RJ O'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 Montvale Ave., Suite 201 Stoneham, MA 02180
phone 781-279-0180 fax 781-279-0173

February 18, 2020

Juliet Walker, Planning Director
Planning Department
City of Portsmouth
1 Junkins Ave, 3rd Floor
Portsmouth, NH 03801

Regarding: Durgin Square, 1600 Woodbury Ave

Dear Ms. Walker,

Attached please find the complete set of site plans dated 02/18/2020 as well as the Stormwater Summary for the project. In cooperation with Stephen G. Pernaw & Company, Inc., R.J. O'Connell & Associates, Inc. has summarized the following comments received from the TAC via email on January 7th, 2020. We have reviewed the comments listed below in italics with responses following:

1. *The National Cooperative Highway Research Program, in their Report 457, provides guidance for when a right turn bay should be provided at an intersection. Based on the speed and volume of traffic on Woodbury Avenue, together with the expected volume of right turns into the proposed driveway, a right turn bay should be provided. A right turn bay can significantly improve operations and safety at the intersection, as it effectively separates those vehicles that are slowing or stopped to turn, from those vehicles in the through traffic lanes. This separation minimizes turn-related collisions such as angle, rear-end, and same-direction-sideswipe, and eliminates unnecessary delay to through vehicles.*

   Response: The warrants for requiring a right-turn lane are satisfied based on NCHRP 457 guidelines however, according to the right-of-way line on the Traffic Control Plan, there is not sufficient right-of-way width to accomplish this. Additionally, it would require the relocation of at least 2 utility poles and one mast arm foundation. The design has been revised to provide a longer taper for incoming right turns and the right-out has been eliminated.

2. *The traffic memo states that a driveway on Woodbury would allow direct access to the site without impacting Durgin Lane. Given that the traffic volumes on Woodbury Ave are more than 3 times greater than the volume on Durgin Lane, and that Durgin Lane traffic is all local traffic turning in and out of commercial driveways, and that vehicle queues on Durgin Lane, as reported in the referenced Woodbury Ave Engineering Study, do not extend back past the first site driveway, the impact to Durgin Lane traffic would be negligible and not a reason to provide a major driveway on Woodbury Ave.*

Response: This is correct however, the 2027 95th percentile queue in the corridor study is 140'. There is approximately 175' of storage available which is sufficient and leaves a surplus queue for approximately 1.5 cars.

3. *While having several driveways helps to disperse the site traffic, the site already has 7 access points, which is more than sufficient to adequately disperse the site generated traffic. There is no need for another major access point, as the level of service and capacity at the signalized intersections is not a cause for concern.*

Response: The proposal is not to increase the number of access points; the project proposes to convert one existing full-access driveway to a limited-access right-in driveway. It is not a "major access point", it is a limited access driveway.

4. *The City recently completed a major signal improvement project (over $1M) along the Woodbury Avenue corridor to improve traffic operations, flow and safety. This proposed driveway would have a negative impact on traffic flow and safety, as it creates a new major driveway between two closely spaced signals, without a right turn lane.*

Response: The proposed driveway will improve traffic flow by eliminating left and right-turn departures and left-turn arrivals, which are currently allowed to/from the existing entry to GameStop.

5. *While state driveway standards allow for driving spacing as stated in the memo, the state driveway standards also require 30-foot-wide driveway lanes with a minimum of 20 feet between the entering and exiting lanes of a driveway such as this. There is no separation between the lanes in the proposed driveway design, and the lanes are only 12 feet wide.*

Response: The project complies with the 30' throat width guideline, but not the 20' between inbound and outbound lanes. The project proposes a "single drive" per NHDOT Figure III (not Figure IV). The design has been modified to include a single 16' wide incoming right turn lane into the site.

6. *If the median island were extended beyond the right-turn-out portion of the proposed driveway, a right-turn-out only driveway may be considered, but not the right turn entering in the presently proposed configuration.*

Response: The plans have been revised to include an extended median island along Woodbury Ave.

7. Fire Department still has concerns regarding access to the rear of the building. Particularly with trucks at the loading docks.

Response: A fire lanes has been added to the plans and will be delineated by new pavement markings adjacent to the building at the fire department connection.

8. A line of shade trees should be considered for the wide landscape areas adjacent the proposed driveway. In order to maintain views into the site the trees could be planted toward the rear of the landscape area.

Response: Shade trees would inhibit the view corridor to the proposed supermarket. The Planting Plan provides areas of shrubs and shorter plantings.

We believe these responses adequately address the City's comments received from the Technical Advisory Committee. Refer to the attached exhibits for additional information. Revised plans and documents are attached to address the comments as described herein.

Please call me if you have any questions at 781-279-0180.

Sincerely,

RJO'CONNELL & ASSOCIATES

Stephen P. Glowacki
Associate Principal

Cory Mason, PE
Project Engineer

cc: Alicia Busconi (KeyPoint), Rachel Cormier (KeyPoint), Christopher Mulligan, Esq. (Bosen), John Bosen, Esq. (Bosen), Stephen Pernaw (Pernaw)

SITE PLAN FOR DURGIN SQUARE PORTSMOUTH, NH

GOVERNMENT/UTILITY CONTACTS

OFFICE OF THE MAYOR:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: RICK BECKSTED, MAYOR
PHONE: (603) 610-7200

CITY CLERK'S OFFICE:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: KELLI BARNABY, CITY CLERK
PHONE: (603) 610-7245

HEALTH DEPARTMENT:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: KRISTIN SHAW, HEALTH OFFICER
PHONE: (603) 610-4187

COMMUNITY DEVELOPMENT DEPARTMENT:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: ELISE ANNUNZIATA
PHONE: (603) 610-7281

DEPARTMENT OF PUBLIC WORKS:
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
ATTN: PETER RICE, DIRECTOR
PHONE: (603) 427-1530

INSPECTION DEPARTRMENT:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: ROBERT MARSILIA,
CHIEF BUILDING INSPECTOR
PHONE: (603) 610-7243

ASSESSOR'S OFFICE:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: ROSANN MAURICE-LENTZ,
CITY ASSESSOR
PHONE: (603) 610-7249

ZONING BOARD OF ADJUSTMENT:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: PETER STITH,
PRINCIPAL PLANNER
PHONE: (603) 610-4188

CONSERVATION COMMISSION:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: PETER BRITZ,
PLANNER/COORDINATOR
PHONE: (603) 610-7215

CITY ENGINEER:
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
ATTN: TERRY DESMARAIS P.E.,
CITY ENGINEER
PHONE: (603) 427-1530

PLANNING BOARD:
CITY HALL
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: JULIET WALKER,
PLANNING DIRECTOR
PHONE: (603) 610-7216

POLICE DEPARTMENT:
3 JUNKINS AVENUE
PORTSMOUTH, NH 03801
ATTN: ROBERT MERNER,
CHIEF OF POLICE
PHONE: (603) 427-1500

FIRE DEPARTMENT:
170 COURT STREET
PORTSMOUTH, NH 03801
ATTN: TODD GERMAIN,
FIRE CHIEF
PHONE: (603) 427-1515

RECREATION DEPARTMENT:
155 PARROT AVENUE
PORTSMOUTH, NH 03801
ATTN: RUS WILSON,
RECREATION DIRECTOR
PHONE: (603) 427-1548

WATER AND WASTEWATER AND SEWER:
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
ATTN: TERRY DESMARAIS P.E.,
CITY ENGINEER
PHONE: (603) 427-1530

ELECTRIC - EVERSOURCE
265 CALEF HIGHWAY
EPPING, NH 03042
PHONE: (800) 662-7764

GAS - UNITIL
6 LIBERTY LANE W
HAMPTON, NH 03842
PHONE: (888) 301-7700

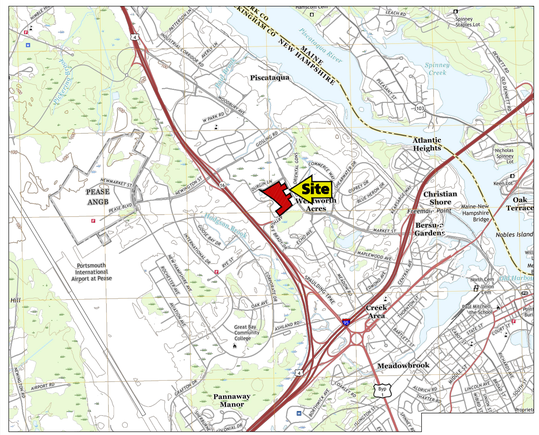
TELEPHONE - CONSOLIDATED COMMUNICATIONS
56 ISLINGTON STREET
PORTSMOUTH, NH 03801
PHONE: (844) 968-7224

CONSULTANTS

TRAFFIC:
STEVEN G. PERNAW & COMPANY, INC.
P.O. BOX 1721
CONCORD, NH 03302
PHONE: (603) 731-8500

LANDSCAPING:
MDLA
MICHAEL D'ANGELO
LANDSCAPE ARCHITECTS, LLC
732 EAST BROADWAY
BOSTON, MA 02127
PHONE: (203) 592-4788

ARCHITECT:
DEAN ASSOCIATES ARCHITECTS, INC.
7 KIMBALL LANE SUITE E6
LYNNFIELD, MA 01940
PHONE: (781) 397-8092



LOCUS MAP
(1"=3,000')

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE
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FAX: 781-279-0173

PREPARED FOR:

KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
ATTN: ALICIA BUSCONI
PHONE: (781) 418-6203

ISSUED FOR TAC REVIEW
FEBRUARY 18, 2020

Drawing Index

Drawing Date	Last Revision	Drawing	Drawing Description
02/18/2020	-	-	COVER SHEET
02/18/2020	-	EX-1	EXISTING CONDITIONS PLAN
02/18/2020	-	OS-1	OVERALL SITE PLAN
02/18/2020	-	C-1	DEMOLITION PLAN AND EROSION CONTROL
02/18/2020	-	C-2	GRADING, DRAINAGE AND UTILITY PLAN
02/18/2020	-	C-3	PARKING AND TRAFFIC CONTROL PLAN
02/18/2020	-	L-1	PLANTING PLAN (BY MDLA)
02/18/2020	-	FT-1	FIRE TRUCK TURNING PLAN
02/18/2020	-	C-4	SITE DETAILS - I
02/18/2020	-	C-5	SITE DETAILS - II
02/18/2020	-	SP-1	SITE LAYOUT PLAN (FOR RCRD RECORDING)
02/18/2020	-	SP-2	OVERALL PLAN (FOR RCRD RECORDING)

Planning Board

Chair

Member

Member

Member

Member

Member

DATE APPROVED:

- ☐ NOTICE OF INTENT
- ☒ NOT FOR CONSTRUCTION
- ☐ ISSUED FOR REVIEW
- ☒ ISSUED FOR PERMIT
- ☐ ISSUED FOR BID/PRICING
- ☐ ISSUED FOR CONSTRUCTION

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_C-0 Cover Sheet.dwg
Feb 18, 2020 - 1:20pm

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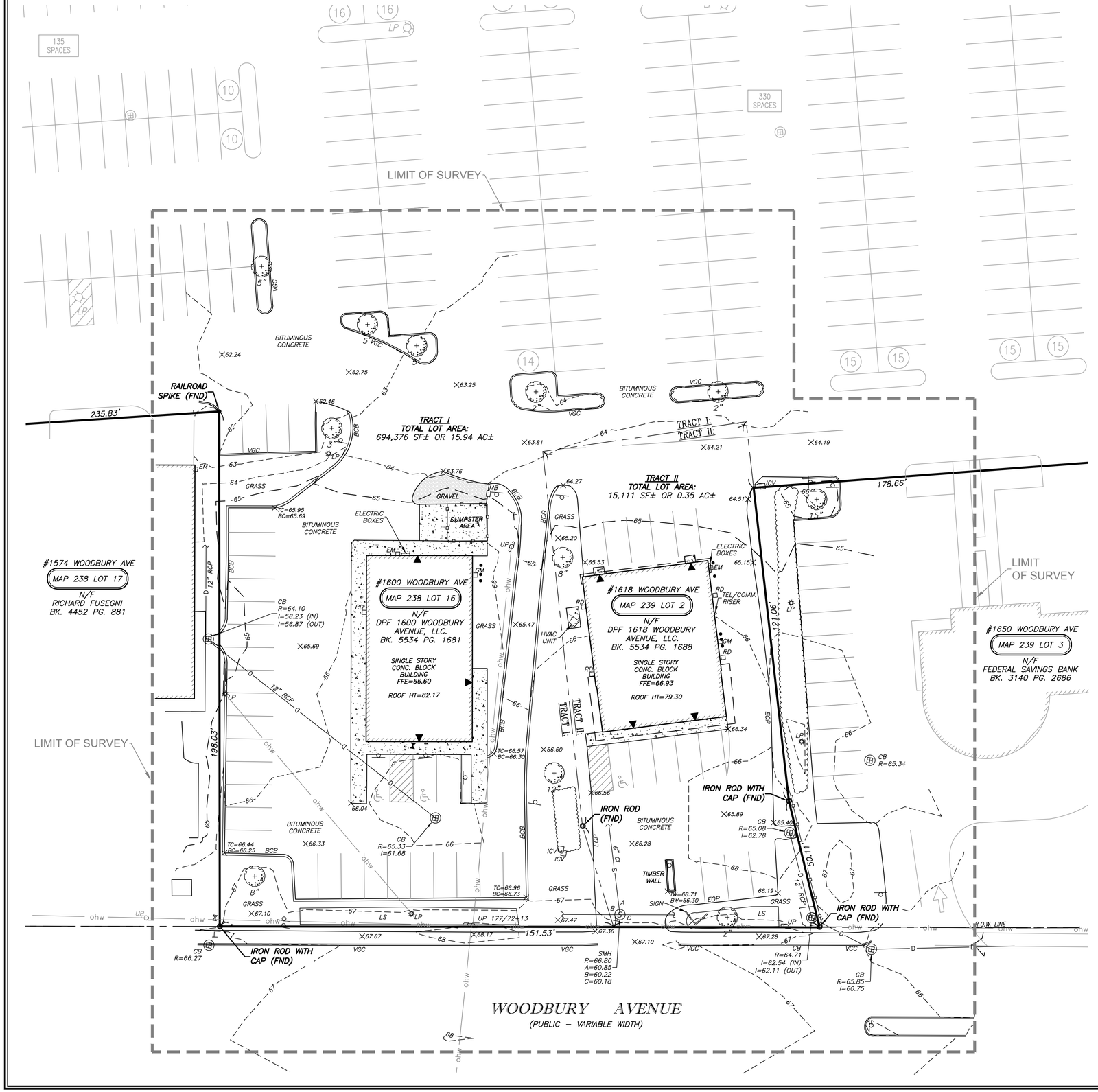
PORTSMOUTH, NH



D-32485

NOTES

1. UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE INDICATIONS, SUBSURFACE INDICATIONS, AND COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. AS OF THE DATE OF THIS SURVEY, NO INFORMATION REGARDING RECORD UTILITIES HAS BEEN PROVIDED BY ELECTRIC AND GAS PROVIDERS. BEFORE CONSTRUCTION CALL "DIG SAFE" 811.
2. FEATURES LOCATED WITHIN THE LIMIT OF SURVEY ARE THE RESULT OF AN ACTUAL SURVEY MADE ON THE GROUND BY RJ O'CONNELL & ASSOC. USING TOTAL STATION METHODS ON 01/08/2020. FEATURES OUTSIDE OF THE LIMIT OF SURVEY WERE COMPILED FROM PLAN ENTITLED "DPF DURGIN SQUARE" BY ODONE SURVEYING & MAPPING ON 05/16/2014.
3. THE HORIZONTAL DATUM IS REFERENCED FROM PLAN D-32485 FROM ROCKINGHAM COUNTY REGISTRY OF DEEDS.
   THE VERTICAL DATUM IS NVD88.
   DATUM WAS ESTABLISHED USING RTK GPS METHODS.
4. THE POSITIONAL ACCURACY OF THE DATA AND PHYSICAL IMPROVEMENTS ON THIS PLAN MAY BE APPROXIMATE. ANY USE OF ELECTRONIC DATA CONTAINED IN AUTOCAD VERSIONS OF THIS PLAN TO GENERATE COORDINATES OR DIMENSIONS NOT SHOWN ON THE PLAN IS NOT AUTHORIZED.
5. THE PARCEL SHOWN IS LOCATED IN ZONE X, AS SHOWN ON "FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE," PANEL 260 OF 681, MAP NUMBER 33015C0260E, EFFECTIVE DATE MAY 17, 2005.
6. THE PARCEL IS LOCATED IN THE GATEWAY CORRIDOR ZONE, (G1) AS REFERENCED FROM THE CITY OF PORTSMOUTH PLANNING DEPARTMENT.
7. CONTOUR INTERVAL IS ONE FOOT (1').

LEGEND

	PROPERTY LINE
	ABUTTING PROPERTY LINE
S	SEWER LINE
D	DRAIN LINE
W	WATER LINE
G	GAS LINE
E	ELECTRIC LINE
ohw	OVERHEAD WIRES
	STOCKADE FENCE
UP	UTILITY POLE
LP	LIGHT POLE
EM	ELECTRIC METER
S	SEWER MANHOLE
D	DRAIN MANHOLE
CB	CATCH BASIN
GM	BOLLARD
GM	GAS METER
	GAS VALVE
RD	ROOF DRAIN
ICV	IRRIGATION CONTROL VALVE
CC	CONCRETE CURB
VGC	VERTICAL GRANITE CURB
BCB	BITUMINOUS CONC. CURB
LS	LANDSCAPE AREA
HC	HANDICAP
CONC.	CONCRETE
EOP	EDGE OF PAVEMENT
IR	IRON ROD
RRS	RAILROAD SPIKE
	DOOR
	SIGN
	DECIDUOUS TREE

20 0 10 20 40
GRAPHIC SCALE IN FEET

RJOC

NO.	REVISION	DATE
1	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:
DPF DURGIN SQUARE
PORTSMOUTH, NH

DRAWING NAME:
EXISTING CONDITIONS PLAN

THIS PLAN IS THE RESULT OF AN ON THE GROUND SURVEY PERFORMED ON 01/08/2020.

STATE OF NEW HAMPSHIRE No 1019 SCOTT M. LITALIEN LICENSED LAND SURVEYOR

02/18/2020
PROFESSIONAL LAND SURVEYOR FOR RJ O'CONNELL & ASSOCIATES, INC — DATE

DRAWN BY:	TDB
REVIEWED BY:	SML
SCALE:	1" = 20'
FIELD BOOK:	FIELD BOOK: 35 / PG: 60
FIELD CREW:	TDB / RJK
DATE:	02/18/2020

DRAWING NUMBER:
EX-1

PROJECT NUMBER:
16030

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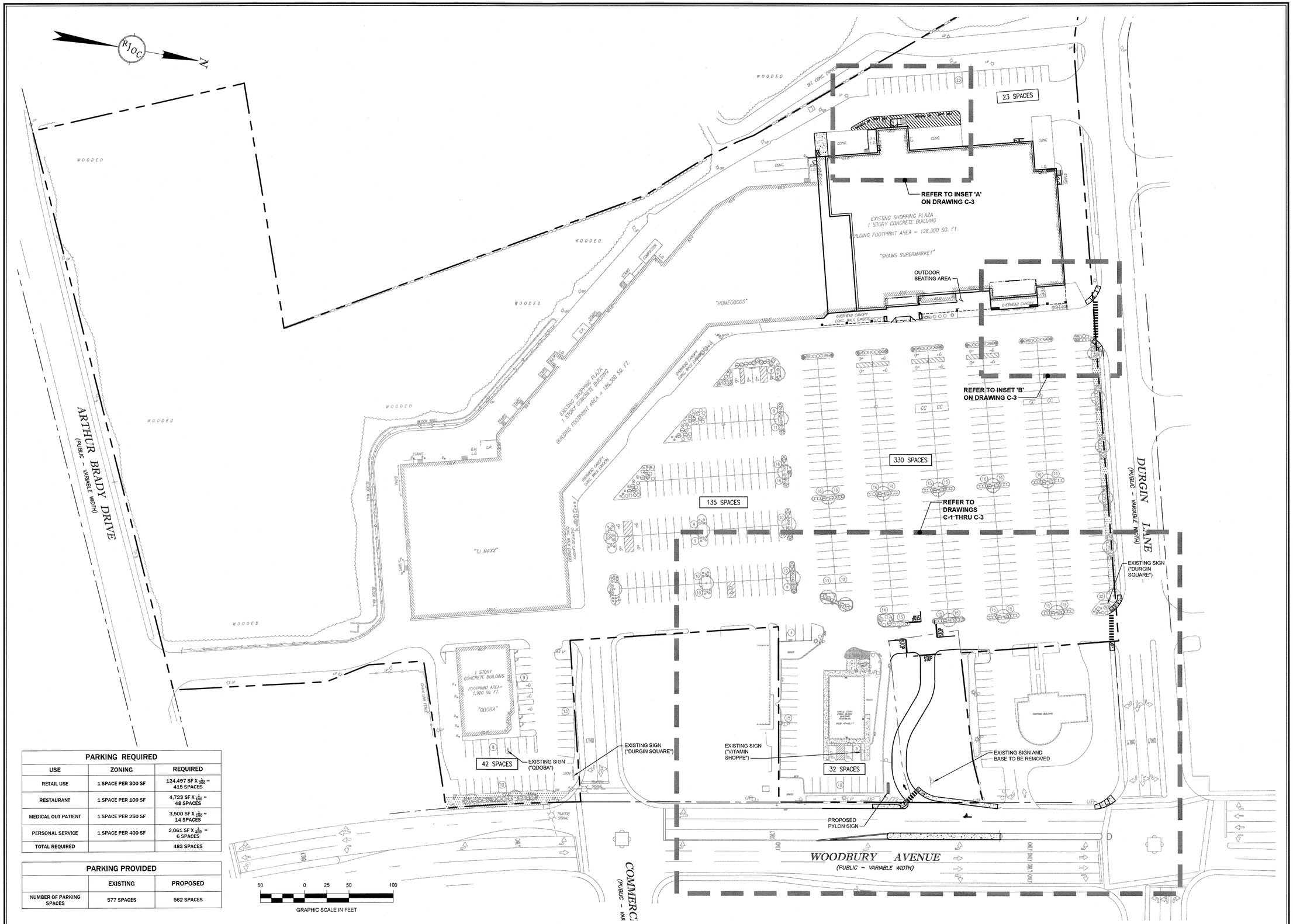
Feb 18, 2020 - 9:38am



PARKING REQUIRED		
USE	ZONING	REQUIRED
RETAIL USE	1 SPACE PER 300 SF	124,497 SF X 1/300 = 415 SPACES
RESTAURANT	1 SPACE PER 100 SF	4,723 SF X 1/100 = 48 SPACES
MEDICAL OUT PATIENT	1 SPACE PER 250 SF	3,500 SF X 1/250 = 14 SPACES
PERSONAL SERVICE	1 SPACE PER 400 SF	2,061 SF X 1/400 = 6 SPACES
TOTAL REQUIRED		483 SPACES

PARKING PROVIDED		
	EXISTING	PROPOSED
NUMBER OF PARKING SPACES	577 SPACES	562 SPACES

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_OS-1 Overall Site Plan.dwg
Feb 18, 2020 - 10:58am

RJOC

NO.	REVISION	DATE
-	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
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PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:

DPF DURGIN SQUARE

PORTSMOUTH, NH

SEAL:

STATE OF NEW HAMPSHIRE
BRIAN P. DUNDON
No. 10460
LICENSED PROFESSIONAL ENGINEER

02-18-2020

DESIGNED BY:	SPG
DRAWN BY:	MCR
REVIEWED BY:	BPD
SCALE:	1" = 50'
DATE:	02/18/2020

DRAWING NAME:

OVERALL SITE PLAN

DRAWING NUMBER:

OS-1

PROJECT NUMBER:

16030

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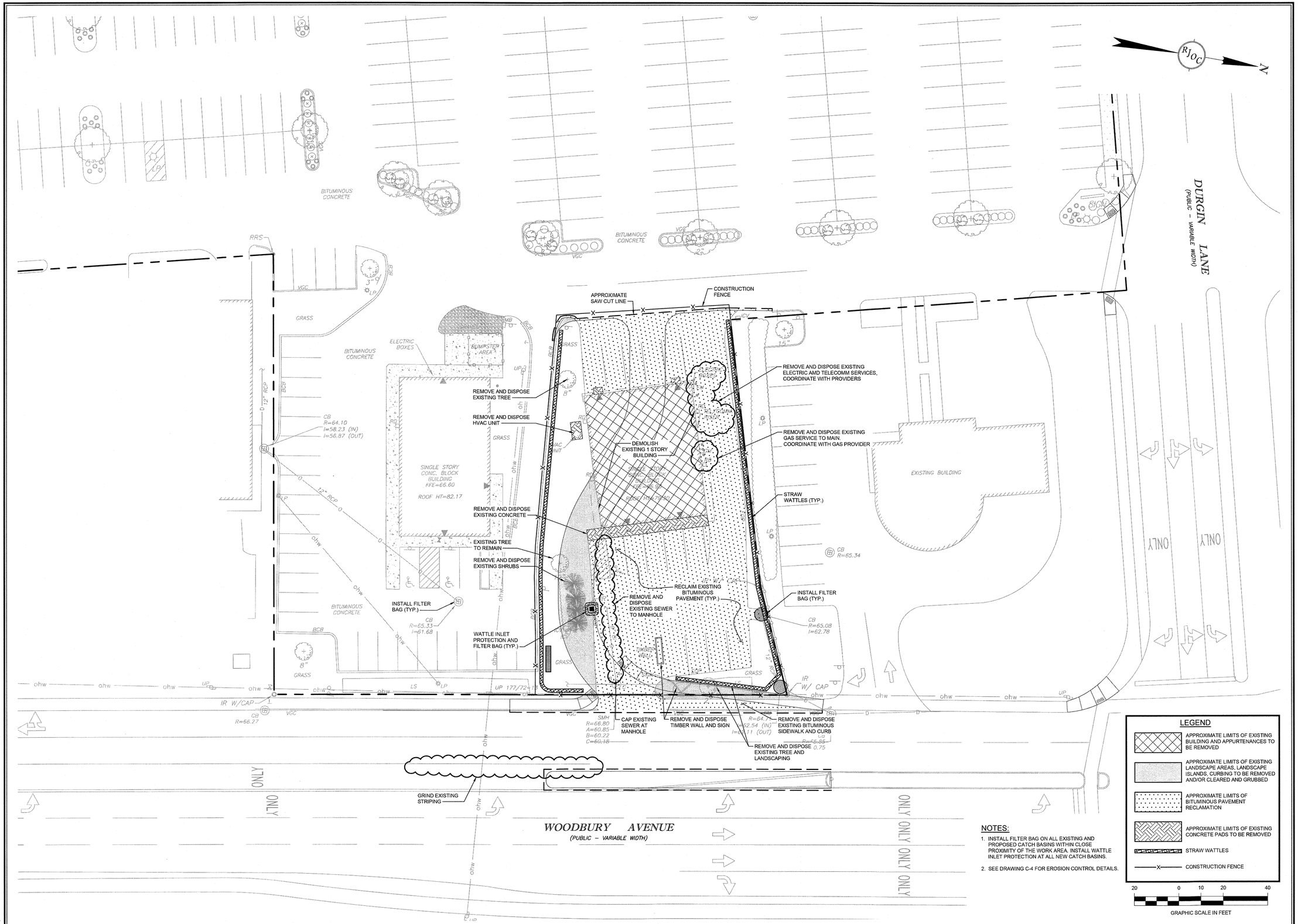

LEGEND

- APPROXIMATE LIMITS OF EXISTING BUILDING AND APPURTENANCES TO BE REMOVED
- APPROXIMATE LIMITS OF EXISTING LANDSCAPE AREAS, LANDSCAPE ISLANDS, CURBING TO BE REMOVED AND/OR CLEARED AND GRUBBED
- APPROXIMATE LIMITS OF BITUMINOUS PAVEMENT RECLAMATION
- APPROXIMATE LIMITS OF EXISTING CONCRETE PADS TO BE REMOVED
- STRAW WATTLES
- CONSTRUCTION FENCE

20 0 10 20 40

GRAPHIC SCALE IN FEET

NOTES:

1. INSTALL FILTER BAG ON ALL EXISTING AND PROPOSED CATCH BASINS WITHIN CLOSE PROXIMITY OF THE WORK AREA. INSTALL WATTLE INLET PROTECTION AT ALL NEW CATCH BASINS.
2. SEE DRAWING C-4 FOR EROSION CONTROL DETAILS.

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_C-1 Demolition and Erosion Control Plan.dwg
Feb 18, 2020 - 10:33am

RJOC

NO.	DATE	REVISION
.	02/18/2020	ISSUED FOR TAC REVIEW

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:

DPF DURGIN SQUARE

PORTSMOUTH, NH

SEAL:

STATE OF NEW HAMPSHIRE – BRIAN P. DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER

02-18-2020

DESIGNED BY:	CNM
DRAWN BY:	CNM
REVIEWED BY:	BPD
SCALE:	1" = 20'
DATE:	02/18/2020

DRAWING NAME:

DEMOLITION AND EROSION CONTROL PLAN

DRAWING NUMBER:

C-1

PROJECT NUMBER:

16030

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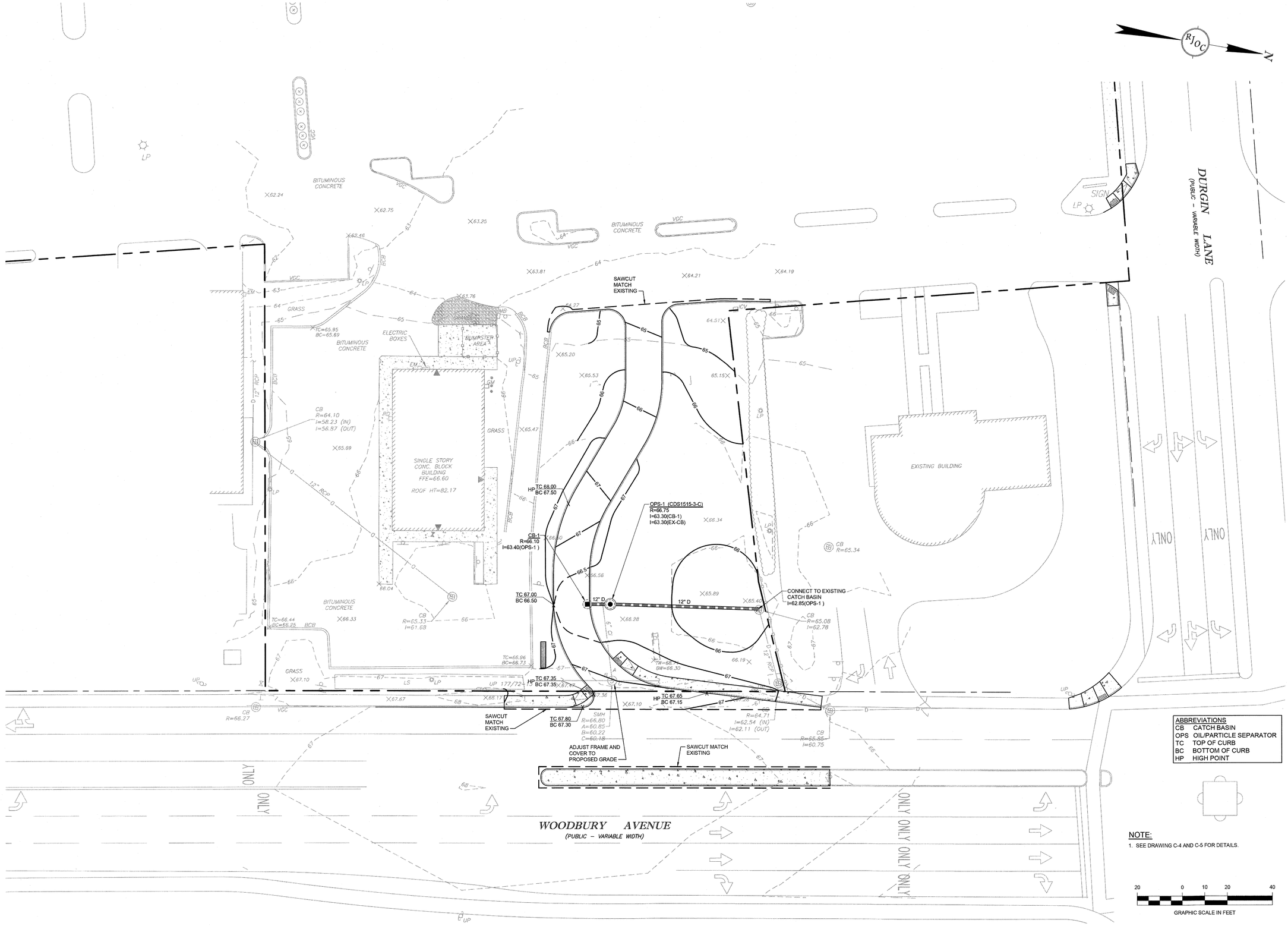

ABBREVIATIONS	
CB	CATCH BASIN
OPS	OIL/PARTICLE SEPARATOR
TC	TOP OF CURB
BC	BOTTOM OF CURB
HP	HIGH POINT

NOTE:

1. SEE DRAWING C-4 AND C-5 FOR DETAILS.

RJOC

NO.	REVISION	DATE
1	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.

CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180

PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:

KEYPOINT™ PARTNERS

Unlocking Value in Commercial Real Estate

ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:

DPF DURGIN SQUARE

PORTSMOUTH, NH

SEAL:

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – BRIAN P. DUNDON No. 10460 LICENSED

02-18-2020

DESIGNED BY:	CNM
DRAWN BY:	CNM
REVIEWED BY:	BPD
SCALE:	1" = 20'
DATE:	02/18/2020

DRAWING NAME:

GRADING, DRAINAGE, AND UTILITY PLAN

DRAWING NUMBER:

C-2

PROJECT NUMBER:

16030

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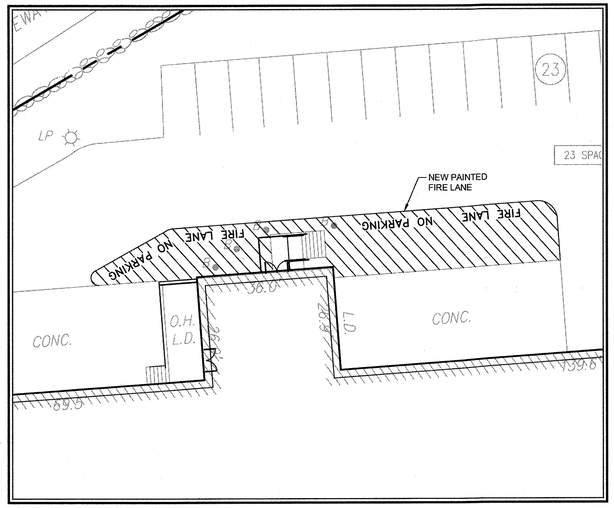
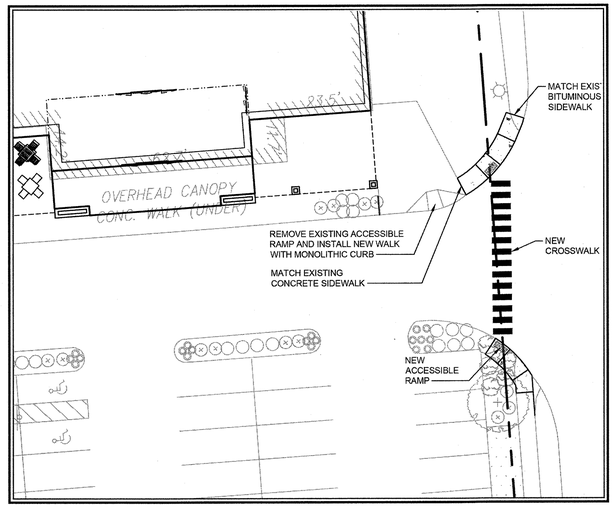
Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_C-2 Grading and Drainage Plan.dwg
Feb 18, 2020 - 10:46am



INSET 'A' AS SHOWN ON DRAWING OS-1



INSET 'B' AS SHOWN ON DRAWING OS-1

LEGEND

- HEAVY DUTY PAVEMENT
- CONCRETE SIDEWALK
- A — VERTICAL GRANITE CURB
- B — SLOPED GRANITE CURB
- DYCL — DOUBLE YELLOW CENTER LINE

TRAFFIC CONTROL SCHEDULE

SIGN NUMBER	SIGN	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	DESCRIPTION	MOUNT TYPE	MOUNT HEIGHT	REMARKS
R1-1	STOP	30"	30"	WHITE ON RED	2"x2" SQUARE POST	7'-0"	REFLECTORIZED SIGN
R5-1	DO NOT ENTER	30"	30"	RED ON WHITE	2"x2" SQUARE POST	7'-0"	REFLECTORIZED SIGN
R1-3P	ALL WAY	18"	6"	WHITE ON RED	2"x2" SQUARE POST	6'-6"	REFLECTORIZED SIGN

20 0 10 20 40

GRAPHIC SCALE IN FEET

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16930_C-3 Parking and Traffic Control Plan.dwg
Feb 18, 2020 - 10:26am

RJOC

NO.	REVISION	DATE
1	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:

DPF DURGIN SQUARE
PORTSMOUTH, NH

SEAL:

STATE OF NEW HAMPSHIRE – BRIAN P. DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER

02-18-2020

DESIGNED BY:	CNM
DRAWN BY:	MCR/HAA
REVIEWED BY:	BPD
SCALE:	1" = 20'
DATE:	02/18/2020

DRAWING NAME:

PARKING AND TRAFFIC CONTROL PLAN

DRAWING NUMBER:

C-3

PROJECT NUMBER:

