### **Application for a Definitive Subdivision Plan**



# Salisbury Pine Tree Estates Holden, Massachusetts

**APPLICANT:** 

Holden Pine Tree, LLC 42 Zottoli Road Holden, Massachusetts 01520

PLANNER, LANDSCAPE ARCHITECT, CIVIL ENGINEER, SURVEYOR:

PLACES Associates, Inc.

DATE of SUBMITTAL:

October 10, 2019

Salisbury Pine Tree Definitive Subdivision Application
Off Bailey Road and Salisbury Street, Holden, MA
Places Project No. 7602
Table of Contents

- 1. Table of Contents
- 2. Application Cover Letter
- 3. Application Form C
- 4. Filing Fee Checks
- 5. Requested List of Waivers
- 6. List of Abutters
- 7. Project Narrative
  - Includes Traffic and Drainage Executive Summaries
- 8. Environmental Review Report & Utility Impact Assessment (separate book), 12 copies
  - Traffic Impact Assessment (separate book), 4 copies
  - Stormwater Analysis (separate book), 4 copies



## PLACES Associates, Inc.

Certified WRF

October 10, 2019

By hand delivery

Holden Planning Board (c/o Town Clerk) Holden Town Hall 1196 Main Street Holden, MA 01520

Re: Holden Pine Tree

Application for a Definitive Subdivision

Bailey Road and Salisbury Street, Holden, MA

Places Project No. 7602

Dear Board Members:

On behalf of our client, Holden Pine Tree, LLC, this office herewith submits the Definitive Subdivision "Salisbury Pine Tree Estates". Please find enclosed the following materials which are intended to constitute a Definitive Subdivision Filing under the Town of Holden's Subdivision Control Regulations and pursuant to the provisions of MGL Chpt 41, Sections 81K to 81GG, inclusive. This application is being filed pursuant to MGL Chpt. 41, 81Q; being a definitive plan filed within seven months of a preliminary subdivision (filed March 12, 2019), and in accordance with Massachusetts General Laws Chapter 40-A and Chapter 41 and purposefully obtains the protection afforded by those chapters.

This application includes the following materials:

- A. Original Documents:
  - 1. Cover Letter
  - 2. Two (2) completed "Form C" Applications.
  - Fees:

Application Fee of \$ 5,700 (\$1,000 plus \$100/lot x 47 lots)
Engineering Review Fee of \$ 8,050 (\$1,000 plus \$150/lot x 47 lots)

- 4. One (1) copy of a certified abutters list.
- 5. One (1) complete set of mailing labels of abutters/addresses.
- B. Submittal Book and Plans:
  - 1. Twelve(12) Application Books which include copies of:
    - a. Application Cover Letter
    - b. Application Form C
    - c. Filing Fee Checks
    - d. Requested List of Waivers
    - e. List of Abutters
    - f. Project Narrative

- 2. Twelve (12) copies of the Environmental Review Report & Utility Impact Assessments
- 3. Twelve (12) full size and eight (8) 11x17 copies of the plans entitled "Salisbury Pine Tree Estates, Definitive Residential Subdivision in Holden, Massachusetts prepared for Holden Pine Tree LLC by Places Associates, Inc. dated October 2019,
- 4. Four (4) copies of the following:
  - a. Stormwater Analysis
  - b. Traffic Impact Assessment (by MDM Associates)
- 5. One (1) Flash Drive with PDFs of the above items (B.1 to 4).

#### Project Overview:

This 25.7± acre property is located between Salisbury Street and Bailey Road, directly abutting the DCR Sewer Trunk Line and railroad on the northerly side. The project will gain frontage/access from three roads which will include the extension of Pine Tree Road and two new roads (Henry Way and Farmer's Way) which will provide a connection between Salisbury Street and Bailey Road.

The proposed project will create 45 new residential lots, 9 of which are located in the Residential-Suburban-3 (R-10) Zoning District and the remaining 36 in the Residential-Multifamily (RM) District. A total of 101 new units of housing are proposed. A majority of the site is located in the RM district which allows multiple units per lot.

The connection to Salisbury Street will be via Pine Tree Road. While there is evidence that Pine Tree Road is a way in existence prior to zoning, it and the other two roads, Farmer's Way and Henry Drive, will have a 28' pavement width with sidewalks on both sides as required by the regulations in effect at the time of filing.

Portions of the site are within the 200' and 400' offset to the bank of a tributary to a surface water supply as regulated by the Department of Conservation and Recreation (DCR). The plan has been designed to meet those regulations with less than 10% impervious surfaces within the 200'-400' offset and by locating all storm water BMPs (Best Management Practices) outside of the 200' offset and outside the recently delineated Zone A off of Bailey Road.

The storm water system has been designed to meet all applicable Stormwater Regulations. Due to the steepness of the site, the use of LID (Low Impact Development) techniques are limited to control the potential for erosion.

#### Lot Development:

The R-M district permits, by-right, the development of a single family dwelling and up to a four-family dwelling unit on a 20,000 sf. lot (See Zoning Bylaws, Section V, Use Regulations, F. Table of Use Regulations, Table 1, Residential, item 3 and Zoning Section VI, Table 2, Area Regulations).

The R-10 district permits, by-right, the development of a single family, detached dwelling on a 10,000 sf. lot. Multi-family dwellings are permitted by Special Permit up to a four-family dwelling unit on a 25,000 sf. lot. No multi-family units are proposed on the lots located in the R-10 district.

The developments of lots on the Definitive Subdivision Plans are diagrammatic only, as individual lot development will be based on future purchaser's specific requirements. This plan depicts 11 single family

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

Holden Pine Tree Application for a Definitive Subdivision Bailey Road and Salisbury Street, Holden, MA Places Project No. 7602

Page | 3

residences, 21 duplex building, 4 triplex building and 9 quad's buildings for a total of 101 new dwelling units. Structures exist on Lot A off of Salisbury Street and on Lot B, 124 Bailey Road. These two lots are included as part of the subdivision as their lot lines are being modified by this application. By depicting a dense development scheme, we are demonstrating the ability of the site, its related infrastructure and adjacent roadways to support the project under this full build-out scenario.

#### Requested Waivers:

We have requested a waiver to a lesser roadway widths (24') as part of this application. Modern traffic engineering and planning standards note that narrower roads are safer, have a lesser environmental impact and require less long term maintenance. Other waivers are of an administrative nature to accommodate modern survey, drafting and plan-copying techniques. We note specifically, that should the Board decide not to grant these routinely-requested administrative waivers, we will supply the Board with the requested blueprints, sepias, etc.

We look forward to working with the Planning Board, its consultants, and other town agencies throughout this project. If the Board should have any questions or concerns, or if you should require additional information regarding this application, please contact the undersigned.

Very truly yours,

Places Associates, Inc.

