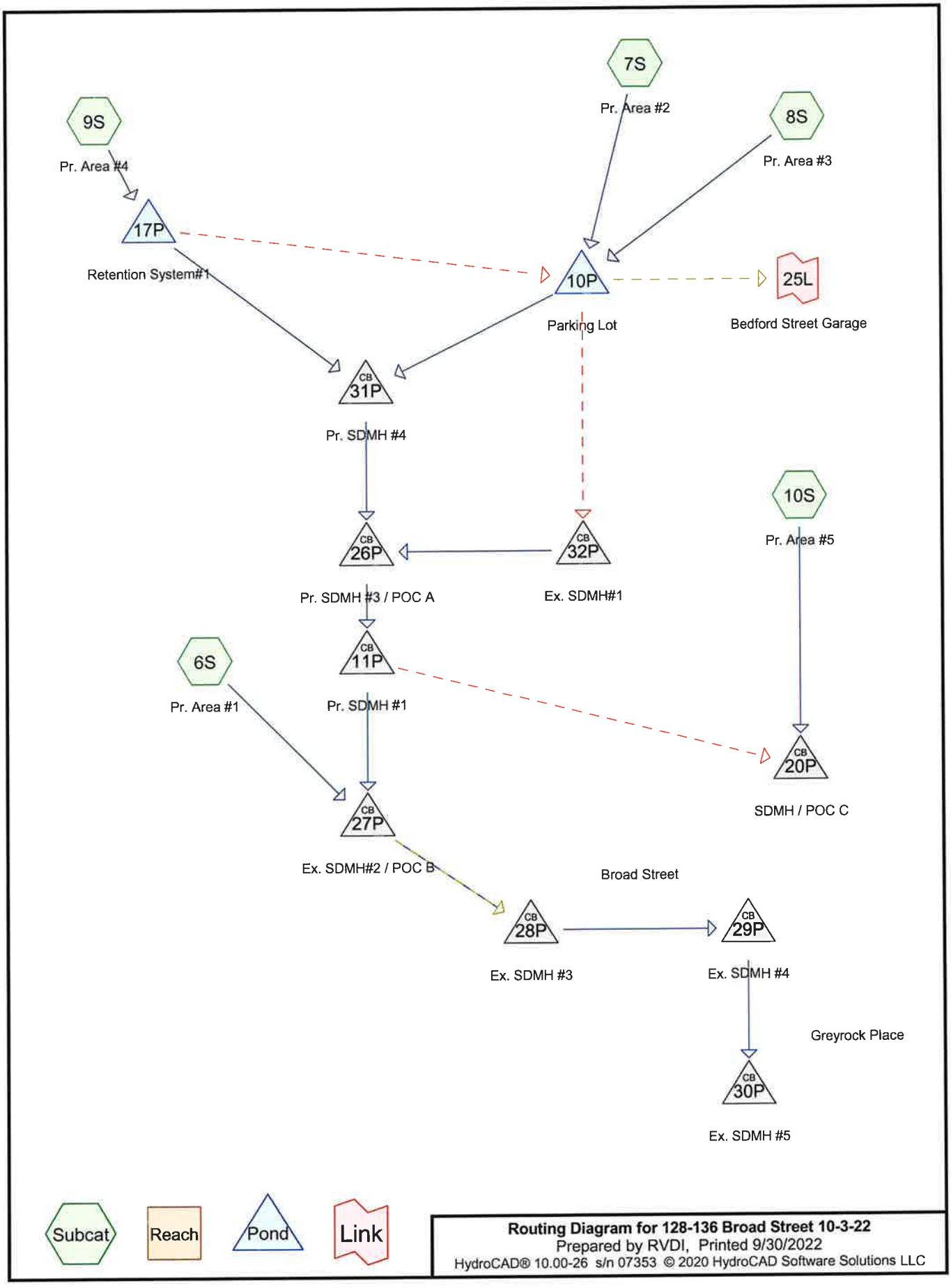
Pond 19P: Ex. SDMH #3 Peak Elev=14.53' Inflow=21.32 cfs 114,845 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=21.32 cfs 114,845 cf

Pond 21P: Ex. SDMH #4 Peak Elev=11.49' Inflow=21.32 cfs 114,845 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=21.32 cfs 114,845 cf

Pond 22P: Ex. SDMH #5 Peak Elev=10.79' Inflow=21.32 cfs 114,845 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=21.32 cfs 114,845 cf

Link 24L: Bedford Street Garage Inflow=7.99 cfs 5,518 cf
Primary=7.99 cfs 5,518 cf

Appendix L:
HydroCAD Analysis—Proposed Conditions



Routing Diagram for 128-136 Broad Street 10-3-22
Prepared by RVDI, Printed 9/30/2022

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 6S: Pr. Area #1 Runoff Area=2,714 sf 100.00% Impervious Runoff Depth=2.74"
Tc=5.0 min CN=98.0 Runoff=0.18 cfs 619 cf

Subcatchment 7S: Pr. Area #2 Runoff Area=115,349 sf 100.00% Impervious Runoff Depth=2.74"
Tc=10.0 min CN=98.0 Runoff=6.65 cfs 26,323 cf

Subcatchment 8S: Pr. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=2.74"
Tc=5.0 min CN=98.0 Runoff=2.58 cfs 8,717 cf

Subcatchment 9S: Pr. Area #4 Runoff Area=33,888 sf 100.00% Impervious Runoff Depth=2.74"
Tc=5.0 min CN=98.0 Runoff=2.28 cfs 7,733 cf

Subcatchment 10S: Pr. Area #5 Runoff Area=322 sf 100.00% Impervious Runoff Depth=2.74"
Tc=5.0 min CN=98.0 Runoff=0.02 cfs 73 cf

Pond 10P: Parking Lot Peak Elev=14.81' Storage=23 cf Inflow=8.77 cfs 35,039 cf
Primary=5.45 cfs 7,900 cf Secondary=3.34 cfs 27,138 cf Tertiary=0.00 cfs 0 cf Outflow=8.76 cfs 35,038 cf

Pond 11P: Pr. SDMH #1 Peak Elev=13.79' Inflow=8.76 cfs 36,837 cf
Primary=8.74 cfs 36,831 cf Secondary=0.02 cfs 6 cf Outflow=8.76 cfs 36,837 cf

Pond 17P: Retention System#1 Peak Elev=13.64' Storage=6,125 cf Inflow=2.28 cfs 7,733 cf
Primary=0.10 cfs 1,798 cf Secondary=0.00 cfs 0 cf Outflow=0.10 cfs 1,798 cf

Pond 20P: SDMH / POC C Peak Elev=11.81' Inflow=0.04 cfs 79 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.04 cfs 79 cf

Pond 26P: Pr. SDMH #3 / POC A Peak Elev=14.34' Inflow=8.76 cfs 36,837 cf
18.0" Round Culvert x 2.00 n=0.011 L=96.0' S=0.0052 '/' Outflow=8.76 cfs 36,837 cf

Pond 27P: Ex. SDMH#2 / POC B Peak Elev=13.43' Inflow=8.90 cfs 37,450 cf
Primary=8.90 cfs 37,450 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=8.90 cfs 37,450 cf

Pond 28P: Ex. SDMH #3 Peak Elev=12.35' Inflow=8.90 cfs 37,450 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=8.90 cfs 37,450 cf

Pond 29P: Ex. SDMH #4 Peak Elev=9.91' Inflow=8.90 cfs 37,450 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=8.90 cfs 37,450 cf

Pond 30P: Ex. SDMH #5 Peak Elev=9.15' Inflow=8.90 cfs 37,450 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=8.90 cfs 37,450 cf

Pond 31P: Pr. SDMH #4 Peak Elev=14.48' Inflow=5.45 cfs 9,698 cf
18.0" Round Culvert x 2.00 n=0.011 L=29.0' S=0.0052 '/' Outflow=5.45 cfs 9,698 cf

Pond 32P: Ex. SDMH#1 Peak Elev=14.45' Inflow=3.34 cfs 27,138 cf
24.0" Round Culvert n=0.011 L=18.0' S=0.0056 '/' Outflow=3.34 cfs 27,138 cf

Link 25L: Bedford Street Garage

Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 6S: Pr. Area #1 Runoff Area=2,714 sf 100.00% Impervious Runoff Depth=3.36"
Tc=5.0 min CN=98.0 Runoff=0.22 cfs 759 cf

Subcatchment 7S: Pr. Area #2 Runoff Area=115,349 sf 100.00% Impervious Runoff Depth=3.36"
Tc=10.0 min CN=98.0 Runoff=8.07 cfs 32,261 cf

Subcatchment 8S: Pr. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=3.36"
Tc=5.0 min CN=98.0 Runoff=3.13 cfs 10,683 cf

Subcatchment 9S: Pr. Area #4 Runoff Area=33,888 sf 100.00% Impervious Runoff Depth=3.36"
Tc=5.0 min CN=98.0 Runoff=2.77 cfs 9,478 cf

Subcatchment 10S: Pr. Area #5 Runoff Area=322 sf 100.00% Impervious Runoff Depth=3.36"
Tc=5.0 min CN=98.0 Runoff=0.03 cfs 90 cf

Pond 10P: Parking Lot Peak Elev=15.01' Storage=26 cf Inflow=10.65 cfs 42,944 cf
Primary=7.07 cfs 10,806 cf Secondary=3.62 cfs 32,137 cf Tertiary=0.00 cfs 0 cf Outflow=10.64 cfs 42,943 cf

Pond 11P: Pr. SDMH #1 Peak Elev=13.94' Inflow=10.64 cfs 46,486 cf
Primary=10.48 cfs 46,422 cf Secondary=0.16 cfs 64 cf Outflow=10.64 cfs 46,486 cf

Pond 17P: Retention System#1 Peak Elev=13.86' Storage=6,461 cf Inflow=2.77 cfs 9,478 cf
Primary=0.42 cfs 3,543 cf Secondary=0.00 cfs 0 cf Outflow=0.42 cfs 3,543 cf

Pond 20P: SDMH / POC C Peak Elev=11.93' Inflow=0.18 cfs 154 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.18 cfs 154 cf

Pond 26P: Pr. SDMH #3 / POC A Peak Elev=14.52' Inflow=10.64 cfs 46,486 cf
18.0" Round Culvert x 2.00 n=0.011 L=96.0' S=0.0052 '/' Outflow=10.64 cfs 46,486 cf

Pond 27P: Ex. SDMH#2 / POC B Peak Elev=13.55' Inflow=10.67 cfs 47,181 cf
Primary=10.67 cfs 47,181 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=10.67 cfs 47,181 cf

Pond 28P: Ex. SDMH #3 Peak Elev=12.52' Inflow=10.67 cfs 47,181 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=10.67 cfs 47,181 cf

Pond 29P: Ex. SDMH #4 Peak Elev=10.11' Inflow=10.67 cfs 47,181 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=10.67 cfs 47,181 cf

Pond 30P: Ex. SDMH #5 Peak Elev=9.31' Inflow=10.67 cfs 47,181 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=10.67 cfs 47,181 cf

Pond 31P: Pr. SDMH #4 Peak Elev=14.68' Inflow=7.07 cfs 14,349 cf
18.0" Round Culvert x 2.00 n=0.011 L=29.0' S=0.0052 '/' Outflow=7.07 cfs 14,349 cf

Pond 32P: Ex. SDMH#1 Peak Elev=14.61' Inflow=3.62 cfs 32,137 cf
24.0" Round Culvert n=0.011 L=18.0' S=0.0056 '/' Outflow=3.62 cfs 32,137 cf

Link 25L: Bedford Street Garage

Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 6S: Pr. Area #1 Runoff Area=2,714 sf 100.00% Impervious Runoff Depth=4.37"
Tc=5.0 min CN=98.0 Runoff=0.29 cfs 989 cf

Subcatchment 7S: Pr. Area #2 Runoff Area=115,349 sf 100.00% Impervious Runoff Depth=4.37"
Tc=10.0 min CN=98.0 Runoff=10.41 cfs 42,043 cf

Subcatchment 8S: Pr. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=4.37"
Tc=5.0 min CN=98.0 Runoff=4.03 cfs 13,922 cf

Subcatchment 9S: Pr. Area #4 Runoff Area=33,888 sf 100.00% Impervious Runoff Depth=4.37"
Tc=5.0 min CN=98.0 Runoff=3.58 cfs 12,352 cf

Subcatchment 10S: Pr. Area #5 Runoff Area=322 sf 100.00% Impervious Runoff Depth=4.37"
Tc=5.0 min CN=98.0 Runoff=0.03 cfs 117 cf

Pond 10P: Parking Lot Peak Elev=15.39' Storage=32 cf Inflow=13.73 cfs 55,965 cf
Primary=9.78 cfs 16,144 cf Secondary=3.99 cfs 39,821 cf Tertiary=0.00 cfs 0 cf Outflow=13.72 cfs 55,965 cf

Pond 11P: Pr. SDMH #1 Peak Elev=14.31' Inflow=13.72 cfs 62,381 cf
Primary=12.96 cfs 62,015 cf Secondary=0.80 cfs 366 cf Outflow=13.72 cfs 62,381 cf

Pond 17P: Retention System#1 Peak Elev=14.65' Storage=7,621 cf Inflow=3.58 cfs 12,352 cf
Primary=2.11 cfs 6,417 cf Secondary=0.00 cfs 0 cf Outflow=2.11 cfs 6,417 cf

Pond 20P: SDMH / POC C Peak Elev=12.18' Inflow=0.82 cfs 484 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=0.82 cfs 484 cf

Pond 26P: Pr. SDMH #3 / POC A Peak Elev=14.87' Inflow=13.72 cfs 62,381 cf
18.0" Round Culvert x 2.00 n=0.011 L=96.0' S=0.0052 '/' Outflow=13.72 cfs 62,381 cf

Pond 27P: Ex. SDMH#2 / POC B Peak Elev=13.75' Inflow=13.22 cfs 63,004 cf
Primary=13.22 cfs 63,004 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=13.22 cfs 63,004 cf

Pond 28P: Ex. SDMH #3 Peak Elev=12.78' Inflow=13.22 cfs 63,004 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=13.22 cfs 63,004 cf

Pond 29P: Ex. SDMH #4 Peak Elev=10.41' Inflow=13.22 cfs 63,004 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=13.22 cfs 63,004 cf

Pond 30P: Ex. SDMH #5 Peak Elev=9.56' Inflow=13.22 cfs 63,004 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=13.22 cfs 63,004 cf

Pond 31P: Pr. SDMH #4 Peak Elev=15.09' Inflow=9.78 cfs 22,560 cf
18.0" Round Culvert x 2.00 n=0.011 L=29.0' S=0.0052 '/' Outflow=9.78 cfs 22,560 cf

Pond 32P: Ex. SDMH#1 Peak Elev=14.93' Inflow=3.99 cfs 39,821 cf
24.0" Round Culvert n=0.011 L=18.0' S=0.0056 '/' Outflow=3.99 cfs 39,821 cf

Link 25L: Bedford Street Garage

Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 6S: Pr. Area #1 Runoff Area=2,714 sf 100.00% Impervious Runoff Depth=5.21"
Tc=5.0 min CN=98.0 Runoff=0.34 cfs 1,179 cf

Subcatchment 7S: Pr. Area #2 Runoff Area=115,349 sf 100.00% Impervious Runoff Depth=5.21"
Tc=10.0 min CN=98.0 Runoff=12.33 cfs 50,105 cf

Subcatchment 8S: Pr. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=5.21"
Tc=5.0 min CN=98.0 Runoff=4.78 cfs 16,592 cf

Subcatchment 9S: Pr. Area #4 Runoff Area=33,888 sf 100.00% Impervious Runoff Depth=5.21"
Tc=5.0 min CN=98.0 Runoff=4.24 cfs 14,720 cf

Subcatchment 10S: Pr. Area #5 Runoff Area=322 sf 100.00% Impervious Runoff Depth=5.21"
Tc=5.0 min CN=98.0 Runoff=0.04 cfs 140 cf

Pond 10P: Parking Lot Peak Elev=16.14' Storage=1,078 cf Inflow=16.26 cfs 66,697 cf
Primary=11.71 cfs 21,113 cf Secondary=4.58 cfs 45,583 cf Tertiary=0.00 cfs 0 cf Outflow=16.08 cfs 66,696 cf

Pond 11P: Pr. SDMH #1 Peak Elev=14.95' Inflow=18.88 cfs 75,481 cf
Primary=17.62 cfs 74,374 cf Secondary=1.25 cfs 1,107 cf Outflow=18.88 cfs 75,481 cf

Pond 17P: Retention System#1 Peak Elev=16.06' Storage=7,813 cf Inflow=4.24 cfs 14,720 cf
Primary=4.22 cfs 8,785 cf Secondary=0.00 cfs 0 cf Outflow=4.22 cfs 8,785 cf

Pond 20P: SDMH / POC C Peak Elev=12.31' Inflow=1.28 cfs 1,247 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=1.28 cfs 1,247 cf

Pond 26P: Pr. SDMH #3 / POC A Peak Elev=15.82' Inflow=18.88 cfs 75,481 cf
18.0" Round Culvert x 2.00 n=0.011 L=96.0' S=0.0052 '/' Outflow=18.88 cfs 75,481 cf

Pond 27P: Ex. SDMH#2 / POC B Peak Elev=14.19' Inflow=17.86 cfs 75,553 cf
Primary=17.86 cfs 75,553 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=17.86 cfs 75,553 cf

Pond 28P: Ex. SDMH #3 Peak Elev=13.32' Inflow=17.86 cfs 75,553 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=17.86 cfs 75,553 cf

Pond 29P: Ex. SDMH #4 Peak Elev=11.10' Inflow=17.86 cfs 75,553 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=17.86 cfs 75,553 cf

Pond 30P: Ex. SDMH #5 Peak Elev=10.15' Inflow=17.86 cfs 75,553 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=17.86 cfs 75,553 cf

Pond 31P: Pr. SDMH #4 Peak Elev=16.03' Inflow=14.71 cfs 29,898 cf
18.0" Round Culvert x 2.00 n=0.011 L=29.0' S=0.0052 '/' Outflow=14.71 cfs 29,898 cf

Pond 32P: Ex. SDMH#1 Peak Elev=15.88' Inflow=4.58 cfs 45,583 cf
24.0" Round Culvert n=0.011 L=18.0' S=0.0056 '/' Outflow=4.58 cfs 45,583 cf

Link 25L: Bedford Street Garage

Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Summary for Subcatchment 6S: Pr. Area #1

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 1,443 cf, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
2,714	98.0	Paved parking, HSG D
2,714		100.00% Impervious Area

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

Summary for Subcatchment 7S: Pr. Area #2

Runoff = 15.00 cfs @ 12.13 hrs, Volume= 61,339 cf, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
115,349	98.0	Paved parking, HSG D
115,349		100.00% Impervious Area

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

Summary for Subcatchment 8S: Pr. Area #3

Runoff = 5.81 cfs @ 12.07 hrs, Volume= 20,312 cf, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
38,197	98.0	Roofs, HSG D
38,197		100.00% Impervious Area

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

Summary for Subcatchment 9S: Pr. Area #4

Runoff = 5.15 cfs @ 12.07 hrs, Volume= 18,021 cf, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
33,888	98.0	Roofs, HSG B
33,888		100.00% Impervious Area

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

Summary for Subcatchment 10S: Pr. Area #5

Runoff = 0.05 cfs @ 12.07 hrs, Volume= 171 cf, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25-Year Rainfall=6.62"

Area (sf)	CN	Description
322	98.0	Paved parking, HSG D
0	80.0	>75% Grass cover, Good, HSG D
322	98.0	Weighted Average
322		100.00% Impervious Area

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

Summary for Pond 10P: Parking Lot

Inflow Area = 153,546 sf,100.00% Impervious, Inflow Depth = 6.38" for 25-Year event
Inflow = 19.79 cfs @ 12.11 hrs, Volume= 81,651 cf
Outflow = 18.29 cfs @ 12.23 hrs, Volume= 81,650 cf, Atten= 8%, Lag= 6.8 min
Primary = 12.82 cfs @ 12.23 hrs, Volume= 27,690 cf
Secondary = 5.22 cfs @ 12.24 hrs, Volume= 53,778 cf
Tertiary = 0.73 cfs @ 12.21 hrs, Volume= 183 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.53' @ 12.21 hrs Surf.Area= 13,955 sf Storage= 4,689 cf
Flood Elev= 16.90' Surf.Area= 19,811 sf Storage= 9,197 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.0 min (747.3 - 746.3)

Volume	Invert	Avail.Storage	Storage Description
#1	13.40'	37 cf	**4.00'W x 4.00'L x 2.30'H CB**
#2	15.40'	9,160 cf	**Trench Drain / Double CB (Irregular)** Listed below (Recalc)
		9,197 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
15.40	8	12.0	0	0	8
15.50	72	36.0	3	3	100
15.60	378	130.0	20	24	1,341
15.70	620	166.0	49	73	2,190
15.80	986	212.0	80	153	3,573
15.90	1,843	326.0	139	292	8,454
16.00	2,886	393.0	235	527	12,288
16.10	4,188	448.0	352	878	15,969
16.20	5,792	544.0	497	1,375	23,547
16.30	8,436	679.0	707	2,083	36,686
16.40	10,645	710.0	952	3,034	40,113
16.50	13,336	740.0	1,197	4,231	43,576
16.60	15,337	779.0	1,432	5,663	48,291
16.70	17,423	794.0	1,637	7,300	50,170
16.80	19,795	822.0	1,860	9,160	53,771

Device	Routing	Invert	Outlet Devices
#1	Primary	13.80'	**18.0" Round Twin 18" PVC X 2.00** L= 117.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.80' / 13.25' S= 0.0047 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf
#2	Secondary	13.45'	**12.0" W x 12.0" H Box Culvert** L= 10.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 13.45' / 13.20' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 1.00 sf
#3	Tertiary	16.45'	**Asymmetrical Weir, C= 3.27** Offset (feet) 0.00 9.10 17.80 26.65 36.06 43.97 53.90 62.08 71.77 Height (feet) 0.69 0.26 0.14 0.10 0.00 0.02 0.24 0.41 0.69

Primary OutFlow Max=8.86 cfs @ 12.23 hrs HW=16.51' TW=16.22' (Dynamic Tailwater)
↑—**1=Twin 18" PVC** (Outlet Controls 8.86 cfs @ 2.51 fps)

Secondary OutFlow Max=4.05 cfs @ 12.24 hrs HW=16.50' TW=15.79' (Dynamic Tailwater)
↑—**2=Culvert** (Inlet Controls 4.05 cfs @ 4.05 fps)

Tertiary OutFlow Max=0.65 cfs @ 12.21 hrs HW=16.52' TW=0.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** (Weir Controls 0.65 cfs @ 0.52 fps)

Summary for Pond 11P: Pr. SDMH #1

Inflow Area = 187,434 sf,100.00% Impervious, Inflow Depth = 5.99" for 25-Year event
Inflow = 21.93 cfs @ 12.06 hrs, Volume= 93,553 cf
Outflow = 21.93 cfs @ 12.06 hrs, Volume= 93,553 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.46 cfs @ 12.06 hrs, Volume= 91,451 cf
Secondary = 1.54 cfs @ 12.08 hrs, Volume= 2,102 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 15.64' @ 12.08 hrs
Flood Elev= 16.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.55'	**18.0" Round 24" PVC X 2.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.55' / 12.50' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf
#2	Secondary	13.70'	**8.0" Round Culvert** L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.70' / 13.00' S= 0.0054 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf

Primary OutFlow Max=13.70 cfs @ 12.06 hrs HW=15.30' TW=14.65' (Dynamic Tailwater)
↑—**1=24" PVC** (Inlet Controls 13.70 cfs @ 3.88 fps)

Secondary OutFlow Max=1.52 cfs @ 12.08 hrs HW=15.59' TW=12.38' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 1.52 cfs @ 4.36 fps)

Summary for Pond 17P: Retention System#1

Inflow Area = 33,888 sf,100.00% Impervious, Inflow Depth = 6.38" for 25-Year event
Inflow = 5.15 cfs @ 12.07 hrs, Volume= 18,021 cf
Outflow = 4.94 cfs @ 12.09 hrs, Volume= 12,085 cf, Atten= 4%, Lag= 0.9 min
Primary = 4.94 cfs @ 12.09 hrs, Volume= 12,085 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.58' @ 12.14 hrs Surf.Area= 1,953 sf Storage= 7,820 cf

Plug-Flow detention time= 213.2 min calculated for 12,072 cf (67% of inflow)
Center-of-Mass det. time= 113.7 min (856.5 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	9.20'	1,304 cf	**10.00'W x 194.00'L x 6.17'H Field A** 11,963 cf Overall - 8,704 cf Embedded = 3,259 cf x 40.0% Voids
#2A	9.70'	6,471 cf	**retain_it retain_it 5.0'** x 24 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 1 Rows adjusted for 519.5 cf perimeter wall
#3	13.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		7,825 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	13.50'	**18.0" Round 18" PVC** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.50' / 13.30' S= 0.0167 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf
#2	Secondary	16.60'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=15.89' TW=16.29' (Dynamic Tailwater)
↑—**1=18" PVC** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=9.20' TW=13.40' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 20P: SDMH / POC C

Inflow Area = 322 sf,100.00% Impervious, Inflow Depth = 84.70" for 25-Year event
Inflow = 1.59 cfs @ 12.08 hrs, Volume= 2,273 cf
Outflow = 1.59 cfs @ 12.08 hrs, Volume= 2,273 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.08 hrs, Volume= 2,273 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 12.38' @ 12.08 hrs
Flood Elev= 17.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	11.70'	**18.0" Round 18" RCP** L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.70' / 11.30' S= 0.0040 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=1.57 cfs @ 12.08 hrs HW=12.38' (Free Discharge)
↑—**1=18" RCP** (Barrel Controls 1.57 cfs @ 2.97 fps)

Summary for Pond 26P: Pr. SDMH #3 / POC A

Inflow Area = 187,434 sf,100.00% Impervious, Inflow Depth = 5.99" for 25-Year event
Inflow = 21.93 cfs @ 12.06 hrs, Volume= 93,553 cf
Outflow = 21.93 cfs @ 12.06 hrs, Volume= 93,553 cf, Atten= 0%, Lag= 0.0 min
Primary = 21.93 cfs @ 12.06 hrs, Volume= 93,553 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.36' @ 12.09 hrs
Flood Elev= 17.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.10'	**18.0" Round Culvert X 2.00** L= 96.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 13.10' / 12.60' S= 0.0052 '/' Cc= 0.900
n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=13.64 cfs @ 12.06 hrs HW=15.96' TW=15.32' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 13.64 cfs @ 3.86 fps)

Summary for Pond 27P: Ex. SDMH#2 / POC B

Inflow Area =	190,148 sf,100.00% Impervious,		Inflow Depth =	5.86"	for 25-Year event
Inflow =	20.87 cfs @	12.06 hrs, Volume=	92,894 cf		
Outflow =	20.87 cfs @	12.06 hrs, Volume=	92,894 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	20.87 cfs @	12.06 hrs, Volume=	92,894 cf		
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0 cf		
Tertiary =	0.00 cfs @	0.00 hrs, Volume=	0 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 14.87' @ 12.08 hrs
Flood Elev= 16.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.40'	**18.0" Round Culvert X 2.00** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.40' / 11.20' S= 0.0400 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf
#2	Secondary	16.10'	**24.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	16.40'	**24.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=14.49 cfs @ 12.06 hrs HW=14.65' TW=13.92' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 14.49 cfs @ 4.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.40' TW=11.00' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.40' TW=11.00' (Dynamic Tailwater)
↑—**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 28P: Ex. SDMH #3

Inflow Area =	190,148 sf,100.00% Impervious,		Inflow Depth =	5.86"	for 25-Year event
Inflow =	20.87 cfs @	12.06 hrs, Volume=	92,894 cf		
Outflow =	20.87 cfs @	12.06 hrs, Volume=	92,894 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	20.87 cfs @	12.06 hrs, Volume=	92,894 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 14.25' @ 12.07 hrs
Flood Elev= 16.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	11.00'	**24.0" Round RCP_Round 24"**

L= 303.0' RCP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 11.00' / 8.40' S= 0.0086 '/' Cc= 0.900
n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=16.78 cfs @ 12.06 hrs HW=13.92' TW=11.59' (Dynamic Tailwater)
↑—**1=RCP_Round 24"** (Outlet Controls 16.78 cfs @ 5.34 fps)

Summary for Pond 29P: Ex. SDMH #4

Inflow Area = 190,148 sf,100.00% Impervious, Inflow Depth = 5.86" for 25-Year event
Inflow = 20.87 cfs @ 12.06 hrs, Volume= 92,894 cf
Outflow = 20.87 cfs @ 12.06 hrs, Volume= 92,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.87 cfs @ 12.06 hrs, Volume= 92,894 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 12.03' @ 12.08 hrs
Flood Elev= 16.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	8.40'	**24.0" Round RCP_Round 24"** L= 62.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.40' / 7.80' S= 0.0097 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=16.33 cfs @ 12.06 hrs HW=11.59' TW=10.42' (Dynamic Tailwater)
↑—**1=RCP_Round 24"** (Inlet Controls 16.33 cfs @ 5.20 fps)