16030

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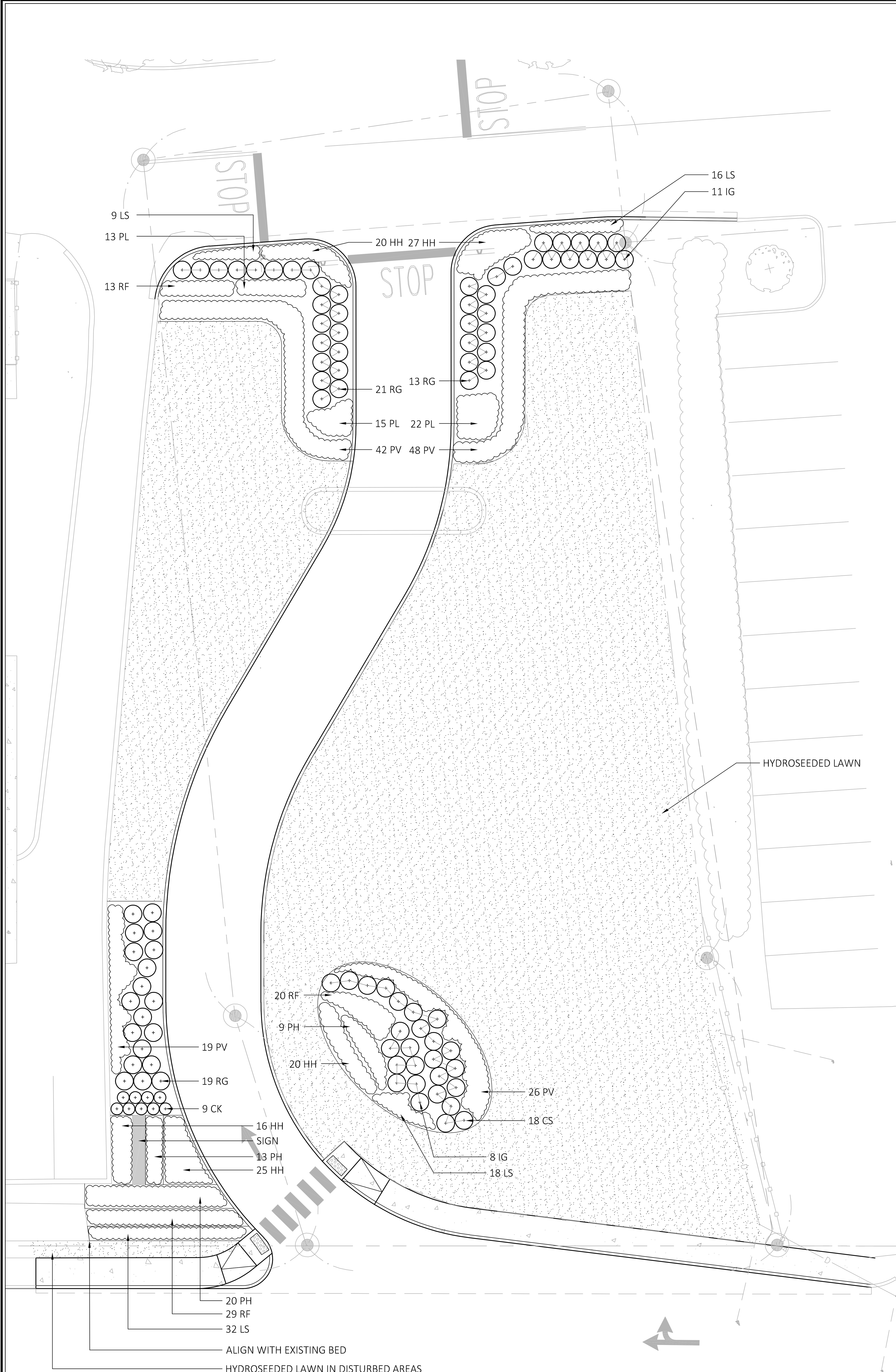
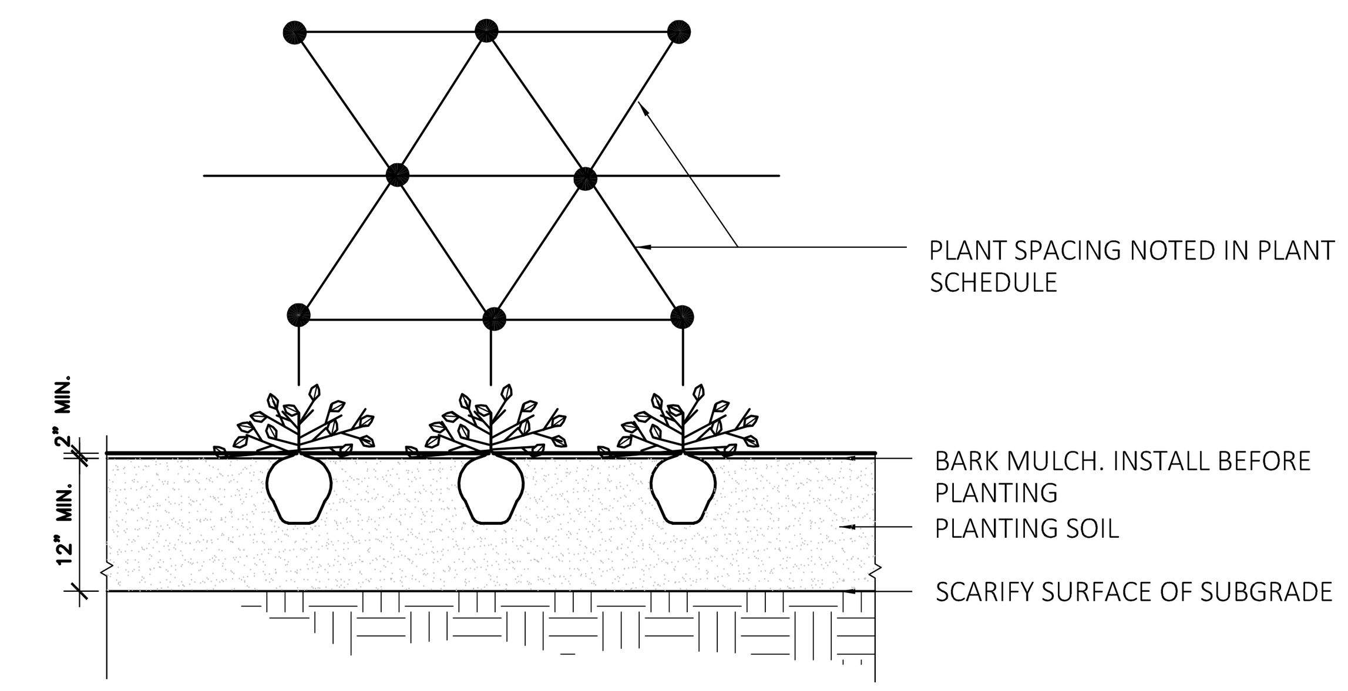
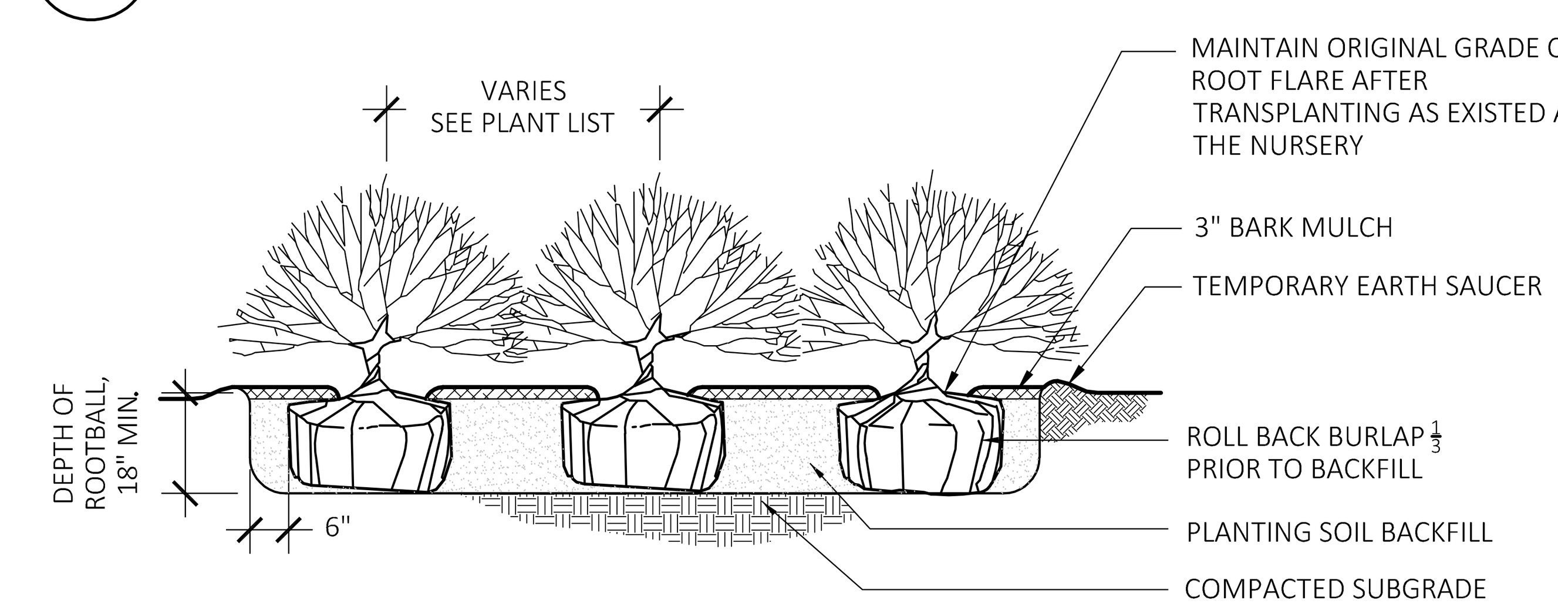


1 LANDSCAPE PLANTING PLAN
SCALE: 1" = 10'-0"

NOTE: NO IRRIGATION AT THIS TIME



2 GROUNDCOVER PLANTING
SCALE: N.T.S.



3 SHRUB PLANTING
SCALE: N.T.S.

PLANTING:

1. DURING CONSTRUCTION, PROTECT ALL EXISTING SITE FEATURES, STRUCTURES AND UTILITIES.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. SUBSTITUTIONS WILL BE PERMITTED ONLY IF APPROVED BY THE LANDSCAPE ARCHITECT.
3. LANDSCAPE ARCHITECT APPROVAL IS REQUIRED BEFORE PLANT MATERIAL IS PURCHASED. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO SEE ALL MATERIAL IN PERSON AT THE NURSERY. IF TRAVEL OUTSIDE OF MA IS REQUIRED, LANDSCAPE ARCHITECT'S TRAVEL COSTS SHALL BE PAID FOR BY THE CONTRACTOR.
4. ALL EXPOSED BURLAP, WIRE BASKETS AND OTHER MATERIALS ATTACHED TO PLANTS SHALL BE REMOVED PRIOR TO PLANTING. CARE SHALL BE TAKEN NOT TO DISTURB THE ROOT BALL OF PLANTS.
5. THOROUGHLY WATER ALL PLANTS IMMEDIATELY AFTER PLANTING.
6. WHERE DISCREPANCIES IN QUANTITIES OCCUR, DRAWINGS SUPERCEDE PLANT NOTES AND SCHEDULE.
7. TRANSPLANTING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK.
8. LOAM USED IN PLANT BEDS SHALL BE UNIFORM IN COMPOSITION, FREE FROM SUBSOIL, STONES LARGER THAN 1", NOXIOUS SEEDS AND SUITABLE FOR THE SUPPORT OF VEGETATIVE GROWTH. THE pH VALUE SHALL BE BETWEEN 5.5 AND 6.5.
9. MULCH IN TREE AND SHRUB BEDS SHALL BE NATURAL, NATIVE HEMLOCK MULCH FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS. SUBMIT SAMPLES FOR APPROVAL.
10. LOCATIONS FOR PLANTS AND/OR OUTLINE OF AREAS TO BE PLANTED ARE TO BE STAKED OUT AT THE SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
11. SOIL DEPTHS: a.) SHRUBS AND PERENNIAL BEDS: 18" MIN.; b.) GROUNDCOVER: 6" MIN.; c.) TREES: SEE DETAIL; d.) SOD/SEED: 6"MIN.
12. PROVIDE A SUBSURFACE ROOTBALL ANCHOR BY PLATIPUS EARTH ANCHORS, SIZE FOR CALIPER

PLANT SCHEDULE

SYMBOL	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
SHRUBS AND GROUNDCOVER					
RG	53	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	3 GAL	36" O.C.
IG	19	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	5 GAL	36" O.C.
CS	18	CORNUS SERICEA 'ARCTIC FIRE'	ARCTIC FIRE DOGWOOD	5 GAL	36" O.C.
PERENNIALS					
CK	9	CALAMAGROSTIS A. 'KARL FOERSTER'	KARL FOERSTER SWITCH GRASS	1 GAL	24" O.C. CONTAINER
HH	108	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURN DAYLILLYS	1 GAL	18" O.C. CONTAINER
LS	75	LIRIOPE SPICATA	CREEPING LIRIOPE	1 GAL	15" O.C. CONTAINER
PH	42	PENNISETUM A. 'HAMELN'	HAMELN FOUNTAIN GRASS	2 GAL	24" O.C. CONTAINER
PL	50	PEROVSKIA A. 'LITTLE SPIRE'	LITTLE SPIRE RUSSIAN SAGE	1 GAL	24" O.C. CONTAINER
RF	49	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYE SUSAN	1 GAL	18" O.C. CONTAINER
PV	135	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	1 GAL	30" O.C. CONTAINER

SCALE: 1" = 10'-0"
20' 10' 5' 2.5' 0 10' 20'

RJOC

NO.	REVISION	DATE
	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
MDLA
MICHAEL D'ANGELO LANDSCAPE ARCHITECTURE LLC
732 EAST BROADWAY
BOSTON, MA 02127
203-592-4788

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:
DPF DURGIN SQUARE
PORTSMOUTH, NH

SEAL:
LICENSED LANDSCAPE ARCHITECT MICHAEL D'ANGELO 00182 STATE OF NEW HAMPSHIRE

DESIGNED BY: MD
DRAWN BY: MD
REVIEWED BY: MD
SCALE: 1"=10'-0"
DATE: 01/23/2020

DRAWING NAME:
PLANTING PLAN

DRAWING NUMBER:
L-1

PROJECT NUMBER:
16030

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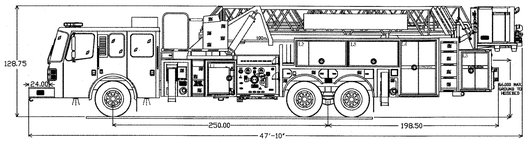

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_FT-1 Fire Truck Turning Plan.dwg
Feb 18, 2020 - 10:31am

RJOC

NO.	REVISION	DATE
-	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
RJO'CONNELL
& ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:

DPF DURGIN SQUARE

PORTSMOUTH, NH

SEAL:

STATE OF NEW HAMPSHIRE – BRIAN P. DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER –

02-18-2020

DESIGNED BY:	SPG
DRAWN BY:	MCR
REVIEWED BY:	BPD
SCALE:	1" = 50'
DATE:	02/18/2020

DRAWING NAME:

FIRE TRUCK TURNING PLAN

DRAWING NUMBER:

FT-1

PROJECT NUMBER:

16030

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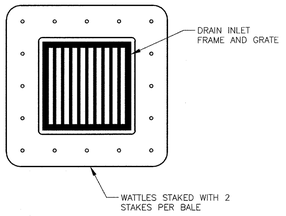


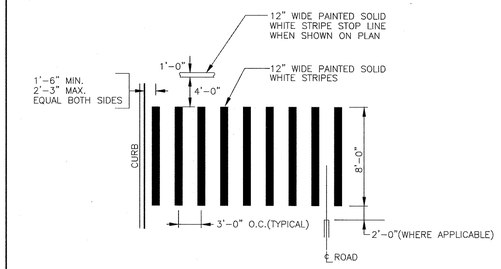
NOTE:
THIS DETAIL IS TO BE USED WHEN PARKING AREAS ARE AT SUBGRADE ELEVATION.

NOTES:
1. BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.

3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

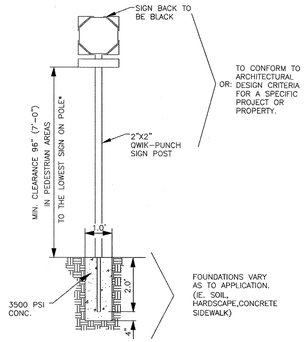
TYPICAL WATTLE INLET PROTECTION DETAIL
SCALE: N.T.S.



GENERAL NOTES

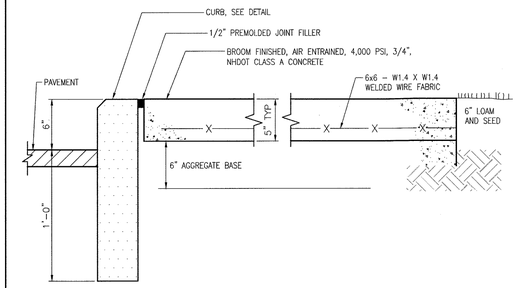
1. STRIPING SHALL HAVE TWO COATS OF PAINT, WATERBOURNE OR SOLVENT BOURNE, USING COLORS AS SPECIFIED HEREIN. WATERBOURNE PAINTS SHALL CONFORM TO FS TT-P-1952. SOLVENT BOURNE PAINTS SHALL CONFORM TO FS A-A-2886 OR AASHTO M248. IF SEAL COAT IS USED, IT SHALL BE COMPATIBLE WITH STRIPING COMPOUND.
2. RETROREFLECTORIZED TRAFFIC PAINT SHALL UTILIZE GLASS BEADS IN ACCORDANCE WITH AASHTO M 247, TYPE I APPLIED AT A MINIMUM RATE OF 5.5 POUNDS OF BEADS PER GALLON OF PAINT. ONLY THE SECOND COAT OF PAINT SHALL BE RETROREFLECTIVE.

CROSSWALK DETAIL
SCALE: N.T.S.

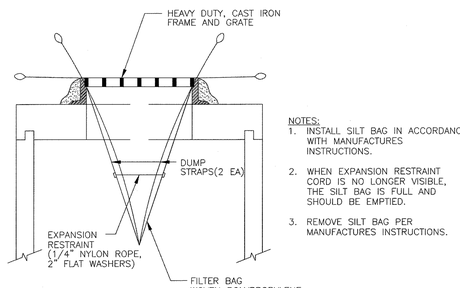


TYPICAL REGULATORY SIGNS, INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
(1) STOP SIGN
(2) YIELD SIGN
(3) SPEED LIMIT SIGN
(4) PEDESTRIAN CROSSING
(5) DIRECTIONAL SIGN
*NOTE: IN NON-PEDESTRIAN AREAS ADJUST SIGN HEIGHT FOR CLEAR VISIBILITY BASED UPON SITE SPECIFIC CONDITIONS.

INTERIOR REGULATORY SIGN
SCALE: N.T.S.

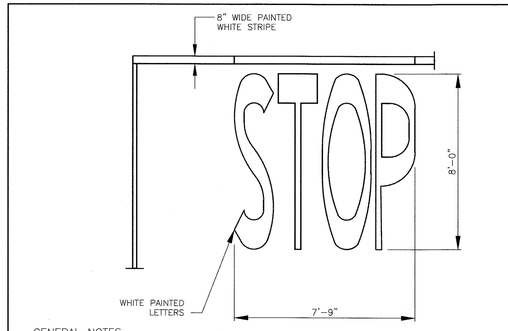


TYPICAL CONCRETE SIDEWALK DETAIL
SCALE: N.T.S.



NOTES:
1. INSTALL SILT BAG IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS.
2. WHEN EXPANSION RESTRAINT CORD IS NO LONGER VISIBLE, THE SILT BAG IS FULL AND SHOULD BE EMPTIED.
3. REMOVE SILT BAG PER MANUFACTURES INSTRUCTIONS.

TYPICAL FILTER BAG DETAIL
SCALE: N.T.S.



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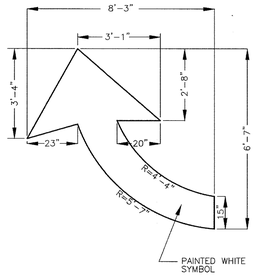
3. ALL OTHER PAVEMENT LETTERINGS SHALL CONFORM TO THE DIMENSIONS OF THIS DETAIL UNLESS OTHERWISE NOTED.

TYPICAL PAINTED 'STOP' DETAIL
SCALE: N.T.S.



GENERAL NOTES

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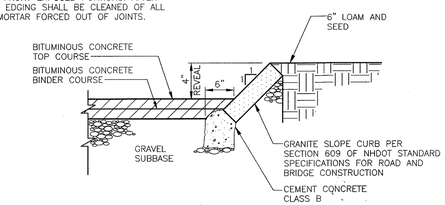
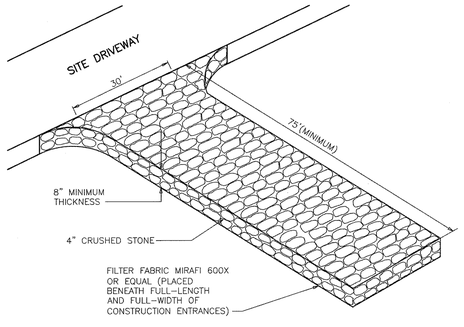
TYPICAL PAINTED TURN ARROW DETAIL
SCALE: N.T.S.

NOTES:
1. PLACE GRAVEL TO SETTING EDGING. SPACES BEHIND THE EDGING SHALL BE FILLED WITH GRAVEL AND THOROUGHLY COMPACTED SO THAT THE EDGING IS COMPLETELY SUPPORTED THROUGHOUT ITS LENGTH.
2. EDGING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE, JOINTS FILLED WITH CEMENT MORTAR AND NEATLY POINTED ON THE TOP AND FRONT EXPOSED PORTIONS. AFTER POINTING, EDGING SHALL BE CLEANED OF ALL EXCESS MORTAR FORCED OUT OF JOINTS.

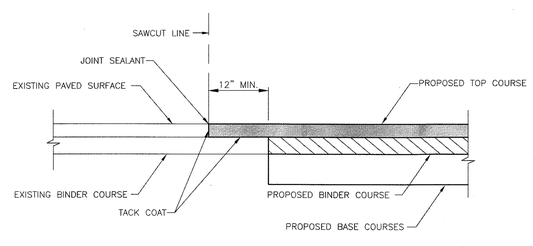


TYPICAL SLOPED GRANITE CURB DETAIL
SCALE: N.T.S.



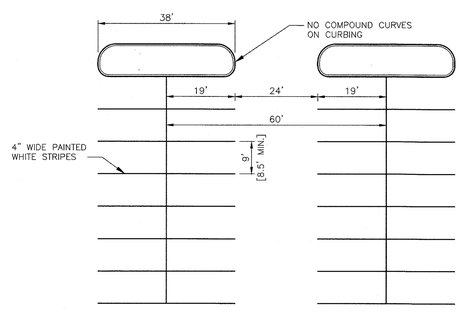
PERSPECTIVE

VEHICLE TRACKING PAD
SCALE: N.T.S.

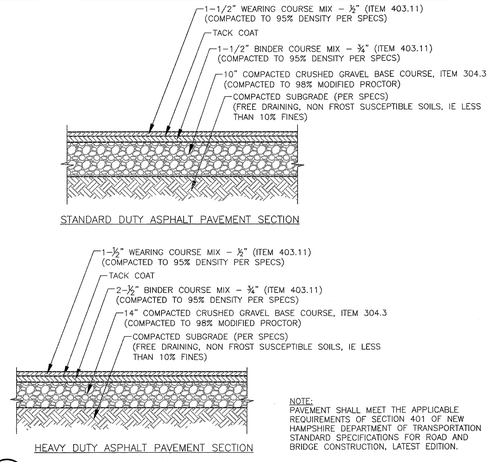


NOTES:
1. WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENT, JOINTS SHALL BE SEALED USING A HOT-APPLIED RUBBERIZED JOINT SEALANT CONFORMING TO REQUIREMENTS OF ASTM D6690. SEALANT SHALL FORM A RESILIENT AND ADHESIVE SEAL PREVENTING INFILTRATION OF MOISTURE.
2. TACK COAT SHALL BE EMULSIFIED ASPHALT RS-1 CONFORMING TO REQUIREMENTS OF AASHTO-M140.

TYPICAL MATCH EXISTING PAVEMENT DETAIL
SCALE: N.T.S.



TYPICAL PARKING LOT STRIPING DETAIL
SCALE: N.T.S.



STANDARD DUTY ASPHALT PAVEMENT SECTION

HEAVY DUTY ASPHALT PAVEMENT SECTION

NOTE:
PAVEMENT SHALL MEET THE APPLICABLE REQUIREMENTS OF SECTION 401 OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

PAVEMENT SECTION
SCALE: N.T.S.

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_C-4 Site Details - I.dwg
Feb 14, 2020 - 10:33am

RJOC

NO.	REVISION	DATE
1	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT™ PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:

DPF DURGIN SQUARE
PORTSMOUTH, NH

SEAL:
STATE OF NEW HAMPSHIRE - BRIAN P DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER
02-18-2020

DESIGNED BY:	CNM
DRAWN BY:	MSM
REVIEWED BY:	BPD
SCALE:	N.T.S.
DATE:	02/18/2020

DRAWING NAME:

SITE DETAILS - I

DRAWING NUMBER:
C-4

PROJECT NUMBER:
16030

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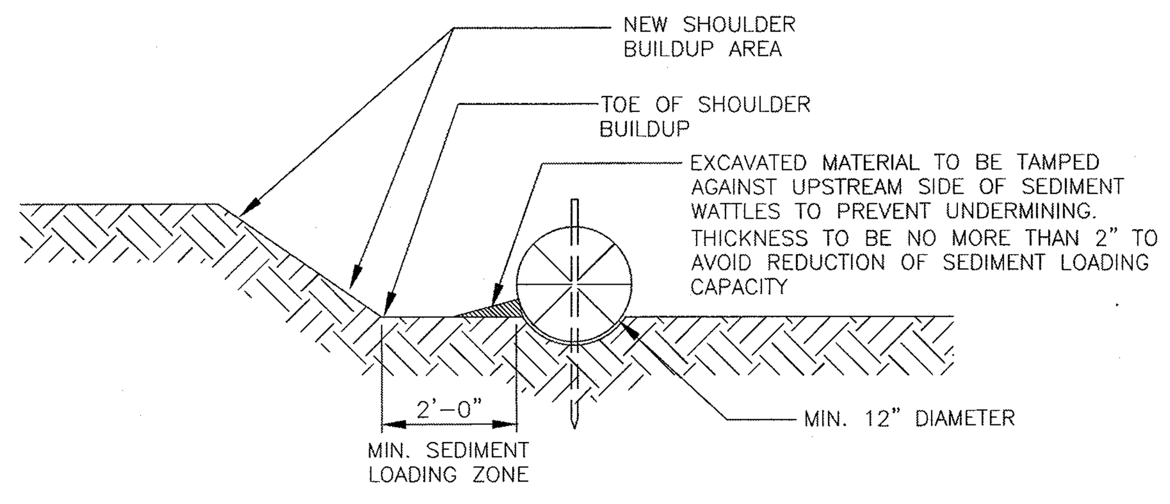
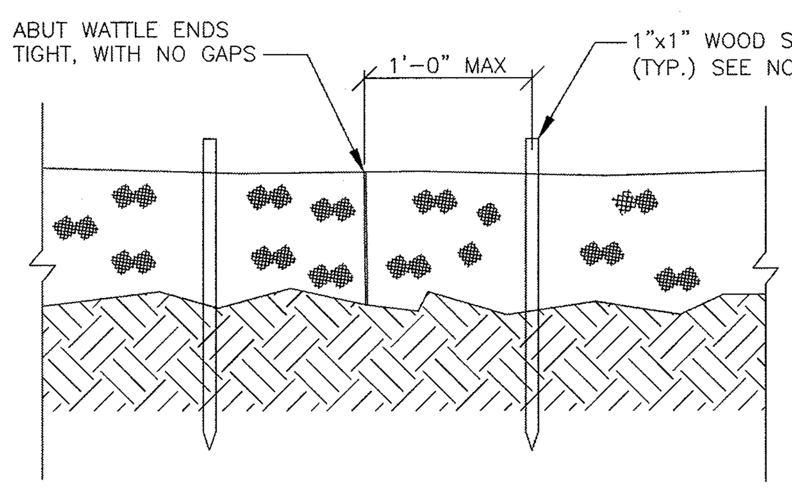


SECTION SEDIMENT WATTLE



ELEVATION SEDIMENT WATTLES CONNECTION

NOTES:

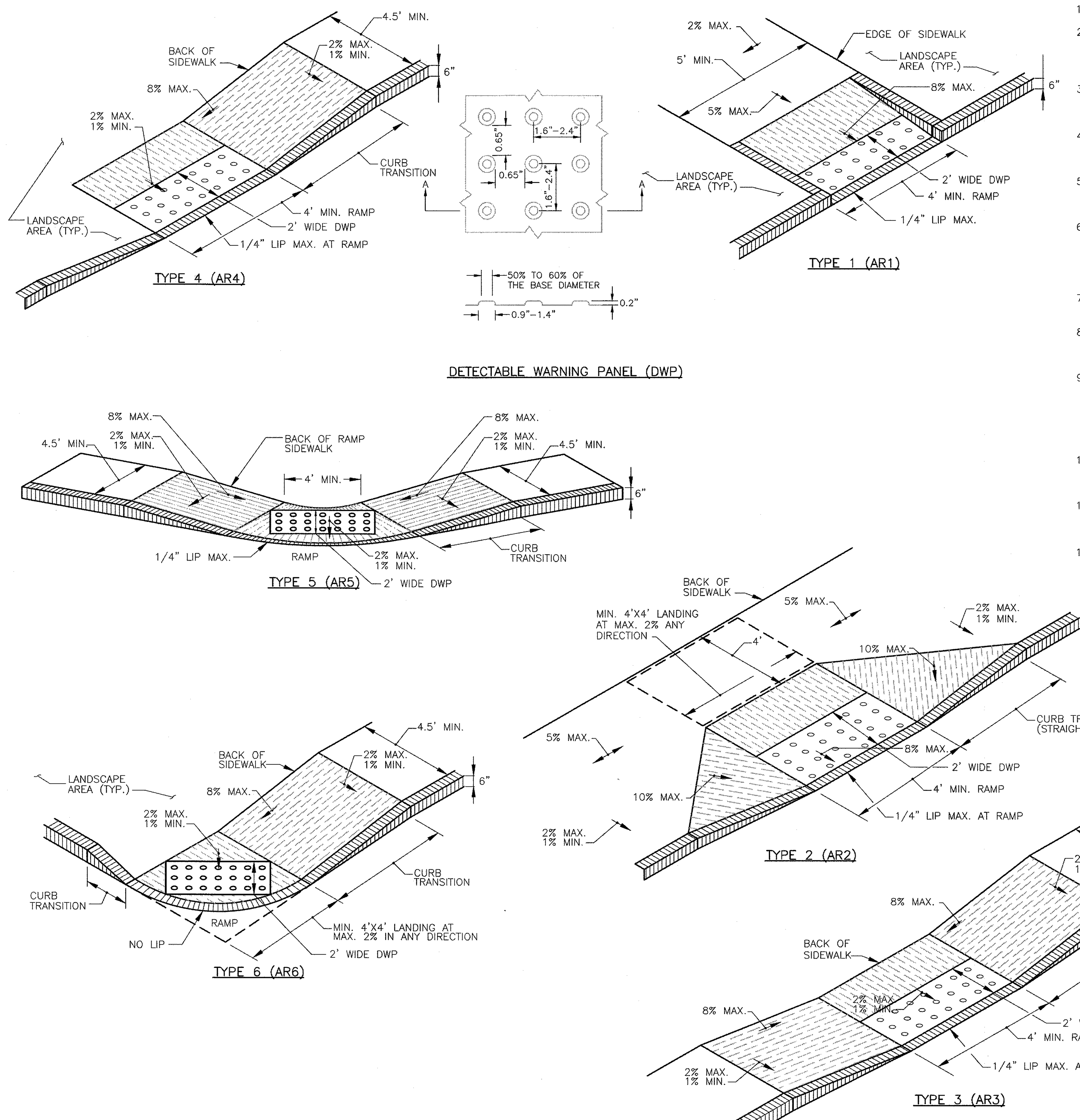
1. SEDIMENT WATTLES ARE TO BE INSTALLED, AS SLOPES ARE CONSTRUCTED TO GRADE OR AS DIRECTED BY THE ENGINEER. SIZE, INSTALLATION AND MAINTENANCE SHALL BE PER THE MANUFACTURER'S SPECIFICATIONS FOR SLOPE, SWALE, AND PERIMETER PROTECTION AND AS FILED CONDITIONS WARRANT.
2. TRENCHES TO BE CONSTRUCTED ALONG AND PARALLEL TO THE CONTOURS. TRENCH DEPTH TO BE $\frac{1}{3}$ THE THICKNESS OF THE SEDIMENT WATTLE. PLACE EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
3. LOCATE SEDIMENT WATTLES AS INDICATED ON PLANS OR AS DIRECTED BY THE ENGINEER. SPACE WATTLE TRENCHES ACCORDING TO THE FOLLOWING SCHEDULE:

SLOPE RATIO	MAX SPACING INTERVALS
1:1 AND STEEPER, APPLY MINIBENCHING OR OTHER SUITABLE BMP'S.	
2:1	10'-0"
3:1	20'-0"
4:1	30'-0"
5:1	40'-0"
6:1	40'-0"

4. SEDIMENT WATTLES TO BE IN CONTINUOUS CONTACT WITH TRENCH BOTTOM AND SIDES. NO DAYLIGHT SHOULD BE SEEN UNDER THE WATTLE. DO NOT OVERLAP THE ENDS ON TOP OF EACH OTHER.
5. STAKES TO PENETRATE SOIL OF TRENCH BOTTOM 12" MINIMUM. STAKES TO BE EXPOSED 3" MAXIMUM ABOVE THE TOP OF WATTLE. SPACE STAKES 4'-0" O.C. MAX., 1'-0" MAX. AT WATTLE ENDS. A 20" DIAMETER WATTLE MAY NEED TO BE MADE FROM 2-3 ROLLED EXCELSIOR OR STRAW BLANKETS.
6. REPAIR ANY RILLS OR GULLIES PROMPTLY.
7. THE INSTALLATION AND MAINTENANCE OF SEDIMENT WATTLE BMP'S SHALL NOT NEGATIVELY IMPACT TRAFFIC SAFETY.

WATTLE EROSION AND SILTATION BARRIER

SCALE: N.T.S.

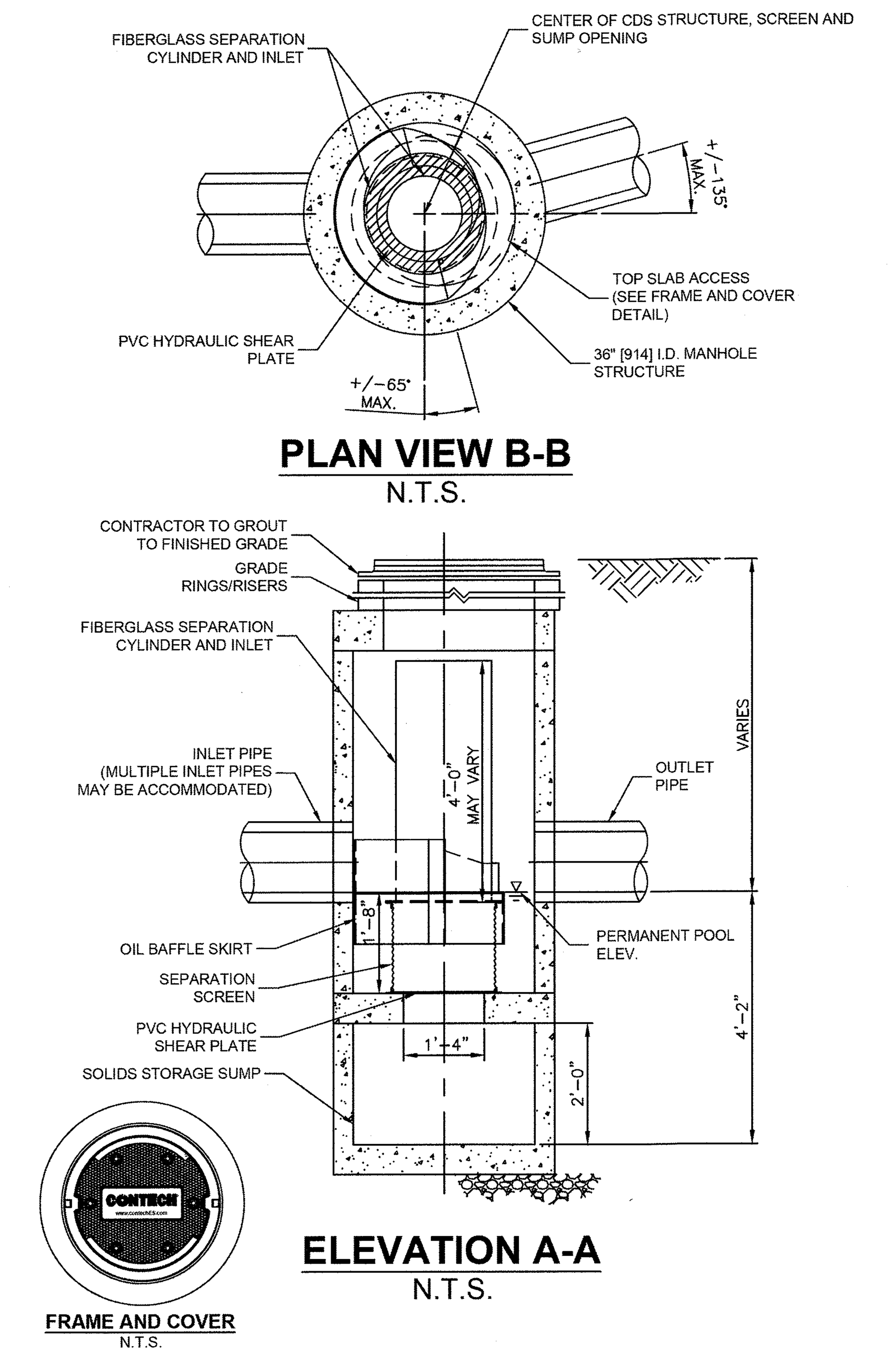


NOTES:

1. SEE PLANS FOR CURB TYPE.
2. CURBS AND WALKS ALONG ACCESSIBLE ROUTES SHALL MEET OR EXCEED THE APPLICABLE ADA REGULATIONS.
3. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 2% (1% MIN).
4. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
5. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 8%.
6. MAINTAIN A MINIMUM OF 3 FEET CLEAR AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS ETC.)
7. GRADE BASE OF RAMP TO PREVENT PONDING.
8. RAMP CONSTRUCTION SHALL CONFORM TO TYPICAL SIDEWALK SECTION.
9. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'X5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
10. ALL CURBING AT RAMPS SHALL BE VERTICAL CURBING SET FLUSH WHERE IT ABUTS ROADWAY.
11. ALL RAMPS SHALL BE CEMENT CONCRETE WITH BROOM NON-SLIP SURFACE.
12. ALL RAMPS SHALL HAVE A 24" WIDE DETECTABLE WARNING PANEL EXTENDING THE FULL WIDTH OF THE FLUSH RAMP EDGE.

ACCESSIBLE CURB RAMPS (AR)

SCALE: N.T.S.



GENERAL NOTES

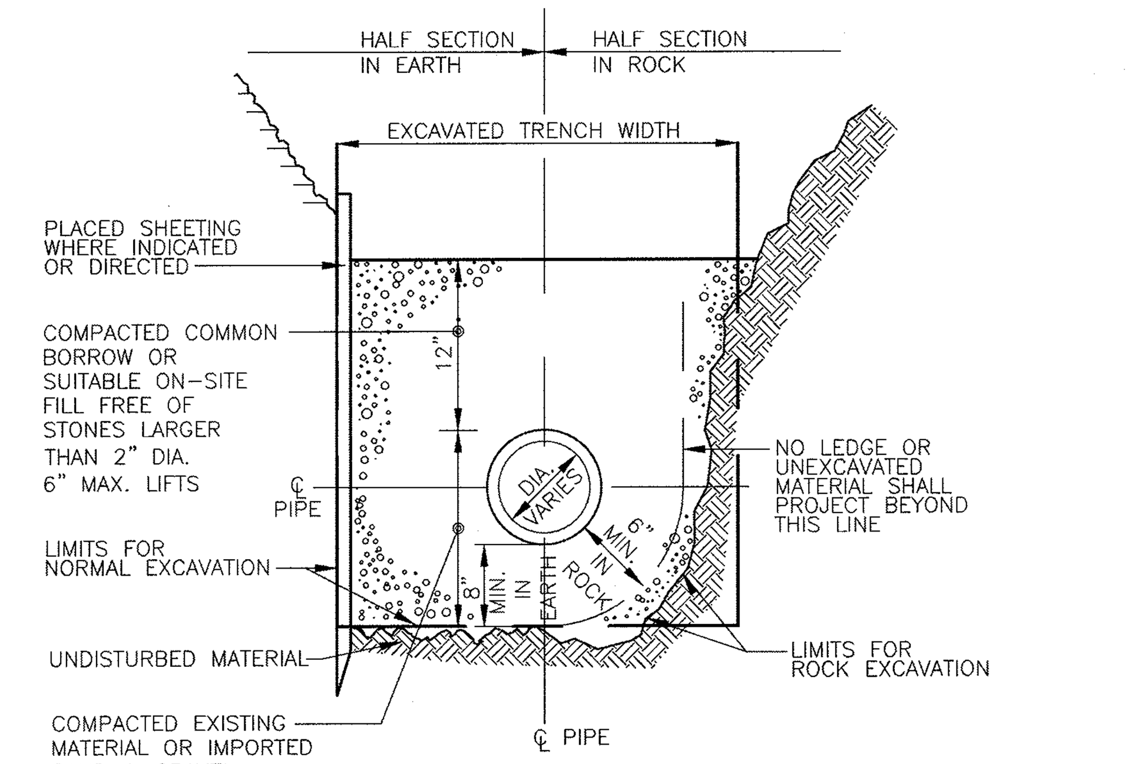
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO..
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

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

OIL/PARTICLE SEPARATOR DETAIL (CDS 1515-3-C)

SCALE: N.T.S.

