

974 CMR 3.00: SITE PLAN APPROVAL

Section

- 3.01: Purpose, Process, and Goals
- 3.02: Requirements
- 3.03: Review and Decision
- 3.04: Design Standards
- 3.05: Innovative Development
- 3.06: Steep Slope Protection
- 3.07: Appendix A: Plant Lists and Figures
- 3.08: Appendix B: Figures

3.01: Purpose, Process, and Goals

- (1) Site Plan Approval is the component of the Unified Development Permit System that manages the placement of structures and improvements on the project site. The Applicant shall follow the procedures for Level Two review in 974 CMR 1.05: *Level Two Review*.
- (2) The goals and objectives of site planning at Devens are:
 - (a) To fit development to the land, minimize alterations to natural terrain and to soften the visual impact of development as viewed from Streets and Roads.
 - (b) To protect natural resources, including groundwater and surface water resources, wildlife habitats, wetlands and other Resource Areas and whenever possible, enhance ecological systems.
 - (c) To respond to present and future needs and uses, enable adaptive reuse and density changes over time without compromising sustainability.
 - (d) To be energy-efficient, both during construction and over time.
 - (e) To integrate economic, social, and environmental concerns.

3.02: Requirements

- (1) Site Plan Approval is required when a proposed project involves one or more of the following:
 - (a) Construction of a new building, regardless of land use;
 - (b) Extension or increase in the area of a nonconforming use in an existing building;
 - (c) Construction or expansion of a parking lot, structure, or loading dock;
 - (d) Construction of an ancillary building on-site (denoting use for storing equipment, maintenance supplies, and similar items, or for housing building systems equipment), if the building contains more than 800 square feet of gross floor area; and
 - (e) Construction of a project that will result in changes to the existing land surface area of 10% or more of the lot size.
 - (f) Construction or improvement(s) of streets and/or roads in conjunction with residential developments.
- (2) Submission Requirements. When the Site Plan is submitted with other Unified Permit components, submission of duplicate information shall be minimized. Specific submission requirements shall be established by the Director during the scoping session prior to the pre-permitting conference. An Applicant for Site Plan review shall file the following:
 - (a) A completed Permit Submission form.
 - (b) The required Administrative and Peer Review Fee.
 - (c) Seven copies of the Site Plan, unless another number of plans has been specified by the Director. A digital copy of the Site Plan and all supporting information shall also be provided, in a format approved by the LUA.
 - (d) A list of abutters, certified if abutters are not located in Devens and a sketch plan showing the proximity of the abutters to the site.
 - (e) Stormwater management design and accompanying drainage calculations and Stormwater Operations and Maintenance Plan prepared by an Engineer in accordance with 974 CMR 3.04(4) and 4.08: *Stormwater Management*.
 - (f) Request for Determination of Applicability (RFD) or a Notice of Intent (NOI) shall be submitted in accordance with Article XII of the By-laws and 974 CMR 1.05: *Level Two Review*.

3.02: continued

- (g) Copies of all existing Easements, covenants, restrictions and Institutional Controls applying to the lot.
- (h) Soil suitability tests and analysis.
- (i) A list of Waivers requested by the Applicant, identified as Waivers of Submission and Plan Form and Contents requirements or Design Standards, with the applicable section of the Regulations clearly identified or a statement that no waivers are being requested.
- (j) Copy of any variance applying to the land, granted or filed concurrently with the Site Plan.
- (k) A narrative demonstrating compliance with the Reuse Plan and By-laws meeting the specifications of 974 CMR 1.03(4)(c): *Statement of Consistency with Reuse Plan and By-laws*.
- (l) If proposed by the Applicant, a plan for the phasing of the construction of the required improvements, including a description, schedule, and plan showing the location of each phase.
- (m) A written statement of compliance with the *Devens Open Space and Recreation Plan* (DOSRP) and the *Devens Main Post Trails* report dated July 2001, to determine the effects, if any, of proposed development on Resource Areas, proposed trail Rights-of-way, active and passive recreation areas, and other amenities included in the DOSRP.
- (n) If an Applicant proposes parking lot construction phasing, a written statement demonstrating that the portion to be constructed is sufficient for the needs of the users of the proposed structure, comparing the number of spaces required by the By-laws to the number the Applicant believes are adequate, written certification that no building or permanent accessory structure will be placed on the area reserved for additional parking spaces, and a draft covenant that the parking will be built when the DEC determines it is required.
- (o) An estimate of the number of vehicle trips daily and for the morning and evening peak periods (trip generation rates shall be based on the ITE *Trip Generation Manual* most recent edition, and, if applicable, data about similar developments in Massachusetts) and a description of traffic mitigation measures proposed including traffic management plans, trip reduction methods, and car/vanpooling preferential parking. The LUA may require a traffic study. In all cases, Applicants shall provide a written statement agreeing to participate in the Devens Transportation Demand Management Program (TDM) to reduce single occupancy vehicle trips and promote alternative forms of transportation.
- (p) An erosion and sedimentation control plan as per 974 CMR 3.04(4) and the Devens Stormwater Pollution Prevention Plan.
- (q) A landscape treatment maintenance and water management plan as per 974 CMR 3.04(8)(m).
- (r) A narrative demonstrating compliance with the Industrial Performance Standards.
- (s) The sustainable sites section of US Green Building Council LEED™ Green Building Rating System™ Checklist (<http://www.usgbc.org/>) most recent version, the remainder of the completed checklist to be submitted when the building permit application is submitted. For residential projects, Applicants shall submit a completed copy of the most recent version of the LEED for Neighborhood Development Checklist (all sections at time of application).
- (t) Building elevations or perspectives of those portions of the building visible from Streets and residential and open space zoning districts showing the general appearance, massing, building materials, proposed colors, and relationship to abutting premises, and, prior to the Public Hearing, the design review letter from Mass Development.
- (u) Building design review materials and if located within the Viewshed District, viewshed impact analysis.
- (v) All Slope Resource Areas as identified in 974 CMR 3.08: *Appendix B: Figures (13) and Figure M* within the proposed plan area shall be shown on the site plan.
- (w) Climate change mitigation, adaptation and greenhouse gas emissions mitigation measures in accordance with the requirements of 974 CMR 4.11: *Greenhouse Gas Mitigation*.
- (x) Residential projects shall comply with the applicable provisions of 974 CMR 2.04: *Level Two Plan -- Definitive Subdivision*, 2.06: *Implementation of an Approved Definitive Subdivision Plan*, 2.07: *Design Standards* and 5.00: *Residential*, and include the following:
 1. Location and proposed uses of Open Space and a narrative demonstrating compliance with the DOSRP.

3.02: continued

2. List the number of single, two-family, and multi-family dwelling units, whether they are rental and or for sale, and the number of bedrooms for each dwelling unit.
3. Show on a plan, the location of each type of dwelling unit.
4. Provide model drawings of all housing styles.
5. List the number and style of Moderate-income dwelling units and show where they will be located.
6. Provide a narrative and plans of methods (including traffic calming measures) to be used to foster the creation of a universal design, pedestrian and bike-friendly community, to control truck and non-resident traffic through the development, and to control vehicle operating speeds at or below the design speed limit(s).

(3) Plan Form and Contents.

(a) Surveying and Drafting Plan Requirements. The Site Plan shall be 24"x 36" and at a scale of 1"= 40', unless an alternative scale is authorized by the Director. The Site Plan must comply with 974 CMR 2.04(3): *Form and Content of Way and Profile Plans*, and conform to the Registry of Deeds requirements for recording. The Site Plan must also show:

1. The names and addresses of the record owner of the land and the Applicant and the name, seal, and address of the designer, Engineer, Surveyor, and registered landscape architect who made the plan, all of which shall appear in the lower right-hand corner.
2. The name of the development, scale, date of plan, and legend.
3. A locus plan indicating the general location of the site in relation to all adjacent and nearby roads, railroads, and waterways.
4. Ties from the development site to the nearest town and county bounds if within 1000' of the site. Bearings and curve data/distances of all lot lines, names of all adjoining property owners as they appear in the most recent tax list, and the location of Easements, Rights-of-way, and public and private ways.
5. Devens Parcel ID number, if available.
6. Topography for the entire site in 2' intervals with contours and principal elevations of significant existing and proposed features related to the *National Geodetic Vertical Datum (NGVD)* of 1929. Existing contours shall be shown as dashed lines and, along with all other existing features, shall be screened. Proposed contours are to be shown as solid lines.
7. A space for the DEC's endorsement of the Site Plan by a majority of the members of the DEC on the front sheet and space for the chairperson or designee to sign all other sheets.
8. Lines of existing abutting streets and roads showing drainage and driveway locations and curb cuts.
9. Surveyed property lines showing distances and monument locations, all existing and proposed Easements, Rights-of-way, utilities and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed.

(b) Administrative Plan Requirements. The Site Plan shall also include:

1. Zoning district(s) and any boundary of zoning districts within the site, along any existing or proposed lot line, or within 50'.
2. The location, dimensions (including height), and general use of all existing and proposed buildings and structures to remain, including ground coverage, gross floor area, open area uses, and other facilities and improvements. Location of buildings existing on the site to be developed and on adjacent land under the same ownership within 500' of the lot line, indicating whether existing buildings are to be retained, modified or removed.
3. A statement noting the area of the site, the percentage of the site to be covered by impervious surfaces (such as buildings and parking areas), the area to be devoted to open space, the area to be paved for streets, roads, parking, driveways, loading spaces, and sidewalks, the number of proposed parking spaces and the number required by the By-laws, the number of employees expected per shift, and the gross floor area of each proposed (commercial, industrial, office, or other) use. This data shall be tabulated to show the relationship of the required versus the proposed quantities.
4. Existing and proposed Front, Side, and Rear Yard setback dimensions.

3.02: continued

5. Driveways, parking lots and loading docks, showing entrances and exits designed for safe ingress and egress, curb cuts, layout of parking spaces, aisles, off-street loading facilities, pedestrian walks, bicycle racks or storage facilities, handicap ramps, and representative cross-sections of service and parking areas and driveways.
 6. Landscape Treatment.
 - a. Existing and proposed landscape features such as street trees, fences, walls, planting areas, wooded areas, and walks. Scattered trees to be preserved shall also be shown as well as all "specimen trees" (trees exceeding a minimum caliper of 12" within 100' of existing or proposed lot lines have been identified and indicated on the plan. All existing landscape features, especially existing trees and woodland to remain, shall be shown on ALL site plan sheets, such as site preparation and demolition, layout, grading, utilities, and erosion control, as well as planting plans, landscaping plans, planting plans, planting detail sheets, landscape maintenance plans, and planting specifications shall be prepared by a landscape architect registered in the Commonwealth of Massachusetts and shall bear the seal and signature of the registered landscape architect who prepared them.
 - b. Planting plans shall indicate the locations of proposed street, road and site lighting, even if site lighting is shown elsewhere on a separate plan and designed by separate consultant. Planting plans shall also include details and locations for walks, walls, and fences including dimensions, materials, and finishes.
 - c. Quantities, species, and spacing of plantings in lot setback areas, screens, parking and loading areas, and other landscaped areas shall be shown at a minimum scale of 1"=40'. Detail plans for areas such as landscape treatments adjacent to buildings, tree clusters or shrub beds, landscaped islands in parking areas, or other densely landscaped areas shall be shown at a scale of 1"=20'.
 - d. If an irrigation system is proposed, the Submission shall include an irrigation plan complying with 974 CMR 8.09(11): *Controls On In-ground Irrigation Systems* showing the complete layout and of all components, complete schematic diagrams of all systems, a functional and sequential description of all systems, and irrigation details for installation of all components, including but not limited to piping, valves, valve boxes, sprinkler heads, backflow preventers, automatic control systems, pumps, meters, associated cabinets, and all appurtenances as needed.
 7. Proposed means of fire equipment access.
 8. Proposed traffic circulation systems, including the volume and proposed direction of traffic flows into, out of, and within the site for both vehicles and pedestrians for an average day and for peak hours.
 9. Location and dimensions (including height) of all storage facilities for equipment, material, and other like items and the location of all aboveground and underground fuel, combustible, and flammable liquid storage tanks greater than 250 gallons.
 10. Location and dimensions (including height) of facilities for garbage, rubbish, recycling, and other waste collection and disposal.
 11. Garage and pedestrian entrances and exits.
 12. Maximum size vehicle, including trailers, expected to use the site after construction, by length, width, height, and American Association of State Highway and Transportation Officials (AASHTO) designation.
 13. Location and dimensions (including height) of existing and/or proposed free-standing signs and the manner of illumination. All proposed signs shall conform with Article XIII of the By-laws and 974 CMR 6.00: *Sign Control*.
 14. Existing and proposed public and private utilities, above and below grade, along with their type, size, and class.
 15. If the project is to be phased, a plan for the phasing of the construction of the required improvements, including a description, schedule, and plan of affected areas.
 16. Any additional details that may be pertinent or required by the Director during the scoping or pre-permitting sessions.
- (c) Industrial Performance Standards Plan Requirements.
1. The site lighting information shall be provided on the Site Plan, including types of fixtures, heights, wattage, foot candle output directly under the light source, foot candle output at the lot line, and a photometric layout/diagram showing direction and intensity of outdoor lighting. The plan shall also designate which lights (if any) shall remain on overnight (between 11:00 P.M. and 7:00 A.M.) to provide adequate illumination for night operations.