Summary for Pond 30P: Ex. SDMH #5

Inflow Area = 190,148 sf,100.00% Impervious, Inflow Depth = 5.86" for 25-Year event
Inflow = 20.87 cfs @ 12.06 hrs, Volume= 92,894 cf
Outflow = 20.87 cfs @ 12.06 hrs, Volume= 92,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.87 cfs @ 12.06 hrs, Volume= 92,894 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 10.62' @ 12.06 hrs
Flood Elev= 16.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	7.80'	**24.0" Round RCP_Round 24"** L= 78.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.80' / 6.45' S= 0.0173 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=19.27 cfs @ 12.06 hrs HW=10.42' (Free Discharge)
↑—**1=RCP_Round 24"** (Inlet Controls 19.27 cfs @ 6.13 fps)

Summary for Pond 31P: Pr. SDMH #4

Inflow Area = 187,434 sf,100.00% Impervious, Inflow Depth = 2.55" for 25-Year event
Inflow = 16.97 cfs @ 12.06 hrs, Volume= 39,775 cf
Outflow = 16.97 cfs @ 12.06 hrs, Volume= 39,775 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.97 cfs @ 12.06 hrs, Volume= 39,775 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.41' @ 12.11 hrs
Flood Elev= 16.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.25'	**18.0" Round Culvert X 2.00** L= 29.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.25' / 13.10' S= 0.0052 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 12.06 hrs HW=15.87' TW=15.91' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 32P: Ex. SDMH#1

Inflow = 5.22 cfs @ 12.24 hrs, Volume= 53,778 cf
Outflow = 5.22 cfs @ 12.24 hrs, Volume= 53,778 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.22 cfs @ 12.24 hrs, Volume= 53,778 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.42' @ 12.13 hrs
Flood Elev= 17.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.20'	**24.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.20' / 13.10' S= 0.0056 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 12.24 hrs HW=15.79' TW=15.88' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Link 25L: Bedford Street Garage

Inflow = 0.73 cfs @ 12.21 hrs, Volume= 183 cf
Primary = 0.73 cfs @ 12.21 hrs, Volume= 183 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 6S: Pr. Area #1 Runoff Area=2,714 sf 100.00% Impervious Runoff Depth=7.24"
Tc=5.0 min CN=98.0 Runoff=0.47 cfs 1,638 cf

Subcatchment 7S: Pr. Area #2 Runoff Area=115,349 sf 100.00% Impervious Runoff Depth=7.24"
Tc=10.0 min CN=98.0 Runoff=16.97 cfs 69,599 cf

Subcatchment 8S: Pr. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=7.24"
Tc=5.0 min CN=98.0 Runoff=6.57 cfs 23,047 cf

Subcatchment 9S: Pr. Area #4 Runoff Area=33,888 sf 100.00% Impervious Runoff Depth=7.24"
Tc=5.0 min CN=98.0 Runoff=5.83 cfs 20,447 cf

Subcatchment 10S: Pr. Area #5 Runoff Area=322 sf 100.00% Impervious Runoff Depth=7.24"
Tc=5.0 min CN=98.0 Runoff=0.06 cfs 194 cf

Pond 10P: Parking Lot Peak Elev=16.61' Storage=5,827 cf Inflow=23.28 cfs 92,786 cf
Primary=14.97 cfs 33,187 cf Secondary=5.60 cfs 58,039 cf Tertiary=3.25 cfs 1,860 cf Outflow=21.55 cfs 93,086 cf

Pond 11P: Pr. SDMH #1 Peak Elev=15.50' Inflow=20.80 cfs 105,598 cf
Primary=19.37 cfs 102,945 cf Secondary=1.49 cfs 2,653 cf Outflow=20.80 cfs 105,598 cf

Pond 17P: Retention System#1 Peak Elev=16.73' Storage=7,822 cf Inflow=5.83 cfs 20,447 cf
Primary=6.47 cfs 14,372 cf Secondary=0.92 cfs 140 cf Outflow=6.45 cfs 14,512 cf

Pond 20P: SDMH / POC C Peak Elev=12.37' Inflow=1.54 cfs 2,847 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=1.54 cfs 2,847 cf

Pond 26P: Pr. SDMH #3 / POC A Peak Elev=16.37' Inflow=20.80 cfs 105,598 cf
18.0" Round Culvert x 2.00 n=0.011 L=96.0' S=0.0052 '/' Outflow=20.80 cfs 105,598 cf

Pond 27P: Ex. SDMH#2 / POC B Peak Elev=14.83' Inflow=19.79 cfs 104,583 cf
Primary=19.79 cfs 104,583 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=19.79 cfs 104,583 cf

Pond 28P: Ex. SDMH #3 Peak Elev=13.95' Inflow=19.79 cfs 104,583 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=19.79 cfs 104,583 cf

Pond 29P: Ex. SDMH #4 Peak Elev=11.80' Inflow=19.79 cfs 104,583 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=19.79 cfs 104,583 cf

Pond 30P: Ex. SDMH #5 Peak Elev=10.51' Inflow=19.79 cfs 104,583 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=19.79 cfs 104,583 cf

Pond 31P: Pr. SDMH #4 Peak Elev=16.59' Inflow=16.03 cfs 47,560 cf
18.0" Round Culvert x 2.00 n=0.011 L=29.0' S=0.0052 '/' Outflow=16.03 cfs 47,560 cf

Pond 32P: Ex. SDMH#1 Peak Elev=16.41' Inflow=5.60 cfs 58,039 cf
24.0" Round Culvert n=0.011 L=18.0' S=0.0056 '/' Outflow=5.60 cfs 58,039 cf

Link 25L: Bedford Street Garage

Inflow=3.25 cfs 1,860 cf
Primary=3.25 cfs 1,860 cf

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 6S: Pr. Area #1 Runoff Area=2,714 sf 100.00% Impervious Runoff Depth=8.17"
Tc=5.0 min CN=98.0 Runoff=0.53 cfs 1,848 cf

Subcatchment 7S: Pr. Area #2 Runoff Area=115,349 sf 100.00% Impervious Runoff Depth=8.17"
Tc=10.0 min CN=98.0 Runoff=19.09 cfs 78,533 cf

Subcatchment 8S: Pr. Area #3 Runoff Area=38,197 sf 100.00% Impervious Runoff Depth=8.17"
Tc=5.0 min CN=98.0 Runoff=7.39 cfs 26,006 cf

Subcatchment 9S: Pr. Area #4 Runoff Area=33,888 sf 100.00% Impervious Runoff Depth=8.17"
Tc=5.0 min CN=98.0 Runoff=6.56 cfs 23,072 cf

Subcatchment 10S: Pr. Area #5 Runoff Area=322 sf 100.00% Impervious Runoff Depth=8.17"
Tc=5.0 min CN=98.0 Runoff=0.06 cfs 219 cf

Pond 10P: Parking Lot Peak Elev=16.71' Storage=7,518 cf Inflow=27.53 cfs 105,657 cf
Primary=21.95 cfs 36,723 cf Secondary=7.69 cfs 62,706 cf Tertiary=9.90 cfs 6,461 cf Outflow=30.63 cfs 105,891 cf

Pond 11P: Pr. SDMH #1 Peak Elev=17.08' Inflow=33.72 cfs 115,447 cf
Primary=31.69 cfs 112,107 cf Secondary=2.03 cfs 3,341 cf Outflow=33.72 cfs 115,447 cf

Pond 17P: Retention System#1 Peak Elev=16.91' Storage=7,824 cf Inflow=6.56 cfs 23,072 cf
Primary=7.20 cfs 16,018 cf Secondary=2.36 cfs 1,119 cf Outflow=7.29 cfs 17,137 cf

Pond 20P: SDMH / POC C Peak Elev=12.48' Inflow=2.04 cfs 3,560 cf
18.0" Round Culvert n=0.013 L=100.0' S=0.0040 '/' Outflow=2.04 cfs 3,560 cf

Pond 26P: Pr. SDMH #3 / POC A Peak Elev=18.03' Inflow=33.72 cfs 115,447 cf
18.0" Round Culvert x 2.00 n=0.011 L=96.0' S=0.0052 '/' Outflow=33.72 cfs 115,447 cf

Pond 27P: Ex. SDMH#2 / POC B Peak Elev=18.87' Inflow=31.80 cfs 113,954 cf
Primary=29.88 cfs 112,635 cf Secondary=1.92 cfs 963 cf Tertiary=1.74 cfs 357 cf Outflow=31.80 cfs 113,954 cf

Pond 28P: Ex. SDMH #3 Peak Elev=18.80' Inflow=31.80 cfs 113,954 cf
24.0" Round Culvert n=0.013 L=303.0' S=0.0086 '/' Outflow=31.80 cfs 113,954 cf

Pond 29P: Ex. SDMH #4 Peak Elev=14.28' Inflow=31.80 cfs 113,954 cf
24.0" Round Culvert n=0.013 L=62.0' S=0.0097 '/' Outflow=31.80 cfs 113,954 cf

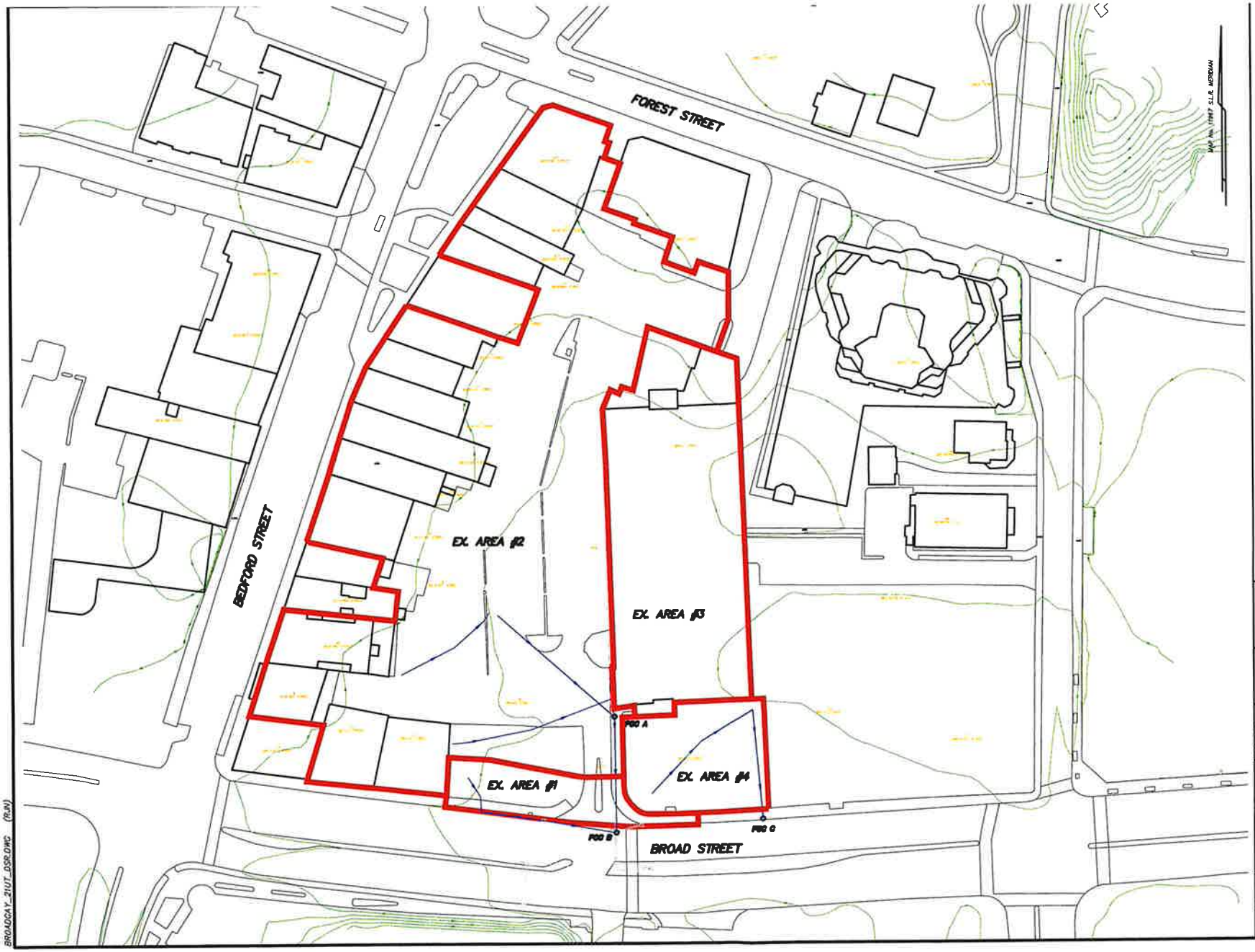
Pond 30P: Ex. SDMH #5 Peak Elev=13.22' Inflow=31.80 cfs 113,954 cf
24.0" Round Culvert n=0.013 L=78.0' S=0.0173 '/' Outflow=31.80 cfs 113,954 cf

Pond 31P: Pr. SDMH #4 Peak Elev=19.00' Inflow=26.03 cfs 52,741 cf
18.0" Round Culvert x 2.00 n=0.011 L=29.0' S=0.0052 '/' Outflow=26.03 cfs 52,741 cf

Pond 32P: Ex. SDMH#1 Peak Elev=18.04' Inflow=7.69 cfs 62,706 cf
24.0" Round Culvert n=0.011 L=18.0' S=0.0056 '/' Outflow=7.69 cfs 62,706 cf

Link 25L: Bedford Street Garage

Inflow=9.90 cfs 6,461 cf
Primary=9.90 cfs 6,461 cf



LOCATION MAP

NOTES:

1. Refer to a plan entitled "Mixed Use Development, TR Broad II LLC, 128 Broad Street Stamford, Connecticut, Grading Plan, Sheet 1 of 6," as prepared by D'Andrea Surveying & Engineering, PC.

2. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).

EXISTING WATERSHED MAP

PREPARED FOR

TR BROAD II, LLC

LOCATION

128–136 BROAD STREET
STAMFORD, CONNECTICUT

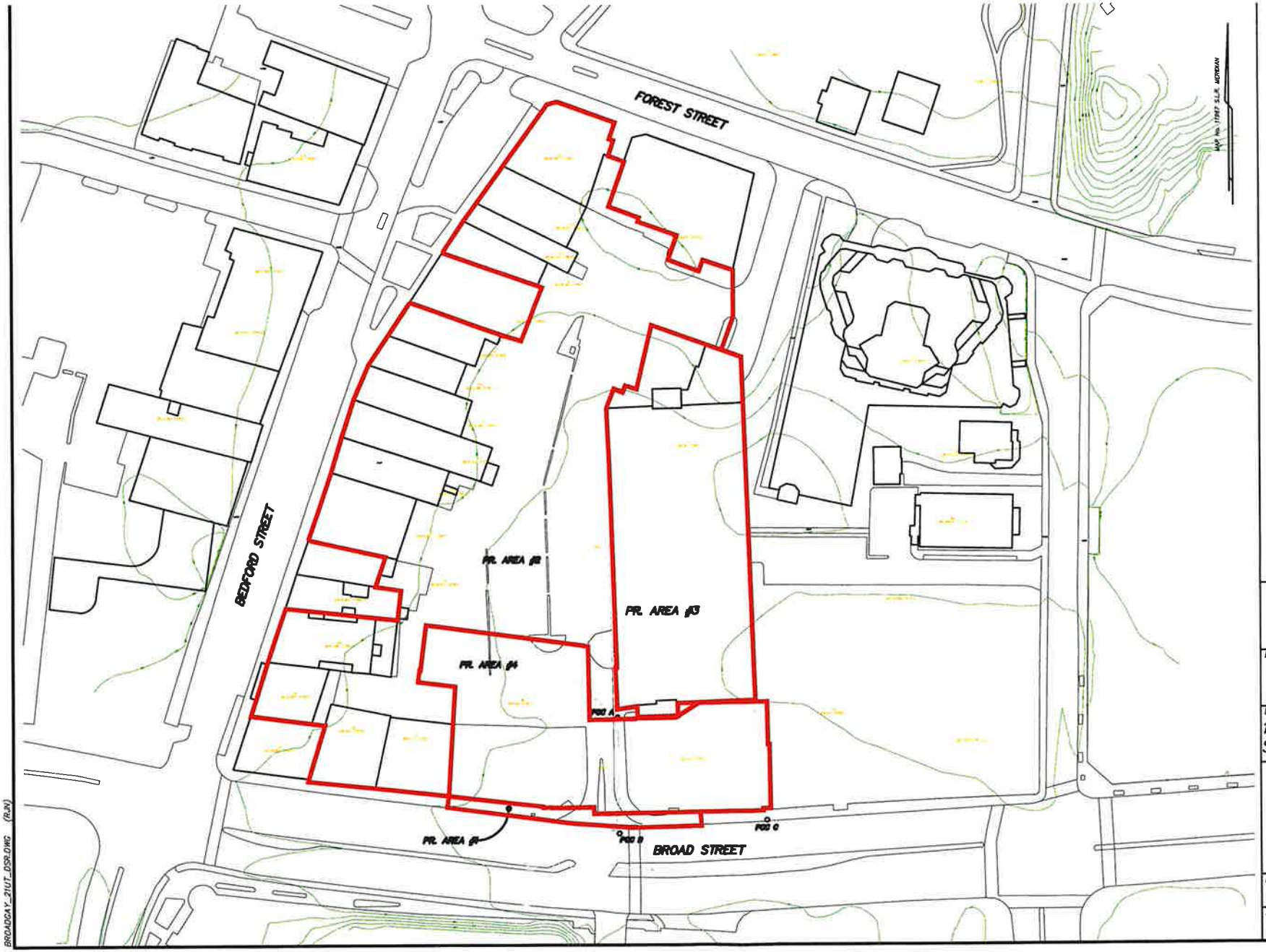
D'ANDREA SURVEYING & ENGINEERING, PC

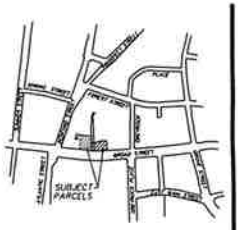
DATE: 10–3–22

SCALE: 1"=80'

SHEET No. EXH–A

BROADCAY_21UT_DSR.DWG (R.N)





LOCATION MAP

NOTES:

1. Refer to a plan entitled "Mixed Use Development, TR Broad II LLC, 128 Broad Street Stamford, Connecticut, Grading Plan, Sheet 1 of 6," as prepared by D'Andrea Surveying & Engineering, PC.

2. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).

PROPOSED WATERSHED MAP

PREPARED FOR

TR BROAD II, LLC

LOCATION

128–136 BROAD STREET
STAMFORD, CONNECTICUT

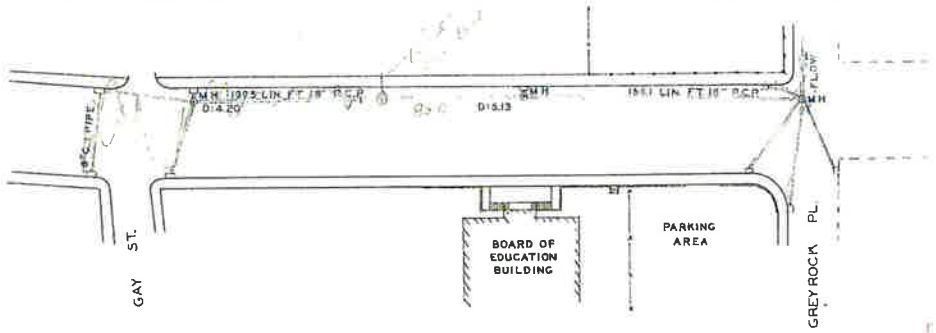
D'ANDREA SURVEYING & ENGINEERING, PC

DATE: 10–3–22

SCALE: 1"=80'

SHEET No. EXH–B

BROADWAY_21UT_DSR.DWG (BLN)



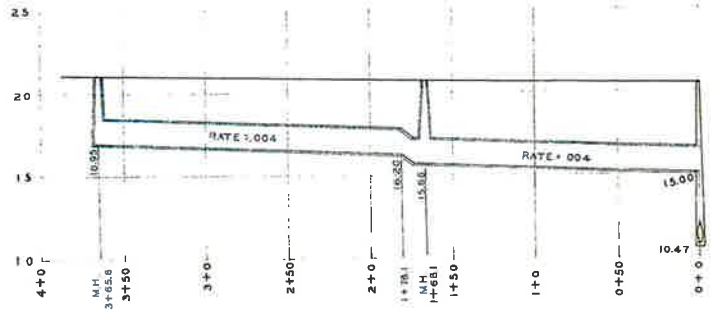
BROAD ST.

STORM WATER SEWER

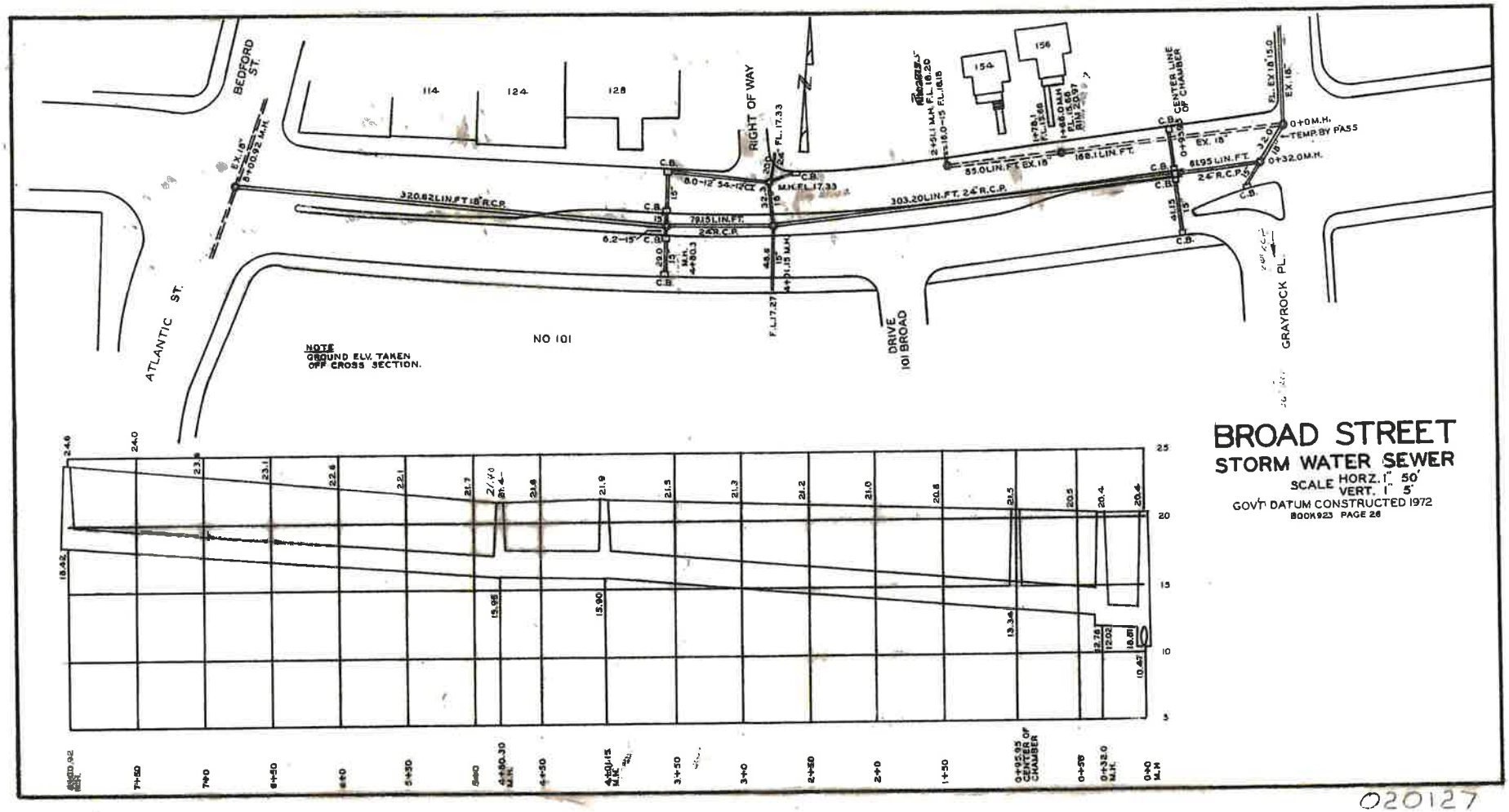
SCALE : HORZ. 1" = 50'
VERT. 1" = 5'

GOV'T DATUM CONSTRUCTED 1960
BOOK 714 PAGE 112

C.B. LATERALS 12" R.C.P.



020127

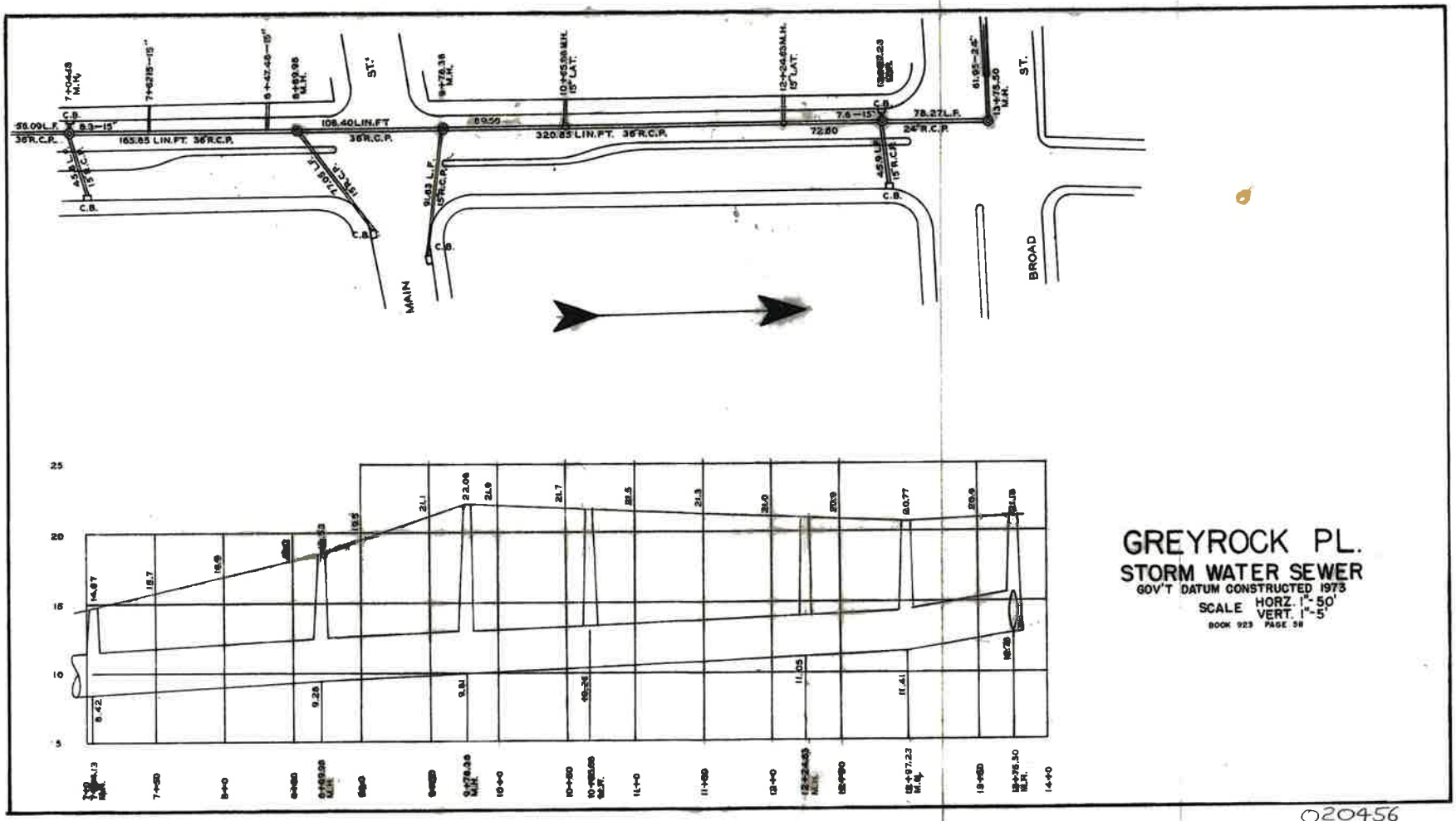


BROAD STREET
STORM WATER SEWER

SCALE HORZ. 1" = 50'
VERT. 1" = 5'

GOVT DATUM CONSTRUCTED 1972
BOOK 923 PAGE 26

020127



GREYROCK PL.

