

SITE DEVELOPMENT PLANS
3201 LAFAYETTE ROAD, LLC
3201 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

VICINITY PLAN

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

	NUMBER	APPROVED	EXPIRES
CITY SITE PLAN REVIEW		PENDING	
CITY VARIANCE	—	05/21/2020	05/21/2022
EPA SWPPP		PENDING	

THE FOLLOWING VARIANCES FROM THE CITY OF PORTSMOUTH ZONING ORDINANCE HAVE BEEN GRANTED BY THE ZONING BOARD OF ADJUSTMENT:

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.

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 MOBILE HOMES IN THE G1 ZONE.

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.

SITE DEVELOPMENT PLANS

3201 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

JUNE 22, 2020

[illegible]



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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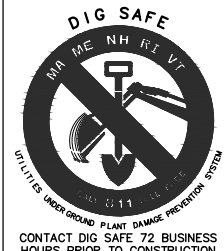
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45407-33 – COVER

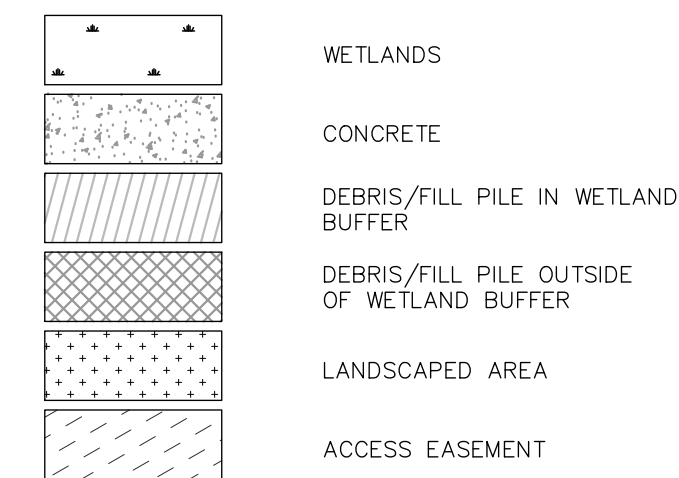
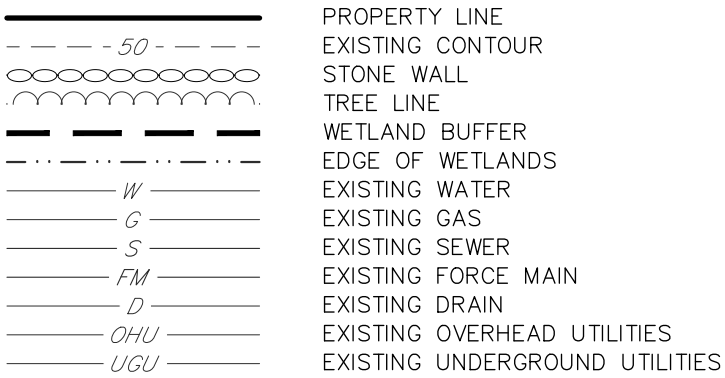
C-00

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

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



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	ELEMENT LENGTH
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
GA/WH	GAS/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
RORD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
SGC	SLOPED GRANITE CURB
WM	SQUARE FEET
WM	TEMPORARY BENCH MARK
WB	WATER METER



292/151-2 N/F
PUBLIC LAND HOLDINGS LLC
148 EIGHTH ROAD, SUITE 2A
BETTER, NH 03833
RCRD BK.6097 PG.1357

292/150 N/F
CHRIS G. & LISA
ALEXANDROPOULOS
3168 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
RCRD BK.4175 PG.1509

292/149 N/F
ELIZABETH BATICK RICCI
REVOCABLE TRUST OF 1993
5 HARDING ROAD
PORTSMOUTH, NH 03801
RCRD BK.5189 PG.1131

292/148 N/F
KERRIGAN REVOCABLE TRUS
3202 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
RCRD BK.5296 PG.1541

292/147 N/F
KERRY E. RILEY
3254 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
RCRD BK.5239 PG.2663

292/146 N/F
YANG CHU FAMILY REVOCABLE
TRUST OF 2019
6 DRURY PLAINS ROAD
STRATHAM, NH 03885
RCRD BK 6022 PG 2118

292/145 N/F
LINDSAY A. BLAKEY
95 CARDINAL LANE
PITTSMOUTH, NH 03901
RCRD BK 5791 PG 0929

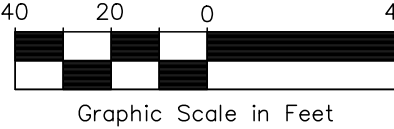
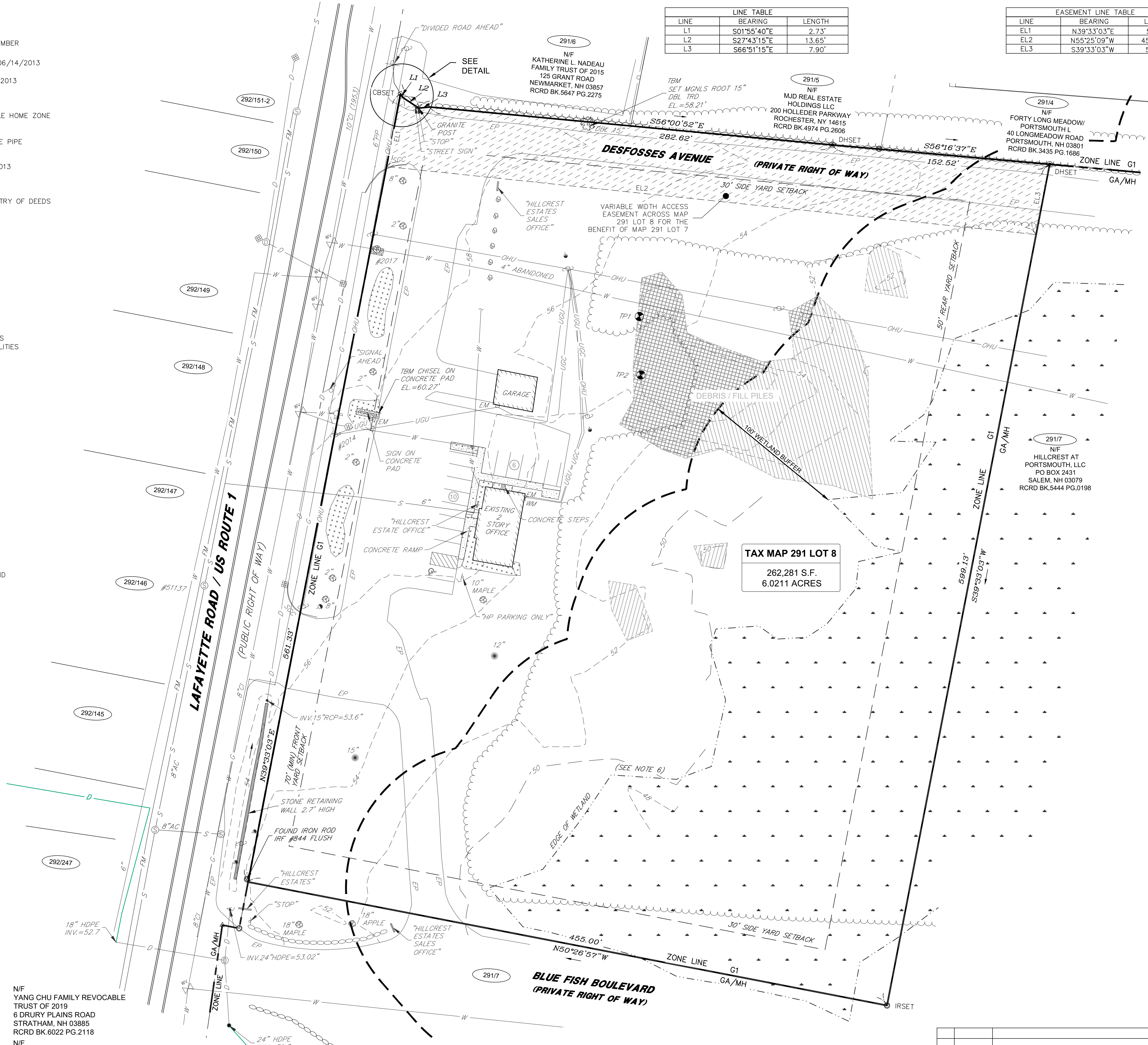
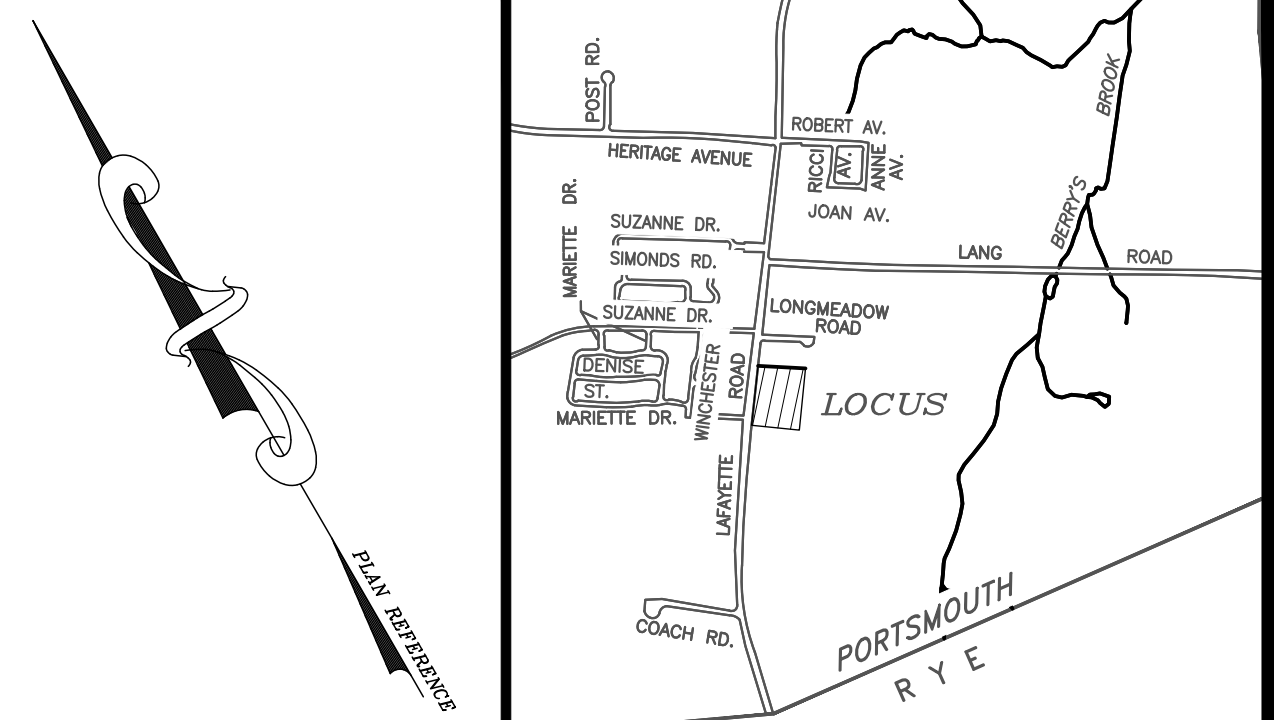
292/247 N/F
KAREN E. KAPELOS REVOCABLE
TRUST OF 1995
1537B OYSTER CATCHER POINT
NAPLES, FL 34105
RCRD BK 3569 PG 2269

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48 Constitution Drive, Bedford, N.H. 03110

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

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'

[illegible]

NOTES:

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 291, 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
RCDR BK-5617 P.01045
5. ZONING REQUIREMENTS:

SEE ATTACH 5B, SECTION 10.5B20 – GENERAL STANDARDS FOR ALL BUILDINGS AND DEVELOPMENT OF THE CITY OF PORTSMOUTH ZONING ORDINANCE.
6. TOTAL PARCEL AREA:

262,281 S.F.
6.0211 ACRES
7. PETER S. SCHAUER, CERTIFIED WETLAND SCIENTIST #48, OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. OF LOUDON, NH AND THOMAS SCHAUER, JR., 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: NORTHEASTRAL 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.

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 REVISION #6 DATED 12/23/2013. RCRD PLAN D-38075.

