

Groundwater Protection District Special Permit & Site Plan Approval

for:

**Sturbridge Senior Center
480 Main Street**

proposed by:

Town of Sturbridge

May, 2023

prepared by:

WDG | Waterfield Design Group

WDG Project No: W-1717

Project Narrative

The submission contains the description of how the proposed redevelopment project at 480 Main Street in Sturbridge meets the Town of Sturbridge Groundwater Protection District bylaws and regulations for Special Permit and Site Plan Approval.

On the pages that follow, an explanation is provided where needed to illustrate how certain aspects of the project meet or exceed Town of Sturbridge requirements.

Regulatory Review

The proposed project will need to seek the following approvals from the Planning Board:

The items provided below are prepared as required by Chapter 16 of the *Zoning Bylaw of the Town of Sturbridge, Massachusetts* (amended through the Special Town Meeting October 29, 2018); and in accordance with discussions held between the applicant and the Town in the months immediately preceding this application.

Text shown in *italics* below represents responses by the proponent explaining how the submission meets or exceeds the requirements of Chapter 16 of the Zoning Bylaw governing Special Permits for work in the Groundwater Protection District.

Groundwater Protection District Special Permit

“16.06 Use Regulations

A. Permitted uses. The following uses are permitted within the Groundwater Protection District, provided that all necessary permits, orders or approvals required by local, state or federal law are also obtained:

(5) Maintenance, repair and enlargement of any existing structure subject to Subsection B (prohibited uses) and Subsection C (special permitted uses).

C. Uses and activities requiring a special permit. The following uses and activities are permitted only upon the issuance of a special permit by the special permit granting authority (SPGA) under such conditions as they may require:

(6) Any use that will render impervious more than fifteen percent (15%) or two thousand five hundred (2,500) square feet of any lot, whichever is greater. A system for groundwater recharge must be provided which does not degrade groundwater quality. For nonresidential uses, recharge shall be by stormwater infiltration basins or similar system covered with natural vegetation, and dry wells shall be used only where other methods are not feasible. For all nonresidential uses, all such basins and wells shall be preceded by oil, grease and sediment traps to facilitate removal of contamination. Any and all recharge areas shall be permanently maintained in full working order by the owner.”

The proposed project has 0.92 acres of impervious, which renders impervious more than 15% of the lot, therefore the Groundwater Protection District Regulations need to be met.

A system of groundwater recharge is provided, which does not degrade groundwater quality. The proposed nonresidential project has the stormwater being recharged by underground infiltration chambers. The underground infiltration chambers are covered by the paved parking and driveway areas. Having the underground infiltration chambers be covered with natural vegetation was not feasible.

The vegetated areas where it could be located on site are:

- *In the small lawn area between the building.*
- *In the forested area to the east of the building and parking areas.*
- *To the south of the parking area.*

The small lawn is not large enough to handle all of the infiltration volume needed. In addition, it is closer to the building foundation than the proposed locations and could increase the stormwater along the foundation and infiltration into the building basement.

The forested area east of the building would need to be cleared, which would unnecessarily destroy existing vegetation and remove the visual vegetated buffer between the site and the abutting property. The area to the south of the property is to be undisturbed and the existing street trees along Route 20 were to be maintained and enhanced with additional plantings. Locating the chambers in this location would require removing healthy street trees and replacing them with trees with less growth potential as deep roots could potentially disturb the chamber system.

Locating the storage to the south of the parking area would increase the disturbance to the site and significantly increase the cost of the project as a large amount of fill would need to be brought in to grade and/or fill over the storage areas.

In addition, locating the storage to the south of the parking area would put the project closer to the resource area and associated buffer zones located across Route 20.

Therefore, the proposed layout is the most feasible layout that meets the groundwater requirements.

The underground infiltration chambers are preceded by deep sump catch basins and oil, grease and sediment traps (Proprietary Separators [PS #1]).

The owner shall permanently maintain the proposed system in full working order.

Details about how these items meet the Groundwater Protection District requirements are illustrated in the attached Stormwater Report and Sheet C-104.

“16.07 Procedures for issuance of special permit

- A. The special permit granting authority (SPGA) under this Article shall be the Planning Board. Such special permit shall be granted if the SPGA determines, in conjunction with the Public Works Director, Board of Health, the Conservation Commission and Board of Selectmen, acting as Water Commissioners, that the intent of this Article, as well as its specific criteria, are met. The SPGA shall not grant a special permit under this Article unless the petitioner’s application materials include, in the SPGA’s opinion, sufficiently detailed, definite and credible information to support positive findings in relation to the standards given in this Article. The SPGA shall document the basis for any departures from the recommendations of the other town boards or agencies in its decision.”

The attached, submitted documents and this narrative provide sufficiently detailed, definite and credible information to support positive findings in relation to the standards given in this Article.”

- B. “Upon receipt of the special permit application, the SPGA shall transmit one (1) copy to the Public Works Director, Board of Health, the Conservation Commission and Board of Selectmen, acting as Water Commissioners for their written recommendations. Failure to respond in writing within forty-five (45) days of receipt by the Board shall indicate approval or no desire to comment by said agency. The necessary number of copies of the application shall be furnished by the applicant.”

The necessary number of copies of the application shall be furnished by the applicant.