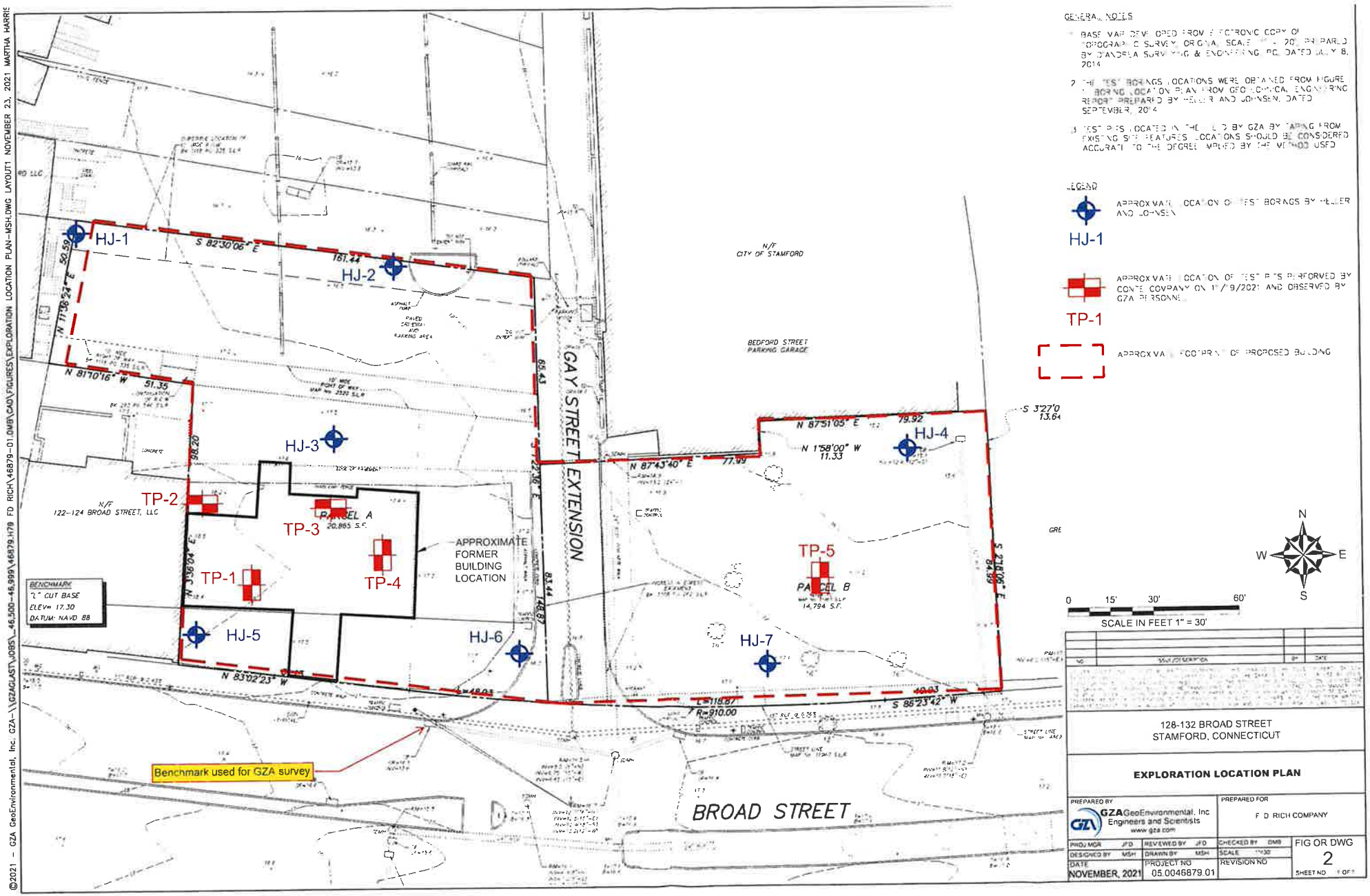
STORM WATER SEWER

GOV'T DATUM CONSTRUCTED 1973

SCALE HORZ. 1"-50'
VERT. 1"-5'

BOOK 923 PAGE 38

020456



City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

CHECKLISTS

Project Name: Mixed Use Development

Project Address 128-136 Broad Street

Property Owner(s) TR Broad II LLC

Tax Account Number(s) 001-2688, 004-0515

Engineer's Signature _____ Date: 10/28/2022

All checklists must be completed and submitted. Provide a brief explanation for any items not provided. Check boxes as completed or N/A as not applicable.

✓	**Existing Conditions Plan**
✓	**Stormwater Management Report**
✓	**Stormwater Management Plan / Construction Plan**
	Certificate of Occupancy

Checklist for Existing Conditions Plan

I. General Information

✓	Site address
✓	Orientation, block, zone, City, street name
✓	Applicant name and legal address
✓	Surveyor name, address, contact information
✓	North arrow, bar scale, horizontal and vertical datum
✓	24" x 36" sheet size unless otherwise approved
✓	Existing conditions survey shall be prepared in accordance with the Minimum Standards for Surveys and Maps in the State of Connecticut. The class of survey shall be A-2 and T-2 and shall be represented as such on the map. The base map shall be sealed and signed by a Professional Land Surveyor licensed in the State of Connecticut.
✓	Drawing scale shall be set at 1" = 20' or 1" = 40' when possible

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

II. Existing Conditions Plan Elements

✓	Show and label all property boundaries with linear bearing / distances and curve information
	Required zoning setbacks
✓	Show and label monument information
✓	Show and label at least one permanent benchmark on the parcel with northing, easting and elevation
✓	Label adjacent property ownership information
✓	Existing contours based on NAVD 88 (no exceptions) at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent at a minimum of 20 ft. beyond the property boundaries of the subject parcel
✓	Show spot elevations at low points, high points, and where topography is flatter than 2 percent
✓	All buildings and structures (label current use and finished floor elevations)
✓	All pavement, parking, driveways, property access points
✓	All roadways, streets, and rights-of-way. Label streets as public or private with street name
✓	All patios, decks, walkways, sidewalks, curb ramps (both adjacent to and opposite and existing roadways or intersections)
✓	Show and label (size, material, inverts) all existing utilities (overhead and underground) within the right-of-way and the project site (label ownership) including but not limited to water, gas and electrical services, wells, storm sewers, sanitary sewers and subsurface sewerage disposal systems.
✓	Show and label existing conveyance systems (swales, ditches, storm drains) including dimensions, elevations, sizes, slopes, and direction of flow
✓	Show and label boundaries of all easements, both public and private, with type, owner, and width
✓	Show and label all other existing features and improvements (e.g. light poles, mature trees of 8" (dbh) diameter or greater, vegetation, walls with top and bottom elevations, fences, pavement markings)

III. Resource Areas

	Show and label limits of inland wetlands, tidal wetlands and any associated setbacks.
	Show and label existing natural site features including tree canopy, outcroppings, permanent and intermittent watercourses, waterbodies, streams
	Show and label limits of floodplain and floodway along with FIRM references (Community Number, Panel, Suffix, and Date) including any effective Letters of Map Revision/Amendment, zone designation and elevation.
	Show and label any Conservation Easement Areas
	Show and label Connecticut Coastal Jurisdiction Line (CJL)
	Show and label existing steep slopes (25% and greater)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

Checklist for Stormwater Management Report

I. Project Report

A. Applicant / Site Information

✓	Applicant name, legal address, contact information (email & phone)
✓	Engineers name, legal address, contact information (email & phone)
✓	Site address and legal description
✓	Current / proposed zoning and land use
✓	Site vicinity map (8.5" x 11")

B. Project Description and Purpose

✓	Project description including proposed project elements and anticipated construction schedule

C. Existing Conditions Description

✓	Site area, ground cover, vegetation, features (roads, buildings, utilities, etc.)
✓	Site topography, slopes, drainage patterns, conveyances systems (swales, storm drains, etc.), stormwater discharge locations
	Receiving waterbody information including stormwater impairments and TMDL information (See the most recent State of Connecticut Integrated Water Quality Report)
✓	Site soils information including soil types, hydrologic soil group, bedrock / outcroppings, groundwater elevation, significant geologic features
✓	Provide NRCS Soils Mapping
	Resource protection areas (wetlands, streams, lakes, etc.), buffers, floodplains, floodways

D. Summary of Applicable General Design Criteria

✓	Methodology, design storm frequency
✓	Hydrologic design criteria
✓	Hydraulic design criteria
	Flood hazard areas

	Applying under "Lite" Stormwater Management: Skip to Section I (Refer to Flow Chart on page vii of the City of Stamford Stormwater Drainage Manual)

E. Project Type in Accordance with Standard 1 Definitions

	Area of disturbance, receiving waterbody classification (High Quality, Tidal Wetlands, Direct Waterfront)
✓	Project type (development, redevelopment, linear development)
✓	Pollutant reduction standard per flowchart Section 2.4

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

F. Summary of LID Site Constraints

	Description of sensitive areas for protection
	Mature tree inventory, which shall include 8-inch (dbh) diameter trees or greater
	Steep slopes
	Ledge and bedrock depth
	Seasonal high groundwater elevation
	Pollutant hotspots
	Summary of infiltration rates

G. Summary of Proposed Stormwater Treatment Practices

✓	Proposed LID controls (i.e. minimize impervious, minimize DCIA, minimize disturbance, increase time of concentrations, other LID controls and strategies)
✓	Location, size, types
✓	Design criteria and references
✓	Stormwater treatment practice, drainage area characteristics / details

H. Summary of Compliance with Standards 1

✓	Required pollutant reduction criteria
✓	Provided pollutant reduction (WQV) by stormwater treatment practice
✓	Summary of compliance with Standard 1

I. Summary of Compliance with Standards 2, 3, and 4

✓	Description of proposed stormwater management system
✓	Pre-development site hydrology with delineation of each watershed area and sub-basin
✓	Post-development site hydrology with delineation of each watershed area and sub-basin
✓	Comparison table of pre- and post-development hydrology, peak flow, volume, and percent difference
✓	Summary table of watershed areas and sub-basin areas, time of concentration and runoff coefficients
✓	Summary table demonstrating the 2-year, 24-hour post development peak flow rate is less than or equal to the lowest of either: - The pre-development 1-year, 24-hour storm peak flow rate - 50 percent of the pre-development 2-year, 24-hour storm peak flow rate
✓	Conveyance protection, emergency outlet sizing
	Hydraulic grade line summary and tail water elevation used in analysis
✓	Construction erosion and sediment control description, Standard 3
✓	Operation and Maintenance, maintenance tasks and schedule on construction plans per Standard 4

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

J. Summary of Compliance with Applicable Drainage Facility Design Requirements

✓	Description of applicable design requirements and compliance
✓	Description of proposed drainage facilities and compliance

K. Stormwater Management Report

✓	Signed and stamped by professional engineer licensed in the State of Connecticut
✓	Drainage impact statement in accordance with Standard 5B.

II. Supporting Calculations (as appendix to Project Report)

	Applying under "Lite" Stormwater Management: Skip to Section N

L. Water Quality Volume / Water Quality Flow Calculations

✓	Calculations demonstrating the total Water Quality Volume generated by the post-development site and the required retention/treatment volume per Standard 1 in cubic feet.
✓	Calculations demonstrating the total Water Quality Volume retained/treated by each stormwater treatment practice and the total Water Quality Volume generated by the post-development contributing drainage area to each stormwater treatment practice

M. Stormwater Treatment Practice Sizing Calculations

✓	Calculations demonstrating how each stormwater treatment practice has been designed and sized in accordance with the Structural Stormwater BMP Design references in Appendix B. Calculations will vary by stormwater treatment practice, but a minimum, applicants shall provide calculations in accordance with design criteria from the Connecticut Stormwater Quality Manual.

N. Hydrologic and Hydraulic Design Calculations

✓	Stream channel protection, Standard 2A
✓	Conveyance protection, Standard 2B
✓	Peak flow control (1-year, 2-year, 5-year, 10-year, 25-year, and 50-year storms), Standard 2C
	Inlet analysis
	Gutter flow (Site by site basis as requested by Engineering Bureau)
✓	Storm sewers and culverts (velocities, capacity, hydraulics)
	Hydraulic grade line required when pipe is flowing at full capacity o Provide existing and proposed summary table o Provide existing and proposed mapping, label structures
✓	Detention facilities (outlet structure, stage/storage, freeboard)
✓	Emergency outlet sizing, safely pass the 100 year storm, Standard 2D
	Outlet protection calculations, based on conveyance protection (i.e. riprap, energy dissipater)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

O. Hydrologic and Hydraulic Model, Existing and Proposed

✓	Drainage routing diagram
✓	Summary
✓	Storage pond input

P. Downstream analysis (Site by site basis as required by the Engineering Bureau)

	Downstream analysis, Standard 2E

III. Supporting Mapping (as appendix to Project Report)

Q. Pre-Development Drainage Basin Area Mapping

✓	11" x 17" or 8.5" x 11" sheet size
✓	Topography, drainage patterns, drainage area boundaries and sub basins, flow paths, times of concentration
✓	Locations of existing stormwater discharges
	Perennial and intermittent streams, wetlands, and floodplain / floodways
	NRCS soil types, locations, boring locations, infiltration testing locations
	Vegetation and groundcover
✓	Existing roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, decks and other structures
✓	Location, size, type of existing structural stormwater controls, facilities and conveyance systems

R. Post-Development Drainage Basin Area Mapping

✓	11" x 17" or 8.5" x 11" sheet size
✓	Topography, drainage patterns, drainage area boundaries and sub basins, flow paths, times of concentration
✓	Locations of proposed stormwater discharges
	Perennial and intermittent streams, wetlands, and floodplain / floodways
	NRCS soil types, locations, boring locations, infiltration testing locations
	Vegetation, ground cover and proposed limits of clearing/disturbance
✓	Proposed, roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, decks and other structures
✓	Location, size, type of proposed structural stormwater controls, facilities and conveyance systems

IV. DCIA Tracking Worksheet (as appendix to Project Report)

✓	DCIA Tracking Worksheet (Use form found in Appendix E)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

V. Proposed LID Review Map

	Applying under "Lite" Stormwater Management - Proposed LID Review Map NOT required.

A. General

	Site address
	Applicant name, legal address, contact information
	Engineers name, address, contact information
	North arrow, bar scale, horizontal and vertical datum
	Drawing scale shall be set at 1"=20' or 1"=40' when possible
	Signed and stamped by a Licensed Professional Engineer in the State of Connecticut
	11" x 17" or 24" x 36" sheet size unless otherwise approved
	Existing and proposed contours based on NAVD 88 at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent
	Locations of existing stormwater discharges
	Roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, and decks and other structures
	Location, size, ownership of stormwater conveyance systems (swales, pipes, etc.)

B. LID Constraints:

	Boring / test pit locations
	Infiltration testing locations and results
	Vegetation and proposed limits of clearing / disturbance
	NRCS soils mapping
	Steep slopes
	Surface waters / Perennial and intermittent streams
	Resource protection areas and buffers, wetlands, floodplain / floodways
	Existing vegetation and mature trees, which shall include 8-inch (dbh) diameter trees or greater
	Poor soils (HSG C & D)
	Shallow bedrock / ledge
	Seasonal high groundwater elevation
	Other site constraints (e.g. brownfield caps)

C. Proposed Stormwater Treatment Measures:

	Location, size, type, limits, and WQV provided by each proposed stormwater treatment practices
	Drainage area to each proposed stormwater treatment practice (total area, impervious area, WQV)

D. Site Summary Table:

	Total site area, disturbed area, pre- and post-development impervious areas
	Required pollutant reduction volume (retention or detention)
	Provided pollutant reduction volume (retention or detention)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

Checklist for Stormwater Management Plan / Construction Plans

A. General

✓	Site orientation, address and legal description
✓	Applicant name, legal address, contact information
✓	Engineers name, address, contact information
✓	North arrow, bar scale, horizontal and vertical datum
✓	Drawing scale shall be set at 1"=20' or 1"=40' when possible
✓	Stamped by a Licensed Professional Engineer in the State of Connecticut
✓	24" x 36" sheet size unless otherwise approved

B. Site Development Plans

✓	City of Stamford Standard Notes
✓	As required by the Drainage Maintenance Agreement, provide a written narrative describing the nature of the proposed development activity and the program for operation and maintenance of drainage facilities and control measures throughout the life of the project.
✓	Existing and proposed contours based on NAVD 88 at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent
✓	All required spot elevations to clearly depict positive pitch
✓	Top and bottom elevation of all walls
✓	Roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, and decks and other structures
✓	All utilities and easements
✓	Location, size, maintenance access, type of proposed structural stormwater controls and facilities with elevations and inverts
✓	Location, size, maintenance access, type of proposed non-structural stormwater controls and facilities with elevations and inverts
✓	Location, size, type of proposed stormwater infrastructure, inlets, manholes, infiltration and detentions systems, control structures with elevations and inverts
	Location, size, ownership of stormwater conveyance systems (swales, pipes, etc.) with elevations and inverts
✓	Identify roof leaders, curtain drains and foundation drains with elevations and inverts
✓	Proposed water quality treatment systems, size and model type
✓	Final stabilization measures which may include slope stabilization

C. Erosion and Sedimentation Control Plan

✓	Phasing and schedule
✓	Construction access and staging and stock pile areas
✓	Operation and maintenance of erosion and sedimentation controls
	Tree protection
✓	Downstream protection such as location of silt fencing
✓	Limit of disturbance
✓	Construction fencing

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

D. Construction Details

✓	Standard City of Stamford details
✓	Infiltration system details
✓	Control structure details
✓	Water quality treatment details
	Infiltration testing results

Checklist for Certificate of Occupancy

	Final Improvement Location Survey
	Stormwater Management Certification Form
	Final DCIA Tracking Worksheet
	Standard City of Stamford Drainage Maintenance Agreement (Agreement Covenant)

Other Certifications at the discretion of the Engineering Bureau and/or EPB

	Wall Certification
	Landscape Certification
	Landscape Maintenance Agreement
	Waiver Covering Storm Sewer Connection
	Waiver Covering Granite Block, Depressed Curb, and Driveway Aprons
	Flood Certification

FINAL SITE PLAN REVIEW SET

"MIXED USE DEVELOPMENT"

LOCATION

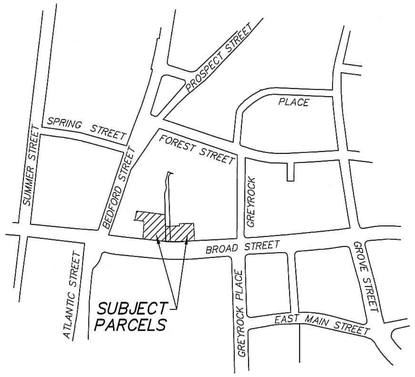
128 BROAD STREET
STAMFORD, CONNECTICUT

PREPARED FOR

TR BROAD II LLC

BLOCK No. 176
"C-G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP

SHEET INDEX

SHEET	TITLE	REVISION	DATE
–	TOPOGRAPHIC SURVEY	3	6-28-22
1 OF 6	GRADING PLAN	0	10-28-22
2 OF 6	STORM DRAINAGE & UTILITY PLAN	0	10-28-22
3 OF 6	PAVEMENT MARKINGS & SIGNAGE PLAN	0	10-28-22
4 OF 6	SEDIMENTATION & EROSION CONTROL PLAN	0	10-28-22
5 OF 6	NOTES AND DETAILS	0	10-28-22
6 OF 6	DETAILS	0	10-28-22
1 OF 1	OFFSITE PARKING LOT MODIFICATION PLAN	0	10-28-22
1 OF 1	CROSS SECTION PLAN	0	10-28-22
1 OF 1	CONSTRUCTION LOGISTICS PLAN	0	10-28-22

ENGINEERING PLANS PREPARED BY:

D'ANDREA SURVEYING & ENGINEERING, PC.
LEONARD C. D'ANDREA, CT PE No. 14869

10-28-22
DATE

ONLY COPIES OF THIS SET, BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S / SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, PC
• LAND PLANNERS
• ENGINEERS
• SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637-1779

PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT

REV.	DATE	DESCRIPTION
0	10-28-22	ZONING SUBMISSION

BROADSA~ 2IUT_COVERSHEET_01_REVS.DWG (RAY)

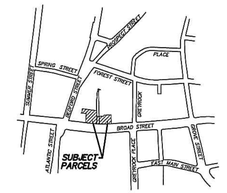
2IUT

LEGEND

— — 88 — —	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
× T=88.8 B=88.3	EXISTING WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	PROPERTY LINE
	ZONING DISTRICT LIMIT LINE
C	CABLE SERVICE
E	ELECTRIC SERVICE
G	GAS SERVICE
T	TELECOMMUNICATION SERVICE
W	WATER SERVICE
GG	GAS GATE
WG	WATER GATE
WM	WATER METER
OSW	OVERHEAD SERVICE WIRES
POLE	UTILITY POLE
CB	CATCH BASIN
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
FL	FLOWLINE

BLOCK No. 176

MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP – 1" = 800'±

THIS MAP DEPICTS SITE CONDITIONS AS OF MAY 2, 2022.

THE UNDERSIGNED DECLARES TO :

M&T BANK, ITS SUCCESSORS AND/OR ASSIGNS AS THEIR INTERESTS MAY APPEAR

FIRST AMERICAN TITLE INSURANCE COMPANY

TR BROAD II, LLC

CONTOURS AND ELEVATIONS DEPICTED HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

THIS MAP IS A TOPOGRAPHIC SURVEY. TOPOGRAPHIC DATA IS IN ACCORDANCE WITH CLASS "T–2" TOPOGRAPHIC ACCURACY. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A–2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20–300b–1 THROUGH 20–300b–20.

NEW MONUMENTATION HAS NOT BEEN SET AS A RESULT OF THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

AREA = 35,659 S.F.

REFER TO BOOK 4416 PAGE 166 AND MAPS No. 2520, 4859, 11967 11992 S.L.R.

LAND LIES IN "C–G" ZONING DISTRICT

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

D'ANDREA SURVEYING & ENGINEERING, P.C.

ANTHONY L. D'ANDREA, CT LS No. 9673 SURVEYOR

RIVERSIDE, CONNECTICUT JANUARY 12, 2022 JANUARY 18, 2022 MAY 2, 2022 JUNE 28, 2022

CONTOUR INTERVAL = ONE FOOT

1 INCH = 20 FEET

SCALE

20 0 20

IN FEET

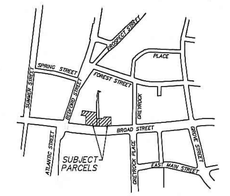
TOPOGRAPHIC SURVEY
DEPICTING
128–136 BROAD STREET
AND
GAY STREET EXTENSION
IN
STAMFORD, CONNECTICUT
PREPARED FOR
TR BROAD II LLC

BROADGAY_INVT_TO_3.DWG (C3D)

21UT

BLOCK No. 176
"C–G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

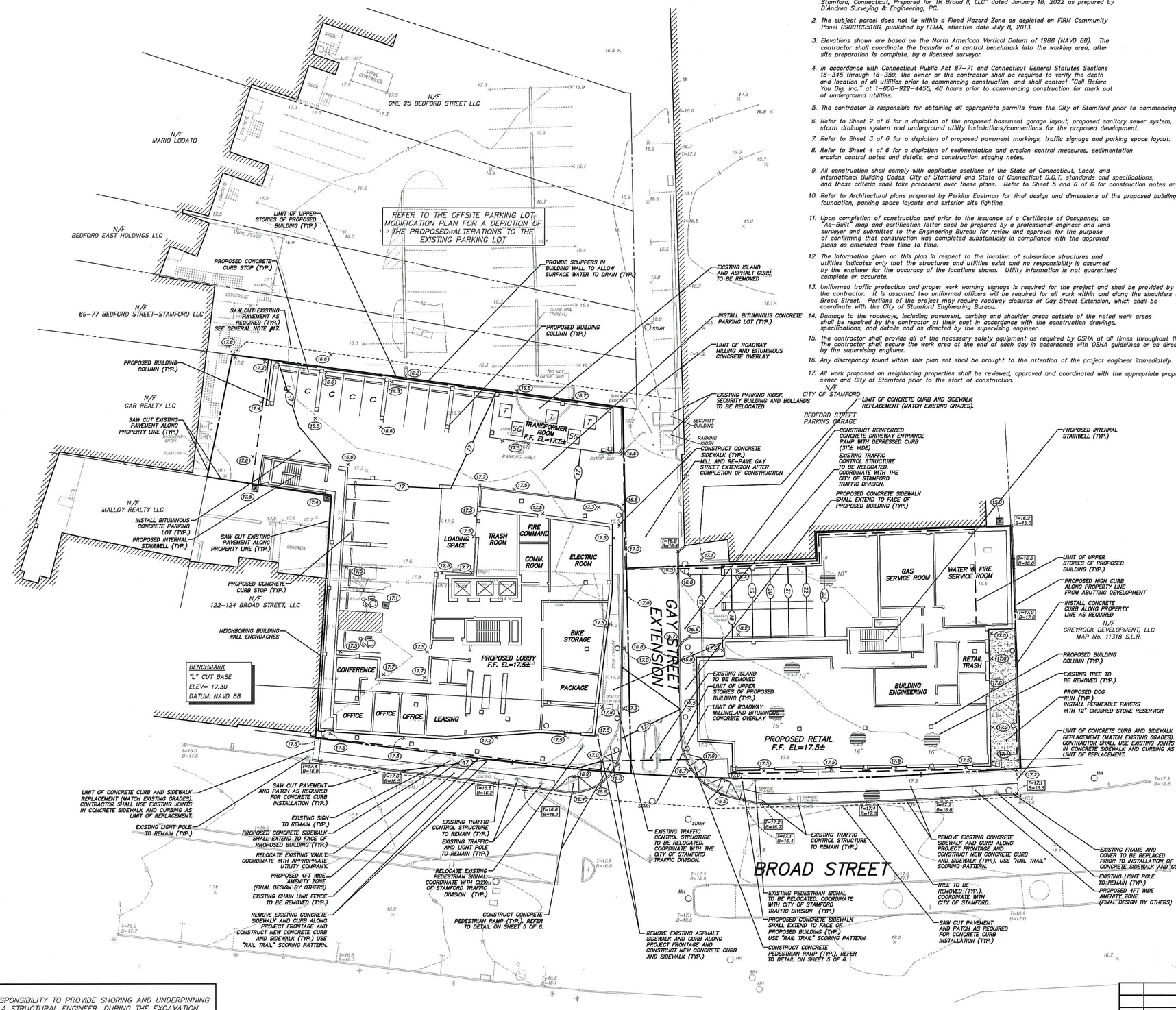
MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP – 1" = 800'±

GENERAL NOTES:

1. Boundary information, existing features, and topography were taken from a survey entitled "Topographic Survey Depicting 128–136 Broad Street and Gay Street Extension in Stamford, Connecticut, Prepared for TR Broad II, LLC" dated January 18, 2022 as prepared by D'Andrea Surveying & Engineering, Pc.
2. The subject parcel does not lie within a Flood Hazard Zone as depicted on FIRM Community Panel 09001C0516G, published by FEMA, effective date July 8, 2013.
3. Elevations shown are based on the North American Vertical Datum of 1988 (NAVD 88). The contractor shall coordinate the transfer of a control benchmark into the working area, after site preparation is complete, by a licensed surveyor.
4. In accordance with Connecticut Public Act 87–71 and Connecticut General Statutes Sections 16–345 through 16–359, the owner or the contractor shall be required to verify the depth and location of all utilities prior to commencing construction, and shall contact "Call Before You Dig, Inc." at 1–800–922–4455, 48 hours prior to commencing construction for mark out of underground utilities.
5. The contractor is responsible for obtaining all appropriate permits from the City of Stamford prior to commencing construction.
6. Refer to Sheet 2 of 6 for a depiction of the proposed basement garage layout, proposed sanitary sewer system, storm drainage system and underground utility installations/connections for the proposed development.
7. Refer to Sheet 3 of 6 for a depiction of proposed pavement markings, traffic signage and parking space layout.
8. Refer to Sheet 4 of 6 for a depiction of sedimentation and erosion control measures, sedimentation erosion control notes and details, and construction staging notes.
9. All construction shall comply with applicable sections of the State of Connecticut, Local, and International Building Codes, City of Stamford and State of Connecticut D.O.T. standards and specifications, and those criteria shall take precedent over these plans. Refer to Sheet 5 and 6 of 6 for construction notes and details.
10. Refer to Architectural plans prepared by Perkins Eastman for final design and dimensions of the proposed building, footings, foundation, parking space layouts and exterior site lighting.
11. Upon completion of construction and prior to the issuance of a Certificate of Occupancy, an "As–Built" map and certification letter shall be prepared by a professional engineer and land surveyor and submitted to the Engineering Bureau for review and approval for the purpose of confirming that construction was completed substantially in compliance with the approved plans as amended from time to time.
12. The information given on this plan in respect to the location of subsurface structures and utilities indicates only that the structures and utilities exist and no responsibility is assumed by the engineer for the accuracy of the locations shown. Utility information is not guaranteed complete or accurate.
13. Uniformed traffic protection and proper work warning signage is required for the project and shall be provided by the contractor. It is assumed two uniformed officers will be required for all work within and along the shoulders of Broad Street. Portions of the project may require roadway closures of Gay Street Extension, which shall be coordinate with the City of Stamford Engineering Bureau.
14. Damage to the roadways, including pavement, curbing and shoulder areas outside of the noted work areas shall be repaired by the contractor at their cost in accordance with the construction drawings, specifications, and details and as directed by the supervising engineer.
15. The contractor shall provide all of the necessary safety equipment as required by OSHA at all times throughout the project. The contractor shall secure the work area at the end of each day in accordance with OSHA guidelines or as directed by the supervising engineer.
16. Any discrepancy found within this plan set shall be brought to the attention of the project engineer immediately.
17. All work proposed on neighboring properties shall be reviewed, approved and coordinated with the appropriate property owner and City of Stamford prior to the start of construction.



LEGEND

— 88 —	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
T=88.8 B=88.8	EXISTING WALL/CURB SPOT GRADE
88	PROPOSED CONTOUR
88.8	PROPOSED SPOT GRADE
T=88.8 B=88.8	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
— G — G —	UNDERGROUND UTILITY SERVICE: C=CABLE, E=ELECTRIC, G=GAS, T=TELEPHONE, W=WATER
	PROPERTY LINE
1	REGULAR PARKING SPACE (8.5'x18')
C	COMPACT PARKING SPACE (8.5'x16')
	HANDICAPPED PARKING SPACE
GG	GAS GATE
WG	WATER GATE
WM	WATER METER
POLE	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CPP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
AOBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET
SCALE
20 0 20
IN FEET

NOTE:
IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SHORING AND UNDERPINNING AS REQUIRED, DESIGNED BY A STRUCTURAL ENGINEER, DURING THE EXCAVATION AND CONSTRUCTION OF THE PROPOSED BUILDING FOOTINGS AND FOUNDATIONS TO PROTECT AND MAINTAIN NEIGHBORING BUILDING FOUNDATIONS AND PROPERTIES.