3.02: continued

12. Notes shall be provided on the Site Plan stating:
 - a. Existing or proposed use will not generate electromagnetic interference to any sensitive receptor. Interference with the Harvard-Smithsonian radio telescope (1400-1720 MHz) is specifically prohibited.
 - b. Proposed or existing use will not cause pronounced, multiple patterns of noise or vibration nuisance to, or interfere with, any sensitive receptor.
 - c. Either "A Massachusetts Department of Environmental Protection (DEP) air quality permit application has been made" or "A DEP air quality permit is not required."
3. Locations or uses deemed by the Director to be sensitive receptors in any given area of impact may be subject to field identification of the receptor and/or special documentation or field data that helps to clarify the existence or absence of subject impacts. This documentation and data includes existing secondary data and studies, limited field testing by the Applicant, or in the worst case scenario, retention of additional professional consultants to conduct further testing. Specifications for any additional information will be identified by the Director during the pre-permitting conference and shall be incorporated in the Site Plan Submission.
- (d) Resource Areas/Flood Plain Plan Requirements. The Site Plan shall include:
 1. All resource areas as defined by 974 CMR 4.06: *Wetlands Protection*, Federal Emergency Management Agency (FEMA) flood plain elevations on and/or adjacent to the lot, Flood Insurance Rate Map (FIRM) panel number, zone designation, and base flood elevation;
 2. Erosion and Sediment Control Plan in accordance with 974 CMR 3.02(3)(e);
 3. Location of all private wells on or within 200' of the boundaries of the property;
 4. Location of all public and community water supply wells on or within 1,000' of the boundaries of the property;
 5. Proposed conservation restrictions and Easements, if any;
 6. For any site plan that stores fuel, combustible and flammable liquids, as defined by 42 U.S.C. §§ 6901 through 6922i, M.G.L. c. 148, and 527 CMR 9.00: *Tanks and Containers*, compliance with 974 CMR 4.09: *Water Resource Protection* and an addendum to the DSPCC and the location of on-site materials and equipment for spill response in accordance with its specific DSPCC are required.
- (e) All site plan submissions shall include an Erosion and Sediment Control Plan containing sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The plan shall include such detail as is necessary to demonstrate that the proposed development will comply with *Massachusetts Department of Environmental Protection Stormwater Management Standards*, the *Devens Stormwater Pollution Prevention Plan* and 974 CMR 3.04. The Erosion and Sediment Control Plan shall also include the following:
 1. Location and description of resource areas including:
 - a. Watercourses and water bodies, wetlands (including a 100' upland review area, riparian zones and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map);
 - b. Existing vegetation including tree lines, shrub layer, ground cover and herbaceous vegetation, and trees with a caliper 12" or larger, noting specimen trees and forest communities;
 - c. Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as endangered, threatened or of special concern, estimated habitats of rare wildlife and certified vernal pools, potential vernal pools, and priority habitats of rare species within 500' of any construction activity.
 2. Existing soils (type, hydrologic group, erodibility) and the volume and nature of imported soil materials.
 3. Drainage patterns, watersheds and sub-watersheds, with calculations of proposed land disturbance within each sub-watershed and areas of soil to be disturbed in each watershed throughout the duration of the proposed land disturbance activity.
 4. A description of construction and waste materials expected to be stored on-site. The Plan shall include a description and details of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response.

3.02: continued

5. Location and details of all erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural control measures and best management practices, interim grading, and material stockpiling areas in accordance with the *Devens Stormwater Pollution Prevention Plan* and *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* (<http://www.mass.gov/eea/docs/dep/water/essec1.pdf>). Such narrative and Operation and Maintenance Plan for temporary and permanent erosion control measures during Construction, shall be included on the erosion and sediment control plan and include but not be limited to, the following requirements:

- a. Prior to any land disturbance activities commencing on the site, the Applicant/contractor shall be responsible for physically marking the limits of construction on the site with tape, signs, or orange construction fence, so that workers understand the areas to be protected. The physical markers shall be inspected daily and repaired as necessary throughout the duration of the project.
- b. Perimeter sediment control system shall be installed prior to soil disturbance and maintained to contain soils on-site. Areas outside of the perimeter sediment control system must not be disturbed unless the Applicant has obtained prior approval from the DEC.
- c. Measures shall be taken to control erosion within the project area. Sediment in runoff water shall be trapped and retained within the project area and street sweeping of adjacent Streets and Roads shall be included where necessary.
- d. All Resource Areas shall be protected from sediment.
- e. Monitoring and maintenance of erosion and sediment control measures throughout the course of construction shall be required. Sediment shall be removed once the volume reaches $\frac{1}{4}$ to $\frac{1}{2}$ the height of the erosion control.
- f. Divert runoff from offsite and undisturbed areas away from construction to minimize soil erosion and sedimentation on and off-site. Temporarily stabilize all highly erodible soils and slopes immediately.
- g. Land disturbance activities exceeding two acres in size shall not be disturbed without a sequencing plan that requires stormwater controls to be installed and exposed soils stabilized, as disturbance beyond the two acres continues. A construction phasing plan, including erosion and sediment control plan for each phase, shall be submitted to the DEC prior to any construction on the site. Mass clearings and grading of the entire site shall be avoided.
- h. Soil stockpiles must be stabilized or covered at the end of each workday. Stockpile side slopes shall not be greater than 2:1. All stockpiles shall be surrounded by sediment controls.
- i. Disturbed areas remaining idle for more than 14 days shall be temporarily or permanently stabilized.
- j. Permanent seeding shall be undertaken in the spring from March through May, and in late summer and early fall from August to October 15th. During the peak summer months and in the fall after October 15th, when seeding is found to be impractical, an appropriate temporary mulch and/or non-asphaltic soil tackifier with winter rye shall be applied. Permanent seeding may be undertaken during the summer if plans provide for adequate mulching and watering.
- k. Anti-tracking pad(s) shall be constructed at all entrance/exist points of the site to reduce the amount of soil carried onto roadways and off the site. Dust shall also be controlled at the site.
- l. All slopes steeper than 3:1 (h:v, 33.3%), as well as perimeter dikes, sediment basins or traps, and embankments must, upon completion, be immediately stabilized with sod, seed and anchored straw mulch, or other approved stabilization measures.
- m. Temporary sediment trapping devices must not be removed until permanent stabilization is established in all construction areas associated with the project. Similarly, stabilization must be established prior to converting temporary sediment traps/basins into permanent (post-construction) stormwater management facilities. All facilities used for temporary measures shall be cleaned and re-stabilized prior to being put into final operation.
- n. All temporary erosion and sediment control measures shall be removed after final site stabilization. Disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized within 30 days of removal.

3.02: continued

6. Other applicable controls and/or information as may be required by the DEC.
7. All plans, reports and calculations required as part of the erosion and sediment control plan must be stamped and certified by a professional engineer.
8. Projects disturbing one acre or more are required to obtain a Construction General Permit (CGP) from the US EPA. A copy of the CGP must be filed with the DEC prior to issuance of a building permit for all applicable projects.

3.03: Review and Decision

- (1) Review. The DEC shall follow 974 CMR 1.04: *Level One Review* to review a Site Plan.
- (2) Review Criteria. The DEC shall approve a Site Plan if it meets the following criteria:
 - (a) The Site Plan complies with 974 CMR 3.00 and with the applicable provisions of the By-laws.
 - (b) The development lies on a Lot that is or will be recorded at the Registry of Deeds.
 - (c) The Submission is Complete.
 - (d) All streets and roads, driveways, parking lots, loading areas, paths, and sidewalks, are designed to provide for safe multi-modal travel in accordance with 974 CMR 2.07: *Design Standards*, the Americans with Disabilities Act of 1990 (ADA) and 521 CMR: *Architectural Access Board*.
 - (e) Access and site circulation enables prompt fire, police, and emergency response.
 - (f) Adequate capture and discharge of stormwater and surface water runoff and compliance with applicable portions of the *Devens Stormwater Pollution Prevention Plan* has been achieved
 - (g) Connections with utility, power and communication systems available in the abutting infrastructure have been made.
 - (h) Applicable facilities required under the Water Resources Protection By-law and the related Design Standards have been included.
 - (i) Landscape Treatment Design Standards for plant materials, planting strips, screening, and preservation of existing specimen trees and wooded areas have been met.
 - (j) A DEP wetlands Order of Conditions has been issued or determined not required.
 - (k) Applicable Industrial Performance Standards have been adhered to.
 - (l) Sufficient parking for current needs has been provided.
 - (m) Adequate traffic mitigation and control measures have been proposed.
 - (n) Participation in the Devens Transportation Management Initiative has been agreed to.
 - (o) Adequate water supply exists in terms of quantity, quality, and water pressure for commercial and/or domestic needs and fire protection and the use of potable water for irrigation has been minimized to the maximum extent feasible.
 - (p) Connection to sanitary sewers has been made.
 - (q) Building design meets the minimum standards as established by MassDevelopment for the district in which the lot is located.
 - (r) Soil testing indicates that the soils are capable of supporting proposed development.
 - (s) The development has been designed with due consideration for public health.
 - (t) Adequate climate change mitigation, adaptation and greenhouse gas emissions mitigation measures have been incorporated in accordance with 974 CMR 4.11: *Greenhouse Gas Mitigation*.
- (3) Conditions. The DEC may impose conditions so that the Site Plan complies with the Review Criteria and 974 CMR 3.04. Conditions the DEC might impose include:
 - (a) The completion and installation of the proposed improvements within a period specified by the DEC or agreed to by the Applicant.
 - (b) The extension of water, sewer, and drainage systems to the undeveloped land abutting the site to allow for future connection with the public systems.
 - (c) Measures to ensure compliance with earth removal provisions in 974 CMR 4.07: *Earth Removal*.
 - (d) Measures to ensure compliance with any Institutional Controls located within the boundary of the site.
 - (e) Construction of offsite improvements involving the extension and/or modification of street and/or road utility or drainage systems beyond the site.

3.03: continued

- (4) After approval of the Site Plan, the Applicant shall supply a reproducible mylar for endorsement, along with a copy of the Site Plan in digital format for the DEC records. Proof of recordation and as-built plans may also be required.

3.04: Design Standards

(1) Setback and Frontage Requirements.

- (a) For all lots in all zoning districts, the minimum Setbacks of structures from lot lines shall be as follows except as otherwise noted in 974 CMR 3.04(1)(b) through (f).

Front Yard: 25'

(except in the Innovation and Technology Center District where the minimum Setback is 15').

Side Yard: 10'

Rear Yard: 25'

- (b) For lots abutting or containing zoning district boundary lines, Setbacks shall be increased to 25' unless adjacent to the Residential I and Residential II zoning districts where the minimum Setback shall be 50'.

- (c) The minimum Side Yard and Rear Yard Setbacks for accessory buildings in residential districts shall be 5'.

- (d) Environmental Business District. Setbacks shall comply with the requirements of all districts, except the minimum Side Yard and Rear Yard Setbacks for lots abutting Walker Road in the town of Shirley shall be 150' in addition to the public open space buffer parallel to Walker Road.

- (e) Corner lots shall comply with the Front Yard Setback requirements for each side of the Lot that is parallel to a street or road.

- (f) Refer to 974 CMR 5.02(1): *Innovative Residential Development (IRD) Residential I* for Innovative Residential Development minimum frontage and Setback requirements.

- (2) Streets and Roads. All projects that include construction of new or alteration to existing streets and/or roads shall comply with 974 CMR 2.07: *Design Standards.*

(3) Parking.

- (a) All Districts.

