StoneHill
Environmental, Inc.

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Project Summary

Supplemental Site Investigation and Remedial Action Plan
Former Dagostino Rose Farm, Exeter, NH
NHDES Site #201203003

Background

The Former Dagostino Rose Farm (Site) is approximately 41 acres and was operated until the 1990s as a commercial greenhouse operation growing roses. The Site consisted of three large greenhouses, a rose packing building, a boiler building, and several additional smaller buildings (See attached Figure 1 – Site Location Map). Decades earlier a brick manufacturing business reportedly operated on the Site. The historical uses of the Site resulted in the release of lead to soils within the former greenhouse area; deposition of soil containing coal ash and solid waste behind the former boiler and packing buildings (BPB Area); and the accumulation of lead-impacted soil and/or sediments in the large man-made basin on the property (Basin #4), as well as several other smaller basins (See attached Site Plan). The source of the lead contamination is believed to be the result of lead-based paint and window glazing used in the construction of the greenhouses which were likely scattered throughout the former greenhouse area during demolition in the 1990s. Lead impacted soils carried in stormwater runoff likely also accumulated in Basin #4 and the smaller man-made basins within the Former Greenhouse Area. Excess water from the greenhouse operations also likely drained through troughs within the former greenhouses via pipes leading to Basin #4. The overflow from Basin #4 drains through a concrete pipe which runs westerly under Oak Street Extension to a small shallow wetland depression (Wetland H). Sediment samples collected from Basin #4 and Wetland H revealed lead at a concentration above which benthic invertebrates may be adversely impacted, however, below the NH Department of Environmental Services (NHDES) Soil Remediation Standard (SRS) of 400 milligrams per kilogram (mg/kg) established for lead. The soil containing ash located along the embankment behind the BPB Area may contains poly-aromatic hydrocarbons (PAHs), possibly associated with the ash, and was likely disposed on the embankment during the former brickyard and possibly the rose farm operations. The areas of fill and lead impacted soils were first identified during site investigations (SI) conducted by Credere Associates, LLC, between 2012 and 2016 on behalf of the Rockingham Planning Commission. These studies determined that the contamination was limited to soils and on-site groundwater had not been impacted by the historic land uses.

Supplemental Site Investigation

StoneHill Environmental, Inc., (StoneHill) of Portsmouth, NH was retained in 2016 by Exeter Rose Farm, LLC to complete additional site investigation activities to fill data gaps and develop a Remedial Action Plan (RAP) for submittal to the NHDES. During the the summer and fall of 2017, StoneHill completed supplemental SI field tasks including:

- Collecting additional soil samples in the Former Greenhouse Area to determine the extent and degree of lead contamination.
- Completing test pits in the BPB Area to further delineate the soil containing solid wastes and ash.

Former Greenhouse Area

Remnants of concrete slabs/foundations, metal window frames, wood, and broken glass are partially buried throughout the footprints of each of the three former greenhouses to a depth up to two feet below which native silt and clay is present. Several concrete drainage troughs exist throughout the Former Greenhouse Area appear to have carried drainage from the greenhouses to Basin #4.

StoneHill collected over one hundred soil samples in and around the Former Greenhouse Area from the ground surface to two feet below grade. The field measurements of lead in soil and confirmatory laboratory analyses confirmed lead impacts above the SRS to depths typically less than two feet below the ground surface. The findings also indicate that the elevated lead concentrations in soils are limited laterally to within approximately five feet of the footprint of the Former Greenhouse Area.

Former Boiler and Packing Buildings Area

An area of mixed soil and coal ash, as well as solid waste debris, is located along the embankment in the BPB Area and covers an area approximately 550 feet by 150 feet. The area contains concrete, household appliances, asphalt, bricks, glass, some soil mixed with ash, and other debris that varies in depth between three to thirteen feet. StoneHill completed test pits in the BPB Area to further delineate the soil containing coal ash and solid waste fill. A detailed review of available information from previously completed test pit and soil boring data in conjunction with the recent test pit data indicates that coal ash mixed with sand, silt, clay, and gravel was used to fill and expand the embankment on which the boiler and packing buildings were constructed. This fill includes areas of solid wastes, metal, concrete, brick, plastics, and household wastes (appliances, furniture, etc.) which have been primarily discarded on the ground surface.

