

PROJECT TEAM

ARCHITECT

Bargmann Hendrie + Archetype, Inc. 9 Channel Center Street Boston, MA 02210 617 350 0450

MEP/FP ENGINEER

Allied Consulting Engineering Services

235 Littleton Road, Suite Five Westford, MA 01886 978 443 7888

HAZARDOUS MATERIALS

Universal Environmental Consultants

12 Brewster Road Framingham, MA 01702 508 628 5486

STRUCTURAL ENGINEER

Bolton & DiMartino, Inc.

100 Grove Street, Suite 317 Worcester, MA 01605 508 756 8972

COST CONSULTANT

CHA Consulting, Inc.

1 Faneuil Hall Marketplace South Market Building, Suite 4195 Boston, MA 02109-6117 617 451 2717

SITE & CIVIL ENGINEER

Pare Corporation

8 Blackstone Valley Place Lincoln, RI 02865 401 334 4100

TABLE OF CONTENTS

1. Executive Summary	
2. Background and Methodology	,
3. Building Program	(
a. Conceptual Building Plans	
i. 480 Main Street	14
ii. New Building	19
4. Code and Zoning Study	23
5. Existing Conditions at 480 Main Street	35
6. Test Fit at 480 Main Street	53
a. Site Test Fit Plan	54
b. Site Feasibility Study	55
7. Test Fit at 70 Cedar Street	59
a. Site Test Fit Plan	62
b. Site Feasibility Study	60
8. Test Fit at 80 Haynes Street (Rte 15)	67
a. Site Test Fit Plan	70
b. Site Feasibility Study	7
9. Traffic Study	7
10. Cost Estimates	83
11. Appendix	9
a. Structural Review	98
b. Structural Design Drawings	100
c. MEP Systems Evaluation	110
d. Hazardous Materials Report	118
e. Pare Feasibility Report	120
f. 480 Main Street Minimal Parking Site Plan	234
g. 80 Haynes Street Alernate Test Fit Plan	236
h. Lead Paint Email	238
i. Fire Alarm Email	240
j. 2008 Accessibility Audit Senior Center	242
k. Activity List	24

This study was commissioned by the Town of Sturbridge to explore the feasibility of expanding the existing Senior Center at 480 Main Street or relocating to a new site with new construction to accommodate the growing senior population. The Sturbridge Senior Center houses the Council on Aging with the mission "to promote healthy and active aging by addressing the physical, social, and economic needs of seniors, and to provide resources, services, education, and activities to embrace aging with health and vitality."

The Town's investment in an expanded Senior Center is an opportunity to promote Sturbridge as an age-friendly community where residents can "age-in-place" and meet the expanding demand for services of Sturbridge's growing community of seniors. The Council on Aging, through the Senior Center, provides Sturbridge seniors with education, recreation, social services, transportation and outreach programs. The entire community benefits when services are provided on a proactive basis.

The challenge is to efficiently and economically expand the existing Senior Center program with respect for the historically important Schoolhouse built in 1874, or

through construction of a new facility at a different town owned site. This study investigated the existing Senior Center and alternate locations at 70 Cedar Street and 80 Haynes Street (Route 15). Floor plans, a conceptual site plan and a building 3D study model were designed for 480 Main Street and a cost estimate was prepared. Conceptual test fits for both alternate locations were prepared for the purpose of enabling Town officials and the public to make an informed decision about next steps for addressing the needs of the Senior Center.

The design documents contained herein are preliminary, intended to articulate a working program, establish a building footprint, and to show sufficient detail for the cost estimate. The program and building footprint will require further development and/or refinement in the next phase of design. This development occurs through three subsequent stages: Schematic Design, Design Development, and Construction Documents.

SECTION 1 EXECUTIVE SUMMARY

This Feasibility Study examined three sites identified by the Town for a Senior Center. The first site was the existing Senior Center building at 480 Main Street, applying the proposed program of spaces and needs to develop a conceptual plan and cost estimate for renovations, construction of an addition, and site work. The second and third sites were put forth by the Town to test fit whether a new building with parking could be accommodated. These two sites, 70 Cedar Street and 80 Haynes Street (Route 15), required the development a conceptual new Senior Center building plan with parking and required site work to perform test fits. A cost estimate for each was also prepared as part of this study.

The existing Senior Center occupies the Snellville District #2 Schoolhouse built in 1874. The building includes a basement level that is not usable as occupiable space due to ceiling and head height clearances. limiting the effective area of the facility to first and second floors only. Existing spaces on the first and second floors are maximized, including two single toilet rooms on each floor. These restroom facilities are inadequate. The first floor multipurpose room serves meals for between 60 and 75 people, houses the gift shop area, included office equipment and desks, and has no ability to partition into separate concurrent functions. The existing kitchen is insufficiently sized to provide meals for a growing senior population and is not of commercial grade. Dry goods and refrigerated storage is limited. The upstairs multipurpose room is used for exercise, meetings, and

other activities, but has no storage space for tables and chairs, currently stacked along one wall. The basement game room, library and workout area are compromised by low ceilings defined by the exposed structural beams and an exposed sanitary line.

For the purpose of this study, the Senior Center working group determined that a total net building area of approximately 12,750 sf was required to meet the needs of users and programs and activities. An efficient layout of functions with interactive connectivity between staff and users is prescribed for the future success of the center. Having a fully accessible main entrance, fully modern code compliant facility with adequate parking are key criteria.

Determining whether the demands for greater functional space in the existing building can be effectively met included the study of two offsite locations where a new facility could accommodate the program and parking in a more efficient and economically viable approach. The site evaluation of all three locations included review of access to utilities, storm water drainage requirements, septic system requirements, parking, and permitting issues. Traffic impact of all three locations was also considered, and is discussed in Section 9 of this study.

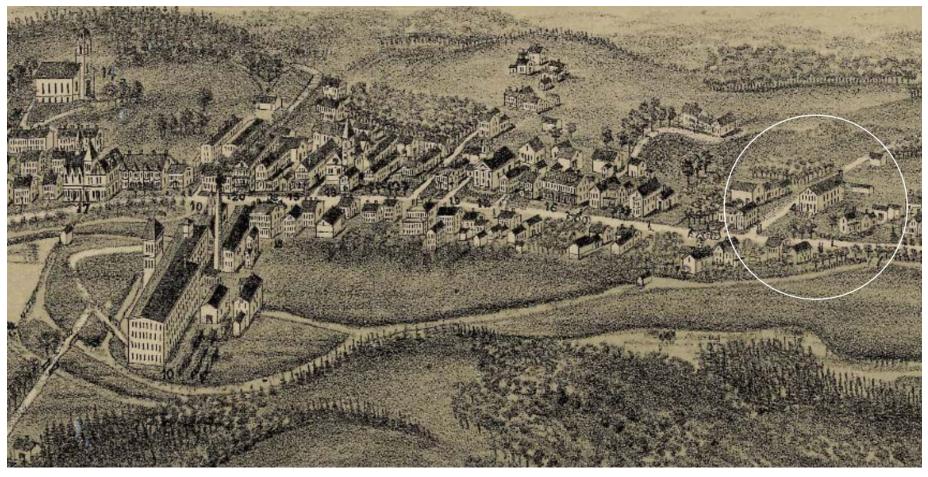
CONSTRUCTION COST ESTIMATE

BH+A's cost consultant CHA, prepared a feasibility level cost estimate for all three sites, including cost-add line items for further consideration by the Town. These construction costs included hard costs for utilities back charges, AV, FF&E, and soft costs including design fees, owner's project manager costs, testing, inspections, moving, to arrive at a total project cost. Costs for all three sites are summarized in Section 10 of this study.

FINDINGS

The study found that the existing site at 480 Main Street will physically accommodate an addition to the Senior Center and achieve a parking count of 66 parking spaces including handicap, matching the Director's request. The study found the two alternate site locations, 70 Cedar Street and 80 Haynes Street could also support a new 12,000 sf facility with parking for at least 65 cars including handicap, as well as expanded parking to 100 and possibly 150 cars if required. All three options were within approximately \$422,000 of each other in their construction and total project cost, ranging from \$9.890.766 for the renovation and addition to 480 Main Street, to \$10,038,464 for a new facility at 70 Cedar Street. The site at 80 Haynes, at \$9,615,637 was the least cost but is likely the most challenging site to move forward on due to deed restrictions placed on it. This deed restriction is discussed in greater detail in Section 8 of this study.

SECTION 2 BACKGROUND & METHODOLOGY



The Snellville District #2 Schoolhouse built in 1874 was originally used as a public school and meeting house. Designed in the Italianate style, the building is constructed with load bearing brick walls set on a granite block foundation. It served as a primary school and meeting room until around 1949 when it transitioned to a meeting place for the Veterans of Foreign Wars, as well as the Sturbridge Art Association and the Civic Defense for Storage, according to the Massachusetts Historical Commission

Inventory Form No. STU.113. The building is identified as Individually Eligible for listing on the National Register of Historic Places, however it is currently not registered. It is listed in the Sturbridge Historic Building Inventory by the Sturbridge Historical Commission which has authority over this property by means of demolition delay.

Snellville District #2 Schoolhouse has received modifications and alterations over the years, including a

shed addition in the 1970's and egress stair and elevator addition in the 1990's. Snellville has served as the Sturbridge Senior Center Council on Aging since 1979.

The building gross area currently at approximately 9,041 GSF includes a basement level of 2,977 GSF that is not usable as occupiable space due to ceiling and head height restrictions, limiting the effective area of the facility to 6,064 GSF.

The following steps were undertaken in completion of the feasibility study.

- 1. Space Program: Undertook tours of the existing facilities and participated in meetings with Council on Aging, Senior Center staff, Senior Center Study Committee, Town Facilities Coordinator, and the Town Administrator.
- 2. Site Plan Analysis: Developed a schematic site plan and building layout along with a summary of the site plan conditions and approximate number of vehicular parking spaces at each site.
- 3. Conformance with Regulations: Analyzed the site plan for conformance with the requirements of the Sturbridge Zoning Bylaws.
- **4. Historical Context:** Reviewed the Massachusetts Archive inventory documents for the existing building toward sensitive addition design.
- 5. Program of Uses and Parking Requirements: Prepared a space allocation program for the building allowing for a room-by-room occupancy to be created. This will lead to a use based parking program that was compared to the requirements of the Zoning Bylaws. Pare Corporation provided independent analysis of these findings.
- **6. Schematic Design:** Prepared additional drawings of the proposed addition to the existing building showing interior plan layouts and exterior appearance.
- 7. Utility and Traffic Analysis: Produced a civil engineering report of the existing utility infrastructure, discussion of civil engineering site conditions and a preliminary traffic review of each site.

- 8. Permits and Approvals: Identified applicable permits require for the proposed construction at all three sites.
- 10. Cost: Prepared a design cost estimate for each site proposed. The estimate shall include hard construction costs as well as soft costs such as engineering fees, testing, legal, inspection services, and FF&E. The final design cost estimate will establish the project budget. These are presented in a comparative manner.
- 11. Present Data: Met with the Sturbridge Senior Center, Town Facilities Coordinator, and Town Administrator to review the design plans and cost estimates.

SECTION 3 BUILDING PROGRAM

Design for the Budget, Growth, and Trends

Accommodating future requirements is not an easy task. UMass Boston has prepared many senior center reports and makes the following suggestions for what may be provided in future program:

- Recognize that the demand for COA services and programs in general will increase in the future. The community will see steady increase in the number of older residents moving forward. A large share of older adults who do not currently use COA programs and services indicate they are likely to do so in the future. All evidence points to expanded demand for COA services and programs.
- Priority should be placed on creating a facility that has sufficient adiacent space for multiple activities to occur simultaneously. Multi-purpose and flexible spaces are needed to accommodate the diversity of interests reflected across senior cohorts; additionally, as new cohorts of residents become engaged in COA activities, program offerings will evolve in turn.
- Connecting residents to services and helping them enroll is an important activity of the COA. To meet this mission, private spaces for confidential conversations about support needs are required. Adequate parking and accessibility features are essential in any facility to be developed.
- An improved facility is likely to result in growing demand not only among newly eligible residents, but also among those who have been discouraged from participation in the past due to limitations in programing, space, or access.

Parking Program

Parking requirements are discussed by Pare Corporation in Section 9 and 10 of this report and were determined for all three sites based on program functions within the building, taken from the Sturbridge Zoning By-Law parking calculations table as follows:

- General office use (1 space per 500 SF)
- Restaurant/café use (1 per 3 seats and 1 per employee on the largest shift)
- Art studio/class space (1 per studio plus one per 3 students if classes are provided)
- Personal service for the balance of the uses (1 per 200 SF)

A minimum number of parking spaces was calculated to be 53. The COA advised that a minimum of 65 parking spaces should be provided for all three sites as part of this study, as presented in each of the site test fits.

Additionally, the Town requested augmenting the parking study to include 100 spaces, and 150 spaces. The 150 space option would potentially accommodate the facility as a Town voting station.

The parking solution needs to accommodate cars as well as vans and other types of vehicles. The demand for COA-provided transportation services is likely to increase steadily. As the population continues to age, alternatives to self-driving are increasingly sought out. Given the lack of public transportation options in the area. COA services will experience high demand. The parking program is further refined for day-to-day and peak use versus overflow use.

480 Main Street

The existing Senior Center at 480 Main Street resides in an old school building with insufficient infrastructure, lack of accessibility, limited program spaces and facilities. An addition to the existing building provides open multipurpose spaces that are insufficient currently, serving the growing needs of the Center's many regular activities. By distributing offices and core building services to the existing building and large activity multipurpose spaces to the new addition, the concept presented in this report offers an effective continuation of use for the 1874 facility. Providing a new accessible entrance centered between existing and new brings both new and old together as a multifunctional center.

Seniors and visitors will enter the building on the east side through a covered accessible entrance into a lobby that aligns the existing building floor with the addition floor. The lobby connects the Director's Office, the Gift Shop. and the Reception Desk to visitors providing a compact, efficient point of operation for the center. The Lobby also connects the seniors to the Multipurpose Room, Kitchen, and west entry as the main corridor linking registration/ check-in with access to all programs for all users. Fully accessible restroom facilities located in the existing portion of the building, along with offices for Outreach, Veterans Affairs, Flex Professional Office, Staff Restroom and Staff Breakroom round out the first floor.

The design uses the existing elevator and stair to access the second floor Exercise/Tai Chi/Yoga room in the addition, as well as the Health & Wellness, Workout Room, Game Room and Small Meeting Room in the existing portion. New egress stairs are provided at the rear of the addition and at the front of the existing building.

70 Cedar Street – 80 Haynes Street (Route 15)

The conceptual new building proposed for 70 Cedar Street and 80 Havnes Street (Route 15) is laid out as a single-story facility based on the same program elements as 480 Main Street. The main entrance to the Senior Center, sheltered by a canopy roof, is through a vestibule into the Lobby where Reception, the Director's Office and Gift Shop provide an efficient arrival experience. From the Lobby, seniors and visitors have direct access to the Multipurpose Room where dining, presentations, lectures, and other events occur. Across the corridor, users have access to the Exercise/Tai Chi/Yoga. A Game Room and Workout Room are positioned away from the busier areas. Administrative offices include the Director, Outreach, Health and Wellness, Veterans Affairs, and Tri-Valley. A Meeting Room for private meetings, screenings, and COA board meetings is accessed from the public corridor, as well as the Flex Room and Professional Office. A Copy and Supply room serve all offices and work areas. Fully accessible restrooms are located efficiently adjacent to mechanical and plumbing spaces, including a Staff Restroom and Staff Breakroom. A Companion Restroom is grouped in this area as well.

Program Space Requirements

Council on Aging

The Senior Center is a dedicated facility operated by COA for gathering, socializing, participation in programs, seeking information and guidance, etc. COA offices include the Director, Outreach Coordinator, Tri-Valley, Veterans Affairs, Health and Wellness, and a Flex Room/Professional Office for S.H.I.N.E. offering community-wide services to the senior population. A Meeting Room provides both COA and seniors use for meetings and private discussions.

Lobby

Provides a point of entry where seniors and visitors are greeted, offered any assistance if desired, and check in to activities and programs. The reception desk serves to facilitate the individual needs of seniors and provides monitoring of the entry points, providing direct access to the Multipurpose Spaces, Gift Shop, and Public Restrooms.

Gift Shop

An open space accessed directly from the Lobby where handmade, vintage, and other items are offered for sale to anvone visiting the Center.

Multipurpose Room

One of the large program spaces at the Center is the large Multipurpose Room. This room is a program space that may be sub-divided with a movable partition to accommodate multiple smaller functions as well as serving as a large meeting space. Approximately 20 tables with seating for 100 or more is possible for senior meals, prepared in the adjacent commercial kitchen and served by the pass-through window.

Kitchen

Meals on Wheels is a service provided through Council on Aging where meals are prepared and distributed to residents from the Senior Center kitchen. Van loading and unloading occur on the west side of the building, directly with the kitchen to facilitate this program. A small walkin cooler is incorporated along with commercial cooking appliances, counter workspace, upper and lower cabinets, and a large central island. The kitchen could be utilized for Center programs including cooking classes. A commercial kitchen is to offer fresh cooked on site, including lunches or meals for seniors instead of precooked or reheated meals from meals on wheels.

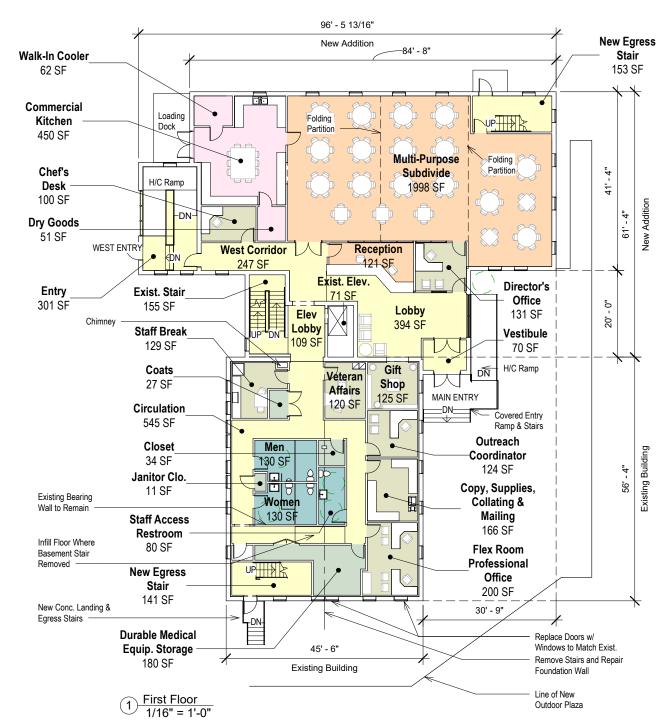
Exercise/Tai Chi/Yoga

The second large program area upstairs is the Exercise/ Tai Chi/Yoga space, an open room sub-dividable for multiple activities occurring at the same time. This space is accessed from the lobby area and has a storage room for mats, etc.

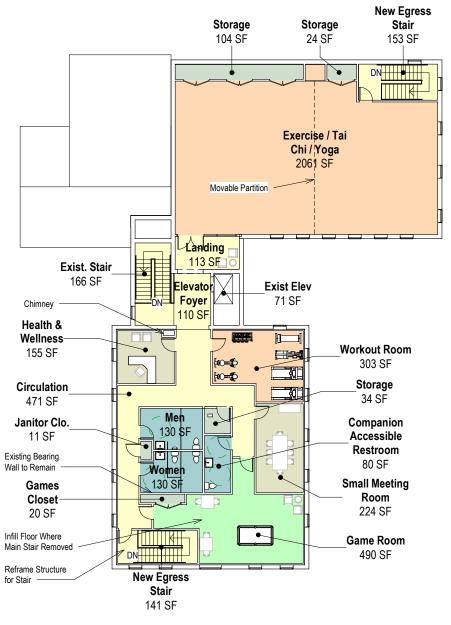
Fully accessible restroom facilities, Companion Restroom, Staff Restroom, a smaller Workout Room with exercise equipment, and Game Room with pool table round out the program.

Space	Proposed Area	Notes
LOBBY	350	
GIFT SHOP	120	
MULTIPURPOSE ROOM	2,000	2,000 SF + subdividable additional 2 spaces. Currently serving 60 people, potential to 75. 6 tables set up always.
COMMERCIAL KITCHEN / MEALS ON WHEELS	550	450 sf plus 50 sf Dry Goods plus 50 sf walk-in cooler
EXERCISE/TAI CHI/YOGA	1,500	subdividable into two spaces
WORKOUT ROOM	300	
GAME ROOM	400	one pool table only
SMALL MEETING ROOM	250	·
FLEX ROOM/PROFESSIONAL OFFICE	200	S.H.I.N.E./Veterans/Program Assistant use
DIRECTOR OFFICE	120	•
OUTREACH COORDINATOR OFFICE	120	
CHEF'S DESK	120	(was Tri-Valley)
VETERANS AFFAIRS OFFICE	120	
HEALTH AND WELLNESS OFFICE	120	
COPY, SUPPLIES, COLLATING & MAILING	150	
PUBLIC RESTROOMS	520	on both floor levels
COMPANION ACCESSIBLE RESTROOM	80	
STAFF ACCESSIBLE RESTROOM	80	
STAFF BREAKROOM	100	Refrig, micro, etc. for patron alergy separation
MECHANICAL ROOM	250	
ELECTRICAL ROOM	150	
WATER SERVICE SPRINKLER & PUMP ROOM	250	
FIRE STAIRS	800	Existing SC entry stair is larger
ELEVATOR & ELEVATOR MACHINE ROOM	320	
DURABLE MEDICAL EQUIPMENT STORAGE	150	
GENERAL STORAGE	800	
SUBTOTAL	9,920	
GROSSING FACTOR @ 27%	2,732	need to include area for existing oversized stair, circulation, masonry wall thickness at existing building and interior walls
TOTAL	12,652	compare to original program 12,515 sf

480 Main Street



480 Main Street



Second Floor 1/16" = 1'-0"

480 Main Street



Sturbridge Senior Center Sturbridge Council on Aging Elevations

Bargmann Hendrie + Archetype 9 Channel Center Street Boston, MA 02210 Tel: (617) 350-0450 07/23/20

C:\Local Revit\480 Main St_rvt20_option1_iwhitehill.rvt

480 Main Street



View looking Northeast

480 Main Street

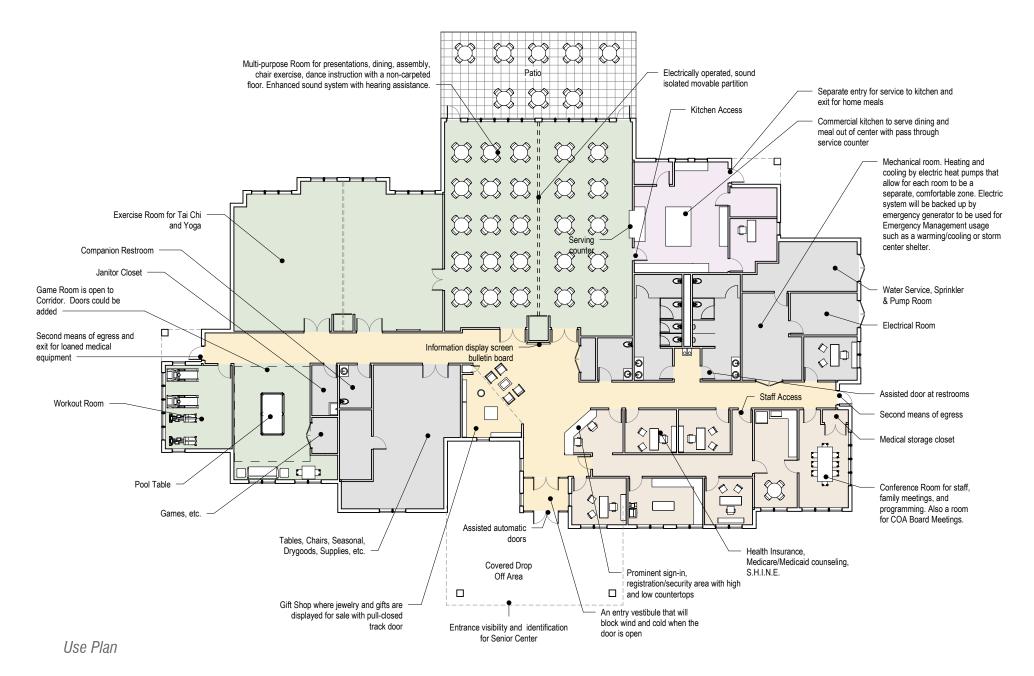


View looking Northwest

Conceptual New Building



Conceptual New Building



Conceptual New Building







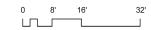


FRONT ELEVATION

STURBRIDGE SENIOR CENTER - NEW BUILDING

Elevations - 1/16" = 1'-0"

Bargmann Hendrie + Archetype 9 Channel Center Street Boston, MA 02210 Tel: (617) 350-0450 06/26/20 C:\Local Revit\3435_Sturbridge Senior Center Alt Sites_Central_R20_iwhitehill.rvt



SECTION 4 CODE & ZONING STUDY

Summary:

The existing building at 480 Main Street operating as a senior center has an occupancy classification of A – Assembly and an existing construction type of 3B. The building currently complies with the building code for Use, Height, and Area. There is no change in use. While it is possible to add onto the existing building continuing with type 3B construction, the open plan areas become challenging structurally using type 3B wood frame and floor trusses. Using 2B construction steel framing, a composite slab second floor for the addition will allow design of large open multipurpose spaces. As noted in the structural report in the appendix, the new construction will be isolated from the existing with an expansion joint. New building construction will be Type 2B with steel frame and roof trusses to accommodate large multipurpose spaces. Both existing and new buildings will have automatic sprinklers with addressable alarm systems.

The following code review is applicable to both existing and new construction and demonstrates both existing and new community centers are designed to meet all governing codes. Specific code analysis relative to 480 Main Street is also found in the structural report, located in the appendix of this report.

Applicable Codes:

780 CMR: Massachusetts Building Code (9th Edition)

(2015 International Building Code, amended)

(2015 International Existing Building Code, amended)

(2015 International Energy Conservation Code, amended)

527 CMR: Massachusetts Fire Prevention Regulations

(2015 NFPA-1)

521 CMR: Massachusetts Architectural Access Board Regulations (2006)

ADA: Americans with Disabilities Act (2010 ADAAG)

527 CMR 12.00: Massachusetts Electrical Code

(2017 National Electrical Code, amended)

2015 International Mechanical Code

248 CMR: Massachusetts Plumbing Code (2017)

524 CMR: Massachusetts Elevator Code (2018) (for 480 Main Street)

(2013 ASME A17.1, amended)

CHAPTER 3 USE AND OCCUPANCY CLASSIFICATION

Principal Use

303.4 Assembly Group A-3

303.3 Assembly Group A-2 (dining)

Accessory Use

304.1 Business Group B (office)

311.2 Moderate-Hazard Storage Group S-1

CHAPTER 5 GENERAL BUILDING HEIGHTS AND AREAS

480 Main Street: 2 stories plus basement (under existing)

Basement 2.977 GSF 3.091 GSF Existing First Existing Second 2,973 GSF

Proposed New Building

11,937 GSF Floor Area

Table 504.3 Allowable Building Height in Feet above Grade Plane

Occupancy Classification		Type of Construction	Height
А	Sprinklered	Type IIIB/IIB	75'

Table 504.4 Allowable Number of Stories Above Grade Plane

Occupancy Classification		Type of Construction	Number of Stories
A-3	Sprinklered	Type IIIB/IIB	3
A-2	Sprinklered	Type IIIB/IIB	3

506.1.3 Basements

Basements need not be included in the total allowable floor area of a building provided the total area of such basements does not exceed the area permitted for a one-story above grade plane building.

CODE STUDY

Table 506.2 Allowable Area Factor (SF)

Occupancy Classification		Type of Construction	Allowable Area (SF)
A-3	Sprinklered - SM	Type IIIB/IIB	28,500
A-2	Sprinklered - SM	Type IIIB/IIB	28,500

SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.1.1

CHAPTER 6 TYPES OF CONSTRUCTION

Table 601 Fire-Resistance Rating Requirements for Building Elements (Hours)

Building Element	Construction Type IIIB (existing 480 Main)	Construction Type IIB (new / addition)
Primary structural frame	0	0
Bearing Walls Exterior Interior	2 0	0 0
Nonbearing walls and partitions Exterior	See Table 602	See Table 602
Nonbearing walls and partitions Interior	0	0
Floor construction and secondary members	0	0
Roof construction and secondary members	0	0

Table 602 Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance

Fire Separation Distance = X (feet)	Type of Construction	Occupancy Group F-1,M, S-1	Occupancy Group A , B,E,F- 2,I,R,S-2,U
X≥30	All	0	0

Currently both existing 480 Main and both proposed new construction locations site buildings further than 30 feet away from any adjacent structure.

CHAPTER 10 MEANS OF EGRESS

Table 1004.1.2 Maximum Floor Area Allowances per Occupant

Assembly without fixed seats (tables and chairs)	15 net
Business Areas	100 gross
Exercise Rooms	50 gross
Kitchens, Commercial	200 gross

1005.3.1 Stairways

0.2 inch per occupant (sprinklered building with voice/alarm)

Based on the total net area of the facility it is possible to have 300 occupants, requiring an addressable fire alarm system. The cost estimate for both renovation and new buildings in this feasibility study includes an addressable fire alarm system.

1005.3.2 Other Egress Components

0.15 inch per occupant (sprinklered building with voice/alarm)

Other Egress Requirements

- All exit doors serving more than 50 occupants must swing in the direction of egress travel (780 CMR 1010.1.2.1).
- Stair doors are not permitted to reduce clear width of the means of egress to less than ½ of the required width at any point. When fully open the door cannot project more than 7" into the required width (780 CMR 1005.7.1).
- Maximum Exit Access Travel Distance: Group A: < 250 ft. (780 CMR 1017.2).

- Maximum Dead End Corridor Length: Group A: 20 ft. (780 CMR 1020.4).
- Common path of travel limits: Group A: 75 ft. (780 CMR 1006.2.1).

1006.2.1 Egress based on occupant load and common path of egress travel distance Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1

Table 1006.2.1 Spaces With One Exit Or Exit Access Doorway

Occupancy	Maximum Occupant Load of Space	With Sprinkler System (feet)
А	49	75
В	49	100
S	29	100

Table 1006.3.1 Minimum Number Of Exits Or Access To Exits Per Story

Occupant Load Per Story	Minimum Number of Exits
1-500	2

SECTION 1011 STAIRWAYS

1011.2 Stairway Width and Capacity

The required capacity of stairways shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches.

Exceptions:

1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches.

1011.3 Headroom

Stairways shall have a headroom clearance of not less than 80 inches measured vertically from a line connecting the edge of the nosings.

1011.5.20 Riser Height and Tread Depth

Stair riser heights shall be 7 inches maximum and 4 inches minimum. Rectangular tread depths shall be 11 inches minimum.

Exceptions:

4. See Section 403.1 of the International Existing Building Code for the replacement of existing stairways.

Stairs must comply with 521CMR 27

SECTION 1012 RAMPS

1012.2 Slope

Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope).

1012.4 Vertical Rise

The rise for any ramp run shall be 30 inches maximum.

Ramps must comply with 521 CMR 24

CHAPTER 11 ACCESSIBILITY

521 CMR - 2006 Edition Architectural Access Board

The Massachusetts Architectural Access Board (MAAB) promulgates accessibility regulations for all buildings within Massachusetts, which are accessible to the public. Any rooms and spaces open to the public must be accessible.

28 CFR Part 36: ADA Accessibility Guidelines (ADAAG)

The ADA Guidelines are not enforced by the Commonwealth of Massachusetts. Enforcement can only occur through a civil lawsuit or a complaint filed with the US Department of Justice. The ADA guidelines contain accessibility requirements which are applicable to all buildings and cover employees in addition to the public. Under the provisions of the ADA, areas within these buildings are classified as a commercial facility. All work shall comply with the ADAAG unless technically infeasible.

CODE STUDY

CHAPTER 34 – EXISTING BUILDING CODE (IEBC 2015)

Refer to the Structural Review in the appendix for 480 Main Street governing structural compliance for work to the existing building.

505.1 Alterations will exceed 50% of the building area. Level 3 alterations shall comply with the provisions of Chapter 7 and 8 for Level 1 and 2, in addition to Chapter 9 for Level 3.

904.1 Automatic Sprinkler Systems

An automatic sprinkler system shall be provided in all work areas where required by 804.2.

1101.1 Additions shall comply with the IBC code for new construction.

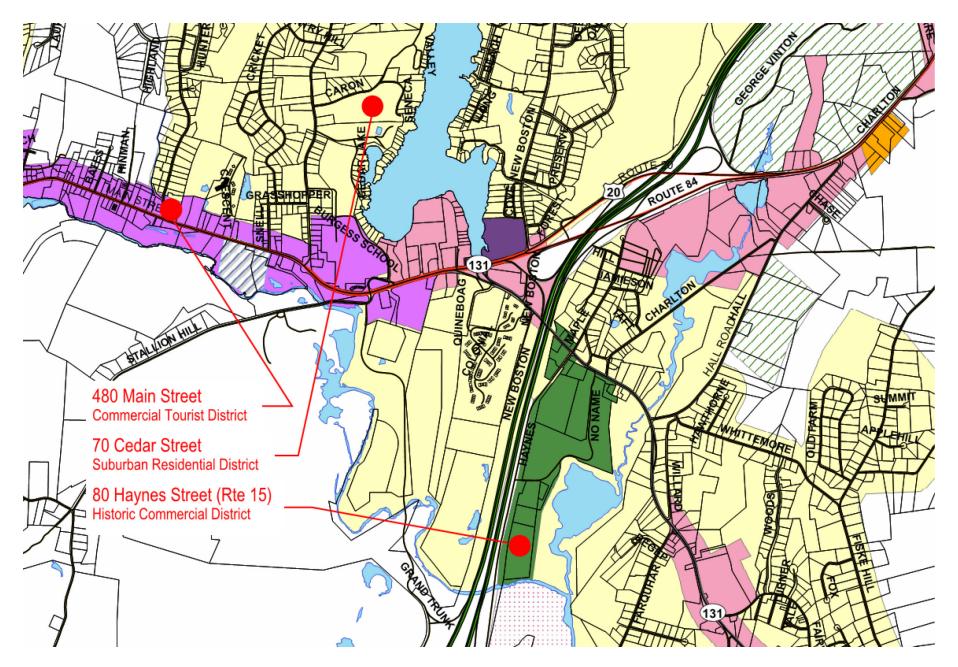
Other requirements:

Fire Protection

- Sprinklers The building must be protected with automatic wet pipe sprinkler systems designed in accordance with the requirements of NFPA 13 (780 CMR 903.2.1.2, 903.3.1.1). Water flow alarms which activate alarm devices on the interior and exterior of the building must be provided (780 CMR 903.4.2).
- Standpipes The highest occupied floor is less than 30 ft. above grade plane, and the building will be fully sprinklered. A standpipe system is therefore not required (780 CMR 905.3.1, 905.3.2).
- Fire Alarm Manual pull stations are required (780 CMR 907.2.1). Notification must be provided throughout the building for the pull station activation or a water flow alarm (780 CMR 907.5)

Energy Code

The building must comply with all applicable provisions of the 2015 International Energy Conservation Code (IECC) as amended by Massachusetts. The Town of Sturbridge adopted the Stretch Energy Code on June 4, 2018, and went into effect January 1, 2019.



ZONING STUDY

The three Options in this Feasibility Study occur in different zoning districts, each with their own unique requirements. The existing option at 480 Main Street is within the Commercial Tourist District, while 70 Cedar Street is within the Suburban Residential District, and 80 Haynes Street is within the Historic Commercial District. All three districts allow a senior center facility to be constructed while each district has its own requirements for lot size, frontage, setbacks, site coverage, building height, etc. The following looks at each zoning district as it applies to a senior center, and notes any potential architectural variance or Town review that might be required. The civil engineering report included in the appendix of this study further identifies requirements for approvals including environmental requirements.

Proposed work at 480 Main Street and 70 Cedar Street appear to comply with all applicable zoning requirements. 80 Haynes Street as proposed in this study due to topographical and environmental restrictions will require site plan review and possible waiver for parking in front of the building (Chapter 21) and design review for the more restrictive architectural design requirements outlined in Chapter 13.

Excerpt from Chapter 19 Table on page 97 of the Zoning ByLaws:

Zone Project Site	Lot Size		Setback		Max Lot Coverage %	Max # Bldg. Stories	Max. Height (Mean)	Max. Impervious Survace	Min. Habitable Floor Area
	Acre	Frontage	Street	Other					
Commercial Tourist 480 Main	10,000 sf	100'	25'	10'	30	3 (3)	35 (4)	-	750 sf
Suburban Residential 70 Cedar	½ Acre	125'	30'	15'	15	2	35	-	750 sf
Historic Commercial 80 Haynes	1	200'	50'	20'	30	-	35	-	750 sf

- 3. May be varied by Special Permit by the Planning Board
- 4. May be varied by Special Permit by the Planning Board

480 Main Street

Chapter 8 Use Regulations: Commercial Tourist District

8.01 Permitted Uses

a) Religious, educational or governmental use. Council on Aging is a governmental use.

8.03 The following regulations shall be applicable in the Commercial/Tourist District (CT)

Site Plan Review - See Chapter Twenty-Five

In addition, applicants shall note the following:

- (a) Design Review is required for new structures, and exterior renovation or alteration of existing structures, in the Commercial Tourist District (CT), as set forth in General Bylaws Section 1.30, et seq.
- (b) Per the Planning Board's direction, Design Review shall take place prior to or concurrently with the Site Plan Review Process in the Town of Sturbridge, and shall inform that process.
- (c) Property owners and designers shall use the Design Review Guidelines when applying for and undergoing the Design Review Process, which may include architectural review and/or sign review.
- (d) Applicants are encouraged to discuss their projects with the Planning Department if they have any questions regarding the Design Review Guidelines.

Design Review and Site Plan Review (chapter 25) are required for this site.

70 Cedar Street

Chapter 6 Use Regulations: Suburban Residential District

6.01 Permitted Uses:

b) Religious, educational or governmental use. Council on Aging is a governmental use.

Site Plan Review (chapter 25) is required for this site.

80 Haynes Street (Route 15)

Chapter 13 Use Regulations: Historical Commercial District

13.01 Permitted Uses:

g) Religious, educational or governmental use. Council on Aging is a governmental use.

13.03.3 Guidelines for Infill Development for all projects requiring Site Plan Review.

- a) New structures should support the distinctive architectural characteristics of development within the existing Historic Commercial District and nearby NRHD, including building mass, scale, proportion, decoration/detail, door and window spacing, exterior materials, porches and roof pitch and style.
- b) The height of new structures should be considered within the context of their surroundings. Structures with greater height should consider providing greater setbacks at the second story level, to reduce impacts (e.g. blocking or screening of air and light, privacy, etc) on adjoining story structures.
- c) The incorporation of design elements that break up large facades and add human scale to the structures is encouraged.
- d) The proper use of building materials can enhance desired neighborhood qualities (e.g., compatibility, continuity, harmony, etc). The design of new structures should incorporate an appropriate mixture of the predominant materials in the surrounding neighborhood whenever possible.
- e) Building forms that reduce energy may be much different than traditional architectural types. Careful design is required to ensure that such modern and commonly used features are integrated within the design. Solar panels and other sustainable construction features should be fully integrated into the design of new construction, rather than applied at the conclusion of the design process.

13.04 The following shall be applicable in the Historic Commercial District:

a. All parking, loading and service areas shall be located to the rear of the principal structure wherever possible.

ZONING STUDY

Note: 80 Haynes Street proposes to capture the former right of way between the Route 15 roadway and the street property line, bringing all parking to the front of the building. This site plan will require approval from the town.

- b. Site Plan Review See Chapter Twenty-Five
- c. Design Review pursuant to General Bylaws Section 1.30, et seq. shall be required for all adaptive reuse projects, additions to existing structures, and infill development.

With respect to Design Review, applicants shall note the following:

- i. Per the Planning Board's direction, Design Review shall take place prior to or concurrently with the Site Plan Review Process in the Town of Sturbridge, and shall inform that process.
- ii. Property owners and designers shall use the Design Review Guidelines when applying for and undergoing the Design Review Process, which may include architectural review and/or sign review.
- iii. Applicants are encouraged to discuss their projects with the Planning Department if they have any questions regarding the Design Review Guidelines.

Chapter 21: Off Street Parking, Loading and Drive Thru Standards

The following standards apply to all parking lots developed within the Town.

21.02 Motor Vehicle Parking:

General:

B. Parking lots shall be provided on the same lot or on another lot located in a zone in which the parking area is permitted within a radius of not more than 300 feet from the lot to which it is appurtenant and in accordance with the shared parking Requirements in Section 21.10. Properties within the Commercial Tourist District shall not be required to comply with the 300 foot limitation, but may share parking anywhere within the District.

21.03 Space Dimensions:

A. Following dimensions apply:

Standard Space area of not less than 10'x20' per vehicle

Parallel parking Spaces shall have an area of not less than 9'x20'

Compact/Small Car Parking not less than 8'x16'

Universal Access Spaces not less than 12'x18'

21.04 Drive Aisles:

A. Two-way minimum 25' for angle parking. One-way minimum 18' for angle parking. 24' wide lane is required for perpendicular parking.

21.09 Parking Lot Landscaping:

- A. Buffering: Not allowed in front setback, and the area of the font setback shall be a buffer, landscaped.
- B. Interior Parking lot landscaping:

Under 20 parking spaces 0.0%

Equal to or over 20 spaces 5.0%

Equal to or over 100 spaces 7.5%

- 1. 1 shade tree per 10 spaces
- 2. No landscaping island less than 10' wide. No landscaping strip separating parking bays less than 8' wide.
- 3. Planning Board encourages large planting islands (600 sf) located throughout the lot and planted with shade trees

21.11 Parking Spaces Required:

A. Commercial Tourist District: (480 Main Street)

Properties within the Commercial Tourist District shall not be required to comply with the current parking requirements for the continued use for a same or similar use that exists at the time of adoption of this section. A proposed change shall require review by the Planning Board and a determination of practical parking requirements for the proposed use given the constraints of the District. Factors such as shared parking, peak parking demands of uses at different times of the day or week, and actual projected parking needs shall be considered when determining practical parking requirements.

The Town Planner, Zoning Enforcement Officer and DPW Director shall review such parking proposals and make recommendations to the Planning Board on the parking proposals. The intent of this section of the bylaw is to encourage the continued use and reuse of buildings within the Commercial Tourist District.

Parking space count determination:

- General office use (1 space per 500 sf)
- Restaurant/café use (1 per 3 seats and 1 per employee on the largest shift)
- Art studio/class space (1 per studio plus one per 3 students if classes are provided)
- Personal service for the balance of the uses (1 per 200 per sf)

The Building Program in Section 3 was used to determine parking space counts based on the above determination and the program square footages. The total parking count arrived at was 53 parking spaces. The Council on Aging Director has advised that 65 parking spaces are desired, based on experience with 480 Main Street usage. All test fit site diagrams presented in this report include a minimum of 65 parking spaces. Further, sites 70 Cedar and 80 Haynes study 100 and 150 parking spaces for possible facility use as a town voting station.

SECTION 5 EXISTING CONDITIONS AT 480 MAIN STREET

Understanding the existing condition of 480 Main Street involved several specialized consultant reports in addition to our architectural review, based on field visits, review of existing available drawings, industry standards, and testing with regard to the possibility of hazardous materials used in the building. These reviews included the following consultants. Their full reports are found in the appendix of this study.

- Mechanical, Electrical Plumbing, Fire Alarm: Allied Consulting Engineering
- Hazardous Materials: Universal Environmental Consultants
- Structural Review: Bolton & DiMartino, Inc.

Architecturally, the existing building generally appears to be in reasonably good condition with evidence of ongoing care and maintenance to the facility. There are areas within the existing building that do not meet current ADA and Massachusetts accessibility requirements. Many of these issues were identified in the 2008 Accessibility Audit, and have not been addressed over the following twelve years. This audit may be found in the appendix of this study. The existing monumental stair, and the south entry do not comply with egress. The basement is currently being used for public access, where ceiling/ vertical clearances are lower that the building code allows. Having the Senior Center as a public facility noncompliant with the requirements of ADA places the town at risk for civil suit. The perimeter walls do not appear to be insulated, the recent vinyl replacement windows were not insulated to the openings and the Owner has advised the windows do not lock and seal shut, weatherstripping

has failed, accessible operable hardware is not provided. Our review follows in this section of the study.

MEP/Fire Protection review identified both critical and non-critical deficiencies in the building. Mechanical critical items include exterior combustion air louvers that must be protected from snow and debris. The fan coil unit in the basement crawl space should be relocated to a dry location and the ductwork inspected for mold during construction. CO and NO2 sensors are required to shut down the basement ventilation system should an idling vehicle park next to the intake air louver.

Plumbing review did not identify critical items, however the building does not have a janitor closet requiring people to use the kitchen sink, some existing toilet rooms do not comply with 521 CMR MAAB. The existing water heater will not support a commercial kitchen and is beyond its warranty period. Existing hot water supply piping is not insulated as required to meet current codes.

Electrical identified several critical items, including replacement of the existing fire alarm system which does not comply with current code, and has missing detection devices. The fire alarm system must be replaced with a new addressable system if the building is expanded with an addition, increasing the occupant load to a potential 300 people. Exposed wiring must be properly terminated and covered. Emergency lighting is inconsistent, with some areas without that are required, and exit signage is outdated.

Hazardous materials investigation identified asbestos in exterior caulking of windows and doors, based on representative sampling. Lead paint was not specifically tested as there are no requirements to remove LBP from Senior Centers. The only compliance would be OSHA and DEP. During demolition and construction, monitoring of loose or flaking paint is required.

Structural review identified areas of concern to bring the existing building in compliance with IEBC minimum standards for existing buildings. An area of critical concern is the center masonry bearing wall as seen in the basement upon removal of ceiling tiles. This brick wall, supporting columns through the first floor to support the second floor exhibits deterioration and will require full inspection, repairs and strengthening during construction once all concealing walls are removed. Seismic throughwall anchors at the second floor, steel plates and anchors at the roof to wall connection, repair of missing bricks in the basement bearing wall, deteriorated wood framing are also noted in the structural report.

BOLTON & DIMARTINO, INC. CONSULTING STRUCTURAL ENGINEERS 100 Grove Street Worcester, MA 01605 Tel. 508-756-8972

July 23, 2020

Mr. Reese Schroeder Bargmann Hendrie + Archetype, Inc. 9 Channel Center Street, Suite 300 Boston, MA 02210

Feasibility Study- Structural Narrative Sturbridge Senior Center Sturbridge, MA

Dear Mr. Schroeder.

The Sturbridge Senior Center project includes renovating the existing Senior Center building and constructing a new 9,000 sq. ft., two-story, addition. The new construction portion of the project conforms to Type 2B Construction.

Existing Building:

Structural work within the existing building includes:

- Install seismic through-wall anchors at 6'-0" o.c. at perimeter of existing 2nd Floor and Roof level to tie unreinforced brick walls to floor levels. This will include drilling through the brick wall and installing a plate on the exterior face of the wall and an anchor to the wood framing on the interior side.
- Selective repair of existing brick pier and center brick bearing wall in the basement at missing brick masonry.
- Selective repair of wood framing due to deterioration/damage at 1st and 2nd Floor framing. For estimate, assume sistering 2x8 floor joists to existing joists at 20 locations.
- Install ties at existing 1st Floor girders where loosely joined at center of building to provide continuity from side-to-side of building. Assume adding Simpson Strong-Tie plate ties at 5 location for estimate.
- Infill original building stairways at 1st and 2nd floor with new dimensional wood framing and plywood floor sheathing. Framing will need to be carried to existing girders and possibly new posts down to basement level. Assume 2 new posts to basement with lally columns and footings installed in the basement.
- Create new floor opening at 2nd floor for egress stair. Work will include providing new bearing walls carried to the basement. Also, exterior wall will require structural anchorage at the limits of the stair where floor framing is removed. Anchorage will likely include structural steel tubes anchored through the exterior wall to stabilize the wall at the floor level and be anchored to the wood floor framing beyond the limits of the new stair opening.

· Recommend carrying an allowance for general structural repairs that may be discovered after finishes are removed due to age/condition of existing building.

Recommend carrying an allowance for repair of center brick bearing wall in the basement where steel columns supporting the second floor likely bear. Condition of wall at exposed locations lead us to believe repairs may be required at existing posts, but could not be confirmed due to being covered by finishes. Anticipate repair of 2 locations of brick wall by shoring existing first and second floor framing near columns and remove/replace brick bearing wall with 8" reinforced CMU pier to existing foundation.

New Construction:

The foundations are assumed to be shallow foundations (exterior frost walls and interior spread footings) supported on natural glacial till or compacted structural fill, with a bearing capacity of 4 ksf. The perimeter concrete foundation walls have a width sufficient to eliminate the need for forming wall pilasters. Foundation type will need to be confirmed with Geotechnical Engineer for existing soil conditions.

The first floor will be a 5" thick concrete slab-on-grade reinforced with welded-wire fabric (6x6-W2.9 W2.9). Control joints, consisting of sawn cuts and construction joints, will be shown on the plans, and will be located at about 12 feet on center to minimize shrinkage cracks in the

The framed slabs will be a 5½" thick concrete composite slab supported on steel beams. 3"-18 Gauge composite metal deck will be specified and the slab will be reinforced with welded wire fabric (6x6-W2.9 W2.9). The composite concrete slab is made composite with the steel beams by using shear studs, and "partial composite design" is used for the economy of installing fewer shear studs. ASTM A992, with yield strength of 50 ksi, will be specified for the structural steel. However, the beams will be selected on serviceability requirements to reduce the problems of vibrations and deflections, so they will not necessarily be fully stressed. For estimating purposes, the weight of steel framing can be assumed to be 14 psf, including metal decking.

The roof framing will incorporate steel beam, steel trusses, and metal roof deck. The roof steel pitches to follow the gable roof layout. The roof metal deck will be 1-1/2"-20 Gauge (Galv). Type B. For estimating purposes, the weight of the steel framing at the roof can be assumed to be 12 psf, including metal decking.

Wherever possible, hollow structural shapes will be selected for the columns. HSS6x6 tubes are easily concealed in the wall and partition framing eliminating the need for pilasters in the concrete foundation walls or interior partitions. Columns designed as moment frames will be wide flange shapes.

The lateral stability of the buildings will be achieved with concentrically braced frames and/or steel moment frames, concrete floor diaphragms, and metal deck roof diaphragms. Typically, the concentrically braced frame members will be HSS shapes and will resist the lateral loads in both tension and compression.

Please call this office if you wish to discuss these items or any other aspect of the project.

Bolton & DiMartino, Inc.

Christopher Tutlis, P.E. President

The Senior Center building at 480 Main Street generally appears to be in good condition with evidence of ongoing care and maintenance to the facility. BH+A visited the building on March 18, 2020 to review existing conditions, general code and accessibility compliance. We also had our M.E.P. traffic, and hazardous materials consultants tour the facility. Our consultants have prepared their respective reports included in the appendix.

Exterior Observations

South Elevation

The south elevation is the original front entrance to the building, with three entry doors accessed by three separate sets of stairs. The center and right stairs are granite with minimal or no landing at the doors, while the left concrete stair does have a landing. This left door is used as the non-accessible entrance to the facility. Hardware appears to have been replaced with lever style handles, with panic bars on the interiors for all three entrances. All doors have been rehung to swing out. A non-working light exists over the center door.



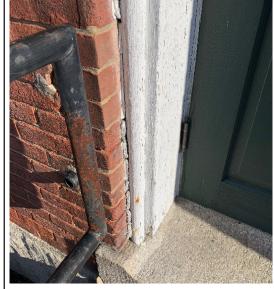
Some movement has occurred with the right-hand granite steps.

Recommend removal of granite steps with removal of doors.



All three doors are wood and show their age with peeling paint, missing or failed caulking and weatherstripping. Railings are rusting. Guardrails do not comply with the building code Chapter 10 Means of Egress Section 1015.4 Opening Limitations.

Railings require replacement if stairs remain. See proposed renovation plan where these are eliminated.



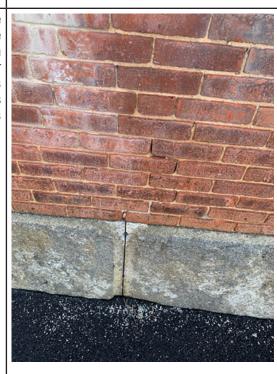
West Elevation



Foundation metal louver blades have filled with sand and require maintenance. The louvers must be allowed to drain. There are no bollards or other protective measures in place to prevent louvers from impact damage.



Gaps between joints in the granite foundation require re-pointing. There is a significant amount of staining on the foundation and brick at the stair addition. Observation of the roof was limited but noted that snow guards are present but there are no gutters or downspouts.



North Elevation

The majority of masonry on the north elevation is on the recent addition work and appears generally in good condition. All wood trim including fascias, soffits, and trim on both the addition and original building are in need of painting. The clapboard siding above the brick has weathered and requires painting.



The railing at the base of the handicap ramp appears to have been hit and repaired on several occasions. The railing was in the process of being painted yellow during our site visit. There are no bollards to protect the ramp railing. The elevation difference between the asphalt pavement and the concrete ramp exceeds 1/2".

Slope appears to meet 1:12 maximum requirement. Ramp slope meets accessibility code, however bottom of ramp to asphalt paving exceeds maximum 1/2".

Landing at top of ramp measured 6'-0"

Ramp clear width between railings measured 4'-2"







Exterior masonry condition is consistent with the other exterior walls of the building.

The protective cover for the wall mounted AC refrigerant lines has come off and is missing except for the bottom portion.



General Exterior Observations

There are areas around the exterior masonry which require repair and re-pointing. Brickwork is generally in good condition with no obvious signs of stress cracks. There are areas of mortar loss and what appears to be mortar staining at the granite window sills. The masonry should be cleaned with a process appropriate to the age of the brick and mortar.

Gaps between joints in the granite foundation require re-pointing.



Soffits, eaves and brackets appear to have been spray painted resulting in some overspray on the masonry. This condition occurs around the building.



Replacement vinyl windows appear to be in good condition. Owner's representative has advised that the windows do not close or lock properly. Windows were reportedly installed in 2018.

Exterior wood trim around windows and doors shows peeling paint. There is sealant loss where door trim meets the masonry. Soffit boards have opened up and require caulking and painting.



MAAB/ADA Accessible Entry

Following is a general review of accessibility into the facility from the exterior. A comprehensive review is not provided, as any addition to this building will require compliance with current accessibility requirements.

The Town provided BH+A with a copy of the 2008 Accessibility Audit for the Senior Center. Many of the deficiencies identified in this report (see appendix) are still evident and have not been addressed. They are included in this report by reference. It is noted that all such deficiencies are to be brought into conformance with both Massachusetts and ADA accessibility requirements.

Front entrance is not accessible per the requirements of MAAB 521.25.1.

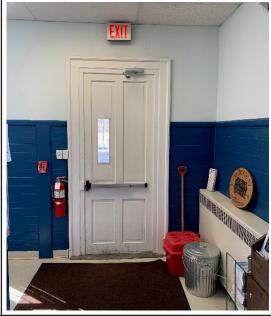
This public entrance does not meet MAAB 521.27.6 for protection from outdoor conditions.

Exterior stairs do not comply with Chapter 10 Means of Egress Section 1011.7.2 Outdoor Conditions.

Guardrails do not comply with Chapter 10 Means of Egress Section 1015.4 Opening Limitations.



Front entrance door as seen from inside. This door is equipped with a panic bar and is marked as an egress door.

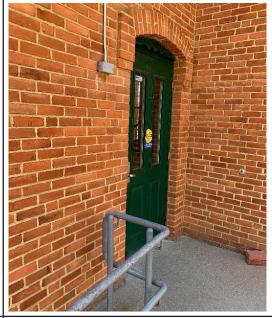


Rear (north) entrance is accessible with ramp and power activated door opener. Ramp is not protected from rain and snow.



Rear entrance door is operated by power actuator. Landing at top of ramp complies at 72".

ADA requirement for actuator location is between 1 and 5 feet from door. The location of the actuator is not in compliance.



Interior view of rear entrance door. This door is equipped with an automatic opener with interior and exterior pushbutton control. The door is also equipped with a panic bar and is identified as an egress door.

Elevator call buttons are blocked for accessible use by storage of snow removal equipment.



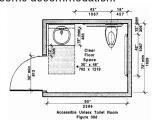
Exterior door from office at southeast corner is equipped with a panic bar but is not identified as an exit.

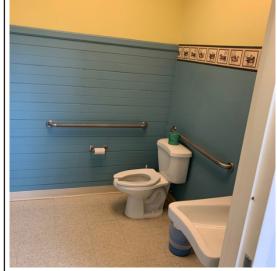


Interior Observations

First Floor

Toilet room at southwest corner appears to be upgraded toward accessibility requirements, however the sink projects too close to the door. 521 CMR: 30.701 Figure 30d. Edge of sink to door opening is 6" in lieu of required 12". This toilet is not identified as "Handicap Accessible" but is configured with some accommodation.





Toilet room at southwest corner, adjacent to building entrance. Note the open door to the main stair is equipped with a panic bar.



Toilet room at southeast corner (beyond) as seen from southwest corner, looking through open door across main stair. This toilet room is also not identified as "Handicap Accessible" but is configured with accommodation.



Generally, spaces on the first floor appear to be in good repair. Observations made did not identify significant physical deficiencies. The Owner representative has advised there are areas of viny floor tile failing and cracking, paint chipping at windows, and lack of storage for furniture leading to some overcrowding.



Kitchen Serving Area is not accessible and is equipped with residential grade appliances.



Kitchen food prep area. An exhaust fan was not observed, as the range hood appears to recirculate. The closet door (seen in photo on left side) houses paper goods with the hot water heater. Kitchen sink is insufficiently sized for its purpose.

The senior center facility does not have a custodial area with mop sink. The Owner's representative has advised BH+A that staff currently use the kitchen sink as a mop sink. Janitor closets with mop sinks are required and are included in the proposed renovations.



South Stair to Second Floor

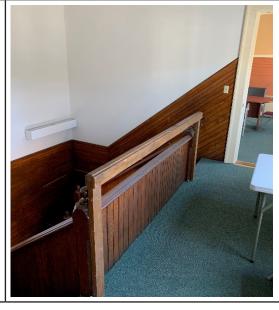
Main stair is original to building and serves as one of two required means of egress from the second floor. Stair width from intermediate landing to second floor is 36 inches wide, each side run. Intermediate landing is 36" deep from the 60" first run. The bottom of the main stair begins 60" inside the center double doors on the front (south) elevation. This stair does not comply with current egress code. Alterations to the building will require the addition of a code compliant egress stair or modification of this stair to meet minimum handrail and guardrail height requirements.



Handrail is 24" above tread nosing; it should be 2'-10". Handrail shape is non-compliant.



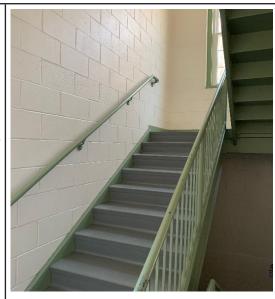
Guardrail at second floor has been amended in height but may not meet code lateral force requirement. It's opening exceeds the 4" sphere requirement and does not have a compliant rail shape.



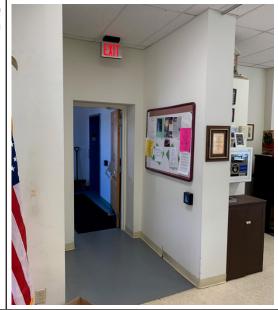
North Stair

The north stair is not original to the building, added in 1998 along with the elevator and handicap ramp to provide code upgrades to the existing building. This stair appears to be in compliance with code, except as noted. Access to this stair from within the building on the first floor is by means of a power operated door and is accessible.

Refer to following page for additional code review of this stair.



Power operator for egress door to north stair and elevator is seen on wall below bulletin board.



Clear access to the north stair from the second floor is in compliance. Section 2015 IBC 1011.2 (Stairways) Width and Capacity requires a minimum of 44" unless the occupant load is less than 50 people. The multipurpose space is approximately 1600 net SF.

2015 IBC: Table 1004.1.2: Assembly without fixed seats unconcentrated (table and chairs) 15 net SF / person

Occupant load: 1600/15 =107 occupants.



Second floor multipurpose room tables and chairs.



Second Floor

Two toilet rooms on the south side of the floor are in good working order and appear to meet 521 CMR: 30.7.1 dimensional requirements, however they are not marked with signage indicating Handicap Accessible.

An electric water cooler (EWC) is located between the two toilet rooms in the corridor leading to the main function room. It is a single fountain mounted at accessible height. It is not a "high-low" per 521 CMR 36.1.1, Figure 36a guidelines.

The EWC projects into the path of egress beyond 4".



Water stains are on the ceiling in various places throughout the second floor. Unknown whether roof is leaking, or stains are from previous issues since repaired.



Generally, spaces on the second floor appear to be in good repair. Observations made did not identify significant physical deficiencies except for ceiling damage due to water. The Owner representative advised that paint is failing in this area.

Flooring by Mats Inc. installed in 2018.



Attic

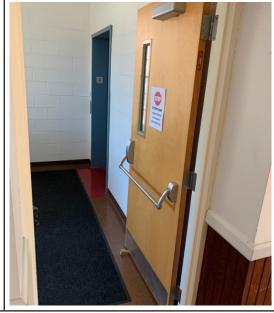
The attic has no access hatch. Currently, access is gained through the acoustical tile ceiling. functioning attic hatch access is required. Subsequent observations of the attic by the structural engineer are found in the structural engineering report in the appendix.

The attic is currently insulated, however the insulation has been installed backwards with the vapor barrier facing the cold side. Insulation appears to be minimal in thickness and requires full replacement as part of compliance with the building and energy code.





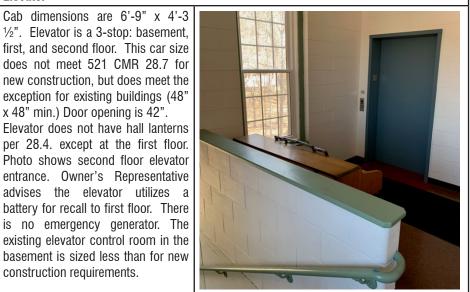
The door exiting from the second floor activity space to the north stair and elevator is not in compliance with egress. The door is not power actuated, and is positioned deep within the wall, out of compliance with 521 CMR 26.6.4.



Elevator

½". Elevator is a 3-stop: basement, first, and second floor. This car size does not meet 521 CMR 28.7 for new construction, but does meet the exception for existing buildings (48" x 48" min.) Door opening is 42". Elevator does not have hall lanterns per 28.4. except at the first floor. Photo shows second floor elevator entrance. Owner's Representative advises the elevator utilizes a battery for recall to first floor. There is no emergency generator. The existing elevator control room in the

construction requirements.



Basement

Basement Stairs and Egress

The basement is served by two stairs and the elevator. The north stair as part of the 1998 addition as in the photo appears to meet egress requirements.

The second stair located by the southwest entry is non-compliant and does not meet egress requirements.

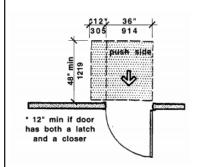


The basement corridor leading to the north stair is 34" in width. 2015 IBC Table 1020.2 requires a minimum corridor width of 36" for an occupant load less than 50 people. The fintube radiant heat register further restricts the corridor width.

While this corridor is identified as an egress, it does not meet egress requirements.



The door to the north egress stair is set deeply in excess of 6" into the original masonry foundation wall and does not comply with MAAB 26.6.2 and does not provide 12" minimum on the push side as required by 26.6.3 Fig. 26e. This door is not compliant as an accessible door to the elevator beyond.



Door to the second basement stair as seen from the stair. Required push side clearance of 12" per MAAB 26.6.3 Fig. 26e is not provided.





The second stair to the basement is non-compliant for width (stair narrows at top), and headroom. Handrails do not extend beyond the top and bottom riser as required by CMR 780 1014.6



Additionally, a sanitary line exiting the building is directly in front of the stair at the basement level and clearance under the pipe is 5'-10".



Basement Spaces

All spaces within the basement do not comply with minimum ceiling height of not less than 7'-6" clearance as required for occupied use. Structural wood beams bearing on the foundation wall and supported by columns and a center bearing wall have a clearance of 6'-4".



Some insect damage was noted on a ceiling beam in the northeast corner of the basement. It appears to be old damage but should be inspected by a qualified pest professional.



Basement storage areas have significant head height clearance issues. Within two corners (northeast and southeast) are access doors to areas providing access to the foundation "crawl space" wall and storage areas.



Game Room ceiling height does not meet 7'-6" minimum code compliance. Note structural column against pool table.



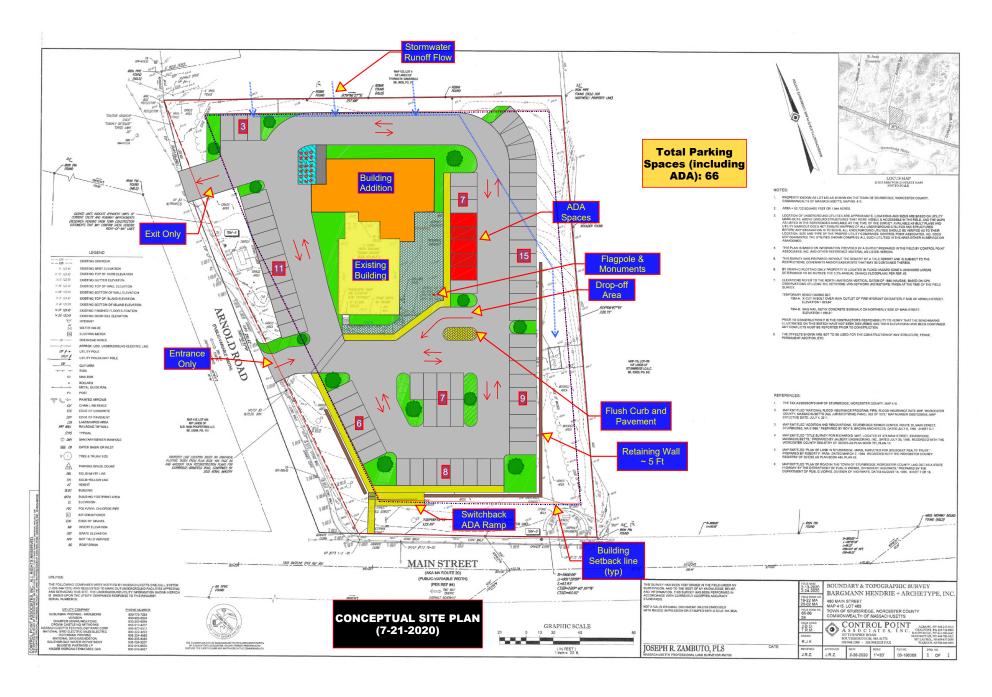
Mechanical Room

Located in the northwest corner of the basement is the main mechanical room. The equipment in this room is reviewed by Allied in this report. Ceiling height in this area is similarly compromised as the rest of the basement, below 7'-6" minimum requirements.



SECTION 6 TEST FIT AT 480 MAIN STREET

TEST FIT AT 480 MAIN STREET



SITE EVALUATION - 480 MAIN STREET

Site Description

Property records for the Site were reviewed by Pare. Copies of the property cards are included in Appendix

The Site, designated as Parcel 415-02433-490 on the Sturbridge GIS system, is comprised of one parcel owned by the Town of Sturbridge according to property record cards (included in Appendix B). The Site contains approximately 0.78 acres one a single parcel and is previous developed as the Sturbridge Council on Aging/Senior Center building.

Zoning

The Sturbridge Zone Map (included in Appendix C) indicates the Site is located within the Commercial Tourist District zone as shown in Figure 1 and Figure 2 below. The Site is currently developed with the existing senior center and a paved parking lot to serve the building. The building and parking area are generally located at the northern portion of the Site with a grassed area making up a southern portion. The Site is bound by Main Street to the south, Arnold Street to the west, residential property to the north, and commercial property to the east.







Figure 2 Sturbridge Zoning Map of the Site

Topography

Based on MassGIS available LiDAR data, topography generally slopes downward from a high point of approximately elevation 615 feet at the northern boundary of the Site towards the southern boundary of the Site at approximately elevation 600 feet. The existing topography is shown on the constraints map in Appendix A.

Soils

According to NRCS Web Soil Survey mapping, the Site contains Brookfield fine sandy loam, 3 to 8 percent slopes, extremely stony (401B) at the eastern edge of the Site, and Canton fine sandy loam, 3 to 8 percent slopes (420B) at the remainder of the Site. Brookfield fine sandy loam has a hydrologic soil group A, indicating a high rate of water transmission. Canton fine sandy loam has a hydrologic soil group B, indicating a high rate of water transmission. An NRCS site soil survey map has been included in Appendix D. Test pits may be scheduled as part of the site evaluation to further investigate the soil characteristics, at

the site if selected for development. It is anticipated that further geotechnical investigation including soil borings will be required prior to future development of the site.

Site Circulation and Parking

The existing Council on Aging has a single driveway on the east side of Arnold Road, approximately 150 feet north of the intersection of Main Street and Arnold Road. The facility's surface parking lot surrounds the building and operates as a one-way counterclockwise loop. The current facility has a total of 26 striped spaces. In addition to the on-site parking lot, there is available overflow parking on the west side of Arnold Road opposite the Council on Aging. This parking lot provides approximately 24 spaces.

An initial traffic assessment has been conducted and is included under separate cover.

Based on available aerial imagery and street imagery, existing impervious area onsite appears to be in good condition with minimal cracking throughout the parking area. Parking striping and curbing appears to be in good condition throughout the parking area.

Utilities

Electric

Based on available aerial imagery and as-built plans, electricity appears to be supplied to the existing building via overhead wires along Main Street. Underground 4" PVC conduit extends from the southeast corner of the building, which terminates at a pole southeast of the parking area. Overhead wire from the pole connects to the utility poles on Main Street south of the property line. National Grid supplies electric services for the Town.

Gas

Based on available aerial imagery, record plans, and MassDOT utility ownership contacts, and MA Department of Public Utilities mapping of natural gas providers, subsurface gas utilities are not available in the Town of Sturbridge. An underground propone tank is currently located onsite between Arnold Street and the western edge of the onsite parking.

Water

According to mapping provide by the Sturbridge DPW, a 6" cast iron water main is available on Arnold Street and Main Street. Based on water gates adjacent to the site from aerial imagery, it appears that the water service to the existing building connects to Arnold Street at the western edge of the property. Available as-built plans did not depict the location or size of the water service from the building.

Based on available street imagery, there are two existing hydrants located between Arnold Street and western edge of the existing lot. An additional hydrant is located at the southern corner of Main Street and Arnold Street. Note that the two hydrants on Arnold Street are not listed on the mapping provided by the Town; it is currently unknown whether these hydrants are operational.

Engineering review shall occur during the design phase to determine capacity and sizing requirements based on a finalized design. If a water main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine flow capacity. Utility records for 480 Main Street and all other sites can be found in Appendix E.

TEST FIT AT 480 MAIN STREET

Excerpt from Pare Feasibility Study

Sewer

According to internal GIS mapping made available by the Sturbridge DPW, an 8" vitrified clay pipe sewer main is available on Arnold Street, and an 18" reinforced concrete pipe sewer main is available on Main Street. Based on as-built drawings, a sewer service exits through the southwest corner of the existing building. The size of the service is unknown, and the location of the connection to the sewer main is unknown. The as-built drawings depict the service running west towards the 8" VCP sewer main on Arnold Street: however, the location of the connection will need to be confirmed.

Further review should be considered to assess whether the current service location and capacity will support the proposed uses onsite if the service is to remain. If a sewer main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine capacity.

Stormwater

The existing site generally drains from the northern edge of the site towards the low point at the southern edge of the site. Based on as-built drawings, the existing building utilizes a gutter system for roof runoff that collects into underground piping via downspouts at the north side of the building. Roof runoff outfalls at the flared end section east of the southeast corner of the parking area.

Drainage from the site as a whole flows south to Main Street and Arnold Street, and is collected by the roads' catch basins. The plan titled "Sturbridge-Brimfield Road, 1934 Reconstruction", provided by MassDOT depicts these catch basins outfalling into the wetlands to the south of Main Street, and ultimately into the Quinebaug River.

MassGIS indicates that the site is part of the Quinebaug watershed as shown in Figure 3 and Figure 4 below.





Figure 4 MassGIS Major Basins Shaded

Figure 3 MassGIS Legend

Proposed development will use onsite Best Management Practices for water quality treatment, groundwater recharge, and control of peak flow rates. The system will be designed in accordance with the Massachusetts Stormwater Handbook and the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations. Points of discharge will generally be located to match the existing conditions, including maintaining hydrology to the existing wetlands and to the drainage system within the right-of-way.

Regulated Areas

Pare has reviewed the regulated areas on the site including wetlands, waterbodies, historical places, natural heritage areas, and zoning areas as discussed below.

Wetlands and Surface Water

Based on available MassGIS data, wetlands are present offsite south of Main Street, as identified on the constraints map in Appendix A. Per regulations set forth by the Town of Sturbridge Conservation Department, the wetlands south of the Site include a 200' municipal wetland buffer which infringe the southern property boundary of the Site. Work within this 200' buffer is subject to prior review by the Sturbridge Conservation Commission to ensure no significant adverse impact and requires filing or a Request for Determination.

The offsite wetlands are not considered a Bordering Vegetated Wetlands subject to jurisdiction under the Wetland Protection Act (WPA). Work inside the 100' buffer (and up to the 25' buffer) is regulated by the WPA and may be permitted after filing through the local Conservation Commission. However, the 100' buffer does not infringe the Site. No surface water protection areas or vernal pools were identified on MassGIS data layers.

According to MassGIS data, the Site is largely contained within a Zone 2 Wellhead Protection area.

Federal Emergency Management Agency (FEMA)

According to the FEMA flood Insurance Rate Map for Essex County, Massachusetts (Community-Panel 0926E, Map Number 25027C0926E, Effective Date July 4, 2011) included in Appendix H of this narrative, the Site falls within the FEMA Zone X or "areas determined to be outside the 0.2% annual chance floodplain."

Natural Heritage and Endangered Species Program (NHESP)

Based on available MassGIS data no streams, Natural Heritage and Endangered Species Program (NHESP) priority habitats of rare species, or vernal pools were identified on the Site as shown in Figure and Figure below.

TEST FIT AT 480 MAIN STREET

Excerpt from Pare Feasibility Study

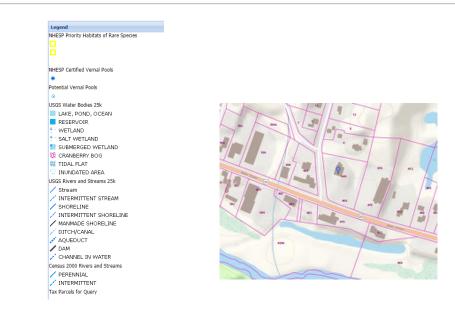


Figure 5 MassGIS Legend

Figure 6 MassGIS Data Image Corresponding to the Legend

Historical

Massachusetts Cultural Resource Information System (MACRIS) Maps 2.0 Beta mapping and data was used to determine historical areas at each site. Refer to MACRIS Map in Appendix I for reference.

The existing structure onsite is considered an inventoried historic property, the Snellville District #2 Schoolhouse (STU.113). The Site is also contained within an inventoried historic district, Snellville (STU.C). Main Street contains several historic properties adject to the Site, including the Floyd Gray House and the Lucius Snell House.

Conservation and Open Space Land

Based on Sturbridge GIS, the Site is not Chapter 61, 61A, and 61B Land under Title IX of the Commonwealth of Massachusetts General Laws which includes the classification and taxation of forest lands and forest products, assessment and taxation of agricultural and horticultural land, and classification and taxation of recreational land, respectively. Additionally, the Site is not listed as any other variant of public or private open space, or conservation land on the town GIS. Figure 7 shows open space delineated on town GIS.

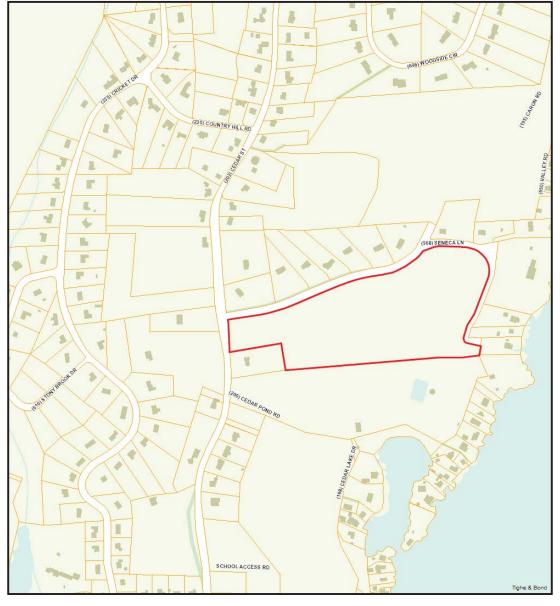


Figure 7 Sturbridge GIS - Open Space / Chapter 61, 61A and 61B Land

Deed Restrictions

No deed restrictions were found in the Worcester District Recorded/Registered Land database.

SECTION 7 TEST FIT AT 70 CEDAR STREET



Map 1, 70 Cedar Street

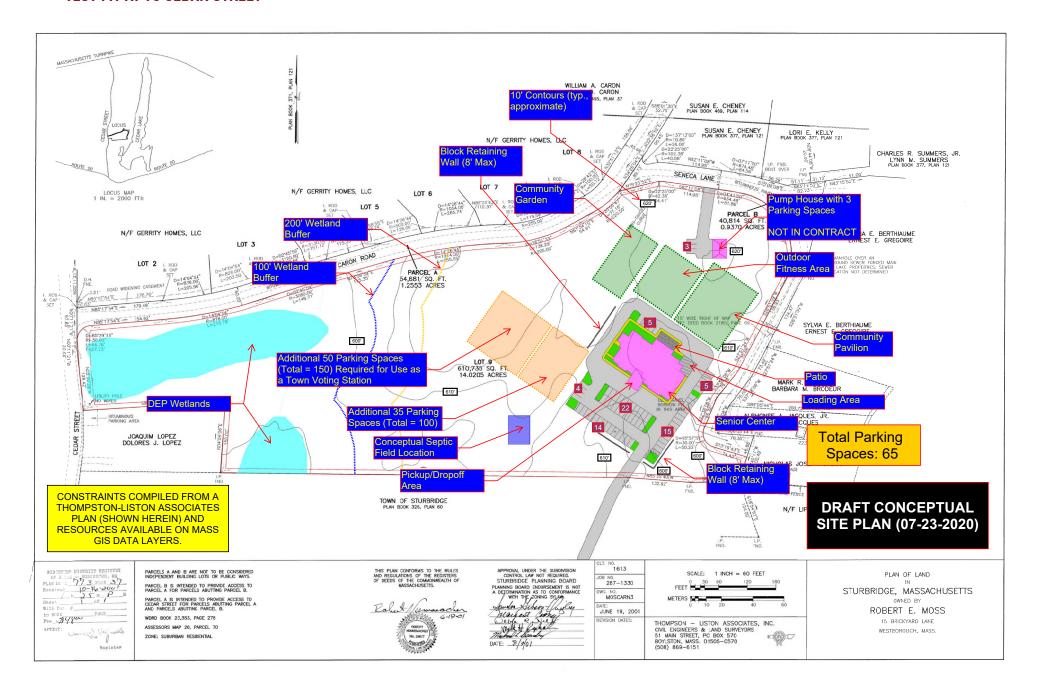
7/24/2019 8:52:48 AM

Scale: 1"=400' Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.







Excerpt from Pare Feasibility Study

SITE EVALUATION - 70 CEDAR STREET

Site Description

Property records for the Site were reviewed by Pare. Copies of the property cards are included in Appendix

The Site, designated as Parcel 202-02417-070 on the Sturbridge GIS system, is comprised of one parcel owned by the Town of Sturbridge according to property record cards (included in Appendix B). The Site contains approximately 14.02 acres one a single parcel and is undeveloped.

Zoning

The Sturbridge Zone Map (included in Appendix C) indicates the Site is located within the Suburban Residential District as shown in Figure 8 and Figure 9 below. The Site is currently undeveloped and largely a forested area. The Site is bound by residential property to the north, Cedar Street and residential property to the west, Seneca Lane to the east, and Cedar Pond Road and the Cedar Pond Recreation Area to the south.





Figure 8 Sturbridge Zoning Legend

Figure 9 Sturbridge Zoning Map of the Site

Topography

Based on MassGIS available LiDAR data, topography is highly varied and contains several local high and low points. Generally, the Site is highest at the center at approximately elevation 629, and slopes downward in all direction towards the property lines. The lowest point of the Site is at the wetlands at the western side of the Site at approximately elevation 590. The existing topography is shown on the constraints map in Appendix A.

Soils

According to NRCS Web Soil Survey mapping, the Site contains Freetown muck, 0 to 1 percent slopes (52A) at the western edge of the Site, and Canton fine sandy loam, 0 to 8 percent slopes, extremely stony (422B) at the center of the Site, and Merrimac find sandy loam, 3 to 8 percent slopes (254B) at the eastern and southwest corners of the Site. Freetown Muck has a split hydrologic soil group B/D, indicating a moderate rate of water transmission in its drained condition, and a very slow rate of water transmission in its undrained condition. Soils that are assigned split hydrologic groups are considered group D in their natural condition. Canton fine sandy loam has a hydrologic soil group B, indicating a moderate rate of water

transmission. Merrimac find sandy loam has a hydrologic soil group A, indicating a high rate of water transmission. An NRCS site soil survey map has been included in Appendix D. Test pits may be scheduled as part of the site evaluation to further investigate the soil characteristics at the site, if selected for development. It is anticipated that further geotechnical investigation including soil borings will be required prior to future development of the site.

Site Circulation and Parking

The site is currently undeveloped, and as such, does not have existing site circulation or parking considerations.

Utilities

Electric

Based on available aerial imagery, electricity appears to be available via overhead wire from the utility poles on Cedar Street and Cedar Pond Road. Engineering review shall occur during the design phase to determine whether existing services adjacent to the Site are sufficient, based on a finalized electrical design for the facility. National Grid supplies electric services for the Town.

Based on available aerial imagery, record plans, and MassDOT utility ownership contacts, and MA Department of Public Utilities mapping of natural gas providers, subsurface gas utilities are not available in the Town of Sturbridge.