Susan E. Carter, P.E., LEED-BD&C Director of Engineering and President

Enc: as noted

Holden Town Clerk CC:

Hand Delivered Holden Board of Health Hand Delivered Gail M. Hanny, Holden Pine Tree, LLC -Applicant

Paul J. Haverty, Esq. Blatman, Bobrowski & Haverty, LLC

#### THE COMMONWEALTH OF MASSACHUSETTS

#### The Town of Holden

#### FORM C APPLICATION FOR A DEFINITIVE SUBDIVISION APPROVAL

File one completed form with the Planning Board and one copy with the Town Clerk in accordance with the requirements of Section IV-B.

October 10, 2019

No	<u>October 10, 2019</u>
To the Planning Board:	
The undersigned herewith s	ubmit the accompanying Definitive Plan of Property located
in the Town of Holden for	approval as a subdivision under the requirements of the
Subdivision Control Law an	d the Rules and Regulations Governing the Subdivision o
Land of the Planning Board  1. Name of Subdivider _	in the Town of Holden. Holden Pine Tree, LLC Gail M. Hanny, Manager
4	2 Zottoli Road lolden, MA 01520
2. Name of Engineer or	Susan E. Carter, P.E.  Surveyor Places Associates, Inc.  256 Great Road, Suite 4
Address	Littleton, MA 01460
3. Deed of property reco 41303 Book 33704 33729	rded in Worcester County (South) Registry,  164 - 75 Salisbury Street (4.5 ac)  Page 65 - Pinetree Road (20.75 ac)  21 124 Bailey Road (0.31 ac)
Balley Road and Salisbury Str frontage on Balley Road and "Pine Tree." The proposed st	tion of Property: B parcels of land totaling 25.6 ± acres. The property is located between reet and is bounded on the north by the railroad tracks. The site has gains physical access from this frontage and the existing way known as abdivision will create 47 lots with frontage and access from three hich is an extension of Pine Tree.  Signature of owner  Gail M. Hanny, Manager, Holden Pine Tree, LLC  Address  42 Zottoli Road, Holden, MA 01520

A list of the names and address of the abutters of this subdivision is attached.

Filing Fee Checks

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Application Fee of \$ 5,700 (\$1,000 plus \$100/lot x 47 lots)

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HOLDEN PINE TREE, LLC 42 ZOTTOLI RD HOLDEN, MA 01520	Oct 4, 2019 Date	470 53-7173/2113 09
Pay to the Journal Holden  Order of Journal Holden  Eight thousand fifty	\$ 80	(j) (r)
Southbridge Savings Bank Love your bank™  For		L MP

Engineering Review Fee of \$8,050 (\$1,000 plus \$150/lot x 47 lots)

The following is a List of Waivers requested from the requirements of the Subdivision Control Regulations for the Town of Holden, as permitted by Section VII- Administration, A., Variance.

The waivers requested herein are not depicted on the subdivision plans, but are requested to address a variety of situations including:

- 1. Conflicts between sections of the regulations and/or other town-established design and construction standards.
- 2. Standards of practice where the Subdivision regulations do not match modern site design criteria or modern (current) standards of practice.
- 3. Construction waivers routinely given by the Board on other projects and waivers to the development of the site which will benefit the Town of Holden and/or the applicant.

In all cases, should the Board decide not to grant a waiver requested herein, the applicant will revise the application and plans or withdraw the waiver request to ensure that the project is fully compliant with the regulations and the Board's interpretation of the same.

#### Waivers Requested:

Section IV – Definitive Plan, B., Contents of Definitive Plan and Relevant Data:

- a. Eleven (11) Blueprints This office herewith requests the Board accept black-line photocopies of the submission plan sets in lieu of blueprint copies, as blueprint copies are harder to obtain, more environmentally insensitive and they do not translate graphic information as well as photocopies.
- b. Item 7 Pencil Roadway Names on Plans This section requires the names of proposed street names in pencil until they are approved by the Board. We ask the Board grant a waiver to this requirement as modern drafting techniques using CADD allow the modification of plan data and information readily via in on mylar or paper copy.
- c. Item 12 Plan Datum We ask the Board accept the datum of the plans as being the Town's Sewer Datum, which relates to the on-line GIS, and town topographic information datum. We cannot confirm that the Datum is USGS base.

Section IV – C., Security of Performance, 1.

This section requires that, "the construction of ways, installation of municipal services and all other required improvements ...for all lots in the subdivision be completed within two years," of the approval of the Definitive Plan." As the Board is aware, due to the number of lots and dwelling units, the project is subject to the requirements of the Zoning Bylaws, Section XV, Phased Growth Zoning Bylaw (XV, § 4), where the construction of dwellings are required to be built over a period of no less than five (5) years in distinct phases. As provided under MGL Chpt 40A, §6, "...it [protections provided under Zoning and Subdivision Control Law] shall be extended by a period equal to the time which a city or town imposes or has imposed upon it by a state, a federal agency or a court, a moratorium on construction, the issuance of permits or utility connections." [emphasis added]. It is the opinion of this office that the cited MGL mandates that the construction of the project is extended five years to coincide with the requirements of the Phased Growth Zoning Bylaw.

Salisbury Pine Tree Definitive Subdivision Application Off Bailey Road and Salisbury Street, Holden, MA Places Project No. 7602 Requested List of Waivers

Page | 2

Accordingly, for the reasons cited above, the applicant requests the Board allow the construction of ways to coincide with the proposed construction phasing plan which is submitted herein as part of the application and not require the construction of ways and infrastructure within two (2) years of the date of endorsement of the plans.

Section V - General Design Standards, A. Streets, 2., a. Minor Streets, Roadway Width: .

1.. Proposed ways in the subdivision: As depicted on the plans, the width of the proposed new roadways (Pine Tree Lane, Farmer's Way and Henry Way) have been designed to comply with the above citation from the Subdivision Regulations and as shown in Appendix A – Typical Roadway Section, 28' paved width. As noted in the Traffic Impact report prepared by MDM Transportation Associates, this width of pavement is based on an outdated standard for construction which has found that excessive roadway width encourages speeding, increases maintenance costs and associated environmental impacts. It is the applicant's desire to reduce the pavement width for these roads to match the currently proposed subdivision required pavement width of 24' for the reasons cited above.

Section VI – Required Improvements for an Approved Subdivision, D., Drainage, 6.: This section requires a three (3') foot sump in all catchbasins. Current stormwater regulations established by the Commonwealth of Massachusetts and referenced in the Town's Stormwater and Erosion Control Bylaw and the Wetlands Protection Act requires a minimum of a four (4') foot sump, as depicted on the plans. We ask the board allow the greater depth sump in all catchbasins within the subdivision and roadway improvement project.

Section VI – Required Improvements for an Approved Subdivision, F., Monuments.: This section requires that all roadway bounds be made of granite. We request a waiver from this requirement to permit the substitution of reinforced concrete bounds of the same dimension, as are required for drainage easements. The use of steel reinforced concrete bounds is more compatible with modern surveying techniques, where magnetic locators can identify the location of such bounds when buried, broken or otherwise non-discernable. Granite bounds are non-magnetic and cannot be located using these modern techniques.