NOTE:
A "STREET OPENING PERMIT" MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION ACTIVITY IN THE CITY OF STAMFORD RIGHT–OF–WAY. ALL CONSTRUCTION WITHIN THE RIGHT–OF–WAY SHALL BE COORDINATED WITH THE CITY OF STAMFORD ENGINEERING BUREAU.

BUILDING FOOTING NOTE:
THE PROPOSED BUILDING FOOTINGS AND ASSOCIATED EXCAVATIONS SHALL NOT EXTEND BEYOND THE PROPERTY LINES.

DEMOLITION NOTE:
ALL EXISTING TREES, ASPHALT PAVEMENT, FENCING, AND MISC. DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND MAINTAINING TRAFFIC FLOW ON ADJOINING ROADWAYS THROUGHOUT THE PROJECT.

REV.	DATE	DESCRIPTION
0	10–28–22	ZONING SUBMISSION

LEONARD C. D'ANDREA, CT PE No. 14869
10–28–22
ENGINEER DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, PC
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637–1779

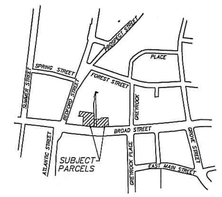
PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
1 OF 6	GRADING PLAN

BROADSAX_21UT_DP_07_REVD.DWG (RJN)

21UT

BLOCK No. 176
"C–G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP – 1" = 800'±

GENERAL NOTES:

1. The purpose of this plan is only to depict the layout of the proposed storm drainage, sanitary sewer, and utilities; water, gas, electric, telephone, and cable. This plan shall not be used for the construction of any other aspect of this project.
2. Boundary Information, existing features, and topography were taken from a survey entitled "Topographic Survey Depicting 128–136 Broad Street and Gay Street Extension in Stamford, Connecticut, Prepared for TR Broad II, LLC" dated January 18, 2022 as prepared by D'Andrea Surveying & Engineering, PC.
3. Elevations shown are based on the North American Vertical Datum of 1988 (NAVD 88). The contractor shall coordinate the transfer of a control benchmark into the working area, after site preparation is complete, by a licensed surveyor.
4. In accordance with Connecticut Public Act 87–71 and Connecticut General Statutes Sections 16–345 through 16–359, the owner or the contractor shall be required to verify the depth and location of all utilities prior to commencing construction, and shall contact "Call Before You Dig, Inc." at 1–800–922–4455, 48 hours prior to commencing construction for mark out of underground utilities.
5. The information given on this plan in respect to the location of subsurface structures and utilities indicates only that the structures and utilities exist and no responsibility is assumed by the engineer for the accuracy of the locations shown. Utility information is not guaranteed complete or accurate.
6. The proposed development will be served by the City of Stamford sanitary sewer system. A sewer permit shall be obtained prior to the commencement of construction.
7. The proposed development shall be served by YankeeGas and the Aquarion Water Company. New service laterals shall be installed to the new building as depicted on this plan. Final service lateral locations and any utility relocation shall be coordinated with each respective utility company.
8. All roof drains for the proposed building shall be piped internally and connected to the proposed storm drainage system as depicted on the plan. Final locations and sizes of the roof drain connections shall be coordinated between the architect, contractor and project engineer.
9. The locations and elevations of the proposed storm drainage system depicted hereon may be modified with the approval of the project engineer and City of Stamford Engineering Bureau to meet field conditions.
10. Existing drainage structures and piping to remain shall be cleaned and inspected to determine if replacement is warranted. Existing piping to remain shall be videoed to determine their condition, prior to construction.
11. The contractor shall obtain all appropriate permits prior to commencing construction.
12. All construction shall comply with City of Stamford and State of Connecticut D.O.T. standards and specifications. Refer to Sheet 5 and 6 of 6 for construction notes and details.
13. All utility relocation and installations shall be coordinated with each respective utility company prior to construction. Coordinate all utility installation and connection specifications with each respective utility company.
14. Prior to any construction, the contractor shall coordinate a test pit schedule with the City of Stamford and project engineer. Test pits shall be excavated where indicated hereon or wherever design conflicts may occur to determine actual location and elevation of utility service mains/laterals within the Broad Street Right–of–Way along the project frontage. Design conflicts if any, shall be brought to the immediate attention of the project engineer. Plate or backfill and patch test pits as directed by the project engineer.
15. The contractor is responsible for providing adequate support/protection for existing utility laterals and/or mains exposed during the excavation and installation of the proposed utility service laterals. Care shall be taken to not undermine the existing mains/laterals anymore than necessary to install the proposed utility laterals. Any damage to the existing utility mains/laterals or service interruption caused during the proposed utility installation shall be repaired by the contractor at no expense to the City of Stamford, property owner served or the property owner of 128–136 Broad Street. Any exposed utility service lateral shall be backfilled with one foot of clean sand above the lateral.
16. During construction activities within the City of Stamford Right–of–Way, the contractor must maintain traffic flow at all times. Contractor shall provide all necessary traffic control devices for the maintenance and protection of both vehicular and pedestrian traffic. All traffic control devices shall be installed in conformance with the Manual on Uniform Traffic Control Devices, 2009 Edition, as published by the U.S. Department of Transportation, Federal Highway Administration, and as amended to date.
17. All trenches shall be backfilled and/or plated after work hours each day, with the traffic/pedestrian right–of–way restored to safe/serviceable condition.
18. The Engineering Bureau of the City of Stamford shall be notified three days prior to commencement of any construction within the City of Stamford Right–of–Way.
19. All work within the City of Stamford Right–of–Way shall be in accordance with all applicable City of Stamford standards.
20. Certification will be required by a Professional Engineer licensed in the State of Connecticut that work has been completed in compliance with the approved drawings.
21. A Final Location Plan will be required by a Professional Land Surveyor licensed in the State of Connecticut.
22. Contractor is responsible for ensuring all exposed utility lateral/mains are backfilled in compliance with each respective utility company's requirements.
23. All utility relocation and installations shall be coordinated with each respective utility company prior to construction. Coordinate all utility installation and connection specifications with each respective utility company.
24. The contractor shall coordinate the final location and installation of all proposed utility splice boxes/vaults with each respective utility company.
25. Depicted locations of the proposed gas services, water services, and underground utilities; electric, telephone, and cable are approximate for approval purposes only. Final locations and installation requirements shall be coordinated between each respective utility company and the owner.
26. A Drainage Maintenance Agreement shall be provided to the City of Stamford prior to obtaining a final Certificate of Occupancy.

NOTE:
THE CONTRACTOR AND/OR OWNER SHALL COORDINATE WITH EACH RESPECTIVE UTILITY COMPANY REGARDING THE ABANDONMENT OR RELOCATION PROCEDURES REQURIED FOR ALL EXSTING UTILITIES WITHIN GAY STREET EXTENSION.

NOTE:
THE CONTRACTOR AND/OR OWNER SHALL COORDINATE WITH EACH RESPECTIVE UTILITY COMPANY TO DETERMINE THE AVAILABILITY, LOCATION AND SERVICE REQUIREMENTS FOR ELECTRICAL, TELEPHONE AND CABLE SERVICE FOR THE PROPOSED DEVELOPMENT.

NOTE:
THE CONTRACTOR SHALL DIG TEST PITS TO VERIFY THE DEPTH AND LOCATIONS OF EXISTING UTILITIES, SEWERS, AND STORM DRAINS PRIOR TO INSTALLATION OF ANY PROPOSED UTILITIES. ANY POTENTIAL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER IMMEDIATELY.

NOTE:
A "STREET OPENING PERMIT" MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION ACTIVITY IN THE CITY OF STAMFORD RIGHT–OF–WAY. ALL CONSTRUCTION WITHIN THE RIGHT–OF–WAY SHALL BE COORDINATED WITH THE CITY OF STAMFORD ENGINEERING BUREAU. ALL WORK IN THE CITY R.O.W. SHALL BE BUILT IN ACCORDANCE TO CITY OF STAMFORD STANDARDS.

LEGEND

88	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
× T=88.8 B=88.8	EXISTING WALL/CURB SPOT GRADE
88	PROPOSED CONTOUR
×88.8	PROPOSED SPOT GRADE
T=88.8 B=88.8	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
	TREE PROTECTION
×	SILT FENCE
	PROPERTY LINE
	ZONE BOUNDARY LINE
1	REGULAR PARKING SPACE (8.5'x18')
C	COMPACT PARKING SPACE (8.5'x16')
	HANDICAPPED PARKING SPACE
GG ○	GAS GATE
WG ○	WATER GATE
WM ○	WATER METER
POLE ◆	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CPP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
AOBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

BENCHMARK
"L" CUT BASE
ELEV= 17.30
DATUM: NAVD 88

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET
SCALE
20 0 20
IN FEET

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION, INCLUDING PHYSICAL EVIDENCE, AND UTILITY COMPANY SKETCHES. DEPICTED UTILITIES ARE APPROXIMATE, AND MAY BE INCOMPLETE. SURVEY DECLARATION OF ACCURACY DOES NOT EXTEND TO THE PLOTTING OF UNDERGROUND UTILITIES. UNDERGROUND UTILITY LOCATION SHALL BE FIELD VERIFIED AND MARKED PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES, "CALL BEFORE YOU DIG," 1–800–922–4455.

REV.	DATE	DESCRIPTION
0	10–28–22	ZONING SUBMISSION

LEONARD C. D'ANDREA, CT PE No. 14869
ENGINEER — 10–28–22 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, PC
• LAND PLANNERS
• ENGINEERS
• SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637–1779

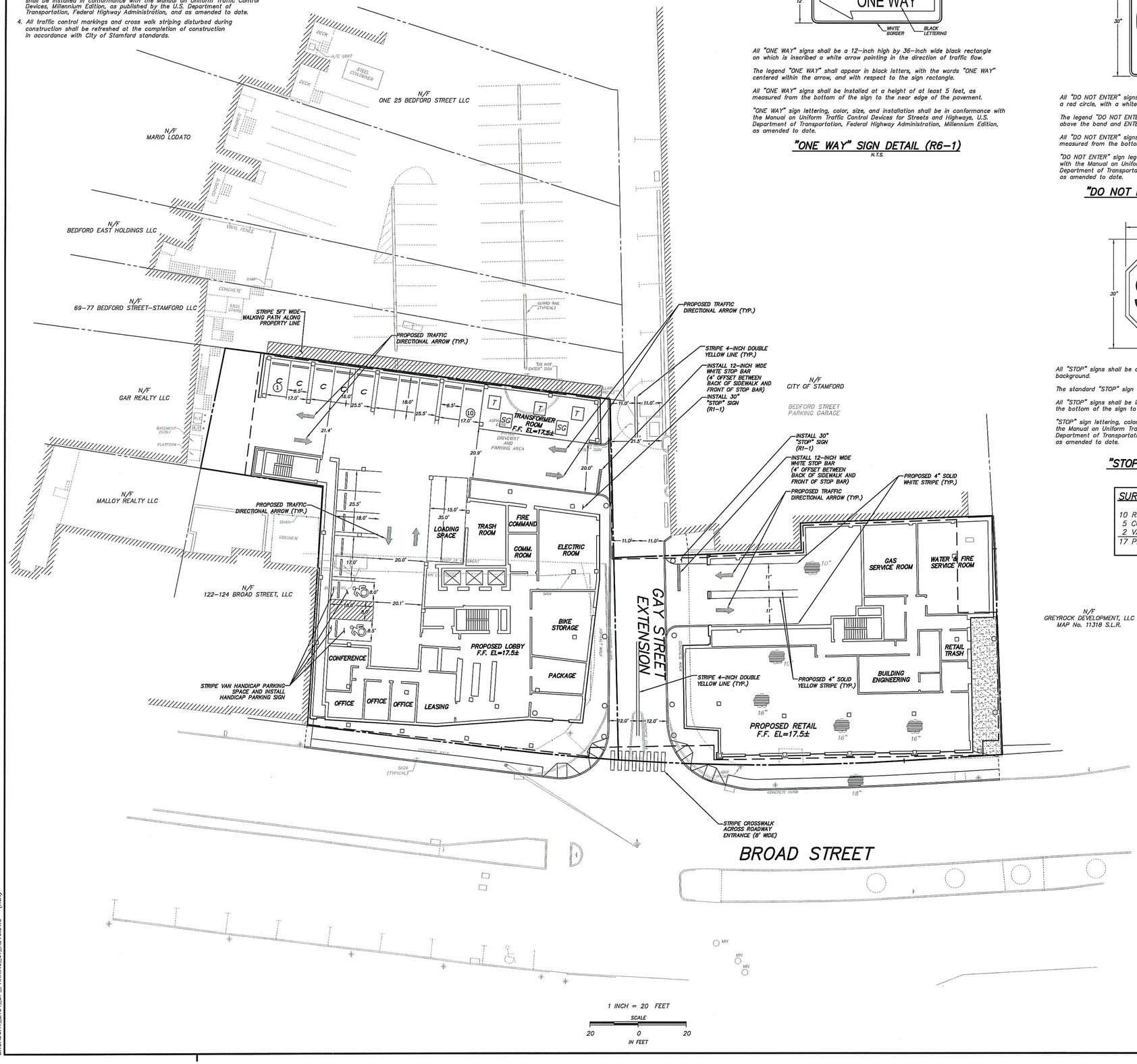
PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
2 OF 6	STORM DRAINAGE & UTILITY PLAN

XREF: BROADGAY_21UT_07_REVO.DWG
BROADGAY_21UT_UP_01_REVO.DWG (RAN)

21UT

NOTES:

1. Refer to topographic survey for a declaration of survey class accuracy.
2. The purpose of this plan is only to depict the proposed locations and details for all internal pavement markings and signage. This plan shall not be used for any other aspect of construction.
3. All traffic control devices, including traffic signs and pavement markings, shall be installed in conformance with the Manual on Uniform Traffic Control Devices, Millennium Edition, as published by the U.S. Department of Transportation, Federal Highway Administration, and as amended to date.
4. All traffic control markings and cross walk striping disturbed during construction shall be refreshed at the completion of construction in accordance with City of Stamford standards.

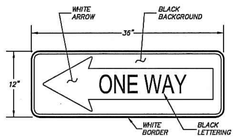


1 INCH = 20 FEET

SCALE

20 0 20

IN FEET



All "ONE WAY" signs shall be a 12-inch high by 36-inch wide black rectangle on which is inscribed a white arrow pointing in the direction of traffic flow.

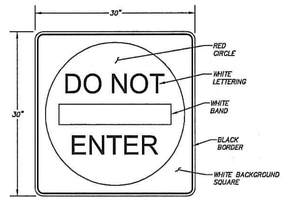
The legend "ONE WAY" shall appear in black letters, with the words "ONE WAY" centered within the arrow, and with respect to the sign rectangle.

All "ONE WAY" signs shall be installed at a height of at least 5 feet, as measured from the bottom of the sign to the near edge of the pavement.

"ONE WAY" sign lettering, color, size, and installation shall be in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highway Administration, Millennium Edition, as amended to date.

"ONE WAY" SIGN DETAIL (R6-1)

N.T.S.



All "DO NOT ENTER" signs shall be a 30-inch white square on which is inscribed a red circle, with a white band placed horizontally across the center of the circle.

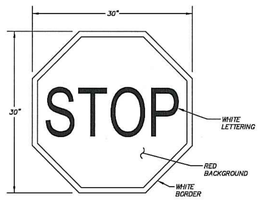
The legend "DO NOT ENTER" shall appear in white letters with the words DO NOT above the band and ENTER below the band.

All "DO NOT ENTER" signs shall be installed at a height of at least 5 feet, measured from the bottom of the sign to the near edge of the pavement.

"DO NOT ENTER" sign legend, color, size, and installation shall be in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highway Administration, Millennium Edition, as amended to date.

"DO NOT ENTER" SIGN DETAIL (R5-1)

N.T.S.



All "STOP" signs shall be an octagon with a white legend and border on a red background.

The standard "STOP" sign shall be 30 x 30 inches.

All "STOP" signs shall be installed at a height of at least 5 feet, measured from the bottom of the sign to the near edge of the pavement.

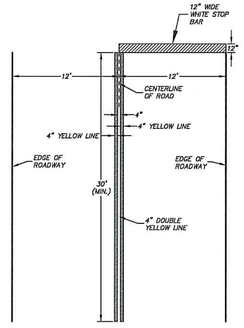
"STOP" sign lettering, color, size, and installation shall be in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highway Administration, Millennium Edition, as amended to date.

"STOP" SIGN DETAIL (R1-1)

N.T.S.

SURFACE PARKING SUMMARY

10 REGULAR PARKING SPACES (8.5'x18')
5 COMPACT PARKING SPACES (8.5'x16')
2 VAN HANDICAP PARKING SPACE
17 PARKING SPACES PROVIDED



PAVEMENT MARKING DETAIL

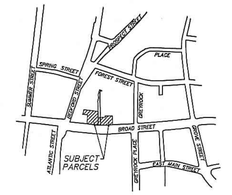
N.T.S.

STOP BAR NOTES:

1. STOP BARS SHALL BE 12" WIDE (MIN.) UNLESS OTHERWISE NOTED ON THE PLANS.
2. IF THERE IS AN EXISTING CROSSWALK, THE STOP BAR SHALL BE PLACED A MINIMUM OF 4 FT BEHIND THE NEAREST EDGE OF THE CROSSWALK.
3. IN THE ABSENCE OF A MARKED CROSSWALK, THE STOP BAR SHALL BE PLACED AT THE DESIRED STOPPING POINT, IN NO CASE SHALL THIS BE MORE THAN 30 FT OR LESS THAN 5 FT FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. THE STOP BAR SHALL BE AT A 90° ANGLE WITH RESPECT TO THE CENTERLINE OF THE ROADWAY.
4. THE STOP BAR SHALL BE PLACED IN LINE WITH THE STOP SIGN. IF THE STOP SIGN CANNOT BE LOCATED EXACTLY WHERE VEHICLES ARE EXPECTED TO STOP, IT SHALL BE PLACED AT THE STOPPING POINT.

BLOCK No. 176
"C-G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP - 1" = 800'±

NOTE: THE VAN ACCESSIBLE SIGN SHALL ONLY BE USED FOR DESIGNATING VAN ACCESSIBLE SPACES.

"HANDICAPPED PARKING PERMIT REQUIRED" & "VAN ACCESSIBLE" signs shall have white lettering against a blue background.

All accessible signage sizes, lettering, and symbols shall comply with federal and state specifications.

All accessible signage shall be installed 60" (minimum) above the floor or ground surface of the parking space, measured to the bottom of the sign.

Confirm fine amount prior to sign fabrication.

HANDICAPPED PARKING SPACE SIGN DETAIL

N.T.S.

LEGEND

BB	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
T=88.8 I=88.8	EXISTING WALL/CURB SPOT GRADE
88	PROPOSED CONTOUR
×88.8	PROPOSED SPOT GRADE
T=88.8 I=88.8	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
G G	UNDERGROUND UTILITY SERVICE: C=CABLE, E=ELECTRIC, G=GAS, T=TELEPHONE, W=WATER
	PROPERTY LINE
1	REGULAR PARKING SPACE (8.5'x18')
C	COMPACT PARKING SPACE (8.5'x16')
	HANDICAPPED PARKING SPACE
GG ⊙	GAS GATE
WG ⊙	WATER GATE
WM ⊙	WATER METER
POLE ⊕	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CPP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
AGBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

D'ANDREA SURVEYING & ENGINEERING, PC
• LAND PLANNERS
• ENGINEERS
• SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637-1779

PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
3 OF 6	PAVEMENT MARKINGS & SIGNAGE PLAN

REV.	DATE	DESCRIPTION
0	10-28-22	ZONING SUBMISSION

LEONARD C. D'ANDREA, CT PE No. 14869

10-28-22

ENGINEER DATE

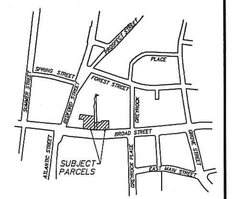
ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

XREF: BROADXX_21UT_DP_07_REVOLDWG
BROADXX_21UT_DP_PARKING_01_REVOLDWG (N.W)

21UT

BLOCK No. 176
"C-G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

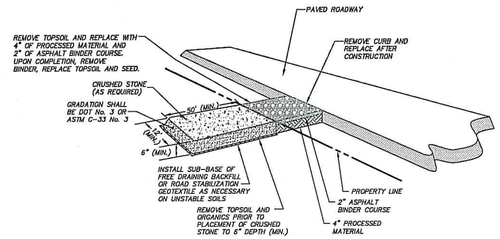
MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP – 1" = 800'±

SEDIMENTATION AND EROSION CONTROL NOTES:

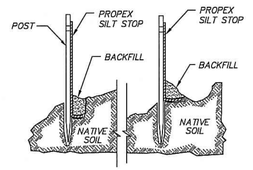
1. Temporary soil and erosion control measures inclusive of filter barriers, water breaks, check dams, and anti-tracking areas shall remain in place for as long as necessary to permanently stabilize developed areas.
2. Erosion and sediment control devices shall be installed in their proper sequence. No clearing or grading may be done in any area until the devices for that area, as shown on the plan, are in place and functional.
3. Natural vegetation shall be maintained and protected to the greatest extent practical.
4. All sediment and erosion control devices and provisions shall be maintained in operational condition by the contractor until final acceptance of the project.
5. No changes of this soil erosion and sediment control plan may be made without approval of the project engineer.
6. Land disturbance is to be kept to a minimum and re-establishment and/or stabilization of disturbed areas shall be scheduled as soon as practical.
7. Erosion controls shall be monitored periodically to verify that they are maintained in effective working order. If, during construction, additional control measures are necessary, they shall be installed.
8. Sediment fencing shall be installed where required prior to commencing construction and shall remain in place for the duration of the project. Fencing shall be Propex Silt Stop (TM) as manufactured by Amoco or approved equal.
9. The contractor may provide alternate means of sediment control, but he may not eliminate placement of protection in the areas indicated hereon.
10. The contractor shall regrade, topsoil, and seed all disturbed areas immediately after construction has been completed.
11. Copies of the Sedimentation and Erosion Control Plan are to be maintained at the site and provided to the project foreman and subcontractors prior to the start of work.
12. Additional protection measures shall be implemented as site conditions warrant.
13. An additional 10% of trap rock, hay bales, snowfencing, fabric fencing, and other control materials are to be stockpiled on site for use as necessary.
14. Refer to Erosion and Sedimentation Control Handbook – Connecticut for additional details and specifications for sedimentation control.
15. Water and or calcium chloride shall be applied to unpaved construction areas to prevent wind generated sediments and dust.



CONSTRUCTION ENTRANCE

ANTI-TRACKING PAD DETAIL
N.T.S.

NOTE:
POSTS SHOULD NOT BE SPACED MORE THAN 10' APART



INSTALLATION DETAIL
SEDIMENT CONTROL FABRIC
N.T.S.

BENCHMARK
"L" CUT BASE
ELEV= 17.30
DATUM: NAVD 88

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

CATCH BASIN SILTSACK DETAIL
N.T.S.

NOTE:
THE STREET AND PROJECT FRONTAGE AREA SHALL BE SWEPT CLEAN AT THE END OF EACH DAY AS REQUIRED. IN PARTICULAR, THE CONSTRUCTION ENTRANCE SHALL BE KEPT FREE OF DUST AND SEDIMENT.

NOTE:
THIS PLAN SHALL BE USED EXPRESSLY FOR THE IMPLEMENTATION OF SEDIMENTATION AND EROSION CONTROL MEASURES. IN NO WAY IS THIS PLAN INTENDED FOR PURPOSES OTHER THAN SEDIMENTATION AND EROSION CONTROL MEASURES.

NOTE: FOUNDATION DEWATERING
DURING FOUNDATION CONSTRUCTION THE CONTRACTOR SHALL ENSURE THAT THERE IS NO DISCHARGE OF SILTY WATER TO ADJOINING PROPERTIES OR INTO STORM SEWER STRUCTURES. DEWATERING DISCHARGE, IF REQUIRED, SHALL BE PUMPED INTO A CRUSHED STONE DEWATERING AREA SURROUNDED WITH SILT FENCE OR OTHER ENGINEER APPROVED EQUIVALENT DEWATERING METHOD. THIS REQUIREMENT SHALL APPLY TO ALL ON-SITE EXCAVATIONS.

LEGEND

- CONSTRUCTION FENCE
- SILT FENCE
- TREE TO BE REMOVED
- HAY BALES

LEGEND

88	EXISTING CONTOUR
× 88.6	EXISTING SPOT GRADE
T=88.6 B=88.6	EXISTING WALL/CURB SPOT GRADE
88	PROPOSED CONTOUR
× 88.6	PROPOSED SPOT GRADE
T=88.6 B=88.6	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
	TREE PROTECTION
	SILT FENCE
	PROPERTY LINE
	ZONE BOUNDARY LINE
GG	GAS GATE
WG	WATER GATE
WM	WATER METER
POLE	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CPP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
ADBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

REV.	DATE	DESCRIPTION
0	10-28-22	ZONING SUBMISSION

LEONARD C. D'ANDREA, CT PE No. 14869
ENGINEER — 10-28-22 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, PC
• LAND PLANNERS
• ENGINEERS
• SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637-1779

PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
4 OF 6	SEDIMENTATION & EROSION CONTROL PLAN

XREF: BROADGAY_21UT_DP_07_REVOLDWG
BROADGAY_21UT_SANDE_01_REVOLDWG (XJN)

21UT

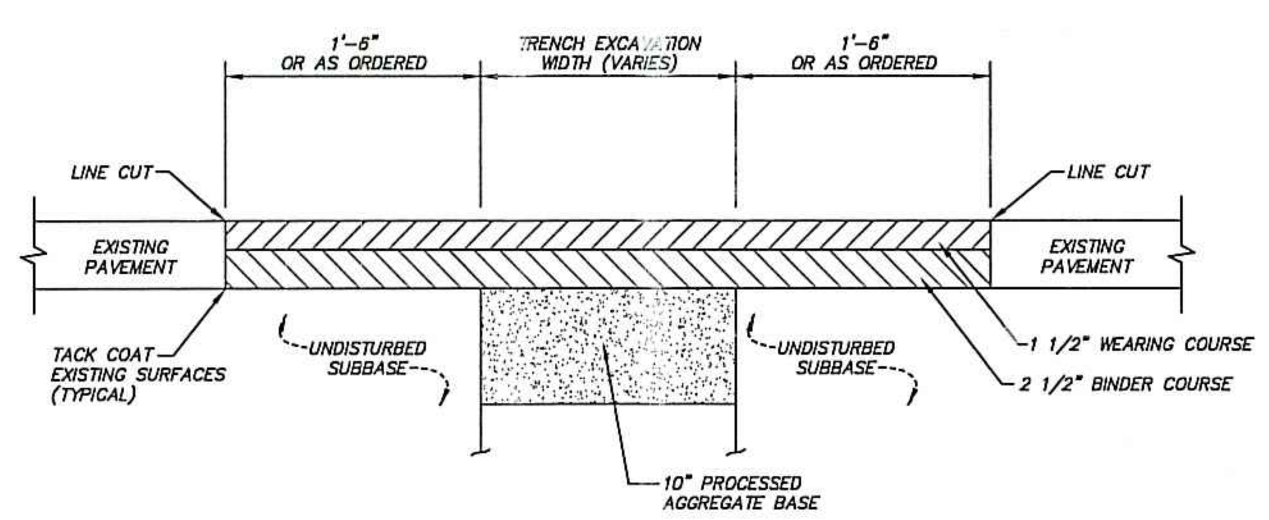
CONSTRUCTION NOTES:

1. In accordance with Connecticut Public Act 87–71 and Connecticut General Statutes Sections 16–345 through 16–359, the owner or the contractor shall be required to verify the depth and location of all utilities prior to commencing construction, and shall contact "Call Before You Dig, Inc." at 1–800–922–4455, 48 hours prior to commencing construction for mark out of underground utilities.
2. The contractor shall be solely responsible to coordinate his work with the work being done by others. The contractor shall likewise bear the responsiblilty for delays or other factors related to the work by others. No claims shall be allowed due to the contractor's failure to adequately coordinate such work.
3. THE CITY OF STAMFORD ENGINEERING BUREAU SHALL BE NOTIFIED THREE DAYS PRIOR TO THE COMMENCEMENT OF EACH PHASE OF CONSTRUCTION AFFECTING THE CITY RIGHT–OF–WAY.
4. All construction shall comply with applicable sections of the State of Conecticut, Local, and International Building codes, and those criteria shall take precedent over these plans.
5. All construction shall be inspected by a professional engineer prior to backfill and as the work progresses.
6. The project engineer shall be notified a minimum of three working days prior to the commencement of each phase of construction.
7. Appropriate measures shall be taken to control any sedimentation and erosion which may result during construction.
8. All excavated material shall be stockpiled and contained on–site within silt fencing. The contractor shall be responsible for the removal of all excess material excavated during construction. All excess material shall be removed in a careful and environmentally sound manner and shall be disposed of legally off–site.
9. All specimen trees shall be protected during the construction period, except those specifically designated to be removed, in accordance with generally accepted standards.
10. The proposed building shall be designed by an architect in order to conform with current applicable zoning setback criteria and regulations, and a building permit shall be obtained prior to commencing construction.
11. Existing utilities in conflict through or above this parcel shall be relocated as directed by the appropriate utility company or the owner. The contractor shall excavate test pits to verify the location and depth of utilities where conflicts may exist.
12. Pavement replacement shall be bituminous concrete, placed in accordance with the City of Stamford standards and/or Connecticut State Highway specifications.
13. Shoulders and disturbed areas shall receive four inches of topsoil; fine graded and seeded as soon as practical to prevent erosion.
14. The contractor shall not commence any paving until the grading and shaping of the compacted gravel base has been approved by the project engineer.
15. Regrading, filling, and other such alterations to the site shall be restricted to the minimum level necessary to complete the project as shown on the plan.
16. Existing inverts on storm drains, sanitary sewers, and utility conduits shall be field verified where appropriate, before commencing construction. The contractor shall excavate test pits where indicated hereon or wherever design conflicts may occur. The contractor shall notify the project engineer of the test pit schedule. Design conflicts if any, shall be brought to the immediate attention of the project engineer. Plate or backfill and patch test pits as directed by the project engineer.
17. The project engineer, with the approval of the owner and City of Stamford, may direct a change in the location of the utilities, storm drainage or sanitary sewer structures to meet field conditions or requirements of final building design.
18. Junction boxes shall be 32"x32" as manufactured by Eastern Precast Co., Inc., with Pattern No. 1057, cast iron frame and cover, as manufactured by Campbell Foundry, Co., or engineer approved equal, unless noted otherwise. All junction boxes shall have 2' (minimum) sumps and bell traps, installed immediately upon making pipe connections, unless noted otherwise.
19. Manhole structures shall be precast concrete with gaskets as manufactured by Eastern Precast Co., Inc. or engineer approved equal, unless noted otherwise.
20. All gravity PVC storm drain and sanitary sewer pipes shall conform to ASTM D 3034 "Standard Specification for type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings" or approved equal (SDR35).
21. All reinforced concrete pipe shall be Class IV with joints as approved by the City of Stamford Engineering Bureau.
22. Where unsuitable foundation is encountered during construction of storm drains or sanitary sewers, the contractor shall remove the unsuitable material and replace it with other material approved by the project engineer. All unsuitable material shall be removed from the project area and disposed of legally.
23. Bedding and backfill material shall conform to ASTM D2321 specification "standard recommended practice for underground installations of flexible thermoplastic sewer pipe (PVC)."
24. All site drainage and sewer connections shall be sloped at 2% (minimum) or as otherwise noted.
25. All drainage and sewer conduits if located under a paved or traveled way shall have 2 1/2 foot minimum cover within the municipal right–of–way, or be encased in concrete as ordered by the supervising engineer.
26. The contractor shall provide all equipment, tools, labor and materials necessary to satisfactorily clean and remove all visible obstructions, dirt, sand, sludge, roots, gravel, stones, etc., from the storm drains, sanitary sewers, and manholes.
27. Processed aggregate shall be in accordance with the City of Stamford standards and/or Connecticut State Highway specifications.
28. Roadway and parking lot pavement shall be 2 course bituminous concrete placed in accordance with the City of Stamford standards and/or Connecticut State Highway specifications.
29. All existing manhole frames, catch basin grates, and utility structures shall be adjusted to new finish grade as required. Contractor to coordinate with existing utility companies to ensure their facilities are adjusted to finish grade.
30. Storm drain manhole sumps and risers shall be 48" diameter as manufactured by Eastern Precast Co., Inc., or engineer approved equivalent. Frames and rims located in the City of Stamford right–of–way shall be pattern no. 1027 as manufactured by Campbell Foundry Co., Inc., or engineer approved equivalent, and shall have "Stamford CONN" cast on cover.
31. Sanitary sewer manhole sumps and risers shall be 48" diameter as manufactured by Eastern Precast Co., Inc., or engineer approved equivalent. Frames and rims located in the City of Stamford right–of–way shall be pattern no. 1027 as manufactured by Campbell Foundry Co., Inc., or engineer approved equivalent, and shall have "Sewer" cast on cover.
32. Connections between manholes and PVC sanitary sewer pipes shall be made with flexible rubber boot type connections, sealed water tight with a stainless steel clamp. Connections to manholes for reinforced concrete storm and sanitary sewer pipe shall be made with concrete brick masonry and non–shrink grout. The contractor shall make sure that all connections of new sanitary sewers to manholes are water tight.
33. Precast concrete cone sections shall be eccentric cones, and flat slab tops are to have eccentric openings. Eccentric cone sections shall be used when the vertical distance between the manhole frame and the top of the highest pipe is six (6) feet or greater. Otherwise, flat slab tops shall be used. Aluminum manhole steps (drop form type) shall be provided in all manholes at 12 inch intervals. Each step shall be capable of supporting a minimum load of 1,000 pounds. Wall joints shall be "O–ring" rubber gasket types with the interior and exterior joint faces sealed with waterproof non–shrink grout.
34. Exterior surfaces of all sanitary manholes shall be coated with two (2) coats of coal–tar sealer as manufactured by Kopper, Mobil or PPG, or engineer approved equivalent.
35. Sanitary sewer manholes shall be watertight; all leaks shall be permanently plugged.
36. All traffic control devices, including traffic signs and pavement markings, shall be installed in conformance with the Manual on Uniform Traffic Control Devices, Millennium Edition, as published by the U.S. Department of Transportation, Federal Highway Administration, and as amended to date.
37. All new utilities including electric, telephone and cable TV shall be installed underground.
38. Proposed services such as gas, water, and electric are shown schematically only. Final design for all utilities, other than sewer and drainage shall be provided by the respective utility company.
39. Curbs and sidewalks in the City right–of–way shall be constructed in accordance with the City of Stamford standards and specifications. The contractor shall pay specific attention to the location of construction joints.
40. The project engineer, with the approval of the City of Stamford, may direct a change in the location of the proposed storm drainage structures to meet field conditions, or requirements of final design.
41. Any changes to the plan without the prior written approval of the design engineer is not permitted.
42. All traffic control devices, including traffic signs and pavement markings, shall be installed in conformance with the Manual on Uniform Traffic Control Devices, Millennium Edition, as published by the U.S. Department of Transportation, Federal Highway Administration, and as amended to date.
43. Stamford Police Officers shall be used during the portion of work involving right–of–way restrictions as required by the City of Stamford to ensure pedestrian, vehicular, and work site safety.
44. Pursuant to Sec. 14–314b of the Connecticut General Statutes, no traffic control sign, signal, device, pavement marking, guardrail, or like device or part thereof shall be removed, obstructed, relocated, or otherwise disturbed, altered, or rendered ineffective in any way without the prior approval from the City of Stamford. Contractor is responsible for replacement, to the specification and satisfaction of the Engineering Bureau, of any pavement markings or other traffic control devices removed or damaged due to work done or related activity.

BROADGAY_21UT_ED_01_REV0.DWG (RJN)

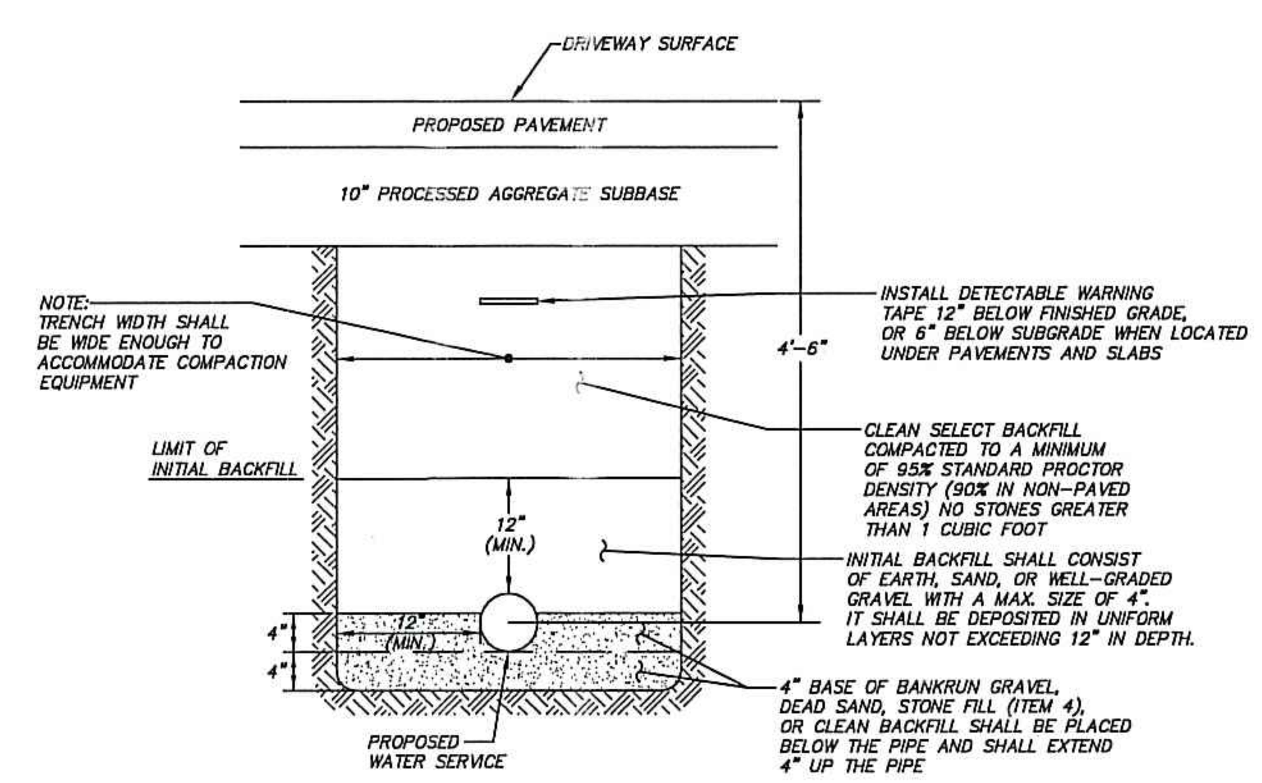
CITY OF STAMFORD STANDARD NOTES:

1. A Street Opening Permit is required for all work within the City of Stamford Right–of–Way.
2. All work within the City of Stamford Right–of–Way shall be constructed to City of Stamford requirements, the State of Connecticut Basic Building Code and the Connecticut Guidelines for Soil Erosion and Sedimentation Control.
3. The City of Stamford Engineering Bureau shall be notified three days prior to any commencement of work within the City of Stamford Right–of–Way.
4. Trees within the City of Stamford Right–of–Way to be removed shall be posted in accordance with the Tree Ordinance.
5. Prior to any excavation the Contractor and/or Applicant/Owner, in accordance with Public Act 77–350, shall be required to contact "Call Before You Dig" at 1–800–922–4455 for mark out of underground utilities.
6. All retaining walls greater than three (3) feet are required to be designed, and inspected during construction by a Professional Engineer licensed in the State of Connecticut. Certification of the retaining wall shall be required prior to issuance of a Certificate of Occupancy and/or bond release.
7. Certification will be required by a Professional Engineer licensed in the State of Connecticut that work has been completed in compliance with the approved drawings.
8. A Final Location Plan will be required by a Professional Land Surveyor licensed in the State of Connecticut depicting all completed improvements.
9. Granite block or other decorative stone or brick, depressed curb, driveway apron and curbing within the City of Stamford Right–of–Way shall require a waiver from the City of Stamford Engineering Bureau.
10. Sediment and erosion controls shall be maintained and repaired as necessary throughout construction until the site is stabilized.
11. Trees proposed to be planted within the City of Stamford Right–of–Way shall be reviewed and approved by the City's Tree Warden.



NOTES:
1. IF ANY EXISTING ASPHALT IS THICKER THAN 4" THEN MATCH EXISTING ASPHALT THICKNESS.
2. ANY CONCRETE ROADWAY BASE THAT IS REMOVED SHALL BE REPLACED IN KIND.

DETAIL FOR TRENCH REPAIR
N.T.S.



DETAIL FOR WATER SERVICE INSTALLATION
N.T.S.

NOTES:
1. THE CONTRACTOR SHALL HAVE ALL MATERIAL SELECTION AND INSTALLATION SPECIFICATIONS APPROVED BY THE AQUARION WATER COMPANY PRIOR TO INSTALLATION.
2. THIS SECTION IS DESIGNED TO RESIST UPLIFT FLOOD FORCES ASSOCIATED WITH THE MINIMUM ELEVATION STANDARD AS SPECIFIED IN THE ZONING REGULATION.

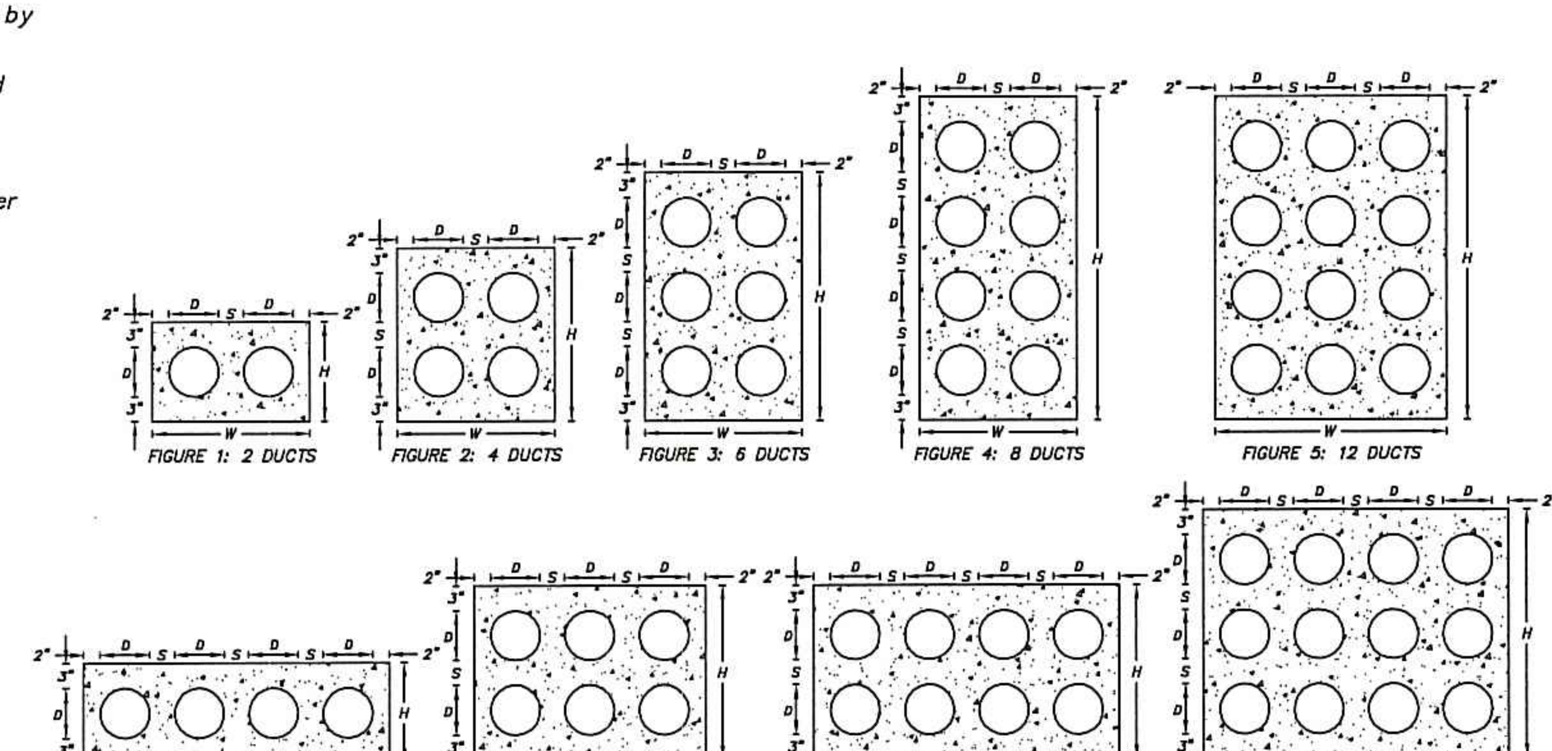
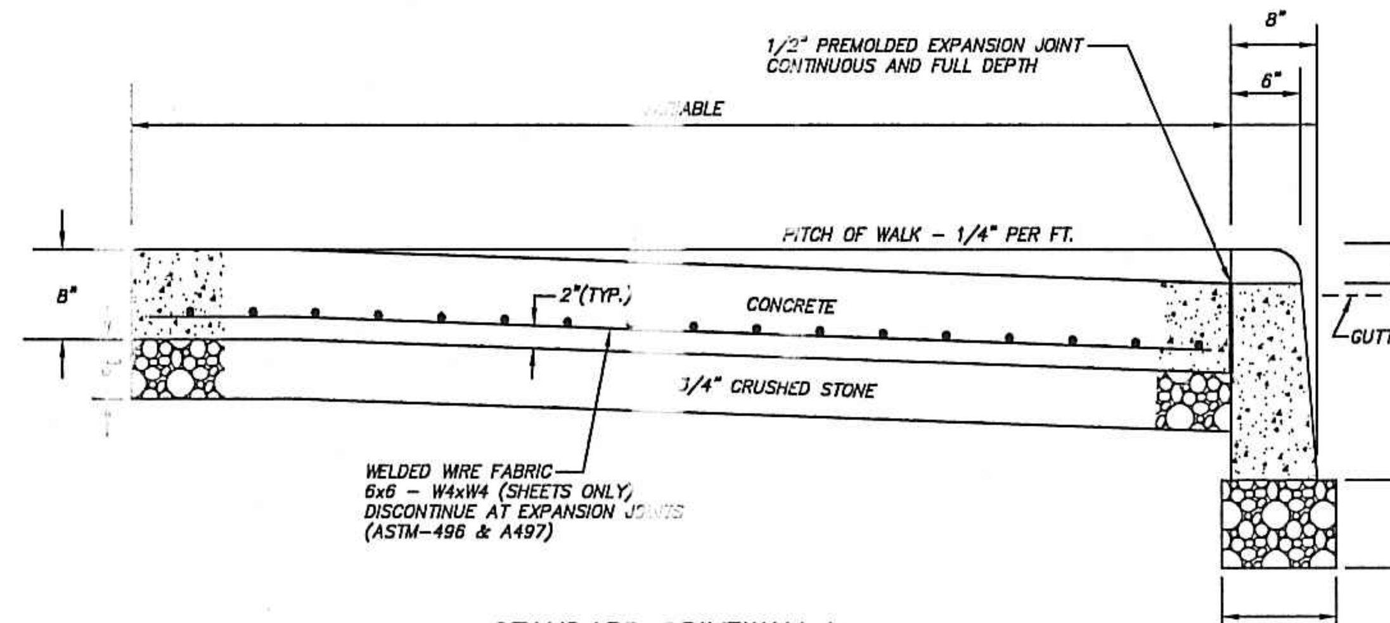


Fig	Dimensions in Inches								
	4" Duct			5" Duct			6" Duct		
	W	H	S	W	H	S	W	H	S
1	14–1/2	10–1/2	1–1/2	16–1/2	11–1/2	1–1/2	19	12–1/2	2
2	14–1/2	16–1/2	1–1/2	16–1/2	18–1/2	1–1/2	19	21	2
2A	26–1/2	10–1/2	1–1/2	30–1/2	11–1/2	1–1/2	36	12–1/2	2
3	14–1/2	22–1/2	1–1/2	16–1/2	25–1/2	1–1/2	19	29–1/2	2
3A	20–1/2	16–1/2	1–1/2	23–1/2	18–1/2	1–1/2	27–1/2	21	2
4	14–1/2	28–1/2	1–1/2	16–1/2	32–1/2	1–1/2	18	38	2
4A	26–1/2	16–1/2	1–1/2	30–1/2	18–1/2	1–1/2	36	21	2
5	20–1/2	28–1/2	1–1/2	23–1/2	32–1/2	1–1/2	27–1/2	38	2
5A	26–1/2	22–1/2	1–1/2	30–1/2	25–1/2	1–1/2	36	29–1/2	2

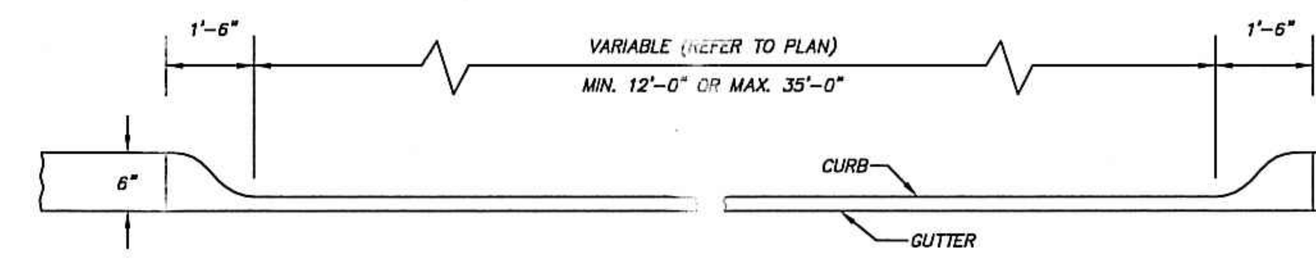
NOTES:
1. At monholes conduit banks shall be per Figures 1, 2, 3, 4, or 5.
2. Minimum cover from top of a conduit bank to the pavement of earth surface shall be:
   a. State highways – 36 inches
   b. Railroad tracks – 60 inches
   c. All other areas – 24 inches
3. In the conduit run between manholes if obstructions are encountered or to reduce trench depth, Figures 2A, 3A, 4A, or 5A are permissible.
4. Concrete shall be 2,500 psi, 1/2 inch maximum stone, 6–9 inch slump of such consistency that spading will ensure the flow of concrete between and under the individual ducts, but not so wet as to float the ducts. For tier buildup construction a stiffer consistency should be used.

CONDUIT BANK CONSTRUCTION DETAIL
N.T.S.

NOTE:
REFER TO NORTHEAST UTILITIES CONDUIT BANK CONSTRUCTION DETAIL DTR 73.209



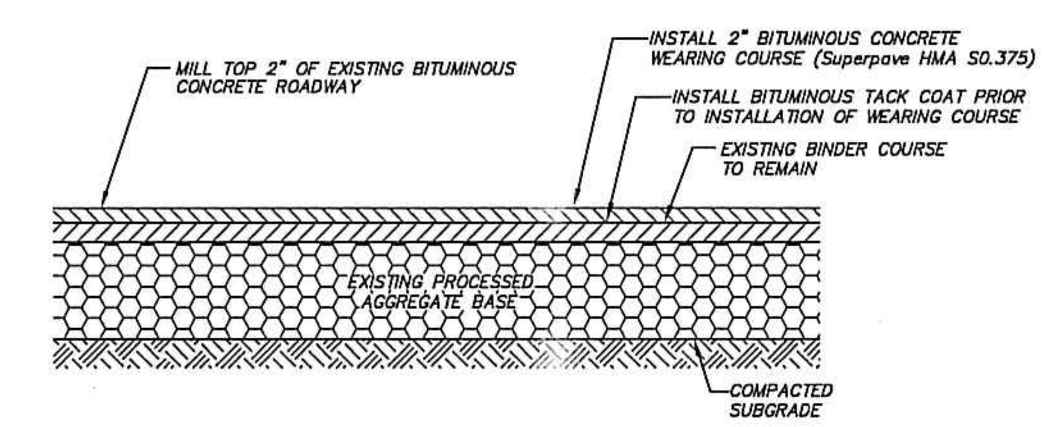
STANDARD DRIVEWAY & HEAVY DUTY DRIVEWAY
N.T.S.



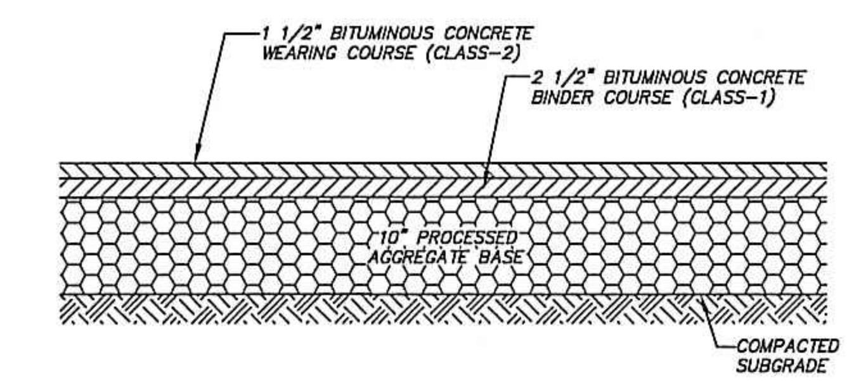
TYPICAL CONSTRUCTION OF CURB AT DRIVEWAY
N.T.S.

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

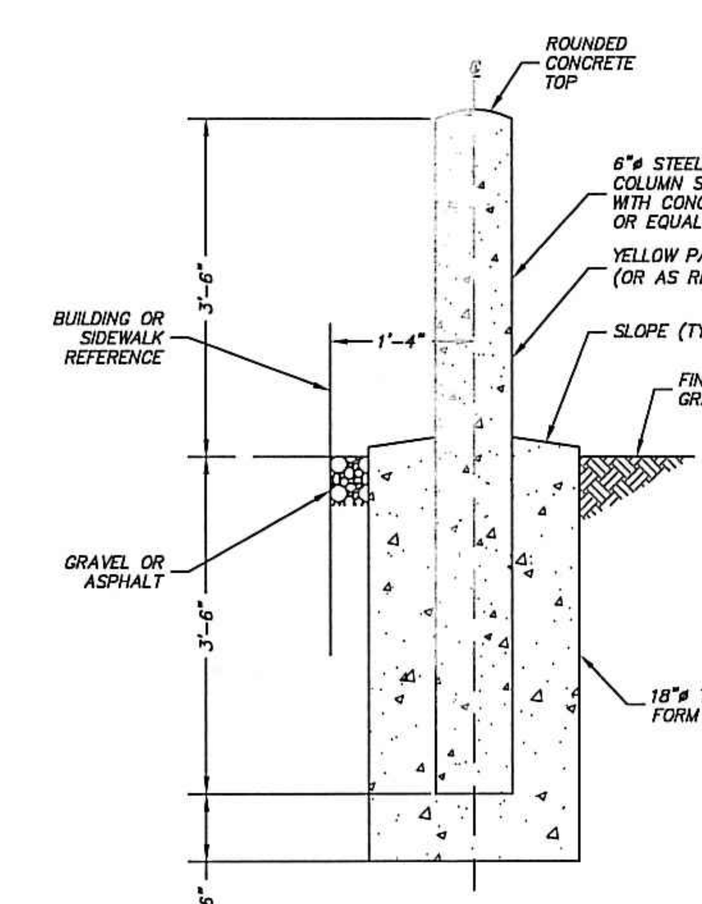
REINFORCED CONCRETE DRIVEWAY ENTRANCE
N.T.S.



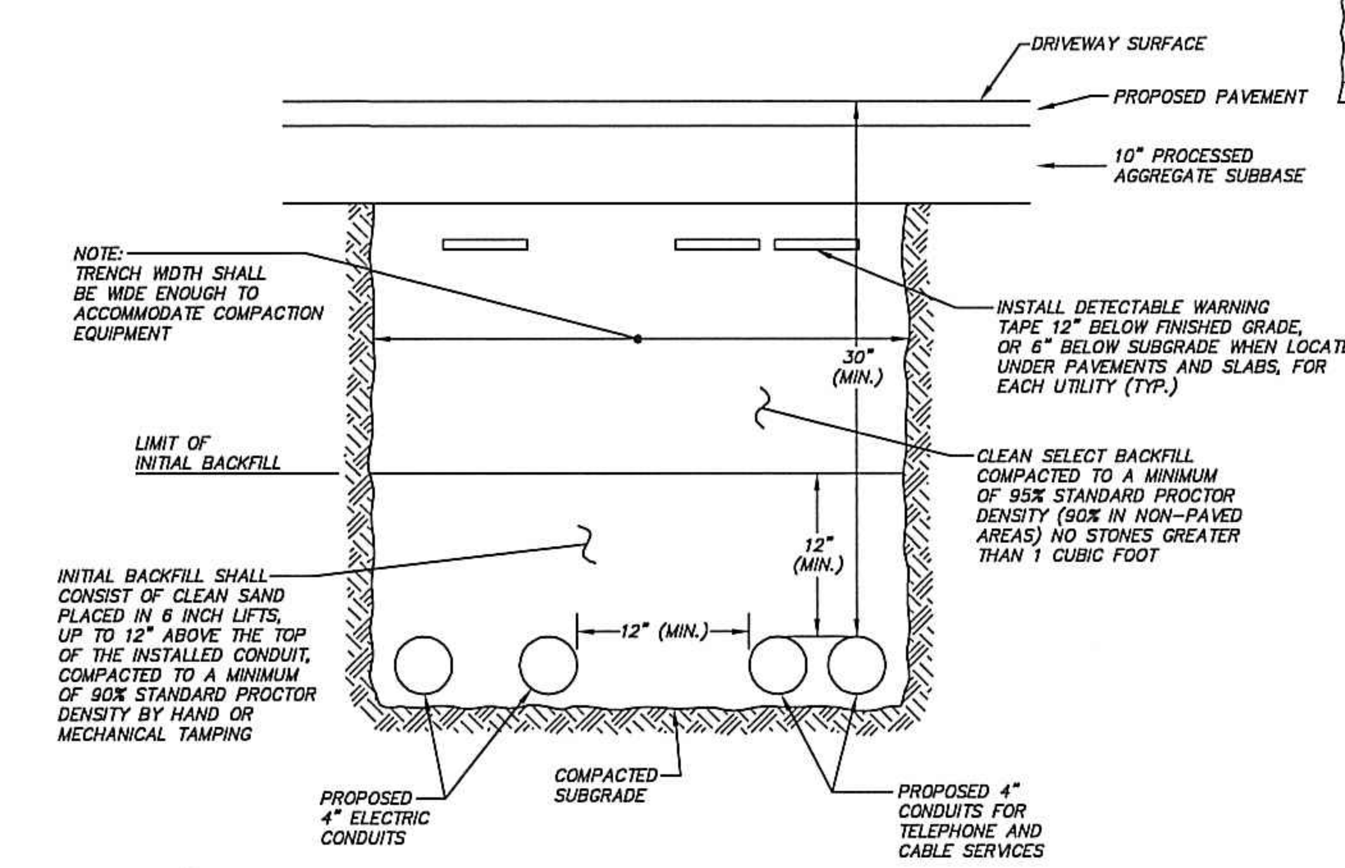
BITUMINOUS CONCRETE ROADWAY OVERLAY DETAIL
N.T.S.