Water

According to mapping provide by the Sturbridge DPW, a 6" asbestos concrete water main is available on Cedar Street. Mapping provided by the DPW does not indicate available water lines to access on Cedar Pond Road.

Based on Sturbridge DPW mapping and aerial imagery, there is one existing hydrant located on Cedar Street near the northwest corner of the property. It is anticipated that any development on the Site would require additional fire safety measures.

If a water main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine flow capacity.

Sewer

According to internal GIS mapping made available by the Sturbridge DPW, an 10" PVC pipe sewer main is available on Cedar Street, and a 3" low pressure force main is available on Cedar Pond Road.

There are several options for servicing the proposed building, the first of which being an approximately 200-foot gravity sewer from the building to a proposed septic system to the southwest. If a septic system is proposed in lieu of a sewer main connection, based on MassDEP Title V regulations, there are required "estimated minimum setback distances from surface waters and wetlands as required under 310 CMR 15.000 (Title 5) for the sitting, construction, inspection, upgrade and expansion of on-site sewage treatment and disposal systems." The purpose of the setback areas is to indicate location of natural resources that require protection from sewage treatment and disposal systems.

Excerpt from Pare Feasibility Study

Any new onsite septic systems will need to confirm to the Title V regulation setback and design requirements and will require permits from MassDEP and the Sturbridge Board of Health.

The second option would be to connect into the existing 3" low pressure force main on Cedar Pond Road. This would require the installation of a grinder pump within the building and an approximately 500-foot sewer line from the building to Cedar Pond Road. If a sewer main connection is proposed, further review shall be conducted to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine capacity.

A third option would be to utilize a proposed pump house north of the building adjacent to Secena Lane. Approximately 220 feet of sewer line would be required to connect the building into the pump house location shown on concept plans. If the pump house is being installed to serve properties beyond 70 Cedar Street, this option would be most economical, as the pump house and associated piping are not part of the contract for the senior center project.

Stormwater

The existing site generally drains from the center of the site to the east and west, with the majority of the Site flowing west into the wetlands at the western edge of the Site. The surrounding roads contain limited stormwater infrastructure. Internal Sturbridge GIS mapping shows 4 catch basins in the vicinity of the northwest corner of the Site, all of which have their own outfalls feeding into the Site's western wetlands.

MassGIS indicates that the site is part of the Quinebaug watershed as shown in Figure 10 and Figure 11 below.





Figure 11 MassGIS Major Basins Shaded

Figure 10 MassGIS Legend

Proposed development will use onsite Best Management Practices for water quality treatment, groundwater recharge, and control of peak flow rates. The system will be designed in accordance with the Massachusetts Stormwater Handbook and the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations. Points of discharge will generally be located to match the existing conditions, including maintaining hydrology to the existing wetlands and to the drainage system within the right-of-way.

Regulated Areas

Pare has reviewed the regulated areas on the site including wetlands, waterbodies, historical places, natural heritage areas, and zoning areas as discussed below.

Wetlands and Surface Water

Based on available MassGIS data, wetlands are present at the western side of the site, as identified on the constraints map in Appendix A. Per regulations set forth by the Town of Sturbridge Conservation Department, the wetlands onsite include a 200' municipal wetland buffer which extends roughly to the center of the Site. Work within this 200' buffer is subject to prior review by the Sturbridge Conservation Commission to ensure no significant adverse impact and requires filing of a Request for Determination.

The onsite wetlands are considered a Bordering Vegetated Wetlands subject to jurisdiction under the Wetland Protection Act (WPA). Work inside the 100' buffer (and up to the 25' buffer) is regulated by the WPA and may be permitted after filing through the local Conservation Commission. No surface water protection areas or vernal pools were identified on MassGIS data layers.

According to MassGIS data, the Site is largely contained within a Zone 2 Wellhead Protection area.

Federal Emergency Management Agency (FEMA)

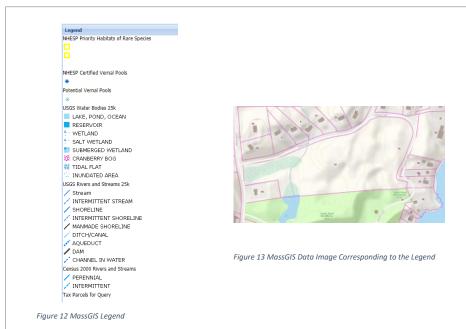
According to the FEMA flood Insurance Rate Maps for Essex County, Massachusetts (Community-Panel 0926E, Map Number 25027C0926E, Effective Date July 4, 2011 and Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 201) included in Appendix H of this narrative, the Site falls within the FEMA Zone X or "areas determined to be outside the 0.2% annual chance floodplain."

Natural Heritage and Endangered Species Program (NHESP)

Based on available MassGIS data no streams, Natural Heritage and Endangered Species Program (NHESP) priority habitats of rare species, or vernal pools were identified on the Site as shown in Figure 12 and Figure 13 below.

TEST FIT AT 70 CEDAR STREET

Excerpt from Pare Feasibility Study



Historical

Massachusetts Cultural Resource Information System (MACRIS) Maps 2.0 Beta mapping and data was used to determine historical areas at each site. Refer to MACRIS Map in Appendix I for reference.

According to MACRIS, no historic properties were listed on or adjacent to the Site.

Conservation and Open Space Land

Based on Sturbridge GIS, the Site is not Chapter 61, 61A, and 61B Land under Title IX of the Commonwealth of Massachusetts General Laws which includes the classification and taxation of forest lands and forest products, assessment and taxation of agricultural and horticultural land, and classification and taxation of recreational land, respectively. Town GIS does list the Site as "Municipal Playing Fields" open space. Figure 14 shows open space delineated on town GIS.

Per chapter 25.06 (j) of the Zoning Bylaws, the plan for open space should be consistent with the Open Space Plan adopted by the Town.

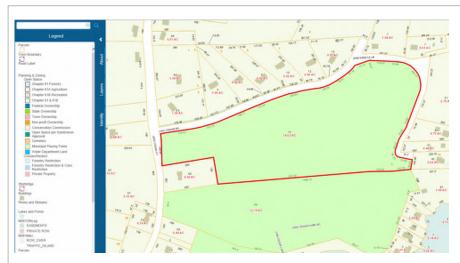


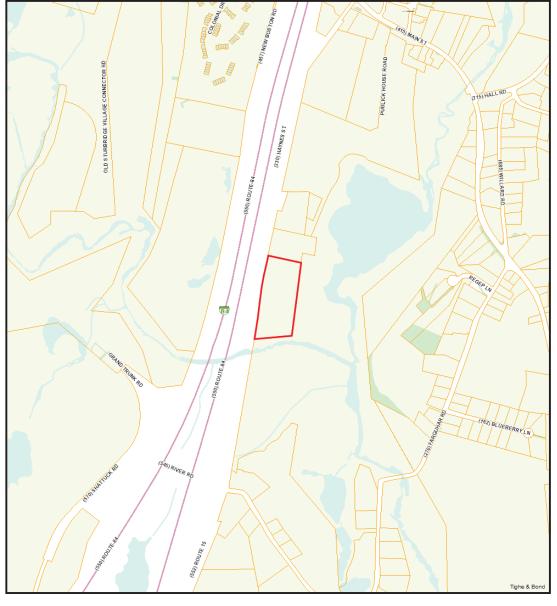
Figure 14 Sturbridge GIS - Open Space / Chapter 61, 61A and 61B Land

Deed Restrictions

No deed restrictions were found in the Worcester District Recorded/Registered Land database.

SECTION 8 TEST FIT AT 80 HAYNES STREET

TEST FIT AT 80 HAYNES STREET



Map 2, 80 Route 15

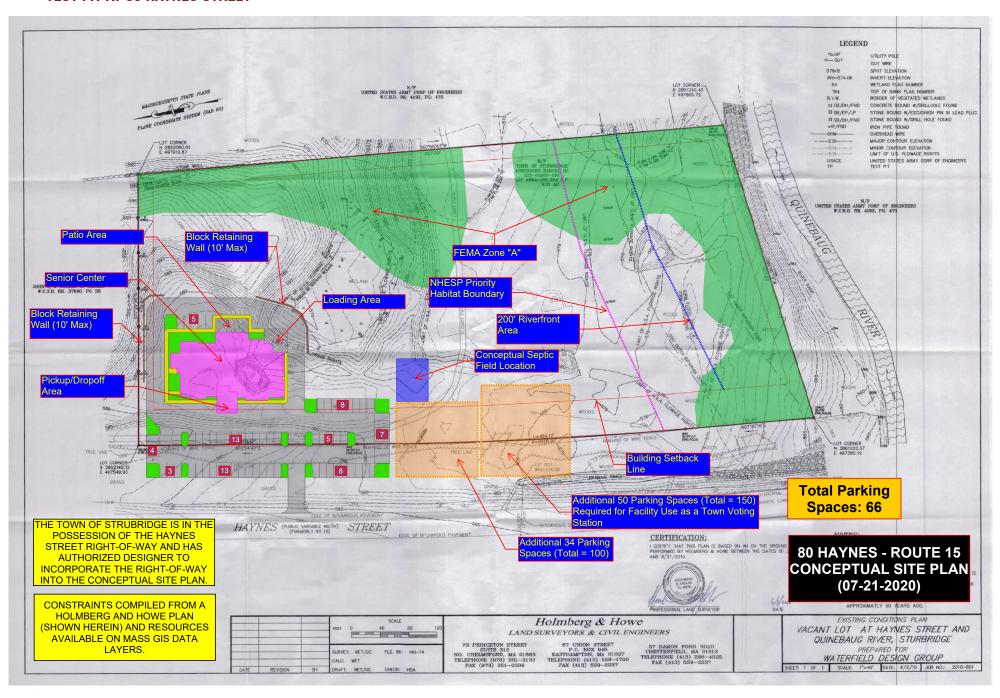
7/24/2019 9:02:57 AM

Scale: 1"=800' Scale is approximate





TEST FIT AT 80 HAYNES STREET



SITE EVALUATION - 80 ROUTE 15

Site Description

Property records for the Site were reviewed by Pare. Copies of the property cards are included in Appendix

The Site, designated as Parcel 552-02952-080 on the Sturbridge GIS system, is comprised of one parcel owned by the Town of Sturbridge according to property record cards (included in Appendix B). The Site contains approximately 8.52 acres one a single parcel and is undeveloped.

Zoning

The Sturbridge Zoning Map (included in Appendix C) indicates the Site is located within the Historic Commercial District as shown in Figure 16 and Figure 17 below. The Site is currently undeveloped. The Site is bound by residential property to the north, Route 15 and to the west, wetlands and wooded land to the east, and the Quinebaug River to the south.



Figure 15 Sturbridge Zoning Legend

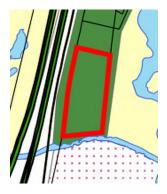


Figure 16 Sturbridge Zoning Map of the Site

Topography

Based on MassGIS available LiDAR data, the Site is highest at the northern property line at approximately elevation 600. The lowest point of the Site is along the southern and southeastern property line at approximately elevation 570. The Site general slopes from north to southeast, with local low and high points interspersed throughout the Site. The existing topography is shown on the constraints map in Appendix A.

Soils

According to NRCS Web Soil Survey mapping, the Site contains Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes (102C) at the northern edge of the Site, Pits, gravel (600) at the eastern edge of the Site, and Merrimac find sandy loam, 3 to 8 percent slopes (254B) throughout the remainder the Site. Chatfield-Hollis-Rock outcrop complex has a hydrologic soil group B, indicating a moderate rate of water transmission. Pits, gravels does not have an assigned hydrologic soil group. Merrimac find sandy loam has a hydrologic soil group A, indicating a high rate of water transmission. An NRCS site soil survey map has been included in Appendix D. Test pits may be scheduled as part of the site evaluation to further investigate the soil characteristics at the site if selected for development. It is anticipated that further geotechnical investigation including soil borings will be required prior to future development of the site.

Site Circulation and Parking

The site is currently undeveloped, and as such, does not have existing site circulation or parking

Utilities

Electric

Based on available aerial imagery, electricity appears to be available via overhead wire from the utility poles on Route 15. National Grid supplies electric services for the Town.

Based on available aerial imagery, record plans, and MassDOT utility ownership contacts, and MA Department of Public Utilities mapping of natural gas providers, subsurface gas utilities are not available in the Town of Sturbridge.

Water

According to mapping provide by the Sturbridge DPW, no water mains are currently located on Route 15. The closest water main is a 12" ductile iron line located on Shattuck Road, approximately 1,750 feet from the Site. It is anticipated that installation of a well would be required to supply water to the Site.

Based on Sturbridge DPW mapping and aerial imagery, there are no existing hydrants located in the vicinity of the Site. It is anticipated that any development on the Site would require additional fire safety measures.

If a water main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine flow capacity.

Sewer

According to internal GIS mapping made available by the Sturbridge DPW, no sewer mains are available on Route 15. The closest sewer main is approximately 3,000 feet north of the Site, an 8" PVC line at the corner of Haynes Street and Main Street. It is anticipated that a septic system will be required for Site development.

If a sewer main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine capacity.

If a septic system is proposed in lieu of a sewer main connection, based on MassDEP Title V regulations, there are required "estimated minimum setback distances from surface waters and wetlands as required under 310 CMR 15.000 (Title 5) for the sitting, construction, inspection, upgrade and expansion of on-site sewage treatment and disposal systems." The purpose of the setback areas is to indicate location of natural resources that require protection from sewage treatment and disposal systems.

Any new onsite septic systems will need to confirm to the Title V regulation setback and design requirements and will require permits from MassDEP and the Sturbridge Board of Health.

TEST FIT AT 80 HAYNES STREET

Excerpt from Pare Feasibility Study

Stormwater

The existing site generally drains from the northern edge of the site to the southeast, with the majority of stormwater flowing west into the wetlands east of the Site. Internal Sturbridge GIS does not show any existing stormwater infrastructure in the vicinity of the Site.

MassGIS indicates that the site is part of the Quinebaug watershed as shown in Figure 17 and Figure 18





Figure 18 MassGIS Major Basins Shaded

Figure 17 MassGIS Legend

Proposed development will use onsite Best Management Practices for water quality treatment, groundwater recharge, and control of peak flow rates. The system will be designed in accordance with the Massachusetts Stormwater Handbook and the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations. Points of discharge will generally be located to match the existing conditions, including maintaining hydrology to the existing wetlands and to the drainage system within the right-of-way.

Regulated Areas

Pare has reviewed the regulated areas on the site including wetlands, waterbodies, historical places, natural heritage areas, and zoning areas as discussed below.

Wetlands and Surface Water

Based on available MassGIS data, wetlands are present offsite to the east, as identified on the constraints map in Appendix A. Additionally, the Quinebaug River is directly south of the Site. Per regulations set forth by the Town of Sturbridge Conservation Department, the Quinebaug River includes a 200' municipal Perennial Riverfront Resource buffer which extends into the southern section of the Site. No disturbance of this 200' buffer is allowed except under extreme and mitigating circumstances to be determined on a case-by-case basis by the Sturbridge Conservation Commission.

The Quinebaug River also has associated 200' riverfront area and 100' wetland buffers subject to jurisdiction under the Wetland Protection Act (WPA). Work inside the 200' buffer (and up to the 25' buffer) is regulated by the WPA and may be permitted after filing through the local Conservation Commission. No surface water protection areas or vernal pools were identified on MassGIS data layers.

According to MassGIS data, the Site does not contain any surface water or wellhead protection areas.

Federal Emergency Management Agency (FEMA)

According to the FEMA flood Insurance Rate Maps for Essex County, Massachusetts (Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 2011 and Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 2011) included in Appendix H of this narrative, the southern and eastern edges of the Site falls within the FEMA Zone A special flood hazard area subject to inundation by the 1% annual chance flood. Zone A's do not have a base flood elevation determined.

Natural Heritage and Endangered Species Program (NHESP)

Based on available MassGIS data, Natural Heritage and Endangered Species Program (NHESP) priority habitats of rare species were identified at the southern edge of the Site as shown in Figure 19 and Figure 20 below.

TEST FIT AT 80 HAYNES STREET

Excerpt from Pare Feasibility Study

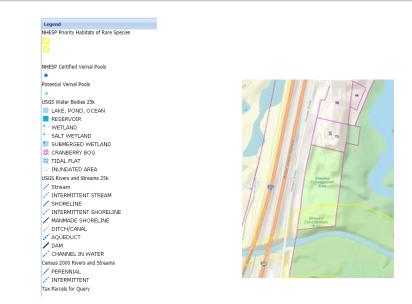


Figure 19 MassGIS Legend

Figure 20 MassGIS Data Image Corresponding to the Legend

Historical

Massachusetts Cultural Resource Information System (MACRIS) Maps 2.0 Beta mapping and data was used to determine historical areas at each site. Refer to MACRIS Map in Appendix I for reference.

According to MACRIS, no historic properties were listed on or adjacent to the Site.

Conservation and Open Space Land

Based on Sturbridge GIS, the Site is not Chapter 61, 61A, and 61B Land under Title IX of the Commonwealth of Massachusetts General Laws which includes the classification and taxation of forest lands and forest products, assessment and taxation of agricultural and horticultural land, and classification and taxation of recreational land, respectively. Town GIS does list the Site as "Conservation Commission" open space. Figure 21 shows open space delineated on town GIS.

The Site (80 Route 15) is inventoried as Conservation Commission owned land in the 2018 Open Space and Recreation Plan and is referred to in the plan as the "Shepard Parcel". The Site had a Conservation Restriction placed on it in 2016 with the purpose of protecting the land in perpetuity.

• Development at this site may not be feasible due to a conservation restriction on the property that is outlined in a deed restriction. (Deed restriction referenced in the following section)

Per chapter 25.06 (j) of the Zoning Bylaws, the plan for open space should be consistent with the Open Space Plan adopted by the Town.



Figure 21 Sturbridge GIS - Open Space / Chapter 61, 61A and 61B Land

Deed Restrictions

A Conservation deed restriction exists for the property which limits development on the property. This deed can be found on the Worcester District Recorded/Registered Land database (Book 36254, Page 47), also attached in Appendix B.

SECTION 9 TRAFFIC STUDY





PARECORP.COM

July 23, 2020

Mr. Joel Bargmann Bargmann Hendrie + Archetype, Inc. 300 A Street Boston, MA 02210-1710

Re: Professional Traffic Engineering Services – Phase 1 Sturbridge Senior Center Sturbridge, Massachusetts Pare Project No. 20030.00

Dear Mr. Bargmann:

Pare Corporation (Pare) has completed the requested preliminary traffic engineering assessment for a new Senior Center to replace the existing Sturbridge Council on Aging (COA) in Sturbridge, Massachusetts. The proposed Senior Center will have a gross floor area (GFA) of 12,733 square feet. Three site locations within the Town of Sturbridge are currently under consideration for construction of the new Senior Center. The three sites under consideration include the following:

- 480 Main Street (Route 20) occupied by the existing Sturbridge Council on Aging
- 70 Cedar Street currently unoccupied
- 80 Route 15 (Haynes Street) currently unoccupied

A field review of each site and the surrounding roadway networks was conducted on Thursday, March 26, 2020. Figures depicting the three potential site locations are attached.

Existing Facility



Photo 1: Existing Sturbridge Council on Aging

The existing Sturbridge Council on Aging facility provides activities, educational classes and services for seniors in the community. Hours of operation for the existing facility are Monday through Friday from 8:00 a.m. to 4:00 p.m. with the exception of Tuesdays when the facility remains open until 6:30 p.m. The facility operates a number of education and exercise classes daily as well as large events several time throughout the year. Scheduled activities are generally between the hours of 8:30 a.m. and 4:00 p.m. The existing facility at 480 Main Street (Route 20) is a total of approximately 8,000 square feet.

The existing Council on Aging has a single driveway on the east side of Arnold Road, approximately 150 feet north of the intersection of Main Street and Arnold Road. The facility's

surface parking lot surrounds the building and operates as a one-way counterclockwise loop. The current facility has a total of 26 striped spaces. In addition to the on-site parking lot, there is available overflow parking on the

8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865 T 401.334.4100 F 401.334.4108

10 LINCOLN ROAD, SUITE 210 FOXBORO, MA 02035 T 508.543.1755 F 508.543.1881



Mr. Joel Bargmann (2) April 10, 2020

west side of Arnold Road opposite the Council on Aging. This parking lot provides approximately 24 spaces. There is no crosswalk across Arnold Road to provide safe pedestrian access to the facility. Based on conversations with staff from the Sturbridge Council on Aging the following are important notes on

- Patrons drive to and from the site primarily as single-occupancy trips, with a few attendees being dropped off. Additionally, some patrons walk to the current COA, mostly from Main Street, and the Elderbus service regularly drops off patrons from local assisted living homes.
- The on-site parking lot regularly reaches capacity with peak hours of demand from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 3:00 p.m.
- When the facility's on-site parking lot is full, patrons park in the parking lot on the west side of Arnold Road. Patrons do not park on-street on Arnold Road or Main Street.
- Large events are held several times a year in which the facility's on-site and overflow parking lots are filled.

Site Descriptions

480 Main Street (Route 20)

the existing operations of the facility:

The first proposed site is the parcel for the existing Sturbridge Council on Aging, located at 480 Main Street (Route 20). The site is approximately 1.6 acres. Though the site address is along Main Street, the site currently has a single driveway on the east side of Arnold Road. Main Street (Route 20) is a principal arterial under MassDOT jurisdiction. Main Street has a posted speed limit of 35 miles per hour with primarily commercial uses and some mixed residential and industrial uses. Arnold Road is a local roadway under Town jurisdiction. Arnold Road has a posted speed limit of 30 miles per hour. The roadway serves primarily residential uses with some additional commercial and public uses at the intersection with Main Street.

In the vicinity of the site, Main Street has one 12-foot travel lane and a 6-foot shoulder in each direction, separated by a double-yellow centerline. A 7-foot sidewalk is located along the northern side of the roadway. There is a 5foot wide sidewalk on the southern side of the roadway that begins approximately 325 feet west of Arnold Road and continues westward.



Photo 2: Signage at the site entrance for the one-way loop gives the impression that vehicles should not exit at this location.

Arnold Road has a paved roadway width that ranges from 30 feet to 36 feet in width. At the existing site driveway, the northbound lane is approximately 11 feet wide and the southbound lane is approximately 18 feet wide (flaring to accommodate two turn lanes at the Main Street intersection). The two directions of travel are separated by a solid yellow centerline and there are no striped shoulders. A 3.5-foot wide sidewalk is present on the east side of Arnold Road near the intersection with Main Street and terminates at the Sturbridge Council on Aging driveway. No crosswalks are present at the site driveway.

As noted, the site currently has a single driveway on the east side of Arnold Road. Sight distance from the existing driveway is limited to the north by the horizontal and



Mr. Joel Bargmann (3) April 10, 2020

vertical curvature of the roadway. There is clear sight distance to the south to the intersection with Main Street. If this site is selected for the reconstruction of the Senior Center, the Town is considering a second driveway located at the northern end of the property, approximately 110 feet north of the existing driveway, allowing vehicles to enter at the current (southern) driveway and exit at the new (northern) driveway. This would increase the distance between the driveway and the Main Street intersection, decreasing the likelihood that southbound queues would block the site exit.

The intersection of Main Street with Arnold Road, which would continue to serve as a primary access route for many patrons of the facility, forms a three-legged unsignalized intersection. Main Street operates freely while Arnold Road is under strop control. At the intersection, the southbound approach of Arnold Road has separated left- and right-turn lanes. Crosswalks are present on the north and east legs of the intersection, though there is no sidewalk located on the south side of Main Street at the intersection.

70 Cedar Street

The second proposed site is currently an undeveloped property located on the east side of Cedar Street, between Caron Road and Cedar Pond Road. The site is approximately 15 acres. There is currently no access to the site. The proposed site at 70 Cedar Street will have a single driveway on Cedar Pond Road. Cedar Street is a local roadway under Town jurisdiction and has a posted speed limit of 30 miles per hour. The roadway in the vicinity of the site is wooded and has residential uses. Cedar Pond Road is a local roadway under Town jurisdiction. It does not have a posted speed limit, but a de facto speed limit of 30 miles per hour is assumed based on its "thickly settled" character. Uses along Cedar pond Road are residential and public, with the Cedar Pond Recreation Area located on the



Photo 3: The horizontal curvature and heavily wooded nature of Cedar Street

south side of the roadway. The recreation area includes a playground, public beach and tennis courts.

In the vicinity of the site, Cedar Street has one 11-foot travel lane in each direction separated by a solid yellow centerline. There are no shoulders or sidewalks. The roadway has sharp horizontal curves and is heavily wooded, limiting sight lines. Cedar Pond Road has a total unstriped roadway width of 22 feet with no shoulders or sidewalks. Curb is present on the south side of Cedar Pond Road near the recreation area.

The proposed driveway on Cedar Pond Road would be located on the north side of the roadway approximately 1,000 feet from the intersection with Cedar Street. Sight distance along Cedar Pond Road is limited by horizontal and vertical curvature of the roadway.



Mr. Joel Bargmann April 10, 2020 (4)

80 Route 15

This undeveloped Town parcel is the third proposed site, located on the east side of Route 15 (Haynes Street) between Publick House Road and River Road. The site is approximately 8.8 acres. Route 15 is a local roadway under Town jurisdiction with a posted speed limit of 50 miles per hour. The roadway has mixed residential and commercial uses but is mostly undeveloped. Interstate 84 parallels Route 15 to the west. On- and off-ramps to I-84 Northbound are located just to the west of the intersection of Route 15and River Road.

In the vicinity of the site, Route 15 has one 12-foot travel lane and a 6-foot shoulder in each direction. No sidewalks or crosswalks are present on Route 15.



Photo 4: The flat and straight geometry of Haynes Street / Route 15 allowing for adequate sight distance.

There is currently no vehicular access to the site. A site driveway is proposed on the east side of Route 15 approximately 650 feet south of the intersection with Publick House Road. The straight and flat geometry of Route 15 provides clear sight distance in both directions.

Sight Distance

Each of the potential sites was reviewed to determine if there is adequate sight distance for staff and patrons of the senior center to safely access and egress the site. Sight distance is determined based on the design speed of the roadway, which is the 85th percentile speed of the roadway. For the purposes of this study, it was assumed that the 85th percentile speed for each roadway would be 5 miles per hour over the posted speed limit. Therefore, the design speeds are 35 miles per hour along Arnold Road and Cedar Pond Road, and 55 miles per hour along Route 15 (Haynes Street).



Photo 5: Horizontal curvature of Arnold Road limiting sight

According to the latest edition of the American Association of State Highway and Transportation Officials (AASHTO) publication A Policy on the Geometric Design of Highways and Streets, the minimum safe stopping sight distances (SSD) for 35 and 55 mile per hour speeds are 250 feet and 425 feet respectively. According to AASHTO, if the available sight distance is at least equal to the appropriate stopping sight distance, then drivers have sufficient conditions to anticipate and avoid collisions. The current and proposed driveway at the existing sight meet stopping sight distance with the exception of the existing driveway to the south. However, vehicles turning onto Arnold Road from Main Street are expected to have lower speeds, making this an

acceptable situation. The driveway on Cedar Pond Road meets the required stopping sight distance in both directions. The flat, straight geometry of Route 15 allows for clear sight distance in both directions. A summary of the sight distance available can be seen below in Table 1.



Mr. Joel Bargmann (5) April 10, 2020

Table 1: Sight Distance Summary

	Required SSD (ft)	Measured SSD (ft)
To the North	250	285
To the South	250*	150
To the North	250	350
To the South	250	260
To the East	250	280
To the West	250	>500
To the North	425	>500
To the South	425	>500
	To the South To the North To the South To the East To the West To the North	To the North 250 To the South 250* To the North 250 To the South 250 To the South 250 To the East 250 To the West 250 To the North 425

^{*} Vehicles turning from Main Street are expected to have reduced speeds

Safety Study

Crash data for each study area was extracted from the MassDOT crash portal for the most recent three (3) year period available, from March 2017 through February 2020. Crash data was reviewed to determine the presence of safety concerns in the vicinity of the three proposed sites.

480 Main Street (Route 20)

The study area defined for the existing COA site includes Main Street (Route 20) from Hinman Street to Crescent Way and Arnold Road from Main Street to Carol Lane. According to the data reviewed there were a total 48 incidents that occurred within the 480 Main Street study area. Of these incidents, eight (8) occurred at the intersection of Main Street at Arnold Road, three (3) occurred at the intersection of Main Street at Hinman Street, and 37 occurred along Main Street not at a specific intersection. There were no incidents along Arnold Road.

At the intersection of Main Street and Arnold Road four (4) of the incidents were rear end collisions and four (4) were angle collisions. Of these incidents, one (1) resulted in a non-fatal injury and no incidents resulted in a fatality. At the intersection of Main Street and Hinman Street two (2) incidents were angle collisions and one (1) was a sideswipe in the opposite direction; no injuries were reported. Of the 37 remaining incidents along Main Street, 21 were rear end collisions, 12 were angle collisions, three (3) were accidents with a single vehicle, and one (1) was a sideswipe in the same direction. Of these, seven (7) resulted in non-fatal injuries with a total of ten (10) injured persons and no incidents resulted in fatality. Though there was a notable number of incidents along Main Street, the majority were rear end or angle collisions which are generally low severity. There were no trends or severities of incidents that would lend themselves to mitigation. A breakdown of the incidents by type and number of injuries can be seen below in Table 2.



Mr. Joel Bargmann (6) April 10, 2020

Table 2: Crash Summary for 480 Main Street

Roadway/ Intersection	Total	Non- Fatal Injuries	Fatal Injuries	Angle	Sideswipe Same Direction	Sideswipe Opposite Direction	Rear End	Single Vehicle
Main Street (Route 20)	37	10	0	12	1	0	21	3
Main Street at Arnold Road	8	1	0	4	0	0	4	0
Main Street at Hinman Street	3	0	0	2	0	1	0	0

70 Cedar Street

The study area defined for the Cedar Street site includes Cedar Street from Caron Road to Burgess School Road as well as Cedar Pond Road from Cedar Street to Abrams Drive. Within the study area of the 70 Cedar Street site a total of two (2) incidents occurred, one on Cedar Street and one on Cedar Pond Road. Both of the incidents were single vehicle crashes with no injuries reported. This study area had a very low frequency of incidents. A breakdown of the incidents by type and number of injuries can be seen below in Table 3.

Table 3: Crash Summary for 70 Cedar Street

 Roadway/ Intersection	Total	Non-Fatal Injuries	Fatal Injuries	Single Vehicle
Cedar Street	1	0	0	1
Cedar Pond Road	1	0	0	1

80 Route 15

The study area defined for the Route 15 site includes Route 15 from Publick House Road to River Road. Within the study area of the 80 Route 15 site a total of seven (7) incidents occurred. Of these, five (5) were angle collisions, one (1) was a sideswipe in the opposite direction, and one (1) was a single vehicle collision. Two (2) non-fatal injuries were reported and no fatalities occurred. All of these collisions occurred at the intersection of Route 15 and River Road, approximately half a mile from the proposed site driveway. There were no trends that would lend themselves to mitigation for the proposed site. A breakdown of the incidents by type and number of injuries can be seen below in Table 4.

Table 4: Crash Summary for 80 Route 15

Roadway/ Intersection	Total	Non-Fatal Injuries	Fatal Injuries	Angle	Sideswipe Opposite Direction	Single Vehicle
Route 15at River Road	7	2	0	5	1	1

Parking Demand

Parking generation is typically estimated for particular land uses by utilizing rates provided in the Institute of Transportation Engineers Parking Generation manual. Parking rates for recreational senior centers, however, are not included in the Manual. Other methods for determining parking needs have therefore been investigated.



Mr. Joel Bargmann (7) April 10, 2020

Pare has completed a review and assessment of the Town's zoning bylaws for parking regulations. The three proposed facilities are zoned in different districts; the existing Council on Aging is in the Commercial Tourist District, the 70 Cedar Street site is in the Commercial II District, and the 80 Route 15 site is in the Historic Commercial District. The Commercial Tourist District is exempt from meeting specific on-site parking, as shared parking within the whole district is permitted. For the remaining sites, it is noted that the zoning also does not specify the use of Senior Center. Based on the zoning, the most similar uses are considered to be theater for the multi-purpose room, which will be designed to accommodate up to 75 seats, and personal services for the remainder of the building, which requires one space per 200 square feet. This equates to a total of 55 spaces. We note that the Town's designation of 1 space per 10 theater seats is low compared to most municipalities. A rate of 1 space per 3 seats is typical. This would equate to a maximum of 72 spaces.

Pare also compared the proposed facility to similar existing facilities in nearby or comparable communities. From experience with Barnstable, Scituate, Falmouth, Andover and Lincoln, RI, the average parking allotment ranges from approximately one space per 200 square feet to one space per 120 square feet. This aligns with the current recommendation of the Massachusetts Office of Elder Affairs. This would equate to between 64 and 107 spaces, with some variation from site to site based on walkability and proximity to senior communities and public/provided transportation.

Finally, Pare assessed the existing facility program and parking demand compared to the proposed program. Currently, the COA calendar shows up to two overlapping activities on a daily basis, and frequently reaches capacity of the on-site parking allotment of 26 spaces. This averages 13 vehicles per activity. The future program has a maximum of four overlapping activities. This would proportionally equate to a daily need of up to 52 spaces, with larger events requiring more on-site or overflow parking. Should a particularly large event fill the entire multi-purpose room, with 75 seats, and assume some various additional activity within the center (up to an activity's worth), peak demand could be as high as 88 spaces if all individuals drove themselves and could not walk or use alternate modes of transportation to get to the site.

The existing site at 480 Main Street is the only of the three proposed sites with existing pedestrian accommodations. It is also the only site with permitted shared parking based on the defined District. This site is currently accessible to the Elderbus service for nearby assisted living facilities. It is undetermined whether other sites would have this option. It is reasonable, for the Main Street site, to assume a reduction in demand similar to a nominal carpool rate of 1.25, which assumes 20 percent of attendees will come via alternate modes of transportation. This could reduce the maximum demand from 88 to 73 for the Main Street site, which could be a combination of on-site and overflow parking.

Conclusion

Upon completion of the preliminary traffic assessment of the potential sites for the proposed Senior Center, the following points can be made.

General

- The parking space requirements of the site will be dependent on three key factors: (1) availability of nearby parking lot(s) for overflow use during large events or programs, (2) location of the site in relation to pedestrian accommodations that would encourage walking to the facility, and (3) the use of public/provided transportation by the visitors.
- · Sight distances were assessed based on existing and/or preliminary driveway locations and should be revisited as the site design progresses to confirm adequate safety for traffic conditions.

April 10, 2020



Mr. Joel Bargmann (8) April 10, 2020

480 Main Street

- · The existing site has the best location for proximity to pedestrian accommodations as well as bicycle friendly roadways, with Main Street having wide shoulders and a relatively low speed limit. It is also assumed that some patrons will continue to access the site via the Elderbus service.
- . Though limited by the horizontal curvature of the roadway, there is adequate stopping sight distance for both the existing and proposed driveway locations based on the design speed, acknowledging that individuals turning from Main Street onto Arnold Road have reduced speeds as they approach the existing (southern) driveway.
- There were no trends or severities of incidents in the vicinity of the site that cause concern for patrons.
- The site location will allow for continued overflow parking on the west side of Arnold Road, reducing the required size of the on-site parking lot. It is recommended that a crosswalk be added from the overflow parking to the Senior Center site.
- · There may be difficulty in repurposing the existing site while maintaining current operations and programming.

70 Cedar Street

- There are no pedestrian accommodations along any of the roadways adjacent to this proposed site. The curvy residential roadways leading to the site may prohibit access by the Elderbus service.
- The proposed driveway location along Cedar Pond Road would provide adequate sight distance. If this driveway locations is shifted, sight distance should be reassessed due to the horizontal curvature of the
- There were no trends of severities of incidents in the vicinity of the site that cause concern for patrons.
- . The large size of the property would allow for ample parking for the new facility. With no nearby options for overflow parking, the site would require the development of a larger parking lot.
- · The property is currently unoccupied and would not interfere with the current operations of the Sturbridge Council on Aging during construction.

80 Route 15

- There are no pedestrian accommodations along Route 15. However, the roadway seems appropriate for use by the Elderbus service.
- Vehicular speeds along Route 15 are significantly higher than the existing facility.
- The flat, straight geometry of Route 15 allows for adequate sight distance in both directions.
- There were no trends of severities of incidents in the vicinity of the site that cause concern for patrons.



Mr. Joel Bargmann

• The large size of the property would allow for ample parking for the new facility. With no nearby options for overflow parking, the site would require the development of a larger parking lot.

(9)

· The property is currently unoccupied and would not interfere with the current operations of the Sturbridge Council on Aging during construction.

We are available to discuss this report with you at your convenience. Please feel free to contact us if you have any questions or need additional information.

Sincerely,

Amy Archer Senior Project Engineer

JPS/AA

SECTION 10 COST ESTIMATES

TOTAL CONSTRUCTION RELATED PROJECT CO	STS	480 Main St	70 Cedar St	80 Haynes St
IARD COST				
General Contractor				
Construction Cost Estimate w/escalation		7,700,682	7,823,195	7,474,122
Utility Company Backcharge for transformer			15,000	15,000
			,	,
Furniture, Fixtures & Equipment		000 000	000 000	000.000
Furniture		200,000	200,000 10,000	200,000
Audio Visual Equipment for Program Rooms		10,000 100,000	100,000	10,000 100,000
Multi-Purpose Room Broadcast Ready (lights, cameras, sound, equip)		40,000	40,000	40,000
Office Equipment (computers, copiers) Kitchen Placewares, Utensils, Cooking Supplies		10,000	10,000	10,000
VOIP Phone system		10,000	10,000	10,000
Fitness Equipment		20,000	20,000	20,000
Office supplies, drawer dividers, waste baskets, etc.		2,500	2,500	2,500
Audio Visual Equipment		100,000	100,000	100,000
· · · · · · · · · · · · · · · · · · ·		· ·	· ·	
Hard Cost Subtotal		\$8,193,182	\$8,330,695	\$7,981,62
SOFT COST				
Permits & Approvals Building Permit		waived by Town	waived by Town	waived by Towr
Peer Review of Site Plan Submission		5,000	5,000	5,000
			-,	-,
Architecture & Engineering	400/	770,000	700 000	747.440
Architect & Engineer (% of construction cost)	10%	770,068	782,320	747,412
Traffic & Parking Engineer for site plan review		7,500	7,500	7,500
PCB Testing, Analysis & Hazardous Materials Construction Monitoring	400/	25,000	20,000	20,000
Furniture Selection, Specification, Oversight	10%	20,000 20,000	20,000 20,000	20,000
Audio Visual Design Geotechnical Engineer		15,000	20,000	20,000
Survey & Layout for Construction (layout only at Main Street)		3,000	19,000	14,250
Testing & Inspections		,	,	,
Concrete, Steel, Soil and other Inspections		15,000	15,000	15,000
Project Management				
Owner's Project Manager and Clerk	4%	308,027	312,928	298,965
Owner's Commissioning Agent		18,000	18,000	18,000
Moving				
Rental cost at temporary site during 480 Main Renovation				
Relocate from 480 Main Street to temporary site & Back		15,000		
Relocate from 480 Main Street to New Building			5,000	5,000
Advertising & Bidding		5 000	5,000	5.000
Public Bidding: Advertising, Printing & Document Website		5,000	5,000	5,000
Legal Contracts				
Other Ponding Costs		ai.	m:	_:
Bonding Costs		ni	ni	ni
Soft Cost Subtotal		\$1,226,595	\$1,229,747	\$1,176,12
ONTINGENCY				
Contingency	E0/	476.000	470.000	
Owner's Contingency on Hard & Soft Costs	5%	470,989	478,022	457,887
Project Total		\$9,890,766	\$10,038,464	\$9,615,637



Sturbridge Senior Center Renovations and Additions New Construction Sturbridge, MA

July 30, 2020

Feasibility Study Estimate

Architect:

Bargmann Hendrie + Archetype, Inc. 9 Channel Center Street, Suite 300 Boston, MA 02210 (617) 350 0450

Cost Consultant:

CHA Consulting Inc 1 Faneuil Hall Marketplace South Market Bldg, Suite 4195 Boston, MA 02109 (617) 451-2717



Renovations and Additions **New Construction** Sturbridge, MA

INTRODUCTION

Project Description:

The project consists of options for the Sturbridge Senior Center in Sturbridge, MA.

Option One: Additions and renovation to existing historic building at 480 Main Street

hazardous material abatement of existing three story building

interior selective demolition of existing building

new construction of two story addition to existing building consisting of;

concrete foundations and slab on grade, steel framed structure

brick facade, vinyl windows, asphalt shingles pitch roofing

interior program fit out; multi-purpose room, exercise/tai chi/yoga room, kitchen, office

new fire sprinklers, VRF mechanical system and emergency power generator

site preparation, bulk earthwork, site utilities, 66 parking spaces, exterior site improvements

Option Two: New Building at 70 Cedar Street site

new construction of one story 11,973gsf building

concrete foundations and slab on grade, steel framed structure

fiber cement facade, fiberglass windows, asphalt shingles pitch roofing

interior program fit out; multi-purpose room, exercise/tai chi/ yoga room, kitchen, office

new VRF mechanical system and emergency power generator

site preparation, bulk earthwork, site utilities, 100 parking spaces, exterior site improvements

Option Three: New Building at 80 Haynes Street site

new construction of one story 11,937qsf building

concrete foundations and slab on grade, steel framed structure

fiber cement facade, fiberglass windows, asphalt shingles pitch roofing

interior program fit out; multi-purpose room, exercise/tai chi/ yoga room, kitchen, office

new VRF mechanical system and emergency power generator

site preparation, bulk earthwork, site utilities, new septic field, 150 parking spaces, exterior site improvements

Project Particulars:

Documents prepared by Bargmann Hendrie + Archetype, Inc.

480 Main Street; Existing Conditions Drawings and Assessments, field visit photo gallery

Asbestos Containing Materials Identification Survey dated March 25, 2020 prepared by UES

Existing MEP Systems Evaluation dated April 6, 2020 prepared by Allied Consulting Engineering

Package received June 8, 2020

480 Main Street Progress Plans dated June 9, 2020

70 Cedar Street; Draft Conceptual Plan dated May 27, 2020, and New Building Drawings dated June 4, 2020

70 Cedar - Joint Plan; Draft Conceptual Plan dated June 23, 2020

80 Haynes Street; Draft Conceptual Plan dated May 27, 2020, and New Building Drawings dated June 4, 2020

80 Rt. Alt: Draft Conceptual Plan dated June 23, 2020.

GSF Matrix received June 8, 2020

Sturbridge Senior Center Concept July 30 Printed 7/30/2020

Introduction Page 2 of 19 Pages



Renovations and Additions **New Construction** Sturbridge, MA

Project Particulars: cont'd

Conceptual Pricing for Feasibility Study Notes received June 8, 2020

Draft Site Feasibility Study dated April 21, 2020 prepared by Pare Corporation

Structural Drawings and Narrative dated June 4, 2020 prepared by Bolton & DiMartino, Inc.

Detailed quantity takeoff from these documents where possible

CHA Consulting Inc experience with similar projects of this nature

Design intent and scope review discussions with Bargmann Hendrie + Archetype, Inc.

Project Assumptions:

The project will be constructed under a single prime contract in accordance with the requirements of Massachusetts General Laws Chapter 149, including Filed Sub-Bids

Our costs assume that there will be at least three subcontractors submitting unrestricted bids in each trade bid category Direct trade unit rates include escalation to mid-point of construction duration and prevailing wage labor rates. These unit rates continue to be updated during the design period

Operation during normal working hours

Option One Existing Building will be unoccupied during construction

Temporary electrical and water site utility connections will be available. General Conditions value includes utility connections and consumption costs

Lay-down/storage area, jobsite shed and trailers, and construction entrance will be located adjacent to Project area Noise and vibration disturbances are anticipated and will be minimized or avoided during normal business hours Subcontractor's markups are included in each unit rate. These markups cover field and home office overhead and

Design and Pricing Contingency markup is an allowance for unforeseen design issues, design detail development and specification clarifications during the design period. This allowance typically reduces during the design period. to more accurately reflect the designed scope of work progress

General Conditions covers supervision, general facilities to support Project, and site office overheads that are not attributable to the direct trade costs

Project Requirements value covers scaffolding, staging and access, temporary protection, and cleaning Anticipated start of construction is August 2021

Escalation allowance from now to anticipated Bid Date has been carried at a rate of 2% per year

Renovations and Additions **New Construction**

Sturbridge, MA

Construction Cost Estimate Exclusions:

Irrigation

Site or existing condition surveys and investigations

Architectural/Engineering; Designer and other professional fees, testing, printing, surveying

Owner's administration; legal fees, advertising, permitting, Owner's insurance, administration, interest expense

Project costs; utility company back charges prior to construction, construction of swing space and temporary

facilities, program related phasing, relocation

Owner's site representation and project administration

Third Party testing and commissioning

Police details and street/sidewalk permits

Environmental permitting

Building permit fees

Sturbridge Senior Center Concept July 30 Printed 7/30/2020

Introduction Page 3 of 19 Pages Sturbridge Senior Center Concept July 30 Printed 7/30/2020

Introduction Page 4 of 19 Pages



MAIN SUMMARY

Sturbridge, MA

EL ENEVE		OPTION (ONE	OPTION '	TWO	OPTION T	HREE
ELEMENT		16,118 G	SF	11,937 (SSF	11,937	SSF
Direct Trade Details							
Hazardous Material Abatement		\$25,000	\$1.55				
Building Construction		\$4,505,606	\$279.54	\$3,838,875	\$321.59	\$4,034,165	\$337.95
Sitework		\$1,174,075	\$72.84	\$2,195,319	\$183.91	\$1,729,956	\$144.92
Direct Trade Details Subtotal		\$5,704,681	\$353.93	\$6,034,194	\$505.50	\$5,764,121	\$482.88
Design and Pricing Contingency	10.00%	\$571,000	\$35.43	\$604,000	\$50.60	\$577,000	\$48.34
Unforeseen Conditions Contingency		\$100,000	\$6.20				
Direct Trade Details Subtotal		\$6,375,681	\$395.56	\$6,638,194	\$556.10	\$6,341,121	\$531.22
General Conditions and Requirements	7.50%	\$479,000	\$29.72	\$498,000	\$41.72	\$476,000	\$39.88
Premium for Phasing - Option One Only	2.50%	\$172,000	\$10.67				
General Liability Insurance	1.25%	\$86,000	\$5.34	\$90,000	\$7.54	\$86,000	\$7.20
Performance and Payment Bonds	1.00%	\$72,000	\$4.47	\$73,000	\$6.12	\$70,000	\$5.86
Fee	3.00%	\$216,000	\$13.40	\$219,000	\$18.35	\$210,000	\$17.59
Estimated Construction Cost Total		7,400,681	\$459.16	\$7,518,194	\$629.82	\$7,183,121	\$601.75
Escalation Allowance from now to Bid	2.00%	\$149,000	\$9.24	\$151,000	\$12.65	\$144,000	\$12.06
Delay start of construction to 2022	2.00%	\$151,000	\$9.37	\$154,000	\$12.90	\$147,000	\$12.31
Estimated Construction Cost Total with Escalation		7,700,682	\$477.77	\$7,823,195	\$655.37	\$7,474,122	\$626.13
Cost Adds and Alternates		(\$190,000)					
Fiber cement exterior wall cladding in lieu of masonry Replace roofing in lieu of roofing repairs		(\$180,000) \$129,000					
Motorized window shades in lieu of manual operated		\$8,000					
Electric energy source		\$200,000					
Additional parking space capacity to 100 spaces		\$280,000					
Additional parking space capacity to 100 spaces Additional parking space capacity to 150 spaces		\$280,000					
Septic tank in lieu of street connection		(\$376,000)					
New water pump house in lieu of Town connection		\$305,000					
		\$550,000					



DIRECT TRADE COST SUMMARY

Renovations and Additions

ELEMENT	OPTION	ONE	OPTION	TWO	OPTION T	HREE
ELEWENT	16,118 (GSF	11,937	GSF	11,937	GSF
02-EXISTING CONDITIONS	\$118,461	\$7.35				
03-CONCRETE	\$290,674	\$18.03	\$333,203	\$27.91	\$333,203	\$27.91
04-MASONRY	\$342,595	\$21.26	\$32,100	\$2.69	\$32,100	\$2.69
05-METALS	\$508,462	\$31.55	\$659,568	\$55.25	\$659,568	\$55.25
06-WOODS, PLASTICS, AND COMPOSITES	\$327,839	\$20.34	\$277,032	\$23.21	\$277,032	\$23.21
07-THERMAL AND MOISTURE PROTECTION	\$344,920	\$21.40	\$466,168	\$39.05	\$466,168	\$39.05
08-OPENINGS	\$336,745	\$20.89	\$275,720	\$23.10	\$275,720	\$23.10
09-FINISHES	\$573,567	\$35.59	\$449,651	\$37.67	\$440,226	\$36.88
10-SPECIALTIES	\$151,131	\$9.38	\$108,208	\$9.06	\$108,208	\$9.06
11-EQUIPMENT	\$90,000	\$5.58	\$126,000	\$10.56	\$126,000	\$10.56
12-FURNISHINGS	\$17,405	\$1.08	\$15,310	\$1.28	\$15,310	\$1.28
14-CONVEYING EQUIPMENT	\$30,000	\$1.86				
21-FIRE SUPPRESSION	\$119,869	\$7.44	\$93,774	\$7.86	\$93,774	\$7.86
22-PLUMBING	\$301,871	\$18.73	\$214,427	\$17.96	\$214,427	\$17.96
23-HVAC	\$530,452	\$32.91	\$452,518	\$37.91	\$452,518	\$37.91
26-ELECTRICAL	\$446,616	\$27.71	\$335,197	\$28.08	\$539,912	\$45.23
31-EARTHWORK	\$161,994	\$10.05	\$644,249	\$53.97	\$563,059	\$47.17
32-EXTERIOR IMPROVEMENTS	\$570,192	\$35.38	\$561,896	\$47.07	\$553,793	\$46.39
33-UTILITIES	\$441,889	\$27.42	\$989,174	\$82.87	\$613,105	\$51.36
		*=	****	**	4 2.2,122	******
Direct Trade Details Subtotal	\$5,704,681	\$353.93	\$6,034,194	\$505.50	\$5,764,121	\$482.88

Sturbridge Senior Center Concept July 30 Printed 7/30/2020

Direct Trade Summary Page 6 of 19 Pages

Main Summary Page 5 of 19 Pages

0:	ELEMENT			Option		Option		Option	
02		UNIT	UNIT RATE	16,118 QUANTITY		11,937 QUANTITY			7 GSF COST
0.	2-EXISTING CONDITIONS								
	E-EXISTING CONDITIONS								
A	sbestos Abatement								
	Hazardous materials removal, budget provided	AL	\$25,000.00	1	\$25,000				
	PCB testing and remediation during construction	AL	\$10,000.00	1	\$10,000				
В	uilding Structure Demolition Demo existing building structure	DAY	\$1,500.00	1	\$1,500				
D	emolition	DAI	\$1,500.00		ψ1,500				
	Exterior door	LEAF	\$150.00	3	\$450				
	Granite steps at south elevation	LOC	\$1,500.00	2	\$3,000				
	Bathroom, include plumbing fixtures, floor and ceiling	RM	\$1,500.00	2	\$3,000				
	New opening in floor structural for new egress stair	SF	\$160.00	15	\$2,400				
	Flooring finish GWB ceiling	SF SF	\$1.25 \$1.75	4,742 2.051	\$5,928 \$3,589				
	ACT ceiling	SF	\$1.75	2,693	\$4.040				
	Stud wall	SF	\$3.50	3,440	\$12,040				
	New opening in masonry wall	LOC	\$1,500.00	1	\$1,500				
	Casework	LF	\$15.00	12	\$180				
	New door open	LOC	\$650.00	1	\$650				
	Door	LEAF FLT	\$120.00 \$2.000.00	31 1	\$3,720 \$2,000				
_	Interior monumental stair art, haul away and disposal	AL	\$2,000.00	1	\$2,000				
0	mechanical and electrical system debris	CY	\$65.00	40	\$2,600				
	Saw cut existing pavement	LF.	\$10.00	34	\$340				
	Asphalt pavement; roadway and parking lot	SF	\$0.85	16,405	\$13,944				
	Curbing	LF	\$8.00	580	\$4,640				
	Concrete ramp	SF	\$10.00	158	\$1,580				
	Project sign	EA SF	\$150.00	1 132	\$150				
	LOG cabin Gazebo Shuffle board	SF SF	\$10.00 \$5.00	132 642	\$1,320 \$3,210				
	Flagpole and foundation	EA	\$850.00	1	\$850				
	Stair	SF	\$5.00	130	\$650				
	Shed	SF	\$5.00	156	\$780				
M	liscellaneous demolition other than above	LS	\$5,000.00	1 _	\$5,000	_		_	
02	2-EXISTING CONDITIONS TOTAL				\$118,461		\$0		\$0
0:	3-CONCRETE								
	o solitorization								
S	trip footing	LF		264		584		584	
	Concrete; material	CY	\$135.00	36	\$4,820	68	\$9,180		\$9,180
	Concrete; place	CY	\$85.00	36	\$3,035	68	\$5,780	68	\$5,780
	Reinforcement Formwork	LBS SF	\$1.20 \$9.00	1,487 528	\$1,784 \$4,752	2,955 1.460	\$3,546 \$13,140	2,955 1,460	\$3,546 \$13,140
	Formwork Keyways	LF	\$9.00	528 264	\$4,752 \$660	1,460 584	\$13,140 \$1,460		\$13,140
Is	colated footing	EA	Ψ2.50	5	\$ 500	37	Ç.,.00	37	ψ.,
	Concrete; material	CY	\$135.00	5	\$709	78	\$10,490		\$10,490
	Concrete; place	CY	\$85.00	5	\$446	78	\$6,605		\$6,605
	Reinforcement	LBS	\$1.20	446	\$536	6,605	\$7,925		\$7,925
Is	Formwork	SF	\$10.00	100	\$1,000	1,332	\$13,320	1,332	\$13,320
	olated footing for leally columns at existing basement oundation wall	EA SF	\$500.00	2 935	\$1,000	1,946		1,946	
F	oundation wall Concrete; material	SF CY	\$135.00	935 42	\$5,670	1,946 101	\$13,635	1,946 101	\$13,635
	Concrete; place	CY	\$85.00	42	\$3,570	101	\$8,585	101	\$8,585
	Reinforcement;	LBS	\$1.20	5,250	\$6,300	12,625	\$15,150	12,625	\$15,150
	Formwork	SF	\$12.00	1,870	\$22,440	3,892	\$46,704	3,892	\$46,704
	Masonry shelf	LF	\$7.00	255	\$1,785	470	\$3,290	470	\$3,290
_	Connect to existing foundation	EA	\$450.00	2	\$900				
P	ier/pilaster; allow Concrete	EA CY	6405.00	22 5	\$675	37 9	64.045	37 9	64.015
	Concrete Rebar	LBS	\$135.00 \$1.20	5 1,000	\$675 \$1,200	9 1,800	\$1,215 \$2,160		\$1,215 \$2,160
	Formwork	SF	\$12.00	1,229	\$1,200	2,067	\$24,802		\$24,802
	Place and finish	CY	\$85.00	5	\$425	9	\$765	9	\$765

_	DIRECT TRADE COST DETAILS					Sturbridge Senior (Renovations and Ad				
	ELEMENT	UNIT	UNIT RATE	Option 16,118 QUANTITY		Option 11,937 QUANTITY			Three 7 GSF COST	
_	Slab on grade: 5" thick	SF		4,377		11,937		11.937		
5	Concrete; material	CY	\$135.00	4,377 75	\$10,125	11,937 204	\$27,540	11,937 204	\$27,54	
6	Concrete; place & finish	SF	\$2.50	4,377	\$10,943	11,937	\$29,843	11,937	\$29,84	
7	WWF 6x6	SF	\$0.75	5,034	\$3,775	13,728	\$10,296	13,728	\$10,29	
8	Rigid insulation under slab on grade	SF	\$2.50	4,377	\$10,943	11,937	\$29,843	11,937	\$29,84	
9	Slab isolation joints	LF	\$5.50	381	\$2,093	1,038	\$5,709	1,038	\$5,70	
	5-1/2" Slab on deck at second level	SF		2,700						
1	Concrete; material	CY	\$135.00	48	\$6,480					
2	Concrete; pump, place & finish	SF	\$2.75	2,700	\$7,425					
	Reinforcement (6x6 mesh) 10% overlap Exterior Entrance	SF	\$0.75	2,970	\$2,228					
5	Loading dock; footing, foundation wall, slab on grade	GSF	\$70.00	135	\$9,450	150	\$10,500	150	\$10,50	
6	Concrete stair	LFR	\$75.00	70	\$5,250		*,		*,	
7	H/C ramp	SF	\$25.00	120	\$3,000					
8	Concrete landing	SF	\$15.00	152	\$2,280					
	Miscellaneous									
0	Underpinning existing foundation	LF	\$1,800.00	62	\$111,600		2			
1	Concrete pad; allow	LS SET	\$2,000.00 \$175.00	1	\$2,000	1	\$2,000	1	\$2,00	
3	Set column base plate, 4 ea. anchors	FLT	\$175.00 \$2.500.00		\$3,850	37	\$6,475	37	\$6,47	
4	Concrete for metal pan stairs Concrete accessories	LS	\$2,500.00	1	\$2,500 \$20,280		\$23,247		\$23,24	
	03-CONCRETE TOTAL	LO		-	\$290,674	-	\$333,203		\$333,20	
6					*===,=:		*****		*****	
7										
8	04-MASONRY									
	Unit Masonry									
11	Brick veneer to match existing including scaffolding	SF	\$37.00	6.060	\$224 220					
12	Architectural 4x4x24" CMU water table	SF	\$30.00	-,	*·,	970	\$29,100	970	\$29,10	
13	Brick/stone; ext columns at entrance	EA	\$1,500.00			2	\$3,000	2	\$3,00	
14	Existing Building Repairs and Maintenance									
)5	Brick repointing including scaffolding	SF	\$25.00	4,595	\$114,875					
96	Infill former window opening in ext wall	LOC	\$3,500.00	1.	\$3,500	-				
18	04-MASONRY TOTAL				\$342,595		\$32,100		\$32,10	
9										
	05-METALS									
1	Structural Steel Framing									
	Steel Decking									
14	Wide flange sections at roof; 12#/sf allowance provided	TON	\$4,200.00			72	\$300,812	72	\$300,81	
15	WF floor and roof per S-102	TON	\$4,200.00	41	\$172,200					
16	Steel truss per S-102	TON	\$4,650.00	10	\$46,500					
17	WF/HSS-shape columns; assume 2.5#/sf	TON	\$4,550.00	9	\$40,250	15	\$67,892	15	\$67,89	
18	Moment connection	EA	\$750.00	24	\$18,000		0440 4		0440 :-	
19	Entrance canopy; complete Column base plate	SF FA	\$150.00 \$75.00	350 22	\$52,500 \$1.650	996 37	\$149,400 \$2,775	996 37	\$149,40	
20	Column base plate Shear studs	FA	\$75.00 \$5.50	540	\$1,650	31	φ2,1/5	31	\$2,77	
22	3" x18ga composite steel floor deck	SF	\$3.75	2,700	\$10.125					
23	1½"x20ga. Metal roof deck; galv.	SF	\$3.50	5,885	\$20,598	12,928	\$45,247	12,928	\$45,24	
24	Seismic through-wall anchors @6"o.c.; perimeter of floor and roof	LF	\$65.00	400	\$26,000				,=	
25	plates									
	05 40 00 Light Gage Metal Framing - see Div 09									
	05 50 00* Miscellaneous and Ornamental Iron									
28	Relieving angle Handrail at stair/ramp	LF LF	\$25.00 \$240.00	207	N.I.C. \$12,000					
29 30	Handrail at stair/ramp Galvanized steel lintels for windows/ door	LF LF	\$240.00 \$120.00	50 76	\$12,000 \$9,120	234	\$28,080	234	\$28.08	
30 31	Steel support for operable partitions	LF	\$120.00	102	\$9,120 \$17,850	234 74	\$28,080	234 74	\$28,08 \$12,95	
32	Steel support for casework, vanity counters	EA	\$75.00	298	\$22,350	240	\$18,000	240	\$18,00	
33	Miscellaneous metals to interior	GSF	\$2.00	272	\$544	11,937	\$23,874	11,937	\$23,87	
34	Miscellaneous metals to exterior masonry	SF	\$3.50	6,060	\$21,210	970	\$3,395	970	\$3,39	
35	Metal pan stairs, incl's steel pipe railings	FLT	\$15,000.00	2	\$30,000					
	Miscellaneous metals to exterior masonry; Reno	SF	\$1.00	4,595	\$4,595					
36						7,143	\$7,143	7,143	C7 44	
17	Miscellaneous metals for exterior remainder 05-METALS TOTAL	SF	\$1.00	-	\$508,462	- 1,143 _	\$659,568	_ 7,143 _	\$7,14 \$659,5 6	

								Sturbridge S	
_	DIRECT TRADE COST DETAILS			Option	One	Option	a Two	Renovations a Option	
	ELEMENT	UNIT	UNIT RATE	16,118		11,937		11,937	
		ON	ONIT ICATE	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
9 (0	06-WOODS, PLASTICS, AND COMPOSITES								
	Rough Carpentry								
2	Selective repair of existing pier and center bearing wall in the base	LOC	\$500.00	11	\$5,500				
3	Selective repair of wood framing; sistering 2x8	LOC	\$750.00	20	\$15,000				
4	Infill existing stair open with wood framing	SF	\$25.00	216	\$5,400				
5	New posts at basement w/ leally column	EA	\$600.00	2	\$1,200				
6	Install ties at existing 1st floor girders to provide	LS	\$200.00	5	\$1,000				
7	continuity - Simpson tie strap qty provided		*** *** ***		00.700				
8 9	Anchored wood floor framing beyond the limits of the new stair c	LS GSF	\$2,700.00	1	\$2,700				
9	General structural repairs due to age/condition of existing building Repair of brick wall by shoring existing first and second floor	LOC	\$4.50 \$2,500.00	9,041 2	\$40,685 \$5,000				
1	framing near columns and remove /repair brick bearing wall w/	LUC	\$2,500.00	2	\$5,000				
2	8" reinforce CMU pier to existing foundation								
3	Rough carpentry roof blocking	LF	\$15.00	670	\$10.050	689	\$10.335	689	\$10.33
4	5/8" Plywood pitch roof sheathing, rough carpentry, blocking	SF	\$5.00	5.885	\$29,425	12.928	\$64,639	12.928	\$64,63
5		OPEN	\$175.00	12	\$2,100	42	\$7,350	42	\$7,35
6		OPEN	\$175.00	32	\$5,600		. ,		. ,
7	Rough carpentry/blocking; interior partitions and ceilings	SF	\$1.50	4,374	\$6,561	11,808	\$17,711	11,808	\$17,71
8	Reno area	SF	\$1.50	7,920	\$11,880				
9 <i>F</i>	Exterior Finish Carpentry								
0	Wood paneled wall infill w/glazing at former entrance door opening	OPEN	\$3,500.00	2	\$7,000				
1	Decorative column enclosure	EA	\$1,500.00			2	\$3,000	2	\$3,00
2	Exterior soffit	SF	\$25.00	940	\$23,500	2,347	\$58,675	2,347	\$58,67
3	Exterior soffit; Reno area	SF	\$25.00	435	\$10,875				
	Interior Architectural Woodwork								
5	Gift shop	AL	\$10,000.00	1	\$10,000	1	\$10,000	1	\$10,00
6	Multipurpose Room	LE	\$250.00	8	***	8	***	8	\$2.00
, 8	Serving counters Trash and tray counter	LF	\$250.00	8	\$2,000 \$1,500	8 6	\$2,000 \$1,500	8	\$2,00
9	Trash under counter cabinet	LF	\$250.00	6	\$1,500	6	\$1,500	6	\$1,50
0	Reception; Custom wood cabinets with plastic laminate countertop	LF	\$450.00	22	\$9,900	11	\$4,950	11	\$4,95
1	Kitchen Staff		φ+30.00		ψ3,300		ψ4,330		ψ4,30
2	Base and wall cabinet, countertop at Kitchen	LF	\$550.00	56	\$30,800	42	\$23,100	42	\$23,10
3	Base and wall cabinet countertop Staff Break; Reno area	LF	\$550.00	10	\$5,500				4=0,10
4	Service counters at Kitchen	LF	\$1,080.00	7	\$7,560	9	\$9,720	9	\$9,72
5	Copy supply; base cabinet countertop	LF	\$370.00	26	\$9,620	8	\$2,960	8	\$2,96
6	Wood shelf and coat rod in coat closet	RMS	\$250.00	1	\$250	1	\$250	1	\$25
7	Laminate shelving (4 tall) in all closets/storage	RMS	\$800.00	3	\$2,400	3	\$2,400	3	\$2,40
8	Wood base at lobby	LF	\$12.00	85	\$1,020	52	\$624	52	\$62
9	Vanity counter @ Restroom	LF	\$240.00			15	\$3,600	15	\$3,60
0	Chair rail at corridor; assumed qty	LF	\$15.00	180	\$2,700	230	\$3,450	230	\$3,45
1	Window sill	LF	\$32.00	100	\$3,200	234	\$7,488	234	\$7,48
2	Miscellaneous standing and running trim	GSF	\$3.50	7,077	\$24,770	11,937	\$41,780	11,937	\$41,78
3	Miscellaneous standing and running trim; Reno area	GSF	\$3.50	9,041	\$31,644		\$277.032		6077.00
4 (5	06-WOODS, PLASTICS, AND COMPOSITES TOTAL				\$327,839		\$2/7,032		\$277,03
6									
7 (8	07-THERMAL AND MOISTURE PROTECTION								
	07 00 01* Waterproofing Dampproofing and Caulking								
10	Damproofing at foundation wall	SF	\$3.50	935	\$3,273	1,946	\$6,811	1,946	\$6,81
1	Damproofing at existing foundation wall, new foundation drain	LF	\$110.00	176	\$19,360				
2	Fluid applied air/vapor barrier @ exterior wall	SF	\$7.20	6,060	\$43,632	5,522	\$39,758	5,522	\$39,75
3	Caulking and sealants	GSF	\$3.00	16,118	\$48,354	11,937	\$35,811	11,937	\$35,81
4	Liquid applied vapor barrier to mitigate slab moisture content	SF	\$3.50	2,367	\$8,285	5,431	\$19,009	5,431	\$19,00
	07 00 02* Roofing and Flashing								
	Asphalt shingle roofing assembly, 30 year warranty	SF	\$13.00	5,885	\$76,505	12,928	\$168,061	12,928	\$168,06
	Repair existing roofing - 5% allowance provided	SF	\$31.25	203	\$6,344				
	Canopy @ entrance - Div 05 complete assembly	SF	\$18.00	350	Div 05	996	Div 05	996	Div 05
	Roof edge/fascia, coping, flashing	LF	\$35.00	392	\$13,720	556	\$19,460	556	\$19,46
	Vented ridge cap	AL I F	\$5,000.00	1	\$5,000 \$4,420	1 556	\$5,000	1	\$5,00 \$9.45
	New thru wall flashing Pad-type, flat-mounted snow guards; assumed	LF LF	\$17.00 \$50.00	260 60	\$4,420 \$3,000	556 30	\$9,452 \$1,500	556 30	\$9,45 \$1,50
		EA.	\$50.00	60	\$3,000	30 1	\$1,500 \$3,500	30 1	\$1,50 \$3,50
	Roof hatch and curb; allow	LA	\$5,500.00				ψ5,500		φ3,30

	DIRECT TRADE COST DETAILS							Renovations :	Senior Cent and Addition
	ELEMENT	UNIT	UNIT RATE	Option 16,118 QUANTITY		Option 11,933 QUANTITY	n Two	Option 11,93	Three
04 .	Aluminum gutter	LF	\$45.00	175	\$7,875	289	\$13,005	289	\$13,00
05	Aluminum downspouts	AL	\$5,000.00	1	\$3,750	1	\$5,000	1	\$5,00
06	Misc. roof accessories	LS	\$3,500.00	1	\$3,500	1	\$3,500	1	\$3,50
07	Roof edge/fascia, coping, flashing	LF	\$35.00	290	\$10,150				
80	Vented ridge cap	AL	\$5,000.00	1	\$5,000				
09	New thru wall flashing	LF	\$17.00	310	\$5,270				
10	Pad-type, flat-mounted snow guards; assumed	LF	\$50.00	60	\$3,000				
11	Aluminum gutter	LF	\$45.00	175	\$7,875				
12	Aluminum downspouts	AL	\$3,500.00	1	\$2,625				
13	Misc. roof accessories	LS	\$3,000.00	1	\$3,000				
14	07 21 00 Thermal Insulation								
15	2" Rigid insulation at foundation wall	SF	\$2.75	935	\$2,571	1,946	\$5,352	1,946	\$5,35
16	3" Mineral Fiber thermal insulation at exterior wall	SF	\$2.50	6,060	\$15,150	5,522	\$13,805	5,522	\$13,80
17	Spray Polyurethane Insulation (per Narrative)	SF	\$4.75	6,060	\$28,785				
18	Batt insulation to existing attic	SF	\$2.50	2,567	\$6,418				
19	Spray polyurethane Insulation	AL	\$1,500.00			1	\$1,500	1	\$1,50
20	07 46 10 Cementitious Siding								
21	Cement fiber siding in lieu of masonry	SF	\$15.00	6,060	Alternate				
22	Fiber cement flat panels with battens	SF	\$15.00			1,830	\$27,450	1,830	\$27,45
23	Fiber cement horizontal shingle siding	SF	\$15.50			3,692	\$57,226	3,692	\$57,22
24	Fiber cement smooth trim, board, fascia	LS	\$25,000.00			1	\$25,000	1	\$25,00
25	Through floor penetration firestopping & fire resistive joints	GSF	\$0.50	16,118	\$8,059	11,937	\$5,969	11,937	\$5,96
	07-THERMAL AND MOISTURE PROTECTION TOTAL				\$344,920	–	\$466,168		\$466,16
27									
28									
29	08-OPENINGS								
30									
31	Exterior door								
32	Egress exit door; insulated HM door w/HM welded frame.	LEAF	\$2,500.00	2	\$5,000	6	\$15,000	6	\$15,00
33	Reno area	PR	\$2,500.00	1	\$2,500				
34	Pair of doors at Loading Dock	PR	\$5,000.00	1	\$5,000				
35	Emulate door at south elevation	PR	\$7,000.00	1	\$7,000				
36	Emulate door at south elevation	LEAF	\$3,500.00	1	\$3,500				
37	Interior HM door	LEAF							
38	single door	LEAF	\$300.00			4	\$1,200	4	\$1,20
39	single door: Reno area, basement	LEAF	\$300.00	3	\$900				
40	double door	PR	\$600.00			5	\$3,000	5	\$3,00
41	Interior solid core wood door								
42	single door	LEAF	\$350.00	10	\$3,500	18	\$6,300	18	\$6,30
43	Reno area	LEAF	\$350.00	23	\$8,050		,		,
44	double door	PR	\$700.00	1	\$700	5	\$3,500	5	\$3,50
45	Reno area	PR	\$700.00	3	\$2,100	•	-0,000	•	ψ0,00
	Door Frames		+,00.00	,	,				
47	HMF, single	EA	\$240.00	10	\$2,400	22	\$5.280	22	\$5,28
48	Reno area	EA	\$240.00	26	\$6,240		,u,L00		ψ0,20
49	HMF, double	EA	\$390.00	1	\$390	10	\$3,900	10	\$3,90
50	Reno area	EA	\$390.00	3	\$1,170	10	\$0,000		ψ5,50
	Access doors at MEP installation	FA	\$300.00	3	\$900	8	\$2,400	8	\$2,40
	Access doors at MEP installation; Reno area	FΑ	\$300.00	10	\$3,000	۰	ψ <u>2</u> , 1 00	۰	Ψ2,40
	Overhead coiling door at Kitchen/Serving area	FA	\$5,000.00	10	\$5,000	1	\$5,000	1	\$5.00
	Overhead coiling door at Kitchen/Serving area Overhead coiling counter door at Reception desk; assumed	FA	\$5,000.00	1	\$10,000	1	\$5,000	1	\$5,00 \$5,00
	Exterior Doors		ψυ,υυυ.00	1	φ10,000	'	ψ5,000	'	ψ5,00
56 56	Entry doors; fiberglass door w/divided glass lights changed to alum	PR	\$7.500.00	1	\$7,500	1	\$7.500	1	\$7.50
57	single door	LEAF	\$3,750.00	1	φ1,500	6	\$22,500	6	\$22.50
	single door Vestibule; pair of doors	PR	\$3,750.00	1	\$7,000	1	\$22,500	1	\$22,50
	vestibule, pair of doors Exterior storefront	SF	\$1,000.00	210	\$24,150	98	\$11,270	98	\$1,00
		SF	\$115.00 \$115.00	210 405	. ,	98 88		98 88	\$11,27 \$10.12
	Interior glass storefront/sidelight & transom at vestibule	or-	ф115.00	405	\$46,575	88	\$10,120	88	\$1U,12
	Operable partition between program rooms - Div. 10	SF	605.00		es4 070	4 0=0	\$100 ccc	4 0=0	6400.05
	Fiberglass window, double hung, insulating glass		\$95.00	546	\$51,870	1,270	\$120,650	1,270	\$120,65
	Remove and replace window, fixed sash, horizontal mullion	SF	\$100.00	818	\$81,800				
	Rounded windows	EA	\$1,800.00	1	\$1,800				
	Door Hardware								
66	Door hardware, heavy duty mortise locksets	OPEN	\$800.00	12	\$9,600	42	\$33,600	42	\$33,60
	Reno area	OPEN	\$800.00	32	\$25,600				
67 68	Automatic door operator	SFT	\$2.500.00	2	\$5,000	3	\$7.500	3	\$7.50

	DIRECT TRADE COST DETAILS							Renovations	Senior Cent and Additio
	ELEMENT	UNIT	UNIT RATE	Option 16,118 QUANTITY			n Two 7 GSF COST	Option	7 GSF COST
69	Glass and Glazing								
70	Door glazing & sidelight	LS	\$3,500.00	1	\$3,500	1	\$3,500	1	\$3,50
71	Reno area	LS	\$3,500.00	1	\$3,500				
72 73	Louvers and Vents Aluminum louvers; allow	IS	\$1.500.00	1	64 500	1	\$1.500		\$1.50
	08-OPENINGS TOTAL	LS	\$1,500.00	١,	\$1,500 \$336,745	. '-	\$1,500	. 1.	\$1,50 \$275.72
75	US-OFENINGS TOTAL				\$330,745		\$215,120		\$215,12
76									
77 78	09-FINISHES								
	09 00 01* Tiling								
80	12x24 Porcelain tile flooring in Lobby	SF	\$24.00	394	\$9.456	510	\$12.240	510	\$12.24
B1	12x24 Ceramic tile flooring in bathrooms	SF	\$22.00		,	660	\$14,520	660	\$14,52
82	bathrooms; Reno area	SF	\$22.00	700	\$15,400				
83	12x24 Ceramic tile in Corridor	SF	\$22.00	771	\$16,962	869	\$19,118	869	\$19,11
84	Reno area	SF	\$22.00	1,016	\$22,352				
85 86	Porcelain wall tile in bathrooms; full height at wet walls Reno area	SF SF	\$24.00 \$24.00	592	\$14.208	424	\$10,176	424	\$10,17
86 87	Reno area Ceramic wall base	SF LF	\$24.00 \$15.00	172	\$14,208	139	\$2,085	139	\$2,08
88	Quarry floor tile at kitchen, pantry, receiving	SF	\$24.00	563	\$13,512	630	\$15.120	630	\$15,12
89	Quarry tile wall base	LF	\$14.00	184	\$2,576	129	\$1,806	129	\$1,80
	09 00 02* Acoustical Panel Ceilings								
91	Acoustical tile ceiling; 2'x2'	SF	\$5.50	5,295	\$29,123	7,708	\$42,394	7,708	\$42,39
92	Acoustical tile ceiling; 2'x2'; Reno area	SF	\$5.50	4,975	\$27,362				
93 94	Acoustical tile ceiling @ Restrooms Acoustical tile ceiling @ Restrooms; Reno area	SF SF	\$5.75 \$5.75	700	\$4,025	660	\$3,795	660	\$3,79
95	ACT at kitchen	SF SF	\$6.00	700 510	\$3,060	630	\$3,780	630	\$3,78
	09 00 03* Resilient Flooring	٥.	ψ0.00	310	40,000	000	40,700	000	ψ0,7 0
97	6x36 plank vinyl floor at Multipurpose room	SF	\$10.00	1,998	\$19,980	2,583	\$25,830	2,583	\$25,83
98	Reno area, Game room	SF	\$7.50	766	\$5,745				
99	Rubber flooring landing and stair treads	SF	\$12.00	305	\$3,660				
00	Reno area	SF SF	\$12.00 \$7.50	605	\$7,260	96	\$720	96	\$72
01 02	Reno area	SF SF	\$7.50	129	\$968	96	\$720	96	\$/2
03	Storage Room; assume VCT	SF	\$4.50	123	4900	1,166	\$5,247	1,166	\$5,24
04	Epoxy flooring in Janitor closets	SF	\$11.00			66	\$726	66	\$72
05	Reno area	SF	\$11.00	22	\$242				
06	Mechanical, Storage - in lieu of sealed concrete	SF	\$11.00	150	\$1,650	651	\$7,161	651	\$7,16
07	18x36 carpet tile flooring at Offices and Gift Shop	SF	\$5.50	369	\$2,030	1,586	\$8,723	1,586	\$8,72
08 09	Reno area Wall base	SF	\$5.50	3,647	\$20,058		00.454		00.41
09 10	Wall base Reno area	LF SF	\$3.50 \$3.50	1,300 2,165	\$4,550 \$7,578	1,844	\$6,454	1,844	\$6,45
	Performance wood floor at Yoga Tai Chi room	SF SF	\$25.00	2,165	\$51,100	2,002	\$50,050	1,625	\$40,62
	09 00 04* Painting and Coating			_,-,	4 2.,.00	2,002	,	.,020	,01
13	Interior								
14	Reno area	SF	\$1.50	1,705	\$2,558				
15	GWB walls	SF	\$1.10	13,880	\$15,268	22,687	\$24,956	22,687	\$24,95
16 17	Reno area	SF SF	\$1.10 \$1.50	20,435 769	\$22,479 \$1,154	1 250	\$1,884	1.256	¢1 00
17 18	GWB ceiling / soffits Reno area	SF SF	\$1.50 \$1.50	769 605	\$1,154 \$908	1,256	\$1,884	1,256	\$1,88
19	Exposed ceiling @ Mechanical, storage	SF	\$1.25	150	\$188	651	\$814	651	\$81
20	Reno area	SF	\$1.25	1,705	\$2,131				
21	HM Door	OPEN	\$70.00			14	\$980	14	\$98
22	Reno area	OPEN	\$70.00	3	\$210				
23	HM door frame	OPEN	\$50.00	12	\$600	32	\$1,600	32	\$1,60
24 25	Reno area Exterior	OPEN	\$50.00	32	\$1,600				
25 26	Misc. painting soffit	SF	\$1.50	940	\$1,410	996	\$1,494	996	\$1,49
27	Reno area	SF	\$1.50	435	\$653		21,104		ψ.,το
28	09 21 16 Gypsum Board Assemblies								
	Exterior walls: 6"galvanized metal stud framing	SF				5,522	Included	5,522	Included
	Exterior wall, drywall interior layer, gypsum sheathing	SF	\$12.00			5,522	\$66,264	5,522	\$66,26
	Interior of exterior wall; 8" metal stud, fiberglass sheathing,	SF	\$14.00	4,770	\$66,780				
32	insulation and GWB layer at two-story exterior wall 6" metal stud at other areas	SF	\$12.00	1,290	\$15,480				
33									

