



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists



July 21, 2020

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

**Re: Response to TAC Comments  
Proposed Offices with Model Home Units  
3201 Lafayette Road, Portsmouth, NH 03801  
Tax Map 291 Lot 8**

Dear Mrs. Walker,

On behalf of our client, 3201 Lafayette Road, LLC, we provide the following responses to the comments that have resulted from the City of Portsmouth Technical Advisory Committee review for the Proposed Offices with Model Home Units at 3201 Lafayette Road in Portsmouth, NH. The comments are shown in italics, and responses are shown in bold.

- 1. Issues brought up previously at the work session were not completed.*

**All comments from the previous work session have been addressed.**

- 2. The proposed water service for the staffed model building needs to come from the existing office building after it has been metered.*

**Discussions have taken place directly with DPW and this comment has been addressed.**

- 3. The existing sewer for the office building needs to be televised and approved by DPW before expanded use is authorized.*

**A hard copy of the video of the existing sewer service was provided with the original project submittal. The video found that the service was in adequate working condition.**

- 4. Slope shown for new 4" pipe is insufficient to meet plumbing code.*

**The slope of the proposed 4" sewer service has been increased to 3.6%.**

- 5. The water main mapping needs to be completed as indicated in June 25<sup>th</sup> email to Chris Rice.*

**Please see attached Water Line Plan.**



6. *The proposed lighting on the utility pole must be compliant with zoning, 'no Eversource spot lights'.*

**The proposed lighting mounted on the utility pole has been removed from the plan.**

7. *Please show existing water service for law building as depicted in February 27<sup>th</sup> email to Jack McTigue, the line does not begin at the gate valve as indicated.*

**Please see Existing Conditions Plan or Water Line Plan for location of existing water service.**

8. *Remove non-functioning lines from site plan or otherwise denote as non-functional.*

**Non-functioning lines have been noted on attached Existing Conditions Plan.**

9. *Bollards should be added around the other utility pole in the boat trailer storage area.*

**Bollards have been added around the utility pole in boat trailer storage area.**

10. *Trip generation memo is ok. While auto sales may not be an accurate comparison, we would not expect signification trip generation from this land use.*

**Comment noted.**

11. *How will the crushed stone parking area be maintained?*

**Please see maintenance guidelines on Crushed Stone Parking Area detail on Sheet C-11.**

12. *How will the snow removal occur in particular how will crushed stone be held in place during plowing operations?*

**Please see maintenance guidelines on Crushed Stone Parking Area detail on Sheet C-11.**

13. *Wetland Protection – Consider adding a split-rail fence along the edge of the gravel parking area to delineate the 100 foot wetland buffer and prevent future encroachment.*

**A split-rail fence has been proposed at the edge of the 100 foot wetland buffer.**

14. *Landscaping along Route 1 – Additional landscaping (including shade trees) should be located along the island on Route 1 between the existing curb-cuts.*

**Proposed trees along with existing landscaping meeting requirements are shown between the existing curb cuts along Route 1.**



*15. Streetscape – The 5 Parking spaces located in front of the model homes should be relocated so the model homes have a continuous landscape strip along the driveway.*

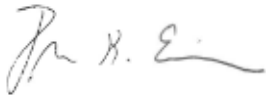
**It is necessary to keep the proposed parking in close proximity to the proposed model homes and there are no suitable alternative locations for the parking on site. In addition, proposed landscaping has been added between the existing access driveway and Route 1.**

*16. Sidewalk – A raised concrete walkway should be added to the existing 2 story office building in order to provide safe pedestrian circulation on the site. The existing driveway is significantly wider than required so the sidewalk could be accommodated. Additional landscaping should also be considered on the ends of the existing 10 parking spaces located in front of the office building.*

**The existing building has a raised sidewalk. Please see attached photos. The existing parking area is paved and landscaping is present in areas adjacent to the existing building.**

We appreciate your consideration of these matters. If you have any questions or concerns, please do not hesitate to contact us.

Sincerely,  
**MSC a division of TFMoran, Inc.**



Dylan K. Erickson, EIT  
*Project Engineer*

## Site Photos



Photo #1: Landscape area adjacent to existing office building.



Photo #2: Main entrance to existing office building.





Photo #3: Lawn area adjacent to existing office building.



Photo #4: Raised concrete sidewalk in existing parking area.



Photo #5: Side entrance to existing office building and raised concrete sidewalk in existing parking area.



Photo #6: Raised concrete sidewalk in existing parking area.

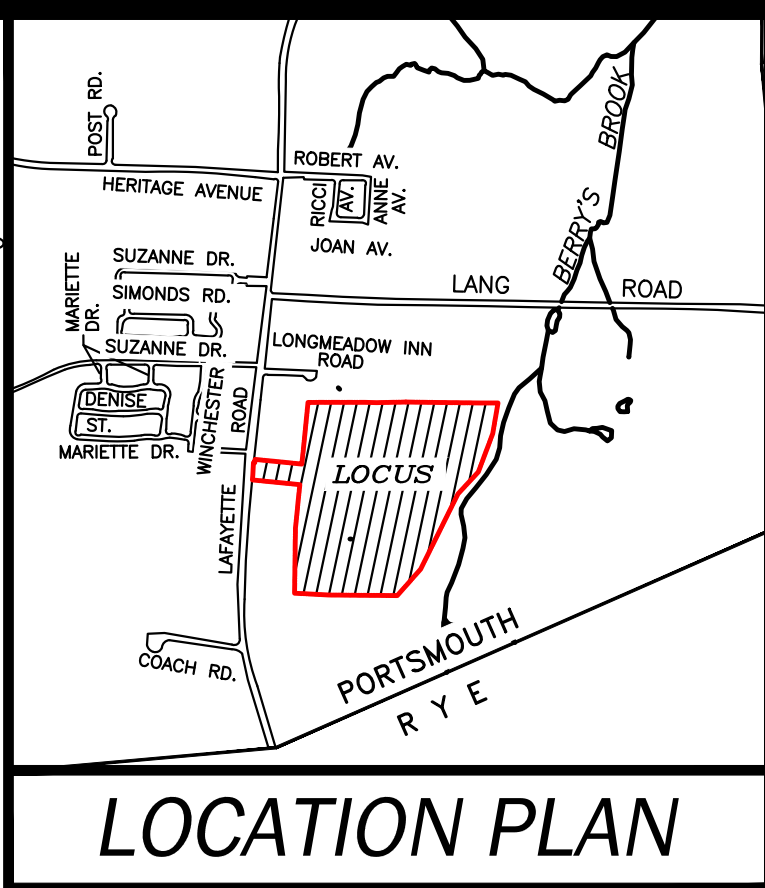
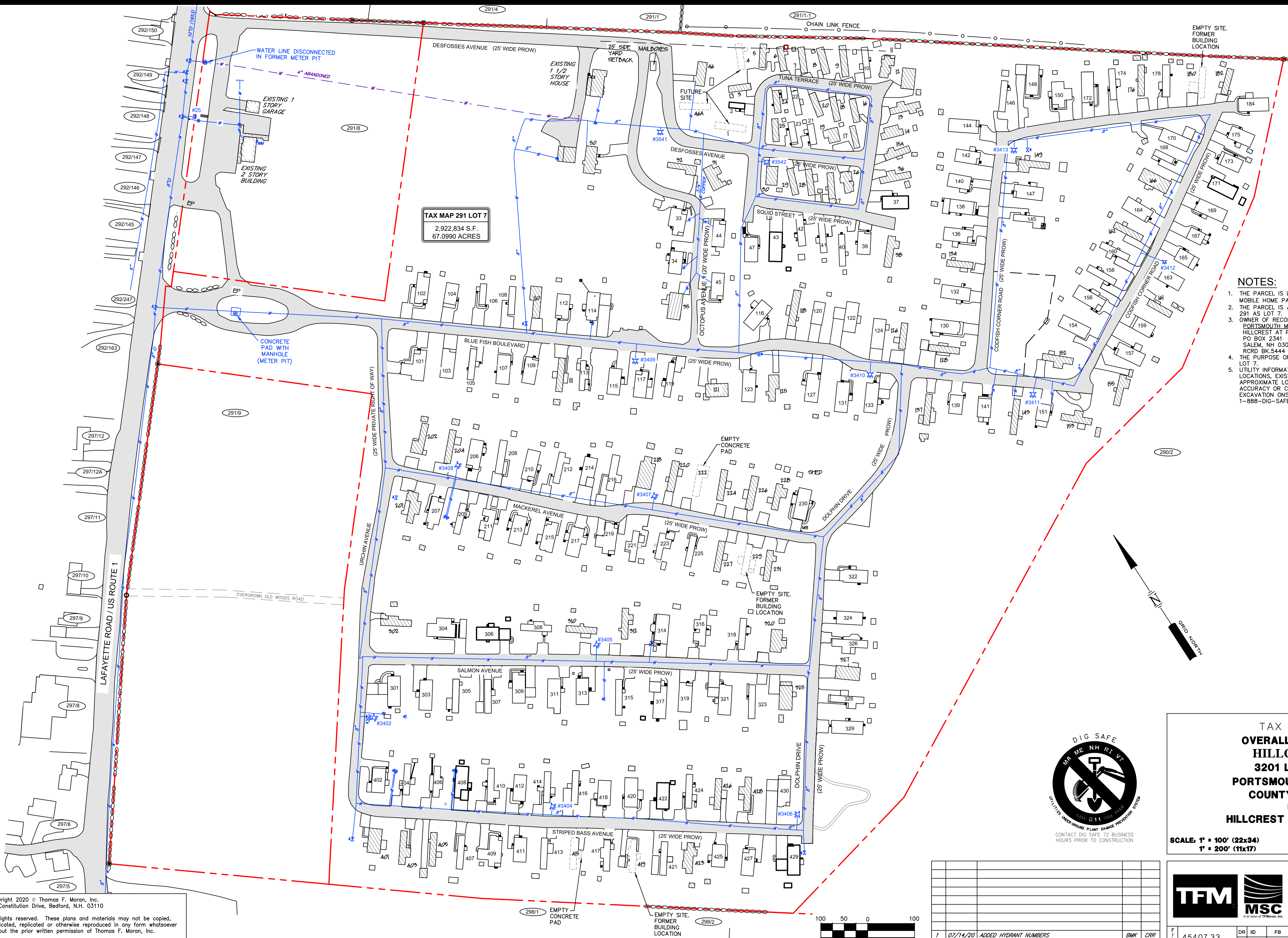


Jul 14, 2020 - 8:4 am  
F:\MSC Projects\45407 - Portsmouth - Lafayette Rd - Portsmouth LLC\_Model Home\Carlson\_Sur\_by\Drawings\45407\_33\_Utility\_Plan.dwg

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- NOTES:**
1. THE PARCEL IS LOCATED IN THE CITY OF PORTSMOUTH GARDEN APARTMENT/ MOBILE HOME PARK (GA/MH) ZONE.
  2. THE PARCEL IS AS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 291 AS LOT 7.
  3. OWNER OF RECORD: PORTSMOUTH MAP 291 LOT 7 HILLCREST AT PORTSMOUTH LLC PO BOX 2341 SALEM, NH 03079 RCRD BK.5444 PG.198
  4. THE PURPOSE OF THIS PLAN IS TO SHOW THE WATER LINES ON MAP 291 LOT 7.
  5. UTILITY INFORMATION SHOWN HEREON ARE A COMPILATION OF FIELD LOCATIONS, EXISTING RECORDS AND ORAL RECOLLECTIONS. THEY ARE APPROXIMATE LOCATIONS ONLY. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ONSITE THE CONTRACTOR SHALL CONTACT DIGSAFE AT 811 OR 1-888-DIG-SAFE TO VERIFY UTILITIES.

- LEGEND:**
- CI CAST IRON
  - WM WATER METER
  - ⊕ WATER METER PIT MANHOLE
  - ⊕ WATER GATE VALVE
  - ⊕ WATER SHUTOFF VALVE
  - ⊕ HYDRANT
  - WATER LINE
  - - - ABANDONED WATER LINE
  - - - BOUNDARY LINE



**TAX MAP 291 LOT 7**  
**OVERALL WATER LINE PLAN**  
**HILLCREST ESTATES**  
**3201 LAFAYETTE ROAD**  
**PORTSMOUTH, NEW HAMPSHIRE**  
**COUNTY OF ROCKINGHAM**  
PROPERTY OF  
**HILLCREST AT PORTSMOUTH, LLC**

**SCALE: 1" = 100' (22x34)**  
**1" = 200' (11x17)**

**JULY 7, 2020**

**TFM** **MSC**

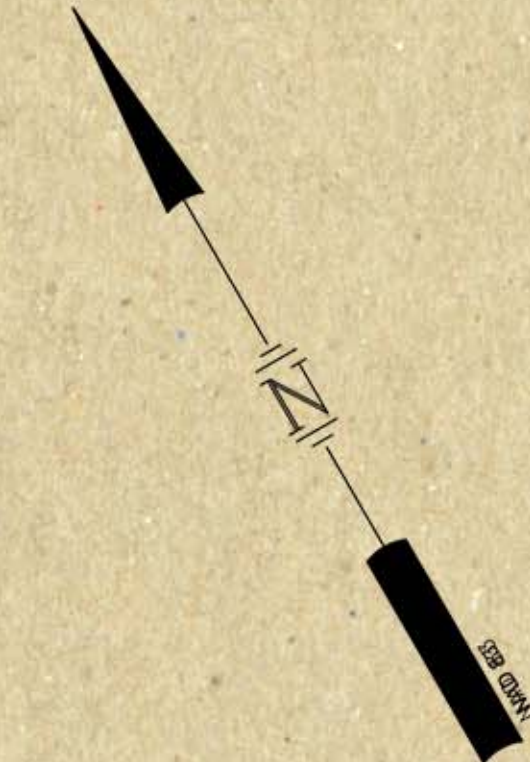
Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
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FILE	45407.33	DR	ID	FB	567
REV.	DATE	DESCRIPTION	DR	CK	



Jul 28, 2020 - 4:31pm  
F:\MISC Projects\45407 - Lafayette Road - Portsmouth\45407-33 - 3201 Lafayette Rd LLC Model Home\Design\PRODUCTION DRAWINGS\45407-33 - Landscape.dwg



LAFAYETTE ROAD / US ROUTE 1

(PUBLIC RIGHT OF WAY)

DESFOSSES AVENUE

(PRIVATE RIGHT OF WAY)



LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	2	PYRUS CALLERYANA 'CHANTICLEER' CHANTICLEER FLOWERING PEAR	2 1/2" TO 3" CAL.	B&B
	6	MAACKIA AMURENSIS AMUR MAACKIA	2 1/2" TO 3" CAL.	B&B
	3	CORNUS SERICEA 'KELSEY' KELSEY RED-OSIER DOGWOOD	7 GAL.	CONT.
	16	HYDRANGEA PANICULATA 'BOBO' BOBO PANICLE HYDRANGEA	5 GAL.	CONT.
	14	JUNIPERUS C. 'PFITZERIANA COMPACTA' COMPACT PFITZER JUNIPER	2' TO 2 1/2'	B&B
	26	PENNISETUM A. 'HAEMEL' HAEMEL FOUNTAIN GRASS	5 GAL.	CONT.
	14	RHODODENDRON 'NOVA ZEMBLA' NOVA ZEMBLA RHODODENDRON	2' TO 2 1/2'	B&B
	2	RHODODENDRON 'PJM' PJM RHODODENDRON	2' TO 2 1/2'	B&B
	7	SPIRAEA BIMALDA 'GOLDFLAME' GOLDFLAME SPIREA	5 GAL.	CONT.
	16	SPIRAEA JAPONICA 'LEMON PRINCESS' LEMON PRINCESS SPIREA	5 GAL.	CONT.
	13	TAXUS MEDIA 'EVER-LOW' EVER-LOW YEW	2' TO 2 1/2'	B&B

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
- THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
- ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBROUS, COMPACT ROOT SYSTEM.
- ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
- ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
- IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
- ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FM."
- THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
- ALL REQUIRED PLANT MATERIALS SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.

GUARANTEE

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

LANDSCAPE PLAN

3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

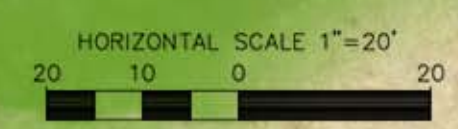
1"=40' (11"X17")  
SCALE: 1"=20' (22"X34")

JUNE 22, 2020

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REV.	DATE	DESCRIPTION	DR	CK	DKE	CRR
1	7/8/2020	REVISIONS PER CITY STAFF & TAC COMMENTS				

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

48 Constitution Drive  
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Phone (603) 472-4488  
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www.tfmoran.com

45407.33

DR DKE FB  
CK CRR CADFILE

45407-33 - LANDSCAPE

C-07



SITE DEVELOPMENT PLANS

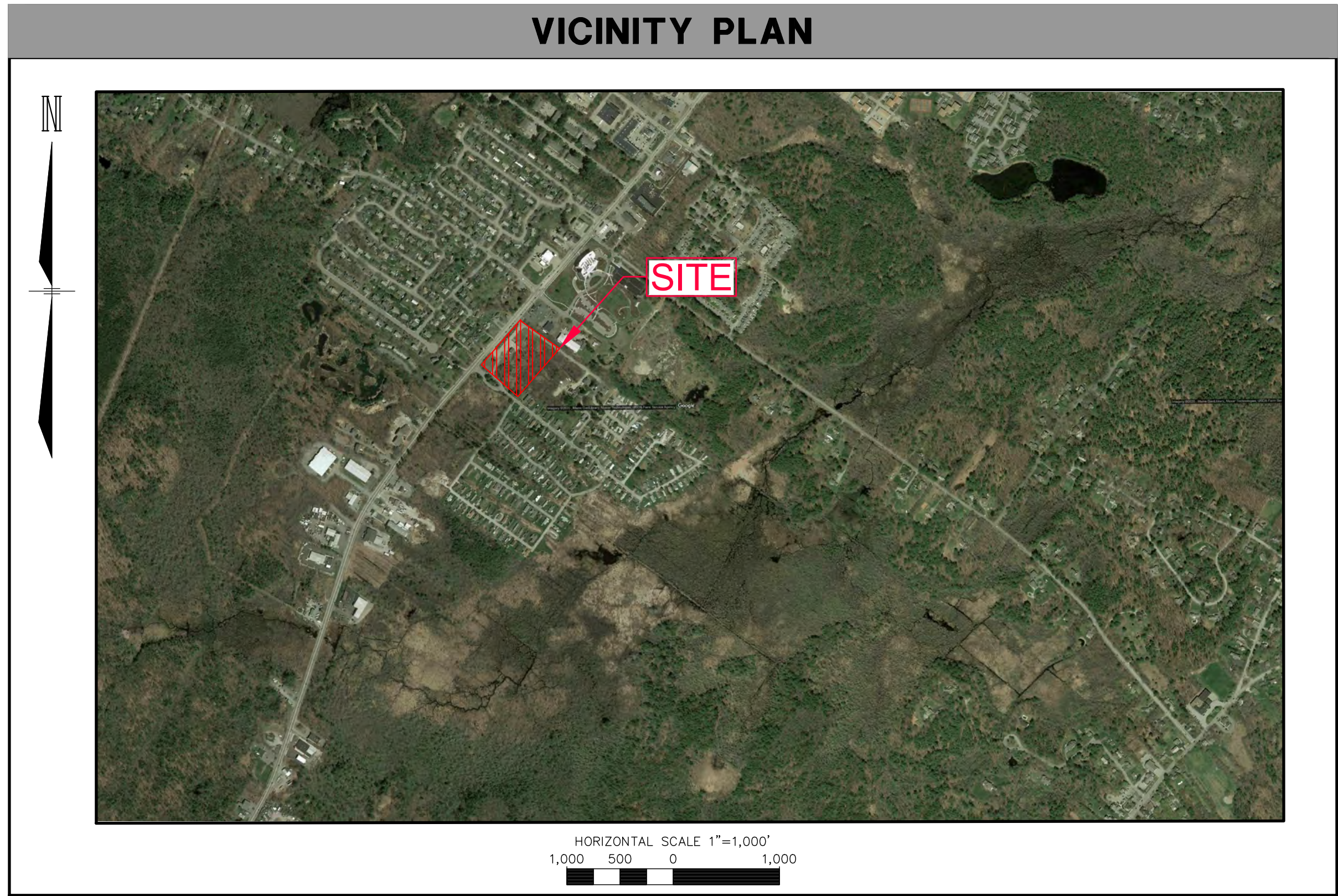
3201 LAFAYETTE ROAD, LLC

3201 LAFAYETTE ROAD

PORTSMOUTH, NEW HAMPSHIRE

JUNE 22, 2020

(LAST REVISED JULY 8, 2020)



1	7/8/2020	REVISIONS PER CITY STAFF & TAC COMMENTS	DKE	CRR	
REV.	DATE	DESCRIPTION	DR	CK	

INDEX OF SHEETS	
SHEET	SHEET TITLE
C-00	COVER
C-01	EXISTING CONDITIONS PLAN
C-02	NOTES & LEGEND
C-03	SITE PREPARATION PLAN
C-04	SITE LAYOUT PLAN
C-05	GRADING & DRAINAGE PLAN
C-06	UTILITY PLAN
C-07	LANDSCAPE PLAN
C-08	LANDSCAPE DETAILS
C-09	EROSION CONTROL NOTES
C-10	TRUCK MOVEMENT PLAN
C-11 - C-12	DETAILS
C-13	MANUFACTURED MODEL HOME EXAMPLES

PERMITS/APPROVALS			
	NUMBER	APPROVED	EXPIRES
CITY SITE PLAN REVIEW		PENDING	
CITY VARIANCE	-	05/21/2020	05/21/2022
EPA SWPPP		PENDING	
NHDOT DRIVEWAY		PENDING	


VARIANCES	
THE FOLLOWING VARIANCES FROM THE CITY OF PORTSMOUTH ZONING ORDINANCE HAVE BEEN GRANTED BY THE ZONING BOARD OF ADJUSTMENT (ON 5/21/20):	
1. CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.5B83.10 - REQUIRED OFF-STREET PARKING SHALL NOT BE LOCATED BETWEEN A PRINCIPAL BUILDING AND A STREET OR WITHIN ANY REQUIRED BUFFER AREA.	
2. CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.113.20 - REQUIRED OFF-STREET PARKING SHALL NOT BE LOCATED IN ANY REQUIRED FRONT YARD, OR BETWEEN A PRINCIPAL BUILDING AND A STREET.	