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

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

TFM®

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
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JUNE 22, 2020

C-01

LEGEND

	PROPOSED
	PROPERTY LINE
	ZONING LINE
	EASEMENT
	BASELINE
	FLOODPLAIN
	EDGE OF WATERBODY
	EDGE OF WETLAND
	SETBACK (WETLAND)
	SETBACK (STRUCTURE)
	SETBACK (PARKING)
	SETBACK (LANDSCAPE)
	GRAVEL ROAD
	EDGE OF PAVEMENT
	VERTICAL GRANITE CURB
	SLOPED GRANITE CURB
	CONCRETE CURB
	INTEGRATED CONCRETE CURB
	BUTIMINOUS ASPHALT CURB
	CAPE COD BERM
	SAWCUT
	BUILDING
	BUILDING ROOF OVERHANG
	BUILDING FOUNDATION
	BUILDING ENTRANCE
	OVERHEAD DOOR
	TREE LINE
	FENCE (CHAIN LINK)
	FENCE (WIRE)
	FENCE (STOCKADE)
	GUARDRAIL
	STONE WALL
	RETAINING WALL
	SILT FENCE
	SILT SOCK
	SOIL BOUNDARY
	LIMIT OF GRADING
	CONTOUR
	SPOT GRADE
	PARKING COUNT
	YELLOW DOUBLE SOLID LINE
	YELLOW SINGLE SOLID LINE
	WHITE SINGLE SOLID LINE
	WHITE SINGLE BROKEN LINE
	STOP BAR
	CROSSWALK
	ACCESSIBLE PARKING SYMBOL
	PAVEMENT ARROW
	TRAFFIC FLOW ARROW (NOT P
	SIGN (SINGLE POST)
	SIGN (DOUBLE POST)
	SIGN (PYLON)
	SIGN (MONUMENT)
	BOLLARD
	DUMPSTER PAD

PROPOSED

	GRAVEL
	HEAVY DUTY PAVEMENT
	CONSTRUCTION ENTRANCE
	SNOW STORAGE
	RIPRAP
	INLET PROTECTION
	DRAIN LINE
	DRAINAGE SWALE
	STORMWATER BMP
	SEWER LINE
	SEWER FORCE MAIN LINE
	WATER LINE
	GAS LINE
	OVERHEAD UTILITY LINE
	UNDERGROUND UTILITY LINE
	CATCH BASIN
	DRAIN INLET
	OUTLET CONTROL STRUCTURE
	ROOF DRAIN
	DRAIN CLEANOUT
	DRAIN MANHOLE
	FARED END SECTION
	SEWER CLEAN OUT
	SEWER MANHOLE
	SEWER VENT
	DRAIN/SEWER/WATER PLUG OR CAP
	HYDRANT
	FIRE DEPARTMENT CONNECTION
	WATER GATE VALVE
	WATER SHUTOFF
	THRUST BLOCK
	WATER METER
	WATER MANHOLE
	WELL
	GAS GATE VALVE
	GAS SHUT OFF
	GAS METER
	TELEPHONE MANHOLE
	ELECTRIC MANHOLE
	TRAFFIC CONTROL CABINET
	ELECTRIC HANDHOLE
	ELECTRIC PULL BOX
	ELECTRIC METER
	FLOOD LIGHT
	LIGHT POLE
	UTILITY POLE
	GUY POLE
	TRANSFORMER PAD
	BORING LOCATION
	TEST PIT LOCATION
	INFILTRATION TEST LOCATION
	MONITORING WELL

GENERAL NOTES

2. 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-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. THE SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
4. 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.
5. 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.
6. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. 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.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACIES. 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.
14. 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.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. 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 CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
18. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
19. CONTRACTOR'S GENERAL RESPONSIBILITIES:
 - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS.
 - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
 - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
 - D. 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.
 - E. 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.
 - F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
 - G. 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.
 - H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
 - I. 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.
 - J. 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.
 - K. 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.
 - L. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
 - M. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
 - N. 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.
 - O. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER DETERMINING 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.

GRADING NOTES

2. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
 3. 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.
 4. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEERS RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
 5. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
 6. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
 7. 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.
 8. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS AND LOADING AREAS.
 9. 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.
 10. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
 11. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
 12. 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.
 13. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
 14. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
 15. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
 16. 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

2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, 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.
3. 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.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVER 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.
6. 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.
7. 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.
8. 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.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS 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-VQ 700.
10. 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 PIPE 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.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTION OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS, CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PLIP ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. 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.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	MUNICIPAL - (603) 427-1530
WATER	MUNICIPAL - (603) 427-1530
GAS	UNITIL - (888) 301-7700
ELECTRIC	EVERSOURCE - (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

TFM®

Civil Engineers	48 Constitution Drive
Structural Engineers	Bedford, NH 03110
Traffic Engineers	Phone (603) 472-4488
Land Surveyors	Fax (603) 472-9747
Landscape Architects	www.tfmoran.com
Scientists	

FILE	45407.33	DR	DKE	FB	-	C-02
		CK	CRR	CADFILE	45407-33 - NOTES & LEGEND	

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ABBREVIATIONS	
GENERAL	MATH SYMBOLS
A = ampere	Δ = change in
B = tesla	δ = skin depth
C = coulomb	ϵ = permittivity
D = diameter	η = efficiency
E = electric field strength	θ = angle
F = farad	μ = permeability
G = gauss	ν = frequency
H = henry	ω = angular frequency
I = current	ϕ = phase angle
J = joule	ψ = vector potential
K = kelvin	χ = susceptibility
L = length	λ = wavelength
M = meter	ρ = resistivity
N = newton	σ = conductivity
P = power	τ = time constant
R = resistance	φ = azimuthal angle
S = siemens	Φ = magnetic flux
T = tesla	Ψ = stream function
V = volt	Ω = ohm
W = watt	∞ = infinity
Z = impedance	\approx = approximately equal to

GENERAL					
ABAN	ABANDON	EXIST	EXISTING	PERF	PERFORMED
AC	ACRES	FFE	FINISHED FLOOR ELEVATION	RADP	PROPOSED
ADJ	ADJUST	FND	FOUNDATION	R	RADIUS
APPROX	APPROXIMATE	HP	HIGH POINT	R&D	REMOVE AND DISPOSE
BC	BOTTOM OF CURB	INV	INVERT ELEVATION	R&R	REMOVE AND RESET
BIT	BITUMINOUS	IT	INFILTRATION TEST	REM	REMOVE
BK/PG	BOOK & PAGE	L	LENGTH	RET	RETAIN
BLDG	BUILDING	LF	LINEAR FEET	REM	RM ELEVATION
BS	BOTTOM OF SLOPE	LSA	LANDSCAPE AREA	ROW	RIGHT OF WAY
BW	BOTTOM OF WALL	MAX	MAXIMUM	S	SLOPE
CONC	CONCRETE	MIN	MINIMUM	SF	SQUARE FEET
COORD	COORDINATE	N/F	NOW OR FORMERLY	SW	SIDEWALK
DIA	DIAMETER	NTS	NOT TO SCALE	TB	TEMPORARY BENCHMARK
ELEV	ELEVATION	OC	ON CENTER	TC	TOP OF CURB
EP	EDGE OF PAVEMENT	PAVE	PAVEMENT	TP	TEST PIT
				TOP	TOP OF WALL
				TYG	TYPICAL
				UNDER	UNDERGROUND
				WCR	ACCESSIBLE WHEELCHAIR RAMP
				W/	WITH

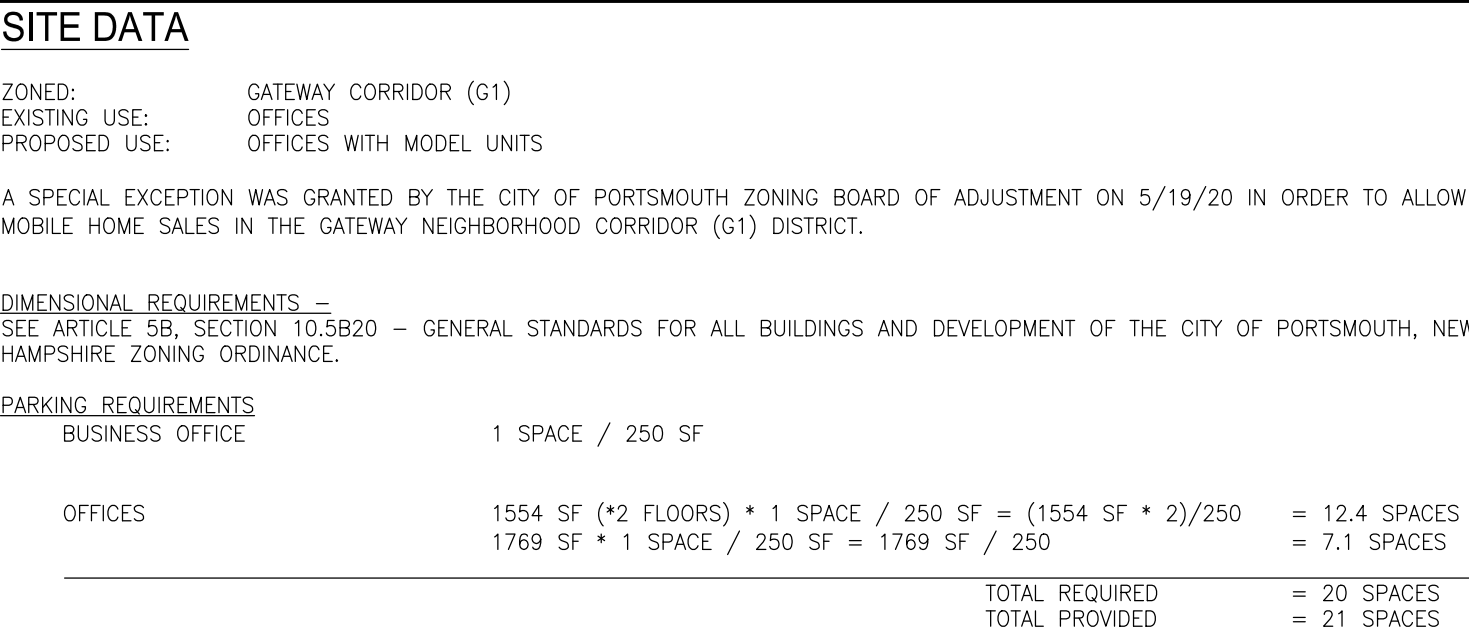
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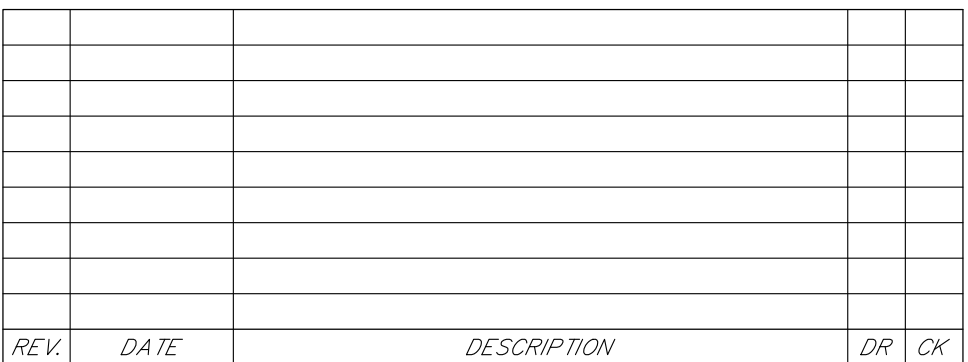
plan is not effective unless signed by a duly authorized officer of
mas F. Moran, Inc.