6* metal stud; 2-%* GWB, balt insulation assume at stains SF \$12.25 340 \$4,165 35 metal stud; 2-%* GWB, balt insulation SF \$10.75 0,79.20 \$85,140 \$1.0	DIRECT TRADE COST DETAILS							Sturbridge S Renovations a	and Addition
Interior partitions: generally Plancing partitions: 3 % most shadow Plancing partitions: 4 % plancing partition	ELEMENT	UNIT	UNIT RATE						
Require partitions 3 %*metal stad. (2) %*COVB, 30*CoVB and 10*CoVB and 10*Co				QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
Require partitions 3 %*metal stad. (2) %*COVB, 30*CoVB and 10*CoVB and 10*Co	1.1.2	05		44.00-		40.550		40.550	
Plumbrig yalls; 3 % metal statud; (1) % CWB, 3/5 * bat insulation SF \$75.00			640.50	11,830		,	£406 404	,	£406.40
3 % melal stud, 2x % GWB, batt insulation 6 F metal stud, 2x % GWB, batt insulation 7 F metal stud, 2x % GWB, batt insulation 8 F 510.76 7,920 8 53,140 8 4,165 3 % metal stud, 2x % GWB, batt insulation 8 F 510.76 7,920 8 53,140 6 WS celling @ stars 8 F 513.80 8 6 8 83.49 1 Interior selff, allow 1 Interior selff, allo									
6* metal stud, 2 x** GWR, batt insulation assume at stairs SF \$12.25 340 \$4,165 \$7.15 \$7.00 \$7.0				3 570	\$38 378	410	\$3,071	410	φ3,07
3 % metal stud, 2x % CWB, batt insulation									
GWB celling @ vestbules and bobbes SF \$12,00 464 \$5,568 \$96 \$7,152 \$96 \$7,152 \$71,00 \$12,00 \$12,00 \$13,00 \$1,00									
Second floor celling is stairs	GWB ceiling @ vestibule and lobbies					596	\$7.152	596	\$7,152
Interior soft Lallow New Spoon 1 \$5,000 1 \$5,									
Investigate and repair apporatio leaks as observed on the second force celling; assume 10% of celling area \$440,651	Reno area	SF	\$13.80	605	\$8,349				
### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling area ### Second floor ceiling: assume 10% of ceiling: assu	Interior soffit; allow					1	\$5,000	1	\$5,000
SPECIALTES S449,651 S449,651 S449,651 S440,22 SPECIALTES SPECIALTES SPECIALTES SPECIA		SF	\$25.00	236	\$5,905				
Visual Display Units Information display screen bulletin board EA \$3,000.00 1 \$3,000 1 \$3				_		_			
Natural Display Units Find Properties Find					\$573,567		\$449,651		\$440,226
Natural Display Units Find Properties Find	•								
Visual Display Units	10-SPECIALTIES								
Information displays creen bulletin board	10-SPECIALTIES								
Information displays creen bulletin board	Visual Display Units								
Reno area EA		FΔ	\$3,000,00	4	\$3,000		\$3,000	4	\$3,000
Signage Exterior building signage LS \$4,500.00 1 \$4,500 \$4,500 1						'	ψ5,000	'	ψ5,000
Exterior building signage			ψ1,300.00		ψ1,500				
Code-required interior panel signage, access. Signage GSF S0.35 7,077 S2.477 11,937 S4.178 11,937 S4.178 Reno area Bulletin Boards EA \$2,000.00 1 \$2,000 2 \$2,300 ADA STALL \$1,450.00 \$2 \$2,300 ADA STALL \$1,450.00 \$2 \$2,300 ADA STALL \$1,450.00 \$4 \$5,800 STALL \$1,450.00 \$4 \$5,800 STALL \$1,450.00 \$4 \$5,800 STALL \$1,450.00 \$4 \$5,800 STALL \$1,450.00 \$4 \$1,000 \$1 \$1		LS	\$4,500.00	1	\$4,500	1	\$4,500	1	\$4,500
Reno area GSF \$0.35 9,041 \$3,164 \$2,000 1 \$2,000 2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$2,300 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700 \$2 \$3,700	Code-required interior panel signage, access. Signage	GSF		7,077	\$2,477	11,937		11,937	\$4,178
Tollet Compartments		GSF	\$0.35	9,041	\$3,164				
Phenolic resin, overhead braced	Bulletin Boards	EA	\$2,000.00	1	\$2,000	1	\$2,000	1	\$2,000
ADA STALL \$1,450.00 2 \$2,900 2 \$2,200 Urinal screen EA \$850.00 2 \$1,700 2 \$1,700 2 \$1,700 Exist Building Reno Phenolic resin, overhead braced \$TALL \$1,150.00 2 \$2,300 ADA \$1,150.00 4 \$5,800 Urinal screen EA \$850.00 2 \$1,700 Wall Protection EA \$850.00 2 \$1,700 Wall Protection Corner guards; allow LS \$1,000.00 1 \$1,000 1 \$1,000 1 \$1,000 1 \$1,000 Door hooks US \$1,250.00 1 \$1,250 1 \$1,250 1 \$1,250 Ceparable partition between program rooms LF \$1,000.00 74 \$75,480 74 \$75,480 Poerable partition between program rooms LF \$1,000.00 102 \$104,040 Tollet and EATh Accessories; aligned user EA \$700.00 2 \$1,400 2 \$1,400 2 \$1,400 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 3 \$1,350 Utility shelff mop & broom holder; Janitor SET \$150.00 2 \$300 Utility shelff mop & broom holder; Janitor SET \$150.00 3 \$1,350 Utility shelff mop & broom holder; Janitor SET \$150.00 3 \$1,350 Utility shelff mop & broom holder; Janitor SET \$150.00 3 \$1,350 Utility shelff mop & broom holder; Janitor SET \$150.00 3 \$1,350 Utility shelff mop & broom holder; Janitor SET \$150	Toilet Compartments								
Urinal screen	Phenolic resin, overhead braced	STALL	\$1,150.00			2	\$2,300	2	\$2,300
Exist Building Reno Phenolic resin, overhead braced STALL \$1,150.00 2 \$2,300 ADA STALL \$1,450.00 4 \$5,800 Urinal screen EA \$850.00 2 \$1,700 Wall Protection Corner guards; allow LS \$1,000.00 1 \$1,000 1 \$1,	ADA								\$2,900
Phenolic resin, overhead braced STALL \$1,150.00 2 \$2,300 ADA		EA	\$850.00			2	\$1,700	2	\$1,70
ADA STALL \$1,450.00 4 \$5,800 Use Protection Wall Protection Corner guards; allow LS \$1,000.00 1 \$1,0									
Urinal screen									
Wall Protection Comer guards; allow LS \$1,000.00 1 \$1,000				-					
Corner guards; allow		EA	\$850.00	2	\$1,700				
Door hooks		10	\$1,000,00		¢1 000		\$1,000		\$1.00
Operable partition at the Multipurpose Room: motorized, qty provided F \$1,020.00 102 \$104,040 74 \$75,480 74 \$7									. ,
Commercial cooking and dishwashing equipment Commercial cooking and dishwashing equipment Cookin					ψ1,230				
Toilet accessories; gang toilet			.,	102	\$104 040		ψ1 0, 100		ψ10,10t
Toilet accessories; single user I collet accessories; single user SET \$150.00 SET \$150.00 1 \$150	! Toilet and Bath Accessories		\$1,020.00	.02	ψ101,010				
Utility shelf/ mop & broom holder; Janitor SET \$150.00	Toilet accessories; gang toilet	EA	\$3,500.00			2	\$7,000	2	\$7,000
Exist Building Reno Toilet accessories; gang toilet EA \$3,500.00 4 \$14,000 Toilet accessories; gang toilet EA \$700.00 2 \$1,400 Utility shelf mop & broom holder; Janitor EA \$700.00 2 \$300 Five Protection Specialities Recessed fire extinguisher and cabinet EA \$450.00 3 \$1,350 3 \$1,350 \$3 \$3 \$3 \$3 \$3 \$3 \$3 \$									\$1,400
Toilet accessories; gang toilet	Utility shelf/ mop & broom holder; Janitor	SET	\$150.00			1	\$150	1	\$150
Toilet accessories; single user	Exist Building Reno								
Utility shelf/ mop & broom holder; Janitor SET \$150.00 2 \$300 Fire Protection Specialties Recessed fire extinguisher and cabinet EA \$450.00 3 \$1.350 3 \$1.350 Recessed fire extinguisher and cabinet EA \$450.00 3 \$1.350 Receivanceus Specialties Aluminum louvers with factory finished Kynar coating 10-SPECIALTIES TOTAL 11-EQUIPMENT Food service equipment; allowance GSF \$200.00 450 \$90.000 630 \$126.000 630 \$126.000 Commercial cooking and dishwashing equipment Walk-in refrigerator/freezer Walk-in refrigerator/freezer 11-EQUIPMENT TOTAL SET \$150.00 2 \$300 S126.000 630 \$126.000 S126.000 \$126.000 S126.000 \$126.000 S126.000 S126.000	Toilet accessories; gang toilet	EA	\$3,500.00	4	\$14,000				
Fire Protection Specialities EA	Toilet accessories; single user	_, ,		_	¥ ·, · · ·				
Recessed fire extinguisher and cabinet EA \$450.00 3 \$1,350 \$10,000 \$1,000	Utility shelf/ mop & broom holder; Janitor	SET	\$150.00	2	\$300				
Reno area									
Miscellaneous Specialties						3	\$1,350	3	\$1,350
Aluminum louvers with factory finished Kynar coating Div 08 Div 08 S10-SPECIALTIES TOTAL S108, 200 S108, 2		EA	\$450.00	3	\$1,350				
11-EQUIPMENT					Div 00		Div 00		Div 00
11-EQUIPMENT				-		-		-	
11-EQUIPMENT Food service equipment; allowance GSF \$200.00 450 \$90,000 630 \$126,000 630 \$126,000 Commercial cooking and dishwashing equipment Included Incl	5 10-SPECIALTIES TOTAL				\$151,131		\$108,208		\$108,208
Food service equipment; allowance GSF \$200.00 450 \$90.000 630 \$126.000 630 \$126.000 Commercial cooking and dishwashing equipment Included									
Food service equipment; allowance GSF \$200.00 450 \$90.000 630 \$126.000 630 \$126.000 Commercial cooking and dishwashing equipment Included									
Food service equipment; allowance	11-EQUIFMENT								
Commercial cooking and dishwashing equipment Included Inc		GSF	\$200.00	450	\$90.000	630	\$126.000	630	\$126,000
Walk-in refrigerator/freezer Included Included Included 11-EQUIPMENT TOTAL \$90,000 \$126,000 \$126,000									
11-EQUIPMENT TOTAL \$90,000 \$126,000 \$126,000									
				-	\$90,000	-		-	\$126,000
	i								
	i								
	,								

DIRECT TRADE COST DETAILS							Sturbridge S Renovations a	
ELEMENT	UNIT	UNIT RATE	Optior 16,118	GSF	Option 11,937	GSF	Option 11,937	Three GSF
			QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
9 12-FURNISHINGS								
0								
1 Window Treatment								
2 Roller shades, manual shade operators @ Offices area	SF	\$7.50	1,364	\$10,230	715	\$5,363	715	\$5,363
3 Multipurpose, Program	SF	\$12.50	210	\$2,625	555	\$6,938	555	\$6,938
4 Entrance Mats								
5 Recessed walk off mat at entry vestibule 6 12-FURNISHINGS TOTAL	SF	\$35.00	130	\$4,550 \$17,405	. 86 _	\$3,010 \$15,310	_ 86 _	\$3,010 \$15,310
o 12-FURNISHINGS TOTAL 7				\$17,405		\$15,310		\$15,310
,								
9 14-CONVEYING EQUIPMENT								
0								
1 14 20 00 Elevator								
2 ETR elevator at Reno area; inspect and re-certify	LS	\$25,000.00	1	\$25,000				
Redo elevator cab interiors, new carpet	CAB	\$5,000.00	1 _	\$5,000	_			
4 14-CONVEYING EQUIPMENT TOTAL				\$30,000		\$0		\$0
5 6								
7 21-FIRE SUPPRESSION								
8								
9 Fire service entrance	EA	\$4,500.00	1	\$4,500	1	\$4,500	1	\$4,500
Backflow preventer	EA	\$5,500.00	1	\$5,500	1	\$5,500	1	\$5,500
1 Alarm check valve w/trim	EA	\$5,500.00	1	\$5,500	1	\$5,500	1	\$5,500
2 Fire department connection	EA	\$2,500.00	1	\$2,500	1	\$2,500	1	\$2,500
3 Zone controller	EA	\$2,520.00	1	\$2,520	1	\$2,520	1	\$2,520
4 Sprinkler coverage	GSF	\$5.50	16,118	\$88,649	11,937	\$65,654	11,937	\$65,654
5 Seismic restraints	EA	\$2,100.00	1	\$2,100	1	\$2,100	1	\$2,100
6 Coring, cutting, sleeves & fire stopping	LS LS	\$2,700.00	1	\$2,700			_	
7 Shop drawings / BIM / ENG Support / As-Built 8 Permits & fees	LS	\$4,000.00	1	\$4,000 \$1.900	1	\$4,000	1	\$4,000
9 21-FIRE SUPPRESSION TOTAL	LS		١.	\$1,900 \$119,869	. 1_	\$1,500 \$93,774	_ 1_	\$1,500 \$93,774
0				\$115,005		\$55,774		\$55,114
- 1								
2 22-PLUMBING								
3								
4 Equipment								
5 Electric water heater w/ storage tank	EA	\$15,000.00	1	\$15,000	1	\$15,000	1	\$15,000
6 Water meter assembly	EA	\$4,000.00	1	\$4,000	1	\$4,000	1	\$4,000
7 Reduced pressure backflow preventer, 8 Hot water circulation pump assembly	EA EA	\$4,200.00 \$1,200.00	1	\$4,200 \$1,200	1 2	\$4,200 \$2,400	1 2	\$4,200 \$2,400
Mixing valve	EA	\$4,500.00	1	\$4,500	1	\$4,500	1	\$4,500
0 Floor drain - New	LS	\$3,500.00	•	ψ 4 ,500	1	\$3,500	- 1	\$3,500
1 Floor drain - Addition	LS	\$2,000.00	1	\$2,000	•	\$5,500	•	ψ0,000
2 Floor drain - Renovation	LS	\$2,500.00	1	\$2,500				
3 Kitchen floor sink	LS	\$950.00	1	\$950	1	\$950	1	\$950
4 Trap primer	EA	\$700.00	1	\$700	1	\$700	1	\$700
5 Wall hydrant	EA	\$325.00	2	\$650	1	\$325	1	\$325
6 Hose bibb	EA	\$250.00	1	\$250	1	\$250	1	\$250
7 Indoor grease interceptor	EA	\$3,500.00	1	\$3,500	1	\$3,500	1	\$3,500
Rough-in & connection to kitchen equipment	EA	\$5,000.00	1	\$5,000	1	\$5,000	1	\$5,000
9 Plumbing Fixtures 0 Water Closet	FA	¢4 050 00	8	\$14 800	8	614.000	8	614 000
Water Closet Urinal	EA FA	\$1,850.00 \$1,800.00	8 2	\$14,800 \$3,600	8 2	\$14,800 \$3,600	8 2	\$14,800 \$3,600
2 Lavatory; wall hung	FA	\$1,000.00	6	\$10,800	2	\$3,600	2	\$3,600
3 Janitor Closet	EA	\$2,500.00	2	\$5,000	1	\$2,500	1	\$2,500
4 Sinks	EA	\$1,800.00	3	\$5,400	4	\$7,200	4	\$7,200
5 Drinking fountain w/ bottle filler	EA	\$5,500.00	2	\$11,000	1	\$5,500	1	\$5,500
6 Domestic Water Piping								
	GSF	\$3.50	16,118	\$56,413	11,937	\$41,780	11,937	\$41,780
 Copper pipe type L with fittings & hangers 								
8 Sanitary Waste And Vent Piping		\$4.50	16,118	\$72,531	11,937	\$53,717	11,937	\$53,717
8 Sanitary Waste And Vent Piping 9 Cast iron pipe with fittings & hangers	GSF			\$24,177	11,937	\$17,906	11,937	\$17,906
Cast iron pipe with fittings & hangers Gas portable tank and piping	GSF GSF	\$1.50	16,118	\$24,177				
Sanitary Waste And Vent Piping Cast iron pipe with fittings & hangers Gas portable tank and piping Miscellaneous	GSF	,	.,			00 555		00.55
8 Sanitary Waste And Vent Piping 9 Cast iron pipe with fittings & hangers 0 Gas portable tank and piping 1 Miscellaneous 2 System testing and flushing	GSF	\$1.50 \$2,500.00	16,118	\$2,500	1	\$2,500	1	\$2,500
Sanitary Waste And Vent Piping Cast iron pipe with fittings & hangers Gas portable tank and piping Miscellaneous	GSF	,	.,		1	\$2,500 \$2,000	1	\$2,500 \$2,000

								Sturbridge S	
- 0	DIRECT TRADE COST DETAILS							Renovations a	
				Option		Option		Option	
	ELEMENT	UNIT	UNIT RATE	16,118		11,937		11,93	
				QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
4	Seismic Restraints and Structural Steel Comp.	LS	\$1,500.00	1	\$1,500	1	\$1.500	1	\$1,5
5	Hydraulic lifts/rigging	LS	\$5,000.00	1	\$5,000	1	\$5,000	1	\$5,0
6	Shop drawings / BIM / ENG Support / As-Built	IS	\$3.500.00	1	\$3,500	1	\$3,500	1	\$3,50
7	Commissioning support	LS	\$2,000.00	1	\$2,000	1	\$2,000	1	\$2.0
8	Fees & permits	LS	*=,		\$4,200		\$3,000		\$3,0
9 2	22-PLUMBING TOTAL			-	\$301.871	_	\$214,427	-	\$214,4
0									
٩.									
	23-HVAC								
3									
	Heating/Cooling System:								
5	Automatic Glycol feed	LS	\$25,000.00	1	\$25,000				
6	Pipe leakage test	LS	\$12,900.00	1	\$12,900				
7.	Ventilation through basement VRF Equipment and distribution	LS	\$10,000.00	1	\$10,000				
						_		_	
9	VRF Condenser	EA	\$56,000.00	1	\$56,000	2	\$112,000	2	\$112,0
0	Condensate pipe	LS	\$22,400.00	1	\$22,400	1	\$22,400	1	\$22,4
	Kitchen Exhaust & Make Up Air:		640,000,00		640.000		640.000		640.0
2	Kitchen exhaust fan & hood	LS	\$18,000.00	1	\$18,000	1	\$18,000	1	\$18,0
3	Make up air unit	LS	\$19,000.00	1	\$19,000	1	\$19,000	1	\$19,0
14 \ 15	Ventilation:	F.	ene ono on		ene non	1	ear acc		605.0
15 16	ERV-1 (Fresh Air For Building)	EA	\$25,000.00	1	\$25,000	1	\$25,000	1	\$25,0
	VAV Terminal Units	EA GSF	\$1,000.00	4 16.118	\$4,000	4 11.937	\$4,000	4	\$4,0
17	Insulated galvanized ductwork; allow		\$7.50	,	\$120,885	,	\$89,528	11,937	\$89,5
8	Kitchen exhaust duct Electric duct heater	LS EA	\$20,000.00 \$2,500.00	1	\$20,000 \$2,500	1	\$20,000 \$2,500	1	\$20,0 \$2,5
9	Electric duct neater Miscellaneous Requirements:	EA	\$2,500.00	1	\$2,500	1	\$2,500	1	\$2,5
0 /			** ***	1	00.500		00.500	1	00.5
	Louver w/motorized damper	EA	\$2,500.00	-	\$2,500	1	\$2,500	-	\$2,5
12	Fan forced heaters	EA	\$3,500.00	4	\$14,000	4	\$14,000	4	\$14,00
13	Bathroom heating & cooling	RMS	\$2,500.00	6	\$15,000	4	\$10,000	4	\$10,0
	Controls & Instrumentation Fest & balance	GSF	\$6.50	16,118 1	\$104,767	11,937	\$77,591	11,937 1	\$77,5
	l est & balance Miscellaneous	LS	\$14,500.00	1	\$14,500	1	\$14,500	1	\$14,5
16 <i>1</i> 17	Coring, cutting, sleeves & fire stopping	LS			\$25.000		\$2.500		\$2.5
18	Seismic Restraints and Structural Steel Comp.	LS	\$2,000.00	1	\$25,000	1	\$2,500	1	\$2,0
19	Hydraulic lifts/rigging	LS	\$5,000.00	1	\$5.000	1	\$5,000	1	\$5.0
10	Shop drawings / BIM / ENG Support / As-Built	LS	\$8,500.00	1	\$8,500	1	\$8,500	1	\$8,50
11		LS		-		1		1	
	Commissioning support 23-HVAC TOTAL	Lo	\$3,500.00	1 _	\$3,500	- '-	\$3,500	- 1-	\$3,5
12 2	23-HVAC TOTAL				\$530,452		\$452,518		\$452,5
13									
٠.	26-ELECTRICAL								
6									
	Gear & Distribution								
8	Normal Power								
9	Meter provision	EA	350	1	\$350	\$1.00	\$350	1	\$3
0	Associated panelboards and feeders	GSF	\$3.25	16,118	\$52,384	11,793	\$38,327	11,793	\$38,3
1	Grounding	LS		1	\$3,500	1	\$2,500	1	\$2,5
2	Emergency power generator - Div. 33								
3	Equipment Wiring	GSF	\$3.00	16,118	\$48,354	11,937	\$35,811	11,937	\$35,8
	ighting & Branch Power								
5	LED lighting	SF	\$4.50	16,118	\$72,531	11,793	\$53,069	11,793	\$53,0
6	Exit and emergency lighting	SF	\$2.25	16,118	\$36,266	11,793	\$26,534	11,793	\$26,5
7	Lighting control system								
8	Switches and sensors	GSF	\$0.50	16,118	\$8,059	11,793	\$5,897	11,793	\$5,8
9	Branch Power								
0	Branch devices	GSF	\$0.25	16,118	\$4,030	11,793	\$2,948	11,793	\$2,9
1	Branch wiring	GSF	\$3.00	16,118	\$48,354	11,793	\$35,379	11,793	\$35,3
	Fire Alarm								
3	Added panic button remotes	EA	\$500.00	1	\$500	1	\$500	1	\$5
4	Control panel	LS	\$5,000.00	1	\$5,000	1	\$5,000	1	\$5,0
5	Terminal cabinet	EA	\$1,000.00	1	\$1,000	1	\$1,000	1	\$1,0
6	Annunciator	EA	\$1,500.00	1	\$1,500	1	\$1,500	1	\$1,5
7	DACT (Dialer)	EA	\$850.00	1	\$850	1	\$850	1	\$8
					****		****	_	\$2
8	Beacon	EA	\$225.00	1	\$225	1	\$225	1	\$2.

DIRECT TRADE COST DETAILS			0-41	One	Option	Two	Renovations a	
ELEMENT	UNIT	UNIT RATE	Option 16.118		Option 11.937		Option	Three 7 GSF
ELEMENT	UNII	UNII KAIE	QUANTITY	COST	QUANTITY QUANTITY	COST	QUANTITY QUANTITY	COST
9 Bell 0 Initiating reporting devices modules and cabling	EA GSF	\$150.00 \$1.25	1 13.141	\$150 \$16.426	1 11.793	\$150 \$14.741	1 11.793	\$15 \$14.74
Initiating, reporting devices, modules and cabling Testing and programming	LS	\$1.25	13,141	\$16,426 \$2,000	11,793	\$14,741 \$2,000	11,793	\$14,74 \$2,00
2 Telephone/Data/CATV	Lo	\$2,000.00	1	\$2,000	1	\$2,000	1	\$2,00
3 IDF Fit-Out	LS	\$3,500.00	1	\$3,500	1	\$3,500	1	\$3,50
4 Allow for devices and cabling	GSF	\$1.50	16,118	\$24,177	11,793	\$17,690	11,793	\$17,69
5 Security system	GSF	\$2.50	16,118	\$40,295	11,793	\$29,483	11,793	\$29,48
6 AV/Sound System								
7 Speaker	EA	\$150.00	12	\$1,800	11	\$1,650	13	\$23,40
8 Speaker back box	LS	\$35.00	12	\$420	11	\$385	13	\$5,46
9 Low voltage cabling	LF	\$1.20	372	\$446	341	\$409	403	\$179,89
 Sound system at café/library 	LS	\$5,000.00	1	\$5,000	1	\$5,000	1	\$5,00
1 Sound system at activity room	LS	\$5,000.00	1	\$5,000	1	\$5,000	1	\$5,00
2 Rough-in and power connections	LOC	\$2,500.00	1	\$2,500	1	\$2,500	1	\$2,50
3 "Broadcast Ready"; Multipurpose Room 4 Lightning Protection	RMS	\$5,000.00	5	\$25,000	4	\$20,000	3	\$15,00
4 Lightning Protection 5 Lightning protection system				NIC		NIC		NIC
6 Miscellaneous				INIC		NIC		INIC
7 Fees & Permits	LS		1	\$7,000	1	\$5.300	1	\$8,70
Demo & make safe for connection of addition to existing building	LS	\$10,000.00	1	\$10,000		-0,000		ψ0,10
9 Coordination & management	LS	\$6,500.00	1	\$6,500	1	\$6,500	1	\$6,50
0 Testing	LS	\$3,500.00	1	\$3,500	1	\$3,500	1	\$3,50
1 Temp power & lights	LS		1_	\$10,000	1_	\$7,500	1_	\$7,50
2 26-ELECTRICAL TOTAL			_	\$446,616	_	\$335,197	_	\$539,91
3								
4								
5 31-EARTHWORK								
7 Site Clearing								
8 Clear and grub	ACRE	\$7.500.00	1.3	\$9.761	3	\$20,698	3	\$20.37
9 Construction fence	LF	\$16.00	1,158	\$18,528	2,230	\$35,680	2,482	\$39,71
Double construction gate	EA	\$2,500.00	2	\$5,000	2,230	\$5,000	1	\$2.50
1 Construction entrance	LS	\$7.500.00	2	\$15,000	2	\$15,000	1	\$7,50
2 Wash down/re-fueling	SF	\$2.50	1,500	\$3,750	1,500	\$3,750	1,500	\$3,75
3 Temp signs	LS	\$1,500.00	1	\$1,500	1	\$1,500	1	\$1,50
4 Haybale and erosion control netting; install, maintain and dispose	LF	\$14.00	1,158	\$16,212	2,230	\$31,220	2,482	\$34,74
5 Haybales at stockpile topsoil areas	LS	\$2,500.00	1	\$2,500	1	\$2,500	1	\$2,50
6 Wetland protection	LS				1	\$3,000	1	\$6,00
7 Senior Center Building Earthwork	SF		4,377		11,937		11,937	
8 Rough and fine grade for new slab	SF	\$1.50	4,377	\$6,566	11,937	\$17,906	11,937	\$17,90
9 Excavation, stockpile	CY	\$16.00	267	\$4,280	729	\$11,672	729	\$11,67
Structural fill Gravel below slab; 12" thick	CY	\$22.00 \$35.00	178	\$6,241	0 486	\$1 \$17,021	1,309 486	\$28,80 \$17,02
1 Gravel below slab; 12" thick 2 Continuous footings	LF	ააი.00	178 264	\$0,∠41	486 584	\$17,027	486 584	\$17,02
2 Continuous rootings 3 Excavation	CY	\$15.00	264 147	\$2,205	584 324	\$4,860	324	\$4,86
4 Backfill with imported fill	CY	\$15.00	24	\$2,205	324	\$9.072	324	\$9,07
5 Perimeter foundation drain	LF	\$28.50	441	\$8,159	584	\$10.804	584	\$10,80
6 Spread footings	EA	ψ.o.oo	5	ψο, 100	37	ψ.0,004	37	Ų.0,00·
7 Excavation	CY	\$15.00	41	\$615	307	\$4,605	307	\$4,60
8 Backfill with imported fill	CY	\$28.00	36	\$1,001	220	\$6,168	220	\$6,16
Backfill selected excavated material behind wall	CY	\$10.00	73	\$730	162	\$1,620	162	\$1,62
Site Earthwork								
1 Remove & stockpile topsoil	CY	\$8.00	1,050	\$8,399	1,670	\$13,357	1,416	\$11,32
2 Asphalt pavement cut and fill	CY	\$12.00	1,706	\$20,468	2,849	\$34,188	2,583	\$30,99
3 Concrete pavement cut and fill	CY	\$12.00	148	\$1,775	246	\$2,952	191	\$2,29
Site grade cut and fill	CY	\$10.00	784	\$7,843	1,357	\$13,566	1,210	\$12,10
5 Rock excavation	AL					\$350,000		\$250,00
6 Rough and fine grade for new surfacing	SF	\$0.50	41,580	\$20,790	56,219	\$28,110	50,435	\$25,21
7 31-EARTHWORK TOTAL				\$161,994		\$644,249		\$563,05
9								
9								
1								
2								
3								
3								

	DIRECT TRADE COST DETAILS							Renovations a	nd Additio
				Option	n One	Option	Two	Option	
	ELEMENT	UNIT	UNIT RATE	16,118 QUANTITY	GSF	11,937 QUANTITY	COST	11,937 QUANTITY	COST
				QUARTITI	0001	QUARTITI	0001	QUARTITI	0001
	32-EXTERIOR IMPROVEMENTS								
95	Paving and Surfacing								
97	Asphalt paving at vehicular roads, drives and parking areas	SF	\$3.15	36,752	\$115,769	45.418	\$143.067	46,499	\$146,47
98	Roadway at Option Two	SF	\$3.15	,	******	5,864	\$18,472	12,122	*,
99	Gravel base; 12" crushed stone base	CY	\$32.00	1,497	\$47,904	2,089	\$66,848	1,894	\$60,60
00	Patch and pave existing pavement at street	SF	\$8.00	200	\$1,600	200	\$1,600	200	\$1,60
01	Precast concrete curbing	LF	\$25.00	1,392	\$34,800	1,880	\$47,000	2,163	\$54,07
02	Parking spaces	EA	\$35.00	63	\$2,205	62	\$2,170	64	\$2,24
03 04	Handicap parking spaces Pickup/drop-off paving marking	EA SF	\$75.00 \$2.00	3 596	\$225 \$1,192	3 394	\$225 \$788	3 394	\$22 \$78
05	Misc. paving marking	SF	\$1,500.00	1	\$1,192	1	\$1,500	1	\$1,50
06	Concrete sidewalks	SF	\$6.50	2.052	\$13.338	2.590	\$16.835	2.478	\$16.10
07	Switchback ADA ramp	SF	\$15.00	365	\$5,475	_,	* ,	_,	* ,
08	Clay brick pavers at pickup/drop-off	SF	\$18.00	2,776	\$49,968	2,347	\$42,246	1,458	\$26,24
09	Gravel base	CY	\$35.00	113	\$3,955	101	\$3,535	80	\$2,80
10	New curb crossing at Arnold Street	LOC	\$20,000.00	1	\$20,000				
11	Curb cuts; allow	EA	\$380.00	4	\$1,520	3	\$1,140	3	\$1,14
12 13	Concrete pad Exterior Improvements	AL	\$2,500.00	1	\$2,500	1	\$2,500	1	\$2,50
13 <i>[</i> 14	exterior improvements Project signage and plaque	LS	\$6,000.00	1	\$6,000	1	\$6,000	1	\$6,00
15	Fence enclosures at dumpster pad	LS	\$3,300.00	1	\$3,300	1	\$3,300	1	\$3,30
16	Precast modular block gravity retaining wall	SF	\$55.00	-	**,***	1,697	\$93,308	1,755	\$96,52
17	Concrete retaining wall 5ft	SF	\$85.00	1,645	\$139,825				
18	Concrete stair	LFR	\$75.00	32	\$2,400				
19	Handrail at concrete stair	LF	\$160.00	10	\$1,600				
20	Site pipe bollard; allow	EA	\$600.00	4	\$2,400	4	\$2,400	4	\$2,40
21	Trash/recycle receptacles; allow	EA	\$600.00	2	\$1,200	2	\$1,200	2	\$1,20
22 23	Benches Bike racks	EA AL	\$1,500.00 \$1.500.00	4	\$6,000 \$1,500	4	\$6,000 \$1,500	4	\$6,00 \$1,50
23 24	Traffic and pedestrian sign	AL	\$5,000.00	1	\$5,000	1	\$5,000	1	\$5,00
25	Misc. site improvement other than above	IS	\$35.000.00	1	\$35,000	1	\$35,000	1	\$35.00
26 /	Plantings		,	-	***,***	· ·	***,***	-	***,***
27	Respread stockpiled topsoil	CY	\$9.00	1,050	\$9,449	1,670	\$15,027	1,416	\$12,74
28	Plant bed soil	CY	\$25.00	51	\$1,275	161	\$4,014	240	\$6,00
29	Mulch; allow	CY	\$45.00	10	\$450	10	\$450	10	\$45
30	Imported topsoil for plant bed	CY	\$25.00	547	\$13,678	276	\$6,900	360	\$9,00
31	Lawn area	SF	\$0.35	21,748	\$7,612	48,381	\$16,933	51,967	\$18,18
32 33	Trees/Shrubs Tree	AL EA	\$15,000.00 \$950.00	12	\$11,400	1	\$15,000	1	\$15,00
34	Groundcover	SF	\$3.50	5,758	\$20,153	554	\$1,939	5,479	\$19,17
	32-EXTERIOR IMPROVEMENTS TOTAL	31	φ3.50	5,756	\$570,192	- 554 _	\$561.896	- 5,475 _	\$553,79
36	2 EXTENSIVE NOVEMENTO FORZE				40.10,102		\$ 001,000		4000,70
37		_							
38 39	33-UTILITIES								
	Water Distribution								
41	6" T, S,& G, street connection	EA	\$9,500.00	1	\$9,500	1	\$9,500	1	\$9,50
42 43	6" CLDI	LF	\$80.00	110	\$8,800	360	\$28,800	160	\$12,80
43 44	2" Domestic water Hydrant and gate	LF FA	\$45.00 \$2.600.00	30 2	\$1,350 \$5,200	30 2	\$1,350 \$5,200	30 2	\$1,35 \$5,20
44	6" gate	EA	\$1,200.00	1	\$1,200	1	\$1,200	1	\$1,20
46	Tee and Bend	AL	\$1,200.00	1	\$1,200	1	\$1,440	1	\$1,20
47	Thrust blocks	LS	\$800.00	1	\$800	1	\$800	1	\$80
48	Sanitary Sewerage								
49	Sewer MH	EA	\$4,000.00	1	\$4,000	3	\$12,000	2	\$8,00
50	Grease trap	AL	\$15,000.00	1	\$15,000	1	\$15,000	1	\$15,00
51	Septic system	SF	\$20.00					2,656	\$53,12
52	6" PVC pipe	LF	\$65.00	110	\$7,150	4.055	0040 5	160	\$10,40
53 54	10" PVC pipe, direct buried under road, thru rock Sewer street connection	LF LOC	\$210.00 \$9.500.00	1	\$9.500	1,650 1	\$346,500 \$9,500		
•	Storm Drainage	LUC	φσ,υυυ.00	1	φυ,υ00	'	φσ,υ00		
56	Storm drainage system base on hard finish area	SF	\$4.50	46,322	\$208,449	68,063	\$306,284	60,821	\$273,69
	Gas Service - Not Available		Ţ 3 0	-,		,		,	
58									

Renovations and Additions

- 1	DIRECT TRADE COST DETAILS							Renovations	Senior Cente and Addition
				Option		Optio	n Two	Optio	n Three
	ELEMENT	UNIT	UNIT RATE	16,118	GSF	11,93	7 GSF	11,93	37 GSF
				QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
659 /	Electrical Utilities								
60	Primary electrical service allow	LF	\$50.00		excl.	400	\$20,000	110	\$5,500
61	Pad mounted transformer						by Utility Co.		by Utility Co
62	Transformer pad allow	EA	\$2,500.00	1	\$2,500	1	\$2,500	1	\$2,50
63	125KW emergency generator	EA	\$58,000.00	1	\$58,000	1	\$58,000	1	\$58,00
64	400A secondary electrical service allow	LF	\$160.00			50	\$8,000	50	\$8,00
65	Telecommunications service allow	LF	\$70.00	120	\$8,400	450	\$31,500	160	\$11,20
66	Site lighting fixtures and circuitry								
67	Pole light single head	EA	\$1,700.00	30	\$51,000	40	\$68,000	40	\$68,00
68	Pole light double head	EA	\$2,400.00	2	\$4,800	2	\$4,800	3	\$7,20
69	Base	EA	\$350.00	32	\$11,200	42	\$14,700	43	\$15,05
70	Circuitry	LF	\$15.00	2,240	\$33,600	2,940	\$44,100	3,010	\$45,15
71 3	33-UTILITIES TOTAL			-	\$441,889		\$989,174		\$613,10

Ci		
Sturbridge \$	Senior	Center

COST ADDS AND ALTERNATES

	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	COST
,	Fiber cement exterior wall cladding in lieu of masonry				
	Brick veneer to match existing including scaffolding	(6,060)	SF	\$37.00	(\$224,220
	Fiber cement flat panels with battens	6,060	SF	\$15.00	\$90,900
	Markups	35%	Oi	(\$133,320)	(\$46,647
	Alternate Total	3370		(ψ100,020)	(\$180,000
12	Alternate Total				(\$100,000)
13					
	Replace roofing in lieu of roofing repairs				
15	Repair existing roofing - 5% allowance provided	(203)	SF	\$31.25	(\$6,344
16	Replace existing roof w/architectural grade "slate shingle "	4,060	SF	\$25.00	\$101,500
	Markups	35%	or.	\$95,156	\$33.294
	Cost Add Total	35%		φ95,150 <u></u>	\$129,000
18	Cost Add Total				\$129,000
20					
	Motorized window shades in lieu of manual operated				
	Premium for motorized	1,574	SF	\$3.50	\$5,509
	Markups	35%	0.	\$5,509	\$1,928
	Cost Add Total	0070		Ψο,οοο _	\$8,000
25	Cost Add Total				40,000
26					
	Electric energy source				
28	Solar panels, battery storage				\$200,000
	Markups	35%		\$200,000	\$69,978
	Cost Add Total	0070		Ψ200,000 _	\$270,000
31	Cost Add Total				Ψ270,000
32					
	Additional parking space capacity to 100 spaces				
	Rough and fine grade for new surfacing	17,500	SF	\$0.50	\$8.750
	Asphalt paving at vehicular roads, drives and parking areas	17,500	SF	\$3.15	\$55,125
36	Gravel base; 12" crushed stone base	713	CY	\$32.00	\$22,816
	Precast concrete curbing	385	LF	\$25.00	\$9,625
	Parking spaces	35	EA	\$35.00	\$1,225
	Storm drainage system base on hard finish area	17,500	SF	\$4.50	\$78,750
	Pole light single head	10	EA.	\$1,700.00	\$17,000
41	Base	10	EA	\$350.00	\$3,500
42	Circuitry	700	LF	\$15.00	\$10,500
	Markups	35%		\$207.291	\$72,529
	Cost Add Total	33,0			\$280,000
45	Cost Add Total				Ψ200,000
46					
47					
	Sturbridge Senior Center Concept July 30			Cost Adds and	
	Printed 7/30/2020			Page 18	of 19 Pages

Sturbridge Senior Center Concept July 30 Direct Trade Details

COST ADDS AND ALTERNATES



Renovations and Additions

	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	COST
	Additional parking space capacity to 150 spaces				
	Rough and fine grade for new surfacing	41,500	SF	\$0.50	\$20,750
	Asphalt paving at vehicular roads, drives and parking areas	41,500	SF	\$3.15	\$130,725
51	Gravel base; 12" crushed stone base	1,691	CY	\$32.00	\$54,112
	Precast concrete curbing	913	LF	\$25.00	\$22,825
	Parking spaces	83	EA	\$35.00	\$2,905
	Storm drainage system base on hard finish area	41,500	SF	\$4.50	\$186,750
55	Pole light single head	20	EA	\$1,700.00	\$34,000
56	Base	20	EA	\$350.00	\$7,000
57	Circuitry	1,400	LF	\$15.00	\$21,000
58	Markups	35%		\$480,067 _	\$167,970
59	Cost Add Total				\$649,000
60					
61					
62	Septic tank in lieu of street connection				
63	10" PVC main, street connection	(1)	LS	\$356,000.00	(\$356,000)
64	6" PVC pipe	350	LF	\$65.00	\$22,750
65	Septic system	2,746	GSF	\$20.00	\$54,920
66	Markups	35%		(\$278,330)	(\$97,384)
67	Cost Add Total			_	(\$376,000)
68					
69					
70	New water pump house in lieu of Town connection				
71	Street connection; water, sewer	(2)	LOC	\$9,500.00	(\$19,000)
72	6" CLDI	(360)	LF	\$80.00	(\$28,800)
73	6" CLDI	220	LF	\$80.00	\$17,600
74	Pump house	1	LS	\$240,000.00	\$240,000
	Force main sewer to pump house	125	LF	\$125.00	\$15,625
76	Markups	35%		\$225.425	\$78,874
77	Cost Add Total			· · · · -	\$305,000
78					*****
79					
80					
-00				_	
	Sturbridge Senior Center Concept July 30			Cost Adds and	
	Printed 7/30/2020			Page 19	of 19 Pages

SECTION 11 APPENDIX

APPENDIX A STRUCTURAL REVIEW

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

Structural Code Review Sturbridge Senior Center

480 Main Street Sturbridge, Massachusetts

1.1 Introduction:

The Sturbridge Senior Center is a two-story, 6,000 ft² building, with a basement, located at 480 Main Street in Sturbridge, Massachusetts that is being investigated for renovation and possible addition. The brick building was constructed in 1874 as a Town Building with standard pre-1900 construction material and techniques. The building has undergone a few renovations and additions, including converting the building from a school to a senior center in the late 1970's and a renovation and addition in the late 1990's. The 1990's addition was to add an elevator and stair servicing all three floor levels. The building is being investigated for full renovation and a sizeable addition to the rear of the building to support increased programing. This report will describe the general conditions of the existing structure, as well as establish structural guidelines, in accordance with the Massachusetts State Building Code, that must be followed during a building renovation.



General Report Information:

This report presents the results of our Massachusetts State Building Code (MSBC) Structural review of 480 Main Street in Sturbridge, Massachusetts. Our review has been completed in conformance with Chapter 34 of the Ninth Edition of the Massachusetts State Building Code, which became effective September 20, 2017 and the International Existing Building Code, 2015 Edition.

Basis of the Report:

- This report is based on visible observations during our site visits on 5/20/2020 and 7/23/2020.
- Original Construction Drawings were not available.
- Limited Construction Drawings from 1979 and 1998 renovations.

Bolton & DiMartino, Inc. 1 of 13 Consulting Structural Engineers

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

Our observations of the existing building were limited to what was readily visible. We did not evaluate strengths of materials, remove finishes, or take measurements; therefore, we are unable to comment on any structural capacities or deficiencies of the existing structural systems beyond what was readily visible.

4.1 General Building Description:

The building is a two-story structure with a full basement. The original building consists of stone and brick foundation walls, unreinforced brick bearing walls (interior and exterior walls), steel lally columns in basement, wood girders, and wood framed floors and roof. The first-floor framing consists of 2x10 floor joists, 6x10 solid wood girders and wood board sub-floor. The second-floor framing was not visible, so we could not verify the construction type and layout, but we anticipate that the floor framing will be similar to the first floor. The second-floor framing was modified in the 1970's to add a steel beam at the center of the building to remove the brick bearing wall at the center of the building that originally extended to the second floor. The gable roof structure consists of dimensional wood rafters, wood ridge board, wood girders at mid-span of rafters with support posts, heavy timber trusses over the assembly area, and wood board sub-roof. The original slate roof was replaced with asphalt shingles. Interior non-structural partitions are wood framed.

The building was designed with unreinforced brick bearing walls at the exterior of the building, as well as a center bearing wall (which has been modified and removed above the first floor). The construction materials were common at the time of construction, but are not allowed by the current building code. Since the proposed renovation will be fairly extensive, the building will be reviewed for conformance to Appendix 1 of the International Existing Building Code (IEBC). The intent of Appendix 1 of the IEBC is to reduce the inherent risk associated with unreinforced masonry (URM) wall during wind and seismic events. We anticipate remedial measures to secure the walls to the floor and roof levels to reduce the inherent risks associated with unreinforced masonry walls will be

5.1 General Existing Conditions:

General Exterior

In general, the exterior walls of the building are unreinforced brick masonry walls with a stone foundation. The stone foundation terminates approximately 5-feet above the basement floor level with the brick bearing wall starting above. The exterior brick wall at the first floor, front wall, is 12" thick. The exterior veneer appears to be in good condition with no significant signs of deterioration, or settlement, but does need general repointing and maintenance to extend the life of the brick. The interior side of the foundation wall is covered with plastic sheeting and trench drain to collect water and it is our understanding that water does slowly infiltrate the foundation wall. If exterior site work is completed during the future renovation, adding waterproofing or a drainage system to reduce water infiltration may be beneficial.

The exterior walls of the 1998 addition are reinforced 8" CMU with brick veneer to match the original building. The walls of the addition appear to be in good condition with no significant signs of deterioration or settlement.

General Interior:

The interior of the building appears to be in average condition. The structure is mostly covered by finishes, except a few areas of the basement where the exterior walls and floor framing were visible. There is an access hole above the ceiling to view the attic/roof framing, but we were unable to get into the attic to view the condition of the framing. In the basement area, we viewed the existing conditions where possible and noticed some insect damaged wood, loose bricks at the center

Bolton & DiMartino, Inc. Consulting Structural Engineers 2 of 13

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

bearing wall, and missing bricks at an interior masonry pier. We anticipate additional masonry repair work will be required when finishes are removed.

The interior partitions are typically plaster on wood framing. We noticed some settlement cracks in the plaster of walls at the second floor near the interior stairwell along the Main Street side of the building. Most of the cracks are likely due to long-term creep of the wood framing, but we would recommend reviewing the condition of the wood framing after finishes have been removed and strengthen any members that require repair.

The interior of the 1998 addition is generally exposed CMU block, which appears to be in good condition with no significant signs of settlement.

Building Structure 6.1

The original 1874, two-story, building consists of:

- Foundations:
 - o The exterior wall foundations are stone foundations up to approximately 5 feet above the basement floor. The exterior wall above is unreinforced brick exterior bearing
 - o Foundations at the interior posts and interior bearing wall are unknown.
 - Concrete slab-on-grade thickness is unknown. Slab appears to have been poured during one of the renovations. The slab includes raised portions near the exterior wall at select locations, as well as a formed drainage trench and sump pit to collect water that comes through the exterior stone foundation along the west wall.
- Exterior Walls:
 - o Unreinforced brick masonry walls. Thickness is 12" at first floor, unknown if wall thickness steps above/below first floor level.
- Interior Walls:
 - o 8" Brick bearing wall is located at the center of the basement level. Wall appears to have originally extended to the second floor, but was mostly removed during the 1998 renovation by installing a steel post and steel beams below the second floor framing. The wall is currently covered by finishes, but we did lift a ceiling tile to see the existing wall and noticed some loose/displaced bricks near the rear of the building. We anticipate repairs/strengthening will be required once finishes are removed
- Columns:
 - o Steel pipe columns are located in the basement to support the first floor girders. The posts are typically located mid-span between the exterior side walls and the center bearing wall. The posts appear to be approximately 4 ½" diameter pipes with a 6"x6" steel cap plate. The plates are typically lag bolted to the girder, except at one location where a post was added at the center of the building and the cap is not secured to the girder.
 - Two brick piers (12"x12") were used to support the north-most girder instead of steel columns. The pier within the boiler room appears to be missing some brick at the top connection and we recommend repairing during the renovation.
- Framed Floors (First floor described below based on visible portions of the basement, second floor was not visible and not described):
 - Wood board subfloor. We measured at two locations and the total thickness varied
 - o 2x10 @ 16" +/- o.c. floor joists spanning approximately 9'-6" between girders. Joists span from exterior walls (N-S) to interior wood girders. Joists bear on top of girders with lapped connections.

Bolton & DiMartino, Inc. Consulting Structural Engineers 3 of 13

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

- o Girders are solid wood with dimensions just over 6"x10". The girders bear on exterior foundation walls, interior posts, interior brick piers, and interior brick bearing wall. There are 5 girder lines that span the E-W direction of the building. We noticed that at one center post the girder is broken over the post, but the girders does not appear to be tied together other than with the floor boards. We recommend tying any girders that are broken over bearing location together with straps to conform to basic code requirements.
- Roof:
 - Gable roof with board sheathing over rafters. Unknown if plywood sheathing was added during previous re-roofing project.
 - 2x8 rafters @ 22" o.c. extend from ridge to attic floor level, supported on girder at
 - o Heavy timber trusses framed with 7x7's and tension rods over open floor area.
 - o Heavy timber beams and bracing over stairwell bearing wall.
 - 10x6 girder at mid-span of rafters bearing on the trusses and modified heavy timber beams. Girder is rotated to match roof slope. Girders nearest south-west corner had 13/4"x9 1/2" LVL reinforcement added to each side, likely during the last renovation due to splitting from long-term creep and settlement.

The 1998, two-story, stair and elevator addition consists of:

- Foundations:
 - o The foundations include reinforced concrete walls at the exterior walls and at the perimeter of the elevator pit.
 - Concrete slab-on-grade appears to be a 5" concrete slab, thickened at CMU partitions.
- Exterior Walls:
 - o Reinforced 8" CMU walls with brick veneer.
- Interior Walls:
- o 8" Reinforced CMU partitions.
- Framed Floors (First and Second Floor):
 - o 4" Concrete slab on steel decking with wire fabric reinforcing.
 - Steel framing (W8 beams) spanning between CMU walls.
 - Steel channels for stair stringers and landings.
- Roof (Limited information since access was not feasible during our visit):
 - o 2x10 dimensional wood rafters @ 16" o.c. bearing on exterior CMU walls.
 - ½" Plywood roof sheathing.

In general, the construction of the original building is fairly typical for a pre-1900's era building, consisting of wood framing and unreinforced masonry bearing walls. The unreinforced masonry bearing walls would not be permitted by current Building Codes, but may remain provided they conform to the International Existing Building Code (IEBC), as amended by the Massachusetts State Building Code, which will be reviewed in the following section.

Building Code Review- Structural:

This review presents our interpretation of the structural requirements of the International Existing Building Code (IEBC), as modified by the Massachusetts State Building Code. In general, the provisions of The IEBC are intended to maintain or increase public safety, health, and general welfare in existing buildings by permitting repair, alteration, addition, and/or change of use without requiring full compliance with the code for new construction except where otherwise specified.

Bolton & DiMartino, Inc. Consulting Structural Engineers 4 of 13

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

Renovation/Addition Assumptions:

In order to review the requirements of the IEBC for a renovation to 480 Main Street, the scope of the project must be defined. For this review we are assuming that the renovation will include:

- Complete renovation to interior finishes (Painting, flooring, wall finishes, partition locations, etc.) of existing building.
- Infill existing stair openings at 1st floor and relocating stair opening at 2nd floor of original
- Repoint exterior brick at select locations.
- New mechanical/plumbing/electrical systems throughout building.
- Removal/replacement of finishes at exterior walls
- Occupancy/Use-Group to remain unchanged.
- Addition will be seismically isolated to avoid impacting the existing building, and the design of the addition will conform to the International Building Code (IBC), as modified by the Massachusetts State Building Code.

Occupancy Risk Category: II

Seismic Design Category: Category B

Site: Sturbridge, MA

- Seismic Site Parameters
 - o $S_s = 0.173 (S_{DS} = 0.184)$
 - o $S_1 = 0.064 (S_{D1} = 0.102)$
 - Soil Site Class D (Unknown)

Applicable Building Codes:

- Massachusetts State Building Code, 9th Edition.
- International Building Code (IBC), 2015 Edition.
- International Existing Building Code (IEBC), 2015 Edition.

Note: Building is an Unreinforced Masonry Bearing Wall Building, therefore IEBC Chapter A1 (Appendix A: Guidelines for the Seismic Retrofit of Existing Buildings) will also be reviewed.

IEBC Review

IEBC Chapter 1: Scope and Administration

IEBC 101.2 Scope: The provisions of the International Existing Building Code shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings,

❖ IEBC provisions will be followed during planned renovation/addition of 480 Main Street.

IEBC 101.4 Applicability: This code shall apply to the repair, alteration, change of occupancy, addition and relocation of existing building, regardless of occupancy, subject to the criteria of Sections 101.4.1 and 101.4.2.

❖ Occupancy provisions set forth in Sections 101.4.1 and 101.4.2 will be reviewed and

IEBC 101.4.1 Buildings not previously occupied: A building of portion of a building that has not been previously occupied or used for its intended purpose in accordance with the laws in existence at the time of its completion shall be permitted to comply with the provisions of the laws in existence at the time of its original permit unless such permit has expired. Subsequent permits shall comply with the International Building Code or International Residential Code, as applicable, for new construction.

The building is currently occupied, so this section does not appear to apply to the proposed renovation.

Bolton & DiMartino, Inc. 5 of 13 Consulting Structural Engineers

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

IEBC 101.4.2 Buildings previously occupied: The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the International Fire Code, or as is deemed necessary by the code official for the general safety and welfare of the occupants and the public.

The building is currently occupied as a Senior Center and will remain in use as a Senior Center provided the provisions of the IEBC are followed.

IEBC Chapter 3: Provisions for all compliance methods

IEBC 301.1 General: The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with on of the methods listed in Section 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an existing building subject to repair, alteration, change of occupancy, addition or relocation of existing buildings, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

The IEBC allows choosing the compliance method for the renovation/addition from any of the three options. For this project, the provisions of 301.1.2 "Work area compliance method" will be followed.

IEBC 301.1.2 Work area compliance method: The provisions of the International Existing Building Code shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings.

IEBC provisions will be followed during planned renovation/addition of 480 Main Street.

IEBC Chapter 5: Classification of Work

IEBC 501.1 Scope: The provisions of this chapter shall be used in conjunction with Chapters 6 through 13 and shall apply to the alteration, repair, addition and change of occupancy of existing structures, including historic and moved structures, as referenced in Section 301.1.2. The work performed on an existing building shall be classified in accordance with this chapter.

Chapter 5 will be followed to classify the work to be performed during the renovation/addition.

IEBC 502.1 Repairs Scope: Repairs as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

Existing structural elements will be reviewed after finishes are removed during the demolition phase to determine if additional repairs are required at unforeseen conditions.

IEBC 502.2 Repair Application: Repairs shall comply with the provisions of Chapter 6.

Provisions of Chapter 6 will be followed for repairs.

IEBC 502.3 Repair Related Work: Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the provisions of Chapter 7, 8, 9, 10 or 11.

Provision is self-explanatory that work on nondamaged components to complete a repair do not need to conform to other requirements specified in Chapter 7 through 11.

IEBC 505.1 Alteration- Level 3 Scope: Level 3 alterations apply where the work area exceeds 50 percent of the building area.

Bolton & DiMartino, Inc. Consulting Structural Engineers

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

The work area for the proposed project will exceed 50 percent of the building area and will be considered a Level 3 alteration.

IEBC 505.2 Alteration- Level 3 Application: Level 3 alterations shall comply with the provisions of Chapters 7 and 8 for Level 1 and 2 alterations, respectively, as well as the provisions of Chapter 9.

❖ The structural scope will follow the provisions of Chapters 7, 8 and 9 covering Levels 1 through 3 of alteration requirements.

IEBC 506.2 Change of Occupancy Application: Change of occupancy shall comply with the provisions of Chapter 10.

. It is our understanding that there will be no change of occupancy as part of this renovation/addition and the provisions of Chapter 10 will not apply.

Alteration Level 1 Structural Requirements:

IEBC 707.2 Addition or replacement of roofing or replacement of equipment: Where addition or replacement of equipment results in additional dead loads, structural components supporting such reroofing or equipment shall comply with the gravity load requirements of the International Building Code.

- The slate tile roof on the main building was replaced with asphalt shingles in approximately 2016, which will likely remain during the proposed renovation. The 1998 addition was roofed with asphalt shingles, which would likely be replaced during a significant renovation/addition due to the age of the shingles.
- * There are several exceptions that are permitted by the IEBC. One exception is "Structural elements where the additional dead load from roofing or equipment does not increase the force in the element by more than 5 percent." We anticipate removing the asphalt shingles from the 1998 addition and replacing with similar materials to avoid increasing the dead loads on the existing roof framing.

IEBC 707.3.1 Bracing for unreinforced masonry bearing wall parapets: Where a permit is issued for reroofing for more than 25 percent of the roof area of a building that is assigned to Seismic Design Category B, C, D, E or F that has parapets constructed of unreinforced masonry, the work shall include the installation of parapet bracing to resist the reduced International Building Code level seismic forces as specified in Section 301.1.4.2 of this code, unless an evaluation demonstrates compliance of such items.

There are no unreinforced masonry parapets, so bracing is not required.

IEBC 707.3.2 Roof diaphragms resisting wind loads in high wind regions: Where roofing materials are removed from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate wind speed is greater than 115 mph or in a special wind region, as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

❖ Ultimate wind speed is 124 mph, so connections are to be reviewed if more than 50 percent of the roofing materials are removed/replaced. Currently, there is no plan to remove/replace the original building roofing material, which is more than 50 percent of the total building roof, so we do not anticipate reviewing the diaphragm anchorage.

Level 2 Structural Requirements:

Bolton & DiMartino, Inc. Consulting Structural Engineers 7 of 13

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

IEBC 807.2 New structural elements: New structural elements in alterations, including connections and anchorage, shall comply with the International Building Code (IBC).

New structural elements will comply with the IBC.

IEBC 807.3 Minimum design loads: The minimum design loads on existing elements of a structure that do not support additional loads as a result of an alteration shall be the loads applicable at the time the building was constructed.

* Renovation will not change the minimum design loads on the structure. If element loads change, they will be reviewed for compliance with the IBC.

IEBC 807.4 Existing structural elements carrying gravity loads: Alterations shall not reduce the capacity of the existing gravity load-carrying structural elements unless it is demonstrated that the elements have the capacity to carry the applicable design gravity loads required by the International Building Code. Existing structural elements supporting any additional gravity loads as a result of the alterations, including the effects of snow drift, shall comply with the International Building Code. Exception includes structural elements whose stress is not increased by more than 5 percent.

Design loads will be reviewed, but should remain unchanged at the existing structure.

IEBC 807.5 Existing structural elements resisting lateral loads: Except as permitted by Section 807.6, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined by ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the wind and seismic provisions of the IBC. Reduced IBC-level seismic forces in accordance with Section 301.1.4.2 shall be permitted. Exception: Any existing lateral load-resisting structural element whose demand-capacity ratio with the alteration considered is more than 10 percent greater that its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered.

* The existing unreinforced brick bearing walls provide lateral force resistance, and it is our understanding that the walls will remain unchanged, so the demand-capacity ratio will remain unaltered and the walls are permitted to remain.

IEBC 807.6 Voluntary improvement of the seismic force-resisting system: Alterations to existing structural elements and addition of new structural elements that are initiated for the purpose of increasing the lateral force-resisting strength or stiffness of an existing structure and that are not required by other sections of this code shall not be required to be designed for forces conforming to the IBC, provided that an engineering analysis is submitted to show that:

- ❖ The capacity of existing structural elements required to resist forces is not
- The lateral loading to existing structural elements is not increased either beyond its capacity or more than 10 percent:
- New structural elements are detailed and connected to the existing structural elements as required by the IBC;
- New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the IBC; and
- ❖ A dangerous condition as defined in this code is not created. Voluntary alterations to lateral force-resisting systems conducted in accordance with Appendix A and the referenced standards of this code shall be permitted.
- * The existing seismic force-resisting system consists of the unreinforced brick bearing walls. Voluntary improvements to the unreinforced masonry walls will be financially prohibitive and are not included in this report.

Level 3 Structural Requirements:

Bolton & DiMartino, Inc. Consulting Structural Engineers

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

IEBC 907.2 New structural elements: New structural elements shall comply with Section 807.2.

New structural elements will comply with the IBC, per 807.2.

IEBC 907.3 Existing structural elements carrying gravity loads: Existing structural elements carrying gravity loads shall comply with 807.4.

Design loads will be reviewed, but should remain unchanged at the existing structure.

IEBC 907.4 Existing structural elements resisting lateral loads: All existing elements of the lateralforce-resisting system shall comply with this section.

❖ Alterations to the building structure are not anticipated, but if there are modifications to the unreinforced masonry walls, the building will be reviewed for conformance to this section. Limited changes to the brick walls to adjust door locations (infill existing door openings with masonry and add new door openings of similar size and quantity) will not trigger a full review of the lateral-force-resisting systems.

IEBC 907.4.1 Evaluation and analysis: An engineering evaluation and analysis that establishes the structural adequacy of the altered structure shall be prepared by a registered design professional and submitted to the code official

Renovation to the interior finishes and systems is acceptable without a detailed analysis. but if lateral-force-resisting elements are modified to increase the seismic base shear by 10 percent, an analysis will need to be completed. We do not anticipate altering the lateral-force-resisting system. It should be understood that unreinforced masonry bearing wall buildings are complicated to reinforce and a detailed analysis will likely lead to installing a new seismic force resisting system, which may be cost prohibitive.

IEBC 907.4.2 Substantial structural alteration: Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural alterations within a 5-year period, the evaluation and analysis shall demonstrate that the altered building or structure complies with the International Building Code for wind loading and with the reduced International Building Code level seismic forces in accordance with Section 301.1.4.2. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

Stair infill/modification will likely be approximately 8-percent of the original building floor area, so we do not anticipate altering the structure by more than 30 percent. If the 30 percent threshold is reached, we will review the structure with the code mandated loads.

IEBC 907.4.3 Seismic Design Category F: Where the building is assigned to Seismic Design Category F, the evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with reduced IBC-level seismic forces in accordance with Section 301.1.4.2 and with the wind provisions applicable to a limited structural alteration.

❖ The building is not assigned to Seismic Design Category F, and does not need to conform to the requirements of this section.

IEBC 907.4.4 Limited structural alteration: Where the work does not involve a substantial structural alteration and the building is not assigned to Seismic Design Category F, the existing elements of the lateral load-resisting system shall comply with Section 807.5.

* The building is not assigned to Seismic Design Category F, so limited structural alterations will comply with Section 807.5.

Bolton & DiMartino, Inc. 9 of 13 Consulting Structural Engineers

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

IEBC 907.4.5 Wall anchors for concrete and masonry buildings: For any building assigned to Seismic Design Category D, E, or F with the structural system consisting of concrete or reinforced masonry walls with a flexible roof diaphragm and any building assigned to Seismic Design Category C. D. E. or F with a structural system consisting of unreinforced masonry walls with any type of roof diaphragm, the alteration work shall include installation of wall anchors at the roof line to resist the reduced IBC-level seismic forces in accordance with Section 301.1.4.2. unless an evaluation demonstrates compliance of existing wall anchorage.

The building is classified as Seismic Design Category B and does not need to conform to the requirements of this section. Anchorage at the roof level will be reviewed in accordance to the requirements of 707.3.2.

IEBC 907.4.6 Bracing for unreinforced masonry parapets: Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E, or F shall have bracing installed as needed to resist the reduced IBC-level seismic forces in accordance with Section 301.1.4. unless an evaluation demonstrates compliance of such items.

The building does not have unreinforced masonry parapets.

IEBC Chapter A1: Seismic Strengthening Provisions for Unreinforced Masonry Bearing Wall Buildinas

IEBC A101.1 Purpose: The purpose of this chapter is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on existing masonry bearing wall buildings.

The provisions of this chapter are intended as minimum standards for structural seismic resistance. and are established primarily to reduce the risk of life loss or injury. Compliance with these provisions will not necessarily prevent loss of life or injury, or prevent earthquake damage to rehabilitated buildings.

Provisions of this chapter will be followed during renovation work. The building is unreinforced brick masonry, which is one of the more susceptible type of buildings to seismic forces.

IEBC A102.1: General: The provisions of this chapter shall apply to all existing buildings having at least one unreinforced masonry bearing wall. The elements regulated by this chapter shall be determined in accordance with Table A1-A. Except as provided herein, other structural provisions of the building code shall apply. This chapter does not apply to the alteration of existing electrical. plumbing, mechanical or fire safety systems.

- ❖ IEBC Table A1-A: Table indicated elements to be reviewed based on Seismic Parameter $S_{D1} = 0.102$. For this project, the following elements need to be reviewed:
 - Parapets
 - · Walls, Anchorage.

IEBC A102.2 Essential and hazardous facilities: The provisions of this chapter shall not apply to the strengthening of buildings in Risk Category III or IV. Such buildings shall be strengthened to meet the requirements of the International Building Code for new buildings of the same risk category or other such criteria approved by the code official.

The degree of earthquake risk reduction anticipated in Appendix A1 is not considered acceptable for buildings in Risk Category III and IV and additional measures would be required. The Senior Center building occupancy is included in Risk Category II and meets the requirements to follow Appendix A1.

Bolton & DiMartino, Inc. Consulting Structural Engineers

Sturbridge Senior Center Sturbridge, Massachusetts Structural Code Review July 23, 2020

IEBC A113.1 Wall Anchorage:

IEBC A113.1.1 Anchor Locations: Unreinforced masonry walls shall be anchored at the roof and floor levels as required in Section A110.2. Ceilings of plaster or similar materials, when not attached directly to roof or floor framing and where abutting masonry walls, shall either be anchored to the walls at a maximum spacing of 6 feet, or be removed.

Floor and roof framing appears to be dimensional lumber bearing on the unreinforced brick bearing walls. The second floor joists were not visible, but we anticipate that the joists are pocketed into the brick and positive anchorage may not be present at floor & roof locations. New anchorage appears to be required at the second floor and roof levels.

IEBC A113.1.2 Anchor Requirements: Anchors shall consist of bolts installed through the wall as specified in Table A1-E, or an approved equivalent at a maximum anchor spacing of 6 feet. All wall anchors shall be secured to the joists to develop the required forces.

• We anticipate installing ½" diameter thru-wall anchors at 6'-0" o.c. (max) to resist the required loads at the floor and roof level.

IEBC A113.1.3 Minimum Wall Anchorage: Anchorage of masonry walls to each floor or roof shall resist a minimum force determined as $0.9S_{DS}$ times the tributary weight or 200 pounds per linear foot, whichever is greater, acting normal to the wall at the level of the floor or roof. Existing wall anchors, if used, must meet the requirements of this chapter or must be upgraded.

Based on the weight of the 12" brick exterior walls, the design force is approximately 240 pounds per foot at the second floor level and 150 pounds per foot at the roof level. We anticipate using 240 pounds per foot for anchorage design at the second floor level and 200 pounds per foot at the roof level.

IEBC A113.6 Parapets: Parapets and exterior wall appendages not conforming to this chapter shall be removed, or stabilized or braced to ensure that the parapets and appendages remain in their original positions.

The maximum height of an unbraced unreinforced masonry parapet above the lower of either the level of tension anchors or the roof sheathing shall not exceed the height-to-thickness ratio shown in Table A1-F (2.5). If the required parapet height exceeds this maximum height, a bracing system designed for the forces determined in accordance with the building code shall support the top of the parapet. Parapet corrective work must be performed in conjunction with the installation of tension roof anchors.

There are no parapets on this building that require anchorage.

8.1 Conclusions and Recommendations:

The purpose of this report is to identify any structural deficiencies and liabilities that will need to be addressed during the planned renovation. The report is based on the premise that the existing building will remain in use as a Senior Center and the structural systems will not be altered. We have reviewed the building in accordance to Chapter 34 of the Massachusetts State Building Code (Ninth Edition) and the International Existing Building Code (2015 Edition). We have reviewed the general conditions of the building, as well as the structural modifications that will need to be addressed as part of the renovation to increase the public safety of the building. This report, in its entirety, shall be used as the basis for the renovation. The following items are meant to highlight conditions or deficiencies noted in the report, but do not limit the work required.

General Information:

Bolton & DiMartino, Inc.
Consulting Structural Engineers

11 of 13

Sturbridge Senior Center Sturbridge, Massachusetts

Structural Code Review July 23, 2020

- Existing building area is approximately 6,000 ft2.
- The existing asphalt shingle roofing is scheduled to remain at the original building, but may be replaced at the 1998 addition due to age.
- Scope of work within the existing building shall conform to the International Existing Building Code, as amended by the Massachusetts State Building Code, and specifically any requirements for Level 3 work and Appendix 1A of the IEBC.
- All new work within the existing building and the addition shall comply with the requirements
 of the International Building Code, as modified by the Massachusetts State Building Code.

Building Existing Conditions:

- Exterior walls appear to be 12" unreinforced brick bearing walls.
- Interior 8" unreinforced masonry bearing wall and brick piers in the basement are to remain, but will require remedial work. Extent of repair work at center bearing wall to be determined after removal of finishes. Masonry pier work will include rebuilding to top course of brick to provide bearing for the wood girder.
- Floors and roof are framed with dimensional lumber, board sub-floor, board sub-roof sheathing, and are to remain unchanged during the renovation. Condition of framing to be reviewed after finishes are removed. Similar projects have required repairing a small percentage of the framing due to age/damage/deterioration and we would expect the same with this project.
- Floor girders to be reviewed for continuity during renovation. An exposed girder at the first floor near the front of the building was not continuous over a lally column near the front of the building and will require straps or plates to provide continuity. Similar conditions are to be reviewed at the center bearing wall.
- At the same location as the non-continuous girder, the post cap was not anchored to the girder and the girder appears to be just sitting on the post cap. The cap should be drilled and anchors installed to secure the cap to the girder. Other caps appeared to be bolted to the floor girders.
- Minor insect damage was noticed on a few floor framing members. Further inspection should be completed after finishes are removed so any badly damaged members can be repaired by sistering new members to the existing framing.

Structural Requirements for Renovation:

- Geotechnical exploration/review will be required for new the construction, as well as an
 foundation work to the existing building, and is included in the cost estimate section of this
 feasibility report.
- Second floor level framing anchorage to unreinforced masonry bearing walls to be reviewed
 in accordance with Appendix A1 of the IEBC to resist minimum code mandated load of 240
 lb/ft. We anticipate installing 1/2" diameter through-bolt anchors at 6-feet on center at the
 perimeter of the building.
- Roof level anchorage to unreinforced brick bearing wall to be reviewed in accordance with Appendix A1 of the IEBC to resist code mandated load of 200 lb/ft. We anticipate installing 1/2" diameter through-bolt anchors at 6-feet on center at the perimeter of the building
- Roof snow loads to be included with new roof work at existing building:
 - o Original: Unknown
 - \circ Renovation: In accordance with Massachusetts State Building Code (P $_{g}$ = 40 psf & P $_{f}$ = 35 psf)
- Lateral load resisting system consists of plain masonry bearing walls. Walls would not be acceptable for new construction, but may remain if the building is not structurally modified.

Bolton & DiMartino, Inc.
Consulting Structural Engineers

APPENDIX

Sturbridge Senior Center Sturbridge, Massachusetts	Structural Code Review July 23, 2020
Based on our review of the existing conditions and the professional opinion that the existing building is capable Senior Center. Renovations should be done with the urn this report will only bring the building up to the minimulaxisting buildings, and will not meet the Building Code re	of being renovated for continued use as a derstanding that structural upgrades noted im standards of the Building Code for
Prepared by:	
Christopher Tutlis, PE	

STURBRIDGE SENIOR CENTER SITE FEASIBILITY STUDY 105

APPENDIX B STRUCTURAL DESIGN DRAWINGS

BD BOLTON & DIMARTINO, INC. CONSULTING STRUCTURAL ENGINEERS 100 Grove Street Worcester, MA 01605 Tel. 508-756-8972

July 23, 2020

Mr. Reese Schroeder Bargmann Hendrie + Archetype, Inc. 9 Channel Center Street, Suite 300 Boston, MA 02210

Feasibility Study- Structural Narrative Sturbridge Senior Center Sturbridge, MA

Dear Mr. Schroeder.

The Sturbridge Senior Center project includes renovating the existing Senior Center building and constructing a new 9,000 sq. ft., two-story, addition. The new construction portion of the project conforms to Type 2B Construction.

Existing Building:

Structural work within the existing building includes:

- Install seismic through-wall anchors at 6'-0" o.c. at perimeter of existing 2nd Floor and Roof level to tie unreinforced brick walls to floor levels. This will include drilling through the brick wall and installing a plate on the exterior face of the wall and an anchor to the wood framing on the interior side.
- Selective repair of existing brick pier and center brick bearing wall in the basement at missing brick masonry.
- Selective repair of wood framing due to deterioration/damage at 1st and 2nd Floor framing. For estimate, assume sistering 2x8 floor joists to existing joists at 20 locations.
- Install ties at existing 1st Floor girders where loosely joined at center of building to provide continuity from side-to-side of building. Assume adding Simpson Strong-Tie plate ties at 5 location for estimate.
- Infill original building stairways at 1st and 2nd floor with new dimensional wood framing and plywood floor sheathing. Framing will need to be carried to existing girders and possibly new posts down to basement level. Assume 2 new posts to basement with lally columns and footings installed in the basement.
- Create new floor opening at 2nd floor for egress stair. Work will include providing new bearing walls carried to the basement. Also, exterior wall will require structural anchorage at the limits of the stair where floor framing is removed. Anchorage will likely include structural steel tubes anchored through the exterior wall to stabilize the wall at the floor level and be anchored to the wood floor framing beyond the limits of the new stair opening.

- · Recommend carrying an allowance for general structural repairs that may be discovered after finishes are removed due to age/condition of existing building.
- Recommend carrying an allowance for repair of center brick bearing wall in the basement where steel columns supporting the second floor likely bear. Condition of wall at exposed locations lead us to believe repairs may be required at existing posts, but could not be confirmed due to being covered by finishes. Anticipate repair of 2 locations of brick wall by shoring existing first and second floor framing near columns and remove/replace brick bearing wall with 8" reinforced CMU pier to existing foundation.

New Construction:

The foundations are assumed to be shallow foundations (exterior frost walls and interior spread footings) supported on natural glacial till or compacted structural fill, with a bearing capacity of 4 ksf. The perimeter concrete foundation walls have a width sufficient to eliminate the need for forming wall pilasters. Foundation type will need to be confirmed with Geotechnical Engineer for existing soil conditions.

The first floor will be a 5" thick concrete slab-on-grade reinforced with welded-wire fabric (6x6-W2.9 W2.9). Control joints, consisting of sawn cuts and construction joints, will be shown on the plans, and will be located at about 12 feet on center to minimize shrinkage cracks in the

The framed slabs will be a 51/2" thick concrete composite slab supported on steel beams. 3"-18 Gauge composite metal deck will be specified and the slab will be reinforced with welded wire fabric (6x6-W2.9 W2.9). The composite concrete slab is made composite with the steel beams by using shear studs, and "partial composite design" is used for the economy of installing fewer shear studs. ASTM A992, with yield strength of 50 ksi, will be specified for the structural steel. However, the beams will be selected on serviceability requirements to reduce the problems of vibrations and deflections, so they will not necessarily be fully stressed. For estimating purposes, the weight of steel framing can be assumed to be 14 psf. including metal decking.

The roof framing will incorporate steel beam, steel trusses, and metal roof deck. The roof steel pitches to follow the gable roof layout. The roof metal deck will be 1-1/2"-20 Gauge (Galv), Type B. For estimating purposes, the weight of the steel framing at the roof can be assumed to be 12 psf, including metal decking.

Wherever possible, hollow structural shapes will be selected for the columns. HSS6x6 tubes are easily concealed in the wall and partition framing eliminating the need for pilasters in the concrete foundation walls or interior partitions. Columns designed as moment frames will be wide flange shapes.

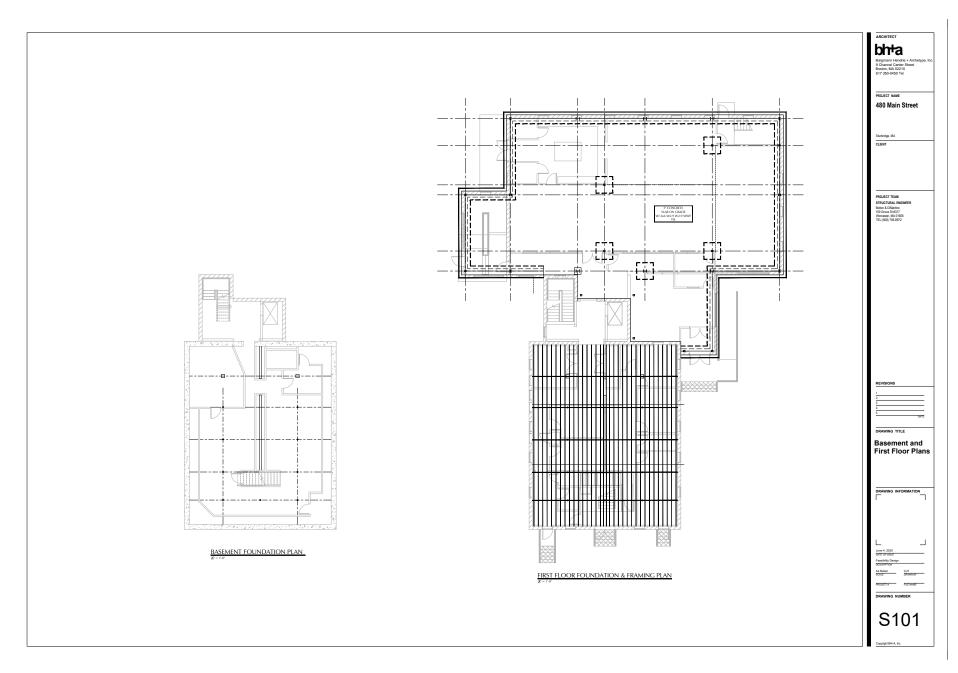
The lateral stability of the buildings will be achieved with concentrically braced frames and/or steel moment frames, concrete floor diaphragms, and metal deck roof diaphragms. Typically, the concentrically braced frame members will be HSS shapes and will resist the lateral loads in both tension and compression.

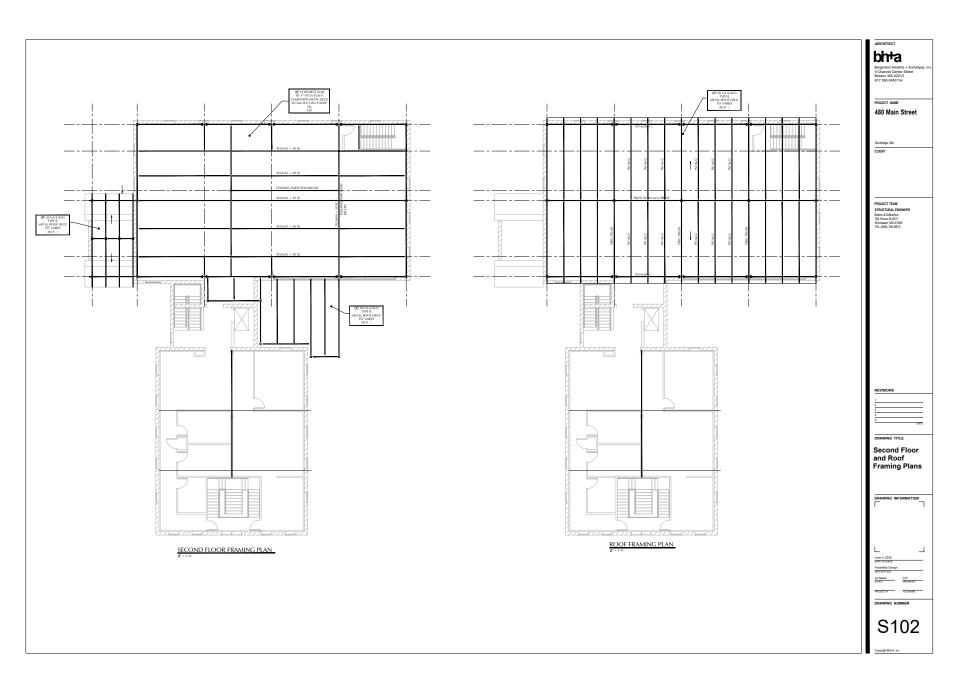
Please call this office if you wish to discuss these items or any other aspect of the project.

Bolton & DiMartino, Inc.

Christopher Tutlis, P.E. President

2





APPENDIX C MEP SYSTEMS EVALUATION



Bargmann Hendrie + Archetype, Inc. 9 Channel Street, Suite 300 Boston, Massachusetts 02210

July 28, 2020

ACES Project No.: 60088

Attention: Mr. Reese Schroeder, AIA

Subject: Sturbridge Senior Center

480 Main Street

Sturbridge, Massachusetts Existing MEP Systems Evaluation

We visited the site on March 13, 2020 to evaluate the existing HVAC, Electrical, Fire Alarm and Plumbing systems. Our observations, findings and recommendations are below.

The building is a brick 3-story building, including the basement level. All floors are utilized by the Senior Center for client and staff usage. There is no fire protection system in the building.

The Basement Level consists of an Exercise Room, Library area, Game Room and storage and mechanical rooms. There is a perimeter mechanical passageway around 3-sides of the basement where plumbing, electrical, ductwork and piping are run. The electrical and water services are located in these mechanical passageways.

The First Floor consists of a Multipurpose Room, Kitchen, Offices and Toilet Rooms. The Kitchen has a residential style electric range with a recirculation style exhaust hood. Meals are prepared off site and brought to the site for serving. The Multipurpose room can have an occupancy up to 40 people.

The Second Floor consists of a Multipurpose Room, Meeting Room and Toilet Rooms. There is an attic space above the second floor where the mechanical equipment serving this level is located. The Multipurpose room can have an occupancy up to 50 people.

The roof is uninsulated, there is a layer of insulation in the attic floor structure. This insulation layer is broken by openings used to access the mechanical equipment located in the attic.

There is a 1998 addition at the rear of the building for an accessible entrance, elevator and stairway that serves all three levels.

HVAC

Existing conditions

The building is heated by a hydronic oil fired boiler system with a combination of finned tube baseboard, convectors, cabinet unit heaters and fan coils. There are two (2) split fan coil systems providing cooling to parts of the building.

www.alliedconsulting.net

235 Littleton Road, Unit 5 Westford, MA 01886 978 443 7888

151 Lavan Street Warwick, RI 02888 4014617888

29 West Broad Street, Unit 2 Pawcatuck, CT 06379 860 506 7888

Sturbridge Senior Center

Page 2

There are two (2) Pensotti oil fired boilers located in the Boiler Room on the basement level. Each boiler is rated at 195 MBH output at 1.6 gph oil fire rate. The boilers were manufactured in 2015 and have at least 20 years of service life remaining if properly maintained. The boilers appear appropriately sized for the building, but any addition to the building would likely require additional capacity if the hydronic system were used.

There are two (2) 300 gallon oil storage tanks serving the boilers. The boilers are connected to a chimney for venting and combustion air is provided through a side wall louver and ductwork. The louver is located at ground level in the parking lot and could become blocked

The boilers are piped in a primary/secondary arrangement with two main building circulation pumps in a duty/standby arrangement. The duty/standby status of the pumps is manually switched on a yearly basis. The pumps appear to be in good condition.

It was reported that the hot water boiler system is filled with a propylene glycol solution, which is required because the second floor air handler is located in the unconditioned attic and the piping serving this unit runs through this unconditioned space. There is no glycol feeder connected to the system, so if there is a leak the water is made up through the city water connection diluting the glycol mixture in the system. A glycol feeder should be installed to maintain the glycol solution in the system and the city water feed valve should be turned off.

A Tekmar controller stages the boilers and resets the hot water supply temperature based on outside air temperature. 2-way zone control valves located throughout the building are used to provide heating control to the spaces. The boilers are manually energized and de-energized seasonally to prevent the heating and cooling systems from operating at the same time.

The Basement Level has a ducted unit ventilator with a hot water coil to provide ventilation for the basement areas. The intake air louver for this unit ventilator is located at ground level in the parking lot. This louver could be blocked by snow and it is also located adjacent to a bench for clients waiting for the shuttle bus which could allow vehicle fumes to be sucked in and distributed into the basement. The basement spaces are heated by hydronic finned

There is an inline exhaust fan located in the mechanical passage that exhausts from the Game Room out through the sidewall.

There is no cooling system for the basement spaces.

The First Floor Multipurpose Room has perimeter hydronic convectors and a 2-ton ducted DX cooling fan coil. The fan coil may serve other spaces on the first floor, but we did not note which ones. The heating and cooling components are controlled by separate thermostats. This room has a ceiling fan.

The fan coil unit serving the Multipurpose Room is located in a mechanical closet in the basement of the office addition. This closet has a dirt floor and the room has high humidity which could lead to mold forming in the unit and/or ductwork. The supply duct for this system rises up to the first floor ceiling for air distribution. There is no outside air connected to this unit, it is 100% recirculation. This 2-ton fan coil is connected to a 3-ton condensing unit. It is unclear why the system component sizes do not match. The condensate drain line from the fan coil runs to outdoors and is laying on the ground next to the condensing unit.

The office at the rear of the building off the Multipurpose Room is heated by a strip of

electric baseboard. This room appears to have been an addition and is not connected to the central heating system.

The front office, front stairway, front entry and toilet rooms on the First Floor all have hydronic cabinet unit heaters with manual thermostats for control.