SPECIAL EXCEPTION	
THE FOLLOWING SPECIAL EXCEPTION FROM THE CITY OF PORTSMOUTH ZONING ORDINANCE HAS BEEN GRANTED BY THE ZONING BOARD OF ADJUSTMENT:	
1. CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.44011.3 - TO ALLOW MANUFACTURED HOUSING SALES IN THE G1 ZONE.	

WAIVERS	
THE FOLLOWING WAIVERS FROM THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS HAVE BEEN REQUESTED:	
1. CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS SECTION 2.5.4.3J - PHOTOMETRIC PLAN FOR PROPOSED EXTERIOR LIGHTING.	
2. CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS SECTION 2.5.4.3B - ELEVATIONS OF BUILDING(S) INDICATING THEIR HEIGHT, MASSING, PLACEMENT, MATERIALS, LIGHTING AND FACADE TREATMENTS.	

THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.

SITE DEVELOPMENT PLANS	
TAX MAP 291 LOT 8	
COVER	
3201 LAFAYETTE ROAD	
PORTSMOUTH, NEW HAMPSHIRE	
OWNED BY/PREPARED FOR	
3201 LAFAYETTE ROAD, LLC	
JUNE 22, 2020	

		Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists		48 Constitution Drive Bedford, NH 03110 Phone (603) 472-4488 Fax (603) 472-9747 www.tfmoran.com		
FILE	45407.33	DR	DKE	FB	-	C-00
		CK	CRR	CADFILE	45407-33 - COVER	

GENERAL INFORMATION

OWNER/APPLICANT

MAP 291 LOT 8  
3201 LAFAYETTE ROAD, LLC  
72 SOUTH BROADWAY  
SALEM, NH 03079  
603-231-3363

RESOURCE LIST

PLANNING/ZONING DEPARTMENT  
1 JUNKINS AVE  
PORTSMOUTH, NH 03801  
603-610-7216  
JULIET WALKER, PLANNING DIRECTOR

BUILDING DEPARTMENT

1 JUNKINS AVE  
PORTSMOUTH, NH 03801  
603-610-7243  
ROBERT MARSILIA,  
CHIEF BUILDING INSPECTOR

PUBLIC WORKS

600 PEVERLY HILL RD  
PORTSMOUTH, NH 03801  
603-427-1530  
PETER RICE, PUBLIC WORKS DIRECTOR

POLICE DEPARTMENT

3 JUNKINS AVE  
PORTSMOUTH, NH 03801  
603-427-1510  
ROBERT MERNER, CHIEF

FIRE DEPARTMENT

170 COURT STREET  
PORTSMOUTH, NH 03801  
603-427-1515  
TODD GERMAIN, CHIEF

ASSOCIATED PROFESSIONALS

ENVIRONMENTAL SERVICES  
GOVE ENVIRONMENTAL SERVICES  
8 CONTINENTAL DRIVE  
BUILDING 2 - UNIT H  
EXETER, NH 03833

SOIL SCIENTIST

TES ENVIRONMENTAL CONSULTANTS, LLC  
1494 ROUTE 3A, UNIT 1  
BOW, NH 03304  
(603) 856-8925  
THOMAS E. SOKOLOSKI, WETLANDS  
SCIENTIST

LAND SURVEYORS

MSC: A DIVISION OF TFMORAN, INC.  
170 COMMERCE WAY  
PORTSMOUTH, NH 03801  
(603) 431-2222  
J. COREY COLWELL, LLS

ABUTTERS

MAP 292, LOT 151-2  
WEEKS REALTY TRUST  
PO BOX 100  
HAMPTON FALLS, 03844

MAP 292, LOT 150  
CHRIS G. & LISA ALEXANDROPOULOS  
3168 LAFAYETTE ROAD  
PORTSMOUTH, NH 03801

MAP 292, LOT 149  
ELIZABETH BATICK RICCI  
REVOCABLE TRUST OF 1993  
55 HARDING ROAD  
PORTSMOUTH, NH 03801

MAP 292, LOT 148  
KERRIGAN REVOCABLE TRUST  
3202 LAFAYETTE ROAD  
PORTSMOUTH, NH 03801

MAP 292, LOT 147  
KERRY E. RILEY  
3224 LAFAYETTE ROAD  
PORTSMOUTH, NH 03801

MAP 292, LOT 146  
YANG CHU FAMILY  
REVOCABLE TRUST OF 2019  
6 DRURY PLAINS ROAD  
STRATHAM, NH 03885

MAP 292, LOT 145  
LINDSAY A. BLAKEY  
95 CARDINAL LANE  
PORTSMOUTH, NH 03801

MAP 292, LOT 247  
KAREN E. KAPELOS  
REVOCABLE TRUST OF 1995  
1537B OYSTER CATCHER POINT  
NAPLES, FL 34105

MAP 291, LOT 6  
KATHERINE L. NADEAU  
FAMILY TRUST OF 2015  
125 GRANT ROAD  
NEWMARKET, NH 03857

MAP 291, LOT 5  
MJD REAL ESTATE HOLDINGS LLC  
200 HOLLEDER PARKWAY  
ROCHESTER, NY 14615

MAP 291, LOT 4  
FORTY LONG MEADOW/ PORTSMOUTH  
40 LONGMEADOW ROAD  
PORTSMOUTH, NH 03801

MAP 291, LOT 7  
HILLCREST AT PORTSMOUTH, LLC  
PO BOX 2431  
SALEM, NH 03079

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CONTACT US FOR SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

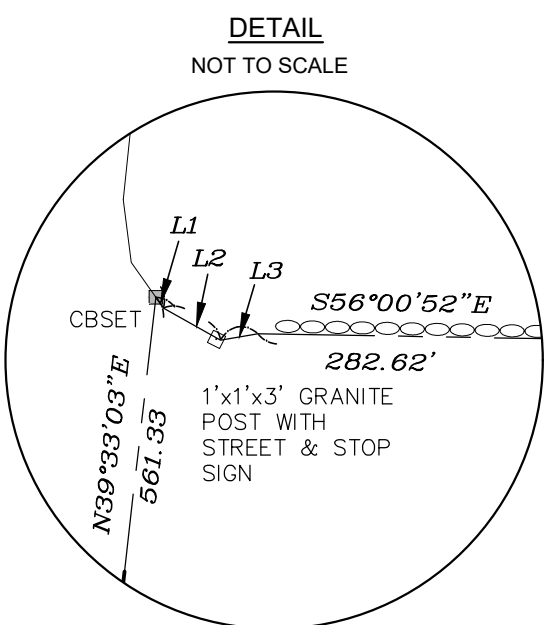
Jul 22, 2020 - 11:31am  
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LEGEND:

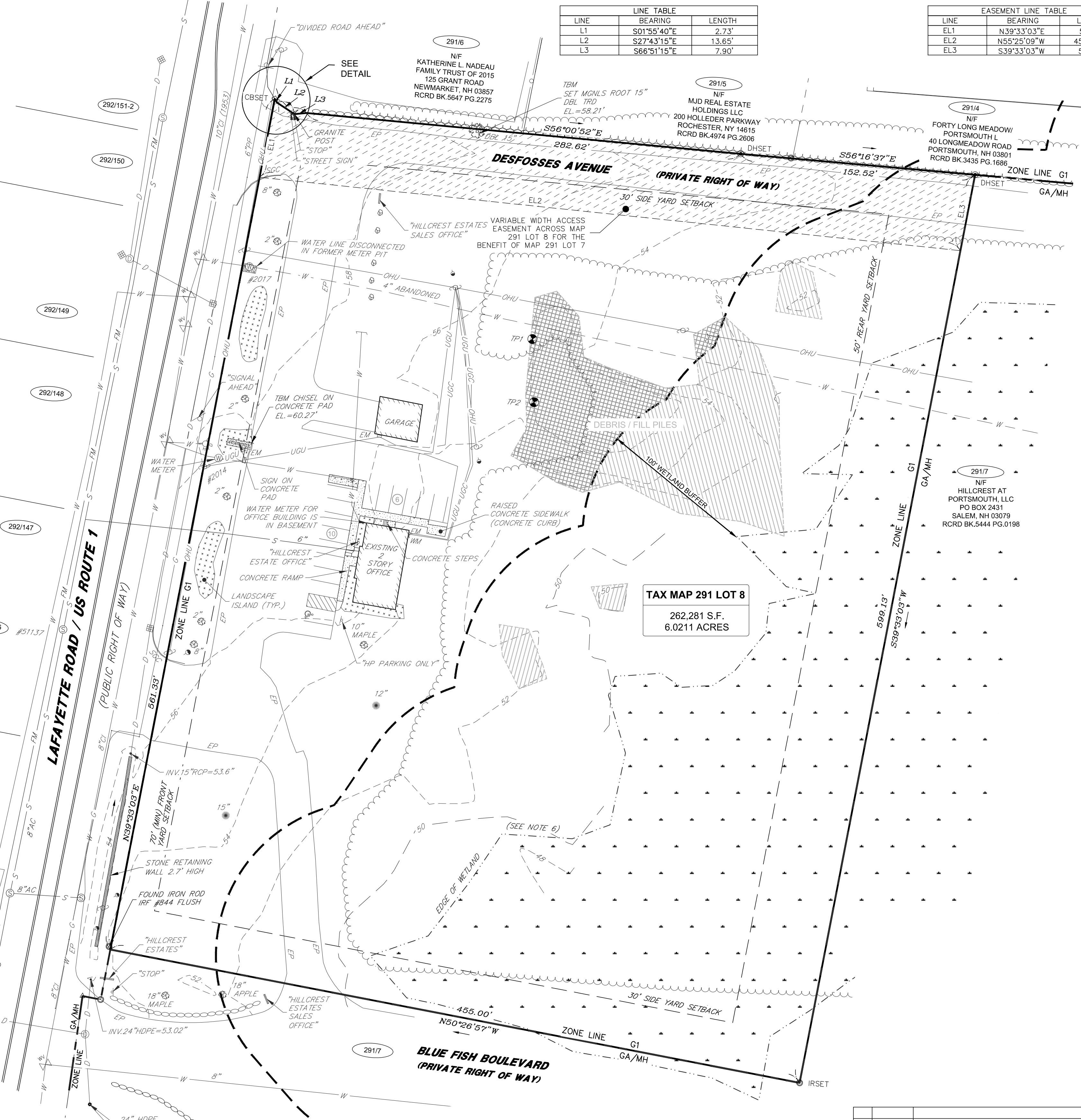
292/151-2	ASSESSOR'S MAP & LOT NUMBER
AC	ASBESTOS PIPE
CBSET	CONCRETE BOUND SET ON 06/14/2013
CI	CAST IRON PIPE
DHSET	DRILL HOLE SET ON 06/14/2013
EL1	EASEMENT LENGTH
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
GA/MH	GARDEN APARTMENT/ MOBILE HOME ZONE
G1	GATEWAY CORRIDOR
GM	GAS METER
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HANDICAP
INV.	INVERT
IRSET	IRON ROD SET ON 06/14/2013
L1	LINE LENGTH
PP	PLASTIC PIPE
RCP	REINFORCED CONCRETE PIPE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
SGC	SLOPED GRANITE CURB
S.F.	SQUARE FEET
TBM	TEMPORARY BENCH MARK
WM	WATER METER
---	PROPERTY LINE
---	EXISTING CONTOUR
---	STONE WALL
---	TREE LINE
---	WETLAND BUFFER
---	EDGE OF WETLANDS
---	EXISTING WATER
---	EXISTING GAS
---	EXISTING SEWER
---	EXISTING FORCE MAIN
---	EXISTING DRAIN
---	EXISTING OVERHEAD UTILITIES
---	EXISTING UNDERGROUND UTILITIES
---	GUY POLE
---	UTILITY POLE
---	LIGHT POLE
---	SIGN
---	CATCH BASIN
---	SEWER MANHOLE
---	DRAIN MANHOLE
---	HYDRANT
---	WATER MANHOLE
---	WATER VALVE
---	WATER SHUTOFF
---	DECIDUOUS TREE
---	EVERGREEN TREE
---	PARKING SPACES
---	HANDICAP
---	LANDSCAPE BOULDER
---	TEST PIT

TP1	WETLANDS
---	CONCRETE
---	DEBRIS/FILL PILE IN WETLAND BUFFER
---	DEBRIS/FILL PILE OUTSIDE OF WETLAND BUFFER
---	LANDSCAPED AREA
---	ACCESS EASEMENT



ABUTTERS ACROSS LAFAYETTE ROAD

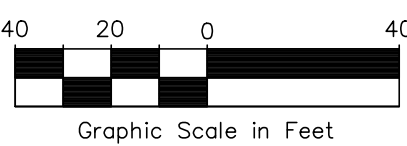
292/151-2	N/F PUBLIC LAND HOLDINGS LLC 149 EPPING ROAD, SUITE 2A PORTSMOUTH, NH 03803 RCRD B...097 PG.1357
292/150	N/F CHRIS G. & LISA ALEXANDROPOULOS 3118 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD B...475 PG.1509
292/149	N/F ELI & ABETH BATIC & RICCI REVOCABLE TRUST OF 1993 55 HARDING ROAD PORTSMOUTH, NH 03801 RCRD B...5189 PG.1131
292/148	N/F ERRIGAN REVOCABLE TRUST 3202 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD B...529 PG.1541
292/147	N/F ERRY E. RILEY 3224 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD B...5239 PG.2...3
292/146	N/F YANG CHU FAMILY REVOCABLE TRUST OF 2019 DRURY PLAINS ROAD STRATHAM, NH 03885 RCRD B...022 PG.2118
292/145	N/F LINDSAY A. BLAKEY 95 CARDINAL LANE PORTSMOUTH, NH 03801 RCRD B...5791 PG.0929
292/247	N/F AREN E. & PELOS REVOCABLE TRUST OF 1995 1537B OYSTER CATCHER POINT NAPLES, FL 34105 RCRD B...35 PG.22-9



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LINE	BEARING	LENGTH
L1	S01°55'40"E	2.73'
L2	S27°43'15"E	13.65'
L3	S66°51'15"E	7.90'

LINE	BEARING	LENGTH
EL1	N39°33'03"E	51.76'
EL2	N55°25'09"W	456.72'
EL3	S39°33'03"W	50.00'



REV.	DATE	DESCRIPTION	BY	CHK
2	07/17/20	UPDATED LABELS	BMK	JCC
1	07/07/20	UPDATED WATER LINES	BMK	JCC

LOCATION PLAN

NOTES:

- THE PARCEL IS LOCATED IN THE CITY OF PORTSMOUTH GATEWAY CORRIDOR (G1) ZONE.
  - THE PARCEL IS AS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 291 AS LOT 8.
  - THE PARCEL IS LOCATED IN FLOOD ZONE X AS SHOWN ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 681, MAP NUMBER 3301SC0270E, EFFECTIVE DATE MAY 17, 2005.
  - OWNER OF RECORD:
- 3201 LAFAYETTE ROAD, LLC  
72 SOUTH BROADWAY  
SALEM, NH 03079  
RCRD BK.5617 PG.1045
5. ZONING REQUIREMENTS:
- SEE ARTICLE 5B, SECTION 10.5B20 - GENERAL STANDARDS FOR ALL BUILDINGS AND DEVELOPMENT OF THE CITY OF PORTSMOUTH, NEW HAMPSHIRE ZONING ORDINANCE.
5. TOTAL PARCEL AREA:
- 262,281 S.F.  
6.0211 ACRES
6. PETER S. SCHAUER, CERTIFIED WETLAND SCIENTIST #48, OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. OF LOUDON, NH AND THOMAS SOKOLOSKI, CERTIFIED WETLAND SCIENTIST #127, OF TES ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH, PERFORMED THE WETLAND MAPPING BETWEEN MARCH 26, 2014 AND AUGUST 25, 2017 ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.
7. ALL MONUMENTS SHOWN HEREON WERE OBSERVED OR SET AS PART OF THIS SURVEY.
8. FIELD SURVEY WAS COMPLETED BY TCE IN JUNE 2020, WITH A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR.
9. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1983.
10. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
11. UTILITIES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATION AND RECORD PLANS. THEY ARE APPROXIMATE LOCATION ONLY. CONTACT DIGSAFE AT 811 OR 1-888-DIG-SAFE TO VERIFY UTILITIES.

PLAN REFERENCE:

- "OVERALL SUBDIVISION PLAN, MAP 289 LOT 1 & MAP 291 LOT 7 (PORTSMOUTH) & MAP 15 LOT 24 (RYE) PROPERTY OF HILLCREST AT PORTSMOUTH LLC, 3201-3203 LAFAYETTE ROAD/LANG ROAD, PORTSMOUTH & RYE, NEW HAMPSHIRE COUNTY OF ROCKINGHAM", BY MSC CIVIL ENGINEERS AND LAND SURVEYORS, INC. DATED APRIL 15, 2013 WITH REVISION #6 DATED 12/23/2013. RCRD PLAN D-38075.

TAX MAP 291 LOT 8

EXISTING CONDITIONS PLAN  
3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE  
PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

SCALE: 1" = 40' (22"x34")  
1" = 80' (11"x17")

JUNE 22, 2020



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

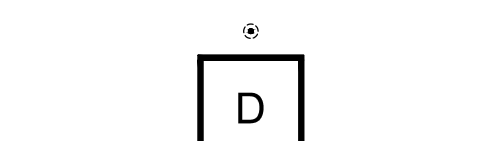
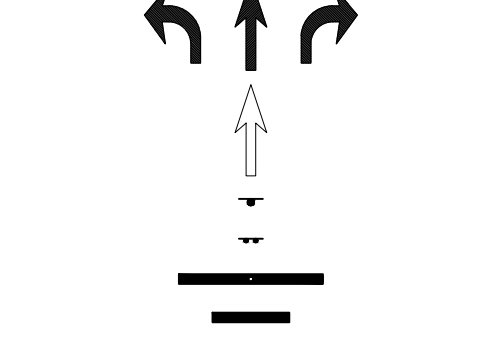
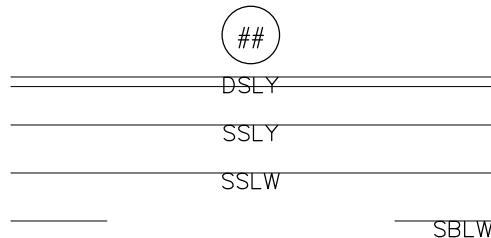
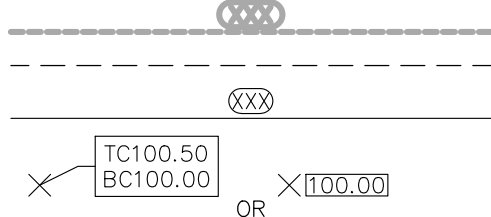
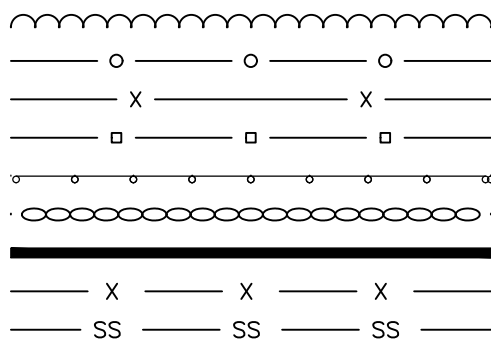
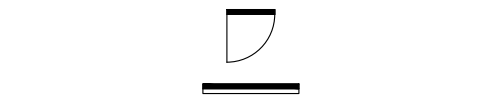
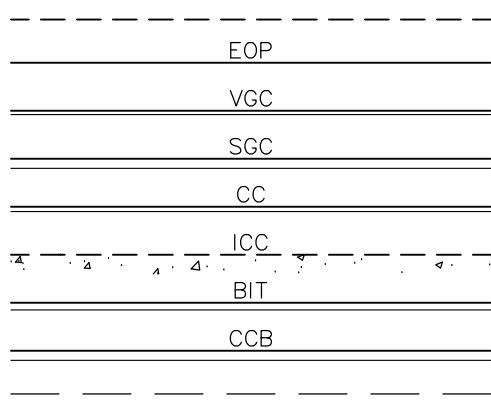
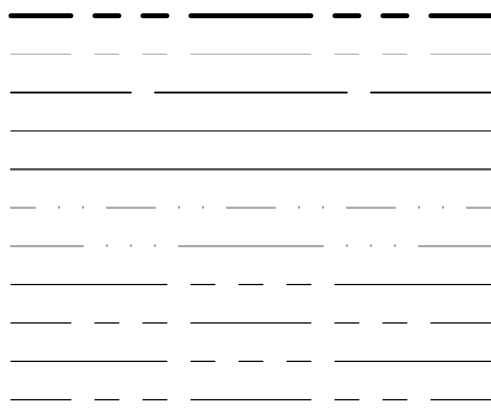
170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
www.TFMoran.com

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CK	JCC	CADFILE				

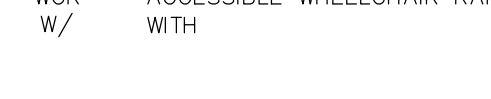
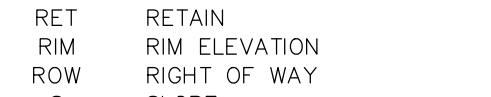
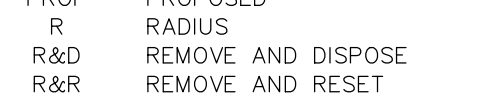
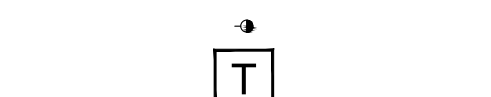
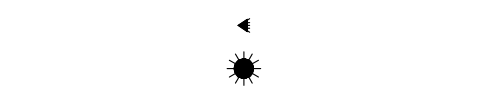
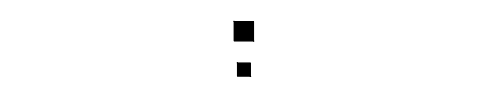
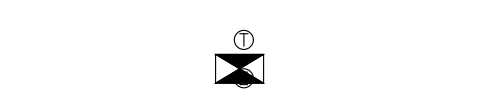
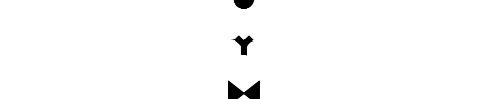
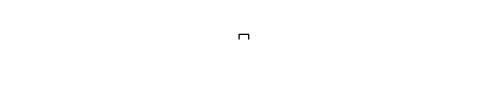
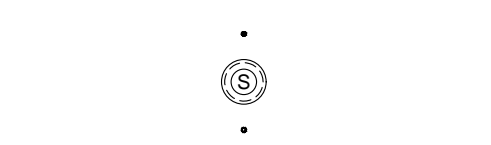
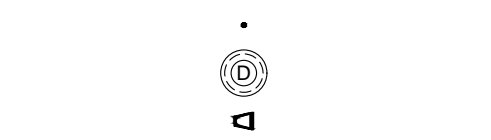
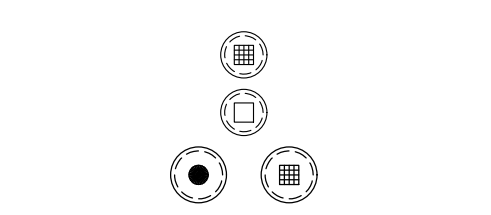
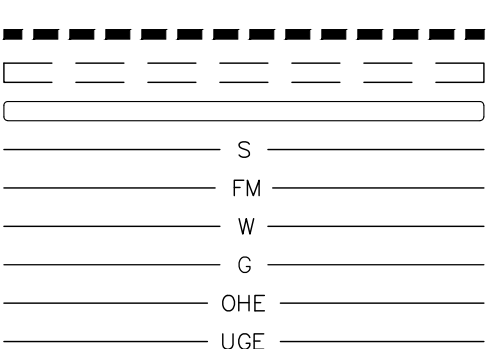
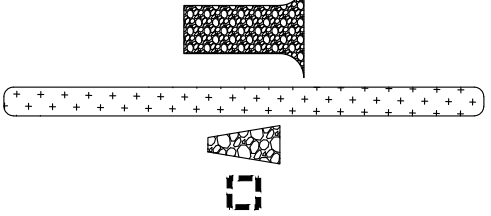
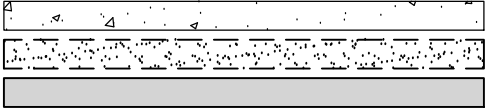


LEGEND

PROPOSED



PROPOSED



GENERAL NOTES

- THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
- THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-COMFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
- THE SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
- AN ALTERATION OF TERRAIN PERMIT IS NOT REQUIRED PER ENV-WQ 1503.02. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 OR AS APPLICABLE.
- SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
- SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
- CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
- PRIOR TO COMMENCING ANY SITE WORK ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
- SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
- TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
- TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
- ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
- REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABOUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, AND PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
- IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
- IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
- ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGED SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
- ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
- CONTRACTOR'S GENERAL RESPONSIBILITIES:
  - BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS.
  - NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
  - EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
  - TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST AND UNSIGHTLY DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT BETWEEN THE HOURS OUTLINED IN THE APPLICABLE MUNICIPAL ORDINANCES AND REGULATIONS OF THE CITY OF PORTSMOUTH, NEW HAMPSHIRE.
  - MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
  - IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
  - COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
  - PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
  - WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
  - VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
  - PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
  - IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
  - AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.
  - THE USE OF PORTABLE HEATERS IN BOAT STORAGE AREAS SHALL BE PROHIBITED EXCEPT WHERE NECESSARY TO ACCOMPLISH REPAIRS.