Remedial Action Plan

StoneHill has prepared a site specific Remedial Action Plan (RAP) which includes the Supplemental SI findings. The objective of the RAP is to remove lead impacted soils exceeding the SRS in the Former Greenhouse Area, and to remove solid wastes/debris from the BPB Area and cap the area to eliminate potential direct contact to the remaining soil containing ash. The RAP is being submitted to NHDES for review and approval, and includes the following actions:

1. Soil exceeding the lead SRS in the Former Greenhouse Area will be excavated and transported of site for disposal or treatment at a facility licensed to receive lead impacted soils. It is estimated that approximately 5500 to 7500 cubic yards of lead impacted soil will be excavated for off-site disposal. Post excavation soil samples will be analyzed from throughout the Former Greenhouse Area to document the removal of lead impacted soils exceeding the SRS.

2. Solid wastes and debris will be removed from the BPB Area and properly disposed of appropriately. An estimated 1,100 cubic yards of soil containing debris and/or coal ash will be excavated, the obvious debris will be removed, and the soil consolidated in the BPB area. As part of this process, the embankment will be regraded, and covered with a minimum two feet of clean soil and seeded, or with a combination of soil and 4-inch stone rip-rap. The soil fill which currently impacts jurisdictional wetlands will be removed and the wetlands restored. During the remedial activities the quality of the soil containing ash will be reassessed to determine if the soil fill exceeds any SRS for ash related contaminants and whether an Activity and Use Restriction (AUR) is necessary to ensure the maintenance of the earthen cover over the consolidated area.

3. Lead impacted sediments within Basin #4, as well as in several smaller man-made basins, will be removed to achieve concentrations below which a risk is posed to benthic organisms. Sediments removed from basins found to contain total lead exceeding the SRS will be properly disposed at an off-site treatment or disposal facility. Upon completion of the sediment removal, post excavation samples will be collected and analyzed. Finally, the banks of Basin 4 will be graded and revegetated.

It is anticipated that remedial activities will take place during the Spring/Summer of 2018.