The Second Floor spaces are heated and cooled by an air handler system that is located in the unconditioned attic. Photos provided by BH+A show that the unit is a Dunham-Bush model #HF008LF11838801, serial #11838801A99A. This model information indicates the unit has a hot water heating coil, a 2 HP fan motor, mixing box section and was manufactured in 1999. This air handler is rated for 3,480 CFM (according to existing plans of the building), this airflow is standard for a nominal 7.5 ton air handler. The photos do not show a damper actuator attached to the mixing box dampers and they appear to be locked in the recirculation position. The missing actuator means the minimum fresh air may not be maintained and the free cooling cycle would not be functional. In 2017 a 5-ton condensing unit and DX duct coil were added to the system or possibly replaced and older split system. It is unclear why these units are mismatched in capacities and they will not operate at the nominal equipment capacities. There is an in-line exhaust fan located in the attic that operates as part of the space ventilation and economizer cycle to prevent space over-pressurization. This air handler system is controlled by a programmable heating/cooling thermostat located in the space. Unless the programmable thermostat's operating schedule is updated regularly the system may be operating during unoccupied periods and not operating during occupied periods.

The Office/Meeting Room area has a hydronic convector for supplemental heat controlled by a manual heating-only thermostat. The Toilet Rooms also have hydronic convectors and manual thermostats. The Toilet Rooms have ceiling mounted exhaust fans wired to the light switches.

The hot water supply and return piping risers run exposed through the front stairway. The pipe insulation and ceiling tiles show signs of water damage from leaks. The piping in the attic and the air vent at the top of the risers also show signs of leaks. There are additional signs of leaks on the ceiling tiles located below the air handler in the ceiling of the front stairs. It was reported by staff that there was a leak on this system this year, but the exact location of the leak was unknown.

There is no built-in means of attic access and the step ladders available on site are not capable of providing safe access to this space. Servicing contractors must bring their own ladders for access through the ACT drop ceiling, original ceiling and up into the attic space.

Thermostats are a mixture of manual and programmable styles. Some of the thermostats have plastic locking covers installed, but they are either unlocked or the keys are in the locks.

The elevator and stair addition at the rear of the building has hydronic cabinet heaters at each level. It was reported that there was a leak in the first floor cabinet heater this winter that caused extensive damage to the first floor and basement. At the time of our visit the cabinet heater on the second floor was completely blocked by a piano that was preventing the unit from operating properly.

The elevator shaft and machine room are properly vented per the codes applicable at the time of installation.

Condensing units for the fan coil systems are located at ground level in the parking lot. The condensing unit for the first floor system is located next to a bench used by people waiting for the shuttle bus and a retractable awning has been installed to shade the bench. When this awning is open it will adversely affect the operation of the condensing unit by allowing the hot discharge air to recirculate back into the unit, also it traps the hot air under the awning. This unit does not have any bollards to protect the unit from possible damage by vehicles.

The condensing units are from 2015 and 2017 and have many years of service life remaining if properly maintained.

There were a couple of window air conditioners stored in the basement. It is assumed these are used in the 1st floor office spaces.

The Basement and second floor spaces have mechanical ventilation, but the first floor spaces do not. The first floor spaces rely on natural ventilation, opening the windows. A fresh air intake could be added to the first floor fan coil unit to introduce ventilation air, if some form of heat were added to the system for winter operation. Fresh air can be introduced to the basement via the unit ventilator when it is operating. However, this unit is heating-only, so if it operates during the summer it will introduce warm, humid air to the space. It is unclear if this unit is operated in the summer. The second floor Multipurpose Room system has a fresh air intake and provides fresh air anytime the fan system is operating. The thermostat associated with the systems has the fan switch in "Auto", which means the fan will only operate on a call for heating or cooling, and ventilation will not be provided continuously. The system controls should be configured for continuous fan operation during Occupied periods to maintain the ventilation.



Photo 1 - Typical Hydronic Convector



Photo 2 - Pipe Risers - Attic

Page 5



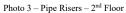




Photo 4 – Heating Control



Photo 5 – FCU Serving 1st Floor



Photo 6 - Mechanical Passage

Sturbridge Senior Center





Photo 7 – Programmable Thermostat

Photo 8 - Manual Thermostat



Photo 9 - Combustion Air Louver



Photo 10 - Fresh Air Louver

Recommendations

General

Category 1 - Critical Deficiency Items to be addressed immediately

- Provide signage above the combustion air louver directing the louver to be kept clear of snow
- Provide a dry location for the fan coil serving the first floor. Unit and ductwork should be checked for mold and cleaned if required.
- Provide CO and NO2 sensors wired to shut down the basement unit ventilator should an idling vehicle park next to the intake air louver. Provide signage near the louver indicating

Page 7

"No Idling".

Category 2 - Non-critical deficiencies that should be included or considered in a renovation or as maintenance upgrades

- · Automate the duty/standby pumps to switch on a failure and change lead status on a weekly
- · Install an automatic glycol feed system.
- Install leak detectors connected to a control or security system capable of sending alerts to a central location that is monitored 24/7.
- · Install programmable thermostats for all heating and cooling systems to increase energy efficiency and space comfort.
- Install a building management system to control the HVAC systems to improve energy efficiency. System should be capable of monitoring alarm conditions and have the capability to notify a central system.
- Provide ventilation for the basement through a system that has cooling.
- Further evaluate hot water piping for leaks and replace compromised sections or the entire piping system.

Plumbing

Existing conditions

The potable hot water is provided by an electric tank located in a storage closet off the Kitchen on the First Floor. The State water heater is 30 gallons rated at 208/240 volts and 3.5/4.5 KW and is was installed in 2013. There is no commercial kitchen equipment so this tank is appropriately sized for the toilet rooms and fixtures served. The hot water supply piping is not insulated and should be to meet current codes. The water heater has a 6-year warranty, so this unit is now out of warranty is subject to failure.

The Toilet Rooms are ADA accessible, although at least one toilet has the handle located on the wall side which is not code compliant.

There is a drinking fountain located in the hallway outside the Toilet rooms on the second floor.

There is no Janitors closet with a floor or utility sink, currently the cleaners fill and dump their mop buckets in the kitchen sink.

There is a sump pit and submersible pump located in the basement mechanical passage.

Sanitary waste piping is a combination of cast iron and copper and it runs across the basement ceiling and though the mechanical passages exiting the building above the basement floor level.



Photo 11 - DHW Tank



Photo 12 - Water Fountain



Photo 13 - Sump Pump



Photo 14 - Water Service

Page 9

Recommendations

Category 1 - Critical Deficiency Items to be addressed immediately

None.

Category 2 – Non-critical deficiencies that should be included in a renovation

- · Provide a Janitors closet with floor sink.
- Installation of a commercial kitchen would require upgrades to the potable water heating system.

Electrical Systems

Existing conditions

The existing electrical service is a 400 amp, 208V, 3-phase service fed from an underground service entering the building via an exterior meter. The main service entrance breaker (the building power shut-off) is located in the basement electrical/storage area.

The main service equipment (meter, main 400 amp breaker / Panel "MDP") appear to be in good working condition and have been well maintained. The service appears to be at-capacity given that there is an elevator connected to it. Any renovation work can easily be accommodated given the existing equipment, however, building additions will require a new service.

The main electrical equipment is manufactured by Siemens. There are two branch panels also by Siemens that are newer. There is also an older load center adjacent to the main panel. The load center and adjacent A&B switch have signs of rust.

Wiring in the building varies - original wiring is present in many areas and newer wiring has been added over the years. Visible wiring is mostly MC cable, metallic sheathed cable or NM cable (ROMEX) and is in acceptable condition for the most part. Several junction boxes are open and have no cover leaving wires exposed - a hazardous condition. A considerable amount of abandoned electrical work was found to still be in place - it is recommended that this be removed during any renovations/upgrades. A disconnect in the attic is installed adjacent to piping that impedes on the NEC-required working space.

The lighting mostly consists of fluorescent lighting. These are functional but outdated. Existing lighting is in fair condition – still operational, however, some fixtures require maintenance / lens-replacement.

Light switches comprise of standard (manual) toggle switches. Automatic lighting controls are not present, including exterior lighting.

The copy machine located in the first floor hallway outside the Office and Kitchen is plugged in to an outlet in the Kitchen as there is no power in the hallway.

The Multi-Purpose room on the second floor does not have a central sound system (microphone or speakers) and the projector is portable and the screen is manual. During our site visit the exercise class that was in session was using a portable radio for sound.

Sturbridge Senior Center

Page 10



Photo 15 - Main Meter



Photo 16 - Main Panel



Photo 17 - Attic Disconnect



Photo 18 - Basement Load Center with Rust

Page 11



Photo 19 - Open Junction Box



 $Photo\ 21-Non-Compliant\ Pull-Station$



Photo 20 - Main Breaker



Photo 22 - Branch Panel

Sturbridge Senior Center





Photo 23 - Copier

Emergency lighting in the building varies and comprises of emergency battery units. Exterior exit egress lighting in not present – this would be required per current code. The look of the space is not consistent as varying types of emergency lights have been installed over the years. Some areas do not have emergency lighting and are required to do so. Exit signage is generally functional but also outdated.

The automatic door open button on the accessible ramp at the rear entry to the building needs to be reset every day when the door is unlocked.

Page 13





Photo 24 – Fire Alarm Panel (Exterior)

Photo 25 – Fire Alarm Panel (Interior)

The existing fire alarm system is a Magnum Fire Alert 6000 zoned panel. Horn/strobes, strobes, smoke detectors, and pull stations are located throughout the building although coverage is neither consistent nor complete. The main panel is in good condition but does not comply with current code and serviceability is limited. Notification devices such as horn-strobes are not codecompliant and wiring is exposed in many cases. CO detection was not found in the boiler area.

Existing data and telephone systems needed for operation of the building are active. A demarcation point is located in a storage room in the basement. Tele-data appears to be adequately distributed as required by the building occupants.

Recommendations

Electrical System Deficiencies and Potential Upgrades

Category 1 - Critical Deficiency Items to be addressed immediately that are related to life safety and protection of valuable materials.

- Replace the fire alarm system with a new, addressable system.
- · Relocate the disconnect in the attic.
- Cover up and properly terminate exposed wiring.
- · Replace emergency/exit lighting as required.

Sturbridge Senior Center

Page 14

Category 2 - Non-critical deficiencies that should be included in a major renovation to extend the life of the building to 30 years.

- · Replace older lighting with new, robust fixtures with energy efficient lamping (LED).
- Remove abandoned electrical work and update all circuit directories.
- Replace existing, outdated equipment (load center, A&B switch, etc.).
- Automate exterior lighting by using either a timeclock or daylight sensors.
- Complete miscellaneous repairs and outlet additions (e.g. automatic door opener and copier).

End of Report

APPENDIX D HAZARDOUS MATERIALS REPORT

FINAL REPORT FOR LIMITED ASBESTOS CONTAINING MATERIALS IDENTIFICATION SURVEY AT THE STURBRIDGE SENIOR CENTER STURBRIDGE, MASSACHUSETTS

PROJECT NO: 220 198.00

SURVEY DATE: March 25, 2020

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS



March 30, 2020

Mr. Reese Schroeder Bargmann Hendrie + Archetype, Inc. 9 Channel Center Street Suite 300 Boston, MA 02210

Reference:

Asbestos Containing Materials Identification Survey Sturbridge Senior Center, Sturbridge, MA

Dear Mr. Schroeder:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional

Enclosed please find the report for limited Asbestos Containing Materials Identification Survey at the Sturbridge Senior Center, Sturbridge, MA.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

Ammar M. Dieb President

UEC:\220 198.00\Report.DOC

Enclosure

APPFNDIX

1.0 INTRODUCTION:

Universal Environmental Consultants (UEC) has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty years of experience.

UEC was contracted to conduct a limited Asbestos Containing Materials Identification Survey at the Sturbridge Senior Center, Sturbridge, MA.

No destructive or roof testing was performed.

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos and determination of types of ACM found for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with Environmental Protection Agency (EPA) standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Leonard J. Busa (Al-030673). The samples were analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

Samples results are attached.

2.0 FINDINGS:

The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed. All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to contain asbestos based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent. No additional accessible ACM was found during this survey.

However, hidden ACM may be found during any renovation or demolition activities.

Number of Samples Collected

Forty-three (43) bulk samples were collected from the following materials suspected of containing asbestos:

Type and Location of Material

- 1. Joint compound at first floor hallway to addition
- 2. Joint compound at second floor bathroom hall
- 3. Joint compound at basement pool room
- 4. Joint compound at boiler room Joint compound at boiler room
- Old sheetrock at boiler room
- 7. Old sheetrock at boiler room
- 8. 2' x 4' Suspended acoustical ceiling tile at second floor
- 9. 2' x 4' Suspended acoustical ceiling tile at first floor
- 10. 2' x 4' Suspended acoustical ceiling tile at basement
- 11. 2' x 4' Suspended acoustical ceiling tile at first floor kitchen
- 12. 2' x 4' Suspended acoustical ceiling tile at first floor stairwell
- 13. Adhesive for new wood strip floor at second floor
- 14. Black glue in fiberglass batting insulation at attic
- 15. Wall plaster at second floor hallway
- 16. Wall plaster at first floor
- 17. Wall plaster at second floor

UEC:\220 198.00\REPORT.DOC Page 1 of 4

- 18. Ceiling plaster at second floor
- 19. Ceiling plaster at first floor
- 20. Ceiling plaster at first floor
- 21. Ceiling plaster at first floor
- 22. Crème 12" x 12" vinyl floor tile at first floor
- 23. Crème 12" x 12" vinyl floor tile at first floor
- 24. Crème/yellow 12" x 12" vinyl floor tile at first floor kitchen
- 25. Crème/yellow 12" x 12" vinyl floor tile at first floor kitchen
- 26. Tan 12" x 12" vinyl floor tile at first floor kitchen
- 27. Blue 12" x 12" vinyl floor tile at first floor
- 28. Blue 12" x 12" vinyl floor tile at second floor bathroom I
- 29. Blue/red 12" x 12" vinyl floor tile at second floor bathroom II
- 30. Brown/orange 12" x 12" vinyl floor tile at second floor elevator stairwell
- 31. Brown/orange 12" x 12" vinyl floor tile at second floor elevator stairwell
- 32. Blue/grey 12" x 12" vinyl floor tile at basement
- 33. Blue/grev 12" x 12" vinvl floor tile at basement
- 34. White/grey 12" x 12" vinyl floor tile at basement
- 35. White/grey 12" x 12" vinyl floor tile at basement
- 36. White 12" x 12" vinyl floor tile under blue tile at first floor office
- 37. Exterior window framing caulking
- 38. Exterior window framing caulking
- 39. Exterior window framing caulking
- 40. Exterior door framing caulking
- 41. Exterior door framing caulking
- 42. Exterior flashing between brick and foundation
- 43. Exterior flashing between brick and foundation

Sample Results

Type and Location of Material

1.	Joint compound at first floor hallway to addition
2.	Joint compound at second floor bathroom hall
3.	Joint compound at basement pool room

4. Joint compound at boiler room 5. Joint compound at boiler room

6. Old sheetrock at boiler room

7. Old sheetrock at boiler room 8. 2' x 4' Suspended acoustical ceiling tile at second floor

9. 2' x 4' Suspended acoustical ceiling tile at first floor 10. 2' x 4' Suspended acoustical ceiling tile at basement

11. 2' x 4' Suspended acoustical ceiling tile at first floor kitchen

12. 2' x 4' Suspended acoustical ceiling tile at first floor stairwell 13. Adhesive for new wood strip floor at second floor

14. Black glue in fiberglass batting insulation at attic

15. Wall plaster at second floor hallway 16. Wall plaster at first floor

17. Wall plaster at second floor

18. Ceiling plaster at second floor 19. Ceiling plaster at first floor

20. Ceiling plaster at first floor

21. Ceiling plaster at first floor 22. Crème 12" x 12" vinyl floor tile at first floor

23. Crème 12" x 12" vinyl floor tile at first floor 24. Crème/yellow 12" x 12" vinyl floor tile at first floor kitchen

25. Crème/yellow 12" x 12" vinyl floor tile at first floor kitchen

26. Tan 12" x 12" vinyl floor tile at first floor kitchen

UEC:\220 198.00\REPORT.DOC Page 2 of 4 No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Ashestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Ashestos Detected No Asbestos Detected No Ashestos Detected No Asbestos Detected No Ashestos Detected No Asbestos Detected No Ashestos Detected

27. Blue 12" x 12" vinyl floor tile at first floor	No Asbestos Detected
28. Blue 12" x 12" vinyl floor tile at second floor bathroom I	No Asbestos Detected
29. Blue/red 12" x 12" vinyl floor tile at second floor bathroom II	No Asbestos Detected
30. Brown/orange 12" x 12" vinyl floor tile at second floor elevator stairwell	No Asbestos Detected
31. Brown/orange 12" x 12" vinyl floor tile at second floor elevator stairwell	No Asbestos Detected
32. Blue/grey 12" x 12" vinyl floor tile at basement	No Asbestos Detected
33. Blue/grey 12" x 12" vinyl floor tile at basement	No Asbestos Detected
34. White/grey 12" x 12" vinyl floor tile at basement	No Asbestos Detected
35. White/grey 12" x 12" vinyl floor tile at basement	No Asbestos Detected
36. White 12" x 12" vinyl floor tile under blue tile at first floor office	No Asbestos Detected
37. Exterior window framing caulking	3% Asbestos
38. Exterior window framing caulking	2% Asbestos
39. Exterior window framing caulking	5% Asbestos
40. Exterior door framing caulking	5% Asbestos
41. Exterior door framing caulking	3% Asbestos
42. Exterior flashing between brick and foundation	No Asbestos Detected
43. Exterior flashing between brick and foundation	No Asbestos Detected

Observations and Conclusions:

All ACM must be removed by a Massachusetts licensed asbestos abatement contractor prior to any renovation or demolition activities that might disturb the ACM under the supervision of a Massachusetts licensed project monitor.

- 1. Exterior window framing caulking was found to contain asbestos. Windows appears to be new but original
- 2. Exterior door framing caulking was found to contain asbestos.
- 3. Roofing material was assumed to contain asbestos.
- 4. Damproofing behind and on foundation walls was assumed to exist and assumed to contain asbestos.
- 5. All remaining suspect materials were found not to contain asbestos.
- 6. Hidden ACM may be found during renovation and demolition activities.
- 7. Two (2) oil tanks were observed in the boiler room.

3.0 COST ESTIMATES:

The cost includes removal and disposal of all accessible ACM.

Location	Material	Approximate Quantity	Cost Estimate (\$)
Exterior	Original Window Framing Caulking Original Door Framing Caulking	38 Total Windows 4 Total Doors	15,200.00 1,200.00
Boiler Room	Oil Tanks	2 Total	2,500.00
Design, Construct	ion Monitoring and Air Sampling Fees		6,100.00
		TOTAL:	\$ 25,000.00

4.0 DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a. Bulk material samples were analyzed using PLM and dispersion staining techniques in accordance with EPA method 600/M4-82-020.

UEC:\220 198.00\REPORT.DOC Page 3 of 4

5.0 LIMITATIONS AND CONDITIONS:

This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:

Leonard J. Busa Asbestos Inspector (AI-030673)

UEC:\220 198.00\REPORT.DOC

Page 4 of 4



Asbestos Identification Laboratory

165 New Boston St., Ste 227 Woburn, MA 01801 781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com

March 27, 2020

Ammar Dieb Universal Environmental Consultants 12 Brewster Road Framingham, MA 01702

Project Name: Sturbridge Senior Center, Sturbridge, MA Project Number:

Date Sampled: 2020-03-25 2020-03-26 Work Received: Work Analyzed: 2020-03-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations, Department of Health Certification; AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business

Michael Thuming

Michael Manning Owner/Director

March 27, 2020

Project Name:

Sturbridge Senior Center, Sturbridge, MA

Project Number:

2020-03-25 Date Sampled: Work Received: 2020-03-26 Work Analyzed: 2020-03-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Ammar Dieb

12 Brewster Road

Framingham, MA 01702

Universal Environmental Consultants

FieldID	Material	Location	Color	Non-Asbestos	%	Asbestos %
LabID						
1	Joint Compound (JC)	1st Fl. Hall to Addition from Main Floor	white	Non-Fibrous	100	None Detected
578123 2	10	0.151.0.4				
	JC	2nd Fl. Bathrm Hall Wall	white	Non-Fibrous	100	None Detected
578124						
3	ıc ı	Bsmt, Pool Rm.	white	Non-Fibrous	100	None Detected
578125						
1	JC	Boiler Rm.	white	Non-Fibrous	100	None Detected
578126						
5	JC (Clg)	Boiler Rm.	white	Non-Fibrous	100	None Detected
578127						
3	Old Sheetrock CLG	Boiler Rm.	multi	Cellulose		None Detected
578128				Non-Fibrous	80	
7	Old Sheetrock CLG	Boiler Rm.	multi	Cellulose	15	None Detected
578129				Non-Fibrous	85	
3 /8129	2*4 SAT	2nd Fl. Main Floor	gray	Mineral Wool	30	None Detected
				Cellulose	60	
578130				Non-Fibrous	10	
9	2*4 SAT	1st Fl. Main Floor	gray	Mineral Wool Cellulose	3 0 6 0	None Detected
578131				Non-Fibrous	10	
10	2*4 SAT	Bsmt. Main Floor	gray	Mineral Wool	10	None Detected
				Cellulose	80	
578132				Non-Fibrous	10	
11	2*4 SAT (Frosty)	1st Fl. Kitchen	gray	Mineral Wool Cellulose	3 0 6 0	None Detected
578133				Non-Fibrous	10	
12	2*4 SAT (Pressed Wood)	1st Fl. Front S.W.	brown	Cellulose	98	None Detected
578134				Non-Fibrous	2	
5/8134	Adhesive for New Wood	2nd Fl. Main Floor	yellow	Non-Fibrous	100	None Detected
570177	Strip Floor					
578135 14	Black in FG Floor Batt	Attic	multi	Fiberglass	1.0	None Detected
	- Black III I O I looi Ball	,	india	Cellulose	85	None Detected
	1		l	Non-Fibrous	5	l

Field	dID	Material	Location	Color	Non-Asbestos %	Asbestos %
	LabID					
15		Wall Plaster (WP)	2nd Fl. Hall	multi	Hair S Non-Fibrous 97	None Detected
16	578137	WP	1st Fl.Main Floor	multi	Hair 2	None Detected
10		- VVP	TSt FI.IVIAIII FIOOI	muiu	Non-Fibrous 98	
	578138					
17		WP	2nd Fl. Main Floor	multi	Hair Non-Fibrous 9	None Detected
	578139				Non-Fibrous 9	Ί
18		Ceiling Plaster (CP)	2nd Fl. Main Floor	multi		None Detected
	578140				Non-Fibrous 90	
19	376140	СР	1st Fl. Front S.W.	multi	Hair 2	None Detected
_		-			Non-Fibrous 98	
20	578141	0.0	4.4.51.125.1			1
20		CP	1st Fl. Kitchen	multi	Hair Non-Fibrous 9	None Detected
	578142				1.011 1101000 9	
21		СР	1st Fl.Main Floor	multi		None Detected
	578143				Non-Fibrous 98	3
22	2/0113	12" Creme VT	1st Fl.Main Floor	tan	Non-Fibrous 100	None Detected
		+				
23	578144	40" O \ /T	4-4-51-54-0-14	4	7 711	
23		12" Creme VT	1st Fl. Front S.W.	tan	Non-Fibrous 100	None Detected
	578145					
24		12" Creme-Yellow VT	Kitchen	tan	Non-Fibrous 100	None Detected
	578146					
25	370110	12" Creme-Yellow VT	Kitchen-Office	tan	Non-Fibrous 100	None Detected
26	578147	12" Tan VT	Kitabaa	4	77 7711 4.04	
26		- IZ Tan VI	Kitchen	tan	Non-Fibrous 100	None Detected
	578148					
27		12" Blue VT	1st Fl.Main Floor	gray	Non-Fibrous 100	None Detected
	578149					
28		12" Blue VT	2nd Fl. BathrmI	gray	Non-Fibrous 100	None Detected
29	578150	12" Blue W/Red VT	2nd Fl. BathrmII	arev	Non-Fibrous 100	None Detected
		- Dide Wilted VI	Ziid I I. Dauliiiiii	gray	NOII-FIDIOUS 100	None Detected
	578151					1
30		12" Brown-Orange VT	2nd Fl. Elevator S.W.	brown	Non-Fibrous 100	None Detected
	578152					1
31		12" Brown-Orange VT	2nd Fl. Elevator S.W.	brown	Non-Fibrous 100	None Detected
32	578153	12" Blue-Gray VT	Bsmt. Hall @ Elevator	gray	Non-Fibrous 100	None Detected
UZ		- Diue-Glay VI	Danit. Hall @ Lievatol	gray	NOII-FIDIOUS 100	None Detected
	578154					

FieldI)	Material	Location	Color	Non-Asbestos	%	Asbestos %
L	.abID						
33		12" Blue-Gray VT	Bsmt. Hall @ Elevator	gray	Non-Fibrous	100	None Detected
5	78155						
34		12" White W/Gray VT	Bsmt. Hall	white	Non-Fibrous	100	None Detected
	78156						
35		12" White W/Gray VT	Bsmt. Hall	white	Non-Fibrous	100	None Detected
5	78157						
36		12" White VT Under 12" —Blue VT	1st Fl. Office	white	Non-Fibrous	100	None Detected
	78158						
37		Window Frame Caulk	2nd Fl. Exterior	multi	Non-Fibrous	97	Detected Chrysotile
5 38	78159	Win Fr.	2nd Fl. Exterior	multi	Non-Fibrous	9.8	Detected
			Zild I i. Exterior	la.a	non ribroup		Chrysotile
5 39	78160	Win Fr.	1st Fl. Exterior	gray	Other		Detected
			ISCI I. Exterior	gray	Non-Fibrous	_	Chrysotile
5 40	78161	Door Fr. Caulk	Front Door -I Exterior	gray	Other	2	Detected
		- Bool 11. Gaulk	TOTAL BOOK -1 Exterior	gray	Non-Fibrous	_	Chrysotile
	78162						
41		Door Fr. Caulk	Front Door II Exterior	multi	Non-Fibrous	97	Detected Chrysotile
	78163						
42		Flashing Between Brick & Foundation	Rear S.W./Elevator Addition, Exterior	blue	Non-Fibrous	100	None Detected
	78164						
43		FI. Between BR & Found	Rear S.W./Elevator Addition, Exterior	blue	Non-Fibrous	100	None Detected
	78165 27 March	2020 Enik Go	End of Report				age 3 of 3

CHAIN OF CUSTODY

10	3
_	_

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adiah@uac-any.com

Tel: (508) 628-5486 - Fax: (508) 628-5488

<u>adieb@uec-env.com</u>

Town/City: <u>Sturbridge</u> <u>Ta</u> Building Name <u>Sturbridge</u> <u>Senior</u> <u>Center</u>

Sample	Result Description of Material.	Sample Location
/	Voint Compound (JC)	15 Fl. hall to addition from main flo
2	JC "	2 de Bathem hall wall
3	JC	Bent Fool soon
4	VC	Brileren
5	JC (cLa)	
6	old spectrock chy	
-7	old spectrock che	#
8	245AT	2nd Fl main Floor
. 9	2.4 SAT	151 Fl main Tologe
10	2.4507	Bent main Flore
11	2.4 SAT (FLOSTY)	151 Fl Kitcher
12	2.4 SAT (pressed wood)	1st Trent 5.W.
13	Adhesive for sew wood strip	floor 3rd fl main floor
14	Black in FG Floor Ba	
15	wallplaster (wp)	Edd hall
16	we	151 Fl main Floor
17	WP	2 del nois Floor
-8	CELLING PLASTER (CP)	Zad Fl. main Flow
19	CP	15 Fl Front Sw
20	CP	1st pl Kitch

CHAIN OF CUSTODY

Universal Environmental Consultants 12 Brewster Road Framingham, MA 01702 Tel: (608) 628-5486 - Fax: (508) 628-5488 adieb@uec-env.com Town/City:	Theorege SR Ell
Sample Result Description of Material	Sample Location

130	Sample Resul	t Description of Material	Sample Location
32	2/	CP	1st Fle main floor
F	ZZ	13" cieme VI	1st Fl min flow
ŀ	23	13" creme VT	1st Fl. Fast sw
ŀ		12" creme-jellow NT	Kitche
ŀ	24	12" oreme yellow VI	Kitchen-office
-	25	1 1/	Witcher
-	26	13" Ton XT	1st Fl main Flage
- 1	27	12" Blue VI	2011 Bather - I
1	28	12" Blue VI	-
- [. 29	12" Blue wfred VI	3rd Fl Bethen-IL
ı	30	18° Bour-Diaggert	2-0 Fl Elevator Sw
.	3/	12" BLOWN-DEANGE VI	2" FL ELEV. SW
Ī	32	12 Bloggay VI	Bent hall e EleVATOR
	.37	12" Blue-grey VT	Rent hall & alex
- 1	34	12" white w/grey vi	Bent hall
	3.5	12" while w/ gieg vi	Bent hall
		12" white xt wader 12"	Block a 1st flatfice
	36	window frame castk	2nd Fl Exterior
	37		and fil
	38	and fo	157 64
	39	win fe	Frast doorst
	40	door for coulk	Front doores

40 acosts coulte	17 / 60-7 / (700)	
Reported By - Tamas R Susa	- Date: - 3-25-20	Due Date: 24-42
Descined Dur	Date:	

CHAIN OF CUSTODY

Universal Envi	ronmental Consultants
12 Brewster Ro	
Framingham, M	A 01702
Tel: (508) 628-5	5486 - Fax: (508) 628-5488
adiah@uar-an	

Town/City: Stutings, and Building Name Stution States

Sample Result Description of Material Sample recording 41	Sample	Docult	Description of Material	Sample Location
42 Raching betwie Birthingstations are sufated securiors 43 Restrict Research """ """ """ """ """ """ """		aveault		111 TI Exterior -
42 Alexand Brink in Marketon " are sufated seelled for " " " " " " " " " " " " " " " " " " "			YON TE CAULT	Frant Whole the Battery
43 Resigning Resignation 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	42		Hashing betwie Beick founds	ion cear suffler ADDITION
	43		Fl. betier Re: Found	
	ļ			
		-		
1 1 1				
		<u></u>		L

Reported By	Date: -3-25-20	Due Date: 24-h
Received By:	Date:	

APPENDIX E SITE FEASIBILITY STUDY: FULL REPORT

PARE PROJECT NO. 20030.00

SITE FEASIBILITY STUDY

480 MAIN STREET - PARCEL 415-02433-480 70 CEDAR STREET - PARCEL 202-02417-070 80 ROUTE 15 - PARCEL 552-02952-080

TOWN OF STURBRIDGE SENIOR CENTER STURBRIDGE, MASSACHUSETTS

PREPARED FOR:

Bargmann Hendrie + Archtype, Inc 9 Channel Center Street, Suite 300 Boston, MA 02210

PREPARED BY:

Pare Corporation 10 Lincoln Road, Suite 210 Foxboro, MA 02035

April 2020 Revised July 2020

TABLE OF CONTENTS

SECTION		PAGE
	Introduction	1
	Site Evaluation – 480 Main Street	3
	Site Evaluation – 70 Cedar Street	9
	Site Evaluation – 80 Route 15	15
	Permitting	21

APPENDICES

A	Constraints Map
В	Property Records Ownership & Deeds
C	Zoning Map
D	Soil Information
E	Record Drawings and Utility Records
F	Well Documentation (not used)
G	Wetland Regulations
Н	FEMA Mapping
I	Historic Mapping

Pare Corporation

- i -



INTRODUCTION

The intent of this site feasibility study is to evaluate for the feasibility of developing a new senior center in the Town of Sturbridge, Massachusetts. The Town of Sturbridge is currently in possession of three parcels listed below

As requested by Bargmann Hendrie + Archtype, Inc (BH+A), the properties included with this feasibility level evaluation are as follows:

- 480 Main Street Sturbridge, Massachusetts (Parcel ID 415-02433-490)
- 70 Cedar Street Sturbridge, Massachusetts (Parcel ID 202-02417-070)
- 80 Route 15, Sturbridge, Massachusetts (Parcel ID 552-02952-080)

The parcels will be considered separate Sites for the purpose of this feasibility study. Based on the findings contained herein, constraints maps have been included for the Sites in Appendix A. The constraints maps show various jurisdictional areas, regulatory boundaries, and additional pertinent information reviewed as part of this feasibility study.

The methodology for obtaining the information within this feasibility level site evaluation included the review of the following resources:

- Massachusetts Geographic Information System (MassGIS) data layers, accessed on March 31, 2020
- Town of Sturbridge's Interactive Geographic Information System (Sturbridge GIS) data layers, accessed on March 31, 2020;
- MACRIS Maps 2.0 Beta historical inventory, accessed March 31, 2020;
- NRCS Web Soil Survey, accessed on March 31, 2020;
- Sturbridge Zoning Map, Revised through Annual Town Meeting June 4, 2013.
- Town of Sturbridge Vision Government Solutions Property Cards;
- Flood Insurance Rate Map for Worcester County, Massachusetts (Community-Panel 0926E, Map Number 25027C0926E, Effective Date July 4, 2011);
- Flood Insurance Rate Map for Worcester County, Massachusetts (Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 2011);
- Zoning Bylaws of the Town of the Town of Sturbridge, Massachusetts;
- Town of Sturbridge Conservation Department Regulations;
- Sturbridge DPW ArcGIS Sewer mapping, accessed on March 17, 2020;
- Mapsonline (Quickasset by PeopleGIS) Sturbridge Drainage mapping, accessed on March 17, 2020;
- Plan titled "Sturbridge-Brimfield Road, 1934 Reconstruction", provided by MassDOT, no date;
- Plans titled "Basemap Water North" and Basemap Water South", provided by Sturbridge DPW, no date:

Pare Corporation -1-



Sturbridge Senior Center - Site Feasibility Study

- Plans titled "Handicap Addition and Renovations, Sturbridge Senior Center, 480 Main Street, Route 20, Sturbridge, Massachusetts 01566", prepared by Roy S. Brown Architects, dated July 6, 1998:
- Deed Restriction Titled "Conservation Restriction to Opacum Land Trust, Inc., Shepard Parcel",
 Dated August 1, 2016, Recorded at Worcester District Registry of Deeds in Book 36254, Page 47.

This feasibility level evaluation excludes the following:

- · In-person site reconnaissance;
- Hazardous materials identification and evaluation of any type;
- · Capacity analysis for existing utilities;
- · Existing conditions review of existing utilities;
- · Historic/previous site development; and
- · Any information not provided by the resources identified herein.

Pare Corporation -2-



SITE EVALUATION - 480 MAIN STREET

Site Description

Property records for the Site were reviewed by Pare. Copies of the property cards are included in Appendix

The Site, designated as Parcel 415-02433-490 on the Sturbridge GIS system, is comprised of one parcel owned by the Town of Sturbridge according to property record cards (included in Appendix B). The Site contains approximately 0.78 acres one a single parcel and is previous developed as the Sturbridge Council on Aging/Senior Center building.

Zoning

The Sturbridge Zone Map (included in Appendix C) indicates the Site is located within the Commercial Tourist District zone as shown in Figure 1 and Figure 2 below. The Site is currently developed with the existing senior center and a paved parking lot to serve the building. The building and parking area are generally located at the northern portion of the Site with a grassed area making up a southern portion. The Site is bound by Main Street to the south, Arnold Street to the west, residential property to the north, and commercial property to the east.





Figure 1 Sturbridge Zoning Legend

Figure 2 Sturbridge Zoning Map of the Site

Topography

Based on MassGIS available LiDAR data, topography generally slopes downward from a high point of approximately elevation 615 feet at the northern boundary of the Site towards the southern boundary of the Site at approximately elevation 600 feet. The existing topography is shown on the constraints map in Appendix A.

Soils

According to NRCS Web Soil Survey mapping, the Site contains Brookfield fine sandy loam, 3 to 8 percent slopes, extremely stony (401B) at the eastern edge of the Site, and Canton fine sandy loam, 3 to 8 percent slopes (420B) at the remainder of the Site. Brookfield fine sandy loam has a hydrologic soil group A, indicating a high rate of water transmission. Canton fine sandy loam has a hydrologic soil group B, indicating a high rate of water transmission. An NRCS site soil survey map has been included in Appendix D. Test pits may be scheduled as part of the site evaluation to further investigate the soil characteristics, at

Pare Corporation

-3-

Sturbridge Senior Center - Site Feasibility Study

the site if selected for development. It is anticipated that further geotechnical investigation including soil borings will be required prior to future development of the site.

Site Circulation and Parking

The existing Council on Aging has a single driveway on the east side of Arnold Road, approximately 150 feet north of the intersection of Main Street and Arnold Road. The facility's surface parking lot surrounds the building and operates as a one-way counterclockwise loop. The current facility has a total of 26 striped spaces. In addition to the on-site parking lot, there is available overflow parking on the west side of Arnold Road opposite the Council on Aging. This parking lot provides approximately 24 spaces.

An initial traffic assessment has been conducted and is included under separate cover.

Based on available aerial imagery and street imagery, existing impervious area onsite appears to be in good condition with minimal cracking throughout the parking area. Parking striping and curbing appears to be in good condition throughout the parking area.

Utilities

Electric

Based on available aerial imagery and as-built plans, electricity appears to be supplied to the existing building via overhead wires along Main Street. Underground 4" PVC conduit extends from the southeast corner of the building, which terminates at a pole southeast of the parking area. Overhead wire from the pole connects to the utility poles on Main Street south of the property line. National Grid supplies electric services for the Town.

Gas

Based on available aerial imagery, record plans, and MassDOT utility ownership contacts, and MA Department of Public Utilities mapping of natural gas providers, subsurface gas utilities are not available in the Town of Sturbridge. An underground propone tank is currently located onsite between Arnold Street and the western edge of the onsite parking.

According to mapping provide by the Sturbridge DPW, a 6" cast iron water main is available on Arnold Street and Main Street. Based on water gates adjacent to the site from aerial imagery, it appears that the water service to the existing building connects to Arnold Street at the western edge of the property. Available as-built plans did not depict the location or size of the water service from the building.

Based on available street imagery, there are two existing hydrants located between Arnold Street and western edge of the existing lot. An additional hydrant is located at the southern corner of Main Street and Arnold Street. Note that the two hydrants on Arnold Street are not listed on the mapping provided by the Town; it is currently unknown whether these hydrants are operational.

Engineering review shall occur during the design phase to determine capacity and sizing requirements based on a finalized design. If a water main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine flow capacity. Utility records for 480 Main Street and all other sites can be found in Appendix E.

Pare Corporation





APPENDIX

Sturbridge Senior Center - Site Feasibility Study

Sewer

According to internal GIS mapping made available by the Sturbridge DPW, an 8" vitrified clay pipe sewer main is available on Arnold Street, and an 18" reinforced concrete pipe sewer main is available on Main Street. Based on as-built drawings, a sewer service exits through the southwest corner of the existing building. The size of the service is unknown, and the location of the connection to the sewer main is unknown. The as-built drawings depict the service running west towards the 8" VCP sewer main on Arnold Street; however, the location of the connection will need to be confirmed.

Further review should be considered to assess whether the current service location and capacity will support the proposed uses onsite if the service is to remain. If a sewer main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine capacity.

Stormwater

The existing site generally drains from the northern edge of the site towards the low point at the southern edge of the site. Based on as-built drawings, the existing building utilizes a gutter system for roof runoff that collects into underground piping via downspouts at the north side of the building. Roof runoff outfalls at the flared end section east of the southeast corner of the parking area.

Drainage from the site as a whole flows south to Main Street and Arnold Street, and is collected by the roads' catch basins. The plan titled "Sturbridge-Brimfield Road, 1934 Reconstruction", provided by MassDOT depicts these catch basins outfalling into the wetlands to the south of Main Street, and ultimately into the Ouinebaug River.

MassGIS indicates that the site is part of the Quinebaug watershed as shown in Figure 3 and Figure 4 below.





Figure 4 MassGIS Major Basins Shaded

Figure 3 MassGIS Legend

Pare Corporation



Sturbridge Senior Center - Site Feasibility Study

Proposed development will use onsite Best Management Practices for water quality treatment, groundwater recharge, and control of peak flow rates. The system will be designed in accordance with the Massachusetts Stormwater Handbook and the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations. Points of discharge will generally be located to match the existing conditions, including maintaining hydrology to the existing wetlands and to the drainage system within the right-of-way.

Regulated Areas

Pare has reviewed the regulated areas on the site including wetlands, waterbodies, historical places, natural heritage areas, and zoning areas as discussed below.

Wetlands and Surface Water

Based on available MassGIS data, wetlands are present offsite south of Main Street, as identified on the constraints map in Appendix A. Per regulations set forth by the Town of Sturbridge Conservation Department, the wetlands south of the Site include a 200' municipal wetland buffer which infringe the southern property boundary of the Site. Work within this 200' buffer is subject to prior review by the Sturbridge Conservation Commission to ensure no significant adverse impact and requires filing or a Request for Determination.

The offsite wetlands are not considered a Bordering Vegetated Wetlands subject to jurisdiction under the Wetland Protection Act (WPA). Work inside the 100' buffer (and up to the 25' buffer) is regulated by the WPA and may be permitted after filing through the local Conservation Commission. However, the 100' buffer does not infringe the Site. No surface water protection areas or vernal pools were identified on MassGIS data layers.

According to MassGIS data, the Site is largely contained within a Zone 2 Wellhead Protection area.

Federal Emergency Management Agency (FEMA)

According to the FEMA flood Insurance Rate Map for Essex County, Massachusetts (Community-Panel 0926E, Map Number 25027C0926E, Effective Date July 4, 2011) included in Appendix H of this narrative, the Site falls within the FEMA Zone X or "areas determined to be outside the 0.2% annual chance floodplain."

Natural Heritage and Endangered Species Program (NHESP)

Based on available MassGIS data no streams, Natural Heritage and Endangered Species Program (NHESP) priority habitats of rare species, or vernal pools were identified on the Site as shown in Figure and Figure below.

-6-

Pare Corporation



-5-

Sturbridge Senior Center - Site Feasibility Study NHESP Priority Habitats of Rare Species NHESP Certified Vernal Pools Potential Vernal Pools USGS Water Bodies 25k LAKE, POND, OCEAN RESERVOIR WETLAND * SALT WETLAND SUBMERGED WETLAND CRANBERRY BOG ₩ TIDAL FLAT INUNDATED AREA USGS Rivers and Streams 25k / Stream / INTERMITTENT STREAM ✓ SHORELINE / INTERMITTENT SHORELINE / MANMADE SHORELINE / DITCH/CANAL AQUEDUCT / DAM CHANNEL IN WATER Census 2000 Rivers and Streams

Historical

Massachusetts Cultural Resource Information System (MACRIS) Maps 2.0 Beta mapping and data was used to determine historical areas at each site. Refer to MACRIS Map in Appendix I for reference.

Figure 6 MassGIS Data Image Corresponding to the Legend

The existing structure onsite is considered an inventoried historic property, the Snellville District #2 Schoolhouse (STU.113). The Site is also contained within an inventoried historic district, Snellville (STU.C). Main Street contains several historic properties adject to the Site, including the Floyd Gray House and the Lucius Snell House.

Conservation and Open Space Land

/ PERENNIAL

INTERMITTENT Tax Parcels for Query Figure 5 MassGIS Legend

Based on Sturbridge GIS, the Site is not Chapter 61, 61A, and 61B Land under Title IX of the Commonwealth of Massachusetts General Laws which includes the classification and taxation of forest lands and forest products, assessment and taxation of agricultural and horticultural land, and classification and taxation of recreational land, respectively. Additionally, the Site is not listed as any other variant of public or private open space, or conservation land on the town GIS. Figure 7 shows open space delineated on town GIS.



Sturbridge Senior Center - Site Feasibility Study



Figure 7 Sturbridge GIS – Open Space / Chapter 61, 61A and 61B Land

-8-

Deed Restrictions

No deed restrictions were found in the Worcester District Recorded/Registered Land database.

Pare Corporation



SITE EVALUATION - 70 CEDAR STREET

Site Description

Property records for the Site were reviewed by Pare. Copies of the property cards are included in Appendix

The Site, designated as Parcel 202-02417-070 on the Sturbridge GIS system, is comprised of one parcel owned by the Town of Sturbridge according to property record cards (included in Appendix B). The Site contains approximately 14.02 acres one a single parcel and is undeveloped.

Zoning

The Sturbridge Zone Map (included in Appendix C) indicates the Site is located within the Suburban Residential District as shown in Figure 8 and Figure 9 below. The Site is currently undeveloped and largely a forested area. The Site is bound by residential property to the north, Cedar Street and residential property to the west, Seneca Lane to the east, and Cedar Pond Road and the Cedar Pond Recreation Area to the south.





Figure 8 Sturbridge Zoning Legend

Figure 9 Sturbridge Zoning Map of the Site

Topography

Based on MassGIS available LiDAR data, topography is highly varied and contains several local high and low points. Generally, the Site is highest at the center at approximately elevation 629, and slopes downward in all direction towards the property lines. The lowest point of the Site is at the wetlands at the western side of the Site at approximately elevation 590. The existing topography is shown on the constraints map in Appendix A.

Soils

According to NRCS Web Soil Survey mapping, the Site contains Freetown muck, 0 to 1 percent slopes (52A) at the western edge of the Site, and Canton fine sandy loam, 0 to 8 percent slopes, extremely stony (422B) at the center of the Site, and Merrimac find sandy loam, 3 to 8 percent slopes (254B) at the eastern and southwest corners of the Site. Freetown Muck has a split hydrologic soil group B/D, indicating a moderate rate of water transmission in its drained condition, and a very slow rate of water transmission in its undrained condition. Soils that are assigned split hydrologic groups are considered group D in their natural condition. Canton fine sandy loam has a hydrologic soil group B, indicating a moderate rate of water

Pare Corporation

Sturbridge Senior Center - Site Feasibility Study

transmission. Merrimac find sandy loam has a hydrologic soil group A, indicating a high rate of water transmission. An NRCS site soil survey map has been included in Appendix D. Test pits may be scheduled as part of the site evaluation to further investigate the soil characteristics at the site, if selected for development. It is anticipated that further geotechnical investigation including soil borings will be required prior to future development of the site.

Site Circulation and Parking

The site is currently undeveloped, and as such, does not have existing site circulation or parking considerations.

Utilities

Electric

Based on available aerial imagery, electricity appears to be available via overhead wire from the utility poles on Cedar Street and Cedar Pond Road. Engineering review shall occur during the design phase to determine whether existing services adjacent to the Site are sufficient, based on a finalized electrical design for the facility. National Grid supplies electric services for the Town.

Gas

Based on available aerial imagery, record plans, and MassDOT utility ownership contacts, and MA Department of Public Utilities mapping of natural gas providers, subsurface gas utilities are not available in the Town of Sturbridge.

Water

According to mapping provide by the Sturbridge DPW, a 6" asbestos concrete water main is available on Cedar Street. Mapping provided by the DPW does not indicate available water lines to access on Cedar Pond Road.

Based on Sturbridge DPW mapping and aerial imagery, there is one existing hydrant located on Cedar Street near the northwest corner of the property. It is anticipated that any development on the Site would require additional fire safety measures.

If a water main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine flow capacity.

According to internal GIS mapping made available by the Sturbridge DPW, an 10" PVC pipe sewer main is available on Cedar Street, and a 3" low pressure force main is available on Cedar Pond Road.

There are several options for servicing the proposed building, the first of which being an approximately 200-foot gravity sewer from the building to a proposed septic system to the southwest. If a septic system is proposed in lieu of a sewer main connection, based on MassDEP Title V regulations, there are required "estimated minimum setback distances from surface waters and wetlands as required under 310 CMR 15.000 (Title 5) for the sitting, construction, inspection, upgrade and expansion of on-site sewage treatment and disposal systems." The purpose of the setback areas is to indicate location of natural resources that require protection from sewage treatment and disposal systems.

Pare Corporation





Any new onsite septic systems will need to confirm to the Title V regulation setback and design requirements and will require permits from MassDEP and the Sturbridge Board of Health.

The second option would be to connect into the existing 3" low pressure force main on Cedar Pond Road. This would require the installation of a grinder pump within the building and an approximately 500-foot sewer line from the building to Cedar Pond Road. If a sewer main connection is proposed, further review shall be conducted to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine capacity.

A third option would be to utilize a proposed pump house north of the building adjacent to Secena Lane. Approximately 220 feet of sewer line would be required to connect the building into the pump house location shown on concept plans. If the pump house is being installed to serve properties beyond 70 Cedar Street, this option would be most economical, as the pump house and associated piping are not part of the contract for the senior center project.

Stormwater

The existing site generally drains from the center of the site to the east and west, with the majority of the Site flowing west into the wetlands at the western edge of the Site. The surrounding roads contain limited stormwater infrastructure. Internal Sturbridge GIS mapping shows 4 catch basins in the vicinity of the northwest corner of the Site, all of which have their own outfalls feeding into the Site's western wetlands.

MassGIS indicates that the site is part of the Quinebaug watershed as shown in Figure 10 and Figure 11 below.





Figure 11 MassGIS Major Basins Shaded

Figure 10 MassGIS Legend

Pare Corporation -11-

Sturbridge Senior Center - Site Feasibility Study

Proposed development will use onsite Best Management Practices for water quality treatment, groundwater recharge, and control of peak flow rates. The system will be designed in accordance with the Massachusetts Stormwater Handbook and the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations. Points of discharge will generally be located to match the existing conditions, including maintaining hydrology to the existing wetlands and to the drainage system within the right-of-way.

Regulated Areas

Pare has reviewed the regulated areas on the site including wetlands, waterbodies, historical places, natural heritage areas, and zoning areas as discussed below.

Wetlands and Surface Water

Based on available MassGIS data, wetlands are present at the western side of the site, as identified on the constraints map in Appendix A. Per regulations set forth by the Town of Sturbridge Conservation Department, the wetlands onsite include a 200' municipal wetland buffer which extends roughly to the center of the Site. Work within this 200' buffer is subject to prior review by the Sturbridge Conservation Commission to ensure no significant adverse impact and requires filing of a Request for Determination.

The onsite wetlands are considered a Bordering Vegetated Wetlands subject to jurisdiction under the Wetland Protection Act (WPA). Work inside the 100' buffer (and up to the 25' buffer) is regulated by the WPA and may be permitted after filing through the local Conservation Commission. No surface water protection areas or vernal pools were identified on MassGIS data layers.

According to MassGIS data, the Site is largely contained within a Zone 2 Wellhead Protection area.

Federal Emergency Management Agency (FEMA)

According to the FEMA flood Insurance Rate Maps for Essex County, Massachusetts (Community-Panel 0926E, Map Number 25027C0926E, Effective Date July 4, 2011 and Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 201) included in Appendix H of this narrative, the Site falls within the FEMA Zone X or "areas determined to be outside the 0.2% annual chance floodplain."

Natural Heritage and Endangered Species Program (NHESP)

Based on available MassGIS data no streams, Natural Heritage and Endangered Species Program (NHESP) priority habitats of rare species, or vernal pools were identified on the Site as shown in Figure 12 and Figure 13 below.

Pare Corporation -12-







Figure 13 MassGIS Data Image Corresponding to the Legend

Figure 12 MassGIS Legend

Historical

Massachusetts Cultural Resource Information System (MACRIS) Maps 2.0 Beta mapping and data was used to determine historical areas at each site. Refer to MACRIS Map in Appendix I for reference.

According to MACRIS, no historic properties were listed on or adjacent to the Site.

Conservation and Open Space Land

Based on Sturbridge GIS, the Site is not Chapter 61, 61A, and 61B Land under Title IX of the Commonwealth of Massachusetts General Laws which includes the classification and taxation of forest lands and forest products, assessment and taxation of agricultural and horticultural land, and classification and taxation of recreational land, respectively. Town GIS does list the Site as "Municipal Playing Fields" open space. Figure 14 shows open space delineated on town GIS.

Per chapter 25.06 (j) of the Zoning Bylaws, the plan for open space should be consistent with the Open Space Plan adopted by the Town.

-13-

Sturbridge Senior Center - Site Feasibility Study



Figure 14 Sturbridge GIS – Open Space / Chapter 61, 61A and 61B Land

Deed Restrictions

No deed restrictions were found in the Worcester District Recorded/Registered Land database.



Pare Corporation

Pare Corporation

-14-



SITE EVALUATION - 80 ROUTE 15

Site Description

Property records for the Site were reviewed by Pare. Copies of the property cards are included in Appendix

The Site, designated as Parcel 552-02952-080 on the Sturbridge GIS system, is comprised of one parcel owned by the Town of Sturbridge according to property record cards (included in Appendix B). The Site contains approximately 8.52 acres one a single parcel and is undeveloped.

Zoning

The Sturbridge Zoning Map (included in Appendix C) indicates the Site is located within the Historic Commercial District as shown in Figure 16 and Figure 17 below. The Site is currently undeveloped. The Site is bound by residential property to the north, Route 15 and to the west, wetlands and wooded land to the east, and the Quinebaug River to the south.



Figure 15 Sturbridge Zoning Legend

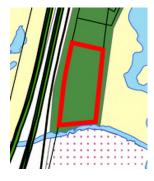


Figure 16 Sturbridge Zoning Map of the Site

Topography

Pare Corporation

Based on MassGIS available LiDAR data, the Site is highest at the northern property line at approximately elevation 600. The lowest point of the Site is along the southern and southeastern property line at approximately elevation 570. The Site general slopes from north to southeast, with local low and high points interspersed throughout the Site. The existing topography is shown on the constraints map in Appendix A.

According to NRCS Web Soil Survey mapping, the Site contains Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes (102C) at the northern edge of the Site, Pits, gravel (600) at the eastern edge of the Site, and Merrimac find sandy loam, 3 to 8 percent slopes (254B) throughout the remainder the Site. Chatfield-Hollis-Rock outcrop complex has a hydrologic soil group B, indicating a moderate rate of water transmission. Pits, gravels does not have an assigned hydrologic soil group. Merrimac find sandy loam has a hydrologic soil group A, indicating a high rate of water transmission. An NRCS site soil survey map has been included in Appendix D. Test pits may be scheduled as part of the site evaluation to further investigate

Sturbridge Senior Center - Site Feasibility Study

the soil characteristics at the site if selected for development. It is anticipated that further geotechnical investigation including soil borings will be required prior to future development of the site.

Site Circulation and Parking

The site is currently undeveloped, and as such, does not have existing site circulation or parking considerations.

Utilities

Electric

Based on available aerial imagery, electricity appears to be available via overhead wire from the utility poles on Route 15. National Grid supplies electric services for the Town.

Based on available aerial imagery, record plans, and MassDOT utility ownership contacts, and MA Department of Public Utilities mapping of natural gas providers, subsurface gas utilities are not available in the Town of Sturbridge.

Water

According to mapping provide by the Sturbridge DPW, no water mains are currently located on Route 15. The closest water main is a 12" ductile iron line located on Shattuck Road, approximately 1,750 feet from the Site. It is anticipated that installation of a well would be required to supply water to the Site.

Based on Sturbridge DPW mapping and aerial imagery, there are no existing hydrants located in the vicinity of the Site. It is anticipated that any development on the Site would require additional fire safety measures.

If a water main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine flow capacity.

According to internal GIS mapping made available by the Sturbridge DPW, no sewer mains are available on Route 15. The closest sewer main is approximately 3,000 feet north of the Site, an 8" PVC line at the corner of Haynes Street and Main Street. It is anticipated that a septic system will be required for Site development.

If a sewer main connection is proposed, further review should be considered to determine the location of the service. Future coordination with the Sturbridge DPW should be considered as the design progresses to review connection requirements and to determine capacity.

If a septic system is proposed in lieu of a sewer main connection, based on MassDEP Title V regulations, there are required "estimated minimum setback distances from surface waters and wetlands as required under 310 CMR 15.000 (Title 5) for the sitting, construction, inspection, upgrade and expansion of on-site sewage treatment and disposal systems." The purpose of the setback areas is to indicate location of natural resources that require protection from sewage treatment and disposal systems.

Any new onsite septic systems will need to confirm to the Title V regulation setback and design requirements and will require permits from MassDEP and the Sturbridge Board of Health.

Pare Corporation -16-



Stormwater

The existing site generally drains from the northern edge of the site to the southeast, with the majority of stormwater flowing west into the wetlands east of the Site. Internal Sturbridge GIS does not show any existing stormwater infrastructure in the vicinity of the Site.

MassGIS indicates that the site is part of the Quinebaug watershed as shown in Figure 17 and Figure 18 below.





Figure 18 MassGIS Major Basins Shaded

Figure 17 MassGIS Legend

Proposed development will use onsite Best Management Practices for water quality treatment, groundwater recharge, and control of peak flow rates. The system will be designed in accordance with the Massachusetts Stormwater Handbook and the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations. Points of discharge will generally be located to match the existing conditions, including maintaining hydrology to the existing wetlands and to the drainage system within the right-of-way.

Regulated Areas

Pare has reviewed the regulated areas on the site including wetlands, waterbodies, historical places, natural heritage areas, and zoning areas as discussed below.

Wetlands and Surface Water

Based on available MassGIS data, wetlands are present offsite to the east, as identified on the constraints map in Appendix A. Additionally, the Quinebaug River is directly south of the Site. Per regulations set

Pare Corporation -17-



Pare Corporation

Sturbridge Senior Center - Site Feasibility Study

forth by the Town of Sturbridge Conservation Department, the Quinebaug River includes a 200' municipal Perennial Riverfront Resource buffer which extends into the southern section of the Site. No disturbance of this 200' buffer is allowed except under extreme and mitigating circumstances to be determined on a case-by-case basis by the Sturbridge Conservation Commission.

The Quinebaug River also has associated 200' riverfront area and 100' wetland buffers subject to jurisdiction under the Wetland Protection Act (WPA). Work inside the 200' buffer (and up to the 25' buffer) is regulated by the WPA and may be permitted after filing through the local Conservation Commission. No surface water protection areas or vernal pools were identified on MassGIS data layers.

According to MassGIS data, the Site does not contain any surface water or wellhead protection areas.

Federal Emergency Management Agency (FEMA)

According to the FEMA flood Insurance Rate Maps for Essex County, Massachusetts (Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 2011 and Community-Panel 0927E, Map Number 25027C0927E, Effective Date July 4, 2011) included in Appendix H of this narrative, the southern and eastern edges of the Site falls within the FEMA Zone A special flood hazard area subject to inundation by the 1% annual chance flood. Zone A's do not have a base flood elevation determined.

Natural Heritage and Endangered Species Program (NHESP)

Based on available MassGIS data, Natural Heritage and Endangered Species Program (NHESP) priority habitats of rare species were identified at the southern edge of the Site as shown in Figure 19 and Figure 20 below

-18-

Sturbridge Senior Center - Site Feasibility Study





Figure 19 MassGIS Legend

Figure 20 MassGIS Data Image Corresponding to the Legend

Historical

Massachusetts Cultural Resource Information System (MACRIS) Maps 2.0 Beta mapping and data was used to determine historical areas at each site. Refer to MACRIS Map in Appendix I for reference.

According to MACRIS, no historic properties were listed on or adjacent to the Site.

Conservation and Open Space Land

Based on Sturbridge GIS, the Site is not Chapter 61, 61A, and 61B Land under Title IX of the Commonwealth of Massachusetts General Laws which includes the classification and taxation of forest lands and forest products, assessment and taxation of agricultural and horticultural land, and classification and taxation of recreational land, respectively. Town GIS does list the Site as "Conservation Commission" open space. Figure 21 shows open space delineated on town GIS.

The Site (80 Route 15) is inventoried as Conservation Commission owned land in the 2018 Open Space and Recreation Plan and is referred to in the plan as the "Shepard Parcel". The Site had a Conservation Restriction placed on it in 2016 with the purpose of protecting the land in perpetuity.

Development at this site may not be feasible due to a conservation restriction on the property that is outlined in a deed restriction. (Deed restriction referenced in the following section)

Per chapter 25.06 (j) of the Zoning Bylaws, the plan for open space should be consistent with the Open Space Plan adopted by the Town.

-19-



Pare Corporation

Sturbridge Senior Center - Site Feasibility Study



Figure 21 Sturbridge GIS - Open Space / Chapter 61, 61A and 61B Land

Deed Restrictions

A Conservation deed restriction exists for the property which limits development on the property. This deed can be found on the Worcester District Recorded/Registered Land database (Book 36254, Page 47), also attached in Appendix B.

Pare Corporation

-20-



Sturbridge Senior Center - Site Feasibility Study

PERMITTING

Based on the location and nature of the Sites, there are multiple permits that may be required at the local, state, and federal levels for future development of any Sites. Review periods are assumed and may vary. The local permitting information was compiled from the Zoning Bylaws of the Town of Sturbridge, Massachusetts (Zoning Bylaws) and Conservation Commission Documents.

Zoning Requirements

As part of the Suburban Residential, Commercial Tourist, and Historic Commercial zones, the Sites are subject to the dimensional constraints as defined in Table 1 below, per Chapter 19 of the Zoning Bylaws.

	Lot Size		Setbacks		Max. Lot Coverage (%)	Max. # Bldg. Stories	Max. Height (Mean)	Max. Impervious Surface	Min. Habitable Floor Area
	Area (acre s)	Frontage	Street	Othe					15.1
Rural Residential	1	150′	30'	20'	15	2	35	-	750 s.f.
Suburban Residential	8619	125"	307	15"	15)	2)	9 0	•	750 s.f.
Commercial	1	150'	25'	10'	30	3	35	70%	750 s.f.
Commercial Towist	50,000 5q. Ft.	100"	25')	100	30)	311	354	•	750 s.f.
Commercial II	1	150'	25'	10'	30	3	35	70%	750 s.f.
Alistoric Commercial	0	2001	501)	50.	30)	8	(35)	•	750 s.f.)
General Industrial	1	150'	30'	20'	50		35	70%	750 s.f.
Industrial Park	2	300'	60'	30'	331	2	35	70%	750 s.f.
Special Use	1,	200/1	100%	30^	30		35	-	750 s.f.

Table 1 Town of Sturbridge Table of Dimensional Requirements, dated 2018

Suburban Residential (SR) Zone - 70 Cedar Street

Per Chapter 6.01 (b) of the Zoning Bylaws, governmental uses are permitted for construction in the Suburban Residential District.

Commercial Tourist (CT) District - 480 Main Street

Per Chapter 8.01 (s) of the Zoning Bylaws, governmental uses are permitted for construction in the Commercial Tourist District.

Per 8.03 (a), Design Review is required for new structures, and exterior renovation or alteration of existing

Pare Corporation -21-



Sturbridge Senior Center - Site Feasibility Study

structures, in the Commercial Tourist District. Design Review shall take place prior to or concurrently with Site Plan Review, and owners/designs shall use the Design Review Guidelines when applying for and undergoing the Design Review Process, which may include architectural review and/or sign review.

Historic Commercial (HC) District - 80 Route 15

Per chapter 13.01 (g) of the Zoning Bylaws, governmental uses are permitted for construction in the Historic Commercial District.

Per 13.03.3, Guidelines have been established for infill development for all project requiring site plan review. Projects that include the construction of new structures within the Historic Commercial District shall retain a residential character, scale and style although the property is proposed to be utilized for commercial purposes. Refer to the Bylaw section referenced for general design principles to be followed to the extent practicable.

Per 13.04 (a), All parking, loading and service areas shall be located to the rear of the principal structure wherever possible.

Per 13.04 (c), Design Review pursuant to General Bylaws Section 1.30, et seq. shall be required for all adaptive reuse projects, additions to existing structures, and infill development. Design Review shall take place prior to or concurrently with Site Plan Review, and owners/designs shall use the Design Review Guidelines when applying for and undergoing the Design Review Process, which may include architectural review and/or sign review.

Off-Street Parking, Loading and Drive Thru Standards

Per chapter 21.02 (b) of the Zoning Bylaws, Parking lots shall be provided on the same lot or on another lot located in a zone in which the parking area is permitted within a radius of not more than three hundred feet from the lot to which it is appurtenant and in accordance with the Shared Parking Requirements in Section 21.10. Properties within the Commercial Tourist District shall not be required to comply with the 300-foot limitation but may share parking anywhere within the District.

Per 21.03 and 21.04, the following dimensions shall apply for parking spaces and access lanes:

- Standard Spaces shall have an area of not less than 10' X 20' per vehicle.
- Parallel parking Spaces shall have an area of not less than 9' X 20'.
- Compact/Small Car Parking Spaces shall have an area of not less than 8' X 16'.
- Universal Access Spaces shall have an area of not less than 12' X 18'.
- Two –way driving lanes shall be a minimum of 25 feet wide for angle parking.
- One-way driving lanes shall be a minimum of 18 feet wide for angle parking.
- A 24-foot wide driving lane is required for perpendicular parking.

Per 21.09, parking spaces, driveways, buildings, structures, and storage materials shall not be allowed within the front setback, and the area of the front setback shall be a buffer and landscaped as such. Interior areas of parking lots (exclusive of buffer areas) shall be landscaped according to the following percentage of total parking lot areas:

- Lots under 20 parking spaces: 0%
- Lots equal to or over 20 spaces: 5%
- Lots equal to or over 100 spaces: 7.5%

Pare Corporation -22-



Sturbridge Senior Center - Site Feasibility Study

Per 21.11 (a), properties within the Commercial Tourist District shall not be required to comply with the current parking requirements for the continued use for a same or similar use that exists at the time of adoption of this section. A proposed change shall require review by the Planning Board and a determination of practical parking requirements for the proposed use given the constraints of the District. Factors such as shared parking, peak parking demands of uses at different times of the day or week, and actual projected parking needs shall be considered when determining practical parking requirements. With the exception of properties located within the Commercial Tourist District as noted above, the following schedule of parking requirements shall apply:

Use Categories	Specific Uses	Minimum Required	Other Commercial		1
Residential Categories				Restourant, Cofé.	1 per 3 seats and 1 per employee
	Dwelling Unit	2	1	Tavern, Microbrewery	working on the largest shift
	Accessory Dwelling Unit	1 per unit		Miniature Golf	Loer hale and Loer employee
	Senior Housing	1 per unit		Commercial Outdoor	1 space for every 3 persons that the
	Bed & Breakfast	1 per guest room in addition to the 2		Recreation	uutdour facilities are designed to
		for the residence		I .	accommodate when used to maximum
Retalf and Service					capacity
	Hotel, Inn, Motel	1 per room and 1 per employee		Indoor Family	3 spaces per 1,000 square feet of gross
	Retail	1 per 200 sq. ft. of gross floor area	1	Amusement Centers	floor area, plus one space for each 2
	Personal Service	1 per 200 square feet of gross floor			licensed game machines
		area - in the case of a hair salon or		Vehicle Repair	2 spaces per service bay plus one space
		barber shop the ratio shall be 1 per 200		1	per employee working on the largest
		square feet or two per chair, whichever			shift
		is greater		Vehicle Sales & Service	2 spaces per service bay plus one space
	Health clubs, gyms and	1 per 4 occupants based upon the		1	per employee working on the largest
	fitness centers	maximum allowable occupancy			shift, plus one space for each vehicle
	Theaters	1 per 10 seats			allowed for sale by the license
	Bank or other Financial	1 per 400 square feet of floor area		Art Studio/Class Space	1 per studio and 1 per 3 students if
	Institution	The ten square test of their area			classes are provided
	Veterinarian	1 space for every 2 employees, plus 1	industrial		
	*C1C+***C****C***	space per doctor, plus 3 space per		Manufacturing and	1 per 2 employees
		examination room		Production	
Office				Warehouse and	1 per 2 employees
	General office	1 per 500 sq. ft, and 1 per employee		Wholesale	
	Geretai Guitte	working on the largest shift	institutional		
	Corporate office	1.1 per employee		Long Term Care Facility	1 space for 4 beds and 1 per employee
	Medical/Dental office	1 per 300 square feet of floor area/or/			working on the largest shift
	iviedical/izental office	I per 300 square teet or floor area/or/			

Table 2 Town of Sturbridge Table of Parking Requirements, dated 2018

Per 21.12 (a), A decrease in the number of off-street parking spaces required by this Chapter may be granted as part of the Special Permit or Site Plan Approval process provided that the purpose and intent of the bylaw is met, the amount of off street-parking to be provided will be sufficient to serve the use(s) for which it is intended, and the decrease in required off-street parking is based on a parking study prepared by a registered professional engineer. See 21.12 for further information on decreases in parking requirements.

Building Permit

Per chapter 4.01 the Zoning Bylaws, Building Permit of the Zoning Bylaws, no building or structure shall be constructed unless a building permit is first secured.

Site Plan Review

Per chapter 25 of the Zoning Bylaws, All uses, other than single family and two family dwellings, horticultural nursery, farm, tree farm, professional office when office and residence of the professional are both located in the same residential building when the property is located in a residential zone, and accessory uses customarily incidental to these uses, shall be subject to the Site Plan Review.



Pare Corporation -23-

Sturbridge Senior Center - Site Feasibility Study

Before approval, approval subject to conditions, or disapproval of final site plan is given, except where disapproval is mandated by failure of the site plan to comply with applicable bylaws, a public hearing shall be held by the Planning Board.

Failure of the Planning Board to take final action upon an application for the Site Plan Review within ninety (90) days following the close of a public hearing shall be deemed to be approval of such application.

Section 25.05 and 25.06 of the Zoning Bylaws lay out the criteria for approval and standards for site plan review, including preservation of landscape, relation of building to environment and surrounding, and all other subjects applicable to review.

Massachusetts Department of Transportation (MassDOT) Permit

Main Street/Route 20 (associated with the 480 Main Street Site) is listed under MassDOT jurisdiction as a Principal Arterial - Other on the MassDOT Road Inventory and is subject to all requirements set forth by MassDOT for any construction proposed within the right-of-way including an access permit and trench rider permit.

Conservation Commission

The Massachusetts Wetlands Protection Act prohibits the removal, dredging, filling, or altering of wetlands without a permit. If any activity is proposed within jurisdictional resource areas, a Notice of Intent will be required to obtain a permit and will require review and approval under the jurisdiction of the Massachusetts Wetlands Protection Act and Town of Sturbridge Conservation Commission Requirements.

Department of Public Works Permits

Future development will likely require trench and street opening permits through the Sturbridge Department of Public Works (DPW). Such permits are typically obtained prior to the start of construction and obtained by the selected Contractor.

Utility Permits

All proposed utility including gas, electric, sewer, and water shall be permitted through the applicable Town of Sturbridge Board/Commission, state and federal jurisdiction, and utility companies.

Stormwater Permits

MassDEP

Future development of a municipal complex will be required to meet the requirements set forth by the Massachusetts Stormwater Management Guidelines, latest edition.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit

Development involving disturbance of over one (1) acre will require filing of a NPDES Construction General Permit (CGP) with the Environmental Protection Agency (EPA) or in conjunction with the Commonwealth of Massachusetts. It is anticipated that filing of a CGP will be required for the development of a municipal complex. The Contractor awarded the contract is typically responsible for filing the NPDES CGP and preparing a project specific Stormwater Pollution Prevention Plan.

Town of Sturbridge Stormwater Management Permit

Pare Corporation





Sturbridge Senior Center - Site Feasibility Study

Future development of a municipal complex will require the application for a Stormwater Management Permit to the Stormwater Permitting Authority in conformance with the Rules and Regulations of the Town of Sturbridge Planning Board, Chapter 8 Stormwater Management Regulations, revised September 2017.

Massachusetts Environmental Policy Act (MEPA)

It is not anticipated that the future development of a municipal complex will trigger MEPA thresholds; however, potential triggers that would require filing of an Environmental Notification Form and Environmental Impact Report should be monitored as the design progresses. If MEPA review is required, MEPA requires applications to be submitted one year prior to construction. MEPA submission will include approved Schematic Design plans. MEPA review thresholds are detailed in 301 CMR 11.00, section 11.03, and include thresholds for land, state listed species, wetlands, waterways, tidelands, water, wastewater, transportation, energy, solid and hazardous waste, historical and archeological resources, areas of critical environmental concern, and regulations.

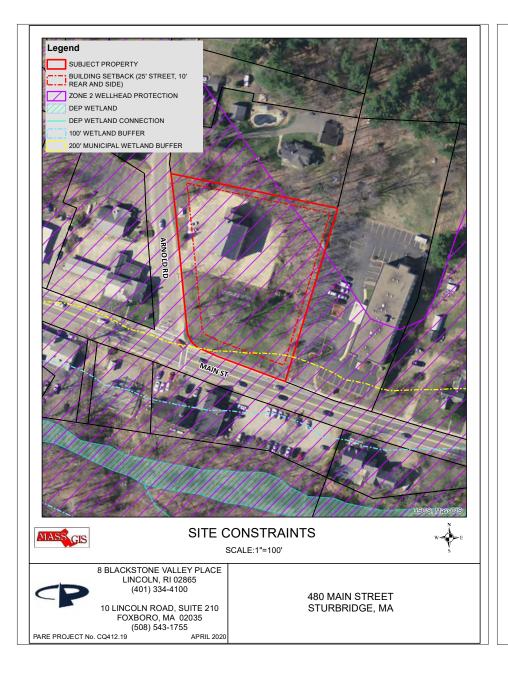
APPENDIX A:

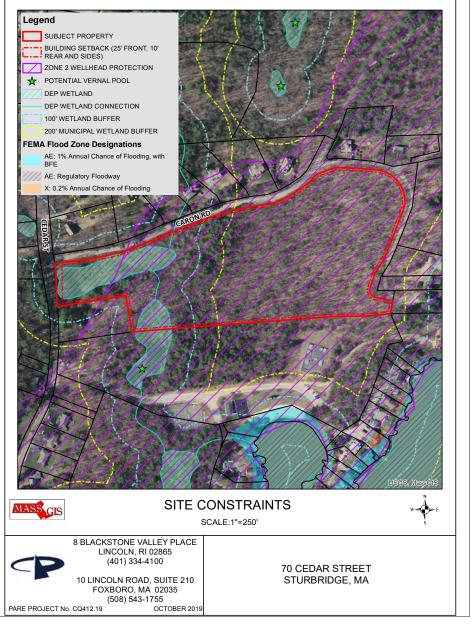
Constraints Maps

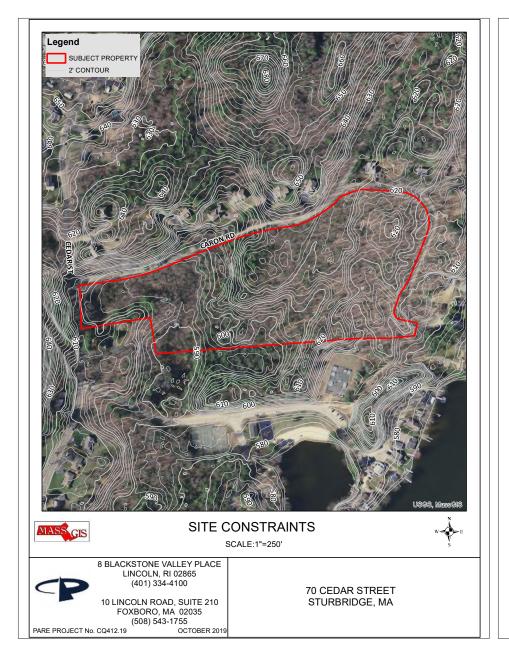
Pare Corporation

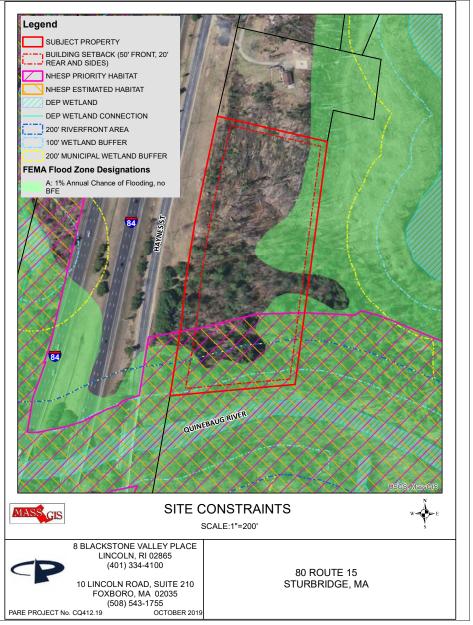
-25-













APPENDIX B:

Property Records Cards

Deed Restrictions

Vision Government Solutions Page 1 of 3 70 CEDAR STREET Location 70 CEDAR STREET Mblu 202-/0 2417/- 070/ / Acct# 202-02417-070 Owner INHABITANTS OF STURBRIDGE Assessment \$107,500 Appraisal \$107,500 PID 833 Building Count 1 Current Value Appraisal Valuation Year Improvements 2020 \$107,500 \$107,500 Valuation Year Total Improvements \$107,500 2020 \$107.500 Owner of Record INHABITANTS OF STURBRIDGE Owner Co-Owner Certificate Address 308 MAIN STREET Book & Page 25558/0037 STURBRIDGE, MA 01566 12/21/2001 Instrument Ownership History Ownership History Owner Sale Price Book & Page Sale Date INHABITANTS OF STURBRIDGE 25558/0037 12/21/2001 1G MOSS BOBERT F \$250,000 23353/0278 12/22/2000 BERTAND REALTY INVESTMENT 20162/0076 1A 06/09/1998 BERTRAND REALTY LIMITED 18255/0301 09/19/1996 BERTRAND EDMOND 03390/0413 12/31/1951 **Building Information** Building 1 : Section 1 Year Built: **Building Photo** Living Area: Replacement Cost: Building Percent Good: http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=833 4/2/2020

Vision Government Solutions

Page 2 of 3

Replacement Cost

\$0 Less Depreciation:

Building Attributes				
Field	Description			
Style	Vacant Land			
Model				
Grade:				
Stories:				
Decupancy				
Exterior Wall 1				
Exterior Wall 2				
Roof Structure:				
Roof Cover				
Interior Wall 1				
Interior Wall 2				
Interior Flr 1				
Interior Fir 2				
Heat Fuel				
Heat Type:				
AC Type:				
Total Bedrooms:				
Total Bthrms:				
Total Half Baths:				
Total Xtra Fixtrs:				
Total Rooms:				
Bath Style:				
Kitchen Style:				
Num Kitchens				
Usrfld 107				
Usrfld 300				
Usrfld 301				



\80.jpg)

Building Layout

(http://images.vgsi.com/photos/SturbridgeMAPhotos//Sketches/833_846

Building Sub-Areas (sq ft)	Legend	
No Data for Building Sub-Areas		

Extra Features

Extra Features Legend No Data for Extra Features

Depth

Land

SR

Land Use Land Line Valuation Use Code 9300 Size (Acres) 14.02 Description Town of Sturbridge V Frontage

Assessed Value \$107,500 Neighborhood

http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=833

4/2/2020

Vision Government Solutions Page 3 of 3 Vision Government Solutions Page 1 of 3 Alt Land Appr No Appraised Value \$107,500 Category Outbuildings 80 ROUTE 15 Outbuildings Legend Location 80 ROUTE 15 Mblu 552-/0 2952/- 080/ / No Data for Outbuildings Acct# 552-02952-080 Owner TOWN OF STURBRIDGE Valuation History Assessment \$270,900 Appraisal \$270,900 Valuation Year Improvements Land PID 3246 Building Count 1 2020 \$107,500 \$107,500 \$109,200 \$109,200 Current Value 2018 \$0 \$106,100 \$106,100 2017 \$0 \$104,000 \$104,000 Appraisal 2016 \$102,200 \$102,200 Improvements 2020 \$270,900 \$270,900 Assessment Valuation Year Improvements Valuation Year Improvements Land Total \$107.500 \$107.500 2020 \$270,900 2020 \$270,900 2019 \$0 \$109,200 \$109,200 2018 \$106,100 Owner of Record 2017 \$0 \$104,000 \$104,000 TOWN OF STURBRIDGE Sale Price \$207,700 Owner 2016 \$102,200 \$102,200 \$0 Co-Owner Certificate Address 308 MAIN STREET Book & Page 36254/0047 STURBRIDGE, MA 01566 05/04/2005 Instrument Ownership History (c) 2020 Vision Government Solutions, Inc. All rights reserved. Ownership History Sale Price Book & Page Sale Date TOWN OF STURBRIDGE \$207,700 36254/0047 05/04/2005 SHEPARD ETHEL & MABEL O 3350/0042 07/16/1951 **Building Information** Building 1 : Section 1 Year Built: **Building Photo** Living Area: Replacement Cost: Building Percent Good: Replacement Cost \$0 Less Depreciation: **Building Attributes** Description http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=833 4/2/2020 http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=3246 4/2/2020

Vision Government Solutions Page 2 of 3 Style Vacant Land Model Grade: Stories: Exterior Wall 1 Exterior Wall 2 Roof Structure: Roof Cover Interior Wall 1 $(http://images.vgsi.com/photos/SturbridgeMAPhotos//\01\01\88$ \87.jpg) Interior Flr 1 **Building Layout** Interior Fir 2 (http://images.vgsi.com/photos/SturbridgeMAPhotos//Sketches/3246_3/ Heat Fuel Building Sub-Areas (sq ft) Legend Heat Type: No Data for Building Sub-Areas AC Type: Total Bedrooms: Total Bthrms: Total Half Baths: Total Xtra Fixtrs: Total Rooms: Bath Style: Kitchen Style: Num Kitchens Usrfld 107 Usrfld 300 Usrfld 301 Extra Features Extra Features Legend No Data for Extra Features Land Land Use Land Line Valuation Size (Acres) 8.52 Use Code 9300 Description Town of Sturbridge V Frontage Depth Neighborhood CM4 Assessed Value \$270,900 Alt Land Appr Appraised Value \$270,900 Category Outbuildings http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=3246 4/2/2020

Vision Government Solutions Page 3 of 3

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal					
Valuation Year	Improvements	Land	Total		
2020	\$0	\$270,900	\$270,900		
2019	\$0	\$273,700	\$273,700		
2018	\$0	\$268,800	\$268,800		
2017	\$0	\$260,100	\$260,100		
2016	\$0	\$252,800	\$252,800		

Assessment					
Valuation Year	Improvements	Land	Total		
2020	\$0	\$270,900	\$270,900		
2019	\$0	\$273,700	\$273,700		
2018	\$0	\$268,800	\$268,800		
2017	\$0	\$260,100	\$260,100		
2016	\$0	\$252,800	\$252,800		

(c) 2020 Vision Government Solutions, Inc. All rights reserved.

http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=3246

4/2/2020

Vision Government Solutions Page 1 of 3

480 MAIN STREET

Location 480 MAIN STREET

Mblu 415-/0 2433/- 480/ /

Acct# 415-02433-480

Owner TOWN OF STURBRIDGE

Assessment \$621,200

Appraisal \$621,200

PID 2207

Building Count 1

Current Value

Appraisal						
Valuation Year	Improvements	Land	Total			
2020	\$508,600	\$112,600	\$621,200			
	Assessment					
Valuation Year	Improvements	Land	Total			
2020	\$508,600	\$112,600	\$621,200			

Owner of Record

Owner TOWN OF STURBRIDGE Co-Owner SENIOR CENTER

Sale Price \$0 Certificate

Address 308 MAIN STREET STURBRIDGE, MA 01566 Book & Page 0/0

Building Photo

Ownership History

Ownership History						
Owner Sale Price Certificate Book & Page Sale Date						
TOWN OF STURBRIDGE	\$0		0/0	01/01/1900		

Building Information

Building 1 : Section 1

Year Built: Living Area: Replacement Cost:

STYLE

1874 \$902,468

Building Percent Good: Replacement Cost

Less Depreciation: \$478,300 **Building Attributes** Field Description

53

http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=2207

Clubs/Lodges

4/2/2020

Vision Government Solutions

Page 2 of 3

MODEL	Commercial
Grade	Average +10
Stories:	2
Occupancy	0.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	Clapboard
Roof Structure	Gable/Hip
Roof Cover	State
Interior Wall 1	Plastered
Interior Wall 2	Drywall/Sheet
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Hot Water
AC Pct	0
Struct Class	
Bldg Use	Town of Sturbridge C
Total Rooms	
Total Bedrms	0
Total Baths	3
Usrfld 218	
Usrfld 219	
1st Floor Use:	9031
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00



\65.jpg)

Building Layout



http://images.vgai.com/priotos/otarbridgemAr notos//oketches/2201					
	Legend				
Code	Description	Gross Area	Living Area		
BAS	First Floor	3,048	3,048		
FUS	Upper Story, Finished	2,928	2,928		
FBM	Basement, Finished	2,672	0		
UBM	Basement, Unfinished	256	0		
		8,904	5,976		

Extra Features

Extra Features Lege					
Code	Description	Size	Value	Bldg #	
ELEV	ELEVATOR	1.00 STOP	\$8,000	1	
A/C	AIR CONDITION	3048.00 UNITS	\$3,200	1	

Land Use		Land Line Valuation	
Use Code	9311	Size (Acres)	0.78
Description	Town of Sturbridge C	Frontage	

http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=2207

4/2/2020

Vision Government Solutions

Page 3 of 3

Neighborhood CM2
Alt Land Appr No

Depth

Assessed Value \$112,600 Appraised Value \$112,600

Category

Outbuildings

	Outbuildings <u>Lec</u>						
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #	
SHD1	SHED FRAME			144.00 S.F.	\$600	1	
PAV1	PAVING-ASPHALT			10000.00 S.F.	\$18,500	1	

Valuation History

Appraisal						
Valuation Year	Improvements	Land	Total			
2020	\$508,600	\$112,600	\$621,200			
2019	\$474,100	\$116,300	\$590,400			
2018	\$454,400	\$110,600	\$565,000			
2017	\$434,600	\$106,300	\$540,900			
2016	\$427,400	\$103,200	\$530,600			

Assessment						
Valuation Year	Improvements	Land	Total			
2020	\$508,600	\$112,600	\$621,200			
2019	\$474,100	\$116,300	\$590,400			
2018	\$454,400	\$110,600	\$565,000			
2017	\$434,600	\$106,300	\$540,900			
2016	\$427,400	\$103,200	\$530,600			

(c) 2020 Vision Government Solutions, Inc. All rights reserved.

http://gis.vgsi.com/Sturbridgema/Parcel.aspx?pid=2207

4/2/2020

Bk: 55905 Pg: 344

EEA Approved 8/1/2016

Grantor: Town of Sturbridge
Grantee: Opacum Land Trust, Inc.