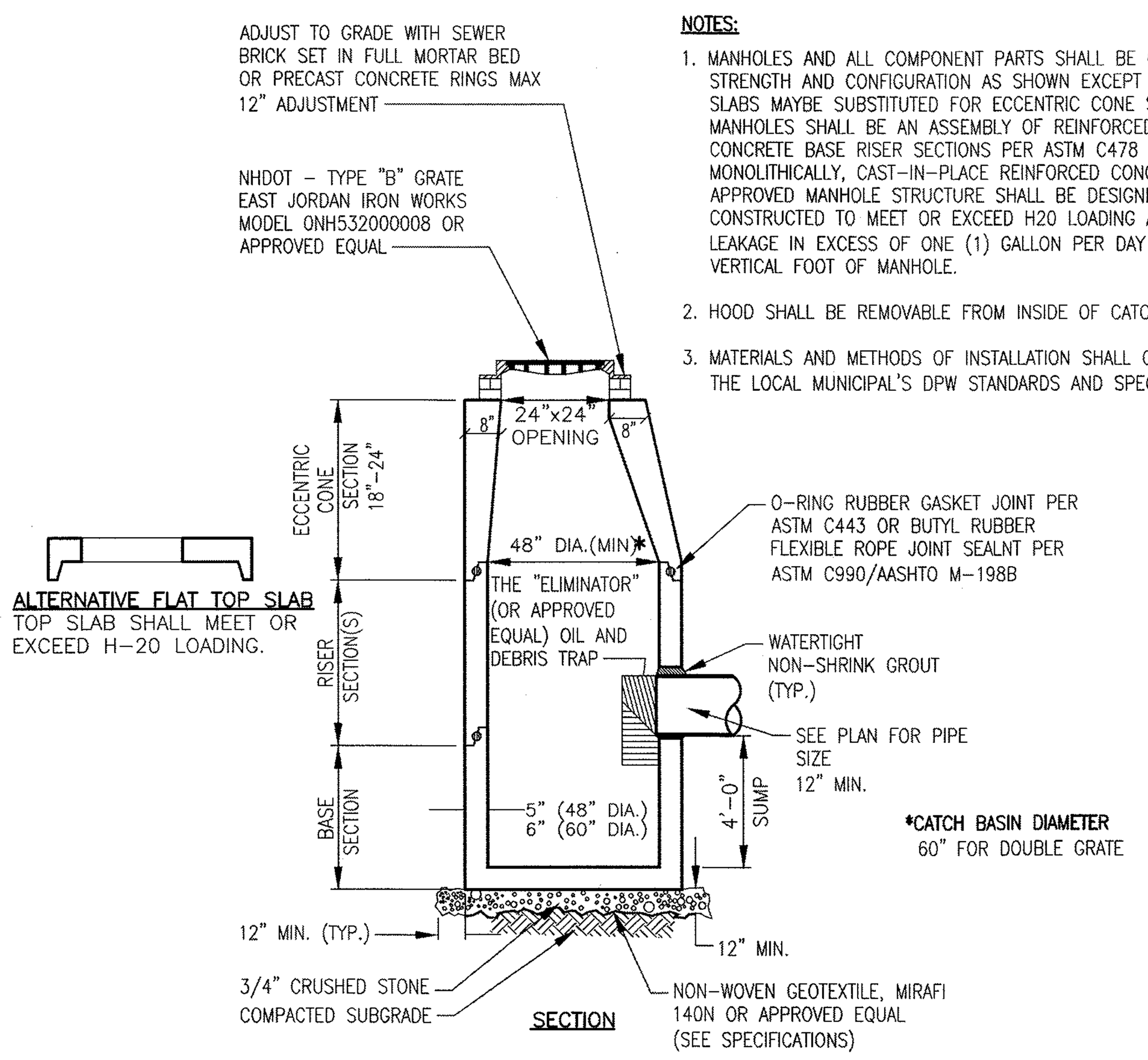


INSIDE PIPE DIAMETER	TRENCH WIDTH
12"	36"
15"	36"
18"	39"
24"	48"
30"	66"
36"	78"
48"	89"

NOTES:
MATERIALS, METHOD OF INSTALLATION, ETC. SHALL CONFORM TO THE CITY ENGINEERING DEPARTMENT'S SPECIFICATIONS.

TYPICAL DRAIN TRENCH DETAIL

SCALE: N.T.S.

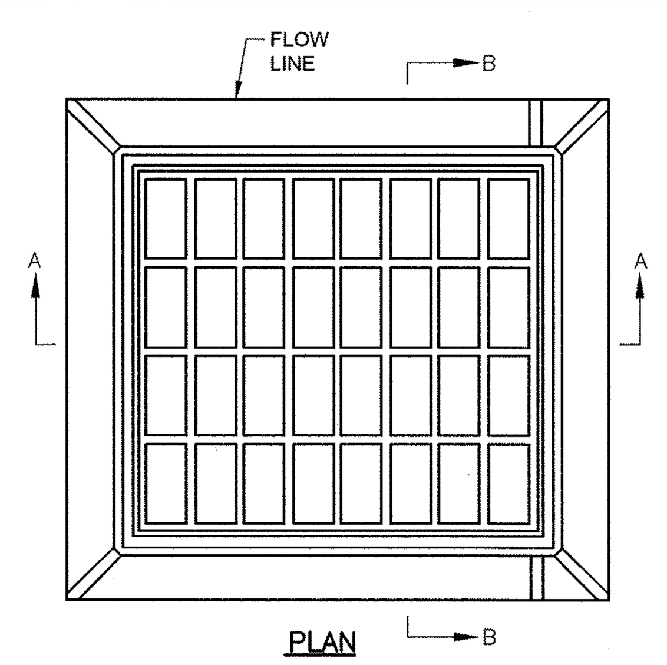


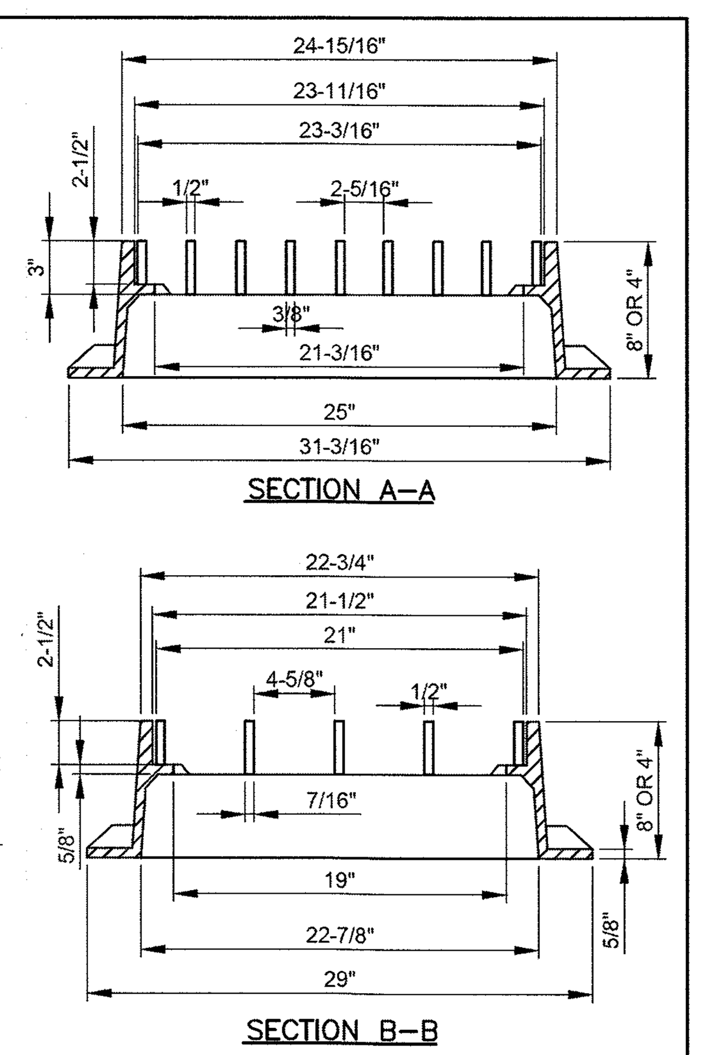
NOTES:

1. MANHOLES AND ALL COMPONENT PARTS SHALL BE OF SIZE, STRENGTH AND CONFIGURATION AS SHOWN EXCEPT THAT TOP SLABS MAYBE SUBSTITUTED FOR ECCENTRIC CONE SECTIONS. MANHOLES SHALL BE AN ASSEMBLY OF REINFORCED, PRECAST CONCRETE BASE RISER SECTIONS PER ASTM C478 OR MONOLITHICALLY, CAST-IN-PLACE REINFORCED CONCRETE. APPROVED MANHOLE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO MEET OR EXCEED H20 LOADING AND PREVENT LEAKAGE IN EXCESS OF ONE (1) GALLON PER DAY PER VERTICAL FOOT OF MANHOLE.
2. HOOD SHALL BE REMOVABLE FROM INSIDE OF CATCH BASIN
3. MATERIALS AND METHODS OF INSTALLATION SHALL CONFORM TO THE LOCAL MUNICIPAL'S DPW STANDARDS AND SPECIFICATIONS.

TYPICAL CATCH BASIN WITH HOOD

SCALE: N.T.S.





NOTES:

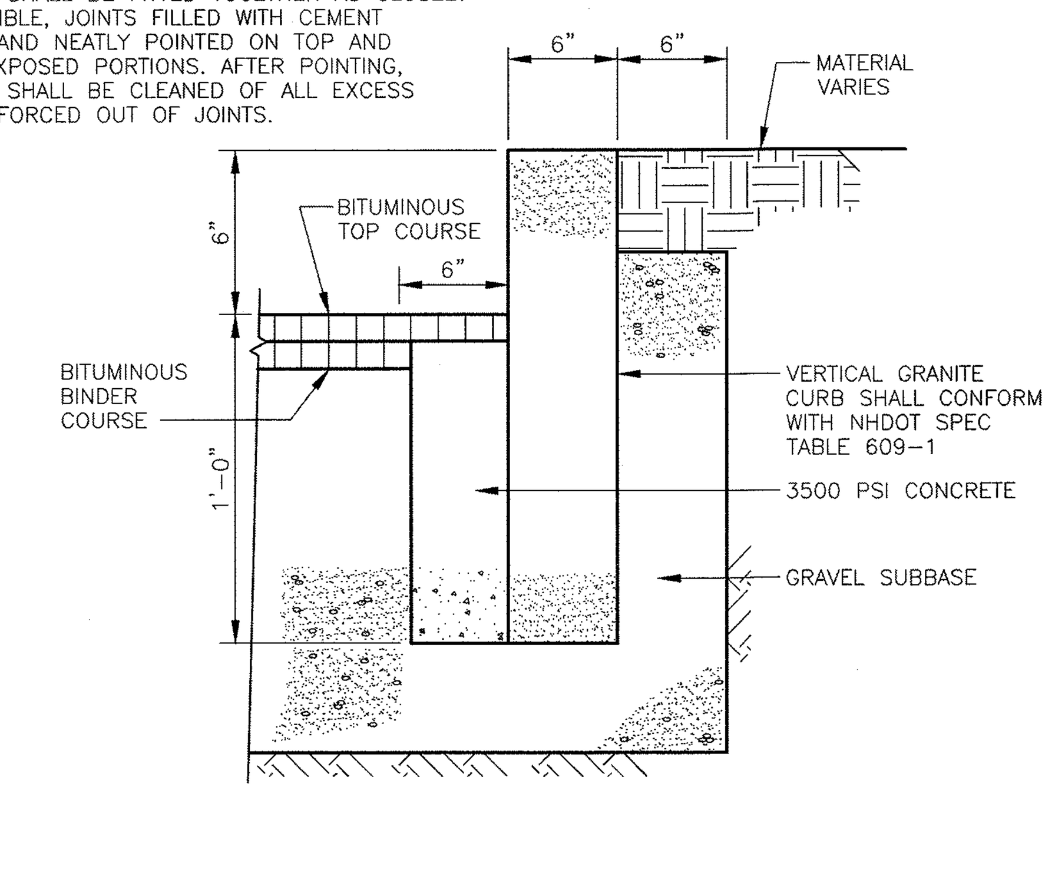
1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   2.1 THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   2.2 THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   2.3 ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
4. FREE OPEN AREA = 2.55 $FT.^2$
5. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

CATCH BASIN FRAME AND GRATE (NHDOT - TYPE 'B' GRATE)

SCALE: N.T.S.

NOTES:

1. PLACE GRAVEL UNDER AND BEHIND CURBING AND THOROUGHLY COMPACT SO THAT THE CURB IS COMPLETELY SUPPORTED THROUGHOUT ITS LENGTH.
2. CURBING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE, JOINTS FILLED WITH CEMENT MORTAR AND NEATLY POINTED ON TOP AND FRONT EXPOSED PORTIONS. AFTER POINTING, CURBING SHALL BE CLEANED OF ALL EXCESS MORTAR FORCED OUT OF JOINTS.



TYPICAL VERTICAL GRANITE CURB DETAIL

SCALE: N.T.S.

RJOC

NO.	REVISION	DATE
1	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:
KEYPOINT PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:
DPF DURGIN SQUARE
PORTSMOUTH, NH

SEAL:
STATE OF NEW HAMPSHIRE BRIAN P. DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER
02-18-2020

DESIGNED BY:	CNM
DRAWN BY:	MSM
REVIEWED BY:	BPD
SCALE:	N.T.S.
DATE:	02/18/2020

DRAWING NAME:
SITE DETAILS - II

DRAWING NUMBER:
C-5

PROJECT NUMBER:
16030

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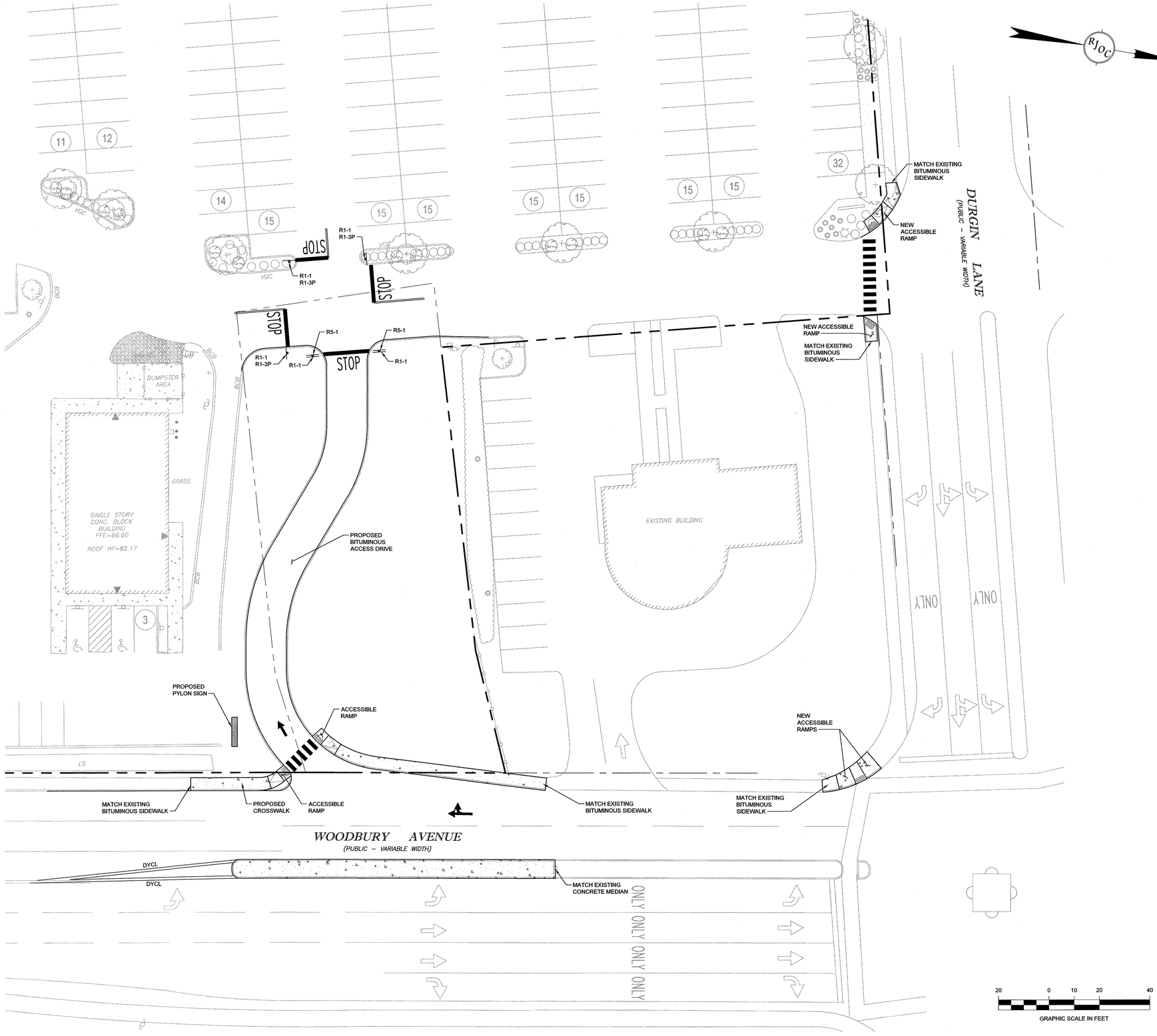


NOTES

1. THIS INFORMATION IS NOT COMPLETE. FOR A COMPLETE SET OF SITE PLANS, SEE THE CITY OF PORTSMOUTH PLANNING DEPARTMENT.
2. PER THE CITY OF PORTSMOUTH REGULATIONS, SP–1 AND SP–2 HAVE BEEN PREPARED TO BE RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS UPON APPROVAL BY THE CITY OF PORTSMOUTH PLANNING BOARD.
3. THESE PLANS HAVE BEEN PREPARED FROM THE FOLLOWING:
   A. "ALTA/ACSM LAND TITLE SURVEY DPF DURGIN SQUARE" BY ODONE SURVEY & MAPPING, LAST REVISED 05/16/2014.
   B. "EXISTING CONDITIONS PLAN" BY R.J. O'CONNELL & ASSOCIATES, INC; DATED 02/18/2020.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES ESPECIALLY WHERE NEW WORK CONNECTS TO EXISTING SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIG SAFE" (1–800–344–7233) AT LEAST TWO (2) WEEKS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL HORIZONTAL CONTROL POINTS AND VERTICAL BENCH MARKS NECESSARY FOR THE WORK.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL INFORMATION SHOWN ON THESE PLANS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND EXISTING SITE CONDITIONS AS SHOWN ON THESE PLANS.
8. ALL CONSTRUCTION DUMPSTERS SHALL BE PROPERLY MAINTAINED. ALL DUMPSTERS SHALL BE LOCATED ON A BITUMINOUS CONCRETE OR CONCRETE SURFACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRASH DISPOSAL ON A REGULAR BASIS AND SHALL ENSURE THAT THE DUMPSTER AREAS ARE PROPERLY MAINTAINED.
9. THE GENERAL CONTRACTOR AND SUBCONTRACTORS WILL HAVE A COPY OF THE SITE PLAN APPROVAL ON SITE AT ALL TIMES AND WILL BE INCORPORATED INTO ALL CONSTRUCTION CONTRACTS.
10. NO AUTHORIZED ACTIVITY SHALL AFFECT ABUTTING PROPERTIES. IF THE APPLICANT MUST WORK ON AN ABUTTING PROPERTY, WRITTEN AUTHORIZATION FROM THE OWNER OF SAID LAND SHALL BE OBTAINED AND PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO THE START OF WORK.
11. ALL CONDITIONS ON THESE PLANS SHALL REMAIN IN EFFECT IN PERPETUITY.
12. REFER TO DRAWING SP–2, OVERALL PLAN, FOR COMPLETE PROPERTY LINE INFORMATION.

No.	REVISIONS	BY	DATE

SITE LAYOUT PLAN

DPF DURGIN SQUARE
1600 WOODBURY AVENUE
PORTSMOUTH, NH
ROCKINGHAM PROPERTY MAP 238 LOT 016
MAP 239 LOT 002

Prepared by: RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE
STONEHAM, MA 02180
781-279-0180
FAX: 781-279-0173

Scale: 1"=20' Date: 02/18/2020

For Professional Seal

STATE OF NEW HAMPSHIRE – BRIAN P DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER –

02-18-2020

Owner of Record
DPF 1600 WOODBURY AVE LLC
C/O MARVIN F POER & COMPANY
3520 PIEDMONT RD NE SUITE 410
ATLANTA , GA 30305

Planning Board

Chair

Member

Member

Member

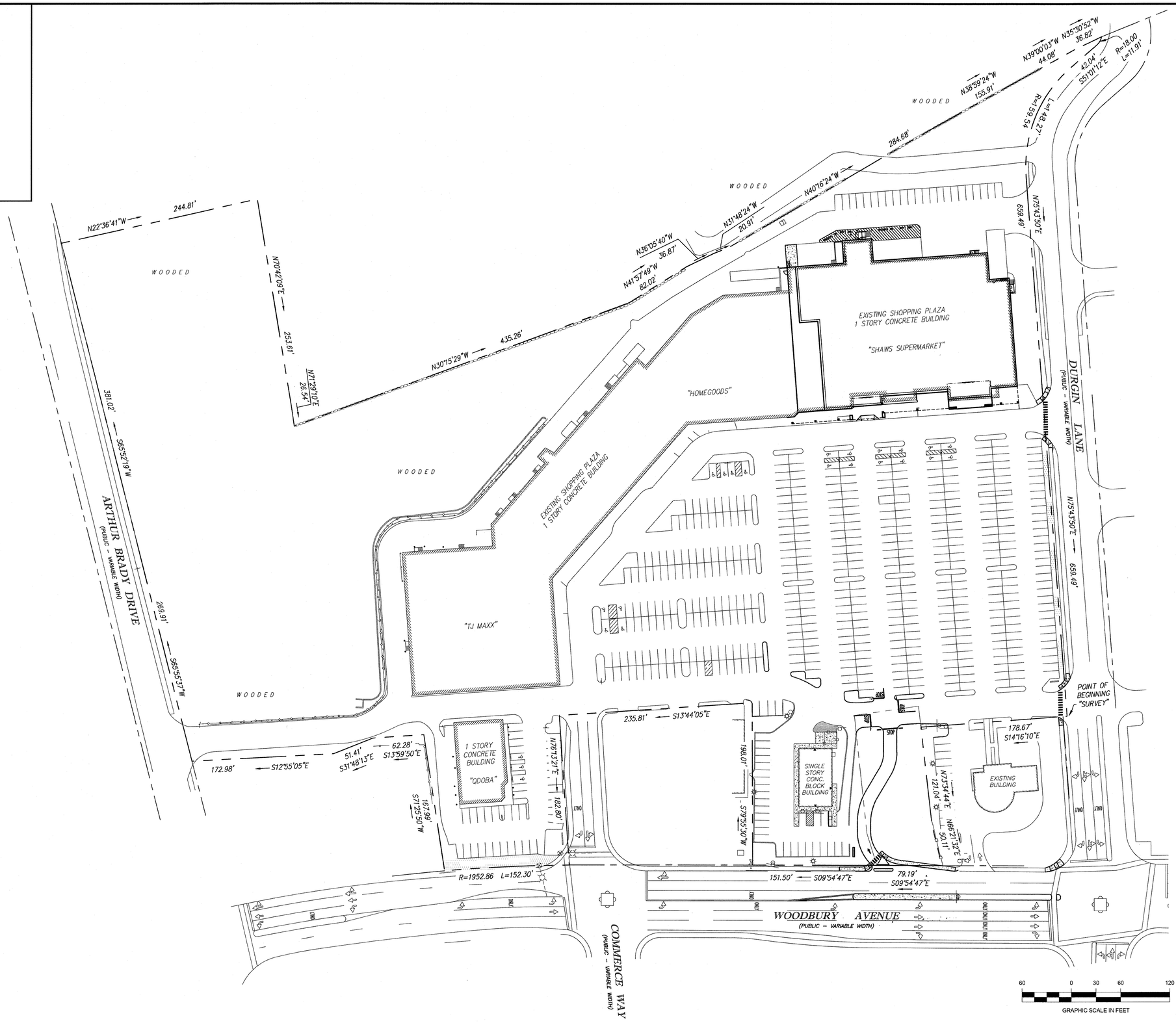
Member

Member

DATE APPROVED:

DESIGNED BY:	DRAWN/CHECKED	PROJECT No.	SHEET No.
CNM/SPG	MCR/CNM	16030	SP-1

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\Registry Plan\16030_SP-1 Registry Plan.dwg
Feb 18, 2020 – 10:53am



No.	REVISIONS	BY	DATE

OVERALL PLAN

DPF DURGIN SQUARE
1600 WOODBURY AVENUE
PORTSMOUTH, NH
ROCKINGHAM PROPERTY MAP 238 LOT 016
MAP 239 LOT 002

Prepared by: RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE
STONEHAM, MA 02180
781-279-0180
FAX: 781-279-0173

Scale: 1"=60'

Date: 02/18/2020

For Professional Seal

STATE OF NEW HAMPSHIRE – BRIAN P. DUNDON No. 10460 LICENSED PROFESSIONAL ENGINEER

02-18-2020

Planning Board

Chair

Member

Member

Member

Member

Member

Member

DATE APPROVED:

Owner of Record

DPF 1600 WOODBURY AVE LLC
C/O MARVIN F POER & COMPANY
3520 PIEDMONT RD NE SUITE 410
ATLANTA , GA 30305

DESIGNED BY:	DRAWN/CHECKED	PROJECT No.	SHEET No.
CNM/SPG	MCR/CNM	16030	SP-2

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\Registry Plan\16030_SP-2 Overall Registry Plan.dwg
Feb 18, 2020 - 11:36am

RJOC

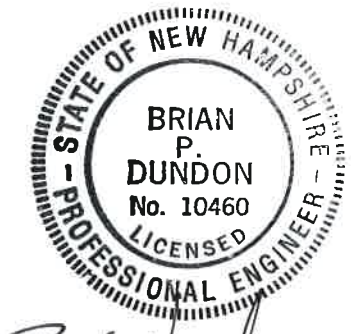
Stormwater Summary

Durgin Square
1600 Woodbury Ave
Portsmouth, New Hampshire

Prepared for:
Keypoint Partners
One Burlington Woods Drive
Burlington, MA 01803

Prepared by:
R.J. O'Connell & Associates, Inc.
80 Montvale Ave, Suite 201
Stoneham, MA 02180

Date:
February 18, 2020



02-18-2020

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RJ O'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 Montvale Ave., Suite 201 Stoneham, MA 02180
phone 781-279-0180 fax 781-279-0173

Stormwater Summary

On behalf of the Applicant, Keypoint Partners LLC, R.J. O'Connell & Associates, Inc. has prepared this stormwater summary for the proposed project at Durgin Square shopping plaza located at 1600 Woodbury Ave, Portsmouth, NH (refer to Figure 1, USGS Map). The existing site is comprised of a 126,300 square foot shopping center building, a 5,920 square foot retail/ restaurant building, and two 2,920 retail buildings. The site is located northwest of downtown Portsmouth along Woodbury Ave between Durgin Lane and Arthur F Brady Drive.

The proposed project will demolish the 2,920 square foot retail building currently housing Gamestop and its associated parking area located at 1608 Woodbury Ave, and construct a new 16-foot-wide one-way access driveway from Woodbury Ave to the main parking field for the shopping center.

The proposed driveway will shift the existing curb cut to the south and convert it to a right-in only condition with new accessible ramps and a crosswalk at the intersection with Woodbury Ave. The existing raised center median along the centerline of Woodbury Ave will be extended further south to prevent left turns at the proposed driveway. The proposed site work will result in a net increase of pervious open space of approximately 7,500 square feet. Modifications to the shopping center building include dividing the tenant space of the former Shaws supermarket into approximately 4,147 of new retail space and the remaining 41,980 square feet into a new supermarket tenant.

As indicated on the FEMA Flood Insurance Rate Map, Panel 33015C0260E, effective May 17, 2005, the site is located in Zone X, outside the 100-year flood zone (refer to Figure 2, Flood Insurance Rate Map). The Natural Resources Conservation Service (NRCS) web soil survey indicates the on-site soil type to be Chatfield-Hollis-Canton complex, with a Hydrologic Soil Group (HSG)-B classification (refer to Figure 3, NRCS Web Soil Survey Map).

This stormwater summary will demonstrate that the proposed stormwater improvements will result in a reduction of peak rates and volumes of stormwater runoff discharging the site and will enhance water quality of stormwater runoff.

In the pre-developed condition, stormwater runoff flows to one of two points of analysis (POA). Runoff from the existing building roof and the western parking areas flow west over pavement towards the main parking field on-site (POA-1) where it is intercepted by several existing catch basins. Runoff from the eastern parking area flows over pavement to the north where it is collected by an existing catch basin and piped to the north and off-site to pipes along the shoulder of Woodbury Ave at POA-2. Refer to Figure 4, Existing Watershed Plan.

In the post-developed condition, stormwater runoff will continue to flow to the same points of analysis as under existing conditions. Runoff from the western portion of the proposed driveway will flow over pavement at POA-1 to the existing catch basins in the main parking field similar to existing conditions. Runoff from the eastern portion of the proposed driveway will be intercepted by a new deep-sump catch basin with hooded outlets and routed through an oil/particle separator to remove settleable solids and floating contaminants before discharging through the existing drain line in Woodbury Ave at POA-2. Refer to Figure 5, Proposed Watershed Plan.

This study used the computer program HydroCAD, version 10.00, to model existing and proposed hydrologic site conditions based on the Natural Resources Conservation Service (NRCS) TR-20 Computer Program for Project Formulation Hydrology. Peak pre- and post-development rates and

volumes of stormwater runoff discharged from the site were determined for the 2, 10, 25 and 50-year storm events at the POAs. Refer to Appendix A for computations.

Because the amount of pervious open space area is increased by approximately 7,500 square feet under proposed conditions as compared to existing, peak rates and volumes of stormwater discharged from the site under post-development conditions are reduced compared to pre-development rates at the POAs. The following tables summarize the calculated peak flows and volumes for the pre-redevelopment and post-redevelopment conditions.

Pre- and Post-Development Peak Rates of Runoff in Cubic Feet per Second (cfs)

	Storm Event							
	2-year		10-year		25-year		50-year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
POA-1	0.77	0.44	1.24	0.84	1.57	1.14	1.75	1.31
POA-2	0.39	0.17	0.68	0.40	0.88	0.59	1.00	0.69
Total	1.16	0.61	1.92	1.24	2.45	1.73	2.75	2.00

Pre- and Post-Development Volumes of Runoff in Cubic Feet (cf)

	Storm Event							
	2-year		10-year		25-year		50-year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
POA-1	2,289	1,317	3,741	2,483	4,775	3,362	5,355	3,867
POA-2	1,153	571	2,006	1,225	2,627	1,746	2,979	2,052
Total	3,442	1,888	5,747	3,708	7,402	5,108	8,334	5,919

As shown in the calculations and in the summary tables above, the increase in pervious landscaped area in the proposed condition will significantly reduce peak rates and volumes of stormwater discharged from the proposed site as compared to the existing conditions. Additionally, the proposed deep-sump catch basin with hooded outlet and oil/particle separator will improve water quality of stormwater runoff. The proposed condition represents notable improvement over the existing condition and is consistent with the stormwater management objectives set forth in the City of Portsmouth Site Plan Review Regulations.

FIGURES

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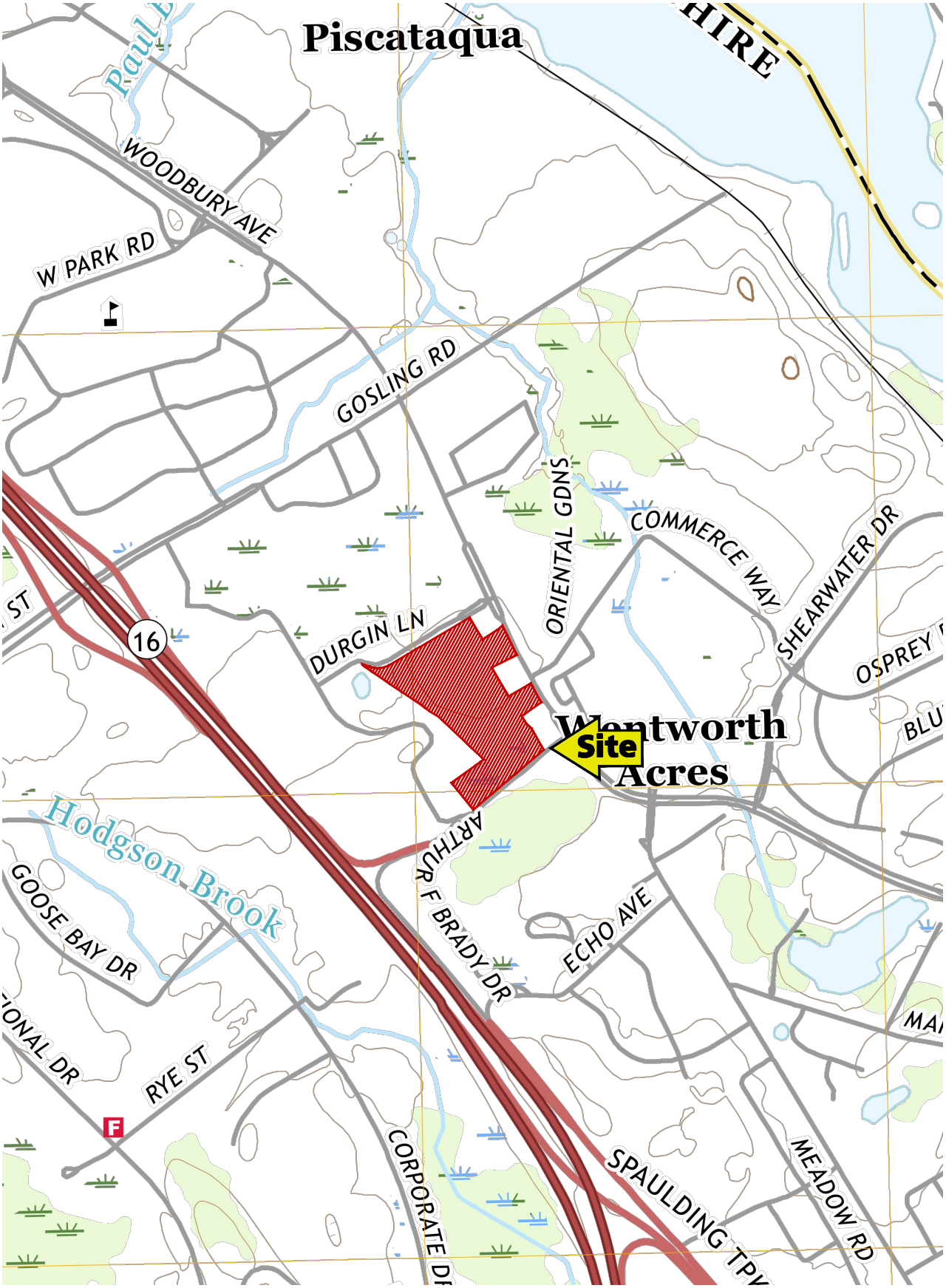

RJOC

1,000 0 500 1,000 2,000

GRAPHIC SCALE IN FEET

RJO'CONNELL
& ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020 SCALE: 1"=1000'

FIGURE 1
USGS MAP

DURGIN SQUARE
PORTSMOUTH, NH

Copyright © 2020 by R.J. O'Connell & Associates, Inc.

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Reports\Stormwater Report\Figures\16030 Figure 1 USGS Map.dwg
Feb 14, 2020 - 12:00pm

National Flood Hazard Layer FIRMette

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/22/2020 at 1:14:51 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped
regulatory p

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& ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020 SCALE: 1"=1000'

FIGURE 2
FLOOD INSURANCE RATE MAP

DURGIN SQUARE
PORTSMOUTH, NH

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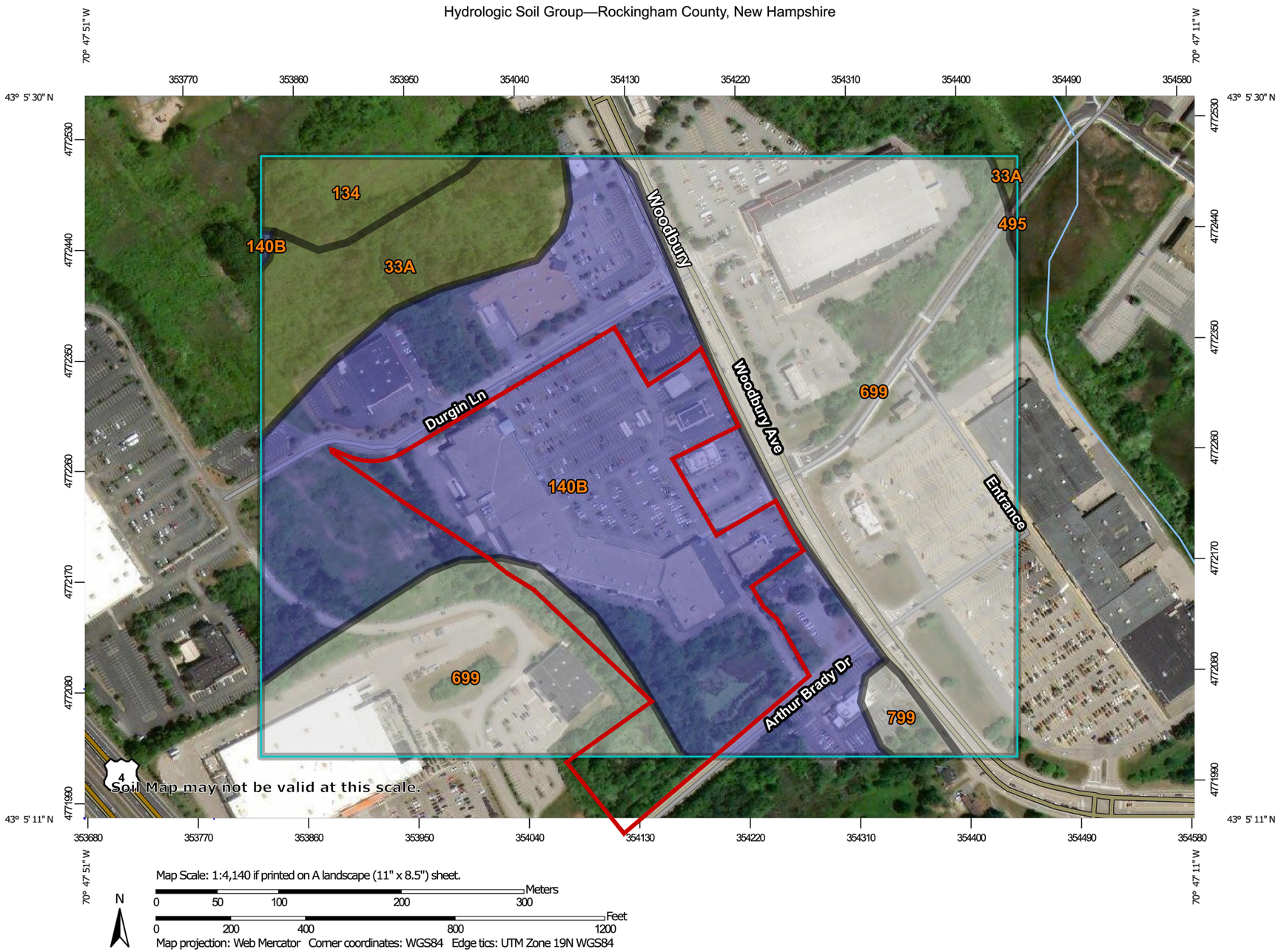


Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

12/12/2019
Page 1 of 4

RJOC

N

HYDROLOGIC SOIL GROUP		
MAP UNIT SYMBOL	MAP UNIT NAME	RATING
140B	CHATFIELD–HOLLIS–CANTON COMPLEX, 0 TO 8 PERCENT SLOPES, ROCKY	B
699	URBAN LAND	—

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020 SCALE: AS SHOWN

FIGURE 3
NRCS WEB SOIL SURVEY MAP

DURGIN SQUARE
PORTSMOUTH, NH

Copyright © 2020 by R.J. O'Connell & Associates, Inc.

