

# SITE PLAN FOR DURGIN SQUARE PORTSMOUTH, NH

## GOVERNMENT/UTILITY CONTACTS

<p><b>OFFICE OF THE MAYOR:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: RICK BECKSTED, MAYOR PHONE: (603) 610-7200</p> <p><b>CITY CLERK'S OFFICE:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: KELLI BARNABY, CITY CLERK PHONE: (603) 610-7245</p> <p><b>HEALTH DEPARTMENT:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: KRISTIN SHAW, HEALTH OFFICER PHONE: (603) 610-4187</p> <p><b>COMMUNITY DEVELOPMENT DEPARTMENT:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: ELISE ANNUNZIATA PHONE: (603) 610-7281</p> <p><b>DEPARTMENT OF PUBLIC WORKS:</b> 680 PEVERLY HILL ROAD PORTSMOUTH, NH 03801 ATTN: PETER RICE, DIRECTOR PHONE: (603) 427-1530</p> <p><b>INSPECTION DEPARTMENT:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: ROBERT MARSILIA, CHIEF BUILDING INSPECTOR PHONE: (603) 610-7243</p>	<p><b>ASSESSOR'S OFFICE:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: ROSANN MAURICE-LENTZ, CITY ASSESSOR PHONE: (603) 610-7249</p> <p><b>ZONING BOARD OF ADJUSTMENT:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: PETER STITH, PRINCIPAL PLANNER PHONE: (603) 610-4188</p> <p><b>CONSERVATION COMMISSION:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: PETER BRITZ, PLANNER/COORDINATOR PHONE: (603) 610-7215</p> <p><b>CITY ENGINEER:</b> 680 PEVERLY HILL ROAD PORTSMOUTH, NH 03801 ATTN: TERRY DESMARAIS P.E., CITY ENGINEER PHONE: (603) 427-1530</p> <p><b>PLANNING BOARD:</b> CITY HALL 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: JULIET WALKER, PLANNING DIRECTOR PHONE: (603) 610-7216</p> <p><b>POLICE DEPARTMENT:</b> 3 JUNKINS AVENUE PORTSMOUTH, NH 03801 ATTN: ROBERT MERNER, CHIEF OF POLICE PHONE: (603) 427-1500</p>	<p><b>FIRE DEPARTMENT:</b> 170 COURT STREET PORTSMOUTH, NH 03801 ATTN: TODD GERMAIN, FIRE CHIEF PHONE: (603) 427-1515</p> <p><b>RECREATION DEPARTMENT:</b> 155 PARROT AVENUE PORTSMOUTH, NH 03801 ATTN: RUS WILSON, RECREATION DIRECTOR PHONE: (603) 427-1548</p> <p><b>WATER AND WASTEWATER AND SEWER:</b> 680 PEVERLY HILL ROAD PORTSMOUTH, NH 03801 ATTN: TERRY DESMARAIS P.E., CITY ENGINEER PHONE: (603) 427-1530</p> <p><b>ELECTRIC - EVERSOURCE:</b> 265 CALEF HIGHWAY EPPING, NH 03042 PHONE: (800) 662-7764</p> <p><b>GAS - UNITIL:</b> 6 LIBERTY LANE W HAMPTON, NH 03842 PHONE: (888) 301-7700</p> <p><b>TELEPHONE - CONSOLIDATED COMMUNICATIONS:</b> 56 ISLINGTON STREET PORTSMOUTH, NH 03801 PHONE: (844) 968-7224</p>
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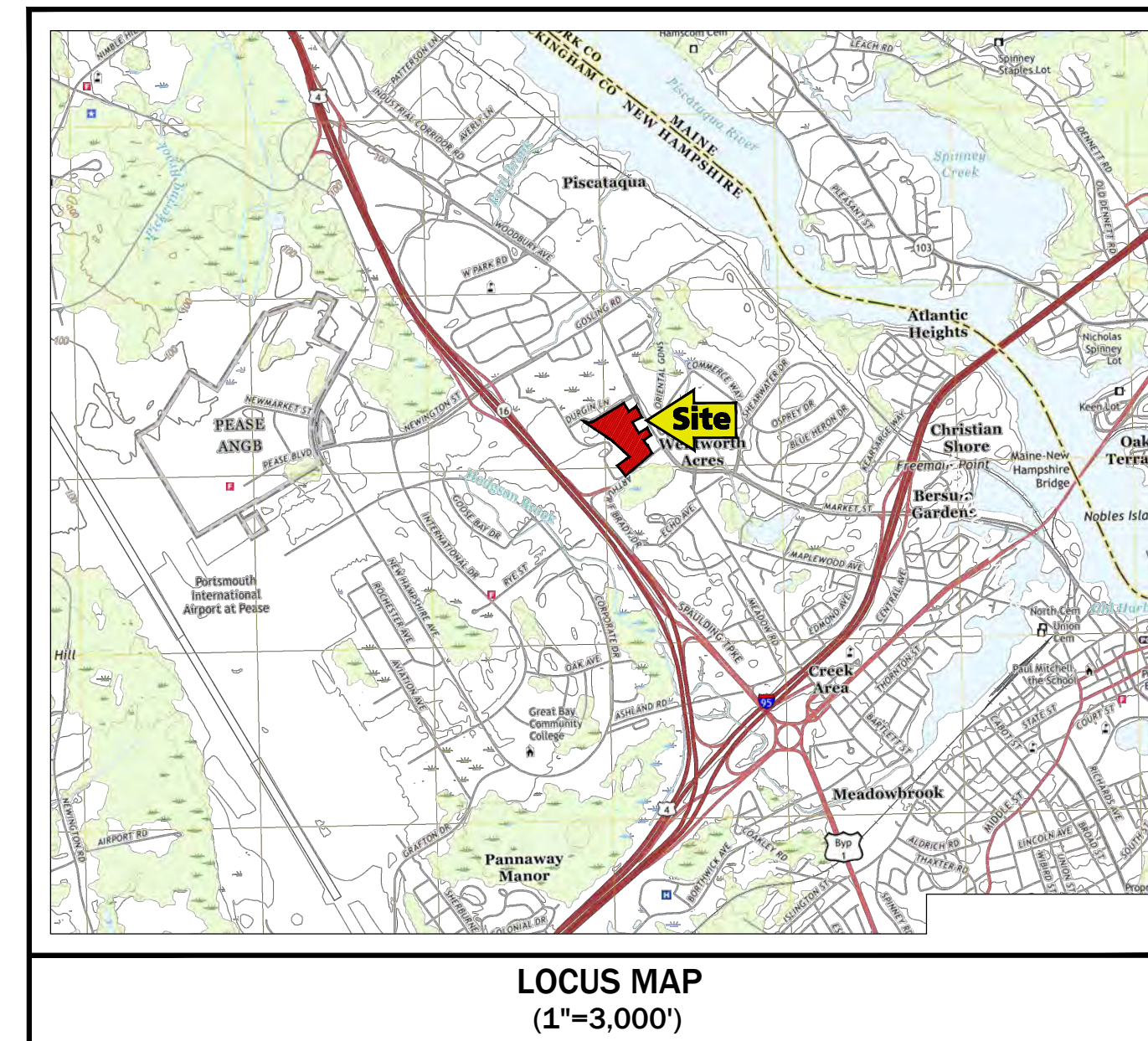
## CONSULTANTS

**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

Drawing Index			
Drawing Date	Last Revision	Drawing	Drawing Description
02/18/2020	03/09/2020	-	COVER SHEET
02/18/2020	-	EX-1	EXISTING CONDITIONS PLAN
02/18/2020	03/09/2020	OS-1	OVERALL SITE PLAN
02/18/2020	03/09/2020	C-1	DEMOLITION PLAN AND EROSION CONTROL
02/18/2020	03/09/2020	C-2	GRADING, DRAINAGE AND UTILITY PLAN
02/18/2020	03/09/2020	C-3	PARKING AND TRAFFIC CONTROL PLAN
02/18/2020	03/09/2020	L-1	PLANTING PLAN (BY MDLA)
03/09/2020	-	1 of 1	PROPOSED SITE LIGHTING
02/18/2020	03/09/2020	FT-1	FIRE TRUCK TURNING PLAN
02/18/2020	03/09/2020	C-4	SITE DETAILS - I
02/18/2020	03/09/2020	C-5	SITE DETAILS - II
02/18/2020	03/09/2020	SP-1	SITE LAYOUT PLAN (FOR RCRD RECORDING)
02/18/2020	03/09/2020	SP-2	OVERALL PLAN (FOR RCRD RECORDING)



**PREPARED BY:**

**RJO'CONNELL &  
ASSOCIATES, INC.**

**CIVIL ENGINEERS, SURVEYORS &  
LAND PLANNERS**

80 MONTVALE AVENUE  
STONEHAM, MA 02180  
PHONE: 781-279-0180  
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 AMENDED SITE  
PLAN APPROVAL  
MARCH 9, 2020**

*Planning Board*

Chair \_\_\_\_\_

Member \_\_\_\_\_

Member \_\_\_\_\_

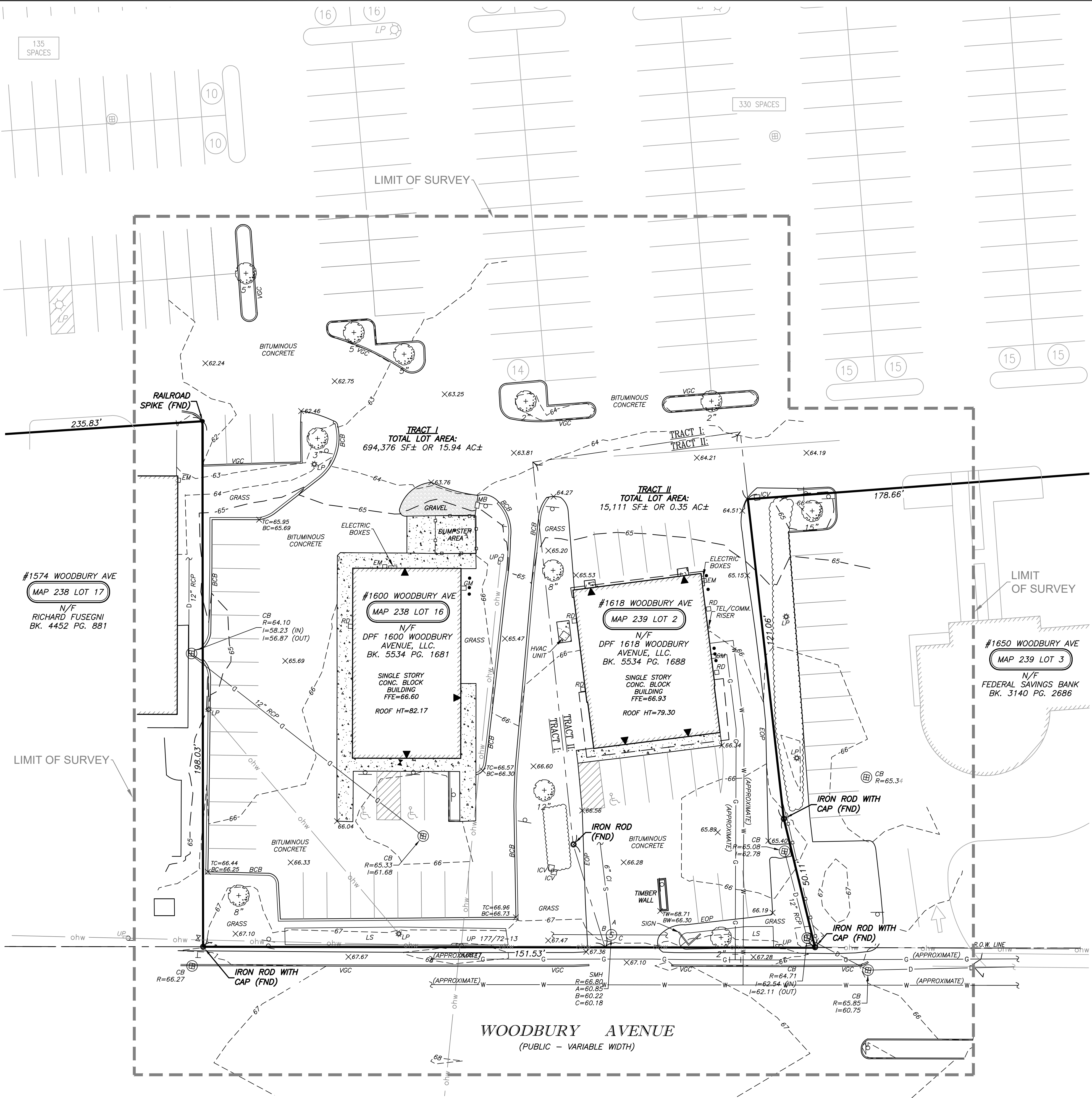
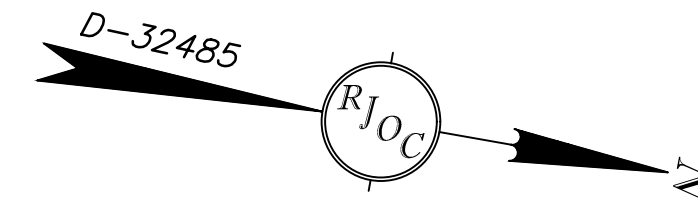
Member \_\_\_\_\_

Member \_\_\_\_\_

Member \_\_\_\_\_

DATE APPROVED: \_\_\_\_\_

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

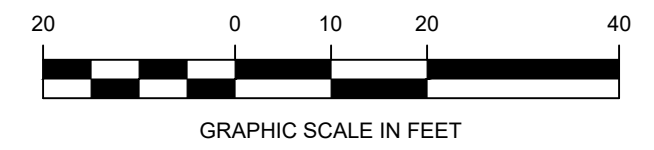


### NOTES

- 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.
- 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 O'DONE SURVEYING & MAPPING ON 05/16/2014.
- 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.
- 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.
- 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.
- THE PARCEL IS LOCATED IN THE GATEWAY CORRIDOR ZONE, (G1) AS REFERENCED FROM THE CITY OF PORTSMOUTH PLANNING DEPARTMENT.
- CONTOUR INTERVAL IS ONE FOOT (1').

### LEGEND

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



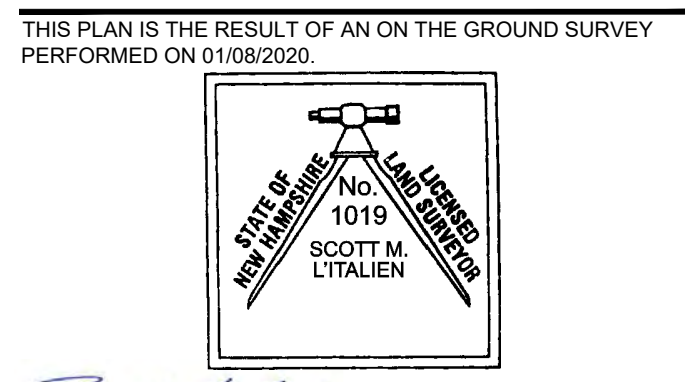
NO.	REVISION	DATE
1.	ISSUED FOR AMENDED SITE PLAN APPROVAL	03/09/2020
2.	ISSUED FOR TAC REVIEW	02/18/2020

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

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.



DATE: 02/18/2020  
 PROFESSIONAL LAND SURVEYOR FOR RJ O'CONNELL & ASSOCIATES, INC.  
 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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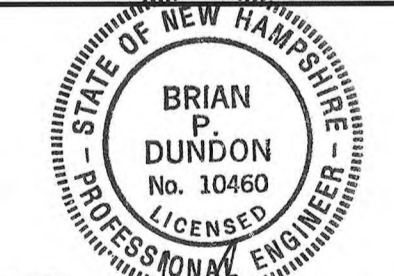
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NO.	REVISION	DATE
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	ISSUED FOR TAC REVIEW	02/18/2020

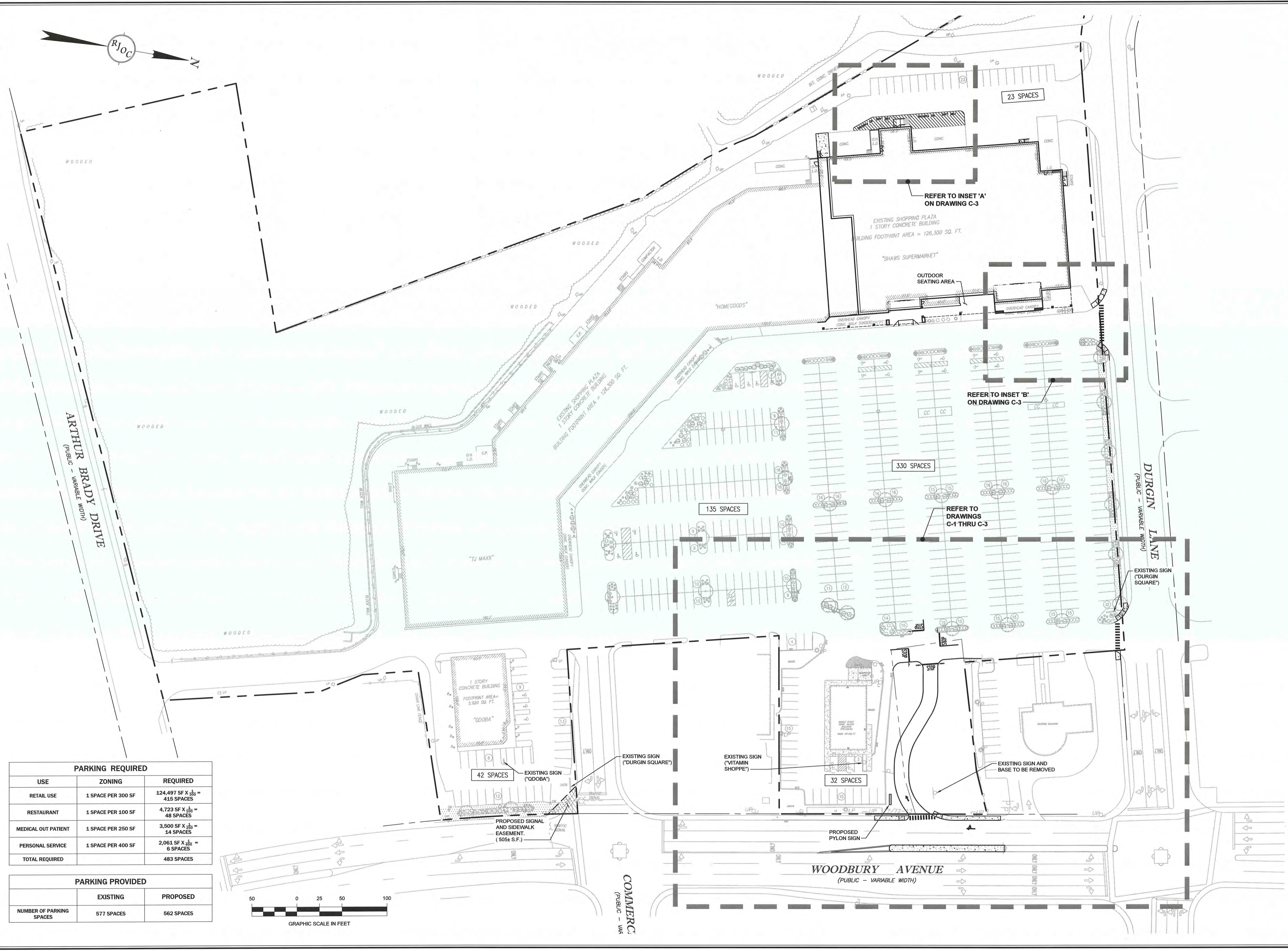
PREPARED BY:  
**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
 80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180  
 PHONE: 781.279.0180 RJCONNELL.COM

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

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

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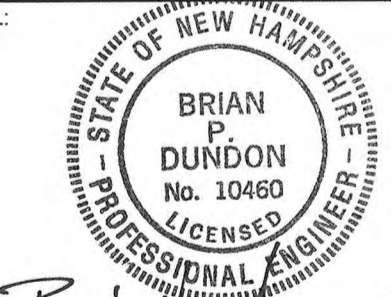
NO.	REVISION	DATE
1.	ISSUED FOR AMENDED SITE PLAN APPROVAL	03/09/2020
	ISSUED FOR TAC REVIEW	02/18/2020

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

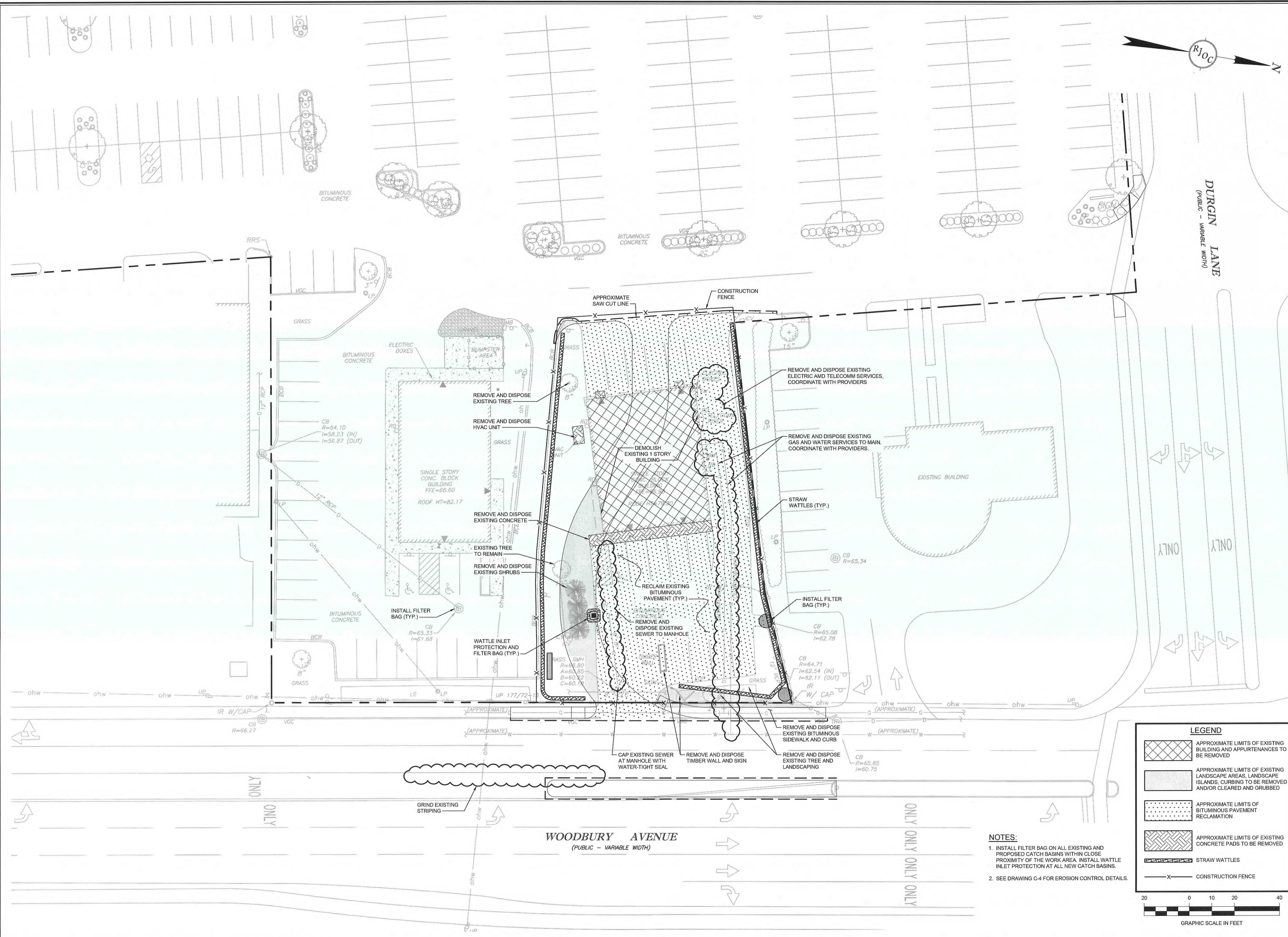
SEAL:  
  
 B. DUNDO  
 03-09-2020

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**



**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

**GRAPHIC SCALE IN FEET**  
 20 0 10 20 40

- 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.

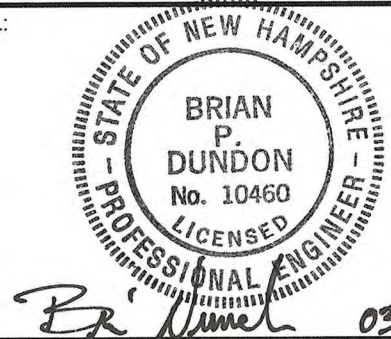
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 Mar 09, 2020 - 11:44am

NO.	REVISION	DATE	NO.	REVISION	DATE
1.	ISSUED FOR AMENDED SITE PLAN APPROVAL	03/09/2020			
	ISSUED FOR TAC REVIEW	02/18/2020			

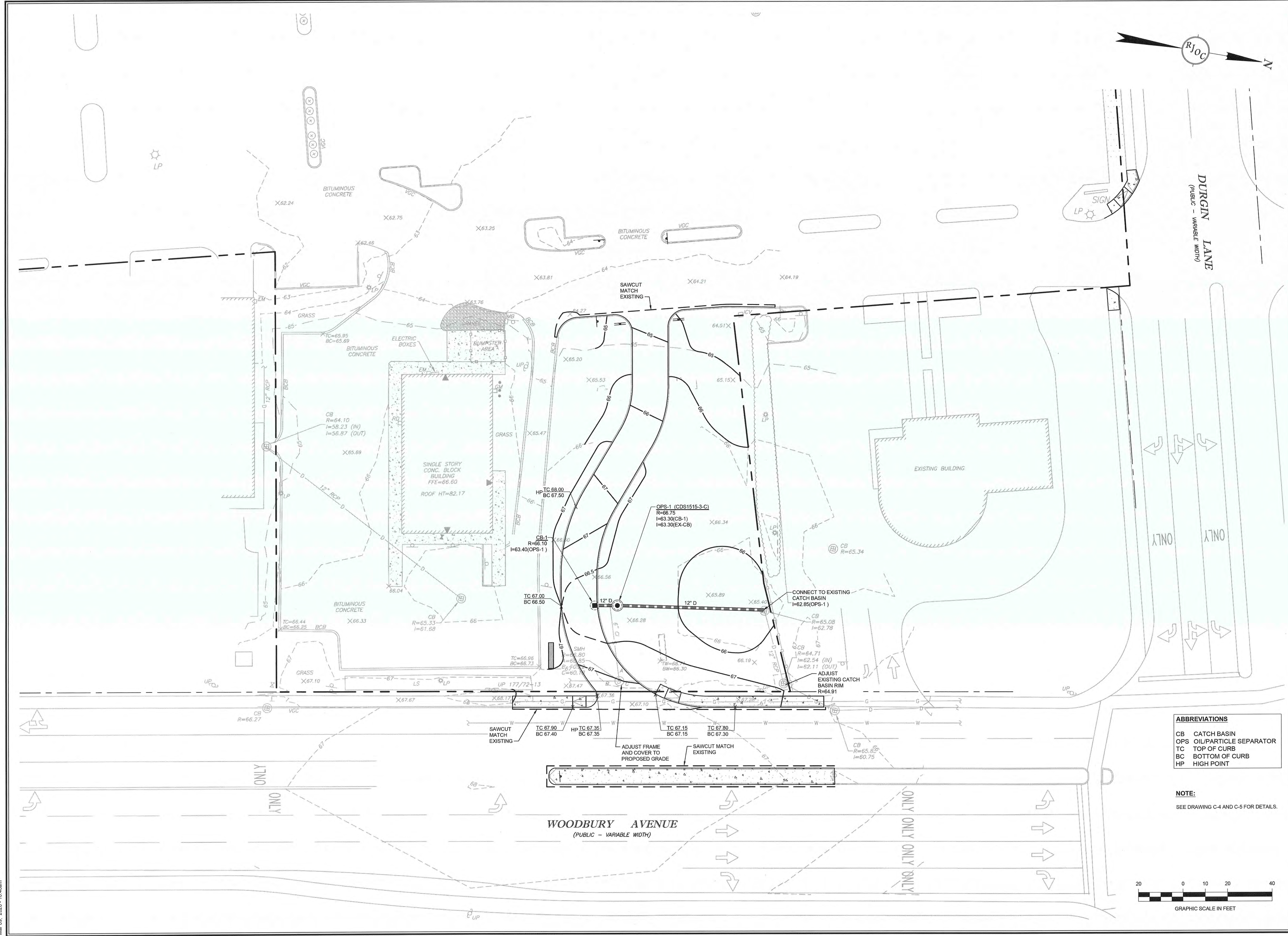
PREPARED BY:  
**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
 80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180  
 PHONE: 781.279.0180 RJCONNELL.COM

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:  
  
 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: C:\NH\Projects\KeyPoint\Durgin Square\Main\16030\_C-2 Grading and Drainage Plan.dwg  
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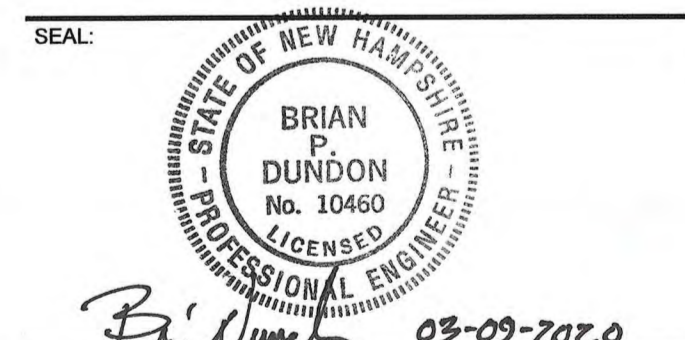
NO.	DATE	REVISION
1.	02/18/2020	ISSUED FOR TAC REVIEW
	03/09/2020	ISSUED FOR AMENDED SITE PLAN APPROVAL

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:

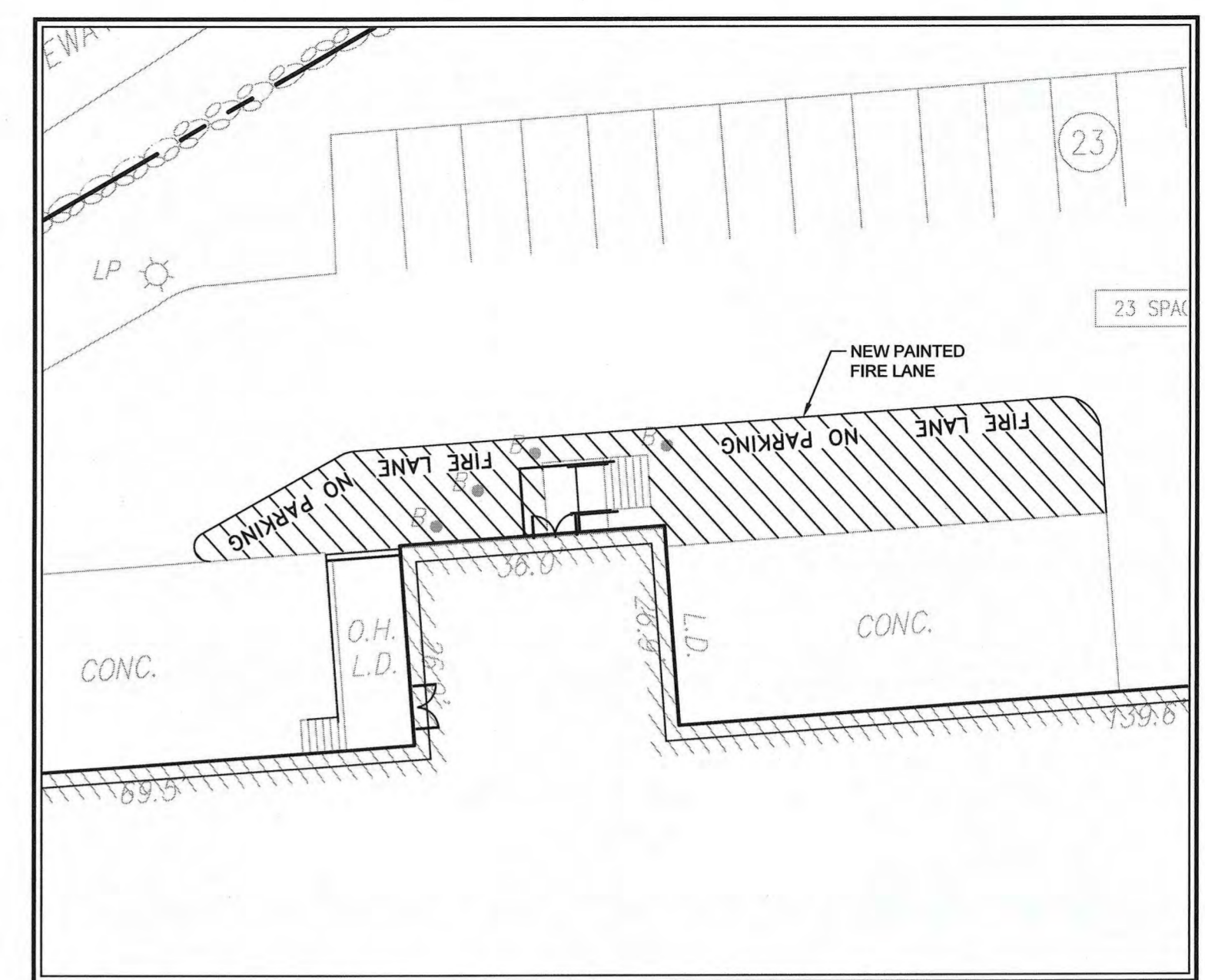
**DPF DURGIN SQUARE**  
 PORTSMOUTH, NH



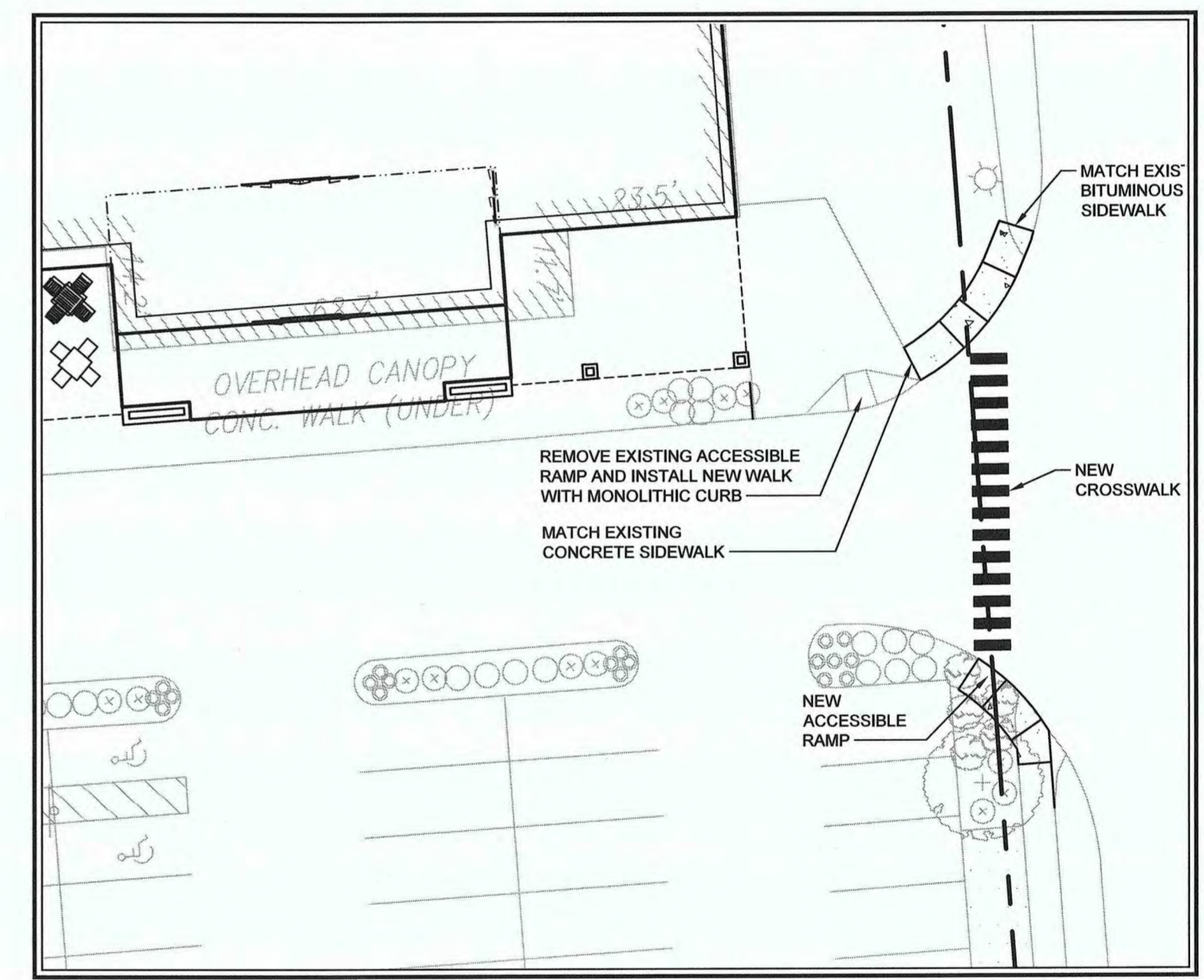
DESIGNED BY: CNM  
 DRAWN BY: MCR/HAA  
 REVIEWED BY: BPD  
 SCALE: 1" = 20'  
 DATE: 02/18/2020  
 DRAWING NAME:

## PARKING AND TRAFFIC CONTROL PLAN

DRAWING NUMBER: **C-3**  
 PROJECT NUMBER: 16030



INSET 'A' AS SHOWN ON DRAWING OS-1



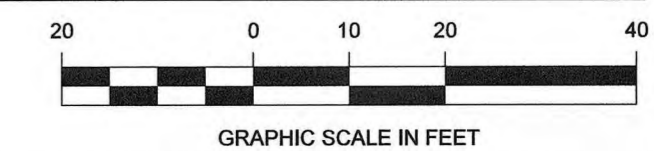
INSET 'B' AS SHOWN ON DRAWING OS-1

**LEGEND**

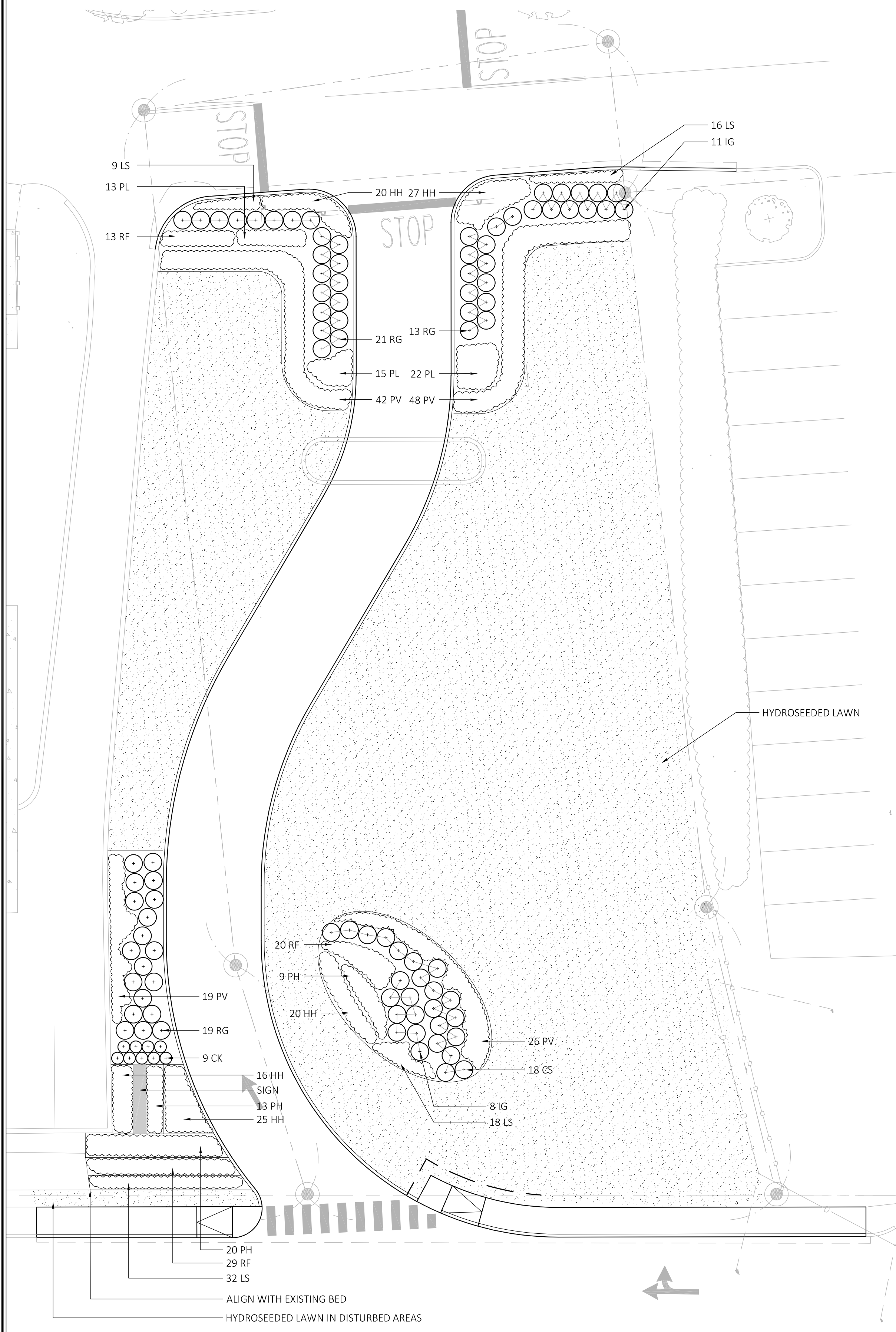
- HEAVY DUTY PAVEMENT
- CONCRETE SIDEWALK
- VERTICAL GRANITE CURB
- SLOPED GRANITE CURB
- DYCL DOUBLE YELLOW CENTER LINE

**NOTE:**  
 ANY PAVEMENT IMPACTED BY UTILITIES OR ISLAND CONSTRUCTION WITHIN THE CITY R.O.W. WILL BE MILLED AND REPAVED AFTER 12 MONTHS TO THE SATISFACTION OF THE PUBLIC WORKS DEPARTMENT.