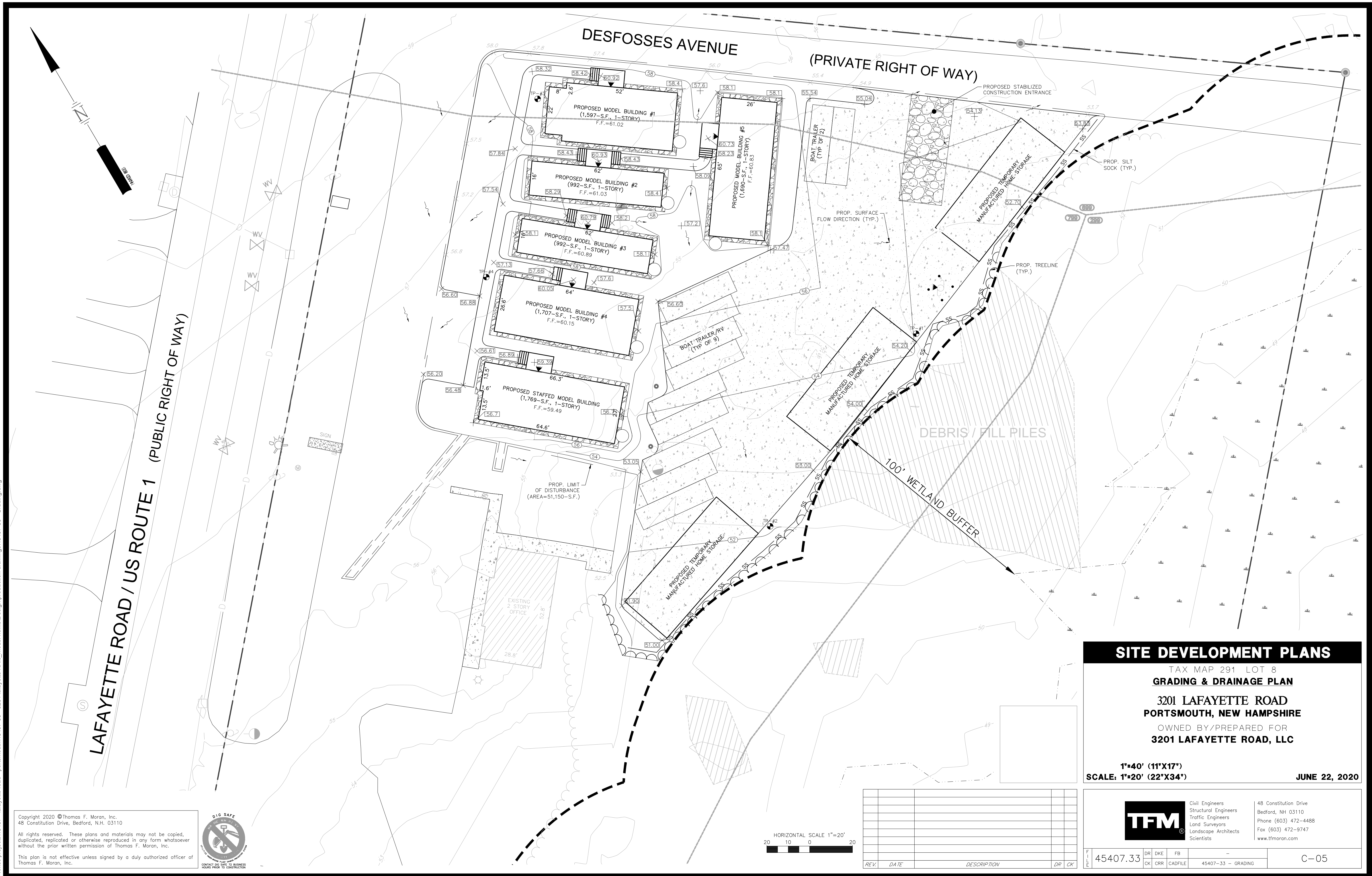
CONTACT DIG SAFE 72 BUSINESS
HOURS PRIOR TO CONSTRUCTION

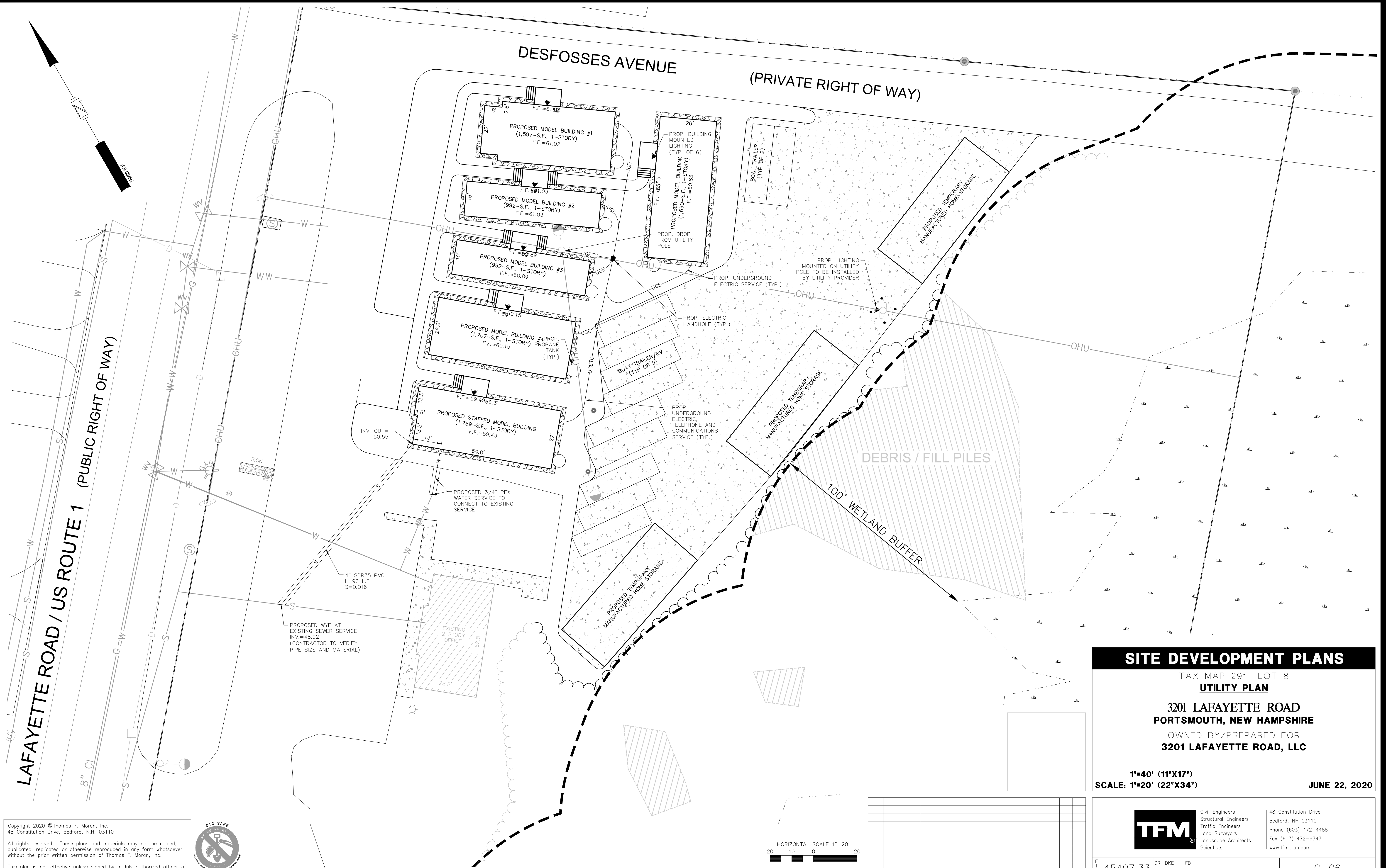


TOTAL LOT AREA:		262,281-S.F.
BUILDING AREA:		
USE		AREA
EX. OFFICE		1,554-S.F.
PROP. MODEL BUILDINGS		8,747-S.F.
TOTAL BUILDING LOT COVERAGE		10,301-S.F.
		4%
OTHER IMPERVIOUS AREAS:		
PAVEMENT & CONCRETE		40,926-S.F.
STEPS AND LANDING		768-S.F.
CRUSHED STONE STORAGE AREA		23,124-S.F.
TOTAL OTHER IMPERVIOUS COVERAGE		64,818-S.F.
		24%
TOTAL LOT COVERAGE		75,119-S.F.
IMPERVIOUS LOT COVERAGE		28%



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		CK	CRR	CADFILE	45407-33 - SITE LAYOUT	





SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

UTILITY 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



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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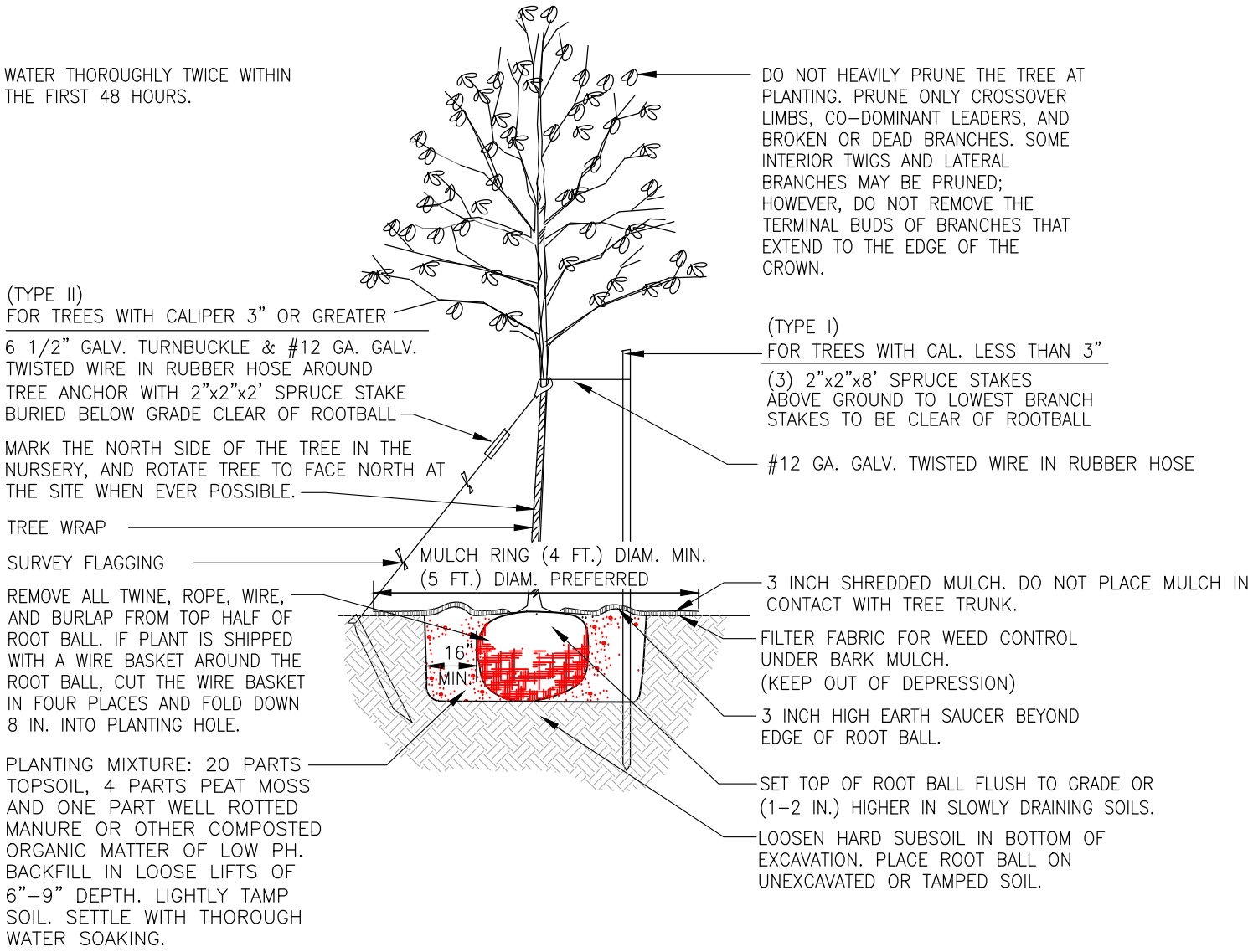
HORIZONTAL SCALE 1"=20'

A horizontal scale bar with alternating black and white segments. The segments are labeled 20, 10, 0, and 20 from left to right, indicating distances in feet. The total length of the bar is 60 feet.[illegible]



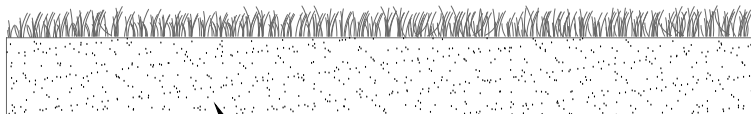
LANDSCAPE NOTES

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 DRIPLINES 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 BED 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 RADII 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 SEEDED AREAS WILL 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.