1. Dimensional and Related Requirements.

a. In all districts, except where buildings are set back 150' or more in the Rail, Industrial, and Trade Related District, parking lots shall be located to the rear and sides of the buildings with only visitor, handicapped, and preferential parking situated within the Front Yard setback. Preferential parking includes spaces for electric, hybrid and alternative fuel vehicles, carpools, vanpools, and other ridesharing vehicles. Parking allowed in the front of the building shall be limited to 10% of the required parking spaces in accordance with 974 CMR 3.04(3)(a)1.f. The remainder of the parking serving the project shall not be located in front of the building façade. In cases where buildings in the Rail, Industrial, and Trade Related District are set back 150' or more, parking is permitted in the front of the building. In such instances, a landscaped strip between the front lot line and the parking lot, measuring at least 60' deep, shall be provided. On-street parking shall be considered in parking calculations for residential developments.

b. Parking spaces shall be at least 9' wide x 18' deep. Applicants may propose up to 10% of parking for compact car parking spaces. Compact car spaces shall be 8' wide x 16' deep. Aisle widths shall be at least 24'. All parking lots shall conform to Article XIV of the By-laws.

c. Handicapped spaces (dimensions, locations, and so forth) shall conform to 521 CMR: *Architectural Access Board.* The number of designated handicapped parking spaces is based on the total number of spaces required (refer to table below). Handicapped parking spaces may be constructed in phases or reserved, although an adequate number shall be constructed with the initial phase. Additional handicapped spaces shall be constructed when the reserve or phased parking is constructed.

3.04: continued

Total parking spaces	Required handicapped spaces
15 to 25 spaces	one designated space
26 to 40 spaces	5%, but not less than two
41 to 100 spaces	4%, but not less than three
101 to 200 spaces	3%, but not less than four
201 to 500 spaces	2%, but not less than six
501 to 13,000 spaces	1.5%, not less than ten

- d. No parking facility shall be used for servicing or repair of vehicles or the storage or display of merchandise or other objects that otherwise interfere with its availability for parking.
- e. Landscape islands shall serve a functional purpose for stormwater infiltration and evapotranspiration, and should be used whenever possible to reduce runoff, increase groundwater recharge, and increase screening and shade with trees. Parking lots shall extend no more than 180' in either length or width without a landscaped island and a pedestrian connection through the parking area and pervious landscape island(s) that is a minimum of 5' wide and bordered by 3" caliper deciduous shade trees planted a minimum of 40' on center. The landscape areas shall be an 18' minimum width along intermediate islands, and a 10' minimum width for terminal islands and divider islands (*see 974 CMR 3.06(2): Figure B*). Parking lots measuring less than 180' in either length or width shall be divided into bays not greater than 72' in length by terminal or intermediate island (*see 974 CMR 3.06(2) Figure B*). Terminal islands shall be 10' in minimum width and intermediate islands shall be 18' minimum in width. In truck parking lots, the Applicant may consolidate intermediate islands, to allow 360' between intermediate islands, with intermediate islands constructed at 36' minimum width. Divider islands in truck parking areas shall be a minimum of 20' deep.
- f. The number of parking spaces constructed may not exceed the number of spaces required by the Massachusetts Architectural Access Board and ADA plus those required by the By-laws and Exhibit C therein. Except in the Innovation and Technology Center Zoning District, on-street parking is only permitted where approved by the DEC and consented to by MassDevelopment.
- g. For residential developments, there shall be two off-street parking spaces per dwelling unit. The DEC may reduce this requirement where sufficient on-street parking is available.
- h. There shall be bicycle storage facilities provided on site for all developments.
- i. 1.5%, not less than ten Parking lots and associated improvements shall comply with ADA and 521 CMR: *Architectural Access Board Regulations*.
2. Construction Standards.
- a. Parking lots, loading dock areas, and driveways shall be constructed of bituminous concrete pavement. The construction specifications shall be the following:
- i. Compacted subgrade, free of frost, roots, and debris.
 - ii. 8" of compacted gravel sub-base conforming to *Massachusetts Highway Department Standard Specifications for Highways and Bridges (MHDSSHB) M.1.03.0 Type A*.
(<http://www.mhd.state.ma.us/downloads/manuals/1995mspecc.pdf>)
 - iii. 4" of compacted gravel base conforming to *MHDSSHB M.1.03.0 Type B*.
 - iv. 2" of bituminous concrete binder course.
 - v. 1½" of bituminous concrete top course
- b. The portion of the parking lots, loading docks, and driveway subject to truck traffic, truck and container storage, and other railroad related vehicles, shall be constructed of bituminous concrete pavement. The construction specifications shall be the following:
- i. Compacted subgrade, free of frost, roots, and debris.

3.04: continued

- ii. 8" of compacted gravel sub-base conforming to *Massachusetts Highway Department Standard Specifications for Highway and Bridges (MHDSSHB)* M.1.03.0 Type A.
 - iii. 4" of compacted gravel base conforming to *MHDSSHB* M.1.03.0 Type B.
 - iv. 3" of bituminous concrete base course.
 - v. 1½" of bituminous concrete binder course.
 - vi. 1½" of bituminous concrete top course.
- c. The Applicant may propose modifications to the pavement construction specification where anticipated traffic and usage justify a lesser standard. Modified pavement design calculations (including load bearing data of the pavement and underlying soil) and construction specifications shall be reviewed and approved by the DEC. Any remaining parking and driveway areas shall be constructed in accordance with 974 CMR 3.00. The Applicant shall provide the DEC gravel sieve analyses, compaction tests, and pavement slips during construction activities. The Applicant is also required to allow the Director or designated representative to monitor all paving activities to confirm compliance with the approved pavement modification. The Applicant shall pay for all consultant costs associated with construction inspections and monitoring.
- d. Parking spaces and striping shall be painted according to the *MHDSSHB*. Lines shall be located along the sides and unless curbing is present, at the head of parking stalls. Lines shall be a minimum of 4" wide and shall be one consistent color, either reflective yellow or reflective white paint.
- e. Parking lots measuring less than 10,000 square feet in area are encouraged to utilize an open drainage system to minimize the depth of detention/retention basins, reduce maintenance, and decrease construction costs. Parking lots subject to truck traffic, truck and container storage, and other related vehicles must utilize a pretreatment practice such as a biofiltration basin to remove metals, hydrocarbons, and associated pollutants if open drainage is used.
- f. Parking lots that service multi-family dwelling units shall also comply with the following:
- i. Be paved (using pervious materials where feasible) and screened from the Street or Road in accordance with 974 CMR 3.04(8)(g) and (h);
 - ii. Have travel lanes no wider than 20';
 - iii. For parking lots with greater than 25 spaces, there shall be a pedestrian connection through the parking area and pervious landscape island(s) that is a minimum of 5' wide and bordered by 3" caliper deciduous trees planted a minimum of 40' on center.
 - iv. Intermediate landscape islands shall be provided for parking lots with greater than eight spaces in a row (*see* 974 CMR 3.06(2): *Figure B*).
 - v. LID techniques shall be incorporated in accordance with 974 CMR 4.08: *Stormwater Management* to the maximum extent feasible.
 - vi. For dwelling units without garages, bicycle parking shall be provided at a rate of one space per dwelling unit in an on-site accessible, covered and securable area with at least one visitor bicycle space per ten dwelling units but no fewer than four visitor spaces per project site.
 - vii. Structured parking below the building is encouraged.
 - viii. Provide pedestrian connections to public sidewalks and/or trails in any adjacent streets or roads.
3. Landscape Treatments. Landscape treatment around the perimeter and interior to the parking lot is required and shall be used to break up large expanses of pavement and manage excess heat (urban heat island effect) and stormwater; landscape treatments shall also be required to screen parking lots, dumpsters, loading docks. Parking lots shall be landscaped in accordance with 974 CMR 3.04(8).
4. Driveways/Curb Cut Locations.
- a. Any portion of any entrance or exit driveway shall not be located closer than 150' to the curb/gutter line of an intersecting street. For residential projects, this requirement may be reduced by the DEC as long as the DEC determines that the Applicant has adequately addressed safety concerns.
 - b. The driveway entrance radii curves shall be designed to accommodate the turning radii of the vehicles using the entrance.

3.04: continued

- c. There shall be a distance of at least 40' between any two driveways measured at their intersections with the street. For residential projects, this requirement may be reduced by the DEC as long as the DEC has determined that the Applicant has adequately addressed safety concerns.
 - d. Commercial, Industrial and multi-family residential driveway widths shall be no greater than 24' for a two-way driveway and 14' for a one-way driveway. Residential driveways shall not be wider than 12' as measured at the intersection of the driveway with the Right-of-way or way and shall not be graded in excess of 8%.
 - e. Intersection sight distances shall be provided in accordance with current AASHTO guidelines for prevailing (85th percentile) speeds on adjacent ways to ensure adequate safety.
 - f. Common driveways are encouraged in order to minimize curb cuts, improve safety, reduce paving costs, and lower impervious coverage. The Applicant shall execute a covenant or other acceptable legal instrument as evidence that separate property owners have the legal right to use and responsibility to maintain the common driveway. The DEC may disapprove a common driveway if it determines that the facilities will generate volumes of traffic that would require separate driveways or that the traffic generated from the individual sites cannot be safely combined.
 - g. A standard "STOP" shall be installed at the intersections of industrial and commercial driveways with streets or roads.
 - h. Applicants are encouraged to utilize pervious paving materials for the construction of driveways. Refer to 974 CMR 4.08(5): *Design Standards and Criteria for Certain Structural LID Techniques* for LID techniques and pervious paving construction details.
5. Fire Equipment Access. Access to buildings shall be kept clear of hazardous substances and obstacles that may, in the opinion of the fire officials, impede the proper placement of fire apparatus and personnel in case of emergency. The Applicant shall obtain a letter from the Devens Fire Chief stating there is adequate access for fire equipment. Access for fire equipment shall be provided and maintained on at least two sides of the building. Fire lanes shall be designated with pavement marking and signage.
 6. Parking Lot Phasing. If an Applicant proposes parking lot construction phasing, the Applicant shall demonstrate that the portion to be constructed is sufficient for the needs of the users of the proposed structure. The unconstructed parking area shall be large enough for anticipated needs and shall be shown in a contrasting graphic pattern delineated on the Site Plan. The Parking Lot Phasing plan shall address erosion and sediment controls before and during construction, and specifically cite measures to be implemented to minimize soil compaction in areas not to be paved until later phases. Surety or other adequate performance assurance to construct the parking lot at a specified time in the future may be required. The DEC may then approve the parking lot phasing if it determines sufficient parking will be provided for current needs and adequate assurance exists to construct the remaining parking area when needed.
 7. Common Parking Facilities. Parking facilities shared between two or more users are encouraged in all zoning districts to minimize excessive paving and the size and number of areas devoted to parking. Common (*i.e.* "public") parking facilities are allowed in all districts except the Open Space/Recreation District.
 8. Residential Garages are Discouraged from Facing Streets and Roads. Where garages face the street, they shall be set back a minimum of 10' from the front façade of the dwelling unit.
 9. Where dwelling units are accessible by roads (alleys), vehicular access shall be permitted through the roads (alleys) only. Garages may face roads (alleys).
 10. Transportation Demand Management (TDM). All proposed developments shall demonstrate they have made reasonable efforts to consider and, where feasible, include TDM initiatives early on in the site design and layout process. TDM initiatives can justify a smaller amount of parking than is normally required. TDM initiatives that may affect the site design and layout include, but are not limited to:
 - a. Providing a minimum of 5% of total parking spaces as preferred parking for any ridesharing services (car/van vanpools)
 - b. Providing a minimum of 5% of total parking spaces as preferred parking for any hybrid or zero/low-emitting vehicles

3.04: continued

- c. Providing a minimum of 5% of total parking spaces with hybrid/electrical vehicle plug-in/recharge stations
 - d. Phased parking, shared parking and/or reduced parking requirements
 - e. On-street parking (requires approval from MassDevelopment)
 - f. Guaranteed Ride Home Program (for those who use alternative transportation or participate in ridesharing)
 - g. Employee Relocation Commuter Assistance Program (educating employees on transportation options)
 - h. Ridematching Services (reducing single-occupancy vehicle trips)
 - i. Flexible work hours/compressed work weeks (to reduce A.M. and P.M. peak traffic)
 - j. Public or private transportation options such as a Devens Shuttle Bus (providing access to Devens community services and local commuting options)
- (b) Viewshed Overlay District. Parking lots in the Viewshed Overlay District shall be located on the far side of the building from the viewshed sensitive receptor and/or along the sides of the building [see 974 CMR 3.08(3): *Figure C*]. Parking lots shall not be located between the building and the viewshed sensitive receptor except for a maximum of 10% of the total parking spaces constructed which may be located between the principle building and the street that provides the frontage.
- (c) Historic Overlay District. The Applicant shall demonstrate the feasibility of shared use of parking lots or the creation of common parking facilities has been investigated. If the investigation demonstrates feasibility, the Applicant shall present a plan to the DEC indicating a parking and access Easement for shared use of parking lots with the abutter(s). The Applicant shall provide evidence that an agreement has been made with the abutter and that the Easement has been recorded at the Registry of Deeds.
- (4) Stormwater Management.
- (a) General Provisions.
1. Stormwater Management in Site Plan review generally consists of managing stormwater on the site. Stormwater may be retained and recharged on-site, removed by evapotranspiration, or connected to the public drainage system.
 2. The DEC encourages Applicants to consider the site's location, abutting and on-site natural resources, and topographic characteristics. The Applicant shall identify all Resource Areas as defined by 974 CMR 4.06(3): *Resource Areas*, the anticipated site uses and intensities, and propose an economic, protective, and efficient stormwater management system that is consistent with the requirements of 974 CMR 4.06: *Wetlands Protection* and 4.08: *Stormwater Management*. All Applicants shall avoid and/or minimize clearing of mature vegetation.
 3. Low Impact Development (LID) Stormwater Management design shall be incorporated into the site plan to allow for the full utilization of the property while maintaining the pre-development characteristics of the site as though it were a "green field" (volume, frequency, peak runoff rate) to the maximum extent feasible. Maximizing the use of pervious areas minimizes stormwater runoff from a site, improves stormwater quality, and increases groundwater recharge. Maintenance of these on-site stormwater management systems must be incorporated into facility operations, and is the responsibility of the landowner. For requirements, design standards, and criteria for LID techniques, refer to 974 CMR 4.08: *Stormwater Management*.
 4. Drainage systems shall follow the requirements of the Devens Stormwater Pollution Prevention Plan, the Water Resources Protection Report, and the Water Resources Protection By-law. For requirements, design standards, and criteria for stormwater management systems, refer to 974 CMR 4.08: *Stormwater Management*.
 5. Regardless of whether site drainage is handled on-site or conveyed to a common or public stormwater management system, on-site stormwater management reuse and recharge systems shall be used for roof runoff (excluding metal roofs), whenever feasible.