Section VI – Required Improvements for an Approved Subdivision, M. Record Drawings and Acceptance Plans:

This regulation requires that the record Drawings use of India ink on mylar, a drafting technique and system that is no longer widely used. We request the Board allow the use of modern drafting techniques which include the use of CADD technology, using plotted ink on mylar as is currently accepted by the Worcester County Register of Deeds.







PLACES Associates, Inc. 256 Great Road, Suite 4 Littleton, MA 01460

(P):978.486.0334 (F):978.486.0447

www.placesassociates.com

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LLLLKS

REQUEST FOR CERTIFIED L

#### PLEASE ALLOW 3-5 BUSINESS DAYS TO PROCESS

FEE: \$25

01520 or fax to 508/829-0227.
The following is a request by Places Associates for two (2) Certified Abutters Lists as specified below. Enclosed is a check for \$50. $\#5056$
PROJECT NAME & STREET LOCATION: Holden Salisbury Pine Tree Definitive Subdivision  OWNER: Holden Pine Tree
MAP & PARCEL NUMBERS; 173-2 (1 Pine Tree Rd); 173-61 (2 Pine Tree Rd); 173-35 (75 Salisbury St); 173-82 (Pine Tree Rd - no #); 172-14 (124 Balley Rd)
VARIANCE SPECIAL PERMIT PRELIMINARY PLAN_ DEFINITIVE PLAN_X OTHER (SPECIFY)_X
[Definitive Subdivision for Planning Board: 500'; 'Other' is Notice of Intent for Conservation Commission: 300']
PHONE # Contact: Places Associates, Inc. Cathy McDonnell 978-486-0334 Requesting receipt of lists by September 15, 2019.
PLEASE REFER TO EACH BOARD'S REQUIREMENTS
FOR OFFICE USE ONLY
The Board of Assessors makes the following amendments to the above list:
**************************************
This is to certify this is a List of Abutters to Map 175, Parcel Abutters to Map 175,
Date 9-4-19
Board of Assessors

Jane Reller

Town Of Holden - Board Of Assessor - Certified List Of Abutters

Pine Tree Subdivision		On.
Pine Tree	173-2	9-4-19

Zip Code 01520	01520	01520	01520	01520	01520	01008	01520	01520	01520	02114	01520	01520	01520	01601	01520	01520	01520	01520	01520	01520		01520	01520	01520	01520	01520	01520	01520	01520	01520	01520
State MA	ΣΣ	MΑ	MA	MA	ΜA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA		MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
City/ Town HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	BLANDFORD	HOLDEN	HOLDEN	HOLDEN	BOSTON	HOLDEN	HOLDEN	HOLDEN	WORCESTER	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN		HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN	HOLDEN
Mailing Address 42 ZOTTOLI RD	42 ZULTULI RU 38 OLD SALISBURY ST	65 SALISBURY ST	887B MAIN ST	917 MAIN ST	919 MAIN ST	9 HAIGHT RD	944 MAIN ST	944 MAIN ST	897 MAIN ST	251 CAUSEWAY ST	72 OLD SALISBURY ST	50 OLD SAUSBURY ST	42 ZOTTOLI RD	P O BOX 1188	42 ZOTTOLI RD	P.O. BOX 42	944 MAIN ST	1256 MAIN ST	907 MAIN ST	575 RESERVOIR ST		921 MAIN ST	913 MAIN ST	20 SALISBURY ST	903 MAIN ST	887C MAIN ST	60 SALISBURY ST	49 OLD SALISBURY ST	944 MAIN ST	19 SALISBURY ST	52 OLD SAUSBURY ST
Owner2						BENSON, ROSA			CASSIDY, SUE E	DIV. OF WATER SUPPLY PROTECTION	HIMMER, DOROTHY A	HOWARTH, KAREN A						POWELL, ARTHUR F									(THE) 60 SALISBURY ST REALTY TRUST	COLLINS, JANELL			
Owner1 HOLDEN REALTY, INC	FARRELL, DEBORAH	RALLI, MICHAEL A	GIBLIN, ALYSSA M	GOSELIN, DIANE M	GALLO, ELIZABETH	BENSON, CHARLES	SUNNYSIDE MARKETING & SALES CO., INC.	SUNNYSIDE MARKETING & SALES CO., INC	CASSIDY, TIMOTHY G	COMMONWEALTH OF MASS - DCR	HIMMER, ROBERT P	HOWARTH, JAMES E, II	HOLDEN PINE TREE LLC	PROV AND WORC R R	HOLDEN REALTY, INC	B.A. SUNDIN & SON, INC.	SUNNYSIDE MOTOR REAL ESTATE, LLC	BERTHIAUME, SUSAN K	MOREAU, MAUREEN M	LINDGREN, SHAUN O	CONDO MAIN	RICKER, KATHRYN L	DONNELLY, MICHAEL F	LARSON, KEVIN C	ACITO, WILLIAM P, JR TRUSTEE	GLEICK, HEATHER B	ALZATE, GABRIEL TRUSTEE	COLLINS, MICHAEL R	SUNNYSIDE MARKETING & SALES CO., INC	19 SALISBURY, LLC	PARKER, RONALD C
M/P 173-61	173-27	173-34	173-9	173-501	173-502	173-47	160-77	173-4	173-6	160-79	173-24-2	173-26	173-35	187-70	173-2	173-42	160-108	173-33	173-50	173-48	173-49	173-54	173-53	173-55	173-52	173-10	173-57	173-58	160-78	173-3	173-25

Board Of Assessors

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Town Of Holden - Board Of Assessors - Certified List of Abutters