DECIDUOUS TREE PLANTING

NOT TO SCALE



LOAM & SEED

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

LANDSCAPE DETAILS

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
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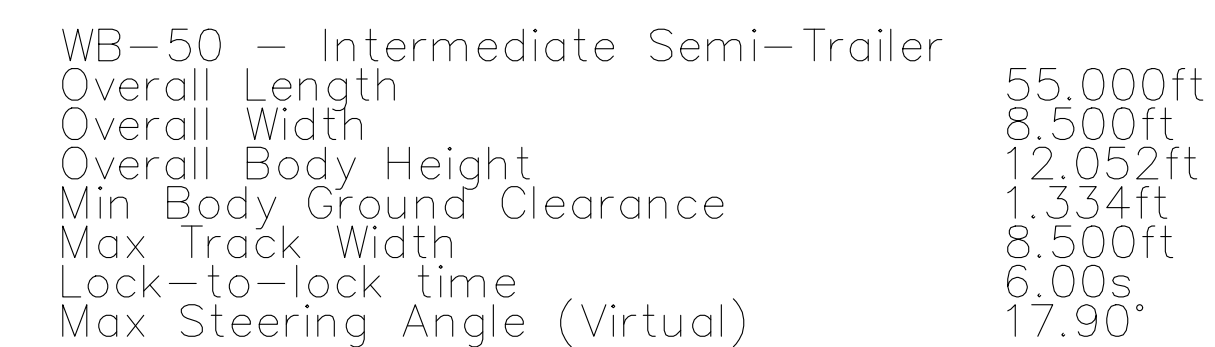
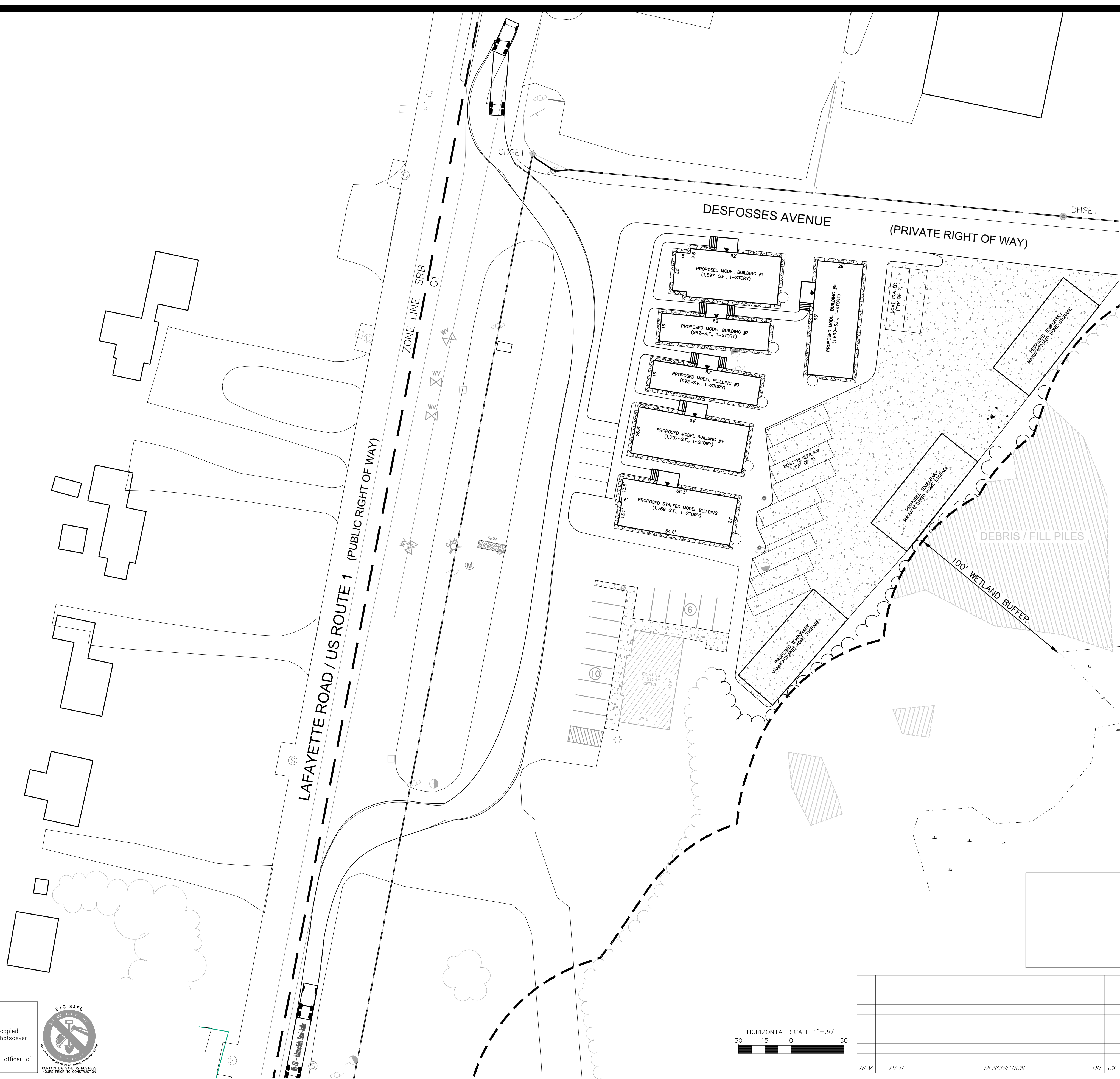
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CONTACT OUR SALES 24 BUSINESS HOURS PRIOR TO CONSTRUCTION



JUNE 22, 2020

CONSTRUCTION SEQUENCE NOTES

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.

GENERAL NOTES

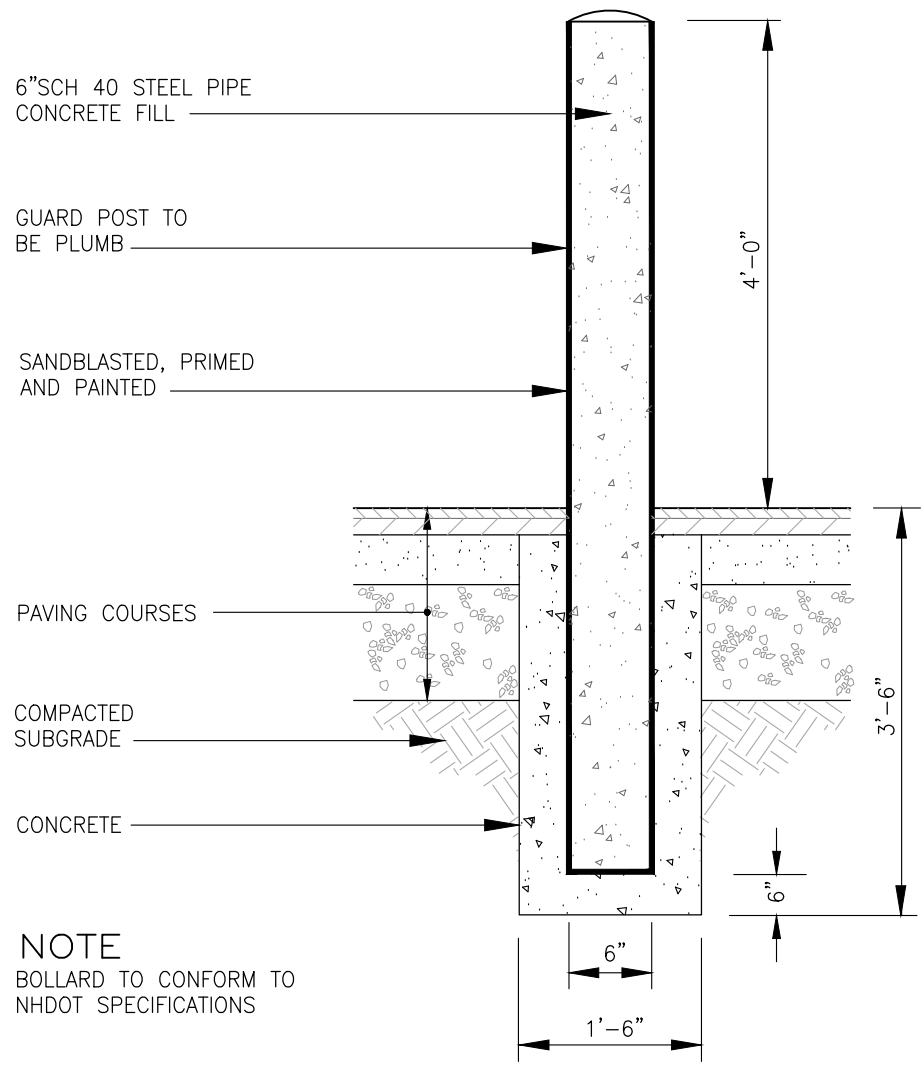
1. PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY 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 SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

STOCKPILE NOTES

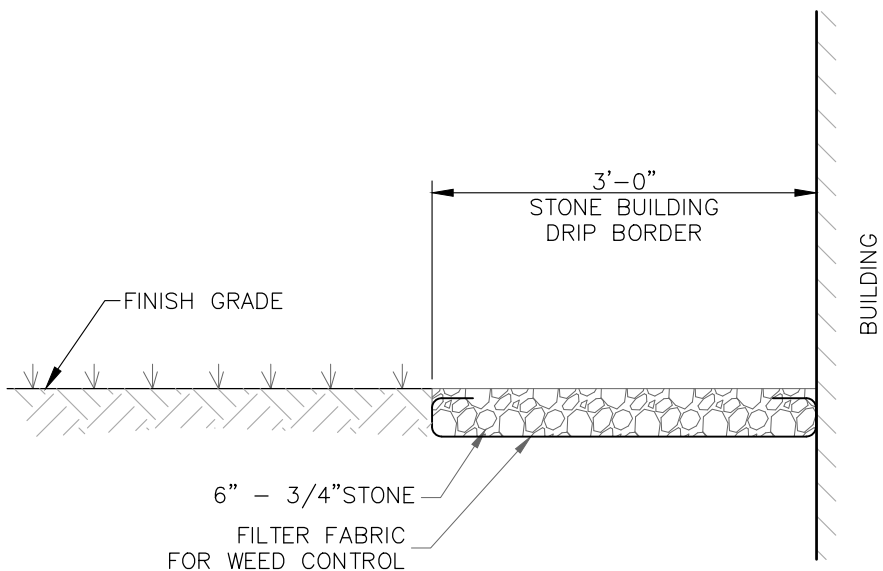
1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORMWATER AND DRAINAGE COURSES.
2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
3. STOCKPILES SHOULD BE SURROUNDED BY SEDIMENT 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.

WINTER CONSTRUCTION

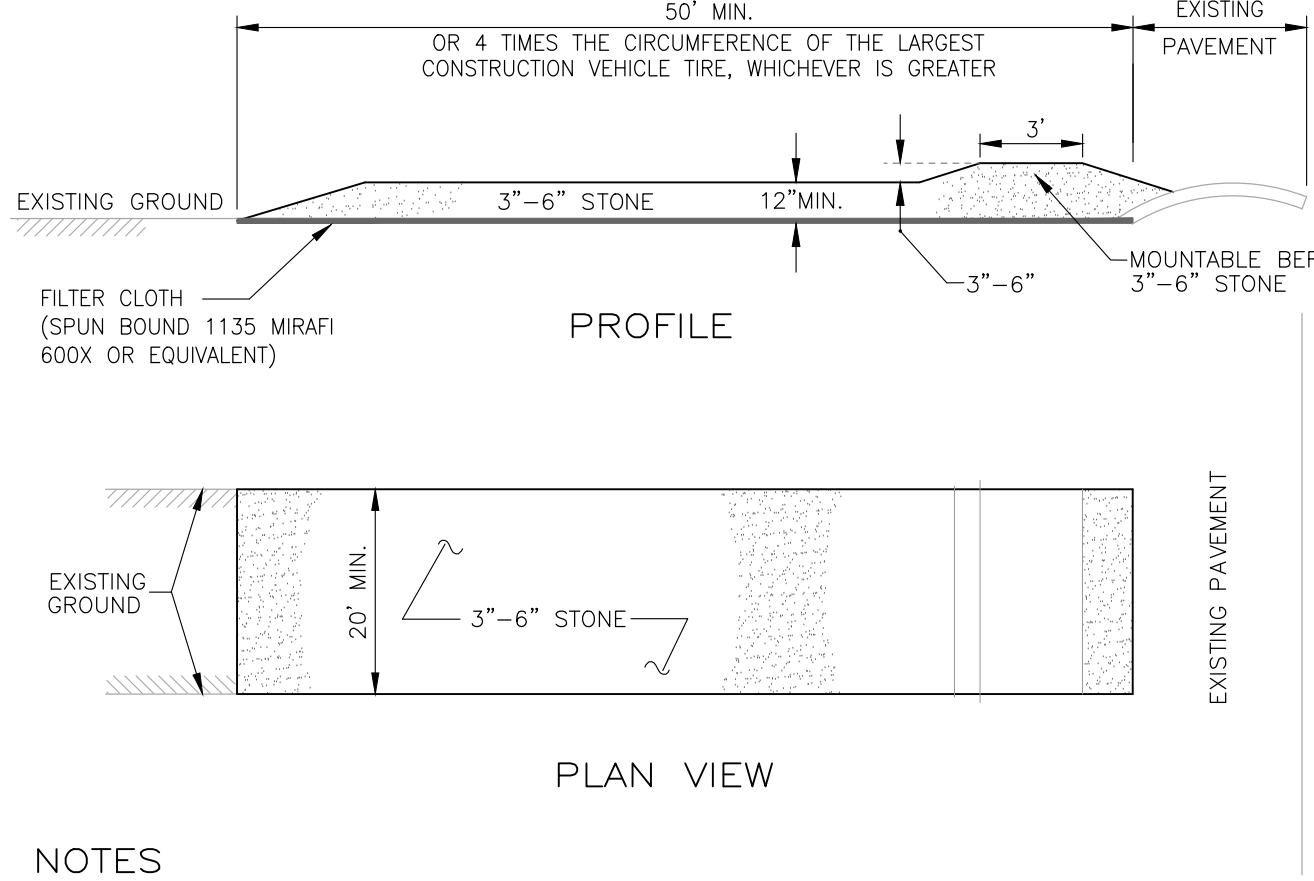
1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 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.