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Reports\Stormwater Report\Figures\16030 Figure 3 Soil Survey.dwg
Feb 14, 2020 - 12:01pm

POA-1
Q_2 = 0.77 CFS
Q_{10} = 1.24 CFS
Q_{25} = 1.57 CFS
Q_{50} = 1.75 CFS

EX-1
TOTAL AREA = 14,418 SF
TOTAL IMP. = 10,890 SF
CN = 89

EX-2
TOTAL AREA = 9,127 SF
TOTAL IMP. = 5,688 SF
CN = 84

POA-2
Q_2 = 0.39 CFS
Q_{10} = 0.68 CFS
Q_{25} = 0.88 CFS
Q_{50} = 1.00 CFS

CB R=64.10 I=58.23 (IN) I=56.87 (OUT)
CB R=66.27
CB R=65.33 I=61.68
CB R=65.34
CB R=64.71 I=62.54 (IN) I=62.11 (OUT)
CB R=65.85
TC=65.95 BC=65.69
TC=66.57 BC=66.30
TC=66.44 BC=66.25
TC=66.96 BC=66.73
TW=68.71 BW=66.30

LEGEND

- WATERSHED BOUNDARY
- OPEN SPACE-GRASS
- BUILDING
- PAVEMENT/IMPERVIOUS
- POA-1 — POINT OF ANALYSIS

30 0 15 30 60
GRAPHIC SCALE IN FEET

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

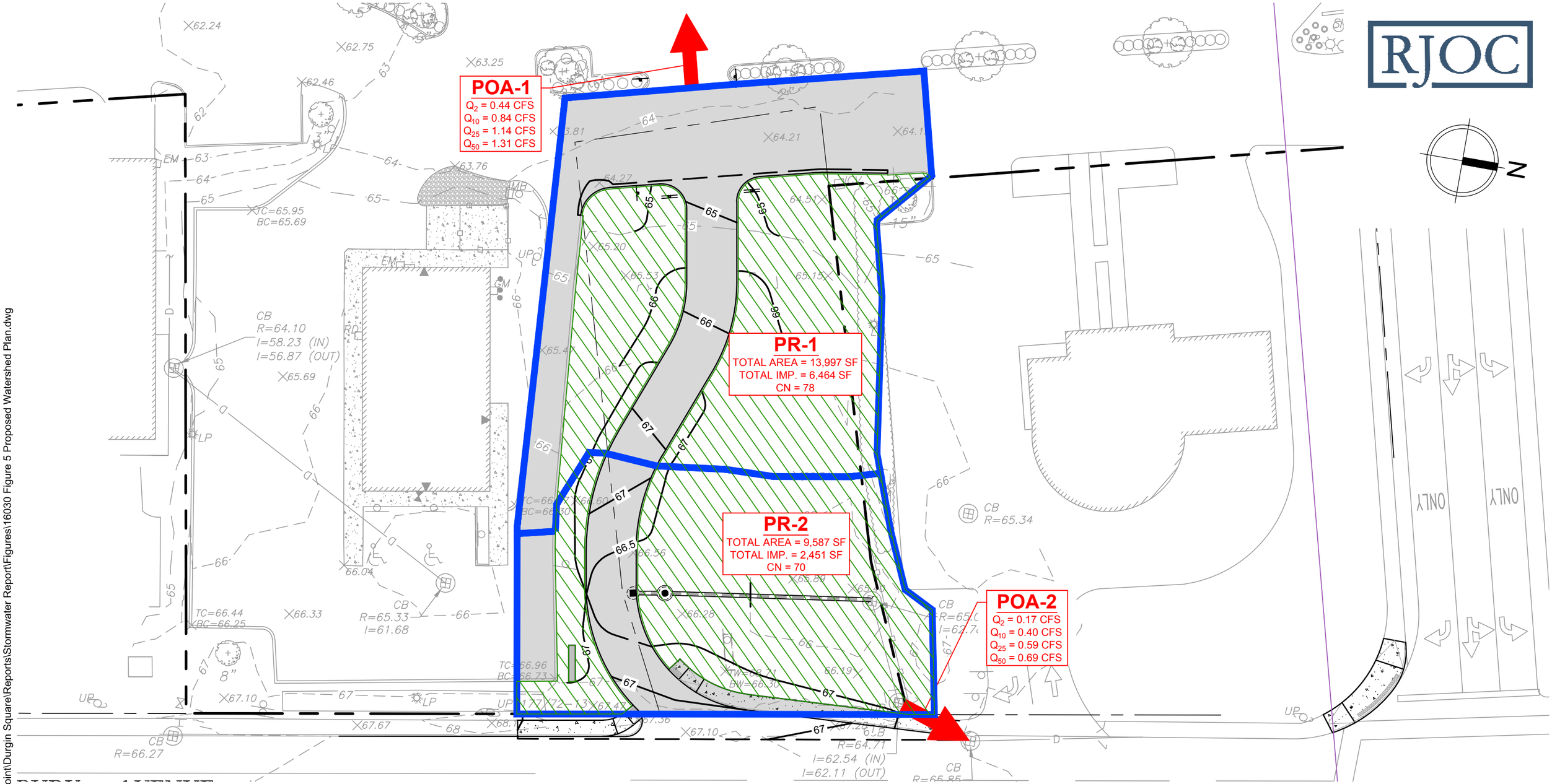
DATE: 02/18/2020 SCALE: 1"=30'

FIGURE 4
EXISTING WATERSHED PLAN

DURGIN SQUARE PORTSMOUTH, NH

Copyright © 2020 by R.J. O'Connell & Associates, Inc.

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Reports\Stormwater Report\Figures\16030 Figure 4 Existing Watershed Plan.dwg
Feb 14, 2020 - 12:02pm



LEGEND

- WATERSHED BOUNDARY
- OPEN SPACE-GRASS
- BUILDING
- PAVEMENT/IMPERVIOUS
- POA-1 — POINT OF ANALYSIS

30 0 15 30 60

GRAPHIC SCALE IN FEET

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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020 SCALE: 1"=30'

FIGURE 5
PROPOSED WATERSHED PLAN

DURGIN SQUARE PORTSMOUTH, NH

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Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Reports\Stormwater Report\Figures\16030 Figure 5 Proposed Watershed Plan.dwg
Feb 14, 2020 - 12:07pm

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APPENDIX A
Computations

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Pre-Development Hydrological Computations

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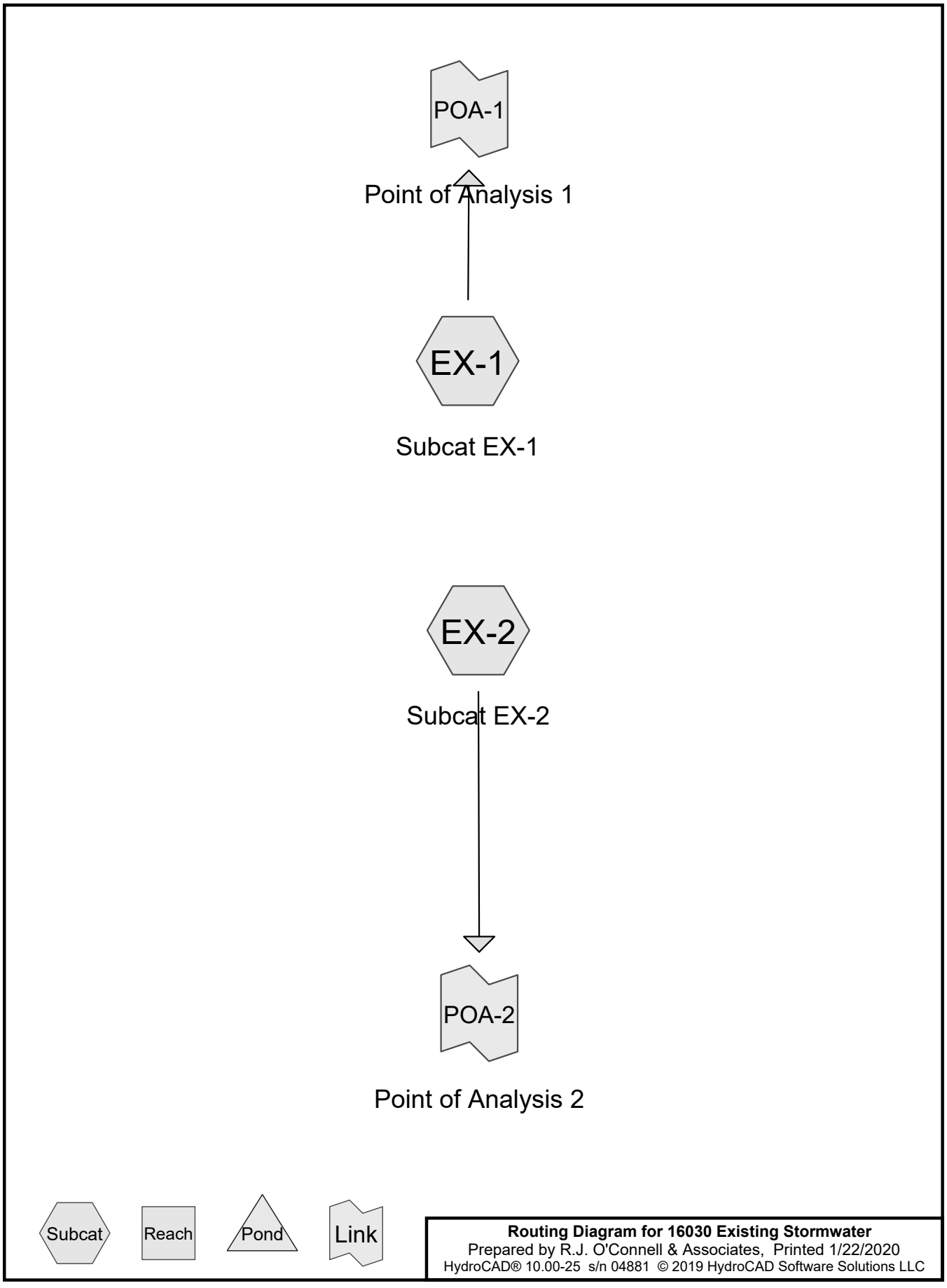


Routing Diagram for 16030 Existing Stormwater
Prepared by R.J. O'Connell & Associates, Printed 1/22/2020
HydroCAD® 10.00-25 s/n 04881 © 2019 HydroCAD Software Solutions LLC

Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.332 ac 75.49% Impervious Runoff Depth>1.90"
Tc=0.0 min CN=89 Runoff=0.77 cfs 2,289 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=9,127 sf 62.32% Impervious Runoff Depth>1.52"
Tc=0.0 min CN=84 Runoff=0.39 cfs 1,153 cf

Link POA-1: Point of Analysis 1 Inflow=0.77 cfs 2,289 cf
Primary=0.77 cfs 2,289 cf

Link POA-2: Point of Analysis 2 Inflow=0.39 cfs 1,153 cf
Primary=0.39 cfs 1,153 cf

Total Runoff Area = 23,584 sf Runoff Volume = 3,442 cf Average Runoff Depth = 1.75"
29.61% Pervious = 6,982 sf 70.39% Impervious = 16,602 sf

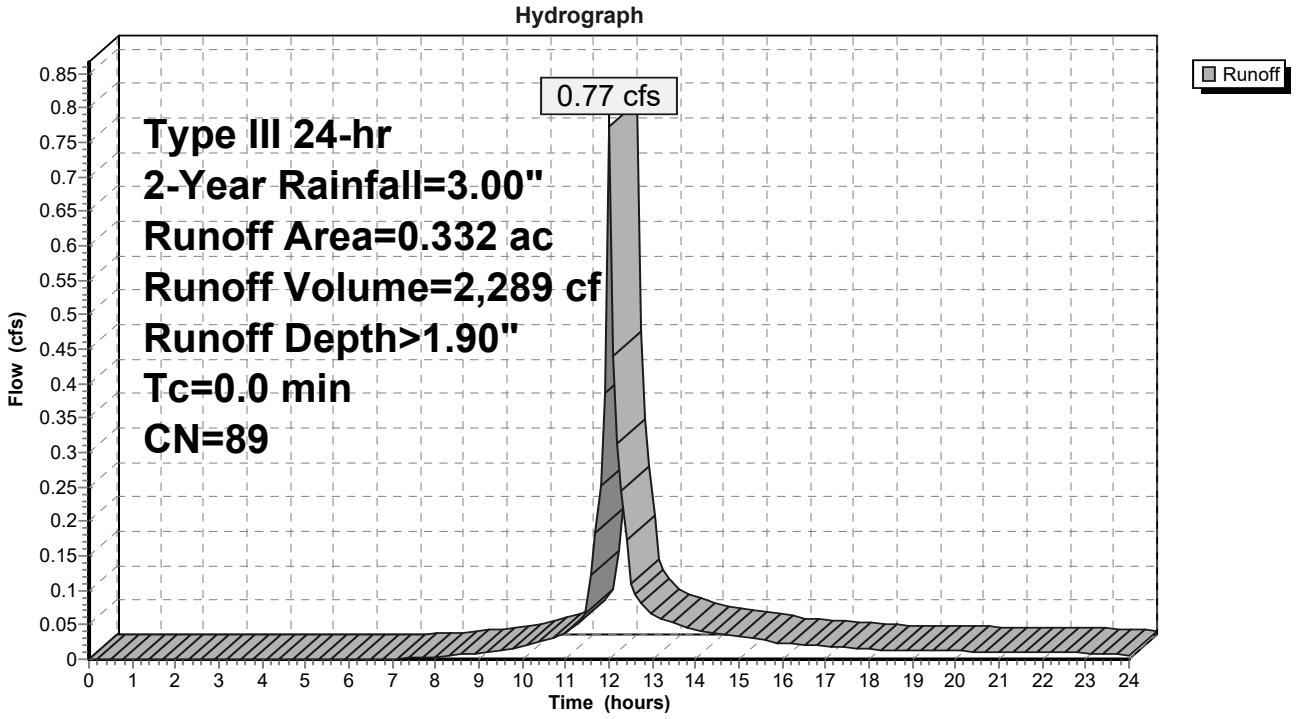
Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 0.77 cfs @ 12.00 hrs, Volume= 2,289 cf, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (ac)	CN	Description
0.183	98	Paved parking, HSG B
0.067	98	Roofs, HSG B
0.081	61	>75% Grass cover, Good, HSG B
0.332	89	Weighted Average
0.081		24.51% Pervious Area
0.251		75.49% Impervious Area

Subcatchment EX-1: Subcat EX-1



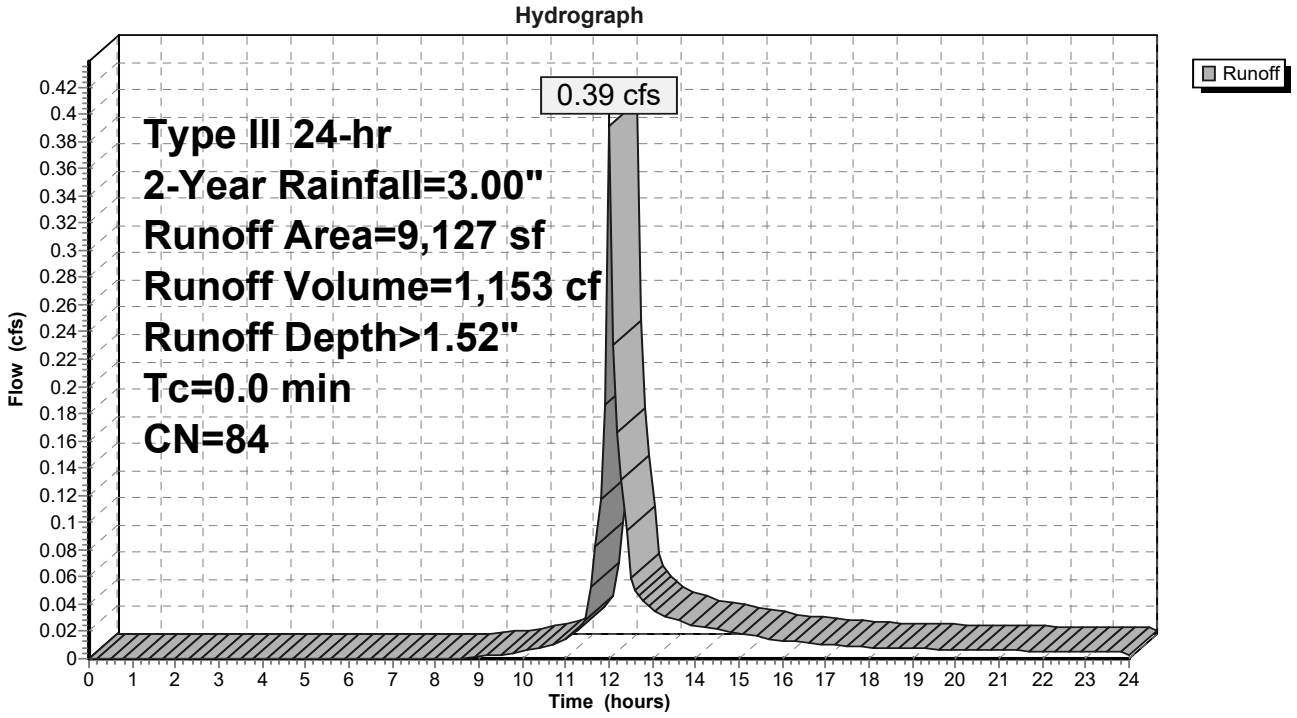
Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 0.39 cfs @ 12.01 hrs, Volume= 1,153 cf, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
3,439	61	>75% Grass cover, Good, HSG B
5,688	98	Paved parking, HSG B
9,127	84	Weighted Average
3,439		37.68% Pervious Area
5,688		62.32% Impervious Area

Subcatchment EX-2: Subcat EX-2

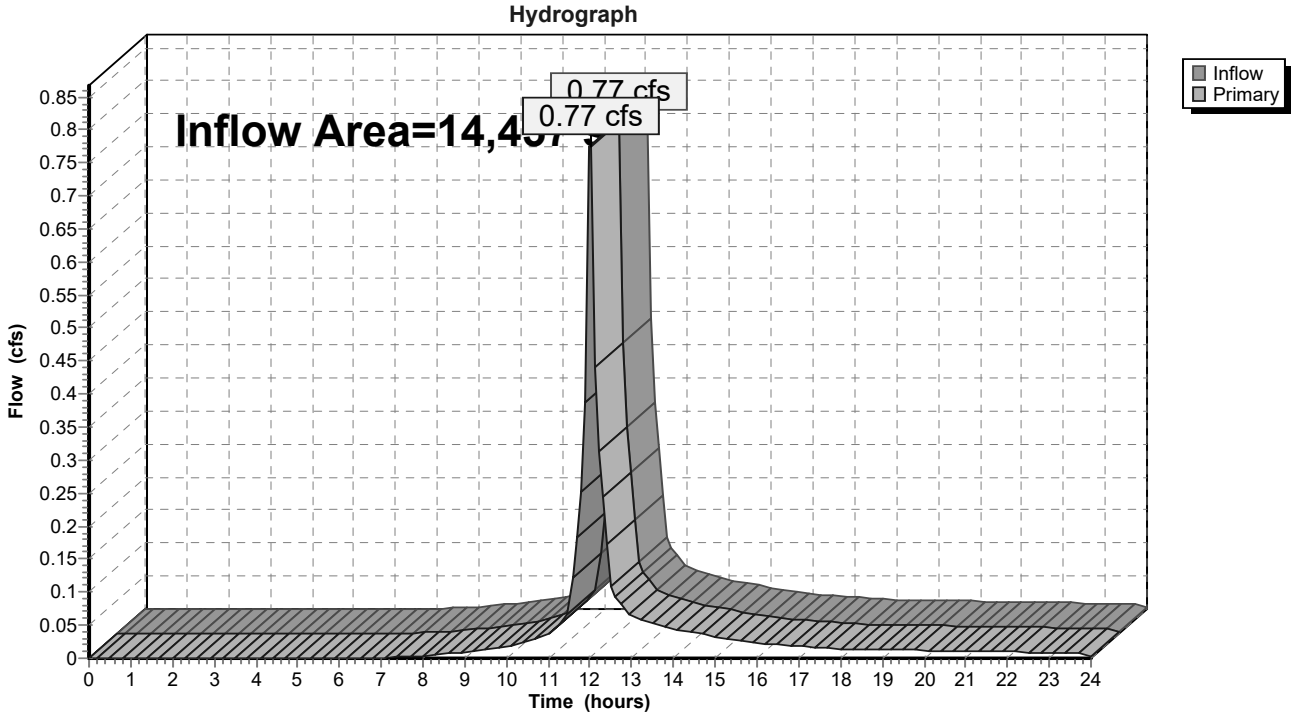


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 14,457 sf, 75.49% Impervious, Inflow Depth > 1.90" for 2-Year event
Inflow = 0.77 cfs @ 12.00 hrs, Volume= 2,289 cf
Primary = 0.77 cfs @ 12.00 hrs, Volume= 2,289 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

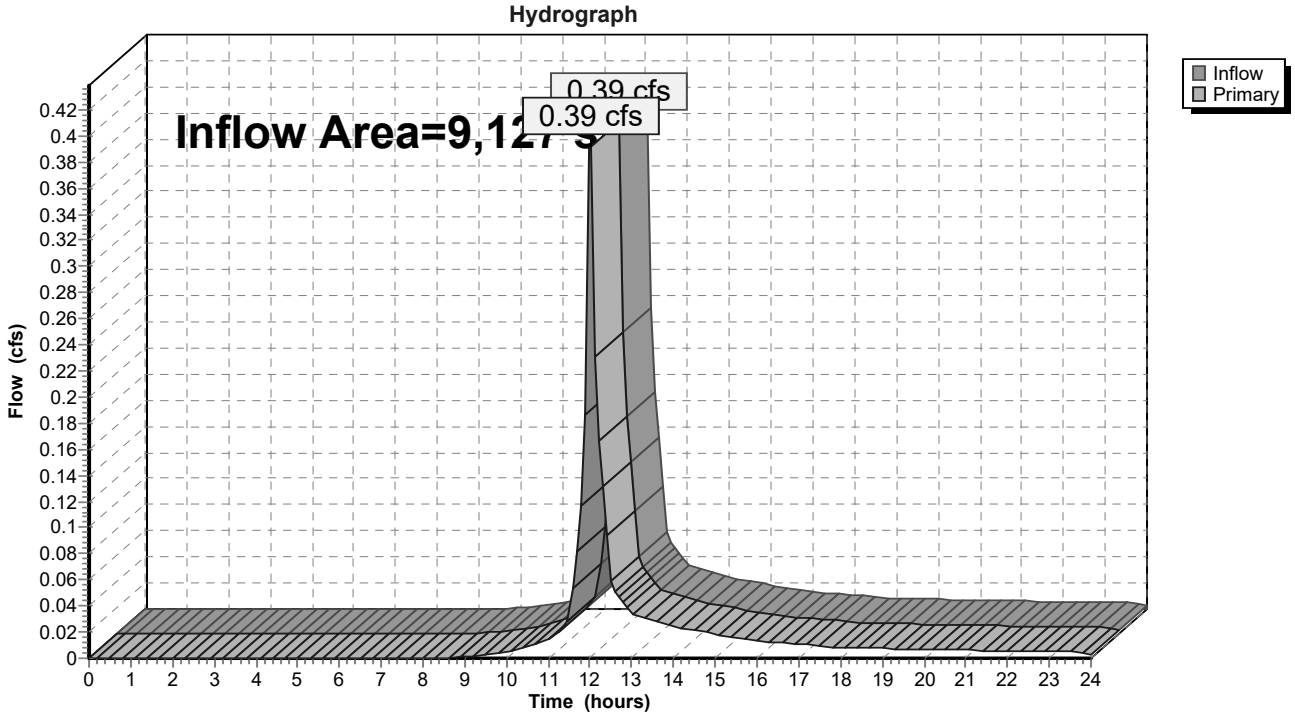


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,127 sf, 62.32% Impervious, Inflow Depth > 1.52" for 2-Year event
Inflow = 0.39 cfs @ 12.01 hrs, Volume= 1,153 cf
Primary = 0.39 cfs @ 12.01 hrs, Volume= 1,153 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.332 ac 75.49% Impervious Runoff Depth>3.11"
Tc=0.0 min CN=89 Runoff=1.24 cfs 3,741 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=9,127 sf 62.32% Impervious Runoff Depth>2.64"
Tc=0.0 min CN=84 Runoff=0.68 cfs 2,006 cf

Link POA-1: Point of Analysis 1 Inflow=1.24 cfs 3,741 cf
Primary=1.24 cfs 3,741 cf

Link POA-2: Point of Analysis 2 Inflow=0.68 cfs 2,006 cf
Primary=0.68 cfs 2,006 cf

Total Runoff Area = 23,584 sf Runoff Volume = 5,747 cf Average Runoff Depth = 2.92"
29.61% Pervious = 6,982 sf 70.39% Impervious = 16,602 sf

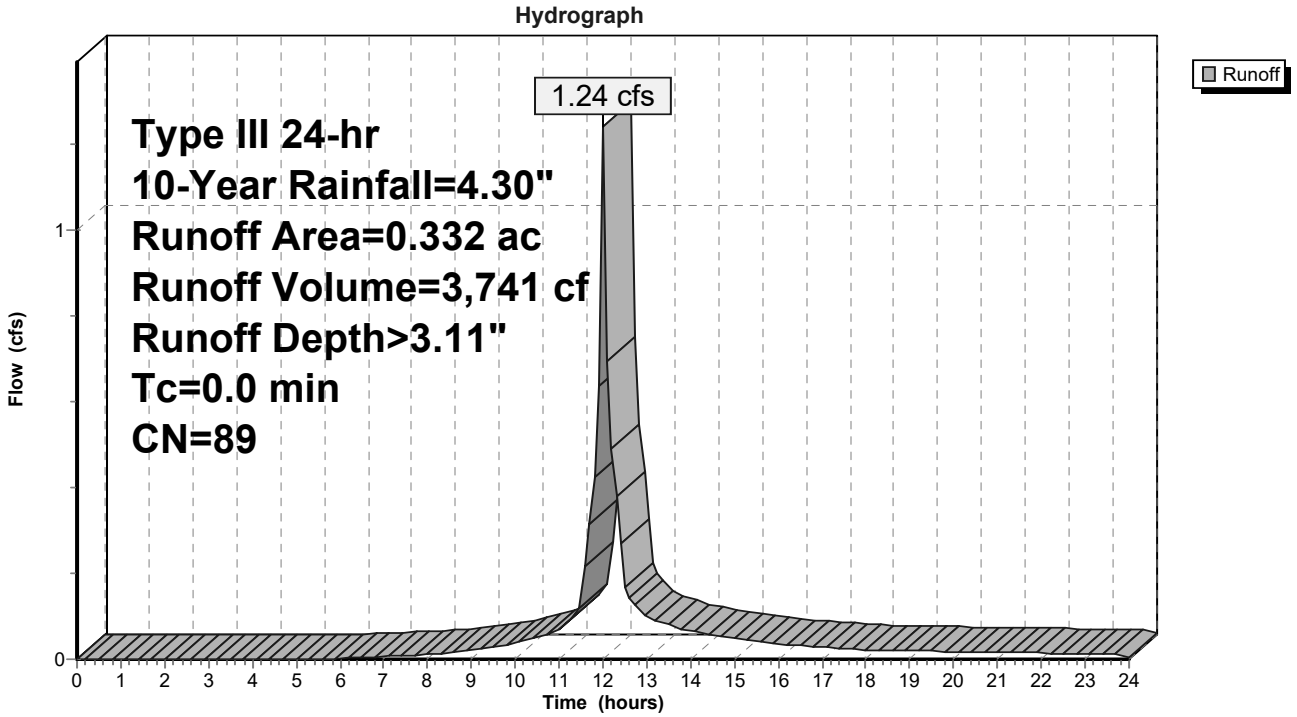
Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 1.24 cfs @ 12.00 hrs, Volume= 3,741 cf, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (ac)	CN	Description
0.183	98	Paved parking, HSG B
0.067	98	Roofs, HSG B
0.081	61	>75% Grass cover, Good, HSG B
0.332	89	Weighted Average
0.081		24.51% Pervious Area
0.251		75.49% Impervious Area

Subcatchment EX-1: Subcat EX-1



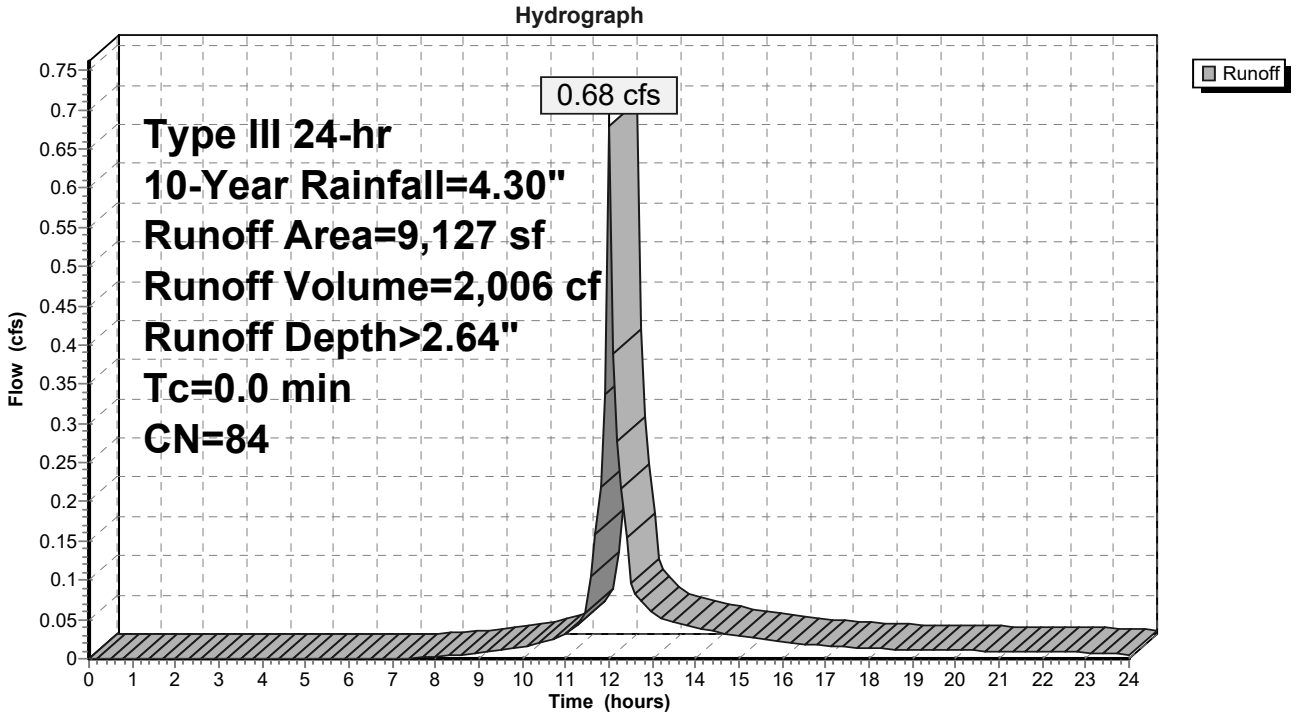
Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 0.68 cfs @ 12.00 hrs, Volume= 2,006 cf, Depth> 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
3,439	61	>75% Grass cover, Good, HSG B
5,688	98	Paved parking, HSG B
9,127	84	Weighted Average
3,439		37.68% Pervious Area
5,688		62.32% Impervious Area

Subcatchment EX-2: Subcat EX-2

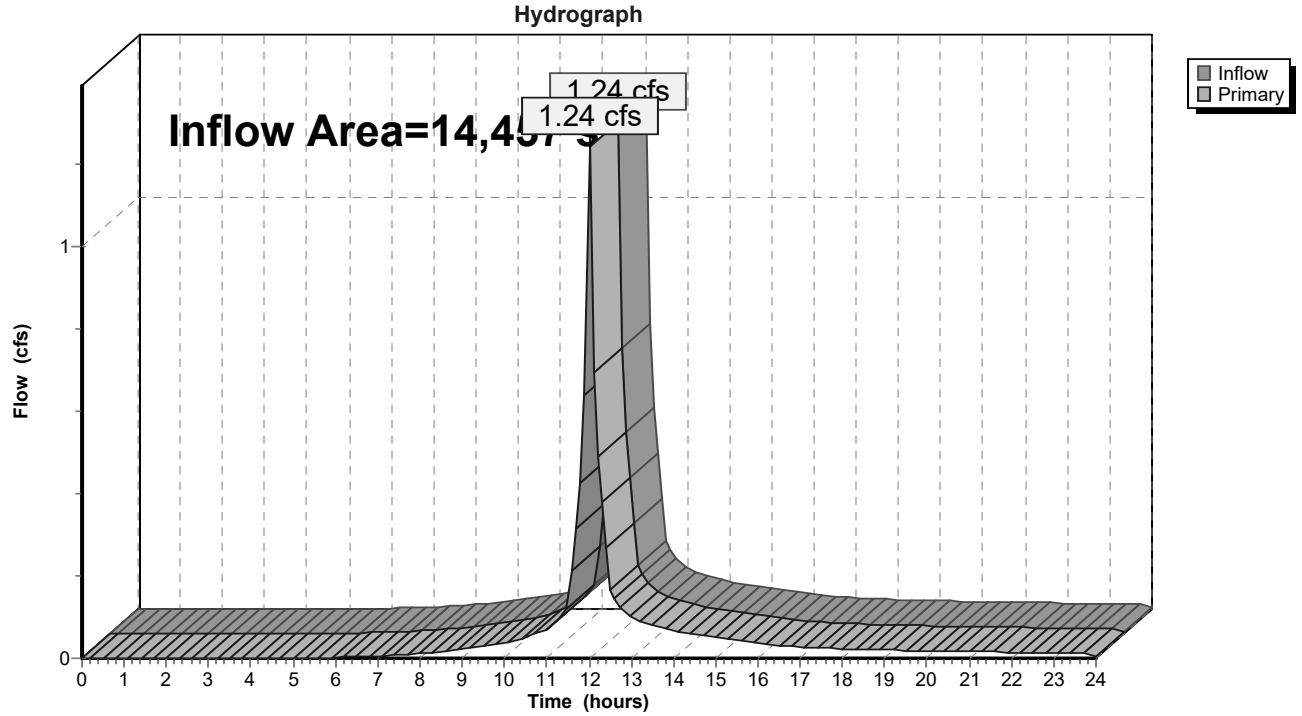


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 14,457 sf, 75.49% Impervious, Inflow Depth > 3.11" for 10-Year event
Inflow = 1.24 cfs @ 12.00 hrs, Volume= 3,741 cf
Primary = 1.24 cfs @ 12.00 hrs, Volume= 3,741 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

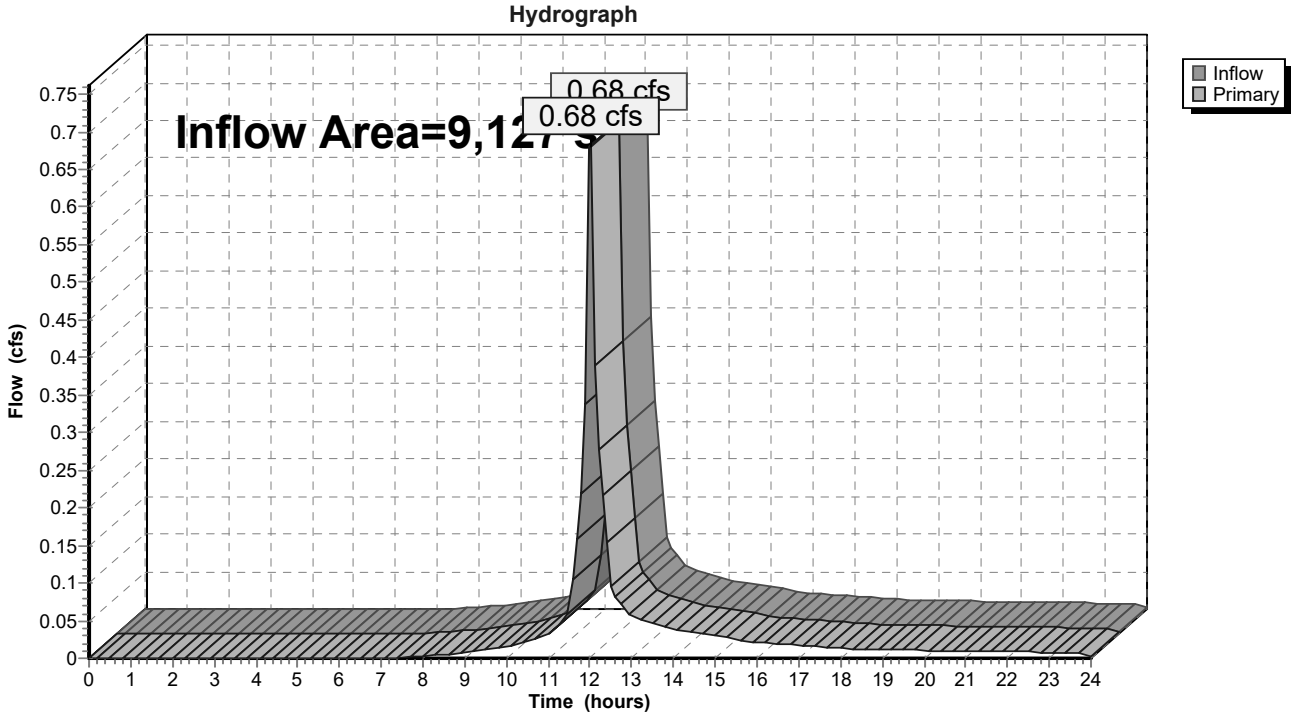


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,127 sf, 62.32% Impervious, Inflow Depth > 2.64" for 10-Year event
Inflow = 0.68 cfs @ 12.00 hrs, Volume= 2,006 cf
Primary = 0.68 cfs @ 12.00 hrs, Volume= 2,006 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.332 ac 75.49% Impervious Runoff Depth>3.96"
Tc=0.0 min CN=89 Runoff=1.57 cfs 4,775 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=9,127 sf 62.32% Impervious Runoff Depth>3.45"
Tc=0.0 min CN=84 Runoff=0.88 cfs 2,627 cf

Link POA-1: Point of Analysis 1 Inflow=1.57 cfs 4,775 cf
Primary=1.57 cfs 4,775 cf

Link POA-2: Point of Analysis 2 Inflow=0.88 cfs 2,627 cf
Primary=0.88 cfs 2,627 cf

Total Runoff Area = 23,584 sf Runoff Volume = 7,402 cf Average Runoff Depth = 3.77"
29.61% Pervious = 6,982 sf 70.39% Impervious = 16,602 sf