- PORTABLE HEATERS USED IN ACCORDANCE WITH NFPA SECTION 28.1.7.2.1.1.1 SHALL BE USED ONLY WHEN PERSONNEL ARE IN ATTENDANCE.
- OPEN FLAME HEATERS SHALL NOT BE USED IN BOAT STORAGE AREAS.
- THE USE OF BLOW TORCHES OR FLAMMABLE PAINT REMOVER SHALL BE PROHIBITED UNLESS PERMITTED BY 8.7.1 OF NFPA 303.
- THE USE OF GASOLINE OR OTHER FLAMMABLE SOLVENTS FOR CLEANING PURPOSED SHALL BE PROHIBITED.
- WHERE A BOAT IS TO BE DRY-STORED FOR THE SEASON OR STORED INDOORS FOR AN EXTENDED PERIOD OF TIME, SUCH AS WHILE AWAITING REPAIRS, THE FOLLOWING PRECAUTIONS SHALL BE TAKEN:
  - THE VESSEL SHALL BE INSPECTED FOR ANY HAZARDOUS MATERIALS OR CONDITIONS THAT COULD EXIST, AND CORRECTIVE ACTION SHALL BE TAKEN.
  - LIQUEFIED PETROLEUM GAS (LPG) AND COMPRESSED NATURAL GAS (CNG) CYLINDERS, RESERVE SUPPLIES OF STOVE ALCOHOL OR KEROSENE, AND CHARCOAL SHALL BE REMOVED FROM THE PREMISES OR STORED IN A SEPARATE, DESIGNATED SAFE AREA.
  - ALL PORTABLE FUEL TANKS SHALL BE REMOVED FROM THE PREMISES OR EMPTIED AND, IF EMPTIED, THE CAP SHALL BE REMOVED AND THE TANK LEFT OPEN TO THE ATMOSPHERE.
  - PERMANENTLY INSTALLED FUEL TANKS SHALL BE STORED AT LEAST 95 PERCENT FULL.
- NO UNATTENDED ELECTRICAL EQUIPMENT SHALL BE IN USE ABOARD BOATS.
- ALL STORAGE AREAS SHALL BE ROUTINELY RAKED, SWEPT, OR OTHERWISE POLICED TO PREVENT THE ACCUMULATION OF RUBBISH.

GRADING NOTES

- THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN NOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
- THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
- COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
- COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
- LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
- THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS AND LOADING AREAS.
- THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THEN 15 MINUTES AFTER FLOODING.
- THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
- ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
- ROAD CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
- NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
- DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

\*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

UTILITY NOTES

- LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
- ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, AND CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
- COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
- THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
- ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
- SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700.
- ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10" MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, ENCASE THE SANITARY LINE IN 6" THICK CONCRETE FOR A DISTANCE OF 10' EITHER SIDE OF THE CROSSING, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 3' HORIZONTALLY TO THE WATER LINE.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
- ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
- THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
- PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
- UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
- THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

PRIVATE	MUNICIPAL
DRAINAGE	(603) 427-1530
SEWER	(603) 427-1530
WATER	(603) 427-1530
GAS	(888) 307-7700
ELECTRIC	(800) 662-7764
TELEPHONE	CONSOLIDATED COMMUNICATIONS - (800) 240-5019
CABLE	COMCAST - (800) 266-2278

SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8  
NOTES & LEGEND

3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

JUNE 22, 2020



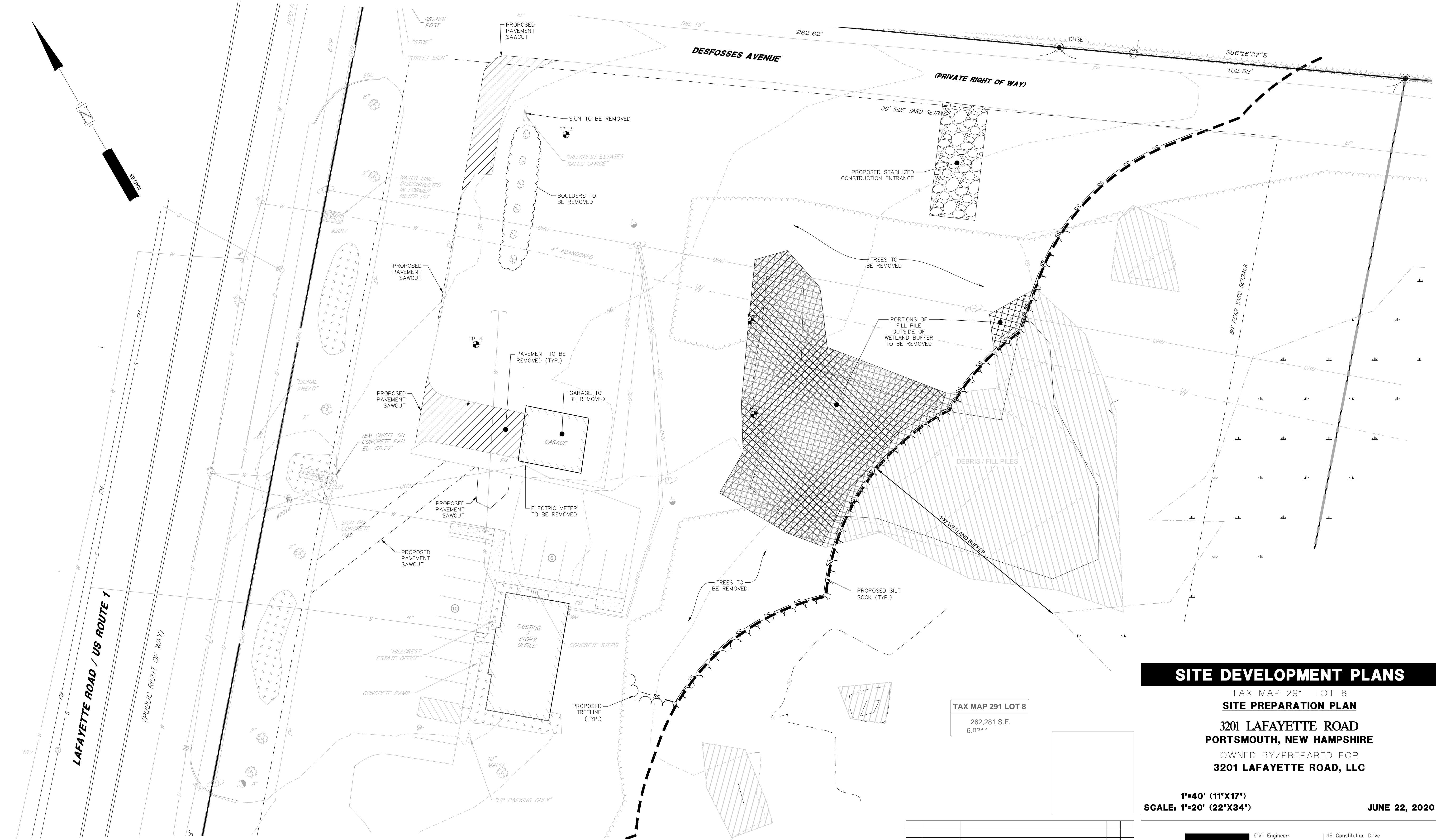
Civil Engineers  
Structural Engineers  
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## SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

### SITE PREPARATION PLAN

3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

1"=40' (11'X17")

SCALE: 1"=20' (22'X34")

JUNE 22, 2020

TAX MAP 291 LOT 8

262,281 S.F.  
6,024'±

HORIZONTAL SCALE 1"=20'  
20 10 0 20

REV.	DATE	DESCRIPTION	DKE	CRR
1	7/8/2020	REVISIONS PER CITY STAFF & TAC COMMENTS	DKE	CRR



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REV.	DATE	DESCRIPTION	DR	CK	

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LAFAYETTE ROAD / US ROUTE 1

(PUBLIC RIGHT OF WAY)

TBM CHISEL ON  
CONCRETE PAD  
EL.=60.27'

EXISTING  
2  
STORY  
OFFICE

PROP. LIMIT  
OF DISTURBANCE  
(AREA=53,108-S.F.)

PROPOSED TEMPORARY  
MANUFACTURED HOME STORAGE  
(LOCATION VARIES ALONG EAST  
EDGE OF CRUSHED STONE)

BOAT TRAILER/RV  
(TYP OF 6)

PROPOSED STAFFED MODEL BUILDING  
(1,769-S.F., 1-STORY)  
(SIZE VARIES)  
F.F.=60.57

PROPOSED MODEL BUILDING #4  
(992-S.F., 1-STORY)  
(SIZE VARIES)  
F.F.=61.47

PROPOSED MODEL BUILDING #3  
(992-S.F., 1-STORY)  
(SIZE VARIES)  
F.F.=61.47

PROPOSED MODEL BUILDING #2  
(992-S.F., 1-STORY)  
(SIZE VARIES)  
F.F.=61.69

PROPOSED MODEL BUILDING #1  
(1,597-S.F., 1-STORY)  
(SIZE VARIES)  
F.F.=61.85

PROPOSED TEMPORARY  
MANUFACTURED HOME STORAGE  
(LOCATION VARIES ALONG EAST  
EDGE OF CRUSHED STONE)

BOAT TRAILER/RV  
(TYP OF 6)

PROPOSED TEMPORARY  
MANUFACTURED HOME STORAGE  
(LOCATION VARIES ALONG EAST  
EDGE OF CRUSHED STONE)

BOAT TRAILER/RV  
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PROPOSED TEMPORARY  
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(LOCATION VARIES ALONG EAST  
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BOAT TRAILER/RV  
(TYP OF 6)

PROPOSED TEMPORARY  
MANUFACTURED HOME STORAGE  
(LOCATION VARIES ALONG EAST  
EDGE OF CRUSHED STONE)

PROPOSED STABILIZED  
CONSTRUCTION ENTRANCE

(PRIVATE RIGHT OF WAY)

DEBRIS / FILL PILES

100' WETLAND BUFFER

PROP. TREELINE  
(TYP.)

PROP. SURFACE  
FLOW  
DIRECTION  
(TYP.)

PROPOSED TEMPORARY  
MANUFACTURED HOME STORAGE  
(LOCATION VARIES ALONG EAST  
EDGE OF CRUSHED STONE)

## SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

GRADING & DRAINAGE PLAN

3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

1"=40' (11"X17")  
SCALE: 1"=20' (22"X34")

JUNE 22, 2020



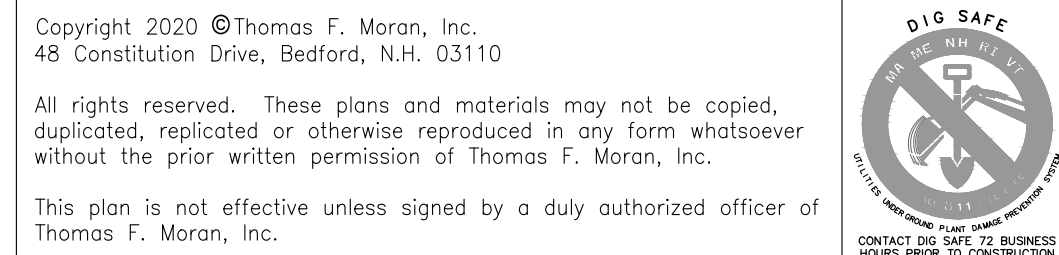
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HORIZONTAL SCALE 1"=20'  
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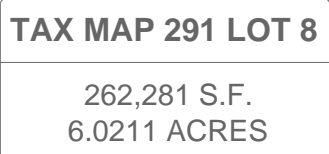
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SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	2	PYRUS CALLERYANA 'CHANTICLEER' CHANTICLEER FLOWERING PEAR	2 1/2" TO 3" CAL.	B&B
	6	MAACKIA AMURENSIS AMUR MAACKIA	2 1/2" TO 3" CAL.	B&B
	3	CORNUS SERICEA 'KELSEYI' KELSEYI RED-OSIER DOGWOOD	7 GAL.	CONT.
	16	HYDRANGEA PANICULATA 'BOBO' BOBO PANICLE HYDRANGEA	5 GAL.	CONT.
	14	JUNIPERUS C. 'Pfitzeriana compacta' COMPACT PFTIZER JUNIPER	2' TO 2 1/2'	B&B
	26	PENNISETUM A. 'HA MELN' HA MELN FOUNTAIN GRASS	5 GAL.	CONT.
	14	RHODODENDRON 'NOVA ZEMBLA' NOVA ZEMBLA RHODODENDRON	2' TO 2 1/2'	B&B
	2	RHODODENDRON 'PJM' PJM RHODODENDRON	2' TO 2 1/2'	B&B
	7	SPIRAEA BUMALDA 'GOLDFLAME' GOLDFLAME SPIRAEA	5 GAL.	CONT.
	16	SPIRAEA JAPONICA 'LEMON PRINCESS' LEMON PRINCESS SPIRAEA	5 GAL.	CONT.
	13	TAXUS MEDIA 'EVER-LOW' EVER-LOW YEW	2' TO 2 1/2'	B&B

(SEE DETAILS FOR ADDITIONAL NOTES)

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERMEN.
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FN."
11. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
12. ALL REQUIRED PLANT MATERIALS SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.
13. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE AND QUANTITY OF PLANT MATERIALS. IF ORIGINALLY INSTALLED UNPLANTED ALTERNATE PLANTINGS ARE REQUESTED, JUSTIFIED AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

**JUNE 22, 2020**



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1. CONTRACTOR WILL BE RESPONSIBLE FOR ALL MEANS, METHODS AND TECHNIQUES FOR IMPLEMENTATION OF PLANTING PLAN.
2. CONTRACTOR WILL LOCATE, VERIFY AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWNWORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTING AND UTILITIES WILL IMMEDIATELY BE REPORTED TO THE LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE, SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
3. CONTRACTOR WILL FURNISH AND PLANT ALL PLANTS IN QUANTITIES AS SHOWN ON THIS PLAN. IN CASES OF DISCREPANCY BETWEEN PLAN AND LIST CLARIFY WITH LANDSCAPE ARCHITECT PRIOR TO PLACING PURCHASE ORDER AND AGAIN PRIOR TO PLANTING.
4. SEE PLANTING DETAILS AND IF INCLUDED, SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
6. PLANTING SHALL BE COMPLETED FROM APRIL 15TH THROUGH OCTOBER 15TH UNLESS OTHERWISE NOTED IN SPECIFICATIONS. THERE WILL BE NO PLANTING DURING JULY AND AUGUST UNLESS SPECIAL PROVISIONS ARE MADE FOR DROUGHT BY PROVIDING ADDITIONAL WATERING.
7. ALL PLANTS WILL BE NURSERY GROWN.
8. PLANTS WILL BE IN ACCORDANCE, AT A MINIMUM, WITH CURRENT EDITION OF "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN HORTICULTURE INDUSTRY ASSOCIATION.
9. TREES WILL BE PRUNED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI A300 PART 1, "TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE STANDARD PRACTICES".
10. PLANTS MATERIAL IS SUBJECT TO APPROVAL / REJECTION BY THE LANDSCAPE ARCHITECT AT THE SITE AND AT THE NURSERY.
11. ALL PLANTS WILL BE MOVED WITH ROOT SYSTEMS AS SOLID UNITS AND WITH BALLS OF EARTH FIRMLY WRAPPED WITH BURLAP. NO PLANT WILL BE ACCEPTED WHEN BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN BADLY CRACKED OR BROKEN BEFORE PLANTING. ALL PLANTS THAT CANNOT BE PLANTED AT ONCE WILL BE HEeled-IN BY SETTING IN THE GROUND AND COVERING THE BALLS WITH SOIL AND THEN WATERING. DURING TRANSPORT, ALL PLANT MATERIALS WILL BE WRAPPED WITH WIND PROOF COVERING.
12. PROPOSED TREES OVERHANGING SIDEWALKS, ROADS OR PARKING WILL BEGIN BRANCHING NATURALLY (NOT PRUNED) AT 6" HEIGHT.
13. MULCH FOR PLANTED AREAS (NOT INCLUDING RAIN GARDENS) WILL BE AGED SHREDDED PINE BARK, PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS UNLESS OTHERWISE SHOWN.
14. PLANT MATERIAL WILL BE LOCATED OUTSIDE BUILDING DRILINES AND ROOF VALLEY POINTS OF CONCENTRATION TO PREVENT DAMAGE TO PLANTS. CLARIFY RELOCATION WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
15. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED, WILL RECEIVE SIX (6) INCH LOAM AND SEED.
16. TREE STAKES AND WRAP WILL REMAIN IN PLACE FOR NO MORE THAN 1 YEAR. CONTRACTOR WILL REMOVE.
17. ALL PLANT GROUPINGS WILL BE IN MULCH BEDS UNLESS OTHERWISE SPECIFIED OR NOTED ON PLANS. WHERE MULCHED PLANT BEDS ABUTS LAWN, PROVIDE TURF CUT EDGE.
18. ALL PLANT BEDS WILL INTERSECT WITH PAVEMENT AT 90 DEGREES UNLESS OTHERWISE NOTED ON PLANS.
19. ALL PLANT BED EDGES WILL BE SMOOTH AND CONSISTENT IN LAYOUT OF RADI AND TANGENTS. IRREGULAR, WAVY EDGES WILL NOT BE ACCEPTED.
20. CONTRACTOR WILL VERIFY PRIOR TO PRICING IF SITE SOILS ARE VERY POORLY DRAINING OR IF LEDGE IS PRESENT. IF CONTRACTOR ENCOUNTERS VERY POORLY DRAINING SOILS (BATH TUB EFFECT) OR LEDGE THAT IMPACTS PROPOSED PLANTING PLAN, NOTIFY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE FOR DIRECTION PRIOR TO PRICING AND AGAIN PRIOR TO PERFORMING ANY WORK.