3.04: continued

(b) Stormwater Management Options for Site Plan Submissions. Site generated stormwater shall be managed on-site to meet green field requirements. Conveyance to a common system (operated by the owners of more than one lot), or to the Devens Stormwater System (DSS), managed by MassDevelopment is an option once green field requirements have been met and all reuse and on-site infiltration methods have been exhausted. Stormwater Management options shall include green infrastructure and LID techniques, including but not limited to vegetated swales, rain gardens, bio-filtration landscape islands, rainwater harvesting, and pervious pavement, where feasible, to achieve infiltration/capture/reuse of stormwater runoff on-site. Stormwater treatment trains may include a combination of LID techniques in addition to conveyance structures, detention basins, extended detention basins, retention basins, swales and infiltration structures, water harvesting devices, and proprietary filtration and separation devices.

1. For lots served by the Devens Stormwater System (DSS), the Applicant may connect excess site drainage to the DSS without on-site detention provided that the following standards are achieved:

- a. The Applicant shall obtain written approval from MassDevelopment/Devens Engineering stating that the DSS can accommodate the anticipated peak rate of runoff for the 25-year storm event using the Natural Resources Conservation Service (NRCS) TR-55 method and that the DSS basins have adequate capacity to accommodate the 100-year storm event (TR-20 Methodology).
- b. A Stormwater Pollution Prevention Plan for all disturbed areas, as defined in the Devens Stormwater Pollution Prevention Plan, shall be included.
- c. An adequate system for collecting on-site stormwater has been designed for the premises.
- d. There shall be no negative impact from drainage on abutting properties, nor any negative impact to any public or private water supply or designated potential future supply.

2. On-site stormwater management systems for areas without access to the DSS shall include: conveyance structures, detention basins, extended detention basins, retention basins, swales and infiltration structures, and water harvesting devices. There are an increasing number of on-site LID techniques which effectively mimic natural hydrologic conditions. These general categories are not mutually exclusive and shall be combined where appropriate as current Best Management Practices and comply with 974 CMR 4.08: *Stormwater Management*.

3. All closed drainage systems shall comply with 974 CMR 4.08(6): *Closed Drainage Systems*.

4. Catch basins or other drainage features in loading/unloading and/or fueling areas shall be equipped with post-indicator valves (which are to remain in the closed position) on the outlets for containment in the event of any spills.

(c) Monitoring and Maintenance of Stormwater Facilities. The Applicant shall include a Stormwater Operations and Maintenance Plan in accordance with 974 CMR 4.08(7): *Monitoring and Maintenance of Stormwater Facilities* as may be applicable. The Site Plan shall specify the construction and post development Maintenance Schedule in detail on the Utility Plan. This will ensure that all parties understand and are aware that a Stormwater Operations and Maintenance Plan exists.

(5) Topographic Alterations.

(a) Topographic alterations shall be minimized, such that buildings, roadways, parking, detention/retention facilities, and all other site improvements shall be located first in previously developed, cleared, disturbed, and/or improved areas of the site, before proposing topographic alterations in previously undisturbed or vegetated areas.

(b) Topographic alterations in undeveloped woodland areas within the setbacks may be approved by the DEC if it determines that the construction of earth berms or slopes will reduce any adverse impacts of development. Tree removal shall be allowed in undeveloped woodland within the setbacks to create a berm or other topographic alteration, so long as alterations are minimized. Replication of trees may be required by the DEC using the same standards established in 974 CMR 3.04(8)(d)8.

3.04: continued

(c) Topographic alterations may be allowed to provide Improvements to the lot if no other access point can be made safely through already disturbed frontage or if all frontage is undisturbed, such that alterations are to the minimum extent necessary to construct the infrastructure.

(d) Earth removal shall comply with the By-laws and 974 CMR 4.07: *Earth Removal*.

(6) Site Improvements.(a) All Districts.1. Sidewalks/Trails. Sidewalks and trails shall conform to the following requirements:

a. Sidewalks standards in 974 CMR 2.07(5): *Stormwater Management*.

b. In limited circumstances, the DEC may allow sidewalks and trails to be located adjacent to a street and/or road only if it is constructed with a vertical curb separating the street/road from the trail.

c. Principle building entries shall have an accessible pedestrian walkway connecting to pedestrian walkways within abutting Rights-of-way or ways.

d. If pedestrian paved areas, such as a plaza, are larger than 20 square feet, pavement shall be cement concrete (pervious preferred) modified with a Solar Reflectance Index (SRI) of 29 or greater. Open grid pavement systems that are at least 50% pervious are a suitable alternative. Refer to 974 CMR 4.08(5): *Design Standards and Criteria for Certain Structural LID Techniques* for LID techniques construction specifications.

e. When a portion of the public trail system, as shown on the *Devens Main Post Trails Report* dated July 2001 adopted by the DEC, falls within the project site, the trail shall be constructed by the Applicant and an appropriate public access Easement shall be provided for that portion of the trail on the project site. Trails shall be constructed to the specifications in accordance with 974 CMR 3.06(12): *Figure L*, or as approved by the DEC.

2. Curbing.

a. Sloped granite curb, vertical granite curb, cement concrete curb and bituminous Cape Cod berm are allowed. Vertical granite curb or cement concrete curb is required at all driveway entrance roundings to the point of rounding tangency. Cast-in-place monolithic, reinforced, air-entrained concrete vertical curb and sidewalks or vertical granite curb is required where sidewalks abut driveways or parking areas.

b. Vertical granite curb, where provided, shall be Type VA4 as specified in Section M9.04.1 of the *Massachusetts Highway Department Standard Specifications For Highways and Bridges (MHDSSHB)* with a six-inch reveal. Granite transition stones shall be installed when vertical granite curb changes profile to sloped granite curbing or Cape Cod berm or where curbing transitions to areas with no curbs.

c. Vertical cement concrete curb, where provided, shall be as specified in M4.02.00 of the *MHDSSHB*, with a six inch reveal.

d. Sloped granite edgestone, where provided, shall be Type SA, SB, or SC as specified in the *MHDSSHB* Section M9.04.2 of with a six-inch reveal.

e. Catch basins shall have curb inlet stones with transition stones when sloped granite edgestone or Cape Cod berm is used.

f. Cape Cod berm, where provided, shall be a Modified Bituminous Concrete Berm - Type A (1' width) as specified in the *MHDSSHB* Section 106.1.0 of the *Construction Standards*.

g. Cast-in-place monolithic, reinforced, air-entrained concrete vertical curb and sidewalks shall conform to the *MHDSSHB* Section M4.0200 for 4000 psi concrete.

h. Curbing may be eliminated in select areas where there is sufficient protection for the edge of pavement and any drainage and/or safety issues have been adequately addressed to the satisfaction of the DEC.

3. Lighting. Site lighting shall conform to the Industrial Performance Standards (974 CMR 4.04: *Illumination and Astrophysical Compatibility*). Lighting posts, fixtures, and housing shall be uniform dark earthtone colors and comply with the following:

a. Access road/parking lighting shall be 0.5-foot candles minimum (maintained), with 30' maximum height posts.

3.04: continued

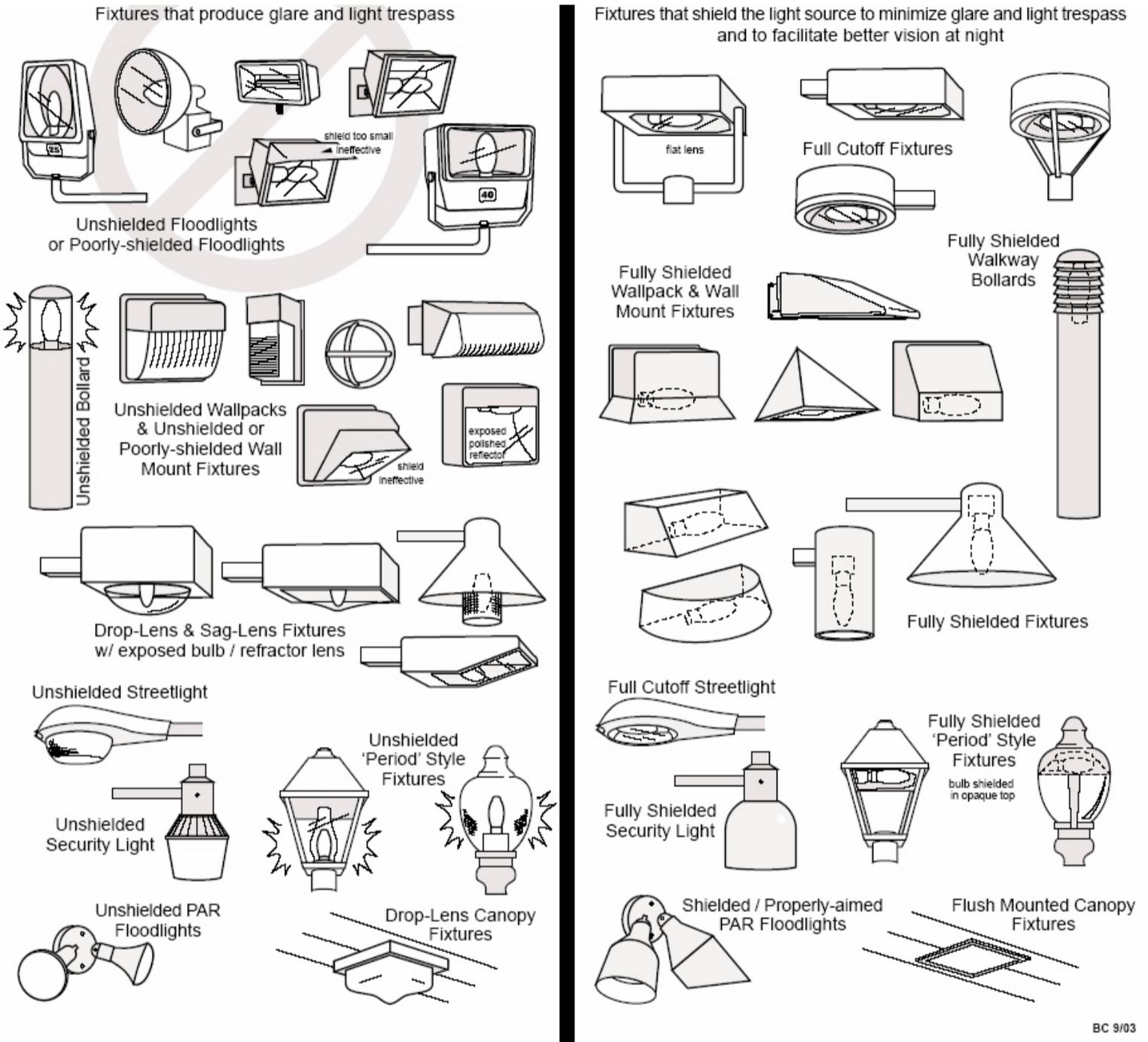
- b. Walkway lighting shall be 0.5 foot candles minimum (maintained), with 15'-18' high posts.
- c. All lighting shall be Metal Halide (HID), Compact Fluorescent (CFL) and/or Light Emitting Diode (LED).
- d. Bollard lights shall have roof optics with 100% sharp cut-off or shall have, at a minimum, louvered lenses, providing maximum cut-off and be of a single dark earth-toned color. Refer to 974 CMR 3.04: *Figure 1* for examples of acceptable fixtures vs. unacceptable fixtures.
- e. Site lighting plan shall indicate location of proposed/existing trees to demonstrate that there is no conflict between proposed lights and proposed/existing trees within the site.
- f. Commercial and industrial property lights may only be illuminated between 11:00 P.M. and 7:00 A.M. if the DEC determines lights are needed to ensure safety for night operations on the premises. 974 CMR 3.04(6)(a)3.f. does not apply to residential properties.
- g. Lighting plans shall incorporate energy efficiency measures to the maximum extent feasible, including but not limited to LED Lighting, timers, daylight sensors and higher albedo ground surfaces/treatments to reduce number of fixtures required.
- h. All light fixtures shall be equipped with appropriate shielding, filters, lenses, or cutoff devices required to eliminate light trespass onto any street or abutting lot or parcel, to eliminate glare perceptible to persons on any street or abutting lot or parcel and to minimize up-lighting.
- i. Lighting attached to residential structures shall not exceed the height of the eave.
- j. Street and/or road lighting shall comply with 974 CMR 2.07(6): *Landscape Treatment within Street Rights-of-way*.
- k. Outdoor light fixtures used to illuminate an outdoor advertising sign shall be in compliance with 974 CMR 6.03(1)(f) and 974 CMR 4.04: *Illumination and Astrophysical Compatibility*.
- l. The following exemptions apply to 974 CMR (6)(a)3.l.i. through m.:
 - i. Lighting in swimming pools and other water features.
 - ii. Exit signs and other illumination required by building codes.
 - iii. Lighting for stairs and ramps, as required by the building code.
 - iv. Holiday and temporary lighting (less than 30 days use in any one year).
 - v. Approved recreational field lighting, with proper controls to minimize glare and light trespass, and automatic shut off no later than 11:00 P.M.
 - vi. The temporary use of low wattage or low voltage lighting for public festivals, celebrations, and the observance of holidays are exempt from regulation except where they create a hazard or nuisance from glare.
- m. The following light sources are prohibited:
 - i. Mercury vapor and quartz lamps.
 - ii. Laser source light or any similar high-intensity light for outdoor advertising, when projected above the horizontal.
 - iii. Searchlights for advertising purposes.