BITUMINOUS CONCRETE ROADWAY & PARKING LOT DETAIL
N.T.S.

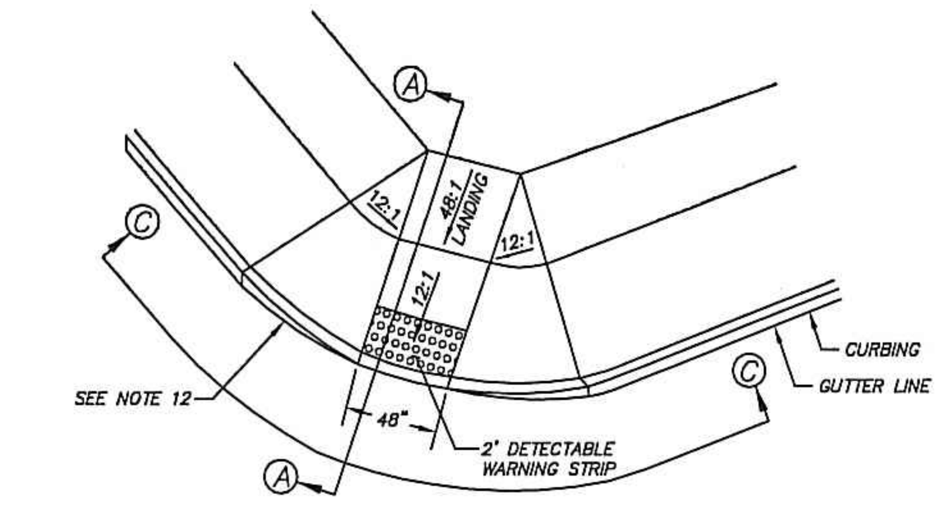


BOLLARD/PIPE GUARD DETAIL
N.T.S.

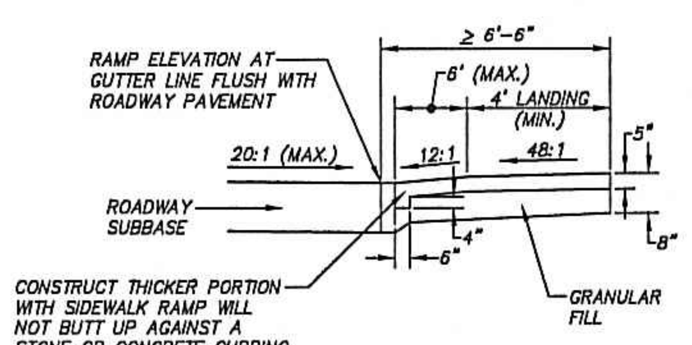


DETAIL FOR UNDERGROUND UTILITY TRENCH
N.T.S.

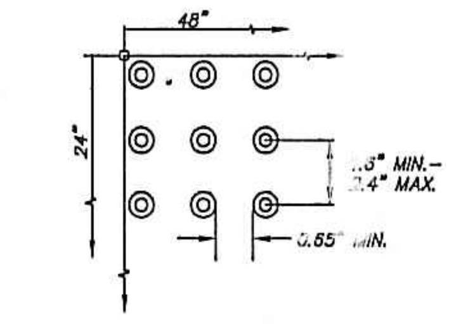
NOTES:
1. COORDINATE INSTALLATION WITH EACH RESPECTIVE UTILITY COMPANY PRIOR TO INSTALLATION.
2. ACTUAL NUMBER AND SIZE OF CONDUITS TO BE INSTALLED MAY VARY. CONTRACTOR SHALL COORDINATE ACTUAL NUMBER AND SIZE OF CONDUITS TO BE INSTALLED WITH BOTH THE OWNER AND EACH RESPECTIVE UTILITY COMPANY
3. THIS SECTION IS DESIGNED TO RESIST UPLIFT FLOOD FORCES ASSOCIATED WITH THE MINIMUM ELEVATION STANDARD AS SPECIFIED IN THE ZONING REGULATION.



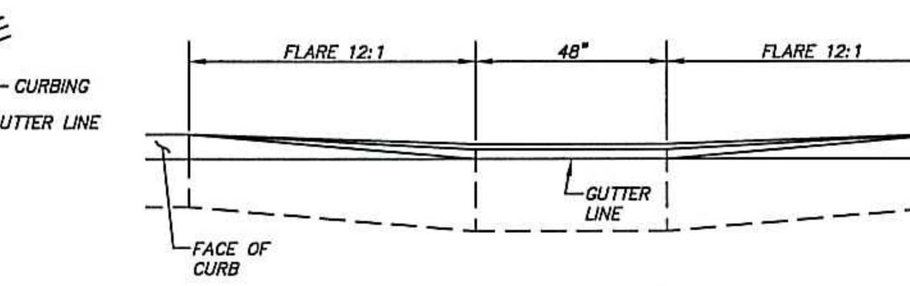
DIAGONAL SIDEWALK RAMP (TYPE 4c)



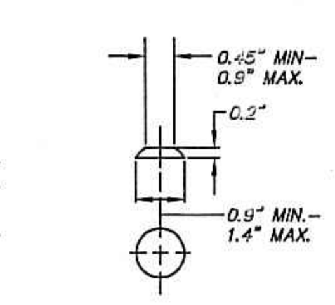
SECTION A–A



DOME SPACING



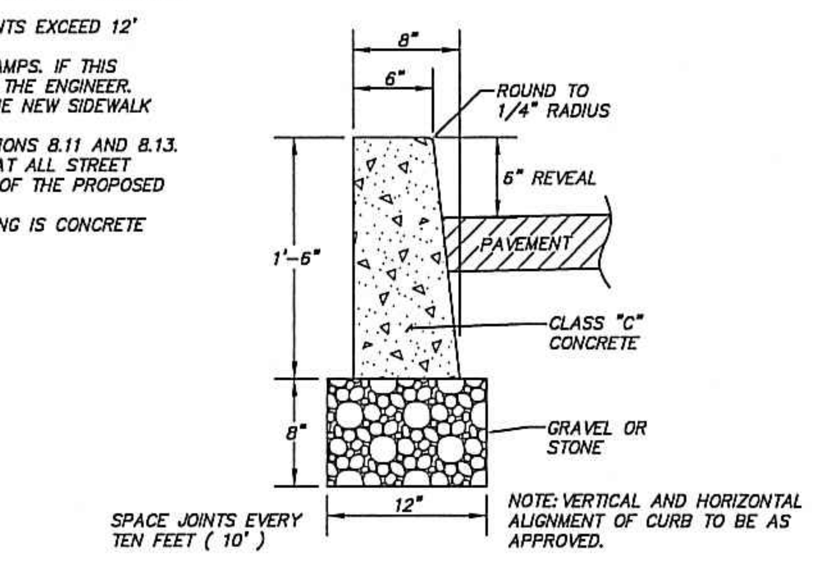
SECTION C–C



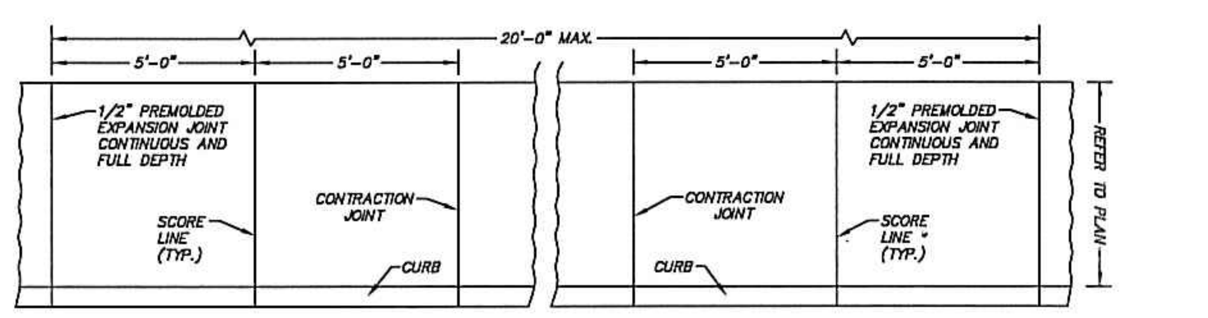
DOME SECTION

NOTES:
1. MAXIMUM SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE SIDEWALK RAMP OR ACCESSIBLE ROUTE SHOULD NOT EXCEED 20:1.
2. CARE SHALL BE TAKEN TO ASSURE UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND ABRUPT GRADE CHANGES.
3. ALL RAMPS SHALL BE CONSTRUCTED OF CLASS "C" CONCRETE IN ACCORDANCE WITH CONNECTICUT STANDARD SPECIFICATIONS ARTICLE M.03.01.
4. SIDEWALK RAMPS SHALL HAVE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP. THE SURFACE ALONG ACCESSIBLE ROUTES SHALL BE STABLE, FIRM AND SLIP RESISTANT IN COMPLIANCE WITH ADAAG SECTION 4.5.
5. DIAGONAL SIDEWALK RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
6. REMOVAL OF EXISTING SIDEWALK FOR NEW RAMP INSTALLATIONS SHALL BE TO THE NEAREST EXPANSION/CONTRACTION JOINT OR DUMMY JOINT, 12:1 MAY NOT BE ACHIEVABLE DUE TO SIDEWALK GRADE. IN RECOGNITION OF THIS, A MINIMUM LIMIT OF 15' FOR A PARALLEL RAMP SHALL BE USED. REMOVAL SHALL NOT BE FURTHER THAN 2' FROM THE PROPOSED RAMP UNLESS DIRECTED BY THE ENGINEER, SAW CUT REQUIRED FOR DUMMY JOINTS SHALL BE INCLUDED IN THE COST OF "CONCRETE SIDEWALK".
7. EXPANSION JOINTS IN CONCRETE SHALL MATCH THOSE IN ADJACENT SIDEWALKS BUT IN NO CASE SHALL THE SPACING BETWEEN EXPANSION JOINTS EXCEED 12' UNLESS OTHERWISE NOTED.
8. RAISED ISLANDS IN MARKED CROSSINGS SHALL HAVE SIDEWALK RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 4' LONG BETWEEN THE RAMPS. IF THIS CANNOT BE ACHIEVED, THE RAISED ISLAND SHALL BE CUT THROUGH LEVEL WITH THE ROADWAY AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
9. SIDEWALK RAMPS SHALL BE CONSTRUCTED AND PAID FOR UNDER THE ITEM "CONCRETE SIDEWALK" INCLUDING CURBING WITHIN THE LIMITS OF THE NEW SIDEWALK RAMP AND DETECTABLE WARNING STRIPS.
10. CURBING WITHIN THE LIMITS OF NEW SIDEWALK RAMP SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE REQUIREMENTS OF FORM 814A SECTIONS 8.11 AND 8.13.
11. HANDICAP RAMPS CONFORMING WITH CONNECTICUT GENERAL STATUTES, SEC. 7–118A, SHALL BE INCORPORATED IN ALL PROPOSED SIDEWALKS AT ALL STREET INTERSECTIONS, AND AT ALL OTHER LOCATIONS WHERE THE GRADE OF A DRIVEWAY OR OTHER FACILITY TAKES PRECEDENCE OVER THE GRADE OF THE PROPOSED SIDEWALK.
12. TRANSITION TO FULL HEIGHT CURB. INSTALL STONE CURBING IF ADJACENT CURBING IS STONE. INSTALL CONCRETE CURBING IF ADJACENT CURBING IS CONCRETE OR BITUMINOUS.
13. INSTALL THE EDGE OF THE DETECTABLE WARNING 6' FROM THE EDGE OF ROAD.
14. TO PERMIT WHEELCHAIR WHEELS TO ROLL BETWEEN DOMES, ALIGN DOMES ON A SQUARE GRID IN THE DIRECTION OF PEDESTRIAN TRAVEL.

DETAILS FOR SIDEWALK RAMPS
N.T.S.



CONCRETE CURB IN CITY RIGHT–OF–WAY
N.T.S.



CONCRETE FOR THE SIDEWALK SHALL BE PLACED TO A UNIFORM DEPTH OF FIVE (5) INCHES UPON A SIX (6) INCH 3/4" CRUSHED STONE BASE. THE SURFACE EDGES OF EACH PANEL SHALL BE ROUNDED TO A RADIUS OF 3/32 INCH.

CONCRETE SHALL BE CLASS "C" CEMENT TYPE II (3,000 PSI MIN.)
AIR ENTRAINMENT SHALL BE BETWEEN 6–7%

A 1/2" THICK APPROVED PREMOLDED BITUMINOUS EXPANSION JOINT SHALL BE PLACED TRANSVERSELY EVERY 20 FT. MAX. AND BETWEEN NEW CONCRETE CURBING AND SIDEWALKS.

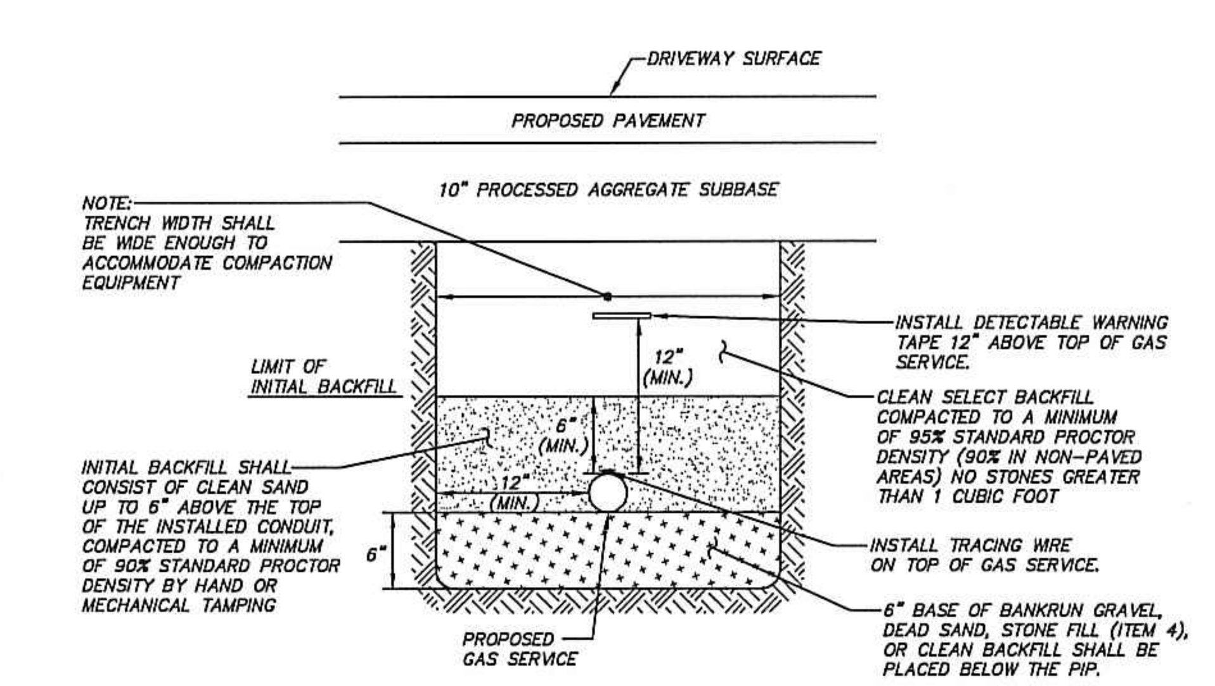
A 1/2" THICK APPROVED PREMOLDED BITUMINOUS EXPANSION JOINT SHALL BE UTILIZED BETWEEN ALL RIGID STRUCTURES (INCLUDING WALLS) AND NEW SIDEWALK WORK.

A MARKED OR SCORED CONTROL JOINT SHALL BE MADE AT FIVE FOOT INTERVALS BETWEEN BITUMINOUS JOINTS. CONTROL JOINTS SHALL BE 1 1/4" DEEP.

ADDITIONAL CONTROL JOINTS SHALL BE PLACED AS REQUIRED TO ELIMINATE ANY CONDITION WHICH WILL CAUSE STRESS VERTICES. (EXAMPLE AT CORNERS OF STRUCTURES)

ANY CHANGES REQUIRED BY LOCAL FIELD CONDITIONS SHALL BE MADE ONLY BY ORDER OF THE PROJECT ENGINEER OR THE CITY ENGINEER.

CONCRETE SIDEWALK WITH CURB
N.T.S.



DETAIL FOR GAS SERVICE INSTALLATION
N.T.S.

NOTES:
1. THE CONTRACTOR SHALL HAVE ALL MATERIAL SELECTION AND INSTALLATION SPECIFICATIONS APPROVED BY THE GAS COMPANY PRIOR TO INSTALLATION.
2. THIS SECTION IS DESIGNED TO RESIST UPLIFT FLOOD FORCES ASSOCIATED WITH THE MINIMUM ELEVATION STANDARD AS SPECIFIED IN THE ZONING REGULATION.

PHOTO RECORD
(CONTRACTOR TAKE NOTICE)

THE SITE CONTRACTOR SHALL BE RESPONSIBLE TO TAKE SITE PICTURES OF ALL THE FOLLOWING MILESTONES AND TO NOTIFY THE PROJECT ENGINEER OF EACH MILESTONE BEING REACHED. THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH A DIGITAL LIBRARY OF THE PHOTOGRAPHY AS THE PROJECT PROGRESSES WITH A COMPLETE LIBRARY AT THE END OF THE SITE WORK PHASE.

	PROJECT MILESTONES
1	E & S Controls at start of construction
2	Protection and/or installation of each non–structural LID BMP
3	Soils verification for each detention/retention/structural LID BMP
4	Amended soils verification for each BMP
5	Each detention/retention/structural LID BMP during construction
6	Each detention/retention/structural LID BMP prior to backfilling/completion
7	Each detention/retention/structural LID BMP at completion
8	Final site inspection throughout site

NOTE:
CONTRACTOR SHALL PROVIDE SAMPLES AND/OR CUT SHEETS OF ALL MATERIAL TO BE INSTALLED FOR REVIEW BY THE PROJECT ENGINEER PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALLOW THREE DAYS FOR PROJECT ENGINEER TO REVIEW MATERIALS AND/OR CUT SHEETS FOR APPROVAL. ALL MATERIALS AND PRODUCTS MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO INSTALLATION.

REV.	DATE	DESCRIPTION
0	10–28–22	ZONING SUBMISSION

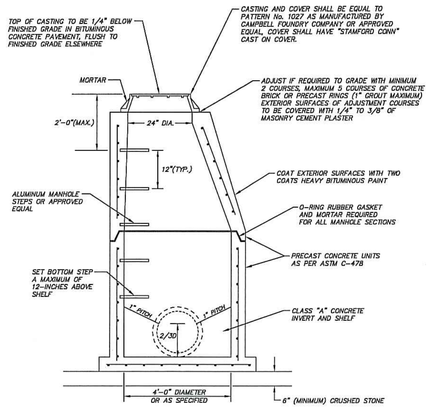
LEONARD C. D'ANDREA, CT PE No. 14869
ENGINEER — DATE: 10–28–22

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, PC
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549
RIVERSIDE, CT 06878
6 NEIL LANE
TEL. 637–1779

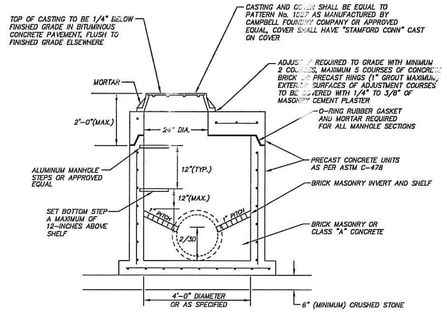
PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
5 OF 6	NOTES & DETAILS

21UT



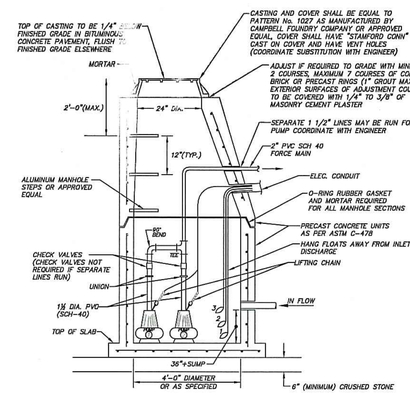
SANITARY SEWER MANHOLE DETAIL

N.T.S.



SHALLOW STORM DRAIN MANHOLE DETAIL

N.T.S.



SANITARY SEWER MANHOLE WITH GRINDER PUMPS DETAIL

N.T.S.

(FOR DUPLEX GRINDER PUMPS)

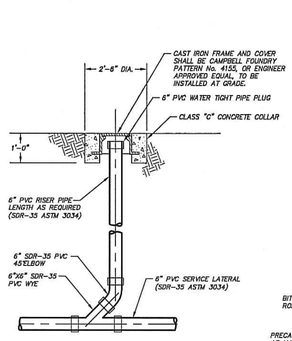
NOTES:

FLOAT ELEV.'S
1. PUMP OFF: (6"± OFF BOTTOM)
2. PUMP ON: (15"± BOTTOM)
3. ALARM AND LAG PUMP ON (WITH SAME FLOAT): (18"± OFF BOTTOM)

NOTES:

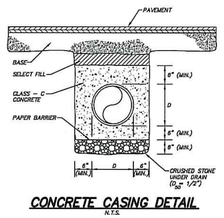
1. FURNISH AND INSTALL 2, GOULD'S SEWAGE GRINDER PUMPS WITH GOULD PANEL No. A6-2012 WITH A NEMA-1 ENCLOSURE AND 3 FLOAT CONTROLS POLYURETHANE FOAM FLOAT A2K23M (A2-3)
2. PUMPS AND CONTROLS SHALL BE CONNECTED TO A BACK UP POWER SUPPLY TO RUN DURING POWER FAILURES. LICENCED ELECTRICIAN TO COORDINATE WITH ENGINEER AND PROVIDE WIRING SCHEMATIC AS REQUIRED.
3. CONTRACTOR TO PROVIDE AND INSTALL PIPING, VALVES AND FITTINGS AS REQUIRED.
4. PANEL TO BE INSTALLED PROXIMATE TO OTHER CONTROL PANELS IN BASEMENT, COORDINATE WITH MECHANICAL ENGINEER.
5. ENGINEER TO BE NOTIFIED TO ATTEND START UP TEST WHEN INSTALLATION IS COMPLETE.
6. PUMPS, CONTROLS, AND MANHOLE MAY BE SUPPLIED BY EASTERN PRECAST 1-203-775-0230, ENGINEER MAY APPROVE EQUAL SUBSTITUTIONS. SUBMIT FOR APPROVAL IN WRITING.

NOTE:
DUPLEX PUMP SYSTEM DEPICTED HEREON IS FOR DEMONSTRATION PURPOSES ONLY. FLOW CALCULATIONS AND DESIGN OF PUMPS/FLOATS TO BE COMPLETED BY OTHERS.



CLEAN OUT DETAIL

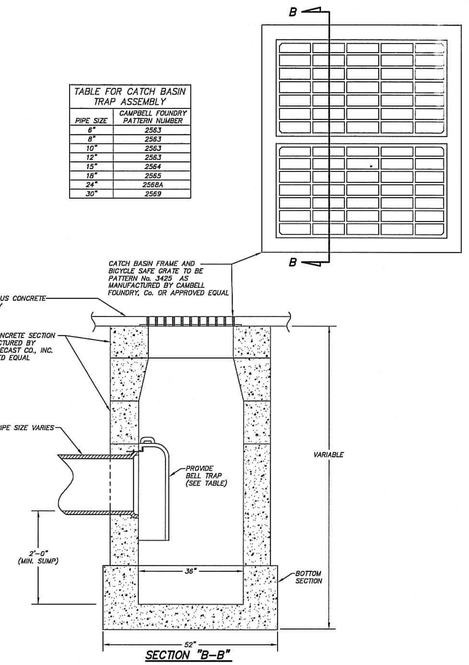
N.T.S.



CONCRETE CASING DETAIL

N.T.S.

TABLE FOR CATCH BASIN TRAP ASSEMBLY	
PIPE SIZE	CAMPBELL FOUNDRY PATTERN NUMBER
6"	2563
8"	2563
10"	2563
12"	2563
15"	2564
18"	2565
24"	2566A
30"	2569



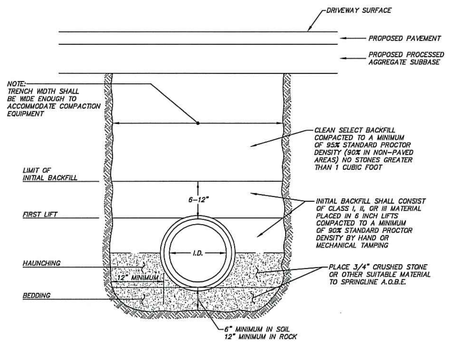
SECTION "B-B"

CATCH BASIN DETAIL (DOUBLE TYPE "CL")

N.T.S.

SUMP NOTE:
CATCH BASIN SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE.

CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION.

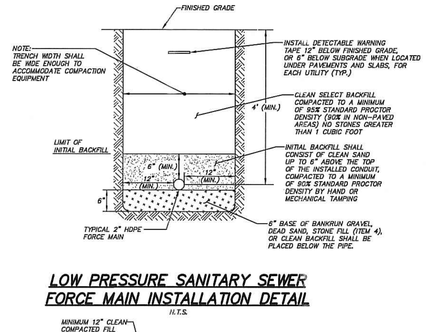


DETAIL FOR PVC SANITARY SEWER AND PVC/RCP STORM DRAIN INSTALLATION

N.T.S.

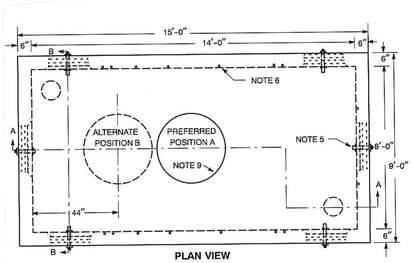
NOTES:

1. REFER TO ASTM D2321 (STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS) FOR TRENCHING SPECIFICATIONS.



LOW PRESSURE SANITARY SEWER FORCE MAIN INSTALLATION DETAIL

N.T.S.



See **Details** and **Notes** on reverse side.

Alternate - Position C

Two 38" openings on ℄ 44" from inside of each end.

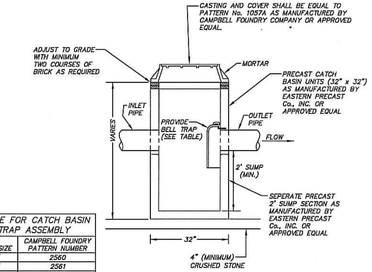


TABLE FOR CATCH BASIN TRAP ASSEMBLY	
PIPE SIZE	CAMPBELL FOUNDRY PATTERN NUMBER
6"	2560
8"	2561
10"	2562
12"	2563

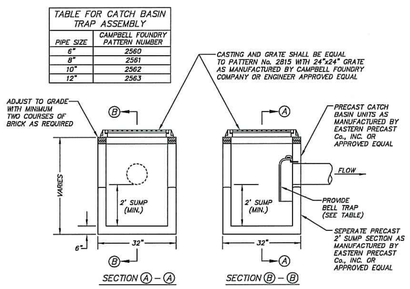
JUNCTION BOX DETAIL

N.T.S.

SUMP NOTE:
JUNCTION BOX SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE.

CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION.

TABLE FOR CATCH BASIN TRAP ASSEMBLY	
PIPE SIZE	CAMPBELL FOUNDRY PATTERN NUMBER
6"	2560
8"	2561
10"	2562
12"	2563

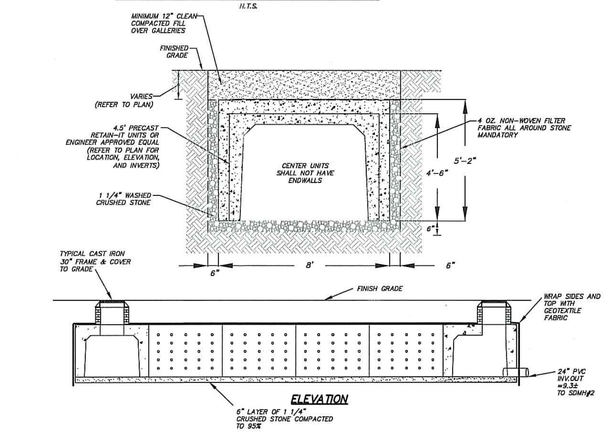


CATCH BASIN #1 DETAIL TYPE "CL"

N.T.S.