21. PARKING AREA PLANTED ISLANDS WILL HAVE MINIMUM OF 1'-0" TOPSOIL PLACED TO THE TOP OF CURB ELEVATION. REMOVE ALL CONSTRUCTION DEBRIS BEFORE PLACING TOPSOIL.
22. EXISTING TREES SHOWN ON THE PLAN WILL REMAIN UNDISTURBED. ALL EXISTING TREES SHOWN TO REMAIN WILL BE PROTECTED WITH A 4-FOOT SNOW FENCE PLACED AT THE DRIP LINE OF THE BRANCHES OR AT 8 FEET MINIMUM FROM THE TREE TRUNK.
23. CONTRACTOR WILL STAKE OR PLACE ON GROUND ALL PROPOSED PLANT MATERIALS PER PLAN. CONTACT LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
24. EXISTING NON-NATIVE, INVASIVE PLANT SPECIES WILL BE IDENTIFIED, REMOVED, DESTROYED AND LEGALLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH THE LATEST UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION METHODS OF DISPOSING NON-NATIVE INVASIVE PLANTS. SEE "MANAGE AND CONTROL INVASIVES" AND PROPERLY DISPOSE OF INVASIVE PLANTS".
25. HYDROSEEDING MAY BE USED AS AN ALTERNATE METHOD OF SEEDING. THE APPLICATION OF LIMESTONE AS NECESSARY, FERTILIZER AND GRASS SEED MAY BE ACCOMPLISHED IN ONE OPERATION BY THE USE OF A SPRAYING MACHINE APPROVED BY THE LANDSCAPE ARCHITECT OR CIVIL ENGINEER. THE MATERIALS SHALL BE MIXED WITH WATER IN THE MACHINE AND SHALL CONFORM TO RELATIVE REQUIREMENTS OF SECTION 644 OF NH. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
26. CONTRACTOR WILL BE RESPONSIBLE FOR ALL MEANS, METHODS AND TECHNIQUES OF WATERING.
27. CONTRACTOR WILL BEGIN WATERING IMMEDIATELY AFTER PLANTING. ALL PLANTS WILL BE THOROUGHLY WATERED TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS WILL BE WATERED WEEKLY, OR MORE OFTEN, IF NECESSARY DURING THE FIRST GROWING SEASON BUT NOT LESS THAN ONE YEAR.
28. WATER ALL LAWNS AS REQUIRED. DO NOT LET NEWLY PLANTED LAWNS DRY OUT DURING THE FIRST FOUR WEEKS MINIMUM.
29. ALL GENERAL LAWN SEEDS ARE TO BE MAINTAINED AND MOWED A MINIMUM THREE (3) TIMES BEFORE REQUESTING REVIEW BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE FOR ACCEPTANCE. MAINTENANCE AND MOWING WILL CONTINUE UNTIL ACCEPTED BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE IS ISSUED IN WRITING.
30. THE CONTRACTOR WILL MAINTAIN AND GUARANTEE ALL PLANTINGS TO BE IN GOOD HEALTHY, FLOURISHING AND ACCEPTABLE CONDITION FOR A PERIOD OF ONE (1) YEAR OR TWO (2) GROWING SEASONS, WHICHEVER IS LONGER, BEGINNING AT THE DATE OF ACCEPTANCE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. ALL GRASSES, TREES AND SHRUBS THAT, IN THE OPINION OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHOWING LESS THAN 80% HEALTHY GROWTH AT THE END OF ONE (1) YEAR PERIOD WILL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.
31. ALL ORNAMENTAL GRASSES WILL BE CUT BACK EVERY FALL OR EARLY SPRING.
32. DECIDUOUS PLANT MATERIAL INSTALLED AFTER SEPTEMBER 30 AND BEFORE APRIL 15 WILL NOT BE REVIEWED THAT SEASON FOR ACCEPTANCE DUE TO STAGE OF LEAF PHYSIOLOGY. THIS PLANT MATERIAL WILL NOT BE REVIEWED UNTIL FOLLOWING GROWING SEASON. GUARANTEE PERIOD WILL BEGIN ONLY AFTER ACCEPTANCE BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE.
33. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
34. ALL REQUIRED PLANT MATERIALS SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.
35. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.



6" LOAM (ITEM 641)

SEED (ITEM 644) LIMESTONE (ITEM 642) FERTILIZER (ITEM 643.11)

APPLY RATIOS OF LIMESTONE AND FERTILIZER PER MANUFACTURERS SPECIFICATION BASED ON SOIL TEST RESULTS.

STRAW MULCH SHALL BE UTILIZED FOR EROSION CONTROL AT A RATE OF 3 TONS PER ACRE. HYDROSEEDING MAY BE UTILIZED AS AN ALTERNATE METHOD. (SEE HYDROSEEDING NOTES)

NOT TO SCALE



WATER THOROUGHLY TWICE WITHIN THE FIRST 48 HOURS.

REMOVE CONTAINER OR BURLAP FROM TOP 1/3 OF ROOTBALL

DIAMETER OF HOLE SHALL BE TWICE THE DIAMETER OF ROOT BALL.

PLANTING MIXTURE: 20 PARTS TOPSOIL, 4 PARTS PEAT MOSS AND ONE PART WELL ROTTED MANURE OR OTHER COMPOSTED ORGANIC MATTER OF LOW PH. BACKFILL IN LOOSE LIFTS OF 6"-8" DEPTH. LIGHTLY TAMP SOIL. SETTLE WITH THOROUGH WATER SOAKING.

3" SHREDDED BARK MULCH

FILTER FABRIC FOR WEED CONTROL (KEEP OUT OF DEPRESSION)


3 INCH HIGH EARTH SAUCER BEYOND EDGE OF ROOT BALL.

SET TOP OF ROOT BALL FLUSH TO GRADE OR (1-2 IN.) HIGHER IN SLOWLY DRAINING SOILS.

LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION. PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.

NOT TO SCALE

[illegible]



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SOIL CHARACTERISTICS

THE SOIL IN THE VICINITY OF THE SITE CONSIST OF URBAN LAND-CANTON COMPLEX, THE MAJORITY OF THE SOIL IS HSG TYPE A.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 53,108 SQUARE FEET (1.21 ACRES). CONSTRUCTION SHALL BE PHASED TO LIMIT DISTURBED AREAS TO LESS THAN 5 ACRES.

CRITICAL NOTE: THIS DRAWING IS PROVIDED FOR GENERAL GUIDANCE. ALL SPECIAL EROSION CONTROL MEASURES MUST BE EXECUTED IN ACCORDANCE WITH CURRENT STATE AND LOCAL REGULATIONS, APPROVED SWPPP AND PERMIT REQUIREMENTS.

SEQUENCE OF MAJOR ACTIVITIES

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY EROSION CONTROL MEASURES PER APPROVED SWPPP IF REQUIRED.
2. DEMOLISH EXISTING SITE WORK DESIGNATED FOR REMOVAL.
3. COMPLETE MAJOR GRADING OF SITE.
4. CONSTRUCT BUILDING PAD, STORMWATER SYSTEM, AND SITE UTILITIES.
5. CONSTRUCT PARKING LOT.
6. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE ALL INLET PROTECTION, SILT BARRIERS AND SEDIMENT THAT HAS BEEN TRAPPED BY THESE DEVICES.
7. CONSULT APPROVED SWPPP FOR CONDITIONS RELATED TO NOTICE OF TERMINATION, IF REQUIRED.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN TWENTY ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT BARRIERS. ALL STORM DRAIN INLETS SHALL BE PROVIDED WITH BARRIER FILTERS. STONE RIPRAP SHALL BE PROVIDED AT THE OUTLETS OF DRAINAGE PIPES WHERE EROSION VELOCITIES ARE ENCOUNTERED.

OFF SITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.

INSTALLATION, MAINTENANCE AND INSPECTION OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN.

1. STABILIZATION OF ALL SWALES, DITCHES AND PONDS IS REQUIRED PRIOR TO DIRECTING FLOW TO THEM.
2. THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENUDED AT ONE TIME. (5 AC MAX)
3. ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND FOLLOWING ANY STORM EVENT OF 0.10" OR GREATER.
4. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
5. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT BARRIER WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE BARRIER.
6. ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
7. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
8. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
9. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

B. FILTERS / BARRIERS

1. SILT SOCKS

A. KNOTTED MESH NETTING MATERIAL SHALL BE DELIVERED TO SITE IN A 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" MATERIAL, FILLED WITH COMPOST CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
PH	TMECC 04.11-A	5.0 TO 8.0
PARTICLE SIZE	TMECC 02.02-B	2" SIEVE AND MIN. 60% GREATER THAN THE 8" SIEVE
MOISTURE CONTENT		STND TESTING < 60%

MATERIAL SHALL BE RELATIVELY FREE OF INERT OR FOREIGN MAN-MADE MATERIALS

MATERIAL SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, FREE FROM ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH.

B. SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK SHALL BE REMOVED ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE SILT SOCK.

C. SILT BARRIER SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.

2. SEQUENCE OF INSTALLATION

SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.

3. MAINTENANCE

A. SILT BARRIERS SHALL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.

B. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.

C. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.

D. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFIRM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

C. MULCHING

1. TIMING

IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS:

A. APPLY MULCH PRIOR TO ANY STORM EVENT.

THIS IS APPLICABLE WHEN WORKING WITHIN 100' OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.

B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.

THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON AN AREA, WHERE THE LENGTH OF TIME VARIES WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.

2. GUIDELINES FOR WINTER MULCH APPLICATION.

WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.

3. MAINTENANCE

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.

D. VEGETATIVE PRACTICE

1. AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF 4". THEN, FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED THICKNESS AS SPECIFIED IN THESE PLANS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND ROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE SITE SUBCONTRACTOR.

2. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER AND OTHER FOREIGN MATERIAL, AS WELL AS STONES OVER 1" IN DIAMETER, SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF OFF SITE. THE LOAM SHALL BE RAKED SMOOTH AND EVEN.

3. THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO ELIMINATE WATER POCKETS AND IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES TO LOW POINTS.

4. SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.

5. ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEEDED.

6. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.

7. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

8. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.

9. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4" AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.

10. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

11. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDD, AND ALL NOXIOUS WEEDS REMOVED.

12. THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER MAINTENANCE AND PROTECTION.

13. UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR SUCH WORK. IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. FOR TEMPORARY PLANTINGS AFTER SEPTEMBER 30, TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:

- A. FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS.
- B. FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 500 POUNDS PER ACRE.

MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:

WINTER RYE (FALL SEEDING)	2.5 LBS/1,000 SF
OATS (SPRING SEEDING)	2.0 LBS/1,000 SF
MULCH	1.5 TONS/ACRE

E. WINTER CONSTRUCTION SEQUENCE

1. ALL PROPOSED POST-DEVELOPMENT LANDSCAPED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1 AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENT.

2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER OCTOBER 15TH, ALL TRAVEL SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOWWALL AFTER EACH STORM EVENT.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

WASTE DISPOSAL

1. WASTE MATERIALS  
ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPACLES. ALL TRASH AND

CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.

2. HAZARDOUS WASTE  
ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.

3. SANITARY WASTE  
ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION

1. MATERIAL 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 DURING CONSTRUCTION TO STORMWATER RUNOFF:

GOOD HOUSEKEEPING:  
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

- A. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
- B. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- C. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- D. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
- E. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- F. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

HAZARDOUS PRODUCTS:  
THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

- A. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
  - B. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
  - C. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
2. PRODUCT SPECIFICATION PRACTICES  
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

PETROLEUM PRODUCTS:

ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:

CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA DESIGNATED ON SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

E. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

F. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

G. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

H. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

I. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

J. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.

K. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

DUST CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

EROSION CONTROL NOTES

3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

JUNE 22, 2020

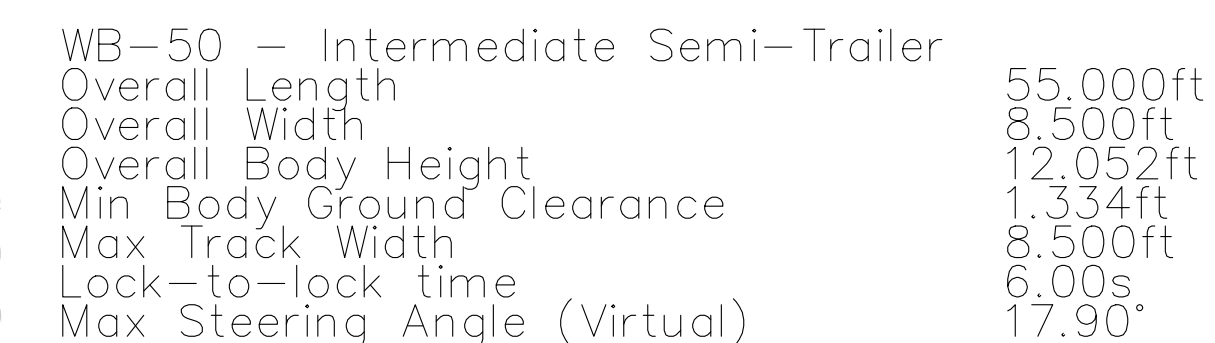
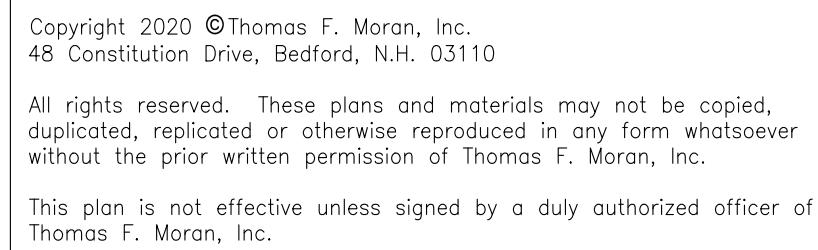
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## TAX MAP 291 LOT 8

3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR  
**3201 LAFAYETTE ROAD, LLC**

**1"=60' (11"X17")**

**SCALE: 1"=30' (22"X34")**


**JUNE 22, 2020**



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

48 Constitution Drive  
Bedford, NH 03110  
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1	7/8/2020	REVISIONS PER CITY STAFF & TAC COMMENTS	DKE	C
<i>REV.</i>	<i>DATE</i>	<i>DESCRIPTION</i>	<i>DR.</i>	<i>C</i>



Civil Engineers  
Structural Engineers  
Traffic Engineers  
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45407-33 — TRUCK MOVEMENT

C-10



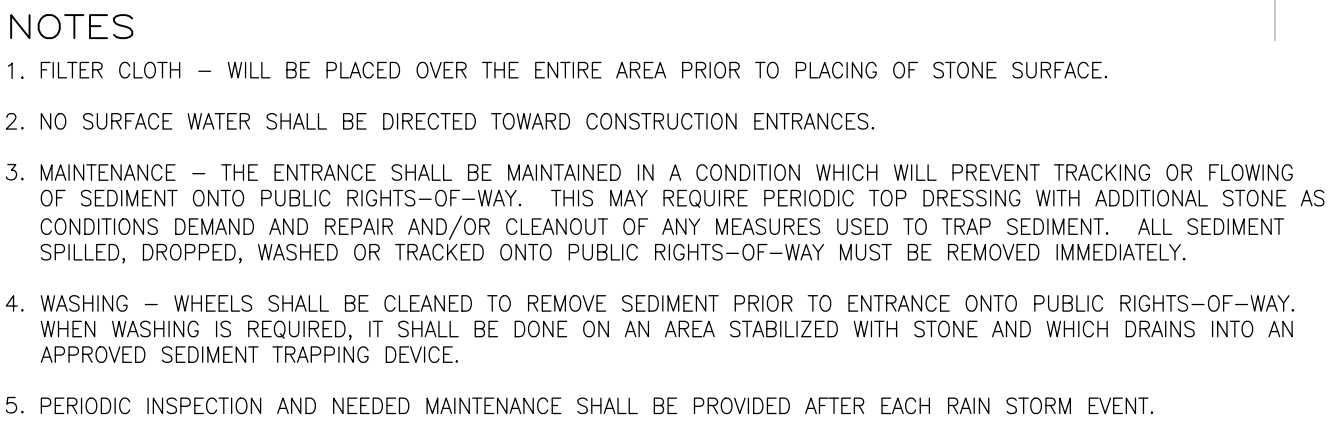
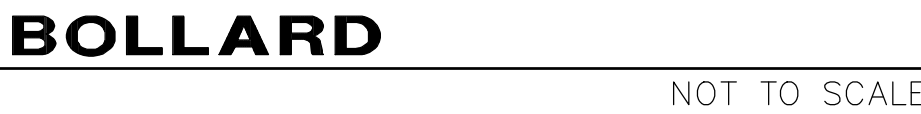
1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
3. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE
4. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES PRIOR TO ANY EARTH MOVING OPERATION
5. ROUGH GRADE SITE OR PHASED WORK AREA, ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
6. AN AREA SHALL BE CONSIDERED STABILIZED IF:
  - A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
  - D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
7. INSTALL ALL UNDERGROUND UTILITIES.
8. CONSTRUCT BUILDINGS.
9. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
10. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER STORM EVENTS.
11. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
12. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
13. LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

\* REFER TO THE GRADING PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

1. PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING FLOW TO THEM.
8. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
9. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE, THE PROPERTY OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.
10. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
11. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. ALL CUT AND FILL SLOPES SHALL BE SEEDDED/LOADED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORMWATER AND DRAINAGE COURSES.
2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
3. STOCKPILES SHOULD BE SURROUNDED BY SEDIMENT BARRIERS, SUCH AS SILT FENCE OR SILT SOCK, TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.
4. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
5. PLACE BAGGED MATERIALS ON PALLETS AND UNDER COVER.
6. INACTIVE STOCKPILES
  - a. INACTIVE SOIL STOCKPILES SHOULD BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS AT ALL TIMES.
  - b. INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS AND OTHER SIMILAR MATERIALS SHOULD BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHOULD ALSO BE COVERED.
7. ACTIVE STOCKPILES
  - a. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
  - b. WHEN A STORM EVENT IS PREDICTED, STOCKPILES SHOULD BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.

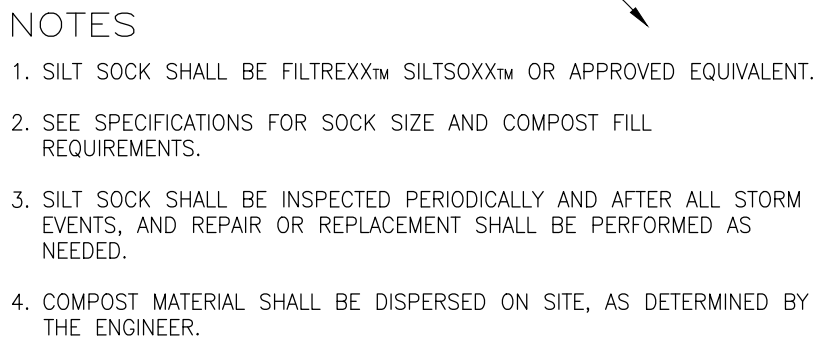


SEE PLAN FOR PROPOSED LOCATION NOT TO SCALE



- NOTES
1. SEE GRADING PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
  2. PROVIDE CLEAN BUTT TO EXISTING PAVEMENT— USE TACK COAT. A TACK COAT SHALL ALSO BE PLACED BETWEEN GRAVEL COURSE AND SUCCESSIVE LAYERS OF BITUMINOUS CONCRETE. SPECIFICALLY, A TACK COAT SHALL BE PLACED ATOP THE BINDER COURSE PAVEMENT PRIOR TO PLACING THE WEARING COURSE.
  3. REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
  4. BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SECTION 401.
  5. BITUMINOUS CONCRETE SHALL BE COMPACTED TO AT LEAST 92.5% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D2041 OR AASHTO T209. PLACEMENT TEMPERATURES OF BITUMINOUS CONCRETE MIXES, IN GENERAL, RANGE BETWEEN 270 AND 310 DEGREES FAHRENHEIT.
  6. PAVEMENT BASE COURSE AGGREGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.3 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
  7. PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOF ROLLED AND COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
  8. THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.

NOT TO SCALE



NOT TO SCALE



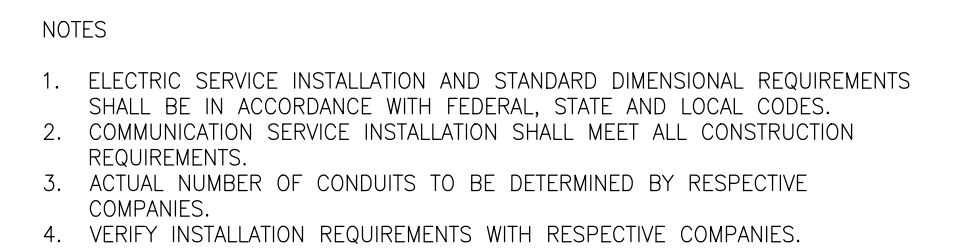
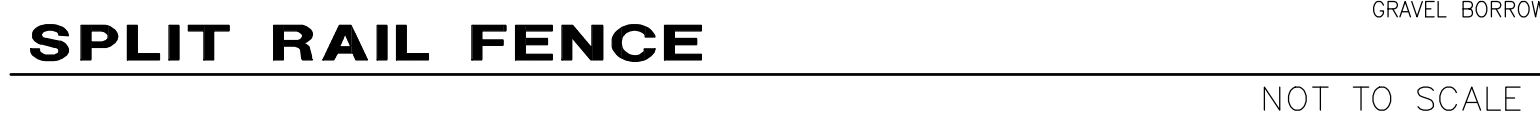
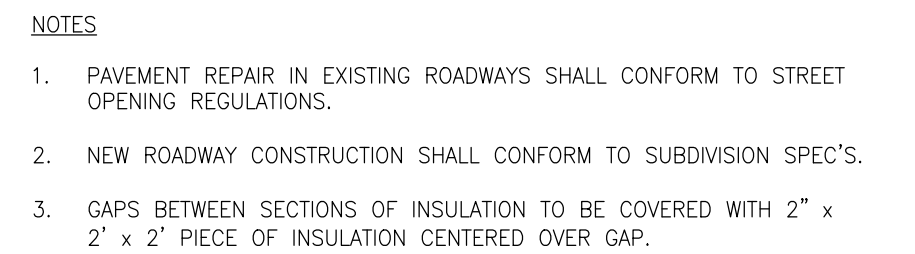
NOT TO SCALE

## TAX MAP 291 LOT 8

**JUNE 22, 2020**

1	7/8/2020	REVISIONS PER CITY STAFF & TAC COMMENTS	DKE	GRR
REV.	DATE	DESCRIPTION	DR	CK

F I L E	45407.33	DR	DKE	FB	—	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists	48 Constitution Drive Bedford, NH 03110 Phone (603) 472-4488 Fax (603) 472-9747 <a href="http://www.tfmoran.com">www.tfmoran.com</a>
		CK	CCR	CADFILE	45407-33 - DETAILS		
							C-11



## JUNE 22, 2020



FILE	45407.33	DR	DKE	FB	-	C-12
		CK	CRR	CADFILE	45407-33 - DETAILS	











Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

June 22, 2020

TFM Project No: 45407.33

Juliette Walker, Planning Director  
Portsmouth Planning Department  
City Hall, 3rd Floor  
1 Junkins Avenue  
Portsmouth, NH 03801

**Re: Site Plan Review, Office with Model Manufactured Homes, 3201 Lafayette Road,  
Tax Map 291, Lot 8**

Dear: Juliette,

On behalf of our client, 3201 Lafayette Road, LLC, we are submitting the following plans and materials for review by the Planning Board. Included with this letter are the following materials:

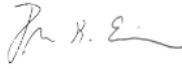
- Letter of Authorization
- Site Plan Check List
- Waiver Application
- Traffic Memorandum
- 1 Copy: 11"x17" Plan Set of the "Site Development Plans, 3201 Lafayette Road, LLC", 3201 Lafayette Road, Portsmouth, NH, Tax Map 291, Lot 8, Dated June 22, 2020, last revised June 22, 2020.
- 1 Copy: 22"x34" Plan Set of the "Site Development Plans, 3201 Lafayette Road, LLC", 3201 Lafayette Road, Portsmouth, NH, Tax Map 291, Lot 8, Dated June 22, 2020, last revised June 22, 2020.
- Renderings of Model Manufactured Homes
- Drainage Report
- Electronic Copy: Video of Existing Sewer Service

This proposal is to include the removal of the existing garage on site and the construction of six model manufactured homes (of varying size and height), and a crushed stone storage area for the storage of boat and RV trailers as well as other model manufactured homes. The existing two-story office building on-site is to remain. This project has previously been presented at the Technical Advisory Committee Work Session and to the Zoning Board of Adjustment.