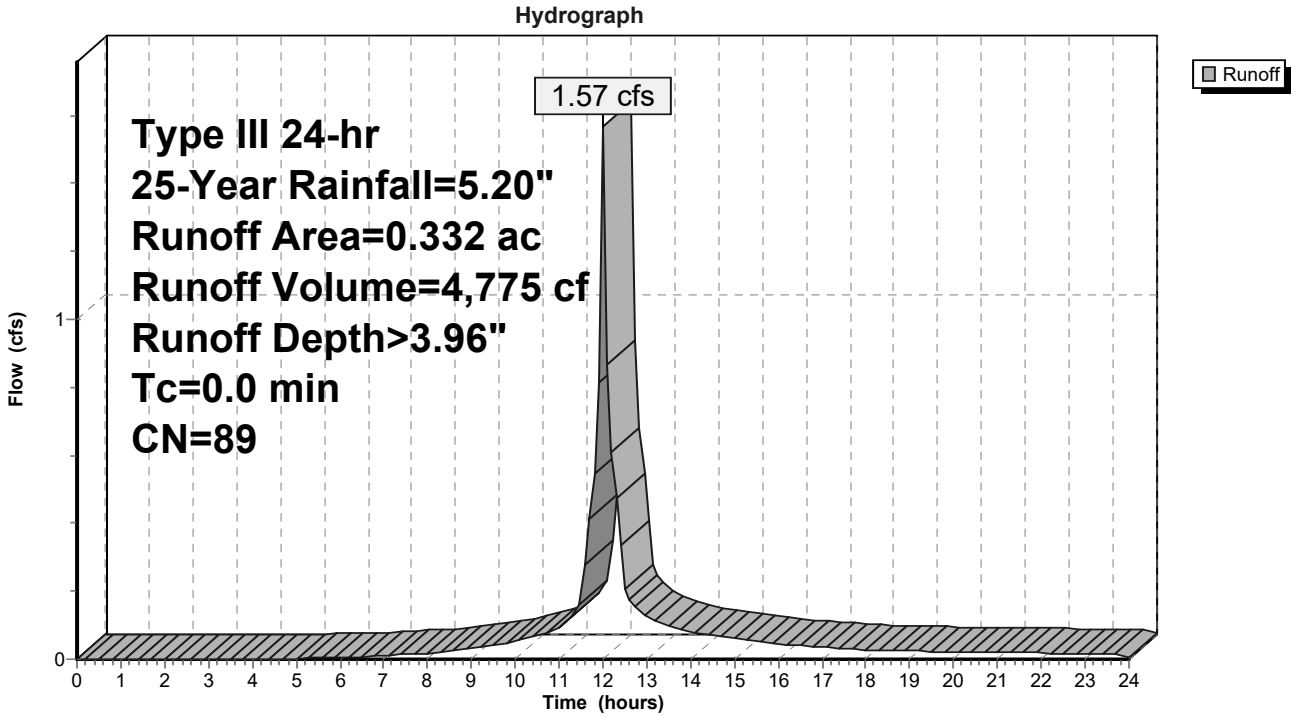
Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 1.57 cfs @ 12.00 hrs, Volume= 4,775 cf, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

Area (ac)	CN	Description
0.183	98	Paved parking, HSG B
0.067	98	Roofs, HSG B
0.081	61	>75% Grass cover, Good, HSG B
0.332	89	Weighted Average
0.081		24.51% Pervious Area
0.251		75.49% Impervious Area

Subcatchment EX-1: Subcat EX-1



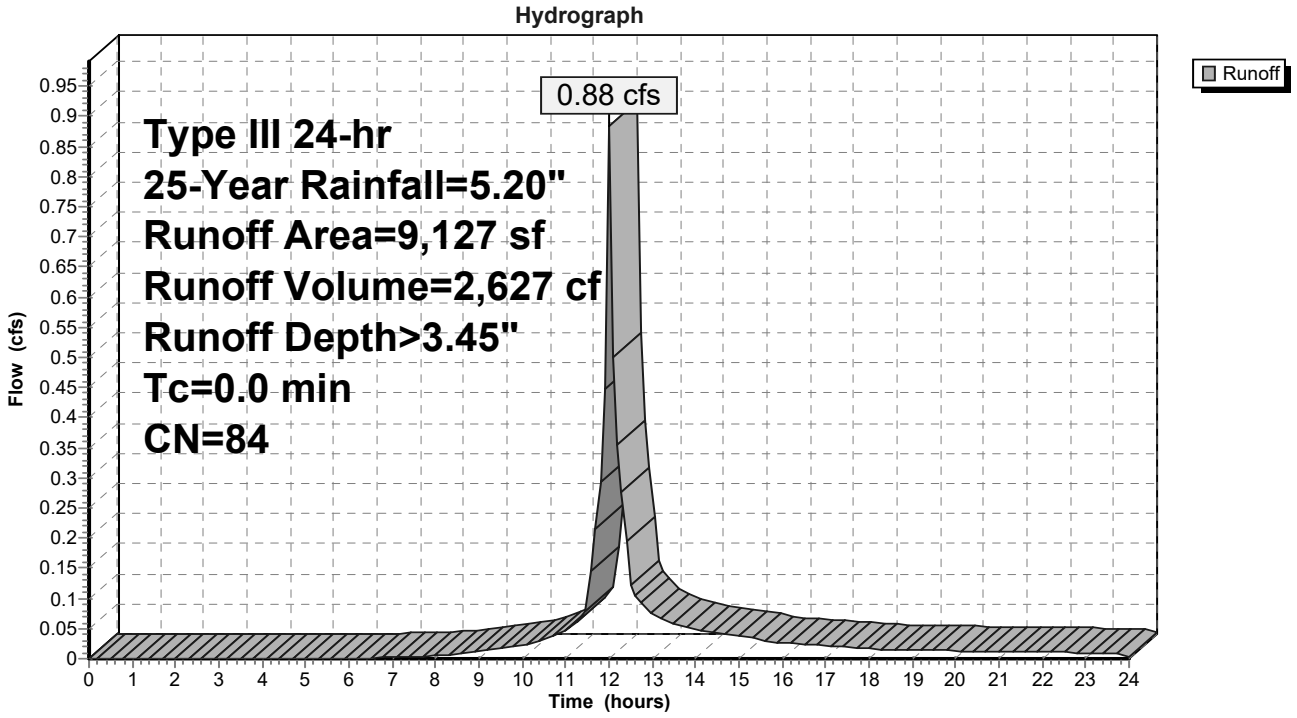
Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 0.88 cfs @ 12.00 hrs, Volume= 2,627 cf, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

Area (sf)	CN	Description
3,439	61	>75% Grass cover, Good, HSG B
5,688	98	Paved parking, HSG B
9,127	84	Weighted Average
3,439		37.68% Pervious Area
5,688		62.32% Impervious Area

Subcatchment EX-2: Subcat EX-2

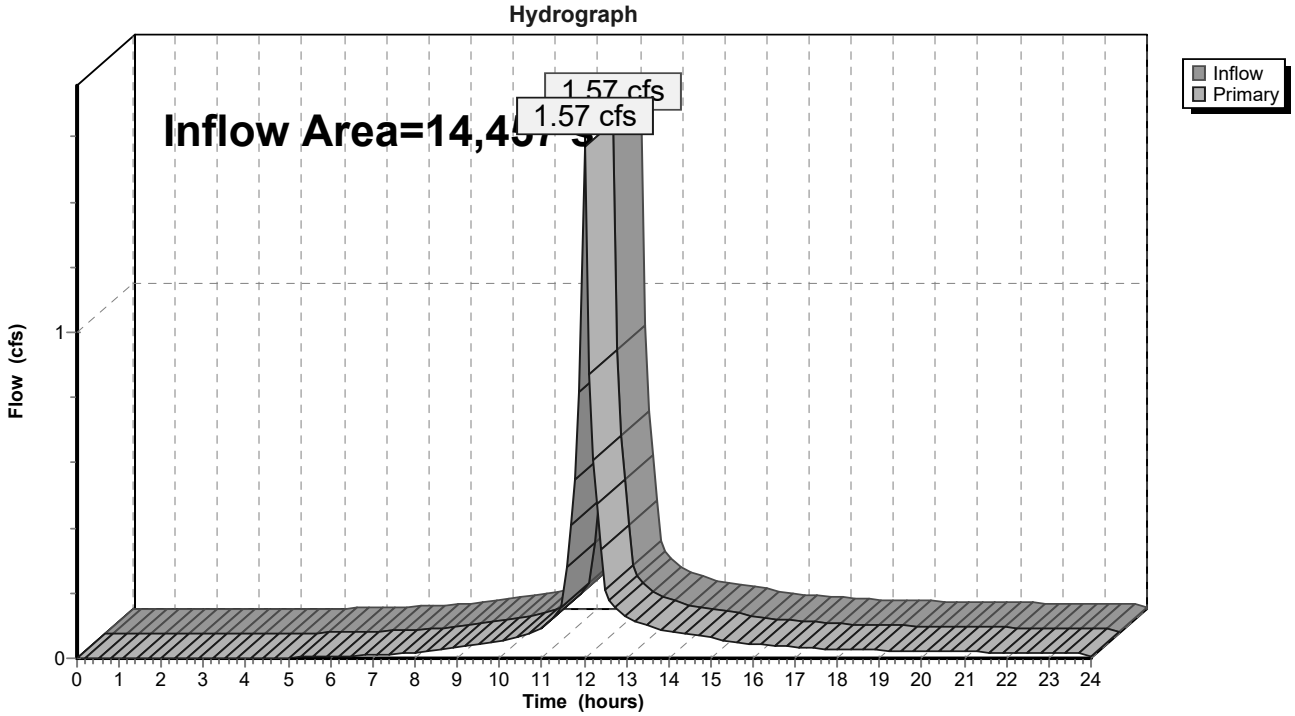


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 14,457 sf, 75.49% Impervious, Inflow Depth > 3.96" for 25-Year event
Inflow = 1.57 cfs @ 12.00 hrs, Volume= 4,775 cf
Primary = 1.57 cfs @ 12.00 hrs, Volume= 4,775 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

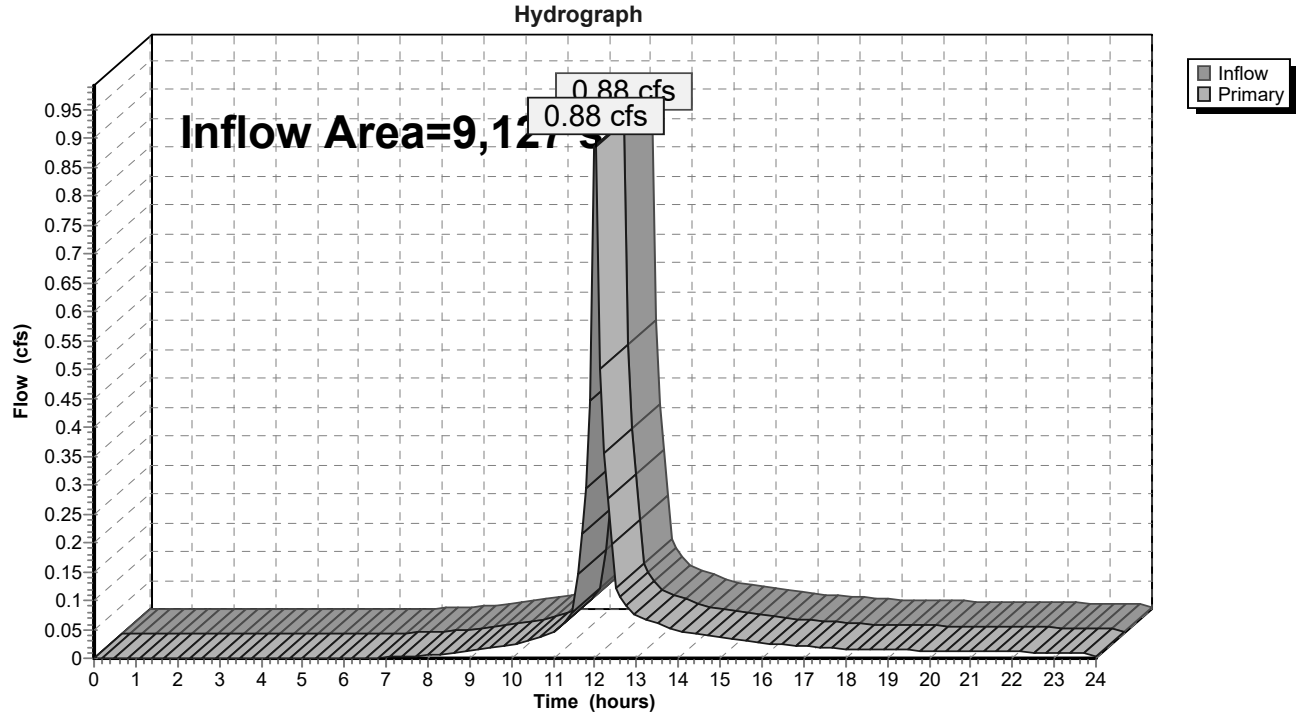


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,127 sf, 62.32% Impervious, Inflow Depth > 3.45" for 25-Year event
Inflow = 0.88 cfs @ 12.00 hrs, Volume= 2,627 cf
Primary = 0.88 cfs @ 12.00 hrs, Volume= 2,627 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.332 ac 75.49% Impervious Runoff Depth>4.45"
Tc=0.0 min CN=89 Runoff=1.75 cfs 5,355 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=9,127 sf 62.32% Impervious Runoff Depth>3.92"
Tc=0.0 min CN=84 Runoff=1.00 cfs 2,979 cf

Link POA-1: Point of Analysis 1 Inflow=1.75 cfs 5,355 cf
Primary=1.75 cfs 5,355 cf

Link POA-2: Point of Analysis 2 Inflow=1.00 cfs 2,979 cf
Primary=1.00 cfs 2,979 cf

Total Runoff Area = 23,584 sf Runoff Volume = 8,334 cf Average Runoff Depth = 4.24"
29.61% Pervious = 6,982 sf 70.39% Impervious = 16,602 sf

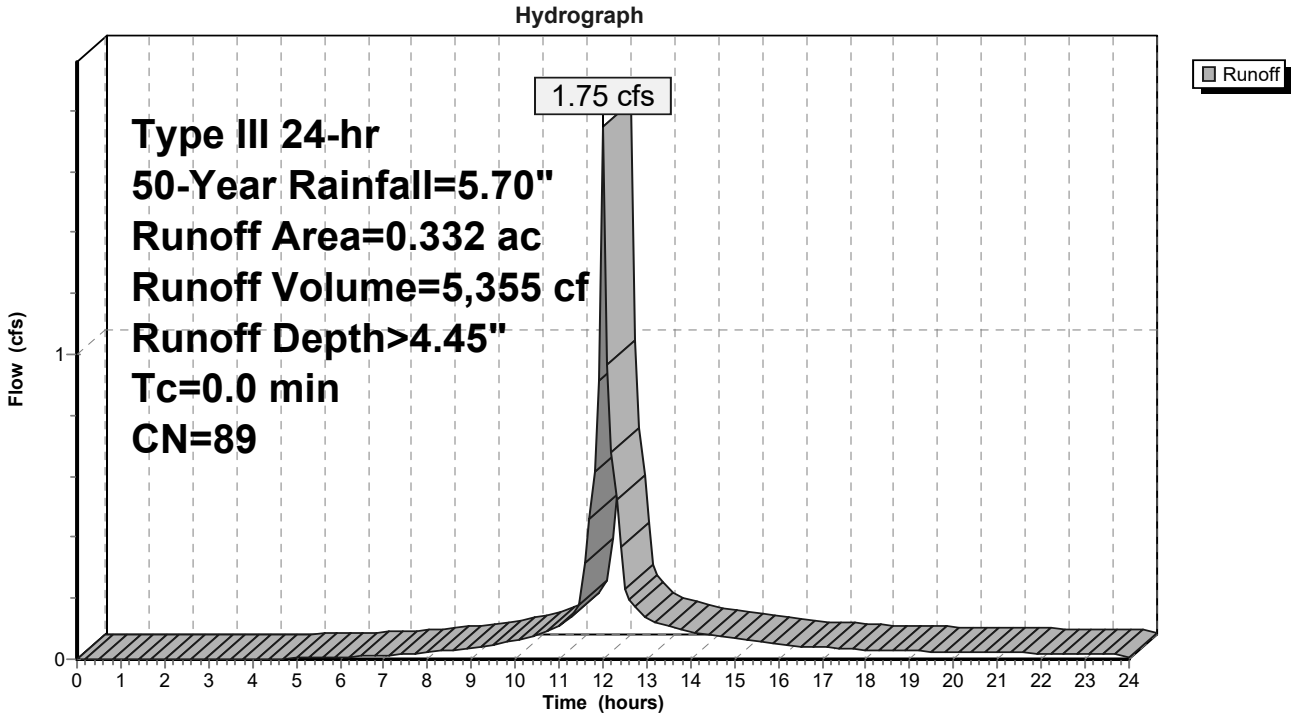
Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 1.75 cfs @ 12.00 hrs, Volume= 5,355 cf, Depth> 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=5.70"

Area (ac)	CN	Description
0.183	98	Paved parking, HSG B
0.067	98	Roofs, HSG B
0.081	61	>75% Grass cover, Good, HSG B
0.332	89	Weighted Average
0.081		24.51% Pervious Area
0.251		75.49% Impervious Area

Subcatchment EX-1: Subcat EX-1



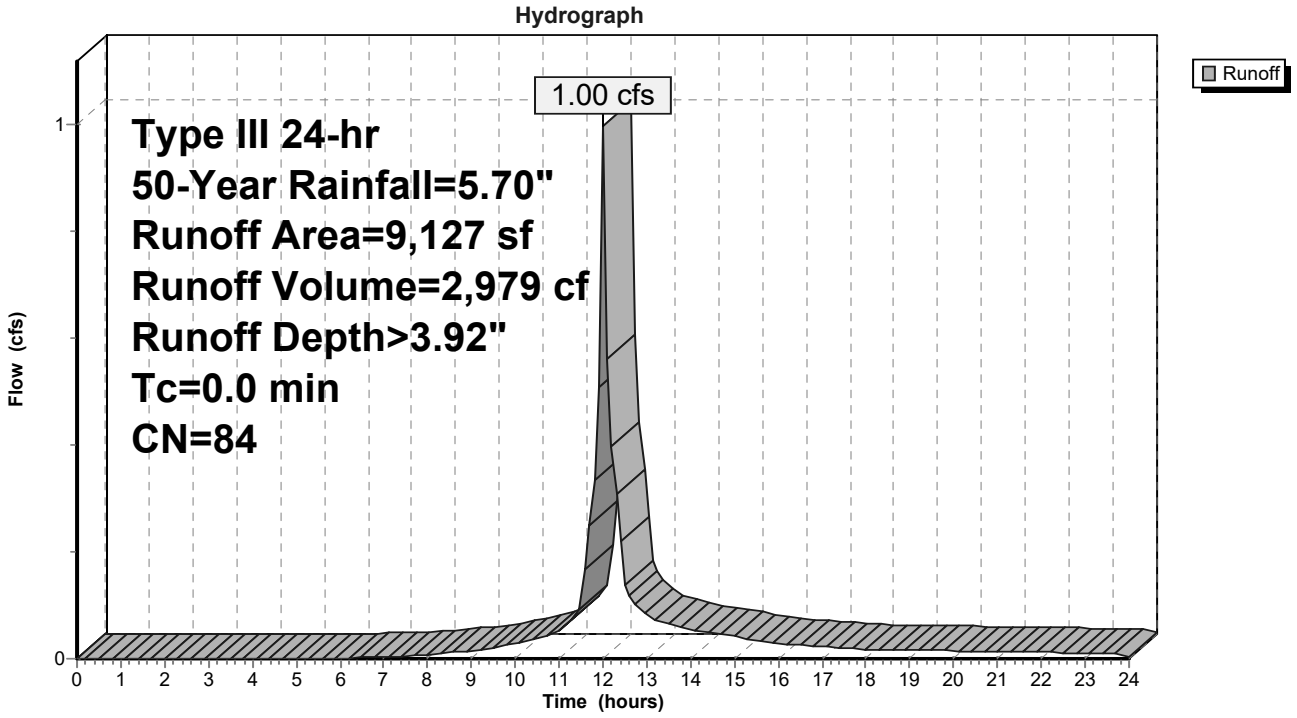
Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 1.00 cfs @ 12.00 hrs, Volume= 2,979 cf, Depth> 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=5.70"

Area (sf)	CN	Description
3,439	61	>75% Grass cover, Good, HSG B
5,688	98	Paved parking, HSG B
9,127	84	Weighted Average
3,439		37.68% Pervious Area
5,688		62.32% Impervious Area

Subcatchment EX-2: Subcat EX-2

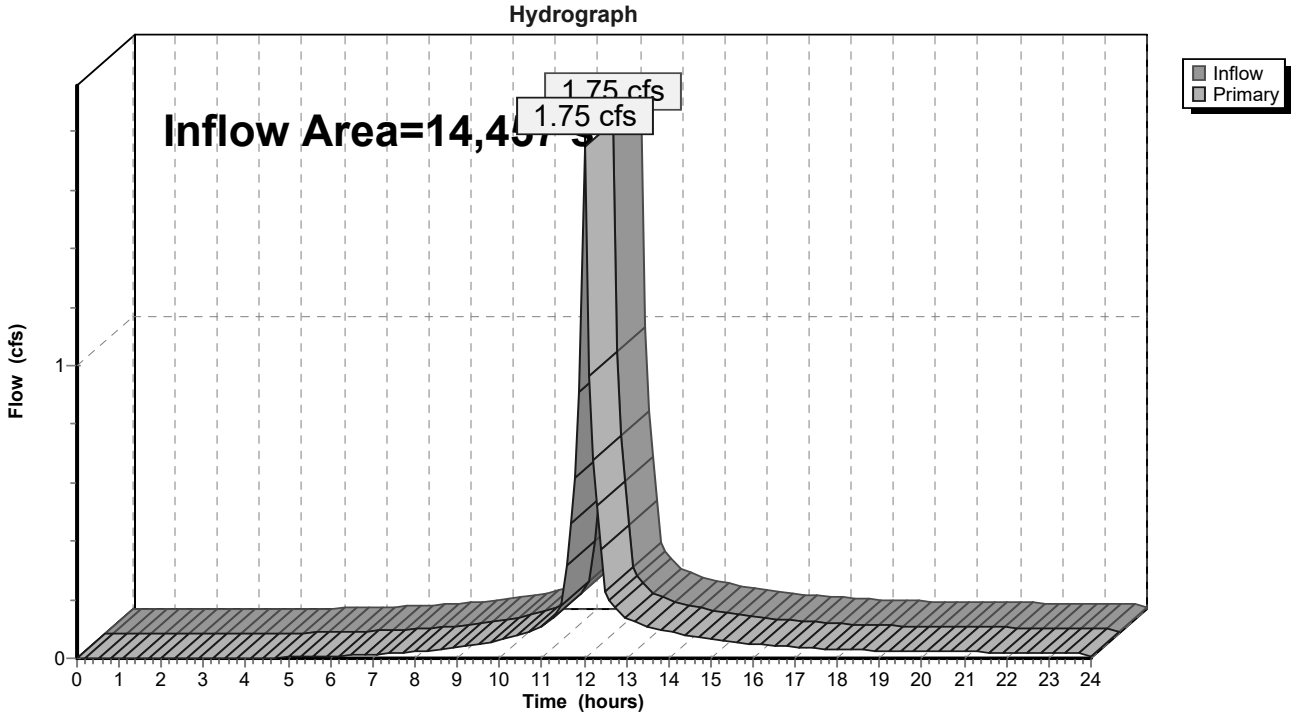


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 14,457 sf, 75.49% Impervious, Inflow Depth > 4.45" for 50-Year event
Inflow = 1.75 cfs @ 12.00 hrs, Volume= 5,355 cf
Primary = 1.75 cfs @ 12.00 hrs, Volume= 5,355 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

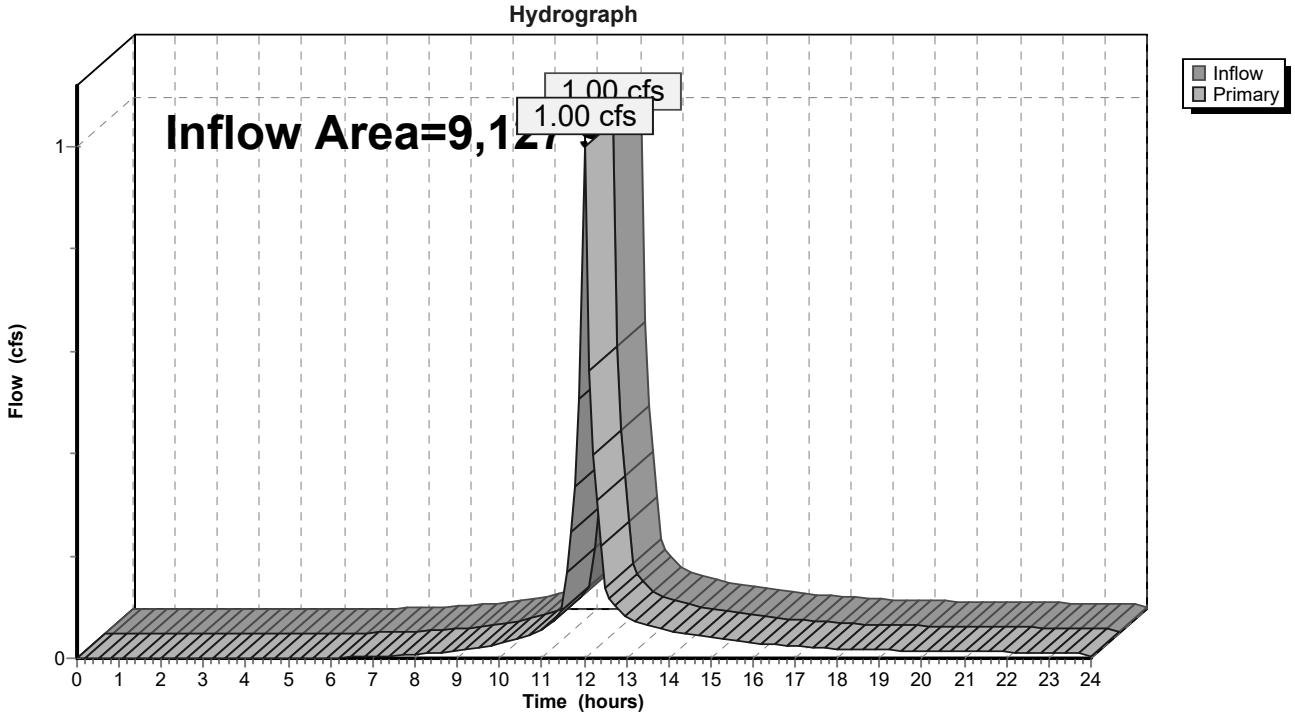


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,127 sf, 62.32% Impervious, Inflow Depth > 3.92" for 50-Year event
Inflow = 1.00 cfs @ 12.00 hrs, Volume= 2,979 cf
Primary = 1.00 cfs @ 12.00 hrs, Volume= 2,979 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



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Post-Development Hydrological Computations

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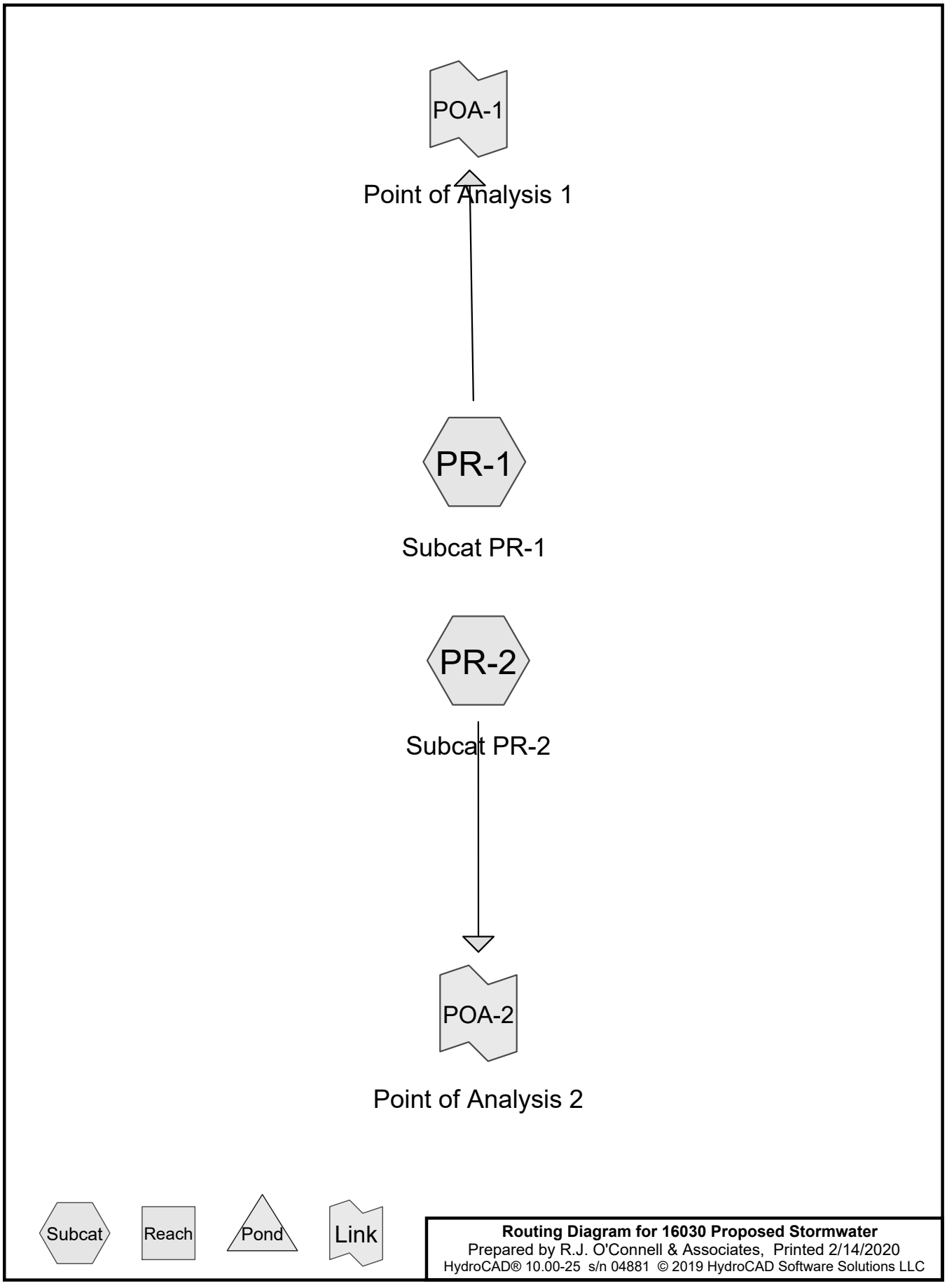


Routing Diagram for 16030 Proposed Stormwater
Prepared by R.J. O'Connell & Associates, Printed 2/14/2020
HydroCAD® 10.00-25 s/n 04881 © 2019 HydroCAD Software Solutions LLC

Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=13,997 sf 46.18% Impervious Runoff Depth>1.13"
Tc=0.0 min CN=78 Runoff=0.44 cfs 1,317 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=9,587 sf 25.56% Impervious Runoff Depth>0.71"
Tc=0.0 min CN=70 Runoff=0.17 cfs 571 cf

Link POA-1: Point of Analysis 1 Inflow=0.44 cfs 1,317 cf
Primary=0.44 cfs 1,317 cf

Link POA-2: Point of Analysis 2 Inflow=0.17 cfs 571 cf
Primary=0.17 cfs 571 cf

Total Runoff Area = 23,584 sf Runoff Volume = 1,887 cf Average Runoff Depth = 0.96"
62.20% Pervious = 14,669 sf 37.80% Impervious = 8,915 sf

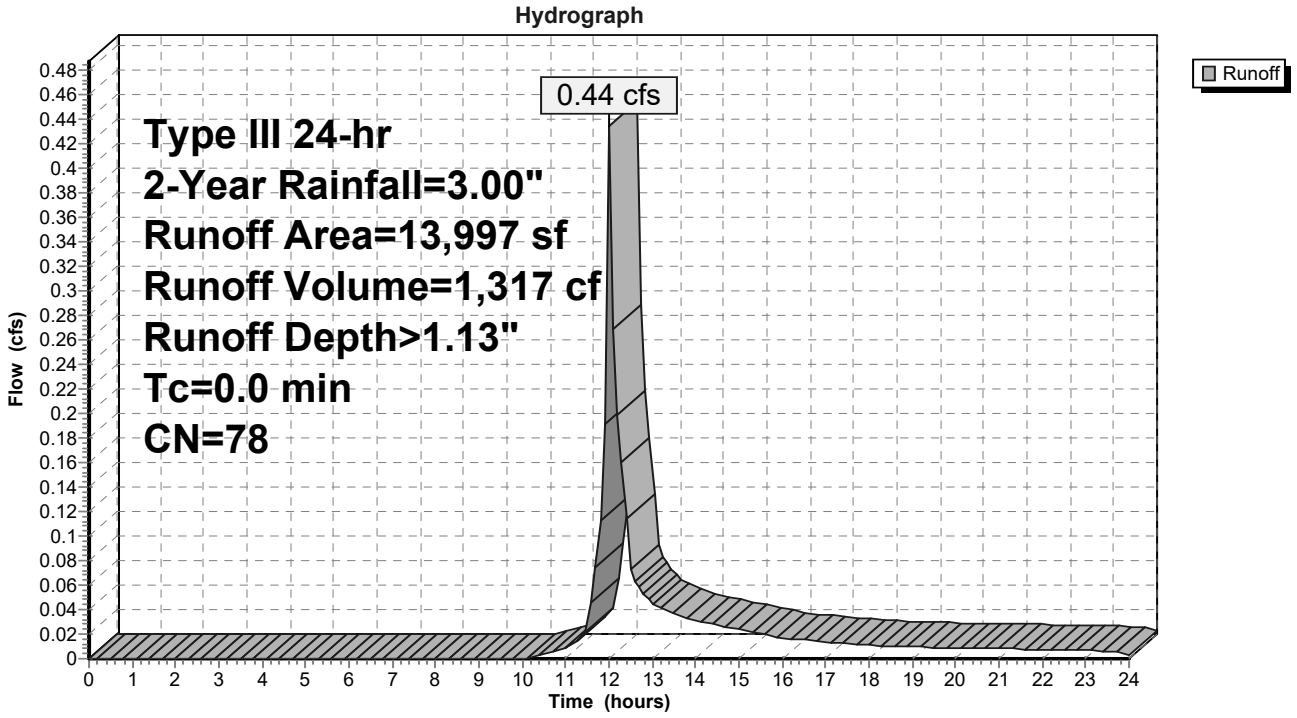
Summary for Subcatchment PR-1: Subcat PR-1

Runoff = 0.44 cfs @ 12.01 hrs, Volume= 1,317 cf, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
6,464	98	Paved parking, HSG B
7,533	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,533		53.82% Pervious Area
6,464		46.18% Impervious Area

Subcatchment PR-1: Subcat PR-1



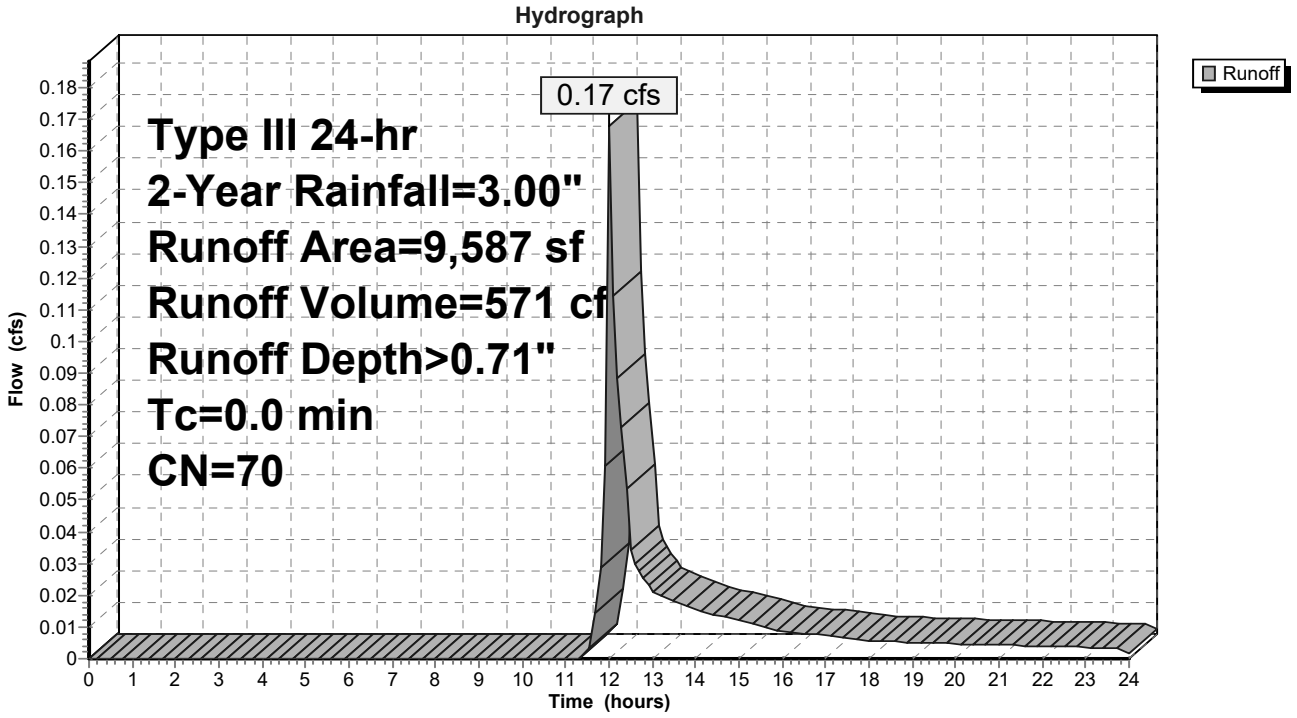
Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.17 cfs @ 12.02 hrs, Volume= 571 cf, Depth> 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
7,136	61	>75% Grass cover, Good, HSG B
2,451	98	Paved parking, HSG B
9,587	70	Weighted Average
7,136		74.44% Pervious Area
2,451		25.56% Impervious Area

Subcatchment PR-2: Subcat PR-2

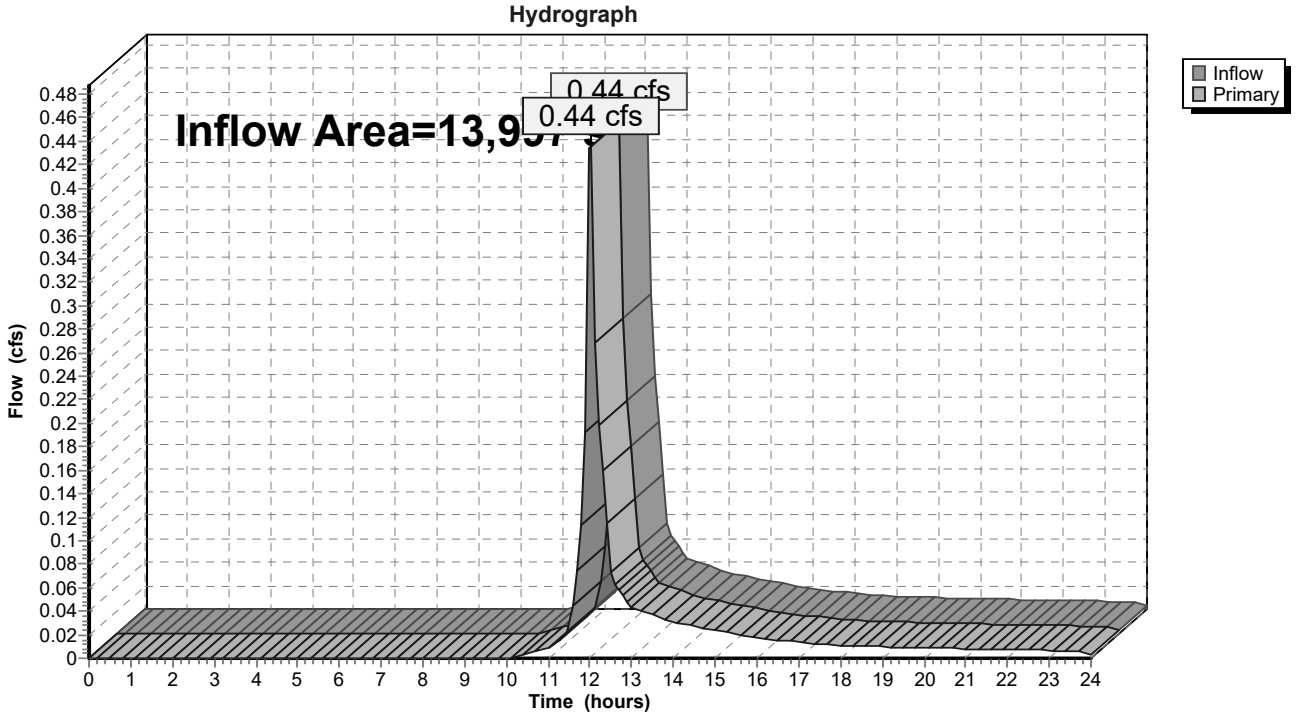


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.18% Impervious, Inflow Depth > 1.13" for 2-Year event
Inflow = 0.44 cfs @ 12.01 hrs, Volume= 1,317 cf
Primary = 0.44 cfs @ 12.01 hrs, Volume= 1,317 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