C. “The SPGA may grant the required special permit only upon finding that the proposed use meets the following standards, those specified in Section 16.06 of this bylaw and any regulations or guidelines adopted by the SPGA. The proposed use must:

(1) In no way, during construction or thereafter, adversely affect the existing or potential quality or quantity of water that is available in the Groundwater Protection District.”

The proposed use during construction and thereafter does not adversely affect the existing or potential quality of water that is available in the Groundwater Protection District. This is illustrated in the submitted plans and Stormwater Report, Erosion and Sedimentation Control Plan, and Long Term Operations and Maintenance Plan.

(2) Be designed to avoid substantial disturbance of the soils, topographic drainage, vegetation and other water-related natural characteristics of the site to be developed.

The proposed use avoids substantial disturbance of soils through limiting construction to the minimal area needed to redevelop the site.

The proposed use avoids disturbance topographic drainage by collecting the impervious drainage with gutters and catch basins and vegetating all exposed soil areas.

The proposed use avoids disturbance to vegetated and other water-related natural characteristics of the site by maintaining the forested area to the east of the site and vegetated lawn area to the south of the site.

“E. The applicant shall file six (6) copies of a site plan and attachments. The site plan shall be drawn at a proper scale as determined by the SPGA and be stamped by a professional engineer. All additional submittals shall be prepared by qualified professionals. The site plan and its attachments shall at a minimum include the following information where pertinent:”

The appropriate copies of site plans and attachments have been supplied by the applicant with plans at the proper scale. All plans and reports have been stamped by a professional engineer.

“(1) A complete list of chemicals, pesticides, herbicides, fertilizers, fuels and other potentially hazardous materials to be used or stored on the premises in quantities greater than those associated with normal household use.”

No chemicals, pesticides, herbicides, fertilizers, fuels, or other potentially hazardous materials are proposed to be used or stored on site in quantities greater than normal household use.

“(2) For those activities using or storing such hazardous materials, a hazardous materials management plan shall be prepared and filed with the Hazardous Materials Coordinator, Fire Chief and Board of Health.”

No hazardous materials management plan is needed as noted above.

“(3) Proposed down-gradient location(s) for groundwater monitoring well(s), should the SPGA deem the activity a potential groundwater threat.”

No groundwater monitoring well is needed or proposed.

Groundwater Protection District Site Plan Review

“300-19.4 B. Content of final site plan and other submittals.

- (1) In addition to any other requirements that the Planning Board may reasonably make, a final site plan shall show all existing and proposed buildings, existing and proposed contour elevations, structures, parking spaces, driveway openings, driveways service areas, facilities for sewage, refuse and other waste disposal, and for surface water drainage, wetlands, surface water, areas subject to the one-hundred-year flood, maximum groundwater elevation, location of aquifers, private or public wells and drinking water supplies in relation to the site, and landscaping features, such as fences, walls, planting areas, walks and lighting, both existing and proposed, and location, type, size and detail of all signs.

The site plans submitted identify existing and proposed buildings, existing and proposed contour elevations, structures, parking spaces, driveway openings, driveways service areas, facilities for sewage, refuse and other waste disposal, and for surface water drainage. There are no wetlands or surface waters on the site. There are no areas subject to the one-hundred-year flood on the site. Maximum groundwater elevation is identified on the plans next to the test pit locations. Almost the entire site is within a Low Yield aquifer and Zone II wellhead protection, which defines the Groundwater Protection District. There are not private wells near the site as the abutting sites are on Town water. The site is in the Zone II of a public well and drinking supply as mentioned above. The site plans submitted identify landscaping features, such as fences, walls, planting areas, walks and lighting, both existing and proposed, and location, type, size and detail of all signs.

- (2) The site plan shall also show the relation of the above features to adjacent ways and properties. The site plan shall also show all contiguous land owned by the applicant or by the owner(s) of the property that is a subject of the application. In addition to the foregoing, the applicant shall submit material dealing with pollution of surface or ground water, soil erosion, increased runoff, changes in groundwater level, and flooding as it affects the site and the project, and the plans as such other submittal shall indicate the measures proposed to deal with and mitigate such environmental impacts.

The site plans show the relation of the above features to the adjacent ways and properties. The site plan shows contiguous land owned by the applicant. The existing and proposed surface or groundwater have not been polluted. This is addressed in the Stormwater Report. The Site Preparation and Demolition Plan and Stormwater Report show how soil erosion will be addressed. The Stormwater Report addressed increase runoff. No changes in groundwater level or flooding are proposed at the site.

- (3) Similar submittals and materials regarding design features intended to integrate the proposed new development into the existing landscape, to enhance aesthetic assets and to screen objectionable features from neighbors shall also be presented. The applicant shall further submit, in writing, a traffic study, that shall project traffic flow patterns into and upon the site for both vehicles and pedestrians, and an estimate of the projected number of motor vehicle trips to and from the site for an average day and for peak hours, and for peak seasons, as well as the existing patterns and existing ways for passage of traffic and pedestrians. The Planning Board reserves the right to request additional traffic information that it deems necessary when making development decisions.

The Landscaping Plan, Sheet C-106, illustrates materials regarding design features integrating the proposed new development into the existing landscaping, enhances aesthetic assets and screening objectionable features from neighbors.