We look forward to discussing this project with you and the rest of the Planning Board at the July 16<sup>th</sup>, 2020 meeting.

Sincerely,  
**MSC a division of TFMoran, Inc.**

A handwritten signature in dark ink, appearing to read "D. K. Erickson", with a stylized flourish at the end.

Dylan K. Erickson, EIT  
*Project Engineer*



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

June 22, 2020

TFM Project No: 45407.33

Juliette Walker, Planning Director  
Portsmouth Planning Department  
City Hall, 3rd Floor  
1 Junkins Avenue  
Portsmouth, NH 03801

**Re: Waiver Requests, Office with Model Manufactured Homes, 3201 Lafayette Road,  
Tax Map 291, Lot 8**

Dear: Juliette,

On behalf of our client, 3201 Lafayette Road, LLC, we are submitting the following waiver requests as part of the submittal for the Office and Model Manufactured Homes at 3201 Lafayette Road:

**Waiver Request** for Site Plan Review Regulations Section 2.5.4.3J: The type and placement of outdoor lighting fixtures for the exterior of the buildings, parking areas, and any other areas of the site, and photometric plan

**Explanation:** The proposed exterior lighting associated with the site improvements are solely a single building mounted light for each model unit, and a standard safety light source (mounted on the existing utility pole) that is to be installed by the utility provider. We do not anticipate that these minimal light sources will result in any spill over on to abutting properties, and therefore believe that a photometric plan is not required.

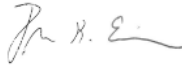
**Waiver Request** for Site Plan Review Regulations Section 2.5.4.3B: Elevations of building(s) indicating their height, massing, placement, materials, lighting and façade treatments.

**Explanation:** The color renderings provided are an accurate depiction of the anticipated aesthetics for the model manufactured homes. The proposed model homes are interchangeable and are subject to being switched with other similar model homes.



We look forward to your review of these waiver requests. If you require additional information please let us know.

Sincerely,  
**MSC a division of TFMoran, Inc.**

A handwritten signature in dark ink, appearing to read "D.K. Erickson", with a stylized flourish at the end.

Dylan K. Erickson, EIT  
*Project Engineer*



**Proposed Model Home**



**Proposed Model Home**





Proposed Model Home



**Proposed Model Home**





Proposed Model Home





Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## TRIP GENERATION MEMORANDUM

Date: June 15 2020

To: City of Portsmouth Planning Department  
Attn: Juliet Walker

From: Robert Duval, PE  
Jen Porter, PE

**Re: Proposed Manufactured Home Sales and Boat Trailer/RV Storage**  
**3201 Lafayette Road, Portsmouth, NH, Tax Map 291, Lot 8**  
TFM Project No. 45407.33

---

### INTRODUCTION

TFMoran has completed this traffic memo to evaluate site trips associated with a proposed Manufactured Home Sales Office and Boat Trailer/RV storage yard at 3201 Lafayette Road (corner of Lafayette Road and Desfosses Avenue) in Portsmouth. The existing site contains a commercial building with 16 parking spaces that are to remain.

The proposed site development includes a new 1,664 sf model mobile home that will be used as a sales office for mobile home sales and trailer/RV storage and rentals. There will be five other mobile home models on the site for customers to walk through. Along the existing driveway, five new parking spaces will be provided to serve the new sales and storage office.

A new cut cut is proposed along Desfosses Avenue to provide access to the rear storage area. Along with boat trailer and RV storage, designated space will be provided for temporary mobile home storage as they are being readied for shipment to customers.

### TRIP GENERATION

As there are no Land Use Code trip generation rates published by the ITE (10<sup>th</sup> Edition) for “Manufactured Home Sales” or “Boat Trailer & RV Storage/Rental”, we used an analogous use to determine likely generation rates. We believe that New Automobile Sales (LUC 840) would be the land use code most likely to have similar trip patterns in that both uses: provide sales of major purchases directly to the public, have few employees per square foot, are likely to have mainly primary trips; and individual customers may make several visits before purchasing.

The table below represents the estimated new trips expected for this type of sales use. To the extent that a much larger population will purchase autos versus a mobile home, these generation rates are likely to be somewhat conservative.

**Table 1 – Manufactured Home Sales (Automobile Dealership LUC 840)**

Land Use	In	Out	Total
<b>Proposed 1,664 sf Building (Sales Office)</b>			
Weekday AM Peak Hour of Adjacent Street	2	1	3
Weekday PM Peak Hour of Adjacent Street	2	2	4
Weekend SAT Peak Hour of Generator	4	3	7

## **CONCLUSION**

Based on the foregoing, we anticipate the traffic impacts associated with the proposed Manufactured Home Sales Office and Boat Trailer/RV storage/rental to be minimal.

This use is expected to generate only 3 trips during the weekday am peak hour, 4 trips during the weekday pm peak, and 7 trips during the Saturday peak hour. These are very low trip volumes (as much as twenty minutes between trips), and are well under the typical allowance for background growth on a major travel corridor such as Lafayette Road.

We therefore conclude that the effect of this project on the Lafayette Road/Desfosses Avenue intersection and the adjacent roadway network will be negligible.

Respectfully Submitted,

**TFMORAN, INC.**



Robert E. Duval, P.E.  
Chief Engineer

**Proposed Trip Generation - ITE 10th Edition**

*Proposed is a Mobile Home Sales facility.*

*The site will have a 1,664 sf office and several models & boat/trailer storage.*

*There is no LUC for this use - below is a similar sales type use.*

**ITE LUC 840 - Automobile Sales (New): 1,664 s.f. Gross Floor Area**

Time Period	Rate/Equin		Rate/ Eq Used	Trip Ends	Directional Split		Directional Distribution	
	X	Rate			In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	1.7	1.87	Rate	3	73%	27%	2	1
Weekday PM Peak Hour Adjacent Street	1.7	2.43	Rate	4	40%	60%	2	2
Weekend SAT Peak Hour Adjacent Street	1.7	4.02	Rate	7	50%	50%	4	3





**SITE DATA**

ZONED: GATEWAY CORRIDOR (G1)  
EXISTING USE: OFFICES  
PROPOSED USE: OFFICES WITH MODEL UNITS

**DIMENSIONAL REQUIREMENTS** —  
SEE ARTICLE 5B, SECTION 10.5B20 — GENERAL STANDARDS FOR ALL BUILDINGS AND DEVELOPMENT OF THE CITY OF PORTSMOUTH, NEW HAMPSHIRE ZONING ORDINANCE.

**PARKING REQUIREMENTS**  
BUSINESS OFFICE — 1 SPACE / 250 SF

OFFICES 1554 SF (\*2 FLOORS) \* 1 SPACE / 250 SF = (1554 SF \* 2)/250 = 12.4 SPACES  
1769 SF \* 1 SPACE / 250 SF = 1769 SF / 250 = 7.1 SPACES

TOTAL REQUIRED = 20 SPACES  
TOTAL PROVIDED = 21 SPACES

**TAX MAP 291 LOT 8**  
262,281 S.F.  
6.0211 ACRES

**LEGEND**

- MATERIAL STOCKPILE
- MATERIAL STOCKPILE WITHIN BUFFER
- PROPOSED CRUSHED STONE ACCESS/STORAGE
- PROPOSED LANDSCAPE AREAS
- PW — PROPOSED, WATER LINE
- PS — PROPOSED SEWER LINE

**TAX MAP 291 LOT 8**

**PROPOSED CONDITIONS PLAN**  
**3201 LAFAYETTE ROAD**  
**PORTSMOUTH, NEW HAMPSHIRE**

**PREPARED FOR**  
**3201 LAFAYETTE ROAD, LLC**

**SCALE: 1" = 20' (22"x34")**  
**1" = 40' (11"x17")**

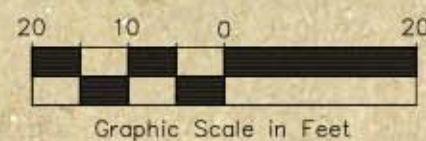
**FEBRUARY 28, 2020**



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
www.TFMoran.com

REV.	DATE	DESCRIPTION	DR	CK



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This plan is not effective unless signed by a duly authorized officer of Thomas F. Moran, Inc.



# Stormwater Management Report

## Office with Model Manufactured Homes

**3201 Lafayette Road  
Tax Map 291 Lot 8  
Portsmouth, NH**

*Date:*

**June 18, 2020**

*Prepared for:*

**3201 Lafayette Road, LLC**  
72 South Broadway  
Salem, NH 02921

Job #: 45407.33

Prepared By:



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

170 Commerce Way, Suite 102, Portsmouth, NH 03801

**Tel:** (603) 431-2222 **Fax:** (603) 431-0190

**[www.tfmoran.com](http://www.tfmoran.com)**

**Office with Model Manufactured Homes**  
3201 Lafayette Road, Portsmouth, NH 03801

**Table of Contents**

---

**Part 1 Project Narrative**

- Executive Summary
- Description of Project
- Storm Water Methodology
  - Pre-development, Calculation Methods, Rainfall Intensity, Post-development
  - Stormwater Treatment & Efficiency
- Erosion Control Measures
- Flood Protection
- Conclusion
  - Peak Rate Flows
  - Channel Protection Requirements

**Part 2 Site Information**

- NRCS Web Soil Survey Report
- Extreme Precipitation Table
- Test Pit and Infiltration Testing Data

**Part 3 Pre-development Drainage Analysis Calculations**

- Pre-development HydroCAD Calculations
  - Pre-development Drainage Diagram
  - Pre-development Area/Soil/Node Listing & Summary: 2-yr, 10-yr, 25-yr, 50-yr

**Part 4 Post-Development Drainage Analysis Calculations**

- Post-development HydroCAD Calculations
  - Post-development Drainage Diagram
  - Post-development Area/Soil/Node Listing & Summary: 2-yr, 10-yr, 25-yr, 50-yr

**Part 5 Drainage Maps**

- Drainage Maps
  - Pre-Development Drainage Plan
  - Post-Development Drainage Plan



## **Executive Summary**

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- 3201 Lafayette Road, LLC of Salem, NH is proposing to construct six model manufactured homes and a crushed stone storage area at 3201 Lafayette Road in Portsmouth, NH.
- A Best Management Practice is proposed to manage the stormwater from the development and propose treatment. An open drainage system is proposed to capture runoff from the project. The Best Management Practice on site is a porous storage area utilizing infiltration.
- There will be no increase in the peak rate of flow to the Discharge Point.



## **Description of Project**

---

The subject parcel is located on Lafayette Road in Portsmouth, NH. The parcel included is Map 291 Lot 8. The total area of the subject parcel is 262,281 S.F.± or 6.02 Ac. The property is zoned G1: Gateway Corridor.

The proposed improvements are to include the removal of the existing garage on site and the construction of six model manufactured homes (of varying size and height), and a crushed stone storage area for the storage of boat and RV trailers as well as other model manufactured homes. Due to the size of the project, only a City of Portsmouth Site Plan approval will be required for the site redevelopment project. The objective for the Post-Development drainage design is to use the best management practice to provide treatment to collected stormwater.

The intent of this report is: 1) To analyze the rate of runoff from the site for the pre-development and post-development conditions and 2) To provide stormwater treatment for the runoff from the development prior to discharging from the site in accordance with the requirements of the City of Portsmouth.

## **Storm Water Methodology**

---

### **Pre-Development Conditions**

The existing property is located on Lafayette Road in Portsmouth, NH and is approximately 6.02 acres. The site is zoned G1: Gateway Corridor. The site abuts Lafayette Road (US Route 1) to the west, Desfosses Avenue to the north, Blue Fish Boulevard to the south, and a residential area to the east.

The property is currently partially developed with a two-story office, detached garage, and associated paved parking area in the western portion of the lot, and a wooded area on the eastern portion of the lot predominantly occupied by wetlands.

Within the drainage study area, there are three soil types according to the NRCS Web Soil Survey: 299: Udorthents, smoothed, 699: Urban land, 799: Udorthents land-Canton complex, (3-15% slopes).

Based on the existing topography of the site, stormwater primarily flows from west to east from Lafayette Road to the wetland area. Existing runoff is collected primarily via surface flow and flows directly to the wetland area. The drainage model represents the flow to the discharge point identified along the limits of the project area where runoff would leave the development area. The curve numbers for each subcatchment were calculated based on the existing ground cover and hydrologic soil group. The time of concentration for each subcatchment was determined using the land ground cover and the slope of the land.



## Calculation Methods

To model the site drainage, HydroCAD Version 10.00 program has been used. The software is based on the SCS TR-20 technique used for modeling the hydrology and hydraulics of storm water runoff. This project complies with City Regulations and as such there is no increase in peak rate of runoff for the 2-year, 10-year, 25-year, and 50-year storm events. Rainfall frequencies were used to determine storm-event intensities.

## Rainfall Intensity

The following precipitation estimates were obtained from the Northeast Regional Climate Center (NRCC):

24-Hour Rainfall Intensity	City of Portsmouth Northeast Regional Climate Center
2-year	3.25 inches
10-year	4.93 inches
25-year	6.25 inches
50-year	7.49 inches

## Post-Development Conditions

The objectives for the post-development drainage design is to use a best management practice to improve treatment to collected stormwater on site. A porous storage area (consisting of crushed stone) is proposed to provide treatment and attenuate flow for the site.

The post-development drainage model represents the project drainage areas divided into multiple subcatchments based on the layout of the site.

An open drainage system is proposed, which utilizes surface flow to collect runoff from the site and distribute flow to the porous storage area. Flows directed to the porous storage area will percolate through the crushed stone and will infiltrate to native soils. In higher storm intensities, the void space within the stone area will reach its maximum capacity and will outlet to a hillside which will discharge to the wetlands on-site.

The pre-development discharge point has been analyzed in post-development conditions.

## Stormwater Treatment

Stormwater Treatment is achieved via the porous storage area. As runoff percolates through the crushed stone, sediment and other pollutants will settle out, and any runoff infiltrating will filter through native soils. The proposed practice was designed to infiltrate and treat the storm event required by the City of Portsmouth (0.5-inch). The resulting runoff from the 0.5-inch storm event that enters the proposed practice is entirely contained within the crushed stone and infiltrates to native soils.



## **Treatment Efficiency**

Appendix B of Volume 2 of the New Hampshire Stormwater [1] lists the pollutant removal efficiencies of various BMP's. An Infiltration Practice more than 75' from surface water has a 90% efficiency for removing Total Suspended Solids (TSS), a 60% efficiency in removing Total Nitrogen (TN) and a 65% efficiency in removing Total Phosphorous (TP). These efficiencies meet the City of Portsmouth requirement of minimizing the export of phosphorous and nitrogen from the site.

## **Erosion Control Measures**

Erosion Control Measures will be used as shown on the grading and drainage plan. The erosion control notes and construction sequence notes on the Detail Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

### **Temporary Erosion Control Measures**

Temporary erosion control measures include a construction entrance and silt socks.

### **Permanent Erosion Control Measures**

The porous storage area is used to slow down off-site flows and volumes.



**Flood Protection**

Examination of the Flood Insurance Rate Map for Rockingham County, New Hampshire (all jurisdictions), map number 33015C0270E, effective May 17, 2005, indicates that the subject parcel is located within Flood Zone X (area of minimal flood hazard).



## Conclusion

### Peak Rate Flows

There will be no increase in the peak rate of flow to any of the Discharge Points.

Discharge Point	PRE-DEVELOPMENT Q (cfs)				POST-DEVELOPMENT Q (cfs)			
	2-yr	10-yr	25-yr	50-yr	2-yr	10-yr	25-yr	50-yr
POI-1	0.1	1.8	4.6	7.8	0.0	0.3	0.8	1.4

### Channel Protection Requirements

Channel protection criteria were analyzed at the Discharge Point. The 2-year 24-hour post-development storm volume has decreased over the pre-development volume at Discharge Point POI-1 and will not result in any erosion control issues in channels downstream of the site. See results in the Discharge Point chart above.





United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Rockingham County, New Hampshire**



June 11, 2020



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require



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# Contents

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<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Rockingham County, New Hampshire.....	13
299—Udorthents, smoothed.....	13
699—Urban land.....	13
799—Urban land-Canton complex, 3 to 15 percent slopes.....	13
<b>References</b> .....	16



# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and



## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.



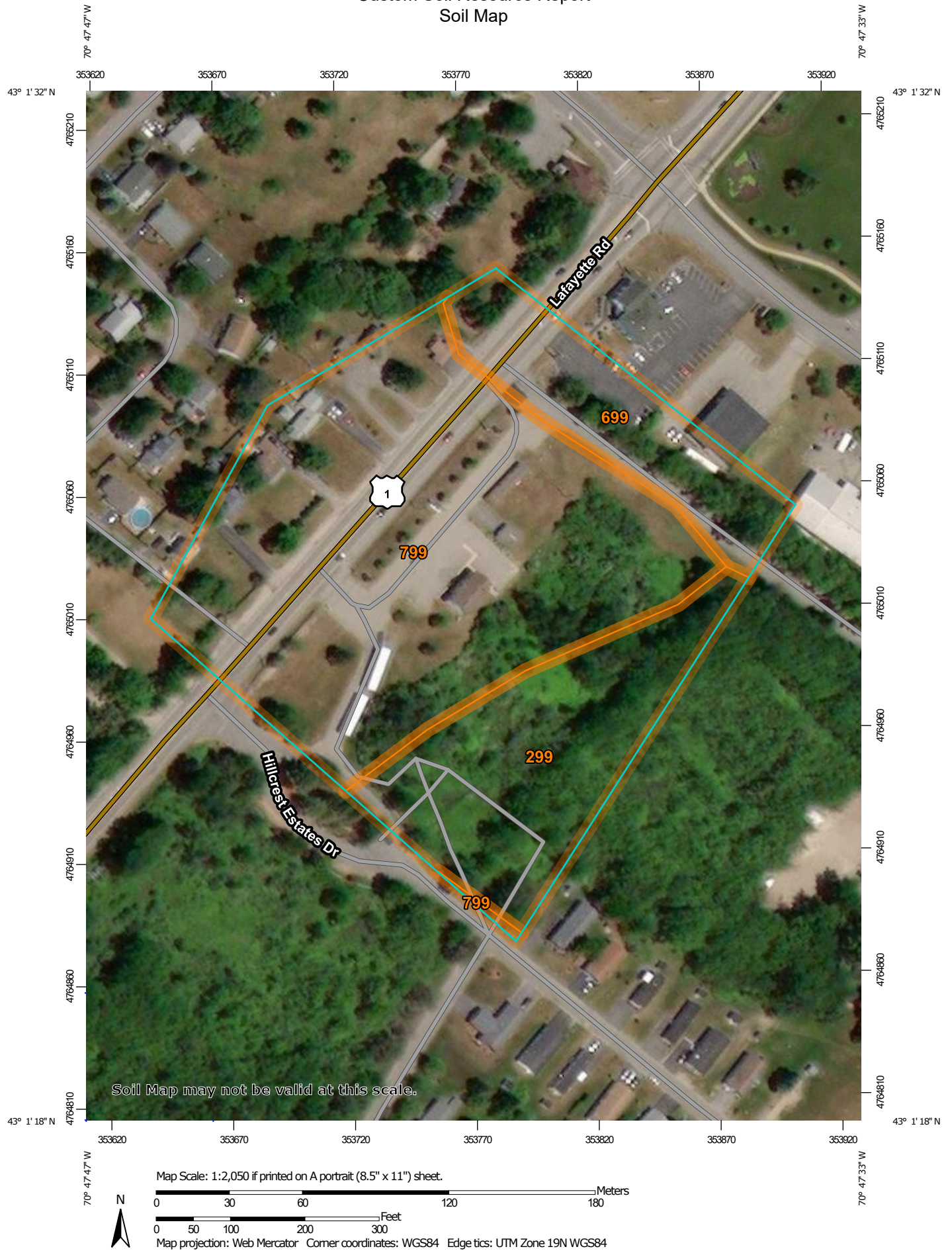
# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



# Custom Soil Resource Report Soil Map





# Custom Soil Resource Report

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other


 Special Line Features

### Water Features

 Streams and Canals


### Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire  
Survey Area Data: Version 21, Sep 16, 2019

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

Date(s) aerial images were photographed: Dec 31, 2009—Jun 14, 2017

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



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
299	Udorthents, smoothed	2.3	23.2%
699	Urban land	1.4	14.4%
799	Urban land-Canton complex, 3 to 15 percent slopes	6.1	62.3%
<b>Totals for Area of Interest</b>		<b>9.8</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the



## Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Rockingham County, New Hampshire

### 299—Udorthents, smoothed

#### Map Unit Composition

*Udorthents and similar soils:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Udorthents

##### Properties and qualities

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

### 699—Urban land

#### Map Unit Composition

*Urban land:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Minor Components

##### Not named

*Percent of map unit:* 15 percent

*Hydric soil rating:* No

### 799—Urban land-Canton complex, 3 to 15 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9cq0

*Elevation:* 0 to 1,000 feet

*Mean annual precipitation:* 42 to 46 inches

*Mean annual air temperature:* 45 to 48 degrees F

*Frost-free period:* 120 to 160 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Urban land:* 55 percent

*Canton and similar soils:* 20 percent

*Minor components:* 25 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*



## Description of Canton

### Setting

*Parent material:* Till

### Typical profile

*H1 - 0 to 5 inches:* gravelly fine sandy loam

*H2 - 5 to 21 inches:* gravelly fine sandy loam

*H3 - 21 to 60 inches:* loamy sand

### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 5.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

## Minor Components

### Udorthents

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

### Squamscott and scitico

*Percent of map unit:* 4 percent

*Landform:* Marine terraces

*Hydric soil rating:* Yes

### Boxford and eldridge

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

### Chatfield

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

### Scituate and newfields

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

### Walpole

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Hydric soil rating:* Yes





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# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