M/P	Owner1	Owner2	Mailing Address	City/ Town	State	Zip Code
. 173-61	HOLDEN REALTY, INC		42 ZOTTOLI RD	HOLDEN	MA	01520
173-62	HOLDEN PINE TREE, LLC		42 ZOTTOLI RD	HOLDEN	MA	01520
173-27	· FARRELL, DEBORAH		38 OLD SALISBURY ST	HOLDEN	MA	01520
173-34	RALU, MICHAEL A		65 SAUSBURY ST	HOLDEN	MA	01520
173-9	GIBLIN, ALYSSA M		887B MAIN ST	HOLDEN	MA	01520
173-47	BENSON, CHARLES	BENSON, ROSA	9 HAIGHT RD	BLANDFORD	MA	01008
173-4	SUNNYSIDE MARKETING & SALES CO., INC		944 MAIN ST	HOLDEN	MA	01520
160-79	COMMONWEALTH OF MASS - DCR	DIV. OF WATER SUPPLY PROTECTION	251 CAUSEWAY ST	BOSTON	MA	02114
173-24-2	HIMMER, ROBERT P	HIMMER, DOROTHY A	72 OLD SALISBURY ST	HOLDEN	MA	01520
173-26	HOWARTH, JAMES E, II	HOWARTH, KAREN A	50 OLD SALISBURY ST	HOLDEN	MA	01520
173-28	CORCORAN, PAUL J		30 OLD SALISBURY ST	HOLDEN	MA	01520
173-35	HOLDEN PINE TREE LLC		42 ZOTTOLI RD	HOLDEN	MA	01520
187-70	PROV AND WORC R R		P O BOX 1,188	WORCESTER	MA	01601
173-44	GAGNON, JAY J	GAGNON, YUKLAN S	160 BAILEY RD	HOLDEN	MA	01520
173-2	HOLDEN REALTY, INC		42 ZOTTOLI RD	HOLDEN	MA	01520
173-42	B.A. SUNDIN & SON, INC.		P.O. BOX 42	HOLDEN	MA	01520
173-33	BERTHIAUME, SUSAN K	POWELL, ARTHUR F	1256 MAIN ST	HOLDEN	MA	01520
173-54	RICKER, KATHRYN L		921 MAIN 5T	HOLDEN	MA	01520
173-53	DONNELLY, MICHAEL F		913 MAIN ST	HOLDEN	MA	01520
173-55	LARSON, KEVIN C		20 SALISBURY ST	HOLDEN	MA	01520
173-10	GLEICK, HEATHER B		887C MAIN ST	HOLDEN	MA	01520
173-57	ALZATE, GABRIEL TRUSTEE	(THE) 60 SALISBURY ST REALTY TRUST	60 SALISBURY ST	HOLDEN	MA	01520
173-58	COLLINS, MICHAEL R	COLLINS, JANELL	49 OLD SALISBURY ST	HOLDEN	MA	01520
173-59	SCHNEIDER, JAMES I	SCHNEIDER, CYNTHIA D	91 SALISBURY ST	HOLDEN	MA	01520
160-78	SUNNYSIDE MARKETING & SALES CO., INC		944 MAIN ST	HOLDEN	MA	01520
173-3	19 SALISBURY, LLC		19 SALISBURY ST	HOLDEN	MA	01520
. 173-25	· PARKER, RONALD C		52 OLD SALISBURY ST	HOLDEN	MA	01520

Board Of Assessors

The month down

Town of Holden - Board of Assessors - Certified List of Abutters Pine Tree Subdivision 173-62-35-14 9-4-19

M/P 995-6	Owner1 CONDO MAIN	Owner2	Mailing Address	City/ Town	State	Zip Code
173-61 995-7	HOLDEN REALTY, INC CONDO MAIN		42 ZQTTOU RD	HOLDEN	MA	01520
173-62	HOLDEN PINE TREE, LLC		42 ZOTTOU RD	HOLDEN	MA	01520
173-40	HOLDEN TOWN OF		TOWN HALL	HOLDEN	ΝΑ	01520
172-17	GAGNON, JAY J	GAGNON, YUKLAN S	160 BAILEY RD	HOLDEN	MA	01520
173-43	HOLDEN TOWN OF		TOWN HALL	HOLDEN	MA	01520
160-530	ROGERS, ANDREA L		969-10 MAIN ST	HOLDEN	MA	01520
173-27	FARRELL, DEBORAH		38 OLD SALISBURY ST	HOLDEN	MA	01520
160-529	SAURIOL, MICHELLE M		969-9 MAIN ST	HOLDEN	MA	01520
173-46	SPAKAUSKAS, JOEL D	SPAKAUSKAS, WENDI L	115 SALISBURY ST	HOLDEN	MA	01520
160-87	ANTINOVITCH, JOSEPH J	RANICAR, JACQUELINE A	92 POWERS RD	HOLDEN	MA	01520
172-20	ZOTTOU, LOUISE		C/O FRANK ZOTTOLI 1042 MAIN S HOLDEN	I S HOLDEN	MA	01520
160-502	SENCKOWSKI, MICHAEL	SENCKOWSKI, ROSEMARIE L	965 MAIN ST UNIT 2	HOLDEN	ΜA	01520
160-508	SGRO, JOSEPH E	SGRO, JACQUELINE B	965-8 MAIN ST	HOLDEN	MA	01520
160-507	MAXFIELD, CHRISTINE M		965-7 MAIN ST	HOLDEN	MA	01520
172-24	KENT, MARK S		P.O. BOX 133	HOLDEN	MA	01520
160-512	SILLS, BETH A		965-12 MAIN ST	HOLDEN	MA	01520
186-22	ALLEN, DANIEL E	ALLEN, ERIN D	8 DAWSON CIR	HOLDEN	MA	01520
173-34	RALLI, MICHAEL A		65 SALISBURY ST	HOLDEN	MA	01520
160-505	MURNANE, EDITH		965-5 MAIN ST	HOLDEN	ΔA	01520
160-501	CHICCARELLI, CAROLINE M		965-1 MAIN ST	HOLDEN	MA	01520
172-9	GROVES, DOUGLAS L		75 BAILEY RD	HOLDEN	MA	01520
173-9	GIBLIN, ALYSSA M		887B MAIN ST	HOLDEN	MA	01520
172-47	FERGUSON, MARK		BAILEY RD	HOLDEN	MA	01520
173-501	GOSELIN, DIANE M		917 MAIN ST	HOLDEN	MA	01520
173-502	GALLO, ELIZABETH		919 MAIN ST	HOLDEN	MA	01520
172-22	PERRY, ALLEN F	PERRY, JUDITH A	147 BAILEY RD	HOLDEN	MA	01520
173-60	CLARKE, JASON M	CLARKE, CRYSTAL N	103 SALISBURY ST	HOLDEN	MΑ	01520
159-96	MCCAULEY, DAWN		77 POWERS RD	HOLDEN	MA	01520
159-111	MOULTON, CHRISTINE C		21 DONALD AVE	HOLDEN	MΑ	01520
173-47	BENSON, CHARLES	BENSON, ROSA	9 HAIGHT RD	BLANDFORD	MΑ	01008
160-1	DAGGETT, ANDREW, KATHRYN	DAGGETT, CHRISTOPHER	27 BAILEY RD	HOLDEN	MA	01520
160-532	ZINK, MARGARET E		969-12 MAIN ST	HOLDEN	MA	01520
160-521	GREENE, MICHAEL A	GREENE, STEPHANIE S	43 LOVELL RD	HOLDEN	MA	01520
160-77	SUNNYSIDE MARKETING & SALES CO.,		944 MAIN ST	HOLDEN	MA	01520
173-4	SUNNYSIDE MARKETING & SALES CO.,		944 MAIN ST	HOLDEN	МА	01520
160-88	MITCHELL, STEPHEN JOSEPH		84 POWERS RD	HOLDEN	МА	01520
160-503	HANSEL, JAMES T	RUSSELL, STEFANIË L	965-3 MAIN ST	HOLDEN	MA	01520
160-506	TIMM, NANCY F		965-6 MAIN ST	HOLDEN	MA	01520
172-1	QUIRK, KRISTINE	QUIRK, GLENN	97 BAILEY RD	HOLDEN	MA	01520
172-4	FERRANTINO, JULIE A.		9 DONALD AVE	HOLDEN	MA	01520