2016 00098448

Bk: 55905 Pg: 344

Grantee: Opacum Land Trust, Inc.
Address: 80 Route 15

Page: 1 of 20 09/01/2016 11:05 AM WD

For Grantor's title see:

Worcester District Registry of Deeds in Book 36254, Page 47.

CONSERVATION RESTRICTION To Opacum Land Trust, Inc.

Shepard Parcel

I. GRANT OF CONSERVATION RESTRICTION

The TOWN OF STURBRIDGE, a Massachusetts municipal corporation with an address at 308 Main Street, Sturbridge, Massachusetts, 01566, and its permitted successors and assigns ("Grantor") acting by and through its Board of Selectmen and Conservation Commission, by authority of M.G.L. Chapter 40, Section 8C, and acting pursuant to M.G.L. Chapter 184, Sections 31-33, as amended, in accordance with the Massachusetts Community Preservation Act, M.G.L. c.44B, as amended, and subject to the purposes and protections of Article 97 of the Amendments to the Constitution of the Commonwealth of Massachusetts, being the owner of the Premises defined below, hereby grants to, with Quitclaim covenants, Opacum Land Trust, Inc., a Massachusetts charitable corporation with an address of P.O. Box 233, Sturbridge, Massachusetts 01566, being qualified to hold conservation restrictions in accordance with M.G.L., c.184, Sections 31-33, and a qualified organization under the Internal Revenue Code, Section 170(h), its successors and permitted assigns ("Grantee"), for nominal consideration, in perpetuity and exclusively for conservation purposes, the following Conservation Restriction on a parcel of land located at 80 Route 15 in the Town of Sturbridge, Massachusetts constituting approximately 8.52 acres ("Premises"), and more particularly described in Exhibit A, attached hereto and incorporated herein, and the attached sketch plan in Exhibit B, attached hereto and incorporated herein. For Grantor's title, see deed dated April 28, 2005, recorded at the Worcester District Registry of Deeds in Book 36254, Page 47.

II. PURPOSES:

This Conservation Restriction is defined in and authorized by Sections 31-33 of Chapter 184 of the General Laws and otherwise by law. The purpose of this Conservation Restriction is to assure that the Premises will be maintained in perpetuity for conservation purposes, in a natural, scenic and undeveloped condition, and to prevent any use or change that would materially impair or interfere with its conservation and preservation values ("conservation values").



EEA Approved 8/1/2016

The Premises were approved for purchase with Community Preservation Act Funds, by the authority of M.G.L. c. 44B, by a vote at a Special Town Meeting held on December 4, 2004 for the purpose of permanent conservation and providing in perpetuity passive recreation opportunities for the citizens of the Commonwealth and the Town of Sturbridge. A copy of the town meeting vote authorizing such purchase is attached hereto and incorporated herein as Exhibit C.

Grantor and Grantee agree that boundaries and natural features existing on the Premises at the time of the execution of this Conservation Restriction, as well as the specific conservation values of the Premises, are documented to the best of their current knowledge in a report dated July 2013 that is on file with Grantor and Grantee and incorporated herein by this reference (hereinafter, the "Baseline Documentation Report"). The Baseline Documentation Report shall consist of documentation that the Grantor and Grantee agree provides, collectively, an accurate representation of the condition and conservation values of the Premises at the time this Conservation Restriction is recorded and which is intended to serve as an objective information baseline to monitor compliance with the terms of this Conservation Restriction.

The Conservation Values and benefit to the public include the following:

Supports Public Policy

- 1. The Sturbridge Community Preservation Committee recommended and the Town of Sturbridge approved the expenditure of Community Preservation Act Funds for the acquisition, conservation and preservation of the Premises.
- 2. The Premises are Town of Sturbridge property administered by and through the Conservation Commission and the Board of Selectmen, and, in accordance with Article 97 of the Amendments to the Constitution, will remain so in perpetuity.
- 3. The Premises are a top priority for conservation or preservation under the 2011 Town of Sturbridge Open Space and Recreation Plan, including goals 1D, 2B, 3B, and 6B:
 - · Preserve agriculture and forestry land which are important components of the Town's character;
 - · Provide opportunities for local residents, individuals and families to become more involved in Open Space though trails and conservation lands;
 - · Improve public access to the water for fishing and boating by identifying town owned and other available parcels which can provide varying levels of access depending on the environmental conditions of the site and water body conditions;
 - Acquire critical land areas necessary for water supply protection.

Wildlife Habitat Preservation. The Premises will provide permanent protection for Core Habitat and Critical Natural Landscape along the Quinebaug River, Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife as indicated on the Massachusetts Natural Heritage and Endangered Species Program ("NHESP") 2008 Priority and Estimated Habitat

Shepard - p 2

Bk: 55905 Pg: 346

EEA Approved 8/1/2016

maps (the portions within PH1161) and BioMap 2, and will receive permanent protection from development.

- Passive Recreation. The Premises will provide opportunities for passive recreation, education, and nature study and also cross-country skiing, snowshoeing, mountain and road biking and other forms of passive recreation.
- D. <u>Public Access to Quinebaug River</u>. The Premises may allow for public access to the Quinebaug River through the abutting United States Army Corp of Engineers property.
- Water Resources. The Premises' southern and eastern borders function as floodplain and serve as a buffer for the Quinebaug River, a significant water resource. Portions of the Premises below the 575 foot elevation are subject to U.S. Army Corps "Flowage Rights".
- Ecological Variation and Integrity. The Premises contain a variety of landscapes and habitats including: upland soft and hardwood forest; floodplain forest; a vernal pool and proximity to the Quinebaug River.
- Wildlife. The Premises includes beavers, common species of turtles and NHESP records for nearby; other sensitive river-dwelling species; garter and other snake species as well as potentially threatened species; a wide variety of native birds and migratory birds; and a variety of dragonflies and damselflies that spend their immature stages in the river are noted in the woodlands on the Premises as well as possible NHESP species.
- H. <u>Cultural Features</u>: There is one stone wall along the north end of the Premises' eastern boundary.

PROHIBITED ACTS AND USES, EXCEPTIONS THERETO, AND PERMITTED USES

Prohibited Acts and Uses

The Grantor will not perform and will not permit others to perform, the following acts and uses which are prohibited, on, above and below the Premises, subject to the exceptions permitted in Section III (B) below:

- (1) Constructing, placing or allowing to remain any temporary or permanent building, tennis court, landing strip, mobile home, swimming pool, asphalt or concrete pavement, road, sign, fence, billboard or other advertising display, antenna, utility pole, tower, conduit, line, solar or wind power generation or other temporary or permanent structure or facility on, above or under the Premises;
- Mining, drilling, excavating, dredging, extracting, hydraulic fracturing or similar extraction methods, or removing from the Premises of soil, loam, peat, gravel, sand, rock, shale

EEA Approved 8/1/2016

gas, or other mineral resource or natural deposit or otherwise make topographical changes to the Premises:

- Placing, filling, storing or dumping on the Premises of soil, refuse, trash, vehicle bodies or parts, yard waste (including grass clippings), rubbish, debris, junk, waste or other similar substance or material whatsoever or the installation of underground storage tanks;
- Cutting, removing or otherwise destroying trees, grasses or other vegetation;
- Activities detrimental to drainage, flood control, water conservation, water quality, erosion control, soil conservation, or archaeological conservation;
- (6) Activities detrimental to archaeological and historical resources, including but not limited to earth moving, excavating, filling or otherwise altering historic stone walls, cellar holes, stone piles and structures and other above and below ground human-made features;
- Use, parking or storage of motorized vehicles including motorcycles, mopeds, all-terrain vehicles, motorized trail bikes, snow mobiles, or any other motorized vehicles on the Premises except for vehicles necessary for public safety, for maintenance/management, or for public safety (i.e., fire, police, ambulance, other government officials and their agents or for public maintenance) in carrying out their lawful duties and for mobility impaired assistance;
- Subdivision or conveyance of a part or portion of the Premises alone, or division or subdivision of the Premises (as compared to conveyance of the Premises in its entirety which shall be permitted), and no portion of the Premises may be used towards building or development requirements on this or any other parcel;
- (9) The use of the Premises for more than de minimis commercial recreation, business, residential or industrial use:
- (10) Any other use of the Premises or activity thereon which is inconsistent with the purpose of this Conservation Restriction or which would materially impair its conservation and preservation values unless necessary in a public safety emergency or an emergency for the protection of the conservation interests that are the subject of this Conservation Restriction; and
- (11) Use of the premises as a site for any human sanitary sewage or other wastewater disposal system.
- Permitted Uses and Activities

The Grantor reserves the right to conduct or permit the following uses and activities on the Premises, but only if such uses and activities do not materially impair the conservation values or purposes of this Conservation Restriction. All permitted uses or activities that allow for public access are subject to the terms and restrictions contained in this Conservation Restriction.

Recreational Uses

Shepard - p 4

Bk: 55905 Pa: 348

EEA Approved 8/1/2016

- (a) Passive outdoor recreational activities such as hiking, horseback riding, crosscountry skiing, mountain and road bicycling and other non-motorized outdoor recreational activities on marked trails or in areas that do not materially alter the landscape or damage the conservation, historic or scenic values of the Premises, are allowed. The Grantor will have the responsibility for preventing and remediating damage to the conservation values of the Premises caused by public use of the Premises, and the Grantee will have the right to request the same of the Grantor.
- (b) Use of motorized wheelchairs or other means of mobility assistance by persons with disabilities on existing woods roads, hard surface trails, or other routes of access is permitted, provided that said activities are conducted to the maximum extent practicable and feasible in a manner that avoids or reasonably minimizes any material impact to the conservation and preservation values and purposes of this Conservation Restriction:
- Trails. Construction, maintenance, repair, replacement, of land and aquatic trail improvements such as a carry-on boat launch. Snow mobiles maybe used to maintain and groom snow covered trails by authorized personnel. Any use or activity permitted by this paragraph is subject to the guidelines of the Sturbridge Trails Master Plan as approved October 2012 and the approval of the grantee.
- Wood Roads. Maintenance and repair of wood roads and cart paths; the construction, maintenance and marking of trails and handicap accessible trails (including bridges and boardwalks). Any use or activity permitted by this paragraph is subject to the guidelines of the Sturbridge Trails Master Plan as approved October 2012 and the approval of the grantee.
- Forestry and Cutting.: Forest management and commercial timber harvesting shall be conducted in accordance with a Forest Management Plan prepared by a Massachusetts licensed forester and approved by the Department of Conservation and Recreation acting by and through its State Forester (or any successor agency) and designed to protect and enhance the conservation values of the Premises, including, without limitation, water limitation, water quality, water features, scenic views, historical resources and wildlife habitat. Prior to any significant cutting, harvesting or "clean-up" from major storm or other damage to the forest, Grantor will provide Grantee 45 days to review and approve the proposed Cutting Plan, and no such Cutting Plan may proceed without Grantee's written consent. Monitoring and stewardship costs as a result of a cut and/or harvest will be the responsibility of the Grantor to pay the Grantee.
- Vegetation Management: In accordance with generally accepted forest management practices, selective minimal removing of brush, pruning and cutting to prevent, control or remove hazards, disease, insect or fire damage, or to preserve the present condition of the Premises, including vistas as documented in the Baseline Survey, and to maintain and repair wood roads, cart paths, fence lines, trails, meadows, and existing means of access and existing

Shepard	- 1	p.	5
---------	-----	----	---

EEA Approved 8/1/2016

- Non-Native and Nuisance Species. The removal of non-native or invasive species, the planting of native species, and the control of species in a manner that minimizes damage to surrounding, non-target species and preserves water and habitat quality.
- Composting. The stockpiling and composting of stumps, trees and brush limbs, and similar biodegradable materials originating on the Premises is permitted, provided that such stockpiling and composting is in locations where the presence of such activities will not have a deleterious impact on the purposes of this Conservation Restriction. No such activities will take place closer than one hundred (100) feet from any wetland, waterbody or stream. All exercise of this Reserved Right shall take into account sensitive areas and avoid harm to nesting species during nesting season.
- Wildlife Habitat Improvement. With the prior written permission of Grantee, measures designed to create and restore native biotic communities, or to maintain, enhance or restore wildlife, wildlife habitat, or rare or endangered species including selective planting of native trees, shrubs and plant species.
- Archaeological Investigations. The conduct of archaeological activities, including without limitation, survey, excavation, and artifact retrieval, following submission of an archaeological field investigation plan and its approval in writing by Grantee and the State Archaeologist of the Massachusetts Historical Commission (or appropriate successor official).
- 10. Signs. The erection, maintenance, and replacement of signs are permitted with respect to hunting, trespass, trail access, conservation, property features, interpretive signs allowed and prohibited uses, Town and neighborhood identity, the Grantee's interest in the Premises, and the protected conservation and preservation values, including natural or historic features, to encourage respectful enjoyment of the land.
- 11. Parking Lot. With notice to and permission of the Grantee, the construction, maintenance, repair and replacement of a parking lot for up to 20 vehicles, or a maximum area of 10,000 sq ft for visitors to the Premises, to be located on Haynes Street/Route 15 or such other location as may be approved by the Grantee. Said parking lot shall not be paved with impervious materials.
- 12. Events. Upon Notice to the Grantee, the Grantee retains the right to limit or prohibit large or multi-day events For the purposes of this conservation restriction any event attended by more than 25 people shall be considered a large event. Grantor reserves the right to allow temporary structures such as tents or porta-potties on a case by case basis, subject to approval by the grantee. Typical passive recreation such as hikes, educational programs, star gazing or similar one-day events that may require temporary infrastructure, are not subject to the approval process. Events requiring temporary structures used or left for more than 48 hours on the Premises require review and prior approval by the Grantee.
- 13. Other. Such other non-prohibited activities requested by the Grantor and expressly approved in writing by the Grantee, in its sole and exclusive discretion, which permission may

Shepard - p 6

Bk: 55905 Pg: 350

EEA Approved 8/1/2016

only be given if the Grantee expressly finds that the activity is consistent with, and does not materially impair, the purposes of conservation and preservation values of the Premises.

The exercise of any right reserved by Grantor under this Paragraph B shall be in compliance with all applicable laws currently existing or enacted in the future, including, but not limited to zoning, the Wetlands Protection Act, the Sturbridge Wetlands Bylaw, and all other applicable federal, state and local laws, rules, regulations, and permits. The inclusion of any reserved right requiring a permit from a public agency does not imply that the Grantee or the Commonwealth takes any position whether such permit should be issued.

Notice and Approval

Whenever notice to or approval by Grantee is required under the provisions of paragraphs A or B, Grantor shall notify Grantee in writing not less than 45 days prior to the date Grantor intends to undertake the activity in question. The notice shall describe the nature, scope, design, location, timetable and any other material aspect of the proposed activity in sufficient detail to permit the Grantee to make an informed judgment as to its consistency with the purposes of this Conservation Restriction. Where Grantee's approval is required, Grantee shall grant or withhold approval in writing within 45 days of receipt of Grantor's request. Grantee's approval shall not be unreasonably withheld, but shall only be granted upon a showing that the proposed activity shall not materially impair the purposes of this Conservation Restriction. Failure of Grantee to respond in writing within 45 days shall be deemed to constitute approval by Grantee of the request as submitted, so long as the request sets forth the provisions of this section relating to deemed approval after 45 days in the notice, the requested activity is not prohibited herein, and the activity will not materially impair the conservation values or purposes of this Conservation Restriction.

IV. LEGAL REMEDIES OF THE GRANTEE

Legal and Injunctive Relief. The rights hereby granted shall include the right to enforce this Conservation Restriction by appropriate legal proceedings and to obtain injunctive and other equitable relief against any violations, including, without limitation, relief requiring restoration of the Premises to their condition prior to the time of the injury complained of (it being agreed that the Grantee will have no adequate remedy at law). The rights hereby granted shall be in addition to, and not in limitation of, any other rights and remedies available to the Grantee for the enforcement of this Conservation Restriction. Grantee shall have the right to pursue third party violations, and the Grantor agrees to cooperate. Grantee agrees to cooperate for a reasonable period of time prior to resorting to legal means in resolving issues concerning violations provided Grantor ceases objectionable actions and Grantee determines there is no ongoing diminution of the conservation values of the Conservation Restriction.

Grantor covenants and agrees to reimburse to Grantee all reasonable costs and expenses (including reasonable counsel fees) incurred in enforcing this Conservation Restriction or in taking reasonable measures to remedy, abate or correct any violation thereof, provided that a violation of this Conservation Restriction is acknowledged by Grantor or determined by a court of competent jurisdiction to have occurred.

EEA Approved 8/1/2016

In the event of a dispute over the boundaries of the Conservation Restriction, Grantor shall pay for a survey and to have the boundaries permanently marked.

- B. Non-Waiver. Enforcement of the terms of this Conservation Restriction shall be at the discretion of Grantee. Any election by the Grantee as to the manner and timing of its right to enforce this Conservation Restriction or otherwise exercise its rights hereunder shall not be deemed or construed to be a waiver of such rights.
- Disclaimer of Liability. Except as specifically stated herein, the Grantee shall have no liability or obligation with respect to the Premises, including, but not limited to, any liability or obligation relating to the condition of the Premises, hazardous materials, compliance with zoning, environmental laws and regulations, use of the Premises or acts not caused by the Grantee or its agents.
- Acts Beyond the Grantor's Control. Nothing contained in this Conservation Restriction shall be construed to entitle the Grantee to bring any actions against the Grantor for any injury to or change in the Premises resulting from causes beyond the Grantor's control, including but not limited to fire, flood, storm and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Premises resulting from such causes. The parties to this Conservation Restriction agree that, in the event of damage to the Premises from acts beyond the Grantor's control, if it is desirable and feasible to restore the Premises, the parties will cooperate in attempting to do so.
- Indemnification. To the fullest extent permitted by law, the Grantor shall protect, defend, indemnify, and save harmless Grantee from and against any and all liabilities, obligations, damages, penalties, claims, causes of action, costs, charges and expenses, including, without limitation, all reasonable attorney's fees and expenses, which may be imposed upon or incurred by or asserted against Grantee as a result of or arising out of the activities and uses on the Premises, whether or not permitted, or any act or misconduct by the Grantor or any of its agents, contractors, or employees arising out of or related to the activities and uses on or with respect to the Premises.

V. ACCESS

The Grantor hereby grants to the Grantee, or its duly authorized agents or representatives, the right to enter the Premises upon reasonable notice and at reasonable times, for the purpose of inspecting the Premises to determine compliance with or to enforce this Conservation Restriction. The Grantor also grants to the Grantee, after notice of a violation and failure of the Grantor to cure said violation, the right to enter the Premises for the purpose of taking any and all actions with respect to the Premises as may be necessary or appropriate to remedy or abate any violation hereof, including but not limited to the right to perform a survey of boundary lines.

Public Access. Premises are to remain open to use by the public subject to reasonable rules and regulations of the grantor as may be promulgated from time to time, including times of access. The Grantor or the Grantee may limit or prohibit access to portions of the Premises

Shepard - p 8

Bk: 55905 Pg: 352

EEA Approved 8/1/2016

whose conservation, historic or scenic values are being damaged by public use.

VI. EXTINGUISHMENT

- If circumstances arise in the future such as render the purpose of this Conservation Restriction impossible to accomplish, this restriction can only be terminated or extinguished, whether in whole or in part, by a court of competent jurisdiction under applicable law after review and approval by the Secretary of the Executive Office of Energy and Environmental Affairs. If any change in conditions ever gives rise to extinguishment or other release of the Conservation Restriction under applicable law, then Grantee, on a subsequent sale, exchange, or involuntary conversion of the Premises, shall be entitled to a portion of the proceeds in accordance with paragraph B below, subject, however, to any applicable law which expressly provides for a different disposition of the proceeds. Grantee shall use its share of the proceeds in a manner consistent with the conservation purpose set forth herein after complying with the terms of any gift, grant or funding requirements.
- Proceeds. Grantor and Grantee agree that the conveyance of this Conservation Restriction gives rise to a real property right, immediately vested in the Grantee, with a fair market value that is at least equal to the proportionate value that this Conservation Restriction, determined at the time of the grant, bears to the value of the unrestricted property at that time. Such proportionate value of the Grantee's property right shall remain constant.
- C. Granter/Grantee Cooperation Regarding Public Action. Whenever all or any part of the Premises or any interest therein is taken by public authority under power of eminent domain or other act of public authority, then the Grantor and the Grantee shall cooperate in recovering the full value of all direct and consequential damages resulting from such action. All related expenses incurred by the Grantor and the Grantee shall first be paid out of any recovered proceeds, and the remaining proceeds shall be distributed between the Grantor and Grantee in shares equal to such proportionate value after complying with the terms of any gift, grant or funding requirements. If a less than fee interest is taken, the proceeds shall be equitably allocated according to the nature of the interest taken. The Grantee shall use its share of the proceeds like a continuing trust in a manner consistent with the conservation purposes of this grant.

VII. ASSIGNABILITY

- A. Running of the Burden. The burdens of this Conservation Restriction shall run with the Premises in perpetuity, and shall be enforceable against the Grantor and the successors and assigns of the Grantor holding any interest in the Premises.
- B. <u>Execution of Instruments</u>. The Grantee is authorized to record or file any notices or instruments appropriate to assuring the perpetual enforceability of this Conservation Restriction; the Grantor, on behalf of itself and its successors and assigns, appoints the Grantee its attorneyin-fact to execute, acknowledge and deliver any such instruments on its behalf. Without limiting the foregoing, the Grantor and its successors and assigns agree to execute any such instrument.

EEA Approved 8/1/2016

Running of the Benefit. The benefits of this Conservation Restriction shall be in gross and shall not be assignable by the Grantee, except in the following instances:

As a condition of any assignment, the Grantee shall require that the purpose of this Conservation Restriction continues to be carried out; and the Assignee, at the time of the assignment, qualifies under Section 170(h) of the Internal Revenue Code of 1986, as amended, and applicable regulations thereunder, and is a donee eligible to receive this Conservation Restriction under Section 32 of Chapter 184 of the General Laws of Massachusetts. Any assignment will comply with Article 97 of the Amendments to the Constitution of the Commonwealth of Massachusetts, if applicable.

VIII. SUBSEQUENT TRANSFERS

The Grantor agrees to incorporate by reference the terms of this Conservation Restriction in any deed or other legal instrument by which it divests itself of any interest in all or a portion of the Premises, including a leasehold interest and to notify the Grantee within 20 days of such transfer. Failure to do so shall not impair the validity of this Conservation Restriction or limit its enforceability in any way. Any transfer will comply with Article 97 of the Amendments to the Constitution of the Commonwealth of Massachusetts, if applicable and the terms of any gift, grant or funding requirement.

The Grantor shall not be liable for violations occurring after its ownership. Liability for any acts or omissions occurring prior to any transfer and liability for any transfer if in violation of this Conservation Restriction shall survive the transfer. Any new owner shall cooperate in the restoration of the Premises or removal of violations caused by prior owner(s) and may be held responsible for any continuing violations.

IX. ESTOPPEL CERTIFICATES

Upon request by the Grantor, the Grantee shall, within thirty (30) days, execute and deliver to the Grantor any document, including an estoppel certificate, which certifies the Grantor's compliance with any obligation of the Grantor contained in this Conservation Restriction.

NON MERGER

The parties intend that any future acquisition of the Premises shall not result in a merger of the Conservation Restriction into the fee. The Grantor agrees that it will not grant, and the Grantee agrees that it will not take title, to any part of the Premises without having first assigned this Conservation Restriction to a non-fee owner that is qualified under Section 170(h) of the Internal Revenue Code of 1986, as amended, and applicable regulations thereunder and is eligible to receive this Conservation Restriction under Section 32 of Chapter 184 of the General Laws of Massachusetts in order to ensure that merger does not occur and that this Conservation Restriction continues to be enforceable by a non-fee owner.

Shepard -- p 10

Bk: 55905 Pg: 354

EEA Approved 8/1/2016

AMENDMENT

If circumstances arise under which an amendment to or modification of this Conservation Restriction would be appropriate, Grantor and Grantee may jointly amend this Conservation Restriction; provided that no amendment shall be allowed that will affect the qualification of this Conservation Restriction or the status of Grantee under any applicable laws, including Section 170(h) of the Internal Revenue Code of 1986, as amended, or Sections 31-33 of Chapter 184 of the General Laws of Massachusetts. Any amendments to this Conservation Restriction shall occur only in exceptional circumstances. The Grantee will consider amendments only to correct an error or oversight, to clarify an ambiguity, or where there is a net gain in conservation value. All expenses of all parties in considering and/or implementing an amendment shall be borne by the persons or entity seeking the amendment. Any amendment shall be consistent with the purposes of this Conservation Restriction, shall not affect its perpetual duration, shall be approved by the Secretary of Energy and Environmental Affairs and if applicable, shall comply with the provisions of Art. 97 of the Amendments to the Massachusetts Constitution, and any gifts, grants or funding requirements. Any amendment shall be recorded in the Worcester District Registry of Deeds.

XII. EFFECTIVE DATE

This Conservation Restriction shall be effective when the Grantor and the Grantee have executed it, the administrative approvals required by Section 32 of Chapter 184 of the General Laws have been obtained, and it has been timely recorded in the Worcester District Registry of Deeds. The Grantee shall record this instrument in timely manner in the Worcester District Registry of Deeds.

XIII. NOTICES

Any notice, demand, request, consent, approval or communication that either party desires or is required to give to the other shall be in writing and either served personally or sent by first class mail, postage pre-paid, addressed as follows:

Grantor Town of Sturbridge Conservation Commission 308 Main Street Sturbridge, MA. 01566

Opacum Land Trust, Inc. P. O. Box 233 Sturbridge, MA. 01566

or to such other address as any of the above parties shall designate from time to time by written notice to the other or that is reasonably ascertainable.

Bk: 55905 Pg: 355 EEA Approved 8/1/2016 XIV. GENERAL PROVISION Controlling Law. The interpretation and performance of this Conservation Restriction shall be governed by the laws of the Commonwealth of Massachusetts. B. <u>Liberal Construction</u>. Any general rule of construction to the contrary notwithstanding, this Conservation Restriction shall be liberally construed in favor of the grant to effect the purpose of this Conservation Restriction and the policy and purposes of Massachusetts General Laws Chapter 184, Sections 31-33. If any provision in this instrument is found to be ambiguous, any interpretation consistent with the purpose of this Conservation Restriction that would render the provision valid shall be favored over any interpretation that would render it invalid. C. <u>Severability</u>. If any provision of this Conservation Restriction or the application thereof to any person or circumstance is found to be invalid, the remainder of the provision of this Conservation Restriction shall not be affected thereby. D. Entire Agreement. This instrument sets forth the entire agreement of the parties with respect to this Conservation Restriction and supersedes all prior discussions, negotiations, understandings or agreements relating to the Conservation Restriction, all of which are merged herein. XV. MISCELLANEOUS Pre-existing Public Rights: Approval of this Conservation Restriction pursuant to M.G.L. Chapter 184, Section 32 by any municipal officials and by the Secretary of Energy and Environmental Affairs is not to be construed as representing the existence or non-existence of any pre-existing rights of the public, if any, in and to the Premises, and any such pre-existing rights of the public, if any, are not affected by the granting of this Conservation Restriction. Attached hereto and incorporated herein are the following: Grantor: Town of Sturbridge Conservation Commission Grantee: Opacum Land Trust, Inc. Approval of Town of Sturbridge Selectboard Approval of the Secretary of Energy and Environmental Affairs Exhibit A legal description Exhibit B Plot Plans Exhibit C Town Meeting Vote approving the acquisition of the restricted land and expenditure of Community Preservation Act Funds in its purchase

			Bk: 55905 Pg: 35	6	. ~
				EEA Approved 8/1/2016	
Executed und	der seal as of this _	31 ^{5†} day of	August	, 2016.	SA PRI ANCORPO LAS ARTES COMPANION C
Conservation Inc. Pursuant to M	Commission vote	d to grant this Con	servation Restriction	6, the Town of Sturbridge on to Opacum Land Trust, ection 8(c), and Chapter	**************************************
2,1/J Edward Good	loodur	_	Steven Chidest	Odzanier An II K	And the second s
Don't M David Barnicl	Darnie	el 1	Steve Halterma	7//Vallin	
Worcester, ss:		IMONWEALTH (OF MASSACHUSE	ETTS	
personally app Ed m Steve proved to me MHSS DKIVE	peared: Vard GoodWill 2 Haltev Mak through satisfactor K'S 21CENSE	2 David Bari L y evidence of iden to be the perso	ntification which was no whose name is si	the undersigned notary pure. Child 1 Ster. as gned on the proceeding or ity for its stated purpose.	
Seal or stamp	· · · · · · · · · · · · · · · · · · ·	ACCEPTANG	Notary Pu My Comm CE OF GRANT	ta Sauthur Dission Expires: Sept. 2	
				DEBRA A. GAUTHIER Notary Public COMMONNEALTH OF MASSACHUSETTS My Commission Expires	*, ,

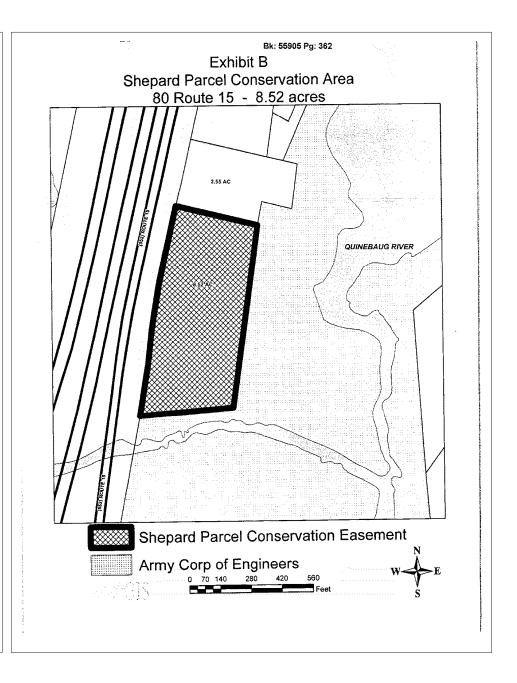
opacum and trust and.
By: J. Edward Hood
Its: Executive Director
WEALTH OF MASSACHUSETTS
D, proved to me through satisfactory evidence of to be the person whose name is signed t, and acknowledged to me that he signed it voluntarily for its
Lubra a Gauthin
My Commission Expires: Sept 25, 2020
DEBRA A. GAUTHIER Notary Public Commonitating of Imaging Services
September 25, 2089

	APPROVAL OF SELECT BOARD)	
certifies that at a public voted to approve the fo	reing a majority of the Select Board of the Temeeting duly held on June 20 pregoing Conservation Restriction to the Op 184 of the General Laws of Massachusetts.	, 2016, the Select Board	
Select Board			
Mary Blanchard	anchard		
Priscilla Gimas			
Mary Dowling			
Craig Moran			
Michael Suprenant			
Michael Suprenant	COMMONWEALTH OF MASSACHU	SETTS	
Worcester, ss:			
Worcester, ss: On this	day of <u>HUGUST</u> , 2016, befor	e me, the undersigned notary	
Worcester, ss: On this	day of <u>HUGUST</u> , 2016, befor	the was	
Worcester, ss: On this	day of AUGUST , 2016, beforeared: SANCHARD satisfactory evidence of identification which will be the person whose name did acknowledged to me that he signed it volumes to be the person whose name did acknowledged to me that he signed it volumes to be a secondaria by the construction of measurements.	the was	

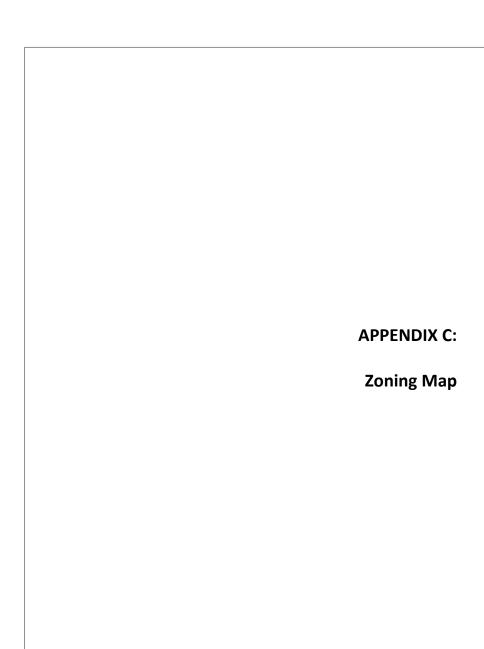
Bk: 55905 Pg: 359 Town of Sturbridge Leon A. Gaumond Jr., Town Administrator CERTIFICATE OF VOTE At a duly authorized meeting the Board of Selectmen of the Town of Sturbridge held on June 20, 2016 it was VOTED, THAT The Board of Selectmen has authorized the Chairman of the Board to sign this Conservation Restriction on behalf of the entire board. I hereby certify that I am the Town Administrator for the Town of Sturbridge and that the above vote has not been amended or rescinded and remains in full force and effect as the date of this certificate of vote./ Telephone (508) 347-2500 Fax (508) 347-5886 Town Hall, 308 Main Street Sturbridge, MA 01566-1078 Igaumond@town.sturbridge.ma.us

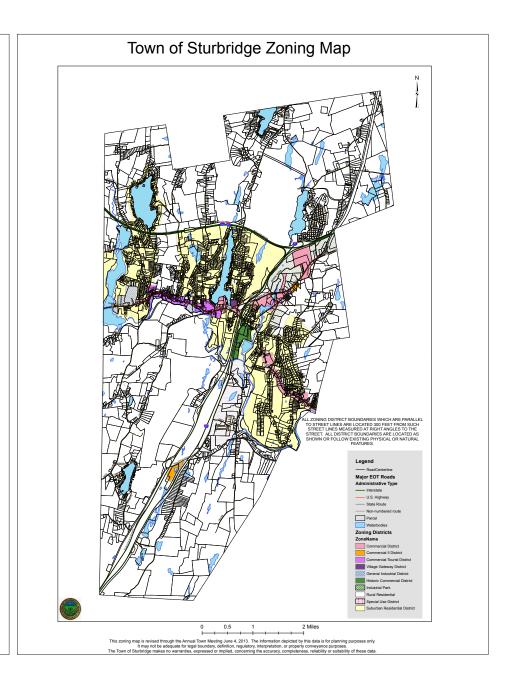
	Bk: 55905 Pg: 360	
	EEA Approved 8/1/2016	
	Y OF ENERGY AND ENVIRONMENTAL AFFAIRS WEALTH OF MASSACHUSETTS	
	tive Office of Energy and Environmental Affairs of the	
-	reby certifies that the foregoing Conservation Restriction to broved in the public interest pursuant to Massachusetts	
General Laws, Chapter 184, Section		
2		
d/1/		
Dated: 8//6, 2016	Muss	
•	By: Matthew A. Beaton	
	Secretary of Energy and Environmental Affairs	
COMMONI	WEALTH OF MASSACHUSETTS	
COMMON	WEALTH OF MASSACHOSET IS	
public, personally appeared MATTH	gust, 2016, before me, the undersigned notary EWA. BEATON, proved to me through satisfactory to be the person	
On this day of Au public, personally appeared MATTH evidence of identification which was	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose.	
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose.	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	Doic
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	206
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	2016
On this	EW A. BEATON, proved to me through satisfactory to be the person ing or attached document, and acknowledged to me that he pose. **Alexandra State	

Bk: 55905 Pg: 361 STURBRIDGE CR-5 - SHEPARD EXHIBIT A - METES AND BOUNDS Taken from Deed, Worcester District Registry of Deeds in Book 36254, pages 47. QUITCLAIM DEED Bk: 36254 Pg: 47 A certain lot or parcel of land located on the easterly side of State Highway Route 15 in the Town of Sturbridge, County of Worcester, Commonwealth of Massachusetts, being bounded and BEGINNING at a stone bound with drill head at the northwesterly corner thereof, on the easterly side of State Highway Route 15, location of 1950, at the southwesterly corner of land formerly of Kenneth R. Shepard and Claire A. Shepard; 'S 77° 29' 36" E along said Shepard land a distance of 378.67', to an iron pipe in the wall at land of Publick House Corporation, formerly of Farquhar; S 07° 55' 43" W a distance of 827.53' to cement bound with drill hole; THENCE S 84° 56' 13" W a distance of 427.62' to cement bound with drill hole; THENCE N 70° 30′ 16" E a distance of 182.63' to stone bound with escushion pin in lead THENCE 464.17' along a line with a radius of 5418.00' to a stone bound with escushion pin THENCE N 12° 24' 47" E a distance of 308.47' to the point of beginning. THENCE



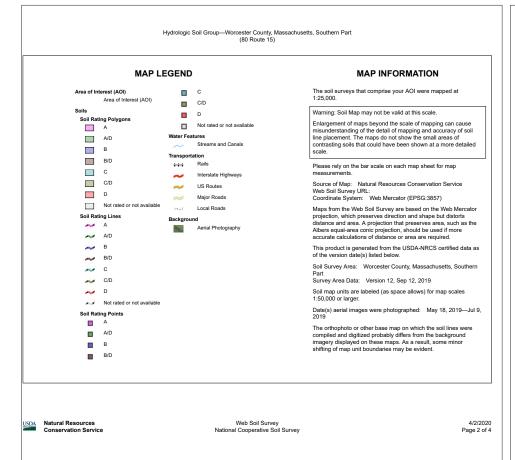
		Bk: 55905 Pg: 363	
		<u></u>	
		A LOUIS TON A MOTE DECIMARY	
T 15 +h.	Town will yote to appropriate an	LAND ACQUISITION – 2/3 VOTE REQUIRED amount not to exceed TWO HUNDRED TWE	FLVE
THOUGHN	D AND 00/100 DOLLARS (\$212,000).00) from the Community Preservation Act Fi	unas
I Indecign:	ated Ralance for the purpose of acqu	uiring 8.5 acres of property on the north side of	OI .
the Quineb	aug River, known as 80 Route 15 fo	ir open space purposes under the Community	
Preservation	n Act; or take any action in relation	mereto.	
Sponsor:	Community Preservation Comm	littee	
RECOMME	ENDATION OF THE FINANCE COM	MMITTEE:	
		witton	
That the To	own vote to approve the article as v	vritten.	
RECOMME	ENDATION OF THE BOARD OF SE	LECTMEN:	
That the T	own vote to appropriate TWO HUI	NDRED TWELVE THOUSAND AND 00/100	
DOLLARC	(\$212,000,00) from the Community	v Preservation Fund. Undesignated Balance for	r .
anan mace	a land acquidition nursuant to MGL (Ch. 44B or any other general or special law to	7
authorize t	the Board of Selectmen to acquire to	or open space and conservation purposes by and to accept the deed to the Town of fee simp	ple
Internet or	lace a parcel of land on the north si	ide of the Quinebaug River known as 80 Kout	te I5
and contri	ining 0.5 screen of land, more or less.	That said land be conveyed to the Town of	
Chubridan	under the provisions of MGL Chap	ter 44B and 40B. \ 8C. as they may hereafter	· De
and to ant	er into all agreements and execute a	olled by the Sturbridge Conservation Commiss	n.
and to ant	er into all agreements and execute a	olled by the Sturbridge Conservation Commissiony and all instruments as may be necessary or I purchase; or take any other action related the	n.
and to ent behalf of t	er into all agreements and execute a he Town of Sturbridge to effect said	ony and all instruments as may be necessary or purchase; or take any other action related the	n.
and to ent behalf of t	er into all agreements and execute a the Town of Sturbridge to effect said	ny and all instruments as may be necessary or I purchase; or take any other action related the anding from the Community	n.
and to ent behalf of t Summal	er into all agreements and execute a he Town of Sturbridge to effect said 	ny and all instruments as may be necessary or I purchase; or take any other action related the Inding from the Community Shepard Parcel" which the Town first	n.
and to ent behalf of t Summar Preserve	er into all agreements and execute a the Town of Sturbridge to effect said any - This article would provide fu artion Act funds to purchase the " tred purchasing in 1995. This pro-	ny and all instruments as may be necessary or I purchase; or take any other action related the unding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the	n.
Summar Preserve consider	er into all agreements and execute a the Town of Sturbridge to effect said ry - This article would provide fu ation Act funds to purchase the "! ted purchasing in 1995. This proj de of the Quinebaug River and b	ny and all instruments as may be necessary or I purchase; or take any other action related the Inding from the Community Shepard Parcel" which the Town first	n.
Summar Preserve consider	er into all agreements and execute a the Town of Sturbridge to effect said any - This article would provide fu artion Act funds to purchase the " tred purchasing in 1995. This pro-	ny and all instruments as may be necessary or I purchase; or take any other action related the unding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the	n.
and to ent behalf of t Summal Preserve consider north si Federal	er into all agreements and execute a the Town of Sturbridge to effect said ry - This article would provide fu ation Act funds to purchase the " red purchasing in 1995. This pro, de of the Quinebaug River and b government land behind it.	ny and all instruments as may be necessary or I purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the porders approximately 125 acres of	n pereto,
Summal Preserve consider north sit Federal	re into all agreements and execute a the Town of Sturbridge to effect said y - This article would provide fur ation Act funds to purchase the "- red purchasing in 1995. This pro- de of the Quinebaug River and b government land behind it. THE TOWN MEETING: The recom- position. The subditute motion was	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the corders approximately 125 acres of inmendation of the Board of Selectmen is actual seconded and passed. The vote of the Town	n pereto.
Summal Preserve consider north sit Federal	re into all agreements and execute a the Town of Sturbridge to effect said y - This article would provide fur ation Act funds to purchase the "- red purchasing in 1995. This pro- de of the Quinebaug River and b government land behind it. THE TOWN MEETING: The recom- position. The subditute motion was	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the corders approximately 125 acres of inmendation of the Board of Selectmen is actual seconded and passed. The vote of the Town	n pereto.
Summal Preserve consider north sit Federal	re into all agreements and execute a the Town of Sturbridge to effect said y - This article would provide furtion Act funds to purchase the " red purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommention. The subditute motion was	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first poerty is 8.5 acres on Route 15 on the inorders approximately 125 acres of indingentation of the Board of Selectmen is actue.	n pereto.
Summal Preserve consider north sit Federal	re into all agreements and execute a the Town of Sturbridge to effect said y - This article would provide furtion Act funds to purchase the " red purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommention. The subditute motion was	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the corders approximately 125 acres of inmendation of the Board of Selectmen is actual seconded and passed. The vote of the Town	n pereto.
Summal Preserve consider north si Federal VOTE OF substitute Meeting w	er into all agreements and execute a the Town of Sturbridge to effect said art of the Town of Sturbridge to effect said art of the Quinebaug River and be government land behind it. THE TOWN MEETING: The recommotion. The substitute motion of against. The motion of the properties of	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	n pereto.
Summal Preserve consider north si Federal VOTE OF substitute Meeting w	re into all agreements and execute a the Town of Sturbridge to effect said y - This article would provide furtion Act funds to purchase the " red purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommention. The subditute motion was	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	n vereto.
Sturbridge	er into all agreements and execute a the Town of Sturbridge to effect said art of the Town of Sturbridge to effect said art of the Quinebaug River and be government land behind it. THE TOWN MEETING: The recommotion. The substitute motion of against. The motion of the properties of	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	n vereto.
Sturbridge	er into all agreements and execute a the Town of Sturbridge to effect said by - This article would provide fusion Act funds to purchase the "tred purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommotion. The substitute motion was was 138 for; 5 against. The motion of the Special Town Meeting ~ December 1997.	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	n pereto.
Sturbridge	er into all agreements and execute a the Town of Sturbridge to effect said by - This article would provide fusion Act funds to purchase the "tred purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommotion. The substitute motion was was 138 for; 5 against. The motion of the Special Town Meeting ~ December 1997.	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	n pereto.
Sturbridge	er into all agreements and execute a the Town of Sturbridge to effect said by - This article would provide fusion Act funds to purchase the "tred purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommotion. The substitute motion was was 138 for; 5 against. The motion of the Special Town Meeting ~ December 1997.	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	ally a
Sturbridge	er into all agreements and execute a the Town of Sturbridge to effect said by - This article would provide fusion Act funds to purchase the "tred purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommotion. The substitute motion was was 138 for; 5 against. The motion of the Special Town Meeting ~ December 1997.	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first perty is 8.5 acres on Route 15 on the orders approximately 125 acres of innendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator.	n pereto.
Sturbridge	er into all agreements and execute a the Town of Sturbridge to effect said by - This article would provide fusion Act funds to purchase the "tred purchasing in 1995. This projude of the Quinebaug River and by government land behind it. THE TOWN MEETING: The recommotion. The substitute motion was was 138 for; 5 against. The motion of the Special Town Meeting ~ December 1997.	iny and all instruments as may be necessary or it purchase; or take any other action related the inding from the Community Shepard Parcel" which the Town first porty is 8.5 acres on Route 15 on the providers approximately 125 acres of immendation of the Board of Selectmen is actual seconded and passed. The vote of the Town carried as declared by the Moderator. A TRUE COPY	ally a







4/2/2020 Page 1 of 4



80 Route 15

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
102C	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	В	1.5	9.1%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	13.1	78.2%
600	Pits, gravel		2.1	12.6%
Totals for Area of Inter	est		16.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



Web Soil Survey National Cooperative Soil Survey

4/2/2020 Page 3 of 4

Hydrologic Soil Group-Worcester County, Massachusetts, Southern Part

80 Route 15

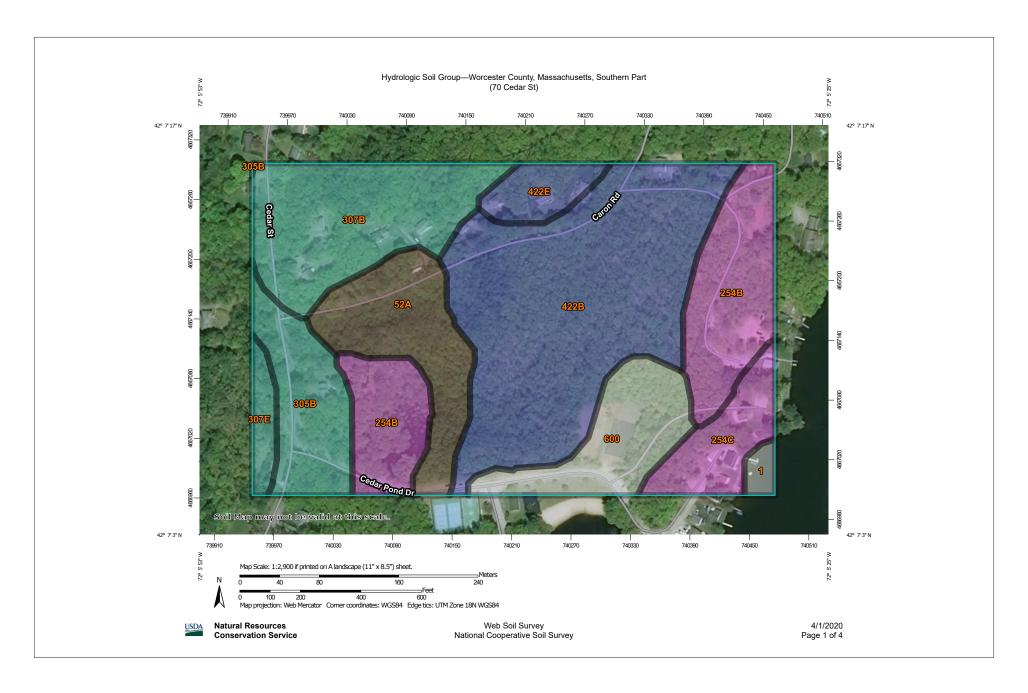
Rating Options

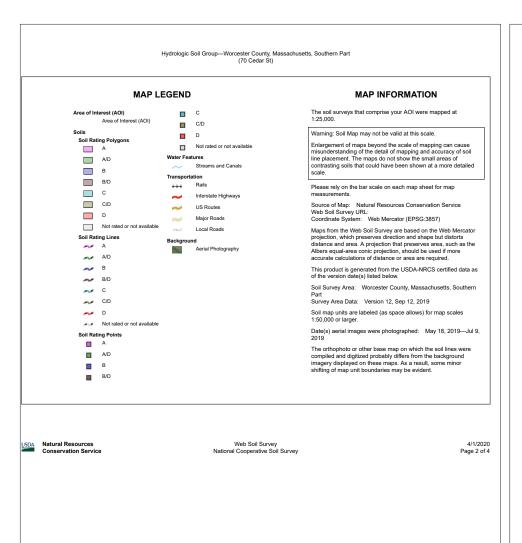
Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

Natural Resources
Conservation Service

Web Soil Survey National Cooperative Soil Survey

4/2/2020 Page 4 of 4





70 Cedar St

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		0.4	0.9%
52A	Freetown muck, 0 to 1 percent slopes	B/D	4.5	10.3%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	6.8	15.7%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	A	2.4	5.4%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	С	3.5	7.9%
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	С	6.3	14.4%
307E	Paxton fine sandy loam, 15 to 35 percent slopes, extremely stony	С	0.8	1.9%
422B	Canton fine sandy loam, 0 to 8 percent slopes, extremely stony	В	14.0	32.1%
422E	Canton fine sandy loam, 15 to 35 percent slopes, extremely stony	В	1.4	3.1%
600	Pits, gravel		3.6	8.3%
Totals for Area of Inter	rest		43.7	100.0%

Natural Resources

Web Soil Survey National Cooperative Soil Survey

4/1/2020 Page 3 of 4

70 Cedar St

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified

Tie-break Rule: Higher



Web Soil Survey National Cooperative Soil Survey

4/1/2020 Page 4 of 4



480 Main Street

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
401B	Brookfield fine sandy loam, 3 to 8 percent slopes, extremely stony	A	0.4	13.6%
420B	Canton fine sandy loam, 3 to 8 percent slopes	В	2.6	86.4%
Totals for Area of Interest			3.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

USDA Natural Resources
Conservation Service

Web Soil Survey National Cooperative Soil Survey 4/1/2020 Page 3 of 4

480 Main Street

Rating Options

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

USDA Natural Resources
Conservation Service

Web Soil Survey National Cooperative Soil Survey

4/1/2020 Page 4 of 4

APPENDIX E:

Record Drawings and Utility Records

Page 1 of 1 Sturbridge Sewer Sturbridge Sewer



Rolta, MassGIS, City of Boston | Esri, HERE, Garmin, iPC

https://sturbridge.maps.arcgis.com/home/webmap/print.html

3/17/2020

Sturbridge Sewer Sewer Service Point Data Issues n Open * Closed pending Sewer Feature Sewer Feature Pump station Collector - Force Main Parcels

Sturbridge Sewer

USDA FSA, DigitalGlobe, GeoEye | Rolta, MassGIS, City of Boston | Esri, HERE, Garmin, iPC

Sturbridge Sewer Page 1 of 1 Sturbridge Sewer Sewer Service Point Data Issues n Open * Closed * Pending Sewer Feature
Sewer Feature
Pump station - Collector - - Force Main Low Pressure Force Main Parcels USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS | Rolta, MassGIS, City of Boston | Esri, HERE, Garmin, iPC

https://sturbridge.maps.arcgis.com/home/webmap/print.html

3/17/2020

Page 1 of 1

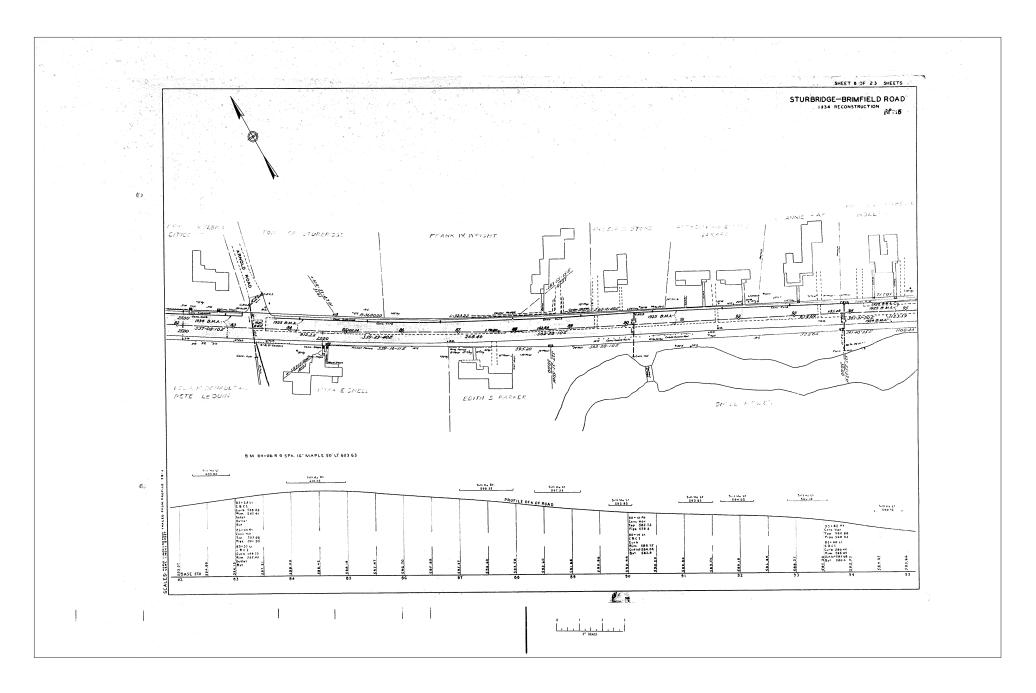
https://sturbridge.maps.arcgis.com/home/webmap/print.html

3/17/2020

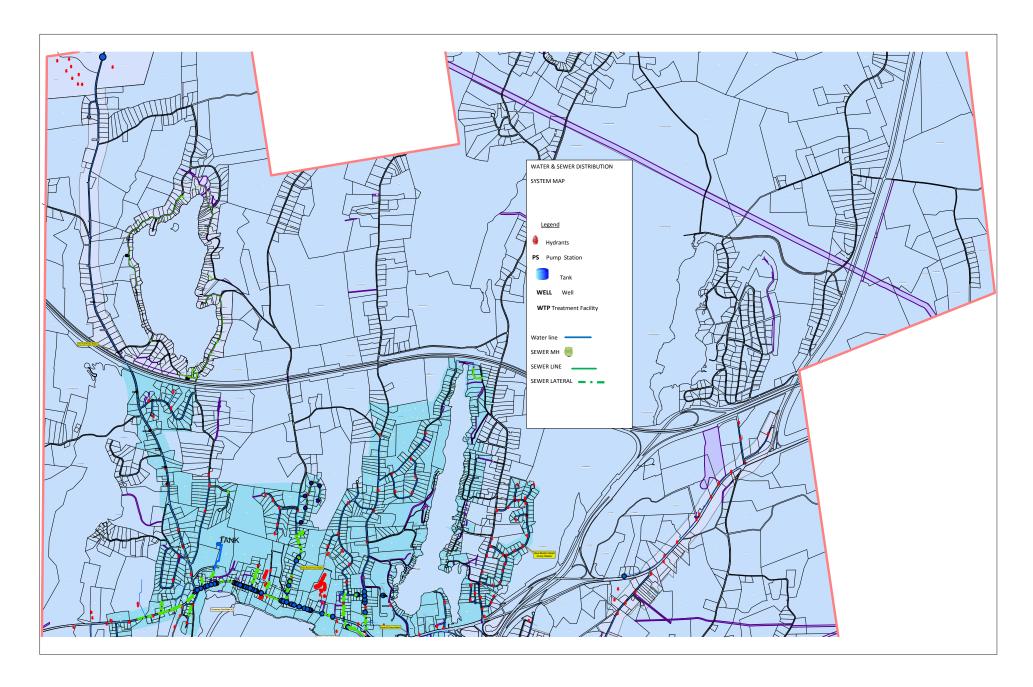




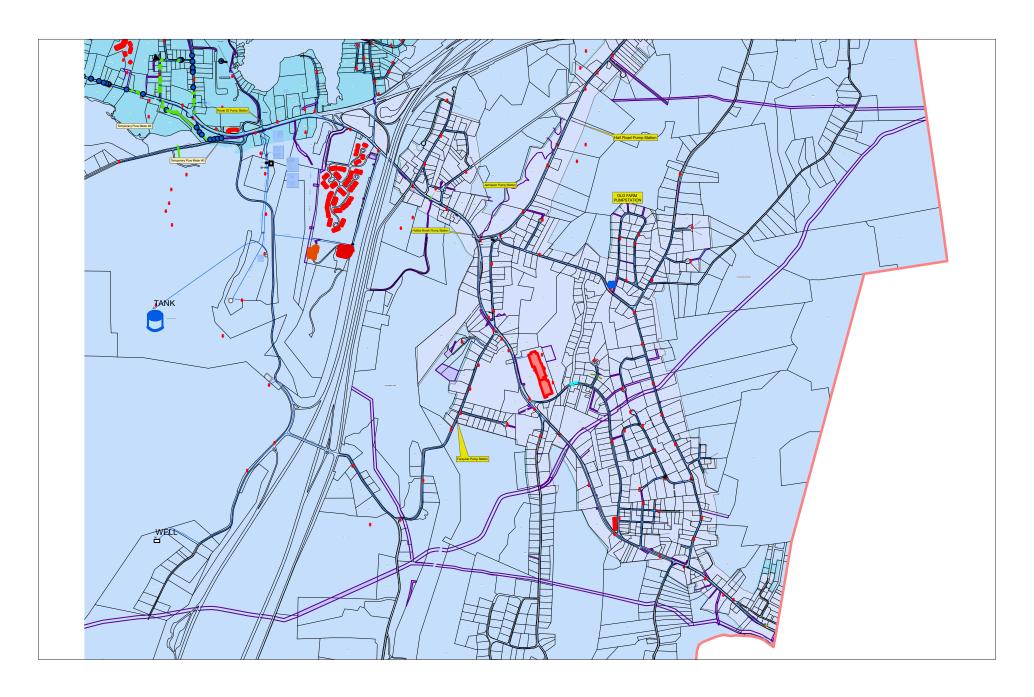


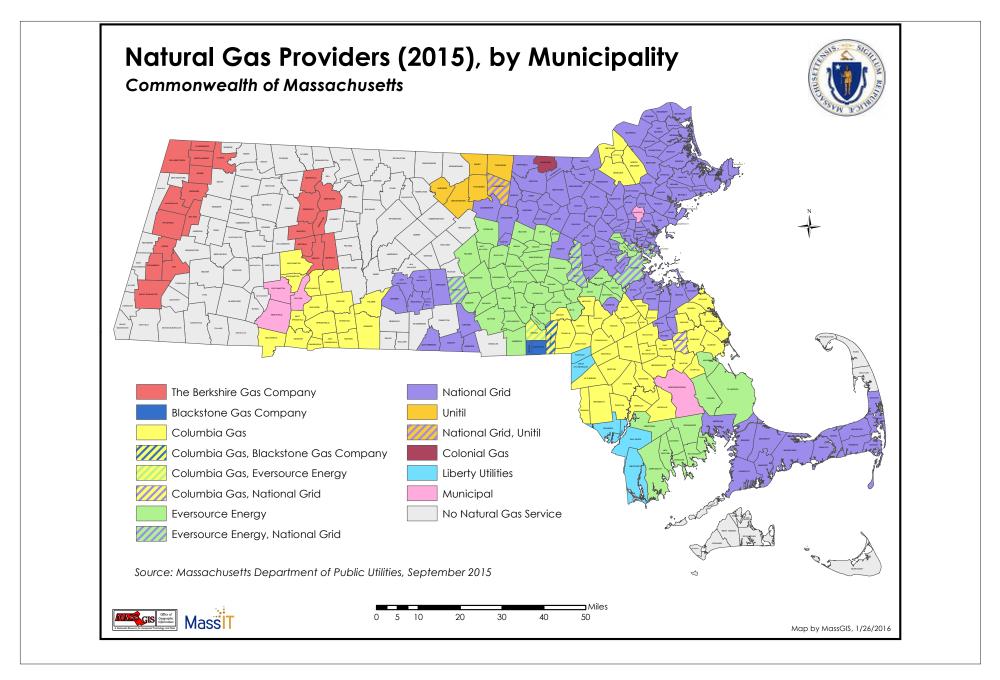


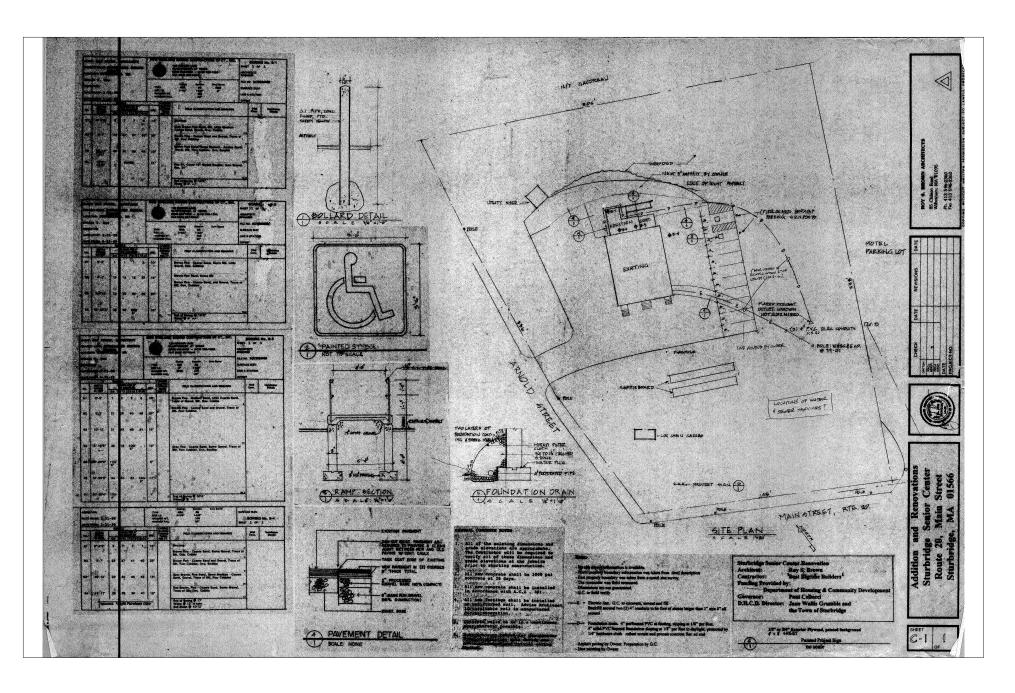
APPENDIX



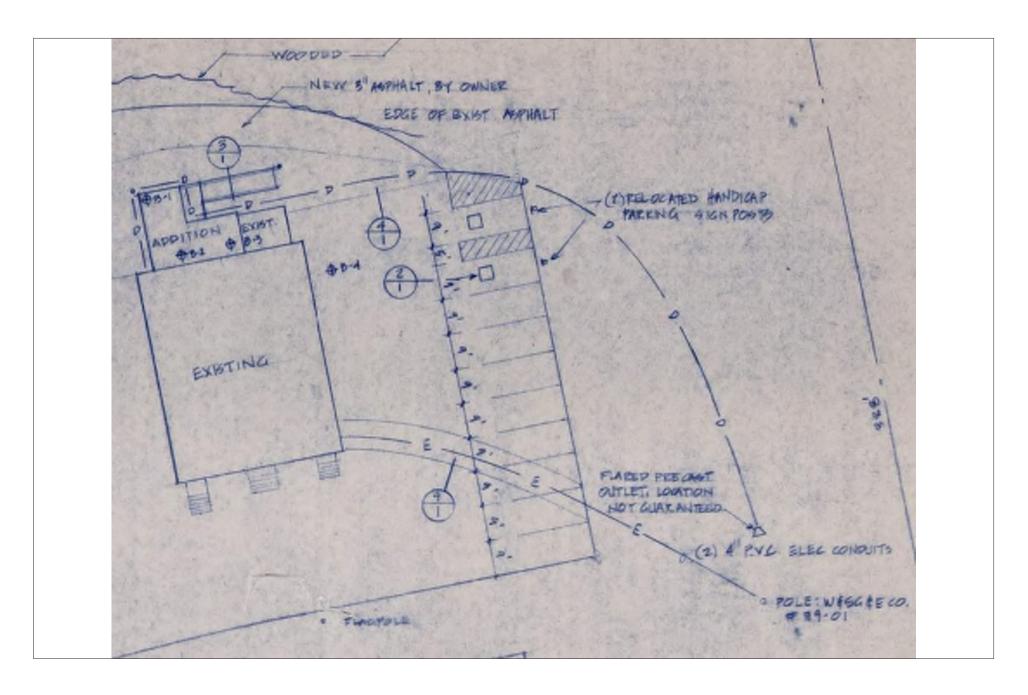
APPENDIX

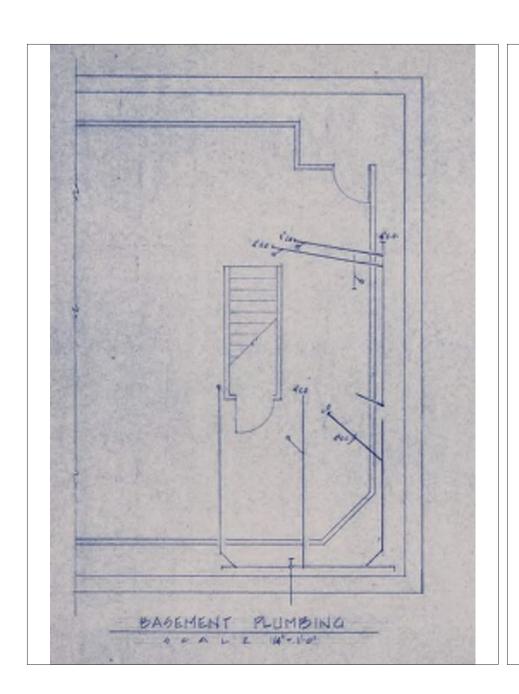






APPENDIX







Well Documentation (not used)

APPENDIX G:

Wetland Regulations

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

REGULATIONS FOR ADMINISTERING THE TOWN OF STURBRIDGE WETLAND BYLAW in association with the WETLAND PROTECTION ACT, 310 CMR 10.00 AND RIVERS PROTECTION ACT

Effective November 22, 2002 Revision 1- effective February 17, 2004 Prepared by the Town of Sturbridge Conservation Commission

The purpose of these regulations is to define and clarify the public hearing process by establishing standard definitions and uniform procedures by which the Sturbridge Conservation Commission will carry out it's responsibilities affecting Areas Subject to Protection Under the Town of Sturbridge Wetland Bylaw, the Wetlands Protection Act, the Rivers Protection Act, and the Wetlands Protection Act Regulations. These areas are to be regulated in order to contribute to the protection of the following interests/resource area

PROTECTION OF PUBLIC AND PRIVATE WATER SUPPLY PROTECTION OF GROUND WATER SUPPLY FLOOD CONTROL STORM DAMAGE PREVENTION PREVENTION OF POLLUTION EROSION AND SEDIMENTATION CONTROL PROTECTION OF WATER QUALITY PROTECTION OF LAND CONTAINING SHELLFISH PROTECTION OF FISHERIES PROTECTION OF WILDLIFE HABITAT PROTECTION OF RARE SPECIES HABITAT PROTECTION OF RECREATION VALUES PROTECTION OF AGRICULTURE AND AQUACULTURE ACTIVITIES

These regulations and supplemental policy statements were issued by the Commission under authority given in MGL c 40 § 8C and are adapted from M.G.L. c. 131, § 40, 310 CMR 10.00, and Town of Sturbridge Wetlands Bylaws. Where the town regulations are more restrictive, they supercede the state regulations, and shall have the force of law.

Nothing contained herein should be construed as preempting or precluding more stringent protection of wetlands or other natural resource areas by Federal, State or Local law, by-law, ordinance or regulation.

The Commission held a public meeting on the draft regulation on Thursday, October 3, 2002. The public hearing was opened on Thursday, October 17, 2002. Public comment was received through November 21, 2002. Public Notice was posted in the Southbridge Evening News on Tuesday, October 8, 2002. Notice was posted on the Town Clerks Board on or before Friday, September 27, 2002 and again, on or before Friday, October 11, 2002. The Sturbridge Conservation Commission Regulation is effective as of Friday, November 22, 2002. Revision 1 adopted at a posted public hearing on February 14, 2004 following discussion at public meetings and hearings on January 22, 2004, February 5, 2004 and February 14, 2004.

> Page 1 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw 4.24-Reports Due TABLE OF CONTENTS 4.25-Revocation of Permits page 5 - Resource Areas, values, presumptions of significance and general performance Preface 5.1-Banks Table Of Contents 5.2-Bordering Vegetated Wetlands (Marshes, Wet Meadows, Swamps and Bogs) Chapter 5.3-Land under Waterbodies and Waterways 5.4-Land Subject to Flooding, Isolated and Bordering 1 - Introduction 5.5-Riverfront Area 1.1-Areas Subject to Protection 5.6-Vernal Pools, certified, potential and identified 1.2-Practicable Alternatives 5.7- Habitats for Rare Wildlife 1.3-No Significant Adverse Impacts 5.8-Wildlife Habitat Evaluations 1.4-Buffer Zones 6 - Additional Regulations 2 - Definitions 6.1-Eight Percent (8%) Slope Bylaw 6.2-Lake Front Tree Cutting 13 3 - General Provisions 6.3-Docks 3.1-Burden of Proof/Presumption of Significance 6.4-Vista Pruning 3.2-Subdivision of Lots 6.5-Nitrogen Loading 3.3-Alternatives for Minor Activities 6.6-Nutrient Loading/Prevention of Pollution to Waterbodies 3 4-Letter Permits 3.5-Limited Projects 7 - Application Requirements 3.6-Title 5 3.7-Storm water 8 - Replication Requirements 3.8-Application of Herbicides, Pesticides, Fertilizers, Salt 8.1-General Performance Standards 3.9-Consultation Requirements 8.2-Riverfront Resource Mitigation and Restoration 3.10-Security Requirements 8.3-Unused at this time 3.11-Self-Imposed Hardships 7.4-Unused at this time 4 - Procedures 20 9 - Foresting Requirements 4.1-Commission Actions 4.2-Timelines 10 - Post Hearing Requirements 4.3-Public Hearing Notification 10.1-Post Hearing Start-Up Requirements 4.4-Additional Requirements 4.5-Requests for Determinations 4.6-Determinations of Applicability Town of Sturbridge Conservation Commission Resource Area Policy 4.7-Notices of Intent Resource Area and Values Protected Summary Spreadsheet 4.8-Orders of Conditions Common Wetlands Plants, Partial List 4.9-Combining Local and State Permit Applications Alternative Analysis, Basis of Request and Scope of Requirements 4.10-Site Visit Requirements and Timing of Delineations and Resource Verification Town of Sturbridge Wetland Bylaw 4.11-Extensions MGL c. 131 § 40 4.12-Certificates of Compliance 4.13-Variances 4.14-Emergency Certification 4.15-Appeals 4.16-Enforcement and Cease and Desist Orders 4.17-Fees 4.18-Severability 4.19-Effective Dates 4.20-Grandfathering 4.21-Denial of Permits 4.22-Requests for Reclassification of Streams 4.23-Resource Area Delineations and Verification of Replication Areas Page 2 of 70 Page 3 of 70 Adopted November 21, 2002 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Revision 1 adopted February 14, 2004

CHAPTER 1 - INTRODUCTION

1.1 AREAS SUBJECT TO PROTECTION

The following resource areas are subject to protection: Freshwater wetlands, marshes, wet meadows, bogs, swamps, seasonal wetlands, vernal pools, banks, reservoirs, lakes, ponds (regardless of their size), rivers, riverfront, streams, creeks, land under water bodies, lands subject to flooding or inundation, and lands within 200 feet of any of the aforesaid resource areas whether or not they border surface waters. For the purpose of this document, resource areas identified or resource areas protected refer to the above stated areas.

Resource area values include but are not limited to the following Interests: public or private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention, water quality, water pollution control, fisheries, wildlife habitat, rare species habitat, including rare plant species, recreation values, agriculture and aquaculture. For the purpose of this document, interests identified or interests protected refer to the

Activities within the areas subject to protection, as well as activities within the 200 foot buffer to areas subject to protection, which will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter said resource areas and buffer zones fall under the jurisdiction of the Sturbridge Conservation Commission ("The Commission"). Said activities require a public hearing for prior review and approval by the Commission to insure there will be no significant adverse impact to the resource area.

Activities undertaken in close proximity to wetlands and other resource areas have a high likelihood of adverse impact upon the wetland or other resource, either immediately, as a consequence of construction, or over time, as a consequence of daily operation or existence of the activities. These adverse impacts from construction and use can include but are not limited to, erosion, siltation, loss of groundwater recharge, disruption of hydrologic connections, poor water quality, harm to wildlife habitat, or disruption of wildlife habitat corridors. The Commission may therefore require that the applicant maintain a strip of continuous, undisturbed vegetative cover in part or all of the 200-foot area and set other conditions on this area, unless the applicant provides evidence deemed sufficient by the Commission that the area or part of it may be disturbed without harm to the values protected by the law.

A growing body of research evidence suggests that even "no disturbance" areas reaching 100 feet from wetlands may be insufficient to protect many important wetland resource characteristics and values. Problems of nutrient runoff, water pollution, siltation, erosion, vegetation change, thermal change and habitat destruction are greatly exacerbated by activities within 100-feet of wetlands and resource areas. Thus, in general, work and activity within 100-feet of wetlands and resource areas should be avoided and discouraged and reasonable alternatives pursued. Accordingly, the Conservation Commission shall begin with the presumption that lands within 200-feet of the resource areas identified in paragraph 1 of chapter 1.1 are best left in an undisturbed and natural state.

Based on systematic field observation in the Town of Sturbridge by the Sturbridge Conservation Commission, disturbance of vegetation or soils within 25 feet of a resource area creates direct observable impacts to the resource area, including but not limited to those stated elsewhere in these regulations. The minimum strip of continuous undisturbed vegetative cover for any and all resource areas is 25 feet from the outermost edge of the resource area in all directions. [For example a stream will have a minimum 50-foot corridor plus the actual width of the stream based on mean annual high water mark. This 50-foot+ buffer should be considered a minimum starting point and not the maximum protection.] The 25-foot buffer is to be considered a "No Disturb" buffer.

Based on systematic field observation in the Town of Sturbridge by the Sturbridge Conservation Commission, any structures less than 50 feet from a resource area create temporary construction and long-term "normal daily use" impacts within the 25-foot buffer. The minimum distance for a new structure will be 50-feet from any resource area. The new structure setback will not apply to any structure existing prior to the adoption of these regulations. However structures being removed and replaced must comply with the regulations in effect at the time of the reconstruction. For structures existing within the 50-foot buffer, which are not being removed but for which the footprint is changing, any increase in footprint must take place at the greatest feasible distance from the resource

> Page 4 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

The Commission shall have the power to issue a waiver to an applicant requesting to perform activities as described in section 1.1 of this Town of Sturbridge Wetland Bylaw Regulation, after said applicant files a Notice of Intent with The Commission and The Commission conducts a public hearing. Such waiver shall be set forth by the issuance of an Order of Conditions by the Commission. In order for the Commission to issue a waiver with respect to a particular project, the Commission must find, based on clear and convincing evidence set forth by the applicant, that owing to circumstances relating to soil conditions, hydrological conditions, topography of such land and especially affecting such land but not generally affecting wetlands within the town, a literal enforcement of the provisions of this bylaw would involve substantial hardship, financial or otherwise, to the applicant, and that desirable relief may be granted without detriment to the values protected by the town wetland bylaw and these regulations and without substantially derogating from the extent or purpose of the town wetland bylaw and these regulations.

A waiver (as stated above) to the 50-foot no structure and the 25-foot no disturb buffer, may also be granted to applicants under the following circumstances; the area is already previously disturbed and the proposed project will improve the protection to the resource area; or, the applicant can prove with documented evidence that there are no other substantially equivalent alternatives available. Said applicant must show that measures will be incorporated into the project to ensure that there will be no significant adverse impact to the resource area and must provide additional protection at a ratio of 2:1 to the value of the resource buffer being altered.

Single-family homes, existing prior to the adoption of these regulations, on small, lake-front, lots, may, on a case-bycase basis be granted a partial waiver from the 25-foot and 50-foot buffer requirements. Granting of a waiver will be based on the following minimum criteria;

- A plan providing for 2:1 mitigation for area disturbed. Said plan shall include but not be limited to, plantings of naturally occurring vegetation, along the lake-front which increase the vegetative cover and decrease erosion within the first 25-foot buffer to the lake.
- Any proposed disturbance shall be minimized and shall be located at the furthest possible distance from
- Said plan shall prioritize sedimentation and erosion control improvement issues along the most disturbed and vulnerable portions of the lake-front.
- Mitigation must occur within the 25-foot buffer first and work outward until the required mitigative effects are achieved.
- Any additional structure in the 50-foot buffer must be minimized and placed as far from the lake as possible.
- Walkways and pathways within the 50-foot buffer shall utilize pervious materials, to be approved by

The Commission may impose conditions, safeguards, and limitations in a waiver permit to protect or further the interests protected by the Town Wetland Bylaw and these regulations. It should be understood that waivers [other than for existing, single-family, lake-front, home lots] are intended to be granted only in rare and unusual cases and are issued at the sole discretion of the Commission.

Concrete bounds clearly delineating the 25-foot no disturb buffer or any alternative approved width no disturb buffer the Commission imposes for each property are to be installed prior to the start of any work on site.

1.2 PRACTICABLE ALTERNATIVES

Applicants are required to demonstrate that there are no practicable alternatives to the proposed project with less adverse impact on the protected resource and interests. A practicable alternative is an available and feasible alternative, which will accomplish the project's purpose, taking into account costs, logistics, the proposed use, and the most current technology.

The area in consideration must extend to the subdivided lots (this includes approval not required [ANR] lots), any parcel out of which the lots were created, any adjacent parcels held in common ownership or interest, any parcels which are in the process of being obtained, any parcels previously held in common ownership or interest with the subject property and any other land, which can reasonably be obtained, as of the effective date of the related regulation as listed in chapter 4.19 of these regulations.

> Page 5 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

The effect of the practicable alternatives analysis and the purpose of evaluating alternatives is to determine whether impacts to resource areas can be avoided. See the Alternatives Analysis Scope of Requirement in the appendices of these regulations for a complete description.

1.3 NO SIGNIFICANT ADVERSE IMPACTS

An applicant is required to demonstrate that any work, including proposed mitigation measures, will have no significant adverse impacts on the resource area. The Commission requires a 25-foot undisturbed vegetated corridor around all resource area boundaries with the exception of certified or identified vernal pools which will require a minimum of a 100-foot, undisturbed buffer. This buffer may range up to 200 feet depending on the characteristics and species present. The term identified vernal pool refers to a vernal pool for which sufficient evidence to certify the vernal pool is present and is identified by the Commission or a representative of the Commission. The Commission prohibits the use of pesticides, fertilizers and herbicides within the 100-foot buffer to all resource areas and prohibits the use of salts, quick release pesticides, quick release fertilizers and quick release herbicides within the 200-foot buffer to all resource areas. Activities, which increase the potential for hazardous impact to the resource areas such as vehicle maintenance, are prohibited within the 200-foot buffer to resource areas.