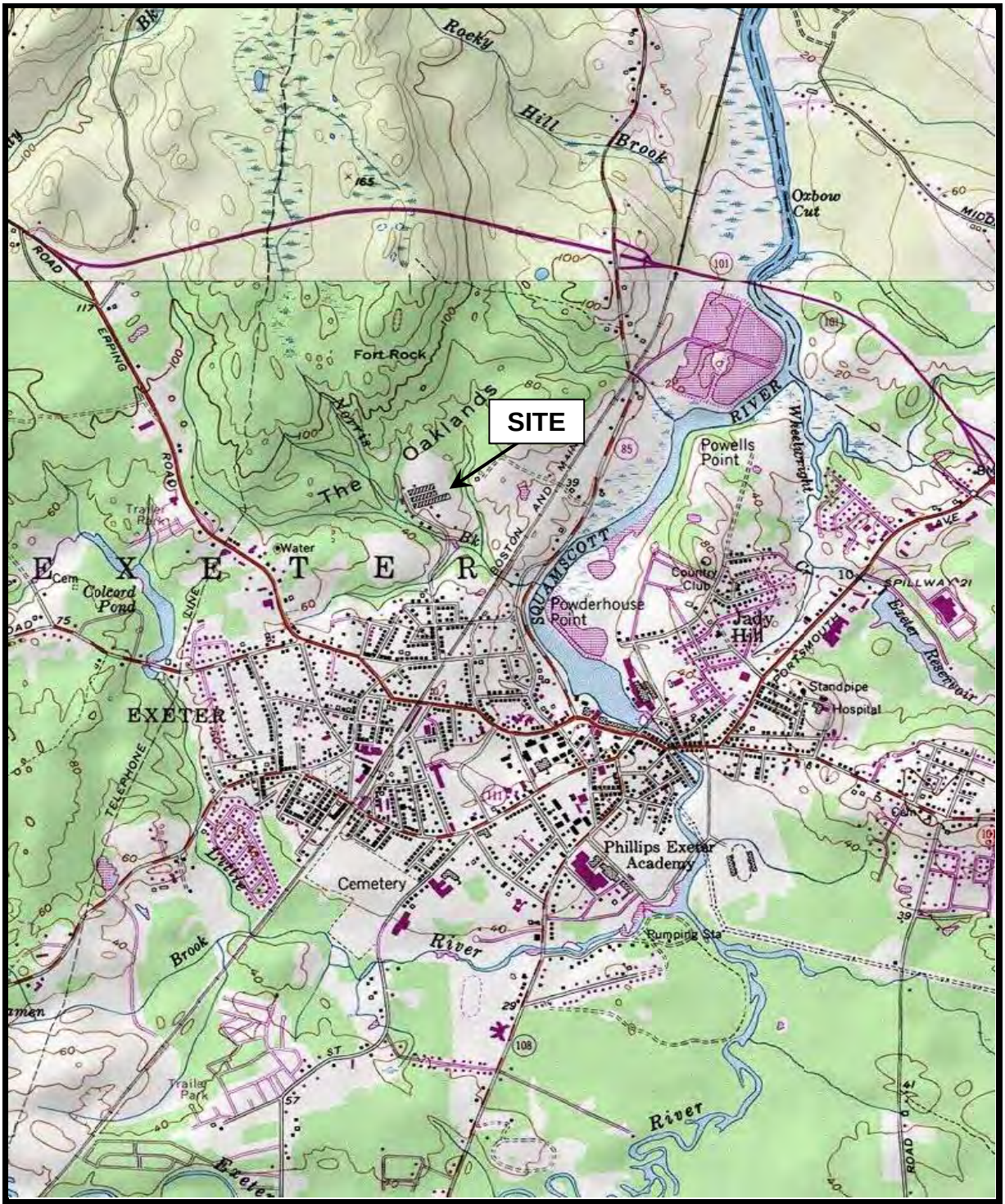


FIGURE 1

SITE LOCATION MAP

0 2000 4000

approximate scale in feet

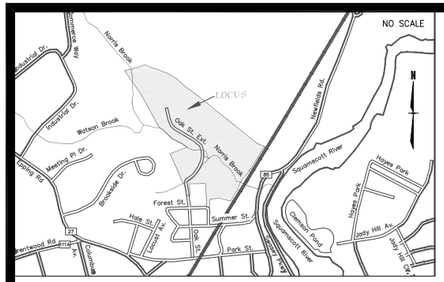
Contour Interval 10 feet

Map Source:
USGS 7.5 Minute
Topographic Quadrangle
Exeter, NH

N

Dagostino Rose Farm
Oak Street Extension
Exeter, NH

Prepared by:
StoneHill Environmental, Inc.
Project No. 15046



VICINITY PLAN

"HENDERSON-SWASEY TOWN FOREST"
TAX MAP 49 LOT 8
N/F
TOWN OF EXETER
HENDERSON-SWASEY FOREST
10 FRONT STREET
EXETER, NH 03833
RCRD BK.2056 PG.64
(municipal)

TAX MAP 53 LOT 4
N/F
JOHN P. & TERESA TOOMEY
2 NEWFIELDS ROAD
EXETER, NH 03833
RCRD BK.5516 PG.135

"FORMER GREENHOUSE AREA"
BASIN #1
BASIN #2
BASIN #3
BASIN #4
GH AREA #1
GH AREA #2
GH AREA #3
15" CAY DRAINPIPE
TAX MAP 54 LOT 6
TAX MAP 54 LOT 5
TAX MAP 54 LOT 5
TAX MAP 54 LOT 7
MOBILE HOME
HOUSE
GARAGE
DRIVEWAY
PUMP HOUSE
SHED
INTERMITTENT STREAM
WELL & PRESSURE TANK
INLET 12" RCP
OUTLET 12" RCP
OUTLET 12" RCP'S
"FORMER BOILER & PACKING BUILDINGS AREA"
APPROX. FORMER LOCATION OF BOILER BUILDING
FORMER PACKING BUILDING
APPROX. TRAIL LOCATION
MM RETENTION POND
2 - 18" CMP'S
WETLAND "G"
WETLAND "H"
WETLAND "B"
NORRIS BROOK
APPROX. EXTENT OF SOLID WASTE
GRANITE HEADWALL WITH BOX CULVERT
CONCRETE RETENTION BARRIER
PERENNIAL STREAM
OAK STREET EXTENSION

TAX MAP 48 LOT 5
N/F
EAST COAST VENTURES INC.
C/O INTERGRATED REALTY RESOURCES
8025 S. WILLOW STREET, SUITE 209
MANCHESTER, NH 01862-1681
RCRD BK.5613 PG.2678
(Industrial)

EXISTING GAS LINE EASEMENT

TAX MAP 54 LOT 1
N/F
SIGARMS INC.
18 INDUSTRIAL DRIVE
EXETER, NH 03833
RCRD BK.2817 PG.686
(Industrial)

TAX MAP 54 LOT 4
N/F
NORRIS BROOK CONDOMINIUM
3 HOLLAND WAY, STE. 201
EXETER, NH 03833
RCRD BK.2561 PG.2642
(residential)

TAX MAP 54 LOT 4
N/F
NORRIS BROOK CONDOMINIUM
3 HOLLAND WAY, STE. 201
EXETER, NH 03833
RCRD BK.2561 PG.2642
(residential)

TAX MAP 49 LOT 7
N/F
BOSTON AND MAINE
RAILROAD CORPORATION
1700 IRON HORSE PARK
NORTH BELLERICA, MA 01862-1681
RCRD BK.529 PG.14