<b>Smoothing</b>	Yes
<b>State</b>	New Hampshire
<b>Location</b>	
<b>Longitude</b>	70.796 degrees West
<b>Latitude</b>	43.024 degrees North
<b>Elevation</b>	0 feet
<b>Date/Time</b>	Thu, 11 Jun 2020 15:22:16 -0400

## Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.26	0.40	0.50	0.66	0.82	1.04	<b>1yr</b>	0.71	0.98	1.22	1.57	2.05	2.69	2.96	<b>1yr</b>	2.38	2.84	3.26	3.98	4.61	<b>1yr</b>
<b>2yr</b>	0.32	0.50	0.62	0.82	1.03	1.30	<b>2yr</b>	0.89	1.19	1.52	1.95	2.51	3.25	3.61	<b>2yr</b>	2.87	3.47	3.98	4.73	5.38	<b>2yr</b>
<b>5yr</b>	0.37	0.58	0.73	0.98	1.25	1.61	<b>5yr</b>	1.08	1.47	1.90	2.45	3.17	4.12	4.64	<b>5yr</b>	3.64	4.46	5.11	6.01	6.78	<b>5yr</b>
<b>10yr</b>	0.41	0.65	0.82	1.12	1.46	1.90	<b>10yr</b>	1.26	1.73	2.25	2.92	3.79	4.93	5.60	<b>10yr</b>	4.36	5.39	6.17	7.20	8.08	<b>10yr</b>
<b>25yr</b>	0.48	0.77	0.98	1.35	1.79	2.36	<b>25yr</b>	1.54	2.16	2.80	3.67	4.79	6.25	7.20	<b>25yr</b>	5.54	6.92	7.93	9.16	10.19	<b>25yr</b>
<b>50yr</b>	0.54	0.87	1.11	1.55	2.09	2.78	<b>50yr</b>	1.80	2.54	3.32	4.37	5.73	7.49	8.70	<b>50yr</b>	6.63	8.37	9.59	10.99	12.14	<b>50yr</b>
<b>100yr</b>	0.60	0.98	1.26	1.79	2.44	3.29	<b>100yr</b>	2.11	3.00	3.95	5.22	6.86	8.98	10.53	<b>100yr</b>	7.95	10.12	11.60	13.19	14.48	<b>100yr</b>
<b>200yr</b>	0.68	1.11	1.44	2.07	2.86	3.88	<b>200yr</b>	2.47	3.55	4.67	6.21	8.19	10.77	12.74	<b>200yr</b>	9.53	12.25	14.04	15.83	17.28	<b>200yr</b>
<b>500yr</b>	0.81	1.33	1.74	2.52	3.52	4.83	<b>500yr</b>	3.04	4.42	5.84	7.81	10.37	13.70	16.39	<b>500yr</b>	12.12	15.76	18.07	20.17	21.84	<b>500yr</b>

## Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.23	0.36	0.44	0.59	0.72	0.89	<b>1yr</b>	0.62	0.87	0.92	1.33	1.67	2.26	2.59	<b>1yr</b>	2.00	2.50	2.90	3.17	3.95	<b>1yr</b>
<b>2yr</b>	0.32	0.49	0.60	0.81	1.00	1.19	<b>2yr</b>	0.87	1.17	1.37	1.82	2.33	3.09	3.51	<b>2yr</b>	2.74	3.37	3.88	4.61	5.14	<b>2yr</b>
<b>5yr</b>	0.35	0.54	0.67	0.93	1.18	1.41	<b>5yr</b>	1.02	1.38	1.61	2.12	2.73	3.85	4.28	<b>5yr</b>	3.41	4.12	4.79	5.64	6.36	<b>5yr</b>
<b>10yr</b>	0.39	0.60	0.74	1.04	1.34	1.61	<b>10yr</b>	1.16	1.57	1.81	2.39	3.06	4.45	4.99	<b>10yr</b>	3.94	4.80	5.59	6.56	7.35	<b>10yr</b>
<b>25yr</b>	0.45	0.68	0.84	1.20	1.58	1.91	<b>25yr</b>	1.37	1.87	2.11	2.75	3.53	4.80	6.08	<b>25yr</b>	4.24	5.85	6.89	8.03	8.90	<b>25yr</b>
<b>50yr</b>	0.49	0.75	0.93	1.34	1.80	2.19	<b>50yr</b>	1.55	2.14	2.36	3.07	3.93	5.43	7.06	<b>50yr</b>	4.81	6.78	8.06	9.36	10.30	<b>50yr</b>
<b>100yr</b>	0.55	0.83	1.04	1.50	2.06	2.49	<b>100yr</b>	1.77	2.44	2.64	3.40	4.35	6.12	8.19	<b>100yr</b>	5.42	7.87	9.45	10.93	11.91	<b>100yr</b>
<b>200yr</b>	0.61	0.91	1.16	1.68	2.34	2.85	<b>200yr</b>	2.02	2.78	2.95	3.77	4.80	6.88	9.50	<b>200yr</b>	6.09	9.13	11.09	12.77	13.80	<b>200yr</b>
<b>500yr</b>	0.71	1.06	1.36	1.97	2.80	3.41	<b>500yr</b>	2.42	3.33	3.44	4.29	5.48	8.03	11.56	<b>500yr</b>	7.11	11.12	13.71	15.72	16.75	<b>500yr</b>

## Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.29	0.44	0.54	0.73	0.89	1.09	<b>1yr</b>	0.77	1.06	1.27	1.74	2.20	3.02	3.17	<b>1yr</b>	2.68	3.05	3.63	4.41	5.11	<b>1yr</b>
<b>2yr</b>	0.34	0.52	0.64	0.87	1.07	1.27	<b>2yr</b>	0.92	1.24	1.48	1.96	2.51	3.46	3.73	<b>2yr</b>	3.06	3.58	4.11	4.87	5.69	<b>2yr</b>
<b>5yr</b>	0.40	0.62	0.77	1.05	1.34	1.63	<b>5yr</b>	1.16	1.59	1.88	2.53	3.24	4.38	4.98	<b>5yr</b>	3.88	4.79	5.43	6.40	7.19	<b>5yr</b>
<b>10yr</b>	0.47	0.72	0.90	1.25	1.62	1.98	<b>10yr</b>	1.40	1.94	2.28	3.10	3.94	5.39	6.20	<b>10yr</b>	4.77	5.97	6.81	7.87	8.78	<b>10yr</b>
<b>25yr</b>	0.58	0.88	1.10	1.57	2.06	2.58	<b>25yr</b>	1.78	2.52	2.95	4.06	5.12	7.86	8.31	<b>25yr</b>	6.96	7.99	9.08	10.36	11.43	<b>25yr</b>
<b>50yr</b>	0.67	1.03	1.28	1.84	2.48	3.15	<b>50yr</b>	2.14	3.08	3.59	4.99	6.28	9.84	10.38	<b>50yr</b>	8.71	9.98	11.31	12.73	13.96	<b>50yr</b>
<b>100yr</b>	0.79	1.20	1.50	2.17	2.98	3.83	<b>100yr</b>	2.57	3.75	4.37	6.14	7.71	12.31	12.97	<b>100yr</b>	10.89	12.47	14.07	15.68	17.07	<b>100yr</b>
<b>200yr</b>	0.93	1.40	1.77	2.57	3.58	4.68	<b>200yr</b>	3.09	4.57	5.33	7.56	9.46	15.43	16.22	<b>200yr</b>	13.66	15.59	17.52	19.29	20.88	<b>200yr</b>
<b>500yr</b>	1.15	1.72	2.21	3.21	4.56	6.08	<b>500yr</b>	3.94	5.94	6.92	9.99	12.43	20.83	21.79	<b>500yr</b>	18.43	20.96	23.41	25.38	27.25	<b>500yr</b>



# TEST PIT REPORT

FOR  
**Hillcrest Estates**  
**3201 Lafayette Road**  
Portsmouth, NH

PREPARED FOR  
**Hillcrest at Portsmouth, LLC**  
45407.30

PREPARED BY  
**TFMoran, Inc.**  
**48 Constitution Drive**  
**Bedford, NH 03110**

January 21, 2020

## **TEST PIT # 1      January 21,2020**

0-15"	10YR 3/3 Dark Brown, Sandy Loam, Granular, Friable, Many Medium to fine roots
15-37"	10YR 5/3, Brown, Sandy Loam, granular Friable, <5% stones
37-72"	10YR 3/4 Dark Yellowish Brown, Loamy Coarse Sand Gravelly, single grain, loose

Redox Concentrations @ 40" 7.5YR 5/4 common distinct

ESWHT: Obs @40"

Seeps/free water observed @42" Rapid flow

Roots: Observed@16"

Ledge: No refusal to 72"

## **TEST PIT # 2      January 21, 2020**

0-10"	10YR 3/3 Dark Brown, Sandy Loam, Granular, Friable, Many Medium to fine roots
10-23"	10YR 4/4 Dark Yellowish Brown, Loamy Coarse Sand, Granular, Friable, <5% stones, fine roots
23-96"	10YR 4/3 Brown, Loamy Coarse Sand Gravelly, single grain, loose, Saturated Encountered 2" clay waterline at 36"

Redox Concentrations @ 32" 7.5YR 5/8 Prominent, common

ESWHT: Obs @32"

Seeps/free water observed @34" Rapid flow

Roots: Observed@30"

Ledge: No refusal to 72"





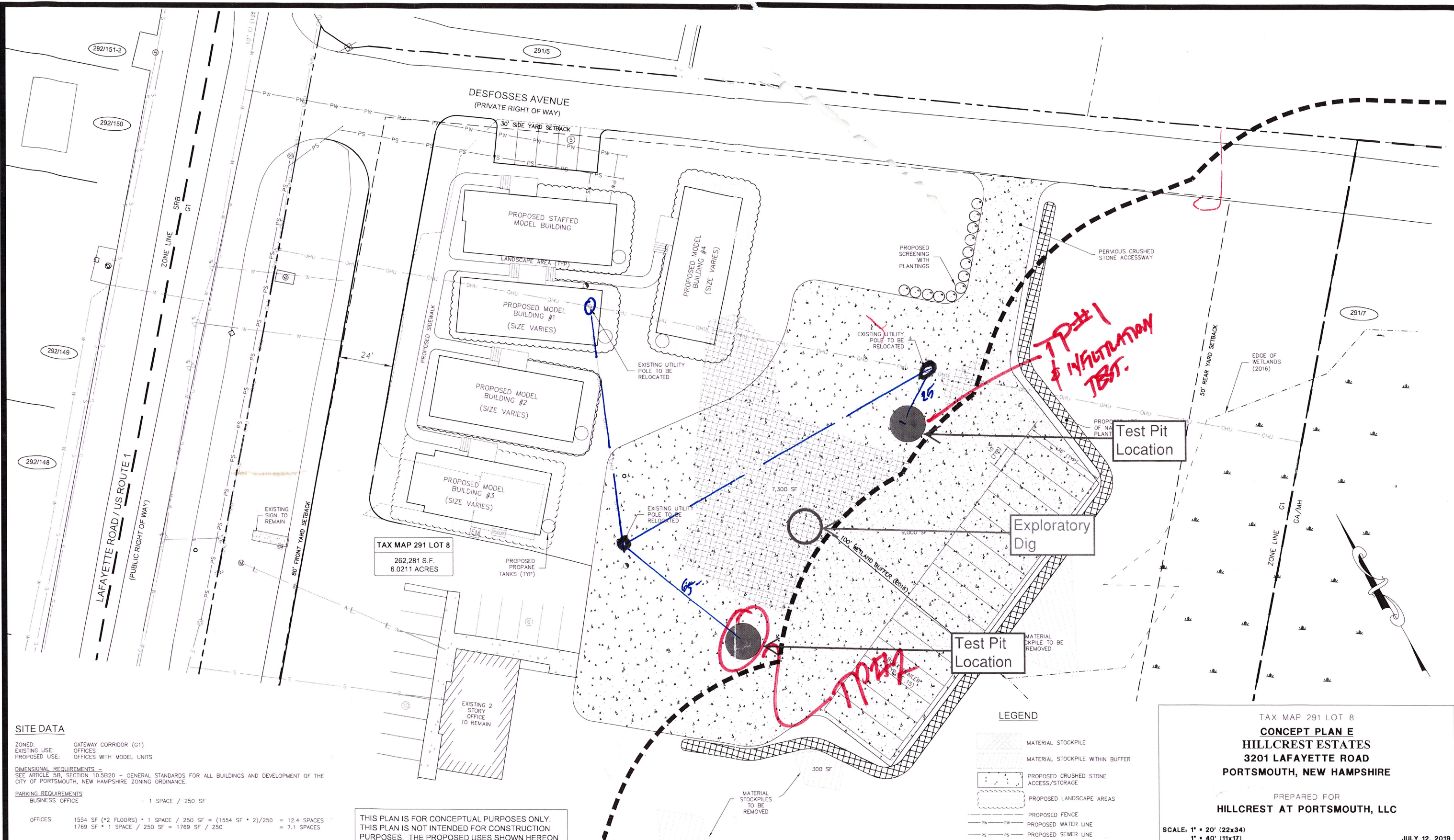
Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## Amoozometer Field Data Sheet

DATE: 21Jan2020				Project: 45407.30 Hillcrest Estates			
LOCATION: 3201 Lafayette Road, Portsmouth, NH				AIR TEMPERATURE:		10°F	
TEST BY: Chris Danforth							
SOIL MAP UNIT: Udorthents, smoothed (Ur)				NOTES: Test conducted at 20" below existing grade			
HORIZON: B – Sandy Loam							
DISTURBED SITE: Extensive fill piles throughout site							
SOIL LOG RECORDED: <b>Test Pit #1</b>							
<b>SETUP CALCULATIONS</b>		Sample Round 1		Sample Round 2		Sample Round 3	
D- Bottom of Hole to Ref line		34cm		35		40	
d - H2O Surface to Ref.		19cm		20		25	
H1 - CHT TUBE SETTING		19cm		20		25	
H - DEPTH OF H2O IN HOLE		15cm		15		15	
Amoozometer Data Calculation Sheet				Hillcrest Estates 45407.30			1/21/2020
TP#1 @ 20" BELOW GRADE							Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.	Outflow Q		(cm/hr)	(in/hr)
<b>Sample Set 1 Coefficient A = 0.001056</b>							
5.000	1	0.016667	105	31500		33.2640	13.0961
5.000	1	0.016667	105	31500		33.2640	13.0961
4.000	1	0.016667	105	25200		26.6112	10.4769
4.500	1	0.016667	105	28350		29.9376	11.7865
4.000	1	0.016667	105	25200		26.6112	10.4769
4.500	1	0.016667	105	28350		29.9376	11.7865
				Average		<b>29.9376</b>	<b>11.7865</b>
				Stand Dev		2.9752	1.1713
<b>Sample Set 2 Coefficient A = 0.001056</b>							
4.000	1	0.016667	105	25200		26.6112	10.4769
4.000	1	0.016667	105	25200		26.6112	10.4769
6.000	1	0.016667	105	37800		39.9168	15.7153
5.500	1	0.016667	105	34650		36.5904	14.4057
5.500	1	0.016667	105	34650		36.5904	14.4057
5.500	1	0.016667	105	34650		36.5904	14.4057
				Average		<b>33.8184</b>	<b>13.3143</b>
				Stand Dev		6.2231	2.4500
<b>Sample Set 3 Coefficient A = 0.001056</b>							
3.500	1	0.016667	105	22050		23.2848	9.1672
3.500	1	0.016667	105	22050		23.2848	9.1672
3.500	1	0.016667	105	22050		23.2848	9.1672
3.500	1	0.016667	105	22050		23.2848	9.1672
3.500	1	0.016667	105	22050		23.2848	9.1672
3.500	1	0.016667	105	22050		23.2848	9.1672
				Average		<b>23.2848</b>	<b>9.1672</b>
				Stand Dev		0.0000	0.0000



Jul 12, 2019 - 10:36am  
F:\WISC Projects\45407 - Lafayette Road - Portsmouth\45407-30 - Hillcrest Estates\dwg\Concept Map 219 Lot 8.dwg

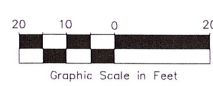


SITE DATA	
ZONED:	GATEWAY CORRIDOR (G1)
EXISTING USE:	OFFICES
PROPOSED USE:	OFFICES WITH MODEL UNITS
DIMENSIONAL REQUIREMENTS - SEE ARTICLE 5B, SECTION 10.5B20 - GENERAL STANDARDS FOR ALL BUILDINGS AND DEVELOPMENT OF THE CITY OF PORTSMOUTH, NEW HAMPSHIRE ZONING ORDINANCE.	
PARKING REQUIREMENTS	
BUSINESS OFFICE	
- 1 SPACE / 250 SF	
OFFICES	1554 SF (*2 FLOORS) * 1 SPACE / 250 SF = (1554 SF * 2)/250 = 12.4 SPACES
	1769 SF * 1 SPACE / 250 SF = 1769 SF / 250 = 7.1 SPACES
TOTAL REQUIRED	= 20 SPACES
TOTAL PROVIDED	= 21 SPACES

THIS PLAN IS FOR CONCEPTUAL PURPOSES ONLY. THIS PLAN IS NOT INTENDED FOR CONSTRUCTION PURPOSES. THE PROPOSED USES SHOWN HEREON MUST BE VERIFIED WITH CURRENT ZONING REGULATIONS.

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This plan is not effective unless signed by a duly authorized officer of Thomas F. Moran, Inc.

LEGEND	
	MATERIAL STOCKPILE
	MATERIAL STOCKPILE WITHIN BUFFER
	PROPOSED CRUSHED STONE ACCESS/STORAGE
	PROPOSED LANDSCAPE AREAS
	PROPOSED FENCE
	PROPOSED WATER LINE
	PROPOSED SEWER LINE



REV	DATE	DESCRIPTION	DR	CK

TAX MAP 291 LOT 8  
**CONCEPT PLAN E**  
**HILLCREST ESTATES**  
**3201 LAFAYETTE ROAD**  
**PORTSMOUTH, NEW HAMPSHIRE**

PREPARED FOR  
**HILLCREST AT PORTSMOUTH, LLC**

SCALE: 1" = 20' (22x34)  
1" = 40' (11x17)

JULY 12, 2019

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
www.TFMoran.com

45407.30	DR	ID	FB	
	CK	JCC	CADFILE	Concept D.dwg

SHEET 1 OF 1



# TEST PIT REPORT

for  
**3201 Lafayette Road, LLC**  
3201 Lafayette Road  
Portsmouth, NH

## PREPARED FOR

Hillcrest at Portsmouth, LLC  
45407.30

## PREPARED BY

TFMoran, Inc.  
48 Constitution Drive  
Bedford, NH 03110

June 9, 2020



**Test Pit #3          6/9/2020**

0-10"          10YR 3/2 Very Dark Grayish Brown, Loamy Sand,  
Granular, Friable, Fine Roots  
10-36"          7.5YR 4/4 Brown, Loamy Sand, gravelly,  
Granular, Friable, Fine Roots  
36-52"          10YR 4/3 Brown, Gravelly coarse Sand, Single \  
Grain, Loose, 10% stones  
52-96"          10YR 5/3 Brown, Medium Sand, Single Grain  
Loose, saturated

ESHWT: Obs @ 72" 7.5YR 3/3 Redox Concentrations  
Few, Distinct

Seeps: None observed at 96"

Roots: obs to 30"

No Refusal @ 96"

**Test Pit #4          6/9/2020**

0-10"          10YR 3/2 Very Dark Grayish Brown, Loamy Sand,  
Granular, Friable, Fine Roots  
10-28"          7.5YR 4/4 Brown, Loamy Sand, gravelly,  
Single Grain, Loose  
28-46"          10YR 4/3 Brown, Gravelly coarse Sand, Single \  
Grain, Loose, 10% stones  
46-96"          10YR 5/4 Yellowish Brown, Medium Sand, Single Grain  
Loose, saturated

ESHWT: Obs @ 72" 7.5YR 3/3 Redox Concentrations  
Few, Distinct

Seeps: None observed at 96"

Roots: obs to 12"

No Refusal @ 96"





Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## Amoozometer Field Data Sheet

DATE: 9June2020				Project: 45407.30 Hillcrest Estates			
LOCATION: 3201 Lafayette Road, Portsmouth, NH				AIR TEMPERATURE:		70°F	
TEST BY: Chris Danforth							
SOIL MAP UNIT: (799) Urban Land Canton Complex				NOTES: Test conducted at 32" below existing grade			
HORIZON: B – Gravelly Coarse Sand							
DISTURBED SITE: Lawn Area							
SOIL LOG RECORDED: <b>Test Pit #3</b>							
<b>SETUP CALCULATIONS</b>		Sample Round 1		Sample Round 2		Sample Round 3	
D- Bottom of Hole to Ref line							
d - H2O Surface to Ref.							
H1 - CHT TUBE SETTING							
H - DEPTH OF H2O IN HOLE							
Amoozometer Data Calculation Sheet				3201 Lafayette Road, LLC 45407.31		6/8/2020	
TP#3 34" BELOW GRADE						Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.	Outflow Q	(cm/hr)	(in/hr)	
Sample Set 1 Coefficient A = 0*							
0.000	1	0.016667	105	0	0*		
Sample Set 2 Coefficient A = 0*							
0.000	1	0.016667	105	0	0*		
Sample Set 3 Coefficient A = 0*							
0.000	1	0.016667	105	0	0*		
*Unable to maintain minimum volume of water in 6cm dia. Hole. Rate exceeds capacity of this infiltrometer							
Refer to published Ksat values in SSSNNE Special Publication No. 5 (See Env-Wq 1504.14)							



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## Amoozometer Field Data Sheet

DATE: 9June2020				Project: 45407.30 Hillcrest Estates			
LOCATION: 3201 Lafayette Road, Portsmouth, NH				AIR TEMPERATURE:		70°F	
TEST BY: Chris Danforth							
SOIL MAP UNIT: (799) Urban Land Canton Complex				NOTES: Test conducted at 40" below existing grade			
HORIZON: B – Gravelly Coarse Sand							
DISTURBED SITE: Lawn Area							
SOIL LOG RECORDED: <b>Test Pit #4</b>							
<b>SETUP CALCULATIONS</b>		Sample Round 1		Sample Round 2		Sample Round 3	
D- Bottom of Hole to Ref line							
d - H2O Surface to Ref.							
H1 - CHT TUBE SETTING							
H - DEPTH OF H2O IN HOLE							
Amoozometer Data Calculation Sheet				3201 Lafayette Road, LLC 45407.31		6/8/2020	
TP#4 @ 40" BELOW GRADE						Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.	Outflow Q	(cm/hr)	(in/hr)	
Sample Set 1 Coefficient A = 0*							
0.000	1	0.016667	105	0	0*		
Sample Set 2 Coefficient A = 0*							
0.000	1	0.016667	105	0	0*		
Sample Set 3 Coefficient A = 0*							
0.000	1	0.016667	105	0	0*		
*Unable to maintain minimum volume of water in 6cm dia. Hole. Rate exceeds capacity of this infiltrometer							
Refer to published Ksat values in SSSNNE Special Publication No. 5 (See Env-Wq 1504.14)							



CBSET	CONCRETE BOUND SET ON 06/14/2013
CI	CAST IRON PIPE
DHSET	DRILL HOLE SET ON 06/14/2013
EP	EDGE OF PAVEMENT
GA/MH	GARDEN APARTMENT/ MOBILE HOME ZONE
G1	GATEWAY CORRIDOR
IRSET	IRON ROD SET ON 06/14/2013
L1	LINE LENGTH
S.F.	SQUARE FEET
	PROPERTY LINE
	STONE WALL
	TREE LINE
	EDGE OF WETLANDS
	EXISTING WATER LINE
	EXISTING GAS
	EXISTING SEWER
	EXISTING SEWER
	GUY POLE
	UTILITY POLE
	LIGHT POLE
	SIGN
	CATCH BASIN
	SEWER MANHOLE
	DRAIN MANHOLE
	HYDRANT
	MANHOLE
	WATER VALVE
	WETLANDS
	CONCRETE
	DEBRIS/FILL PILE IN WETLAND
	DEBRIS/FILL PILE IN WETLAND BUFFER

292/151-2	WEEKS REALTY TRUST PO BOX 100 HAMPTON FALLS, 03844 RCRD BK.2738 PG.818
292/150	CHRIS G. & LISA ALEXANDROPOULOS 3168 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD BK.4175 PG.1509
292/149	ELIZABETH BATICK RICCI REVOCABLE TRUST OF 1993 55 HARDING ROAD PORTSMOUTH, NH 03801 RCRD BK.5189 PG.1131
292/148	KERRIGAN REVOCABLE TRUST 3202 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD BK.5296 PG.1541
292/147	KERRY E. RILEY 3224 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD BK.5239 PG.2663
292/146	YANG CHU FAMILY REVOCABLE TRUST OF 2019 6 DRURY PLAINS ROAD STRATHAM, NH 03885 RCRD BK.6022 PG.2118
292/145	LINDSAY A. BLAKEY 95 CARDINAL LANE PORTSMOUTH, NH 03801 RCRD BK.5791 PG.0929
292/247	KAREN E. KAPELOS REVOCABLE TRUST OF 1995 1537B OYSTER CATCHER POINT NAPLES, FL 34105 RCRD BK.3569 PG.2269

A horizontal bar divided into four equal segments. Above the bar, the numbers 40, 20, 0, and 40 are placed above the first, second, third, and fourth segments respectively. The first and third segments are white, while the second and fourth segments are black. Below the bar, the text "Graphic Scale in Feet" is centered.