	KEYES, TAMMY C/O JAMES BONNETTE	95 POWERS RD P.O. BOX 1039	HOLDEN	MA F	01520
; Ξ		70 BAILEY RD	HOIDEN	Z Z	01520
SLAV	JSTEE	74 BAILEY RD	HOLDEN	MA	01520
TURN	TURNER, BERYL E TRUSTEE 8	85 BAILEY RD	HOLDEN	MA	01520
	<i>y</i> ; «	96 BAILEY RD	HOLDEN	MA S	01520
TOON	TOOMEY, ELAINE J TRUSTEE 1	190 INSTITUTE RD #1	WORCESTER	Σ¥	01602
		167 BAILEY RD	HOLDEN	MA	01520
KELLY		139 BAILEY RD	HOLDEN	MA	01520
NHO!		105A BAILEY RD	HOLDEN	MA	01520
COINT N	CUMINGS, BEIST K	135 BAILEY RD 129 BAILEY RD	HOLDEN	¥Σ	01520
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≥ ∑ I		72 OLD SALISBURY ST	HOLDEN	MA	01520
HOW	HOWARTH, KAREN A	50 OLD SALISBURY ST	HOLDEN	MA	01520
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	DOGOMI, SANDRA A	ZO OLD SALISBURY ST	HOLDEN	M V	07570
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	00)	87 MAIN ST	RUTLAND	MA	01543
TERO,	TERO, MELANIE	1 DAWSON CIR	HOLDEN	MA	01520
KARAS		14 DAWSON CIR	HOLDEN	MA	01520
OWAN	OWANISIAN, ANGELICA	132 SALISBURY ST	HOLDEN	MA	01520
		P O BOX 1188	WORCESTER	MA	01601
GAGN	S	160 BAILEY RD	HOLDEN	MA	01520
JORDA	JORDAN, ALICEA K	26 BAILEY RD	HOLDEN	MA	01520
	7	42 ZOTTOLI RD	HOLDEN	Ψ¥.	01520
JORD/	JORDAN-BURGESS, MARY ELLEN 1	17 DONALD AVE	HOLDEN	ΔĀ	01520
		965-11 MAIN ST	HOLDEN	MA	01520
FU, JIE		13 THORNY LEA	HOLDEN	MA	01520
O'BRIEI	O'BRIEN, JOANNE M	965-10 MAIN ST	HOLDEN	MA	01520
		83 POWERS RD	HOLDEN	MA	01520
LINDBE	LINDBERG, LYNDA S	13 DONALD AVE	HOLDEN	MA	01520
	۵	P.O. BOX 42	HOLDEN	MA	01520
	o)	969 MAIN ST UNIT 2	HOLDEN	MA	01520
		969-3 MAIN ST	HOLDEN	MA	01520
SERVICES, INC		81 HOPE AVE	WORCESTER	MA	01603
BOISVER	BOISVERT, APRIL	17 THORNY LEA	HOLDEN	Δ	01520
	9	67 BAILEY RD	HOLDEN	MA	01520
		155 BAILEY ROAD	HOLDEN	MA	01520
ENGDA	ENGDAHL, LUCIA A	16 THORNY LEA	HOLDEN	MA	01520
GUINE		18 THORNY LEA	HOLDEN	Ψ	01520
RIOR	IINE A	21 THORNY LEA	HOLDEN	MA	01520
		22 DONALD AVE	HOLDEN	MA	01520

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DOW, GARRY A			969 MAIN ST, ELC	BERTHIAUMÉ, SUSAN K	ORIOL, ROBERT G	LEPAIN, ALAN	LINDGREN, SHAUN O	CONDO MAIN	RICKER, KATHRYN L	DONNELLY, MICHAEL F	LARSON, KEVIN C	ACITO, WILLIAM P, JR TRUSTEE	GLEICK, HEATHER B	BANIUKIEWICZ, ROBERT M	ALZATE, GABRIEL TRUSTEE	COLLINS, MICHAEL R	PEREZ, RICHARD DAMON	GOULD, PAUL 1	RENO, SUSAN M	PAQUETTE, TIFFANY LEE	ELMES, MICHAEL B	POLTARACK, RACHEL	HAAPANEN, KURT E	DROHAN, JONATHAN	SCHNEIDER, JAMES I	SUNNYSIDE MARKETING & SALES CO.	19 SALISBURY, LLC	PETERS, JUDITH G	BARRETT, RALPH	TOWLE, JULIE E	PARKER, RONALD C
1/3-30	160-108	172-39	160-528	173-33	160-531	173-45	173-48	173-49	173-54	173-53	173-55	173-52	173-10	172-46	(73-57	173-58	160-504	160-509	172-43	172-45	172-15	160-527	172-41	173-39	173-59	160-78	173-3	160-524	160-525	186-1	173-25

Board Of Assessors

# **Project Narrative**

Includes Traffic and Drainage Executive Summaries

#### Project Location:

This 25.7± acre property is located between Salisbury Street and Bailey Road, directly abutting the DCR sewer trunk line and railroad on the northerly side. The project will gain frontage/access from three roads which will include the extension of Pine Tree Road and two new roads (Henry Way and Farmer's Way) which will provide a connection between Salisbury Street and Bailey Road.

The project is located in the most densely developed portion of the town. It is surrounded on three sides (westerly, southerly and easterly) by existing residential development, most existing before the 1950's. The property sits approximately 20' to 50' higher than the adjacent railroad bed and overlooks (through evergreens) Bailey Road Pond. The site has two hills interior to it. The slopes on the higher of the two, on the easterly side, slope steeply to Salisbury Street. Slopes from the DCR sewer trunk line and the railroad are also steep on the project's northerly and north-westerly side. In the north-west corner is a depression which is now a wetland. We suspect that this wet area was a mining pit for the construction of the trunk line sewer or some other purpose. Two, multiple-unit, rental properties exist on either side of Pine Tree Road, which is, in part, a private way in existence prior to the establishment of zoning in Holden.

This property is one of two areas in the Town of Holden that is zoned Residential-Multifamily (RM). This zoning allows for dense residential development on small lots by right. Its proximity to Rt 122A and Salisbury Street (both collector streets) provides access to the region. The property is surrounded by existing municipal water, sewer, electrical services.

The property is located in the Asian Long-horned Beetle Quarantine area as regulated by the Massachusetts Department of Conservation and Recreation, USDA APHIS, and the US Forest Service. All tree clearing and site related work that involves wood waste must be treated as required by the quarantine and related requirements.