3.04: continued

Figure 1:

Examples of Unacceptable Fixtures

Examples of Acceptable Fixtures



BC 9/03

4. Service Areas, Dumpsters, and Open Storage.
 - a. To the extent feasible, service areas, dumpsters, or open storage areas shall be located to the rear of buildings and placed on cement concrete pads.
 - b. Service areas, dumpsters, or open storage areas shall not be located forward of the front facade of the building.
 - c. Open Storage areas shall be designated on site plans. No open or exterior storage is permitted in undesignated locations.
 - d. Recycling storage and management details shall be provided. For facilities that generate food waste, details on the collection, storage and management of compostable materials shall be provided.
5. Loading docks shall be located to the sides and rear of buildings and shall not be located forward of the front facade of the building.
6. 69kV Power Line Easement Along Nashua River. A vegetated screen meeting the requirements of 974 CMR 3.04(8)(g) shall be planted within a 25' deep buffer that runs adjacent to the 69kV power line Easement. No portion of a dwelling unit shall be located within 100' of the 69kV power line and no Accessory Structures shall be permitted within the 25' deep buffer.

3.04: continued

(b) Historic Overlay District. All development shall comply with 974 CMR 7.00: *Historic District* and comply with the Programmatic Agreement between the Army, the National Advisory Council on Historic Preservation, and the Massachusetts Historical Commission. Site improvements shall comply with the requirements of all districts, except as noted:

1. Sidewalks/Walkways. Brick paving with hand-tight joints (no mortared joints) or an asphalt-setting bed with bituminous or concrete sub-base. Pedestrian paved areas, such as a walkway or plaza, larger than 20 square feet shall be cement concrete (pervious preferred) modified with a Solar Reflectance Index (SRI) of 29 or greater. Open grid pavement systems that are at least 50% pervious are a suitable alternative. Refer to 974 CMR 4.08(5): *Design Standards and Criteria for Certain Structural LID Techniques* for LID techniques construction specifications.
 2. Curbing.
 - a. Sloped granite edgestone shall be Type SA, SB, or SC as specified in the *MHDSSHB* Section M9.04.2 with a 6" reveal.
 - b. Cape Cod Berm shall be a Modified Bituminous Concrete Berm - Type A (1' width) as specified in the *MHDSSHB* Section 106.1.0 of the Construction Standards.
 - c. Cast-in-place monolithic, reinforced, air-entrained concrete vertical curb and sidewalks shall conform to the *MHDSSHB* section M4.02.00 for 4000 psi concrete.
 3. Lighting. Lighting fixtures and poles shall comply with the Report: "Street Lighting Recommendation for Devens Historic Overlay District" prepared by Carol R. Johnson and Associates of Boston, MA, dated November 30, 2001. The DEC may allow alternatives within the interior of parking lots and in service areas. Alternative poles shall be a 30' maximum height with arm-type fixture, upward cutoff, and dark in color (post and housing), and shall be a style that is compatible and harmonious with the historic poles and the goals and objectives of the historic district as stated in the By-laws, Article X.
- (7) Utilities.
- (a) Sewage Disposal.
 1. All sewage generated by site development at Devens shall connect to the Devens public sewer system. The Applicant shall provide evidence that the sewage generated by the proposed development shall be accepted by the Devens Wastewater Treatment Facility.
 2. Septic system construction is prohibited. Where a building is served by an existing septic system, the Applicant may continue to use on-site sewage disposal only if two conditions are met:
 - a. Connection to the public system is so impractical as to constitute an extreme hardship; and
 - b. The upgraded or replaced system meets the requirements of 310 CMR 15.00: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage*.
 - (b) Water Systems. Connection with the Devens water system is required for sanitary and fire suppression purposes. On-site wells may be used for irrigation or process water purposes with the approval of the DEC.
 - (c) Utility Extensions. The DEC may require Easements to allow utilities be extended to the undeveloped land abutting the site to allow for future connection with the public systems.
 - (d) Other Utilities. All proposed and existing public and private utility connections, extensions, and services shall be located or relocated underground.
- (8) Landscape Treatment.
- (a) The existing landscape of Devens is diverse, containing natural wooded environments such as the Nashua River corridor, Mirror Lake, and Robbins Pond, as well as open meadows and ceremonial landscapes such as Rogers Field (parade ground) and the Fort Devens Cemetery. New development shall be respectful and sensitive to the dominant landscape character of the site and Devens as a whole.

3.04: continued

- (b) The purposes of Landscape Treatment Design Standards in Devens are to:
1. Preserve and enhance the character of the Devens landscape.
 2. Provide attractive settings for new development.
 3. Preserve the character of the abutting towns of Ayer, Harvard, Shirley, and Lancaster.
 4. Preserve and enhance local and regional open space resources such as the Oxbow National Wildlife Refuge.
 5. Preserve the integrity of valuable regional historic resources, such as the Devens Historic District and the Fruitlands Museum.
 6. Support and encourage the use of sustainable design principles and operating practices that preserve and enhance wildlife habitats, water quality and quantity, and overall health of the natural environment.
 7. Encourage the use of indigenous plant material to provide natural habitat and food sources for wildlife and to maintain ecological diversity and minimize potable water usage.
 8. Maintain high standards for active and passive recreation, conservation, and other public spaces in Devens and enhance property values for present and future development.
- (c) General Requirements.
1. All required landscape treatments shall be located entirely within the lot.
 2. Native plants shall be used in appropriate locations, such that individual plants are selected for their ability to thrive in or adapt to the particular soil and light conditions they are placed in. (For a list of recommended native plants, *see* http://www.umassgreeninfo.org/fact_sheets/plants_culture/umass_native_plts.pdf).
 3. Under no circumstances, shall any plants be used that are recognized by the horticulture or agricultural industries as invasive, whether native or exotic (non-native). Non-native plants are those species listed as invasive and potentially invasive as per the Invasive Plant Atlas of New England (IPANE) and Massachusetts Invasive Plant Advisory Group. A listing of these plants can be found at http://www.eddmaps.org/ipane/ipanespecies/current_inv.htm).
 4. All plant material shall meet all American National Standards Institute (ANSI) standards for plant material as set forth in Z60.1: American Standard for Nursery Stock, latest edition. All plant material shall also meet certain standards of quality for form, structure, and health and have a minimum winter hardiness for Zone 5B, as determined by the American Standards for Nursery Stock.
 5. Minimum sizes for plant material, unless indicated elsewhere in 974 CMR 3.00, shall be as follows:
 - a. Deciduous shade trees: 3" caliper;
 - b. Deciduous ornamental trees: 2" caliper, and;
 - c. Evergreen trees: 6' height;
 - d. Shrubs. For screening in car parking areas, 3' height; for other screening purposes (dumpsters, loading docks, *etc.*) 6'; any other purposes, 18";
 6. Landscape treatments shall be laid out in informal drifts rather than formal rows and shall undulate with site topography. Individual clusters of trees or shrub beds are acceptable as long as the tree clusters and/or shrub beds overlap. Linear solutions shall be avoided wherever possible, unless the existing landscape treatment is so arranged.
 7. The Applicant may request that the DEC determine that existing vegetation is suitably located, sufficiently visually impervious, and vigorous enough to be substituted for material required by 974 CMR 3.00.
 8. Plant material located within 20' of any road or other paved area shall consist of species recognized by the nursery, horticulture and botanical industries as being tolerant of roadway de-icing salts. (For a sample list of plants recognized as tolerant of roadway de-icing salts, *see* 974 CMR 3.07: *Appendix A: List II.*).
 9. In Village Growth I and II, the Innovation & Technology Center, Business/Community Services, and within the Historic District Overlay Zoning Districts, trees may be located in near-urban conditions, near sidewalks or in plazas. In these cases, the Applicant shall propose trees that will tolerate or adapt to those conditions. (For a list of some plants that withstand urban conditions, *see* 974 CMR 3.07: *Appendix A: List III.*).
 10. Landscaping shall be maintained in good condition in perpetuity.

3.04: continued

11. Disturbed areas intended for natural re-growth shall be, at a minimum, graded, loamed and seeded with a native New England wildflower and/or conservation seed mix. The planting of native trees, shrubs and other plant varieties is encouraged in these areas.

12. Projects shall reduce the use of potable water for irrigation to the maximum extent feasible by implementing potable water reduction measures that factor in plant species, density and micro-climate as well as irrigation efficiency. Irrigation water shall be derived from detained treated stormwater (rainwater harvesting), or roof drainage, and/or reclaimed greywater (in accordance with 314 CMR 20.00: *Reclaimed Water Permit Program and Standards*) to the maximum extent feasible. Greywater is wastewater discharged from domestic sources, including, but not limited to, washing machines, sinks, showers, bath tubs, dishwashers, or other source except toilets, urinals and any drains equipped with garbage grinders. On-site cisterns may be installed to store water for irrigation. The DEC discourages irrigation systems connected to potable water supplies [See also 974 CMR 8.09(11): *Controls on In-ground Irrigation Systems*].

(d) Preservation of Existing Vegetation. [See also 974 CMR 3.04(5)]

1. Buildings, parking, loading docks, access roads, and other site elements shall be sited to preserve existing healthy mature vegetation and maintain natural topography to the maximum extent feasible.

2. All trees with a minimum 12" caliper within the setback shall be preserved. Healthy existing wooded areas within setback areas where buildings cannot be constructed shall be preserved to the greatest extent feasible.

3. The Applicant shall not propose topographic alteration within the root zone of any existing tree or wooded area designated as preferably preserved.

4. All work within the root zone of existing trees to be preserved shall be carried out under the direction and supervision of a Certified Arborist. Should there be no feasible alternative, excavation for walkways, curbs, structures, and utilities within the root zones of preserved trees shall be by hand excavation until roots are encountered, bending smaller main roots out of the excavation area, and sawcutting all roots over 1" caliper. All exposed ends of sawcut roots shall be kept moist by covering the exposed ends with wet peat moss and burlap until excavation is backfilled. Existing trees that have had excavation or grade changes within their root zone shall receive crown pruning and root fertilization per the arborist's recommendations.

5. Areas of previously cleared woodlands on site that are not utilized shall be re-planted with native woodland species. Edges of previously cleared woodlands on site shall be planted with a mix of blueberry, rhododendron, winterberry, bayberry, shrub dogwoods, cranberry bush, spicebush, native viburnums and other hardy shrubs to transition between natural woodland and more formally landscaped portions of a site. Where woodland areas are intended to serve as buffers, such plantings shall be used to fill in voids and rapidly reestablish undergrowth.

6. Building structures, roadways, and paved areas shall be set back at least 12" from the drip-line of wooded areas and trees slated for preservation.