When determining whether significant adverse impact could/has occurred, the Commission shall include in it's review all potential cumulative impacts to resource areas and all work conducted within the 200-foot buffer from the time of adoption of the applicable regulation (see 4.19) through the proposed project time frame.

Additional limitations for Riverfront Resource Areas, which is the 200 feet measured horizontally from the mean annual high water mark for perennial rivers, includes: a limitation on alteration of no more than 10%, maintenance of an undisturbed 100 foot vegetated corridor, stormwater management provisions, and wildlife habitat protection provisions. Work may not impair the capacity of the Riverfront Resource Area to provide wetland and vernal pool habitat. A wildlife habitat evaluation will be required for work within Riverfront Resource Areas. A wildlife habitat evaluation may be required at the discretion of the Commission for work within the 200 foot buffer to any other resource area on a case-by-case basis. Certified and identified vernal pools are protected at the same standard as rare species habitat. Vernal pools, which are state certified or locally documented during the course of the public hearing, are also protected at the same standard as rare species habitat.

These standards are intended to identify the level of protection that the Commission must impose in order to contribute to the protection of the interests identified. It is the responsibility of the person proposing work to design and complete the project in conformance with these performance standards. It is the responsibility of the Commission to impose such conditions on a proposed project as to ensure that the project is designed and completed in a manner consistent with these standards.

1.4 BUFFER ZONES

This section is intended as a general overview. Additional regulations, restrictions or waivers may apply to the specific buffer, project or site in question. For additional information, please refer to the chapters and sections noted in the Table of Contents or contact the commission office.

As of the date of these regulations a summary of the state and local conservation related buffer zones are as follows:

- 25-foot No Disturbance buffer for new construction (see section 1.1, paragraph 6)
- 25-foot No additional disturbance allowed for reconstruction. Projects must result in better conditions for the resource area based on scientific evidence of benefit to the resource, 2:1 mitigation required for any new work in this buffer. (see section 1.1, paragraph 8-11)
- No Structures Allowed for new construction (see section 1.1, paragraph 7)
- 50-foot Addition to existing structures, must be located as far from the resource as possible, 2:1 mitigation required for reconstruction. Change of the footprint is considered new construction. (see section 1.1,
- 100-foot WPA and Local Wetland Bylaw buffer, prior review by the SCC required to ensure no significant adverse impact, work requires the filing of a Notice of Intent, all new disturbance shall be located outside the 100 foot buffer to the extent possible. (see section 1.1 paragraphs 4, 5)

Page 6 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

- 200-foot Local Wetland Bylaw buffer, prior review by the SCC required to ensure no significant adverse impact, work requires the filing of a Request for Determination.
- 200-foot Perennial Riverfront Resource buffer, starts at the edge of mean annual high water mark, no disturbance of this 200 foot buffer is allowed except under extreme and mitigating circumstances to be determined on a case-by-case basis by the Commission.
- 200-foot Vernal Pool buffer, unless proof is provided by the applicant that the project as proposed will result in no adverse impact to the site specific resource area needs (see section 5.6 and section 1.1 paragraph 4). The first 100 feet is to be considered the minimum no-disturb buffer. This may range up to 200 feet on a case-
- 200-foot Wildlife Habitat buffer, variable based on site-specific wildlife habitat requirements (see sections 5.7 and 5.8 and section 1.1 paragraph 4)

Page 7 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

CHAPTER 2 – DEFINITIONS

DEFINITIONS

Abutter means the same as owner of land abutting the activity, defined as any property with a lot line within 200 feet of any lot line of the subject property.

Act means the Wetlands Protection Act, M.G.L. c. 131, § 40.

Activity means any form of draining, dumping, dredging, damming, discharging, excavating, filling or grading; the construction, reconstruction or expansion of any buildings or structures; the driving of pilings; the construction or improvement of roads and other ways; the changing of run-off characteristics; the intercepting or diverging of ground or surface water; the installation of drainage, sewage and water systems; the discharging of pollutants; the destruction of plant life; and any other changing of the physical characteristics of land.

Aggrieved means the same as person aggrieved.

Agriculture. Land in agricultural use means land within resource areas or the Buffer Zone presently and primarily used in producing or raising one or more agricultural commodities for commercial purpose.

Alter The term "alter" shall include, without limitation, the following activities when undertaken to, upon, within or affecting resource areas protected by these regulations:

a) removal, excavation or dredging of soil, sand, gravel or aggregate material of any kind;

b)changing of pre-existing drainage characteristics, flushing characteristics, sedimentation patterns, flow patterns or flood retention characteristics:

- c) drainage or other disturbance of water level or water table.
- d)dumping, discharging or filling with any material which may degrade water quality;
- e) placing of fill, or removal of material, which would alter elevation:
- f) driving of piles, or construction or repair of buildings, or structures of any kind;
- g)placing of obstructions or objects in water;
- h)destruction of plant life, including cutting of trees. Compliance with the Massachusetts Forest Cutting Practices Act (M.G.L. Chapter 132, Sections 40-46) does not relieve any person from compliance with this bylaw. For purposes of this bylaw, "destruction" shall mean uprooting, or cutting down below the leaf or needle region of the plant. It shall not be interpreted to mean periodic mowing or pruning. This provision of the bylaw shall apply to plant life greater than two inches in diameter at a distance of 4 feet above the ground;
- i) changing water temperature, biochemical oxygen demand, or other physical, biological, or chemical characteristics
- i) any activities that may cause or contribute to pollution of any body of water or groundwater:
- k)incremental activities, which have, or may have, a cumulative adverse impact on the resource areas protected by these regulations.

Aquaculture Land in aquacultural use means land presently and primarily used in the growing of aquatic organisms under controlled conditions.

Area Subject to Protection as defined in Chapter 1.1 of these regulations.

Bank (inland) shall include the land area which normally abuts and confines a waterway. Where slopes leading to a wetland or water body are greater than or equal to 1:4, the area is still considered bank, subject to an enhanced

Bankfull Discharge corresponds to the elevation, or stage of the river, that actively creates, modifies, and maintains the river's channel. In the context of these regulations, the river's channel can be described broadly as the crosssectional area that carries the river's annual high water flows, which typically occur in early spring. During bankfull discharge, the water is moving sediment, forming or removing bars, forming or changing bends and meanders, and generally doing work that results in morphologic change to the river system. These morphologic changes to the river system can be observed in the field. Bankfull field indicators include changes in vegetation (usually changes in vegetational community), stain lines, top of point bars (depositional features), changes in slope, changes in bank material, and bank undercuts. However, in some river reaches, characterized by features such as a low gradient, meanders, oxbows, histosols, a lowflow channel, or poorly defined or nonexistent banks, the MAHW line will be evidenced by some combination of the bankfull field indicators listed above. It is important to understand that no one bankfull field indicator should be taken alone; multiple corroborating features should be sought. Bankfull field indicators may be quite subtle in a meandering river with a broad floodplain, or in a wetland stream, so multiple observations along both sides of the river, combined with field indicators located up and down the river reach, may

Bankful Field Indicators means changes in vegetation (usually changes in vegetational community), stain lines, top Page 8 of 70

Adopted November 21, 2002

Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

of point bars (depositional features), changes in slope, changes in bank material, and bank undercuts in regards to

Beach (inland): a naturally occurring inland beach means an unvegetated gently sloping bank abutting a pond or lake and the site of potential recreational activities.

Best Available Measures means the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available.

Best Practical Measures means technologies, designs, measures or engineering practices that are in general use to protect similar interests.

Bordering means touching. An area is bordering on a water body listed if some portion of the area is touching the water body or if some portion of the area is touching another area some portion of which is in turn touching the water

Bordering Vegetated Wetland (BVW) is defined in Chapter 5.2.1 of these regulations.

Boundary means the boundary of an Area Subject to Protection. A description of the boundary of each area is found in the appropriate section of these regulations.

Breeding Areas mean areas used by wildlife for courtship, mating, nesting or other reproductive activity, and rearing

Brook, Creek or Run means the same as a stream.

Buffer Zone means that area of land extending 200 feet horizontally outward from the boundary of any Resource

Certificate of Compliance means a written determination by the issuing authority that work or a portion thereof has been completed in accordance with an Order.

Commissioner means a Commissioner of the Sturbridge Conservation Commission,

Conditions means those requirements set forth in a written Order issued by a Conservation Commission for the purpose of permitting, regulating or prohibiting any activity that will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter an Area Subject to Protection.

Conservation Commission and Commission means that body comprised of members lawfully appointed pursuant to M.G.L.c. 40, § 8C. For the purposes of M.G.L. c. 131, § 40, 310 CMR 10.00, and the Town of Sturbridge Bylaws. Creek, Brook, or Run means the same as a stream.

Date of Issuance means the date an Order is mailed, as evidenced by a postmark, or the date it is hand delivered. Date of Receipt means the date of delivery to an office, home or usual place of business by mail or hand delivery. DBH (dbh) is diameter at breast height.

DEP means the Department of Environmental Protection, and shall include the Commissioner of Environmental Affairs and any other person employed by said.

Determination.

(a) a Determination of Applicability means a written finding by the Conservation Commission or the DEP as to whether a site or the work proposed thereon is subject to jurisdiction.

(b) a Determination of Significance means a written finding by the Conservation Commission, after a public hearing, or by the DEP, that the area on which the proposed work is to be done, or which the proposed work will alter, is significant to one or more of the interests identified.

(c) a Notification of Non-Significance means a written finding by the Conservation Commission, after a public hearing, or by the DEP, that the area on which the proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests identified.

DFWELE - means the Department of Fisheries and Wildlife, Environmental Law Enforcement,

DFW-NHESP - Department of Fisheries and Wildlife, Natural Heritage and Endangered Species Program Dredge means to deepen, widen or excavate, either temporarily or permanently. Existing means in existence at the time of the adoption of the relevant policy, regulation, bylaw or law.

Extension Permit means a written extension of time within which the authorized work shall be completed.

Fill means to deposit any material so as to raise an elevation, either temporarily or permanently.

Final Order means the Order issued by the Commissioner of Environmental Affairs after an adjudicatory hearing or, if no request for hearing has been filed, the Superseding Order or, if no request for a Superseding Order has been filed, the Order of Conditions.

Flood Control means the prevention or reduction of flooding and flood damage.

Formerly or Presently Owned means owned by the same owner at any time on or after August 1, 1996. Freshwater Wetlands are defined as wet meadows, marshes, swamps, bogs, areas where groundwater, flowing or standing surface water or ice provide a significant part of the supporting substrate for a plant community for at least

> Page 9 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

five months of the year; emergent and submergent plant communities in inland waters; Freshwater wetlands do not have to border a water body. If delineated via more than one of three appropriate parameter (evidence of hydrology, vegetation and/or hydric soils), the indicator giving the largest wetland area will define the wetland limits.

General Performance Standards means those requirements established by 310 CMR 10.00 for activities in or affecting each of the Areas Subject to Protection.

Ground Water Supply means water below the earth's surface in the zone of saturation.

Important Wildlife Habitat Functions mean important food, shelter, migratory, breeding, or overwintering areas, or breeding areas for wildlife.

Interests Identified means any interest protected under MGL c. 131, § 40, The Wetlands Protection Act, The Rivers Protection Act, or 310 CMR The Wetlands Protection Act Regulations, or the Town of Sturbridge Wetlands Bylaw, or Town of Sturbridge Wetlands Bylaw Regulations or Policy.

Interests Identified also means public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, erosion and sedimentation control, protection of water quality, protection of land containing shellfish, protection of fisheries, protection of wildlife habitat, protection of rare species habitat, protection of recreational values, and protection of agriculture and aquaculture.

Intermittent Stream See section 4.22.1 Generally, a body of running water which does not flow throughout the year, has a watershed less than 1 square mile and is shown on the USGS topographic map as intermittent or has a "positive flow" less than 99% of the time.

Issuing Authority means the Conservation Commission.

Lake means any open body of fresh water with a surface area of ten acres or more, and shall include great ponds.

Land Subject to Flooding is defined in Chapter 5.4 of these regulations.

Land Under Water Bodies and Waterways means the bottom of, or land under, the surface of the ocean or any estuary, creek, river, stream, pond, or lake.

Lot means an area of land under common ownership or interest. For the purpose of these regulations, lot will mean both lot and parcel

Majority means more than half of the members of the Conservation Commission then in office.

Marsh is defined in M.G.L. c. 131, § 40, para. 11.

Meadow (or Wet Meadow) is defined in M.G.L. c. 131, § 40, para. 10.

Mean Annual High-Water Line is defined as, "...the line that is apparent from visible markings or changes in the character of soils or vegetation due to the prolonged presence of water as evidenced by "bankfull field indicators," or "bankfull discharge".

MEPA means the Massachusetts Environmental Policy Act.

Migratory Areas mean those areas used by wildlife moving from one habitat to another, whether seasonally or

Mitigation means rectifying an adverse impact by repairing, rehabilitating or restoring the affected resource area or compensating for an adverse impact by enhancing or providing replacement resource areas.

No Significant Adverse Impact means to or exceeding the level of protection of the performance standards provided throughout these regulations.

Notice of Intent means the written notice filed by any person intending to remove, fill, dredge, build upon, degrade, discharge into or otherwise alter an Area Subject to Protection.

Order means an Order of Conditions, Superseding Order or Final Order, whichever is applicable.

Order of Conditions means the document issued by a Conservation Commission containing conditions, which regulate or prohibit an activity.

Owner of Land Abutting the Activity means the owner of land sharing a common boundary or corner within 200 feet of any property line for the property containing the site of the proposed activity in any direction, including land located directly across a street, way, creek, river, stream, brook or canal.

Parcel means an area of land under common ownership or interest. For the purpose of these regulations parcel and lot mean the same.

Party to any proceeding before the DEP means the applicant, the Conservation Commission and the DEP, may include the owner of the site, any abutter, any person aggrieved, any ten residents of the city or town where the land is located and any ten persons pursuant to M.G.L. c. 30A, § 10A.

Person The term "person" shall include any individual, group of individuals, business or social organization, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth of Massachusetts or political subdivision thereof, administrative agency, public or quasi-public corporation or body and any other legal entity, its legal representatives, agents or assigns.

> Page 10 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Person Aggrieved means any person who, because of an act or failure to act by the issuing authority, may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified. Such person must specify in writing sufficient facts to allow the DEP or Superior Court to determine whether or not the person is in fact aggrieved.

Plans means such data, maps, engineering drawings, calculations, specifications, schedules and other materials, if any, deemed necessary by the issuing authority to describe the site and/or the work, to determine the impact of the proposed work upon the interests identified

Pond (inland) means any open body of fresh water with a surface area observed or recorded within the last ten years of any size. Ponds may be either naturally occurring or man-made by impoundment, excavation, or otherwise. Ponds shall contain standing water except for periods of extended drought. For purposes of this definition, extended drought shall mean any period of four or more months during which the average rainfall for each month is 50% or less of the ten year average for that same month. Notwithstanding the above, the following man-made bodies of open water shall not be considered ponds:

(a) basins or lagoons which are part of wastewater treatment plants;

(b) swimming pools or other impervious man-made basins; and

(c) individual gravel pits or quarries excavated from upland areas unless inactive for five or more consecutive years. Prevention of Pollution means the prevention or reduction of contamination of surface or ground water.

Private Water Supply means any source or volume of surface or ground water demonstrated to be in any private use or demonstrated to have a potential for private use.

Program shall refer to the Massachusetts Natural Heritage and Endangered Species Program (NHESP).

<u>Project Purpose</u> means the general, functional description of an activity proposed within the riverfront area (e.g., construction of a single family house, expansion of a commercial development).

Protection of Fisheries means protection of the capacity of an Area Subject to Protection in order to prevent or reduce contamination or damage to fish; and to serve as their habitat and nutrient source.

Public Water Supply means any source or volume of surface or ground water demonstrated to be in public use or approved for water supply pursuant to M.G.L. c. 111, § 160 by the Division of Water Supply of the DEP, or demonstrated to have a potential for public use.

Quick Release as specified by the manufacturers label.

Rare Species mean those vertebrate and invertebrate animal species without limitation, listed as endangered, threatened, or of special concern by the Massachusetts Division of Fisheries and Wildlife regardless of whether the site in which they occur has been previously identified by the division.

Recreation means the use and enjoyment of natural surroundings in a manner consistent with their preservation. Activities shall not be detrimental to resource areas.

Redevelopment means replacement, rehabilitation or expansion of existing structures, improvements of existing roads, or reuse of degraded or previously developed areas due to impervious surfaces from existing structures or pavement, absence of topsoil, junkyards, or abandoned dumping grounds.

Remove means to take away any type of material, thereby changing an elevation, either temporarily or permanently. Request for Determination of Applicability (RDA) means a written request made by any person to a Conservation Commission or the DEP for a determination as to whether a site or work thereon is subject to MGL c. 131 \$40, 310 CMR 10.00 or the Town of Sturbridge Wetlands Bylaw.

Resource Area means any of the areas specified Chapter 1.1 of these regulations.

River means any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. River is defined further in 4.22 and 5.5 of these regulations.

Riverfront Area is defined in Chapter 5.5.1 of these regulations. In addition the presumption of the mean annual flood level (i. e., the beginning of the 200 foot Riverfront Resource Area) shall be coincident with the outer edge of BVW. This presumption shall rule unless conclusive scientific evidence is presented to the contrary.

Run, Brook, or Creek means the same as a stream

SCC is the Sturbridge Conservation Commission.

Seasonal Wetland The term "seasonal wetland" shall define areas subject to flooding which form temporary confined bodies of water during periods of high water table and high input from spring runoff or snow melt or heavy precipitation, and support populations of non-transient macro-organisms or serve as breeding habitat for select species of amphibians.

Select Species of Amphibians shall define species of amphibians which depend on seasonal wetlands for breeding habitat, including but not limited to: mole salamanders (Ambystoma maculatum, A. jeffersonianun, A. laterale, and A. opacum); four-toed salamanders (Hemidactylium scutatum); eastern spadefoot toads (Scaphiopus holbrooki);

> Page 11 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

American and Flowler's toads (Bufo a. americanus and B. woodhousii fowleri), spring peepers (Hyla c. crucifer); gray treefrogs (Hyla versicolor), and wood frogs (Rana sylvatica).

Shelter means protection from the elements or predators.

Significant means plays a role. A resource area is significant to an interest identified when it plays a role in the provision or protection, as appropriate, of that interest.

State-listed species mean the same as rare species.

Storm Damage Prevention means the prevention of damage caused by water from storms, including, but not limited to, erosion and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding, water-

Stream means a body of running water, including brooks and creeks, which moves in a defined topographically observable channel in the ground due to a hydraulic gradient, and which flows within, into or out of an Area Subject to Protection. A portion of a stream may flow through a culvert or beneath a bridge. Such a body of running water which does not flow throughout the year (i.e., which is generally intermittent) is a stream, except for that portion upgradient of all bogs, swamps, wet meadows, marshes and underground water courses.

Structure means any man-made or man assembled impervious or partially impervious combination of materials and includes but is not limited to buildings, asphalt driveways, retaining walls, patios, swimming pools, sheds, framework, or any part thereof existing on, above or below the level of land or water.

Subdivided any part or parcel of land created by redefining property boundaries which includes but is not limited to Approval Not Required lots, Subdivision lots, Commercial or Industrial lots, etc, regardless of size or proposed or

Superseding Determination means a determination of applicability, of significance or of non-significance, as the case may be, issued by the DEP.

Superseding Order means a document issued by the DEP containing conditions, which regulate or prohibit an

Swamp is defined in M.G.L. c. 131, § 40, para. 9.

Tree are woody vegetation with a stem diameter of 2 inches at 4 feet from the ground (dbh).

TSS means total suspended solids.

Vernal Pool Habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 200 feet of the mean annual boundaries of such depressions. These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non-breeding season as well, for a variety of amphibian species such as wood frog (Rana sylvatica)

and the spotted salamander (Ambystoma maculatum), and are important habitat for other wildlife species. Waiver a permit issued to an applicant or homeowner who proves to the satisfaction of the Commission, that owing to circumstances relating to soil conditions, hydrological conditions, topography of such land and especially affecting such land but not generally affecting wetlands within the town, a literal enforcement of the provisions of this bylaw would involve substantial hardship, financial or otherwise, to the applicant, and that desirable relief may be granted without detriment to the values protected by the town wetland bylaw and these regulations and without substantially derogating from the extent or purpose of the town wetland bylaw and these regulations.

Water-dependent-uses mean those uses and facilities which require direct access to, or location in inland waters and which therefore cannot be located away from said waters, including but not limited to: marinas, public recreational uses, navigational fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an upland site, crossings over or under water bodies or waterways (but limited to railroad and public roadway bridges, tunnels, culverts, as well as railroad tracks and public roadways connecting thereto which are generally perpendicular to the water body or waterway), and any other uses and facilities as may further hereafter be defined as water-dependent.

Work means the same as activity.

Anyone requesting a definition for a word not included in this section may attend any meeting of the Commission to obtain one

> Page 12 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

CHAPTER 3 - GENERAL PROVISIONS

3.1 BURDEN OF PROOF / PRESUMPTION OF SIGNIFICANCE

When a proposed activity will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter a resource area, the Commission shall presume that said area is significant to the interests identified. The Burden shall be on the applicant to overcome the presumption of significance.

Any person who files a Notice of Intent, Request for Determination, or other permit application, to perform any work within an Area Subject to Protection or within the Buffer Zone to any resource area, has the burden of demonstrating to the Commission beyond any reasonable doubt:

- That the area is not significant to the protection of any of the interests identified, or
- That the proposed work within a resource area will contribute to the protection of the interests by complying with the general performance standards for that area, or
- That proposed work within the buffer zone will contribute to the protection of the interests identified, except that proposed work which lies both within the riverfront area and within all or a portion of the buffer zone to another resource area shall comply with the performance standards for both areas, with the strictest performance standards being required to be met.

Failure to provide adequate evidence to the Commission supporting this burden shall be sufficient cause for the Commission to deny the application or to grant the permit with limits or conditions which modify the proposed

3.2 BUILDING ON SUBDIVIDED LOTS

Review of projects, which fall under the Town of Sturbridge Bylaws only, on lots subdivided after October 6, 1996 shall be based on reasonable use of property based on pre-subdivided lot lines and on any other land owned in common or in common interest or which is reasonably obtainable as detailed in the Alternatives Analysis Basis of Request and Scope of Alternatives in the Appendices of these regulations.

Any deliberations and decisions issued by the Commission, based on State Law or Regulation, shall be based on reasonable use of property based on lot lines as they existed at the time of the adoption of the referenced laws and regulations and on any other land owned in common or in common interest or which is reasonably obtainable as detailed in the Alternatives Analysis Basis of Request and Scope of Alternatives in the Appendices of these regulations. See Chapter 4.19 of these regulations for a listing of effective dates for laws and regulations.

For projects which must comply with both state law, local bylaw, state or local regulation, or policy, the strictest regulations shall apply.

Developments or projects, whether subdivisions or not, owned in common by an individual, a corporation, or a group of individuals with a common interest, with adjacent or bordering lot lines whether during or prior to a project proposal shall be considered a single project. Review, approval or denial, and conditioning shall be based on the cumulative impacts of the project and pre-divided site, as a whole, not on individual or separate parts of the project.

3.3 ALTERNATIVES FOR MINOR ACTIVITIES WITHOUT REVIEW

The Commission allows some minor activities without review, these include:

Basic Yard Maintenance. Basic maintenance is considered to be raking, mowing, and non-chemical yard grooming, with all clippings, cuttings, or grooming materials properly disposed of outside of the resource area and buffer.

Inconsequential brush cutting, (less than 1/10 of the vegetation removed cumulatively within any 5 year period) outside the 25-foot no disturb buffer line from any Resource Area is covered under this policy. This does not include tree cutting. For the purpose of this policy, trees are defined as woody vegetation with a stem diameter of 2 inches or more at a height of 4 feet from the ground (dbh).

> Page 13 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Removal of aquatic vegetation on a lakebed during drawdown is permitted by hand. No power equipment may be

Removal of dead or broken tree limbs, and limited dead brush. Removal of Stumps, by excavation, within 200 feet of any resource area requires notification to the Commission and appropriate permitting.

Site disturbance dramatically increases the chance of damage to the resource area unless erosion control measures are used correctly and effectively. Use methods that minimize site disturbance, especially minimize both removal of natural vegetation and exposure of bare soil.

Note: The following do not constitute normal maintenance: stripping embankments, installing retaining walls or work requiring large power equipment, such as a backhoe or other earth moving equipment.

3.4 LETTER PERMITS

The following may be permitted through the filing of a letter permit application with the Commission office at least 72 hours in advance of a public meeting.

- 1. Replacement of eroded lakebed material if the procedure constitutes normal grooming of any existing beach and not the expansion of or creation of a new beach. Grooming is considered to be adding or regrading in a manner that results in an insignificant change in the amount, nature or distribution of surface materials. The work must be done by hand, with a rake, shovel, similar hand tool, or wheel barrow. The work may only be conducted during annual lake drawdown and must be done without disturbance to the buffer zone or lake. Addition of the equivalent of more than one pickup truck load (considered to by 2 cubic yards) goes beyond normal maintenance. Any sand to be placed in the lake must be tested to be free of sodium, phosphorous, grease/oil and bacteria.
- 2. Tree Cutting. Trees and Natural Cover provide excellent protection against erosion. Any tree removal within the 200-foot buffer zone must be approved before commencing. The trees protect habitat and house wildlife in and around the resource area and provide essential shading and bank stability. In addition, the root systems protect against erosion into the resource area. Trees should be retained along and around the resource area as much as possible. A Notice of Intent or Request for Determination is required for removal of large trees (6 inch dbh) and extensive cutting along resource area boundaries. Tree removal within the 200 foot buffer to any resource area requires a letter permit.
- 3. Reconstruction of existing retaining walls within the 200 foot buffer requires a letter permit request filing. Creation of new retaining walls within the 100 foot buffer requires a Notice of Intent filing. Creation of new retaining walls within the 100 to 200 foot buffer requires a Request for Determination filing.

3.5 LIMITED PROJECTS

Limited projects are activities within the existing wetlands which can proceed at the discretion of the Commission without fully meeting the resource area performance standards due to a lack of any practicable alternatives. Self imposed hardship disqualifies an applicant from limited project consideration.

In permitting limited projects the Commission may issue an Order of Conditions and impose such conditions as will contribute to the interests identified.

No such project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by DFW-NHESP.

In the exercise of this discretion, the Commission shall consider the magnitude of the alteration and the significance of the project site to the interests identified, the availability of reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified.

Limited Project Applications may be approved provided they are carried out in accordance with the following

Page 14 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

general conditions and any additional conditions deemed necessary by the Commission:

- 1. There shall occur no change in the existing topography or the existing soil and surface water levels of the area;
- 2. No fertilizers, pesticides, herbicides, salts and other such materials shall be used within 200 feet of any resource area
- 3. All activities shall be undertaken in such a manner as to prevent erosion and siltation of adjacent resource
- 4. A minimum of 2:1 in-kind mitigation shall be provided for any and all resource area disturbance. Riverfront resource area shall also be mitigated at a minimum ratio of 2:1.

Limited Project Permits may be issued for the following:

- 1. Work on land to be used primarily and directly in the raising of animals.
- 2. Work on land to be used primarily and directly in the raising of cranberries.
- 3. Work on land to be used primarily and directly in the raising of forest products under a planned
- 4. The construction, reconstruction, operation and maintenance of underground and overhead public utilities.
- 5. The construction and maintenance of a new roadway or driveway of minimum legal and practical
- 6. Maintenance and improvement of existing public roadways.
- 7. The excavation of wildlife impoundments, farm ponds and ponds for fire protection.
- 8. The maintenance of beaches and boat launching ramps which existed on April 1, 1983 documentation of such is the responsibility of the applicant.
- 9. The maintenance, repair and improvement (but not substantial enlargement) of structures, including dams and reservoirs which existed on April 1, 1983. When water levels are drawn down for the maintenance, repair, or improvement of dams or reservoirs or appurtenant works to such dams or reservoirs, water levels that existed immediately prior to such projects being undertaken shall be restored upon completion of the work, and a new Notice of Intent need not be filed for such restoration.
- 10. The construction and maintenance of catwalks, footbridges, wharves, docks, piers, boathouses, boat shelters, duck blinds, skeet and trap shooting decks and observation decks; provided, however, that such structures are constructed on pilings or posts so as to permit the reasonably unobstructed flow of water and adequate light to maintain vegetation.
- 11. The routine maintenance and repair of road drainage structures including culverts and catch basins, drainage easements, ditches, watercourses and artificial water conveyances to insure flow capacities which existed on April 1, 1983.
- 12. Lake drawdown projects (except those related to the breaching of a dam or a reservoir or an appurtenant work to such dam or reservoir) undertaken in response to written Orders or Recommendation, Letters issued by the Department of Environmental Management, Office of Dam Safety (DEM). In no event shall a drawdown continue longer than three years without a new or extended Order of Conditions being obtained. Water levels that existed immediately prior to such drawdowns shall be restored no later than the expiration date of the Order of Conditions or any new or extended Order of Conditions, and a new Notice of Intent need not be filed for such restoration.
- 13. The exploration, development, construction, expansion, maintenance, operation, and replacement of public water supply wells or wellfields (including necessary associated roads, ways, structures, and underground and overhead utility lines.
- 14. The closure of landfills.
- 15. Assessment, monitoring, containment, mitigation, and remediation of, or other response to, a release or threat of release of oil and/or hazardous solely to reduce contamination to a level lower than that which is needed to achieve "No Significant Risk" as defined in 310 CMR 40.0006.

The Commission may issue an Order of Conditions for projects which will improve the natural capacity of a resource area(s) to protect the interests identified. No such project may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species. Such projects include, but are not limited to, the removal of aquatic nuisance vegetation to retard pond and lake eutrophication and the thinning or planting of vegetation to improve habitat value.

> Page 15 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

3.6 TITLE 5

Title 5. Subsurface sewage disposal systems are to be constructed in compliance with the requirements of 310 CMR 15.00 or the more stringent Town of Sturbridge Board of Health requirements. Approval for compliance with Title 5 will be deferred to the local Board of Health. To protect the interests identified within the riverfront areas said systems shall not be located within 200 feet of the mean annual high water line.

Impacts from the construction of said systems are not deferred and must be brought before the Commission. Impacts from construction shall be minimized by the placement of erosion and sedimentation controls during excavation and soil transfer, by limiting the placement of fill, by confining the removal of vegetation to that necessary for the footprint of the system, and by taking other measures deemed necessary by the Commission.

Septic system reserve areas may not be located within the 25-foot buffer to a wetland and must be situated in such a manner that should use become necessary, all disturbance will occur outside the 25- foot buffer to any resource area.

Percolation (Perc) Testing. To access perc sites, applicants shall submit to the SCC for review a prepared plan, which is accurate, to scale, and reflects property details such as slopes, trees, vegetated or open areas, approximate wetland boundaries, etc. The plan shall show any wetland or resource areas on site or within 200 feet of the proposed perc location(s). The plan should include the proposed access to the perc site and approximate linear distance from the access drive to the resource area. Potential impacts to soils or vegetation must be noted. Time and day of the scheduled perc test must be noted. A contact name and phone number or address must be included. The perc site must be staked in the field (colorful indicators are appreciated). It is understood that this plan will not be considered a formal wetland delineation, nor will it be considered an approved site plan by the commission. It is a field indicator, which the commission can use to prevent impacts to resource areas prior to any formal commission review process. The commission understands the need for the perc process to precede the design and permit application process. The SCC still has the responsibility to prevent adverse impact to resources regardless of whether a future permit will be filed.

A commission representative will visit each site as quickly as possible to verify the details of the plan submitted. Sites for which access comes within 50 feet of a resource area and for which perc locations are within 100 feet of a resource will not be allowed until a site visit is taken and signature received by the BoH agent. (A minimum of 2 weeks notice is required to schedule a site visit). Plans for sites, which must cross a resource area to access a perc location, must be filed as a Request for Determination with the commission (the applicant should plan to follow the 4-6 week standard public hearing permit time schedule). Sites where the perc location is more than 100 feet from a resource and where the access location is more than 50 feet from any resource, may proceed with the perc test even if a representative of the commission has been unable to get to the site prior to the scheduled test.

Applicants should be aware that if wetland soils or vegetation is disturbed on a site because a submitted plan incorrectly described the site, the commission will consider this a self imposed hardship on the part of the applicant and issue an immediate Cease and Desist Order to the property owner and contractor. All work on site will stop and no further work of any kind will be allowed until full restoration and remediation is realized in the resource area and buffer regardless of future plans for the site. This remediation process will take a year or more as vegetation and soils do not quickly recover from disturbance and damage.

Accordingly: It would be in the best interest of applicants to keep clear of wetlands and resource areas in planning perc locations. If it is necessary to impact resource areas, plans should clearly and accurately reflect this.

3.7 STORMWATER

Minimum Stormwater standards to be implemented for the Town of Sturbridge Conservation Commission purposes will include the following where appropriate: Forebays in all basins; sediment traps; oil and grease traps in all catch basins; check dams; stabilized construction entrances through the use of trap rock or other similar products; multichamber catchbasins: All systems must provide for slow release of stormwater and runoff into receiving waters or drainage systems.

To facilitate the percolation of runoff through the soil to groundwater to help reduce stormwater runoff and reduce

Page 16 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

pollutant migration, wherever possible infiltration basins will be utilized, wherever possible pervious pavement will

Wherever possible vegetative features that maintain and improve natural site hydrology will be implemented. These include but are not limited to grassy swales, vegetated filter strips, or similar features.

3.7.1 Federal Phase II Stormwater

All single projects disturbing an area equal to, or greater than 1 acre, whether the work is contiguous or not, shall comply with Federal Phase II stormwater requirements. For stormwater considerations, developments, whether subdivisions or not, on lands subdivided after January 1, 2002, shall be considered a single project. Developments or projects, whether subdivisions or not, owned in common by an individual, a corporation, or a group of individuals with a common interest, with adjacent or bordering lot lines shall be considered a single project. This includes multiple ANR lots.

Stormwater controls will be implemented for all projects to meet Phase II standards during the course of construction as well as for post construction. To prevent erosion from leaving the site, at a minimum, these measures will include trap rock at all entrances and exits from the property until said entrances are permanently stabilized; a 25-foot undisturbed vegetative buffer between the construction zone and any property lines or a double erosion control

3.7.2 80% Total Suspended Solids (TSS) removal - New Construction

80%TSS Removal is to be considered the absolute minimum. Understanding that removal rate decreases with the age of the system, the expected target for initial removal for new projects will be in excess of 90% TSS removal. Stormwater maintenance plans must be submitted to and approved by the DPW director before the SCC will accept them. DPW approval will be indicated by signature and date from the DPW director.

3.7.3 80% TSS removal - Previously developed sites

For redevelopment of previously developed sites, applicants must take every measure available to reach the highest possible TSS removal for the entire site. Applicants must document and present scientific evidence why the site cannot meet a minimum of 80% removal before a waiver from these regulations will be granted.

3.8 APPLICATION OF HERBICIDES, PESTICIDES, FERTILIZERS OR SALT

The Commission prohibits the use of pesticides, fertilizers and herbicides within the 100 foot buffer and prohibits the use of salts, quick release pesticides, quick release fertilizers and quick release herbicides within the 200 foot buffer.

The only exemptions to these regulations are the application of herbicides within the buffer zone to a resource area, and application of salt in areas for the express interest of public safety where no other measures are adequate or practicable. The herbicide exemption applies only if the work is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333CMR 11.00. Rights of Way Management shall apply only if the person proposing such activity has requested and obtained a determination of the boundaries of the buffer zone and areas subject to protection and has submitted that determination as part of the vegetation management plan. The salt exemption must be brought before the Commission using an RDA application prior to seasonal needs. Such exemptions are allowed for public utilities for work on structures or facilities used in the service of the public. Notification of aquatic or terrestrial herbicide treatment, to the Commission, the local board of selectmen and local board of health, is required at least 30 days in advance of the treatment.

3.9 CONSULTATION

Upon receipt of any permit application, Notice of Intent or Request for Determination, or at any time during the hearing process, the Conservation Commission is authorized to require the applicant to pay for the reasonable costs and expenses of any consultant(s) deemed necessary by the Conservation Commission to review the application. These costs and expenses shall be paid directly to the Town of Sturbridge by the applicant, to be deposited in an agency account by the town treasurer. The Commission or it's representative shall then authorize payment to the consultant after submittal and acceptance of documentation of said review. The exercise of discretion by the Conservation Commission in making a determination that outside consultant expertise is required shall be based on its reasonable finding that additional information acquirable only through outside consultants would be necessary for

> Page 17 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

the making of an objective decision. The specific consultant services may include, but are not limited to, performing area survey and delineation; analyzing wildlife habitat evaluations, hydrogeologic and drainage analysis; and researching environmental or land use law.

For all subdivision projects and commercial/industrial projects, the Commission shall require a peer review as a matter of course for all delineations, proposed infrastructure, drainage calculations, proposed mitigation areas, construction sequence and associated work unless the applicant certifies that all work will be performed outside the 100 foot buffer and that a Conservation Restriction will be issued for all resource area and land within 100 feet of the identified resource areas.

The names of three qualified consultants shall be submitted to the Commission by the applicant. The Commission will choose one to represent the Commission's review needs at the expense of the applicant.

3.10 SECURITY REQUIREMENTS

As part of any permit issued under these regulations, in addition to any security required by any other municipal or State board, agency or official, the Conservation Commission may require that the performance and observance of the conditions impose hereunder be secured wholly or in part by one or more of the methods described below:

- 1. By a proper bond or deposit of money or negotiable securities or other undertaking of financial responsibility sufficient in the opinion of both the Commission and the Town of Sturbridge DPW Director. This bond may be held in common with another town board or agency for which the same restoration work is being bonded. Written, signed agreement that both boards will sign off prior to release of funds will be required.
- 2. By a conservation restriction, easement or other covenant approved by both the Commission and the Department of Environmental Management, where applicable, which is enforceable in a court of law, executed and duly recorded by the owner of record, running with the land to the benefit of Sturbridge whereby the permit conditions shall be performed and observed before any lot may be conveyed other than by mortgage deed.
- 3. If a lot covenant is used in place of a bond, the minimum allowed will be 150% of the market value of the designated lots deemed equivalent to the current cost of restoration as stated by the Town DPW Director. This is to account for possible downward fluctuation in market value during the course of the project.

3.11 SELF IMPOSED HARDSHIPS

The phrase "self-imposed hardship" is not found in either the Wetlands Protection Regulations or the Water Quality Certification Regulation. Water Quality Certification Regulations provide that in certain circumstances, a practicable alternatives analysis should consider lots both currently and formerly owned by an applicant. 314 CMR 9.06(1)(c)1. This suggests that when, for example, an applicant has sold off a means of access, the Department may take that into account in evaluating a water quality certification application.

The Rivers Protection Act 310 CMR 10.58(4) states that the area under consideration for practicable alternatives extends to the original parcel and the subdivided parcels, any adjacent parcels, and any other land, which can reasonably be obtained within the municipality for adjacent lots. Reasonably be obtained, means to purchase at market prices if otherwise practicable, as documented by offers (and any responses). For other land, "reasonably be obtained" means adequate in size to accommodate the project purpose and listed for sale within appropriately zoned areas, at the time of filing a Request for Determination or Notice of Intent, within the municipality. Alternatives extend to any sites which can reasonably be obtained within the appropriate area.

Additionally, the final decision regarding Rabecki, docket # 97-020, approved by Commissioner Liss, upholds the Greenfield Conservation Commission's decision that Rabecki created a self-imposed hardship by purchasing land where he knew that the previous owner had subdivided off all upland access to the property interior. DEP upheld the Commissions decision noting that the prior subdivision prevented upland access to the properties interior and was therefore a self-imposed hardship.

As such: The SCC, in determining whether a self-imposed hardship exists, shall take into account whether alternatives exist/existed, any lots both currently and formerly owned by an applicant, and those lots reasonably available to an applicant.

No special consideration will be given for self imposed hardships. No special consideration will be given for not

Page 18 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

being aware of the requirements of the Wetlands Protection Act, 310CMR 10.00, the Town of Sturbridge Wetland Bylaw, the Town of Sturbridge Conservation Commission Regulations or Policies or any part thereof. No special consideration will be given for those who seek and obtain Planning Board subdivision approval and partially develop parcels, lots or projects of any type prior to delineating and determining resource area boundaries and the 200-foot buffer zone to same.

> Page 19 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

CHAPTER 4 – PROCEDURES

4.1 ACTIONS BY CONSERVATION COMMISSION

Any action by the Conservation Commission is to be taken by a majority of the members present at a meeting. A meeting must be attended by a quorum of Commissioners. A quorum is defined as a majority of the members then in office. The Town of Sturbridge Commission has 5 appointed members, 3 must be present. A majority of commissioners in office must vote in favor of a project for it to be approved. The previously held standard for conservation commission approval was that a vote of a majority of the commissioners present would approve a project. Please note that this has recently changed.

Where an order or notification shall be signed by a majority of the Conservation Commission, that action is to be taken by a majority of the members then in office, who need not convene as a body in order to sign, provided they met pursuant to the open meeting law when voting on the matter. The administrative clerk, agent, a member of the Conservation Commission or an individual designated by the Conservation Commission may receive requests or notices, conduct site visits on behalf of the Commission, and act on administrative matters.

Orders of Conditions and Determinations of Applicability shall be signed by a majority of the Conservation Commission. Copies shall be sent by the Conservation Commission to the DEP, the person making the request, the Building Inspector, the Town Clerk, the Board of Health agent when septic plans are involved and to the property owner. Delivery of the copy to the person making the request shall be by hand delivery or certified mail, return receipt requested. Said permit shall be valid for three years from the date of issuance. Orders of Conditions and Determinations of Applicability issued for Utility Company Right of Way Management shall be valid throughout the effective duration of the Vegetation Management Plan. Letter Permits are valid for one year. Approved amendments are valid only for the duration of the original permit. Extensions may be granted for up to 5 years at the discretion of the Commission.

Public hearings may be continued as follows:

- 1. With the consent of the applicant, to an agreed-upon time, date, and location, which shall be announced at the
- 2. The date, time and place certain of said continued hearing shall be stated at the public hearing and notice posted on the Commission office board and the Town Clerks office board at least 48 hours prior to the
- 3. If the applicant does not consent to a continuation in advance of the hearing, or is not present to give consent to a request for a continuation of the public hearing, the hearing shall be closed and a decision rendered based on the information available to the Commission at that time.

All time periods of ten days or less shall be computed using business days only. In the case of a determination or Order, such period shall commence on the first day after the date of issuance and shall end at the close of business on the tenth business day thereafter. All other time periods specified in M.G.L. c. 131, § 40 and 310 CMR 10.00 and the Town of Sturbridge Wetlands Bylaws shall be computed on the basis of calendar days, unless the last day falls on a Saturday, Sunday or legal holiday, in which case the last day shall be the next business day following.

4.3 PUBLIC HEARING NOTIFICATION REQUIREMENTS

Public hearing notification requirements are the same for all public hearing applications. See Chapter 6 of these regulations for complete application requirements.

Notice of the time and place of the public hearing at which the review by the Commission will be made shall be given by the Conservation Commission at the expense of the person making the request not less than five days prior to such meeting, by publication in a newspaper of general circulation in the city or town in which the land is located. The Commission shall also require that the applicant mail a certified, receipt requested (to be returned to the Commission office) notice to all abutters within 200 feet, the owner, the Board of Health and the Planning Board of the Town of Sturbridge. Notice shall also be given in accordance with the open meeting law, M.G.L. c. 39, § 23B.

> Page 20 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

The notice mailed shall be the standard Notification to Abutters form available on line from the Town of Sturbridge website, the DEP website or through the Commission office.

4.4 ADDITIONAL REQUIREMENTS

The Massachusetts Environmental Policy Act may require an applicant to file an Environmental Notification Form (ENF) and possibly an Environmental Impact Report (EIR) for proposed work. Wetlands threshold for filing an ENF or an EIR with the Massachusetts Environmental Protection Agency can be obtained from the Executive Office of Environmental Affairs (EOEA) website.

4.5 REQUESTS FOR DETERMINATION OF APPLICABILITY

Any person who desires a determination as to whether Conservation Commission jurisdiction applies to land, or to work that may affect an Area Subject to Protection may submit to the Conservation Commission by certified mail or hand delivery a Request for a Determination of Applicability.

For work within riverfront areas, an applicant may submit to the Conservation Commission, by certified mail or hand delivery, a Request for Determination of Applicability to identify the Scope of Alternatives to be evaluated including sufficient information to enable the Conservation Commission to determine the applicable scope. Actual project work within the 200-foot Riverfront Resource Area requires the filing of a Notice of Intent.

Any person who proposes to perform work within the Buffer Zone shall submit to the Conservation Commission sufficient information to enable the Conservation Commission to find and view the area and to determine whether the proposed work will alter an Area Subject to Protection. (See section 6.2)

Any person who proposes to perform work under the Town of Sturbridge Wetland Bylaw only (within the 100 foot to 200 foot buffer, but not within the 100 foot buffer) shall use the Request for Determination form as the application

4.6 DETERMINATION OF APPLICABILITY

Within 21 days of receiving a complete Request for a Determination of Applicability, the Conservation Commission shall open a public hearing (or obtain written permission from the applicant for a time extension) with the purpose of reviewing the application, conducting a site visit to confirm the information submitted, and issuing a Determination of Applicability. The Commission shall issue a determination within 21 days of the close of the public hearing or obtain permission at the public hearing or in writing from the applicant or applicants representative for a defined time extension to issue said determination.

Upon receiving a Negative Determination of Applicability, with or without conditions, by the Commission, work may proceed before the 10 day appeal period has elapsed, at the owner's risk even if a petition for administrative or judicial review has been filed.

Upon receiving a Positive Determination of Applicability by the Conservation Commission, work may not proceed until a Notice of Intent has been filed and a final Order has been issued and recorded and all administrative processes have been finalized and all administrative and judicial appeal periods have elapsed.

A Determination of Applicability expires after three years of issuance. No Determination shall be deemed expired when an appeal is pending.

Please refer to chapter 4.15 for information on the appeal process.

4.7 NOTICES OF INTENT

Any person who proposes to do work that will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter any Area Subject to Protection shall file a Notice of Intent and other application materials in accordance with the submittal requirements set forth in the Instructions for Completing Notice of Intent. Two copies of the completed Notice of Intent with supporting plans and documents shall be sent by certified mail or hand delivery to the Conservation Commission, and one copy of the same shall be sent concurrently in like manner to the DEP. (As outlined in chapter 6 of these regulations.)

Page 21 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Applicants may use the Abbreviated Notice of Intent when all four of the following circumstances exist: the proposed work is within the Buffer Zone and not within the resource area itself, the proposed work does not cause any indirect alteration to any resource area, the proposed work will disturb less than 1000 square feet of surface area within the Buffer Zone, and the proposed work will not require any other state or federal permits.

To establish the extent of bordering vegetated wetland and other resource areas on land subject to protection, applicants may use the Abbreviated Notice of Resource Area Delineation for the confirmation of a delineated boundary of bordering vegetated wetlands and other resource areas on the site, prior to filing a Notice of Intent for proposed work. Alternatively, the boundary of bordering vegetated wetland (or other resource areas) may be determined through the filing of a Notice of Intent or Request for Determination. Please note: due to the time and effort involved in delineating resource area boundaries, a fee will apply. (See section 4.17 for additional information on local fee requirements.)

Upon receipt of the application materials referred to previously, the DEP shall issue a file number. The designation of a file number shall not imply that the plans and supporting documents have been judged adequate for the issuance of an Order, but only that copies of the minimum submittal requirements contained in the General Instructions have been filed.

The Notice of Intent shall also contain a description and calculation of peak flow and estimated water quality characteristics of discharge from a point source (both closed and open channel) when the point of discharge falls within an Area Subject to Protection or within the Buffer Zone for an Area Subject to Protection.

When the issuing authority has determined that an activity outside the Areas Subject to Protection Under the Wetlands Protection Act, Rivers Protection Act and Town of Sturbridge Wetlands Bylaw and outside the Buffer Zone has in fact altered an Area Subject to Protection, it may require such plans, supporting calculations and other documentation as are necessary to describe the entire activity.

When an applicant for a comprehensive permit (under M.G.L. c. 40B, §§ 20 through 23) from a Board of Appeals has received a determination from the board granting or denying the permit and, in the case of a denial, has appealed to the Housing Appeals Committee (established under M.G.L. c. 23B, § 5A), said applicant shall be deemed to have applied for all local permits obtainable at the time of filing. Filing for a Comprehensive Permit from a Board of Appeals does not exempt an applicant of the need to file an application with the Commission for review of applicable state wetlands laws and regulations.

A Notice of Intent shall expire where the applicant has failed to diligently pursue the issuance of a Final Order in proceedings under 310 CMR 10.00. A Notice of Intent shall be presumed to have expired two years after the date of filing unless the applicant submits information showing that good cause exists for the delay of proceedings and that the applicant has continued to pursue the project diligently in other forums in the intervening period. Unfavorable financial circumstances shall not constitute good cause for delay. No Notice of Intent shall be deemed expired when an adjudicatory hearing is pending and when the applicant has provided all information necessary to continue with the hearing of the case. Failure of the applicant to submit all information necessary or requested will be considered a self-imposed hardship and shall not constitute good cause for allowing a waiver to the expiration date.

The following provisions shall apply to any Notice of Intent whenever filed. The Commission may require that supporting plans and calculations be prepared and stamped by a Massachusetts registered professional engineer (PE) when, in its judgment, the complexity of the proposed work warrants this professional certification. The Commission may also require the preparation of supporting materials by other professionals including, but not limited to, registered landscape architect, registered land surveyor, environmental scientist, geologist or hydrologist when, in its judgment, the complexity of the proposed work warrants the relevant specialized expertise.

4.8 ORDERS OF CONDITIONS REGULATING WORK AND ORDERS OF RESOURCE

Page 22 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

AREA DELINEATION

Within 21 days of the close of the public hearing, unless a written extension or verbal permission during a public hearing is given by the applicant, the applicant's representative or the land owner, the Conservation Commission

- Make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is not significant to any of the interests identified and shall so notify the applicant and the DEP, or
- Make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is significant to one or more of the interests identified and shall issue an Order of Conditions for the protection of said interest(s), or
- Make a determination that bordering vegetated wetland and other resource areas subject to jurisdiction have been identified and delineated, and shall issue an Order of Resource Area Delineation to confirm or modify the delineations submitted. The Order of Resource Area Delineation shall be effective for three years, or
- Make a determination that the area on which the work is proposed to be done cannot be conditioned to protect the interests identified and deny the project, or
- Make a determination that the applicant has not submitted sufficient information to determine whether the proposed project will result in significant adverse impact to resource areas or interests identified and shall deny the project until the specified information has been submitted and the review completed.

The Order of Conditions shall impose such conditions as are necessary to meet the performance standards for the protection of those areas found to be significant to one or more of the interests identified.

The Order shall prohibit any work or any portion thereof that cannot be conditioned to meet said standards.

The Order shall impose conditions only upon work or the portion thereof that is to be undertaken within an Area Subject to Protection or within the Buffer Zone to an Area Subject to Protection. Additional conditions may be imposed for upland areas to protect the interests identified, which may, by preponderance of evidence submitted by the applicant or applicant's representative or landowner, or obtained during the review of a submitted application, likely impact an Area Subject to Protection. (See section 1.1)

The Order shall impose conditions setting limits on the quantity and quality of discharge from a point source (both closed and open channel), when said limits are necessary to protect the interests identified; provided, however, that the point of discharge falls within an Area Subject to Protection or within the Buffer Zone to an Area Subject to

The Order shall impose conditions to control and contain erosion and sedimentation and to avoid significant adverse impacts within resource areas and the Buffer Zone.

When the issuing authority has determined that an activity outside the Areas Subject to Protection and outside the Buffer Zone has in fact altered an Area Subject to Protection, it shall impose such conditions on any portion of the activity as are necessary to contribute to the protection of the interests identified.

If the Conservation Commission finds that the information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified, it may issue an Order prohibiting the work until such information is submitted. The Order shall specify the information which is lacking and why it is necessary.

If the Commission finds that a project cannot be conditioned to protect the resource area or the interests identified it must issue an Order of Conditions prohibiting the work and clearly stating the reasons why the project could not be conditioned.

An Order of Conditions or Notification of Non-Significance shall be valid for three years from the date of its issuance except where otherwise specified. No order shall be deemed expired when an appeal is pending.

> Page 23 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

The Order of Conditions or Notification of Non-Significance shall be signed by a majority of the Conservation Commission and shall be mailed by certified mail (return receipt requested) or hand delivered to the applicant or his agent or attorney, and a copy mailed or hand delivered at the same time to the DEP.

If the Order imposes conditions necessary to meet any performance standards contained in the Regulations for Estimated Habitat of Rare Wildlife, a copy shall be mailed or hand delivered at the same time to the Massachusetts Natural Heritage and Endangered Species Program.

A copy of the plans describing the work and the Order shall be kept on file by the Commission until the project is closed or a certificate of compliance has been issued by the SCC, and shall be available to the public at reasonable

Prior to the commencement of any work permitted or required by the Final Order or Notification of Non-Significance, the Order or Notification shall be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. Certification of recording shall be sent to the issuing authority. If work is undertaken without the applicant first recording the Order, the issuing authority may issue an Enforcement Order or Cease and Desist Order or may itself record the Order of Conditions.

An Order of Conditions does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of property rights. Failure to comply with conditions stated in the Order and with all related statutes and other regulatory measures shall be deemed cause to issue a Cease and Desist Order, which is to remain in effect until all conditions have been complied with, regardless of the financial implications to the applicant. Alternatively failure to comply with conditions stated in the Order and with all related statutes and other regulatory measures shall be deemed cause to revoke or modify the Order of Conditions.

It is the applicant's responsibility to send a copy of the final approved plan as outlined in the Order of Conditions or Resource Area Delineation to the DEP. Failure to do so is a violation of the Order of Conditions or other permit.

4.9 COMBINED PERMIT APPLICATIONS

The Conservation Commission, in an appropriate case, may combine the permit or other action on the permit application issued under the Town of Sturbridge Wetland Bylaw with the Order of Conditions or denial issued under the Massachusetts Wetlands Protection Act.

4.10 SITE VISIT REQUIREMENTS AND TIMING OF DELINEATIONS AND RESOURCE VERIFICATION

Subsequent to submitting an application to the Commission and before any permit will be issued, the applicant and or land owner is required to clearly flag or mark the following areas for the purpose of a site visit by the Commission or an agent or representative of the Commission: the boundary of the resource area, the project location, the corner and angle points clearly labeled, the limits of disturbance/erosion control line for the project, the 100 foot buffer and the 200 foot buffer to the resource areas (provided said buffers are on the applicants property). Said markings are to be clearly reflected on the site plans submitted. Failure to do so will be considered grounds to deny the project unless the applicant approves a reasonable time extension to the Commission to conduct additional site visits. The reasonable time extension must take into account the volunteer status of the Commissioners, and the Commission's conservation related work load, at the time of the public hearing in question.

After receiving a permit from the Commission and prior to the start of any work, the erosion control on the site shall be installed as agreed to on the final plan submitted and approved by the Commission. The Commission or agent or representative of the Commission shall be given 72 hours notice to inspect the erosion control and request changes. After that time period, the applicant may start work and the inspection and possible requests for changes in the erosion control will be made at the Commission's earliest convenience.

For phased projects, the applicant shall hold pre-job briefings with the Conservation Commission and/or it's representative prior to each major phase of work, i.e., erosion control installation, tree clearing, grading, roadway construction, etc.

> Page 24 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

4.10.2 Timing of Delineations and Resource Verification

Timing of submittal of proposed plans shall allow for seasonally appropriate resource area delineations and verification of resource areas such as stream status, vernal pool viability or mean annual high water mark for perennial streams. Failure to submit applications with seasonal verification constraints at appropriate times of the year may result in a request by the commission to continue the public hearing until the appropriate time of year for the project specific review, in a permit which requires a minimum of a 200 foot protective buffer around the resource in question, or in a denial of the proposed project.

In the case of challenges to the presumption of vernal pool habitat the Conservation Commission may require that the determination be postponed until the appropriate time period consistent with the evidence being presented. The Commission will either require its own site visits as necessary to confirm the evidence or reliance on a neutral, thirdparty qualified consultant at the applicant's expense.

In the case where precise field verification is necessary to confirm a proposed delineation, the Conservation Commission may require that the delineation be postponed until an appropriate time period where weather conditions allow verification of evidence being presented. The Commission will either require its own site visits as necessary to confirm the evidence or reliance on a neutral, third-party qualified consultant at the applicants expense.

4.11 EXTENSIONS/EXPIRATION OF ORDERS OF CONDITIONS AND DETERMINATIONS OF APPLICABILITY

The Commission may extend an Order for one or more periods of up to three years each. The request for an extension shall be made to the issuing authority at least 30 days prior to expiration of the Order. The Extension Permit shall be signed by a majority of the Commission. A copy of the Extension Permit shall be sent to the DEP.

Extension permits will only be granted for those projects, which meet current state and local regulations. Extensions will not be allowed for projects which do not meet regulations, unless the project is also amended and modified to come in compliance with said regulations. Any review by the Commission for an extension to an approved project will be based on the regulations in effect at the current time.

The Commission may deny the request for an extension and require the filing of a new Notice of Intent for the remaining work in the following circumstances:

- 1. Where no work has begun on the project, except where such failure is due to an unavoidable delay, such as appeals, in the obtaining of other necessary permits:
- 2. Where new information, not available at the time the Order was issued, has become available and indicates that the Order is not adequate to protect the interests identified;
- 3. Where incomplete work is causing damage to the interests;
- 4. Where work has been done in violation of the Order, MGL c. 131 § 40, 310 CMR 10.00, the Town of Sturbridge Wetland Bylaw or these regulations.

The Extension Permit for Orders of Conditions shall be recorded in the Worcester Land Court or the Worcester Registry of Deeds, whichever is appropriate. Proof of recording shall be sent to the Commission prior to the start of any further work. If work is undertaken without the applicant so recording the Extension Permit, the Commission may issue a Cease and Desist Order, or may itself record the Extension Permit.

Extensions for any Order of Conditions not containing an expiration date, issued for work proposed in a Notice of Intent filed under the Wetlands Protection Act prior to November 18, 1974, shall expire on April 17, 1986. Any permits issued after November 18, 1974 shall expire and be considered closed and invalid for any work covered under the permit that has not been started after 3 years from the date of issuance. Extension orders may be obtained from the Commission for projects not completed within the 3 year timeframe, by submitting an extension application at least 30 days prior to the expiration date. Permits for applicants who do not meet this timeline for extending their permit are considered expired and closed. Applicants must file a new permit application, Request for Determination or Notice of Intent, with the Commission for any further work, whether started within the 3 years or not. An applicant may file a petition to waive the refilling requirement and to reopen the Order or Determination with the Commission. In reviewing the application for extension, the Commission may impose additional conditions to the

> Page 25 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

project to meet current state or local law, bylaw or regulation requirements.

4.12 CERTIFICATES OF COMPLIANCE

Upon completion of the work described in a Final Order of Conditions, the applicant shall request in writing the issuance of a Certificate of Compliance stating that the work has been satisfactorily completed. Upon written request by the applicant, a review of the request for a Certificate of Compliance shall be held during public meeting by the Commission within 21 days of receipt thereof. A Certificate of Compliance or a letter of Non-Compliance shall be issued within 45 days of receipt and shall certify that the activity or portions thereof described in the Notice of Intent and plans has been completed in compliance with the Order. The Certificate of Compliance shall be signed by a majority of the Commission. A copy of the Certificate of Compliance shall be sent to the DEP.

Prior to the issuance of a Certificate of Compliance, a site inspection shall be made by the issuing authority. If the issuing authority determines, after review and inspection, that the work has not been done in compliance with the Order, it may refuse to issue a Certificate of Compliance. Such refusal shall be issued within 45 days of receipt of a request for a Certificate of Compliance, shall be in writing and shall specify the reasons for denial.

A copy of the final plans approved in the Order shall accompany the request for a Certificate of Compliance. The final plans accompanying a Certificate of Compliance request must be signed and dated by the party that prepared the plan stating that the as-built site is the same as that shown in the final approved plan.

Certificates of Compliance will not be issued for any site on which there is a replication area for a minimum of 5 years. The five year period has been based established based on the Commission's previous experience with local replication areas.

The Certificate of Compliance shall specify which, if any, of such conditions shall continue. The Certificate shall also specify to what portions of the work it applies, if it does not apply to all the work regulated by the Order.

The Certificate of Compliance shall be recorded in the Land Court or Registry of Deeds, whichever is appropriate. Certification of recording shall be sent to the Commission.

4.13 Waivers

The Commission shall have the power to issue a waiver to an applicant requesting to perform activities as described in section 1.1 of this Town of Sturbridge Wetland Bylaw Regulation, after said applicant files a Notice of Intent with The Commission and The Commission conducts a public hearing. Such waiver shall be set forth by the issuance of an Order of Conditions by the Commission. In order for the Commission to issue a waiver with respect to a particular project, the Commission must find, based on clear and convincing evidence set forth by the applicant, that owing to circumstances relating to soil conditions, hydrological conditions, topography of such land and especially affecting such land but not generally affecting wetlands within the town, a literal enforcement of the provisions of this bylaw would involve substantial hardship, financial or otherwise, to the applicant, and that desirable relief may be granted without detriment to the values protected by the town wetland bylaw and these regulations and without substantially derogating from the extent or purpose of the town wetland bylaw and these regulations.

A waiver (as stated above) to the 50-foot no build and the 25-foot no disturb buffer, may also be granted to applicants under the following circumstances: the area is previously disturbed and the proposed project will improve the protection to the resource area; or, the applicant can prove with documented evidence that there are no other substantially equivalent alternatives available. Said applicant must show that measures will be incorporated into the project to ensure that there will be no negative impact to the resource area and must provide additional layers of protection equivalent to the value of the resource buffer being altered.

Single family homes, existing prior to the adoption of these regulations, on small, lake-front, lots, may, on a case-bycase basis be granted a partial waiver from the 25-foot and 50-foot buffer requirements. Granting of a waiver will be based on the minimum criteria noted in Chapter 1, Section 1.

> Page 26 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

4.14 EMERGENCIES

The permit and application required by this bylaw regulation shall not apply to emergency projects necessary for the protection of the health and safety of the public, provided that the work is to be performed by or has been ordered to be performed by an agency of the Commonwealth or the Town of Sturbridge, provided that notice, oral or written, is provided to the Conservation Commission prior to commencement of work or within 24 hours after commencement, provided that the Conservation Commission certifies the work as an emergency project, and provided that the work is performed only for the time and place certified by the Conservation Commission for the limited purposes necessary to abate the emergency, and provided that protective measures required by the Conservation Commission are complied with, and provided that within 21 days of the commencement of an emergency project, a permit application shall be filed with the Commission for review as provided by this bylaw. (See section 1.3 of these regulations). Such notice shall state the name of the person performing the work, the name of the property owner (if different), the property and the location on the property where the work is to be performed, the exact nature of the emergency and of the work which is to be performed, and when the work was begun and when it is expected to be completed. The Commission may, at its discretion, conduct a site visit to view the work being performed under such notice and to confirm that the information in the notice is correct.

Other than stated in this section the exceptions provided in the Massachusetts Wetlands Protection Act shall not apply.

Any person requesting permission to do an emergency project shall specify why the project is necessary for the protection of the health or safety of the citizens of the Town of Sturbridge and what agency of the town is to perform the project or has ordered the project to be performed.

A single Commissioner can act on a request for emergency certification, with the verbal approval of at least two other Commissioners. The full Commission will review the emergency certification within 21 days of issuance and ratify the certificate and take such other action as it deems appropriate.

Any work undertaken as an emergency activity shall be completed within 30 days from the commencement of such work unless written approval for a later completion date is given by the Commission.

No work shall be allowed within estimated habitat which is indicated on the most recent Estimated Habitat Maps of State-Listed Rare Wetlands Wildlife published by the Natural Heritage and Endangered Species Program of the Massachusetts DEP of Fisheries, Wildlife, and Environmental Law Enforcement without express consent of both NHESP and the Commission, unless in the best professional judgment of the Commission or it's agent that significant and irreparable damage will occur to said habitat without immediate intervention and correction of the

4.15 APPEALS TO THE DEP AND MASSACHUSETTS SUPERIOR COURT

Those aggrieved of the Commission's actions (decision to issue a positive or negative Determination of Applicability, an Order of Conditions, or other permit positive or negative, identification of the Scope of Alternatives for work within the riverfront area, or the failure of a Conservation Commission to either obtain an extension or take action on an application requiring a posted public hearing within 21 days of submittal) based on the State Wetlands Protection Act or the State Riverfront Protection Act, may, within ten days, request the DEP to issue a Superceding Determination of Applicability or Order of Conditions. A Superceding Order from DEP does not negate the local bylaw aspect of the Conservation Commission's permit.

Those aggrieved of the Commission's actions (decision to issue a positive or negative Determination of Applicability, an Order of Conditions, or other permit positive or negative, identification of the Scope of Alternatives for work within the riverfront area, or the failure of a Conservation Commission to either obtain an extension or take action on an application requiring a posted public hearing within 21 days of submittal) based on local bylaw requirements, may, within sixty days, contest the Commissions decision with Massachusetts Superior

The following persons may request an appeal from the DEP or Superior Court:

1. the applicant;

Page 27 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

- 2. the owner, if not the applicant;
- 3. any person aggrieved by an Order:
- 4. any owner of land abutting the land on which the work is to be done;
- 5. any ten residents of the city or town where the land is located;
- 6. the Conservation Commission:
- 7. the Department of Environmental Protection.

4.16 ENFORCEMENT AND CEASE AND DESIST ORDERS

When the Commission, the DEP or the Division of Law Enforcement of the Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE) determines that an activity is in violation of M.G.L. c. 131, § 40, 310 CMR 10.00, the Town of Sturbridge Wetlands bylaw or regulations or a Final Order, the Conservation Commission may issue an Enforcement or Cease and Desist Order. Violations include, but are not limited to:

- 1. Conducting activities regulated by the Town of Sturbridge Wetland bylaw with in a buffer to a resource area
- 2. Conducting work outside the 200 foot buffer, which has a direct or indirect adverse impact on a resource area; 3. Failure to comply with a Final Order, such as failure to observe a particular condition or time period specified
- 4. Failure to complete work described in a Final Order, when such failure causes damage to the interests identified:
- 5. Failure to obtain a valid Final Order or Extension Permit prior to conducting an Activity Subject to Regulation.

A Final Order may be enforced by the Conservation Commission or a member, or designee authorized by the Commission, (the Board of Health Agent, the Director of Inspections or the Police Department), or the DEP. The members, officers, employees and agents of the Conservation Commission and the DEP may enter upon privately owned land for the purpose of performing their duties under M.G.L. c. 131, § 40, 310 CMR 10.08 - 2, and the Town of Sturbridge Wetland Bylaws.

An Enforcement Order issued by a Conservation Commission shall be signed by a majority of the Commission. In a situation requiring immediate action, an Enforcement Order may be signed by a single member or agent of the Commission. Consultation with other members of the Commission is encouraged. Said Order shall be ratified by a majority of the members at the next scheduled meeting of the Commission or will be considered invalid

Owners of land on which violations occur will receive written notice of the violation, what measures are to be taken and the day and time on which the owner or the owner's representative is to meet with the Commission. These meetings will usually be held during the next scheduled public meeting. However, in the case of serious impact or threat of immediate serious impact to a resource area, the Commission may schedule the meeting at the earliest possible date. Determination of serious impact will be at the discretion of a majority of the commission. Failure to attend the meeting scheduled or to notify the Commission and arrange an alternative acceptable time, will result in a Cease and Desist Order being issued at the stated meeting time and date. Failure to respond to the Cease and Desist Order will result in the issuing of an Enforcement Order which will be recorded on the property deed as a lien against the property. Said enforcement order will not be waived until the property and the violation are completely mitigated and restored.

Penalties for actions or violations of wetland/conservation laws, bylaw or regulations, requiring the Commission to initiate enforcement action are on a per site basis and will be as follows:

1st violation written notice 2nd violation \$25.00 3rd violation 4th violation and each subsequent violation \$100.00

> Page 28 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

4.17 FEES

The following fees pertain to local bylaw review and are in addition to those required under the Wetlands Protection

Requests for Determination. A local filing fee of \$25.00 made payable to the Town of Sturbridge as a separate check, shall accompany all Request for Determinations.

Resource Area Delineations. A local filing fee of \$0.10 per foot shall accompany all requests for delineation where work occurs within the 100 foot buffer and when said resource area requires a specific delineation line check (for example, BVW, MAHW for riverfront, etc. MAHW mark for Lake front or clearly defined ponds does not require site specific delineation.) If a delineation has not been made and approved by the Commission within the 3 years prior to the submittal of a project application, a delineation will automatically become part of the project application. Delineations are valid for 3 years. The fee submitted must include the delineation which must be performed by the Commission in order to determine the amount of work being conducted in the buffer zone and the extent of the buffer zone. A local fee of \$0.10 per linear foot, made payable to the Town of Sturbridge, as a separate check, shall be paid by the applicant whether the delineation is filed as a Notice of Intent, a Request for Determination, or a Request for Resource Area Delineation.

Notices of Intent. All Notices of Intent filed pursuant to MGL c. 131 § 40, 310 CMR 10.00 shall be accompanied by a filing fee, the amount of which shall be determined by 801 CMR 4.02(310) (Executive Office for Administration and Finance), and a brief statement indicating how the applicant calculated the fee. 50% of any filing fee in excess of \$25.00 shall be made payable, by check or money order, to the Commonwealth of Massachusetts and shall be sent to the DEP Lock Box accompanied by the Notice of Intent Fee Transmittal Form. The remainder of said fee shall be made payable, by check or money order, to the Town of Sturbridge. Notice of Intent filing fee worksheets are available on line at the DEP website, the SCC website and through the Commission office. (An additional fee of 50% of the total calculated is required for work proposed within a Riverfront Resource Area).

In addition, a local fee of \$50.00, made payable to the Town of Sturbridge, submitted on a separate check from any NoI filing fees shall accompany all NoI filings.

Replication, Mitigation Monitoring. A local fee of \$200 to cover the town's cost for monitoring replication or mitigation areas over the 5 years normally required to monitor these areas, made payable to the Town of Sturbridge. submitted on a separate check, shall accompany all proposals for which replication or mitigation is proposed.

Site Visits, The Commission shall not impose additional fees for site visits unless more than one public hearing related site visit is required due specifically to an applicant's failure to properly mark the site or prepare the plan in accordance with Section 4.10 of these regulations. In this circumstance, to cover the town's cost and to account for the inconvenience imposed on the Commission and staff, a fee of \$25.00 shall be submitted for each site visit necessary due to an applicant's negligence in preparing the field adequately. Multiple site visits necessitated by project complexity or the Commission's discretion to revisit the site, will not be charged an additional site visit fee. Failure to submit the fee will result in denial due incomplete project application.

Waivers, The Conservation Commission may waive the filing fee for an application or request filed by a government agency and may waive the filing fee for a request for determination of applicability filed by a person with no financial connection to the property which is the subject of the request. Said request for waiver shall be made at the time of submittal of the application. In addition, the applicant for all posted NoI and RDA public hearings is responsible for submitting to the Commission clerk on or before the hearing date, a check made payable to "Stonebridge Press" for the cost of the legal advertisement as posted in the local newspaper (The cost of the legal advertisement will be submitted to the applicant in writing).

The applicant is also responsible (if requested in writing) for submitting to the Commission a check in the amount to be determined by the Commission clerk (based on the most current registration fee) made payable to the "Commonwealth of Massachusetts" for the recording of Orders of Conditions by the Commission's clerk for both Notice of Intent Applications and Resource Area Delineation Applications on or before the start of the public hearing. Recording fees imposed by the Registry of Deeds change occasionally and are available on request from the

> Page 29 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Commission office.

General Permit applications will not be considered complete unless all local and state fees are paid at the time of application submittal. The Conservation Commission shall notify, in writing, the applicant when the correct filing fee has not been paid to the town and the filing is therefore incomplete. Said notification shall specify the correct fee amount. The fee will be based on the original project design as proposed in the Notice of Intent, the Request for Determination or the Request for Resource Area Delineation and based on any changes or amendments made during the public hearing process which increase the size of the project. Rebates will not be given for projects which decrease in size during the public hearing, due to an applicant's failure to consider alternatives and reasonable use prior to the initial filing.

Separate checks must be submitted for Notice of Intent and local wetland bylaw filing fees as monies are deposited in different accounts and tracked separately.

In lieu of paying any disputed amount of the filing fee, the applicant may file a Request for a Determination of Applicability with sufficient information to enable the Conservation Commission to determine the extent of the area, or the type and extent of the activity, subject to protection under M.G.L. c. 131, § 40. When a Request For Determination of Applicability is filed by an Applicant to resolve a dispute over the filing fee, all proceedings under the Permit filed with the SCC shall be stayed until all appeal periods for the Determination have elapsed or, if the Determination is appealed, until all proceedings before the DEP or Superior Court have been completed. A Final Determination of Applicability as to the area, or the type and extent of the activity, subject to protection shall be binding on all parties and shall be used in calculating the fee.

4.18 SEVERABILITY

If any provision of any part of the Town of Sturbridge Wetlands Bylaws Regulations or the application thereof, is held to be invalid, such invalidity shall not affect any other provision of said regulations.

4.19 EFFECTIVE DATES OF REGULATIONS

Inlands Wetlands Protection Act "Hatch Act" - 1965

Wetlands Protection Act (MGL 131, Section 40 - 1972

Wetlands Protection Act Regulations- April 1, 1983

Right of Way Herbicide Application - July 10, 1987

Wildlife Habitat Protection - November 1, 1987

Bordering Vegetated Wetland Protection - April 23, 1993

Areas of Critical Environmental Concerns - April 23, 1993

Agricultural - May 21, 1993

Endangered Species Act - June 30, 1995

Rivers Protection Act - August 7, 1996

Town of Sturbridge Wetland Bylaw - October 6, 1996

Rivers Protection Act Regulations - October 6, 1997

Town of Sturbridge Wetland Bylaw Regulations - November 22, 2002

4.20 "GRANDFATHERING"

Any projects possessing a valid Order of Conditions, or other permit, issued under the Massachusetts Wetlands Protection Act at the time of adoption of these regulations shall not be subject to re-review under these regulations. Any revisions to the projects after adoption of these regulations that require an amended or extended permit will be subject to review under these regulations.

The Conservation Commission is empowered to deny a permit for failure to meet the requirements of MGL c. 131 § 40, 310 CMR 10.00, these regulations, or related bylaw; for failure to submit necessary information and plans requested by the Conservation Commission; for failure to meet the performance standards stated; or when the Conservation Commission determines that it is not possible to conduct the requested activity without unacceptable wetlands alterations, or for any other grounds consistent with the Conservation Commission's authority under M.G.L. c. 40 §8C.

> Page 30 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

An Order of Conditions Denial shall specify information which is lacking and why it is necessary for the review or shall specify why the project can not be conditioned to protect the resource areas.

The Conservation Commission may, for good cause, revoke or modify a permit issued under this bylaw after public notice and public hearing, and notice to the permit holder.

4.22 REQUESTS FOR RECLASSIFICATION OF STREAMS

Generally, a body of running water which does not flow throughout the year, has a watershed less than 1 square mile and is shown on the USGS topographic map as intermittent. A dry stream bed must be present for 4 consecutive days at a minimum of 24 hours separation each (i.e. a minimum of 96 consecutive hours), or the stream has a "positive flow" less than 99% of the time.

Occasionally a body of running water which does not flow throughout the year is perennial (dryness may be due to drought, impoundment or other unusual or unnatural circumstances). The determination of stream status will be made by the Commission on a case-by-case basis. The determination will be based on best professional judgment, local site knowledge, scientific data and current state definition at the time the status of a stream is in question.

4.22.2 Perennial Streams/Rivers

See section 5.5 for a complete and detailed definition and description of River or Perennial Stream.

4.22.3 Stream Reclassification Requirements

The SCC reserves the right to reconsider and overturn a reclassification before the 3 years has expired if newly available scientific data and evidence is obtained showing the stream to be perennial. This Commission discretion may occur at any time new evidence becomes available.

The following evidence must be submitted by any applicant requesting a reclassification of a stream as shown on current USGS Topographical maps. Reclassification expires after three years.

- 1. Watershed (i.e., drainage basin) size at the point of the stream for which reclassification is being requested. (A watershed greater than 1 square mile shall be a strong indicator of a perennial stream or river). (A watershed greater than 1/2 square mile with a stratified drift component of 75% or greater shall be a strong indicator of a perennial stream or river).
- 2. Rainfall Data from at least three, triangulating, climatological data sources for the site.
- 3. Current State of Massachusetts declared drought conditions for the specific area in question.
- 4. Flowing water. Flowing water at the site in question shall be a strong indicator of perenniallity. Lack of flowing water during unusually dry conditions (as determined by the Commission based on available rainfall data and observation of below normal water level conditions) shall prohibit reclassification of a stream from perennial to intermittent until normal hydrological conditions exist. Proof of a dry stream bed must be present for 4 consecutive days at a minimum of 24 hours separation each (i.e. a minimum of 96 consecutive hours). Proof must be documented with field notes and dated signed photographs.
- 5. Impoundments created by beavers or man or evidence of withdrawal of water of any kind upstream from the point in question shall be cause to deny a change from perennial to intermittent unless and until the change has been corrected and normal flow conditions have resumed. In the instance of beaver activity, the applicant should note that beavers typically only build dams in response to running water, thus indicating a stream's
- 6. Soil type underlying the stream or watercourse channel.

4.23 RESOURCE AREA DELINEATIONS AND VERIFICATION OF REPLICATION

Delineations, outside of those included in NoI filings, must use the ANoRAD form. Both state and local filing fees apply. For delineations included in an NoI filing, local filing fees may apply. (See section 4.17).

> Page 31 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

4.24 REPORTS DUE

Failure to submit reports on time required in an Order of Conditions or other permit shall be cause for the Commission to issue a Cease and Desist Order until all reports and site data has been submitted to the Commission office. Continued failure to submit said reports shall be deemed sufficient cause to revoke the permit issued due to failure on the applicant or landowners part to provide adequate assurance that the construction site is creating no potential or actual adverse impact to the resource area.

All reports submitted by a third party environmental reviewer shall include;

- The date a request for compliance is made,
- The response from the contractor,
- . The date on which the contractor complied with the request,
- A site plan or locus.

4.25 REVOCATION OF PERMITS

Failure to comply with conditions in any permit issued by the Commission shall be cause to revoke the permit issued following posting of a legal ad in the Southbridge News or other paper of general circulation and after certified notification to abutters.

> Page 32 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

CHAPTER 5 - RESOURCE AREAS, VALUES, PRESUMPTIONS OF SIGNIFICANCE AND GENERAL PERFORMANCE STANDARDS

It shall be noted that this chapter is a work in progress and will evolve as technology and the Commissioners base of knowledge evolves.

The following general performance standards shall apply for all resource areas. An alternative analysis commensurate with the scope of the project shall be presented. A minimum replication standard of 2:1 shall apply to all types of replication and mitigation. There shall be a minimum of a 25-foot no-disturb buffer surrounding all resource areas. There shall be a minimum of a 50-foot no-structure buffer surrounding all resource areas. No project shall lead to a violation of Massachusetts Water Quality Standards, on both numeric and narrative criteria. No project may have adverse impacts on habitat for rare or endangered species or on areas of critical environmental concern. No project will be allowed which has an adverse impact on the interests noted for each resource area. Maximum allowable alterations are at the discretion of the Commission and will be allowed on a case-by-case basis, only in extreme and rare circumstances, and are not to be construed as a right of an applicant or landowner.

Values other than those identified in this section may be determined to be significant to a resource area on a case-bycase basis. Should the Commission determine that additional values are significant based on best professional judgment, a written statement with detailed reasons for the determination shall be submitted to the applicant. An applicant has the right to challenge the additional presumed values based on a preponderance of scientific evidence.

Failure to contain and control sedimentation and erosion on site and out of resource areas and restricted buffers will result in a Cease and Desist Order. All work on site will be stopped until erosion control barriers are corrected and sediments removed from resource areas, restricted buffer areas or impacted off-site areas.

Additional Performance Standards may apply and are listed in the specific resource area sections below.

Banks are likely to be significant to public or private water supply, to ground water supply, to flood control, to storm damage prevention, to the prevention of pollution, to the protection of fisheries and wildlife habitat, Water Quality Protection, Water Pollution Control, Erosion Control and Sedimentation Control.

Where Banks are composed of concrete, asphalt or other artificial impervious material, said Banks are likely to be significant to flood control and storm damage prevention.

Banks are areas where ground water discharges to the surface and where, under some circumstances, surface water recharges the ground water.

Where Banks are partially or totally vegetated, the vegetation serves to maintain the Banks' stability, which in turn protects water quality by reducing erosion and siltation. Banks may also provide shade that moderates water temperatures, as well as providing breeding habitat, escape cover and food, all of which are significant to the protection of fisheries. Banks which drop off quickly or overhang the water's edge often contain numerous undercuts which are favorite hiding spots for important game species. The topography, plant community composition and structure, and soil structure of banks together provide important food, shelter, migratory and overwintering areas, and breeding areas for wildlife. Topography plays a role in determining the suitability of banks to serve as burrowing or feeding habitat. Soil structure also plays a role in determining the suitability for burrowing, hibernation and other cover. Bank topography and soil structure impact the bank's vegetative structure, as well. Bushes and other undergrowth, trees, vegetation extending from the bank into the water, and vegetation growing along the water's edge are also important to a wide variety of wildlife. A number of tubers and berry bushes also grow in banks and serve as important food for wildlife. Finally, banks may provide important shelter for wildlife which needs to move between wetland areas.

Banks act to confine floodwaters during the most frequent storms, preventing the spread of water to adjacent land. Because Banks confine water during such storms to an established channel they maintain water temperatures and depths necessary for the protection of fisheries. The maintenance of cool water temperatures during warm weather is critical to the survival of important game species such as brook trout

> Page 33 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

(Salvelinus fontinalis), rainbow trout (Oncorhynchus mykiss)(Salmo gairdneri) and brown trout (Salmo trutta). An alteration of a Bank that permits water to frequently and consistently spread over a large and more shallow area increases the amount of property which is routinely flooded, as well as elevating water temperature and reducing fish habitat within the main channel, particularly during warm weather.