#### Property History:

This property was purchased by Henry Zottoli in the mid 1940's and has remained in that family since then. The property has never been placed in a tax-reducing status such as 61 A (Forestry) or 61 B (Open Space), both of which would have reduced the overall tax burden on the property owners. In 2008, the current Owner, daughter of Henry Zottoli and Manager of Holden Pine Tree LLC, approached the Town of Holden to investigate developing the property as a mixed-use project, combining residential and commercial uses using the newly established (at that time) Smart Growth Zoning per MGL Chpt 40R. The proposed project was not well-received by multiple town boards.

From 2008 to 2010, our predecessor company started the process of designing a residential subdivision for the site. The property was fully surveyed, wetlands were delineated and filings with the DCR were initiated; utility and infrastructure assessments were started. The project was placed on "hold" during 2010 due to the economic conditions at that time.

In 2018, our office was contracted with Holden Pine Tree to re-activate the residential subdivision project. In March of 2019, we filed a preliminary subdivision with the Town of Holden. We received a denial of the Preliminary Subdivision in April 2019 after the initial and only meeting. The denial of the Preliminary Subdivision does not prevent the filing of the Definitive. It did indicate to the Applicant that the Planning Board and abutters would not support the development.

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<sup>&</sup>lt;sup>1</sup> Holden Master Plan 2019, Census Population Map, Map 4-1, page 485.

As a result of the Preliminary Subdivision's denial, this office was not able work with the Town or Board in a cooperative fashion to modify the project to meet current and preferred standards. Meeting current standards would require asking for waivers to the regulations currently in effect. A denial of a such waiver could potentially prevent the project from moving forward and/or prevent approval. To respond to this situation, the submitted subdivision has been designed to meet all subdivision regulations in effect at the time of the filing of the Preliminary Subdivision. The waiver requests being made are more to the format of the submittal documents (which have been regularly granted by the Planning Board in past applications) than anything meaningful with regard to design.

We also note, for the record, that Holden Pine Tree, LLC. did offer the property for sale to the Town prior to this filing, but received no response from the Town Manager with regard to the offer.

#### The Project:

The proposed project will create 45 new residential lots, 9 of which are located in the Residential-Suburban-3 (R-10) Zoning District and the remaining 36 in the Residential-Multifamily (RM) District. A total of 101 new units of housing are proposed.

The connection to Salisbury Street will be via Pine Tree Road. While there is evidence that Pine Tree Road is a way in existence prior to zoning, it and the other two roads, Farmer's Way and Henry Drive, will have a 28' pavement width with sidewalks on both sides as required by the regulations in effect at the time of filing. The proposed roadway layout for Pine Tree Road honors the location of the historic road. Easements will be obtained to permit construction on the two existing lots off of the existing portion of Pine Tree Road.

Farmer's Way connects to Pine Tree at a stop controlled intersection. Farmer's Way connects to Henry Drive at the highest point of the site and then continues, downhill, to a cul de sac at the property's southern-most portion. Henry Way from its intersection, downhill, westerly to connect to Bailey Road, completing the loop configuration of the project.

The surrounding properties are currently served by public water, sewer, gas, electric and other normally-found utilities. This project will connect to these utilities and in the case of public water, will form a loop connection as is preferred by water departments. Included as part of this application is verification that the existing water and sewer utilities are able to be extended into the site for the project without overtaxing them.

Portions of the site are within the 200' and 400' offset to the bank of a tributary to a surface water supply as regulated by the Department of Conservation and Recreation (DCR). The plan has been designed to meet those regulations with less than 10% impervious surfaces within the 200'-400' offset. All storm water BMPs (Best Management Practices) are outside of the 200' offset and outside the recently delineated Zone A off of Bailey Road.

The storm water system has been designed to meet all applicable Stormwater Regulations. Due to the steepness of the site, the use of LID (Low Impact Development) techniques are limited to control the potential for erosion.

See Drainage System Analysis summary at the end of this document.

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The applicant has retained MDM Transportation Consultants, Inc. of Marlborough, MA, a professional traffic engineering consulting firm, to assess the impact of the development on local traffic patterns, accident rates and intersections. Their report, a Traffic Impact & Access Study is made part of this application. It summarizes,

"The proposed development is expected to have a minimal impact on the study area intersections as there will be a nominal overall change in the level of service and operations of the study intersections under future conditions with the development."

#### Lot Development:

The R-M district permits, by-right, the development of a single family dwelling and up to a four-family dwelling unit on a 20,000 sf. lot (See Zoning Bylaws, Section V, Use Regulations, F. Table of Use Regulations, Table 1, Residential, item 3 and Zoning Section VI, Table 2, Area Regulations).

The R-10 district permits, by-right, the development of a single family, detached dwelling on a 10,000 sf. lot. Multi-family dwellings are permitted by Special Permit up to a four-family dwelling unit on a 25,000 sf. lot. No multi-family units are proposed on the lots located in the R-10 district.

Town of Holden Bylaws requires that projects greater than 41+ units must be phased so that no more than 20% of the total number of units is developed in a single year. A Phasing Plan is included as part of this application which accommodates the required number of units permitted per year (20.2)

- o Phase 1 starts with the construction of the extension of Pine Tree Road and its infrastructure, as the large drainage basin and principal sewer connection occur during this phase. 20 units.
- Phase 2 stars the construction of Henry Way from Bailey Road. This portion of the project will connect to utilities in Bailey Road for sewer and water. The drainage for this portion of the roadway will also be installed. 19 units are proposed to be built during this phase.
- Phase 3 extends Bailey Road to the site's high point and intersection with Farmer's Way. It will
  utilize infrastructure from both Phase 1 and 2. 21 units, the additional unit fills in for the 19 of the
  previous phase.
- o Phase 4 Connects Pine Tree Road and Henry Way with the construction of Farmer's Way between the high point and the dead end at Pine Tree. This phase finishes the loop connection of water and roadway between Salisbury Street and Baily Road. 20 units.
- o Phase 5 Extends Farmer's Way to the cul-de-sac and finishes the development of the project and finishes by developing 21 units.

The developments of lots on the Definitive Subdivision Plans are diagrammatic only, as individual lot development will be based on future lot purchaser's specific requirements. This plan depicts 11 single family residences, 21 duplex building, 4 triplex building and 9 quad's buildings for a total of 101 new dwelling units. Structures exist on Lot A off of Salisbury Street and on Lot B, 124 Bailey Road. These two lots are included as part of the subdivision as their lot lines are being modified by this application. By depicting a dense development scheme, we are demonstrating the ability of the site, its related infrastructure and adjacent roadways to support the project under this full build-out scenario.

Extension to abutting properties:

Subdivision Regulation, Section V, General Design Standards, A. Streets, 1.d. states,

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"d. Provisions satisfactory to the Board shall be made for the proper projection of streets to the adjoining properties and their street connections, if they are already subdivided, or to the Plan Boundary when adjoining properties are not already subdivided..."