TRAFFIC CONTROL SCHEDULE							
SIGN NUMBER	SIGN	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	DESCRIPTION	MOUNT TYPE	MOUNT HEIGHT	REMARKS
R1-1		30"	30"	WHITE ON RED	2"x2" SQUARE POST	7'-0"	REFLECTORIZED SIGN
R5-1		30"	30"	RED ON WHITE	2"x2" SQUARE POST	7'-0"	REFLECTORIZED SIGN
R1-3P		18"	6"	WHITE ON RED	2"x2" SQUARE POST	6'-6"	REFLECTORIZED SIGN
R4-7		24"	30"	BLACK ON WHITE	2"x2" SQUARE POST	7'-0"	REFLECTORIZED SIGN

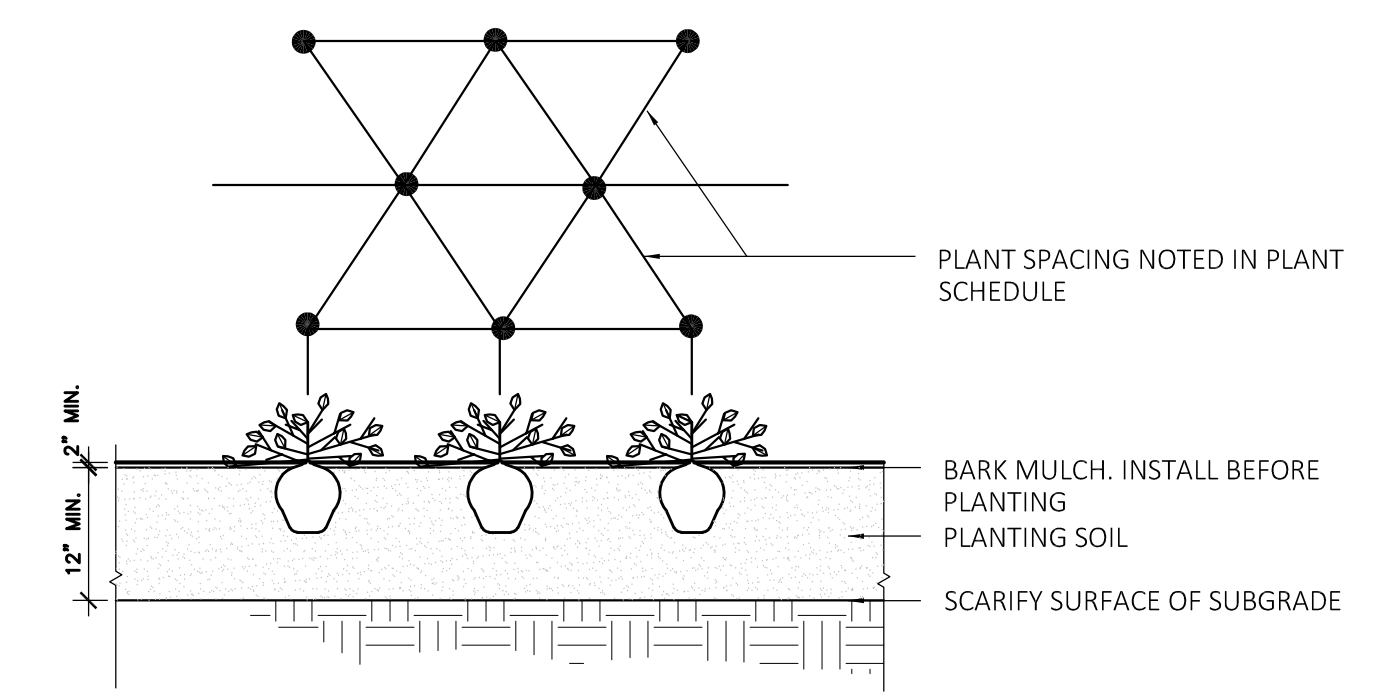


NOTE: NO IRRIGATION AT THIS TIME



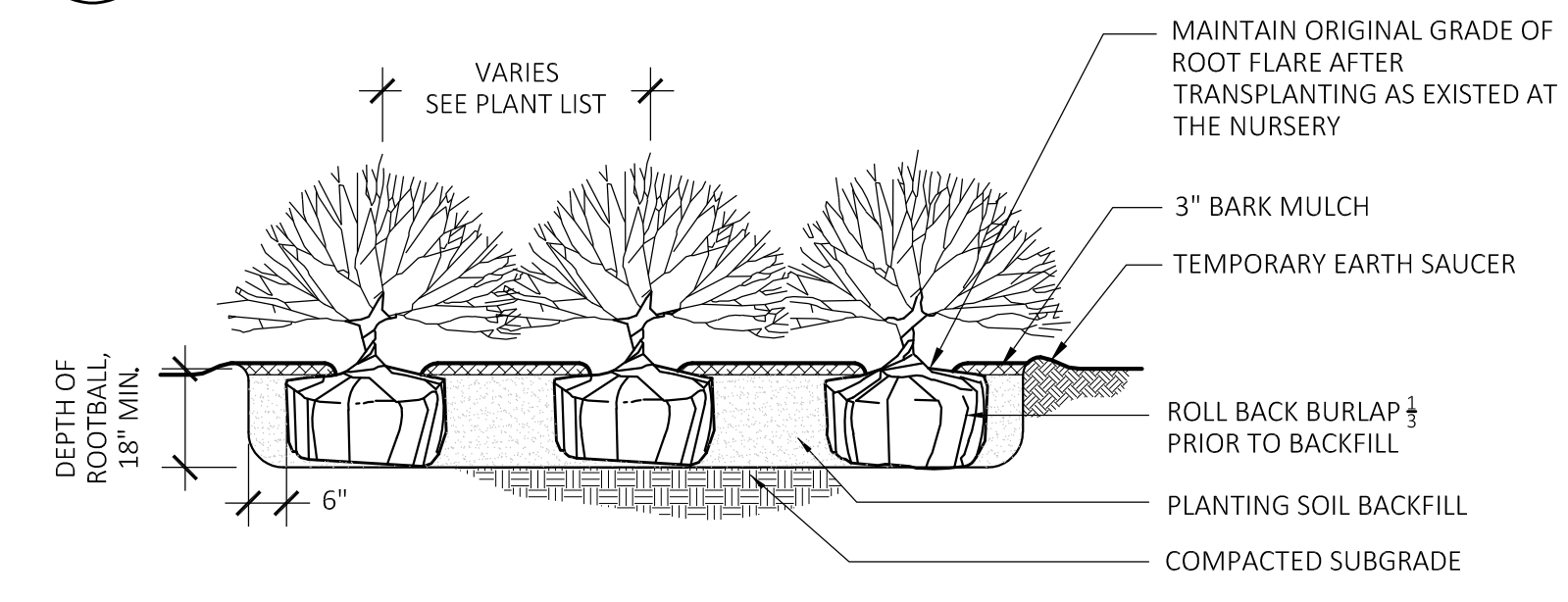
## 2 GROUNDCOVER PLANTING

SCALE: N.T.S.



## 3 SHRUB PLANTING

SCALE: N.T.S.



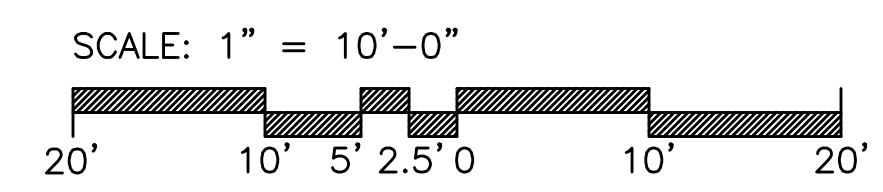
PLANTING:

- DURING CONSTRUCTION, PROTECT ALL EXISTING SITE FEATURES, STRUCTURES AND UTILITIES.
- 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.
- 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.
- 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.
- THOROUGHLY WATER ALL PLANTS IMMEDIATELY AFTER PLANTING.
- WHERE DISCREPANCIES IN QUANTITIES OCCUR, DRAWINGS SUPERCEDE PLANT NOTES AND SCHEDULE.
- TRANSPLANTING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK.
- 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.
- MULCH IN TREE AND SHRUB BEDS SHALL BE NATURAL, NATIVE HEMLOCK MULCH FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS. SUBMIT SAMPLES FOR APPROVAL.
- 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.
- SOIL DEPTHS: a.) SHRUBS AND PERENNIAL BEDS: 18" MIN.; b.) GROUNDCOVER: 6" MIN.; c.) TREES: SEE DETAIL; d.) SOD/SEED: 6" MIN.
- PROVIDE A SUBSURFACE ROOTBALL ANCHOR BY PLATIPUS EARTH ANCHORS, SIZE FOR CALIPER

PLANT SCHEDULE					
SYMBOL	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
<b>SHRUBS AND GROUNDCOVER</b>					
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.
<b>PERENNIALS</b>					
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

## 1 LANDSCAPE PLANTING PLAN

SCALE: 1" = 10'-0"



NO.	REVISION	DATE
1.	ISSUED FOR TAC REVIEW	02/16/2020
	ISSUED FOR AMENDED SITE PLAN APPROVAL	03/10/2020

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

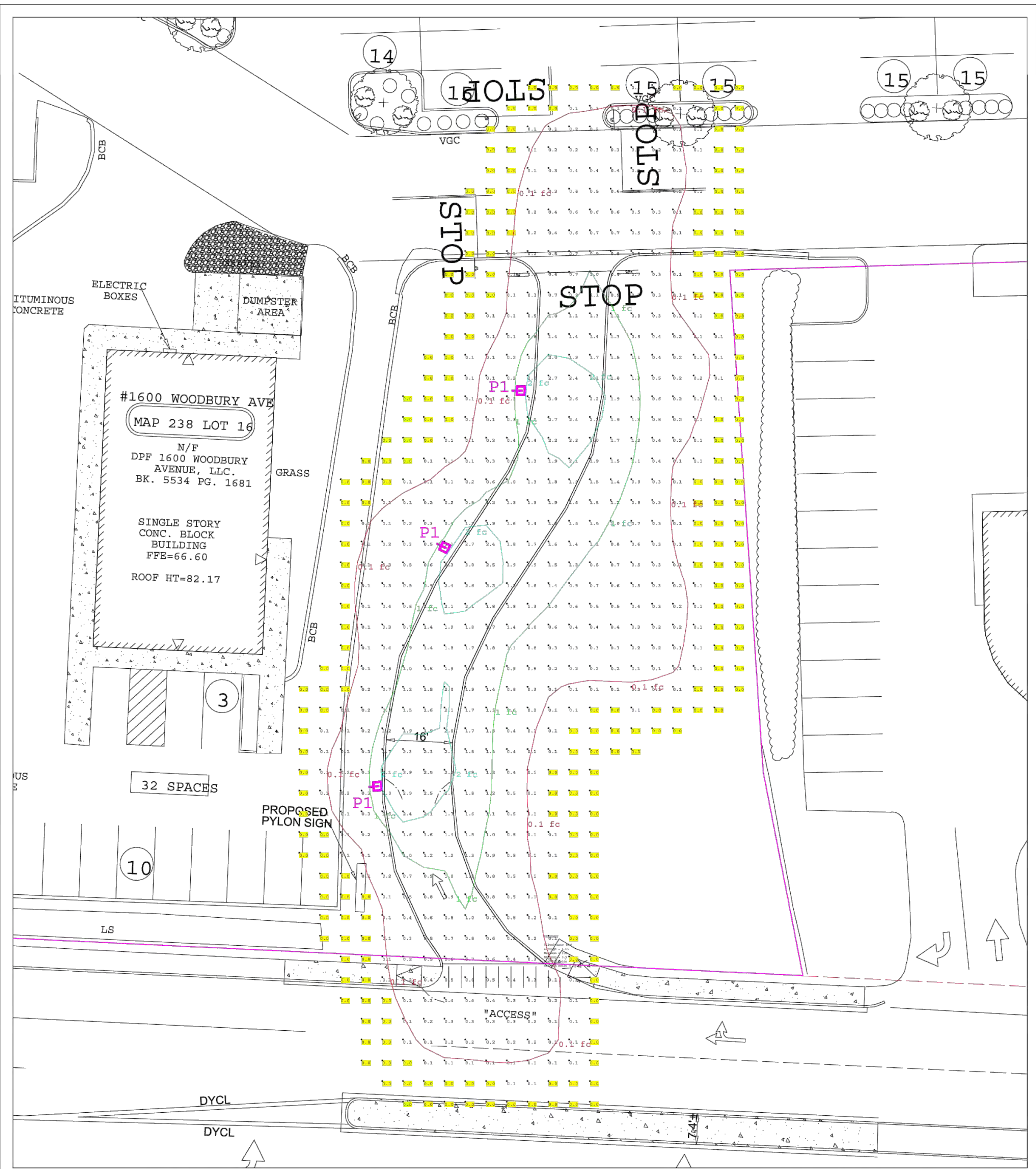
PREPARED FOR:  
**KEYPOINT PARTNERS**  
*Unlocking Value in Commercial Real Estate*  
 ONE BURLINGTON WOODS DRIVE  
 BURLINGTON, MA 01803  
 781-418-6203

PROJECT NAME:  
**DPF DURGIN SQUARE**  
 PORTSMOUTH, NH



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  
 Copyright © 2019 by R.J. O'Connell & Associates, Inc.



Luminaire Schedule						
Qty	Symbol	Label	Description	Lum. Lumens	Lum. Watts	LLF
3		P1	NLS LIGHTING: NV-1-T3-16L-1-40K-UNV-(MOUNTING)-(FINISH)-HSS 20' HEIGHT	3752	56	0.900

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE (ALL POINTS)_Planar	Fc	0.50	3.0	0.0	N.A.	N.A.
DRIVEWAY	Fc	1.65	3.0	0.3	5.50	10.00



**DPF DURGIN SQUARE- PORTSMOUTH NH**  
**PROPOSED SITE LIGHTING**

Drawn By: A.M.  
 Checked By:  
 Date: 3/9/2020  
 Specifier: RI O'CONNELL ASSOC  
 Scale: NTS

#	Date	Comments
X	XX/XX	XXXXXXXXXXXX




NO.	REVISION	DATE
1.	ISSUED FOR AMENDED SITE PLAN APPROVAL	03/09/2020
	ISSUED FOR TAC REVIEW	02/18/2020
	REVISION	
	NO.	DATE
	REVISION	

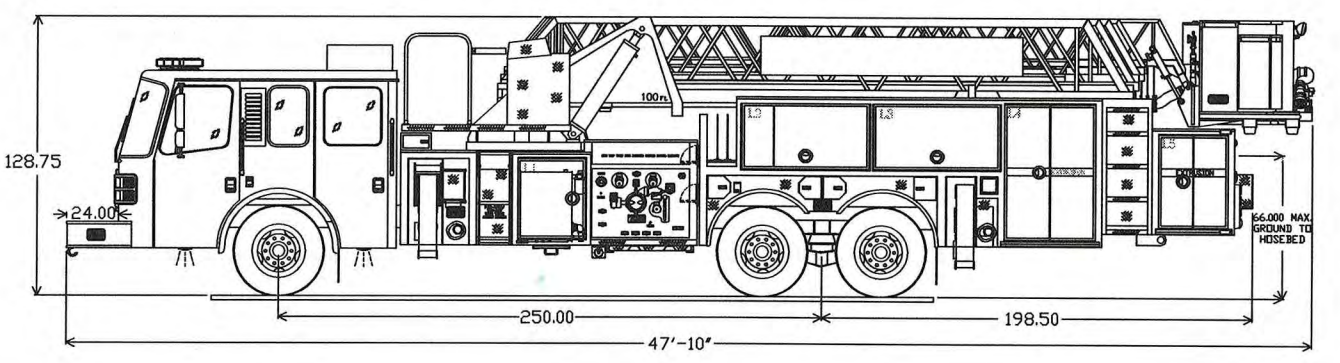
PREPARED BY:  
**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
 80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180  
 PHONE: 781.279.0180 RJOCONNELL.COM

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

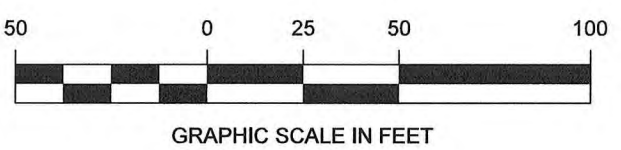
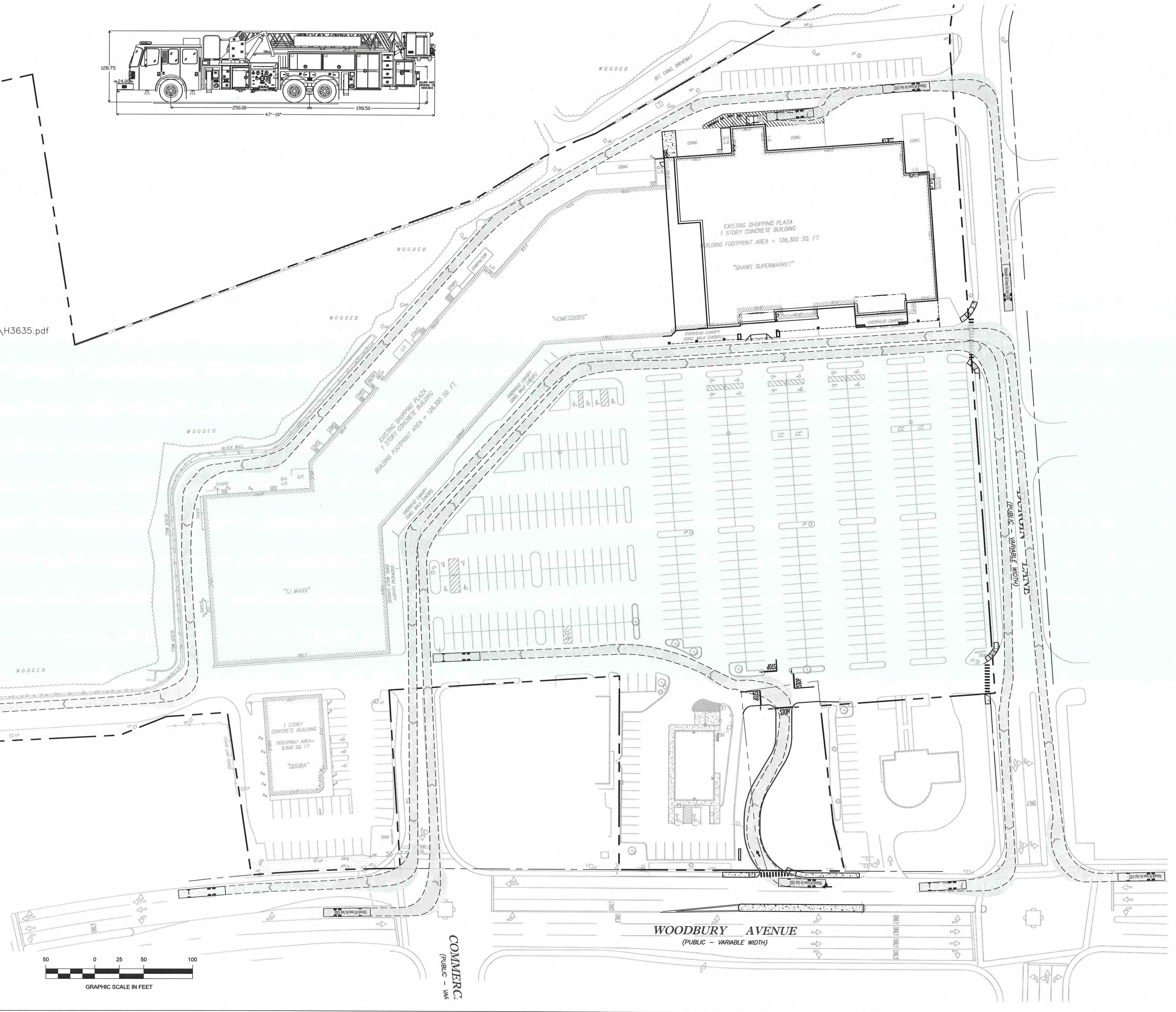
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 DESIGNED BY: SPG  
 DRAWN BY: MCR  
 REVIEWED BY: BPD  
 SCALE: 1" = 50'  
 DATE: 02/18/2020  
 DRAWING NAME:

**FIRE TRUCK TURNING PLAN**  
 DRAWING NUMBER: **FT-1**  
 PROJECT NUMBER: 16030



Missing or invalid reference  
 File: C:\Users\Mario\Desktop\H3635.pdf  
 Sheet: 3

Drawing name C:\NH\Portsmouth\KeyPointDurgin Square\Main\16030\_FT-1 Fire Truck Turning Plan.dwg  
 Mar 05, 2020 - 8:27am

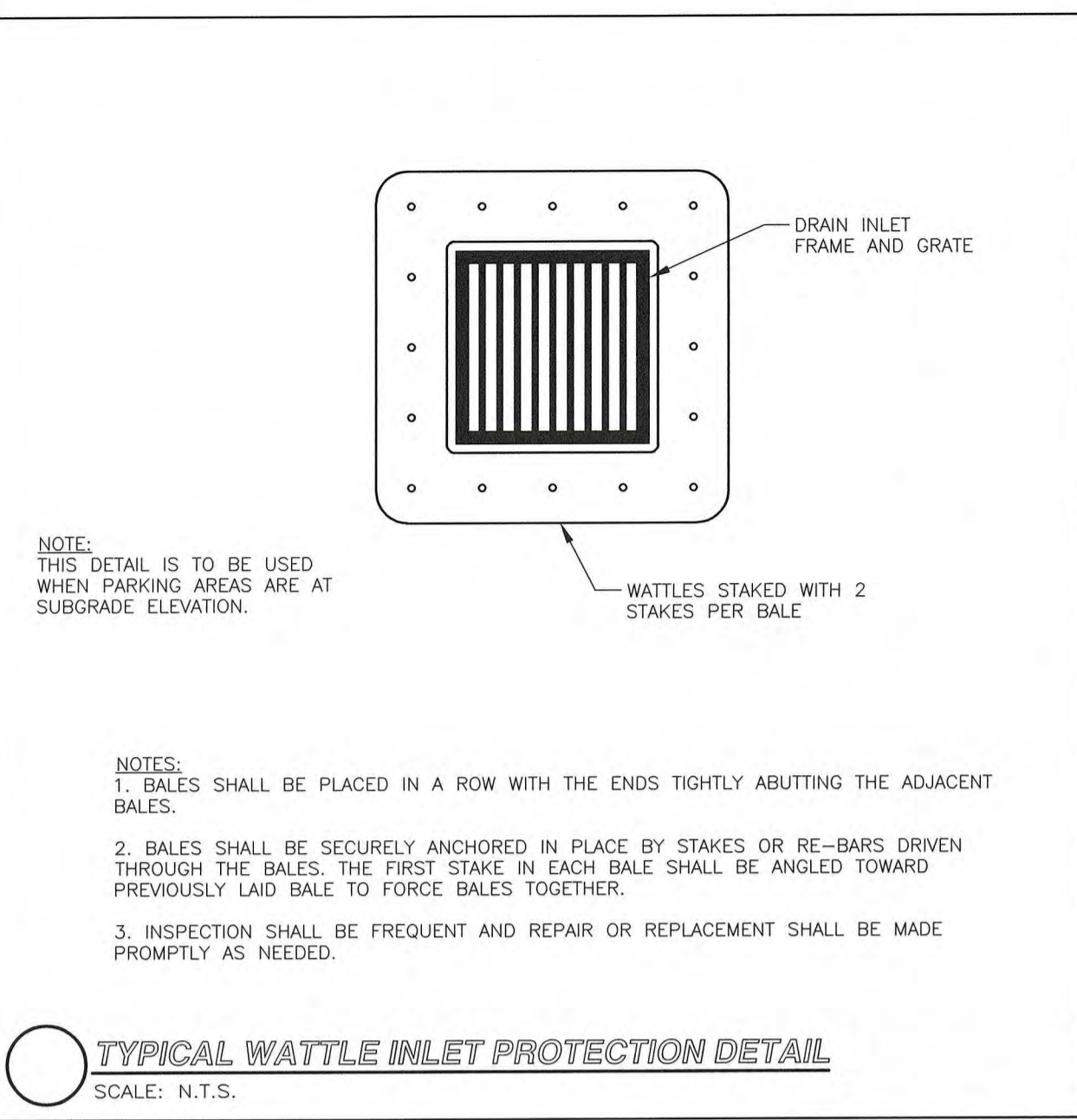


COMMERCIAL  
 (PUBLIC - VARIABLE WIDTH)

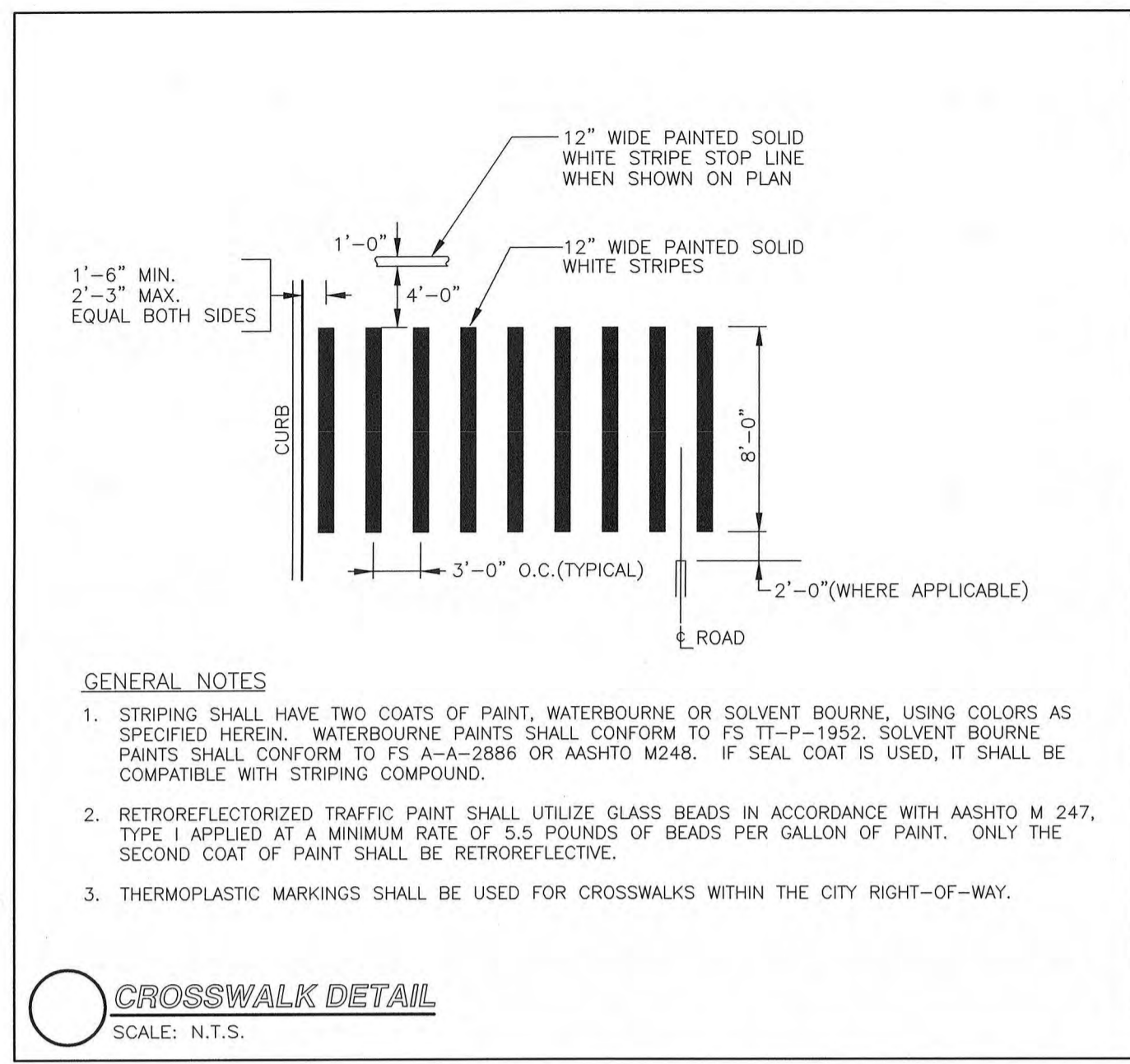
WOODBURY AVENUE  
 (PUBLIC - VARIABLE WIDTH)

ARTHUR BRADY DRIVE  
 (PUBLIC - VARIABLE WIDTH)

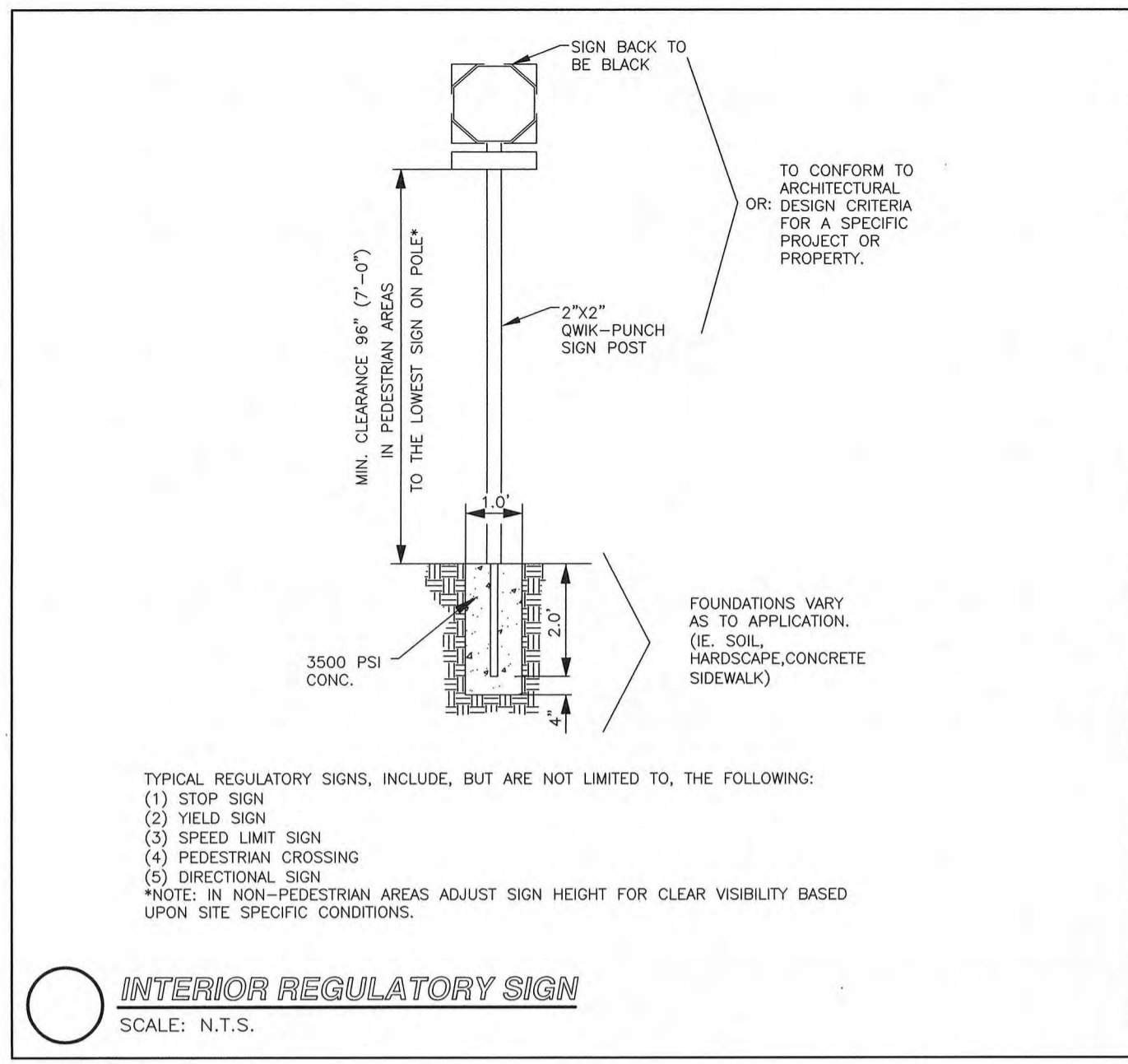
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 (PUBLIC - VARIABLE WIDTH)



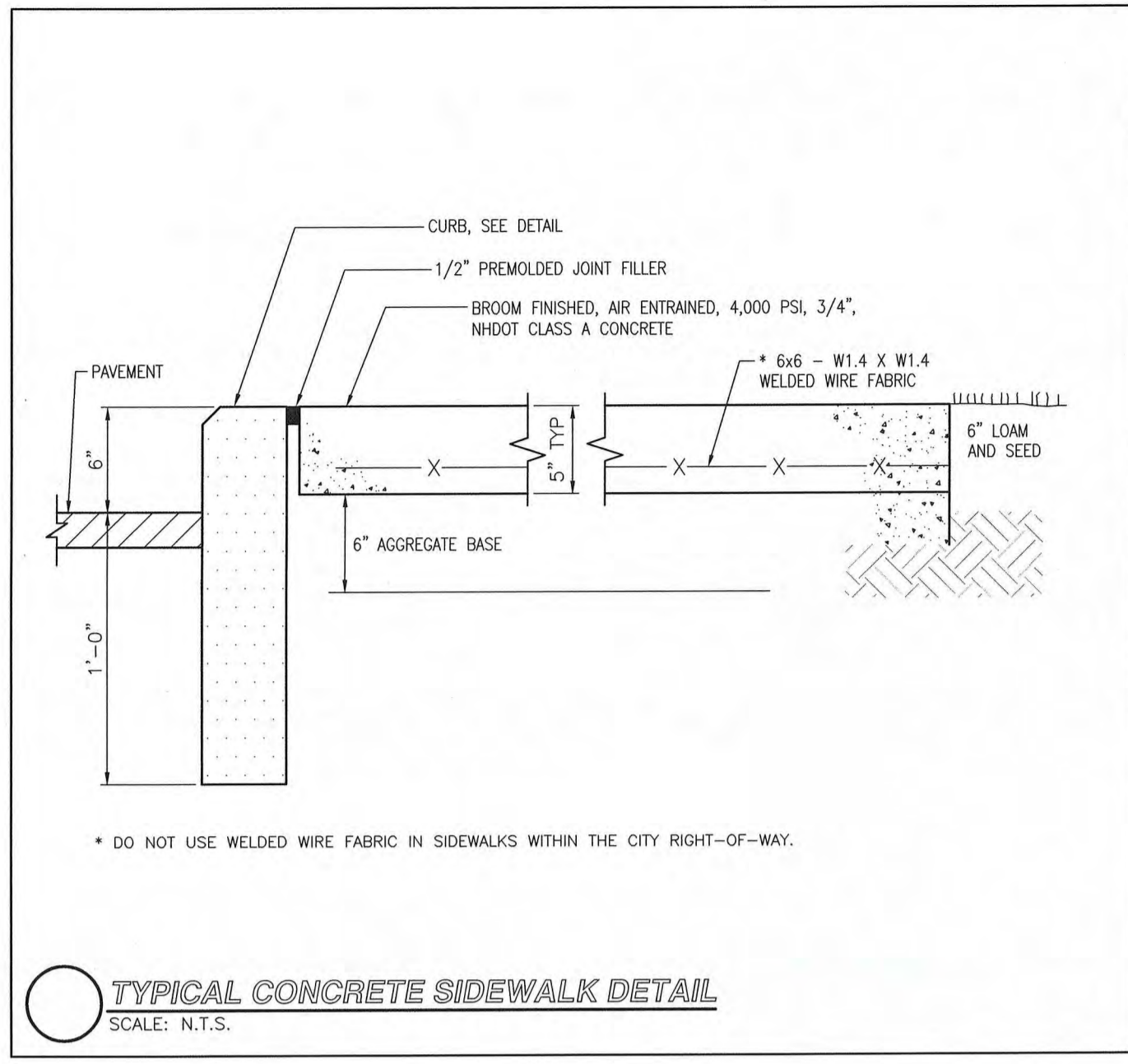
**TYPICAL WATTLE INLET PROTECTION DETAIL**  
SCALE: N.T.S.