EASEMENT LINE TABLE		
LINE	BEARING	LENGTH
EL1	N39°33'03"E	51.76'
EL2	N55°25'09"W	456.72'
EL3	S39°33'03"W	50.00'

1. THE PARCEL IS LOCATED IN THE CITY OF PORTSMOUTH GATEWAY CORRIDOR (G1) ZONE.
2. THE PARCEL IS AS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 2016, LOT 8.
3. THE PARCEL IS LOCATED IN FLOOD ZONE X AS SHOWN ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 681, MAP NUMBER 33015C0270E, EFFECTIVE DATE MAY 17, 2005.
4. OWNER OF RECORD:  
  
3201 LAFAYETTE ROAD, LLC  
72 SOUTH BROADWAY  
SALEM, NH 03079  
RORD BK.5617 PG.1045
5. ZONING REQUIREMENTS:  
  
SEE ARTICLE 5B, SECTION 10.5B20 – GENERAL STANDARDS FOR ALL BUILDINGS AND DEVELOPMENT OF THE CITY OF PORTSMOUTH, NEW HAMPSHIRE ZONING ORDINANCE.
5. TOTAL PARCEL AREA:  
  
262,281 S.F.  
6.0211 ACRES
6. PETER S. SCHAUER, CERTIFIED WETLAND SCIENTIST #48, OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. OF LOUDON, NH AND THOMAS S. SKOKOLSKI, CERTIFIED WETLAND SCIENTIST #127, OF TSE ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH, PERFORMED THE WETLAND MAPPING BETWEEN MARCH 26, 2014 AND AUGUST 25, 2017 ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHEASTERN AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.
7. ALL MONUMENTS SHOWN HEREON WERE OBSERVED OR SET AS PART OF THIS SURVEY.
8. FIELD SURVEY WAS COMPLETED BY TCE BETWEEN NOVEMBER 2014 AND JANUARY 2020, WITH A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR.
9. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1983.
10. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
11. UTILITIES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATION AND RECORD PLANS. THEY ARE APPROXIMATE LOCATION ONLY. CONTACT DIGSAFE AT 811 OR 1-888-DIG-SAFE TO VERIFY UTILITIES.

1. "OVERALL SUBDIVISION PLAN, MAP 289 LOT 1 & MAP 291 LOT 7 (PORTSMOUTH) & MAP 15 LOT 24 (RYE) PROPERTY OF HILLCREST AT PORTSMOUTH LLC, 3201-3203 LAFAYETTE ROAD/LANG ROAD, PORTSMOUTH & RYE, NEW HAMPSHIRE COUNTY OF ROCKINGHAM", BY MSC CIVIL ENGINEERS AND LAND SURVEYORS, INC, DATED APRIL 15, 2013 WITH REVISIONS #6 DATED 12/23/2013. RCRD PLAN D-38075.

**EXISTING CONDITIONS PLAN  
3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE  
PREPARED FOR  
3201 LAFAYETTE ROAD, LLC**

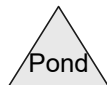
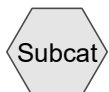
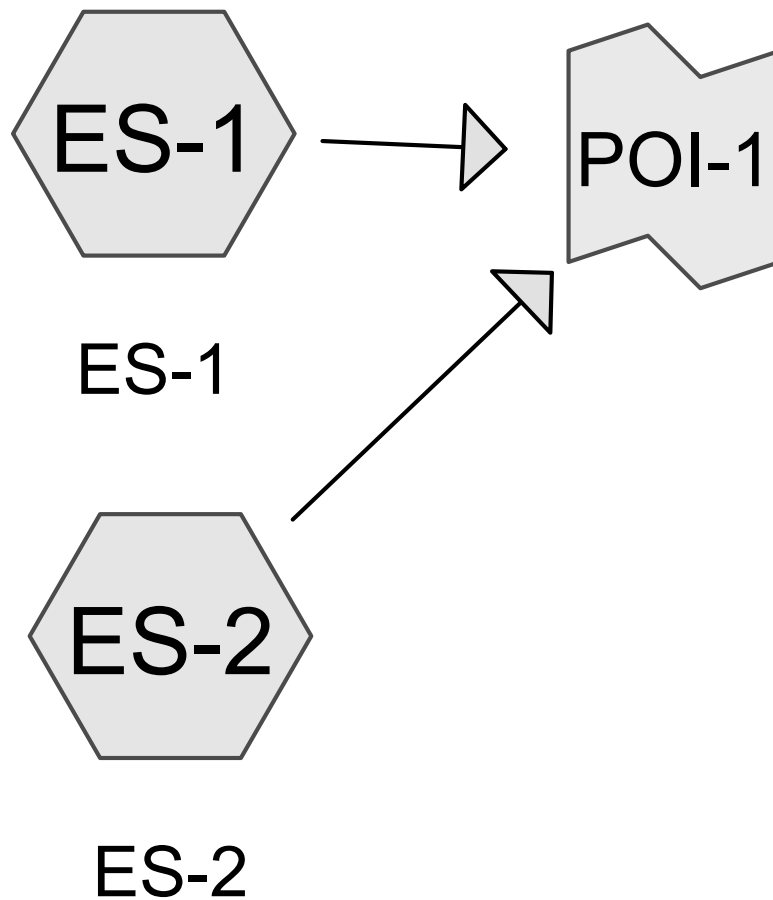
**JUNE 2, 2020**



170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
[www.TFMoran.com](http://www.TFMoran.com)

C-01

Total Area =  
159,386-S.F.



**Routing Diagram for 45407-33 - Pre**

Prepared by MSC a Division of TFMoran, Inc., Printed 6/19/2020  
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**45407-33 - Pre**

Prepared by MSC a Division of TFMoran, Inc.

Printed 6/19/2020

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Page 2

**Area Listing (all nodes)**

Area (sq-ft)	CN	Description (subcatchment-numbers)
43,314	39	>75% Grass cover, Good, HSG A (ES-1, ES-2)
35,914	98	Paved parking, HSG A (ES-1, ES-2)
1,841	98	Roofs, HSG A (ES-2)
78,317	30	Woods, Good, HSG A (ES-1, ES-2)
<b>159,386</b>	<b>49</b>	<b>TOTAL AREA</b>

**45407-33 - Pre**

Prepared by MSC a Division of TFMoran, Inc.

Printed 6/19/2020

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Page 3

**Soil Listing (all nodes)**

Area (sq-ft)	Soil Group	Subcatchment Numbers
159,386	HSG A	ES-1, ES-2
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>159,386</b>		<b>TOTAL AREA</b>



**45407-33 - Pre**

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Page 4

**Ground Covers (all nodes)**

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
43,314	0	0	0	0	43,314	>75% Grass cover, Good
35,914	0	0	0	0	35,914	Paved parking
1,841	0	0	0	0	1,841	Roofs
78,317	0	0	0	0	78,317	Woods, Good
<b>159,386</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>159,386</b>	<b>TOTAL AREA</b>

**Summary for Subcatchment ES-1: ES-1**

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 0.5" Rainfall=0.50"

Area (sf)	CN	Description
9,108	98	Paved parking, HSG A
26,771	30	Woods, Good, HSG A
19,672	39	>75% Grass cover, Good, HSG A
55,551	44	Weighted Average
46,443		83.60% Pervious Area
9,108		16.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0270	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
13.2	348	Total			

**Summary for Subcatchment ES-2: ES-2**

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 0.5" Rainfall=0.50"

Area (sf)	CN	Description
51,546	30	Woods, Good, HSG A
23,642	39	>75% Grass cover, Good, HSG A
26,806	98	Paved parking, HSG A
1,841	98	Roofs, HSG A
103,835	51	Weighted Average
75,188		72.41% Pervious Area
28,647		27.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0240	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
14.8	361	Total			



**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 23.69% Impervious, Inflow Depth = 0.00" for 0.5" event  
Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
Primary = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Subcatchment ES-1: ES-1**

Runoff = 0.0 cfs @ 17.94 hrs, Volume= 102 cf, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.25"

Area (sf)	CN	Description
9,108	98	Paved parking, HSG A
26,771	30	Woods, Good, HSG A
19,672	39	>75% Grass cover, Good, HSG A
55,551	44	Weighted Average
46,443		83.60% Pervious Area
9,108		16.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0270	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
13.2	348	Total			

**Summary for Subcatchment ES-2: ES-2**

Runoff = 0.1 cfs @ 12.20 hrs, Volume= 1,088 cf, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.25"

Area (sf)	CN	Description
51,546	30	Woods, Good, HSG A
23,642	39	>75% Grass cover, Good, HSG A
26,806	98	Paved parking, HSG A
1,841	98	Roofs, HSG A
103,835	51	Weighted Average
75,188		72.41% Pervious Area
28,647		27.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0240	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
14.8	361	Total			



**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 23.69% Impervious, Inflow Depth > 0.09" for 2-yr event  
Inflow = 0.1 cfs @ 12.20 hrs, Volume= 1,190 cf  
Primary = 0.1 cfs @ 12.20 hrs, Volume= 1,190 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**45407-33 - Pre**

Type II 24-hr 10-yr Rainfall=4.93"

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Page 9

**Summary for Subcatchment ES-1: ES-1**

Runoff = 0.3 cfs @ 12.12 hrs, Volume= 1,421 cf, Depth&gt; 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=4.93"

Area (sf)	CN	Description
9,108	98	Paved parking, HSG A
26,771	30	Woods, Good, HSG A
19,672	39	>75% Grass cover, Good, HSG A
55,551	44	Weighted Average
46,443		83.60% Pervious Area
9,108		16.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0270	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
13.2	348	Total			

**Summary for Subcatchment ES-2: ES-2**

Runoff = 1.6 cfs @ 12.11 hrs, Volume= 5,324 cf, Depth&gt; 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=4.93"

Area (sf)	CN	Description
51,546	30	Woods, Good, HSG A
23,642	39	>75% Grass cover, Good, HSG A
26,806	98	Paved parking, HSG A
1,841	98	Roofs, HSG A
103,835	51	Weighted Average
75,188		72.41% Pervious Area
28,647		27.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0240	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
14.8	361	Total			



**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 23.69% Impervious, Inflow Depth > 0.51" for 10-yr event  
Inflow = 1.8 cfs @ 12.11 hrs, Volume= 6,745 cf  
Primary = 1.8 cfs @ 12.11 hrs, Volume= 6,745 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Subcatchment ES-1: ES-1**

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,300 cf, Depth> 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.25"

Area (sf)	CN	Description
9,108	98	Paved parking, HSG A
26,771	30	Woods, Good, HSG A
19,672	39	>75% Grass cover, Good, HSG A
55,551	44	Weighted Average
46,443		83.60% Pervious Area
9,108		16.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0270	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
13.2	348	Total			

**Summary for Subcatchment ES-2: ES-2**

Runoff = 3.6 cfs @ 12.09 hrs, Volume= 10,224 cf, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.25"

Area (sf)	CN	Description
51,546	30	Woods, Good, HSG A
23,642	39	>75% Grass cover, Good, HSG A
26,806	98	Paved parking, HSG A
1,841	98	Roofs, HSG A
103,835	51	Weighted Average
75,188		72.41% Pervious Area
28,647		27.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0240	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
14.8	361	Total			



**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 23.69% Impervious, Inflow Depth > 1.02" for 25-yr event  
Inflow = 4.6 cfs @ 12.09 hrs, Volume= 13,524 cf  
Primary = 4.6 cfs @ 12.09 hrs, Volume= 13,524 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Subcatchment ES-1: ES-1**

Runoff = 2.0 cfs @ 12.08 hrs, Volume= 5,583 cf, Depth> 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
9,108	98	Paved parking, HSG A
26,771	30	Woods, Good, HSG A
19,672	39	>75% Grass cover, Good, HSG A
55,551	44	Weighted Average
46,443		83.60% Pervious Area
9,108		16.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0270	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
13.2	348	Total			

**Summary for Subcatchment ES-2: ES-2**

Runoff = 5.8 cfs @ 12.09 hrs, Volume= 15,744 cf, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
51,546	30	Woods, Good, HSG A
23,642	39	>75% Grass cover, Good, HSG A
26,806	98	Paved parking, HSG A
1,841	98	Roofs, HSG A
103,835	51	Weighted Average
75,188		72.41% Pervious Area
28,647		27.59% Impervious Area

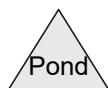
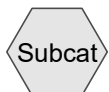
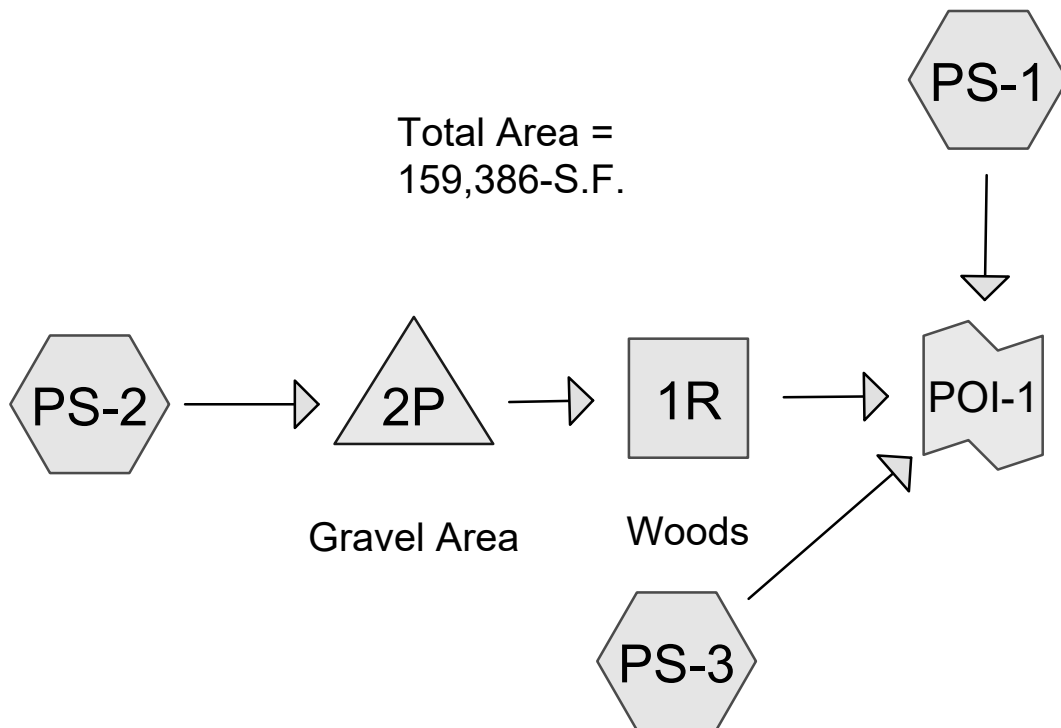
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0240	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
14.8	361	Total			



**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 23.69% Impervious, Inflow Depth > 1.61" for 50-yr event  
Inflow = 7.8 cfs @ 12.08 hrs, Volume= 21,327 cf  
Primary = 7.8 cfs @ 12.08 hrs, Volume= 21,327 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs





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Page 2

**Area Listing (all nodes)**

Area (sq-ft)	CN	Description (subcatchment-numbers)
31,815	39	>75% Grass cover, Good, HSG A (PS-1, PS-2, PS-3)
23,216	96	Gravel surface, HSG A (PS-1, PS-2)
35,519	98	Paved parking, HSG A (PS-1, PS-2)
9,897	98	Roofs, HSG A (PS-1, PS-2, PS-3)
58,939	30	Woods, Good, HSG A (PS-1, PS-3)
<b>159,386</b>	<b>61</b>	<b>TOTAL AREA</b>

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Page 3

**Soil Listing (all nodes)**

Area (sq-ft)	Soil Group	Subcatchment Numbers
159,386	HSG A	PS-1, PS-2, PS-3
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>159,386</b>		<b>TOTAL AREA</b>



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Page 4

**Ground Covers (all nodes)**

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
31,815	0	0	0	0	31,815	>75% Grass cover, Good
23,216	0	0	0	0	23,216	Gravel surface
35,519	0	0	0	0	35,519	Paved parking
9,897	0	0	0	0	9,897	Roofs
58,939	0	0	0	0	58,939	Woods, Good
<b>159,386</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>159,386</b>	<b>TOTAL AREA</b>

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Type II 24-hr 0.5" Rainfall=0.50"

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Page 5

**Summary for Subcatchment PS-1:**

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 0.5" Rainfall=0.50"

Area (sf)	CN	Description
6,878	39	>75% Grass cover, Good, HSG A
20,028	30	Woods, Good, HSG A
6,429	98	Paved parking, HSG A
793	98	Roofs, HSG A
703	96	Gravel surface, HSG A
34,831	47	Weighted Average
27,609		79.27% Pervious Area
7,222		20.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0350	0.10		<b>Sheet Flow,</b>
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		<b>Shallow Concentrated Flow,</b>
					Woodland Kv= 5.0 fps
17.2	112	Total			

**Summary for Subcatchment PS-2:**

Runoff = 0.0 cfs @ 18.55 hrs, Volume= 14 cf, Depth&gt; 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 0.5" Rainfall=0.50"

Area (sf)	CN	Description
8,802	98	Roofs, HSG A
29,090	98	Paved parking, HSG A
20,350	39	>75% Grass cover, Good, HSG A
22,513	96	Gravel surface, HSG A
80,755	83	Weighted Average
42,863		53.08% Pervious Area
37,892		46.92% Impervious Area



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Type II 24-hr 0.5" Rainfall=0.50"

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Page 6

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	42	0.0280	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.3	287	Total			

**Summary for Subcatchment PS-3:**

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 0.5" Rainfall=0.50"

Area (sf)	CN	Description
302	98	Roofs, HSG A
4,587	39	>75% Grass cover, Good, HSG A
38,911	30	Woods, Good, HSG A
43,800	31	Weighted Average
43,498		99.31% Pervious Area
302		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	100	0.0330	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
20.7	220	Total			

**Summary for Reach 1R: Woods**

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth = 0.00" for 0.5" event  
 Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
 Outflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 5.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 0.50' Flow Area= 30.0 sf, Capacity= 7.4 cfs

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Type II 24-hr 0.5" Rainfall=0.50"

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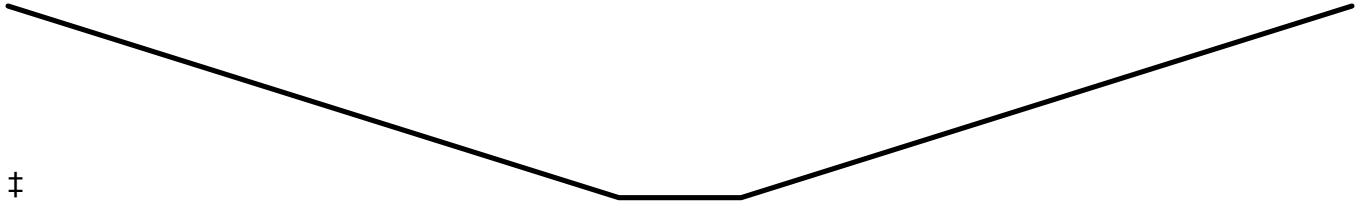
Page 7

10.00' x 0.50' deep channel, n= 0.400 Sheet flow: Woods+light brush

Side Slope Z-value= 100.0 '/' Top Width= 110.00'

Length= 190.0' Slope= 0.0247 '/'