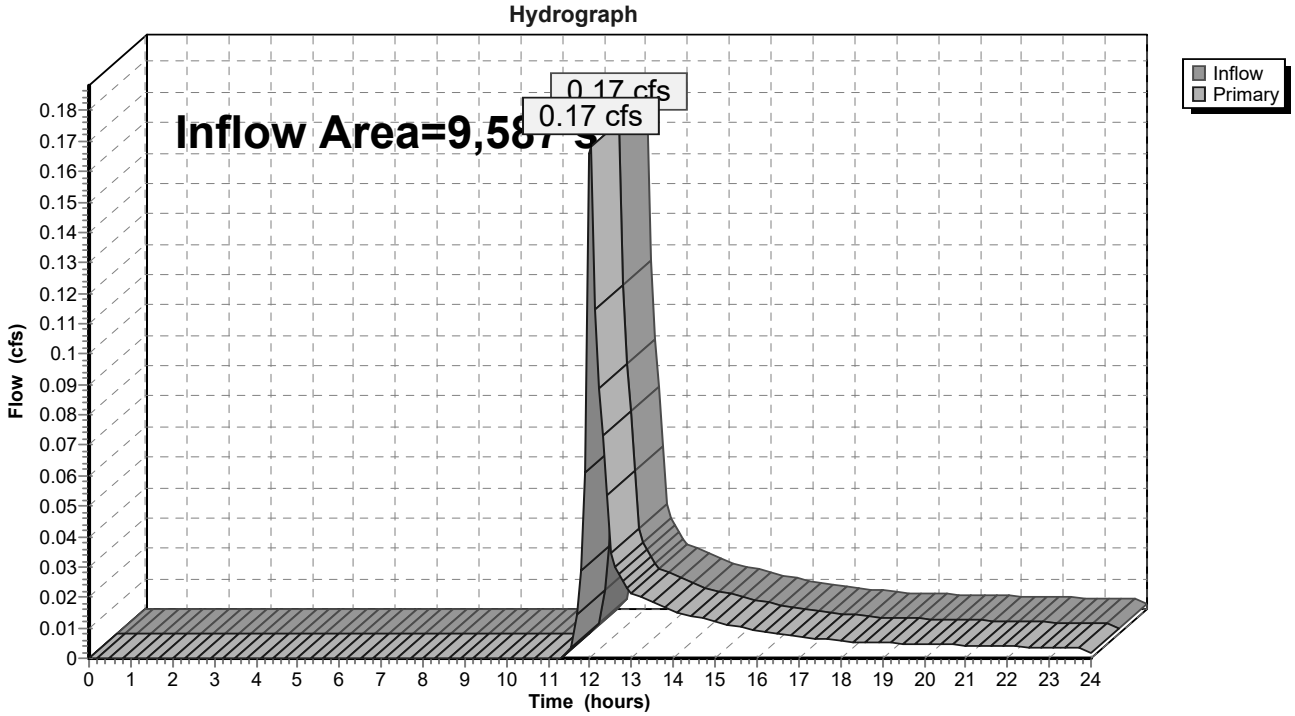


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 25.56% Impervious, Inflow Depth > 0.71" for 2-Year event
Inflow = 0.17 cfs @ 12.02 hrs, Volume= 571 cf
Primary = 0.17 cfs @ 12.02 hrs, Volume= 571 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=13,997 sf 46.18% Impervious Runoff Depth>2.13"
Tc=0.0 min CN=78 Runoff=0.84 cfs 2,483 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=9,587 sf 25.56% Impervious Runoff Depth>1.53"
Tc=0.0 min CN=70 Runoff=0.40 cfs 1,225 cf

Link POA-1: Point of Analysis 1 Inflow=0.84 cfs 2,483 cf
Primary=0.84 cfs 2,483 cf

Link POA-2: Point of Analysis 2 Inflow=0.40 cfs 1,225 cf
Primary=0.40 cfs 1,225 cf

Total Runoff Area = 23,584 sf Runoff Volume = 3,708 cf Average Runoff Depth = 1.89"
62.20% Pervious = 14,669 sf 37.80% Impervious = 8,915 sf

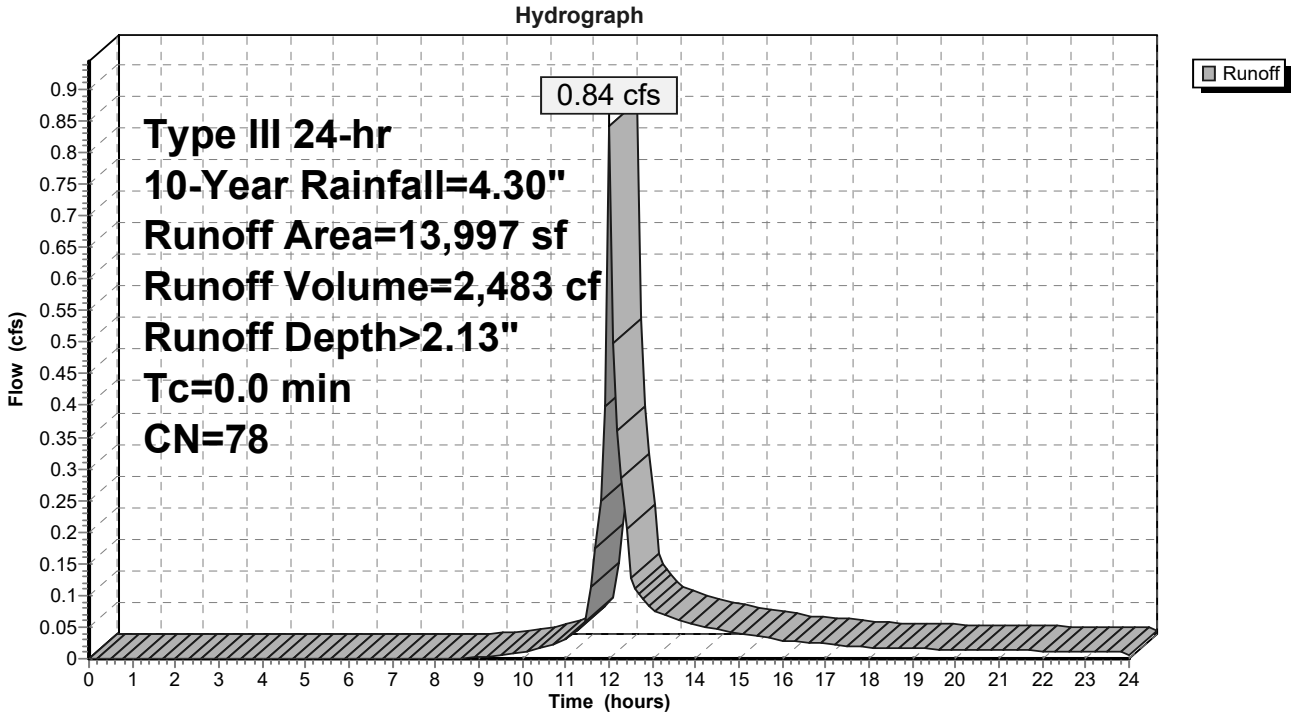
Summary for Subcatchment PR-1: Subcat PR-1

Runoff = 0.84 cfs @ 12.01 hrs, Volume= 2,483 cf, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
6,464	98	Paved parking, HSG B
7,533	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,533		53.82% Pervious Area
6,464		46.18% Impervious Area

Subcatchment PR-1: Subcat PR-1



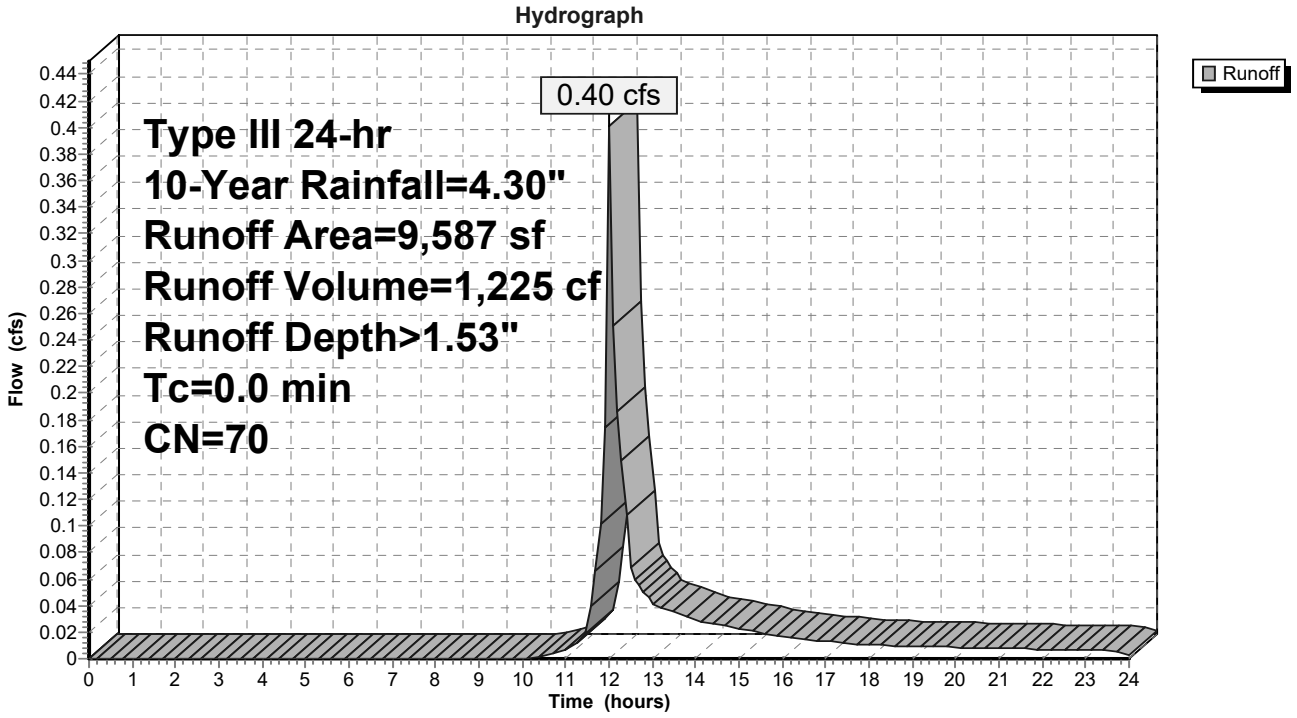
Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.40 cfs @ 12.01 hrs, Volume= 1,225 cf, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
7,136	61	>75% Grass cover, Good, HSG B
2,451	98	Paved parking, HSG B
9,587	70	Weighted Average
7,136		74.44% Pervious Area
2,451		25.56% Impervious Area

Subcatchment PR-2: Subcat PR-2

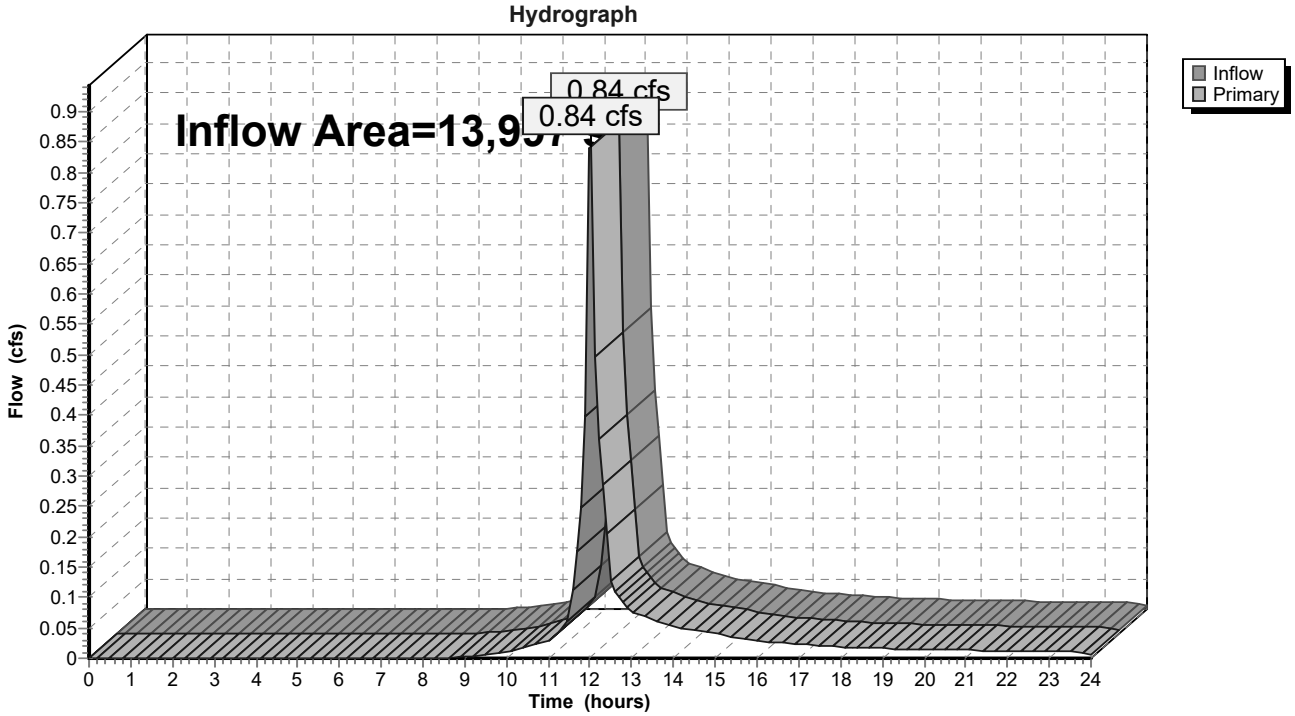


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.18% Impervious, Inflow Depth > 2.13" for 10-Year event
Inflow = 0.84 cfs @ 12.01 hrs, Volume= 2,483 cf
Primary = 0.84 cfs @ 12.01 hrs, Volume= 2,483 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

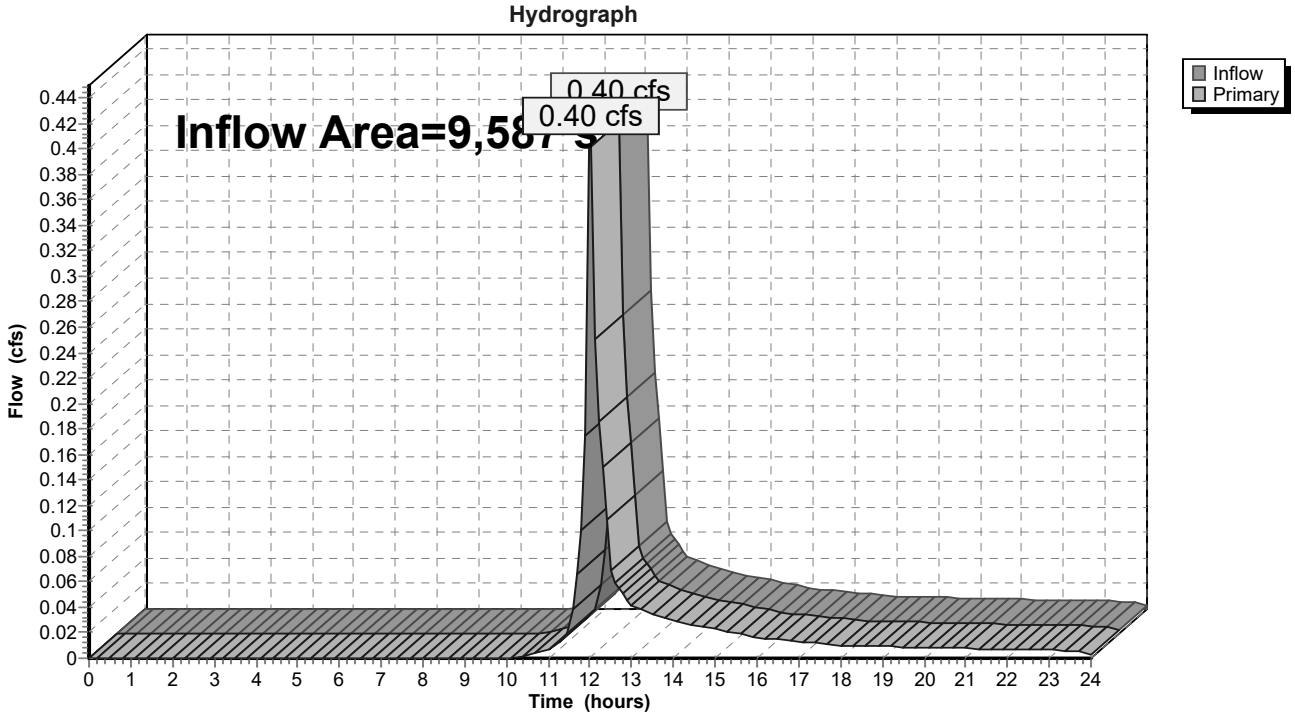


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 25.56% Impervious, Inflow Depth > 1.53" for 10-Year event
Inflow = 0.40 cfs @ 12.01 hrs, Volume= 1,225 cf
Primary = 0.40 cfs @ 12.01 hrs, Volume= 1,225 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=13,997 sf 46.18% Impervious Runoff Depth>2.88"
Tc=0.0 min CN=78 Runoff=1.14 cfs 3,362 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=9,587 sf 25.56% Impervious Runoff Depth>2.19"
Tc=0.0 min CN=70 Runoff=0.59 cfs 1,746 cf

Link POA-1: Point of Analysis 1 Inflow=1.14 cfs 3,362 cf
Primary=1.14 cfs 3,362 cf

Link POA-2: Point of Analysis 2 Inflow=0.59 cfs 1,746 cf
Primary=0.59 cfs 1,746 cf

Total Runoff Area = 23,584 sf Runoff Volume = 5,108 cf Average Runoff Depth = 2.60"
62.20% Pervious = 14,669 sf 37.80% Impervious = 8,915 sf

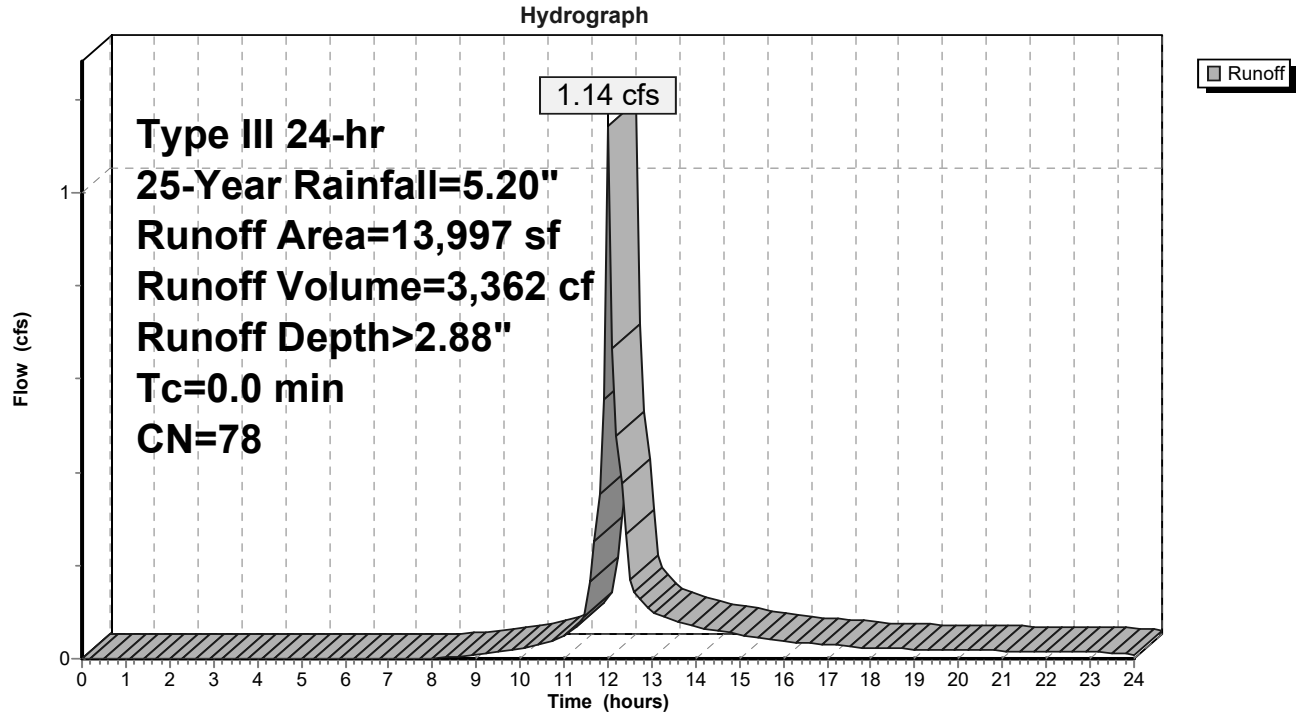
Summary for Subcatchment PR-1: Subcat PR-1

Runoff = 1.14 cfs @ 12.01 hrs, Volume= 3,362 cf, Depth> 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

Area (sf)	CN	Description
6,464	98	Paved parking, HSG B
7,533	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,533		53.82% Pervious Area
6,464		46.18% Impervious Area

Subcatchment PR-1: Subcat PR-1



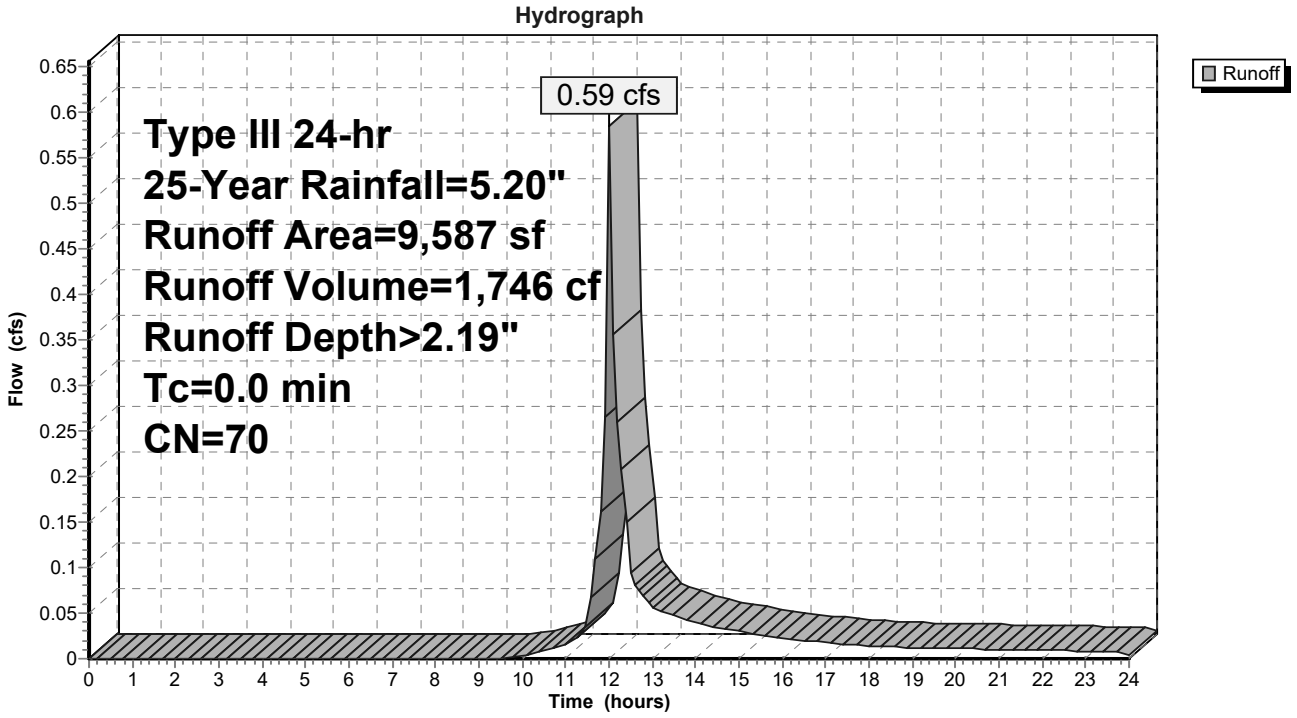
Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.59 cfs @ 12.01 hrs, Volume= 1,746 cf, Depth> 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

Area (sf)	CN	Description
7,136	61	>75% Grass cover, Good, HSG B
2,451	98	Paved parking, HSG B
9,587	70	Weighted Average
7,136		74.44% Pervious Area
2,451		25.56% Impervious Area

Subcatchment PR-2: Subcat PR-2

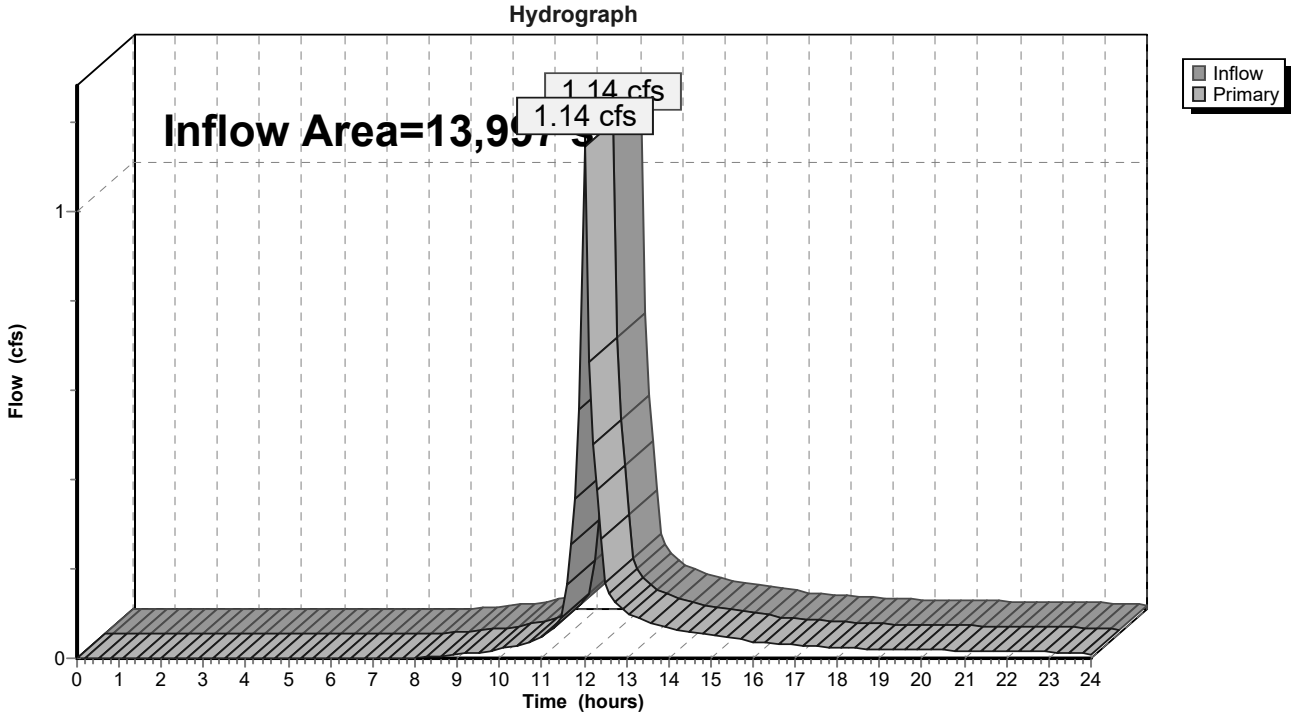


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.18% Impervious, Inflow Depth > 2.88" for 25-Year event
Inflow = 1.14 cfs @ 12.01 hrs, Volume= 3,362 cf
Primary = 1.14 cfs @ 12.01 hrs, Volume= 3,362 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

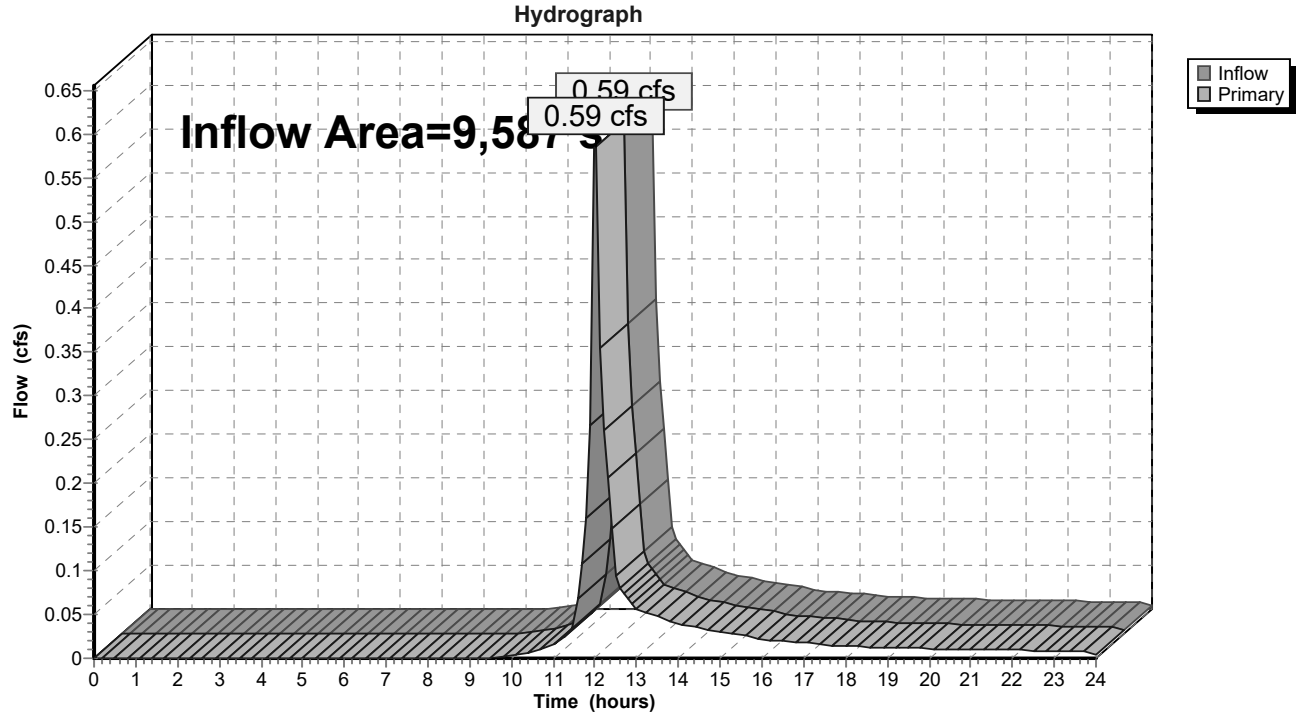


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 25.56% Impervious, Inflow Depth > 2.19" for 25-Year event
Inflow = 0.59 cfs @ 12.01 hrs, Volume= 1,746 cf
Primary = 0.59 cfs @ 12.01 hrs, Volume= 1,746 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



Time span=0.00-24.00 hrs, dt=0.10 hrs, 241 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=13,997 sf 46.18% Impervious Runoff Depth>3.32"
Tc=0.0 min CN=78 Runoff=1.31 cfs 3,867 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=9,587 sf 25.56% Impervious Runoff Depth>2.57"
Tc=0.0 min CN=70 Runoff=0.69 cfs 2,052 cf

Link POA-1: Point of Analysis 1 Inflow=1.31 cfs 3,867 cf
Primary=1.31 cfs 3,867 cf

Link POA-2: Point of Analysis 2 Inflow=0.69 cfs 2,052 cf
Primary=0.69 cfs 2,052 cf

Total Runoff Area = 23,584 sf Runoff Volume = 5,920 cf Average Runoff Depth = 3.01"
62.20% Pervious = 14,669 sf 37.80% Impervious = 8,915 sf

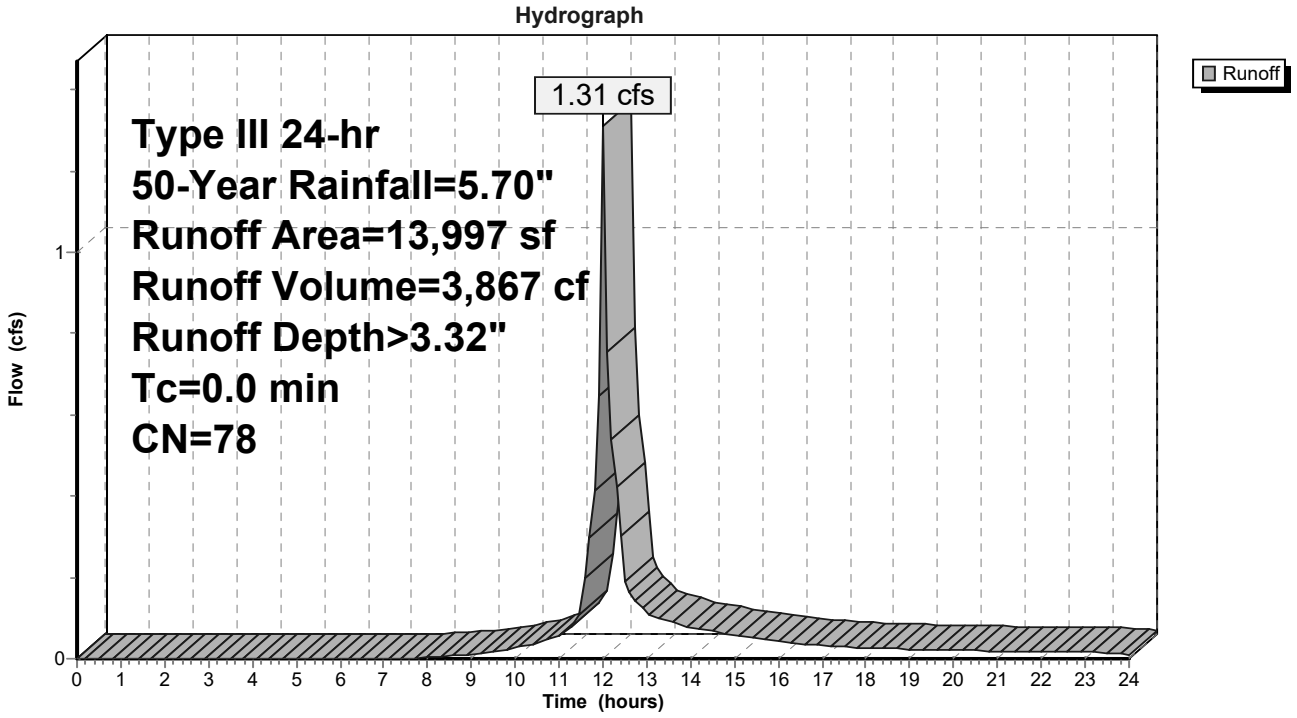
Summary for Subcatchment PR-1: Subcat PR-1

Runoff = 1.31 cfs @ 12.00 hrs, Volume= 3,867 cf, Depth> 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=5.70"

Area (sf)	CN	Description
6,464	98	Paved parking, HSG B
7,533	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,533		53.82% Pervious Area
6,464		46.18% Impervious Area

Subcatchment PR-1: Subcat PR-1



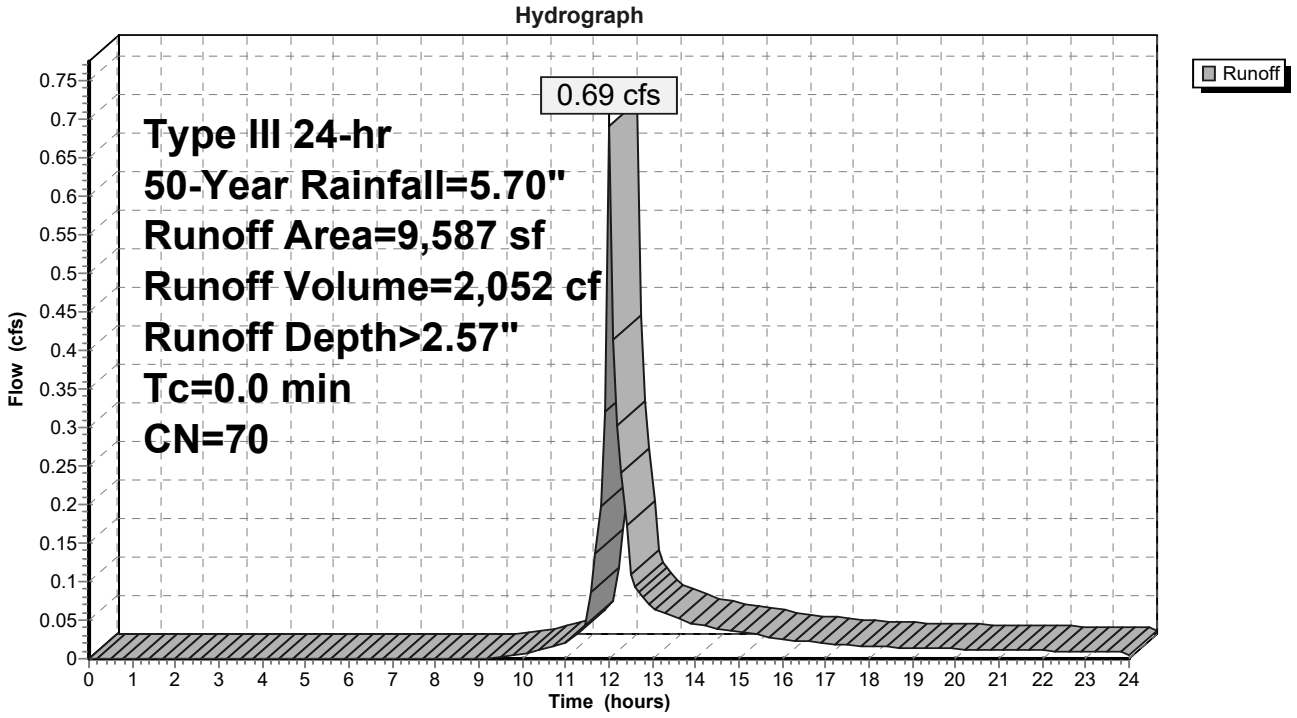
Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.69 cfs @ 12.01 hrs, Volume= 2,052 cf, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=5.70"

Area (sf)	CN	Description
7,136	61	>75% Grass cover, Good, HSG B
2,451	98	Paved parking, HSG B
9,587	70	Weighted Average
7,136		74.44% Pervious Area
2,451		25.56% Impervious Area