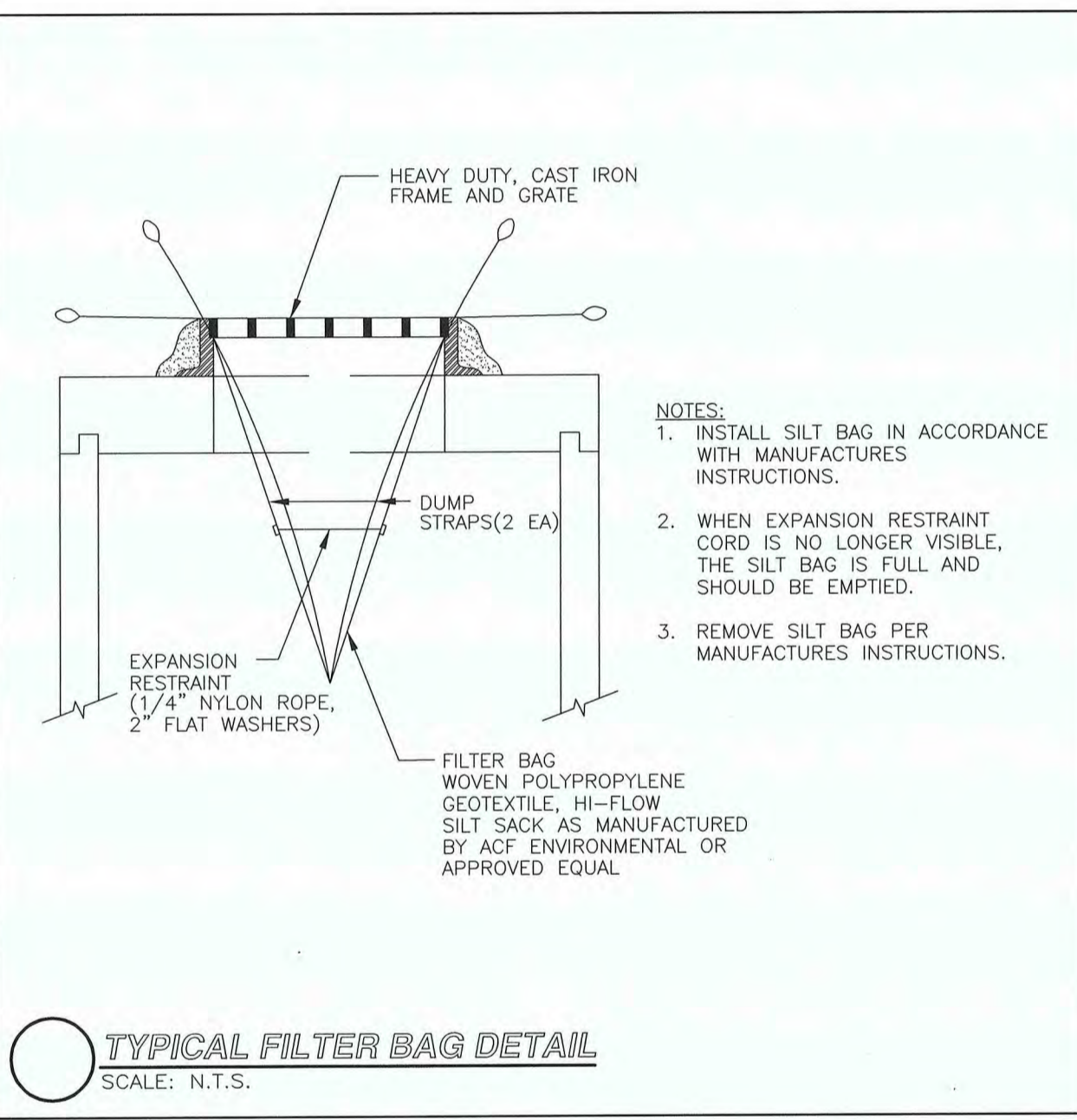
**CROSSWALK DETAIL**  
SCALE: N.T.S.



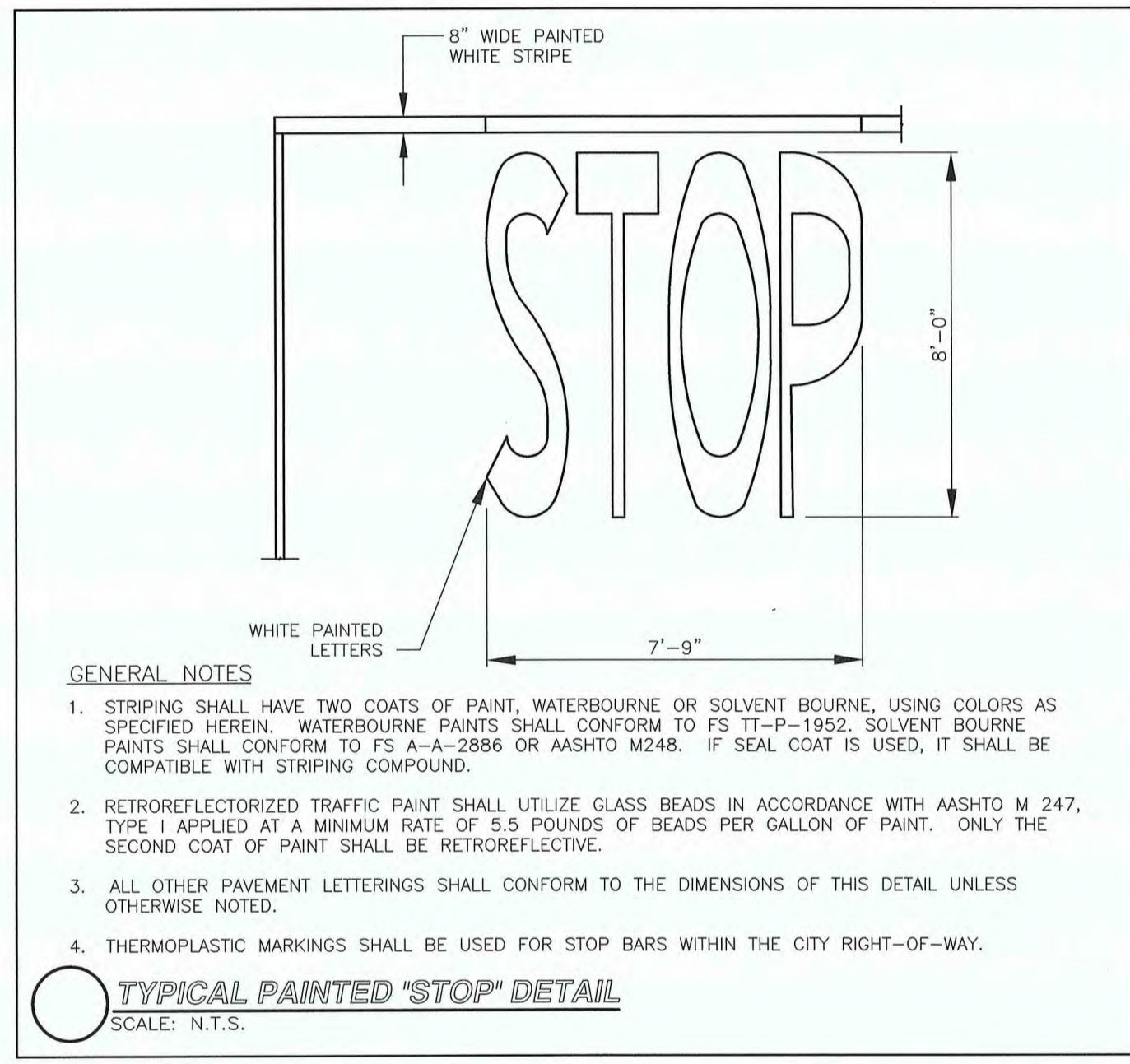
**INTERIOR REGULATORY SIGN**  
SCALE: N.T.S.



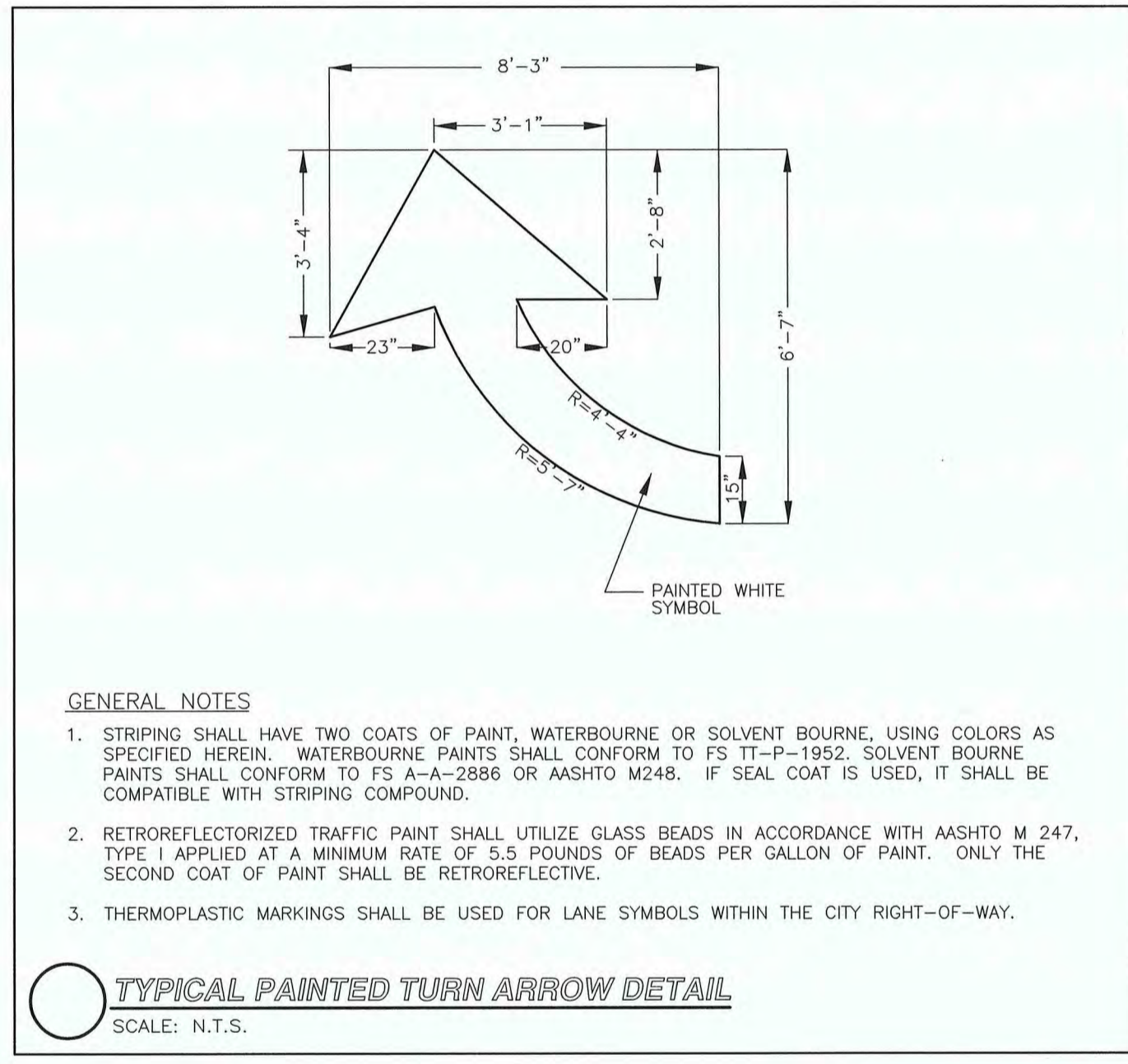
**TYPICAL CONCRETE SIDEWALK DETAIL**  
SCALE: N.T.S.



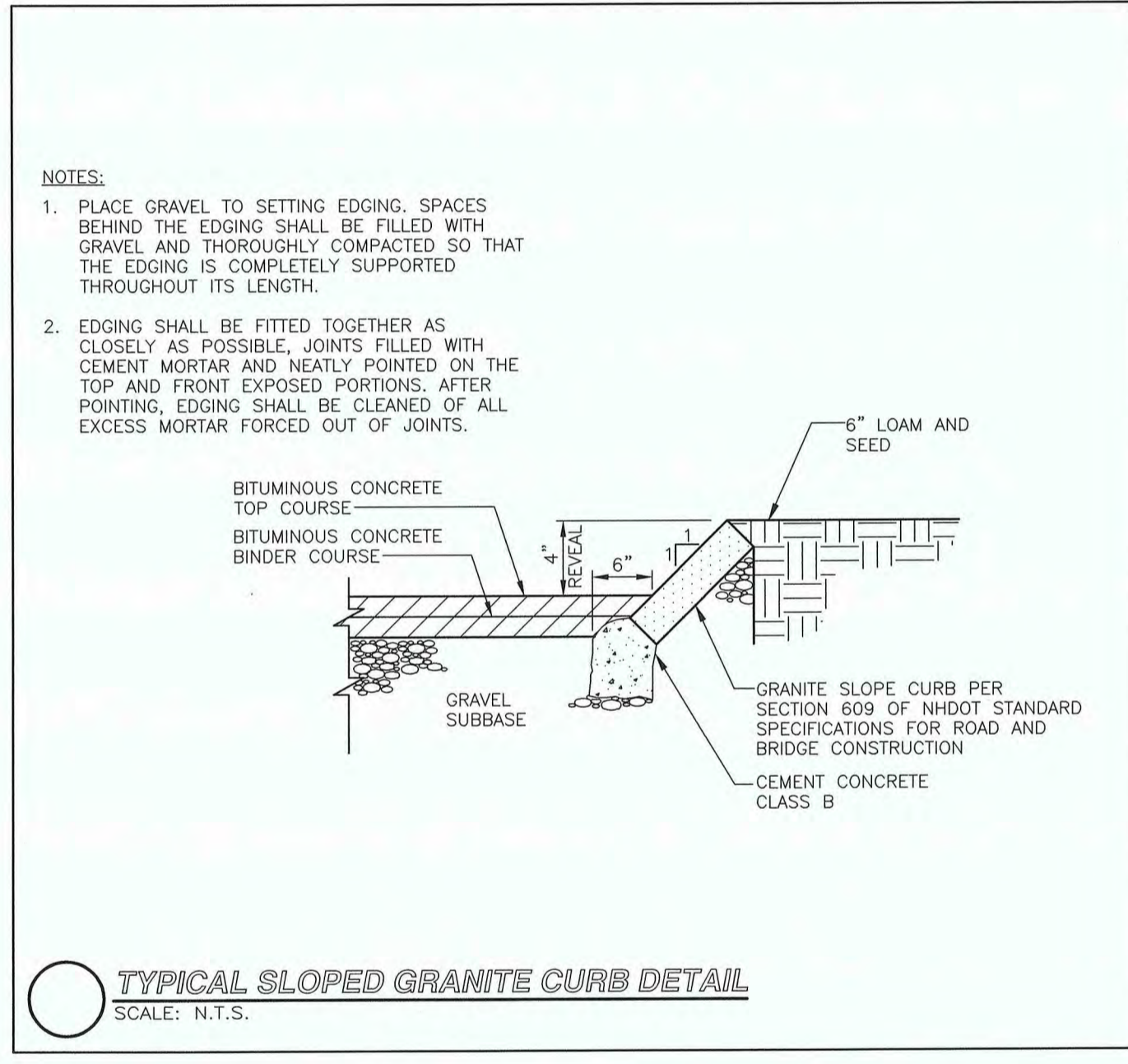
**TYPICAL FILTER BAG DETAIL**  
SCALE: N.T.S.



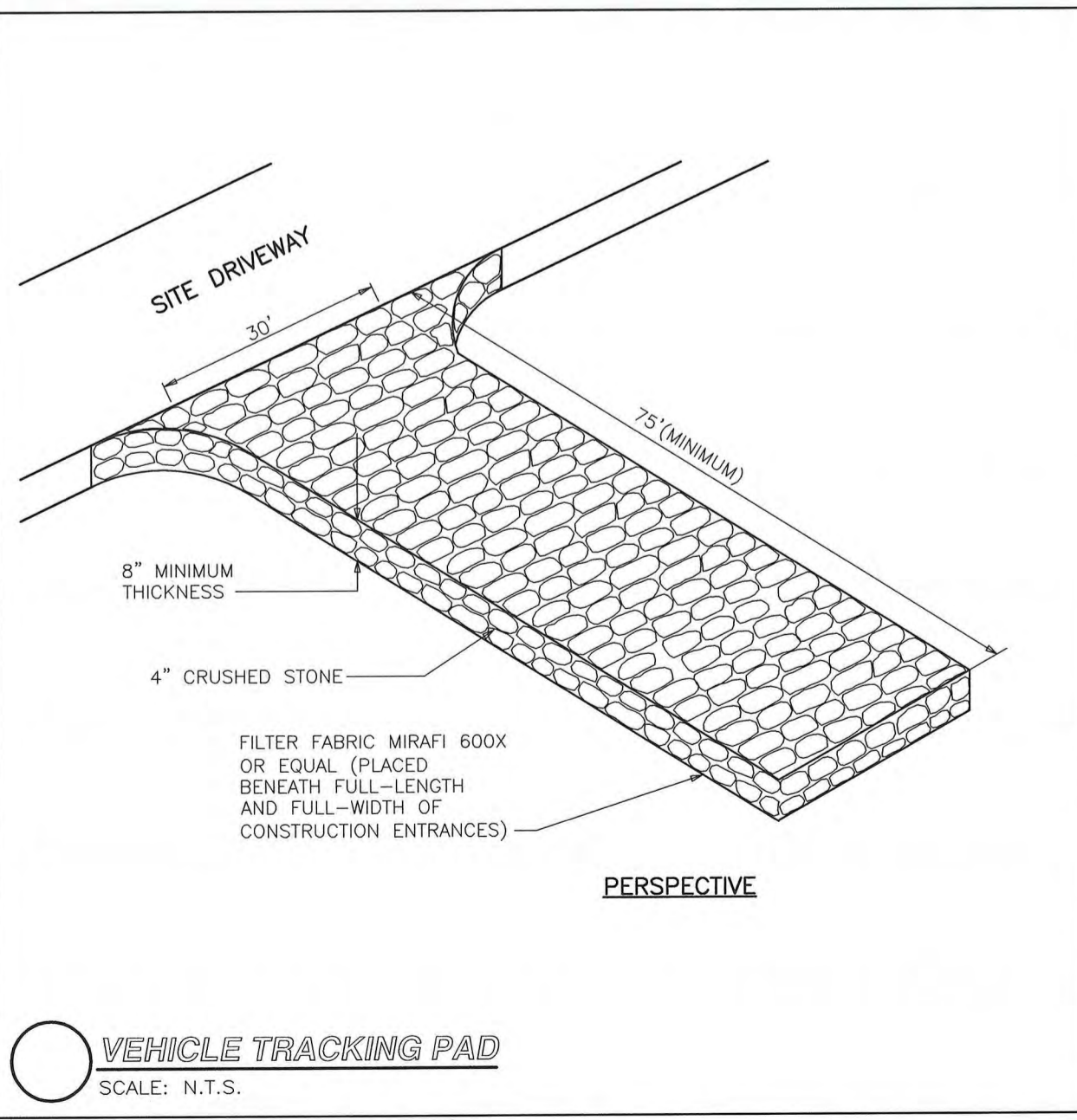
**TYPICAL PAINTED 'STOP' DETAIL**  
SCALE: N.T.S.



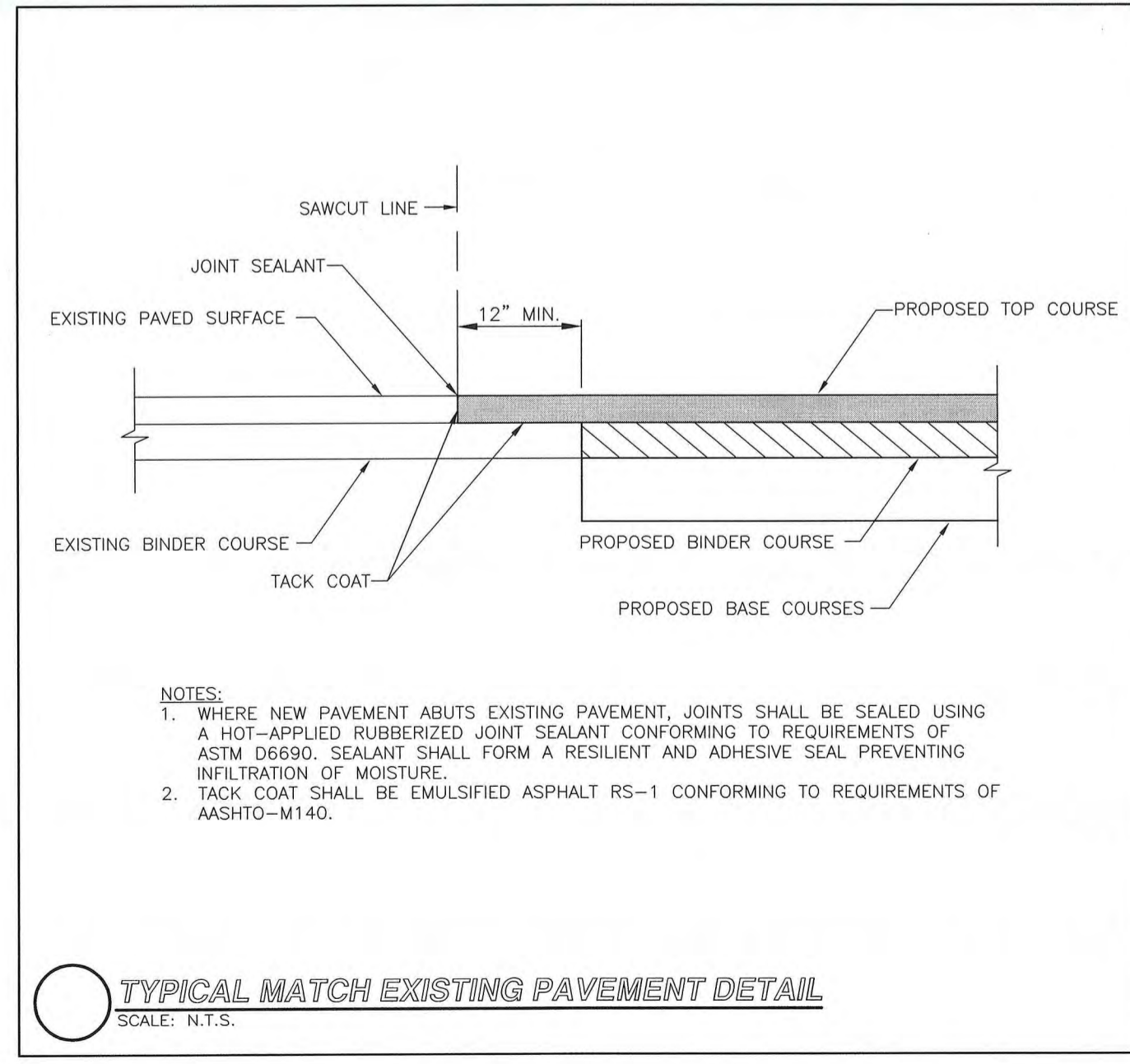
**TYPICAL PAINTED TURN ARROW DETAIL**  
SCALE: N.T.S.



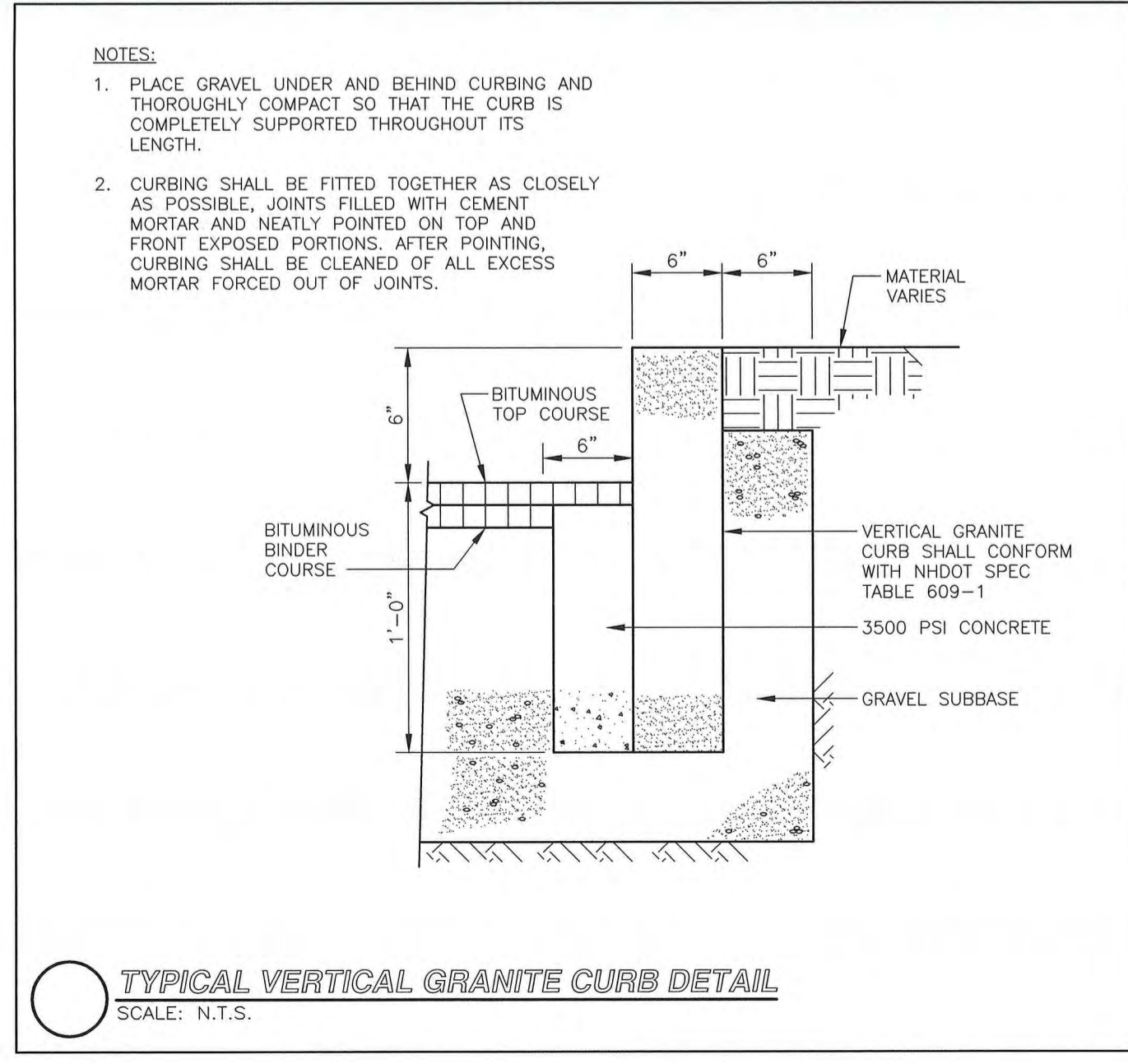
**TYPICAL SLOPED GRANITE CURB DETAIL**  
SCALE: N.T.S.



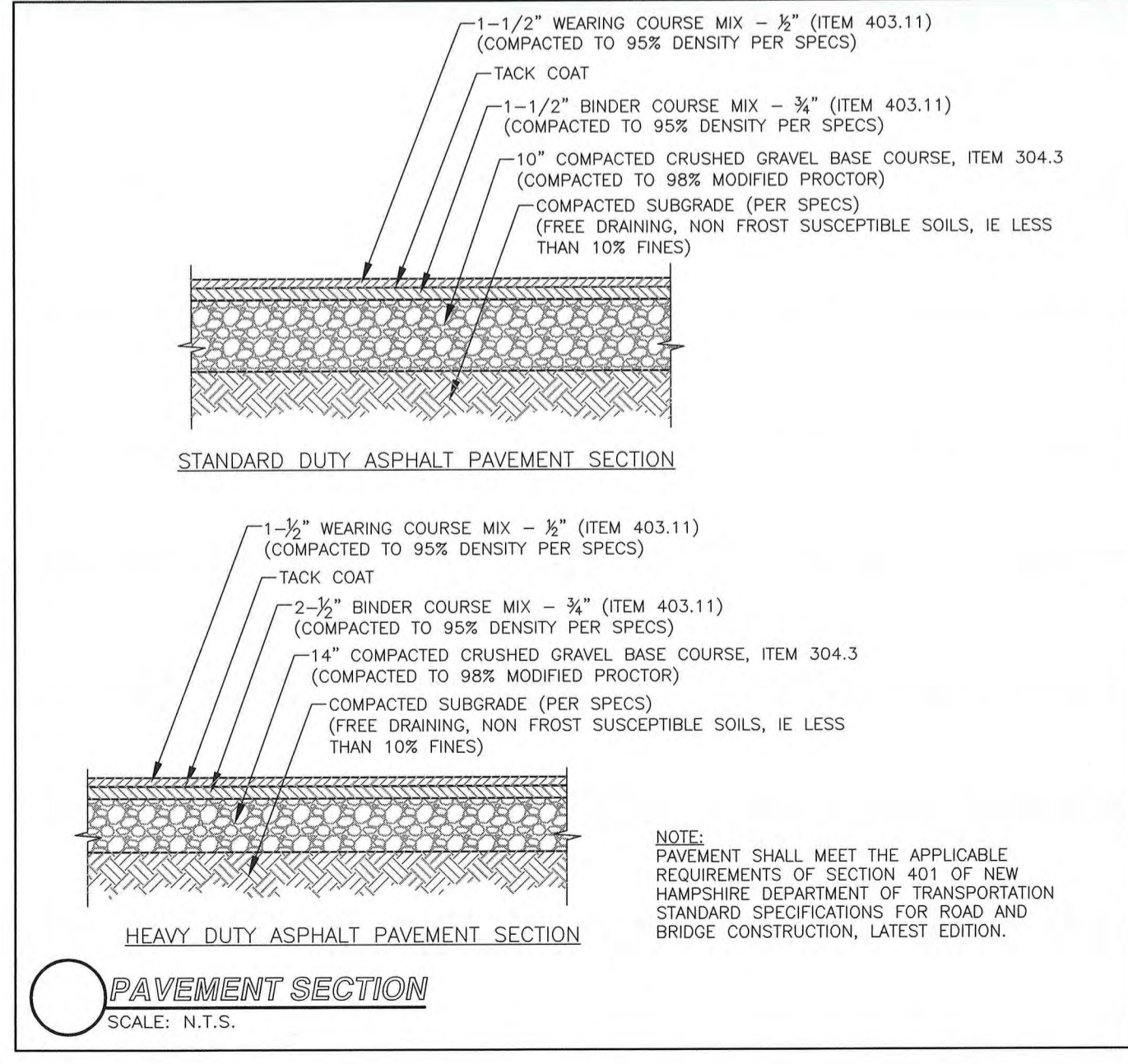
**VEHICLE TRACKING PAD**  
SCALE: N.T.S.



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



**TYPICAL VERTICAL GRANITE CURB DETAIL**  
SCALE: N.T.S.



**PAVEMENT SECTION**  
SCALE: N.T.S.

NO.	DATE	REVISION
1.	03/09/2020	ISSUED FOR AMENDED SITE PLAN APPROVAL
1.	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

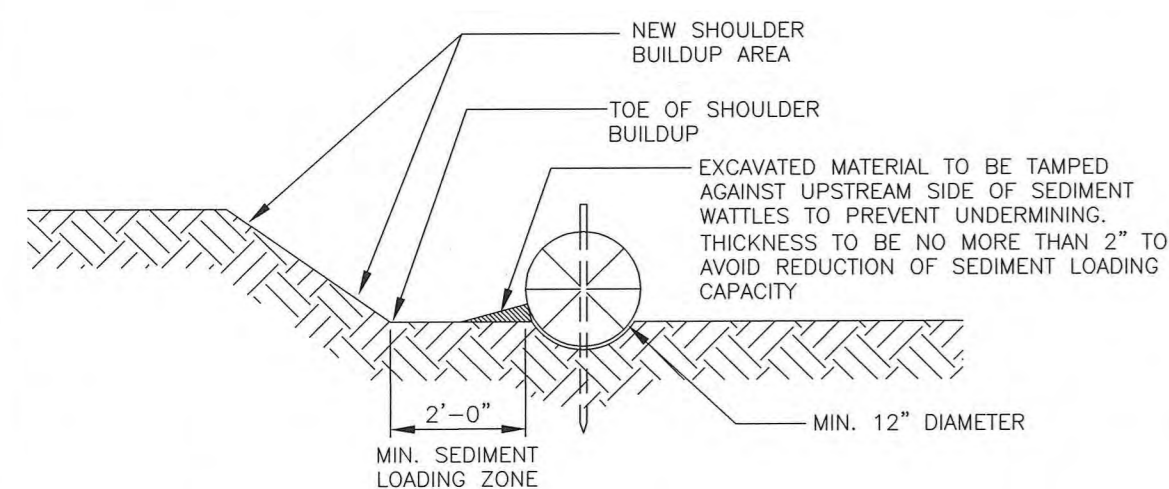
PREPARED FOR:  
**KEYPOINT PARTNERS**  
*Unlocking Value in Commercial Real Estate*  
ONE BURLINGTON WOODS DRIVE  
BURLINGTON, MA 01803  
781-418-6203

PROJECT NAME:

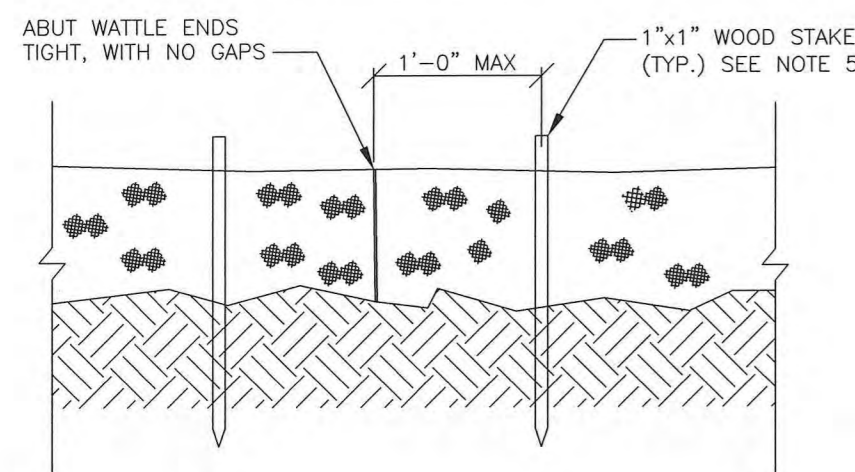
**DPF DURGIN SQUARE**  
PORTSMOUTH, NH

SEAL:  
  
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

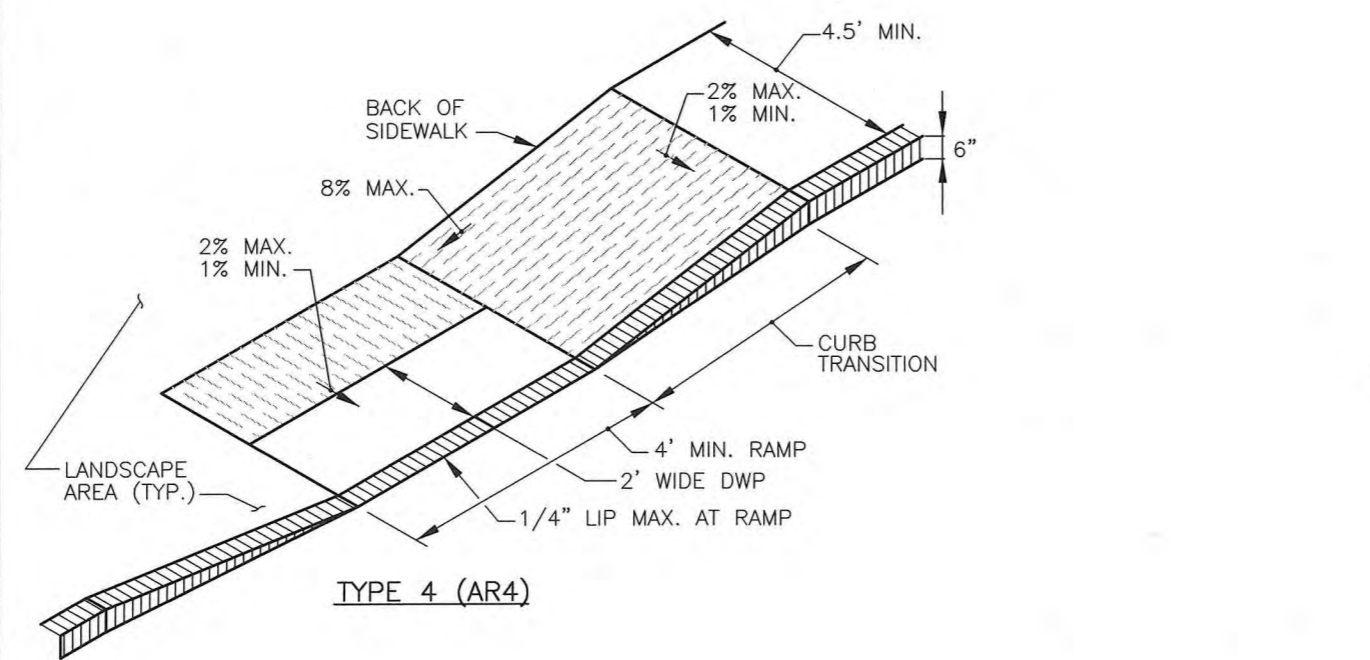
NOTES:

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 1/2 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:

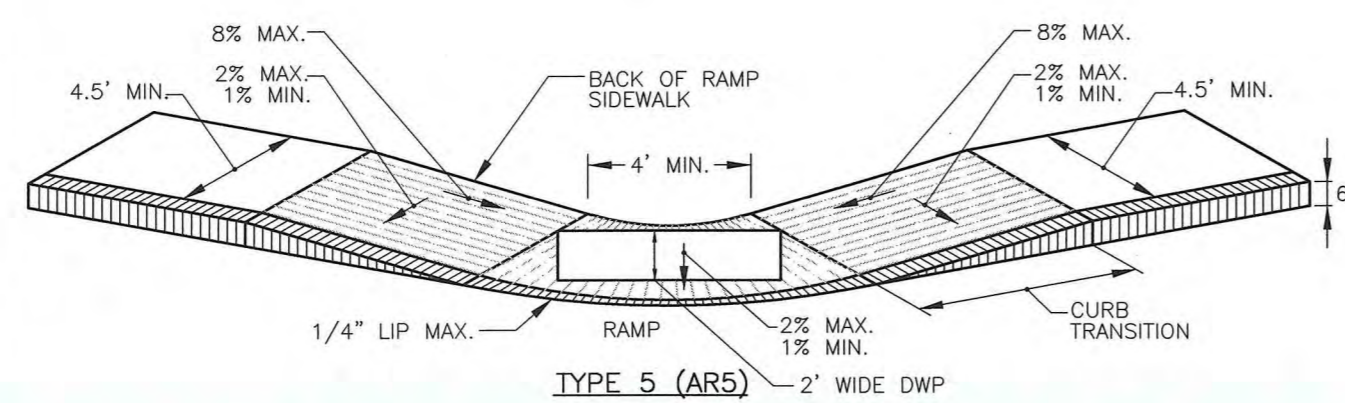
SLOPE RATIO	MAX SPACING INTERVALS
1:1 AND STEEPER, APPLY MINIBENCHING OR OTHER SUITABLE BMP'S.	
2:1	10'-0"
3:1	20'-0"
4:1	30'-0"
5:1	40'-0"
6:1	40'-0"

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 EXCELISIOR 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.