The Layout and Material Plan, Sheet C-103, illustrates how the project traffic flow patterns into and upon the site for both vehicles and pedestrians and as well as the existing patterns and existing ways for passage of traffic and pedestrians.

Based on the proposed use of the site it is not anticipated that the projected number of motor vehicle trips to and from the site for an average day and for peak hours, and for peak seasons will be significantly changed by the proposed changes to the site.

- (4) Except for building permits, any other permits or approvals required from Town agencies are to be included as part of this submittal or an explanation for their absence satisfactory to the Planning Board shall be submitted. Failure to provide such permits or approvals shall not be due to failure by the applicant to apply to the appropriate agency for their grant.

All other permits or approvals required from Town agencies have been included as part of the submittal.

300-19.5 Criteria for approval

In reviewing a site plan application, the Planning Board shall take into consideration the health, safety and welfare of the public in general and the immediate neighborhood in particular, and may prescribe reasonable conditions and safeguards to ensure the accomplishment of the following general objectives:

- (1) That the subject and adjoining premises are protected against serious detriment by provisions for the safe carrying and discharge of surface water drainage, buffers against light, sight, sound, dust and vibration, and that the development of the site will preserve sensitive environmental features such as steep slopes, wetlands and large rock outcroppings, public scenic views and historically significant features and the quality of light and air;

The Site Plans and Stormwater Report illustrate that the subject and adjoining premises are protected against serious detriment. The proposed project has provisions for the safe carrying

and discharge of surface water drainage, buffers against light, sight, sound, dust and vibration. The development of the site will preserve sensitive environmental features such as steep slopes, wetlands and large rock outcroppings, public scenic views and historically significant features and the quality of light and air.

- (2) That there are provisions for convenience and safety of vehicular and pedestrian movement within the site and on adjacent streets, by the provision of pedestrian access ways that are adequate in number, width, grade, alignment and visibility, by appropriately locating driveway openings in relation to traffic, access by emergency vehicles, and, when necessary, compliance with other regulations for the handicapped, minors and the elderly, and by the provision of an adequate amount of and safe configuration of off-street parking and loading spaces in relation to the proposed uses of the premises to prevent on-street and off-street traffic congestion;

The proposed interior traffic circulation pattern, pedestrian walkways, and entry and exit driveways provide provisions for convenient and safe vehicular and pedestrian movement within the site and on adjacent streets. The provision of pedestrian access ways are adequate in number, width, grade, alignment and visibility. The driveway openings are located adequately in relation to traffic, access by emergency vehicles, and, when necessary, compliance with other regulations for the handicapped, minors and the elderly. The site provides an adequate amount of and safe configuration of off-street parking and loading spaces in relation to the proposed uses of the premises to prevent on-street and off-street traffic congestion.

- (3) That there is a harmonious relationship of structures and open spaces to the natural landscape, existing buildings and other community assets in the area and that the project will be in harmony with the surrounding neighborhood; and that the general landscaping of the site complies with the purpose and intent of this bylaw; that existing trees are preserved to the maximum extent possible; that refuse and storage areas are suitably screened during all seasons from the view of adjacent residential areas and public rights-of-way;

The proposed site provides a harmonious relationship of structures and open spaces to the natural landscape, existing buildings and other community assets in the area and that the project will be in harmony with the surrounding neighborhood. The general landscaping of the site complies with the purpose and intent of the bylaw. Existing trees are preserved to the maximum extent possible. Refuse and storage areas are suitably screened during all seasons from the view of adjacent residential areas and public rights-of-way.

- (4) That lighting of the site shall be adequate at ground level for the protection and safety of the public in regard to pedestrian and vehicular circulation; that the glare from the installation of outdoor lights and illuminated signs is properly shielded from the view of adjacent property and public rights-of-way;

The lighting of the site is to be adequate at ground level for the protection and safety of the public in regard to pedestrian and vehicular circulation. The glare from the installation of outdoor lights and illuminated signs is properly shielded from the view of adjacent property and public rights-of-way.

- (5) That all utility systems are suitably located, adequately designed and properly installed to serve the proposed uses, and to protect the property from adverse pollution and that there is the provision of adequate methods for disposal of wastes;

All utility systems are suitably located, adequately designed and properly installed to serve the proposed uses, and to protect the property from adverse pollution. There are provisions for the adequate disposal of wastes.

- (6) Mitigation of adverse impacts on the Town's resources, including the effect on the water supply and distribution system, sewage collection and treatment systems, fire protection and streets.

The proposed site mitigates the adverse impacts on the Town's resources, including the effect on the water supply and distribution system, sewage collection and treatment systems, fire protection and streets.

300-19.6 Standards for Site Plan Review

- A. Relationship to other plans. The proposed development shall take into consideration all existing local and regional plans for the community.

The proposed development takes into consideration all existing local and regional plans for the community.

- B. Preservation of landscape. Development of the site should, to the extent practicable, occur in such a manner that natural features are preserved and areas of environmental sensitivity are avoided. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of the neighboring developed areas. Where tree coverage does not exist or has been removed, new planting may be required. Finished site contours shall depart only minimally from the character of the natural site and the surrounding properties.