5.1.1 Definition, Critical Characteristics and Boundary

A Bank is the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain; or, in the absence of these, it occurs between a water body and an upland. A Bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel or stone. The physical characteristics of a Bank, as well as its location, are critical to the protection of the interests identified. The upper boundary of a Bank is the first observable break in the slope or the mean annual flood level, whichever is higher.

5.1.2 General Performance Standards

Any proposed work on a Bank shall not impair the following:

- 1. The physical stability of the Bank;
- 2. The water carrying capacity of the existing channel within the Bank;
- 3. Ground water and surface water quality;
- 4. The capacity of the Bank to provide breeding habitat, escape cover and food for fisheries;
- 5. The capacity of the Bank to provide important wildlife habitat functions.

Where a proposed activity will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter of a Bank, the Commission shall presume that such area is significant to the interests identified. This presumption may be overcome upon a clear showing that the Bank does not play a role in the protection of said interests. In the event that the presumption is deemed to have been rebutted, the Commission shall make a written determination to this effect, setting forth its grounds.

5.2 BORDERING VEGETATED WETLANDS (WET MEADOWS, MARSHES, SWAMPS AND BOGS)

Bordering Vegetated Wetlands are likely to be significant to: public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, wildlife habitat, water quality control, water pollution, and erosion and sedimentation control.

The plants and soils of Bordering Vegetated Wetlands remove or detain sediments, nutrients (such as nitrogen and phosphorous) and toxic substances (such as heavy metal compounds) that occur in run-off and flood waters. Some nutrients and toxic substances are detained for years in plant root systems or in the soils. Others are held by plants during the growing season and released as the plants decay in the fall and winter. This latter phenomenon delays the impacts of nutrients and toxins until the cold weather period, when such impacts are less likely to reduce water quality.

Bordering Vegetated Wetlands are areas where ground water discharges to the surface and where, under some circumstances, surface water discharges to the ground water. The profusion of vegetation in Bordering Vegetated Wetlands acts to slow down and reduce the passage of flood waters during periods of peak flows by providing temporary flood water storage and by facilitating water removal through evaporation and transpiration. This process reduces downstream flood crests and resulting damage to private and public property. During dry periods the water retained in Bordering Vegetated Wetlands is essential to the maintenance of base flow levels in rivers and streams, which in turn is important to the protection of water quality and water supplies.

The Act defines freshwater wetlands by hydrology and vegetation. Hydrology is the driving force which creates wetlands, but it is a transient, temporal parameter. The presence of water at or near the ground surface during a significant portion of the year supports, and in fact promotes, the growth of wetland indicator plants. Prolonged or frequent saturation or inundation also produces hydric soils, and creates anaerobic soil conditions that favor the growth of wetland indicator plants. Hydric soils are direct indicators of long-term hydrologic conditions and are present throughout the year.

> Page 34 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Wetland vegetation supports a wide variety of insects, reptiles, amphibians, small mammals and birds which are a source of food for important game fish. Bluegills (Lepomis macrochirus), pumpkinseeds (Lepomis gibbosus), yellow perch (Perca flavescens), rock bass (Ambloplites rupestris) and all trout species feed upon nonaquatic insects. Chain pickerel (Esox niger) and northern pike (Esox lucius) feed upon small mammals, snakes, nonaquatic insects, birds and amphibians.

Wetland vegetation provides shade, which moderates water temperatures important to fish life. Wetlands flooded by adjacent water bodies and waterways provide food, breeding habitat and cover for fish. Fish populations in the larval stage are particularly dependent upon food provided by over-bank flooding which occurs during peak flow periods (extreme storms) because most river and stream channels do not provide sufficient quantities of the microscopic plant and animal life required for food. Bordering vegetated wetlands are probably the Commonwealth's most important inland habitat for wildlife. The hydrologic regime, plant community composition and structure, soil composition and structure, topography, and water chemistry of bordering vegetated wetlands provide important food, shelter, migratory and overwintering areas, and breeding areas for many birds, mammals, amphibians and reptiles. A wide variety of vegetated wetland plants, the nature of which are determined in large part by the depth and duration of water, as well as soil and water composition, are utilized by varied species as important areas for mating, nesting, brood rearing, shelter and food (directly and indirectly). The diversity and interspersion of the vegetative structure is also important in determining the nature of its wildlife habitat. Different habitat characteristics are used by different wildlife species during summer, winter and migratory seasons. Although the vegetational community can often be analyzed to establish an accurate wetland boundary, sole reliance on the presence of wetland indicator plants can be misleading because some species thrive in both uplands and wetlands. Gently sloping areas often produce large transitional zones where the vegetational boundary is difficult to delineate. Hydrology can supplement vegetative criteria to enhance the technical accuracy, consistency, and credibility of wetland boundary delineations, and are especially useful for analyzing disturbed sites.

5.2.1 Definition, Critical Characteristics and Boundary

Bordering Vegetated Wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground and surface water regime and the vegetational community which occur in each type of freshwater wetland are specified in M.G.L. c. 131, § 40. The physical characteristics of Bordering Vegetated Wetlands, are critical to the protection of the interests identified. The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. Wetland indicator plants shall include but not necessarily be limited to those plant species identified in the Act. Wetland indicator plants are also those classified in the indicator categories of Facultative, Facultative+, Facultative Wetland-, Facultative Wetland, Facultative Wetland+, or Obligate Wetland in the National List of Plant Species That Occur in Wetlands: Massachusetts (Fish & Wildlife Service, U.S. DEP of the Interior, 1988 or more current list) or plants exhibiting physiological or morphological adaptations to life in saturated or inundated conditions.

Areas containing a predominance of wetland indicator plants are presumed to indicate the presence of saturated or inundated conditions. Therefore, the boundary as determined by 50% or more wetland indicator plants shall be presumed accurate when:

- 1. All dominant species have an indicator status of obligate, facultative wetland+, facultative wetland, or facultative wetland- and the slope is distinct or abrupt between the upland plant community and the wetland plant community;
- 2. The area where the work will occur is partly or wholly within the buffer zone; or
- 3. The issuing authority determines that sole reliance on wetland indicator plants will yield an accurate delineation.

When the boundary is not presumed accurate by the Commission, or to overcome the presumption, credible evidence shall be submitted by a competent source (a registered, certified wetlands scientist). The Commission will evaluate vegetation and indicators of saturated or inundated conditions if submitted by a credible source, or may require credible evidence of saturated or inundated conditions when determining the boundary. Indicators of saturated or

> Page 35 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

inundated conditions sufficient to support wetland indicator plants shall include one or more of the following:

- 1. Groundwater, including the capillary fringe, within a major portion of the root zone;
- 2. Observation of prolonged or frequent flowing or standing surface water;
- 3. Characteristics of hydric soils.

Where an area has been disturbed the boundary is the line within which there are indicators of saturated or inundated conditions sufficient to support a predominance of wetland indicator plants, a predominance of wetland indicator plants, or credible evidence from a competent source that the area supported or would support under undisturbed conditions a predominance of wetland indicator plants prior to the disturbance.

The Commission may require restoration in areas where the disturbance occurred without appropriate permitting and prior review and approval.

Where a proposed activity will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter a Bordering Vegetated Wetland, the issuing authority shall presume that such area is significant to the interests identified.

This presumption may be overcome upon a clear showing that the Bordering Vegetated Wetland does not play a role in the protection of said interests. In the event that the presumption is deemed to have been overcome, the issuing authority shall make a written determination to this effect, setting forth its grounds.

5.2.2 General Performance Standards

Any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.

The Commission may issue an Order of Conditions permitting work which results in the loss of up to 5000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the general conditions found in Chapter 7 of these regulations - Wetland Replication, and any additional, specific conditions the Commission deems necessary to ensure that the replication area will function in a manner similar to the area that will be lost. This allowance is at the discretion of the Commission on a case-by-case basis when no other alternatives are possible. Disturbing 5000 square feet of Bordering Vegetated Wetland is the maximum allowable under extreme conditions and not the right of an applicant or landowner.

No project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59, Estimated Habitat for Rare

Any proposed work shall not destroy or otherwise impair any portion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern designated by the Secretary of Environmental Affairs.

5.3 LAND UNDER WATER BODIES AND WATERWAYS (UNDER ANY CREEK, RIVER, STREAM, POND OR LAKE)

Land Under Water Bodies and Waterways is likely to be significant to: public and private water supply, ground water supply, flood control, storm damage prevention, water quality protection, water pollution control, prevention of pollution, protection of fisheries, wildlife habitat protection, rare species habitat protection and erosion and sedimentation control. Where such land is composed of concrete, asphalt or other artificial impervious material, said land is likely to be significant to flood control and storm damage prevention.

Where Land Under Water Bodies and Waterways are composed of pervious material, such land represents a point of exchange between surface and ground water. The physical nature of Land Under Water Bodies and Waterways is highly variable, ranging from deep organic and fine sedimentary deposits to rocks and bedrock. The organic soils and sediments play an important role in the process of detaining and removing dissolved and particulate nutrients (such as nitrogen and phosphorous) from the surface water above. They also serve as traps for toxic substances (such as heavy metal compounds). Land Under Water Bodies and Waterways, in conjunction with banks, serves to confine floodwater within a definite channel during the most frequent storms. Filling within this channel blocks flows which

> Page 36 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

in turn causes backwater and overbank flooding during such storms. An alteration of Land Under Water Bodies and Waterways that causes water to frequently spread out over a larger area at a lower depth increases the amount of property which is routinely flooded. Additionally, it results in an elevation of water temperature and a decrease in habitat in the main channel, both of which are detrimental to fisheries, particularly during periods of warm weather and low flows.

Land under rivers, streams and creeks that is composed of gravel allows the circulation of cold, well oxygenated water necessary for the survival of important game fish species such as brook trout (Salvelinus fontinalis), rainbow trout (Oncorhynchus mykiss), brown trout (Salmo trutto) and atlantic salmon (Salmon salar), River, stream and creek bottoms with a diverse structure composed of gravel, large and small boulders and rock outcrops provides escape cover and resting areas for the above mentioned game fish species (salmonids). Such bottom type also provides areas for the production of aquatic insects essential to fisheries. Land under ponds and lakes is vital to a large assortment of warm water fish during spawning periods. Species such as largemouth bass (Micropterus salmoides), smallmouth bass (Micropterus dolomieui), blue gills (Lepomis macrochirus), pumpkinseeds (Lepomis gibbosus), black crappie (Pomoxis nigromaculatus) and rock bass (Ambloplites rupestris) build nests on the lake or bottom substrates within which they shed and fertilize their eggs.

The plant community composition and structure, hydrologic regime, topography, soil composition and water quality of land under water bodies and waterways provide important food, shelter, migratory and overwintering areas, and breeding areas for wildlife. Certain submerged, rooted vegetation is eaten by water fowl and some mammals. Some amphibians (as well as some invertebrate species eaten by vertebrate wildlife) attach their eggs to such vegetation. Some aquatic vegetation protruding out of the water is also used for nesting, and many species use dead vegetation resting on land under water but protruding above the surface for feeding and basking Soil composition is also important for hibernation and for animals which begin to burrow their tunnels under water. Hydrologic regime, topography, and water quality not only affect vegetation, but also determine which species feed in an area.

5.3.1 Definition, Critical Characteristics and Boundaries

Land Under Water Bodies and Waterways is the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock. The physical characteristics and location of Land Under Water Bodies and Waterways are critical to the protection of the interests identified. The boundary of Land Under Water Bodies and Waterways is the mean annual high water level

Where a project will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter Land Under Water Bodies and Waterways, the Commission shall presume that such area is significant to the Interests Identified.

5.3.2 General Performance Standards

Any proposed work within Land Under Water Bodies and Waterways shall not impair the following:

- 1. The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;
- 2. Ground and surface water quality:
- 3. The capacity of said land to provide breeding habitat, escape cover and food for fisheries; and
- 4. The capacity of said land to provide important wildlife habitat functions.

This presumption may be overcome upon a clear showing that said land does not play a role in the protection of said interests. In the event that the presumption is deemed to have been overcome, the issuing authority shall make a written determination to this effect, setting forth the grounds.

The Commission may issue an Order in accordance with M.G.L. c. 131, § 40 to maintain or improve boat channels within Land Under Water Bodies and Waterways when said work is designed and carried out using the best practical measures so as to minimize adverse effects such as the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms or the destruction of fisheries habitat

> Page 37 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

No project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59, Estimated Habitat of Rare

5.4 LAND SUBJECT TO FLOODING (BORDERING AND ISOLATED AREAS)

5.4.1 Bordering Land Subject to Flooding:

Bordering Land Subject to Flooding is an area which floods from a rise in a bordering waterway or water body. Such areas are likely to be significant to flood control, storm damage prevention, public and private water supply, groundwater supply, water quality protection, water pollution control, prevention of pollution, wildlife habitat, and erosion and sedimentation control.

Bordering Land Subject to Flooding provides a temporary storage area for flood water which has overtopped the bank of the main channel of a creek, river or stream or the basin of a pond or lake. During periods of peak run-off, flood waters are both retained (i.e., slowly released through evaporation and percolation) and detained (slowly released through surface discharge) by Bordering Land Subject to Flooding. Over time, incremental filling of these areas causes increases in the extent and level of flooding by eliminating flood storage volume or by restricting flows, thereby causing increases in damage to public and private properties.

Certain portions of Bordering Land Subject to Flooding are also likely to be significant to the protection of wildlife habitat. These include: (a) all areas on the ten year floodplain or within 100 feet of the bank or bordering vegetated wetland (whichever is further from the water body or waterway, so long as such area is contained within the 100 year floodplain), and (b) all vernal pool habitat on the 100 year floodplain, except for those portions of (a) and (b) which have been so extensively altered by human activity that their important wildlife habitat functions have been effectively eliminated (such "altered" areas include paved and graveled areas, golf courses, cemeteries, playgrounds, landfills, fairgrounds, quarries, gravel pits, buildings, lawns, gardens, roadways (including median strips, areas enclosed within highway interchanges, shoulders, and embankments), railroad tracks (including ballast and embankments), and similar areas lawfully existing on November 1, 1987 and maintained as such since that time).

The hydrologic regime, plant community composition and structure, topography, soil composition and proximity to water bodies and bordering vegetated wetlands of these portions of bordering land subject to flooding provide important food, shelter, migratory and overwintering areas, and breeding areas for wildlife. Nutrients from flood waters, as well as the inundation of floodplain soil, create important wildlife habitat characteristics, such as richness and diversity of soil and vegetation. A great many species require or prefer habitat which is as close as possible to water and/or has moist conditions, characteristics generally present on lower floodplains. Similarly, lower floodplains, because of their proximity to water and vegetated wetlands, can provide important shelter for wildlife which needs to migrate between such areas, or between such areas and uplands. The "edge" where floodplain habitat borders vegetated wetlands or water bodies is frequently very high in wildlife richness and diversity. Similar "edges" may be found elsewhere the lower floodplain, where differences in topography and frequency of flooding have created varied soil and plant community composition and structure.

Finally, vernal pool habitat is found at various locations throughout the 100 year floodplain. The pool itself generally formed by meander scars, or sloughs left after the main water channel has changed course. These pools are essential breeding sites for certain amphibians which require isolated areas that are generally flooded for at least two continuous months in the spring and/or summer and are free from fish predators. Most of these amphibians remain near the breeding pool during the remainder of their lifecycle. Many reptiles, birds and mammals also feed here.

5.4.2 Isolated Land Subject to Flooding

Isolated Land Subject to Flooding is an isolated depression or a closed basin which serves as

a ponding area for run-off or high ground water which has risen above the ground surface Such areas are likely to be significant to flood control, storm damage prevention, public and private water supply, groundwater supply, water quality protection, water pollution control, prevention of pollution, wildlife habitat, and erosion and sedimentation control. In addition, where such areas are underlain by pervious material they are likely to be significant to public or private water supply and to ground water supply. Where such areas are underlain by pervious material covered by

> Page 38 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

a mat of organic peat and muck, they are also likely to be significant to the prevention of pollution. Finally, where such areas are vernal pool habitat, they are significant to the protection of wildlife habitat.

Isolated Land Subject to Flooding provides a temporary storage area where run-off and high ground water pond and slowly evaporate or percolate into the substrate. Filling causes lateral displacement of the ponded water onto contiguous properties, which may in turn result in damage to said properties.

Isolated Land Subject to Flooding, where it is underlain by pervious material, provides a point of exchange between ground and surface waters. Contaminants introduced into said area, such as septic system discharges and road salts, find easy access into the ground water and neighboring wells. Where these conditions occur and a mat of organic peat or muck covers the substrate of the area, said mat serves to detain and remove contaminants which might otherwise enter the ground water and neighboring wells.

Isolated Land Subject to Flooding, where it is vernal pool habitat, is an essential breeding site for certain amphibians which require isolated areas that are generally flooded for at least two continuous months in the spring and/or summer and are free from fish predators. Most of these amphibians remain near the breeding pool during the remainder of their lifecycle. Many reptiles, birds and mammals also feed here.

5.4.3 Definitions, Critical Characteristics and Boundaries

(a) Bordering Land Subject to Flooding:

- 1. Bordering Land Subject to Flooding is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.
- 2. The topography and location of Bordering Land Subject to Flooding are critical to the protection of the interests identified. Where Bordering Land Subject to Flooding is significant to the protection of wildlife habitat, the physical characteristics as described above are critical to the protection of that interest.
- 3. The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program. Said boundary, so determined, shall be presumed accurate. This presumption may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters.
- 4. The boundary of Bordering Land Subject to Flooding shall be the maximum lateral extent of flood water which has been observed or recorded. In the event of a conflict, the Commission may require the applicant to determine the boundary of Bordering Land Subject to Flooding by engineering calculations which shall be:
- A. based upon a design storm of seven inches of precipitation in 24 hours (i.e., a Type III Rainfall, as defined by the Natural Resources Conservation Services);
- B. based upon the standard methodologies set forth in Natural Resources Conservation Services Technical Release No. 55, Urban Hydrology for Small Watersheds and Section 4 of the Natural Resources Conservation Services, National Engineering Hydrology Handbook; or on the most current procedure accepted by the majority of the scientific community, and
- C. prepared by a registered professional engineer or other professional competent in such matters.
- 5. The boundary of the ten year floodplain is the estimated maximum lateral extent of the flood water which will theoretically result from the statistical ten-year frequency storm. Said boundary shall be based on a design storm of seven inches of precipitation in 24 hours (Type III rainfall) as defined by US Soil Conservation Service. Where profile data is unavailable, the boundary shall be the maximum lateral extent of flood water which has been observed or recorded during a 10 year frequency storm. In the event of conflict, the greater boundary shall be determined to be correct.
- 6. Vernal pool habitat are those that have been identified as such by the Commission using recording information required by the Massachusetts Division of Fisheries and Wildlife in certifying vernal pools. Whether said Division has certified said vernal pool habitat to the Conservation Commission and DEP prior to the filing of each Notice of Intent or Abbreviated Notice of Intent or Request for Determination regarding that portion. Such presumption is rebuttable, and may be overcome upon a clear showing to the contrary by a certified registered professional in that field of expertise.
- 7. The boundary of Vernal pool habitat shall include the area within 200 feet of the boundary of the vernal pool

Page 39 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

itself based on highest elevation of water. In the event of a conflict of opinion, or the lack of a clear boundary delineation, the applicant may submit an opinion certified by a registered professional engineer, supported by engineering calculations, as to the probable extent of said habitat. Said calculations shall be based on peak rate of run-off from the drainage area contributing to the vernal pool and shall be further based upon a design storm of seven inches of precipitation in 24 hours.

(b) Isolated Land Subject to Flooding:

- 1. Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing. Isolated Land Subject to Flooding may be underlain by pervious material, which in turn may be covered by a mat of organic peat or muck.
- 2. The characteristics specified above are critical to the protection of the interests identified.
- 3. The boundary of Isolated Land Subject to Flooding is the perimeter of the largest observed or recorded volume of water confined in said area. In the event of a conflict of opinion regarding the extent of water confined in an Isolated Land Subject to Flooding, the applicant may submit an opinion certified by a registered professional engineer, supported by engineering calculations, as to the probable extent of said water. Said calculations shall be prepared based upon the total volume (rather than peak rate) of run-off from the drainage area contributing to the Isolated Land Subject to Flooding and shall be further based upon the assumption that there is no infiltration of said run-off into the soil within the Isolated Land Subject to Flooding.
- 4. Vernal pool habitat are those that have been identified as such by the Commission using recording information required by the Massachusetts Division of Fisheries and Wildlife in certifying vernal pools; Regardless of whether said Division has certified said vernal pool habitat to the Conservation Commission and DEP prior to the filing of each Notice of Intent or Abbreviated Notice of Intent or Request for Determination regarding that portion. Such presumption is rebuttable, and may be overcome upon a clear showing to the contrary by a certified registered professional in that field of expertise. Vernal pools identified by the Commission during the course of the public hearing shall have the same protection as those identified prior to the application submittal date. The burden of proof of non-significance is on the applicant.
- 5. The boundary of vernal pool habitat shall include the area within 200 feet of the boundary of the vernal pool itself based on highest elevation of water. In the event of a conflict of opinion, or the lack of a clear boundary delineation, the applicant may submit an opinion certified by a registered professional engineer, supported by engineering calculations, as to the probable extent of said habitat. Said calculations shall be based on peak rate of run-off from the drainage area contributing to the vernal pool and shall be further based upon a design storm of seven inches of precipitation in 24 hours.

Where a project will remove, fill, dredge, build upon, degrade, discharge into or otherwise alter Land Subject to Flooding (both Bordering and Isolated Areas) the Commission shall presume that such an area is significant to, and only to, the respective interests specified above.

5.4.4 General Performance Standards

(a) Bordering Land Subject to Flooding

- 1. Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the Commission said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows. Compensatory storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river, stream or creek.
- 2. Work within Bordering Land Subject to Flooding, including that work required to provide the abovespecified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.
- 3. Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions, including altering vernal pool habitat.

Page 40 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

(b) Isolated Land Subject to Flooding: A proposed project in Isolated Land Subject to Flooding shall not result in the following:

- 1. Flood damage due to filling which causes lateral displacement of water that would otherwise be confined within said area;
- 2. An adverse effect on public and private water supply or ground water supply, where said area is underlain by
- 3. An adverse effect on the capacity of said area to prevent pollution of the ground water, where the area is underlain by pervious material which in turn is covered by a mat of organic peat and muck;
- 4. An impairment of its capacity to provide wildlife habitat where said area is vernal pool habitat.

No project may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species as identified either by a certified or registered professional in that field of expertise or by procedures established under 310 CMR 10.59 Estimated Habitat of Rare Wildlife.

This presumption may be overcome only upon a clear showing that said land does not play a role in the protection of said interests by a certified or registered professional in that field of expertise. In the event that the presumption is deemed to have been overcome, the issuing authority shall make a written determination to this effect, setting forth

5.5 RIVERFRONT AREA

Riverfront areas are likely to be significant to: public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, the protection of fisheries, wildlife and/or rare species habitat, water quality control, water pollution control, protection of land containing shellfish, and erosion and sedimentation control.

Land adjacent to rivers and streams can protect the natural integrity of these water bodies. The presence of natural vegetation within riverfront areas is critical to sustaining rivers as ecosystems and providing these public values.

The riverfront area can prevent degradation of water quality by filtering sediments, toxic substances (such as heavy metals), and nutrients (such as phosphorus and nitrogen) from stormwater, nonpoint pollution sources, and the river itself. Sediments are trapped by vegetation before reaching the river. Nutrients and toxic substances may be detained in plant root systems or broken down by soil bacteria. Riverfront areas can trap and remove disease-causing bacteria that otherwise would reach rivers and coastal estuaries where they can contaminate shellfish beds and prohibit safe human consumption. Natural vegetation within the riverfront area also maintains water quality for fish and wildlife.

Where rivers serve as water supplies or provide induced recharge to wells, the riverfront area can be important to the maintenance of drinking water quality and quantity. Land along rivers in its natural state with a high infiltration capacity increases the yield of a water supply well. When riverfront areas lack the capacity to filter pollutants, contaminants can reach human populations served by wells near rivers or by direct river intakes. The capacity of riverfront areas to filter pollutants is equally critical to surface water supplies, reducing or eliminating the need for additional treatment. In the watershed, mature vegetation within riverfront areas provides shade to moderate water temperatures and slow algal growth, which can produce odors and taste problems in drinking water.

Within riverfront areas, surface water interaction with groundwater significantly influences the stream ecosystem. The dynamic relationship between surface and groundwater within the "hyporheic zone", located below the stream channel, sustains communities of aquatic organisms which regulate the flux of nutrients, biomass and the productivity of organisms including fish within the stream itself. The hyporheic zone extends to greater distances horizontally from the channel in large, higher order streams with alluvial floodplains, but the interaction within this zone is important in smaller streams as well. By providing recharge and retaining natural flood storage, as well as by slowing surface water runoff, riverfront areas can mitigate flooding and damage from storms. The root systems of riverfront vegetation keep soil porous, increasing infiltration capacity. Vegetation also removes excess water through evaporation and transpiration. This removal of water from the soil allows for more infiltration when flooding occurs. Increases in storage of floodwaters can decrease peak discharges and reduce storm damage. Vegetated riverfronts also dissipate the energy of storm flows, reducing damage to public and private property.

> Page 41 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Riverfront areas are critical to maintaining thriving fisheries. Maintaining vegetation along rivers promotes fish cover, increases food and oxygen availability, decreases sedimentation, and provides spawning habitat. Maintenance of water temperatures and depths is critical to many important fish species. Where groundwater recharges surface water flows, loss of recharge as a result of impervious surfaces within the riverfront area may aggravate low flow conditions and increase water temperatures. In some cases, summer stream flows are maintained almost exclusively from groundwater recharge. Small streams are most readily impacted by removal of trees and other vegetation along the shore.

Riverfront areas are important wildlife habitat, providing food, shelter, breeding, migratory, and overwintering areas. Even some predominantly upland species use and may be seasonally dependent on riverfront areas. Riverfront areas promote biological diversity by providing habitats for an unusually wide variety of upland and wetland species. including bald eagles, osprey, and kingfishers. Large dead trees provide nesting sites for bird species that typically use the same nest from year to year. Sandy areas along rivers may serve as nesting sites for turtles and water snakes. Riverfront areas provide food for species such as wood turtles which feed and nest in uplands but use rivers as

Riverfront areas provide corridors for the migration of wildlife for feeding or breeding. Loss of this connective function, from activities that create barriers to wildlife movement within riverfront areas, results in habitat fragmentation and causes declines in wildlife populations. Wildlife must also be able to move across riverfront areas, between uplands and the river.

Vernal pools are frequently found within depressions in riverfront areas. These pools are essential breeding sites for certain amphibians which require isolated, seasonally wet areas without predator fish. Most of these amphibians require areas of undisturbed woodlands as habitat during the non-breeding seasons. Some species require continuous woody vegetation between woodland habitat and the breeding pools. Depending on the species, during non-breeding seasons these amphibians may remain near the pools or travel one-fourth mile or more from the pools. Reptiles, especially turtles, often require areas along rivers to lay their eggs. Since amphibians and reptiles are less mobile than mammals and birds, maintaining integrity of their habitat is critical. In those portions so extensively altered by human activity that there important wildlife habitat functions have been effectively eliminated, riverfront areas are not significant to the protection of important wildlife habitat and vernal pool habitat.

5.5.1 Definitions, Critical Characteristics and Boundaries.

A Riverfront Area is the area of land between a river's mean annual high water line and a parallel line located 200 feet away, measured horizontally outward from the river's mean annual high water line. The riverfront area may include or overlap other resource areas or their buffer zones. The riverfront area does have a buffer zone. Rivers begin at the point an intermittent stream becomes perennial, or at a spring or pond which discharges throughout the year. Water does not flow throughout the year in intermittent streams; when the water is not flowing, it may remain in isolated pools or surface water may be absent. Downstream of the point of perennial flow, a perennial stream normally remains a river except when interrupted by a lake or pond.

A river is any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. Perennial streams are rivers; intermittent streams are not rivers

The Commission shall presume that a river or stream shown as perennial on the current United States Geologic Survey topographic quadrangle map (at 1:24,000 scale) (U.S.G.S.) or a more recent map provided by the DEP is perennial unless rebutted by evidence from a competent source asserting to the contrary or a finding by the Commission based on site visit observation, DEP staff, Conservation Commissioners, and Conservation Commission staff are competent sources; the Commission may consider evidence from other sources.

If a river or stream is shown as intermittent or not shown on the current U.S.G.S. map or a more recent map provided by the DEP, an assertion that it is perennial must be supported by evidence by the person making the assertion or by the Commission upon its own initiative, which may include evidence of the presence of aquatic macroinvertebrate species which require perennial flows; evidence of a stream order of two or greater; presence of a U.S.G.S. stream gauge at or upstream of the project location; a watershed size of greater than three square miles, or other evidence.

> Page 42 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

If a river or stream is shown as perennial on the current U.S.G.S. map or more recent map provided by the DEP, an assertion that it is intermittent must be supported by evidence by the person making the assertion which may include field observations that the river is not flowing for a minimum of 3 consecutive months for at least 2 consecutive years, provided the date of observation is not within an extended drought; absence of a channel or banks; soils information showing the groundwater elevation is not at or near the surface; or other evidence. (See section 4.22).

Rivers include the entire length of the major rivers (Assabet, Blackstone, Charles, Chicopee, Concord, Connecticut, Deerfield, Farmington, French, Hoosic, Housatonic, Ipswich, Merrimack, Millers, Nashua, Neponset, Parker (Essex County), **Quinebaug**, Shawsheen, Sudbury, Taunton, Ten Mile, and Westfield).

Rivers include perennial streams which are dry during periods of extended drought, defined as period when precipitation for the previous four months was below normal for the period of record, with at least three of the four months 50% or less and two of the four months 75% or less of normal precipitation. Rivers and streams which are perennial under natural conditions but affected by drawdown from withdrawals of water supply wells or direct withdrawals shall be considered perennial.

Where rivers flow through lakes or ponds, the riverfront area stops at the inlet and begins again at the outlet. A water body identified as a lake, pond, or reservoir on the current U.S.G.S. map or more recent map provided by the DEP, is a lake or pond, unless Commission determines that the water body has primarily riverine characteristics. When a water body is not identified as a lake, pond, or reservoir on the current U.S.G.S. map or more recent map provided by the DEP, the water body is a river if it has primarily riverine characteristics. Riverine characteristics include unidirectional flow that can be visually observed or measured in the field.

In addition, rivers are characterized by horizontal zonation, as opposed to the vertical stratification typically associated with lakes, ponds, and embayments. Great Ponds (i.e., any pond which contained more than ten acres in its natural state, as calculated based on the surface area of lands lying below the natural high water mark; a list is available from the DEP) are never rivers.

Mean Annual High-Water Line of a river is the line that is apparent from visible markings or changes in the character of soils or vegetation due to the prolonged presence of water and that distinguishes between predominantly aquatic and predominantly terrestrial land. Field indicators of bankfull conditions shall be used to determine the mean annual high-water line. Bankfull field indicators include but are not limited to: changes in slope, changes in vegetation, stain lines, top of pointbars, changes in bank materials, or bank undercuts.

- 1. In most rivers, the first observable break in slope is coincident with bankfull conditions and the mean annual high-water line.
- 2. In some river reaches, the mean annual high-water line is represented by bankfull field indicators that occur above the first observable break in slope, or if no observable break in slope exists, by other bankfull field indicators. These river reaches are characterized by at least two of the following features: low gradient, meanders, oxbows, histosols, a low-flow channel, or poorly-defined or nonexistent banks.

Measured horizontally means that the riverfront area extends at a right angle to the mean annual high-water line rather than along the surface of the land.

Where a river runs through a culvert more than 200 feet in length, the riverfront area stops at a perpendicular line at the upstream end of the culvert and resumes at the downstream end. When a river contains islands, the riverfront area extends landward into the island from and parallel to the mean annual high-water line.

The physical characteristics of a Riverfront Area are critical to the protection of the interests identified above.

The Boundary of the Riverfront Area is a line parallel to the mean annual high-water line, located at the outside edge of the riverfront area. At the point where a stream becomes perennial, the riverfront area begins at a line drawn as a semicircle with a 200 radius around the point and connects to the parallel line perpendicular to the mean annual high-water line which forms the outer boundary.

> Page 43 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

5.5.2 Presumption of Significance

Where a proposed activity involves work within the riverfront area, the Commission shall presume that the area is significant to protect: the private or public water supply; groundwater; flood control; prevent storm damage; prevent pollution; land containing shellfish; wildlife and/or rare species habitat; water quality, water pollution control, erosion and sedimentation, and fisheries. The presumption is rebuttable and may be overcome by a clear showing that the riverfront area does not play a role in the protection of each one of these interests. In the event that the presumption is deemed to have been overcome as to the protection of all the interests, the issuing authority shall make a written determination to this effect, setting forth its grounds. Where the applicant provides information that the riverfront area at the site of the activity does not play a role in the protection of a single interest, the issuing authority may determine that the presumption for that interest has been rebutted and the presumption of significance is partially overcome. The applicant must overcome, beyond reasonable doubt, each and every presumption of significance in order to conduct work within the 200 foot Riverfront Resource Area.

5.5.3 General Performance Standard

The applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified and that the work, including proposed mitigation, will have no significant adverse impact on the riverfront area to protect the interests identified. In the event that the presumption is partially overcome, the issuing authority shall make a written determination setting forth its grounds in the Order of Conditions. The Commission shall impose conditions in the Order that contribute to the protection of interests for which the riverfront area is significant.

The work shall meet the performance standards for all other resource areas located within the riverfront area.

No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, or which will have any adverse effect on vernal pool habitat whether certified or identified by the Commission prior to or during the public hearing.

Practicable alternatives There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified.

Definition of Practicable An alternative is practicable and substantially equivalent economically if it is available and capable of being done after taking into consideration costs, existing technology, proposed use, and logistics, in light of overall project purposes. Available and capable of being done means the alternative is obtainable and feasible. Project purposes shall be defined generally (e.g., single family home, residential subdivision, expansion of a commercial development). The alternatives analysis may reduce the scale of the activity or the number of lots available for development, consistent with the project purpose and proposed use. Transactions shall not be arranged to circumvent the intent of alternatives analysis review. The four factors to be considered are:

- 1. The cost of an alternative must be reasonable for the project purpose, and cannot be prohibitive. Higher or lower costs taken alone will not determine whether an alternative is practicable. An alternative for proposed work in the riverfront area must be a practicable and substantially equivalent economic. In considering the costs to the owner, the evaluation should focus on the financial capability reasonably expected from the type of owner (e.g., individual homeowner, residential developer, small business owner, large commercial or industrial developer) rather than the personal or corporate financial status of that particular owner. Applicants should not submit, nor should issuing authorities request, financial information of a confidential nature, such as income tax records or bank statements. Issuing authorities may require documentation of costs, but may also base their determinations on descriptions of alternatives, knowledge of alternative sites, information provided by qualified professionals, comparisons to costs normally associated with similar projects, or other evidence. Any documentation of costs should be limited to that required for a determination of whether the costs are reasonable
- 2. Existing technology, which includes best available measures (i.e., the most up-to-date technology or the best designs, measures, or engineering practices that have been developed and are commercially available);
- 3. The proposed use. This term is related to the concept of project purpose
- 4. Logistics. Logistics refers to the presence or absence of physical or legal constraints. Physical characteristics of a site may influence its development. Legal barriers include circumstances where a project cannot meet other applicable requirements to obtain the necessary permits at an alternative site. An alternative site is not

Page 44 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

practicable if special legislation or changes to municipal zoning would be required to achieve the proposed use or project purpose.

Scope of Alternatives The scope of alternatives under consideration shall be commensurate with the type and size of the project. The issuing authority shall presume that alternatives beyond the scope described below are not practicable and therefore need not be considered. The Commission or another party may overcome the presumption by demonstrating the practicability of a wider range of alternatives, based on cost, and whether the cost is reasonable or prohibitive to the owner; existing technology; proposed use; and logistics in light of the overall project purpose.

- 1. The area under consideration for practicable alternatives is limited to the lot for activities associated with the construction or expansion of a single family house on a lot recorded on orbefore August 1, 1996.
- 2. The area under consideration for practicable alternatives is limited to the lot, the subdivided lots and any adjacent lots formerly or presently owned by the same owner on a lot recorded after August 1,
- 3. The area under consideration for practicable alternatives extends to the original parcel and the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality for adjacent lots, reasonably be obtained, means to purchase at market prices if otherwise practicable, as documented by offers (and any responses). For other land, reasonably be obtained means adequate in size to accommodate the project purpose and listed for sale within appropriately zoned areas, at the time of filing a Request for Determination or Notice of Intent, within the municipality.
- 4. Alternatives extend to any sites which can reasonably be obtained within the appropriate area.

Evaluation of Alternatives The applicant shall demonstrate that there are no practicable and substantially equivalent economic alternatives within the Scope of Alternatives with less adverse effects on the interests identified. The applicant shall submit information to describe sites and the work both for the proposed location and alternative site locations and configurations sufficient for a determination by the Commission. The level of detail of information shall be commensurate with the scope of the project and the practicability of alternatives. Where an applicant identifies an alternative which can be summarily demonstrated to be not practicable, an evaluation is not required.

The purpose of evaluating project alternatives is to locate activities so that impacts to the riverfront area are avoided to the extent practicable. Projects within the Scope of Alternatives must be evaluated to determine whether any are practicable. As much of a project as is feasible shall be sited outside the riverfront area. If siting of a project entirely outside the riverfront area is not practicable, the alternatives shall be evaluated to locate the project as far as possible

The Commission shall not require alternatives which result in greater or substantially equivalent adverse impacts. If an alternative would result in no identifiable difference in impact, the issuing authority shall eliminate the alternative. If there would be no less adverse effects on the interests identified, the proposed project rather than a practicable alternative shall be allowed, but the criteria for determining no significant adverse impact must still be met. If there is a practicable and substantially equivalent economic alternative with less adverse effects, the proposed work shall be denied and the applicant may either withdraw the Notice of Intent or receive an Order of Conditions for the alternative, provided the applicant submitted sufficient information on the alternative in the Notice of Intent.

No Significant Adverse Impact The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests.

Within 200 foot riverfront areas, the issuing authority may, in unusual circumstances, allow, as a consideration and not as a right, the alteration of up to 10% of the riverfront area within the lot, on a lot recorded on or before October 6, 1997, or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided that:

1. At a minimum, a 100 foot wide area of undisturbed vegetation is provided. This area shall extend from mean annual high-water along the river unless another location would better protect the interests identified. If there is not a 100 foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100 foot wide corridor of natural vegetation. Replication and compensatory storage required to meet other resource area performance standards are allowed within this area; structural stormwater management measures may be allowed only when there is no practicable alternative. Temporary impacts where necessary for installation of linear site-related utilities are

> Page 45 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

allowed, provided the area is restored to its natural conditions.

- 2. Stormwater is managed according to standards established by the DEP Phase II Stormwater requirements.
- 3. Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat identified by evidence from a competent source, but not yet certified. For work within an undeveloped riverfront area which exceeds 5,000 square feet, Commission requires a wildlife habitat evaluation study under 310 CMR 10.60.
- 4. Proposed work shall not impair groundwater or surface water quality, by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution. The calculation of square footage of alteration shall exclude areas of replication or compensatory flood storage required to meet performance standards for other resource areas, or any area of restoration within the riverfront area. The calculation also shall exclude areas used for structural stormwater management measures, provided there is no practicable alternative to siting these structures within the riverfront area and provided a wildlife corridor is maintained (e.g. detention basins shall not be fenced).

When an applicant proposes restoration on-site, of degraded riverfront area, alteration may be allowed at a ratio in square feet of at least 2:1 of restored area to area of alteration not conforming to the criteria. Restoration shall

- 1. Removal of all debris, but retaining any trees or other mature vegetation;
- 2. Grading to a topography which reduces runoff and increases infiltration;
- 3. Coverage by topsoil at a depth consistent with natural conditions at the site; and
- 4. Seeding and planting with an erosion control seed mixture, followed by plantings of herbaceous and woody species appropriate to the site.

When an applicant proposes mitigation either on-site or in the riverfront area within the same general area of the river basin, alteration may be allowed at a ratio in square feet of at least 2:1 of mitigation area to area of alteration for previously disturbed sites.

The following may be allowed in the Riverfront Area by the Commission and requires the filing of a Notice of Intent and prior review and approval:

- 1. Fencing, provided it will not constitute a barrier to wildlife movement; stonewalls; stacks of cordwood may be allowed in the riverfront area;
- 2. Vista pruning, provided the activity is located more than 100 feet from the mean annual high water line within a riverfront area or from bordering vegetated wetland, whichever is farther;
- 3. Plantings of native species of trees, shrubs, or groundcover, but excluding turf lawns;
- 4. The conversion of lawn to uses accessory to existing single family houses in existence on August 7, 1996, such as decks, sheds, patios, and pools, provided the activity is located more than 50 feet from the mean annual high-water line within the riverfront area or from bordering vegetated wetland, whichever is farther, and erosion and sedimentation controls are implemented during construction;
- 5. The conversion of impervious to vegetated surfaces, provided erosion and sedimentation controls are implemented during construction; and
- 6. The repair or upgrade of existing septic systems in compliance with 310 CMR 15.000.

5.6 VERNAL POOLS CERTIFIED, POTENTIAL AND IDENTIFIED

5.6.1 Definitions

The term "vernal pool" shall include, in addition to that already defined under the Wetlands Protection Act, G.L. Ch. 131, §40 and Regulations thereunder, 310 CMR 10.00, and as excerpted in the Massachusetts Aerial Photo Survey of Potential Vernal Pools, Massachusetts Natural Heritage & Endangered Species Program, 2001, any confined basin or depression not occurring in existing lawns, gardens, landscaped areas, or driveways which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, contains 200 cubic feet of water at some time during most years (an isolated wetland may be determined to be a vernal pool even though it has less than 200 cubic feet of water at some time most years), is free of adult predatory fish populations, and provides essential breeding and rearing habitat functions for amphibian, reptile or other vernal pool community species, regardless of whether the site has been certified by the Massachusetts Division of Wildlife and Fisheries, Natural Heritage and Endangered Species Program. The presumption of essential habitat value may be overcome by the presentation of credible evidence which in the judgment of the Commission demonstrates that the basin or

Page 46 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

depression does not provide the habitat functions as specified in the Bylaw regulations. The adjacent upland resource area for vernal pools shall extend 200 feet from the mean annual high-water line defining the depression, or one-half of the distance between the vernal pool and any existing house foundation, whichever is greater. In either case the adjacent upland resource area for vernal pools shall not extend over lawns, gardens, landscaped or developed areas existing at the time of the adoption of these regulations.

5.6.2 Presumption of Vernal Pool Habitat

Where a proposed activity involves work within 200 feet of a certified or identified vernal pool, the Commission shall presume that the area is significant to protect: groundwater, water quality, wildlife habitat and/or Rare species habitat.

Based on an overwhelmingly consistent show that those vernal pool identified by NHESP as potential vernal pools are in fact identifiable vernal pools, all potential vernal pools as noted by NHESP shall be considered identified vernal pools. Burden of proof to the contrary is the responsibility of the applicant.

The bylaw/regulation presumes vernal pool habitat exists if a wetland's physical characteristics conform with those defined above.

This presumptive definition for vernal pools is based on systematic field observations by NHESP, "the Vernal Pool Association", and SCC staff, showing that virtually all basins that possess the above characteristics, cited in 5.6.1 actually host breeding vernal pool species. The presumption of vernal pool habitat may be overcome, however, with the presentation of credible evidence, which in the judgment of the Conservation Commission demonstrates that the wetland does not provide, or cannot provide, vernal pool habitat functions.

5.6.3 Demonstrating that a Ponding Area is not a Vernal Pool

For the purposes of overcoming the presumption of vernal pool habitat the Commission will consider:

- 1. Evidence that the ponding area does not hold water for at least two continuous months in most years. As a rule of thumb the term "most years" shall mean three out of five consecutive years.
- 2. Evidence that vernal pool species do not breed or have not bred in the ponding area. The Conservation Commission shall provide explicit guidelines for this evidence.
- 3. Evidence that the ponding area could not be a viable breeding site for vernal pool species due to incompatible physical, chemical, biological, or other persistent conditions at the site in most years. Such evidence could include, without limitation, several months of pH and dissolved oxygen measurements yielding values incompatible with amphibian or reptile breeding.

5.6.4 Timing of Evidence Collection

Many of the indicators of vernal pool habitat are seasonal. For example, certain salamander egg clusters are only found between late March and late May. Wood frog chorusing only occurs between late March and May, and then only at night. Consequently, failure to find evidence of breeding must be tied explicitly to those periods during which the evidence is most likely to be available.

Accordingly, in the case of challenges to the presumption of vernal pool habitat the Conservation Commission may require that the determination be postponed until the appropriate time period consistent with the evidence being presented. The Commission may also require its own site visits as necessary to confirm the evidence.

Should the Commission or the NHESP identify or certify a vernal pool (or Habitat for Rare Wildlife) after a public hearing has been closed and an order or other permit issued, the Commission may reopen the public hearing and issue additional conditions to protect said areas. The public hearing may only be reopened after notification has been made to the applicant, the owner, DEP, all abutters within 200 feet. A legal advertisement must be posted in the local newspaper at least 5 days prior to the public hearing. Notice must be posted on the Town Clerk's Board at least 48 hours in advance of the public hearing.

5.6.5 General Performance Standards

Any work with in the 200-foot buffer zone to a vernal pool shall not cause a significant adverse impact to any function of a vernal pool. It shall not result in a measurable decrease in extant wildlife populations or biological

> Page 47 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

community composition, structure, and species richness of the site or in the vicinity exclusive of the present or future state of adjacent or nearby property or impair, damage, or reduce in value for wildlife purposes, identified specific habitat features. The Commission shall take into account indirect effects including but not limited to effects of nearby human activities on a case-by-case basis.

5.7 ESTIMATED HABITATS OF RARE WILDLIFE

If a project is within estimated habitat, which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by the Natural Heritage and Endangered Species Program, a fully completed copy of the Notice of Intent for such project shall be sent to the Program via the U.S. Postal Service by express or priority mail (or otherwise sent in a manner that guarantees delivery within two days). Such copy shall be sent no later than the date of the filing of the Notice of Intent with the issuing authority. Proof of timely mailing or other delivery to the Program of the copy of such Notice of Intent shall be included in the Notice of Intent which is submitted to the Commission and sent to the DEP's regional office.

Estimated Habitat Maps shall be based on the estimated geographical extent of the habitats of all state-listed vertebrate and invertebrate animal species for which a reported occurrence within the last 25 years has been accepted by the Program and incorporated into its official data base.

If a proposed project is found by the Commission to alter a resource area which is part of the habitat of a state-listed species, such project shall not be permitted to have any short or long term adverse effects on the habitat of the local population of that species. A determination of whether or not a proposed project will have such an adverse effect shall be made by Commission based on the written opinion of the Program and/or private or third party consultants as to whether or not a proposed project will have such an adverse effect.

5.7.1 General Performance Standards

Work within areas identified as habitat for rare and endangered species shall not result in a measurable decrease in extant wildlife populations or biological community compositions, structure, and species richness of the site or in the vicinity exclusive of the present or future state of adjacent or nearby property or impair, damage, or reduce in value for wildlife purposes, identified specific habitat features. The Commission shall take into account indirect effects including but not limited to effects of nearby human activities on a case-by-case basis.

5.8 WILDLIFE HABITAT EVALUATIONS

An evaluation of whether a proposed project will have an adverse effect on wildlife habitat beyond permissible thresholds shall be performed by an individual with at least a masters degree in wildlife biology or ecological science from an accredited college or university, or other competent professional with at least two years experience in wildlife habitat evaluation

5.8.1 Wildlife Habitat Characteristics of Inland Resource Areas

- 1 Banks. The topography, soil structure, and plant community composition and structure of banks can provide the following important wildlife habitat functions:
 - a. Food, shelter and migratory and breeding areas for wildlife
 - b. Overwintering areas for mammals and reptiles.
- 2 Land Under Water Bodies or Waterways. The plant community and soil composition and structure, hydrologic regime, topography and water quality of land under water bodies or waterways can provide the following important wildlife habitat functions:
 - a. Food, shelter and breeding areas for wildlife;
 - b. Overwintering areas for mammals, reptiles and amphibians.
- 3 Vernal Pool Habitat. The topography, soil structure, plant community composition and structure, and hydrologic regime of vernal pool habitat can provide the following important wildlife habitat functions:
 - a. Food, shelter, migratory and breeding areas, and overwintering areas for amphibians;
 - b. Food for other wildlife.
- 4 Lower Floodplains. The hydrologic regime, plant community and soil composition and structure, topography, and proximity to water bodies and waterways of lower floodplains can provide the following important wildlife habitat functions:
 - a. Food, shelter, migratory and overwintering areas for wildlife;

Page 48 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

- b. Breeding areas for birds, mammals and reptiles.
- 5 Riverfront Area. The topography, soil structure, plant community composition and structure, and hydrologic regime can provide the following important wildlife habitat functions:
 - a. Food, shelter, overwintering and breeding areas for wildlife, including turtle nesting areas, nesting sites for birds which typically reuse specific nesting sites, cavity trees, and isolated depressions that function as vernal pools:
 - b. Migratory areas along the riparian corridor including the movement of wildlife unimpeded by barriers within the riverfront area

The Commission shall give special attention to inclusion of those topographical and ecological features that it deems important for maintaining the wildlife habitat value of the resource. The potential presence of rare or endangered species and their specific sensitivity to adjacent upland resource activity shall be considered in determining adjacent upland resource restrictions. Evidence of the presence of such species or evidence of likely habitat shall be considered by the Conservation Commission. Prior designation of rare or endangered species habitat by the Division of Fisheries and Wildlife Natural Heritage Program is not necessary. The Commission may consult with the Division of Fisheries and Wildlife Natural Heritage Program or other authorities as it deems necessary for guidance and recommendations.

Wildlife studies have shown that direct impacts from work - filling, grading, vegetation removal, construction of barriers to movement, etc. - in resource areas can severely harm wildlife populations. For example, low stone walls bisecting a resource area can prevent amphibians that live in upland areas from reaching breeding pools, marshes, and streams. Or, removal of large snags (dead trees) can virtually eliminate nesting by barred owls, pileated woodpeckers, mink, etc. Accordingly, the Commission shall prohibit the placement of fences or other barriers to wildlife movement within and between resource areas and the destruction of specific habitat features.

Examples of protected habitat features include (but are not limited to):

- Large cavity trees
- > Turtle nesting areas
- Existing nest trees for birds that reuse nests
- Beaver dams, dens, and lodges
- Mink or offer dens
- Vernal pools
- Vertical sandy banks
- Migration corridors that provide connectivity between wildlife habitats (i.e. continuous vegetated
- Sphagnum hummocks and pools suitable to serve as nesting habitat for salamanders

Indirect impacts - the effects of human activities near wildlife habitat - can have equally harmful effects. Therefore the Commission shall take into account indirect effects on a project by project basis. So, for example, no work within resource areas shall be permitted within 100 feet of existing beaver, mink or otter dens, or within 200 feet of existing osprey or great blue heron nests.

The Commission will evaluate the likely cumulative impact of work within resource areas. For wildlife habitat purposes a significant cumulative adverse impact is defined as an impact that would under reasonable assumptions result in a measurable decrease in the extant wildlife populations or biological

structure, composition, or richness on the site or in the vicinity taking into account the projected impacts of future projects that could be proposed in the vicinity with similar, comparable, or other significant impacts and disturbance.

> Page 49 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

CHAPTER 6 - ADDITIONAL REGULATIONS AND INFORMATION

6.1 Projects on Slopes 8% or Greater

For projects occurring on slopes of 8% or greater, the conservation buffer zone is 500 feet. The Town of Sturbridge Wetland bylaw and regulation applies to said 500 foot buffer zone. When slopes of 8% or greater dominate the initial 200 feet of resource buffer zone the 25-foot "no disturb" zone and the 50-foot no structure zone shall begin at the top of slope or at 200 feet, which ever is smaller. Determination of the start of the 25-foot no-disturb buffer or the 50-foot no-structure buffer within the 500-foot 8% slope buffer will be at the sole discretion of the Commission and will be based on site specific natural features, on a case-by-case basis.

6.2 Tree Cutting

Trees and other vegetation provide the following benefits to resource areas and to homeowners: they stabilize banks and soils and help provide erosion control to resource areas; they provide shade and help to absorb sound and heat from buildings and paved areas; they stabilize the thermal properties of nearby water resources; they provide natural buffers along waterways and enhance water quality by trapping and filtering pollutants; they slow runoff which helps groundwater recharge; filters nonpoint source pollution and reduces flooding; erosion, and stream sedimentation; they protect fish and wildlife habitat; they revitalize threatened and degraded resource areas; they provide habitat for many species of wildlife and provide many other functions. As such, the Commission strongly encourages leaving any trees and vegetation in it's natural state within the 200 foot buffer to any resource area. Trees should be retained along and around the resource area as much as possible. Should trees or vegetation need to be altered or removed the following guidelines shall apply.

- 1. No disturbance of trees or other vegetation is allowed within the first 25 feet to any resource area. A waiver may be obtained from the Commission by filing a Request for Determination with the Commission for prior review and approval. (See section 1.1)
- 2. Cutting of trees or more than 10% of other vegetation within the remainder of the 200 foot buffer must be applied for using a request for determination for tree or vegetation removal within the first 100 foot buffer to any resource area. A letter permit application shall be used for tree or vegetation removal within the 100 to 200 foot buffer to any resource area. Should a permit be issued, the following Best Management Practices shall be
 - a. No stumps shall be removed within the first 50 feet to a resource area. Stumps may be ground below the surface and loamed and seeded.
 - b. Plans for removal of trees or vegetation on slopes must also contain plans to replace the erosion control values being lost. Tree or vegetation removal will only be allowed if there is not an increased risk of
 - c. Tree removal within the first 50 feet of any resource area will only be allowed if there is not a significant change to the canopy.
- 3. Tree cutting, or any other work, within areas designated as Potential Habitat for Rare and Endangered Species by the Natural Heritage and Endangered Species Program must be permitted through NHESP as well as through the Commission.

6.3 Docks

Any person placing a float, raft or mooring into any body of water within Sturbridge must apply for and obtain a permit as follows:

Any floats, docks or rafts secured to the bottom of the lake either through piles or other permanent measures must obtain a permit from the Department of Environmental Protection, Worcester, MA. Additional permitting must be obtained from the Army Corps of Engineers, if the project includes any filling or dredging at any level. This includes adding stone or removing bottom soils.

> Page 50 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Any temporary or seasonal floats, rafts, docks or moorings must be permitted through the Board of Selectmen as Harbor Master under Chapter 91, Section 10A.

All docks, floats, moorings or rafts which require excavation of any type for installation of footings or other means of securing the structure must be brought before the Commission for permitting using the permit application appropriate to the scope of work involved.

> Page 51 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

CHAPTER 7 – APPLICATION REQUIREMENTS

7.1 APPLICATION COMPLETION

An application will be considered complete and a public hearing scheduled when the following have been submitted:

- 1 Two copies of the Notice of Intent or Request for Determination or other permit application filed and all plans and supporting documents to the Conservation Commission Office.
- 2 One copy of the Notice of Intent or Request for Determination or other permit application filed and all plans and supporting documents to the Town Clerk.
- 3 One copy of the Filing Fee Calculation Worksheet and the Notice of Intent Fee Transmittal Form.
- 4 One copy of the check made payable to the Commonwealth of Massachusetts (amount determined by #2 above) and the check or money order payable to the Town of Sturbridge (amount determined by #2 above).

Completeness of submittal will be based on review by the Commission administrator or agent to determine whether all items noted on the Commissions application checklist have been included. The 21-day requirement to open a public hearing will not begin until an application is complete. Notice of incompleteness will be mailed to the applicant. For minor projects, the administrator or agent may schedule a public hearing even if the application is not complete with the understanding that the additional information will be submitted prior to the start of the public

7.2 NECESSARY AND SUPPORTING INFORMATION FOR AN APPLICATION

To avoid excessive use of paper products and to prevent unnecessary waste, the Commission encourages and appreciates applicants to file projects electronically. Filing may be made either by email or on a CD. Should filings be made electronically, the only paperwork submitted should be a two page, existing and proposed site condition plan, of normal size, and a two page, existing and proposed site condition plan, 11x17 for use in the field.

The following information must be included as part of the application, plans and supporting documents prior to the start of the public hearing:

- Date the application was submitted
- Completed application forms
- DEP file number (submitted by the DEP) OR
- SCC file number (submitted by the Commission clerk)
- Site plan 2 copies Plans must be to scale
- Identifying Plan numbers
- Plan dates, original and final revision
- Plans must be stamped and signed
- Plans clearly marked with resource area delineation showing flag or stake numbers
- Plans clearly marked with labeled 100' and 200' buffer zones
- Plans must show dimensions to resource areas and buffers
- Plans must show erosion control measures proposed
- Drainage calculations with supporting information, if applicable
- Both pre and post grades are shown clearly
- Proposed and existing structures are clearly shown
- Copy of relevant section of the USGS topographic map with the project site outlined in red
- Restoration and Mitigation measures, if applicable
- Existing natural features are shown such as stone walls, large trees, soil types
- Identifying features such as utility poles with identifying numbers, mail boxes, accessory buildings must be shown to allow orientation on the property during site visits
- Title 5 compliance must be documented, septic system and reserve locations must be shown.
- Nearby wells and septic systems are shown
- Perc test locations must be shown
- Affidavit of Service
- Proof of Notice to appropriate State Boards
- Proof of notification to abutters at least 7 days prior to public hearing
- Signed, dated, copy of form used to notify abutters

Page 52 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004 Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

- · Fee paid and copy of filing fee transmittal sheet
- Tax Paid Certification (signed by Treasurer) Form STT.A1 signed by the Tax Collector, notifying the Conservation Commission that the property taxes are paid to date.

[The Commission office will post the legal ad in the Southbridge News, notify town boards, and post the agenda. The applicant is responsible for reimbursing the Town for the cost of the legal ad.]

7.3 NOTIFICATION TO ABUTTERS MUST BE CONDUCTED AS FOLLOWS

- The Applicant will confirm with the Conservation Office the time and date of the hearing.
- The applicant will obtain a certified abutters list for Conservation purposes from the Assessors Office.
- The applicant will prepare a certified mailing to each person listed on the abutters list using the notification form in the application package.
- The green cards must have the applicant's name or the project address written somewhere on them to identify which project application they pertain to.
- The green cards must have the following address as the return address: Sturbridge Conservation Commission, Town Hall, 308 Main Street, Sturbridge, MA 01566.
- The receipts for the mailing, a copy of the certified abutters list, a signed copy of the notification form and the affidavit of service must be delivered to the conservation office at least one week prior to the
- The green return cards must be received in the conservation office at least one week prior to the start of the public hearing.

7.4 FILE WITH D.E.P. - WETLANDS DIVISION, (627 Main Street, Worcester, MA 01608)

Same as listed in section 7.1 above.

Copies of the checks payable to the Town of Sturbridge and the Commonwealth.

7.5 FILE WITH D.E.P. - LOCK BOX, (PO Box 4062, Boston, MA 02211)

- 1. One copy of the Notice of Intent Fee Transmittal Form, and
- 2. The actual check made payable to the Commonwealth of Massachusetts.

7.6 MINIMUM REQUIREMENTS FOR SUBMITTED PLANS AND DRAWINGS

Plans and drawings submitted to the Conservation Committee shall meet the following minimum requirements:

- 1. The drawings shall be of a size suitable to show in readable detail all the elements of the project and all resource areas within 200' of said project. In no event shall a drawing be less than 8 1/2" x 11" (standard copy
- 2. The following items shall be clearly shown on the drawings:
 - a. the boundary of any and all possible wetlands or vegetated wetland areas or other resource areas;
 - b. the 100' and the 200' buffer zone around the wetlands areas or any other protected areas:
 - c. all proposed or ongoing work activities within the wetland area or buffer zone. Both the project location and the limits of work shall be clearly defined;
 - d. natural conditions, including but not limited to vegetation, soils, slopes and other natural resources on site, such as stone walls, within 200 feet of the limits of disturbance whether on the lot or not;

 - f. proposed conditions, including but not limited to buildings, site drainage and building drainage;
 - g. location of water supply and distance to nearest septic system;
 - h. location of septic system and distance to nearest resource boundary and nearest well;
 - i. all utilities with numbers labeled on the plan;
 - i. all structures within 200 feet of the associated resource area(s).
- 3.All pertinent distances shall be dimensioned. The Commission will not rely on scaling. If any distances are omitted or unclear, the Applicant will be required to provide the dimensions and amend the drawings.
- 4.All distances shall be exact. The following tolerances will be assumed unless noted otherwise on the Page 53 of 70

Adopted November 21, 2002

Revision 1 adopted February 14, 2004

drawings

- a foot dimensions plus or minus three inches
- b. inch dimensions plus or minus one quarter of an inch
- c. for compound distances the smallest tolerance applies
- d. approximate distances plus or minus two feet

For example, a dimension marked (50') will be assumed to be 50 feet +/- 3 inches. A dimension marked (50' 6") will be assumed to be 50 feet 6 inches +/- 1/4 inch. A dimension marked (50' +/-) shall be assumed to be within

- 5. The most stringent dimension shall be used for Commission purposes.
- 6.All drawings shall be signed and dated by the applicant or the applicant's agent. The applicant is responsible for the accuracy of the drawing.
- 7. No application will be considered for review until two copies of the drawing are submitted to the Conservation
- 8. The Commission reserves the right to require resubmittal of revised drawings if significant changes are required either as a result of error or of changes in the project workscape.
- 9.In the event of questions or conflicts between verbal information and the drawing, the drawing govern.
- 10. If you have any questions you may call the Conservation Commission Office at 1-508-347-2506, or email the Commission at conservation@town.sturbridge.ma.us.

PLEASE NOTE: The applicant should keep one complete copy of all materials and documents.

The Conservation Commission has adopted the following policies that will be enforced for all projects: No pesticides fertilizers or herbicides are allowed to be used within 100 feet of any resource area. No quick release pesticides fertilizers or herbicides or salts are allowed to be used within 200 feet of any resource area. No alteration of land or cutting of vegetation is allowed within 25 feet of any resource area. No alteration of land or cutting of vegetation is allowed within 200 of any perennial river or stream without rebutting all presumptions of significance and without proving beyond a reasonable doubt that there are no other practicable alternatives.

> Page 54 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

CHAPTER 8 – REPLICATION REQUIREMENTS

from 310 CMR 10.00 and the Massachusetts Audubon Guide to Understanding and Administering the Massachusetts Wetlands Protection Act, adapted for the Town of Sturbridge Wetland Bylaw Regulations

The Executive Office of Environmental Affairs has declared a "No Net Loss of Wetlands Policy" as part of the decision making strategy for the State of Massachusetts. The Sturbridge Conservation Commission has determined that based on the low rate of success in replicating wetlands and in the interest of allowing no net loss of wetlands, resource area alteration will only be allowed under the following circumstances:

- 1. When overwhelming evidence indicates that there are NO other practicable alternatives.
- 2. When alteration of a resource area serves overriding public interests.
- 3. When unavoidable impacts are minimized to the greatest extent possible.
- 4. When compensation is provided at a minimum ratio of 2:1.
- 5. When there will be no alteration to Estimated Wildlife Habitat or Vernal Pools whether certified or identified.

It should be understood by all applicants that a third party consultant will be required to verify both the proposed replication plan prior to approval and the final replication area prior to issuance of a Certificate of Compliance.

All replication and mitigation areas will be monitored for a minimum of five years. As a general rule, Certificates of Compliance will not be issued for any part of any project, which required replication or mitigation until after the 5 year monitoring has been completed.

8.1 GENERAL PERFORMANCE STANDARDS

The proposed replication project must meet or exceed these standards.

A replication plan including certification that each of these standards will be met, and construction activities shall be approved and supervised or conducted by a professional wetlands scientist with experience in wetland replication, wetland hydrology and a working knowledge of botany. Such a person shall be retained by the applicant to supervise and monitor construction of the replication area until compliance of the replication area conditions are given in writing by the Commission. Said compliance will only be issued after monitoring shows that the replication area has succeeded (success is defined as a planting where at least 80% of the vegetation has successfully taken) for a minimum period of two years, and that no further replanting, restoration or repair to the replication area has been needed for at least two years.

- 1. The surface of the replacement area to be created shall, at the absolute minimum, be twice that of the area that will be impacted or destroyed;
- 2. The ground water and surface elevation of the replacement area shall be approximately equal to that of the impacted or destroyed area;
- 3. The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the impacted or destroyed area;
- 4. The replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the impacted or destroyed area;
- 5. The replacement area shall be located within the same general area of the water body or reach of the waterway as the impacted or destroyed area;
- 6. The replacement area shall be reestablished within-kind, indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with currently accepted, standard methods;
- 7. The replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00;
- 8. The seasonal elevation of groundwater must be verified in wetland replication areas once the proposed replication areas have been excavated to base grade;
- 9. No filling of any wetland area may begin until preparation of it's compensatory resource area has been completed, is ready to receive soils from the altered area and all wetlands soils have been removed from the fill
- 10. Monitoring reports are due to the Commission on at least June 1st, and November 1st, of each year of monitoring. Such reports shall include a wetlands scientist's assessment of progress and recommendations for enhancement, if any:

Page 55 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

11. Replication areas, which have not shown signs that they will likely succeed within 3 years, shall be required to be re-engineered and re-constructed. A check to cover the cost of re-engineering and re-construction, to be determined on a case-by-case basis shall be submitted to the Town of Sturbridge Conservation Commission to be held in an Agency Account by the Town Treasurer until a Certificate of Compliance is issued for the project.

As stated in Chapter 1.1 of these regulations, a growing body of research evidence suggests that even "no disturbance" areas reaching 100 feet from wetlands may be insufficient to protect many important wetland resource characteristics and values. Problems of nutrient runoff, water pollution, siltation, erosion, vegetation change, and habitat destruction are greatly exacerbated by activities within 100 feet of wetlands. Thus, in general work and activity within 100 feet of wetlands is discouraged and should be avoided and reasonable alternatives pursued. Accordingly, the Conservation Commission shall begin with the presumption that lands within the adjacent upland of a resource are best left in an undisturbed and natural state.

Local filing fees as outlined in section 4.17 of these regulations shall be paid in full at the time the proposed project is filed or at the time the SCC determines or requires that a replication area is required in order to permit the project.

8.2 RIVERFRONT RESOURCE AREA RESTORATION AND MITIGATION

In addition to the guidelines for resource area restoration and mitigation outlined in Chapter 5 of these regulations, the Commission may allow/require on site restoration of riverfront areas in exchange for approving additional development within already disturbed areas. Redevelopment of disturbed areas must occur further from the river than existing disturbance. Mitigation, such as preservation of additional riverfront land or improvement of an existing adverse impact on site or within the watershed, may also be approved by the Commission.

For areas within Riverfront Resource Areas, the following conditions shall always be a part of any permit: 2:1 mitigation must be given and must not be within existing undisturbed Riverfront Resource Area; no further disturbance of Riverfront Resource Area will be allowed on the parcel in consideration. The parcel in consideration shall be considered as that which shall extend to the subdivided lots any parcel out of which the lots were created, after the effective date of the related regulation as listed in chapter 4.18 of these regulations, including any adjacent parcels with common ownership and any other land, which can reasonably be obtained.

> Page 56 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

CHAPTER 9 – FORESTING REQUIREMENTS

Issue	Relevant Forestry BMP*	Town of Sturbridge Forestry BMPs
Planning and	Massachusetts	The proposed Forest Cutting Plan (FCP) must provide
Timing of	Forestry Best	an accurate and detailed plan with accompany map and
Forest Cutting	Management	schedule that clearly indicates the location and amount
Plan	Practice	of the timber to be harvested, the timing of the timber
	(MFBMP) #2	operation (including if work is to be conducted in
	-Planning is one	phases), the location of sensitive features (wetland
	of the most	crossings, steep slopes, etc) and how the FCP mitigates
	important BMPS	potential impacts due to sensitive natural features or
	and the first to	other features of interest (e.g., avoid undue breaching
	consider.	of stone walls).
	- Locate	The Sturbridge Conservation Commission (SCC)
	landings, access	reserves the right of review and comment on all aspects
	roads, and skid	of the FCP that potentially impact Town wetland
	roads to avoid	resources including, but not restricted to streams,
	steep slopes,	wetlands, vernal pools, ponds together, with all
	wetlands, vernal	associated wildlife habitat as well as ecological and
	pools, and	hydrologic (e.g., groundwater recharge) functions.
	stream crossings	3 2 (8 2
Planning and	MFBMPs #2,	As part of the FCP, the applicant must provide a
Timing of	#14, #17	detailed schedule (by month) of timber harvest
Forest Cutting	- Planning not	operations including all site remediation and
Plan	only means how	completion activities. This schedule (see attached
	you will access	form) shall provide: earliest start date, total expected
	the timber sale,	timber harvest period, date of installation of
	but also when	stream/wetland crossings; period of all work in
	the timber will be	wetlands, date of removal of all temporary structures
	cut.	(skidder bridges, etc) from stream and wetland
	-Timing is one of	crossings, and beginning & completion date for site
	the most	remedial activities.
	important BMPS	
	and the first to	Site remedial activities include: restoration of landing
	consider.	areas, removal of slash from prohibited areas, removal
	- MA Slash Law	of all unnatural debris, stabilization of all stream
	requirements	banks/wetland crossings, and long term soil erosion
	pertain and	control/minimization.
	should be	
	considered in the	
	planning phase	
Planning and	MFBMP #2	As part of the FCP, the applicant must provide a good
Timing of	- The FCP map	quality, detailed site map on an approved base map that
Forest Cutting	must show the	contains topographic and hydrologic features. An
Plan	proposed	approved base map may include a USGS map,
	location of all	engineering site plan or assessor tax map with
	truck roads,	minimum 10 ft topographic contours legibly delineated
	principal skid	and a linear scale not to exceed 1" = 200 ft. FCP
	roads, stream	details will be clearly indicated on the base map and
	and wetland	will include all wetland resources (streams, bordering
	crossings, as	vegetated wetlands (BVWs) vernal pools); filter strips,
	well as the	stream crossings, truck and skidder roads, landing
	general location	areas, and any public water supply within 1000 ft.

Page 57 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

TOWITOLS	numaye Conservation	Commission Regulations for Implementing the Town of Sturbridge	CI VV	10W11 01 3	turbridge Coriservation	Commission Regulations for Implementing the Town of Sturbridge
Planning and Timing of Forest Cutting Plan	of appropriate erosion control measures such as filter strips MFBMP #2, #7 - Operation on sustained slopes of 30% of more for a distance ≥ 200 feet requires the indication of Steep Slope	Landing areas should be kept at least 200 ft away from wetland resource areas. Other site-specific adjustments (e.g., 100 ft width on designated scenic roads) may be applicable. The FCP map will indicate all steep slopes>10%. If the following are present on the parcel – streams greater than 25 ft bank to bank, ponds 10 acres or larger in area, designated scenic rivers, and Outstanding Resource Waters and their tributaries – variable-width filter strips may be called for. In these cases, the base map will clearly identify all areas with slopes > 10%, > 20%, and > 30%. The applicant's calculations of an adjusted width for the filter strips due to increased slope will be clearly indicated. The FCP should be designed to minimize potential		Identification of Wetland Resource Areas (continued) Establishment of Filter Strips	- No equipment may operate in the depression of a Certified Vernal Pool. - Wetlands will not be operated in unless dry, frozen, or otherwise stable. MFBMP #2, #7, #10, #11	identified vernal pools is not permitted. It is SCC policy that no activity is to be undertaken in the wetland resource area or wetland crossing unless the relevant area is dry, frozen or otherwise stable. Fifty (50) ft filter strips will be clearly indicated for all streams, flowing waterbodies, and vernal pools on the approved base way and in the field. Eiter strips widths
	areas on the FCP map. - Identification / Implementation	The FCP should be designed to minimize potential debarking and other damage to residual trees (i.e., trees left in the wetland resource areas) It is requested that trees > 3 ft dbh be marked prior to cutting, by the forester.			- Filter strips are required along all water bodies and certified vernal pools.	approved base map and in the field. Filter strips widths may be increased due to slope or resource sensitivity. The SCC reserves the right to inspect and, where necessary, increase the width of protective filter trips.
Identification of Wetland	of Variable- width Filter Strips MFBMP #2, #9, #10, #11	It is the policy of the SCC that the applicant should avoid crossing all wetland resource areas whenever		Installation of Protective Mitigation	MFBMP #4, #5, #6, - Hay bales can be used for temporary means	Haybales and silt fence will be used to mitigate and/or avoid excess sediment runoff from entering streams, wetlands, vernal pools, etc; especially where timber operations involve construction of truck roads, skidder landings, and stream/wetland crossings. Such erosion
Resource Areas	- All stream crossings will be accurately	possible. The FCP applicant will clearly flag all stream and			to intercept runoff and trap sediment	controls will be properly sited, installed, and maintained.
	mapped and labeled on the FCP map, and marked on the ground with paint or flagging.	wetland crossings on the approved base map and in the field. The crossing centerline and limits of the temporary structure shall be indicated in the field. This flagging shall be maintained and kept available for inspection by the SCC at their discretion. The location of all proposed erosion control measures will be indicated on the base map.			- Silt fence is tended to temporarily retain sediment from small disturbed areas by reducing the speed of	The SCC reserves the right to inspect these erosion controls will notify the FCP permit holder and Service Forester for corrective action when these are not properly installed.
	- Wetlands that will be crossed, logged in, or lie	The permittee will check with the SCC regarding the presence of Certified Vernal Pools (CVPs) on the land subject to the proposed FCP. If CVPs exist on the		Character in	overland flow. MFBMP #9	The Service Forester and SCC are to be notified of any
	adjacent to any harvesting activity will be accurately shown and labeled on the FCP map.	parcel where timber harvesting is to be conducted, the FCP applicant will clearly mark the limits of the depression of the CVP. This flagging shall be maintained and kept available for inspection by the SCC at their discretion. If the parcel where timber harvesting is to be conducted		Changes in Location of Stream Crossings	- If a stream crossing must be crossed during the operation, the Service Forester must be notified and approve the	changes in stream crossing locations. The FCP permit holder will clearly flag the new stream and wetland crossings on the approved base map and in the field, with inspection by the SCC at their discretion. As noted earlier, it is the responsibility of the applicant to avoid all wetland resource crossing if feasible.
	- STB6 – Guideline 50'	has not been surveyed previously for Vernal Pools but landscape conditions indicate a strong possibility of such resources existing on-site, the SCC reserves the		Completion of	change before it is made. MFBMPs #2, #7,	A final inspection date for completion of all site
	buffer- clear cutting around CVP's is not permitted.	right to inspect the parcel prior to timber harvesting as indicated by the timber harvest start date on the FCP. The purpose of this inspection will be to identify candidate VPs for certification. Clear cutting around		Job and all necessary site remediation activities.	#14 - Notify MA DEM Service Forester within 2	activities shall be determined with the MA DEM Service Forester. This shall include removal of slash, restoration of landing areas, and rehabilitation of wetland resource area crossings. The SCC is to be
		Page 58 of 70 Adopted November 21, 2002				Page 59 of 70 Adopted November 21, 2002
		Revision 1 adopted February 14, 2004				Revision 1 adopted February 14, 2004

APPFNDIX

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

notified one week prior to this final inspection date to weeks of job completion to allow the Commission to inspect the site and determine schedule a final that necessary remediation activities to mitigate longinspection. term impacts to wetland resources have been completed or that further monitoring will be required. - Compliance Site activities are not considered completed until with MA Slash approved by the Service Forester and a concurring approval by the Commission Forestry Liaison has been Requirements. obtained. No slash can remain within 25 The SCC will appoint one member as a Forestry Liaison. It will be the responsibility of the Forestry feet of any Liaison to coordinate timely Commission review on continually comment on FCP applications (not to exceed 21 days), flowing brook, any site inspections for wetland resource issues, and stream, river, or any lake, pond, conduct the final inspection with the Service Forester to insure that required remediation activities have or water supply been/will be completed, and concur in the closure

decision.

* BMP Citations are taken from MA DEM. 1996. Massachusetts Forestry Best Management Practices Manual. Amherst, MA

> Page 60 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

CHAPTER 10 – POST HEARING REQUIREMENTS

After a permit is issued by the Commission, there is a ten day appeal period, when the applicant or abutters can appeal the decision of the Commission (if they disagree) to the state DEP (in cases where hearings relate to the Wetland Protection Act or other State Regulations). There is a 60 day appeal period when an applicant or abutters can appeal a decision of the Commission to Superior Court (in cases of hearings where hearings relate to the Town of Sturbridge Wetlands Bylaw). In most cases, both sets of regulations will apply.

After an applicant receives a permit from the Commission and prior to the start of work, they must record the Order of Conditions permit at the Registry of Deeds, 2 Main Street, Worcester MA, 01608. There is a charge for the recording. The phone number for the registry, at the time of this printing is 1-508-798-7713; this number is subject to change. Alternatively, the applicant may request that the permit be recorded by the Commission clerk and submit a check for the cost of recording the permit, made payable to the "Commonwealth of Massachusetts".

After receiving a permit from the Commission and prior to the start of any work, the erosion control on the site shall be installed as agreed to on the final plan submitted and approved by the Commission. The Commission or agent or representative of the Commission shall be given 72 hours notice to inspect the erosion control and request changes. All replication, mitigation and posting of bonds or recording of covenants if required, must be complete and in place prior to the start of any work. After that time period, the applicant may start work and the inspection and possible requests for changes in the erosion control will be made at the Commission's earliest convenience. The Commission may conduct site inspections at any reasonable time until a certificate of compliance is issued, for compliance with the permit issued, or with state and local law, bylaw and regulation.

See also requirements for Extensions - Chapter 4.11, Certificates of Compliance - Chapter 4.12, Appeals -Chapter 4.15

10.1 POST HEARING START-UP REQUIREMENTS

10.1.1 Sedimentation and Erosion Control

Sedimentation and erosion controls shall be installed in such a manner that no sediment or erosion enters any resource area or leaves the property in any way. During heavy rainstorms, uncontrolled erosion and sedimentation often travel off properties and down roadways into catchbasins and nearby wetlands unchecked, creating impacts to town infrastructure and pollution of nearby resource areas. As such, erosion control will be required for all areas where the potential for downgradient impact exists.

Failure to contain and control sedimentation and erosion on site and out of resource areas and restricted buffers will result in a Cease and Desist Order. All work on site will be stopped until erosion control barriers are corrected and sediments removed from resource areas, restricted buffer areas or impacted off-site areas.

10.1.2 Requirements to be Met Prior to Start of Work.

Requirements which must be met prior to the start of work shall include but not be limited to the following:

- Review the Order of Conditions;
- Ensure all pre-start conditions have been met or addressed:
- ➤ Notify the SCC of Compliance with pre-start conditions;
- > All site contractors and responsible parties must have a thorough knowledge and understanding of the OoC;

Page 61 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

APPENDICES POLICY STATEMENT

For Lakes, Ponds, Vernal Pools, Wetlands, Streams, Rivers, and Estimated Habitat Areas (Resource Areas).

STURBRIDGE CONSERVATION COMMISSION

LOCAL, STATE AND FEDERAL REQUIREMENTS

The Massachusetts Wetlands Protection Act, The Rivers Bill and other associated State and Federal Regulations are specific in requiring that no work can be done in any resource area or in any part of the buffer zone without prior review and approval by the local Conservation Commission. The state regulated buffer zone for most resources is an area extending 100 feet out from the edge of the resource area. For perennial rivers and streams the buffer zone is 200 feet and is considered resource area also. The edge of bank starts at the high water mark and extends 200 feet from either side. The Commission must be notified of the extent of the work to be done via a permit application for prior review and approval to ensure that there will be no negative impact to the resource area. If needed, the Commission may impose conditions necessary to protect against erosion, degradation, habitat alteration or other disturbance of the wetland, waterbody or resource area.

The Town of Sturbridge Wetland bylaw extends that buffer zone to any area within 200 feet of any wetland. waterbody, or resource area. This includes all resource areas such as, lakes, ponds, vernal pools, wetlands, seasonal wetlands, streams, rivers, and estimated habitat areas. The bylaw increased the level of protection in these areas beyond that required by the state. The town bylaw can be referenced through the Town Clerk's office, the Conservation Commission office, or through the Town of Sturbridge Website. This bylaw extends and increases protection afforded by the State Laws. State and Federal Environmental Agencies can also be accessed through links from the Conservation Commission web page.

WORK AND MAINTENANCE

Any work or maintenance within the 200-foot buffer zone to a resource area, or within the resource area itself, requires prior review and approval from the Commission. This is accomplished by the filing of a Notice of Intent, a Request for Determination or a Letter Permit with the Conservation Commission. The only exceptions are work exempted by this policy.

The Town of Sturbridge has a 200-foot buffer zone around all resource areas. The state has a 100-foot buffer zone around most resource areas. Perennial streams and estimated habitat for rare and endangered species are two exceptions to state buffer zones.

WORK COVERED UNDER THIS POLICY WHICH REQUIRES NO PERMITTING

The following guidelines are offered by the Commission for the purpose of indicating the type of activity or work that can be conducted in the buffer zone without formal permitting. The policy guidelines are intended to allow normal maintenance and incidental work for properties abutting resource areas. It is expected that residents will police themselves to ensure that regulations are being met and that the policy is being followed. The commission relies on the eyes and ears of the residents of Sturbridge to protect the beautiful natural resources we all treasure.

The commission reserves the right to withdraw these guidelines or make any interpretation or change deemed necessary to comply with the Massachusetts Wetlands Protection Act and other associated Local, State and Federal Regulations on a case-by-case basis.

Basic Yard Maintenance is covered under this policy. Basic maintenance is considered to be raking, mowing and non-chemical yard grooming. Stripping embankments, installing retaining walls or work requiring large power equipment, such as a backhoe or other earth moving equipment does not constitute normal maintenance.

Inconsequential brush cutting, (less than 1/10 of the vegetation) outside the 25-foot unalterable buffer line from the Resource Area is covered under this policy. This does not include tree cutting. For the purpose of this policy, trees are defined as woody vegetation with a stem diameter of 2 inches or more at a height of 4 feet from the ground.

> Page 62 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Removal of aquatic vegetation on a lakebed during drawdown is permitted by hand or weed-whacker. No other power equipment may be used.

Removal of dead or broken tree limbs, limited dead brush, and grinding of stumps. Removal of Stumps below ground level within 100 feet of any resource area is not permitted with out filing a Notice of Intent application with

Use methods that minimize site disturbance; avoid removal of natural vegetation and exposure of bare soil. Site disturbance dramatically increases the chance of damage to the resource area unless erosion control measures are used correctly and effectively.