BOLLARD
NOT TO SCALE



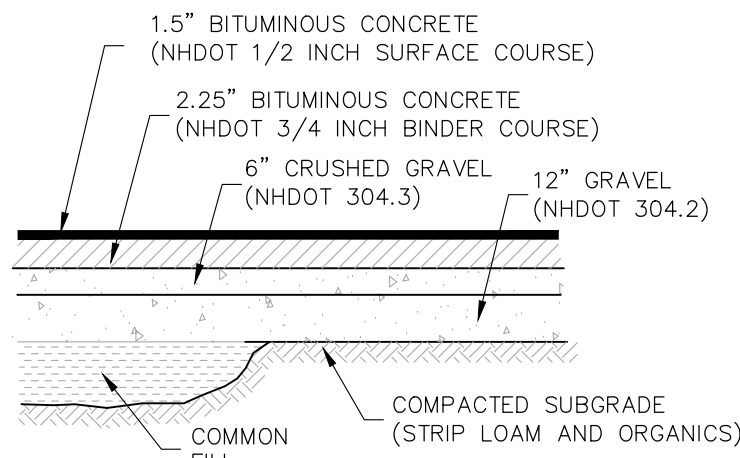
STONE DRIP EDGE
NOT TO SCALE



- NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
 2. NO SURFACE WATER SHALL BE DIRECTED TOWARD CONSTRUCTION ENTRANCES.
 3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
 4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
 5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

SEE PLAN FOR PROPOSED LOCATION
NOT TO SCALE

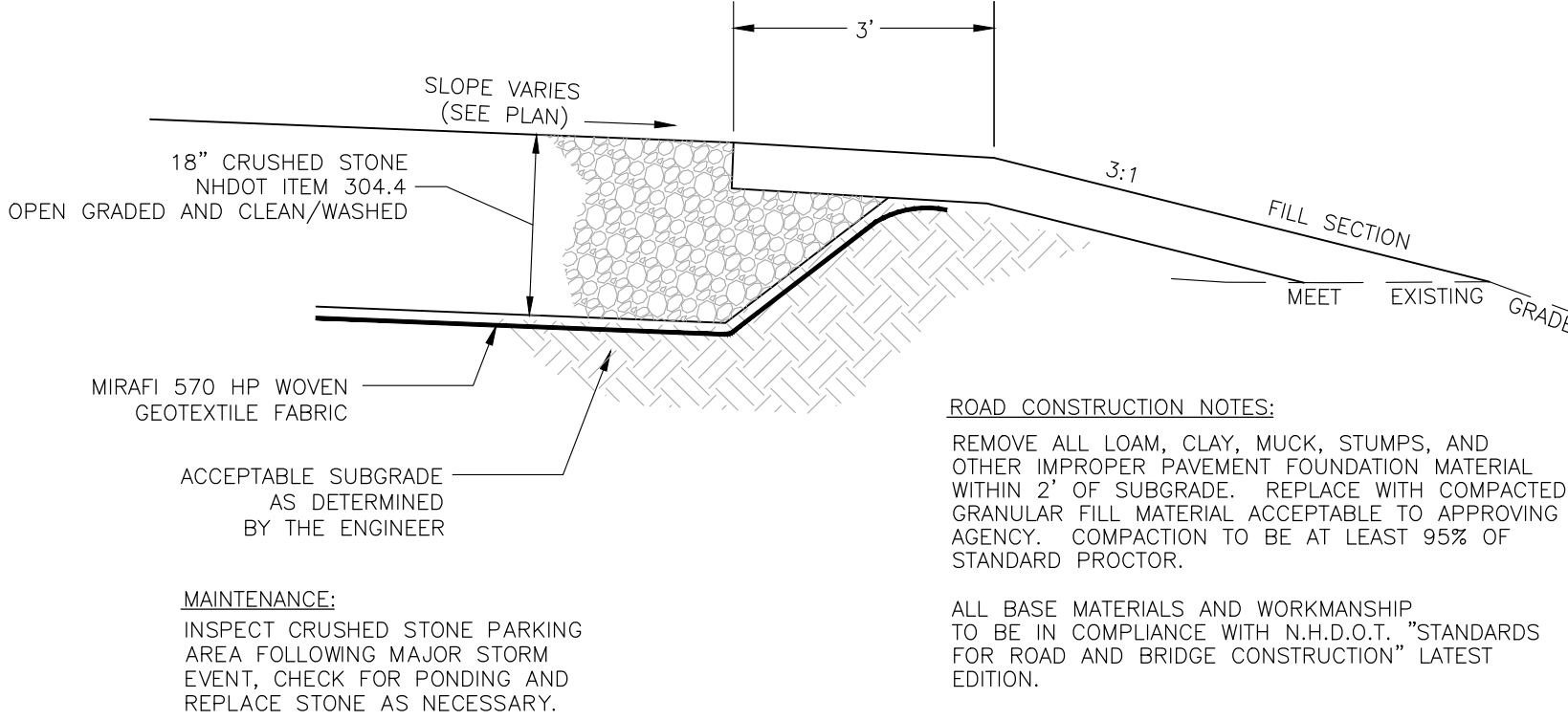


STANDARD DUTY PAVEMENT

- 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.

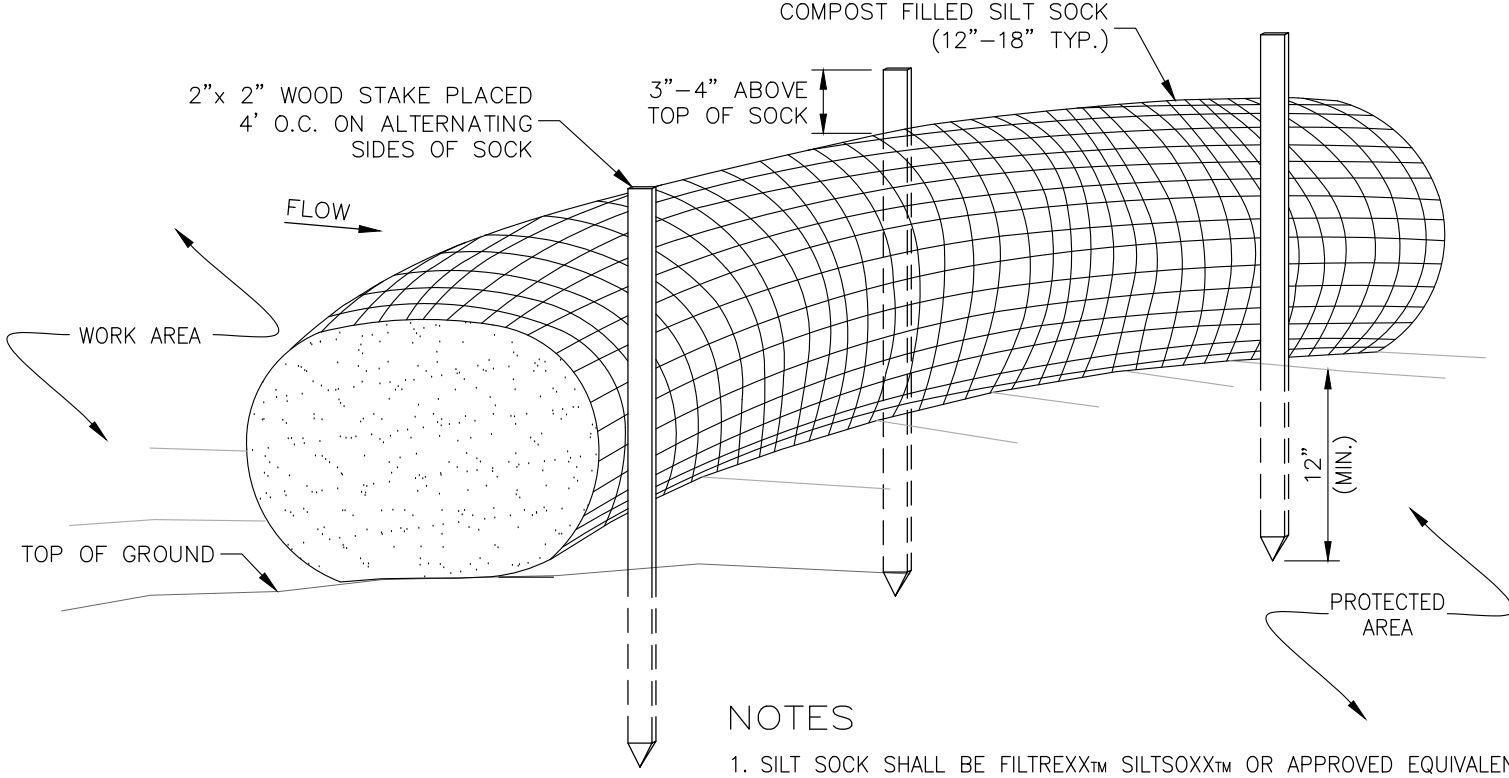
PAVEMENT SECTION

NOT TO SCALE



GRAVEL PARKING LOT SECTION

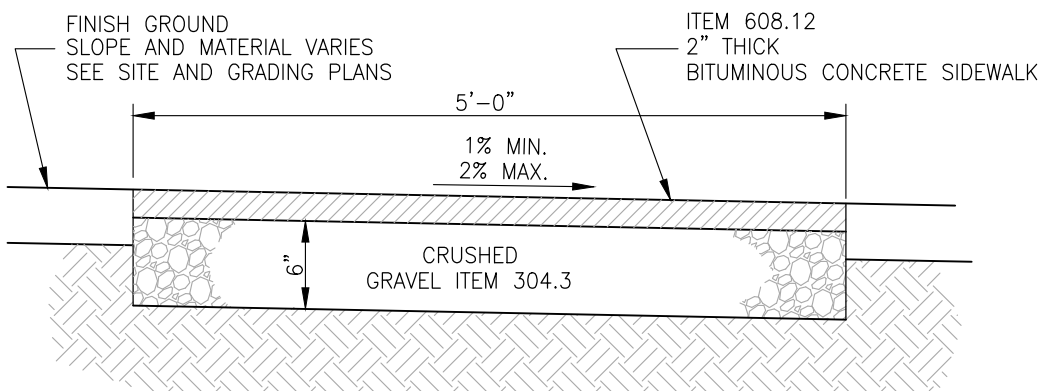
OPEN DRAINAGE SYSTEM
NOT TO SCALE



- NOTES
1. SILT SOCK SHALL BE FILTREXX™ SILT SOCK™ OR APPROVED EQUIVALENT.
 2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
 3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
 4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK

NOT TO SCALE



BITUMINOUS SIDEWALK

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 291 LOT 8

DETAILS

3201 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY/PREPARED FOR
3201 LAFAYETTE ROAD, LLC

JUNE 22, 2020

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



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

REV	DATE	DESCRIPTION	DR	CK
45407.33				



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:

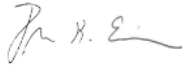
- Letter of Authorization
- Site Plan Check List
- Waiver Application
- Traffic Memorandum
- 1 Copy: 11"x17" Plan Set of the "Site Development Plans, 3201 Lafayette Road, LLC", 3201 Lafayette Road, Portsmouth, NH, Tax Map 291, Lot 8, Dated June 22, 2020, last revised June 22, 2020.
- 1 Copy: 22"x34" 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 16th, 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



City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Owner/Applicant: 3201 Lafayette Road, LLC Date Submitted: June 22, 2020

Phone Number: 603-231-3363 E-mail: glenn@salemnh.com

Site Address: 3201 Lafayette Road, Portsmouth, NH 03801 Map: 291 Lot: 8

Zoning District: Gateway Corridor (G1) Lot area: 262,281 sq. ft.