Subcatchment PR-2: Subcat PR-2

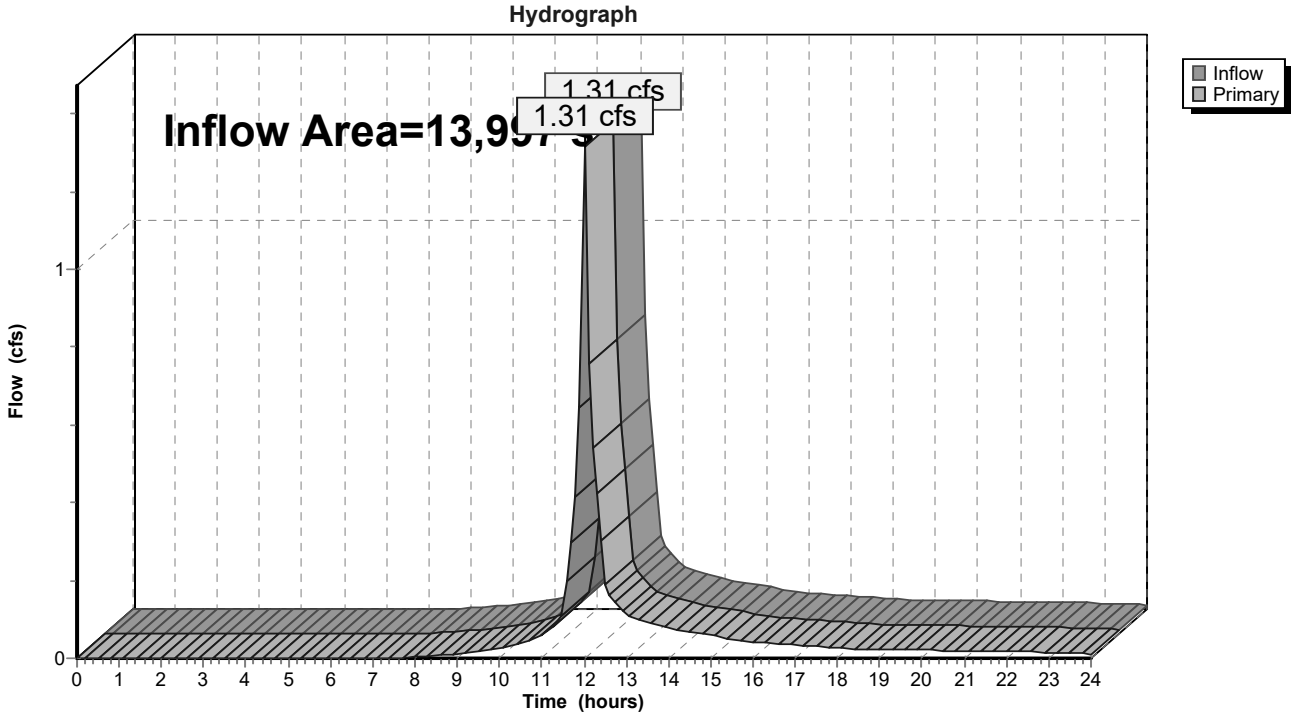


Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.18% Impervious, Inflow Depth > 3.32" for 50-Year event
Inflow = 1.31 cfs @ 12.00 hrs, Volume= 3,867 cf
Primary = 1.31 cfs @ 12.00 hrs, Volume= 3,867 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-1: Point of Analysis 1

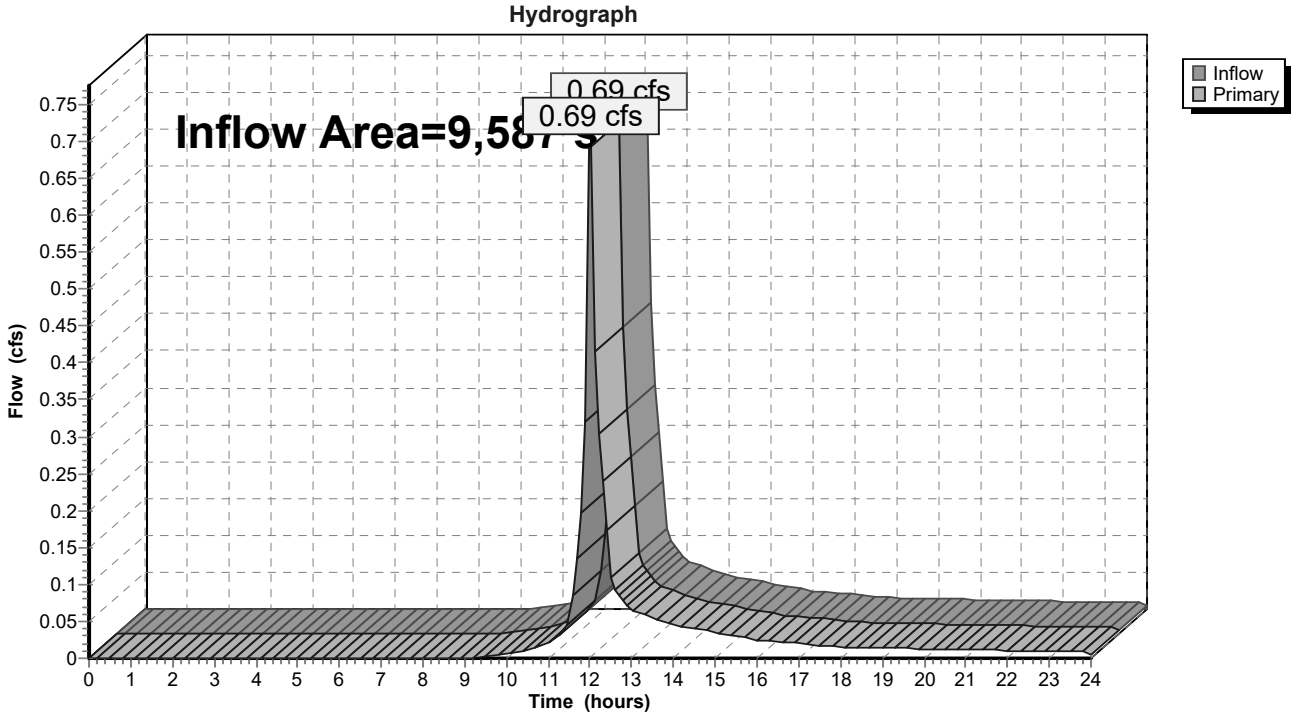


Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 25.56% Impervious, Inflow Depth > 2.57" for 50-Year event
Inflow = 0.69 cfs @ 12.01 hrs, Volume= 2,052 cf
Primary = 0.69 cfs @ 12.01 hrs, Volume= 2,052 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs

Link POA-2: Point of Analysis 2



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APPENDIX B
Inspection and Maintenance Manual (I&M)

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Inspection and Maintenance Manual

Durgin Square
1600 Woodbury Ave
Portsmouth, NH

Prepared for:
Keypoint Partners
One Burlington Woods Drive
Burlington, MA 01803

Prepared by:
R.J. O'Connell & Associates, Inc.
80 Montvale Ave, Suite 201
Stoneham, MA 02180

Date:
February 18, 2020

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TABLE OF CONTENTS

Inspection and Maintenance Manual

INTRODUCTION

This Inspection and Maintenance Manual has been prepared to ensure that the proposed stormwater management system for the proposed driveway at Durgin Square functions properly and to develop and carry out suitable practices for source control and pollution prevention. It consists of four sections:

Section 1 - Stormwater Management System - Inspection and Maintenance, which describes the various components of the stormwater management system, identifies the inspection and maintenance tasks to be undertaken and a schedule for implementing these tasks to insure the proper, long-term operation of the system.

Section 2 – Source Control Plan which identifies and implements suitable measures, practices and procedures for source control and pollution prevention.

Section 3 - Snow Management and Disposal Plan which describes how snow removal will be managed and de-icing operations performed.

SECTION 1 – STORMWATER MANAGEMENT SYSTEM - INSPECTION AND MAINTENANCE

The aim of this stormwater Inspection and Maintenance Manual is to ensure the ongoing proper operation and maintenance of the stormwater system and individual Best Management Practices (BMPs) to effectively remove pollutants as designed and meet the New Hampshire water quality objectives. To accomplish this objective, the following BMPs are included in the stormwater management system for Durgin Square:

- Sweeping of paved surface areas to remove solids and reduce suspended solids in surface runoff.
- Installation of a catch basin with deep sump and hood to reduce the discharge of sediment and pollutants.
- Installation of a oil/particle separator for removal of Total Suspended Solids (TSS), oil and grease.

In consideration of the foregoing, it is the ongoing responsibility of the Landowner, his successors and assignees to adequately maintain the on-site stormwater management/BMP facilities. Adequate maintenance is herein defined as good working condition so that these facilities are performing their design functions.

Based on this, the Landowner, his successors and assignees are required to create a Pollution Prevention Team (PPT) that will be responsible for implementing the Inspection and Maintenance Manual. Upon transfer of ownership of the property, the Landowner is required to notify the new owner of the presence of the stormwater management system and the requirements of this Inspection and Maintenance Manual.

Property Information

Address: 1600 Woodbury Ave
Portsmouth, NH 03801

Landowner and Pollution Prevention Team Leader

Owner's Name: DSQ Holding, LLC
Team Leader: Rachel E. Cormier
Title: Senior Property Manager
Office Phone: 781-273-5555
Email: rcormier@keypointpartners.com

Responsibilities: Coordinate all aspects of the Inspection and Maintenance Manual, coordinate and hire the other Pollution Prevention team members in order to conduct inspections, keep all records, coordinate with contractors for maintenance and repairs of the stormwater management system.

Spill Prevention & Control Contractor

The following contacts shall be notified:

Emergency Contact:
Company Name: TBD
Contact Name: TBD
Emergency Phone: TBD

Consultant Contact:
Company Name: TBD.
Contact Name: TBD
Phone: TBD

New Hampshire Department of Environmental Services (DES) Contact
Spill Emergency Coordinator
Contact Name: TBD
Phone: TBD

Municipal Contacts

Department of Public Works (DPW)
Contact Name: Peter Rice, Director of Public Works
Phone: 603-427-1530

Engineering
Contact Name: Terry Desmarais, P.E., City Engineer
Phone: 603-766-1421

Planning Department
Contact Name: Juliet Walker, Planning Director
Phone: 603-610-7296

Other Pollution Prevention Team Members

Member: Qualified Engineering and/or Environmental Consulting Firm(s)
Responsibilities: Conduct scheduled inspections, maintain records, advise the Team Leader of maintenance needs, ensure inspection maintenance and repairs are completed, keep and maintain all records and inspection reports.
Company Name(s): TBD
Address: TBD
Office Phone: TBD

Team Member Training

The Pollution Prevention Team Leader will coordinate an annual in-house training session with the qualified Engineering and/or Environmental Consulting Firm to discuss the Inspection and

Maintenance Manual, ongoing inspection and maintenance and preventative maintenance procedures.

Annual training session will generally include the following:

- Discuss the Inspection and Maintenance Manual
    - What it is- identify potential sources of stormwater pollution and methods of reducing or eliminating that pollution
    - What it contains- emphasize good housekeeping measures and location of potential pollution sources.
    - Pollution Prevention Team-introduce the team and describe their responsibilities, explain that the objective is to continually monitor the stormwater management system and encourage input and assistance from all.
- Review and explain the storm drainage system, how it works and its components, note the receiving resource area in which the storm drainage system discharges into and the role each one of these components play.
- Emphasize the importance of maintaining current and up-to-date inspection reports and maintenance records of BMPs. Documentation shall include any changes to the O&M Plan's procedures to accommodate changes and revisions to BMPs.

The components of the stormwater management system must be inspected, monitored and maintained in accordance with the following in order to ensure that the on-site stormwater management/BMPs are functioning as designed. Routine inspection and proper maintenance of these individual components is essential to providing the long-term operation of the drainage system.

Catch Basin with Deep Sump and Hooded Outlet:

Stormwater runoff from pavement areas is directed to catch basins via curbing and site grading. The catch basin is equipped with a deep (4 foot) sump and hood. The sump is designed to capture sediment and coarse particles and the hoods prevent hydrocarbons and other floatable debris from entering the drainage system. To ensure proper functioning of the catch basins, they will be inspected and maintained as follows:

> Inspection: At least twice a year and after major storm events (2.5 inches or more in a 24-hour period). Structural damage and other malfunctions are to be noted and reported. Grates and hoods are to be inspected to ensure they are not clogged and functioning properly.
>
> Maintenance: Jet cleaned and power washed semi-annually or when the sump is half full by a licensed contractor. Sediment and hydrocarbons will be properly handled and legally disposed of off-site in accordance with local, state, and federal guidelines and regulations. Any structural damage to catch basins, castings and/or hoods will be repaired or replaced upon discovery.

Oil/Particle Separators:

Oil/Particle separators are precast concrete structures designed to treat incoming stormwater runoff, removing suspended solids, thereby preventing the transfer of pollutants downstream. Particle separators will be inspected and maintained as follows:

Inspection: Quarterly and after major storm events (2.5 inches or more in a 24 hour period). The level of accumulated pollutants and indications of vector infestation are to be noted and reported.

Maintenance: Jet vacuumed, and power washed by a licensed contractor semi-annually or as determined by the inspections. Accumulated sediment and hydrocarbons will be disposed of in accordance with applicable local, state, and federal guidelines and regulations. Particle separators will also be cleaned when observed sediment depth is at 80% of the sump capacity. All maintenance will be performed in accordance with manufacturer recommendations.

Sweeping and Site Clean-Up:

Routine sweeping of paved areas is an effective method to provide important nonpoint source pollution control and will be performed by mechanical sweepers. Most stormwater pollutants travel with the suspended solids contained in the stormwater runoff and regular sweeping will help reduce a portion of this load. Sweeping, especially during the period immediately following winter snowmelt (March/April) when road sand and other debris has accumulated on the pavement, will capture a peak sediment load before spring rains wash residual sand from winter applications into nearby resource areas.

Inspection: Paved areas will be inspected for litter on a weekly basis and picked up and disposed of immediately.

Maintenance: All parking areas, sidewalks, driveways and other impervious surfaces (except roofs) will be swept clean of sand, litter, trash, etc. at least twice a year. A log of land/lot sweeping, and cleanup will be kept. Housekeeping concerns noted by residents, guests, PPT members, and others will be noted and acted upon. Separate cleanup services will be conducted at least twice a year, once between November 14 and December 15 (after leaf fall) and once during the month of April (after snow melt). Additional cleanup services will be conducted as necessary.

Open Space/Landscaped Area

Landscaped areas provide groundwater recharge and a buffer between paved areas.

Inspection: Twice a year and after major storm events.

Maintenance: Note and repair any erosion or uneven grades. Remove trash and debris. Rake and seed to maintain vegetative cover.

Curbing:

Although the site grading design generally directs runoff away from curbing, it is still important for the curbing to be in good working order to delineate edge of pavement from grass and landscaped areas.

Inspection: Inspect site curbing semi-annually to ensure sound structural condition.

Maintenance: Repair/replace as needed.

Please refer to Appendix A for the Inspection Forms, which are to be used by the Pollution Prevention Team member responsible for conducting the scheduled inspections.

SECTION 2 – SOURCE CONTROL PLAN

A. MATERIALS COVERED

The following materials or substances are expected to be present onsite after construction:

Cleaning solvents	Petroleum based products
Detergents	Pesticides/Insecticides
Paints/Solvents	Fertilizers/Herbicides
Acids	Pet waste
Solid Waste	Contaminated Soil

B. MATERIALS MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The Pollution Prevention Team Leader will be responsible for ensuring that these procedures are followed:

1. Good Housekeeping

   The following good housekeeping practices will be followed onsite after construction:

   a) An effort will be made to store only enough products required to do the job.
   b) All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
   c) Products will be kept in their original containers with the original manufacturer's label in legible condition.
   d) Substances will not be mixed with one another unless recommended by the manufacturer.
   e) Whenever possible, all of a product will be used up before disposing of the container.
   f) Manufacturer's recommendations for proper use and disposal will be followed.
   g) A Pollution Prevention Team Member will be responsible for daily inspections to ensure proper use and disposal of materials.

2. Hazardous Substances

   These practices will be used to reduce the risks associated with Hazardous Substances. Material Safety Data Sheets (MSDS's) for each product with hazardous properties that is used at the Project will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained on-site, in the management office. Each employee who must handle a

Hazardous Substance will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

a) Products will be kept in original containers with the original labels in legible condition.
b) Original labels and MSDS's will be procured and used for each product.
c) If surplus product must be disposed of, the manufacturer's and local/state/federal required methods for proper disposal must be followed.

3. Hazardous Waste

It is imperative that all Hazardous Waste be properly identified and handled in accordance with all applicable Hazardous Waste Standards, including the storage, transport and disposal of the Hazardous Wastes. There are significant penalties for the improper handling of Hazardous Wastes. It is important that the Pollution Prevention Team Leader seeks appropriate assistance in making the determination of whether a substance or material is a Hazardous Waste. For example, Hazardous Waste may include certain Hazardous Substances, as well as pesticides, paints, paint solvents, cleaning solvents, contaminated soils, and other materials, substances or chemicals that have been discarded (or are to be discarded) as being out-of-date, contaminated, or otherwise unusable. The Pollution Prevention Team Leader is responsible for ensuring that all Pollution Prevention Team Members are instructed as to these Hazardous Waste requirements and also that the requirements for handling and disposal are being followed.

4. Product Specific Practices

The following product specific practices will be followed on the job site:

a) Petroleum Products

Petroleum products will be stored in tightly sealed containers which are clearly labeled. Petroleum storage tanks shall be located a minimum of 100 linear feet from wetland resource areas, drainage ways, inlets and surface waters unless stored within a building. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on the Erosion Control Plan by the Contractor once the locations have been determined.

b) Fertilizers, Herbicides, Pesticides, and Insecticides

Fertilizers, herbicides, pesticides, insecticides and/or pool chemicals will be applied only in the minimum amounts recommended by the manufacturer. Once applied, they will be worked so as to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags or containers will be transferred to a sealable plastic bin to avoid spills.

c) Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

5. Solid Waste

All waste materials will be collected and stored in an appropriately covered container and/or securely contained metal dumpster rented from a local waste management company which must be a licensed solid waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and debris from the site will be deposited in dumpsters. The dumpsters will be emptied a minimum of once per week or more often if necessary. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. No debris, refuse or other materials, including but not limited to landscaping debris, leaves, shrubs and tree trimmings, logs, bricks stone or trash shall be deposited within the vegetated wetland or within 25 feet of the vegetated wetland.

6. Contaminated Soils

Any contaminated soils (resulting from spills of Hazardous Substances or Oil) will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations. If there is a release, it should be reported as a spill, if it otherwise meets the requirements for a reportable spill.

7. Pet Waste

The site will be inspected weekly for pet waste. Pet waste will be collected, placed in a closed, tied trash bag and disposed of in accordance with applicable code requirements.

SPILL PREVENTION AND RESPONSE PROCEDURES

The Pollution Prevention Team Leader will train all personnel in the proper handling and cleanup of spilled Hazardous Substances or Oil. No spilled Hazardous Substances or Oil will

be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the Pollution Prevention Team Leader to be properly trained, and to train all personnel in spill prevention and clean up procedures.

i. In order to prevent or minimize the potential for a spill of Hazardous Substances or Oil to come into contact with storm water, the following steps will be implemented:

   a) All Hazardous Substances or Oil (such as pesticides, petroleum products, fertilizers, detergents, acids, paints, paint solvents, cleaning solvents, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.
   b) The minimum practical quantity of all such materials will be kept on site.
   c) A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided on site.
   d) Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.
   e) It is the Pollution Prevention Team Leader's responsibility to ensure that all Hazardous Waste on site is disposed of properly by a licensed hazardous material disposal company. The Pollution Prevention Team Leader is responsible for not exceeding Hazardous Waste storage requirements mandated by the EPA or state and local authority.

ii. In the event of a spill of Hazardous Substances or Oil, the following procedures must be followed:

   a) All measures must be taken to contain and abate the spill and to prevent the discharge of the Hazardous Substance or Oil to storm water or off-site. (The spill area must be kept well ventilated and personnel must wear appropriate protective clothing to prevent injury from contact with the Hazardous Substances.)
   b) For spills of less than five (5) gallons of material, proceed with source control and containment, clean-up with absorbent materials or other applicable means unless an imminent hazard or other circumstances dictate that the spill should be treated by a professional emergency response contractor.
   c) For spills greater than five (5) gallons of material immediately contact the NH DES Spill Response and Complaint Investigation Section at (603) 271-3899 Monday – Friday, 8am to 4pm or the NH State Police at (603) 223-4381 on weekends and evenings, and an approved emergency response contractor. Provide information on the type of material spilled, the location of the spill, the quantity spilled, and the time of the spill to the emergency response contractor or coordinator, and proceed with prevention, containment and/or clean-up if so desired.

   d) If there is a Reportable Quantity (RQ) release, then the National Response Center will be notified immediately at (800) 424-8802; within 14 days a report will be submitted

to the EPA regional office describing the release, the date and circumstances of the release and the steps taken to prevent another release. This Pollution Prevention Plan must be updated to reflect any such steps or actions taken and measures to prevent the same from reoccurring.

iii. The Pollution Prevention Team Leader will be the spill prevention and response coordinator. He/she will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the management office.

SECTION 3 - SNOW MANAGEMENT AND DISPOSAL PLAN

Snow management will be overseen by a full-time Property Manager who will implement this plan and be authorized to utilize additional resources should unusual events occur. The Snow Management Contractor (SMC) shall be responsible for maintaining all roads, driveways, parking lots, sidewalks and pedestrian access areas for clear and safe travel. The SMC shall report directly to the Property Manager and maintain communication via cell phones 24 hours per day, 7 days per week. All roads, drives, entrances and exits are the first priority. During extreme events, the first priority will be to clear and maintain proper access for residents and public safety vehicles. The next priority is parking areas, sidewalks, fire hydrants, and delivery areas. Snow will not be piled around light bases and handicap parking areas shall be cleared frequently.

The anti-icing operations typically precede snow plowing and will be provided when conditions warrant. Within 12 months of concrete walks, pads, or other features being poured, no de-icers shall be placed on those surfaces. After the materials have cured for 12 months, a combination of calcium chloride de-icers and sand (washed, fine to medium grade) shall be utilized. Parking areas shall receive spot treatment only when and where needed in a similar manner. The sand/calcium chloride mixture shall consist of 20 parts calcium chloride to 80 parts sand.

Snow plowing shall commence upon accumulation of two inches (“2”) or more. Snow shall be deposited in designated areas, refer to SMP-1, Snow Management Plan. The SMC shall keep existing catch basins open for drainage or water resulting from melting.

Once the storm is over, the SMC shall monitor all areas on-site for icy spots and snowdrifts. If needed, an application of sand and salt will be applied to all streets and roads so that the riding surface remains drivable. When the ambient temperature drops below 25 degrees F, all major areas will receive an application of pre-wetted salt with calcium chloride to maintain melting action and an ice-free surface for as long as possible. Salt loses its effectiveness at temperatures below 25 degrees F.

Deicing chemicals will be kept in original containers with the original product label in legible condition. When not in use, deicing materials will be stored in a neat, orderly manner under cover with their container lids on.

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Figures

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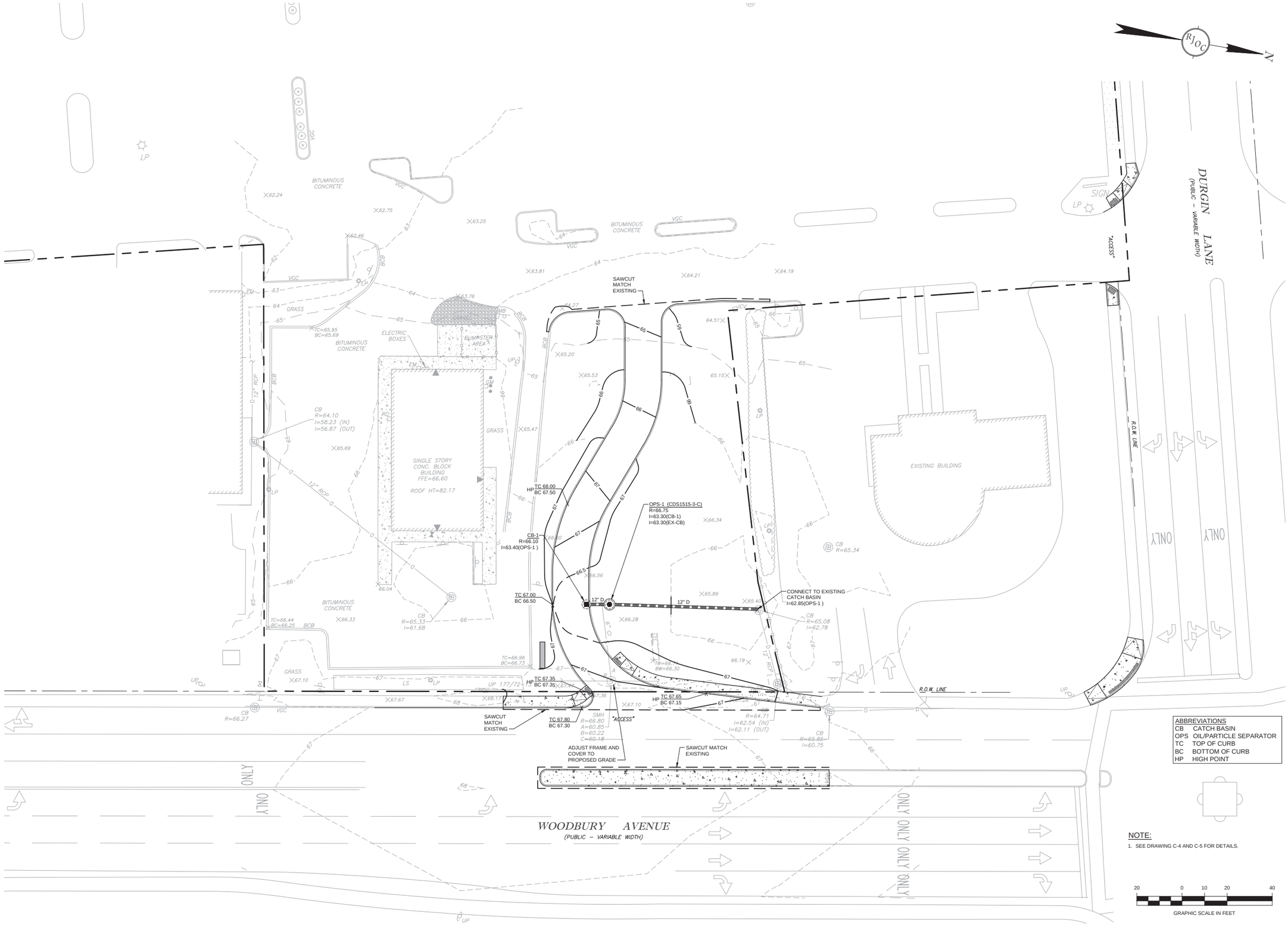

RJOC

NO.	REVISION	DATE
.	ISSUED FOR TAC REVIEW	02/18/2020

PREPARED BY:
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PREPARED FOR:
KEYPOINT PARTNERS
Unlocking Value in Commercial Real Estate
ONE BURLINGTON WOODS DRIVE
BURLINGTON, MA 01803
781-418-6203

PROJECT NAME:
DPF DURGIN SQUARE
PORTSMOUTH, NH

SEAL:

DESIGNED BY:	CNM
DRAWN BY:	CNM
REVIEWED BY:	BPD
SCALE:	1" = 20'
DATE:	02/18/2020

DRAWING NAME:
GRADING, DRAINAGE, AND UTILITY PLAN

DRAWING NUMBER:
C-2

PROJECT NUMBER:
16030

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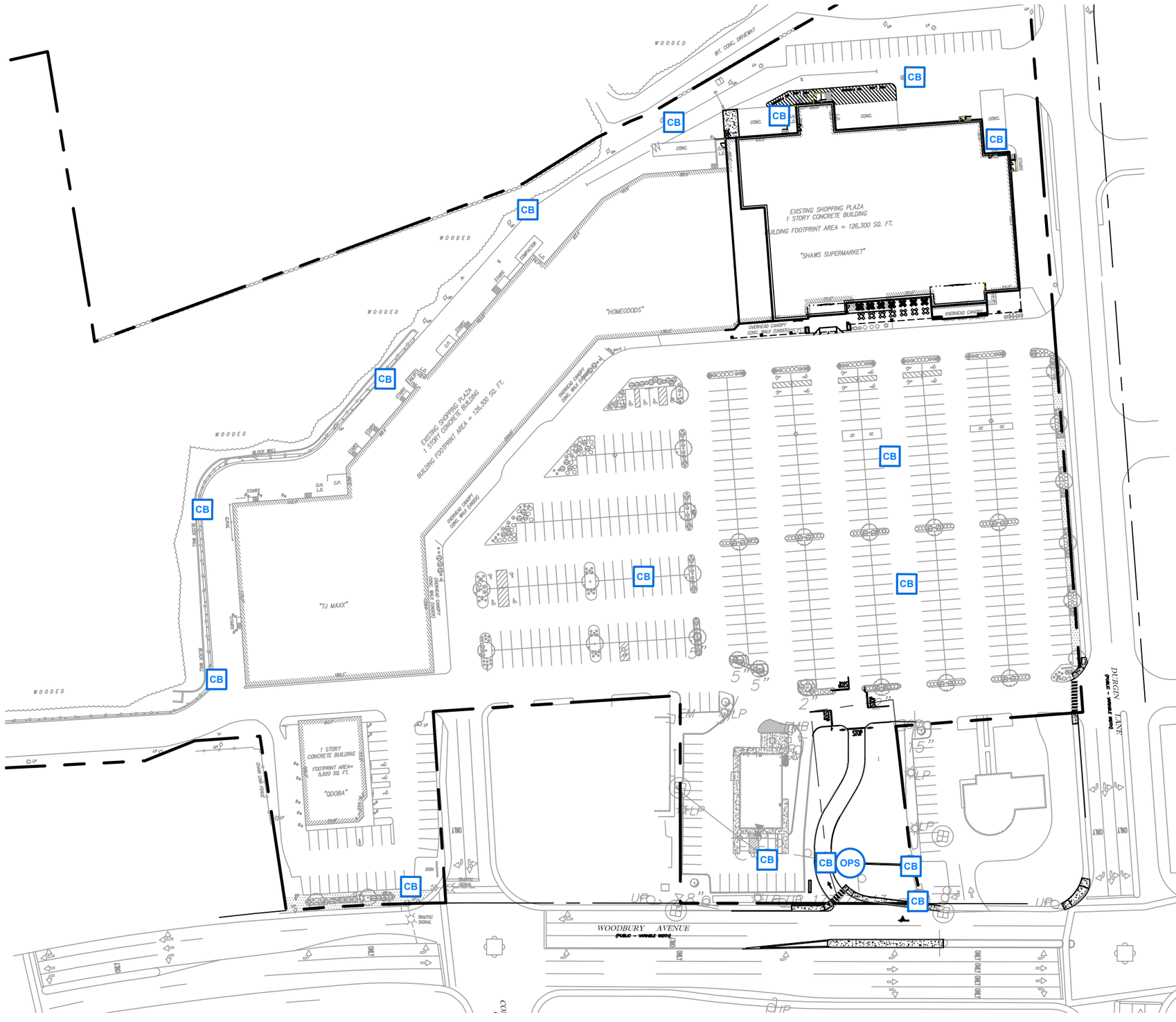
Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Main\16030_C-2 Grading and Drainage Plan.dwg
Feb 14, 2020 - 10:40pm



100 0 50 100 200

GRAPHIC SCALE IN FEET

RJOC

N

LEGEND

CB	CATCH BASIN (CB)
OPS	OIL/PARTICLE SEPARATOR (OPS)

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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020 SCALE: 1"=100'

BMP-1
BMP LOCATION PLAN

DURGIN SQUARE PORTSMOUTH, NH

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Feb 14, 2020 - 11:52am

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N

SNOW STORAGE AREA (TYP)

SNOW STORAGE AREA (TYP)

SNOW STORAGE AREA (TYP)

SNOW STORAGE AREA (TYP)

SNOW STORAGE AREA (TYP)

EXISTING SHOPPING PLAZA
1 STORY CONCRETE BUILDING
BUILDING FOOTPRINT AREA = 126,300 SQ. FT.
"SHAWS SUPERMARKET"

"HOMEGOODS"

EXISTING SHOPPING PLAZA
1 STORY CONCRETE BUILDING
BUILDING FOOTPRINT AREA = 126,300 SQ. FT.

"TJ MAXX"

1 STORY CONCRETE BUILDING
FOOTPRINT AREA= 3,920 SQ. FT.
"OOOBA"

WOODED

SNOW MANAGEMENT CONDITIONS:

- SODIUM BASED DEICING AGENTS WILL NOT BE UTILIZED ON-SITE. ALTERNATIVE DEICING AGENTS WILL BE CALCIUM CHLORIDE OR MAGNESIUM CHLORIDE.
- SNOW WILL NOT BE DUMPED/PLOWED INTO WETLAND SENSITIVE AREAS OR STORMWATER FEATURES.
- SNOW WILL BE STORED IN DESIGNATED AREAS AS SHOWN ON THIS PLAN WITH A MAXIMUM HEIGHT OF SEVEN (7) FEET. WHEN SNOW DESIGNATED AREAS REACH THEIR CAPACITY, SURPLUS SNOW TO BE DISPOSED OF AT AN APPROVED OFF-SITE LOCATION.
- BY MAY 15TH OF EACH YEAR, PARKING LOT WILL BE SWEPT OF SAND/SANDIMENT AND ACCUMULATED TRASH/LITTER WILL BE REMOVED FROM SNOW STORAGE AREAS.

120 0 60 120 240

GRAPHIC SCALE IN FEET

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020 SCALE: 1"=120'

SNOW MANAGEMENT PLAN

DURGIN SQUARE PORTSMOUTH, NH

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Feb 14, 2020 - 11:52am

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Appendix A
Inspection and Maintenance Forms

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Durgin Square
Inspection and Maintenance Manual
Activity Guide

The table below is a list of the minimum inspection and maintenance activities the Pollution Prevention Team needs to conduct as part of the Stormwater Inspection and Maintenance Plan and who is responsible for the activity. The Activity Guide is provided to assist the Pollution Prevention Team Leader and ensure that the activities are being conducted as scheduled.

Timing	**Activity**	**Responsible Party**
Weekly	Inspect lot/land Pet waste management	PPT PPT
Monthly	Inspect and clean parking lot and paved areas Inspect outside storage areas	PPT PPT
Quarterly	Inspect catch basins Inspect oil/particle separators	PPT PPT/Contractor
Semi-Annually	Inspect and clean catch basins Parking lot sweeping Clean oil/particle separators Inspect and repair landscaping areas	Contractor Contractor Contractor PPT/Contractor
Annually	Pollution Prevention Team training Comprehensive annual stormwater evaluation and inspection report	PPT Leader PPT Leader
April	Spring clean-up,	PPT/Contractor
Between November 14 and December 15	Fall clean-up	PPT/Contractor

Durgin Square
Inspection and Maintenance Manual
Comprehensive Annual Evaluation and Inspection Report

Once a year, the Pollution Prevention Team Leader must inspect and evaluate all aspects and provisions of the Inspection and Maintenance Plan, complete the following report and keep a copy on file at the site.

Inspector/Reviewers:_____

Date of Inspection/Review: _____

Note any changes to the Plan in the space below and in the appropriate section of the Plan.

1. Review the Pollution Prevention Team list and update if necessary. Does the Pollution Prevention Team list need updating?
   (circle one) Yes No

2. Review the Inspection and Maintenance Plan (I&M Plan). Are there sections of the I&M Plan that need updating?
   (circle one) Yes No

3. Review Monthly and Weekly Checklists. Update these as necessary.
   - Are there any updates needed to Spill and Leak History and/or the checklists?
   (circle one) Yes No

4. Review site drawings and update if necessary
   - Are there updates needed to any of the drawings? (circle one) Yes No

Requested Changes (attach revisions)

Durgin Square
Inspection and Maintenance Manual
Annual Training Signoff Sheet

For each Inspection and Maintenance Plan training session, the Team Leader should keep records of all attending Team Members using the signoff sheet below, as well as the training agenda, notes, etc.

Training Date: _____	**Topic**:
Trainer: _____	
Team Member Name	**Team Member Signature**

Durgin Square
Inspection and Maintenance Manual
Weekly Inspection Checklist

The site will be checked each week for trash and debris by a member of the Pollution Prevention Team. If any trash or debris is observed in the specified area, write "yes" in the 2nd column and note the problem and corrective measures taken in the appropriate space. Make a new copy of this checklist each week.

Date: _____ **Checklist completed by**: _____

GROUNDS AREA TO CHECK	TRASH OR DEBRIS PRESENT?	DESCRIPTION OF PROBLEM	CORRECTIVE MEASURES TAKEN
Parking Lot & Roadways			
Landscaped Areas			
Dumpster/Loading Areas			
Perimeter of Property			

Durgin Square
Inspection and Maintenance Manual
Monthly Inspection Checklist

The following will be checked each month for sources of pollutants by a member of the Pollution Prevention Team. If the condition in the "check for" column is observed, note the problem and corrective measures taken in the appropriate space. Make a new copy of the checklist each month.

Date: _____ **Checklist completed by**: _____

BMP	ACTIVITY	DESCRIPTION OF PROBLEM (IF PRESENT)	CORRECTIVE MEASURES TAKEN
Sweeping	Sweep Parking Lot and Paved Areas Spillage and Trash		
Outside Storage Areas (Dumpsters/Loading Area)	Check for leaking liquid		

Durgin Square
Inspection and Maintenance Manual
Quarterly Inspection Checklist

The following will be checked each quarter for sources of pollutants by a member of the Pollution Prevention Team. If the condition in the "check for" column is observed, note the problem and corrective measures taken in the appropriate space. Make a new copy of the checklist each quarter.

Date: _____ **Checklist completed by**: _____

BMP	ACTIVITY	DESCRIPTION OF PROBLEM (IF PRESENT)	CORRECTIVE MEASURES TAKEN
Catch Basins	Check for trash, excessive sediment, oil sheen, hood (securely fastened)		
Oil/Particle Separators	Check for accumulated sediment and floatable debris and trash		

Durgin Square
Inspection and Maintenance Manual
Semi-Annual Inspection Checklist

The following will be checked each quarter for sources of pollutants by a member of the Pollution Prevention Team. If the condition in the "check for" column is observed, note the problem and corrective measures taken in the appropriate space. Make a new copy of the checklist semi-annually.

Date: _____ **Checklist completed by**: _____

BMP	ACTIVITY	DESCRIPTION OF PROBLEM (IF PRESENT)	CORRECTIVE MEASURES TAKEN
Catch Basins	Jet vacuum and power wash, remove trash, debris, and excessive sediment. Check for oil sheen and hood being securely fastened		
Oil/Particle Separators	Jet vacuum and power wash		
Curbing	Inspect structural condition		
Landscaping Areas	Remove trash and debris. Inspect and repair erosion and washout areas, reseed as necessary		

Durgin Square
Inspection and Maintenance Manual
Annual Inspection Checklist

The following will be checked each quarter for sources of pollutants by a member of the Pollution Prevention Team. If the condition in the "check for" column is observed, note the problem and corrective measures taken in the appropriate space. Make a new copy of the checklist each year.

Date: _____ **Checklist completed by**: _____

BMP	ACTIVITY	DESCRIPTION OF PROBLEM (IF PRESENT)	CORRECTIVE MEASURES TAKEN
Pollution Prevention Team Training	Prepare annual stormwater evaluation and inspection report		

Durgin Square
Inspection and Maintenance Manual
Spill and Leak History
(____ to _____)

Date	**Spill**	**Leak**	**Location**	**Description**				**Response Procedures**	**Measures to Prevent Reoccurrence**	**Reporting Pollution Prevention Team Member**
(MM/DD/YY)	*(check one)*		*(as indicated on Site Map)*	*Type of Material*	*Quantity*	*Source, if known*	*Reason*			

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Appendix B
CDS Treatment Unit Operations and Maintenance Guidelines

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OPERATIONS AND MAINTENANCE GUIDELINES

CDS Stormwater Treatment Unit

INTRODUCTION

The CDS unit is an important and effective component of your storm water management program and proper operation and maintenance of the unit are essential to demonstrate your compliance with local, state and federal water pollution control requirements.