Places Associates, Inc contacted the two principal undeveloped lot property owners along the southerly property line. This includes the lands of Whittles and Gagnon, as depicted on the plans. Both property owners have requested that we provide the above-required potential connections to their properties. In the case of Gagnon, an easement is provided at the end of Farmer's Way cul-de-sac connecting to the adjacent land. In the case of Whittles, we will reserve one of the two family lots that abut their property for a potential connection to their land. In both cases, the abutter would be obligated to purchase the easement rights or lot to exercise the potential for a connection.

#### Project Permitting:

A project of this size requires multiple types of permits, which include:

- o Definitive Subdivision approval by the Holden Planning Board
- o Notice of Intent approval by the Holden Conservation Commission (Wetlands Protection Act and Holden's Wetlands Bylaw)
- Watershed Protection Act approval by the Department of Conservation and Recreation (DCR).
- Sewer and Water Connection and Extension Permits by the Holden D.P.W.
- o Roadway Connection Permit by Holden DPW & Board of Selectmen
- National Pollutant Discharge Elimination System, Stormwater Pollution Prevention Plan (SWPPP).
- o Local Stormwater Management and Erosion Control Bylaw Permit
- Trench/Excavation Permits

These applications will be made in an order as defined by the permit and permit granting authority. Some permits, like sewer and water connection, roadway connection permits are obtained immediately prior to construction. Others like the subdivision, wetlands-related and watershed permits are required to be obtained earlier in the overall process.

Both the Subdivision and Wetlands permits require notification to abutters as part of the process. This allows abutters notice that they can appear in front of the permitting authorities and allows their input into the processes.

#### Compliance with Master Plan, 2109

The Holden Master Plan, Chapter 4 – Population and Housing provides a detailed assessment of housing construction trends and housing needs. Page 47 of that document states,

"Small lot development and Town-Houses: The Town also indicated is has been seeing more demand for small lot developments and Town-houses recently. More compact housing can often be more affordable, as developers are able to spread more profit generating units across fewer acres. Denser development patterns also offset land use impacts. The Town should consider allowing these units in more places, especially where Town-owned infrastructure exists." <sup>2</sup>

The Master Plan continues to state.

Goal 4.5: Concentrate development along major corridors where infrastructure exists.

Objective 4.5.1 states, "Encourage small lot residential zoning in appropriate places, including cottage developments and Townhouses."

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<sup>&</sup>lt;sup>2</sup> Holden Master Plan 2019, Chapter 4, page 47.

This property is located one of the two areas of town zoned Residential-Multifamily. The other Residential-Multifamily zoned area being off of Manning Street, which is already built-out. This Residential-Multifamily zoning has been in place since prior to the last Master Plan of 2008. It is the Applicant's belief that the maintenance of this zoning accompanied by the issuance of the new Master Plan, which notes as a goal the development of small lot projects in areas currently served by existing infrastructure, is an indication that the Town of Holden desires this type of development in this area.

Accordingly, this project is in keeping with the site's predominant zoning and the goals of the Master Plan.

Environmental Review Report and Utility Impact Assessment (separate book, 12 copies)

Traffic Impact Assessment (separate book, 4 copies)

Stormwater Analysis (separate book, 4 copies)

MDM Transportation Consultants, Inc. (MDM) has prepared this initial Transportation Impact and Access Study (TIAS) for proposed residential development to be located off of Pine Tree Road and Bailey Road in Holden, Massachusetts. The location of the site relative to adjacent roadways is shown in Figure 1. This report documents existing operational and safety-related characteristics of roadways serving the development site, estimates future year operating characteristics of these roadways independent of the development, estimates development-related trip generation, and identifies incremental impacts of site-related traffic. Improvements are recommended that will offset project-related traffic increases and enhance the safety of traffic flow.

This TIAS has been developed in conformance with guidelines for preparation of traffic studies as jointly issued by the Commonwealth of Massachusetts Executive Office of Energy & Environmental Affairs/Massachusetts Department of Transportation (EEA/MassDOT).

#### E.1 PROJECT DESCRIPTION

The project site includes approximate 21 acres of land located between Pine Tree Road and Bailey Road in Holden, Massachusetts. The existing site is comprised of undeveloped land, a single-family home (#124 Bailey Road), and an abandoned single-family home off of Salisbury Street.

Under the proposed development plan, a 102 unit (12 single family and 90 multifamily) residential development will be constructed with off-street parking for approximately 204 vehicles. The existing single-family home located at 124 Bailey Road will remain with access via a new driveway connection to the proposed subdivision roadway. Access to the site will be provided by a full-access unsignalized driveway along Salisbury Street via the existing Pine Tree Road and a full-access unsignalized driveway along Bailey Road just south of house #124. Salisbury Street and Bailey Road are both public ways and are owned and controlled by the Town of Holden.

Pine Tree Road is an existing "way in existence" stub roadway currently providing access to two multi-family residential buildings (totaling 8 apartment units). Under the proposed development program, the 8 apartment units will continue to have access from Pine Tree Road. One of the proposed single-family residential units will have direct access to Salisbury Street.

#### E.2 STUDY AREA

This TIAS evaluates transportation characteristics of roadways and intersections that provide a primary means of access to the site, and that are likely to sustain a measurable level of traffic impact from the proposed development. The study area includes the following intersections:

- ☐ Salisbury Street at Subdivision Site Drive (Unsignalized)
- □ Salisbury Street at Main Street (Route 122A) (Signalized)
- ☐ Bailey Road at Subdivision Site Drive (Unsignalized)
- ☐ Bailey Road at Main Street (Route 122A) (Unsignalized)

#### E.3 SUMMARY OF ANALYSIS AND FINDINGS

Capacity analyses were conducted for each study area intersection to quantify existing and future year traffic operations with and without the development for the weekday morning and weekday evening peak hours. These hours coincide with peak traffic activity of the proposed residential development and the adjacent streets.

The analyses presented in this TIAS are based on industry-standard trip rates published by the Institute of Transportation Engineers (ITE). The proposed development is estimated to generate approximately 52 vehicle trips during the weekday morning peak hour (12 entering and 40 exiting) and 66 vehicle trips during the weekday evening peak hour (42 entering and 24 exiting). On a daily basis, the development is estimated to generate approximately 754 vehicle trips on a weekday.

Under Build conditions, capacity analyses indicate that the Site Driveway approaches to Salisbury Street and Baily Road will operate under capacity at LOS B or better during the weekday morning and weekday evening peak hours. Mainline (through) travel along Main Street will continue to operate unimpeded with minimal delay. The minor street approaches at the intersection of Main Street (Route 122A) and Bailey Road/ Mayo Drive currently operate with long delays during the peak hours. Likewise, left turns from Main Street (again low volumes) experience delays, resulting in use of the paved shoulders to by-pass left turning vehicles. Operations at the signalized Main Street at Salisbury Street intersection are projected to be LOS C or better during peak hours

The proposed development is expected to have a minimal impact on the study area intersections as there will be a nominal overall change in level of service and operations of the study intersections under future conditions with the development. Adequate capacity is available under future Build conditions on both Salisbury Street and Bailey Road to accommodate the site use.