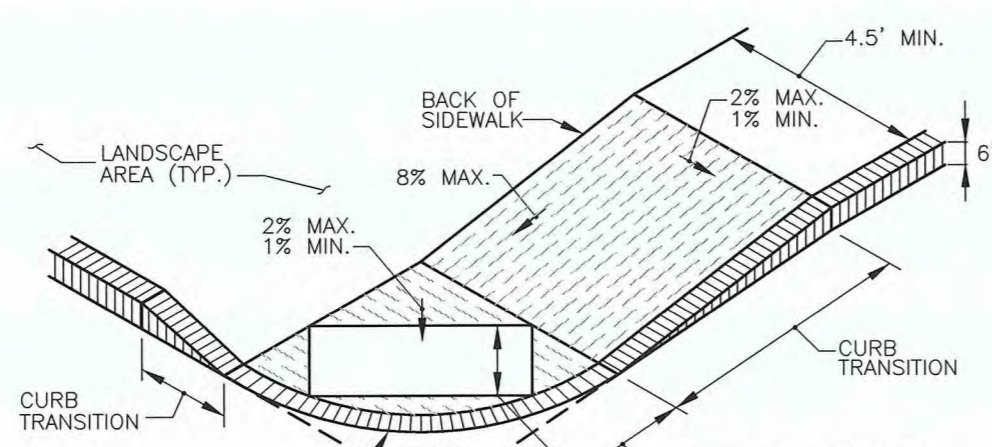
WATTLE EROSION AND SILTATION BARRIER  
SCALE: N.T.S.



TYPE 4 (AR4)

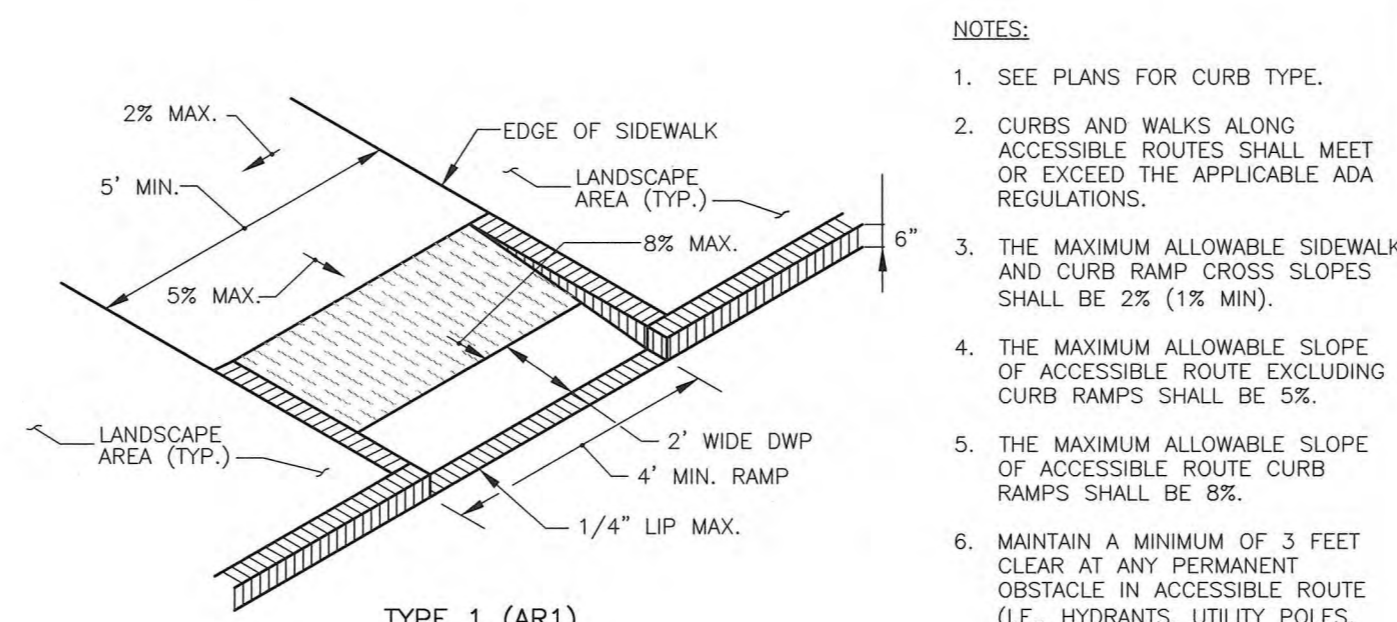


TYPE 5 (AR5)

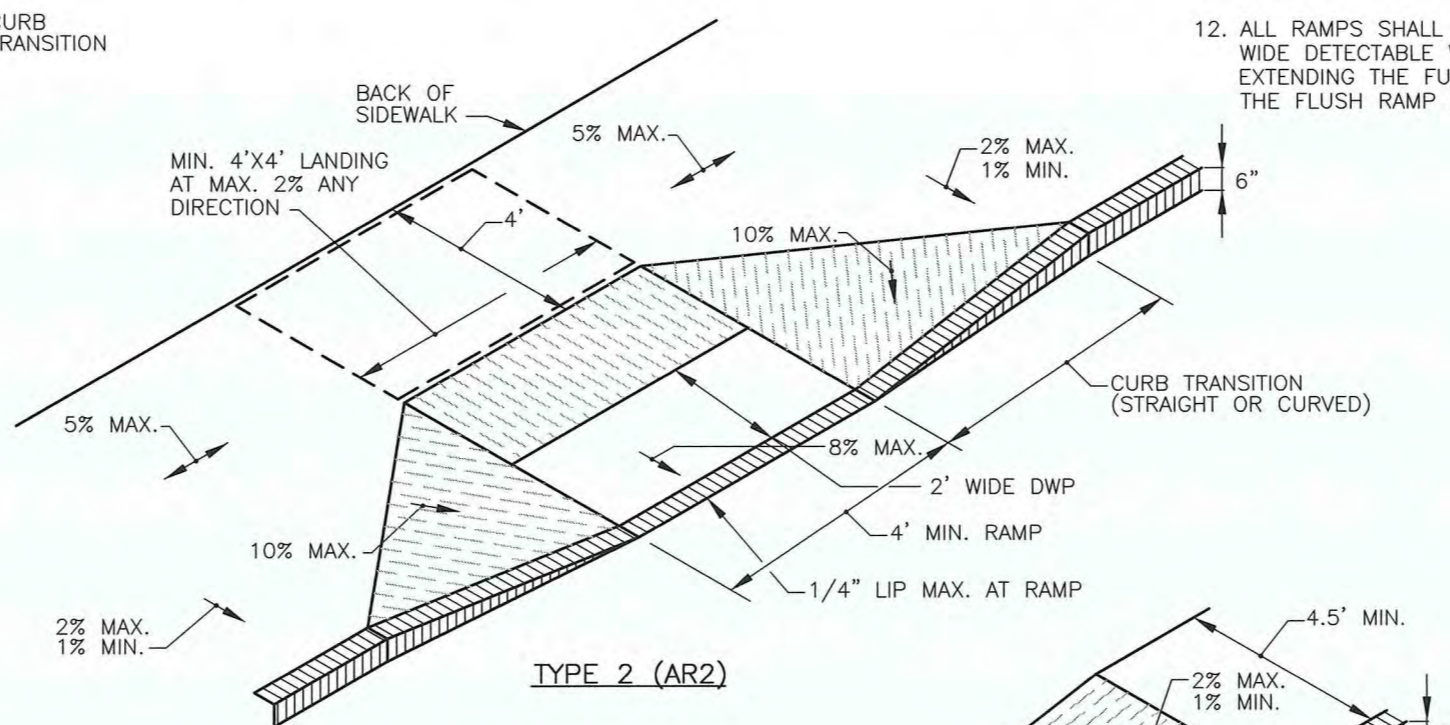


TYPE 6 (AR6)

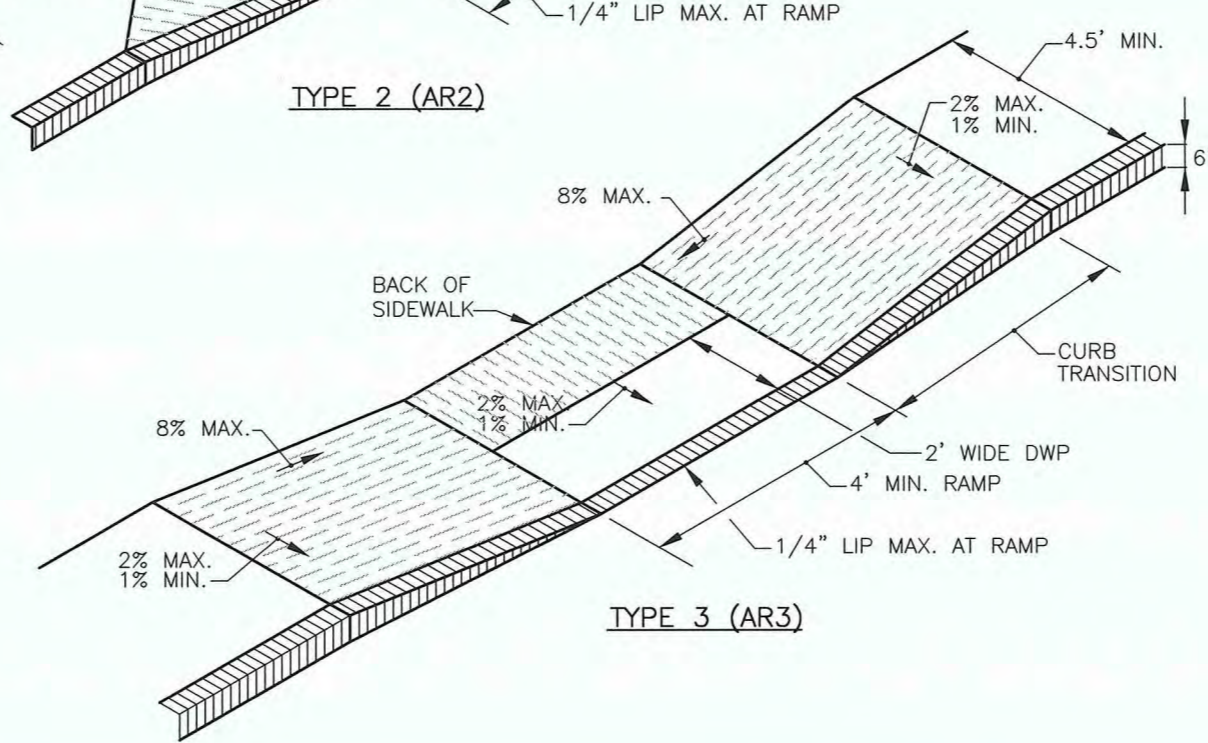
ACCESSIBLE CURB RAMPS (AR)  
SCALE: N.T.S.



TYPE 1 (AR1)



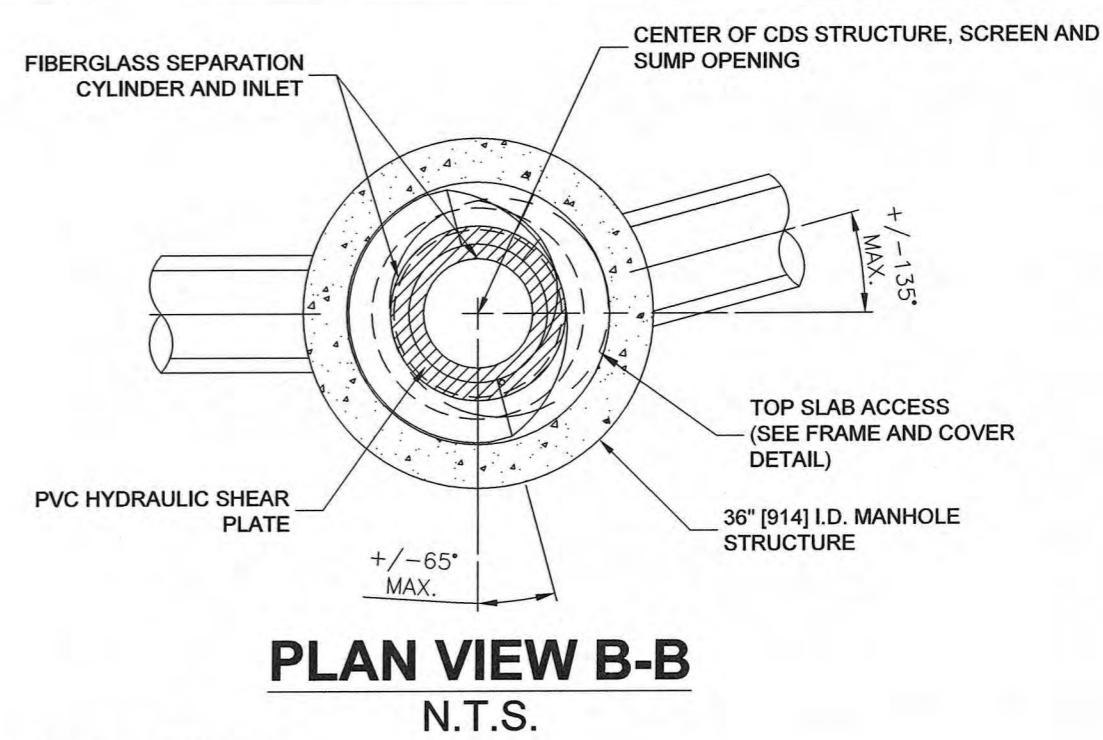
TYPE 2 (AR2)



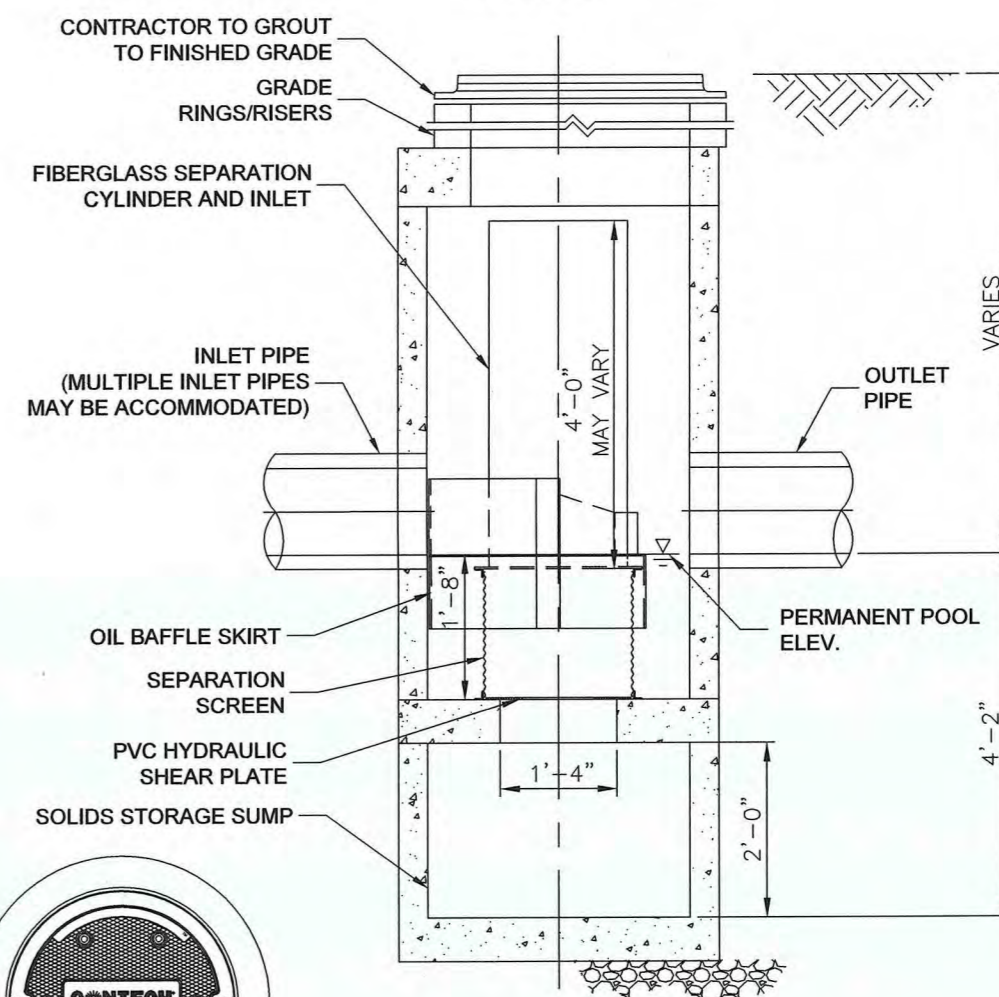
TYPE 3 (AR3)

NOTES:

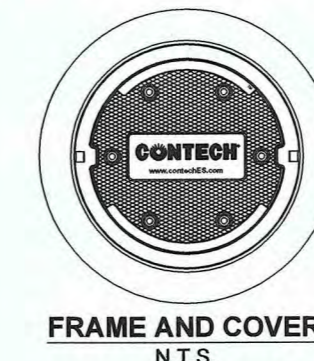
1. SEE PLANS FOR CURB TYPE.
2. CURBS AND WALKS ALONG ACCESSIBLE ROUTES SHALL MEET OR EXCEED THE APPLICABLE ADA REGULATIONS.
3. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 2% (1% MIN).
4. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
5. THE MAXIMUM 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.



PLAN VIEW B-B  
N.T.S.



ELEVATION A-A  
N.T.S.

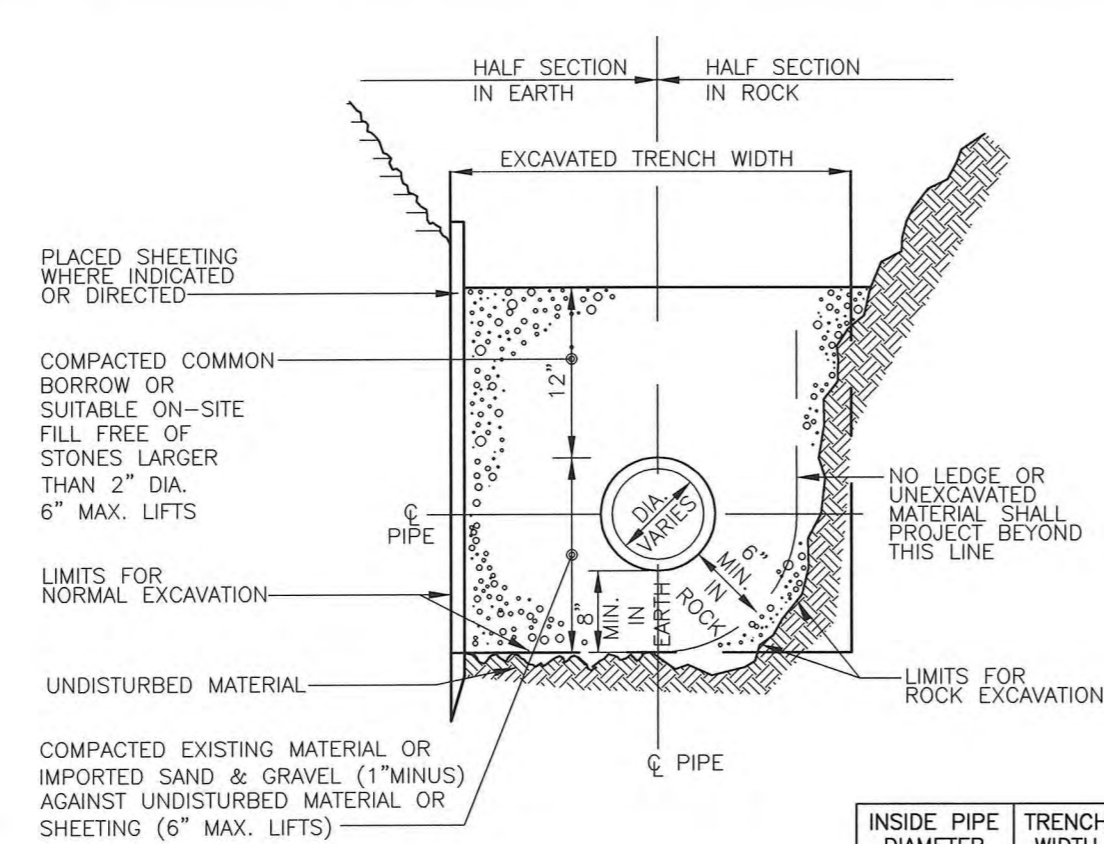


FRAME AND COVER  
N.T.S.

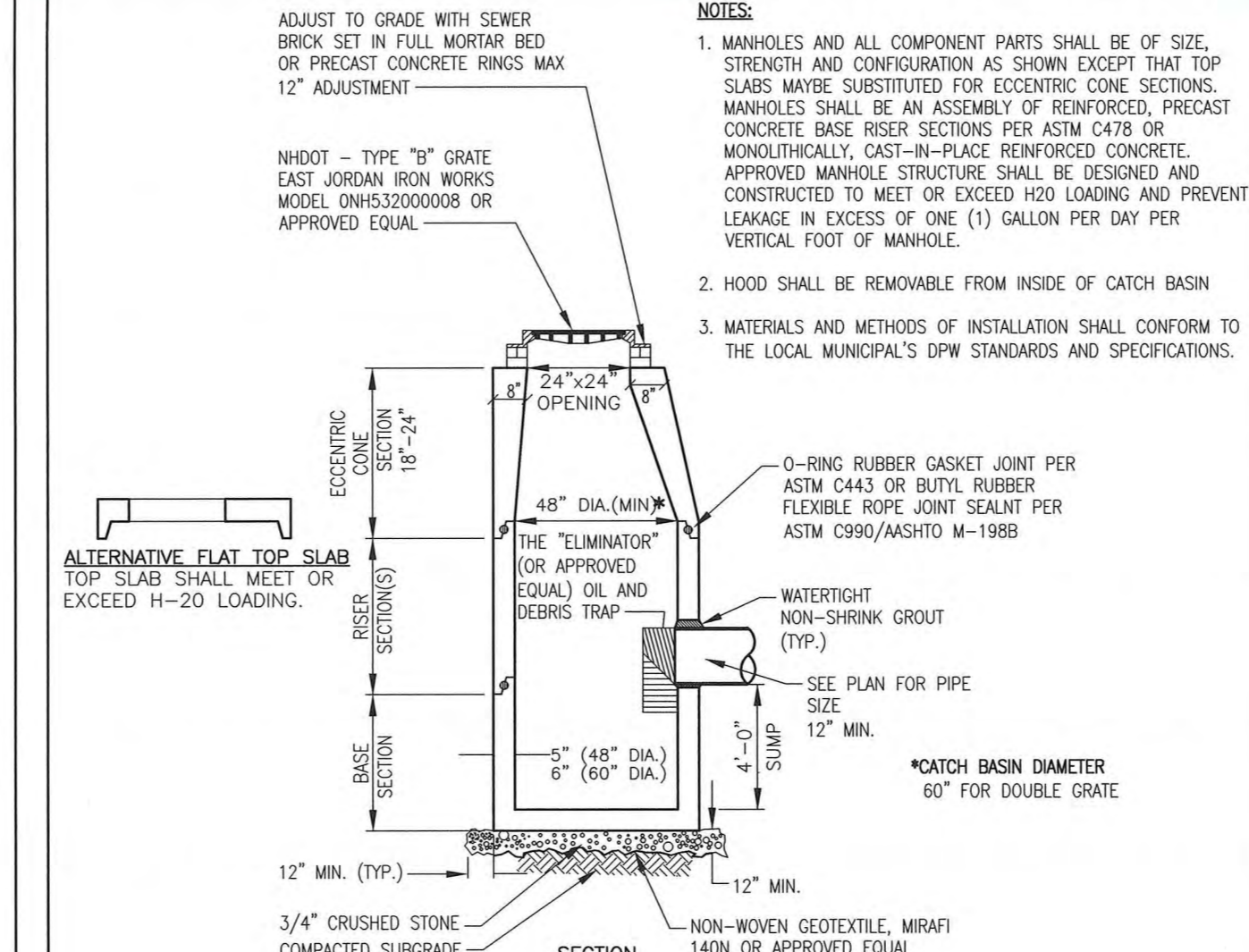
GENERAL NOTES:

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 ASHTO H20 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 M88 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 C478 AND ASHTO LOAD FACTOR DESIGN METHOD.
- INSTALLATION NOTES:
- A. ANY SUBBASE BACKFILL DEPTH, AND/OR ANTI-FLOTTATION 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 ASSEMBLY 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.

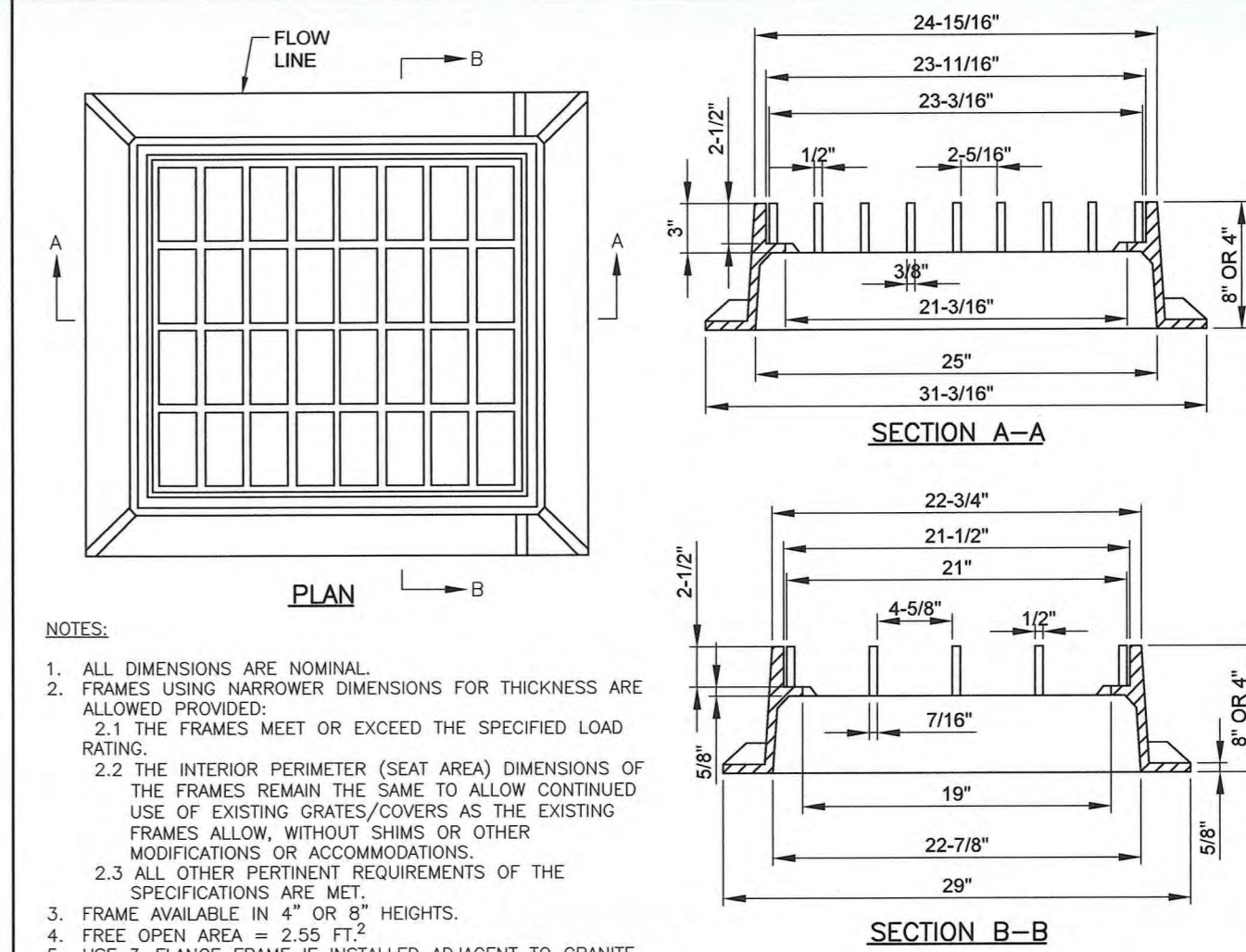
OIL/PARTICLE SEPARATOR DETAIL (CDS 1515-3-C)  
SCALE: N.T.S.



TYPICAL DRAIN TRENCH DETAIL  
SCALE: N.T.S.



TYPICAL CATCH BASIN WITH HOOD  
SCALE: N.T.S.



CATCH BASIN FRAME AND GRATE (NHDOT - TYPE 'B' GRATE)  
SCALE: N.T.S.

NO.	DATE	REVISION
1.	03/09/2020	ISSUED FOR AMENDED SITE PLAN APPROVAL
1.	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 RJCONNELL.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

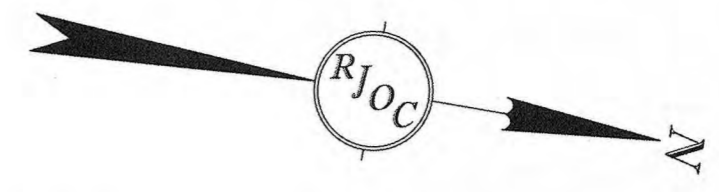
SEAL:  
STATE OF NEW HAMPSHIRE  
BRIAN P. DUNDON  
No. 10460  
LICENSED PROFESSIONAL ENGINEER  
03-09-2020

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 05/15/2014.
  - 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 ADJUTING PROPERTIES. IF THE APPLICANT MUST WORK ON AN ADJUTING 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.

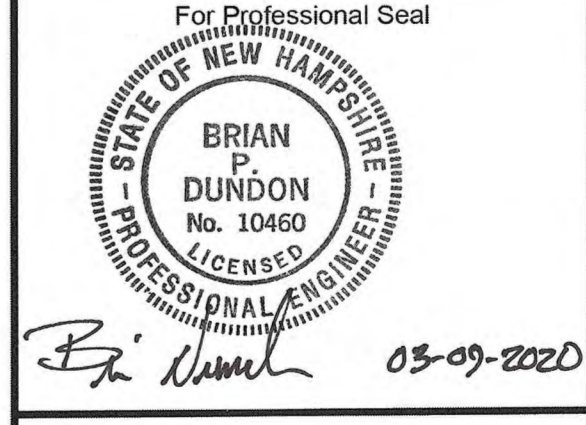


No.	REVISIONS	BY	DATE
-	ISSUED FOR AMENDED SITE PLAN APPROVAL	SPG	03/09/2020

**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.** 80 MONTVALE AVENUE STONEHAM, MA 02180  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS 781-279-0180 FAX: 781-279-0173

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



Planning Board

Chair \_\_\_\_\_

Member \_\_\_\_\_

Member \_\_\_\_\_

Member \_\_\_\_\_

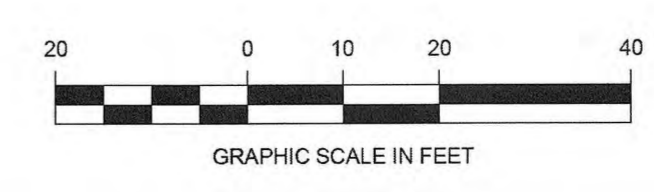
Member \_\_\_\_\_

Member \_\_\_\_\_

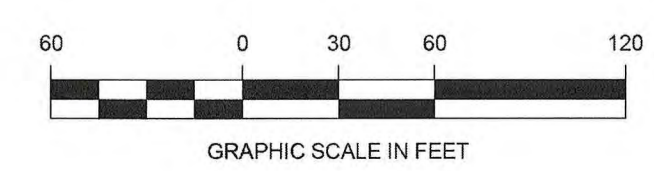
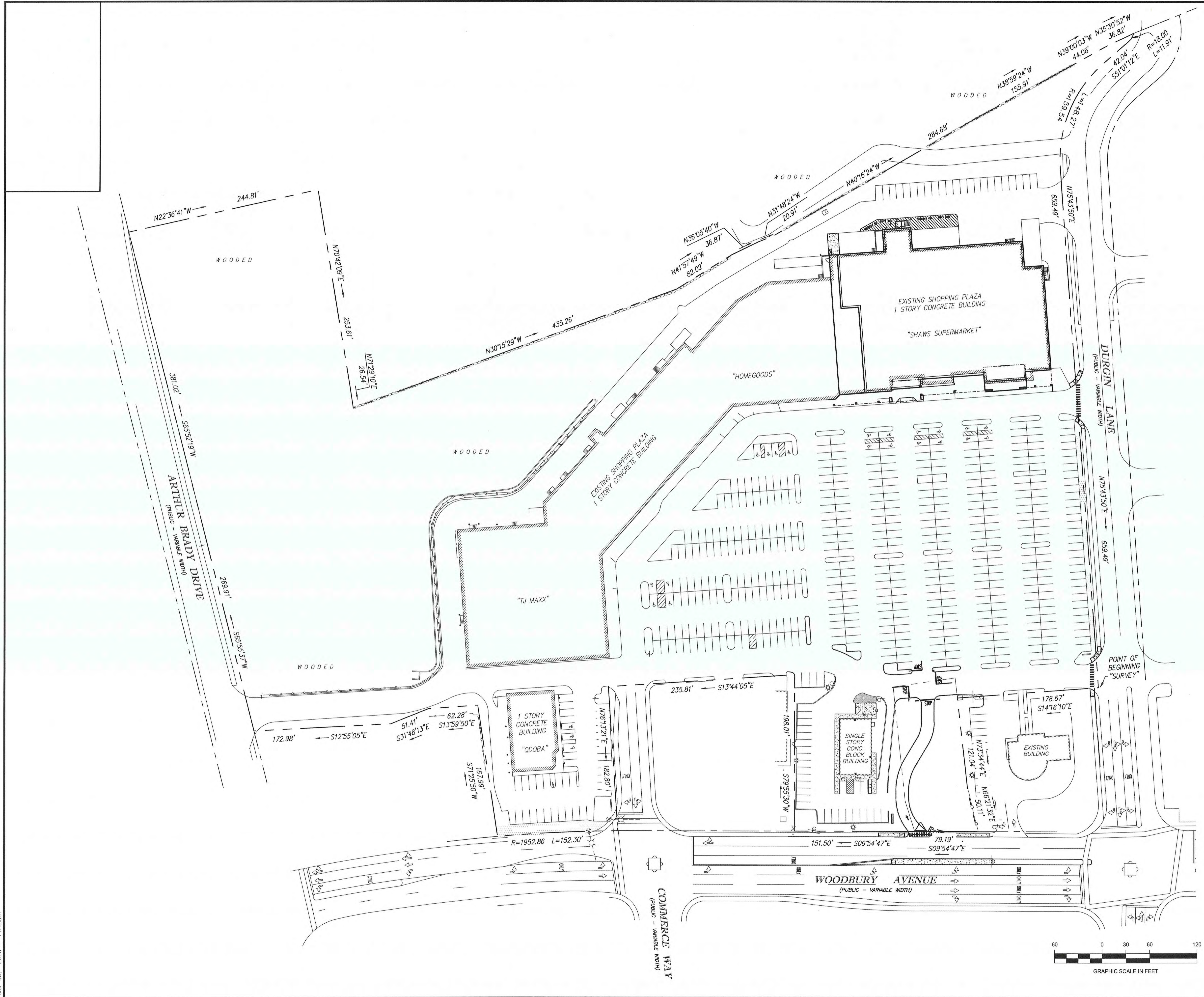
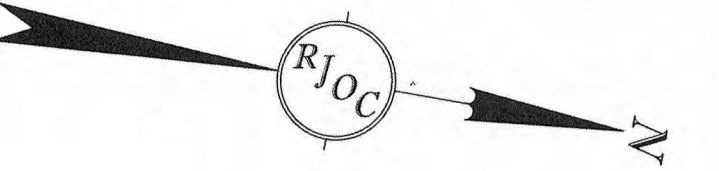
DATE APPROVED: \_\_\_\_\_

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-1



Drawing name: C:\N\H\Portsmouth\KeyPoint\Durgin Square\Main\Registry Plan\16030\_SP-1\_Registry Plan.dwg  
 Date: 03/09/2020 11:45am



ISSUED FOR AMENDED SITE PLAN APPROVAL		SPG	03/09/2020
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

*Brian P. Dundon* 03-09-2020

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: <b>CNM/SPG</b>	DRAWN/CHECKED <b>MCR/CNM</b>	PROJECT No. <b>16030</b>	SHEET No. <b>SP-2</b>
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 Mar 09, 2020 11:43am

# RJO'CONNELL & ASSOCIATES, INC.

CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

80 Montvale Ave., Suite 201  
phone 781-279-0180

Stoneham, MA 02180  
fax 781-279-0173

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March 9, 2020

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

Regarding: Durgin Square, 1600 Woodbury Ave

Dear Ms. Walker,

Attached please find the complete set of site plans dated 03/09/2020 as well as the Stormwater Summary for the project. R.J. O'Connell & Associates, Inc. has summarized the following comments received from the TAC via email on March 3<sup>rd</sup>, 2020. We have reviewed the comments listed below in italics with responses following:

1. *The water service for 1618 Woodbury Avenue needs to be terminated at the main in the road. This is not currently shown on the plans.*

**Response: The water line termination has been shown on Dwg. C-1.**

2. *The gas service for 1618 Woodbury Avenue will need to be terminated. This is not shown on the plans. The gas main is located under the existing sidewalk.*

**Response: The gas line termination has been shown on Dwg. C-1.**

3. *The sewer service to 1618 Woodbury Avenue is shown capped at sewer manhole, please add onto note, 'water tight'.*

**Response: A note has been added to Dwg. C-1.**

4. *The existing ramp at the corner of Durgin Lane and Woodbury is already fully handicapped compliant. It does not need to be replaced.*

**Response: The proposed ramp has been removed. Plans has been updated.**

5. *The privately owned CB in the north east corner of 1618 Woodbury Avenue is 20" below grade. This basin should be raised up to grade.*

**Response: Existing catch basin rim elevation has been adjusted on Dwg. C-2.**

6. *Provide a stay right sign for the island extension on a breakaway post, remove old sign foundation/post.*

**Response: A stay right sign has been added to Dwg. C-3.**

7. *Call out 'bull nose' style curb pieces for the end of the new island.*

**Response: A note has been added to Dwg. C-3.**

8. *Typical parking lot striping lot detail has an error.  $19+24+19=62'$*

**Response: No parking is proposed and therefore the detail on Dwg. C-4 has been removed.**

9. *Do not use welded wire fabric in any sidewalks that are in the ROW.*

**Response: A note has been added to the concrete sidewalk detail on Dwg. C-4 specifying to not use welded wire fabric in any sidewalks within the city Right-Of-Way.**

10. *Use thermoplastic markings for crosswalks, lane symbols and stop bars in the ROW.*

**Response: A note has been added to the crosswalks, lane symbols, and stop bars details on Dwg. C-4 specifying to use thermoplastic markings for crosswalks, lane symbols and stop bars within the city Right-Of-Way.**

11. *Provide easement for signal equipment and tip down at Ruby Tuesday driveway.*

**Response: A sidewalk and signal equipment easement has been added to Dwg. OS-1. The applicant will coordinate with the city for the final coordination.**

12. *Woodbury Avenue has new pavement. Any pavement impacted by utilities or island construction will be milled and repaved after 12 months to the satisfaction of the Public Works department.*

**Response: A note has been added to the Dwg. C-3 per comment.**

13. *Based on the new traffic analysis and the proposed modifications to the GameStop driveway, City staff are satisfied that the revised driveway will operate safely. However, the curb line and sidewalk should stay as true to the existing layout as possible, as pedestrians are not likely to follow the new sidewalk, the sidewalk would require an easement to the City, and the sidewalk snowplow would not be able to follow the new configuration.*

**Response: A sidewalk easement has been added on Dwg. C-3.**

14. *The extension of the median island and elimination of the right turn out portion of the*

*driveway are key elements to the safety improvements at this location and will go a long way to improving the operations of this driveway.*

**Response: No response required.**

15. *Truncated dome panels are not necessary at driveway crossings.*

**Response: Truncated dome panels have been removed and plans have been updated.**

16. *The R1-3P sign on the revised driveway is missing.*

**Response: Signs have been added to Dwg. C-3.**

17. *Recommend the snow removal contractor be "Green Snow-Pro Certified"*

**Response: A note has been added to the I & M.**

18. *Annual stormwater maintenance documentation shall be submitted annually to Portsmouth DPW and Planning Departments.*

**Response: A note has been added to the I & M.**

19. *Shade trees should be considered within the open lawn area to reduce the heat island effect of the larger site.*

**Response: The removal of existing Gamestop building and construction of the access road provides a net increase of 8,000 sf of vegetation and plantings which will help reduce heat island affect. The existing building is being razed and to provide a view corridor to the proposed tenant. Larger shade trees will obstruct that view.**

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

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





# Stormwater Summary

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**Durgin Square  
1600 Woodbury Ave  
Portsmouth, New Hampshire**

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**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:  
March 9, 2020**

03-09-2020

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# RJO'CONNELL & ASSOCIATES, INC.

## CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

80 Montvale Ave., Suite 201  
phone 781-279-0180

Stoneham, MA 02180  
fax 781-279-0173

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### 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 8,000 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 8,000 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
<b>POA-1</b>	0.77	0.44	1.24	0.84	1.57	1.14	1.75	1.31
<b>POA-2</b>	0.39	0.15	0.68	0.38	0.88	0.56	1.00	0.67
<b>Total</b>	1.16	0.59	1.92	1.22	2.45	1.70	2.75	1.98

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

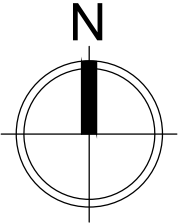
	Storm Event							
	2-year		10-year		25-year		50-year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
<b>POA-1</b>	2,289	1,317	3,741	2,483	4,775	3,362	5,355	3,867
<b>POA-2</b>	1,153	535	2,006	1,171	2,627	1,681	2,979	1,982
<b>Total</b>	3,442	1,852	5,747	3,654	7,402	5,043	8,334	5,849

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.

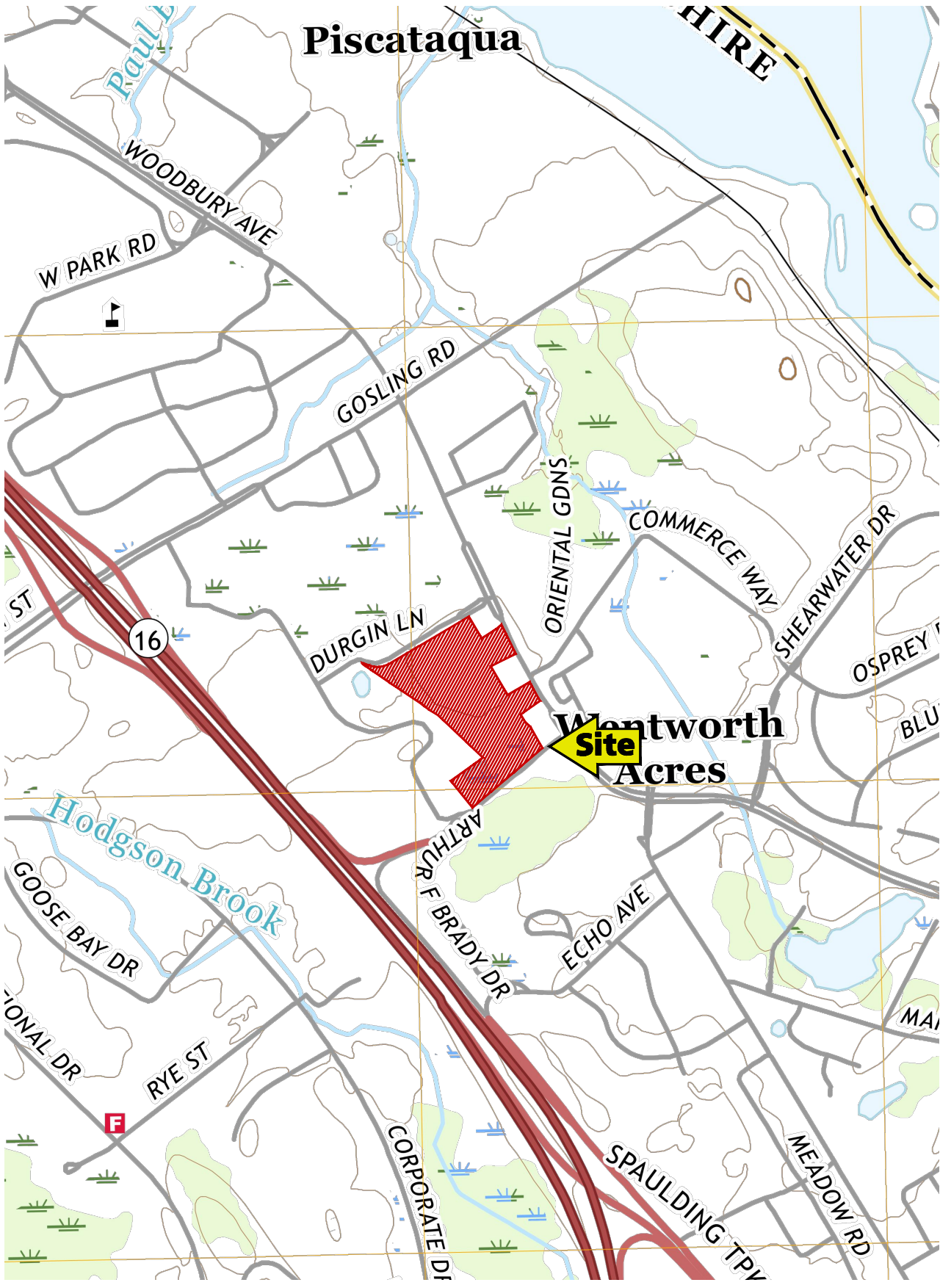
## **FIGURES**

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RJOC



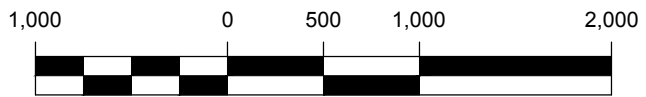
Piscataqua



Wentworth Site  
Acres

16

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

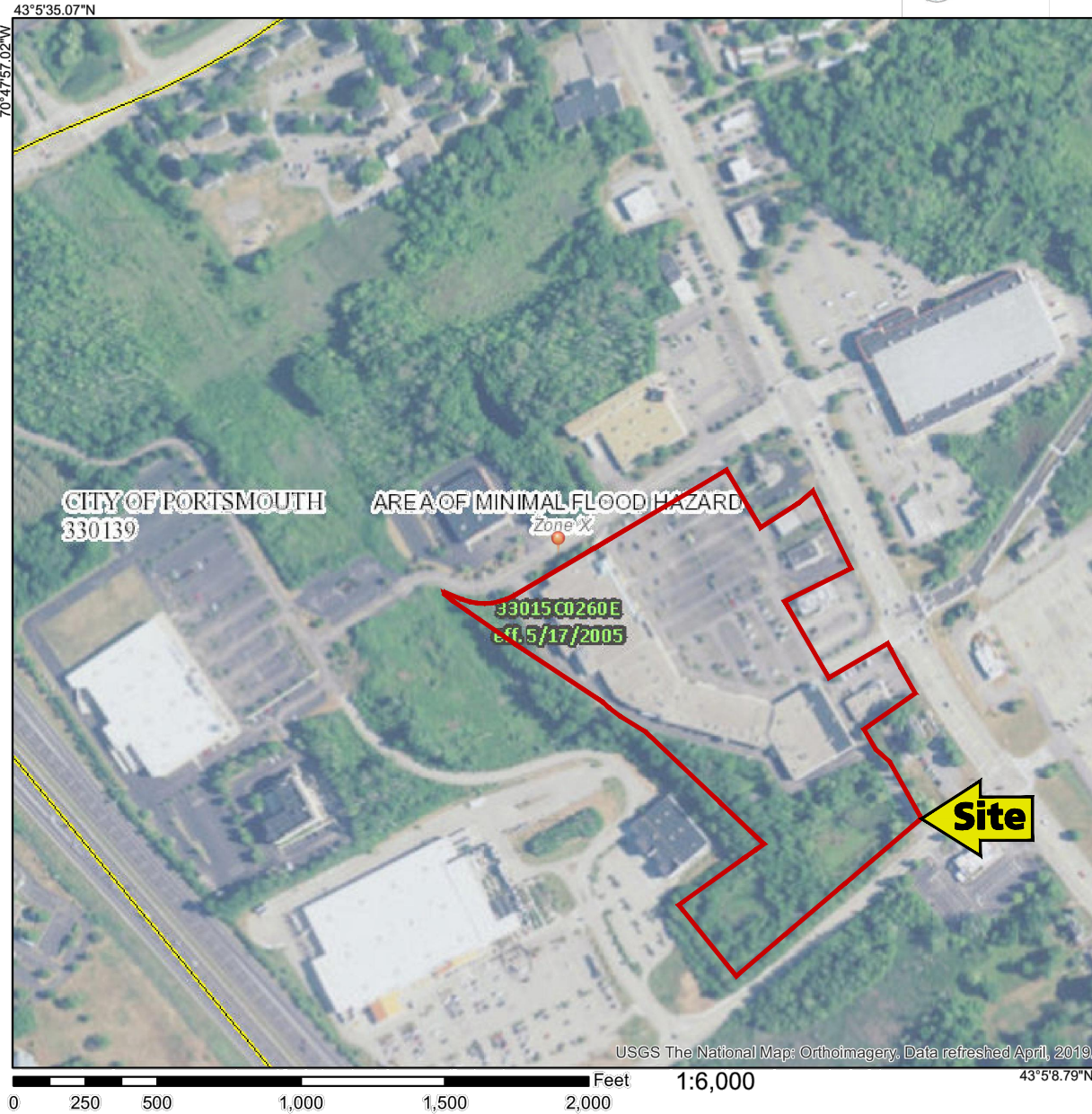


GRAPHIC SCALE IN FEET

**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
 DATE: 02/18/2020 SCALE: 1"=1000'  
**FIGURE 1**  
**USGS MAP**  
 DURGIN SQUARE  
 PORTSMOUTH, NH

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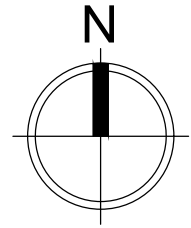
# National Flood Hazard Layer FIRMette



## Legend

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

- |                             |  |   |
|-----------------------------|--|---|
| SPECIAL FLOOD HAZARD AREAS  |  | Without Base Flood Elevation (BFE)<br>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  |
| OTHER AREAS                 |  | Area with Flood Risk due to Levee Zone D  |
|                             |  | Area of Minimal Flood Hazard Zone X   |
|                             |  | Effective LOMRs   |
| GENERAL STRUCTURES          |  | Area of Undetermined Flood Hazard Zone D  |
|                             |  | Channel, Culvert, or Storm Sewer  |
| OTHER FEATURES              |  | Levee, Dike, or Floodwall   |
|                             |  | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation   |
|                             |  | 17.5 Coastal Transect   |
| MAP PANELS                  |  | Base Flood Elevation Line (BFE)   |
|                             |  | Limit of Study  |
|                             |  | Jurisdiction Boundary   |
| MAP PANELS                  |  | 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

### RJO'CONNELL & ASSOCIATES, INC.

CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020

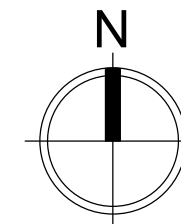
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## FIGURE 2 FLOOD INSURANCE RATE MAP

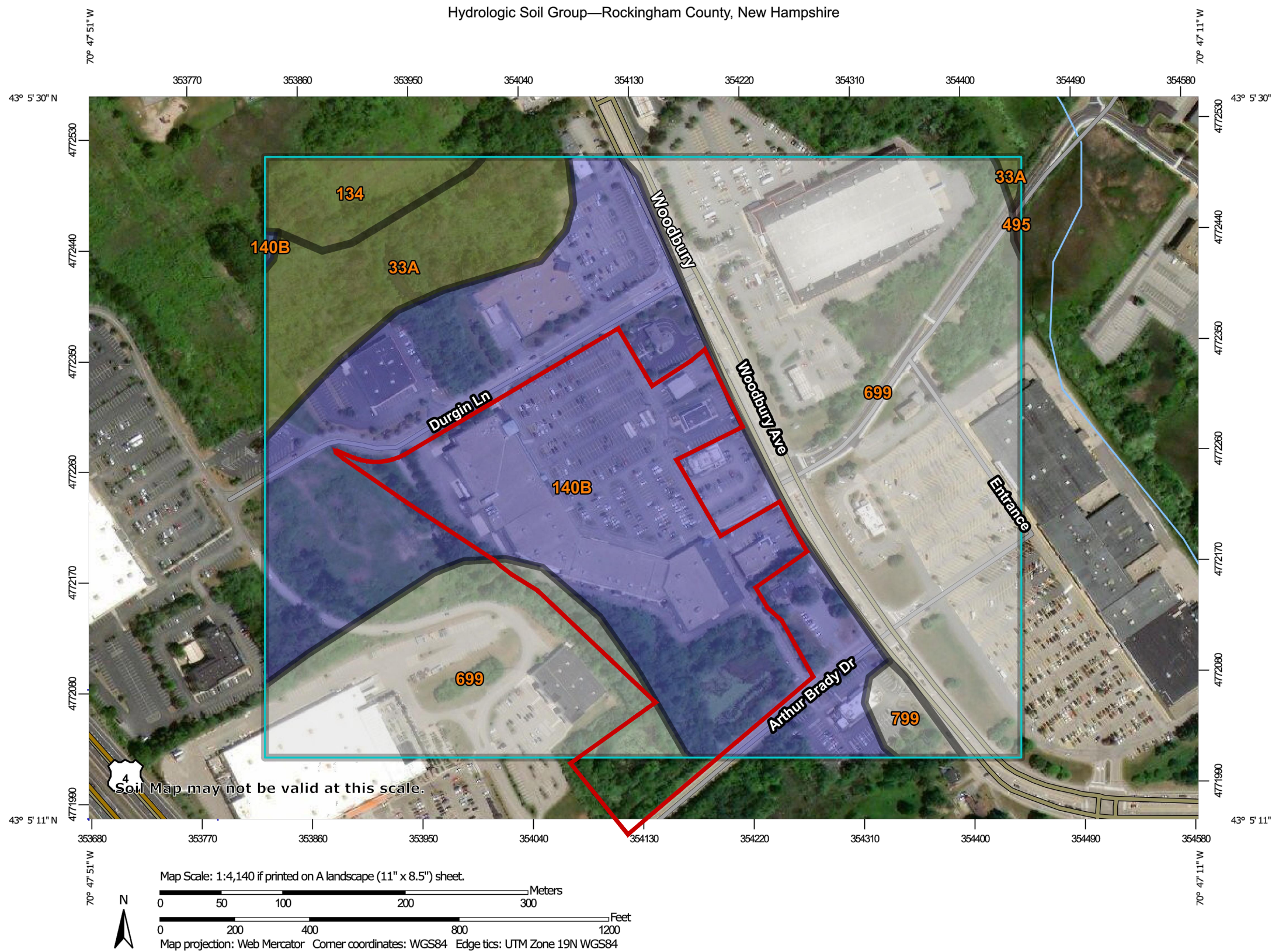
DURGIN SQUARE  
PORTSMOUTH, NH

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Feb 14, 2020 12:00pm



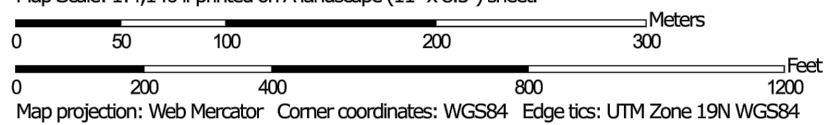


## Hydrologic Soil Group—Rockingham County, New Hampshire



HYDROLOGIC SOIL GROUP		
MAP UNIT SYMBOL	MAP UNIT NAME	RATING
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699	URBAN LAND	—

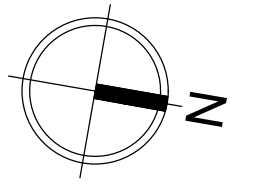
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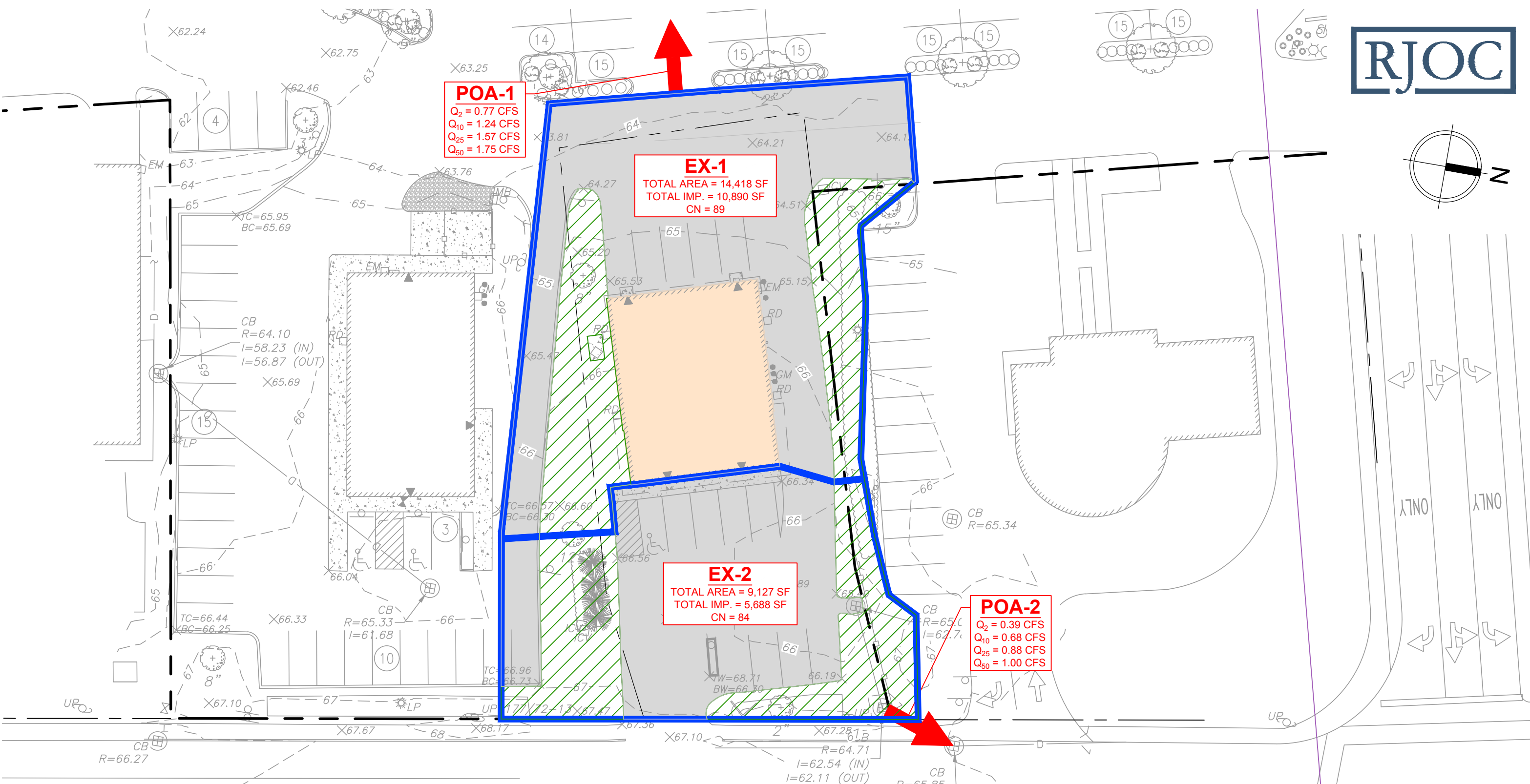
Web Soil Survey  
National Cooperative Soil Survey

12/12/2019  
Page 1 of 4


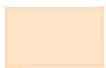
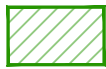


**RJO'CONNELL & ASSOCIATES, INC.**  
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
DATE: 02/18/2020 SCALE: AS SHOWN  
**FIGURE 3**  
**NRCS WEB SOIL SURVEY MAP**  
DURGIN SQUARE  
PORTSMOUTH, NH

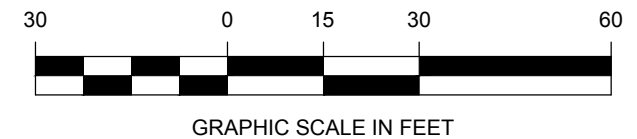


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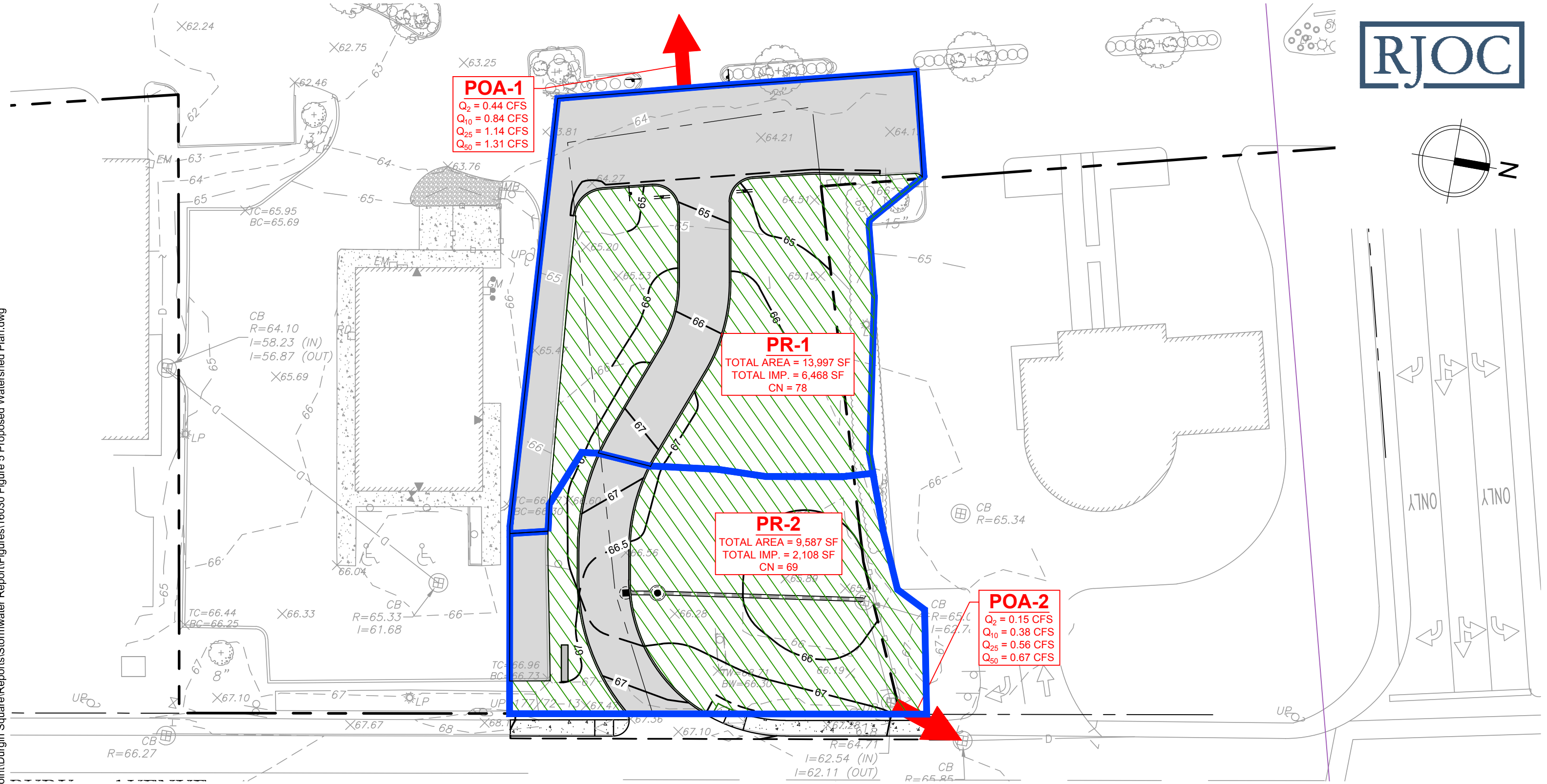
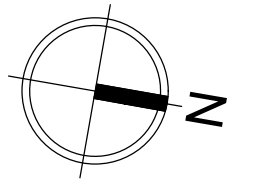


**LEGEND**

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



**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.








**POA-1**  
 $Q_2 = 0.44$  CFS  
 $Q_{10} = 0.84$  CFS  
 $Q_{25} = 1.14$  CFS  
 $Q_{50} = 1.31$  CFS

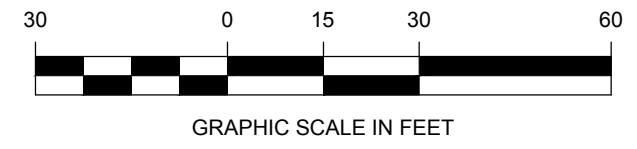
**PR-1**  
 TOTAL AREA = 13,997 SF  
 TOTAL IMP. = 6,468 SF  
 CN = 78

**PR-2**  
 TOTAL AREA = 9,587 SF  
 TOTAL IMP. = 2,108 SF  
 CN = 69

**POA-2**  
 $Q_2 = 0.15$  CFS  
 $Q_{10} = 0.38$  CFS  
 $Q_{25} = 0.56$  CFS  
 $Q_{50} = 0.67$  CFS

**LEGEND**

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



**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
 DATE: 02/18/2020 SCALE: 1"=30'  
 REVISED: 03/09/2020  
**FIGURE 5**  
**PROPOSED 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 5 Proposed Watershed Plan.dwg  
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## **APPENDIX A**

### **Computations**

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## **Pre-Development Hydrological Computations**

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Point of Analysis 1



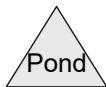
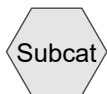
Subcat EX-1



Subcat EX-2



Point of Analysis 2



**16030 Existing Stormwater**

Prepared by R.J. O'Connell & Associates

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Durgin Square - Portsmouth, NH  
Type III 24-hr 2-Year Rainfall=3.00"

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Page 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>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**

# 16030 Existing Stormwater

Prepared by R.J. O'Connell & Associates

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Durgin Square - Portsmouth, NH  
Type III 24-hr 2-Year Rainfall=3.00"

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Page 3

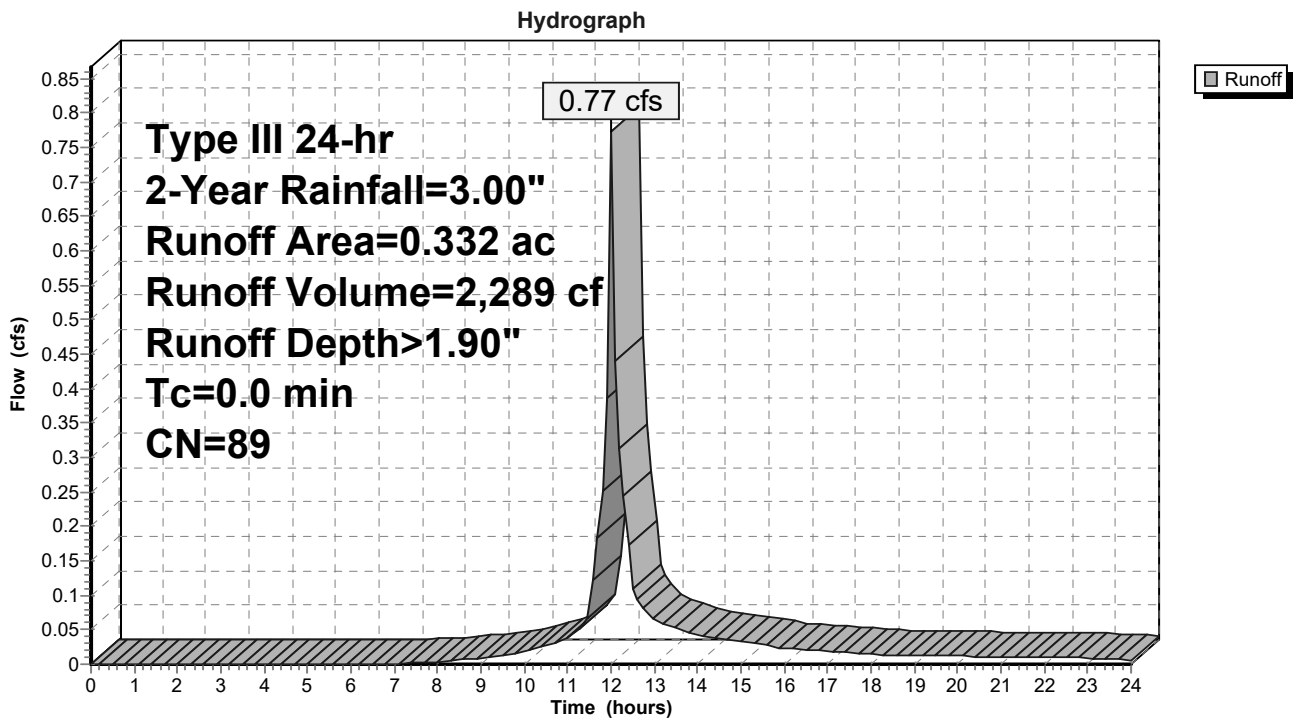
## Summary for Subcatchment EX-1: Subcat EX-1

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



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Type III 24-hr 2-Year Rainfall=3.00"

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Page 4

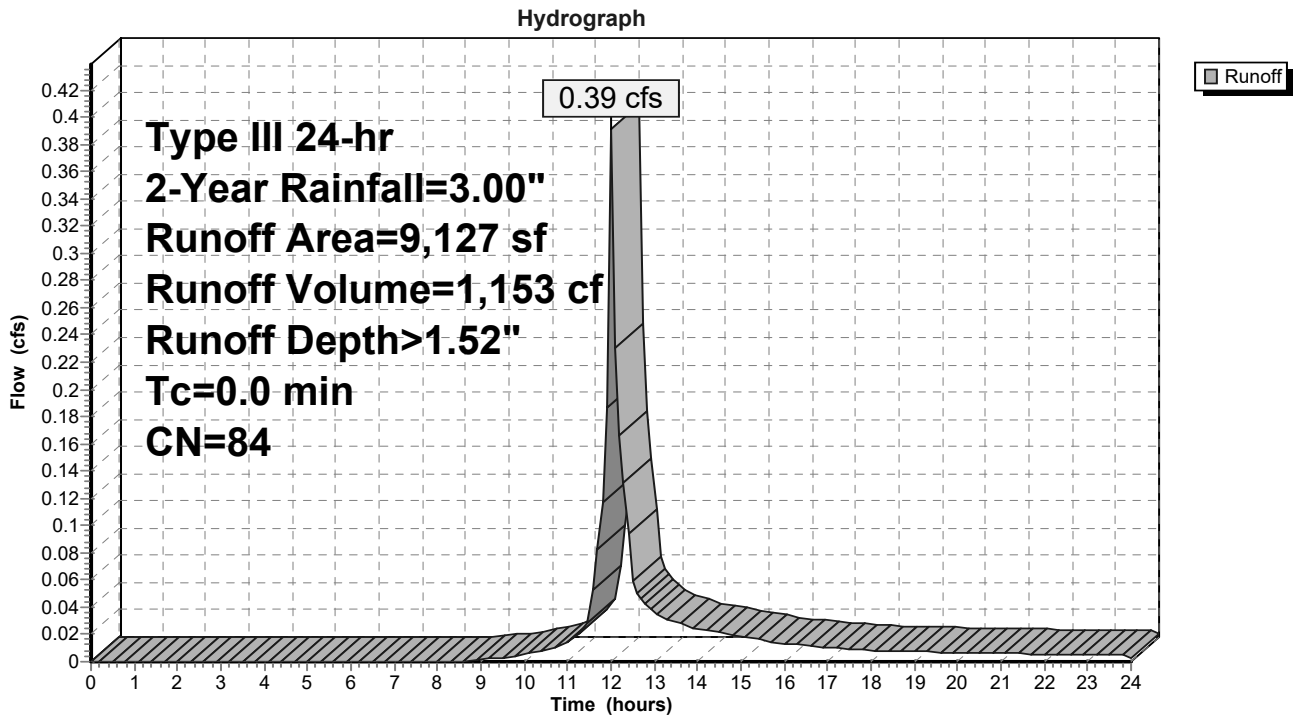
## Summary for Subcatchment EX-2: Subcat EX-2