SUMP NOTE:
CATCH BASIN SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE.

CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION.



4.5' PRECAST RETAIN-IT SYSTEM DETAIL

N.T.S.

NOTES:

1. THE SOILS BENEATH THE INFILTRATION SYSTEM SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION.

Notes

1. Manhole shall be designed for the following loads:
   a. The roof shall be designed for AASHTO HS20-1996 direct wheel load.
   b. The walls shall be designed for the summation of the following:
      1) Soil pressure of not less than an equivalent fluid pressure of 33 pcf.
      2) Hydrostatic pressure of 5 feet measured from the base of the manhole.
      3) A surcharge of 2.5 feet of soil weighing 120 pcf.
   c. The floor shall be designed to resist the hydrostatic pressure resulting from the 5-foot head called for in 1.b.2) above.
2. Concrete and concrete design shall be in accordance with ACI 318-1999.
3. Concrete shall have a minimum and maximum 28-day strength of 4000 and 5000 psi respectively.
4. Steel reinforcing bars shall conform to ASTM A615-1992 Grade 40 or 60. Welded wire mesh shall conform to ASTM A185-1997 or A497-1999.
5. Pulling eyebolts, with a minimum 8000-pound pulling strength, shall be installed adjacent to window knockouts, at eight places.
6. Zinc alloy inserts 1/2 inch - 13 x 1 1/2 inch shall be installed at 48 places.
7. Openings and knockouts shall be clear of reinforcement.
8. Construction joint shall be sealed with asphalt cement or equivalent.
9. Manufacturer's identification and month/year when manufactured shall be legibly marked in/on concrete in the side of the 38-inch opening.
10. This is an oversized manhole only to be used in special cases. A crane will be needed to set both sections of this manhole.

ORIGINAL	MANHOLE - PRECAST REINFORCED CONCRETE			
5/29/75	8'-0" x 14'-0" x 7'-0" INSIDE			
APPROVED				
11/8/07	EVERSOURCE ENERGY	MATERIAL SPECIFICATION	SPC M-039.02	9

D'ANDREA SURVEYING & ENGINEERING, PC
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549, RIVERSIDE, CT 06878
6 NEIL LANE, TEL. 637-1779

PROJECT	MIXED USE DEVELOPMENT	
PREPARED FOR	TR BROAD II, LLC	
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT	
6 OF 6	DETAILS	

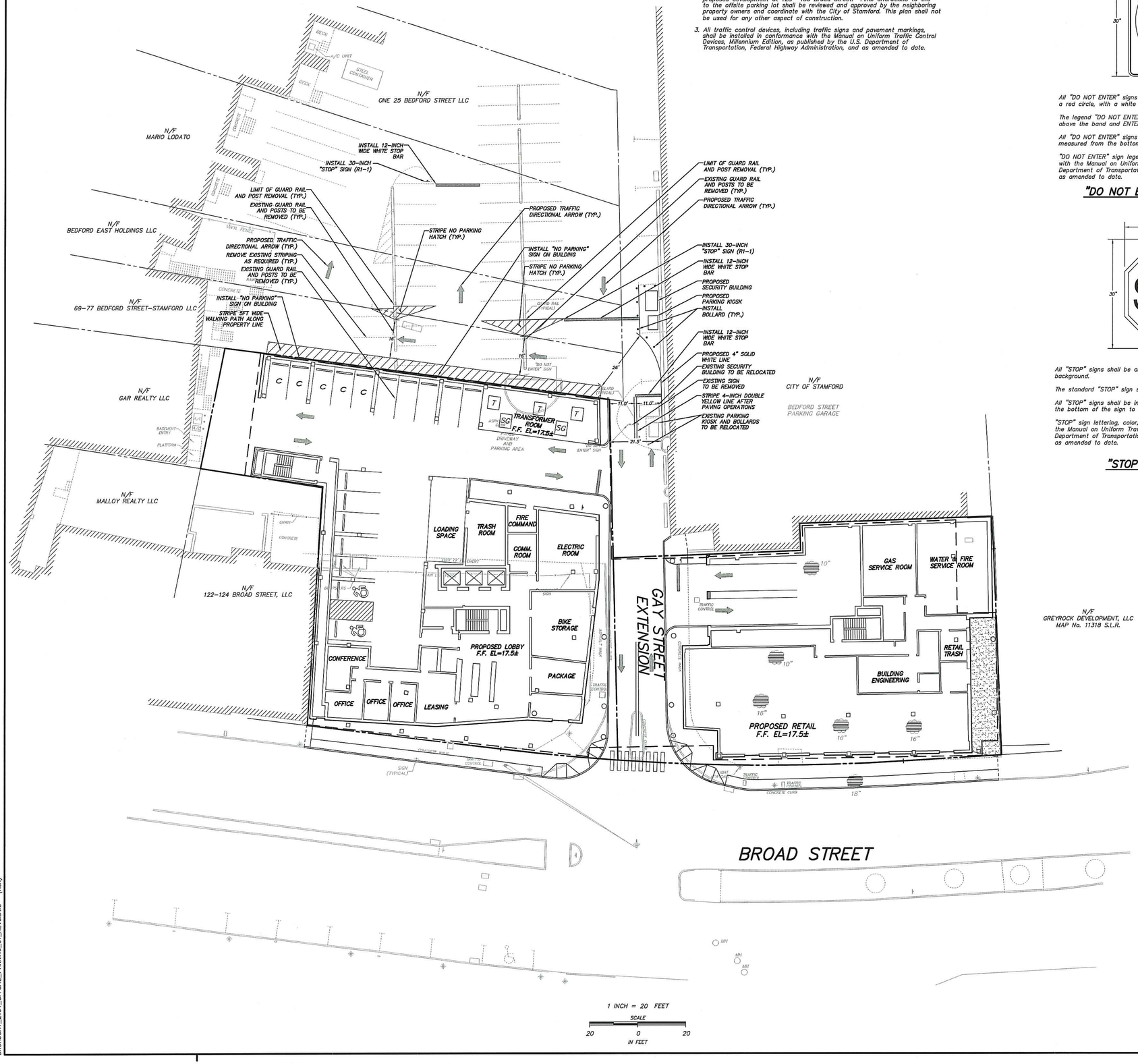
REV.	DATE	DESCRIPTION
0	10-28-22	ZONING SUBMISSION

LEONARD C. D'ANDREA, CT PE No. 14869
ENGINEER — 10-28-22 DATE

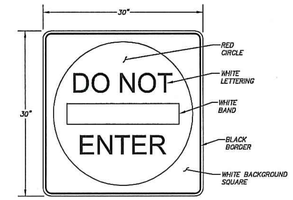
ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

NOTES:

1. Refer to topographic survey for a declaration of survey class accuracy.
2. The purpose of this plan is to depict possible alterations to the offsite parking lot to maintain functionality due to the construction of the proposed development at 128 –138 Broad Street. Final alterations to the to the offsite parking lot shall be reviewed and approved by the neighboring property owners and coordinate with the City of Stamford. This plan shall not be used for any other aspect of construction.
3. All traffic control devices, including traffic signs and pavement markings, shall be installed in conformance with the Manual on Uniform Traffic Control Devices, Millennium Edition, as published by the U.S. Department of Transportation, Federal Highway Administration, and as amended to date.



1 INCH = 20 FEET
SCALE
20 0 20
IN FEET



All "DO NOT ENTER" signs shall be a 30–inch white square on which is inscribed a red circle, with a white band placed horizontally across the center of the circle.

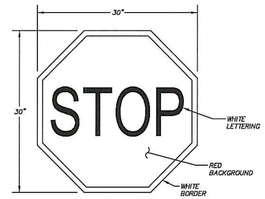
The legend "DO NOT ENTER" shall appear in white letters with the words DO NOT above the band and ENTER below the band.

All "DO NOT ENTER" signs shall be installed at a height of at least 5 feet, measured from the bottom of the sign to the near edge of the pavement.

"DO NOT ENTER" sign legend, color, size, and installation shall be in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highway Administration, Millennium Edition, as amended to date.

"DO NOT ENTER" SIGN DETAIL (R5–1)

N.T.S.



All "STOP" signs shall be an octagon with a white legend and border on a red background.

The standard "STOP" sign shall be 30 x 30 inches.

All "STOP" signs shall be installed at a height of at least 5 feet, measured from the bottom of the sign to the near edge of the pavement.

"STOP" sign lettering, color, size, and installation shall be in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highway Administration, Millennium Edition, as amended to date.

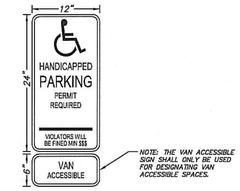
"STOP" SIGN DETAIL (R1–1)

N.T.S.

MAP No. 11967 S.L.R. MERIDIAN

BLOCK No. 176
"C–G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

LOCATION MAP – 1" = 800'±



"HANDICAPPED PARKING PERMIT REQUIRED" & "VAN ACCESSIBLE" signs shall have white lettering against a blue background.

All accessible signage sizes, lettering, and symbols shall comply with federal and state specifications.

All accessible signage shall be installed 60" (minimum) above the floor or ground surface of the parking space, measured to the bottom of the sign.

Confirm fine amount prior to sign fabrication.

HANDICAPPED PARKING SPACE SIGN DETAIL

N.T.S.

LEGEND

— 88 —	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
× T=88.8 B=88.8	EXISTING WALL/CURB SPOT GRADE
88	PROPOSED CONTOUR
× 88.8	PROPOSED SPOT GRADE
T=88.8 B=88.8	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
—G—G—	UNDERGROUND UTILITY SERVICE: C=CABLE, E=ELECTRIC, G=GAS, T=TELEPHONE, W=WATER
	PROPERTY LINE
1	REGULAR PARKING SPACE (8.5'x18')
C	COMPACT PARKING SPACE (8.5'x16')
	HANDICAPPED PARKING SPACE
GG ⊙	GAS GATE
WG ⊙	WATER GATE
WM ⊙	WATER METER
POLE ◆	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CRP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
AOBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

D'ANDREA SURVEYING & ENGINEERING, PC
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549, RIVERSIDE, CT 06878 — 6 NEIL LANE, TEL. 637–1779

REV.	DATE	DESCRIPTION
0	10–28–22	ZONING SUBMISSION

LEONARD C. D'ANDREA, CT PE No. 14869
ENGINEER — 10–28–22 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

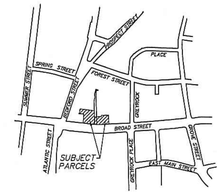
PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
1 OF 1	OFFSITE PARKING LOT MODIFICATION PLAN

XREF: BROADGAY_21UT_DP_07_REVD.DWG
BROADGAY_21UT_OFFSITE_PARKING_01_REVD.DWG (R.N.)

21UT

BLOCK No. 176
"C-G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.

MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP - 1" = 800'±

N/F
69-77 BEDFORD STREET-STAMFORD LLC

N/F
GAR REALTY LLC

N/F
MALLOY REALTY LLC

N/F
122-124 BROAD STREET, LLC

N/F
CITY OF STAMFORD
BEDFORD STREET
PARKING GARAGE

N/F
GREYROCK DEVELOPMENT, LLC
MAP No. 11318 S.L.R.

GAY STREET EXTENSION

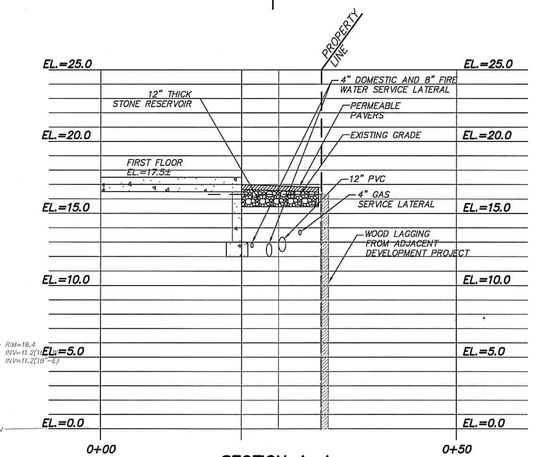
LOADING SPACE
TRASH ROOM
FIRE COMMAND
COMM. ROOM
ELECTRIC ROOM
BIKE STORAGE
PROPOSED LOBBY F.F. EL=17.5±
CONFERENCE
OFFICE
OFFICE
OFFICE
LEASING
PACKAGE
GAS SERVICE ROOM
WATER & FIRE SERVICE ROOM
RETAIL TRASH
BUILDING ENGINEERING
PROPOSED RETAIL F.F. EL=17.5±

BENCHMARK
"L" CUT BASE
ELEV= 17.30
DATUM: NAVD 88

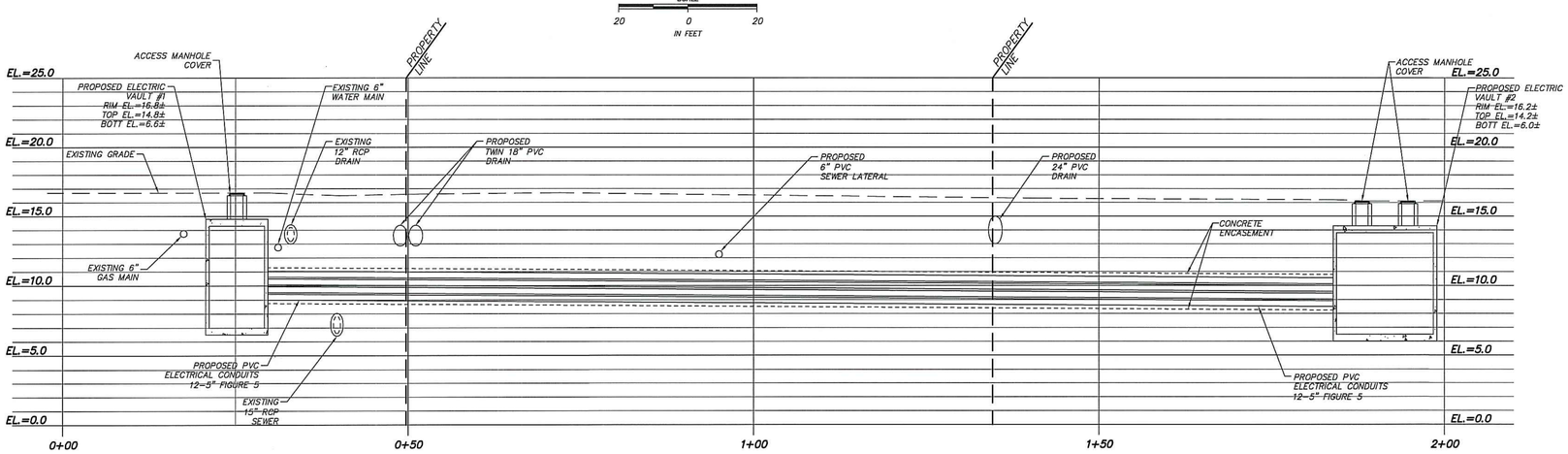
BROAD STREET

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET



SECTION A-A
SCALES: 1"=10' HORIZONTAL
1"=5' VERTICAL



SECTION B-B
SCALES: 1"=10' HORIZONTAL
1"=5' VERTICAL

LEGEND

— 88 —	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
T=88.8 B=88.8	EXISTING WALL/CURB SPOT GRADE
— 88 —	PROPOSED CONTOUR
× 88.8	PROPOSED SPOT GRADE
T=88.8 B=88.8	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
	TREE PROTECTION
	SILT FENCE
	PROPERTY LINE
	ZONE BOUNDARY LINE
GG ⋄	GAS GATE
WG ⋄	WATER GATE
WM ⋄	WATER METER
POLE ◆	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CRP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
AOBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

D'ANDREA SURVEYING & ENGINEERING, PC
• LAND PLANNERS
• ENGINEERS
• SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637-1779

PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
1 OF 1	CROSS SECTION PLAN

REV.	DATE	DESCRIPTION
0	10-28-22	ZONING SUBMISSION

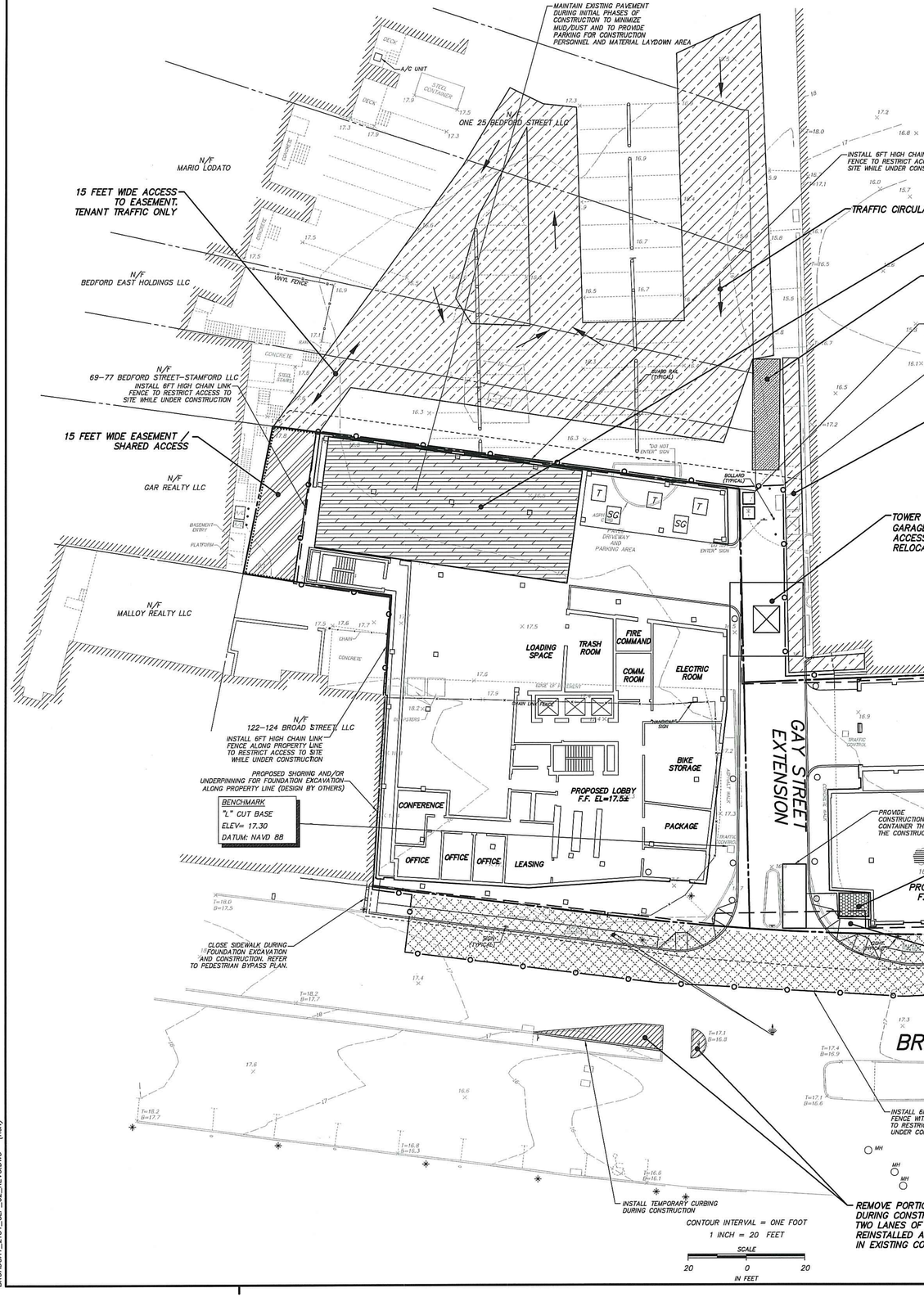
LEONARD C. D'ANDREA, CT PE No. 14869
ENGINEER 10-28-22 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

XREF: BROADDAY_21UT_DP_07_REVDLDWG
BROADDAY_21UT_SECTION_01_REVDLDWG (N.M)

21UT

BLOCK No. 176
"C–G" ZONING DISTRICT
PARCEL A = 20,865 SQ.FT.
PARCEL B = 14,794 SQ.FT.



Notes:

1. The contractor shall be required to coordinate and install security fencing around the entire project limits as noted hereon or as agreed to with the owner and the City of Stamford Office of Operations. As noted hereon, certain sections of fencing fall outside of the property boundary. The owner shall coordinate a temporary work easement with the City of Stamford prior to the installation of the fencing. The location of the double access gate shall be mutually agreed upon with the City of Stamford prior to the installation of the fencing.
2. Material laydown area, project trailer, and temporary sanitary facilities depicted for initial stages of construction. These features will be relocated during subsequent phases of construction.
3. The contractor shall be responsible for coordinating temporary power to the project trailer.
4. The owner and/or contractor shall coordinate off–site parking for the project workforce (if required) with the with the City of Stamford in the Bedford Street parking garage or other off–site parking operator.
5. The installation of a tower crane or contractor people lift shall be coordinated with the architect and structural engineer for the project.
6. The contractor shall arrange for debris containers throughout the construction phase and containers shall not be overfilled.
7. Contractor shall arrange for the proper number of temporary sanitary facilities throughout the construction phase and such facilities shall be properly maintained and sanitized throughout the construction phase.

MAP No. 11967 S.L.R. MERIDIAN

LOCATION MAP – 1" = 800'±

PHASE 1: CONSTRUCTION STAGING:

Note: Area enclosed by existing chain link fence on Parcel A shall serve as construction staging area for initial stages of construction. Contractor shall enclose grass area on Parcel B with temporary chain link fence to provide additional staging area. Contractor shall remove grass/topsoil and install bank run gravel or process aggregate base material to provide construction parking and storage areas for construction materials.

1. Remove parking kiosk, bollards, signage and guard rails in offsite parking lot as indicated on the development plan.
2. Remove existing striping as required and re–stripe offsite parking lot as indicated on plan.
3. Install new signage in offsite parking lot as required.
4. Install sedimentation and erosion controls, chain link fence, and overhead pedestrian walkway protection.
5. Mark and cut trees to be removed.
6. Relocate existing utilities, sanitary sewer and storm drainage systems as required within Gay Street Extension.
7. Excavate for proposed building footings. Provide shoring/underpinning as required (design by others).
8. Construct proposed building footings, foundation walls, columns and first floor slab.
9. Backfill and rough grade around first floor slab.
10. Construct second and third floor parking decks.
11. Install and grade surface parking lot base material.
12. Install asphalt binder course for surface parking lot.

PHASE 2: CONSTRUCTION STAGING:

1. Construct proposed building.
2. Install sanitary sewer and utilities from Broad Street to building.
3. Install storm drainage system for building. Modify existing drainage system as indicated on development plan.
4. Construct walks, curbing, pedestrian ramps, and driveway entrance.
5. Install wearing course of asphalt on parking lot.
6. Stripe parking lot and install signage as required.
7. Remove sedimentation and erosion controls, chain link fence, and overhead pedestrian walkway protection.
8. Mill and resurface Gay Street Extension and Broad Street. Restripe as required.

LEGEND

— 88 —	EXISTING CONTOUR
× 88.8	EXISTING SPOT GRADE
× T=88.8 B=88.6	EXISTING WALL/CURB SPOT GRADE
88	PROPOSED CONTOUR
× 88.8	PROPOSED SPOT GRADE
T=88.8 B=88.6	PROPOSED WALL/CURB SPOT GRADE
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE TO BE REMOVED
	TREE PROTECTION
×	SILT FENCE
	PROPERTY LINE
	ZONE BOUNDARY LINE
GG ⊙	GAS GATE
WG ⊙	WATER GATE
WM ⊙	WATER METER
POLE	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
EMH	ELECTRIC MANHOLE
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CPP	CORRUGATED POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
VTP	VITRIFIED TILE PIPE
T	TOP OF WALL/CURB
B	BOTTOM OF WALL/CURB
GR	GRATE ELEVATION
RIM	RIM ELEVATION
INV	INVERT ELEVATION
AOBE	AS ORDERED BY ENGINEER
VIF	VERIFY IN FIELD

D'ANDREA SURVEYING & ENGINEERING, PC
• LAND PLANNERS • ENGINEERS • SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637–1779

0	10–28–22	ZONING SUBMISSION
REV.	DATE	DESCRIPTION

LEONARD C. D'ANDREA, CT PE No. 14869
10–28–22
ENGINEER DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

PROJECT	MIXED USE DEVELOPMENT
PREPARED FOR	TR BROAD II, LLC
LOCATION	128 BROAD STREET STAMFORD, CONNECTICUT
1 OF 1	CONSTRUCTION LOGISTICS PLAN

XREF: BROADGY_21UT_DP_07_REVOLVING
BROADGX1_21UT_CO_02_REVOLVING (PLAN)

21UT

Block 176

AGREEMENT COVENANT

AGREEMENT made this _____ day of _____ by and between TR Broad II LLC of Stamford, CT (hereinafter referred to as "Owner") and the **CITY OF STAMFORD**, 888 Washington Blvd. Stamford CT 06901, a municipal corporation lying within the County of Fairfield and State of Connecticut, acting herein by its duly authorized Mayor, Caroline Simmons (hereinafter referred to as the "City"), and the **ENVIRONMENTAL PROTECTION BOARD OF THE CITY OF STAMFORD**, acting herein by its duly authorized Chairman, Gary H. Stone (hereinafter referred to as the "EPB").

WITNESSETH:

WHEREAS, OWNER has commenced the planning and construction of a mixed use development on a parcel of land owned by them and as more particularly described on Schedule "A", attached hereto and made a part hereof (the "Property").

WHEREAS, certain drainage facilities ("Drainage Facilities"), including but not limited to subsurface retention system as more particularly described on Schedule "B" attached (the "Construction Plans") shall be installed in connection with the aforesaid construction and in accordance with the Construction Plans and _____ issued therefore, (the "Permit") and;

WHEREAS, OWNER, the CITY and EPB share a joint concern that the Drainage Facilities be maintained in a functioning condition so as to avoid

pollution of surface and groundwaters, flooding and/or improper drainage.

NOW, THEREFORE, in consideration of ten dollars and other good and valuable consideration receipt of which is hereby acknowledged by the OWNER, it is hereby agreed as follows:

1) OWNER shall clean the drainage facilities or cause such facilities to be cleaned by periodic removal of accumulated sediment and debris in a good and workman-like manner, at least two (2) times during every twelve (12) month period, which times shall be in the period between April and June and between October and December and more often as the City may determine to be necessary.

2) OWNER shall sweep, or cause to be swept, garage facilities, driveways and roadway surfaces located on the Property at least once per calendar quarter.

3) OWNER shall utilize only sand or calcium chloride in connection with the de-icing of areas within the Property meaning and intending that road salt (Sodium Chloride) shall not be used for said purpose.

4) OWNER shall repair or replace any defects or defective drainage facilities so as to maintain the drainage facilities, at all times, in a fully functional capacity.

5) OWNER shall file as-built drainage plans with the EPB immediately upon the completion of work. Said plans shall be prepared by a professional engineer/surveyor registered in the State of Connecticut.

6) OWNER grants the CITY and/or EPB, its agents, and employees, the right to enter the Property at all reasonable times upon twenty-four (24) hours notice to the OWNER for the purpose of inspecting the Property to determine if OWNER is complying with the requirements hereunder. A representative of the Owner shall have the right to accompany the City and/or EPB on their inspection of the Property.

7) If, after an inspection is made pursuant to Paragraph Six (6) hereof, the CITY and/or EPB determines that the owner has failed to comply with the aforesaid undertakings, then the CITY and/or EPB shall give written notice of said determination to the then OWNER of the Property which notice shall also specify the said failure. Said notice shall be sent by registered or certified mail to the last known address of said Owner. If the Owner disputes the claim, he shall give written notice thereof to City and/or EPB within ten (10) days of receipt of said notice, and the EPB shall hold a hearing as promptly as possible to decide the merits of the disputed claim. If the claim is not disputed within said ten (10) days, the OWNER shall have thirty (30) days from the receipt of said notice to correct said failure, unless it is impossible to cure said defect within said time, in which case, the necessary repairs shall be immediately commenced and diligently pursued to completion within a reasonable time.

8) If the said failure is not remedied within the time frame herein stated, the CITY and/or EPB may proceed to cure the same and charge the actual cost thereof to the OWNER of the Property.

9) OWNER agrees to reimburse the CITY and/or EPB for reasonable legal fees and court costs if it becomes necessary for the CITY and/or EPB to sue for reimbursement of sums expended by the CITY and/or EPB in performance of OWNER'S obligation.

10) OWNER agrees and covenants to indemnify and save harmless the CITY and the EPB against any and all claims, suits, actions or judgments arising out of the delay in the performance of any of their obligations pursuant to this Agreement.

11) OWNER agrees that this covenant and restriction shall apply to and run with the land. It shall be binding on all future owners, administrators, executors, successors and assigns.

12) The OWNER hereby represents to the CITY and EPB that he/she is the owner, in fee simple, of all of the property described in "Schedule A" attached hereto and made a part hereof.

13) OWNER agrees that this Agreement and restrictive covenant upon execution of the same, shall be recorded on the land records at the OWNER'S expense at the time that a permit is issued for the Property herein and while the OWNER is in title.

14) OWNER agrees not to assert the invalidity of this document.

15) OWNER agrees that nothing herein shall be construed to be a limitation upon the right of the EPB to assert and enforce any

rights it may have under federal, state or City statute, ordinance or regulation.