WHAT WORK CAN BE CONDUCTED WITH A LETTER PERMIT

Replacement of eroded lakebed material is allowed if the procedure constitutes normal grooming of any existing beach and not the creation of a new beach. Grooming is considered to be adding or regrading in a manner that results in an insignificant change in the amount, nature or distribution of surface materials. The work must be done by hand, with a rake, shovel or wheel barrow. The work may only be conducted during annual lake drawdown and must be done without disturbance to the buffer zone. More than one pickup truck load (2-cubic yards) goes beyond normal maintenance. Sand to be placed in the lake must be certified to be free of sodium, phosphorous, grease/oil

Tree Cutting. Any tree removal within the 200-foot buffer zone must be approved before commencing. The trees protect and house habitat in and around the resource area and provide essential shading and bank stability. In addition the root systems protect against erosion into the resource area. Do leave trees along and around the resource area. A Notice of Intent (for work within 100 feet of a resource area), or Request for Determination (for work outside 100 feet but within 200 feet of a resource area), will be required for removal of large trees and extensive cutting along resource area boundaries. Trees and Natural Cover best protect against erosion.

Extensive Brush cutting (in excess of 1/10 of the brush) within 200 feet of the resource area requires a letter permit.

Minor repair of retaining walls, including the occasional replacement of stone or material due to natural erosion or unforeseen incident.

Send a letter with an accurate site sketch including dimensions of the proposed work, distance to resource areas and other pertinent information to:

> Sturbridge Conservation Commission Town Hall, 308 Main Street Sturbridge, MA 01566

The Commission will review the request, conduct a site visit if necessary and respond by mail. Letter Permit applications should include the 100-foot buffer zone, the 200-foot buffer zone, location of structures, location of the trees to be removed, and any erosion control measures proposed.

WORK REQUIRING AN APPLICATION SUBMISSION TO THE COMMISSION AND A PUBLIC HEARING Major repair of retaining walls, replacement of retaining walls and construction of new retaining walls.

Program weed removal intended for the benefit of lake residents.

Any work requiring the use of large power equipment such as a backhoe or any other earth moving equipment.

Any activities that may likely have an impact on the resource area. This includes but is not limited to septic system replacement or installation, driveway replacement or installation, building construction or major repairs, home additions or replacements that increase footprint. Contact SCC to discuss these activities to determine if the specific project could be permitted by a letter permit.

> Page 63 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

APPFNDIX

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Alteration of natural topography, vegetation or drainage systems.

Any work not specified in this policy with in the first 100 feet of any resource area requires the filing of a Notice of Intent with the Commission.

Any work not specified in this policy with in the 100-foot to 200-foot buffer zone of any resource area requires the filing of a Request for Determination with the Commission.

Any work within 500 feet of any resource area on slopes greater than 8% requires the filing of a permit application with the commission.

You may call the commission office at 508-347-2506 for help in determining whether or not a permit application is required and what type of application would be appropriate. You may also email the Commission at conservation@town.sturbridge.ma.us.

Permit applications and instruction pages are available through the town web site or by calling the conservation commission office.

WORK NOT ALLOWED UNDER ANY CIRCUMSTANCES

Use of quick release fertilizers within 200 feet of any resource area.

Use of fertilizers, pesticides or herbicides within 100 feet of any resource area.

Creation of new beaches under the high water mark for lakes and ponds.

Removal of large rocks along the shoreline, edge of bank, or under the natural high water mark. Rocks diffuse wave and channeling action and provide erosion control and natural habitat area.

Decreasing resource storage volume by extending the property line into the resource area

Disturbance of any kind with in any resource area or within the 25-foot no-disturb buffer, without a full alternatives analysis and prior review hearing.

ENCOURAGED PRACTICES

Seed and mulch bare soils within one week of clearing.

Install hay bales down slope of work areas or cleared areas but as close to the work site as possible. Stake hay bales tightly into the ground in a manner that will prevent any and all erosion from passing between or underneath the erosion control line.

Leave a 50-foot buffer of undisturbed vegetation around all resource areas (25 feet of undisturbed vegetation is mandatory). Buffer strips intercept runoff and filter sediment and chemicals from water before it reaches the resource area.

If possible leave dead tree limbs, trunks and vegetation in place along unused portions of resource areas or meadows. Such features provide excellent bird, fish and wildlife habitat.

Don't feed the geese

OTHER INFORMATION

Any alterations that occur to a resource area or within the 200-foot buffer to a resource area, that have not received prior review and approval from the Commission should be reported to 1-508-347-2506. If a site has been through review and approval it will have a sign with a DEP or an SCC number clearly visible from the roadway or public access way. (DEP 3 00 - # # #) or (SCC # # - # #)

> Page 64 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Replication or Restoration of damaged resource areas is the responsibility of the property owner regardless of who

The Commission will be guided by good conservation and best management practices applicable in the buffer zone and resource areas.

When Notice of Intent, Request for Determination or Letter Permit applications are made to the Conservation Commission, site visits are conducted to verify the information being presented. The following are required for all site visits: The resource area must be clearly flagged. Said flagging must be accurately portrayed on the site plan submitted. The edge of construction area/limit of work must be spray painted or staked. The footprint for the proposed structure or project must be spray painted or staked.

PERENNIAL STREAMS AND RIVERS

A perennial stream or river is afforded additional protection through state regulations. Said work must be submitted as a Notice of Intent to the Conservation Commission.

VERNAL POOLS

A vernal pool is a temporary wetland, usually holding water for at least a few months in the spring or fall. A vernal pool is defined as a confined basin depression which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations. The basin, as well as the area within 100 feet of the mean annual boundaries of such depressions define Vernal Pool Habitat and are considered a resource area under the Wetlands Protection Act and Town of Sturbridge Wetland Bylaw. A vernal pool may have a water source inlet but cannot have a defined outlet.

Most vernal pools, like wetlands, are found in woody areas and fill in winter and early spring when snow melt and rain fall are plentiful.

The analysis of the vernal pool and the surrounding area require extensive information gathering. Identification and documentation of existing vegetation, life forms and water quality in and around the pool is conducted. If a vernal pool is certifiable, appropriate paperwork will be filled out and filed with the Natural Heritage and Endangered Species Program.

Under Town of Sturbridge Bylaws, all vernal pools are protected whether certified by the state or not and whether or not they are identified prior to the submittal of the application. The burden of proof for disproving a vernal pools existence is the responsibility of the landowner or applicant.

> Page 65 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Naturally Vegetated buffer strip	Sediment and Pollution Removal	Wildlife Habitat Values Associated with Specific Buffer Width
(width in feet)	(approx %)	
25	50	Poor habitat value; useful for temporary wildlife activities
35	60	Minimally protects stream habitat; poor habitat value; useful for temporary activities of wildlife
50	≥60	Minimal general wildlife and avian habitat
65	70	Minimal Wildlife habitat value; some value as avian habitat
100	70	May have use as a wildlife corridor; general avian habitat value
165	75	Minimal general wildlife habitat value
250	80	Fair to good general wildlife and avian habitat value
330	80	Good general wildlife habitat value; may protect significant wildlife habitat

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

Wetland Indicator Plants Identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, §40) partial list.

The Wetlands Protection Act lists plants by a common name and one of the following: family name, genus name, or species name. (Note: the species name, also known as the scientific name, is made up of the genus and species.) The list in the Act is general and is not meant to include all plants that occur in wetlands. Also, some plants are listed only by family or genus. These are broad categories that include wetland plants as well as non-wetland plants. For instance, the family Juncaceae is comprised of many rushes of which only some are wetland indicator plants. Also, the genus Fraxinus includes wetland plant species (green ash, Fraxinus pennsylvanica; black ash, Fraxinus nigra), as well as a non-wetland plant (white ash, Fraxinus americana). As a result, DEP has determined that the plants listed in the Act only by scientific name (plants with a genus and species name) are considered wetland indicator plants. Plants listed in the Act by family or genus only must also be listed in the National List as OBL, FACW+, FACW, FACW-, FAC+ or FAC species to be considered wetland indicator plants. In addition, all plants in the genus Sphagnum are considered wetland indicator plants (species in this genus have not yet been categorized by indicator category).

The following plants are listed by scientific name in the Act. (Note: the National List indicator category is included

American or white elm (Ulmus americana) FACW-

Aster(Aster nemoralis) FACW+

azalea (Rhododendron canadense) FACW

azalea (Rhododendron viscosum) OBL

black alder (Ilex verticillata) FACW+

black gum tupelo (Nyssa sylvatica) FAC

black spruce (Picea mariana) FACW-

buttonbush (Cephalanthus occidentalis) OBL

cowslip (Caltha palustris) OBL

cranberry (Vaccinium macrocarpon) OBL

hemlock (Tsuga canadensis) FACU

highbush blueberry (Vaccinium corymbosum) FACW-

larch (Larix laricina) FACW

laurel (Kalmia angustifolia) FAC

laurel (Kalmia polifolia) OBL

leatherleaf (Chamaedaphne calyculata) OBL

marsh fern (Dryopteris thelypteris) FACW+

pitcher plants (Sarracenia purpurea) OBL

poison sumac (Toxicodendron vernix) OBL

red maple (Acer rubrum) FAC

sensitive fern (Onoclea sensibilis) FACW

skunk cabbage (Symplocarpus foetidus) OBL

spicebush (Lindera benzoin) FACW

sweetgale (Myrica gale) OBL

sweet pepper bush (Clethra alnifolia) FAC+

water willow (Decodon verticillatus) OBL

white cedar (Chamaecyparis thyoides) OBL

white Hellebore (Veratrum viride) FACW+

Page 67 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Page 66 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

STURBRIDGE CONSERVATION COMMISSION ALTERNATIVES ANALYSIS SCOPE OF REQUIREMENTS

The Commission requires an alternatives analysis, commensurate with the scope of the work proposed. For the sake of clarity and consistency, alternatives analysis shall refer to the following for all applicants seeking permits and project reviews from the Town of Sturbridge Conservation Commission: Innovative open space development with all development located as far from resource areas as possible. (This must need to be subsequently presented to the Planning Board for preliminary review and preliminary approval or denial.) Alternative analysis must be submitted if an applicant is applying for a waiver from the regulations or if proposing alteration to any resource area.

The discretionary authority of the Commission shall take precedence over any alternative analysis presented. The purpose of evaluating project alternatives is to locate activities so that impacts to the resource area are avoided to the extent practicable and to present evidence supporting requests for waivers. Under no circumstances will the completion or submission of an alternatives analysis overcome or negate the discretionary authority of the Commission.

Projects within the Scope of Alternatives must be evaluated to determine whether any are practicable. As much of a project as is feasible shall be sited outside the resource area and the 100-foot buffer. If siting of a project entirely outside the resource area and 100-foot buffer is not practicable, the alternatives shall be evaluated to locate the project as far as possible from the resource area.

When the Commission deems it appropriate due to scope or potential impact of a proposed project, an alternatives analysis will be conducted prior to the discussion of any other project information. This analysis must look at all options that will not impact the resource areas (wetlands, streams, etc) on this property. Alternatives should include, but must not be limited to:

- Reduced development size;
- b. Alternative locations with less resource area impact;
- Alternative crossing methods, such as span bridges.

Narrative information must be provided outlining the following information: the alternatives for no disturbance and the alternatives for minimal disturbance. The SCC shall review and consider the alternatives in deciding whether the project proposed meets the "minimal disturbance", "no significant adverse impact", "reasonable use", and "no net loss of wetland" requirements.

The Commission requires alternatives analysis based on the following 310 CMR 10:00 general performance standards and the following Town of Sturbridge Wetland Bylaw Standards; 10.54 Banks section(4)(b)2. The applicant demonstrates that there is no reasonable method of protecting, renovating or rebuilding the facility in question other than the one proposed. 10.55 Bordering Vegetated Wetlands section (4)(c) 3. in the judgment of the issuing authority it is not reasonable to scale down, redesign or otherwise change the proposed work so that it could be completed without loss of said wetland. 3.57 paragraph 3. In the review of areas within 200 feet of rivers and streams, no permit issued hereunder shall permit activities unless the applicant, in addition to meeting the otherwise applicable requirements of this bylaw, has proven by a preponderance of the evidence that there is no alternative to the proposed project with less adverse effects, such activities, including mitigation measures, will have no significant adverse impact on the areas or values protected by this bylaw. 3.57 paragraph 5. To prevent wetlands loss, the Conservation Commission shall require applicants to avoid wetlands alterations wherever feasible.

An alternative is practicable and substantially equivalent if it is available and capable of being done after taking into consideration costs, existing technology, proposed use, and logistics, in light of overall project purposes. "Available and capable of being done" means the alternative is obtainable and feasible. Project purposes shall be defined generally (e.g., single family home, residential subdivision, expansion of a commercial development). The alternatives analysis may reduce the scale of the activity or the number of lot available for development, consistent with the project purpose and proposed use. Transactions shall not be arranged to circumvent the intent of

> Page 68 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

Town of Sturbridge Conservation Commission Regulations for Implementing the Town of Sturbridge Wetland Bylaw

alternatives analysis review.

The Scope of Alternatives under consideration shall be commensurate with the type and size of the project.

The area under consideration for practicable alternatives extends to the original parcel and the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality for adjacent lots. "Reasonably be obtained", means to purchase at market prices if otherwise practicable, as documented by offers (and any responses). For other land, "reasonably be obtained" means adequate in size to accommodate the project purpose and listed for sale within appropriately zoned areas, at the time of filing a Request for Determination or Notice of Intent, within the region. Alternatives extend to any sites, which can reasonably be obtained within the appropriate or equivalent market value region of the state.

In order for the Commission to evaluate alternatives, the applicant shall submit documentation that there are no practicable and substantially equivalent alternatives with less adverse effects on the interests identified. The applicant shall submit information to describe sites and the work both for the proposed location and alternative site locations and configurations sufficient for a determination by the Commission. The level of detail of information shall be commensurate with the scope of the project and the practicability of alternatives.

The Commission shall not require alternatives which result in greater or substantially equivalent adverse impacts. If there is a practicable and substantially equivalent alternative with less adverse effects, the proposed work shall be denied and the applicant may either withdraw the Notice of Intent, receive an Order of Conditions denial, or receive an Order of Conditions permit for the alternative, provided the applicant submitted sufficient information on the alternative in the Notice of Intent.

In evaluating a project site for alternatives, an applicant should take into account the Planning Board Subdivision Regulations as well as applicable zoning setbacks. These regulations as well as the town's general and zoning bylaws should be read and understood along with the Conservation bylaw and regulations prior to initiating a land use proposal

> Page 69 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

REFERENCES

Material referenced in creating these regulations include primarily (but are not limited to) the following:

- The Town of Sturbridge Wetland Bylaw.
- The Massachusetts Wetlands Protection Act and Associated Regulations, 310 CMR 10.00.
- A Guide to Understanding and Administering the Massachusetts Wetlands Protection Act produced by Massachusetts Audubon Society.
- Environmental Handbook for Conservation Commissioners produced by Massachusetts Association of Conservation Commissioners.
- Massachusetts Association of Conservation Commissioners Annual Conference and Fundamentals Course Materials.
- "A Summary of Pollutant Removal Effectiveness and Wildlife Habitat Value of Vegetated Buffers According to Width"
- Vernal Pools For Educators Materials produced by the Vernal Pool Association.
- NHESP Aerial Photo Survey of Potential Vernal Pools.
- Town of Sudbury Bylaws and Regulations.
- Town of Nantucket Bylaws and Regulations.
- Matter of Rabecki, docket # 97-020 File # 168-178.
- Massachusetts Forest Cutting Practices Act and the Forestry Best Management Practices Manual
- Massachusetts Inland Wetland Replication Guideline and Restoring Massachusetts Wetlands, an Action Plan.
- Rapid Watershed Planning Handbook
- Delineating Bordering Vegetated Wetlands Handbook

The following plans and maps are referenced and utilized during the course of all public hearings (the Commission's review includes but is not limited to the list below:

- USGS Topographic maps
- NHESP Vernal Pool, certified and potential maps
- BioCore Map
- Living Waters Map
- Orthophoto maps
- DEP Wetland Inventory Maps
- Soils maps
- DEP Watershed maps

*These materials are available for review in the Conservation Commission office during normal office hours.

APPENDIX H:

FEMA Mapping

Page 70 of 70 Adopted November 21, 2002 Revision 1 adopted February 14, 2004

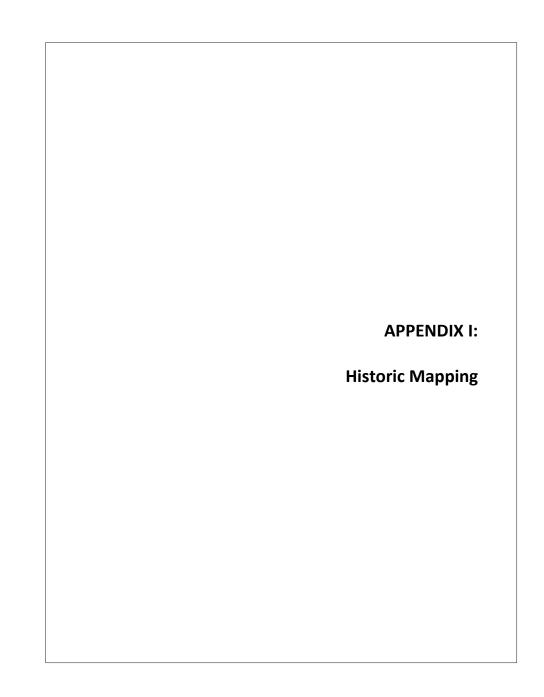
APPENDIX

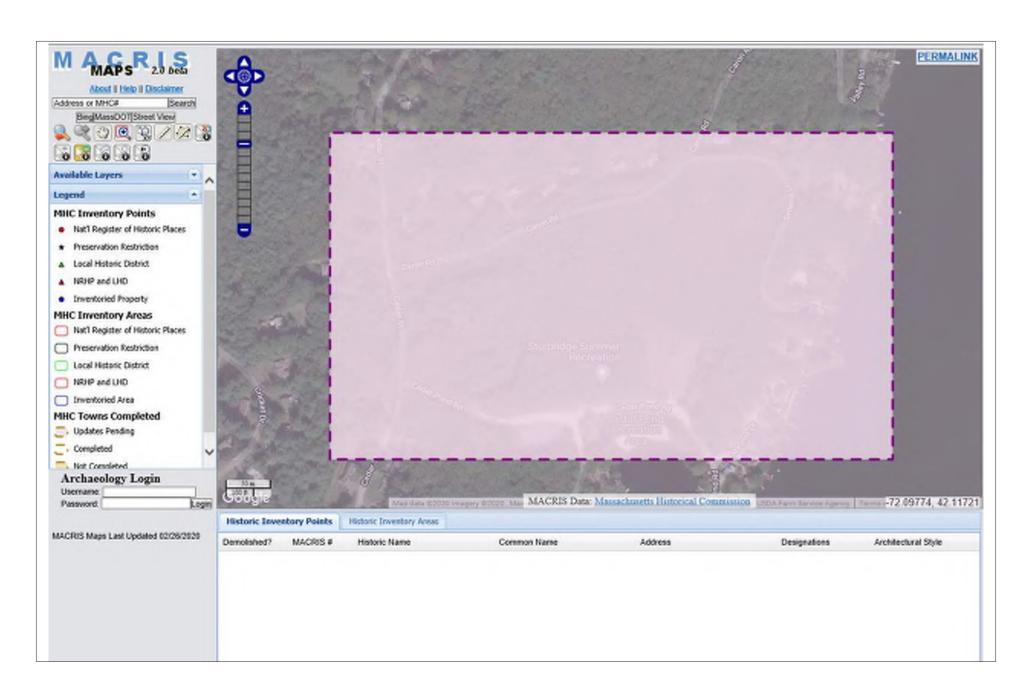
NOTES TO USERS SPECIAL FLOOD HAZARD AREAS (SPHAs) SUBJECT TO INJUNDATION BY THE 1% ANNUAL OHANCE FLOOD The 1% annual chance flood (100-year flood), also incover as the base flood, is the 1 ZONE AE ZONE AH ZONE VE PLOODWAY AREAS IN ZONE AE ****** COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs) ---- 513----(EL 987) MAP SCALE 1" = 500" FIRM FLOOD INSURANCE RATE MAP WORCESTER COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 926 OF 1075 (SEE MAP INDEX FOR FIRM F MAP NUMBER 25027C0926E EFFECTIVE DATE JULY 4, 2011

Federal Emergency Management Agency

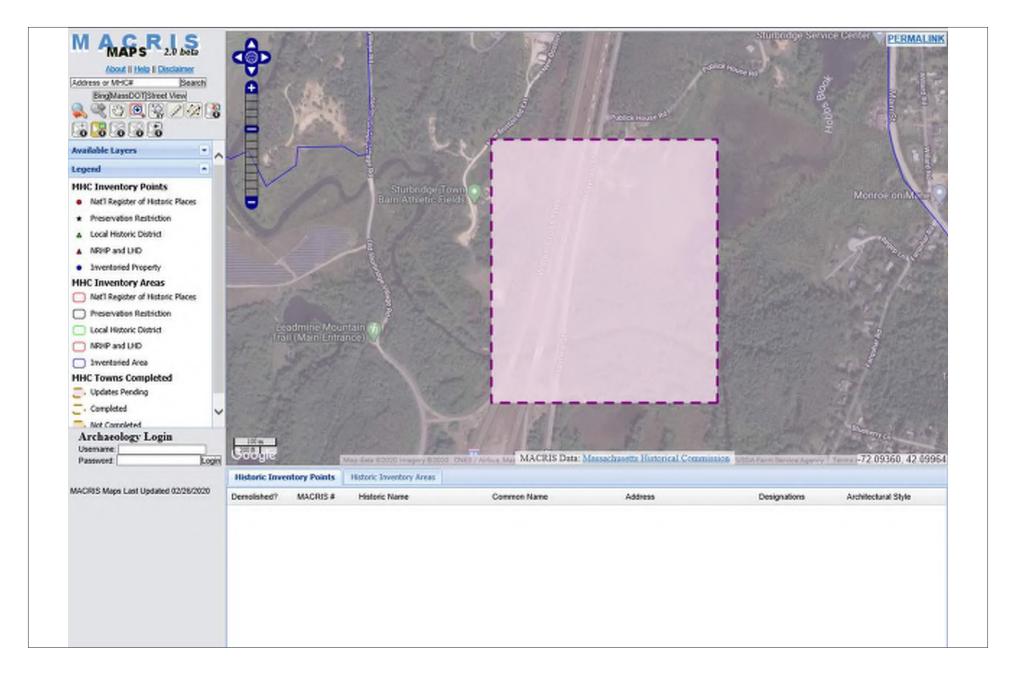
NOTES TO USERS SPECIAL FLOOD HAZARD AREAS (SPHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD The 1% annual chance flood (100-year flood), also known as the base flood, is the ZONE AE ZONE AH ZONE V ZONE VE PLOODWAY AREAS IN ZONE AE ****** ZONE X Areas determined to be outside the 0.2% annual chance flooglisin. Areas in which flood heareds are undetermined, but possible. COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs) egon N MAP SCALE 1" = 500" FIRM FLOOD INSURANCE RATE MAP WORCESTER COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 927 OF 1075 (SEE MAP INDEX FOR FIRM PANEL LAYOUT) MAP NUMBER 25027C0927E EFFECTIVE DATE JULY 4, 2011 Federal Emergency Management Agency

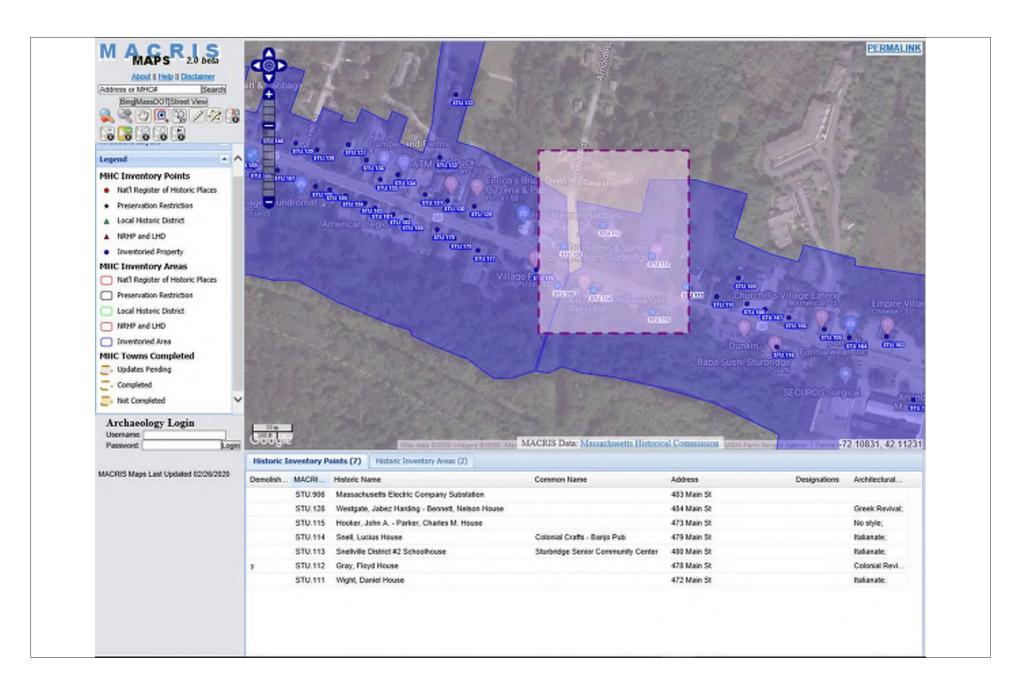
APPENDIX





APPENDIX





Massachusetts Cultural Resource Information System

Scanned Record Cover Page

STU.113

Snellville District #2 Schoolhouse Historic Name Sturbridge Senior Community Center

480 Main St Address: Arnold Rd and Main St

City/Town: Sturbridge Village/Neighborhood: Fiskdale; Snellville

Local No: Year Constructed: 1874

Architect(s):

Architectural Style(s): Italianate

Meeting Hall; Public School; Warehouse; Community Use(s):

Architecture; Community Planning; Education; Military; Significance: Music: Politics Government: Religion

STU.C: Snellville

Designation(s):

Roof: Asphalt Shingle

Wall: Brick; Granite; Wood; Wood Clapboard; Stone, Cut Building Materials(s):

Foundation: Granite: Stone Cut

The Massachusetts Historical Commission (MHC) has converted this paper record to digital format as part of ongoing projects to scan records of the Inventory of Historic Assets of the Commonwealth and National Register of Historic Places nominations for Massachusetts. Efforts are ongoing and not all inventory or National Register records related to this resource may be available in digital format at this time.

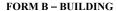
The MACRIS database and scanned files are highly dynamic; new information is added daily and both database records and related scanned files may be updated as new information is incorporated into MHC files. Users should note that there may be a considerable lag time between the receipt of new or updated records by MHC and the appearance of related information in MACRIS. Users should also note that not all source materials for the MACRIS database are made available as scanned images. Users may consult the records, files and maps available in MHC's public research area at its offices at the State Archives Building, 220 Morrissey Boulevard, Boston, open M-F, 9-5.

Users of this digital material acknowledge that they have read and understood the MACRIS Information and Disclaimer (http://mhc-macris.net/macrisdisclaimer.htm)

Data available via the MACRIS web interface, and associated scanned files are for information purposes only. THE ACT OF CHECKING THIS DATABASE AND ASSOCIATED SCANNED FILES DOES NOT SUBSTITUTE FOR COMPLIANCE WITH APPLICABLE LOCAL, STATE OR FEDERAL LAWS AND REGULATIONS. IF YOU ARE REPRESENTING A DEVELOPER AND/OR A PROPOSED PROJECT THAT WILL REQUIRE A PERMIT, LICENSE OR FUNDING FROM ANY STATE OR FEDERAL AGENCY YOU MUST SUBMIT A PROJECT NOTIFICATION FORM TO MHC FOR MHC'S REVIEW AND COMMENT. You can obtain a copy of a PNF through the MHC web site (www.sec.state.ma.us/ under the subject heading "MHC Forms."

> Commonwealth of Massachusetts Massachusetts Historical Commission 220 Morrissey Boulevard, Boston, Massachusetts 02125 www.sec.state.ma.us/mhc

This file was accessed on: Thursday, April 2, 2020 at 5:04: PM



MASSACHUSETTS HISTORICAL COMMISSION MASSACHUSETTS ARCHIVES BUILDING 220 Morrissey Boulevard BOSTON, MASSACHUSETTS 02125

Photograph



Locus Map



Recorded by: Shannon Walsh, PVPC Organization: Sturbridge Historical Commission

Date (month / year): July 2017

12/12

Assessor's Number USGS Quad Area(s) Form Number

STU.113

415-02433-480 STU.C

Place: (neighborhood or village): Snellville, Fiskdale

Address: 480 Main Street

Town/City: Sturbridge

Historic Name: Snellville District #2 Schoolhouse

Uses: Present: (Senior) Community Center

Original: Public School and Meeting House

Date of Construction: 1874

Source: Massachusetts Spv newspaper

Style/Form: Italianate

Architect/Builder: Unknown

Exterior Material: Foundation: Granite

Wall/Trim: Brick and Clapboard/Granite, Wood

Roof: Shingle

Outbuildings/Secondary Structures:

Major Alterations (with dates): Circa 1970s shed roof rear addition

Circa 1990s rear elevator and stair tower addition Circa 1990s and later interior rehabilitation

Condition: Very Good

Moved: no ⊠ yes □ Date:

Acreage: .78 acres

Setting: This institutional building faces south along Main Street, at the intersection witxh Arnold Road, in the Snellville neighborhood of Fiskdale, a village in Sturbridge.

> RECEIVED SEP 10 2017 MASS. HIST. COMM.

Follow Massachusetts Historical Commission Survey Manual instructions for completing this form.

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125 Area(s) Form No.

STU.C STU.113

Recommended for listing in the National Register of Historic Places. If checked, you must attach a completed National Register Criteria Statement form

Use as much space as necessary to complete the following entries, allowing text to flow onto additional continuation sheets.

ARCHITECTURAL DESCRIPTION:

Describe architectural features. Evaluate the characteristics of this building in terms of other buildings within the community. The Snellville District #2 Schoolhouse provides a good example of late nineteenth century Italianate architecture, used on an institutional building constructed in response to the growth and residential development of the Snellville area of Fiskdale, a village of Sturbridge. The building is 5 bays wide by 5 bays deep and two and a half stories high. It has a brick exterior, a granite foundation and granite and wood trim. The brick pattern appears to be Common (Flemish Bond). There are two-story brick pilasters at each of the building's four corners. The front gable roof has a moderate pitch and overhanging eaves with elaborately designed paired brackets. An interior brick chimney is visible towards the rear, northwestern side of the main roof. A secondary two-story wing with a multi-level gabled roofline is connected to the northern, rear side of the building, as well as a one-story, clapboard ell with a shed roof. A concrete ramp provides access to a secondary, later addition entry on the rear, northern facing elevation.

Constructed when Italianate architectural design was fashionable (1840-1885), characteristics of this style include the lowpitched roof with pronounced, overhanging eaves and paired, decorative brackets, and tall, narrow arched windows, with hooded segmental arch-shaped brick crowns.

The main, southern facing façade has three sets of stairs leading to separate entries. The centered, main entry has double paneled doors, with a divided transom light topped with a carved motif in the wooden surround and a hooded, segmental arch brick crown. The other two entries have single doors, each also topped with the carved wooden motif and hooded, segmental arch brick crowns. The first story on this façade has two 6/6 windows and the second story has four 6/6 windows and centered, paired 4/4 windows. The upper half story has paired windows, set in the gable, each with 4 divided lights in the upper sash and venting in the lower half. There are two circular windows, each with 4 divided lights to the east and west of the upper story paired window within the gable

The western and eastern facing side elevations have single 6/6 windows with granite sills and brick lintels. The single windows have the same carved, wooden motif in the upper surround and hooded, segmental arch brick crowns as the windows on the main façade. The western elevation also has two paired first story 6/6 windows with granite sills and brick lintels.

HISTORICAL NARRATIVE

Discuss the history of the building. Explain its associations with local (or state) history. Include uses of the building, and the role(s) the owners/occupants played within the community

This area in Fiskdale was formed in the late eighteenth century, first as "Wight Village," related to the Wight saw, grist, and fulling mills, and was redeveloped in 1842 when brothers Thomas Snell Jr. (1798-1885) and Melville Snell (1804-1877) purchased the land to continue operations of the auger and bit production company created in 1790 by their father, Thomas Snell (1772-1832). Incorporated as Snell Manufacturing Company by 1862, the company was recognized as the first in the country to make spiral augers and the first internationally to produce an improved bight auger.³ The elder Thomas Snell was possibly involved in the construction of the U.S.S. Constitution in Boston, as his operations included "the only manufacturing of bits and augers adapted to shipbuilding use in the vicinity," and Snell Manufacturing Company products were later used to

Continuation sheet 1

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 MORRISSEY BOLILEVARD, BOSTON, MASSACHUSETTS, 02125

Area(s) Form No.

STU.C STU.113

support the ship's 1928 restoration.4 The area in Fiskdale surrounding the manufacturing operations became known as Snellville and the company remained in business until the early 1950s as the oldest auger and bit factory in the country. The area's organization of formal education began in 1761 when Sturbridge formed five school districts and by 1825, the first school committee report noted that 560 students had attended school through the past winter at 12 districts.

By the late 1800s, the Fiskdale area had developed as an institutional and commercial center, due to the presence of the Fiskdale mills and the Snell Manufacturing Company. Main Street development continued with further expansion into that area from the center of Sturbridge, as well as into the neighboring area of Southbridge. (Figures 1 and 3)

A Sturbridge town meeting in 1874 resulted in the decision was reached to build a two-story brick school house, 42 x 60 feet, with two first floor rooms and one second floor room, "for the benefit of Snellville and Fiskdale." The new building, ultimately completed under budget at about \$11,000, was dedicated in early December of that same year and was described as providing "excellent accommodations for a grammar and a primary school," and with the upper hall to "be used by the public for any and all purposes for which it may be required."8 (Figure 2) Education was provided to third and fourth graders, with one teacher per grade.

The new school house became a focal point of the area and was referenced in an 1876 article about a "Flag Raising at Fiskdale," ending with a march to the building, which served as a backdrop for speakers at the event. 9 In 1878, there were 338 students. 10 In 1895, a newspaper article noted that Miss loannetta Warren of Ashland and Miss Nellie Nolan of Fiskdale were newly hired to teach at the school. 11 This building became the first of two similarly styled schools, with a second building (with plans drawn by a female architect) erected in Fiskdale by 1896.12

In 1939, third and fourth grade students of the Snellville District School sang Christmas carols as part of a live, national radio broadcast, unaware that they were on the air until after the program had ended. The radio station, WBZ-WBZA chose the Snellville school as the setting for the children's performance as it was "a typical New England red school house."

In January of 1952, the Regional School District of Tantasqua was established to provide for the towns of Brimfield, Brookfield, Holland, Sturbridge, and Wales and in December of 1954, the new Regional District School opened in Sturbridge. 14 Burgess Elementary School was built to serve Sturbridge in 1949, eliminating the need for the smaller school houses. The former Snellville District #2 Schoolhouse went on to serve as a meeting place for the Veterans of Foreign Wars, the Sturbridge Art Association, and Civic Defense for Storage 1

Circa 1979, the former schoolhouse was rehabilitated for adaptive reuse for the Sturbridge Council on Aging, serving as a senior center for Sturbridge and Fiskdale. Exterior, rear additions were added in the 1970s and 1990s, and interior rehabilitation also occurred in the 1990s.

BIBLIOGRAPHY and/or REFERENCES

Findagrave.com

Genealogybank.com (see footnotes)

<sup>Virginia Savage McAlester, A Field Guide to American Houses. New York: Alfred A. Knopf, 2013.

Helen C. Holley, "Snellville." (MHC Inventory Form \$STU.C.) 1973. https://linbc-marris.net/Details.aspx?MhcId=STU.C, accessed July 2017.

3 Snell Tools Used in Rebuilding of 'Old Ironsides." Springfield Republican, September 9, 1928. Genealogybank.com</sup>

Helen C. Holley, 'Snellville,' (MHC Inventory Form #STU.C), 1973. http://lmhc-macris.net/Details.aspx?Mhold=STU.C, accessed July 2017.
 D. Hamilton Hurd, History of Worcester County, Massachusetts, Volume I. Philadelphia: J. W. Lewis & Co., (1889) 117. Archive.org (site). Accessed on-line "County News " Massachusetts Spy. January 23, 1874. Genealogybank com

^{8 &}quot;Sturbridge," Massachusetts Spy, December 11, 1874. Genealogybank.com

Flag Raising at Fiskdale," Massachusetts Spy, September 22, 1876, Genealogybank.com
 Marvin, Abijah Perkins. "Town of Sturbridge." History of Worcester County, Massachusetts, Volume 2. Boston: C.F. Jewett and Company, 1897(362).

Google books.com (site).

11 "Sturbridge," Worcester Daily Spy, August 30, 1895. Genealogybank.com

¹² "Sturbridge Town Meeting Warrant," *Worcester Daily Spy*, March 28, 1896. *Genealogybank.com*¹³ "Pupils Sing to Nation But Don't Know It." *Boston Herald*, December 23, 1939. *Genealogybank.com*

^{4 &}quot;Regional School Enacted." Springfield Union, May 20, 1955. Genealogybank.com

Helen C. Holley, "Snellville District #2 Schoolhouse." (MHC Inventory Form #STU.113), 1973. http://mhc-macris.net/Details.aspx?MhcId=STU.113, accessed July 2017.

APPFNDIX

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125 Area(s) Form No.

STU.C STU.113

Holley, Helen C. "Fiskdale." (MHC Inventory Form #STU.E), 1973. http://mhc-macris.net/Details.aspx?MhcId=STU.E, accessed July 2017.

Holley, Helen C. "Snellville District #2 Schoolhouse." (MHC Inventory Form #STU.113), 1973. http://mhcmacris.net/Details.aspx?Mhcld=STU.113, accessed July 2017.

Hurd, D. Hamilton. History of Worcester County, Massachusetts, Volume I. Philadelphia: J. W. Lewis & Co., 1889. Archive.org (site). Accessed on-line July 2017, https://archive.org/details/historyofworcest01hurdd

Marvin, Abijah Perkins. "Town of Sturbridge." History of Worcester County, Massachusetts, Volume 2. Boston: C.F. Jewett and Company, 1897(362). Google.books.com (site). Accessed on-line July 2017, https://books.google.com/books?id=Ri4WgxsQu5UC&pg=PA362&lpg=PA362&dg=snellville+school+sturbridge+closed&source= bl&ots=2tZqm3m L9&siq=5ZW0nytWOSjDCEoxW4VXp63c9no&hl=en&sa=X&ved=0ahUKEwj42oOO-qTVAhUFMz4KHQgD0wQ6AEISTAG#v=onepage&g=snellville%20school%20sturbridge%20closed&f=false

Massachusetts Department of Conservation and Recreation, John H. Chafee Blackstone River Valley National Heritage Corridor, Quinebaug and Shetucket Rivers Valley National Heritage Corridor. "Blackstone Valley/Quinebaug-Shetucket Landscape Inventory." Sturbridge Reconnaissance Report, June 2007.

Massachusetts Historical Commission, MHC Reconnaissance Survey Town Report, Sturbridge. Boston: Massachusetts Historical Commission, Office of the Massachusetts Secretary of the State, 1894.

McAlester, Virginia Savage. A Field Guide to American Houses. New York: Alfred A. Knopf, 2013.

"Snellville School" plans on file at Massachusetts State Archives, Identifier Number: D-5-9-50291. Viewing by appointment only.

Figure 1: Unknown author, Sturbridge and Fiskdale, Massachusetts, 1892. State Library of Massachusetts, (site). Accessed July 2017, http://archives.lib.state.ma.us/handle/2452/116152

Figure 2: Unknown author, Sturbridge and Fiskdale, Massachusetts, 1892. State Library of Massachusetts, (site). Accessed July 2017, http://archives.lib.state.ma.us/handle/2452/116152

Figure 3: L. J. Richards & Co. "Chariton & Dudley & Southbridge & Sturbridge." Plate 021, New Topographical Atlas of Worcester County Massachusetts.1898. Ward Maps LLC (site). Accessed July 2017, http://www.wardmaps.com/viewasset.php?aid=12391

INVENTORY FORM B CONTINUATION SHEET

MASSACHUSETTS HISTORICAL COMMISSION

220 Morrissey Boulevard, Boston, Massachusetts 02125

STURBRIDGE

480 MAIN STREET

Area(s) Form No.

STU.C STU.113



Photo 1: Main, southern facing façade



Photo 2: Southeastern corner perspective

Continuation sheet 4

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125

Area(s) Form No.

STU.C STU.113



Photo 3: Eastern facing side elevation



Photo 4: Northeastern corner and northern facing rear elevation

Continuation sheet 5

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

Area(s) Form No.

STU.C STU.113

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125



Photo 5: 6/6 windows, wood trim and segmental arched hooded crowns



Photo 6: Elaborate bracketed eaves

APPENDIX

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125

Area(s) Form No.

STU.C STU.113



Photo 7: Granite sill example

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125

Area(s) Form No. STU.C STU.113

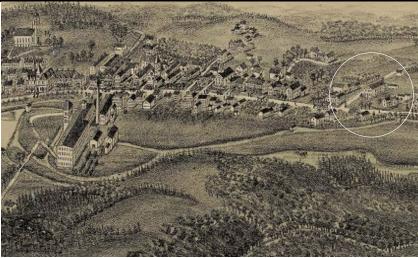


Figure 1: 1892 Map of Sturbridge and Fiskdale, showing school (circled) and development along Main Street in Snellvile part of Fiskdale



Figure 2: 1892 Map of Sturbridge and Snellville, Fiskdale, with a rendering of the school at 480 Main Street

Continuation sheet 8

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125 Area(s) Form No.

STU.C STU.113

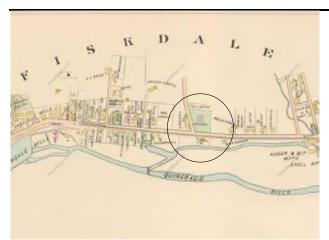


Figure 3: 1898 Map of Fiskdale, showing school along Main Street and continued development

Continuation sheet 9

INVENTORY FORM B CONTINUATION SHEET

STURBRIDGE

480 MAIN STREET

MASSACHUSETTS HISTORICAL COMMISSION 220 Morrissey Boulevard, Boston, Massachusetts 02125

STU.C STU.113

Area(s) Form No.

National Register of Historic Places Criteria Statement Form

Check all that apply:	
☐ Individually eligible ☐ Eligible only in a historic district	
☐ Contributing to a potential historic district ☐ Potential historic district	
Criteria: 🛛 A 🗌 B 🖾 C 🗍 D	
Criteria Considerations:	G

Statement of Significance by Shannon Walsh, Pioneer Valley Planning Commission The criteria that are checked in the above sections must be justified here.

The Snellville District #2 Schoolhouse is recommended for individual listing on the National Register of Historic Places with a period of significance from 1874 (original construction) to 1967 (arbitrary fifty-year threshold), with significance on a local level.

It meets National Register Criteria A in the category of Community Planning and Development. As employment opportunities at the Fiskdale Mills and Snellville Manufacturing Company spurred local population growth, the school was designed and constructed to meet the needs of Fiskdale's growing Snellville community and a portion of the interior space was utilized to provide third and fourth grade elementary education to area children. Prominently displayed on maps during its early period of significance, this building also provides an example of the growth and development of Main Street in Fiskdale between Sturbridge and Southbridge.

Criteria A is also met in the category of Social History, on a local level. The building originally served a dual purpose, as both an institutional facility to support the educational welfare of local youth, as well as a community meeting space for social groups. It was even chosen as a backdrop for an 1876 Fiskdale flag raising.

Criteria C can additionally be applied to this building, with significance on a local level, in the category of Architecture, as it is a well-maintained and fairly intact example of a late nineteenth century Italianate style institutional building which retains many character-defining details, such as its form and massing, overhanging eaves and paired, decorative brackets, tall, narrow arched 6/6 windows with hooded segmental arch-shaped brick crowns, and exterior granite and wood trim from its original design.

In conclusion, the Snellville District School and Meeting Hall building is eligible for National Register listing under both Criteria A and C, with local significance, as a good example of a typical New England red school house," which retains a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association.

Pupils Sing to Nation But Don't Know It." Boston Herald, December 23, 1939. Genealogybank.com

¹⁶ "Flag Raising at Fiskdale," Massachusetts Spy, September 22, 1876, Genealogybank.com

APPENDIX

	Di Calm		
그 생활 내용인 병원 이 경기에 밝혔다.	And the second second		
(Attach photo here)	Vana A		73
FORM B - BUILDING SURVEY	70 AT 181		_5S+
MASSACHUSETTS HISTORICAL COMMISSION 2 Office of the Secretary, State House, Boston	. TownSTURBRI	DGE	8.
1. Is this building historically significant to:	Street address		
X Town Commonwealth Nation	Name SWELLVIL	LE SCHOOLHOUSE OL AND MEETING	25T.T.
Building has historical connection with the following themes: (see also reverse side)	Use: original &	present Now use	l as headquarters mizations
Scholar Commerce/industry			
Agriculture Science/invention Art/Sculpture Travel/communication	Open to public_	st scheduled ti	188
X Education Military Affairs	Date 1874	Style 1850 Its	lienate brick
Government Religion/philosophy Literature Indians	Source of date		
Music Other Levelopment of town/city	Architect		
Architectural reason for inventorying:			
Good example of country schoolhouse; good sett	ing L OR pa	rt of Area # A	1: A: S; A:7
3. CONDITION Excellent Good Fair Deteriorate			
4. DESCRIPTIO	N		
FOUNDATION/BASEMENT: High Regular Low	Material	out cranite	
WALL COVER: WoodB	Harrist Martin Co.		
	Tick Stolle Other .		
ROOF: Ridge Gambrel Flat Hip Mansard Tower Cupola Dormer windows Balustrac	de Grillwork		
CHIMNEYS: 1 2 3 4 Center End Inter	ior Irregular	Cluster Elabor	ate
STORIES: 1 2 3 4 ATTACHMENTS: Wings	Ell Shed		
PORCHES: 1 2 3 4	PORTICO	Balo	cony :
FACADE: Gable end: Front/side Ornament Br	ecketed corners.1	circular window	in gable
Entrance; Side Front: Center/Side Details; 2	center-side: l ce	nter leading to	upstairs hall
Windows: Spacing: Regular/Irregular Identical/V	aried _Brick arch	es over windows	end doors.
Corners: Plain Pilasters Quoins Cornerboards	ample in town of Oorner pilast		
5. Indicate location of building in relation to 6.	Footage of structu	re from street	1001
nearest cross streets and other buildings	Property has		
ARMED SHELL BY	ecorder Helen	G. Holley	
[']	or Shirbridge	1 tretorical	Commissim
	hoto #5_\$.		
$\overline{}$ \times \times \times \times \times	10W # <u>'3 3'</u>	JUN 3 0 19	
SI	EE REVERSE SIDE		

RELATION OF SU	rrounding te stru	CTURE	(ગાવનાડ
. Outbuildings	once an out-hous	e		
	tures; Agriculture O features rehitect			
	uctures ial Federal Greek Re ian Gothic Mansard l			bard Rom.
Use: Reside	ntial Commercial Rel			Fair Deteriorated
	SCRIPTION OF HISTO on front of form)		E OF SITE (Refer and	elaborate on
The upst Woman's From 187 hall. W	lding was built as a airs meeting room wa Relief Corps. Somet 9 to 1954 the Fished hen disbanded it was e in the country.	s designed for th imes emall religi le Brass Band me	ne G.A.R., Sons of V Lous organizations m every Monday night	eterens, et here. in the
In 1939 School b school a Meeting downstai	the Massachusetts Ed y broadcasting the s s being the cldest s room now used by Vet rs rented by Sturbri Oivib Defense for st	chool's Christmas chool building in erans of Foreign dge Art Associati	program to commemo continuous use in Wars. West side of	rate the the State. building
Once the	ND/OR REFERENCE re was a commodious e of building a well		rear of the buildin	g; on the
RESTRICTIONS_				
Original Owner:_	70 - 1: N7 - : 1	the state of the state of		
Deed Information	Book Number	Page,		Registry of Deeds
Form B. 10M-6-71-0496	88			
SVIDS the balk blood of the his handle excellent out or a	entranisti ratama estilian en en en entrantista en en	ACTION OF THE PARTY OF THE PART	A STATE OF THE STA	Control Contro

MHC INVENTORY FORM CONTINUATION SHEET MHC Inventory scanning project, 2008-2009

MACRIS No. STU.113



Looking NE. May 172.

Original yellow form: E Copies: Inventory form				
Town file(w/c Macris			G	
NR director _				unity: Sturbridge
	MHC OPIN	ION: ELIGIBILI	TY FOR NATIONAL REC	GISTER
Date Received:	9/11/2017	Date Due:	Date Reviewed	1: 09/20/2017
Type:	X_Individual	Di	strict (Attach map indicating	boundaries)
Name: S	Snellville Distric	t #2 Schoolhouse	Inventory Form	: STU.113
Address: 4	80 Main Street			
Requested by:	Barbara Search	, Sturbridge Histori	cal Commission	
Action: X	HonorIT	CGrant	R & COther	r:
Agency:		Staff in char	ge of Review: B. Friedber	g
INDIVIDUAL P	ROPERTIES		DISTRICTS	
X Eligible Eligible, also	in district		Eligible Ineligible	
Eligible only Ineligible	in district		More information n	eeded
More informat	tion needed			
CRITERIA:	_X_A	B	<u>X</u> C	D
LEVEL:	X_Loc	ealSta	eNational	
STATEMENT (OF SIGNIFICA	NCE by P. St	ott	-
School Houses (ST	U.31 and STU.45), although listed as p		The wood-frame East and Wes Historic District 11/9/1977 hav Sturbridge Center School

addition, but neither has affected the building's overall integrity. Although five bays across and five bays deep, the building is rectangular in plan, 42x60 feet, with a large second-floor community hall. The 6/6 sash appear to be original and the wooden surrounds with scrollwork above appears intact. Recent aluminum storm sash has been applied over the openings. On the exterior, the building has seen few other alterations, and is an excellent example of the Italianate style as applied to a community district school. While the interiors have been modified to accommodate a senior citizen center, they retain much of their original wood trim, wainscoting and room layout.

The school was an integral part of Sturbridge development in the late 19th and early 20th centuries, providing an important social venue for community meetings and events. The Snellville District #2 Schoolhouse meets criteria A and C of the National Register of Historic Places at the local level.

Massachusetts Cultural Resource Information System

Scanned Record Cover Page

STU.C Inventory No: Historic Name Snellville Address:

City/Town: Sturbridge Snellville

Local No: Year Constructed:

Architect(s): Architectural Style(s):

Agricultural; Industrial Complex or District; Residential Use(s):

Agriculture; Archaeology, Historic; Architecture; Significance: Commerce; Community Planning; Education; Industry

Area(s): Designation(s): Building Materials(s):



The Massachusetts Historical Commission (MHC) has converted this paper record to digital format as part of ongoing projects to scan records of the Inventory of Historic Assets of the Commonwealth and National Register of Historic Places nominations for Massachusetts. Efforts are ongoing and not all inventory or National Register records related to this resource may be available in digital format at this time.

The MACRIS database and scanned files are highly dynamic; new information is added daily and both database records and related scanned files may be updated as new information is incorporated into MHC files. Users should note that there may be a considerable lag time between the receipt of new or updated records by MHC and the appearance of related information in MACRIS. Users should also note that not all source materials for the MACRIS database are made available as scanned images. Users may consult the records, files and maps available in MHC's public research area at its offices at the State Archives Building, 220 Morrissey Boulevard, Boston, open M-F, 9-5.

Users of this digital material acknowledge that they have read and understood the MACRIS Information and Disclaimer (http://mhc-macris.net/macrisdisclaimer.htm)

Data available via the MACRIS web interface, and associated scanned files are for information purposes only. THE ACT OF CHECKING THIS DATABASE AND ASSOCIATED SCANNED FILES DOES NOT SUBSTITUTE FOR COMPLIANCE WITH APPLICABLE LOCAL, STATE OR FEDERAL LAWS AND REGULATIONS. IF YOU ARE REPRESENTING A DEVELOPER AND/OR A PROPOSED PROJECT THAT WILL REQUIRE A PERMIT, LICENSE OR FUNDING FROM ANY STATE OR FEDERAL AGENCY YOU MUST SUBMIT A PROJECT NOTIFICATION FORM TO MHC FOR MHC'S REVIEW AND COMMENT. You can obtain a copy of a PNF through the MHC web site (www.sec.state.ma.us/mhc) under the subject heading "MHC Forms."

> Commonwealth of Massachusetts Massachusetts Historical Commission 220 Morrissey Boulevard, Boston, Massachusetts 02125 www.sec.state.ma.us/mhc

This file was accessed on: Thursday, April 2, 2020 at 5:04: PM

FORM A - AREA AND SITE SURVEY	1. Town Sturbridge
MASSACHUSETTS HISTORICAL COMMISSION Office of the Secretary, State House, Boston	2. Name of area or section
6. Please comment on the Historical or Architectural importance of this area:	Snellville lath century
	3. General Date or Period to present
[1] [1] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2	4. Is the area uniform? both old and near
See reverse side	In style <u>Industrial</u>
- 1997年 - 1997年	In condition Fair
	In type of ownership privets
	In use (Explain) yes, as dwellings
	and commercial, industrial
k (1974- B ES) sassa (sastasada dina dinaken Kumunin munik kul a (1984-1984)	5. Is area potentially threatened? yes
A:3; A:5; A:7 (Agricultur	e By Zoning x
	By Roads
Education, Commerce/Industry)	By Developers
The state of the s	By Deterioration
area and any route numbers.	ated on Form B. Indicate street boundaries of
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
See attached map and	aerial photograph.
Recorder Helen C. Helley For Sturbridge Historical Commiss (Name of Organization) NOTE: Recorder should obtain written permis	aerial photograph.

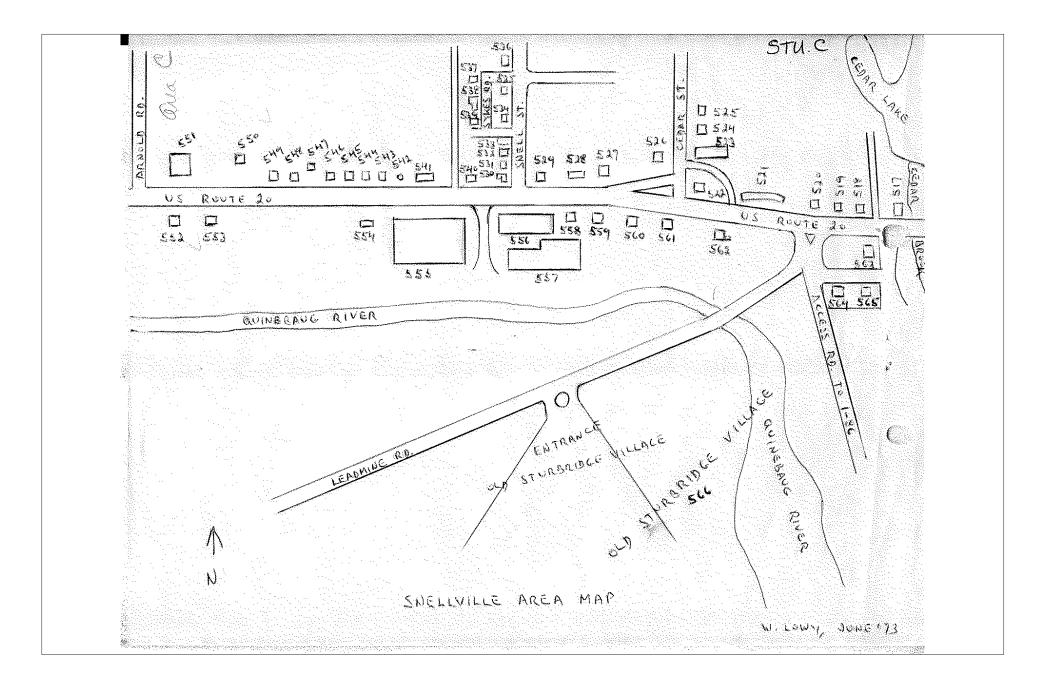
APPFNDIX

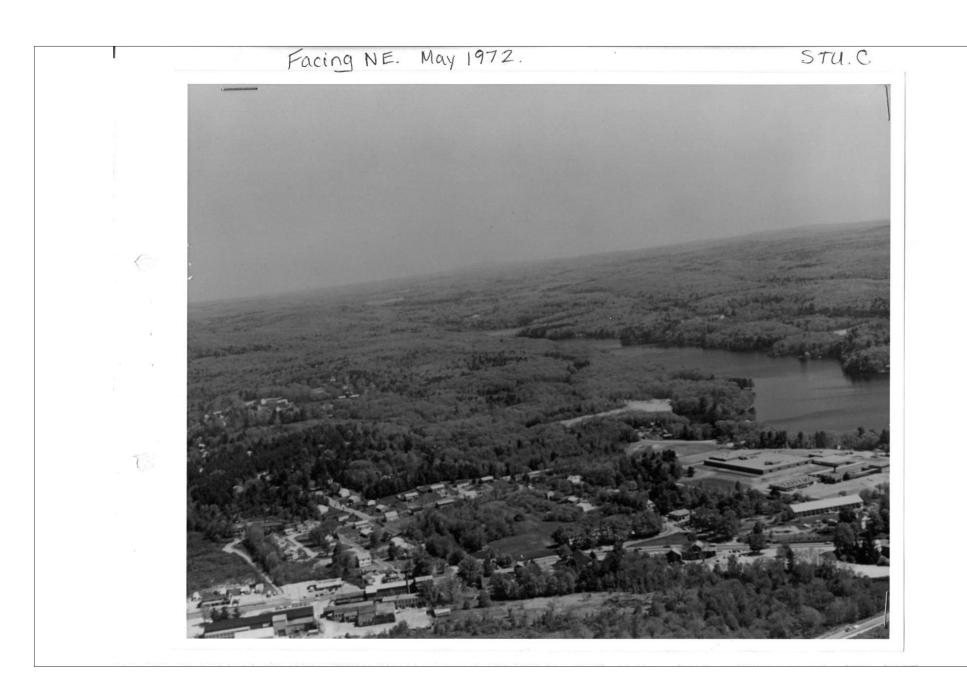
STU.C

From Cedar Brook (next to the Fairgrounds) on the east to Arnold Road on the west lies the section knows as "Snellville," and before that "Wight Village". The property was under one ownership. From the late 18th century to modern times this has been the site of industrial enterprise.

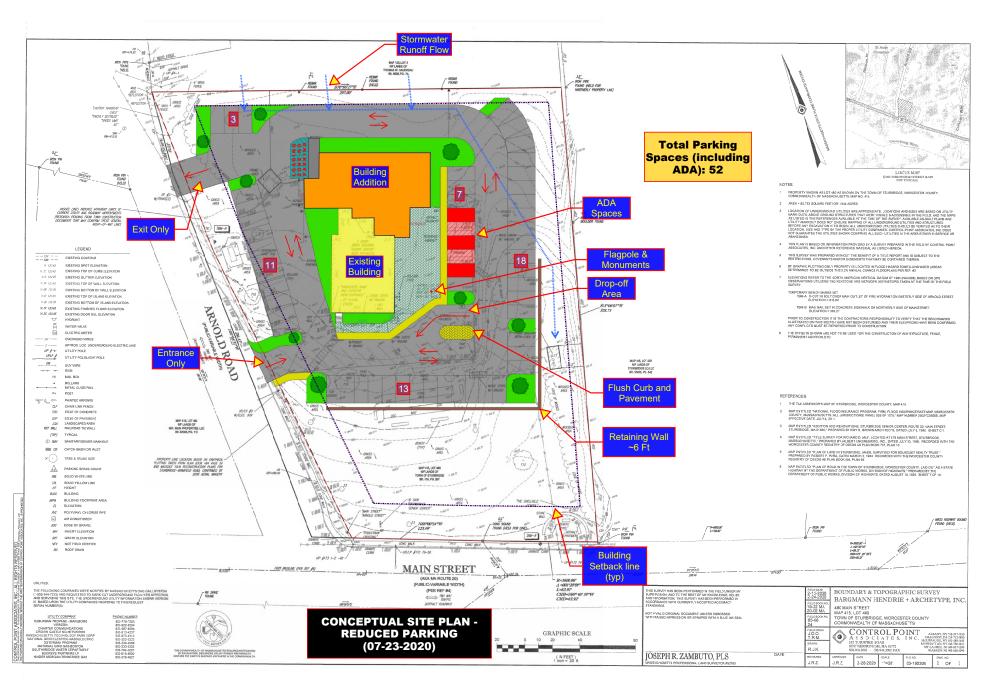
The Wight Wills - primarily saw, grist, fulling were established in the 1990's, with the owner (owners) dwellings, several tenant houses, a counting house and company store. The Wight family brought water power from the Quinebaug River, one-half mile away to this location near the main travels road by a canal dug by hand in 1798-9, now mostly filled in.

When the Snell Brothers bought out the Wights in 1842, transferring to this area what has been called the oldest manufactory in the country for augurs and bits, the locality gradually came to be known as Snellvilla. Some of the Snell buildings are still in existence: owners house, tenant cottages, and factory buildings. The Company closed in 1942-3, but other businesses are occupying the sites. Only one of the early mills remains.

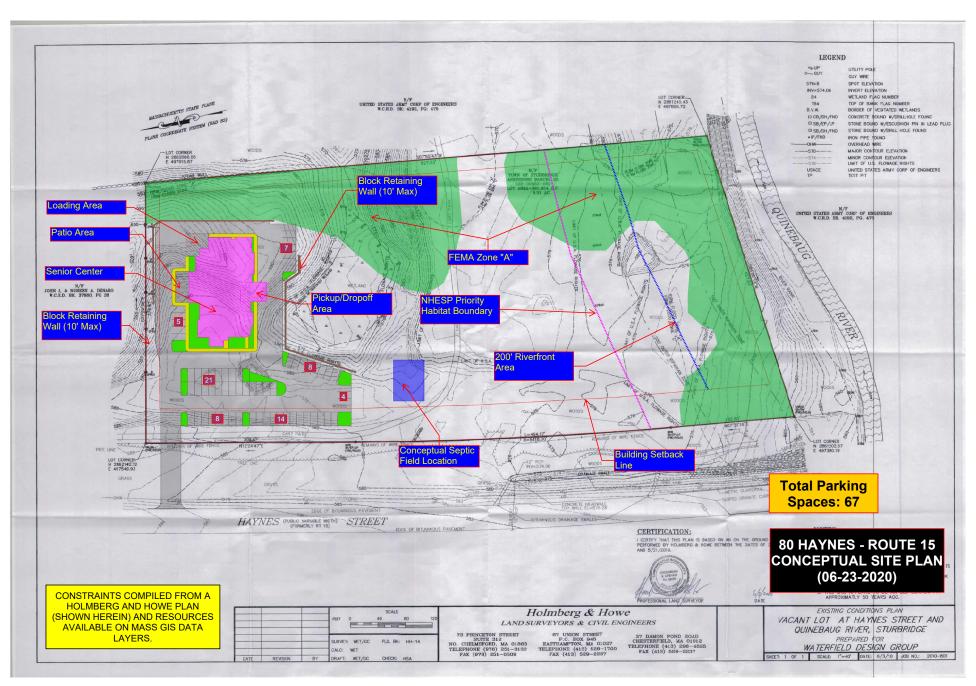




APPENDIX F 480 MAIN STREET MINIMAL PARKING SITE PLAN



APPENDIX G 80 HAYNES STREET ALTERNATE TEST FIT PLAN



APPENDIX H LEAD PAINT EMAIL

Address is 480 Main Street, (Fiskdale) Sturbridge, MA. Robyn Chrabascz Will meet Leny at 9:00 AM. I will advise if anything should change.

Reese Schroeder, AIA

BARGMANN HENDRIE + ARCHETYPE, INC. 9 Channel Center Street, Suite 300, Boston, MA 02210 617 350 0450 main 617 456 2246 direct 781 248 4096 cell www.bhplus.com

From: Ammar Dieb <adieb@uec-env.com>

Sent: Tuesday, March 24, 2020 9:51 AM

To: Schroeder, Reese < RSchroeder@bhplus.com>

Cc: Bargmann, Joel <JBargmann@bhplus.com>; Leonard Busa (leonardj744@msn.com)

<leonardj744@msn.com>; George Bezreh <gbezreh@uec-env.com>

Subject: RE: Sturbridge Senior Center

Good Morning: I will have Leny be there tomorrow at 9:00AM. Please provide address. Thanks.

Ammar M. Dieb

President

Universal Environmental Consultants

12 Brewster Road Framingham, MA 01702

P: 508.628.5486 F: 508.628.5488 M: 617.984.9772 E: adieb@uec-env.com

From: Schroeder, Reese [RSchroeder@bhplus.com]

Sent: Tuesday, March 24, 2020 9:03 AM

To: Ammar Dieb Cc: Bargmann, Joel

Subject: Sturbridge Senior Center

I just received the OK for you to visit any time this week between the hours of 8:00 AM and 4:00 PM. Our client, Robyn Chrabascz with the town will meet you and let you into the building. Let me know when you'd like to arrive and I will schedule it with them.

Thanks again

Reese Schroeder, AIA

BARGMANN HENDRIE + ARCHETYPE, INC. 9 Channel Center Street, Suite 300, Boston, MA 02210 617 350 0450 main 617 456 2246 direct 781 248 4096 cell

www.bhplus.com

From: Ammar Dieb <adieb@uec-env.com> Thursday, July 16, 2020 11:35 AM Sent:

To: Schroeder, Reese Cc: Bargmann, Joel

Subject: RE: Sturbridge Senior Center

Hi: The only compliance would be OSHA and DEP. There are no requirement to remove LBP from "Senior Centers". We must ensure, however, no loose or flaking paint. Thanks.

Ammar M. Dieb

President



12 Brewster Road Framingham, MA 01702

P: 508.628.5486 F: 508.628.5488 M: 617.984.9772 E: adieb@uec-env.com

From: Schroeder, Reese < RSchroeder@bhplus.com>

Sent: Thursday, July 16, 2020 11:26 AM To: Ammar Dieb <adieb@uec-env.com> Cc: Bargmann, Joel <JBargmann@bhplus.com>

Subject: RE: Sturbridge Senior Center

We assume there will be lead paint at least around windows and possibly elsewhere within the existing building. What is the requirement for abatement upon discovery? Remove 100%, or only 48" AFF? If we leave interior wall surfaces of perimeter of building, how would we address discovery of lead paint here?

Thanks very much,

Reese Schroeder, AIA Senior Associate

bh+a

BARGMANN HENDRIE + ARCHETYPE, INC. 9 Channel Center Street, Suite 300, Boston, MA 02210 617 350 0450 main

617 456 2246 direct 781 248 4096 cell www.bhplus.com

From: Ammar Dieb adieb@uec-env.com> Sent: Wednesday, March 25, 2020 9:41 AM To: Schroeder, Reese < RSchroeder@bhplus.com>

Subject: RE: Sturbridge Senior Center

Good Morning: Not needed as per OSHA any amount triggers compliance. Thanks.

Ammar M. Dieb

President

Universal Environmental Consultants

12 Brewster Road Framingham, MA 01702

P: 508.628.5486 F: 508.628.5488 M: 617.984.9772 E: adieb@uec-env.com

From: Schroeder, Reese [RSchroeder@bhplus.com]

Sent: Wednesday, March 25, 2020 9:38 AM

To: Ammar Dieb

Subject: RE: Sturbridge Senior Center

Any lead paint test to be performed?

Reese Schroeder, AIA

bh+a

BARGMANN HENDRIE + ARCHETYPE, INC. 9 Channel Center Street, Suite 300, Boston, MA 02210 617 350 0450 main

617 456 2246 direct 781 248 4096 cell www.bhplus.com

From: Ammar Dieb <a dieb@uec-env.com> Sent: Tuesday, March 24, 2020 9:56 AM

To: Schroeder, Reese < RSchroeder@bhplus.com>

Cc: Bargmann, Joel <JBargmann@bhplus.com>; Leonard Busa (leonardj744@msn.com)

<le><leonardj744@msn.com>; George Bezreh <gbezreh@uec-env.com>

Subject: RE: Sturbridge Senior Center

Thanks.

Ammar M. Dieb

President

Universal Environmental Consultants

12 Brewster Road Framingham, MA 01702

P: 508.628.5486 F: 508.628.5488 M: 617.984.9772 E: adieb@uec-env.com

From: Schroeder, Reese [RSchroeder@bhplus.com]

Sent: Tuesday, March 24, 2020 9:55 AM

To: Ammar Dieb

Cc: Bargmann, Joel; Leonard Busa (leonardi744@msn.com); George Bezreh

Subject: RE: Sturbridge Senior Center

APPENDIX I FIRE ALARM EMAIL

Amish Patel <amishp@alliedconsulting.net> From:

Sent: Monday, July 20, 2020 2:54 PM

To: Paul Laurence

Cc: Schroeder, Reese; John Wood

Subject: Re: Sturbridge Senior Center feasibility report

Follow Up Flag: Follow up Flag Status: Flagged

Reese.

Regarding the fire alarm comment: an occupant load of over 300 was anticipated with this comment (given the square footage). A system is not required if the occupant load is calculated to be less.

Amish Patel, PE, LEED AP (BD+C, H)

Principal Electrical Engineer 978.295.5122 Direct



Allied Consulting Engineering Services, Inc. 235 Littleton Road, Suite 5 Westford, Massachusetts 01886 978.443.7888 Office www.alliedconsulting.net

CONFIDENTIALITY NOTICE: This document may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If you are not the intended recipient, please notify me immediately, as the use of this information is strictly prohibited

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. Allied Consulting does not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

On Mon, Jul 20, 2020 at 2:41 PM Paul Laurence <paul@alliedconsulting.net> wrote:

Reese,

Most air handlers have a tag on the outside that provides at least model & serial numbers and usually also includes some electrical and capacity data. If it not obvious give me a call while you are there, we could facetime so I can see the unit if needed.

Amish will follow up on the FA item.

Paul Laurence

Project Engineer 401.244.6109 Direct



Allied Consulting Engineering Services, Inc. 235 Littleton Road, Suite 5 Westford, MA 01886 978.443.7888 Office ext.109 774.272.1294 Mobile www.alliedconsulting.net

CONFIDENTIALITY NOTICE: This document may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If you are not the intended recipient, please notify me immediately, as the use of this information is strictly prohibited

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. Allied Consulting does not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

On Mon, Jul 20, 2020 at 1:19 PM Schroeder, Reese <RSchroeder@bhplus.com> wrote:

Paul.

We received comments back from the Town regarding our feasibility report. We are actively addressing their comments toward reissuing our report. One issue the town takes exception to and wants amended is the lack of proper access to the attic and all involved were not able to observe the attic. In the Allied report on p. 3 it is mentioned that access was not possible so the model number of the air handler is unknown.

I am attempting to have the town provide a tall ladder sufficient to rest on the attic floor to gain access. If I am able to get into the attic, I may be able to provide photos of the air handler. If this happens, where might I look for a model number on the unit. If I am able to gain access to the attic and photograph the unit, I will send to you for updating your report.

Their other question from your report is on page 13; replace the fire alarm system with a new, addressable system. Their question is: isn't this for 300 people or more? Could you provide additional narrative on this critical level deficiency?

Thanks very much,

Reese Schroeder, AIA Senior Associate

bh+a

BARGMANN HENDRIE + ARCHETYPE, INC.

9 Channel Center Street, Suite 300, Boston, MA 02210

617 350 0450 main

617 456 2246 direct

781 248 4096 cell

www.bhplus.com

APPENDIX J 2008 ACCESSIBILITY AUDIT SENIOR CENTER

Public Buildings: Senior Center

Name: Senior Center

Location: 480 Main Street

Function: Council on aging office, senior center, drop-in lounge. Responsible Party: COA

General Description or Obstacle Which Limits Mobility or Access: This building was substantially modified in the mid- to late 1990's. Since that time, it appears that additional activities and expansion in under-utilized space has occurred without full consideration of accessibility compliance. Overall, the senior center is substantially compliant with a number of additional modifications required for full compliance. There are a number of exterior modifications which are required including parking and access into and around the gazebo, shuffle board area and gardens. Currently there exist two designated car accessible parking spaces. Neither of these spaces are in compliance with the minimum width requirements for a standard space and accompanying access aisle nor is a van accessible space provided. Due to the available space it is recommended that one van accessible space and one car accessible space be provided. The middle portion of the ramp into the building varies from 8.5% - 9.5% and therefore exceeds the maximum allowable running slope requirement.

The building itself contains 3 levels inclusive of the basement, all of which are accessible by a full-service elevator. The main level consists of accessible bathrooms, dining area, galley-style kitchen and 3 offices. The kitchen is wholly non-compliant, however its use is limited primarily to storage of dining related items (paper goods, plastics, etc.) and warming and distribution of food. Food is not prepared in the kitchen but rather delivered to the kitchen area from off-site already prepared and warmed and then distributed by staff and volunteers to those in the dining area. Neither the cabinets, cabinet hardware, sink, countertop heights, serving counter height etc, are compliant. Should the use of this kitchen change to a more substantive and public use, including self surface from the food counter, then full compliance may be required. None of the offices/rooms throughout the building have accessible signage and most doors exceed maximum push/pull force requirements and the minimum door closing speed threshold. Coat racks located throughout the building all exceed maximum height requirements. The basement area is problematic due to non-compliant head clearance throughout due to water/sewer pipes and carrying beams. Similarly, interior public stairwell has non-compliant handrails and head clearance. The 2 doorways into the galleystyle kitchen do not meet the minimum required 32" clearance.

Description of Programs: Administrative functions of council on aging, health services and screenings, social activities, nutrition programs, fitness programs and related activities.

Accessibility Compliance Options: Initiate improvements and remove architectural barriers as specified.

Estimated Total Project Cost: Up to \$56,150+

Projected Completion Date: June 2011

	General Description of Obstacle Which Limits Mobility or Access	ADAAG Compliance	MA 521 CMR Compliance	Type of Action to be Taken	<u>P</u>	· <u>F</u>	Cost Estimate
L	Non-compliant accessible parking space, line striping and signage.	S. 4.6	S. 23	Designate one 8' wide accessible passenger vehicle parking space and one 8' wide van accessible parking space, separated by a 8' wide accessible access aisle. Provide related striping and accessible signage.	1	2	\$100
2.	No accessible route of travel exists to the shuffle board area, gazebo and gardens.	S. 4.3	S.20	Construct a 48" wide w/36" clear width accessible pathway to and around the shuffle board area, gazebo and gradens. Construct a stable, firm, hard surface adjacent to the shuffleboard benches as companion wheelchair "seating".	I	3	\$25,000+
3.	An 8 1/4" abrupt vertical rise exists into the gazebo. The existing door does not fully open and therefore the minimum clearance is not achieved for access into the gazebo.	S. 4.3 S. 4.13 S. 4.14	S. 20 S. 25 S. 26	As part of the creation of the accessible route in \$2 above, construct and on-grade approach to access the gazebo which meets the slope requirements for a walkway and meets the required maneuvering clearances. Modify the existing gate so that it opens and closes properly.	1	3	Included in #2 above

	Sen 4.	ior Center continued The middle segment of the cement ramp into the building has a running slope which varies between 8.5% to 9.5% which exceeds the allowed maximum of	S. 4.3 S. 4.8	S. 20 S. 24	Modify the existing ramp to meet the running slope requirements.	I	3	\$2,000	
	5.	8.3%. The existing handrails on the three sets of front stairs do not comply with the minimum 12" handrail extension beyond the bottom of the stairs.	S. 4.9	S. 27	Extend existing hand railings 12" beyond bottom step.	1	3	\$1,350	
	6.	Non-compliant exterior door closing speed.	S. 4.13	S. 26	The main/accessible entry door as well as all other egress doors have door closing speeds of 3 to 5 seconds. All door closers require adjusting to comply with the minimum 6 second closing speed requirement.	1	. 2	\$250	
	Ż.	Lack of interior accessible signage to the various permanent function rooms (dining/assembly, offices, storage, craft, etc.).	S. 4.30	S. 41	Install accessible compliant signage with appropriate fittish and contrast and character height and proportions. Raised and Brailled characters should also be included. Signage should be mounted at 60° a f,f. o.c. adjacent to the latch site of the door hist of the work.	2.	1	\$825	
	8.	Non-compliant interior door closing speeds.	S. 4.13	S. 26	The doors from the elevator lobby and the door leading to the restroom lobby have door closing speeds of 3 to 5 seconds. All door closers require adjusting to comply with the minimum 6 second closing speed requirement.	1	2	\$250	
(9.	Three portable hallway coat racks located on the main and second floor levels exceed the maximum ht. of 54" a.f.f. for a side approach.	S. 4.2	S. 34	Purchase or install additional companion coat hooks or racks with a maximum height of 54" a.f.f.	4	2	\$ 375	
	10.	The bathrooms are substantially compilant except for the lack of compilant accessible signage, non-compilant door pushfyull force; non-compilant door clasting speeds and flush valves on 3 of 4 water closets that are located on the wall side of the toilet.	S. 4.13 S. 4.16 S. 4.30	S. 26 S. 30 S. 41	Adjust door closers to comply with maximum 5 lbs. interior door pushbrull force requirement and minimum 6 second closing speed requirement. Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Raised and Braillad characters should also be included. Signage should be mounted at 60" aff. o.c. adjacent to the latest side of the door(s). Replace non-compliant water closet tarks with those which have its flush valve on the approach side of the folial.	3	2	\$1,000	
	11.	The 2 kitchen doors and door entrances have clearances e of 30" and 31" (32" min. required).	S. 4.13	S. 26	Modify entries by widening and installing compliant (34" - 36") doosr.	2	3	\$2,500	
	12.	Interior stairs and stairwells the interior stair well to the basement area has a non-continuous railing and a protrusion into the accessible route due to the lack of head clearance at the base (66" aff, existing, minimum of 80" aff, required).	S. 4.3 S. 4.4 S.4.9	S. 20 S. 27	Modify or replace non-compliant railing so that it is continuous. Modify, as feasible, the interior stati well to provide additional 14" of clearance at landing.	2	4	Up to \$2,500+	
	13.	Numerous non-complaint protrusions into the accessible route of travel occur in the basement level due to low hanging pipes (72" – 75" a.f.f).	S. 4.3 S. 4.4	S. 20	Construct barriers, wing walls and/or relocate pipes as applicable and feasible such that the minimum 80" head clearance is achieved.	2	.4	Unknown - up to \$20,000+	

APPENDIX K SENIOR ACTIVITY LIST

SENIOR CENTER ACTIVITIES

Ask the Nurse -2^{nd} Th 10:00-11:30 a.m. Blood pressure taken and questions answered by a registered nurse. Ayredyne Bike - All day, every day. Commercial-quality bike.

Bingo - T 9:45 a.m. (Check newsletter for which Tuesday) with Electrical Division Students from Tantasqua Book Club - First M of the month 11:00 a.m.

Caregiver's Support Group - 2nd Th of each month - 1:00 - 2:30 p.m.

Chair Yoga - Th 10:00 a.m. Led by certified instructor, six-week session. See instructor for cost.

Chat with Gin and Satch - M 12:30 - All are welcome - very thoughtful, provoking and insightful.

Computer - All day, every day. A computer and internet are available to use.

Cribbage - T 12:30 p.m. An informal group that enjoys the game and a good time.

Dominoes – W 12:30 p.m.

Film Appreciation — W 12:30 p.m. Once a month former college professor, Carol Mitchell, presents a movie followed by a discussion. (Check the newsletter for which Wednesday.)

Fitness Class – M,W,F 8:30 – 9:30 a.m. and 9:45 – 10:45 a.m. Exercises geared toward seniors and led by a professional fitness instructor. Yearly cost is \$50.00 for Sturbridge seniors and \$75.00 for participants from out-of-town or under 60 years of age.

Fitness with Dina – F 11:00 a.m. – 12:00 p.m. Have fun and move to the music through a variety of exercises designed to increase muscle strength, range of movement, and activities for daily living. Led by a certified instructor.

Fit for Life – M,W 11:00 – 12:00 p.m. These exercises are geared toward seniors who may find the above classes to be a little too strenuous. Classes are free for Sturbridge seniors and \$25.00 for participants from out-of-town or under sixty years of age. This is for a six-month period.

Foot Care with Nurse Jayne R.N.,B.S.N. – 3rd T of each month – 10:00 – 2:15 by appointment. Cost is \$20.00. Friends Meeting – 3rd W 1:00 p.m. Sept. – June.

Getting Pretty with Polly - Th 9:00 - 11:30 a.m. (See newsletter for dates.)

Jigsaw puzzle - A puzzle is always on-going. Everyone is invited to participate.

Knitting Group - W 10:15 - 11:30 a.m.

Lending Library - All day, every day. There are many books and movies available to be borrowed.

Mah Jongg - Th 9:30

Movies - T 12:30 p.m. (Check newsletter for dates) big screen and projector.

Parkinson Support - 2nd T 1:00 - 2:00 p.m. Support group led by a registered nurse.

Peer Support Counseling - M 3:00 - 4:00 p.m.

Pitch - F 12:15 - 3:00 p.m. An informal group that enjoys the game and a good time.

Pool Table - All day, every day.

Recumbent Bike - All day, every day. Commercial quality bike.

S.A.L.T. (Seniors and Law Enforcement Together) – 3rd Th 1:00 p.m. The Sturbridge Police work with the senior community in ways that will make seniors feel safe and secure.

Sing Along with Sue -1st Th 1:00 -2:00 p.m.

SHINE (Serving Health Insurance Needs of Everyone) T 9:00, 10:00, 11:00 by appointment.

Tap Dancing - M 1:45 - 2:45. Cost is \$35.00 for a six week course, \$6.00 per class.

TOPS (Take Off Pounds Sensibly) – F 10:15 – 11:30 a.m. An international weight loss support group; a participant-run program, fee is \$1.00 per week.

Tuesday Night Exercise – T 5:15 – 6:15. Cost for 10 weeks is \$10.00 for Sturbridge Seniors and and \$20.00 for participants from out-of- town.

Treadmill - All day, every day. Commercial quality equipment.

Yoga Class – M 12:30 – 1:30 p.m. Led by certified Yoga instructor, eight-week session. Cost is \$35.00 for Sturbridge seniors and \$45.00 for participants from out-of-town or under 60 years of age.