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



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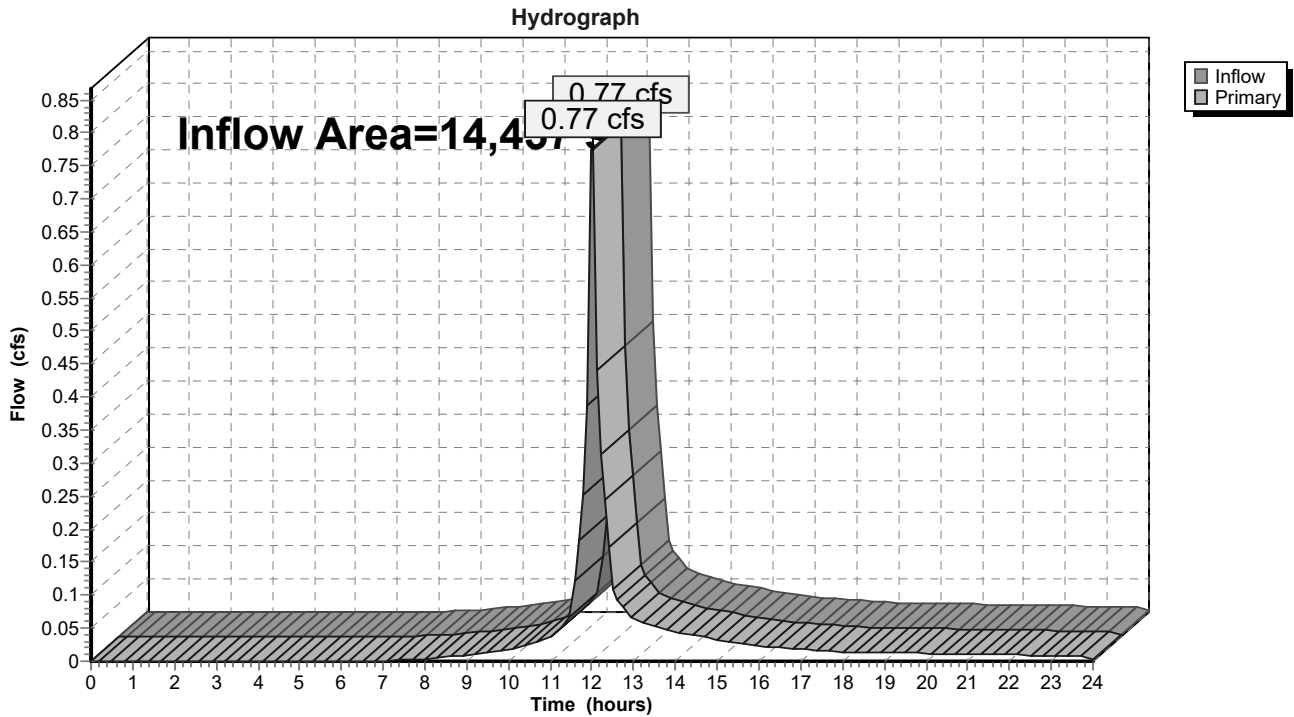
Page 5

## 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



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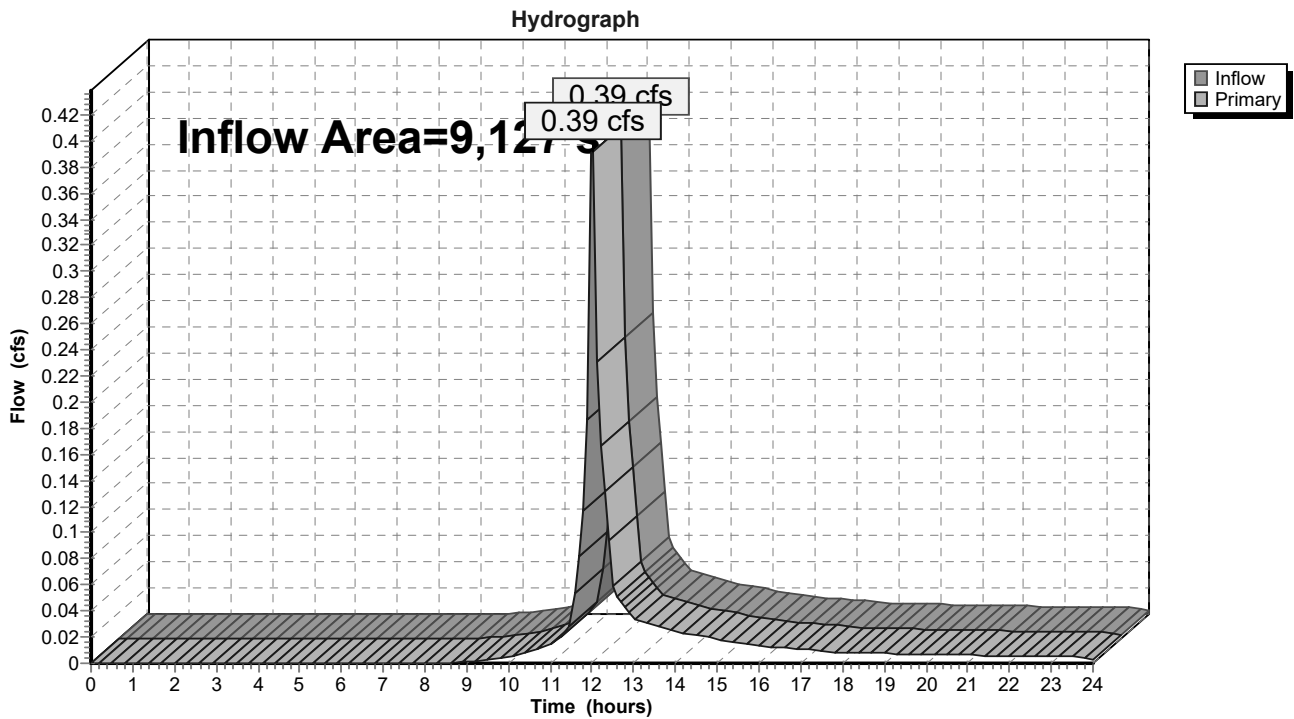
Page 6

## 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



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Durgin Square - Portsmouth, NH  
Type III 24-hr 10-Year Rainfall=4.30"

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Page 7

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**

# 16030 Existing Stormwater

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Durgin Square - Portsmouth, NH  
Type III 24-hr 10-Year Rainfall=4.30"

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Page 8

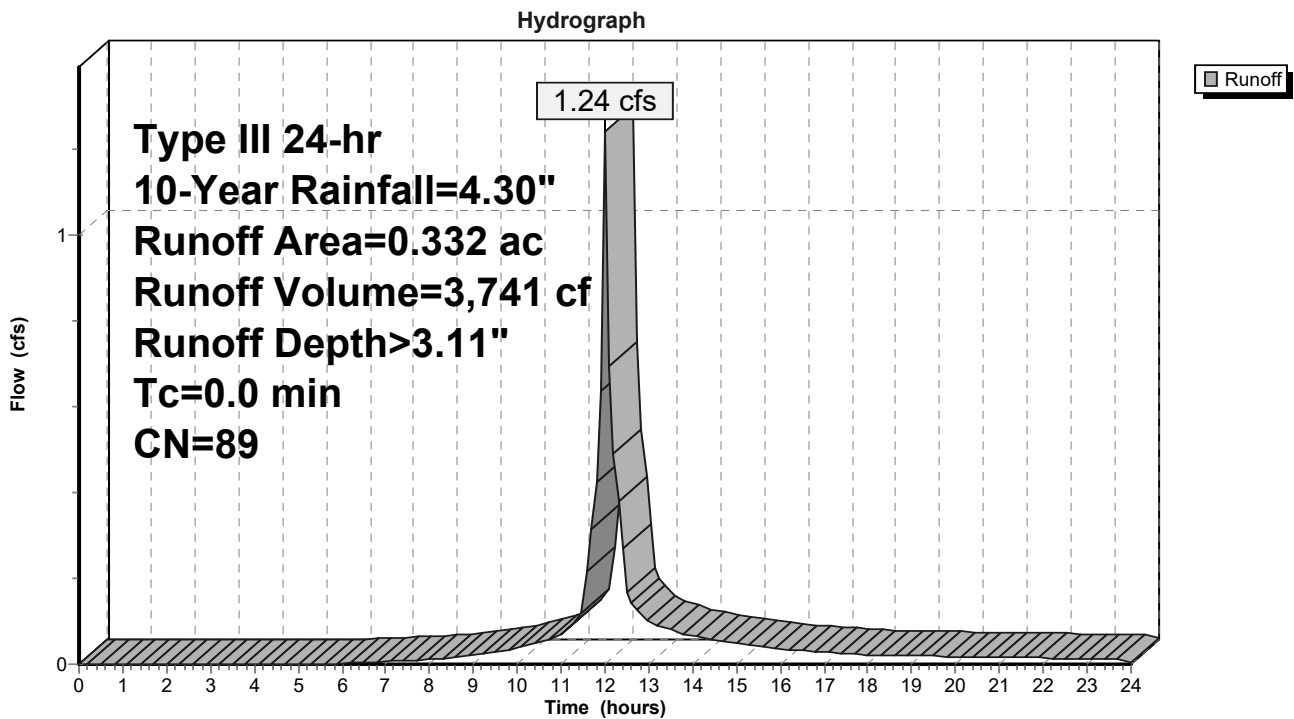
## Summary for Subcatchment EX-1: Subcat EX-1

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





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Type III 24-hr 10-Year Rainfall=4.30"

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Page 9

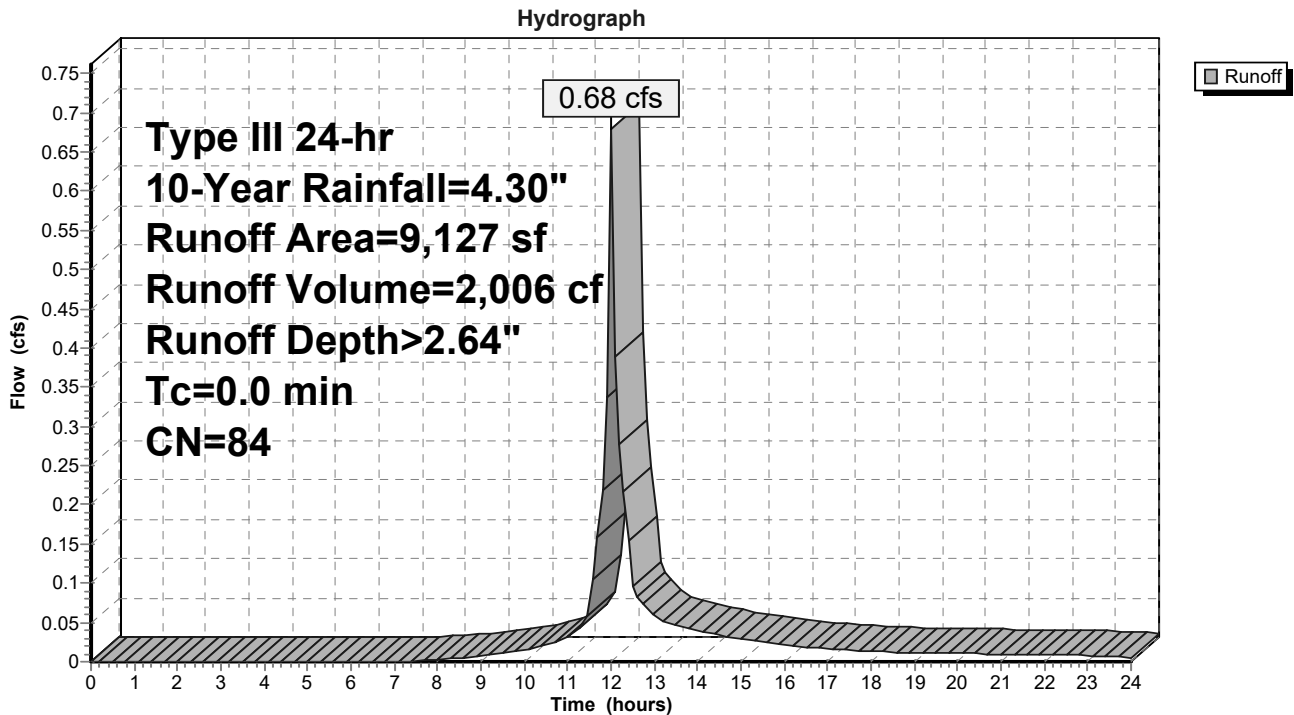
## Summary for Subcatchment EX-2: Subcat EX-2

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



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Type III 24-hr 10-Year Rainfall=4.30"

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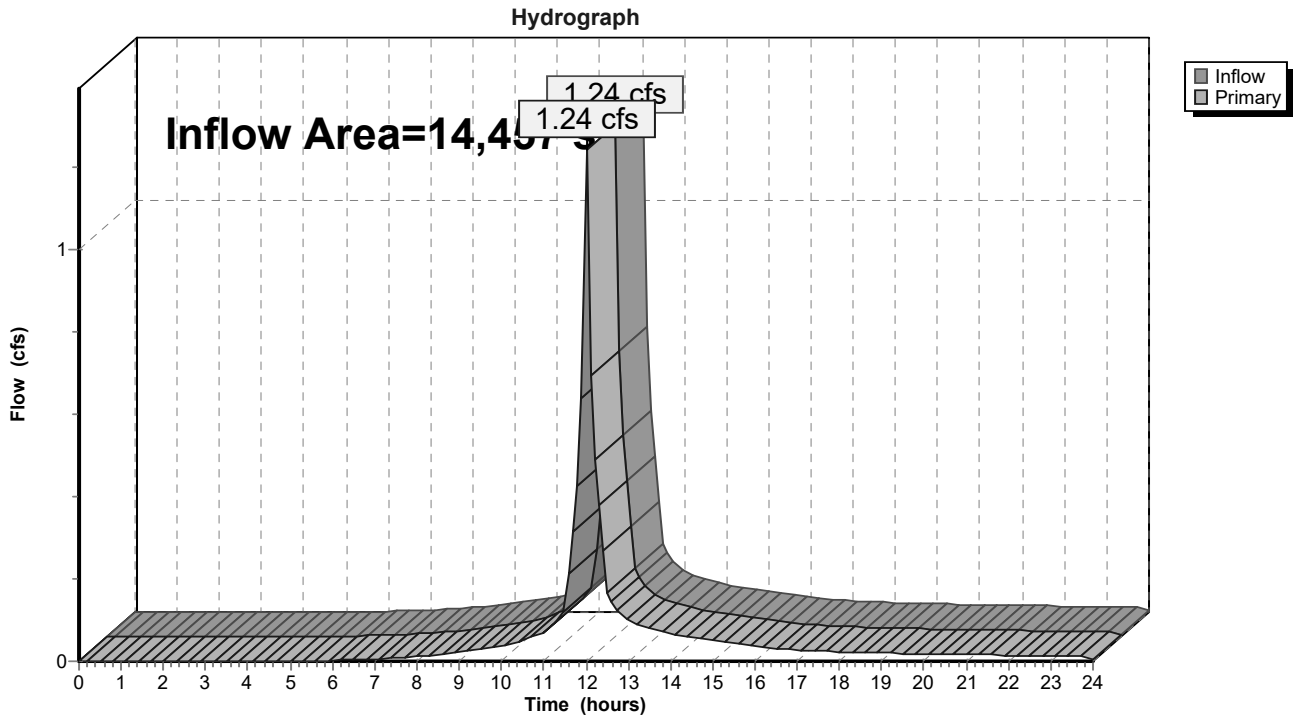
Page 10

## 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



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Type III 24-hr 10-Year Rainfall=4.30"

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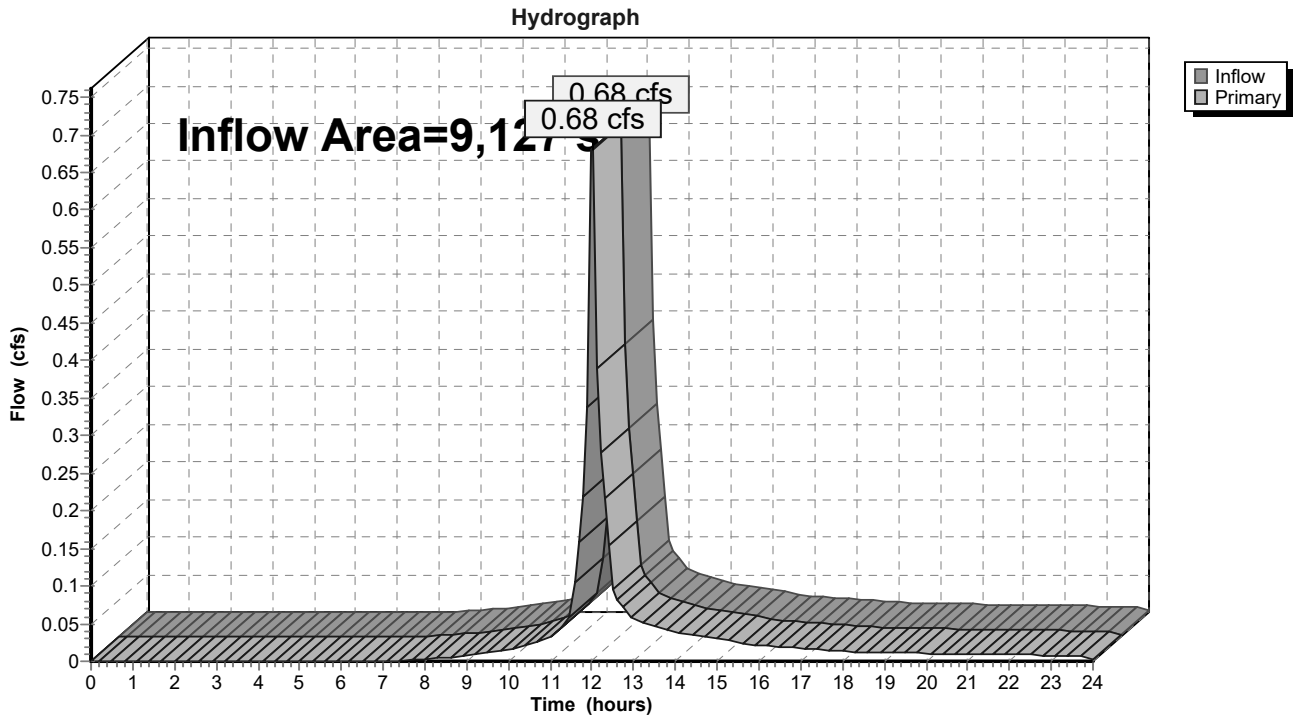
Page 11

## 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



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Durgin Square - Portsmouth, NH  
Type III 24-hr 25-Year Rainfall=5.20"

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Page 12

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**

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Type III 24-hr 25-Year Rainfall=5.20"

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Page 13

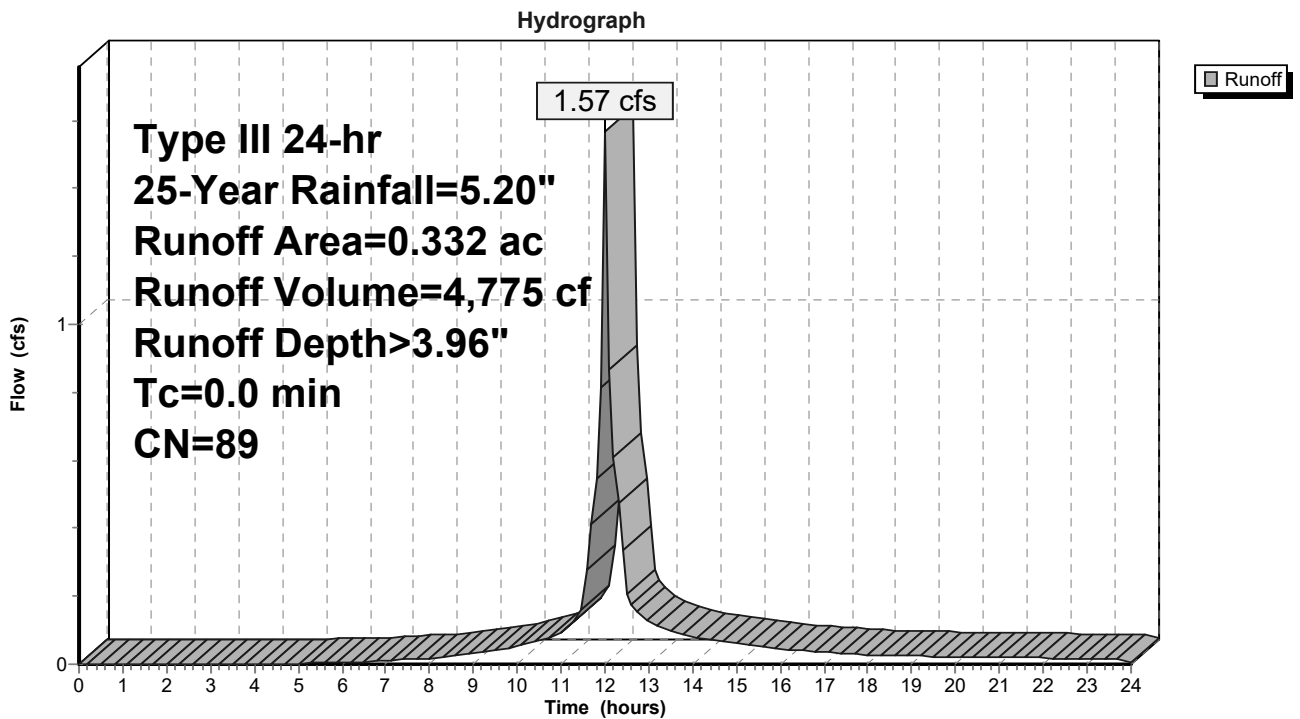
## Summary for Subcatchment EX-1: Subcat EX-1

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



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Type III 24-hr 25-Year Rainfall=5.20"

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Page 14

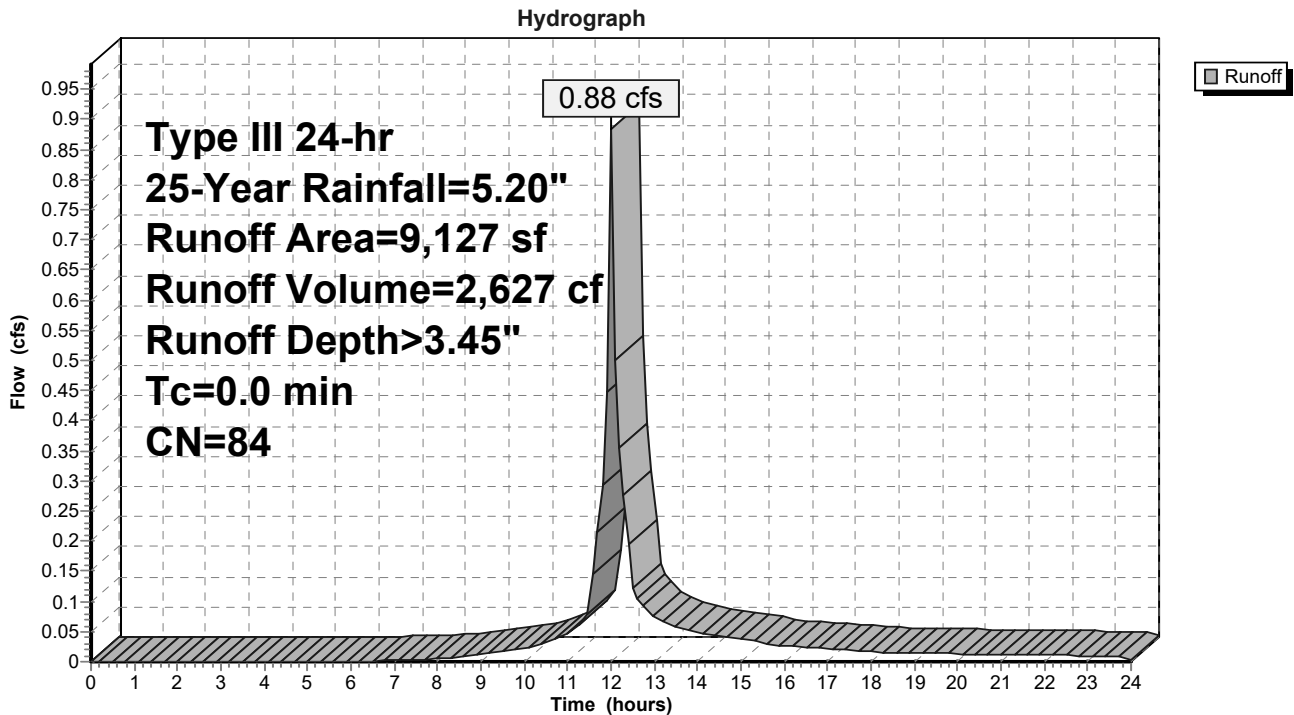
## Summary for Subcatchment EX-2: Subcat EX-2

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



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Type III 24-hr 25-Year Rainfall=5.20"

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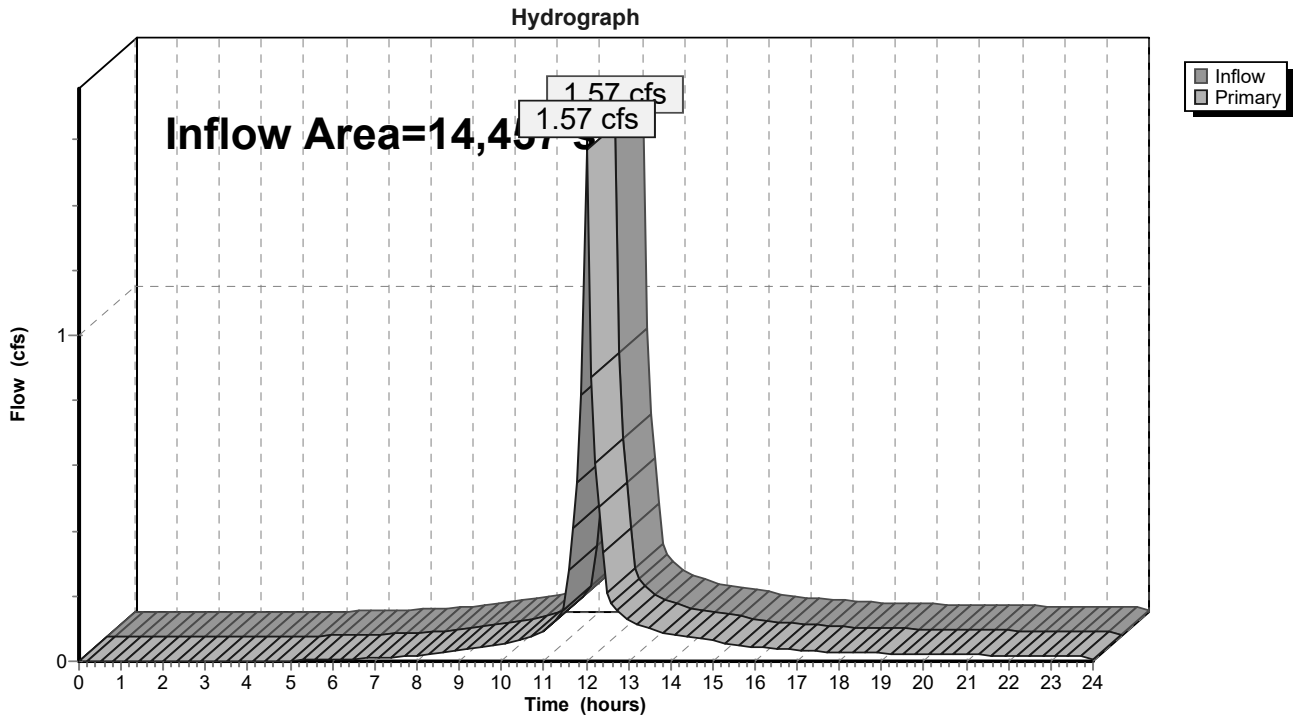
Page 15

## 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



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Type III 24-hr 25-Year Rainfall=5.20"

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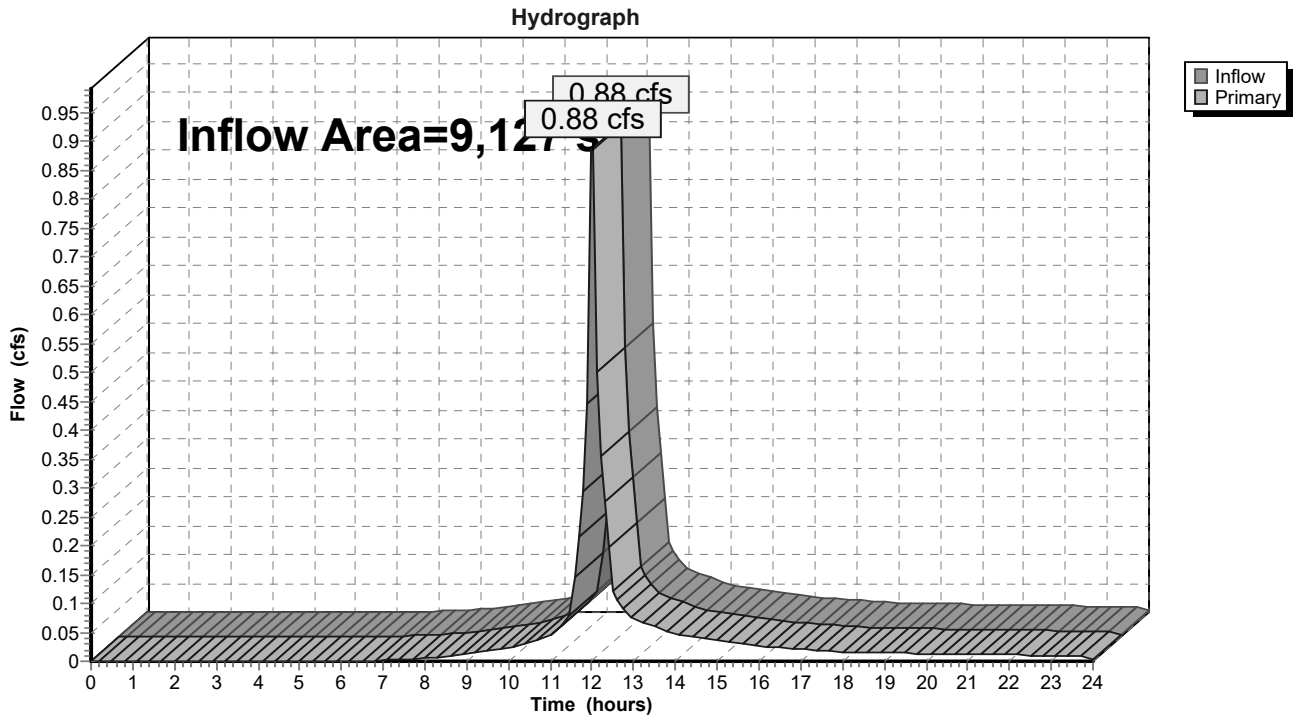
Page 16

## 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





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Durgin Square - Portsmouth, NH  
Type III 24-hr 50-Year Rainfall=5.70"

Printed 1/22/2020

Page 17

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**

# 16030 Existing Stormwater

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Durbin Square - Portsmouth, NH  
Type III 24-hr 50-Year Rainfall=5.70"

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Page 18

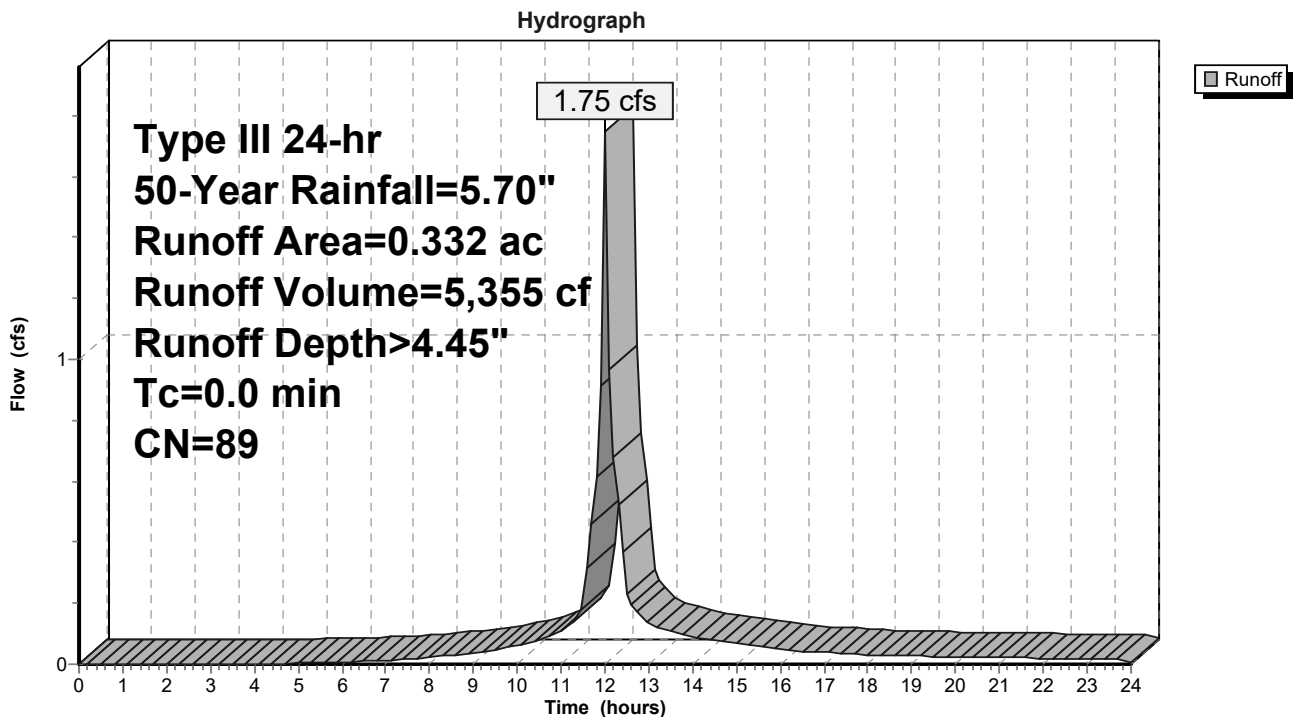
## Summary for Subcatchment EX-1: Subcat EX-1

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



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Type III 24-hr 50-Year Rainfall=5.70"

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Page 19

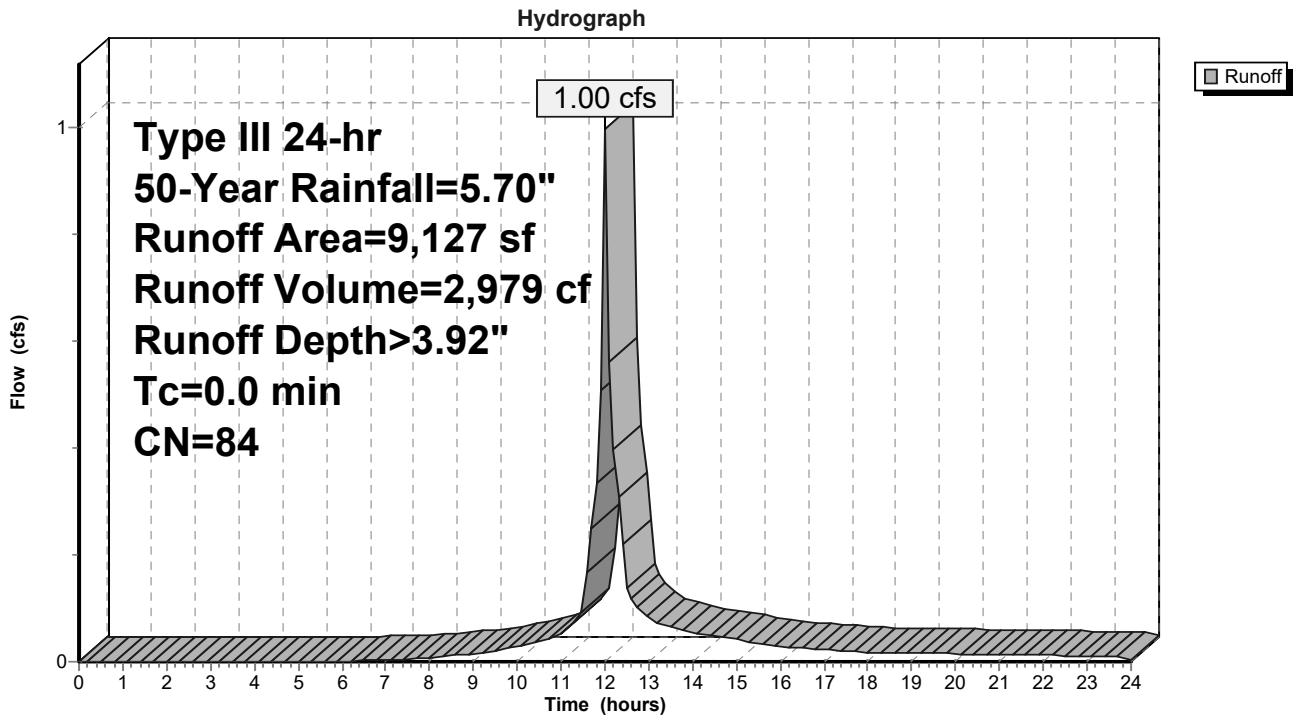
## Summary for Subcatchment EX-2: Subcat EX-2

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



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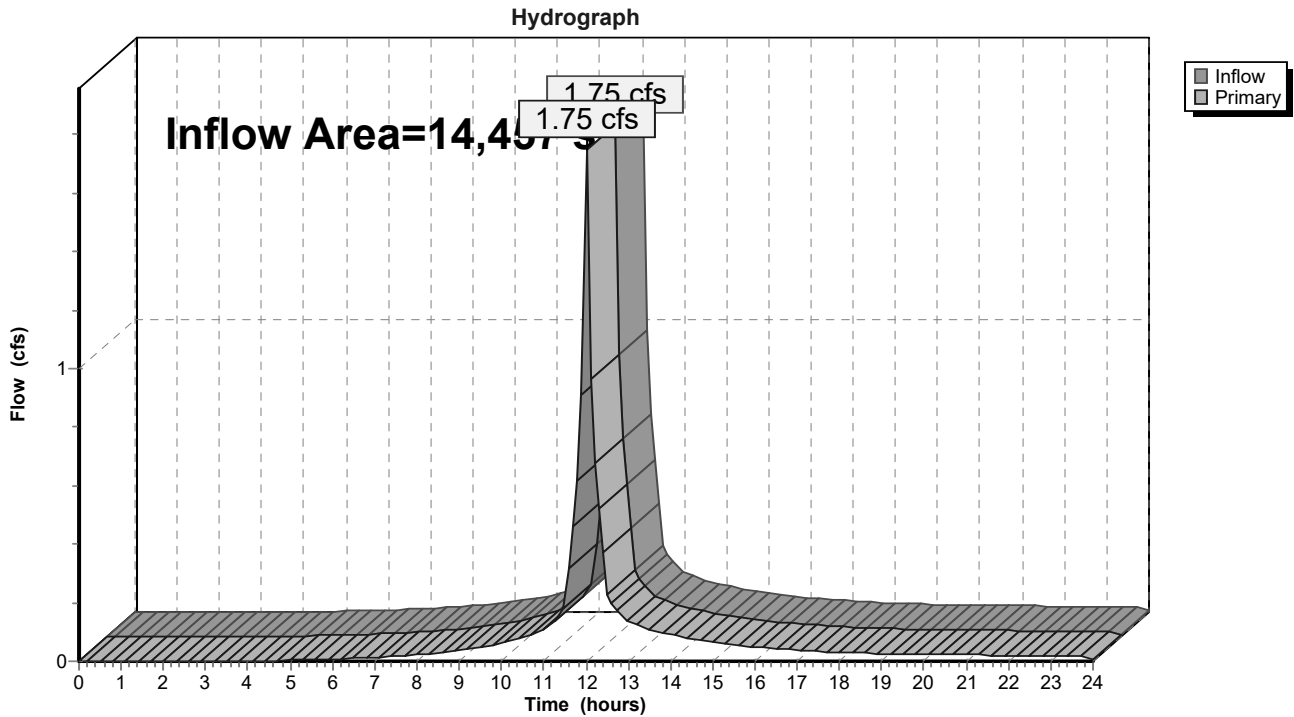
Page 20