The proposed development occurs in such a manner that natural features are preserved and areas of environmental sensitivity are avoided. A portion of the woods on the east side of the property is preserved in its natural state by the minimizing of tree and soil removal. Grade changes are in keeping with the general appearance of the neighboring developed areas. New plantings are proposed where tree coverage does not exist or has been removed. Finished site contours do not depart from the character of the natural site and the surrounding properties.

- C. Relation of building to environment and surroundings. Proposed uses and structures shall be integrated into the existing terrain and surrounding landscape by minimizing use of wetlands, steep slopes and hilltops; protecting visual amenities and scenic views; preserving unique natural or historical features; minimizing tree, vegetation and soil removal; and minimizing grade changes. All buildings and other structures shall be sited to minimize disruption of the topography. Design features shall maintain neighborhood character, enhance aesthetic assets and screen objectionable features from neighbors and

roadways. Strict attention shall be given to proper functional, visual and spatial relationship of all structures, landscaped elements and paved areas.

The proposed uses and structures are integrated into the existing terrain and surrounding landscape. No wetlands are disturbed. No steep slopes or hilltops are disturbed. No visual amenities and scenic views are disturbed. All unique natural or historical features are preserved. Tree, vegetation and soil removal have been kept to a minimum. Grade changes have been kept to a minimum. All buildings and other structures have been sited to minimize disruption of the topography. Design features have maintained neighborhood character, enhanced aesthetic assets and screen objectionable features from neighbors and roadways. Strict attention has been given to proper functional, visual and spatial relationship of all structures, landscaped elements and paved areas.

- D. Circulation. With respect to vehicular and pedestrian circulation, including entrances, ramps, walkways, drives and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls), width of interior drives, and access points, general interior circulation, separation of pedestrian, bicycle and vehicular traffic, access to community facilities and arrangement of parking areas that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties. The arrangement of access points, service roads, driveways, parking areas, lighting and pedestrian walkways shall be designed in a manner that maximizes the convenience and safety of pedestrian and vehicular movement within the site and in relation to adjacent ways.

Vehicular and pedestrian circulation, including entrances, ramps, walkways, drives and parking have been designed to allow for the most beneficial and efficient traffic controls, number of access points to the public streets, width of interior drives, and access points, general interior circulation, separation of pedestrian, bicycle and vehicular traffic, access to community facilities. The parking areas are arranged to be safe and convenient and do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties. The access points, service roads, driveways, parking areas, lighting and pedestrian walkways have been designed in a manner that maximizes the convenience and safety of pedestrian and vehicular movement within the site and in relation to adjacent ways.

E. Surface water drainage.

- (1) Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system, nor obstruct the flow of vehicular or pedestrian traffic, and will not create puddles in paved areas. All surface water drained from roofs, streets, parking lots and other site features shall be disposed of in a safe and efficient manner that shall not create problems of water runoff or erosion of or from the site in question, or onto other sites. Insofar as possible, natural drainage courses, swales properly stabilized with plant material or paving when necessary, and drainage impounding areas, shall be utilized to dispose of water on the site through natural percolation, to a degree equivalent to that prior to development. Also, appropriate control measures shall be employed that include maximum slope requirements, slope stabilization measures, including seeding of exposed areas to replace vegetative cover.

The surface site drainage removes surface waters so that it will not adversely affect neighboring properties or the public storm drainage system, nor obstruct the flow of vehicular or pedestrian traffic, and will not create puddles in paved areas. All surface water drained from roofs, streets, parking lots and other site features is disposed of in a safe and efficient manner that does not create problems of water runoff or erosion of or from the site in question, or onto other sites. Natural drainage courses and swales are properly stabilized with plant material or paving when necessary, and drainage impounding areas, are utilized to dispose of water on the site through natural percolation, to a degree equivalent to that prior to development, as shown in the Stormwater Report. Appropriate control measures are employed that include maximum slope requirements, slope stabilization measures, including seeding of exposed areas to replace vegetative cover.

- (2) Applicants are encouraged to incorporate "green techniques" into project designs in an effort to improve water quality by minimizing impervious surfaces and run-off. The use of nontraditional paving materials such as pavers or porous pavement is encouraged to be incorporated into project design whenever feasible. Additionally, other best management practices for stormwater management such as the collection of roof runoff, use of rain gardens, the promotion of vegetation rather than turf in nonpaved areas, and minimizing soil disruption and similar construction methods should be explored whenever feasible.

The proposed site uses "green techniques" by the use of vegetation instead of turf in some of the landscaped areas and by minimizing soil distribution. The applicant does not have the maintenance budget to incorporate other "green techniques" such as porous pavements and rain gardens.

F. Groundwater recharge and quality preservation.

- (1) Groundwater recharge shall be maximized and groundwater quality shall be protected. Various techniques may be required to maximize recharge, such as perforated drainpipes, pervious pavement, reduction of paved areas, reduction of building area or reduction of building coverage, etc.; or to improve quality, such as installing grease traps or gas/oil separators.

Groundwater recharge is maximized through the use of underground infiltration chambers. Groundwater quality is protected through the use of deep sump catch basins, proprietary separators, and underground infiltration.

- (2) Where groundwater elevation is close to the surface, extra site grading precautions may be required to maintain the protective function of the over burden.

The groundwater elevation is not close to the service.

Groundwater Protection District Site Plan Review Checklist

The completed Site Plan Review Checklist illustrating how the site meets Groundwater Protection District Site Plan Review Requirements is attached.