Inlet Invert= 53.50', Outlet Invert= 48.80'



### Summary for Pond 2P: Gravel Area

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth > 0.00" for 0.5" event

Inflow = 0.0 cfs @ 18.55 hrs, Volume= 14 cf

Outflow = 0.0 cfs @ 18.56 hrs, Volume= 14 cf, Atten= 0%, Lag= 0.8 min

Discarded = 0.0 cfs @ 18.56 hrs, Volume= 14 cf

Primary = 0.0 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 51.50' @ 18.56 hrs    Surf.Area= 23,366 sf    Storage= 0 cf

Plug-Flow detention time= 0.9 min calculated for 14 cf (100% of inflow)

Center-of-Mass det. time= 0.5 min ( 1,051.3 - 1,050.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	51.50'	14,020 cf	<b>Gravel Area (Prismatic)</b> Listed below (Recalc) 35,049 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.50	23,366	0	0
53.00	23,366	35,049	35,049

Device	Routing	Invert	Outlet Devices
#1	Discarded	51.50'	<b>4.580 in/hr Exfiltration over Surface area</b>
#2	Primary	53.00'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Discarded OutFlow** Max=2.5 cfs @ 18.56 hrs HW=51.50' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 2.5 cfs)

**Primary OutFlow** Max=0.0 cfs @ 5.00 hrs HW=51.50' (Free Discharge)

2=Broad-Crested Rectangular Weir ( Controls 0.0 cfs)



**45407-33 - Post***Type II 24-hr 0.5" Rainfall=0.50"*

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Page 8

**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 28.49% Impervious, Inflow Depth = 0.00" for 0.5" event  
Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
Primary = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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Type II 24-hr 2-yr Rainfall=3.25"

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Page 9

**Summary for Subcatchment PS-1:**

Runoff = 0.0 cfs @ 13.57 hrs, Volume= 164 cf, Depth&gt; 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.25"

Area (sf)	CN	Description
6,878	39	>75% Grass cover, Good, HSG A
20,028	30	Woods, Good, HSG A
6,429	98	Paved parking, HSG A
793	98	Roofs, HSG A
703	96	Gravel surface, HSG A
34,831	47	Weighted Average
27,609		79.27% Pervious Area
7,222		20.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0350	0.10		<b>Sheet Flow,</b>
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		<b>Shallow Concentrated Flow,</b>
					Woodland Kv= 5.0 fps
17.2	112	Total			

**Summary for Subcatchment PS-2:**

Runoff = 5.3 cfs @ 11.98 hrs, Volume= 10,230 cf, Depth&gt; 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.25"

Area (sf)	CN	Description
8,802	98	Roofs, HSG A
29,090	98	Paved parking, HSG A
20,350	39	>75% Grass cover, Good, HSG A
22,513	96	Gravel surface, HSG A
80,755	83	Weighted Average
42,863		53.08% Pervious Area
37,892		46.92% Impervious Area



**45407-33 - Post**

Type II 24-hr 2-yr Rainfall=3.25"

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Page 10

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	42	0.0280	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.3	287	Total			

**Summary for Subcatchment PS-3:**

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.25"

Area (sf)	CN	Description
302	98	Roofs, HSG A
4,587	39	>75% Grass cover, Good, HSG A
38,911	30	Woods, Good, HSG A
43,800	31	Weighted Average
43,498		99.31% Pervious Area
302		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	100	0.0330	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
20.7	220	Total			

**Summary for Reach 1R: Woods**

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth = 0.00" for 2-yr event  
 Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
 Outflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 5.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 0.50' Flow Area= 30.0 sf, Capacity= 7.4 cfs

**45407-33 - Post**

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Type II 24-hr 2-yr Rainfall=3.25"

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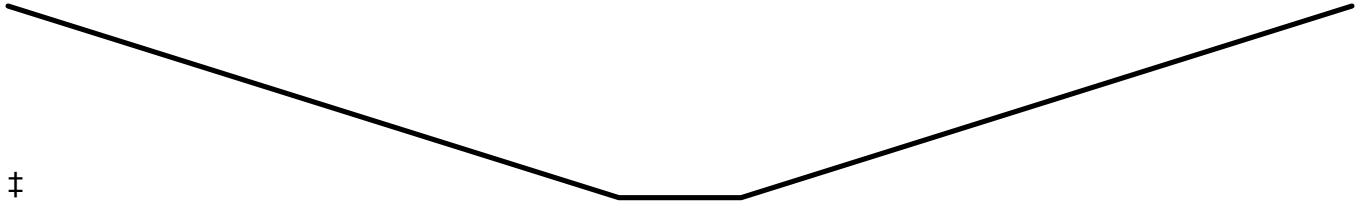
Page 11

10.00' x 0.50' deep channel,  $n=0.400$  Sheet flow: Woods+light brush

Side Slope Z-value= 100.0 ' Top Width= 110.00'

Length= 190.0' Slope= 0.0247 '/'

Inlet Invert= 53.50', Outlet Invert= 48.80'



### Summary for Pond 2P: Gravel Area

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth > 1.52" for 2-yr event

Inflow = 5.3 cfs @ 11.98 hrs, Volume= 10,230 cf

Outflow = 2.5 cfs @ 11.90 hrs, Volume= 10,226 cf, Atten= 53%, Lag= 0.0 min

Discarded = 2.5 cfs @ 11.90 hrs, Volume= 10,226 cf

Primary = 0.0 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 51.65' @ 12.08 hrs Surf.Area= 23,366 sf Storage= 1,413 cf

Plug-Flow detention time= 2.9 min calculated for 10,192 cf (100% of inflow)

Center-of-Mass det. time= 2.7 min ( 789.9 - 787.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	51.50'	14,020 cf	<b>Gravel Area (Prismatic)</b> Listed below (Recalc) 35,049 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.50	23,366	0	0
53.00	23,366	35,049	35,049

Device	Routing	Invert	Outlet Devices
#1	Discarded	51.50'	<b>4.580 in/hr Exfiltration over Surface area</b>
#2	Primary	53.00'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Discarded OutFlow** Max=2.5 cfs @ 11.90 hrs HW=51.53' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 2.5 cfs)

**Primary OutFlow** Max=0.0 cfs @ 5.00 hrs HW=51.50' (Free Discharge)

2=Broad-Crested Rectangular Weir ( Controls 0.0 cfs)



**45407-33 - Post***Type II 24-hr 2-yr Rainfall=3.25"*

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Page 12

**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 28.49% Impervious, Inflow Depth > 0.01" for 2-yr event  
Inflow = 0.0 cfs @ 13.57 hrs, Volume= 164 cf  
Primary = 0.0 cfs @ 13.57 hrs, Volume= 164 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**45407-33 - Post**

Type II 24-hr 10-yr Rainfall=4.93"

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Page 13

**Summary for Subcatchment PS-1:**

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 1,243 cf, Depth&gt; 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=4.93"

Area (sf)	CN	Description
6,878	39	>75% Grass cover, Good, HSG A
20,028	30	Woods, Good, HSG A
6,429	98	Paved parking, HSG A
793	98	Roofs, HSG A
703	96	Gravel surface, HSG A
34,831	47	Weighted Average
27,609		79.27% Pervious Area
7,222		20.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0350	0.10		<b>Sheet Flow,</b>
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		<b>Shallow Concentrated Flow,</b>
					Woodland Kv= 5.0 fps
17.2	112	Total			

**Summary for Subcatchment PS-2:**

Runoff = 9.6 cfs @ 11.97 hrs, Volume= 19,475 cf, Depth&gt; 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=4.93"

Area (sf)	CN	Description
8,802	98	Roofs, HSG A
29,090	98	Paved parking, HSG A
20,350	39	>75% Grass cover, Good, HSG A
22,513	96	Gravel surface, HSG A
80,755	83	Weighted Average
42,863		53.08% Pervious Area
37,892		46.92% Impervious Area



**45407-33 - Post**

Type II 24-hr 10-yr Rainfall=4.93"

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Page 14

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	42	0.0280	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.3	287	Total			

**Summary for Subcatchment PS-3:**

Runoff = 0.0 cfs @ 20.00 hrs, Volume= 8 cf, Depth&gt; 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=4.93"

Area (sf)	CN	Description
302	98	Roofs, HSG A
4,587	39	>75% Grass cover, Good, HSG A
38,911	30	Woods, Good, HSG A
43,800	31	Weighted Average
43,498		99.31% Pervious Area
302		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	100	0.0330	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
20.7	220	Total			

**Summary for Reach 1R: Woods**

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth = 0.00" for 10-yr event  
 Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
 Outflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 5.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 0.50' Flow Area= 30.0 sf, Capacity= 7.4 cfs

**45407-33 - Post**

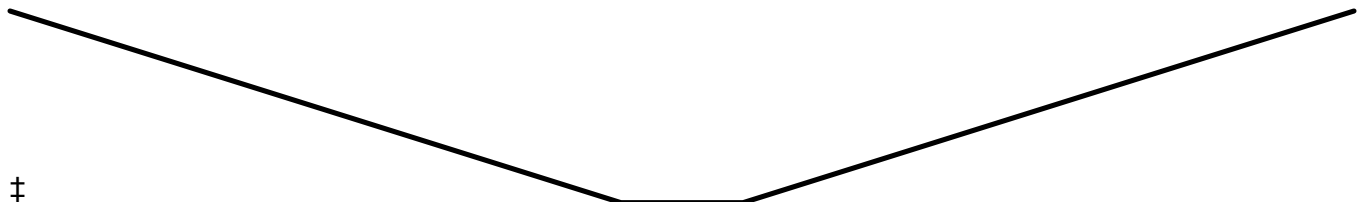
Type II 24-hr 10-yr Rainfall=4.93"

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Page 15

Side Slope Z-value= 100.0 ' / '    Top Width= 110.00'

Inlet Invert= 53.50', Outlet Invert= 48.80'



### Summary for Pond 2P: Gravel Area

Inflow = 9.6 cfs @ 11.97 hrs, Volume= 19,475 cf

Outflow = 2.5 cfs @ 11.75 hrs, Volume= 19,468 cf, Atten= 74%, Lag= 0.0 min

Discarded = 2.5 cfs @ 11.75 hrs, Volume= 19,468 cf

Primary = 0.0 cfs @ 5.00 hrs, Volume= 0 cf

Peak Elev= 52.02' @ 12.13 hrs Surf.Area= 23,366 sf Storage= 4,878 cf

Center-of-Mass det. time= 10.4 min ( 783.4 - 773.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	51.50'	14,020 cf	<b>Gravel Area (Prismatic)</b> Listed below (Recalc) 35,049 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.50	23,366	0	0
53.00	23,366	35,049	35,049

Device	Routing	Invert	Outlet Devices
#1	Discarded	51.50'	<b>4.580 in/hr Exfiltration over Surface area</b>
#2	Primary	53.00'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

↑ **1=Exfiltration** (Exfiltration Controls 2.5 cfs)

2=Broad-Crested Rectangular Weir ( Controls 0.0 cfs)

**45407-33 - Post***Type II 24-hr 10-yr Rainfall=4.93"*

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Page 16

**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 28.49% Impervious, Inflow Depth &gt; 0.09" for 10-yr event

Inflow = 0.3 cfs @ 12.16 hrs, Volume= 1,251 cf

Primary = 0.3 cfs @ 12.16 hrs, Volume= 1,251 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**45407-33 - Post**

Type II 24-hr 25-yr Rainfall=6.25"

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Page 17

**Summary for Subcatchment PS-1:**

Runoff = 0.8 cfs @ 12.13 hrs, Volume= 2,621 cf, Depth&gt; 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.25"

Area (sf)	CN	Description
6,878	39	>75% Grass cover, Good, HSG A
20,028	30	Woods, Good, HSG A
6,429	98	Paved parking, HSG A
793	98	Roofs, HSG A
703	96	Gravel surface, HSG A
34,831	47	Weighted Average
27,609		79.27% Pervious Area
7,222		20.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0350	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
17.2	112	Total			

**Summary for Subcatchment PS-2:**

Runoff = 13.2 cfs @ 11.97 hrs, Volume= 27,184 cf, Depth&gt; 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.25"

Area (sf)	CN	Description
8,802	98	Roofs, HSG A
29,090	98	Paved parking, HSG A
20,350	39	>75% Grass cover, Good, HSG A
22,513	96	Gravel surface, HSG A
80,755	83	Weighted Average
42,863		53.08% Pervious Area
37,892		46.92% Impervious Area

**45407-33 - Post**

Type II 24-hr 25-yr Rainfall=6.25"

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Page 18

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	42	0.0280	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.3	287	Total			

**Summary for Subcatchment PS-3:**

Runoff = 0.0 cfs @ 15.10 hrs, Volume= 334 cf, Depth&gt; 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.25"

Area (sf)	CN	Description
302	98	Roofs, HSG A
4,587	39	>75% Grass cover, Good, HSG A
38,911	30	Woods, Good, HSG A
43,800	31	Weighted Average
43,498		99.31% Pervious Area
302		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	100	0.0330	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
20.7	220	Total			

**Summary for Reach 1R: Woods**

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth = 0.00" for 25-yr event  
 Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
 Outflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 5.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 0.50' Flow Area= 30.0 sf, Capacity= 7.4 cfs

**45407-33 - Post**

Type II 24-hr 25-yr Rainfall=6.25"

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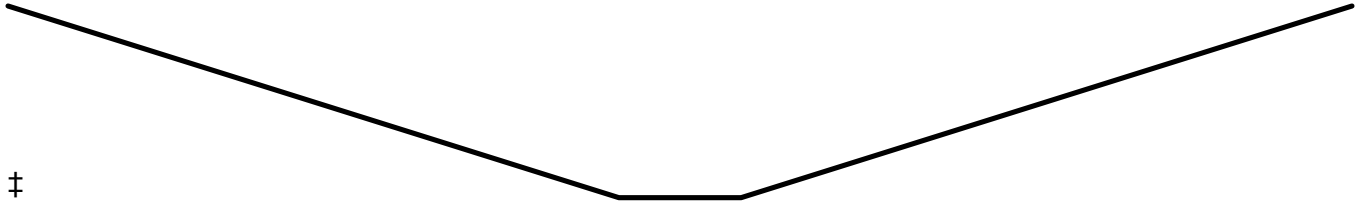
Page 19

10.00' x 0.50' deep channel,  $n = 0.400$  Sheet flow: Woods+light brush

Side Slope Z-value= 100.0 '/' Top Width= 110.00'

Length= 190.0'    Slope= 0.0247 '/'

Inlet Invert= 53.50', Outlet Invert= 48.80'



### Summary for Pond 2P: Gravel Area

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth > 4.04" for 25-yr event

Inflow = 13.2 cfs @ 11.97 hrs, Volume= 27,184 cf

Outflow = 2.5 cfs @ 11.70 hrs, Volume= 27,176 cf, Atten= 81%, Lag= 0.0 min

Discarded = 2.5 cfs @ 11.70 hrs, Volume= 27,176 cf

Primary = 0.0 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 52.38' @ 12.17 hrs Surf.Area= 23,366 sf Storage= 8,214 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 19.2 min ( 784.6 - 765.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	51.50'	14,020 cf	<b>Gravel Area (Prismatic)</b> Listed below (Recalc) 35,049 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.50	23,366	0	0
53.00	23,366	35,049	35,049

Device	Routing	Invert	Outlet Devices
#1	Discarded	51.50'	<b>4.580 in/hr Exfiltration over Surface area</b>
#2	Primary	53.00'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Discarded OutFlow** Max=2.5 cfs @ 11.70 hrs HW=51.52' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 2.5 cfs)

**Primary OutFlow** Max=0.0 cfs @ 5.00 hrs HW=51.50' (Free Discharge)

2=Broad-Crested Rectangular Weir ( Controls 0.0 cfs)



**45407-33 - Post***Type II 24-hr 25-yr Rainfall=6.25"*

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Page 20

**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 28.49% Impervious, Inflow Depth &gt; 0.22" for 25-yr event

Inflow = 0.8 cfs @ 12.13 hrs, Volume= 2,955 cf

Primary = 0.8 cfs @ 12.13 hrs, Volume= 2,955 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**45407-33 - Post**

Type II 24-hr 50-yr Rainfall=7.49"

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Page 21

**Summary for Subcatchment PS-1:**

Runoff = 1.4 cfs @ 12.12 hrs, Volume= 4,235 cf, Depth&gt; 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
6,878	39	>75% Grass cover, Good, HSG A
20,028	30	Woods, Good, HSG A
6,429	98	Paved parking, HSG A
793	98	Roofs, HSG A
703	96	Gravel surface, HSG A
34,831	47	Weighted Average
27,609		79.27% Pervious Area
7,222		20.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0350	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
17.2	112	Total			

**Summary for Subcatchment PS-2:**

Runoff = 16.5 cfs @ 11.97 hrs, Volume= 34,612 cf, Depth&gt; 5.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
8,802	98	Roofs, HSG A
29,090	98	Paved parking, HSG A
20,350	39	>75% Grass cover, Good, HSG A
22,513	96	Gravel surface, HSG A
80,755	83	Weighted Average
42,863		53.08% Pervious Area
37,892		46.92% Impervious Area

**45407-33 - Post**

Type II 24-hr 50-yr Rainfall=7.49"

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Page 22

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	42	0.0280	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.3	287	Total			

**Summary for Subcatchment PS-3:**

Runoff = 0.1 cfs @ 12.49 hrs, Volume= 1,028 cf, Depth&gt; 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
302	98	Roofs, HSG A
4,587	39	>75% Grass cover, Good, HSG A
38,911	30	Woods, Good, HSG A
43,800	31	Weighted Average
43,498		99.31% Pervious Area
302		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	100	0.0330	0.10		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
20.7	220	Total			

**Summary for Reach 1R: Woods**

Inflow Area = 80,755 sf, 46.92% Impervious, Inflow Depth = 0.00" for 50-yr event  
 Inflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf  
 Outflow = 0.0 cfs @ 5.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 5.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 0.50' Flow Area= 30.0 sf, Capacity= 7.4 cfs



**45407-33 - Post**

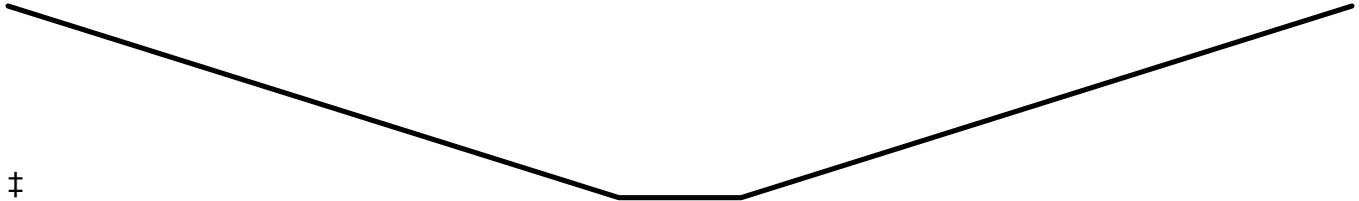
Type II 24-hr 50-yr Rainfall=7.49"

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Page 23

Side Slope Z-value= 100.0 ' / ' Top Width= 110.00'

Inlet Invert= 53.50', Outlet Invert= 48.80'



### Summary for Pond 2P: Gravel Area

Inflow = 16.5 cfs @ 11.97 hrs, Volume= 34,612 cf

Discarded = 2.5 cfs @ 11.70 hrs, Volume= 34,602 cf

[illegible]

Peak Elev= 52.74' @ 12.21 hrs Surf.Area= 23,366 sf Storage= 11,550 cf

Center-of-Mass det. time= 29.0 min ( 788.7 - 759.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	51.50'	14,020 cf	<b>Gravel Area (Prismatic)</b> Listed below (Recalc) 35,049 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.50	23,366	0	0
53.00	23,366	35,049	35,049

Device	Routing	Invert	Outlet Devices
#1	Discarded	51.50'	<b>4.580 in/hr Exfiltration over Surface area</b> <b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Primary	53.00'	

1=Exfiltration (Exfiltration Controls 2.5 cfs)

2=Broad-Crested Rectangular Weir ( Controls 0.0 cfs)

**45407-33 - Post***Type II 24-hr 50-yr Rainfall=7.49"*

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Page 24

**Summary for Link POI-1:**

Inflow Area = 159,386 sf, 28.49% Impervious, Inflow Depth &gt; 0.40" for 50-yr event

Inflow = 1.4 cfs @ 12.12 hrs, Volume= 5,264 cf

Primary = 1.4 cfs @ 12.12 hrs, Volume= 5,264 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**LEGEND**

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (T<sub>c</sub> LINE)
- REACH
- POINT OF INTEREST
- SUBCATCHMENT AREA
- POND, CULVERT, OR CATCH BASIN
- REACH

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)			
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP	DRAINAGE CLASS
799	URBAN LAND—CANTON COMPLEX	A	WELL
699	URBAN LAND	N/A	N/A
299	UDORTHENTS, SMOOTHED	N/A	EXCESSIVE

## SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8  
**PRE-DEVELOPMENT DRAINAGE MAP**  
3201 LAFAYETTE ROAD  
PORTSMOUTH, NEW HAMPSHIRE  
PREPARED FOR  
3201 LAFAYETTE ROAD, LLC

1"=40' (11"X17")  
SCALE: 1"=20' (22"X34") JUNE 22, 2020



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

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		CK	CRR	CADFILE	45407-33 - DRAINAGE	



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LEGEND

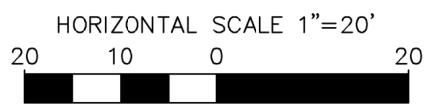
- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (To LINE)
- REACH
- POI-1
- PS-1
- PP-1
- PR-1
- POINT OF INTEREST
- SUBCATCHMENT AREA
- POND, CULVERT, OR CATCH BASIN
- REACH

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)			
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP	DRAINAGE CLASS
799	URBAN LAND--CANTON COMPLEX	A	WELL
699	URBAN LAND	N/A	N/A
299	UDORTHENTS, SMOOTHED	N/A	EXCESSIVE

SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8  
**POST-DEVELOPMENT DRAINAGE MAP**  
**3201 LAFAYETTE ROAD**  
**PORTSMOUTH, NEW HAMPSHIRE**  
PREPARED FOR  
**3201 LAFAYETTE ROAD, LLC**  
**1"=40' (11"X17')**  
**SCALE: 1"=20' (22"X34')** **JUNE 22, 2020**

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REV	DATE	DESCRIPTION	DR	CK

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