TAX MAP 63 LOT 205
N/F
BENJAMIN & JOAN DAGOSTINO
REVOCABLE TRUSTS
1 FOREST STREET
EXETER, NH 03833
RCRD BK.4574 PG.2843
(residential)

TAX MAP 63 LOT 207-1
N/F
JOAN GALLAGHER
5 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.4428 PG.2196
(residential)

TAX MAP 63 LOT 206
N/F
JOAN GALLAGHER &
THOMAS R. LIGHT
5 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.4428 PG.2194
(residential)

TAX MAP 63 LOT 204
N/F
TUCK D. PROPERTIES LLC
215 ATLANTIC AVENUE
SEABROOK, NH 03874
RCRD BK.4816 PG.657
(residential)

TAX MAP 63 LOT 203
N/F
MARY FRANCES DAGOSTINO
11 FOREST STREET
EXETER, NH 03833
RCRD BK.2007 PG.1579
(residential)

TAX MAP 63 LOT 190
N/F
JEANETTE WILLIAMS
REVOCABLE TRUST
10 WADLEIGH STREET
EXETER, NH 03833
(residential)

TAX MAP 63 LOT 202
N/F
MAURA C. FAY &
MICHAEL VEAZEY
13 FOREST STREET
EXETER, NH 03833
RCRD BK.5231 PG.321
(residential)

SPRING HOUSE
APARTMENTS
WADLEIGH STREET
FOREST STREET
OAK STREET EXTENSION
(SEE RCRD BK.#419 PG.#259 FOR PRIVATE RIGHT OF WAY)

SURVEY NOTES:

1. THE PARCELS ARE AS SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7.
2. OWNERS OF RECORD:

MAP 54 LOT 5	MAP 54 LOT 6
EXETER ROSE FARM, LLC	EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION	24 OAK STREET EXTENSION
EXETER, NH 03833	EXETER, NH 03833
RCRD BK.5840 PG.2104	RCRD BK.5840 PG.2104
(603) 425-8598	(603) 425-8598

MAP 54 LOT 7
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

3. TOTAL PARCEL AREA:
   1,823,095± S.F.
   (41.85± ACRES)
4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT, AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.
5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	NA
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%	60%**/40%	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011) AND THE VERTICAL DATUM IS RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88, GEOID 12A). CONTOUR INTERVAL IS 2 FEET.
7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA ZONE AE (EL.8) & SPECIAL FLOOD HAZARD AREA ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E" WITH AN EFFECTIVE DATE OF MAY 17, 2005.

SURVEY NOTES CON'T:

8. THE PURPOSE OF THIS PLAN SET IS TO DEPICT THE OVERALL AND SITE SPECIFIC AREAS OF THE PROPERTY PERTAINING TO THE REMEDIAL ACTION PLAN PREPARED BY STONEHILL ENVIRONMENTAL, INC. DATED OCTOBER 25 2017.
9. THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL AND WETLANDS REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
10. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. POTENTIAL VERNAL POOLS WERE EVALUATED ACCORDING TO ENV-WT 101.106, ENV-WT 101.75 AND ENV-WT 101.86. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.
11. SEE SHEET S-2 TO S-6 FOR ENVIRONMENTAL NOTES.
12. BASINS #1 THROUGH #4 ARE MANMADE.

DIG SAFE
MA ME NH RI VT
811
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

LEGEND:

GH	GREENHOUSE
N/F	NOW OR FORMERLY
MM	MANMADE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
S.F.	SQUARE FEET
	STONE WALL
	BROOK
	PERENNIAL STREAM
	INTERMITTENT STREAM
	EDGE OF WETLANDS/SURFACE WATER
	PROPERTY BOUNDARY
	EASEMENT
	EXISTING PAVEMENT
	FORMER GREENHOUSE/ BOILER & PACKING BUILDINGS AREA
	WETLANDS/SURFACE WATER

100 50 25 0 100
Graphic Scale

TFM / MSC
A division of TFMoran, Inc.
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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

47175.00	DR	BMK	FB	–	S-1
	CK	JCC	CADFILE	47175.00_ENV	

NO.	DATE	DESCRIPTION	DR	CK

TAX MAP 54 LOTS 5, 6 & 7
SITE PLAN
"FORMER DAGOSTINO ROSE FARM"
OAK STREET EXTENSION
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC
PREPARED FOR
EXETER ROSE FARM, LLC
SCALE: 1"=100' **OCTOBER 23, 2017**

Oct 23, 2017 - 4:38pm
F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\ENVIRONMENTAL\47175.00_Overall.dwg