G. Utilities. The placement of electric, telephone or other utility lines and equipment, such as water or sewer, shall be underground; and so located as to provide no adverse impact on the groundwater levels, and to be coordinated with other utilities. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated precisely on the plans.

All proposed utilities are underground and are located to provide no adverse impact on the groundwater level. The utilities are coordinated with the other utilities. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings is indicated on the plans.

H. Advertising. All signs and outdoor advertising features shall be reviewed as an integral element in the design and planning of all development on the site. As a minimum, all signs and advertising devices shall be in conformance with the Zoning Bylaw, Part 4, Article XVII, and the provisions thereof shall be administered by the Planning Board.

No new sign is proposed. The existing sign is proposed to be illuminated. See electrical plans.

I. Other site features. Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures and similar accessory areas and structures shall be designed with such setbacks, screen plantings or other screening methods to prevent their being a hazard or being incongruous with the existing or contemplated environment and the surrounding properties. With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and to maximize accessibility by fire, police and other emergency personnel and equipment.

No accessory buildings are proposed.

J. Open space. All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility to persons passing the site or overlooking it from nearby properties. Attention should be paid to connectivity of open space in an effort to provide natural corridors for wildlife and walking paths, as well as social and recreational needs and the need for neighborhood meeting places and sports fields. The plan for open space should be consistent with the Open Space Plan adopted by the Town. Pedestrian paths, excluding standard sidewalks, should be counted toward open space.

All open space is designed to add to the visual amenities of the vicinity by maximizing its visibility to persons passing the site or overlooking it from nearby properties. The open space is connected to other open spaces as much as practical to provide natural corridors for wildlife and walking paths, as well as social and recreational needs and the need for neighborhood meeting places. The plan for open space is consistent with the Open Space Plan adopted by the Town.

K. Bonds.

The Bond section is not applicable for Town projects.

300-19.7. Landscaping, screening and buffers.

A. Purpose. The Town of Sturbridge recognizes the important aesthetic, ecological and economic values associated with appropriate landscaping and buffering. This section is intended to establish minimum standards for landscaping in the Town as a way to reduce the environmental degradation that can be associated with development in a community. Appropriate landscaping will enhance the community's visual character and protect property values while stabilizing soils, reducing dust and erosion, providing stormwater management and facilitating groundwater recharge. This section seeks to promote the retention and use of existing vegetation as well as to encourage the establishment of new vegetation for aesthetic, health, wildlife and environmental reasons. Appropriate screening and buffer standards will promote the compatibility of land uses by reducing the visual, noise and lighting impacts of specific development on users of the site and abutting users by providing attractive and functional screening between various land uses.

B. Properties subject to landscaping, screening and buffers. These requirements shall apply to all projects that require site plan approval. These standards shall not apply to landscaping installed by homeowners at single-family residences.

C. Plan submittal requirements.

- (1) The landscaping plan may incorporate a variety of materials, including plant materials such as trees, shrubs, ground covers, perennials, and annuals, and other materials such as rocks, water features, walls, fencing, street furniture such as benches and seating areas, art or other landscape elements.

The landscaping plan incorporates a variety of materials, including plant materials such as trees, shrubs, ground covers, perennials, and annuals, and other materials such as fencing, street furniture such as benches and seating areas and other landscape elements.

- (2) Unless determined otherwise by the Planning Board, the following submittals are required at the time of application:

- (a) Each application shall contain a brief narrative describing the project and the proposed landscaping, screening and buffers and other design elements.

The landscape is designed to maintain the appearance of a small-town main street. The edge of the property along the roads has over 10 proposed trees, which combined with the existing trees make Main Street and Arnold Road fully tree lined roads along the site property edge. The shade trees proposed are all on the approved Street Tree list. Additional shade, evergreen and ornamental trees will also be planted near the building for vegetating those areas and providing foreground for the new addition. The existing forested area to the east of the site will be maintained to provide a buffer between the lots. Low growth plants are provided in the parking area as they are over the underground infiltration chambers and larger trees will have roots that will affect the system. A vinyl fence is provided at the northern edge of the property to screen the residential property to the north from the site.

- (b) Plans for projects with over 1,000 square feet of landscaping area shall be prepared by a

certified landscape architect, horticulturist or arborist and shall be submitted with each site plan application, unless an exception is granted by the Planning Board. Plans for smaller projects may be prepared by a person familiar with the proposed species of plants, their planting requirements and maintenance requirements. Such plan shall create a total pattern for the site, integrating the various elements of each site's design and creating a pleasant site character. The landscaping plan shall be designed to achieve architectural and environmental enhancement in the following areas:

[1] Buffering of parking, screening of storage areas and unsightly objects such as public utilities and substations.

[2] Creating buffer zones between residential, commercial and industrial areas.

[3] Erosion control and stormwater management.

[4] Noise barriers.

[5] Streetscape enhancement, blending or improving existing and abutting landscape.

[6] Improving the relationship of site to structure through the use of shade, screening, accent and foundation plantings.

- (c) Landscaping plans shall include botanical and common names of plant materials, symbols, size, quantity and spacing of materials.

Landscaping plans include botanical and common names of plant materials, symbols, size, quantity and spacing of materials.

- (d) The name, address, phone number and certification of the person or firm who prepared the plan.