Application Requirements			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Fully executed and signed Application form. (2.5.2.3)	Submitted via Viewpoint	N/A
<input checked="" type="checkbox"/>	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF). (2.5.2.8)	Submitted via Viewpoint	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Statement that lists and describes "green" building components and systems. (2.5.3.1A)	N/A	
<input checked="" type="checkbox"/>	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. (2.5.3.1B)	Plan Sheet C-01	N/A
<input checked="" type="checkbox"/>	Tax map and lot number, and current zoning of all parcels under Site Plan Review. (2.5.3.1C)	Plan Sheet C-01	N/A
<input checked="" type="checkbox"/>	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. (2.5.3.1D)	Plan Sheet C-00 (Signature will be provided on final plans)	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. (2.5.3.1E)	Plan Sheet C-00	N/A
<input checked="" type="checkbox"/>	Names, addresses and telephone numbers of all professionals involved in the site plan design. (2.5.3.1F)	Plan Sheet C-00	N/A
<input checked="" type="checkbox"/>	List of reference plans. (2.5.3.1G)	Plan Sheet C-01	N/A
<input checked="" type="checkbox"/>	List of names and contact information of all public or private utilities servicing the site. (2.5.3.1H)	Plan Sheet C-02	N/A

Site Plan Specifications			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. (2.5.4.1A)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. (2.5.4.1B)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. (2.5.4.1C)	Plan Sheet C-01	N/A
<input checked="" type="checkbox"/>	Plans shall be drawn to scale. (2.5.4.1D)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Plans shall be prepared and stamped by a NH licensed civil engineer. (2.5.4.1D)	Stamp to be provided on final plans.	N/A
<input checked="" type="checkbox"/>	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. (2.5.4.1E)	Plan Sheet C-01	N/A
<input checked="" type="checkbox"/>	Title (name of development project), north point, scale, legend. (2.5.4.2A)	All sheets in plan.	N/A
<input checked="" type="checkbox"/>	Date plans first submitted, date and explanation of revisions. (2.5.4.2B)	Plan Sheet C-00	N/A
<input checked="" type="checkbox"/>	Individual plan sheet title that clearly describes the information that is displayed. (2.5.4.2C)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Source and date of data displayed on the plan. (2.5.4.2D)	Plan Sheet C-01	N/A

Site Plan Specifications			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." (2.5.4.2E)	Plan Sheet C-02 (General Note #18)	N/A
<input checked="" type="checkbox"/>	Plan sheets submitted for recording shall include the following notes: <ul style="list-style-type: none"> a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "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 changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." (2.13.3)	Plan Sheet C-02 (General Notes #3 & #17)	N/A
<input checked="" type="checkbox"/>	Plan sheets showing landscaping and screening shall also include the following additional notes: <ul style="list-style-type: none"> a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "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." c. "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." (2.13.4)	Plan Sheet C-07 (Notes #11-#13)	N/A

Site Plan Specifications – Required Exhibits and Data			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
	1. Existing Conditions: (2.5.4.3A)		
<input checked="" type="checkbox"/>	a. Surveyed plan of site showing existing natural and built features;	Sheet C-01	
<input checked="" type="checkbox"/>	b. Zoning boundaries;	Sheet C-01	
<input checked="" type="checkbox"/>	c. Dimensional Regulations;	Sheet C-01	
<input checked="" type="checkbox"/>	d. Wetland delineation, wetland function and value assessment;	Sheet C-01	
<input checked="" type="checkbox"/>	e. SFHA, 100-year flood elevation line and BFE data.	Sheet C-01	
	2. Buildings and Structures: (2.5.4.3B)		
<input checked="" type="checkbox"/>	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	Sheet C-04	
<input type="checkbox"/>	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;		Yes
<input checked="" type="checkbox"/>	c. Total Floor Area;	Sheet C-04	
<input checked="" type="checkbox"/>	d. Number of Usable Floors;	Sheet C-04	
<input checked="" type="checkbox"/>	e. Gross floor area by floor and use.	Sheet C-04	
	3. Access and Circulation: (2.5.4.3C)		
<input checked="" type="checkbox"/>	a. Location/width of access ways within site;	Sheet C-01	
<input checked="" type="checkbox"/>	b. Location of curbing, right of ways, edge of pavement and sidewalks;	Sheet C-01	
<input checked="" type="checkbox"/>	c. Location, type, size and design of traffic signing (pavement markings);	Sheet C-01	
<input checked="" type="checkbox"/>	d. Names/layout of existing abutting streets;	Sheet C-01	
<input checked="" type="checkbox"/>	e. Driveway curb cuts for abutting prop. and public roads;	Sheet C-01	
<input type="checkbox"/>	f. If subdivision; Names of all roads, right of way lines and easements noted;	N/A	
<input checked="" type="checkbox"/>	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	Sheet C-10	
	4. Parking and Loading: (2.5.4.3D)		
<input checked="" type="checkbox"/>	a. Location of off street parking/loading areas, landscaped areas/buffers;	Sheet C-04 & C-07	
<input checked="" type="checkbox"/>	b. Parking Calculations (# required and the # provided).	Sheet C-04	
	5. Water Infrastructure: (2.5.4.3E)		
<input checked="" type="checkbox"/>	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	Sheet C-01 & C-06	
<input type="checkbox"/>	b. Location of wells and monitoring wells (include protective radii).	N/A	
	6. Sewer Infrastructure: (2.5.4.3F)		
<input checked="" type="checkbox"/>	a. Size, type and location of sanitary sewage facilities & Engineering data.	Sheet C-01 & C-06	
	7. Utilities: (2.5.4.3G)		
<input checked="" type="checkbox"/>	a. The size, type and location of all above & below ground utilities;	Sheet C-01 & C-06	
<input checked="" type="checkbox"/>	b. Size type and location of generator pads, transformers and other fixtures.	Sheet C-01 & C-06	

Site Plan Specifications – Required Exhibits and Data			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	8. Solid Waste Facilities: (2.5.4.3H)		
<input type="checkbox"/>	a. The size, type and location of solid waste facilities.	N/A	
	9. Storm water Management: (2.5.4.3I)		
<input type="checkbox"/>	a. The location, elevation and layout of all storm-water drainage.	N/A	
	10. Outdoor Lighting: (2.5.4.3J)		
<input type="checkbox"/>	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and; b. photometric plan.		Yes
<input type="checkbox"/>	11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)	N/A	
	12. Landscaping: (2.5.4.3K)		
<input checked="" type="checkbox"/>	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	Sheet C-01 & C-07	
<input type="checkbox"/>	b. Location of any irrigation system and water source.	N/A	
	13. Contours and Elevation: (2.5.4.3L)		
<input checked="" type="checkbox"/>	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	Sheet C-05	
	14. Open Space: (2.5.4.3M)		
<input type="checkbox"/>	a. Type, extent and location of all existing/proposed open space.	N/A	
<input checked="" type="checkbox"/>	15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)	Sheet C-01	
<input checked="" type="checkbox"/>	16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)	Sheet C-04	
<input type="checkbox"/>	17. Character/Civic District (All following information shall be included): (2.5.4.3Q)	N/A	
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);		
	b. Applicable Special Requirements (10.5A21.30);		
	c. Proposed building form/type (10.5A43);		
	d. Proposed community space (10.5A46).		

Other Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. (Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application) (3.2.1-2)	Submitted on Viewpoint and to Planning Dept.	
<input type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)	N/A	
<input type="checkbox"/>	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. (7.3.1)	N/A	
<input checked="" type="checkbox"/>	Indicate where measures to minimize impervious surfaces have been implemented. (7.4.3)	Sheet C-04	
<input checked="" type="checkbox"/>	Calculation of the maximum effective impervious surface as a percentage of the site. (7.4.3.2)	Sheet C-04	
<input checked="" type="checkbox"/>	Stormwater Management and Erosion Control Plan. (Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application) (7.4.4.1)	Submitted on Viewpoint and to Planning Dept.	

Final Site Plan Approval Required Information - N/A (Not a Final Site Plan Submittal)			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	All local approvals, permits, easements and licenses required, including but not limited to: <ul style="list-style-type: none"> a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. (2.5.3.2A)		
<input type="checkbox"/>	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: <ul style="list-style-type: none"> a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. (2.5.3.2B)		

Final Site Plan Approval Required Information

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. (2.5.3.2D)		
<input type="checkbox"/>	A list of any required state and federal permit applications required for the project and the status of same. (2.5.3.2E)		

Applicant's Signature: _____



Date: _____

6/22/20

(TFMoran, Inc. - 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.

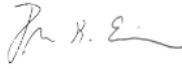
Waiver Request for Site Plan Review Regulations Section 2.5.4.3B: Elevations of building(s) indicating their height, massing, placement, materials, lighting and façade treatments.

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



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 (10th 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
Proposed 1,664 sf Building (Sales Office)			
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")

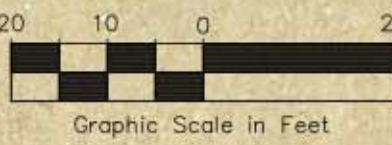
FEBRUARY 28, 2020



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REV.	DATE	DESCRIPTION	DR	CK



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Proposed Model Home



Proposed Model Home



Proposed Model Home



Proposed Model Home



Proposed Model Home



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:



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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

- 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).

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.

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	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
References	16

How Soil Surveys Are Made

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

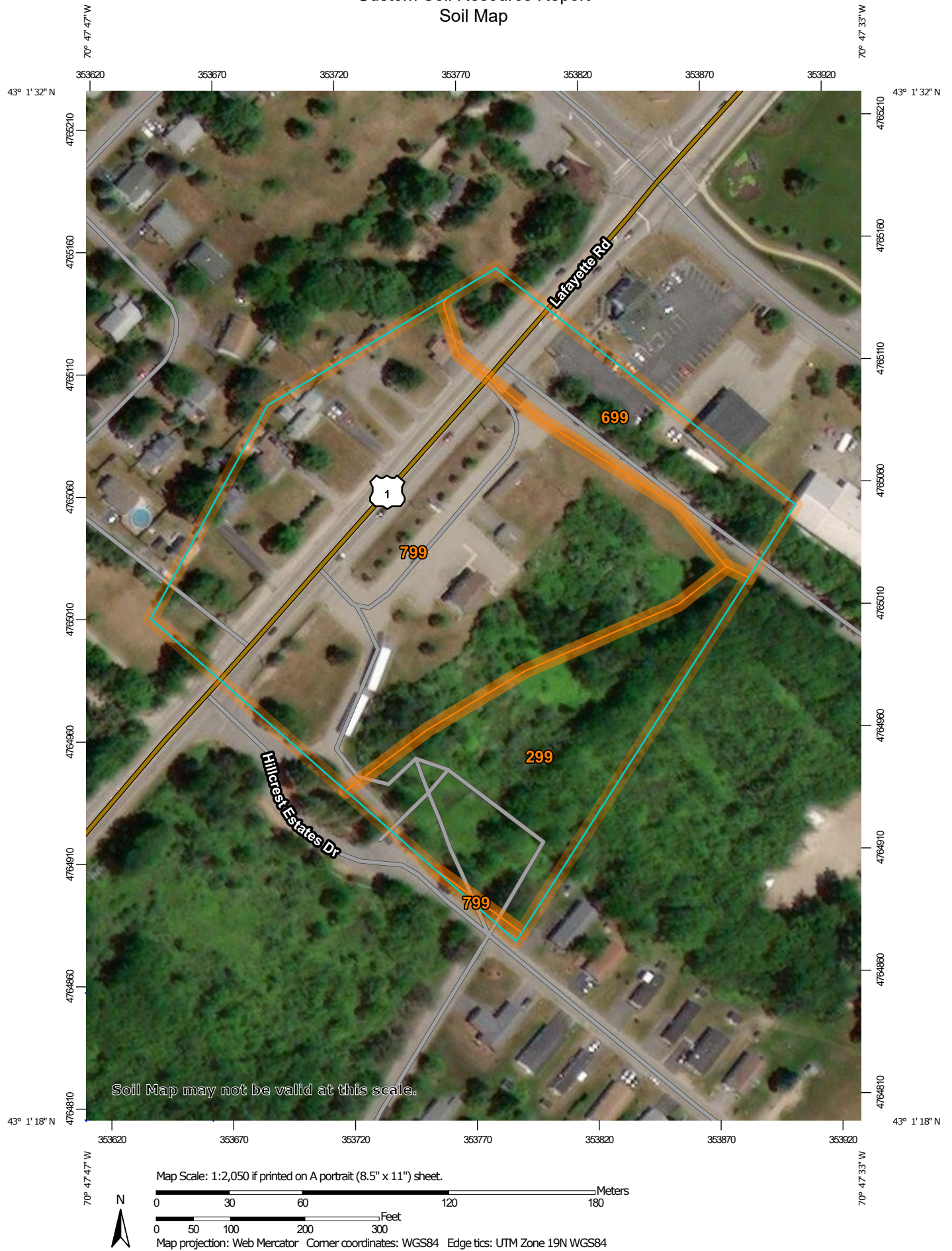
Custom Soil Resource Report

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

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%
Totals for Area of Interest		9.8	100.0%