## 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



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Type III 24-hr 50-Year Rainfall=5.70"

Printed 1/22/2020

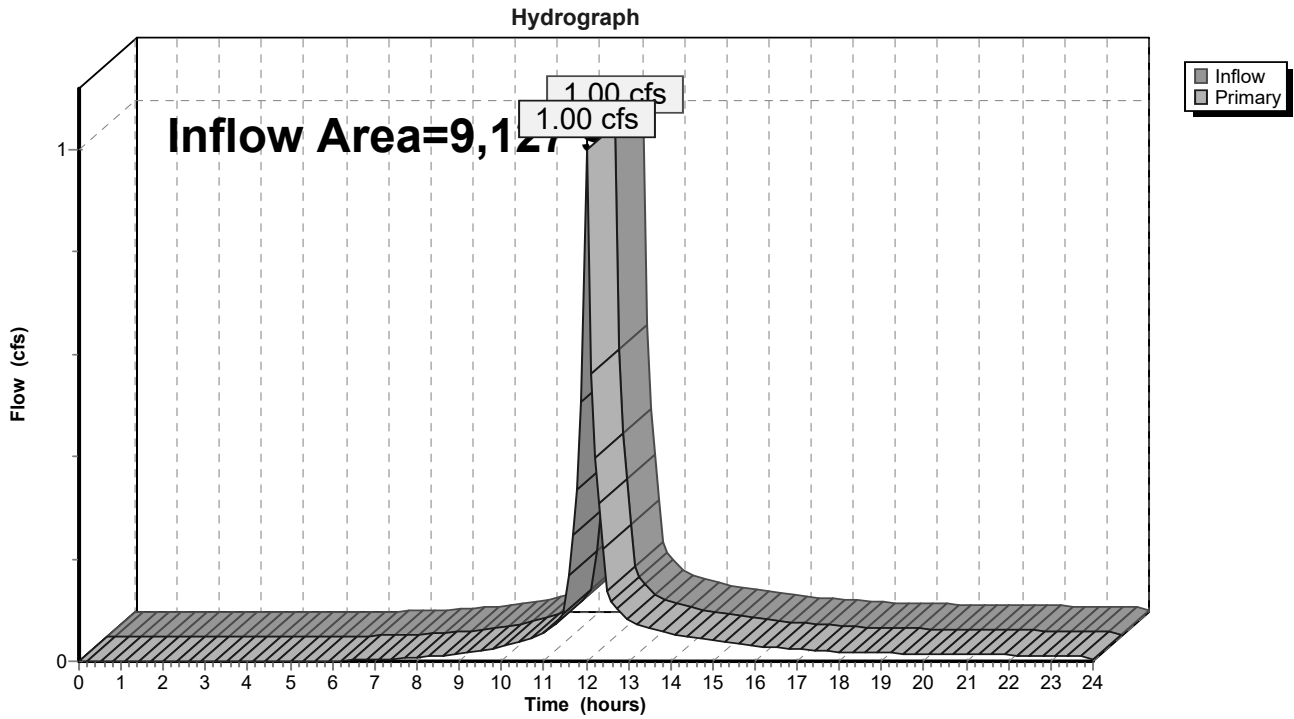
Page 21

## 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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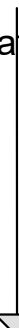
Point of Analysis 1



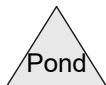
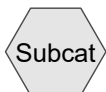
Subcat PR-1



Subcat PR-2



Point of Analysis 2



**16030 Proposed Stormwater**

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Durgin Square - Portsmouth, NH  
Type III 24-hr 2-Year Rainfall=3.00"  
Printed 3/6/2020  
Page 3

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 46.21% 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 21.99% Impervious Runoff Depth>0.67"  
Tc=0.0 min CN=69 Runoff=0.15 cfs 535 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=0.15 cfs 535 cf  
Primary=0.15 cfs 535 cf

**Total Runoff Area = 23,584 sf Runoff Volume = 1,852 cf Average Runoff Depth = 0.94"**  
**63.64% Pervious = 15,008 sf 36.36% Impervious = 8,576 sf**

# 16030 Proposed Stormwater

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Durgin Square - Portsmouth, NH  
Type III 24-hr 2-Year Rainfall=3.00"

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Page 4

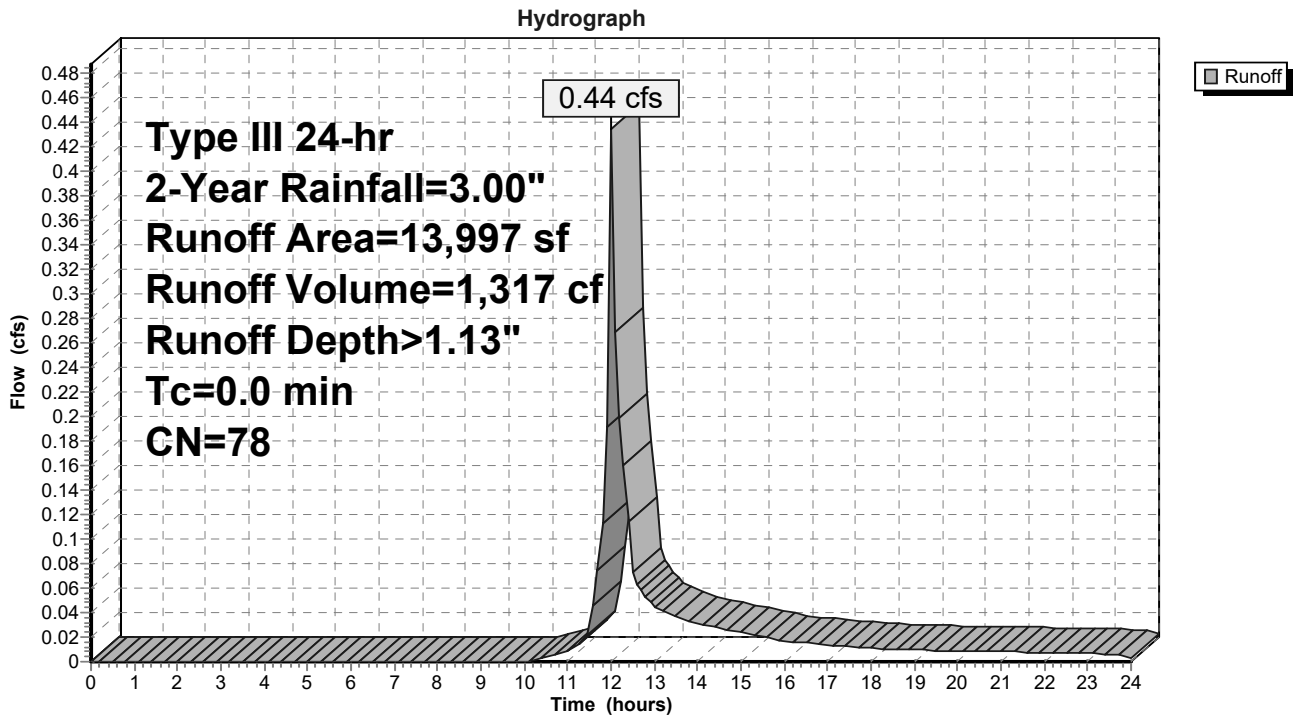
## Summary for Subcatchment PR-1: Subcat PR-1

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
6,468	98	Paved parking, HSG B
7,529	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,529		53.79% Pervious Area
6,468		46.21% Impervious Area

## Subcatchment PR-1: Subcat PR-1



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Page 5

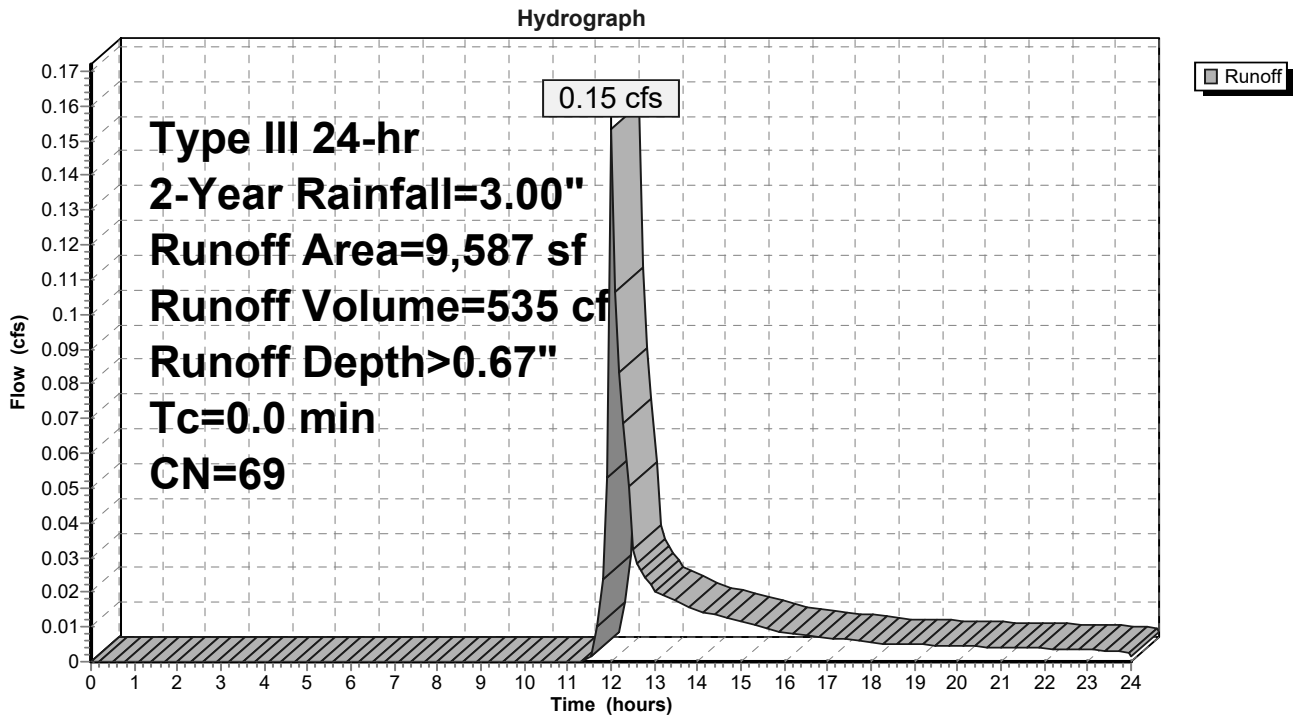
## Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.15 cfs @ 12.02 hrs, Volume= 535 cf, Depth> 0.67"

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
2,108	98	Paved parking, HSG B
7,478	61	>75% Grass cover, Good, HSG B
9,587	69	Weighted Average
7,478		78.01% Pervious Area
2,108		21.99% Impervious Area

## Subcatchment PR-2: Subcat PR-2



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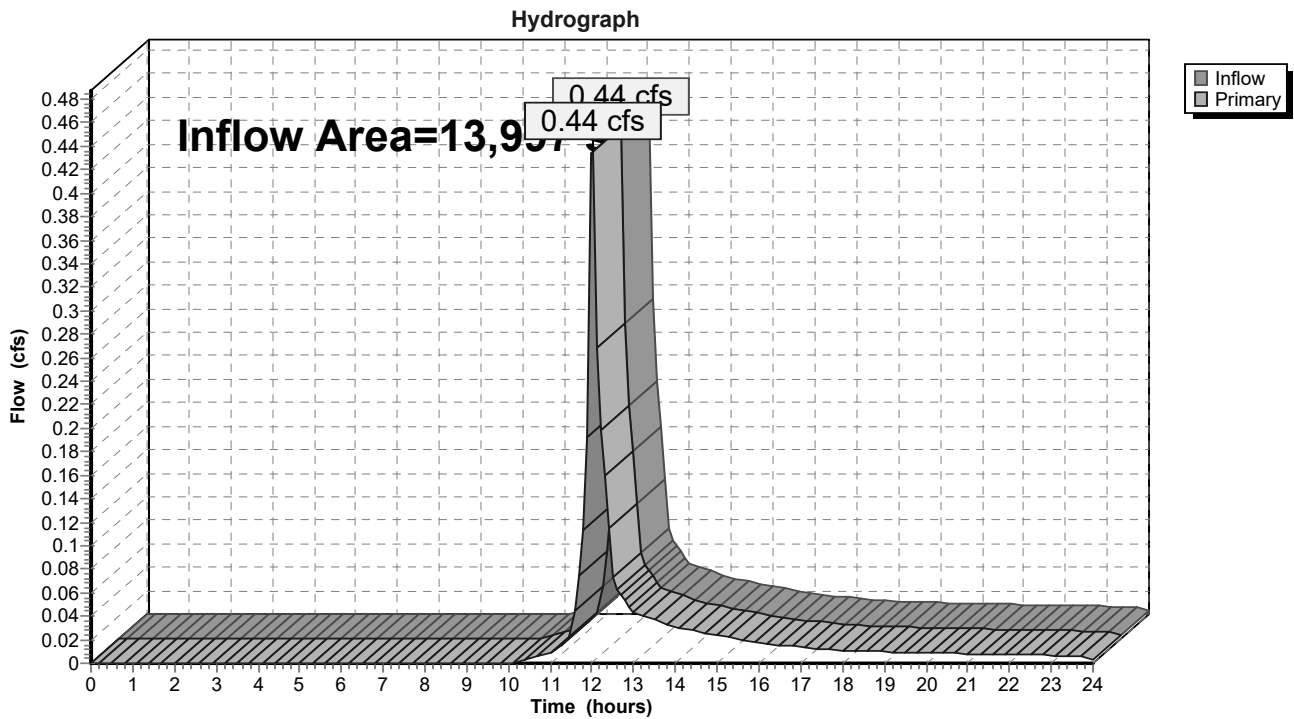
Page 6

## Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.21% 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



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Type III 24-hr 2-Year Rainfall=3.00"

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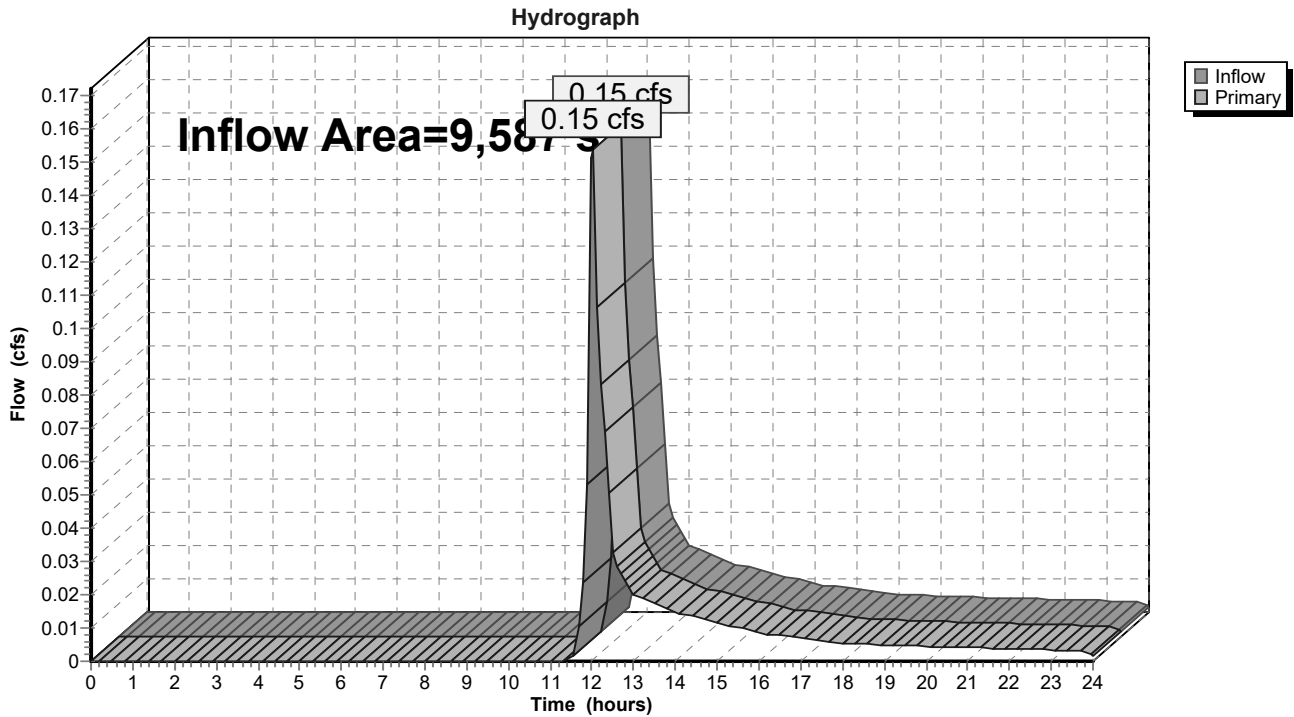
Page 7

## Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 21.99% Impervious, Inflow Depth > 0.67" for 2-Year event  
Inflow = 0.15 cfs @ 12.02 hrs, Volume= 535 cf  
Primary = 0.15 cfs @ 12.02 hrs, Volume= 535 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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Type III 24-hr 10-Year Rainfall=4.30"

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Page 8

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 46.21% 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 21.99% Impervious    Runoff Depth>1.47"  
Tc=0.0 min    CN=69    Runoff=0.38 cfs 1,171 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=0.38 cfs 1,171 cf  
Primary=0.38 cfs 1,171 cf

**Total Runoff Area = 23,584 sf    Runoff Volume = 3,654 cf    Average Runoff Depth = 1.86"**  
**63.64% Pervious = 15,008 sf    36.36% Impervious = 8,576 sf**

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Type III 24-hr 10-Year Rainfall=4.30"

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Page 9

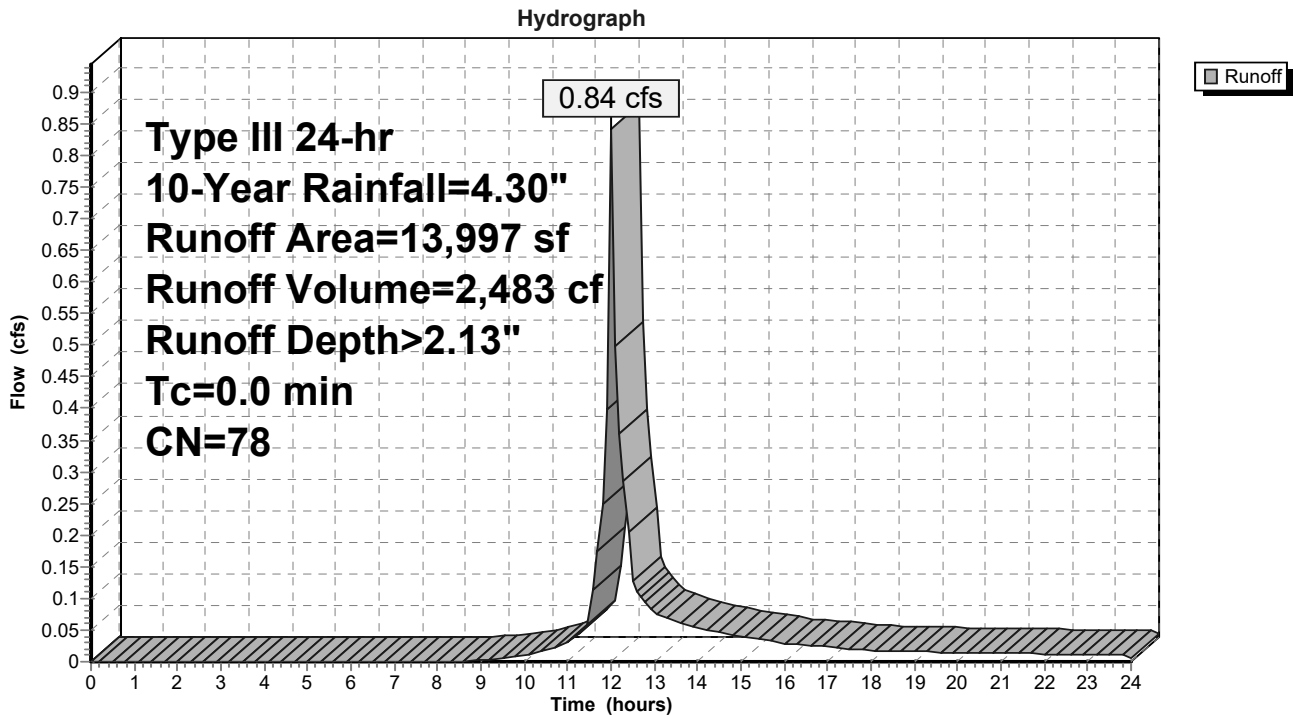
## Summary for Subcatchment PR-1: Subcat PR-1

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
6,468	98	Paved parking, HSG B
7,529	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,529		53.79% Pervious Area
6,468		46.21% Impervious Area

## Subcatchment PR-1: Subcat PR-1





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Type III 24-hr 10-Year Rainfall=4.30"

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Page 10

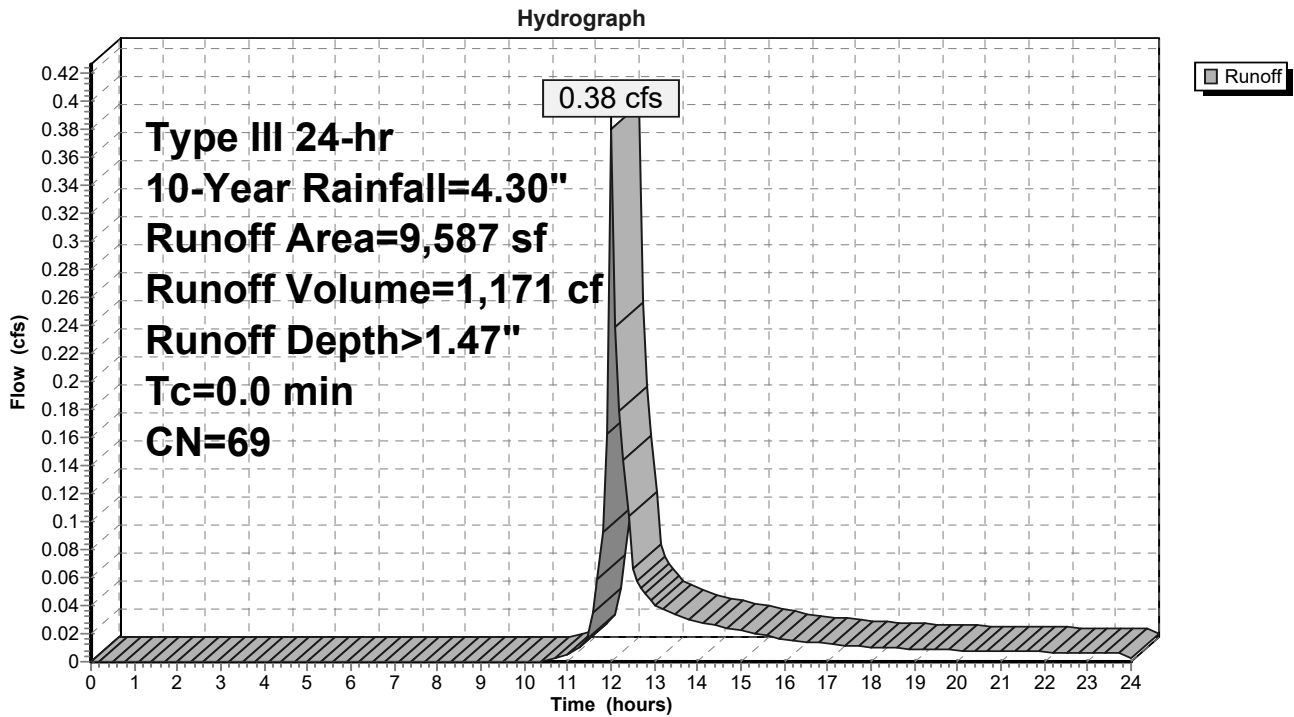
## Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.38 cfs @ 12.01 hrs, Volume= 1,171 cf, Depth> 1.47"

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
2,108	98	Paved parking, HSG B
7,478	61	>75% Grass cover, Good, HSG B
9,587	69	Weighted Average
7,478		78.01% Pervious Area
2,108		21.99% Impervious Area

## Subcatchment PR-2: Subcat PR-2



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Type III 24-hr 10-Year Rainfall=4.30"

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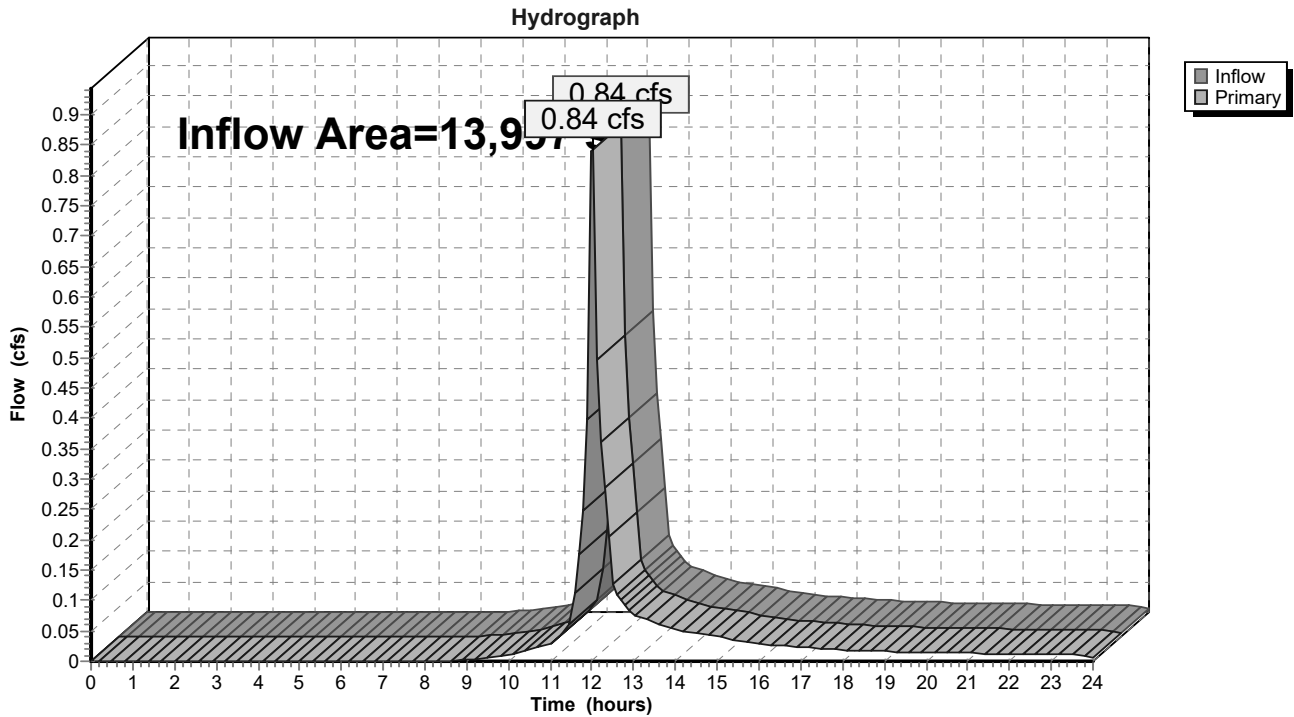
Page 11

## Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.21% 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



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Type III 24-hr 10-Year Rainfall=4.30"

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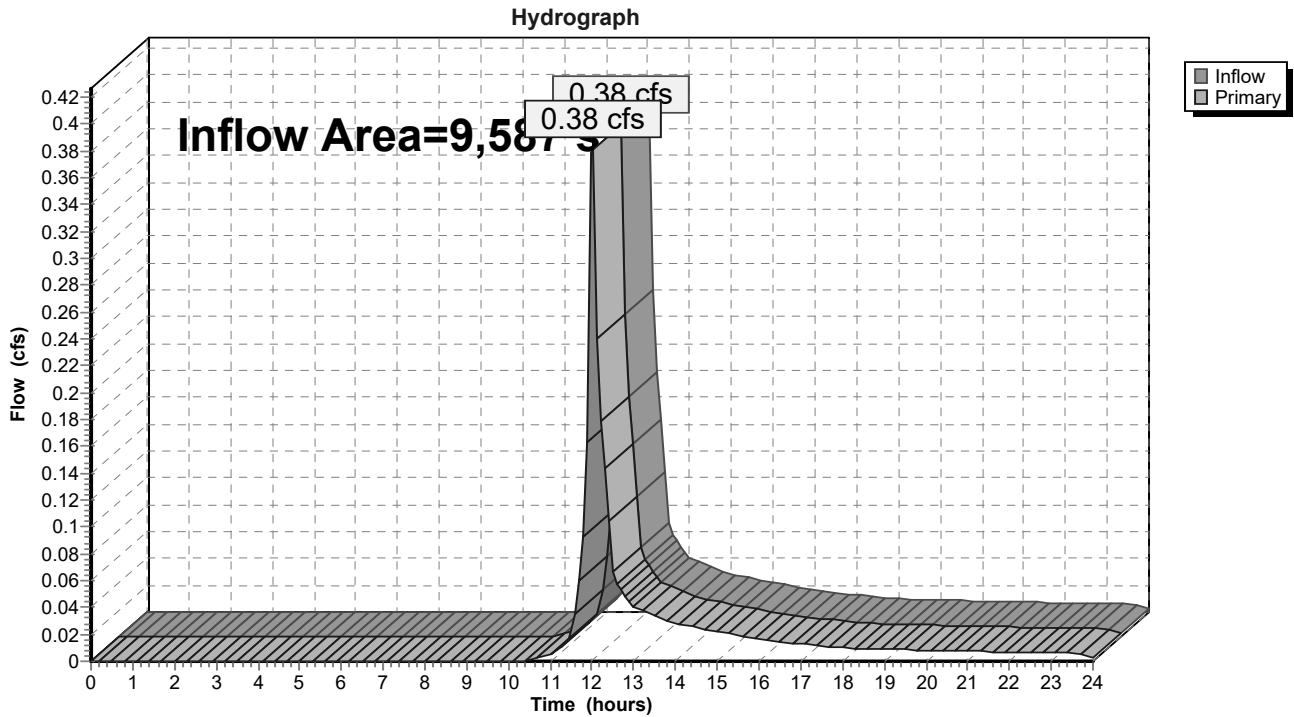
Page 12

## Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 21.99% Impervious, Inflow Depth > 1.47" for 10-Year event  
Inflow = 0.38 cfs @ 12.01 hrs, Volume= 1,171 cf  
Primary = 0.38 cfs @ 12.01 hrs, Volume= 1,171 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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Type III 24-hr 25-Year Rainfall=5.20"

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Page 13

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 46.21% 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 21.99% Impervious Runoff Depth>2.10"  
Tc=0.0 min CN=69 Runoff=0.56 cfs 1,681 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=0.56 cfs 1,681 cf  
Primary=0.56 cfs 1,681 cf

**Total Runoff Area = 23,584 sf Runoff Volume = 5,043 cf Average Runoff Depth = 2.57"**  
**63.64% Pervious = 15,008 sf 36.36% Impervious = 8,576 sf**

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Type III 24-hr 25-Year Rainfall=5.20"

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Page 14

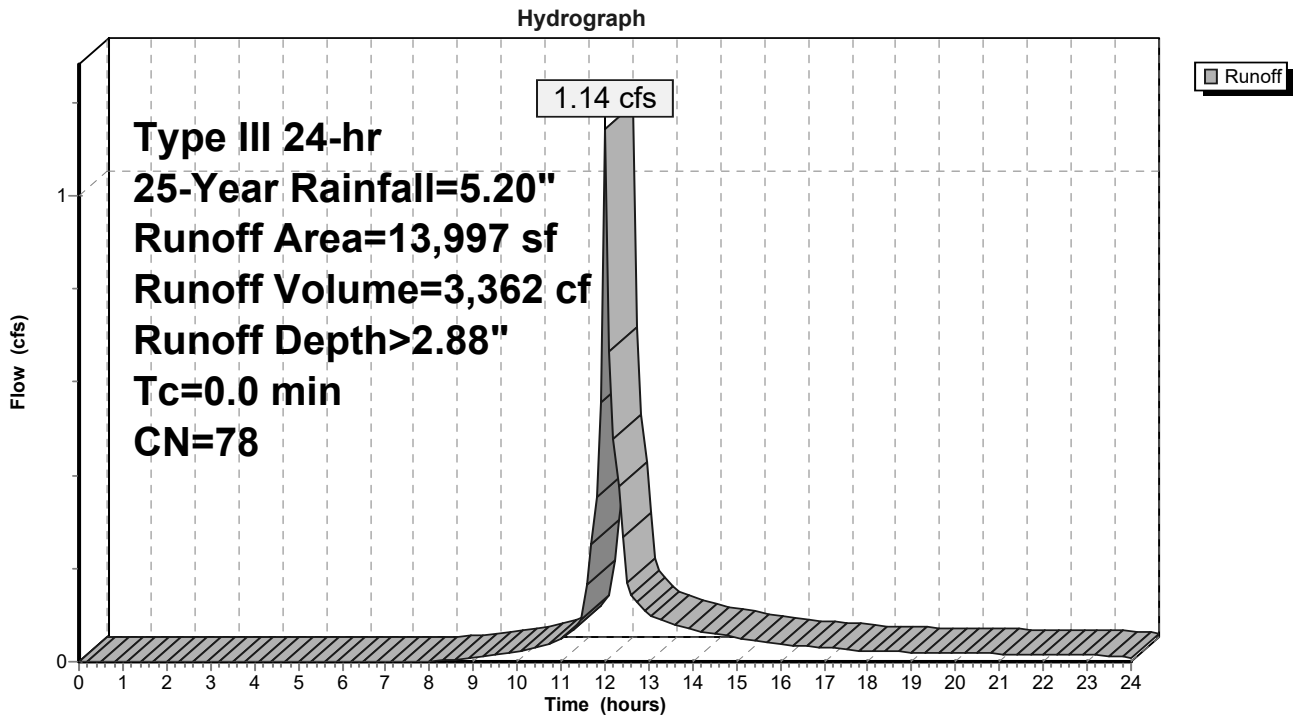
## Summary for Subcatchment PR-1: Subcat PR-1

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
6,468	98	Paved parking, HSG B
7,529	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,529		53.79% Pervious Area
6,468		46.21% Impervious Area

## Subcatchment PR-1: Subcat PR-1



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Page 15

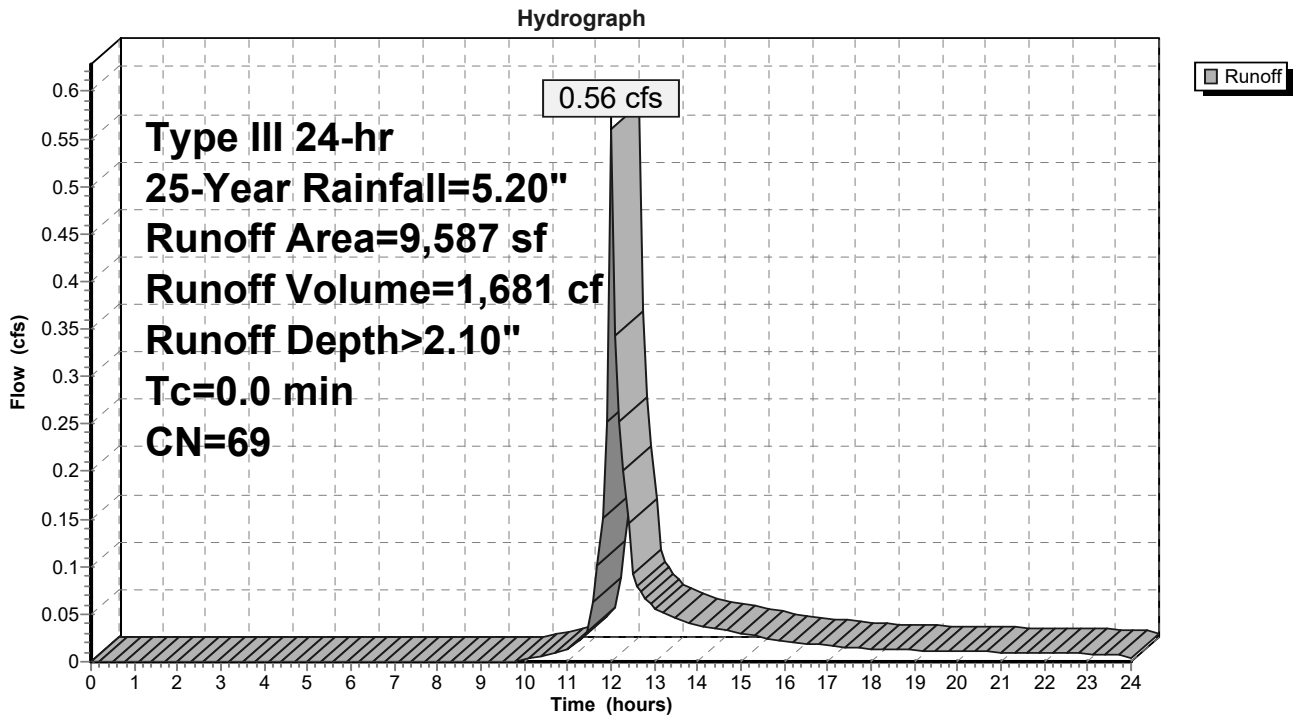
## Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.56 cfs @ 12.01 hrs, Volume= 1,681 cf, Depth> 2.10"