These are included on the Landscaping Plan Sheet C-106.

- (e) The plans shall include the planting details for the installation of trees and shrubs. Planting details shall comply with Landscaping Details found in Appendix 3 of the Rules and Regulations Governing the Subdivision of Land adopted June 18, 2002, as may be amended from time to time.

The plans include the planting details for the installation of trees and shrubs and comply with the Landscaping Details found in Appendix 3 of the Rules and Regulations Governing the Subdivision of Land adopted June 18, 2002, as may be amended from time to time.

- (f) The plans shall include the details for the erosion control measures to be utilized during construction.

The plans include the details for the erosion control measures to be utilized during construction.

- (g) The plans shall include the plant protection detail on the site plan as well as the location, type and caliper of any existing mature trees and plantings to remain, to be relocated or to be removed. If mature trees are removed due to grading or other reasons, replacement specimen size trees may be required.

The plans includes the plant protection detail on the site plan as well as the location, type and caliper of any existing mature trees and plantings to remain, to be relocated or to be removed. If mature trees are removed due to grading or other reasons, replacement specimen size trees may be required.

- D. Preservation of existing landscape. The existing landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of the neighboring developed areas. Where tree coverage does not exist or has been removed, new planting may be required. Finished site contours shall depart only minimally from the character of the natural site and the surrounding properties.

The existing landscape is preserved in its natural state, insofar as practicable, by minimizing tree and soil removal. Grade changes are in keeping with the general appearance of the neighboring developed areas. Where tree coverage does not exist or has been removed, new plantings have been added. Finished site contours depart only minimally from the character of the natural site and the surrounding properties.

- E. Topsoil. Topsoil removed during the course of construction shall be redistributed on all regraded surfaces so as to provide at least six inches of even cover to all disturbed areas of the development and shall be stabilized by seeding or planting.

Topsoil removed during the course of construction will be redistributed on all regraded surfaces so as to provide at least six inches of even cover to all disturbed areas of the development and shall be stabilized by seeding or planting.

- F. Removal of debris. All stumps and other tree parts, litter, brush, weeds, excess or scrap building materials or other debris shall be removed from the site and disposed of in accordance with the law. No tree stumps or portions of tree trunks and limbs shall be buried anywhere on site. All dead or dying trees, standing or fallen, shall be removed from the site.

All stumps and other tree parts, litter, brush, weeds, excess or scrap building materials or other debris will be removed from the site and disposed of in accordance with the law. No tree stumps or portions of tree trunks and limbs shall be buried anywhere on site. All dead or dying trees, standing or fallen, shall be removed from the site. This is described in the Site Preparation and Demolition Plan, Sheet C-102.

- G. Protection of existing plantings. Maximum efforts should be made to save healthy specimens. No material or temporary soil deposits shall be placed within four feet of shrubs or within the protected root zone of trees (please refer to § 270-6 of the Sturbridge General Bylaws for a listing of Protected Root Zones) designated on the landscape plan to be retained. Protective barriers or tree wells shall be installed around each plant and/or group of plants that are to remain on the site. Barriers shall not be supported by the plants that they are protecting, but shall be self-supporting. The barriers shall be at least four feet high and constructed of a durable material that will last until construction is completed. Snow fences and silt fences are examples of acceptable barriers.

No material or temporary soil deposits will be placed within four feet of shrubs or within the protected root zone of trees designated on the landscape plan to be retained. Protective barriers or tree wells will be installed around each plant and/or group of plants that are to remain on the site. Barriers will not be supported by the plants that they are protecting, but will be self-supporting. The barriers shall be at least four feet high and constructed of a durable material that will last until construction is completed. See plans.

- H. Erosion control for slopes. All newly graded slopes at a gradient of 4:1 or greater; in excess of three feet vertical height shall be landscaped with groundcover which is known to have binding characteristics to control erosion. Groundcover shall be planted at a rate to achieve complete coverage in the first year. Jute matting, or other similar erosion control material, shall be installed on all slopes. Hydroseed may be substituted for groundcover plantings if it is shown that the hydroseed area will achieve 100% coverage in the first year. All slope plantings shall be complete prior to requesting final inspection by the Department.

All newly graded slopes at a gradient of 4:1 or greater or in excess of three feet vertical height will be landscaped with groundcover with binding characteristics to control erosion. The groundcover will be planted at a rate to achieve complete coverage in the first year. Jute matting, or other similar erosion control material, will be installed on all slopes. Hydroseed will be used for groundcover plantings to achieve 100% coverage in the first year. All slope plantings will be complete prior to requesting final inspection by the Department.

- I. Additional landscaping. In nonresidential developments, all areas of the site not occupied by buildings and required improvements shall be landscaped by the planting of grass and/or other ground cover, shrubs and trees as part of the landscape plan approved by the Planning Board.

All areas of the site not occupied by buildings and required improvements will be landscaped by the planting of grass and/or other ground cover, shrubs and trees. See Landscaping Plan Sheet C-106.

- J. Landscape trees. Generally, as used in this bylaw, landscape, street or shade trees shall refer to a species of tree that normally grows to a mature height of 40 feet or more, while understory tree refers to a species that normally grows from 15 feet to 35 feet. Where this bylaw specifies a certain number of trees to be used it is referring to street or shade trees. Understory trees may be substituted for up to a maximum of 50% of the number of trees required; provided, however, that two understory trees shall be provided for each landscape tree replaced. (See Tree List.) Dead trees and shrubs shall be replaced in one growing season.