7. Construction activities and site alterations shall not disturb the root zone of the trees designated for preservation. During construction, the Applicant shall install and maintain tree protection fencing, or other protective measures approved by the Director, located 12" beyond the drip-line of the trees to be protected.

8. The Applicant shall be responsible to replace any trees designated to remain, which have been damaged, killed, or removed as a result of construction activities. The DEC requires replacement-in-kind, per caliper inch of deciduous trees and by height for evergreens. Two-inch caliper deciduous trees and 4' tall evergreens shall be the minimum size used for replacement. For example, if a 24" caliper deciduous tree is damaged or killed during construction, the Applicant shall replace the tree with six 4" caliper trees, or any other combination adding up to 24" caliper. A 36' tall evergreen, for example, shall be replaced with six 6' tall evergreens, or any other combination adding up to 36'.

3.04: continued

9. Vegetation shall be cleared from Right-of-ways or way only as needed to accommodate roadway, utilities, and sidewalks. Significant trees (minimum 12" caliper) or woodland vegetation within the Right-of-way shall be preserved by adjusting the alignment of utilities and sidewalks to avoid the trees. The Applicant shall provide tree wells for any grade change of 6" above or below existing finish grade within 6' of the trunk of a tree to be preserved. Use of dry laid fieldstone construction for tree wells is encouraged.

(e) Soil Testing. In order to select plant material that is appropriate for the climate, soil type, light, exposure, and gradient of the site, the Applicant shall have the existing soil tested for both mechanical sieve and chemical analyses by an independent testing laboratory, such as an agricultural extension service or a local agricultural college. The sieve analysis shall be based on the USDA Classification System. The chemical analysis shall be according to the standards of the Association of Official Analytical Chemists. Should additional soil be required to be used, such as topsoil or planting mix, the new soil shall be tested in the same manner. The testing results shall include recommendations from the testing agency on what amendments, if any, may be needed for the soil to support the proposed plant material in a healthy and vigorous condition and whether the soil can support lawn or woody plants. The Applicant may include these soils tests within the submission, or shall indicate within the Submission that such soils tests will be performed during the construction process prior to the use of any on-site or imported loam or topsoil. Submission to the DEC of construction phase soil tests and recommendations shall be made a condition of the Permit.

(f) Groundplane Treatment.

1. All planted areas and "maintained" lawns shall pitch at 1:50 minimum slope, to ensure positive drainage on planted areas. Certain alternative groundplane treatments, such as native meadow grasses and wildflowers, may have a minimum slope of 1:100, particularly if the area is used for groundwater recharge or surface water treatment. "Maintained" lawns are those which are cut frequently, once or twice a week during the growing season.

2. All unpaved areas with a gradient between 1:50 and 1:3 shall receive lawn planting as a minimum. Grass shall be provided using either sod, seed, or hydroseed methods, or a combination thereof. The Applicant is encouraged to limit manicured lawn areas to those immediately surrounding buildings, roads and parking lots. In all other areas, the Applicant is encouraged to propose alternative groundplane treatments such as native meadow grasses and wildflowers (For a list of native meadow grasses and wildflowers, see 974 CMR 3.07: *Appendix A: List I*).

3. Any unpaved areas steeper than 1:3 shall be planted with shrubs or groundcover having fibrous root systems.

4. Any unpaved groundplane visible from a public way, residences, the Open Space Zoning District, or the principal entrance of buildings on abutting lots and at a gradient of 1:1.5 to 1:1 shall be stabilized using bioengineering methods of erosion control, and 100% plant cover. Riprap or trap rock shall not be used to control erosion in these locations.

5. No slopes shall be steeper than 1:1. Where space is limited, or the grade changes near preserved trees, the Applicant shall provide retaining walls to avoid slopes steeper than 1:1. Retaining walls shall be fieldstone, fieldstone-veneer and capstones on concrete retaining wall, or flat-face interlocking concrete masonry systems with split-face texture.

6. Due to compacted soils having a higher runoff coefficient, there shall be no construction activities on parts of the site that are to be landscaped or left in their natural state. In areas where this is not feasible, methods to compensate for the compaction must be employed. Landscape areas shall be deep tilled to a depth of at least 12" to facilitate deep water penetration and soil oxygenation. Use of organic soil amendments (compost, sewer biosolids, and forestry by-products, but not topsoil or any mix with soil as an element) is encouraged to improve water drainage, moisture penetration, soil oxygenation, and/or water holding capacity.

(g) Screening.

1. Screening shall be a year-round visually impermeable barrier that may be either existing, constructed, or a combination thereof.

a. Existing screens may consist of natural topographic landforms, rock outcrops, or vegetation that is dense enough to be visually impermeable.

3.04: continued

- b. Constructed screens may consist of built screens, such as solid walls or fences, topographic screens, such as berms or landforms, vegetative screens consisting entirely of evergreen material, or a combination thereof.
2. The use of existing vegetation, topography, and natural features to comply with screening requirements is encouraged.
 3. Screening is required to soften the visual impact of buildings, vehicle (car, bus, truck, *etc.*) parking areas, loading docks, trash disposal areas, exterior storage, and other unsightly areas associated with or generated by a particular development as viewed from Public Ways, residential zoning districts in Devens and host communities, the Open Space and Recreation Zoning District ("Open Space Zoning District"), and the principal entrance of buildings on abutting lots. The Director shall determine which Improvements shall be screened prior to or during the Pre-permitting Conference.
 4. Screening may be required along the entire Front Yard setback or only a part of it. Screening may also be required to extend beyond the minimum setback areas or further into the lot, particularly if the building is located beyond the minimum setback or if the lot configuration is such that the visibility into Side Yard or Rear Yard setbacks is unimpaired from the public way, residences, the Open Space Zoning District, and principle entrances of buildings on abutting lots.
 5. A minimum of 50% of built screens such as walls or fences that face the public way, residences, the Open Space Zoning District, and principal entrances on abutting lots shall be softened with plantings.
 6. Vegetative screens shall be visually impermeable year round. Vegetative screens shall be a minimum of two shrubs deep, to a minimum depth of 6' and spaced at such an interval to achieve a visually impermeable screen within three growing seasons (*i.e.* spacing to be determined by expected rate of growth, not the shrub's mature size). The minimum height of a screen is 3' upon installation in car parking areas and 6' in other locations. A higher height shall be required if the parking area, loading dock, exterior storage, or other unsightly area is at an elevation lower than the Street, residences, the Open Space Zoning District, and principal entrances of buildings on abutting lots. The height of screens can be the result of combining landforms or natural elevation changes with vegetative material. Screens shall not be located so as to impede vehicular or pedestrian traffic.
 7. Where Improvements requiring screening such as truck parking, loading, service, disposal, or storage areas are adjacent to such Improvements on the abutting lot, the Applicant shall provide a screen that is 50% visually permeable, with the understanding that the owner of the abutting parcel is responsible for the other 50% of the screen. The DEC encourages shared responsibilities between abutters for providing and maintaining screening.
 8. Constructed landforms may be used in conjunction with built or vegetative screens. Constructed landforms shall be organic in shape, of differing shapes and sizes if more than one landform is proposed. The side slopes of constructed landforms shall be loamed and planted with vegetation to minimize erosion. Boulders and rocks may be used within landscape treatments, provided at least $\frac{1}{3}$ of the height of the boulder or rock is below ground.
- (h) Landscape Treatment in Parking Areas.
1. Landscape treatment within parking areas shall provide visual and climatic relief from broad expanses of pavement and shall be designed to channel and define logical areas for pedestrian and vehicular circulation.
 2. The Applicant shall provide shade trees around the perimeter of all parking areas at a minimum ratio of one tree per 25 lineal feet of parking lot perimeter. In portions of parking areas where screens are required, the Applicant shall provide shade trees along the perimeter at a minimum ratio of one tree per 50 lineal feet of parking lot perimeter in addition to the required screen. Trees shall appear informally arranged, rather than set in straight evenly spaced rows, unless existing trees or major site elements suggest a formal arrangement. Informally arranged trees may be clustered or grouped, if desired, as long as clusters/groups are not more than 75' apart.

3.04: continued

3. Internal parking area plantings are required. Exclusive of perimeter screen planting, internal parking lot landscape areas shall contain one deciduous shade tree for every 20 parking spaces. Trees shall be distributed throughout the parking lot as evenly as possible, although more than one tree may be located on a single island. Trees shall be set back at least 5' minimum from the face of the curb. Tree placement and parking lot lighting shall not conflict. Salt-tolerant shrubs shall be planted along divider islands, preferably native species clustered in groups of five or seven, at a rate of one shrub for each 10' of divider island length. Interior parking area plantings may be waived in truck parking areas if interior areas are screened from Streets, the principal entrance of any abutting building, the Open Space and Recreation zoning district, or residential zoning district with a year-round visually impervious screen at least 6' tall at installation and perimeter plantings are provided.

4. Parking area terminal, intermediate, and divider islands shall contain no more than 25% impervious surfaces. The remaining 75% shall be landscaped with grass or other groundcover suitable to the Director. Shrubs planted in islands shall not exceed 4' in height where they might impede vehicular or pedestrian circulation.

(i) Viewshed Overlay Districts. The Viewshed Overlay District protects scenic vistas from the top of Prospect Hill and the Fruitland Museum. Affected areas in Devens are shown on 974 CMR 3.08: *Appendix B: Figure H*. The following apply to all projects within the Viewshed Overlay District:

1. To the maximum extent feasible, buildings and all topographic alterations in the viewshed shall be located within previously disturbed areas (*see 974 CMR 3.06(6): Figure F*).

2. Where buildings encroach on undisturbed wooded areas, the DEC may determine that such encroachment would have a significant adverse effect on the viewshed. To mitigate this adverse effect, the DEC may require that additional trees of at least 4" caliper or clusters of 3" caliper minimum to be planted. The DEC shall determine the spacing, density, size, and location of trees needed to soften the visual impact of the new construction.

3. If substantial tree canopies do not exist between Prospect Hill and the building, vegetative screen on the side(s) of the building directly facing Prospect Hill may also be required (*see 974 CMR 3.06(6): Figure F*). This screen shall be located no further away from the building than a distance equal to the building height. Required screens shall extend the full length of the building facing Prospect Hill. Additional screening requirements:

a. Landscape Screen on Level Terrain in Viewshed Overlay Districts. If a landscaped screen is required on land at approximately the same elevation as the finished grade of the building, deciduous trees of 4" minimum caliper and evergreen trees of 10' minimum height (with at least one evergreen tree for every three deciduous trees) shall be planted at a density and location specified by the DEC (*see 974 CMR 3.06(7): Figure G1*).

b. Landscape Screen on Natural or Artificial Berm in Viewshed Overlay Districts. Where a screen is located on land higher than the finished grade of the building, the required deciduous tree caliper can be reduced by ½" and evergreen tree height can be reduced by 2' for every 3' of elevation difference compared to the finished grade of the building, to a minimum size of 3" caliper for deciduous trees and 6' height for evergreen trees. The number and location of trees planted shall be specified by the DEC.

4. Buildings within the Viewshed Overlay District shall not have reflective metal flashing, mechanical enclosures, window frames or treatments, doors, roofing material, or building trim and all metal surfaces shall be finished with a dark, non-reflective finish. Rooftops shall not be illuminated. Signs shall be located below new or existing tree canopies.