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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United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.796 degrees West
Latitude	43.024 degrees North
Elevation	0 feet
Date/Time	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	
1yr	0.26	0.40	0.50	0.66	0.82	1.04	1yr	0.71	0.98	1.22	1.57	2.05	2.69	2.96	1yr	2.38	2.84	3.26	3.98	4.61	1yr
2yr	0.32	0.50	0.62	0.82	1.03	1.30	2yr	0.89	1.19	1.52	1.95	2.51	3.25	3.61	2yr	2.87	3.47	3.98	4.73	5.38	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.61	5yr	1.08	1.47	1.90	2.45	3.17	4.12	4.64	5yr	3.64	4.46	5.11	6.01	6.78	5yr
10yr	0.41	0.65	0.82	1.12	1.46	1.90	10yr	1.26	1.73	2.25	2.92	3.79	4.93	5.60	10yr	4.36	5.39	6.17	7.20	8.08	10yr
25yr	0.48	0.77	0.98	1.35	1.79	2.36	25yr	1.54	2.16	2.80	3.67	4.79	6.25	7.20	25yr	5.54	6.92	7.93	9.16	10.19	25yr
50yr	0.54	0.87	1.11	1.55	2.09	2.78	50yr	1.80	2.54	3.32	4.37	5.73	7.49	8.70	50yr	6.63	8.37	9.59	10.99	12.14	50yr
100yr	0.60	0.98	1.26	1.79	2.44	3.29	100yr	2.11	3.00	3.95	5.22	6.86	8.98	10.53	100yr	7.95	10.12	11.60	13.19	14.48	100yr
200yr	0.68	1.11	1.44	2.07	2.86	3.88	200yr	2.47	3.55	4.67	6.21	8.19	10.77	12.74	200yr	9.53	12.25	14.04	15.83	17.28	200yr
500yr	0.81	1.33	1.74	2.52	3.52	4.83	500yr	3.04	4.42	5.84	7.81	10.37	13.70	16.39	500yr	12.12	15.76	18.07	20.17	21.84	500yr

Lower Confidence Limits

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

Upper Confidence Limits

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

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"

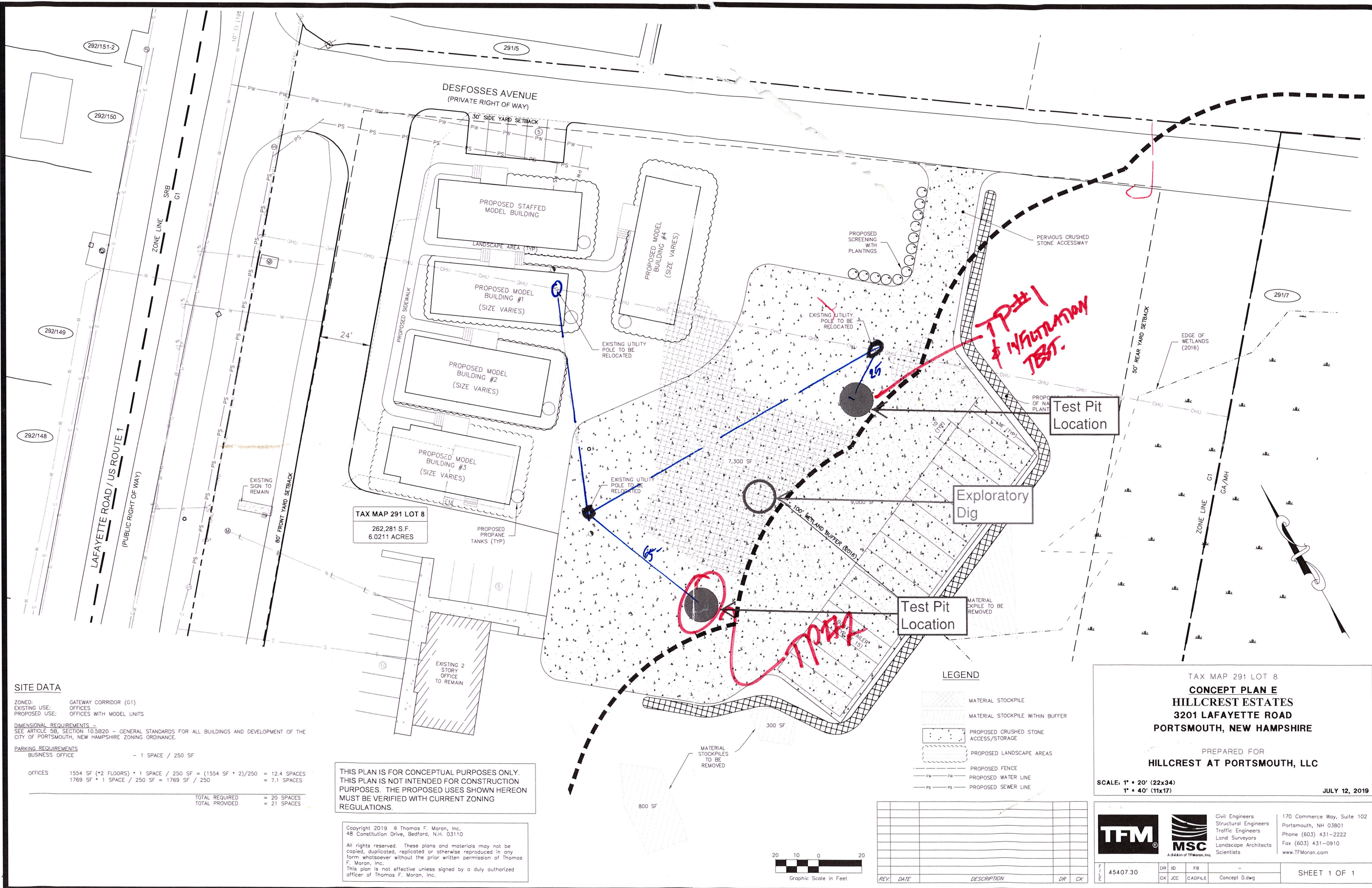


Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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: Test Pit #1							
SETUP CALCULATIONS		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)
Sample Set 1 Coefficient A = 0.001056							
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		29.9376	11.7865
				Stand Dev		2.9752	1.1713
Sample Set 2 Coefficient A = 0.001056							
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		33.8184	13.3143
				Stand Dev		6.2231	2.4500
Sample Set 3 Coefficient A = 0.001056							
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		23.2848	9.1672
				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

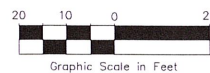
TOTAL REQUIRED = 20 SPACES
TOTAL PROVIDED = 21 SPACES

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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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

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

MSC
A Division of TFMoran, Inc.

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
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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: Test Pit #3							
SETUP CALCULATIONS		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)							



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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: Test Pit #4							
SETUP CALCULATIONS		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, 03944 RCRD BK.2738 PG.818
292/150	CHRIS G. & LISA ALEXANDROPOULOS 3168 LAFAYETTE ROAD PORTSMOUTH, NH 03801 RCRD BK.4175 PG.1209
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.2863
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 55 CARDINAL LANE PORTSMOUTH, NH 03801 RCRD BK.5791 PG.0929
292/247	KAREN E. KAPOEN REVOCABLE TRUST OF 1995 1537B OYSTER CATCHER POINT NAPLES, FL 34105 RCRD BK.3569 PG.2269

A horizontal scale bar divided into four equal segments. Above the bar, the numbers 40, 20, 0, and 4 are marked from left to right. The first segment (40 to 20) is black, the second (20 to 0) is white, the third (0 to 4) is black, and the fourth (4 to the right) is white. 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 AND LOT 18.
3. THE PARCEL IS LOCATED IN FLOOD ZONE X AS SHOWN ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP 270 OF 681, MAP NUMBER 3301SC0270E, EFFECTIVE DATE MAY 17, 2005.
4. 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 SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTHERN 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**

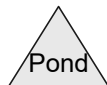
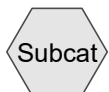
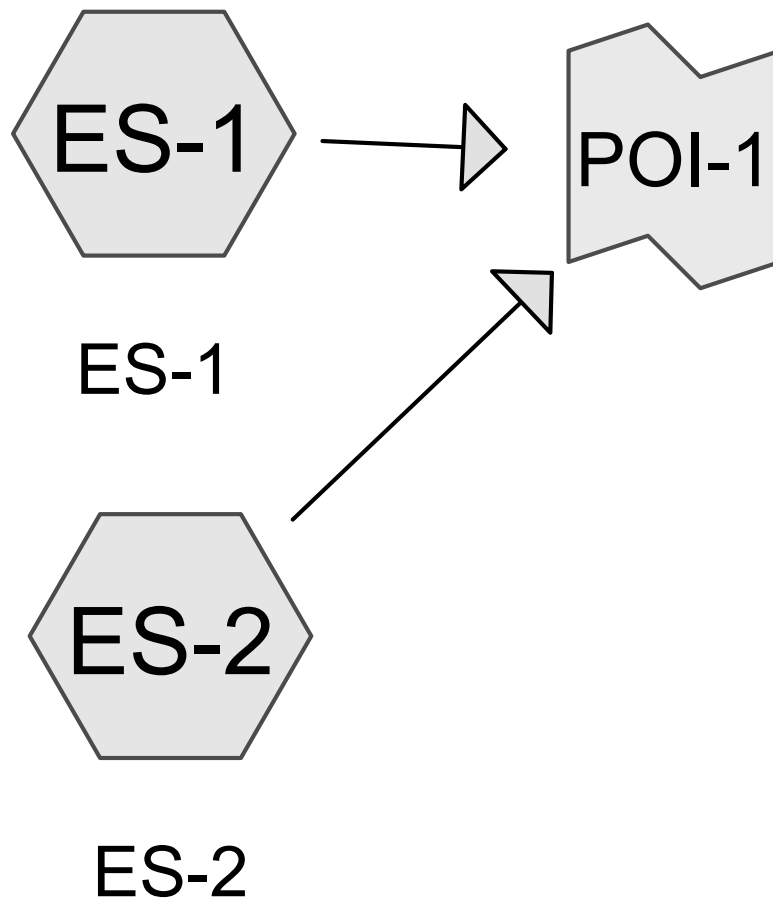
JUNE 2, 2020



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

C-01

Total Area =
159,386-S.F.



Routing Diagram for 45407-33 - Pre

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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)
159,386	49	TOTAL AREA

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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	
159,386		TOTAL AREA

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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
159,386	0	0	0	0	159,386	TOTAL AREA

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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		Shallow Concentrated Flow, 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		Shallow Concentrated Flow, 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		Shallow Concentrated Flow, 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		Shallow Concentrated Flow, 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

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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> 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		Shallow Concentrated Flow, 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> 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		Shallow Concentrated Flow, 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		Shallow Concentrated Flow, 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.2	16	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	245	0.0212	0.73		Shallow Concentrated Flow, 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
1.8	109	0.0210	1.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.8	139	0.0280	0.84		Shallow Concentrated Flow, 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"

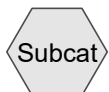
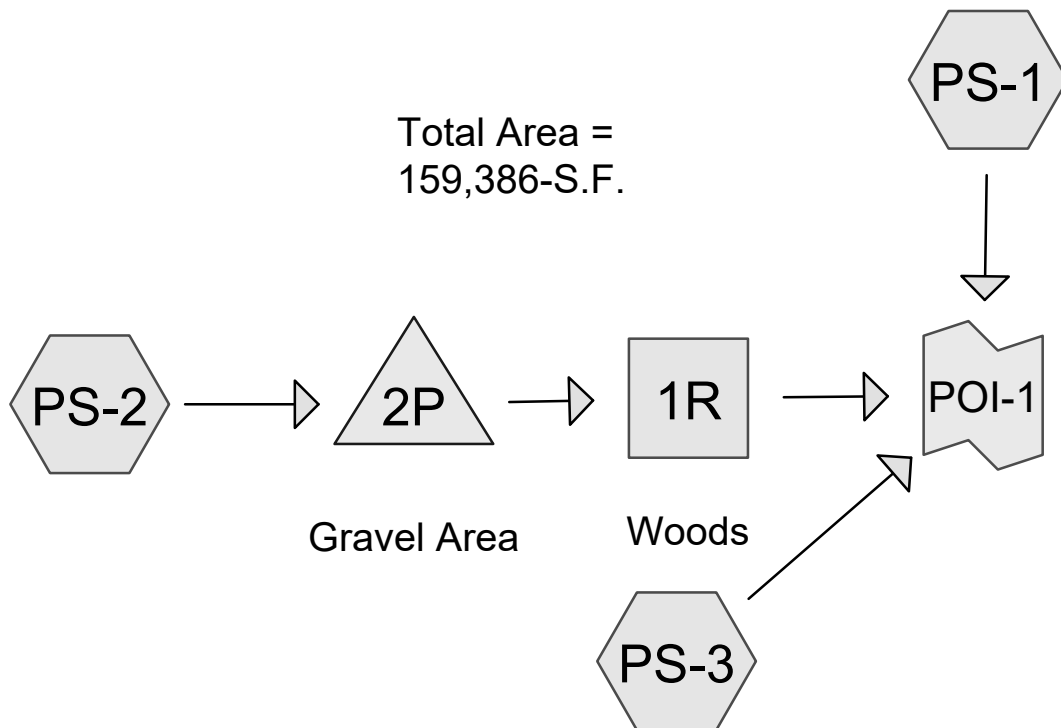
Area (sf)	CN	Description
51,546	30	Woods, Good, HSG A
23,642	39	>75% Grass cover, Good, HSG A
26,806	98	Paved parking, HSG A
1,841	98	Roofs, HSG A
103,835	51	Weighted Average
75,188		72.41% Pervious Area
28,647		27.59% Impervious Area