16) This agreement shall be governed by the laws of the State of Connecticut.

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

WITNESSED:

#1 _____

Printed Name:

#2 _____

Printed Name:

THE CITY OF STAMFORD

BY: _____

Caroline Simmons

Its duly authorized Mayor

#1 _____

Printed Name:

#2 _____

Printed Name:

THE ENVIRONMENTAL PROTECTION BOARD

BY: _____

Gary H. Stone

Its duly authorized Chairman

#1 _____

Printed Name:

#2 _____

Printed Name:

OWNER

BY: _____

_____

(Owner's Name)

(Acknowledgement on the Following Page)

STATE OF CONNECTICUT}
} ss: STAMFORD Date: _____
COUNTY OF FAIRFIELD }

Personally appeared Caroline Simmons, Mayor of the City of Stamford, signer and sealer of the foregoing Instrument, and acknowledged the same to be her free act and deed and the free act and deed of said City, before me.

_____
Commissioner of the Superior
Court or Notary Public

STATE OF CONNECTICUT}
} ss: STAMFORD Date: _____
COUNTY OF FAIRFIELD }

Personally appeared Gary H. Stone, Chairman of the Environmental Protection Board of the City of Stamford, signer and sealer of the foregoing Instrument, and acknowledged the same to be his free act and deed and the free act and deed of said Commission, before me.

_____
Commissioner of the Superior Court
or Notary Public

STATE OF CONNECTICUT}
} ss: STAMFORD Date: _____
COUNTY OF FAIRFIELD }

Personally appeared_____signer and sealer of the foregoing instrument, and acknowledged the same to be____free act and deed, before me.

_____
Commissioner of the Superior Court
or Notary Public

SCHEDULE "A"

PARCEL A:

ALL THAT CERTAIN piece, parcel or tract of land, with the buildings and improvements thereon, situated in the City of Stamford, County of Fairfield and State of Connecticut, and known as 128 Broad Street, which is more particularly bounded and described as follows:

NORTHERLY: One Hundred Sixty-one (161) feet, more or less, by land now or formerly of The Estate of Mary M. Scofield, dec'd.

EASTERLY: One Hundred Forty-eight (148) feet, more or less, by a driveway, now or formerly known as Gay Street Extension;

SOUTHERLY: One Hundred Thirty (130) feet by Broad Street;

WESTERLY: Ninety-eight (98) feet, more or less, by land now or formerly of Charles M. Lounsbury, dec'd. et al, and now or formerly of George Dimenstein;

SOUTHERLY AGAIN: Fifty-one (51) feet, more or less, by land now or formerly of the Estate of Charles Lounsbury, dec'd. et al and now or formerly of George Dimenstein; and

WESTERLY AGAIN: Fifty and 05/100 (50.5) feet by land now or formerly of Merwin Realty Co., and now or formerly of Floyd B. Bertram, et al.

SAID PREMISES are known and designated as "Parcel 'C', 7,883+/- Sq. Ft." and "Parcel 'D', 12,982+/- Sq. Ft." as shown on a certain map entitled, "Map Prepared for Thomas K. Standish, Stamford, Connecticut, Scale 1" = 20', Aug. 22, 1988", certified "Substantially Correct" by William W. Seymour, Conn. L.S. Reg. No. 11352 for William W. Seymour and Associates, P.C., Land Surveyors, Darien, Conn., which map is on file in the Office of the Town Clerk of the City of Stamford as Map No. 11192, reference thereto being had.

PARCEL B:

ALL THAT CERTAIN piece, parcel or tract of land, located in the City of Stamford, County of Fairfield and State of Connecticut, located at the northeast corner of Broad Street including the southerly terminus of Gay Street Extension, and bounded and described as follows:

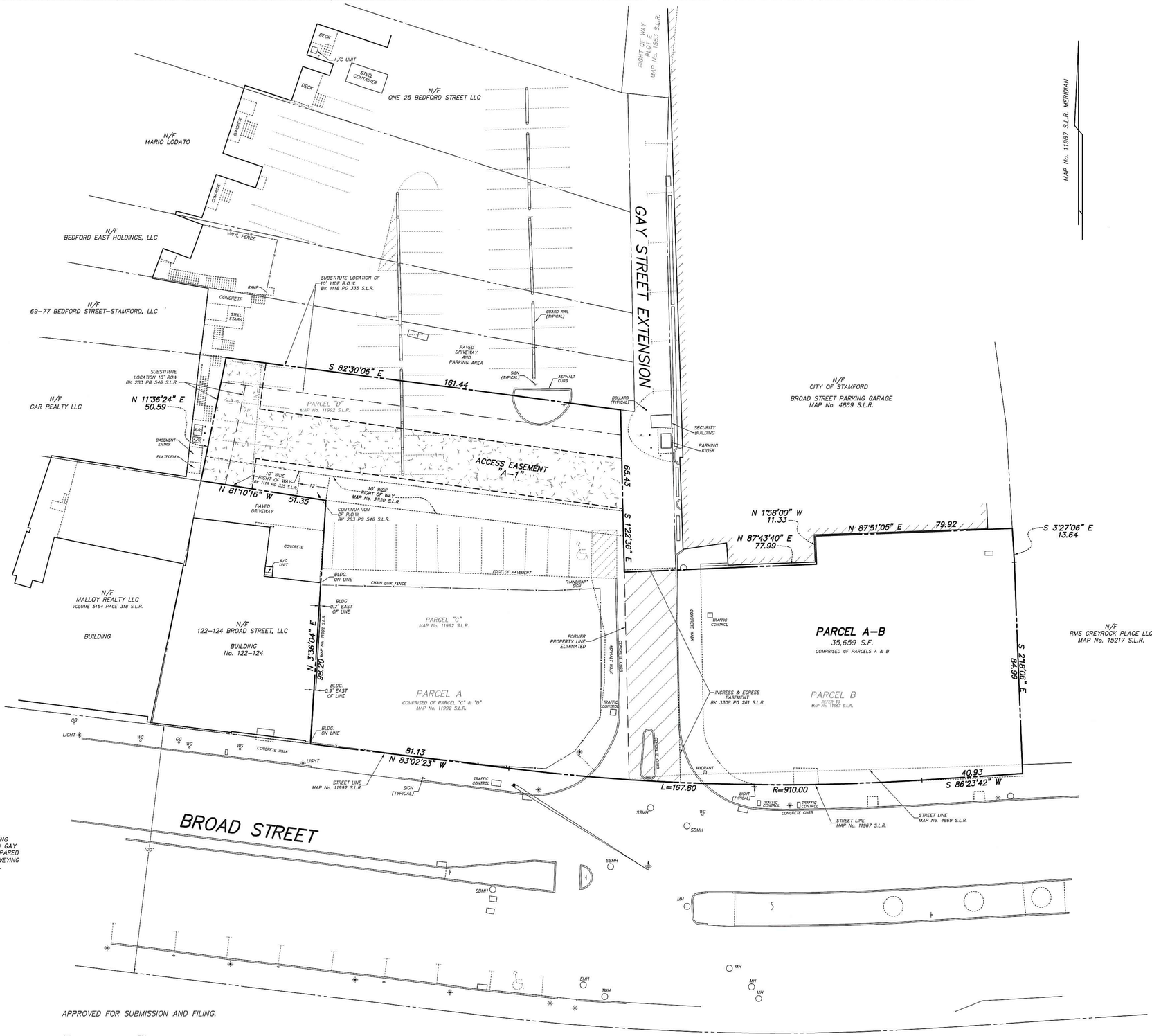
BEGINNING at a point on the new northerly street line of Broad Street as it now exists where said northerly street line intersects the westerly property line of land of United Broad Street Associates, said point being further located 3.65 feet southerly of the southwesterly corner of said land of United Broad Street Associates as shown and delineated on Map No. 11318 of the Stamford Land Records. Thence westerly along said northerly street line of Broad Street, the following courses and distances: S. 86° 23' 42" W. a distance of 40.93 feet, thence continuing on a curve to the right, thence continuing on a curve to the right, the radius of which is 910.00 feet a distance of 118.869 feet to land of Anthony R. Lorenzo, Trustee. Thence northerly along land of said Anthony R. Lorenzo, Trustee N. 1° 22' 36" W. a distance of 83.437 feet to a point, thence easterly, northerly and again easterly through in part across Gay Street Extension and land of the City of Stamford, the following courses and distances: N. 87° 43' 40" E. a distance of 77.992 feet, N. 1° 58' 00" W. a distance of 11.33 feet and N. 87° 51' 05" E. a distance of 79.917 feet to land of United Broad Street Associates. Thence southerly along land of said United Broad Street Associates the following courses and distances: S. 3° 27' 06" E. a distance of 13.64 feet and S. 2° 18' 06" E. a distance of 84.99 feet to the point or place of beginning.

SAID PREMISES are shown and delineated on a certain map entitled, "Map Showing a Portion of Property of the City of Stamford, Stamford, Connecticut,", certified by Paul R. Manula, Land Surveyor, on December 22, 1987, which map is on file in the Stamford Town Clerk's Office as Map No. 11967, reference thereto being had.

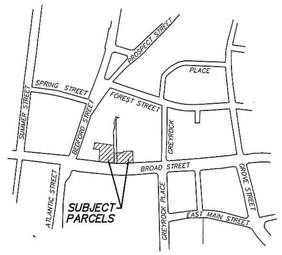
THE above-described property contains 14,794 square feet and lies in Block 176 of the Stamford Land Records.

Properties are known as 136 Broad Street, Stamford, Connecticut &
0 Broad Street (Account #004-0515), Stamford, Connecticut

BLOCK No. 176



MAP No. 11967 S.L.R. MERIDIAN



LOCATION MAP - 1" = 600'±

ACCESS EASEMENT "A-1"

REFER TO A MAP ENTITLED "EASEMENT MAP DEPICTING ACCESS EASEMENT LOCATED AT BROAD STREET AND GAY STREET EXTENSION IN STAMFORD, CONNECTICUT PREPARED FOR TR BROAD II LLC PREPARED BY D'ANDREA SURVEYING & ENGINEERING P.C. AND DATED OCTOBER 28, 2022.

REFER TO A MAP ENTITLED "PROPERTY SURVEY PREPARED FOR BROADGAY L.L.C. STAMFORD, CT." PREPARED BY REDNISS & MEAD AND DATED FEBRUARY 24, 1995.

THIS MAP IS A PROPERTY SURVEY. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A-2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20.

NEW MONUMENTATION HAS NOT BEEN SET AS A RESULT OF THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

REFER TO VOLUME 13022 PAGE 140 AND MAPS No. 11192 & 11967 S.L.R.

LAND LIES IN "C-G" ZONING DISTRICT

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

D'ANDREA SURVEYING & ENGINEERING, P.C.

_____, SURVEYOR
ROBERT L. LIDDEL JR., CT LS No. 15775
RIVERSIDE, CONNECTICUT OCTOBER 28, 2022

APPROVED FOR SUBMISSION AND FILING.

ON _____ BY _____
OWNER OR AGENT

APPROVED BY THE STAMFORD PLANNING BOARD. FOR FILING PURPOSES. (NOT A SUBDIVISION PURSUANT TO CGS 8-18)

ON _____ BY _____
CHAIR OR SECRETARY

1 INCH = 20 FEET
SCALE
20 0 20
IN FEET

PROPERTY SURVEY
DEPICTING
CONSOLIDATION OF PARCELS
AT
128-136 BROAD STREET
AND
GAY STREET EXTENSION
IN
STAMFORD, CONNECTICUT
PREPARED FOR
TR BROAD II, LLC

BROADGAY_21UT_PS_CONS_B.DWG

21UT

Sanitary Sewer Flow Calculations

Name: TR Broad II, LLC
Address: 128 Broad Street Stamford, Connecticut
Date: October 28, 2022

Summary

The following calculations were performed to determine if the existing sanitary sewer main, which extends along the frontage of the proposed development, has sufficient capacity to handle contributing flows from the proposed building. The sanitary sewer connections from the proposed building to the existing sanitary sewer main are depicted on Sheet 2 of 6 of the Final Site Plan Review Set, as prepared by D'Andrea Surveying & Engineering, PC.

The existing sanitary sewer main receiving contributing flows from the proposed building is a 15-inch RCP that directs flow to the east along the northern edge of the Broad Street Right-of-Way towards Greyrock Place.

Proposed Building Daily Residential Sewer Discharge Volume:

Proposed Number of Studio Units	=	31
Proposed Number of One Bedroom Units	=	87
Proposed Number of Two Bedroom Units	=	69
Proposed Number of Three Bedroom Units	=	9
Sewer Discharge Per Capita Per Day	=	75 gallons

Studio Units

$$V_{1BR} = 31\ units \times \frac{1\ bedroom}{1\ unit} \times \frac{1\ persons}{1\ bedroom} \times 75\ gpcd = 2{,}325\ gpd$$

One Bedroom Units

$$V_{1BR} = 87\ units \times \frac{1\ bedroom}{1\ unit} \times \frac{2\ persons}{1\ bedroom} \times 75\ gpcd = 13{,}050\ gpd$$

Two Bedroom Units

$$V_{2BR} = 69\ units \times \frac{2\ bedroom}{1\ unit} \times \frac{2\ persons}{1\ bedroom} \times 75\ gpcd = 20{,}700\ gpd$$

Three Bedroom Units

$$V_{3BR} = 9\ units \times \frac{3\ bedroom}{1\ unit} \times \frac{2\ persons}{1\ bedroom} \times 75\ gpcd = 4{,}050\ gpd$$

- **Proposed Building Retail Sewer Discharge Volume:**

  Eastern Retail: 4,284 sq.ft. (Approximately)

  Assume this space will be used for a restaurant and/or food establishment.

  Assume restaurant has 150 seats and serves breakfast, lunch and dinner.

  Sewer Discharge Per Seat Per Day (Restaurant with Public Toilet) = 45 gallons

$$V_{Western\,Retail} = 150 seats \times \frac{45\ GPD}{1\ seat} = 6{,}750\ gpd$$

- **Proposed Building Total Combined Daily Discharge Volume:**

$V_{Total} = 2{,}325 + 13{,}050 + 20{,}700 + 4{,}050 + 6{,}750 = 46{,}875\ Gallons$

  Total Combined Daily Discharge Volume < 50,000 gpd, therefore only a local discharge permit is required.

- **Proposed Building Peak Daily Discharge Rate:**

Total Combined Daily Discharge Volume	=	46,875 gal
Peak Factor of Safety	=	6.0

Peak Daily Discharge Rate

$$q_{peak} = V_{Total} \times Peak\ Factor = 46{,}875 \times 6.0 = 281{,}250 gpd$$

= 260 gpm (18 hour period)

- **Maximum Capacity of Existing 15" RCP Sewer Main in Broad Street**

Q	=	Pipe Capacity			
n	=	Manning's Roughness Coefficient	=	0.013	(RCP)
s	=	Pipe Slope	=	0.004	ft/ft
D	=	Pipe Diameter	=	15	in
A	=	Pipe Area	=	1.227	ft^2
P_w	=	Wetted Perimeter	=	3.927	ft
Rh	=	Hydraulic Radius	=	0.3125	ft

$$Q = \frac{1.49}{n} A R_H^{\frac{2}{3}} S^{\frac{1}{2}} = \frac{1.49}{0.013}(1.227)(0.3125)^{\frac{2}{3}}(0.004)^{\frac{1}{2}} = 4.10\ cfs$$

= 1,840 gpm

- **Existing Peak Daily Flow Rate (Per Field Observations)**

  An inspection of the existing sanitary sewer manhole approximately 30 feet to the east of 136 Broad Street has revealed a high water mark stain/scum line contained within the flow line trough of the manhole. Therefore, an assumption has been made that under "high flow conditions", flow in the sewer main is approximately 8" above the invert of the 15" sewer main. Therefore, the peak flow rate under "high flow conditions" is approximately 2.3 cfs or 1,032 gpm.

- **Conclusion Summary**

Proposed Total Combined Daily Discharge Volume	=	46,875	gal
Existing Daily Peak Flow Rate	=	1,032	gpm
Proposed Increase in Daily Peak Flow Rate	=	260	gpm
Proposed Daily Peak Flow Rate	=	1,292	gpm
Capacity of Existing 15-inch RCP Sewer	=	1,840	gpm

The proposed total combined daily discharge volume from the proposed development is estimated to be approximately 46,875 gallons and will therefore require a local discharge permit from the WPCA. The addition of the calculated peak discharge from the project site, 260 gpm, plus the approximate existing "high flow condition" flow rate, 1,032 gpm, equals 1,292 gpm, which is still less than the maximum flow capacity of the sewer pipe, 1,840 gpm, by approximately 30 percent. Therefore, the existing sanitary sewer main has sufficient capacity to handle the increase in the daily peak flow rate from the proposed building.

Leonard C. D'Andrea, PE
CT License No. 14869

60C


BEDFORD ST.
EX. 15"
NO 114
NO 124
NO 128
154
156
15" R.C.P.
23.80 LIN. FT.
328.90 LIN. FT. 15" R.C.P.
180.84 LIN. FT. 15" R.C.P.
ATLANTIC ST.
NOTE
GROUND ELV. TAKEN
OFF CROSS SECTION
101 BROAD ST.
DRIVE
101 BROAD
GRAYROCK PL.
164.65 LIN. FT. 12" R.C.P.
BROAD STREET
SANITARY SEWER
SCALE HORZ. 1" 50'
VERT 1" 5'
GOV'T DATUM CONSTRUCTED 1972
BOOK 923 PAGE 23

020127

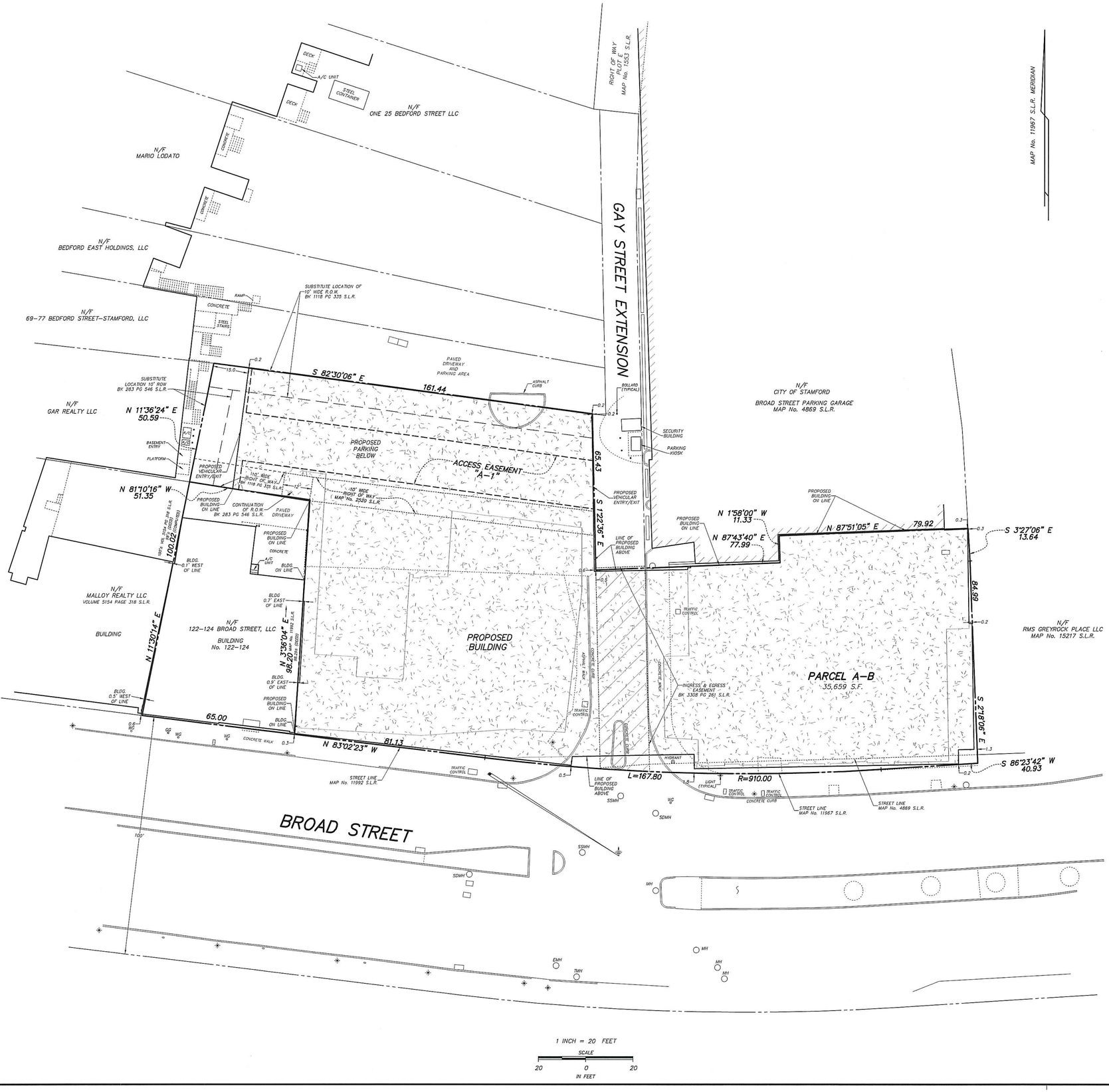
60C

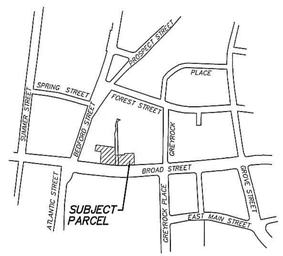
BROAD STREET
SANITARY SEWER

SCALE HORZ. 1" 50'
VERT 1" 5'
GOV'T DATUM CONSTRUCTED 1972
BOOK 923 PAGE 23

020127

BLOCK No. 176





LOCATION MAP - 1" = 600'±

PROPOSED BUILDING COVERAGE

LOT AREA = 35,658 S.F.

PROPOSED BUILDING = 33,945 S.F.

PERCENT COVERAGE = 95.2%

REFER TO A MAP ENTITLED "PROPERTY SURVEY DEPICTING CONSOLIDATION OF PARCELS AT 128-136 BROAD STREET AND GAY STREET EXTENSION IN STAMFORD, CONNECTICUT PREPARED FOR TR BROAD II, LLC" PREPARED BY D'ANDREA SURVEYING & ENGINEERING, P.C. AND DATED OCTOBER 28, 2022.

REFER TO A MAP ENTITLED "EASEMENT MAP DEPICTING ACCESS EASEMENT LOCATED AT BROAD STREET AND GAY STREET EXTENSION IN STAMFORD, CONNECTICUT PREPARED FOR TR BROAD II LLC PREPARED BY D'ANDREA SURVEYING & ENGINEERING P.C. AND DATED OCTOBER 28, 2022.

THIS MAP IS A ZONING LOCATION SURVEY. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A-2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20.

NEW MONUMENTATION HAS NOT BEEN SET AS A RESULT OF THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

REFER TO VOLUME 13022 PAGE 140 AND MAPS No. 11192 & 11967 S.L.R.

LAND LIES IN "C-G" ZONING DISTRICT

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

D'ANDREA SURVEYING & ENGINEERING, P.C.

_____, SURVEYOR
ROBERT L. LIDDEL JR., CT LS No. 15775
RIVERSIDE, CONNECTICUT OCTOBER 28, 2022

1 INCH = 20 FEET

SCALE

20 0 20

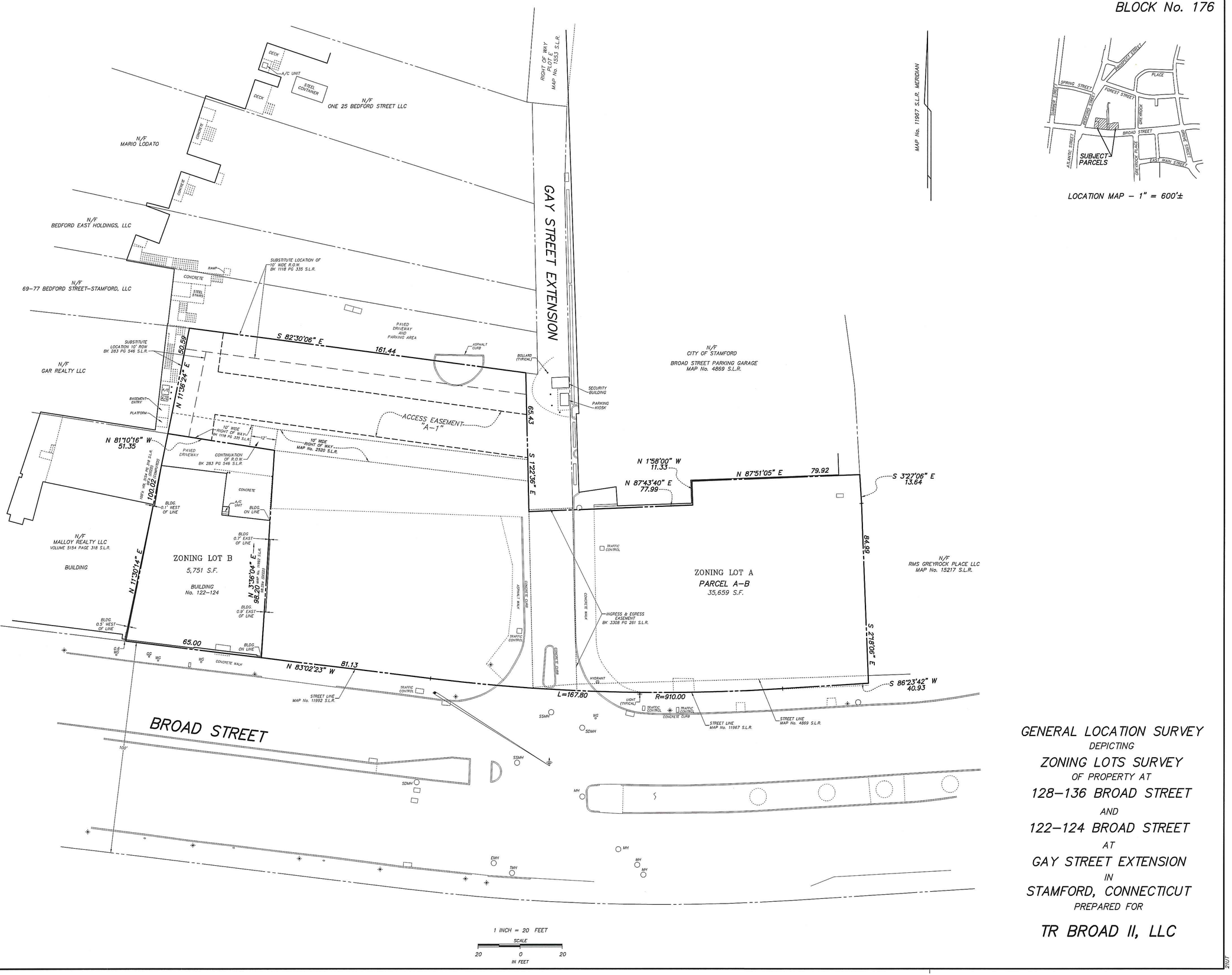
IN FEET

ZONING LOCATION SURVEY
OF PROPERTY AT
128-136 BROAD STREET
AND
GAY STREET EXTENSION
IN
STAMFORD, CONNECTICUT
PREPARED FOR
TR BROAD II, LLC

BROADGAY_2IUT_ZLS_1.DWG

2IUT

BLOCK No. 176



LOCATION MAP – 1" = 600'±

ZONING LOT AREA

ZONING LOT A
ZONING LOT AREA = 35,658 S.F.

ZONING LOT B
ZONING LOT AREA = 5,751 S.F.

TOTAL ZONING LOT AREA = 41,410 S.F.

REFER TO A MAP ENTITLED "PROPERTY SURVEY DEPICTING CONSOLIDATION OF PARCELS AT 128-136 BROAD STREET AND GAY STREET EXTENSION IN STAMFORD, CONNECTICUT PREPARED FOR TR BROAD II, LLC" PREPARED BY D'ANDREA SURVEYING & ENGINEERING, P.C. AND DATED OCTOBER 28, 2022.

REFER TO A MAP ENTITLED "EASEMENT MAP DEPICTING ACCESS EASEMENT LOCATED AT BROAD STREET AND GAY STREET EXTENSION IN STAMFORD, CONNECTICUT PREPARED FOR TR BROAD II LLC PREPARED BY D'ANDREA SURVEYING & ENGINEERING P.C. AND DATED OCTOBER 28, 2022.

THIS MAP IS A GENERAL LOCATION SURVEY. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A-2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20.

NEW MONUMENTATION HAS NOT BEEN SET AS A RESULT OF THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

REFER TO VOLUME 13022 PAGE 140 AND MAPS No. 11192 & 11967 S.L.R.

LAND LIES IN "C-G" ZONING DISTRICT

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

D'ANDREA SURVEYING & ENGINEERING, P.C.

_____, SURVEYOR
ROBERT L. LIDDEL JR., CT LS No. 15775
RIVERSIDE, CONNECTICUT OCTOBER 28, 2022

1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

GENERAL LOCATION SURVEY
DEPICTING
ZONING LOTS SURVEY
OF PROPERTY AT
128-136 BROAD STREET
AND
122-124 BROAD STREET
AT
GAY STREET EXTENSION
IN
STAMFORD, CONNECTICUT
PREPARED FOR
TR BROAD II, LLC

BROADGAY_210T_GLS_ZONING

210T