2

#### E.4 RECOMMENDATIONS AND CONCLUSIONS

Traffic impacts associated with the residential development are not expected to notably affect travel or safety conditions in the site vicinity. However, MDM recommends access-related improvements aimed at enhancing traffic operations and/or travel safety. Specific recommendations are as follows:

*Pine Tree Road at Salisbury Street.* The existing Pine Tree Road and Salisbury Street intersection will serve as primary access to the site. Currently, no traffic control or marked pedestrian crossing is present on the Pine Tree Road eastbound approach. MDM recommends the following improvements:

- □ A STOP sign (R1-1) and STOP line pavement markings is recommended on the Pine Tree Road approach to Salisbury Street. A marked crosswalk and ADA compliant ramps should be installed at the intersection across Pine Tree Road.
- A sidewalk is recommended on Pine Tree Road to connect the site with the existing sidewalk system on the western side of Salisbury Street which extends from Main Street to the Dawson Elementary School.
- Plantings (shrubs, bushes) and structures (walls, fences, etc.) should be maintained at a height of 2 feet or less within the Salisbury Street layout in vicinity of the site driveway to provide unobstructed sight lines.

Bailey Road at Proposed Site Drive. The proposed site driveway will connect the site with Bailey Road just south of the existing garage for #124 Bailey Road. MDM recommends that the Applicant implement the following items:

- $\hfill\Box$  A STOP sign (R1-1) and STOP line pavement markings should be installed on the Site Drive approach to Bailey Road.
- Plantings (shrubs, bushes) and structures (walls, fences, etc.) should be maintained at a height of 2 feet or less within the Bailey Road layout in vicinity of the site driveway to provide unobstructed sight lines.

In summary, adequate capacity is available under future Build conditions on both Salisbury Street and Bailey Road to accommodate the site use. The project is not projected to significantly change any reported operating levels compared to future No-Build conditions. Proposed access improvements will provide ample capacity to accommodate site-generated traffic while also enhancing safety and capacity.

Salisbury Pine Tree Definitive Subdivision Off Bailey Road and Salisbury Street, Holden, MA Places Project No. 7602 Stormwater Analysis

The proposed project contains approximately 25.7 acres of land bordered on the east by Salisbury Street to the east, Bailey Road to the west and the existing railroad tracks to the north. The site is predominately a large moraine with glacial till soils on the hillside transitioning to sand and gravel soils at the toe of the hillside where wetlands are present adjacent to the railroad tracks.

The existing topography creates three major drainage subcatchments: tributary to the wetlands network adjacent to the rail road tracks, tributary to the series of isolated wetlands behind the homes on Bailey Road and tributary to Salisbury Street. The point of analysis by the rail road tracks, is in the DCR Zone A and as such, there are restrictions on the amount of impervious areas, water quality and the location of BMPS.

There are two existing catchbasins located on the existing Pine Tree Road which drain behind the existing apartment building, discharging into the 200' Tributary Zone. The area of the outfall is heavy brush and the outfall could not be recovered by survey so its condition could not be assessed. These catchbasins are in poor condition and provide no BMPs currently associated with drainage structures with the minimum being deep sumps and regular cleaning. This project includes the reconstruction of this first portion of Pine Tree Road and will provide pre-treatment of the runoff collected in these structures with the use of deep sump catchbasins and a stormwater treatment unit – hydrodynamic separator. A new drainage outfall is proposed so that the system can be maintained.

The NCRS soils maps indicate that the site is a combination of Hydrologic Group A, B and C soils. Based on soil testing performed in 2009 and 2019, the majority of the hill has been classified as C soils due to dense sandy loam being encountered. Soils in the wetlands were hydric and classified as D soils.

As much of the site is Hydrologic group C soils, basins have been sited in areas where the A soils are located to maximize the natural infiltration capacity of the sand and gravel areas. The natural storage capacity has been maintained and expanded to the Bailey Road wetlands system behind the existing 124 Bailey Road.

Drainage analysis was performed for the 2, 10, 25 and 100 year events. Many of the overland flow areas to the POA (points of analysis) have been greatly reduced in area but this reduction is not necessarily reflected in the runoff rates as a reduced area has also reduced the time of concentration. This is most noticeable in the 2 year rainfall events. Small drainage features, including depressions for potential raingardens were not included in the drainage calculations as they do not provide any substantial storage capacity for any of the larger storm events. In addition, the design does not consider any of the recharge at the drip lines of the proposed houses as shown on the detail sheets.

The design criteria for design is to provide attenuation to balance the 2, 10 and 25 year events and to not create flooding in the 100 year event.

#### POA - 1 Railroad Tracks

Storm event	Pre Development	Post Development
2 year	0.59 cfs	0.76 cfs
10 year	2.35 cfs	2.14 cfs
25 year	5.56 cfs	3.38 cfs
100 year	13.66 cfs	12.57 cfs

#### POA – Bailey Rd Abutters Isolated Wetland (6P pre development, 60P post development)

Storm event	Pre Development	Post Development
2 year	0.28 cfs	0 cfs
10 year	0.75 cfs	0 cfs
25 year	1.08 cfs	0 cfs
100 year	2.73 cfs	2.72 cfs

#### POA – Salisbury Street (3 Predevelopment, Link 311 post development)

Storm event	Pre Development	Post Development
2 year	2.65 cfs	3.10 cfs
10 year	6.61 cfs	5.78 cfs
25 year	9.32 cfs	8.40 cfs
100 year	13.69 cfs	13.78 cfs

#### POA – Overland to abutters to the South (Pre-development 4, Post development 40)

Storm event	Pre Development	Post Development
2 year	0.85 cfs	0.22 cfs
10 year	2.30 cfs	0.50 cfs
25 year	3.38 cfs	0.70 cfs
100 year	4.94 cfs	1.01 cfs

#### Water Quality

This site design utilizes a variety of BMPs (Best Management Practices) for water quality control on the site. All catchbasins are designed with deep sumps and no water is directly discharged from the drainage with out pre-treatment. As the drainage system will be maintained by a Homeowners Association, water quality inlets have been used where possible and hydrodynamic separators (VortSentry or similar) where there is insufficient are for a basin.

Salisbury Pine Tree Definitive Subdivision Off Bailey Road and Salisbury Street, Holden, MA Places Project No. 7602 Stormwater Analysis

All basins, with the exception of Basin A are designed to drain in between storms. Basin A has been designed as an infiltration basin and contains the entire volume of the 100 year event, maximizing the recharge capacity.

A full analysis of compliance with the DEP Stormwater Standards will be provided when the Notice of Intent is filed with the Conservation Commission and with the local Stormwater by-law filngs.