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
2,108	98	Paved parking, HSG B
7,478	61	>75% Grass cover, Good, HSG B
9,587	69	Weighted Average
7,478		78.01% Pervious Area
2,108		21.99% Impervious Area

## Subcatchment PR-2: Subcat PR-2



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Type III 24-hr 25-Year Rainfall=5.20"

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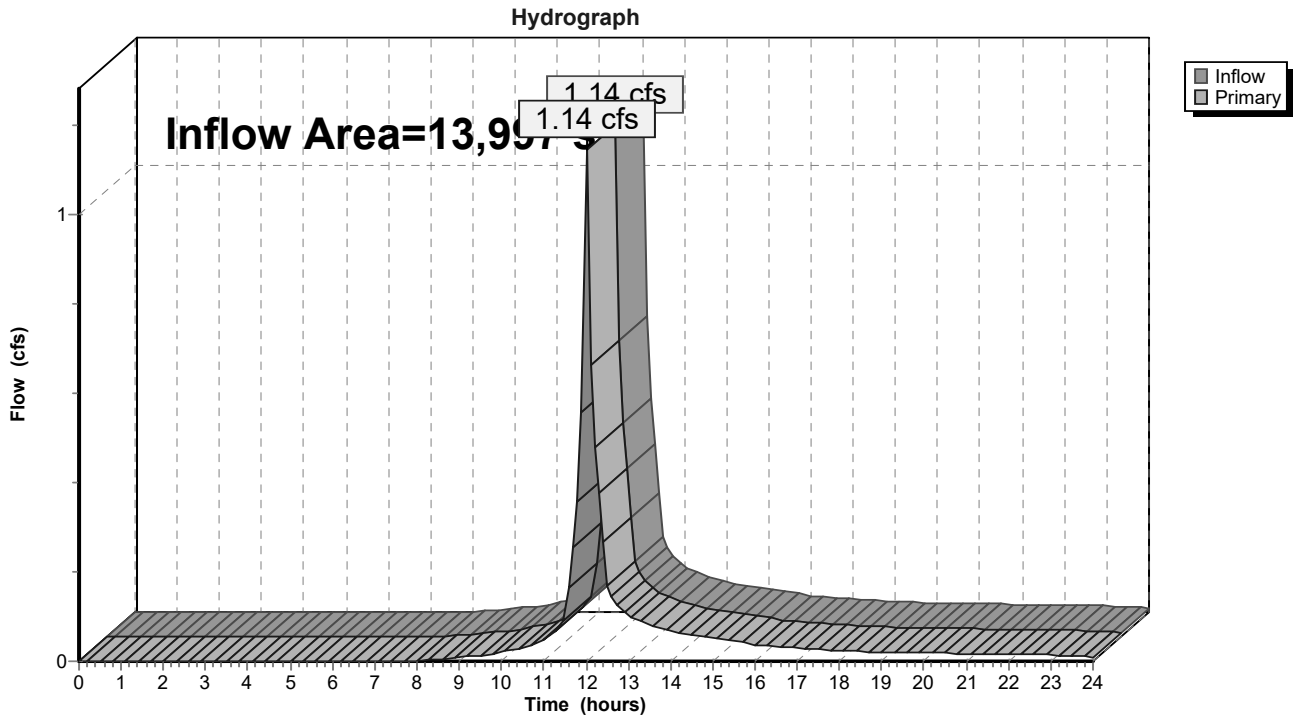
Page 16

## Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.21% 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



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Type III 24-hr 25-Year Rainfall=5.20"

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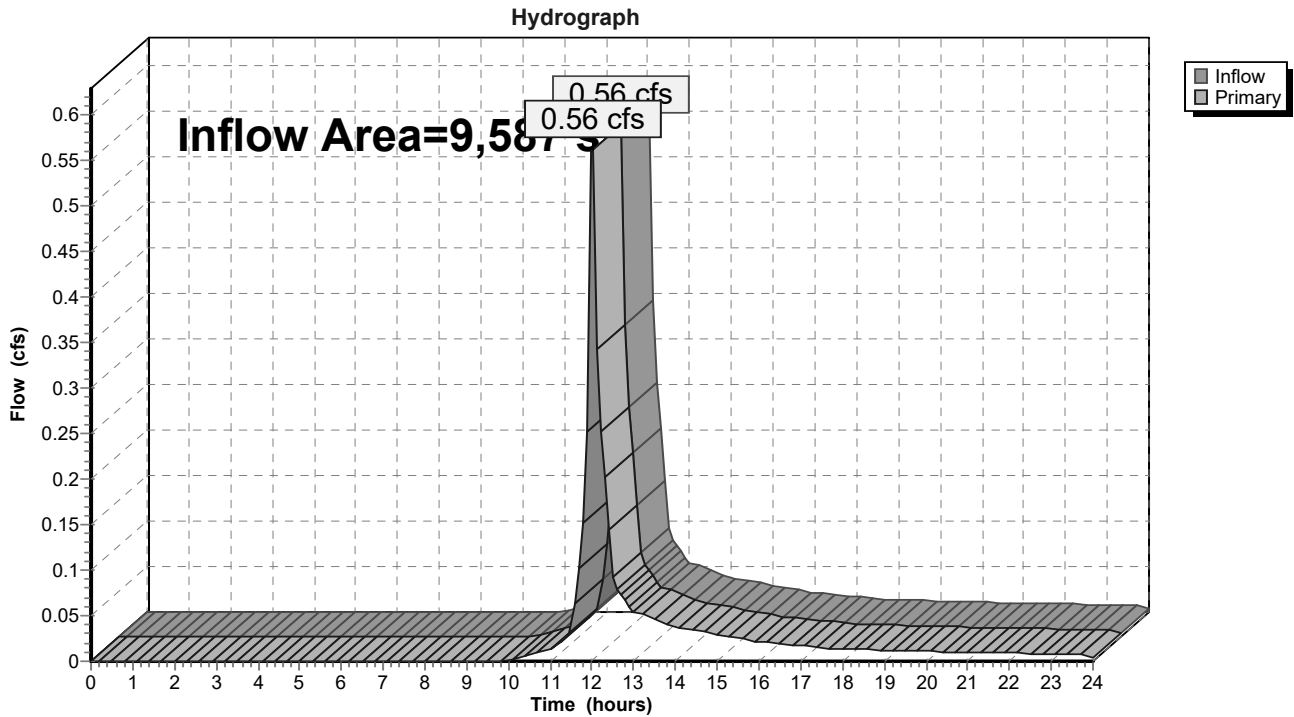
Page 17

## Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 21.99% Impervious, Inflow Depth > 2.10" for 25-Year event  
Inflow = 0.56 cfs @ 12.01 hrs, Volume= 1,681 cf  
Primary = 0.56 cfs @ 12.01 hrs, Volume= 1,681 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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Type III 24-hr 50-Year Rainfall=5.70"

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Page 18

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 46.21% 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 21.99% Impervious    Runoff Depth>2.48"  
Tc=0.0 min    CN=69    Runoff=0.67 cfs 1,982 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=0.67 cfs 1,982 cf  
Primary=0.67 cfs 1,982 cf

**Total Runoff Area = 23,584 sf    Runoff Volume = 5,849 cf    Average Runoff Depth = 2.98"**  
**63.64% Pervious = 15,008 sf    36.36% Impervious = 8,576 sf**

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Type III 24-hr 50-Year Rainfall=5.70"

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Page 19

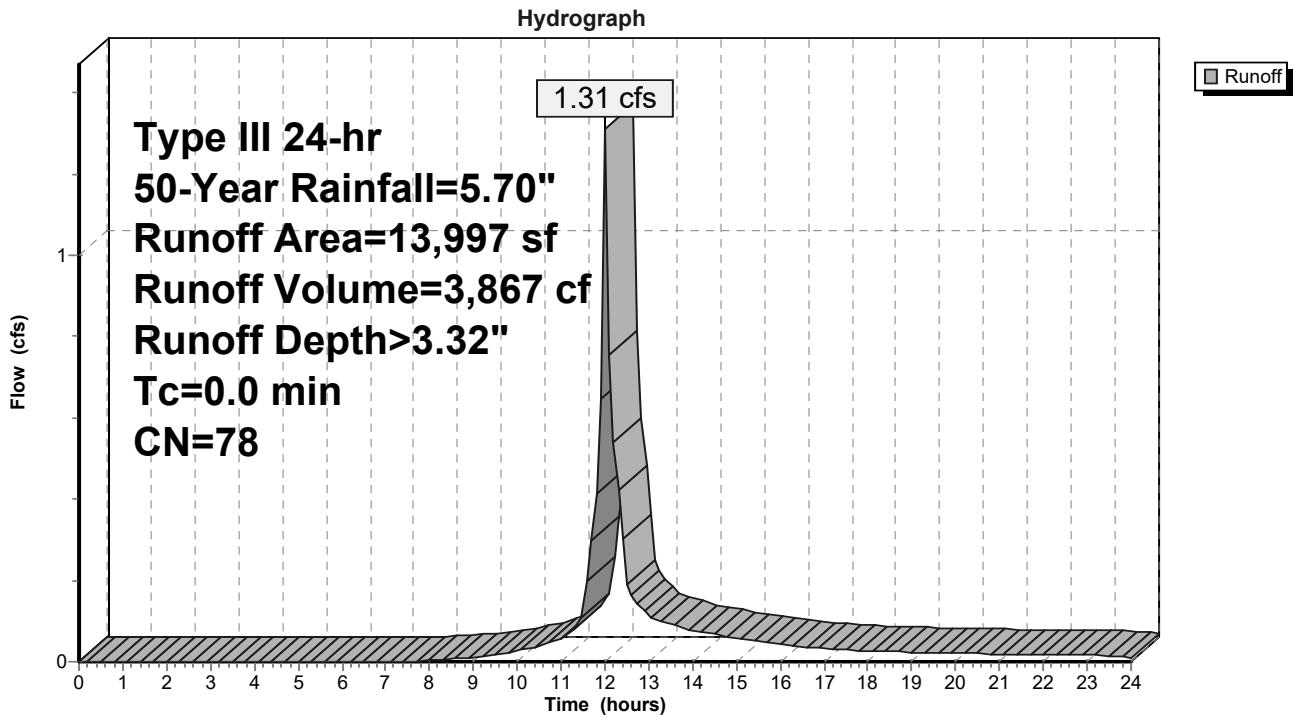
## Summary for Subcatchment PR-1: Subcat PR-1

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
6,468	98	Paved parking, HSG B
7,529	61	>75% Grass cover, Good, HSG B
13,997	78	Weighted Average
7,529		53.79% Pervious Area
6,468		46.21% Impervious Area

## Subcatchment PR-1: Subcat PR-1



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Page 20

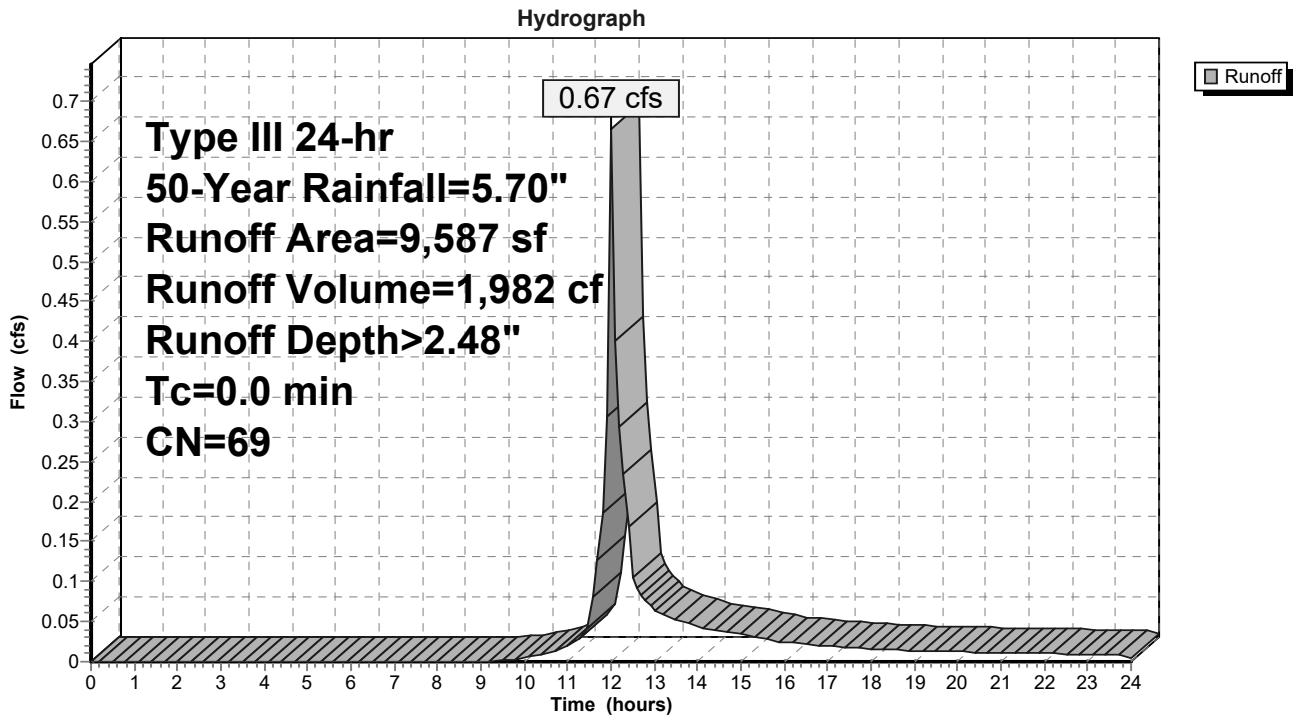
## Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.67 cfs @ 12.01 hrs, Volume= 1,982 cf, Depth> 2.48"

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
2,108	98	Paved parking, HSG B
7,478	61	>75% Grass cover, Good, HSG B
9,587	69	Weighted Average
7,478		78.01% Pervious Area
2,108		21.99% Impervious Area

## Subcatchment PR-2: Subcat PR-2



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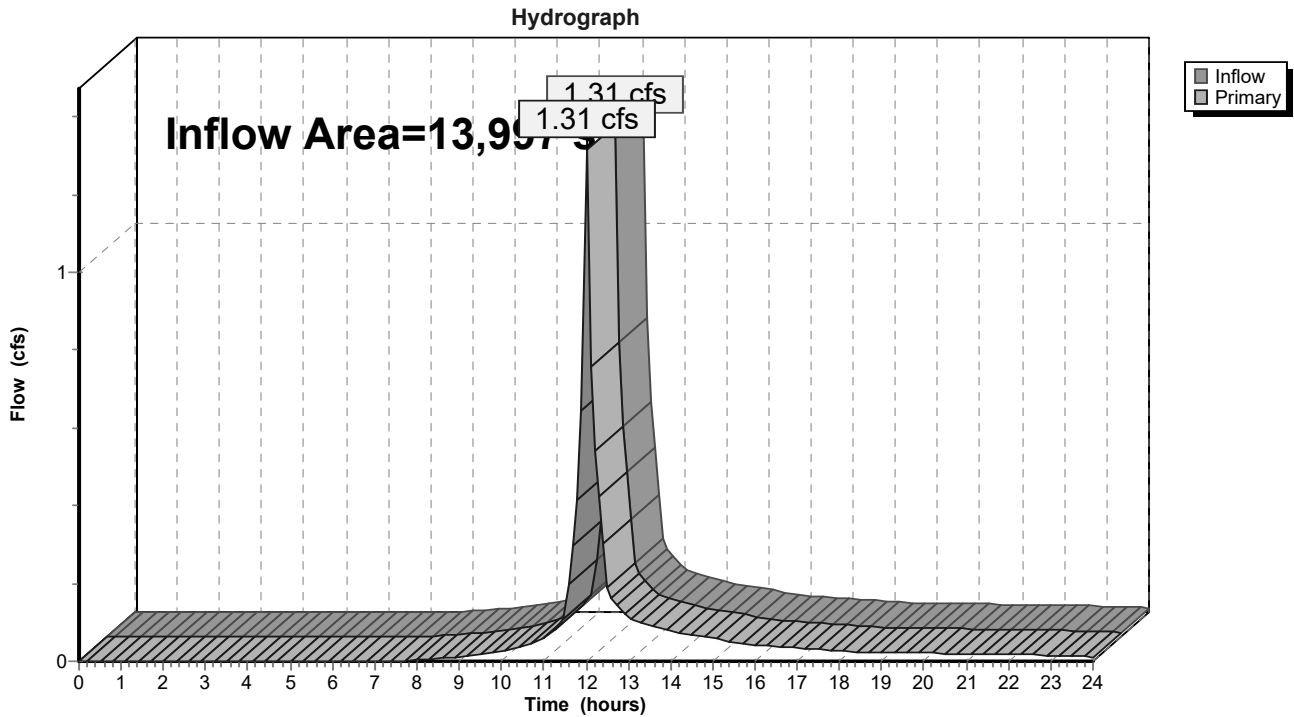
Page 21

## Summary for Link POA-1: Point of Analysis 1

Inflow Area = 13,997 sf, 46.21% 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



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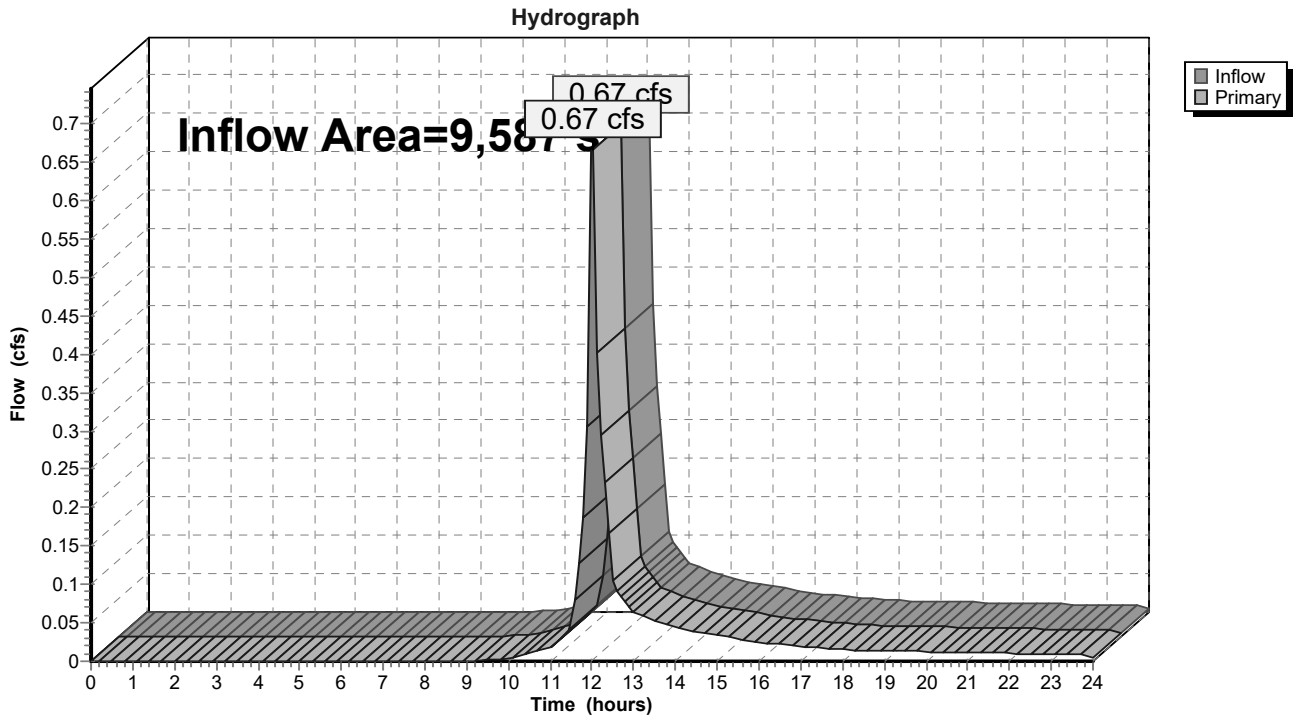
Page 22

## Summary for Link POA-2: Point of Analysis 2

Inflow Area = 9,587 sf, 21.99% Impervious, Inflow Depth > 2.48" for 50-Year event  
Inflow = 0.67 cfs @ 12.01 hrs, Volume= 1,982 cf  
Primary = 0.67 cfs @ 12.01 hrs, Volume= 1,982 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**

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**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:  
March 9, 2020**

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# TABLE OF CONTENTS

Introduction

Section 1 - Stormwater Management System – Inspection and Maintenance

Section 2 - Source Control Plan

A. Materials Covered

B. Materials Management Practices

C. Spill Prevention and Response Procedures

Section 3 - Snow Management and Disposal Plan

Figures

Drawing C-2 – Grading and Drainage Plan

Figure BMP-1 – BMP Location Plan

Figure SMP-1 – Snow Management Plan

Appendices

Appendix A - Maintenance and Inspection Forms

Activity Guide

Comprehensive Annual Evaluation and Inspection Report

Annual Training Signoff Sheet

Weekly Inspection Checklist

Monthly Inspection Checklist

Quarterly Inspection Checklist

Semi-Annually Inspection Checklist

Spill and Leak History

Appendix B – CDS Treatment Unit Operations and Maintenance Guidelines

# **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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NO.	REVISION	DATE
1.	ISSUED FOR AMENDED SITE PLAN APPROVAL	03/09/2020
	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

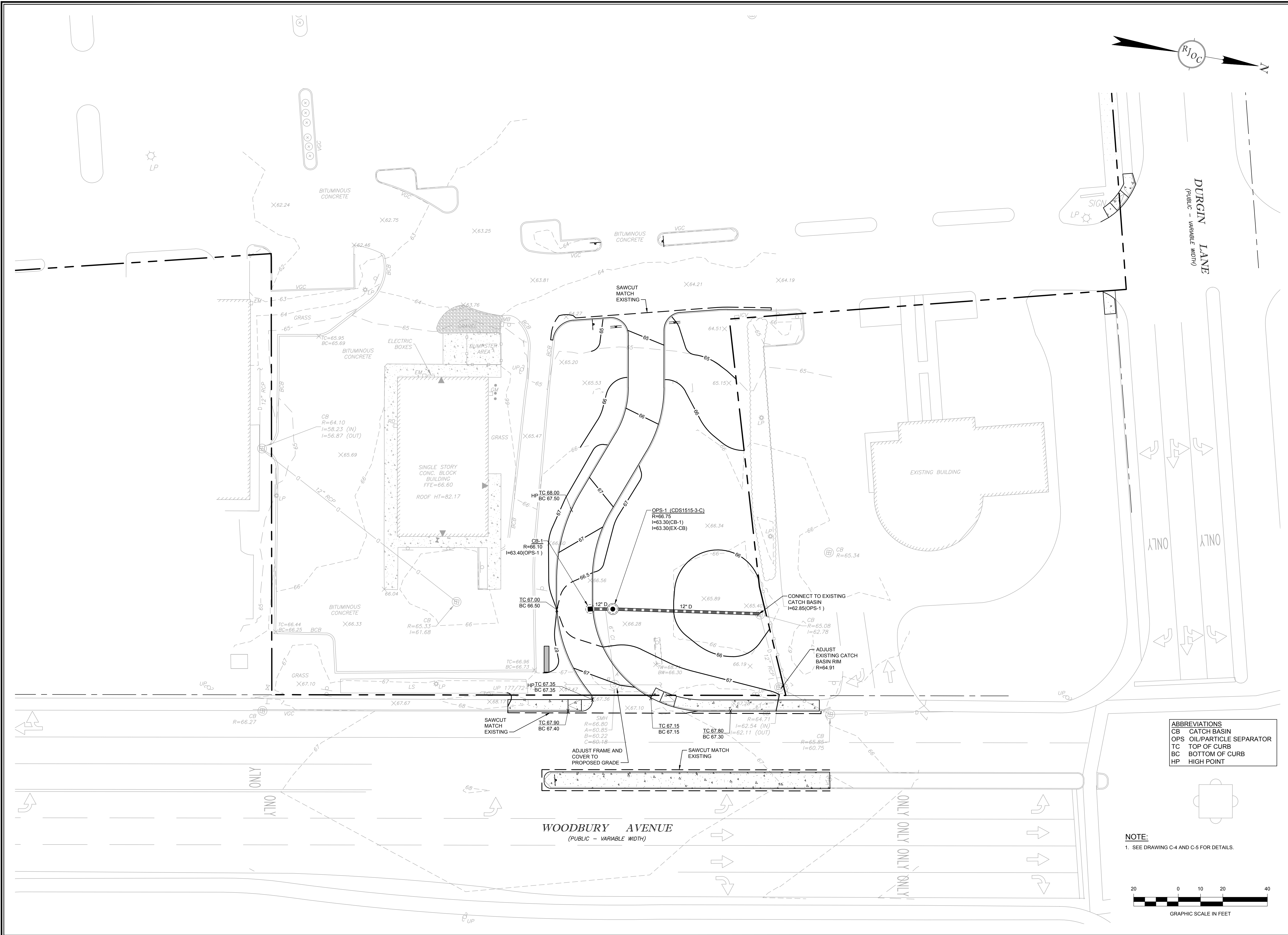
PREPARED FOR:  
**KEYPOINT PARTNERS**  
*Unlocking Value in Commercial Real Estate*  
 ONE BURLINGTON WOODS DRIVE  
 BURLINGTON, MA 01803  
 781-418-6203

PROJECT NAME:  
**DPF DURGIN SQUARE**  
 PORTSMOUTH, NH

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

## GRADING, DRAINAGE, AND UTILITY PLAN

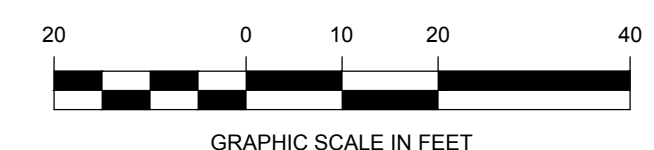
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 PROJECT NUMBER:  
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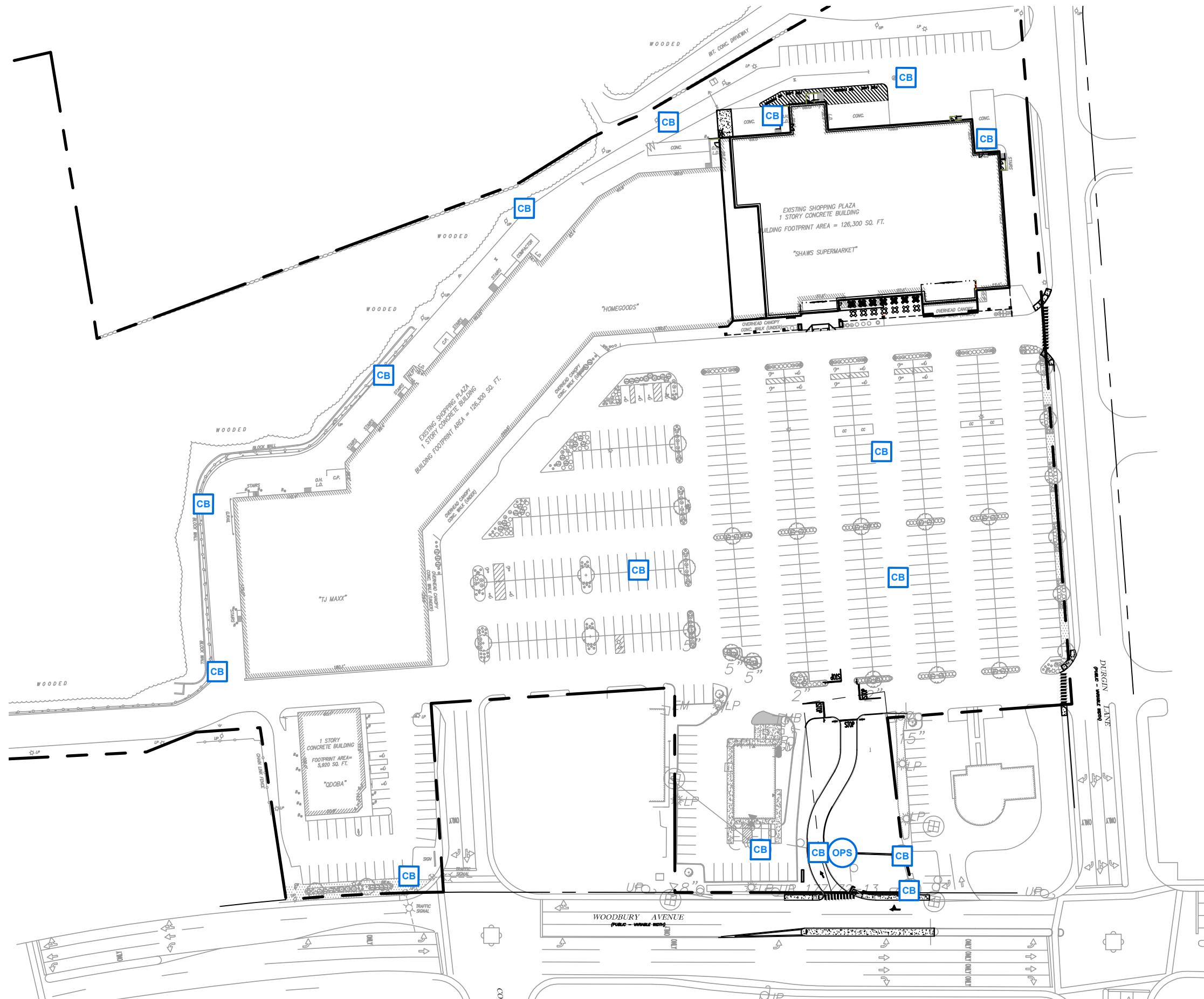
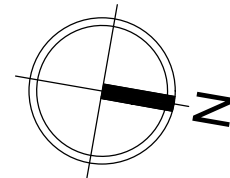
ABBREVIATIONS

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.




Drawing name: C:\NH\Portsmouth\KeyPoint\Main\16030\_C-2 Grading and Drainage Plan.dwg  
 Date: 02/18/2020 15:15pm



**LEGEND**

 CATCH BASIN (CB)

 OIL/PARTICLE SEPARATOR (OPS)

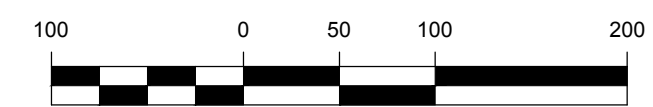
**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS

DATE: 02/18/2020      SCALE: 1"=100'  
 REVISED: 03/09/2020

**BMP-1**  
**BMP LOCATION PLAN**

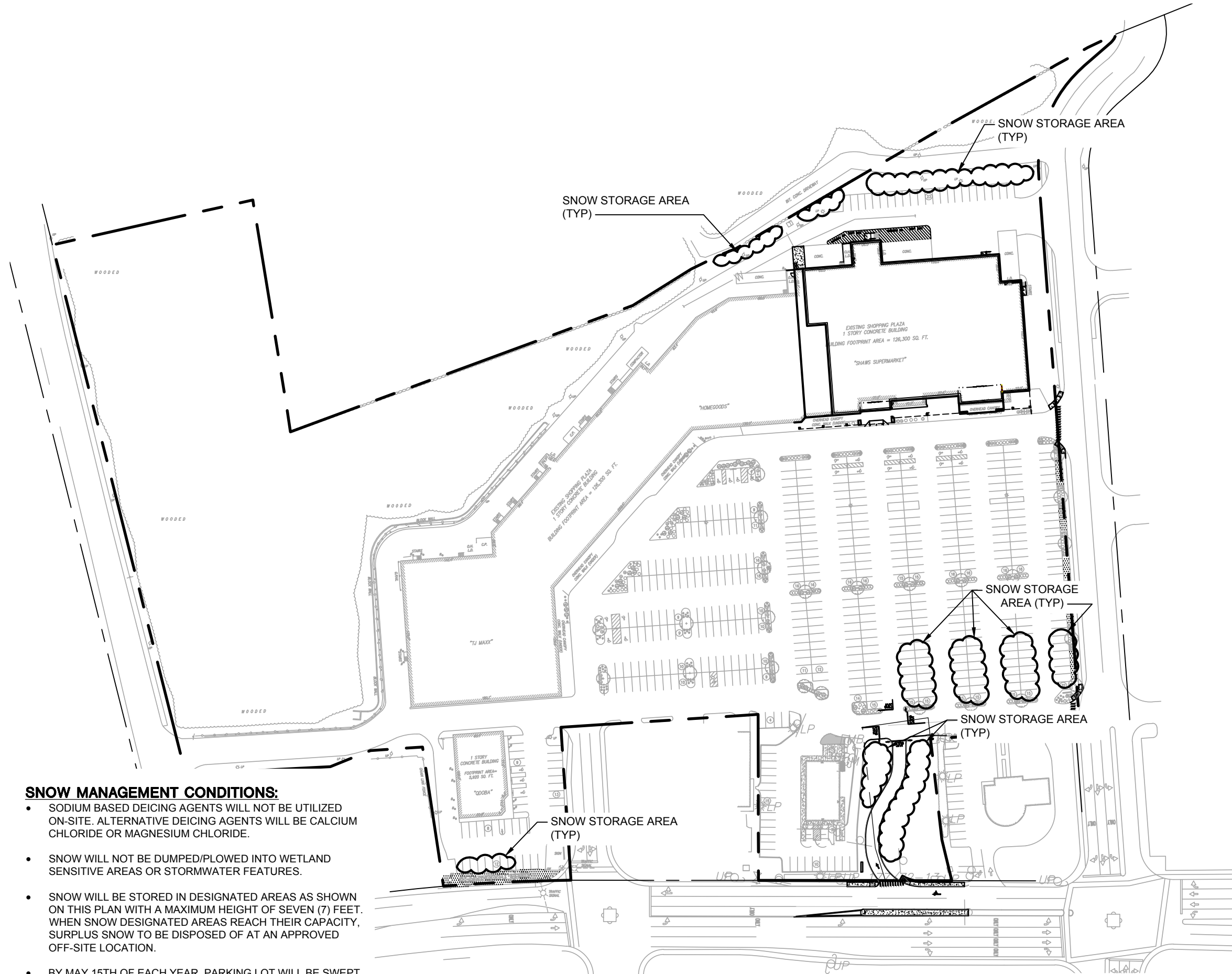
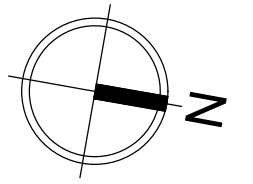
DURGIN SQUARE      PORTSMOUTH, NH

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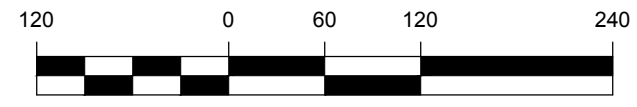


GRAPHIC SCALE IN FEET

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Mar 06, 2020 - 14:49pm



- 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 SWEEPED OF SAND/SANDIMENT AND ACCUMULATED TRASH/LITTER WILL BE REMOVED FROM SNOW STORAGE AREAS.



GRAPHIC SCALE IN FEET

**RJO'CONNELL & ASSOCIATES, INC.**  
 CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS  
 DATE: 02/18/2020 SCALE: 1"=120'  
 REVISED: 03/09/2020  
**SNOW MANAGEMENT PLAN**  
 DURGIN SQUARE PORTSMOUTH, NH  
 Copyright © 2020 by R.J. O'Connell & Associates, Inc.

Drawing name: G:\NH\Portsmouth\KeyPoint\Durgin Square\Reports\I&M\Figures\16030 - SMP-1 - Snow Management Plan.dwg  
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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.

<b>Timing</b>	<b>Activity</b>	<b>Responsible Party</b>
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

**Durbin 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. Annual stormwater maintenance documentation shall be submitted annually to Portsmouth DPW and Planning Departments, 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  
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 2<sup>nd</sup> 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:** \_\_\_\_\_

<b>GROUNDS AREA TO CHECK</b>	<b>TRASH OR DEBRIS PRESENT?</b>	<b>DESCRIPTION OF PROBLEM</b>	<b>CORRECTIVE MEASURES TAKEN</b>
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:** \_\_\_\_\_

<b>BMP</b>	<b>ACTIVITY</b>	<b>DESCRIPTION OF PROBLEM (IF PRESENT)</b>	<b>CORRECTIVE MEASURES TAKEN</b>
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:** \_\_\_\_\_

<b>BMP</b>	<b>ACTIVITY</b>	<b>DESCRIPTION OF PROBLEM (IF PRESENT)</b>	<b>CORRECTIVE MEASURES TAKEN</b>
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:** \_\_\_\_\_

<b>BMP</b>	<b>ACTIVITY</b>	<b>DESCRIPTION OF PROBLEM (IF PRESENT)</b>	<b>CORRECTIVE MEASURES TAKEN</b>
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:** \_\_\_\_\_

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





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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 unmatched 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**) for 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<sup>®</sup> 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<sup>®</sup> Particulate 8-4 mesh or OARS<sup>™</sup> 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 equipments 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.

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**APPENDIX A**  
**ANNUAL RECORDS OF**  
**OPERATIONS & MAINTENANCE**  
**AND INSPECTION CHECKLISTS**

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# 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 least once every 30 days
2. Ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen)
3. Measure amount of solid materials 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).**



February 19, 2020

Juliet Walker, Planning Director  
City of Portsmouth  
1 Junkins Avenue, 3<sup>rd</sup> Floor  
Portsmouth, NH 03801

Re: Driveway Entrance Design  
DPF 1600 Woodbury Avenue, LLC  
1600 Woodbury Avenue  
Assessor's Map 238, Lot 16

Dear Ms. Walker,

Please accept this letter as confirmation that First Seacoast Bank has been contacted by KeyPoint Partners, proponent of the above referenced application for improvements at 1600 Woodbury Avenue. Specifically, we have had the opportunity to discuss and review numerous proposals for location and design of a new entrance to the subject property which would be located adjacent to our existing branch facility at 1650 Woodbury Avenue.

Please let the record show that First Seacoast Bank is supportive of the proposal shown as Conceptual Plan CP-10. This proposal reflects several key elements including a deceleration lane, one-way traffic flow into the property, and an extended median on Woodbury Avenue to minimize opportunities for u-turns. We understand that this concept is the subject of engineering analysis and review necessary for further consideration by the City of Portsmouth.

Please feel free to contact our Facilities Manager, Dana C. Lynch, P.E., if you should have any questions regarding this letter.

Sincerely,

James R. Brannen  
President and Chief Executive Officer

cc: Alicia C. Busconi, Vice President  
KeyPoint Partners