5. Vegetated Rooftops and Vegetated Walls. To the maximum extent feasible buildings within the Viewshed Overlay District that are visible from Prospect Hill at the Sears Estate and/or the Fruitland's Museum and/or residential uses outside of Devens shall have:

3.04: continued

- a. Vegetated roofs that comply with the DEC's Vegetative Roof Policy. A vegetated roof is a roof that is covered with vegetation and a growing medium, planted over a waterproofing membrane. It uses a root repellent system, a drainage and filter layer, and a growing medium of at least 4" and plants.
 - b. Vegetated walls on the sides of the building facing and visible from Prospect Hill at the Sears Estate and/or the Fruitlands Museum and/or residential uses outside Devens. A vegetated wall is a wall, either free-standing or part of a building that is partially or completely covered with vegetation and, in some cases, soil or an inorganic growing medium. There are two main categories of vegetated walls: vegetated façades and living walls. Vegetated façades are made up of climbing plants either growing directly on a wall or specially designed supporting structures. The plant shoot system grows up the side of the building while being rooted to the ground. In a living wall the modular panels are often made of stainless steel containers, geotextiles, irrigation systems, a growing medium and vegetation.
6. Landscaping plans for projects located in the Viewshed Overlay District shall show the design and location of vegetated roofs and walls.
- (j) Internal View Corridors (As a Site Design Consideration). Within planned developments, such as Innovative Developments (By-laws Article III, Section F. and 974 CMR 5.02(1): *Innovative Residential Development (IRD) Residential I*), campus-like multiple buildings on one or more lots, or urbanized or commercial centers, the internal roadway system shall be landscaped and screened as though the drives are Streets, unless the DEC determines an alternative better suits the development layout and the character of the area. Required screens between adjacent uses within a planned development may be eliminated or reduced if the DEC finds that the screening on the lot effectively blocks views of parking lots, loading areas, refuse collection facilities, and other potentially unattractive areas from adjacent Streets and within the planned development. The Applicant shall prepare a landscape treatment plan for the entire planned development area, indicating areas to be screened, materials, locations and types of lighting fixtures, location and plant materials for parking lot buffers, location of signs, and other improvements as determined by the Director.
 - (k) Street Trees are shade trees located along a Road and/or Street.
 1. Where existing street trees are more than 50' apart on average or do not exist along a street or road, the Applicant shall plant street trees. Street trees shall be placed in a linear fashion along the Right-of-way or way boundary, at a maximum spacing of 50' on center on all collectors and boulevards. The maximum spacing for all other streets and roads shall be 40' on center. Where the character of the site is predominantly wooded or pastoral, the Applicant may cluster trees informally along the lot line, with a maximum of 75' between clusters of three or more trees.
 2. Street trees shall be selected from 974 CMR 3.07: *Appendix A: List V*. The Applicant may request the DEC allow other species to be utilized.
 - (l) Landscape Treatment of Building Facades Visible from Roads and/or Streets.
 1. The perimeter of all commercial and industrial buildings visible from a road or street, the principal entrance of adjacent or abutting buildings or from the Residential or Open Space Zoning Districts shall have continuous landscape treatment in the form of shade trees, ornamental trees, evergreen trees, shrubs, or a combination thereof within 50' from the face of the building. Landscape treatment shall consist of a minimum of one shade tree per 50 lineal feet of building façade, or three ornamental/evergreen trees per 50 lineal feet of building façade. Trees may be clustered or grouped, if desired. All trees shall be arranged in staggered, triangulated, or informal drifts, unless available space does not permit, or unless existing vegetation is geometrically arranged or unless such an arrangement is blocking required passive and/or active solar gain. Applicant may request a waiver to propose geometrically-based planting arrangements if the proposed building and site plan design strongly merits a more formal arrangement. Foundation planting is not encouraged, but may be allowed at or near primary and secondary building entries (not maintenance, service, or emergency egress entries). Where allowed, the landscaped foundation bed shall be a minimum depth of 20' in the Innovation & Technology Business, Innovation & Technology Center, Business/Community Services, Village Growth I & II, and Special Use I & II Zoning Districts, and a minimum of 10' depth in all other Districts. The landscaped bed shall consist of shrubs and groundcover to its full horizontal depth, with a minimum of two rows of shrubs.

3.04: continued

2. The landscape treatment adjacent to buildings may be reduced or waived by the DEC in cases where it is impractical to provide the specified depth of landscape area due to the size, shape, or other characteristics of the lot; however, in no case shall any parking space or vehicular lane be located closer than 10' from the building.
 3. Required landscape beds along building foundations may be substituted with remote (*i.e.*, not abutting the façade) beds of ornamental or evergreen tree plantings.
- (m) Landscape Treatment for Residential Projects.
1. In addition to the required street trees, all residential projects shall include a minimum of one 3" caliper deciduous tree and one 6' tall coniferous tree (native species) per 5,000 square feet of lot area.
 2. For proposed Parks and/or Open Spaces without substantial natural/native vegetation, the DEC may require additional plantings for shade, heat island mitigation, and/or aesthetics.
- (n) Maintenance.
1. The owners of any lot shall be responsible for the maintenance of all landscaped open space, natural screens, and constructed screens within the lot. Landscape treatment shall be maintained in good condition such that plantings shall be vigorous and in good health at all times and that the parcel shall present a healthy, neat, and orderly appearance, free from refuse and debris.
 2. The DEC may require a landscape maintenance and water management plan. The maintenance plan shall include but not be limited to the following:
 - a. Integrated Turf Management/Integrated Pest Management Plan. Mowing schedule, weed control, pest control, soil pH management, fertilizer plan, aeration/dethatching schedule, repair/replacement plan. Such a plan shall include steps for managing turf pests or diseases while minimizing inorganic and over-application of fertilizer and pesticide use and the corresponding negative impacts on the environment. Refer to the Integrated Pest Management Tools listed on the Landscape Nursery and Urban Forestry - UMASS Extension website at <http://www.umassgreeninfo.org/>
 - b. Shrub and Groundcover Management. Mulch schedule, weed control, pruning where needed for visibility, preventative pest/disease management, repair/replacement plan. Mulch must be applied regularly to, and maintained in all, planting areas to assist soils in retaining moisture, reducing weed growth, and minimizing erosion. Mulches include organic materials such as wood chips, compost and shredded bark and inert organic materials such as decomposed lava rock, coble, and gravel. If weed barrier mats are used, the use of inert organic mulches is recommended. Non-pervious materials, such as plastic sheeting, are not recommended for use in any area of the landscape because of down-slope erosion, potential soil contamination from herbicide washing and increased runoff coefficients. Mulches shall be applied to the following depths: 3" over bare soil, and 2" where plant materials will cover. Mulches for stormwater management areas shall be heavier and not of a type that will float away.
 - c. Tree Management. Mulch schedule, weed control, deadwood removal, pruning schedule (particularly for trees adjacent to walk or roads), fertilizing schedule, preventative pest/disease management, repair or replacement plan.
 - d. Water Systems Management. Water source, system description, spring start-up, fall close-out, system testing schedule, repair/replacement plan. The Applicant may install a permanent water supply system consisting of a sprinkler system and/or hose bibs placed at appropriate locations and intervals. Whenever possible, irrigation water shall be derived from sources other than the Devens water system, including reclaimed greywater, detained treated stormwater, roof drainage, or water from on-site wells. On-site cisterns may be installed to store water for irrigation.
 - e. Rodent control: design preventative measures, operational preventative measures, monitoring, schedule, remediative action plan.
 - f. Seasonal Maintenance. Spring clean-up plan, fall clean-up plan, disposal plans for leaves and plant debris, winter plowing plan, winter deicing plan.

3.04: continued

g. All applications shall identify invasive plant species on the parcel and include an invasive plant species removal, treatment, monitoring program as part of the long-term maintenance requirements for the site. Species listed as invasive and potentially invasive as per the Invasive Plant Atlas of New England (IPANE) and Massachusetts Invasive Plant Advisory Group are prohibited from being planted and shall be included as part of any invasive plant species removal, treatment and monitoring program. IPANE website, including invasive species management resources can be found at

http://www.eddmaps.org/ipane/ipanespecies/current_inv.htm. Invasive Species Management Plans shall include the following:

- i. Integrated pest management (IPM) strategies;
- ii. Procedure for identifying and monitoring for additional invasive species that may colonize the site and new species as recognized by IPANE;
- iii. Initial treatment, follow-up treatments, long-term control including monitoring, and methods to dispose of invasive plant materials to prevent spread

3.05: Innovative Development

Innovative and Planned Use Development - The By-laws (Article III, Section F) require the Commission adopt regulations that encourage the use of "innovative development strategies, including, but not limited to, clustered development, condominium development, and planned unit development methods." Refer to 974 CMR 5.02(1): *Innovative Residential Development (IRD) Residential I*.

3.06: Steep Slope Protection

(1) Purpose. Development on or adjacent to unique ridgelines, slopes and plateaus can have an adverse impact on:

- (a) Water quality by causing erosion and sedimentation and changing patterns of stormwater runoff;
- (b) Wildlife habitat and corridors; and
- (c) Slope stability.

These adverse impacts can be avoided by restricting development and mitigating its impacts.

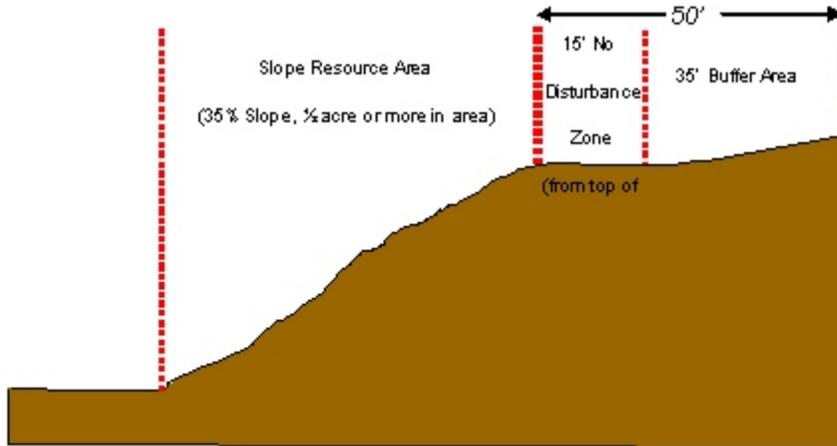
(2) Applicability. The General Requirements of 974 CMR 3.06 applies to Slope Resource Areas (SRAs) shown on the Devens Slope Resource Area Map [*see Appendix B: Figures (13), Figure M* and SRA buffer areas as described in 974 CMR 3.06(3)] and development outside these areas that may impact them.

(3) Definitions. The following definitions pertain to 974 CMR 3.06 only:

Site Disturbance. Any activity which removes the vegetative cover and/or soils from the land surface.

Slope Resource Area (SRAs). Naturally formed, undisturbed slopes with a contiguous areas of a ½ acre or more. These areas are identified on the Devens Slope Resource Area Map in 974 CMR 3.06: Appendix B: *Figures (13)* and *Figure M*. Such slopes are generally in excess of 35%, with mature vegetative cover and in close proximity to sensitive resource areas and/or unique geological formations.

3.06: continued



(4) General Requirements.

(a) There shall be no Site Disturbance in SRAs and the 15' no disturbance area around them, except that the following are permitted:

1. Construction of low-impact hiking/walking trails identified in the 2001 Devens Main Post Trails Plan;
2. Removal of the minimum number of trees necessary to ensure adequate site lines but in no instance shall roots be removed unless the DEC approves a vegetation and soil management plan designed to maintain slope and soil stability; and
3. Removal of vegetation and re-planting of native plant species may be allowed according to a vegetation and soil management plan approved by the DEC if the area has been previously disturbed by recent human activity or is infested by noxious weeds and/or invasive plant species.

(b) There shall be no Site Disturbance within the 35' buffer Area beyond the 15' no disturbance area, unless the DEC makes a finding that the proposed activity will have no adverse impacts on the structure and stability of the SRA and 15' no disturbance area. To support such a finding, the Applicant shall be required to submit a geotechnical report, prepared by a professional geotechnical engineer, that demonstrates the proposed activity within the 35' buffer will have no adverse impacts on the structure and stability of the SRA. Any development authorized within the 35' buffer area shall preserve existing vegetation to the maximum extent feasible.

(c) The Applicant shall demonstrate to the satisfaction of the DEC that:

1. additional stormwater runoff from the proposed development is not directed toward the SRA or SRA Buffer Areas and that;
2. there are adequate measures in place to ensure there is no increase in the rate of stormwater runoff directed toward the SRA or SRA buffer areas.

3.07: Appendix A: Plant Lists

(1) List I: Native Plants. This is a list of plants known to be native to this Massachusetts region. Other plants may exist and may be acceptable once their appropriateness to the list is demonstrated by the Applicant.

Botanical Name	Common Name
<u>Shade Trees</u>	
<i>Acer rubrum</i>	Red Maple
<i>Acer saccharinum</i>	Silver Maple
<i>Acer saccharum</i>	Sugar Maple
<i>Betula lenta</i>	Sweet Birch
<i>Betula lutea</i>	Yellow Birch
<i>Carya cordiformis</i> +	Bitternut Hickory+
<i>Carya glabra</i> +	Pignut Hickory+
<i>Carya ovata</i> +	Shagbark Hickory+
<i>Fagus grandifolia</i>	American Beech
<i>Fraxinus americana</i>	White Ash
<i>Fraxinus pennsylvanica</i> 'Patmore'	Patmore Green Ash
<i>Juglans cinerea</i> +	Butternut+
<i>Liquidambar styraciflua</i> 'Rotundiloba'	Seedless Sweetgum
<i>Liriodendron tulipifera</i>	Tulip Tree
<i>Nyssa sylvatica</i>	Black Tupelo
<i>Platanus occidentalis</i>	American Planetree
<i>Populus grandidentata</i>	Bigtooth Aspen
<i>Populus tremuloides</i>	Quaking Aspen
<i>Prunus americana</i>	American Plum
<i>Prunus serotina</i>	Black Cherry
<i>Quercus alba</i> +	White Oak+
<i>Quercus bicolor</i> +	Swamp White Oak+
<i>Quercus borealis</i> +	Northern Red Oak+
<i>Quercus coccinea</i> +	Scarlet Oak+
<i>Quercus palustris</i> +	Pin Oak+
<i>Quercus prinus</i> +	Chestnut Oak+
<i>Quercus velutina</i> +	Black Oak+
<i>Salix babylonica</i>	Weeping Willow
<i>Salix nigra</i>	Black Willow
<i>Sassafras albidum</i>	Common Sassafras
<i>Tilia americana</i> 'Redmond'	Redmond Linden
<i>Ulmus americana</i> , disease-resist. var.	American Elm

+ These trees are recommended for planting on portions of the site away from walks or roads.