(1) Landscape tree selection.

- (a) Trees are encouraged for all new developments. Tree selections may be made from the approved Street Tree List, which may be found in the Town of Sturbridge Landscaping Guide (1990), as may be amended from time to time.

Trees are from the approved Street Tree List.

- (b) In established neighborhoods with existing mature street tree patterns, street trees should be selected to match the existing street trees in the vicinity.

Street trees match tree types in the vicinity.

- (c) Landscape trees shall not be planted where their growth will interfere with the utility lines or entrances.

The proposed tree species have been selected so that they do not interfere with utility lines or entrances at initial planting or at mature size.

- (d) Landscape trees shall be planted at approximately fifty-foot intervals and shall be planted not closer than five feet and not more than 20 feet from the right-of-way line unless otherwise approved by the Planning Board and DPW Director.

Proposed trees along Main Street and Arnold Road are planted at approximately 20-25 foot intervals, in order to provide greater initial screening of the parking area from the main roads. They are planted between five and 20 feet from the right-of-way.

(2) Tree size.

- (a) No new landscape trees installed per these regulations shall be less than two-inch caliper. Caliper is to be measured in all cases at breast height.

Proposed trees will all be greater than two-inch caliper.

- (b) To encourage the retention of healthy existing large street or landscape trees, Every existing landscape tree with a six-inch caliper and eighteen-foot height may be counted as two trees toward the tree requirements. Any landscape tree with at least an eight-inch caliper and thirty-foot height may be counted as three trees toward the tree requirements.

Several existing trees have been retained along Main Street and Arnold Street, in addition to the existing woods preserved along the eastern edge of the site.

- K. Selection of materials. Landscape materials should be selected and sited to produce a hardy and drought-resistant landscape area. Selection should include consideration of soil type and depth, the amount of maintenance required, spacing, exposure to sun and wind, the slope and contours of the site and compatibility with existing native vegetation preserved on the site. Native plant species shall be used in environmentally sensitive sites. Plants listed by the Commonwealth of Massachusetts as invasive shall not be used.

Landscape materials were selected to produce a hardy and drought-resistant landscape area. Soil type and depth, the amount of maintenance required, spacing, exposure to sun and wind, the slope and contours of the site and compatibility with existing native vegetation preserved on the site were taken into consideration. Native plant species will be used. Plants listed by the Commonwealth of Massachusetts as invasive have not been included.

L. Planting specifications.

- (1) Shrubs and ground cover. All required ground cover plants and shrubs must be of sufficient size and number to meet the required standards within three years of planting. Mulch (as a groundcover) must be confined to areas underneath plants and is not a substitute for ground cover plants.

All required ground cover plants and shrubs are of sufficient size and number to meet the required standards within three years of planting. Mulch (as a groundcover) will be confined to areas underneath plants and is not a substitute for ground cover plants.

- (2) Trees. Trees may be deciduous or coniferous. Deciduous trees at the time of planting must be fully branched, have a minimum diameter of two inches, measured 4 1/2 feet above the ground, and have a minimum height of eight feet. Evergreen trees at the time of planting must be fully branched and a minimum of six feet in height. All nursery stock shall be inspected by the landscape professional who submitted the plan, prior to plant installation, and certified that it is of good quality, with proper structure, free of wounds and injury.

Trees will be deciduous or coniferous. Deciduous trees at the time of planting will be fully branched, have a minimum diameter of two inches, measured 4 1/2 feet above the ground, and have a minimum height of eight feet (except for a group of multistem magnolias near the building, which function as small trees/large shrubs). Evergreen trees at the time of planting will be fully branched and a minimum of six feet in height. All nursery stock will be inspected by the landscape professional who submitted the plan, prior to plant installation, and certified that it is of good quality, with proper structure, free of wounds and injury.

- M. Screening and buffering. The intent of screening and buffering is to provide a means of separation between uses or development. Screening or buffering is meant to mitigate or reduce the incompatibility between different land uses through the use of landscaping or other features. The degree or intensity of the screening or buffering is dependent on the level of incompatibility between the adjacent uses.

- (1) Screening may include the use of such materials as: decorative fencing or walls, shrubs, trees and other plant materials. Soft landscaping should be provided in conjunction with fences or walls to provide a more visually appealing development.

Screening includes the use of such materials as: decorative fencing, shrubs, trees and other plant materials. Soft landscaping is provided in conjunction with fences to provide a more visually appealing development.

- (2) Shrub planting beds, fencing, berming, or a combination thereof, should be selectively arranged to provide for the buffering of off-street parking facilities as viewed from the street or as may be specifically required.

Shrub planting beds and fencing, will be selectively arranged to provide for the buffering of off-street parking facilities as viewed from the street or abutting properties.

- (3) Screening is required for garbage pick-up areas and buffering is required for parking lots within any commercial and industrial districts.

Fence screening is provided for garbage pick-up area and for the rear parking lot. The front parking lot is screened with street trees and other plantings.