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

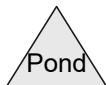
Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat



Reach



Pond



Link

Routing Diagram for 45407-33 - Post

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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)
159,386	61	TOTAL AREA

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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	
159,386		TOTAL AREA

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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
159,386	0	0	0	0	159,386	TOTAL AREA

45407-33 - Post

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		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		Shallow Concentrated Flow,
					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> 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

45407-33 - Post

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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		Shallow Concentrated Flow, 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		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		Shallow Concentrated Flow, 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

45407-33 - Post

Type II 24-hr 0.5" Rainfall=0.50"

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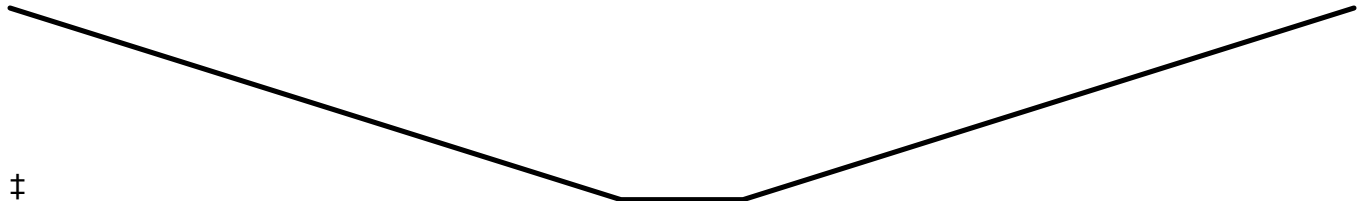
Page 7

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	Gravel Area (Prismatic) 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'	4.580 in/hr Exfiltration over Surface area
#2	Primary	53.00'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir
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

45407-33 - Post

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> 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		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		Shallow Concentrated Flow,
					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> 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

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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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		Shallow Concentrated Flow, 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		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		Shallow Concentrated Flow, 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

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

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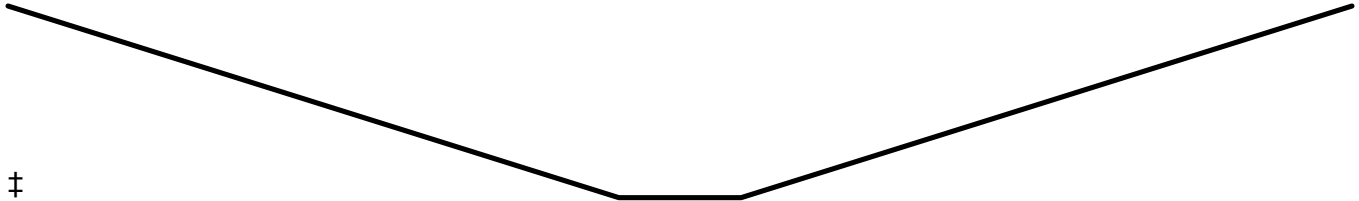
Page 11

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	Gravel Area (Prismatic) 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'	4.580 in/hr Exfiltration over Surface area
#2	Primary	53.00'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir
			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> 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		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		Shallow Concentrated Flow,
					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> 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

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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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		Shallow Concentrated Flow, 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> 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		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		Shallow Concentrated Flow, 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

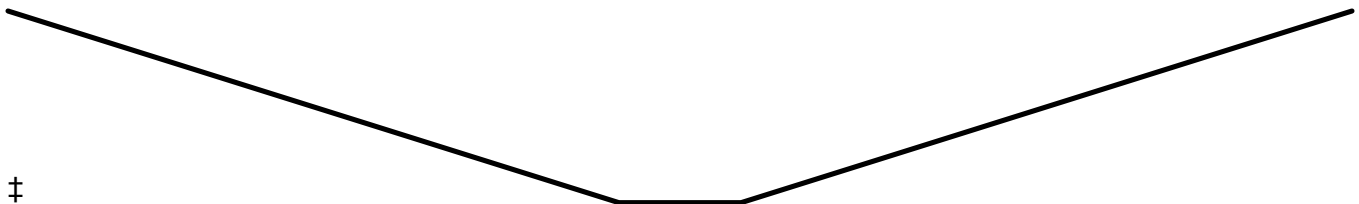
Type II 24-hr 10-yr Rainfall=4.93"

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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	Gravel Area (Prismatic) 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'	4.580 in/hr Exfiltration over Surface area
#2	Primary	53.00'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir
			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

↑ **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 > 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

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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> 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		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		Shallow Concentrated Flow,
					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> 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

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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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		Shallow Concentrated Flow, 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> 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		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		Shallow Concentrated Flow, 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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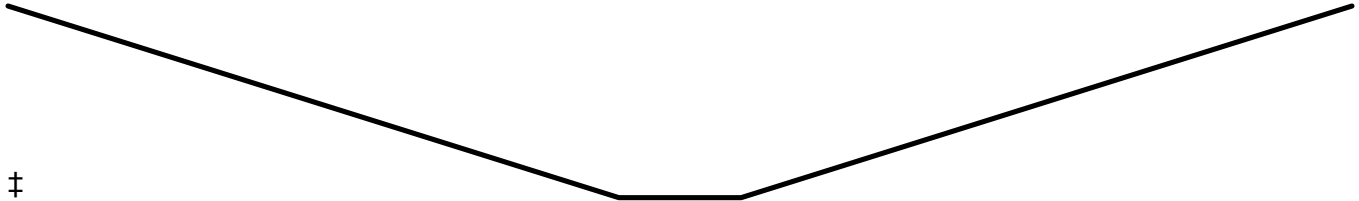
Page 19

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	Gravel Area (Prismatic) 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'	4.580 in/hr Exfiltration over Surface area
#2	Primary	53.00'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir
			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 > 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> 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		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.25"
0.2	12	0.0350	0.94		Shallow Concentrated Flow, 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> 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		Sheet Flow, Grass: Short n= 0.150 P2= 3.25"
0.8	58	0.0200	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.25"
1.0	130	0.0120	2.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	49	0.0510	4.58		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	8	0.0500	1.57		Shallow Concentrated Flow, 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> 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		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.25"
3.3	120	0.0150	0.61		Shallow Concentrated Flow, 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

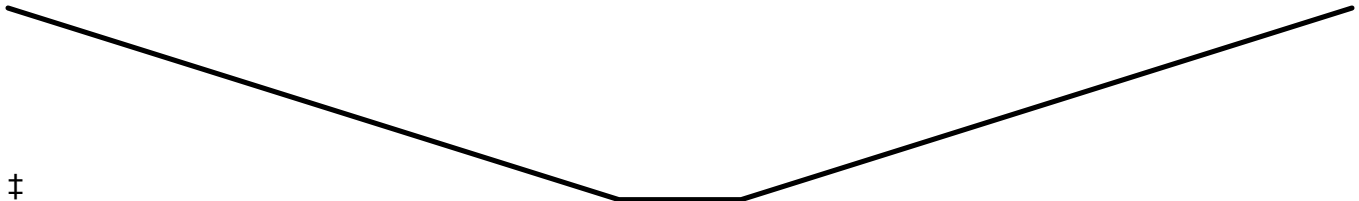
Type II 24-hr 50-yr Rainfall=7.49"

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Page 23

Side Slope Z-value= 100.00' 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

Primary 010 010 010 0100 010, Volume 010

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	Gravel Area (Prismatic) 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'	4.580 in/hr Exfiltration over Surface area
#2	Primary	53.00'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir
			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

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

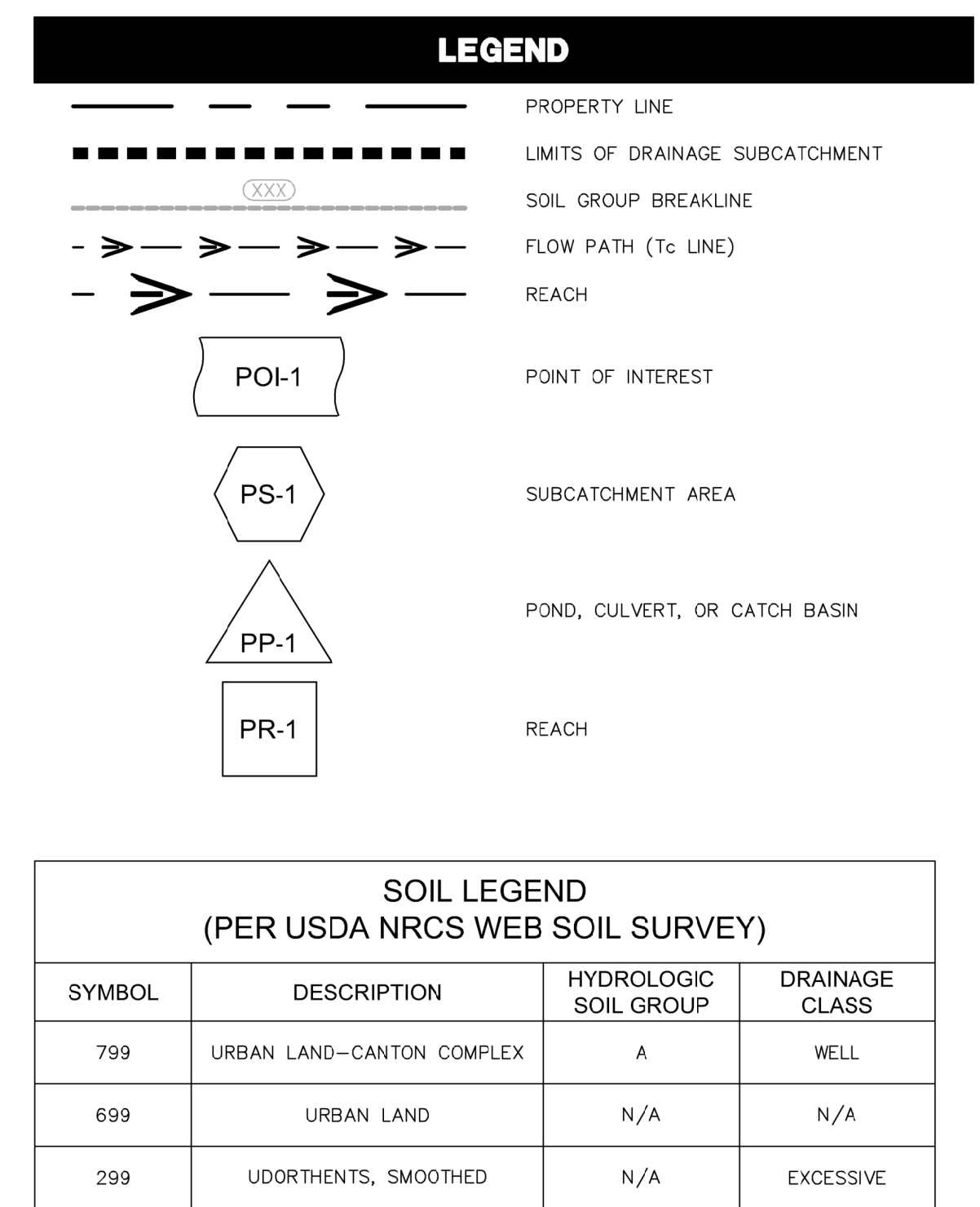
Summary for Link POI-1:

Inflow Area = 159,386 sf, 28.49% Impervious, Inflow Depth > 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



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**

FILE#	45407.33	DR	DKE	FB	—	45407-33 — DRAINAGE	D-02
		CK	CRR	CADFILE			