The CDS technology features a patented non-blocking, indirect screening technique developed in Australia to treat water runoff. The unit is highly effective in the capture of suspended solids, fine sands and larger particles. Because of its non-blocking screening capacity, the CDS unit is un-matched in its ability to capture and retain gross pollutants such as trash and debris. In short, CDS units capture a very wide range of organic and in-organic solids and pollutants that typically result in tons of captured solids each year such as: Total suspended solids (TSS) and other sedimentitious materials, oil and greases, trash, and other debris (including floatables, neutrally buoyant, and negatively buoyant debris). These pollutants will be captured even under very high flow rate conditions.

CDS units are equipped with conventional oil baffles to capture and retain oil and grease. Laboratory evaluations show that the CDS units are capable of capturing up to 70% of the free oil and grease from storm water. CDS units can also accommodate the addition of oil sorbents within their separation chambers. The addition of the oil sorbents can ensure the permanent removal of 80% to 90% of the free oil and grease from the storm water runoff.

OPERATIONS

The CDS unit is a non-mechanical self-operating system and will function any time there is flow in the storm drainage system. The unit will continue to effectively capture pollutants in flows up to the design capacity even during extreme rainfall events when the design capacity may be exceeded. Pollutants captured in the CDS unit's separation chamber and sump will be retained even when the units design capacity is exceeded.

CDS UNIT INSPECTION

Access to the CDS unit is typically achieved through two manhole access covers – one allows inspection (and clean out) of the separation chamber (screen/cylinder) & sump and another allows inspection (and cleanout) of sediment captured and retained behind the screen.

The unit should be periodically inspected to determine the amount of accumulated pollutants and to ensure that the cleanout frequency is adequate to handle the predicted pollutant load being processed by the CDS unit. The unit should be periodically inspected for indications of vector infestation, as well. The recommended cleanout of

solids within the CDS unit's sump should occur at 75% to 85% of the sump capacity. However, the sump may be completely full with no impact to the CDS unit's performance.

CONTECH Stormwater Solutions (previously CDS Technologies) recommends the following inspection guidelines: For new initial operation, check the condition of the unit after every runoff event for the first 30 days. For ongoing operations, the unit should be inspected after the first six inches of rainfall at the beginning of the rainfall season and at approximately 30-day intervals. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), evidence of vector infestation, and to measure the amount of solid materials that have accumulated in the sump, fine sediment accumulated behind the screen, and floating trash and debris in the separation chamber. This can be done with a calibrated dipstick, tape measure or other measuring instrument so that the depth of deposition in the sump can be tracked.

CDS UNIT CLEANOUT

The frequency of cleaning the CDS unit will depend upon the generation of trash and debris and sediments in your application. Cleanout and preventive maintenance schedules will be determined based on operating experience unless precise pollutant loadings have been determined.

Access to the CDS unit is typically achieved through two manhole access covers – one allows cleanout of the separation chamber (screen/cylinder) & sump and another allows cleanout of sediment captured and retained behind the screen. For units possessing a sizable depth below grade (depth to pipe), a single manhole access point would allow both sump cleanout and access behind the screen.

CONTECH Stormwater Solutions Recommends The Following:

> NEW INSTALLATIONS: Check the condition of the unit after every runoff event for the first 30 days. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), measuring the amount of solid materials that have accumulated in the sump, the amount of fine sediment accumulated behind the screen, and determining the amount of floating trash and debris in the separation chamber. This can be done with a calibrated "dip stick" so that the depth of deposition can be tracked. Refer to the "Cleanout Schematic" **(Appendix B) f**or allowable deposition depths and critical distances. Schedules for inspections and cleanout should be based on storm events and pollutant accumulation.
>
> ONGOING OPERATION: During the rainfall season, the unit should be inspected at least once every 30 days. The floatables should be removed and the sump cleaned when the sump is 75-85% full. If floatables accumulate more rapidly than the settleable solids, the floatables should be removed using a vactor truck or dip net before the layer thickness exceeds approximately one foot.
>
> Cleanout of the CDS unit at the end of a rainfall season is recommended because of the nature of pollutants collected and the potential for odor generation

from the decomposition of material collected and retained. This end of season cleanout will assist in preventing the discharge of pore water from the CDS ® unit during summer months.

USE OF SORBENTS –The addition of sorbents is **not a requirement** for CDS units to effectively control oil and grease from storm water. The conventional oil baffle within a unit assures satisfactory oil and grease removal. However, the addition of sorbents is a unique enhancement capability unique to CDS units, enabling increased oil and grease capture efficiencies beyond that obtainable by conventional oil baffle systems.

Under normal operations, CDS units will provide effluent concentrations of oil and grease that are less than 15 parts per million (ppm) for all dry weather spills where the volume is less than or equal to the spill capture volume of the CDS unit. During wet weather flows, the oil baffle system can be expected to remove between 40 and 70% of the free oil and grease from the storm water runoff.

CONTECH Stormwater Solutions only recommends the addition of sorbents to the separation chamber if there are specific land use activities in the catchment watershed that could produce exceptionally large concentrations of oil and grease in the runoff, concentration levels well above typical amounts. If site evaluations merit an increased control of free oil and grease then oil sorbents can be added to the CDS unit to thoroughly address these particular pollutants of concern.

Recommended Oil Sorbents

Rubberizer® Particulate 8-4 mesh or OARS ™ Particulate for Filtration, HPT4100 or equal. Rubberizer is supplied by Haz-Mat Response Technologies, Inc. 4626 Santa Fe Street, San Diego, CA 92109 (800) 542-3036. OARS is supplied by AbTech Industries, 4110 N. Scottsdale Road, Suite 235, Scottsdale, AZ 85251 (800) 545-8999.

The amount of sorbent to be added to the CDS separation chamber can be determined if sufficient information is known about the concentration of oil and grease in the runoff. Frequently the actual concentrations of oil and grease are too variable and the amount to be added and frequency of cleaning will be determined by periodic observation of the sorbent. As an initial application, CDS recommends that approximately 4 to 8 pounds of sorbent material be added to the separation chamber of the CDS units per acre of parking lot or road surface per year. Typically this amount of sorbent results in a ½ inch to one (1") inch depth of sorbent material on the liquid surface of the separation chamber. The oil and grease loading of the sorbent material should be observed after major storm events. Oil Sorbent material may also be furnished in pillow or boom configurations.

The sorbent material should be replaced when it is fully discolored by skimming the sorbent from the surface. The sorbent may require disposal as a special or hazardous waste, but will depend on local and state regulatory requirements.

CLEANOUT AND DISPOSAL

A vactor truck is recommended for cleanout of the CDS unit and can be easily accomplished in less than 30-40 minutes for most installations. Standard vactor operations should be employed in the cleanout of the CDS unit. Disposal of material from the CDS unit should be in accordance with the local municipality's requirements. Disposal of the decant material to a POTW is recommended. Field decanting to the storm drainage system is not recommended. Solids can be disposed of in a similar fashion as those materials collected from street sweeping operations and catch-basin cleanouts.

MAINTENANCE

The CDS unit should be pumped down at least once a year and a thorough inspection of the separation chamber (inlet/cylinder and separation screen) and oil baffle performed. The unit's internal components should not show any signs of damage or any loosening of the bolts used to fasten the various components to the manhole structure and to each other. Ideally, the screen should be power washed for the inspection. If any of the internal components is damaged or if any fasteners appear to be damaged or missing, please contact CONTECH at 800.338.2211 to make arrangements to have the damaged items repaired or replaced.

The screen assembly is fabricated from Type 316 stainless steel and fastened with Type 316 stainless steel fasteners that are easily removed and/or replaced with conventional hand tools. The damaged screen assembly should be replaced with the new screen assembly placed in the same orientation as the one that was removed.

CONFINED SPACE

The CDS unit is a confined space environment and only properly trained personnel possessing the necessary safety equipment should enter the unit to perform particular maintenance and/or inspection activities beyond normal procedure. Inspections of the internal components can, in most cases, be accomplished by observations from the ground surface.

VECTOR CONTROL

Most CDS units do not readily facilitate vector infestation. However, for CDS units that may experience extended periods of non-operation (stagnant flow conditions for more than approximately one week) there may be the potential for vector infestation. In the event that these conditions exist, the CDS unit may be designed to minimize potential vector habitation through the use of physical barriers (such as seals, plugs and/or netting) to seal out potential vectors. The CDS unit may also be configured to allow drain-down under favorable soil conditions where infiltration of storm water runoff is permissible. For standard CDS units that show evidence of mosquito infestation, the

application of larvicide is one control strategy that is recommended. Typical larvicide applications are as follows:

SOLID B.t.i. LARVICIDE: ½ to 1 briquet (typically treats 50-100 sq. ft.) one time per month (30-days) or as directed by manufacturer.

SOLID METHOPRENE LARVICIDE (not recommended for some locations): ½ to 1 briquet (typically treats 50-100 sq. ft.) one time per month (30-days) to once every 4-½ to 5-months (150-days) or as directed by manufacturer.

RECORDS OF OPERATION AND MAINTENANCE

CONTECH Stormwater Solutions recommends that the owner maintain annual records of the operation and maintenance of the CDS unit to document the effective maintenance of this important component of your storm water management program. The attached **Annual Record of Operations and Maintenance** form (see **Appendix A**) is suggested and should be retained for a minimum period of three years.

APPENDIX A

ANNUAL RECORDS OF OPERATIONS & MAINTENANCE AND INSPECTION CHECKLISTS

ANNUAL RECORD OF
OPERATION AND MAINTENANCE

OWNER _____
ADDRESS_____
OWNER REPRESENTATIVE_____**PHONE**_____

INSTALLATION:
MODEL DESIGNATION_____ **DATE** _____
SITE LOCATION_____

INSPECTIONS:

DATE/ INSPECTOR	SCREEN/INLET INTEGRITY	FLOATABLES DEPTH	DEPTH TO SEDIMENT (inches)	SEDIMENT VOLUME* (CUYDS)	SORBENT DISCOLORATION

DEPTH FROM COVER TO BOTTOM OF SUMP (SUMP INVERT) _____

DEPTH FROM COVER TO SUMP @ 75% FULL _____

VOLUME OF SUMP @ 75% FULL =_____**CUYD**

VOLUME/INCH DEPTH _____**CUFT/IN OF SUMP**

VOLUME/FOOT DEPTH_____**CUYD/FT OF SUMP**

***Calculate Sediment Volume = (Depth to Sump Invert – Depth to Sediment)*(Volume/inch)**

OBSERVATIONS OF FUNCTION: _____
_____
_____

CLEANOUT:

DATE	VOLUME FLOATABLES	VOLUME SEDIMENTS	METHOD OF DISPOSAL OF FLOATABLES, SEDIMENTS, DECANT AND SORBENTS

OBSERVATIONS:
_____
_____
_____
_____

SCREEN MAINTENANCE:
DATE OF POWER WASHING, INSPECTION AND OBSERVATIONS:
_____
_____

CERTIFICATION:_____ **TITLE:**_____ **DATE:**_____

INSPECTION CHECKLIST

1. During the rainfall season, inspect and check condition of unit at east once every 30 days ☐
2. Ascertain that the unit is funcioning properly (no blockages or obstructions to inlet and/or separation screen) ☐
3. Measure amount of solid material s that have accumulated in the sump (Unit should be cleaned when the sump is 75-85% full) ☐
4. Measure amount of fine sediment accumulated behind the screen ☐
5. Measure amount of floating trash and debris in the separation chamber ☐

MAINTENANCE CHECKLIST

1. Cleanout unit at the end and beginning of the rainfall season ☐
2. Pump down unit (at least once a year) and thoroughly inspect separation chamber, separation screen and oil baffle ☐
3. No visible signs of damage or loosening of bolts to internal components observed * ☐

*** If there is any damage to the internal components or any fasteners are damaged or missing please contact CONTECH (800.338.1122).**

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Transportation: Engineering • Planning • Design

M E M O R A N D U M

Ref: 1995A

To: Juliet Walker, Planning Director, City of Portsmouth
Eric Eby, P.E., City of Portsmouth

From: Stephen G. Pernaw, P.E., PTOE

Subject: Supplemental Traffic Analysis - Durgin Square
Portsmouth, New Hampshire

Date: February 18, 2020

Background – At our meeting with City staff on 2/13/20 to discuss driveway alternatives at the GameStop driveway on Woodbury Avenue, the City requested that our office: 1) conduct Saturday midday traffic counts at the five site driveways that provide access to Durgin Square, 2) to conduct a supplemental count at the Federal Savings Bank driveway on Woodbury Avenue, and 3) to prepare updated traffic projections for the right-turn entrance only driveway at the Game Stop site. The purpose of this memorandum is to summarize the results of the recent traffic counts, the trip generation analysis for the new supermarket, and the anticipated traffic volumes at the right-turn entrance only driveway on Woodbury Avenue. To summarize:

Driveway Counts – The turning movement counts were conducted simultaneously on Saturday, February 15, 2020 from 10:00 AM to 2:00 PM at the six study area intersections. Analysis of the count data revealed that the highest one-hour period occurred from 12:00 to 1:00 PM. Figure 1 summarizes the turning movement volumes at each driveway. The following table ranks the site driveways in terms of utilization:

DRIVEWAY UTILIZATION - Saturday Peak Hour

Rank / Driveway	Saturday Trips	Percentage
1. Woodbury / Commerce Way / Durgin Square	257	38%
2. Arthur Brady Drive / Durgin Square Driveway	169	25%
3. Durgin Lane / Durgin Square (East Driveway)	157	23%
4. Durgin Lane / Durgin Square (West Driveway)	92	14%
5. Woodbury / Federal Saving Bank Driveway	4	0%
6. Woodbury / GameStop Driveway	0	0%
	679	100%

As an aside, during the four-hour driveway count at the Federal Savings Bank driveway (on Woodbury Avenue) 4 illegal high-risk traffic movements were observed: each of the four involved a northbound vehicle on Woodbury Avenue that veered to the left of the raised median island (on Woodbury Avenue) to enter the bank site via the right-out only bank driveway. This results in potential head-on conflicts with not only southbound vehicles on Woodbury Avenue, but also with vehicles exiting from the bank site. This situation will be rectified by the proposed extension of the median island on Woodbury Avenue by DPF Durgin Square.

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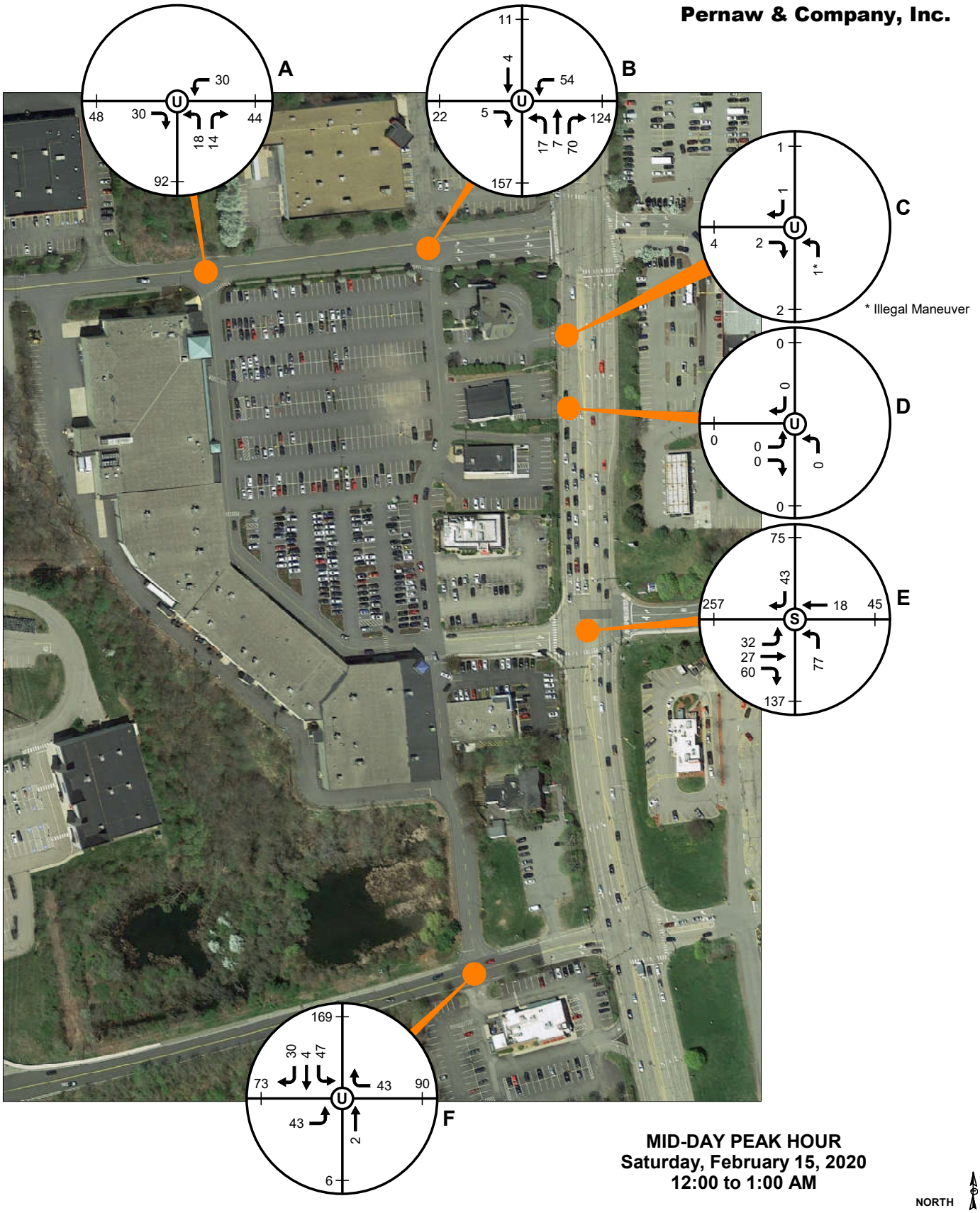

MID-DAY PEAK HOUR
Saturday, February 15, 2020
12:00 to 1:00 AM

NORTH

1995A

Figure 1

Existing Site Generated Traffic Volumes - Saturday Peak Hour

Traffic Evaluation, Durgin Square, Portsmouth, New Hampshire

The complete four-hour turning movement count data is summarized on Figure 2 and was utilized for determining the trip distribution patterns for Durgin Square. The following tabulation summarizes the following travel patterns that were derived from the turning movement count data.

EXISTING TRIP DISTRIBUTION PATTERNS

GATEWAY	INBOUND	OUTBOUND
Durgin Lane - West	11%	11%
Ocean State - North	2%	2%
Woodbury Ave - North	37%	35%
Commerce Way - East	4%	9%
Woodbury Ave - South	34%	34%
Arthur Brady Dr - West	12%	9%
	100%	100%

It should be noted, that the existing trip distribution patterns observed in the field are significantly different from that which was utilized in our previous memorandum. Our previous analysis underestimated the amount of traffic to/from the site via points west on Durgin Lane and south on Woodbury Avenue.

Trip Generation – The following table summarizes the trip generation estimates for Durgin Square Plaza. The driveway counts for the existing site (85,163 sf occupied) resulted in slightly higher traffic volumes than would be expected using the ITE trip generation equations for Land Use Code 820 (Shopping Center). For this reason, the vacant space within the existing Plaza (7,535 sf) was accounted for using the observed trip generation rate, rather than ITE. The trips associated with the new supermarket are based on ITE Land Use Code 850 (Supermarket).

Table 1 — Trip Generation Summary

		Existing Site [1]	Vacant Space [2]	Subtotal	New Food Store [3]	Total
Saturday Peak Hour (12:00 - 1:00 PM)						
	Entering	351 veh	30 veh	381 veh	249 veh	630 veh
	Exiting	328 veh	30 veh	358 veh	239 veh	597 veh
	Total	679 trips	60 trips	739 trips	488 trips	1,227 trips

[1] Driveway Counts Conducted on Saturday February 15, 2020 - See Attachment 1

[2] Vacant Space Adjustment (based on Durgin Square trip generation rate > ITE trip generation rate)

[3] ITE Land Use Code 850 - Supermarket (42,041sf) - See Attachment 2

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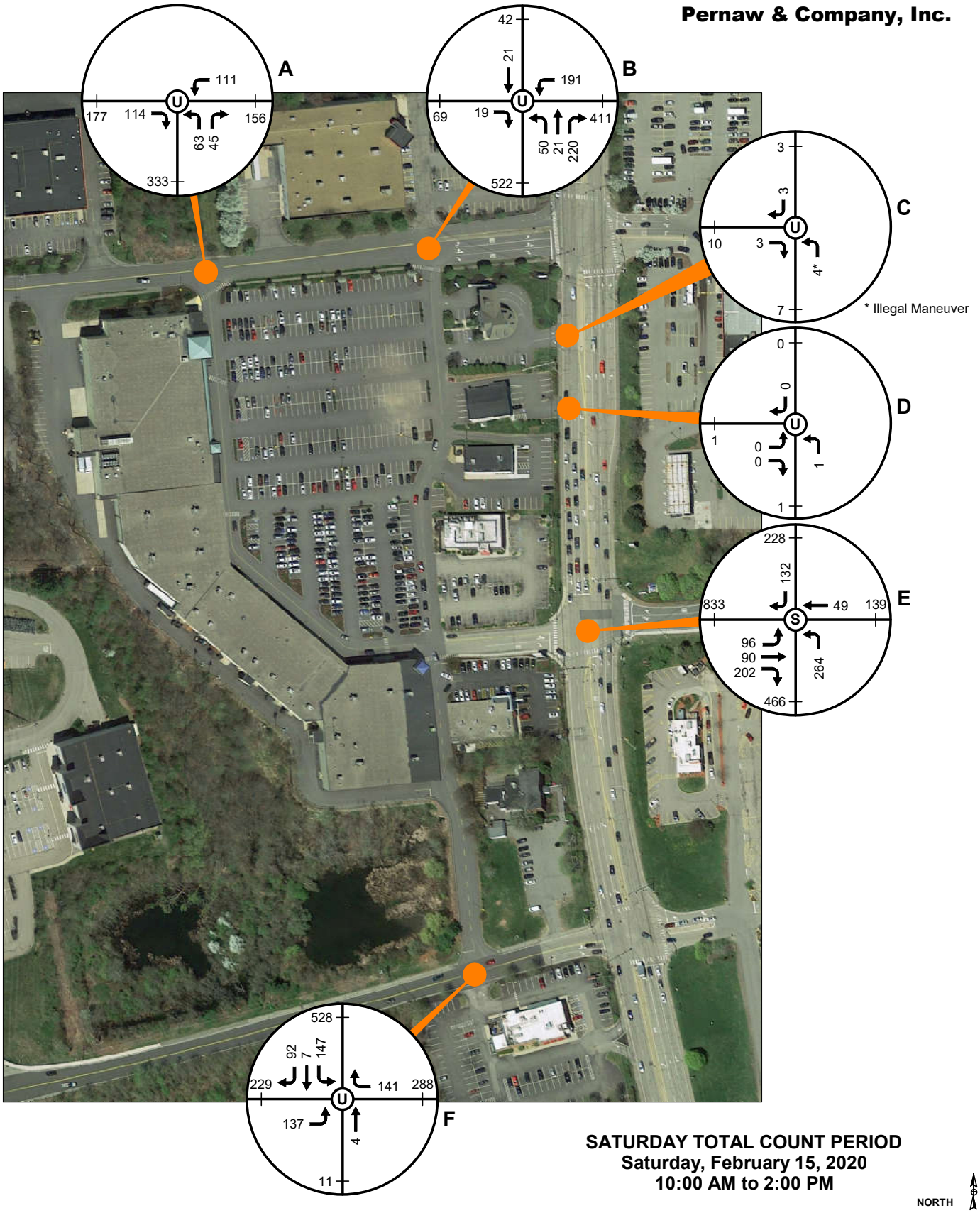


SATURDAY TOTAL COUNT PERIOD
Saturday, February 15, 2020
10:00 AM to 2:00 PM

NORTH

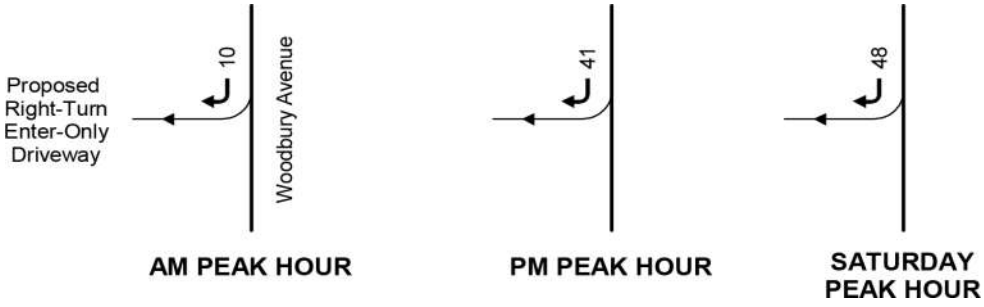
1995A

Figure 2

Existing Site Generated Traffic Volumes - Saturday Mid-Day (4 Hours)

Traffic Evaluation, Durgin Square, Portsmouth, New Hampshire

Driveway Volumes – The proposed "right-turn enter-only" driveway at the GameStop site will be utilized by supermarket customers as well as other patrons of the Durgin Square Plaza. The post-development traffic projections for the proposed right-in only driveway at the GameStop site on Woodbury Avenue is summarized below schematically:



It should be noted that the right-turn entering volume is not critical as this movement encounters no conflicting traffic stream; therefore there is unlimited capacity for this traffic movement and vehicle delays will be nil.

Conclusions:

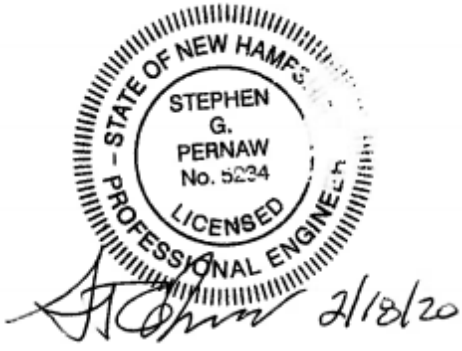
1. Converting the existing full-access driveway on Woodbury Avenue at the GameStop site to the proposed "right-turn enter-only" driveway will reduce the number of basic conflict points from six to one.

2. This driveway will be beneficial for southbound drivers on Woodbury Avenue who may not be familiar with the site, and the need to turn right onto Durgin Lane in advance of the site.

3. Extending the raised median island on Woodbury Avenue beyond the "right-turn enter-only" driveway will eliminate the illegal high-risk traffic movements that were observed at the Federal Savings Bank driveway, as well as the bank's concern with occasional left-turn departure movements from this bank driveway.

4. Providing an additional well-defined point of access on Woodbury Avenue (for southbound vehicles only) has the potential to lessen the traffic demand on Durgin Lane and will enable drivers to choose their access route depending upon local traffic conditions.

5. The proposed "right-turn enter-only" driveway will operate safely and efficiently from a transportation planning and traffic engineering standpoint, and will not significantly impact the flow of southbound through traffic on the corridor.



CC: Alicia C. Busconi, Vice President, KeyPoint Partners, LLC
Steve Glowacki, R. J. O'Connell & Asssociates, Inc.
John K. Bosen, Esquire

ATTACHMENTS

Stephen G. Pernaw & Company, Inc

Durgin Square Driveway Counts - Saturday, February 15, 2020

	Intersection A				Intersection B						Int. C		Intersection D				Intersection E						Intersection F						TOTAL			
	EBR IN	NBL OUT	NBR OUT	WBL IN	EBR IN	SBT IN	WBL IN	NBR OUT	NBT OUT	NBL OUT	SBR IN	EBR OUT	SBR IN	EBL OUT	EBR OUT	NBL IN	SBR IN	WBT IN	NBL IN	EBR OUT	EBT OUT	EBL OUT	SBR OUT	SBT OUT	SBL OUT	WBR IN	NBT IN	EBL IN	IN	OUT	TOT	
10:00 - 10:15	5	0	0	4	0	0	6	4	1	1	0	0	0	0	0	0	1	1	5	2	3	1	2	0	6	7	0	4	33	20	53	
10:15 - 10:30	5	1	1	4	1	2	5	12	2	5	0	0	0	0	0	0	4	3	15	7	3	3	3	0	4	9	0	10	58	41	99	
10:30 - 10:45	7	4	1	5	0	4	7	9	1	3	1	1	0	0	0	0	7	2	10	7	1	3	4	0	5	8	0	6	57	39	96	
10:45 - 11:00	4	6	3	5	0	2	6	6	0	2	1	0	0	0	0	0	3	5	10	7	9	0	5	0	7	7	0	7	50	45	95	343
11:00 - 11:15	4	4	2	4	2	0	10	12	1	3	0	0	0	0	0	1	6	2	14	16	4	6	1	0	5	12	0	7	62	54	116	406
11:15 - 11:30	6	3	1	9	2	1	10	10	1	3	0	0	0	0	0	0	5	2	20	14	4	4	5	0	10	6	0	2	63	55	118	425
11:30 - 11:45	12	5	3	10	1	0	15	10	1	1	0	0	0	0	0	0	8	2	22	13	5	3	12	1	11	6	0	11	87	65	152	481
11:45 - 12:00	9	6	2	10	3	2	21	13	1	5	0	0	0	0	0	0	10	2	17	13	8	3	10	1	10	8	0	10	92	72	164	550
12:00 - 12:15	4	4	5	5	2	2	16	19	1	3	1	0	0	0	0	0	8	2	17	17	8	10	9	1	13	11	1	10	79	90	169	603
12:15 - 12:30	5	4	2	8	1	0	13	20	2	7	0	1	0	0	0	0	13	6	17	10	5	8	9	2	14	6	1	8	78	84	162	647
12:30 - 12:45	13	6	3	7	1	1	18	12	0	2	0	1	0	0	0	0	11	2	25	15	4	9	6	0	8	14	0	10	102	66	168	663
12:45 - 13:00	8	4	4	10	1	1	7	19	4	5	0	0	0	0	0	0	11	8	18	18	10	5	6	1	12	12	0	15	91	88	179	678
13:00 - 13:15	8	2	5	8	2	0	18	18	3	5	0	0	0	0	0	0	11	0	15	14	7	12	6	0	11	4	1	8	75	83	158	667
13:15 - 13:30	9	4	4	11	0	1	10	17	2	2	0	0	0	0	0	0	12	4	16	18	5	13	4	0	8	17	0	10	90	77	167	672
13:30 - 13:45	9	6	7	4	3	2	18	13	0	1	0	0	0	0	0	0	12	6	23	16	10	7	6	0	10	9	1	7	94	76	170	674
13:45 - 14:00	6	4	2	7	0	3	11	26	1	2	0	0	0	0	0	0	10	2	20	15	4	9	4	1	13	5	0	12	76	81	157	652
	114	63	45	111	19	21	191	220	21	50	3	3	0	0	0	1	132	49	264	202	90	96	92	7	147	141	4	137	1187	1036	2223	
Generator Peak Hour																																
12:00 - 13:00	**30**	**18**	**14**	**30**	**5**	**4**	**54**	**70**	**7**	**17**	**1**	**2**	**0**	**0**	**0**	**0**	**43**	**18**	**77**	**60**	**27**	**32**	**30**	**4**	**47**	**43**	**2**	**43**	**350**	**328**	**678**	

Intersection A = Durgin Lane / Durgin Square West Driveway
Intersection B = Durgin Lane / Durgin Square East Driveway / Ocean State Job Lot Driveway
Intersection C = Woodbury Avenue / Federal Savings Bank Driveway
Intersection D = Woodbury Avenue / Game Stop Driveway
Intersection E = Woodbury Avenue / Durgin Square Driveway / Commerce Way
Intersection F = Arthur F. Brady Drive / Durgin Square Driveway / Applebees Driveway

Attachment 1

Trip Generation Summary

Saturday Peak Hour of Generator

Alternative: Alternative 1
Phase:
Project: 1995A 021820

Open Date: 2/18/2020
Analysis Date: 2/18/2020

ITE	Land Use	Size	Units	*	Enter	Exit	Total
850	SUPERMARKET 1	42.04	1000 Sq. Ft. GFA		249	239	488
			Unadjusted Volume		249	239	488
			Internal Capture Trips		0	0	0
			Pass-By Trips		0	0	0
			Volume Added to Adjacent Streets		249	239	488

Total Saturday Peak Hour of Generator Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

TRIP GENERATION 10, TRAFFICWARE, LLC

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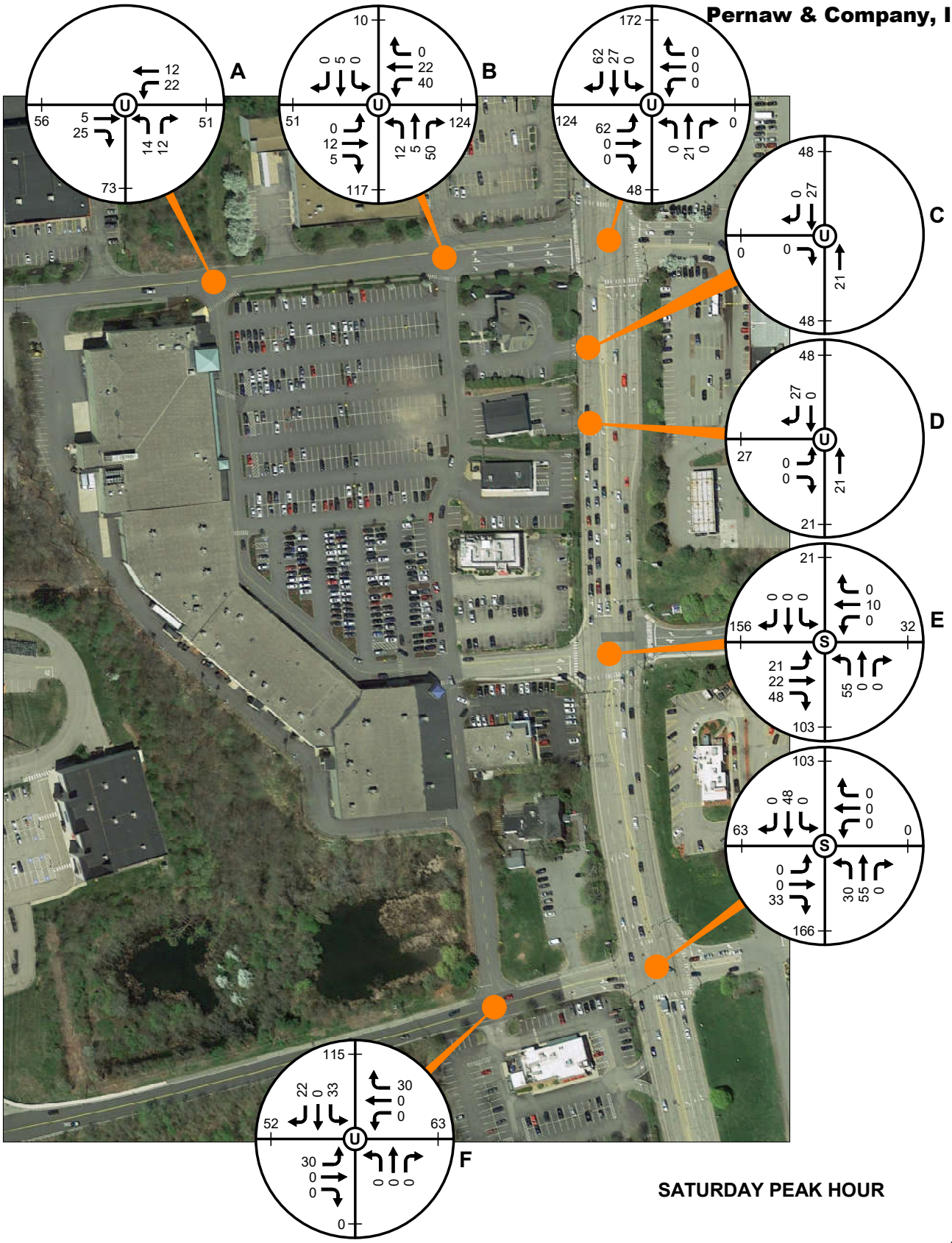

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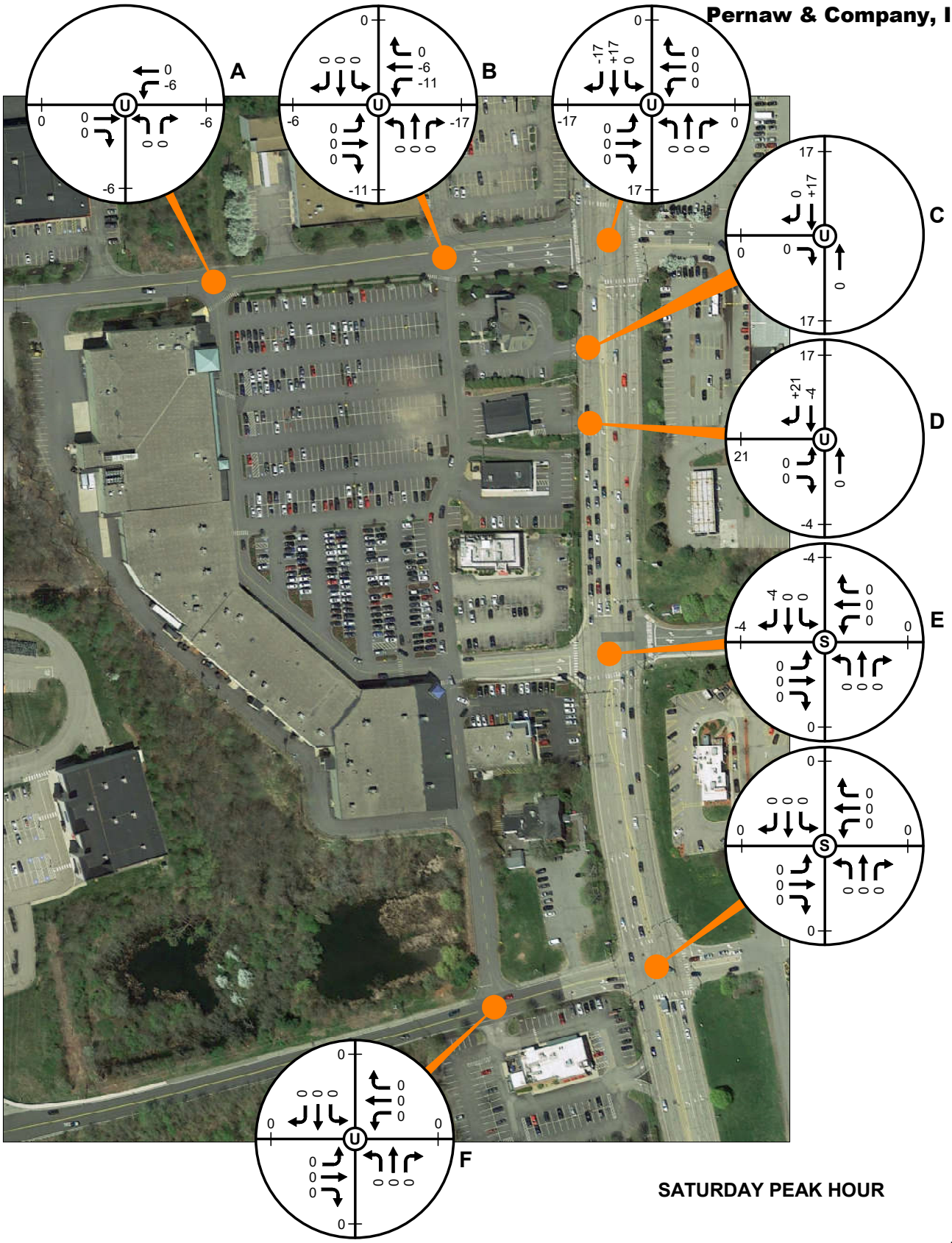
Attachment 3

Supermarket Traffic Volumes - Saturday Mid-Day

Traffic Evaluation, Durgin Square, Portsmouth, New Hampshire



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Attachment 4

Diverted Traffic Volumes - Saturday Mid-Day

Traffic Evaluation, Durgin Square, Portsmouth, New Hampshire