- (4) Where commercial and industrial uses are adjacent to residential use, a combination of fence, wall and evergreen screen must be provided along the rear and/or side lot line, or an area of at least 50 feet shall remain undisturbed and contain sufficient vegetation, in the opinion of the Planning Board, to provide a visual buffer from adjoining properties.

Fence screening is provided along the property line to the adjacent residential dwelling.

- (5) Plant materials used for screening purposes shall be sufficiently large and planted in such fashion that a year-round screen at least eight feet in height shall be produced within three growing seasons. All plantings shall be installed according to accepted horticultural standards.

Plant materials used for screening purposes will be sufficiently large and planted in such fashion that a year-round screen at least eight feet in height will be produced within three growing seasons. All plantings will be installed according to accepted horticultural standards.

- N. When required. Every development shall provide sufficient buffering when topographical or other barriers do not provide reasonable screening and when the Planning Board determines that there is a need:

- (1) To shield neighboring properties from any adverse external effects of a development;
or
- (2) To shield the development from negative impacts of adjacent uses such as streets; and
- (3) To soften the appearance and enhance the aesthetics of commercial and multiple dwelling construction projects.

The proposed development provides sufficient buffering shield neighboring property from any adverse external effects of the development, to shield the development from negative impacts of adjacent street, and to soften the appearance and enhance the aesthetics of the construction project.

- O. Amount of buffering required. Buffering and landscaping of the front setback area shall be required. 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. Landscaping of the frontage buffer shall consider the need for

proposed or future sidewalk installations. The buffer shall allow for necessary access to the site, but driveways shall otherwise not be allowed in the buffer.

(1) Buffers will be required for side and rear lot lines according to the following:

- (a) Where the abutting land use is a same or similar use, and of similar intensity, a buffer strip of 10 feet in width shall be required along the side and rear lot lines.
- (b) Where more intensive land uses abut less intensive land uses, or the abutting land use is a dissimilar use, a buffer strip 25 feet in width shall be required along the side and rear lot lines. As necessary, the Planning Board may require a buffer strip of greater width to protect adjacent property from the adverse effects of a proposed use.

The existing site has parking within the front setback up to 13.5' from the front property line. Proposed parking will be outside of the front setback at a minimum of 25' from the front property line. Existing parking spaces are greater than 10' from the site and rear property lines. Proposed parking will be within 2' of the property line. The applicant is asking the Planning Board to waive the rear parking requirement, as the site will improve the parking setback of the front property lines and will provide a six-foot (6') high vinyl fence along the rear property line to screen all parking and other site activity from the abutting property. See Layout and Material Plan Sheet C-103.

- (c) Parking lots, garbage collection and utility areas, and loading and unloading areas shall be screened around their perimeters by a buffer strip a minimum of five feet wide.

Rear parking lots, garbage collection and utility areas, and loading and unloading areas will be screened around their perimeter with a six-foot (6') high vinyl fence.

- (d) The Planning Board may waive any of the requirements noted above in confined sites. The applicant shall request such waivers in writing at the time of application. The applicant should note that requesting a waiver does not imply that a waiver will be granted.

The applicant is requesting a waiver to some of the setback requirements as noted above.

- (2) Design. Arrangement of plantings in buffers shall provide maximum protection to adjacent properties and avoid damage to existing plant material. If planted berms are used, the minimum top width shall be four feet and the maximum side slope shall be 2:1.

Plantings are proposed to maximize protection to adjacent properties and avoid damage to existing plant material. No berms are proposed.

P. Tree preservation and care during construction.

(1) Installation and maintenance.

- (a) All trees, shrubs and groundcovers should be free of insects, pests or fungus disease or the effects of previous infestations. They should have normally well-developed branch systems and a vigorous and fibrous root system which is not root or pot bound.
- (b) All trees, shrubs and groundcovers which have been planted and which, due to accident, disease or other cause, fail to show a healthy growth within one year must be replaced.
- (c) All landscaped areas shall be regularly watered, fertilized, weeded and otherwise kept in good condition in accordance with the approved five-year plan.
- (e) Trees and shrubs should be trimmed or pruned to prevent blocking or interference with the following:
 - [1] Sight distance views.
 - [2] Pedestrian or motor vehicle access.
 - [3] Installation, maintenance or repair of any public utility or fire land.
 - [4] Damage to property line fences or structures on adjoining properties.

All trees, shrubs and groundcovers will be free of insects, pests or fungus disease or the effects of previous infestations. They will have normally well-developed branch systems and a vigorous and fibrous root system which will not root or pot bound.

All trees, shrubs and groundcovers which have been planted and which, due to accident, disease or other cause, fail to show a healthy growth within one year will be replaced.

All landscaped areas will be regularly watered, fertilized, weeded and otherwise kept in good condition in accordance with the approved five-year plan.

Trees and shrubs will be trimmed or pruned to prevent blocking or interference with the following, sight distance views, pedestrian or motor vehicle access, installation, maintenance and repair of any public utility or fire land, and damage to property line fences or structures on adjoining properties.

Q. Exceeding standards. Landscaping materials that exceed the standards may be substituted for the minimums so long as all fence or vegetation does not obstruct vision of pedestrian or automobile traffic.

R. Complying with the standards. It is the applicant's responsibility to show that the landscaping materials proposed will comply with the regulations of this article.

The applicant has submitted this narrative to illustrate with the drawings that the proposed site complies with the regulations of this article.