<u>Ornamental Trees</u>	
<i>Alnus rugosa</i>	Hazel Alder
<i>Amelanchier canadensis</i>	Shadblow Serviceberry
<i>Amelanchier laevis</i>	Alleghany Serviceberry
<i>Betula nigra</i>	River Birch
<i>Betula papyrifera</i>	Paper Birch
<i>Betula populifolia</i>	Gray Birch
<i>Carpinus caroliniana</i>	American Hornbeam
<i>Cercis canadensis</i>	Eastern Redbud
<i>Cornus alternifolia</i>	Pagoda Dogwood
<i>Cornus florida</i> ^	Flowering Dogwood ^
<i>Crataegus punctata</i>	Dotted Hawthorn
<i>Hamamelis virginiana</i>	Common Witchhazel

^ *Cornus florida* has been adversely affected by an anthracnose epidemic in the Northeast US for the past 20 years or so. Anthracnose spreads rapidly to other Flowering Dogwoods. Before using, check with local agricultural extensions for the status of anthracnose.

3.07: continued

Botanical Name	Common Name
<u>Ornamental Trees (continued)</u>	
<i>Larix laricina</i>	American Larch
<i>Ostrya virginiana</i>	Hop Hornbeam
<i>Prunus pennsylvanica</i>	Pin Cherry
<i>Prunus virginiana</i>	Common Chokecherry
<i>Rhus copallina</i>	Flameleaf Sumac
<i>Salix discolor</i>	Pussy Willow
<i>Salix bebbiana</i>	Bebb Willow
<i>Viburnum lentago</i>	Nannyberry Viburnum
<u>Evergreen Trees</u>	
<i>Ilex opaca</i>	American Holly
<i>Juniperus virginiana</i>	Eastern Red Cedar
<i>Pinus rigida</i>	Pitch Pine
<i>Pinus strobus</i>	Eastern White Pine
<i>Thuja occidentalis</i>	American Arborvitae
<i>Tsuga canadensis</i>	Canadian Hemlock
<u>Deciduous Shrubs</u>	
<i>Arctostaphylos uva-ursi</i>	Bearberry
<i>Aronia melanocarpa</i>	Black Chokeberry
<i>Aronia prunifolia</i>	Purplefruit Chokeberry
<i>Clethra alnifolia</i>	Summersweet Clethra
<i>Comptonia peregrina</i>	Sweetfern
<i>Cornus alterniflora</i>	Green-osier Dogwood
<i>Cornus amomum</i>	Silky Dogwood
<i>Cornus foemina</i>	Gray-stemmed Dogwood
<i>Cornus racemosa</i>	Gray Dogwood
<i>Cornus rugosa</i>	Redleaf Dogwood
<i>Gaylussacia spp.</i>	Huckleberry
<i>Ilex verticillata</i>	Common Winterberry
<i>Lindera benzoin</i>	Common Spicebush
<i>Myrica pennsylvanica</i>	Northern Bayberry
<i>Rhododendron nudiflorum</i>	Pinxterbloom Azalea
<i>Rhododendron roseum</i>	Roseshell Azalea
<i>Rhododendron viscosum</i>	Swamp Azalea
<i>Rhus glabra</i>	Smooth Sumac
<i>Rhus typhina</i>	Staghorn Sumac
<i>Rosa carolina</i>	Carolina Rose
<i>Rubus odoratus</i>	Fragrant Thimbleberry
<i>Salix humilis</i>	Prairie Willow
<i>Salix lucida</i>	Shining Willow
<i>Sambucus canadensis 'Maxima'</i>	American Elder
<i>Sambucus pubens</i>	Scarlet Elder
<i>Spiraea tomentosa</i>	Hardhack Spirea
<i>Vaccinium corymbosum</i>	Highbush Blueberry
<i>Vaccinium stamineum</i>	Common Deerberry
<i>Viburnum acerifolium</i>	Mapleleaf Viburnum
<i>Viburnum alnifolium</i>	Hobblebush Viburnum
<i>Viburnum cassinoides</i>	Witherod Viburnum
<i>Viburnum dentatum</i>	Arrowwood Viburnum
<i>Viburnum trilobum</i>	American Cranberrybush Viburnum
<u>Evergreen Shrubs</u>	
<i>Juniperus communis 'Compressa'</i>	Common Juniper
<i>Kalmia angustifolia</i>	Sheeplaurel
<i>Kalmia latifolia</i>	Mountainlaurel
<i>Taxus canadensis</i>	Canada Yew

3.07: continued

Botanical Name	Common Name
<u>Groundcovers</u>	
<i>Cornus canadensis</i>	Bunchberry Dogwood
<i>Epigaea repens</i>	Trailing Arbutus
<i>Gaultheria procumbens</i>	Checkerberry Wintergreen
<i>Maianthemum canadense</i>	Canada Mayflower
<i>Mitchella repens</i>	Partridgeberry
<i>Vaccinium angustifolium</i>	Lowbush Blueberry
<i>Vaccinium macrocarpum</i>	Cranberry
<u>Meadow Grasses/Wildflowers</u>	
Rebel II Tall Fescue	
Palmer II Perr. Ryegrass	
Jamestown Chewings Fescue	
Indian Grass	
Blackwell Switchgrass	
Big Bluestem	
Little Bluestem	
Blue Joint Reedgrass	
<i>Antennaria alpina</i>	Alpine Pussy-Toes
<i>Aristida dichotoma</i>	Poverty Grass
<i>Aster linariifolius</i>	Bristly Aster
<i>Bulbostylis capillaris</i>	
<i>Eragrostis spectabilis</i>	Purple Lovegrass
<i>Houstonia caerulea</i>	Bluets
<i>Juncus bufonius</i>	Toad Rush
<i>Senecio aureus</i>	Golden Ragwort

(2) List II: Salt Tolerant Plants. This is a list of plants known to be tolerant of salt from road deicing in this Massachusetts region. Other plants may exist and may be acceptable once their appropriateness to the list is demonstrated by the Applicant.

Botanical Name	Common Name
<u>Shade Trees</u>	
<i>Acer campestre</i>	Hedge Maple
<i>Acer saccharinum</i> *	Silver Maple*
<i>Aesculus hippocastanum</i>	Horse-chestnut
<i>Betula lenta</i> *	Sweet Birch*
<i>Betula lutea</i> *	Yellow Birch*
<i>Fraxinus americana</i> *	White Ash*
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust
<i>Nyssa sylvatica</i> *	Black Tupelo*
<i>Prunus serotina</i> *	Black Cherry*
<i>Quercus alba</i> *+	White Oak*+
<i>Quercus borealis</i> *+	Northern Red Oak*+
<i>Quercus macrocarpa</i> +	Bur Oak+
<i>Quercus robur</i> +	English Oak+
<i>Ulmus glabra</i>	Wych Elm
<i>Ulmus pumila</i>	Chinese Elm
<u>Ornamental Trees</u>	
<i>Amelanchier canadensis</i> *	Shadblow Serviceberry*
<i>Betula papyrifera</i> *	Paper Birch*

* Native Plants

+ These trees are recommended for planting on portions of the site away from walks or roads.

3.07: continued

Botanical Name	Common Name
<u>Ornamental Trees</u> (continued)	
<i>Betula populifolia</i> *	Gray Birch*
<i>Prunus pennsylvanica</i> *	Pin Cherry*
<i>Prunus virginiana</i> *	Common Chokecherry*
<i>Pyrus calleryana</i> 'Aristocrat'	Aristocrat Pear
<i>Pyrus calleryana</i> 'Bradford'	Bradford Pear
<i>Rhus copallina</i> *	Flameleaf Sumac*
<i>Salix discolor</i> *	Pussy Willow*
<i>Salix bebbiana</i> *	Bebb Willow*
<i>Sorbus decora</i>	Showy Mountain Ash
<u>Evergreen Trees</u>	
<i>Juniperus virginiana</i> *	Eastern Red Cedar*
<i>Picea pungens</i> 'glauca'	Blue Colorado Spruce
<i>Pinus nigra</i>	Austrian Pine
<i>Pinus ponderosa</i>	Ponderosa Pine
<i>Pinus rigida</i> *	Pitch pine*
<i>Pinus thunbergii</i>	Japanese Black Pine
<u>Deciduous Shrubs</u>	
<i>Arctostaphylos uva-ursi</i> *	Bearberry*
<i>Aronia melanocarpa</i> *	Black Chokeberry*
<i>Aronia prunifolia</i> *	Purplefruit Chokeberry*
<i>Hippophae rhamnoides</i>	Common Seabuckthorn
<i>Lindera benzoin</i> *	Common Spicebush*
<i>Myrica pennsylvanica</i> *	Northern Bayberry*
<i>Rhus glabra</i> *	Smooth Sumac*
<i>Rhus typhina</i> *	Staghorn Sumac*
<i>Salix humilis</i> *	Prairie Willow*
<i>Salix lucida</i> *	Shining Willow*
<i>Shepherdia argentea</i>	Buffaloberry
<i>Tamarix ramosissima</i>	Five Stamen Tamarisk
<i>Vaccinium corymbosum</i> *	Highbush Blueberry*
<i>Vaccinium stamineum</i> *	Common Deerberry*
<i>Viburnum cassinoides</i> *	Witherod Viburnum*
<i>Viburnum dentatum</i> *	Arrowwood Viburnum*
<u>Evergreen Shrubs</u>	
<i>Pinus mugo mugo</i>	Japanese Black Pine
<i>Taxus canadensis</i> *	Canada Yew*
<u>Groundcovers</u>	
<i>Epigaea repens</i> *	Trailing Arbutus*
<i>Vaccinium angustifolium</i> *	Lowbush Blueberry*

* Native Plants

+ These trees are recommended for planting on portions of the site away from walks or roads.

(3) List III: Plants That Withstand Urban Conditions. This is a list of plants known to be appropriate to urban planting situations in this Massachusetts region. Other plants may exist and may be acceptable once their appropriateness to the list is demonstrated by the Applicant.

Botanical Name	Common Name
<u>Shade Trees</u>	
<i>Acer campestre</i> 'Queen Elizabeth'	Queen Elizabeth Hedge Maple
<i>Acer freemani</i> 'Celebration'	Celebration Maple

3.07: continued

Botanical Name	Common Name
<u>Shade Trees</u> (continued)	
<i>Acer rubrum</i> 'Red Sunset'*	Red Sunset Red Maple*
<i>Acer saccharum</i> 'Green Mountain'*	Sugar Maple*
<i>Acer tartaricum</i>	Tartarian Maple
<i>Carpinus betulus fastigiata</i>	Pyramidal European Hornbeam
<i>Celtis occidentalis</i> 'Prairie Pride'	Prairie Pride Hackberry
<i>Cladastris lutea</i>	Yellowwood
<i>Corylus colurna</i>	Turkish Hazelnut
<i>Eucommia ulmoides</i>	Hardy Rubber Tree
<i>Fraxinus excelsior</i> 'Hessei'	Hesse European Ash
<i>Fraxinus pennsylvanica</i> 'Summit'*	Summit Ash*
<i>Ginkgo biloba</i>	Maidenhair Tree
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust
<i>Liquidambar styraciflua</i> 'Moraine'*	Moraine Sweet Gum*
<i>Maclura pomifera inermis</i> 'Park'	Park Osage Orange
<i>Nyssa sylvatica</i> *	Black Tupelo*
<i>Platanus acerifolia</i> 'Bloodgood'	London Plane Tree 'Bloodgood'
<i>Quercus borealis</i> *+	Northern Red Oak*+
<i>Sophora japonica</i> 'Regent'	Regent Scholartree
<i>Tilia cordata</i>	European Littleleaf Linden
<i>Zelkova serrata</i> 'Village Green'	Village Green Zelkova
 <u>Ornamental Trees</u>	
<i>Betula nigra</i> 'Heritage'*	Heritage Birch*
<i>Cercidiphyllum japonicum</i>	Katsura Tree
<i>Chionanthus virginicus</i>	Fringe Tree
<i>Cornus kousa</i> 'Summer Stars'	Summer Stars Dogwood
<i>Crataegus phaenopyrum</i>	Washington Hawthorn
<i>Ilex verticillata</i> 'Winter Red'*	Winter Red Winterberry*
<i>Magnolia stellata</i> 'Galaxy'	Galaxy Magnolia
<i>Ostrya virginiana</i> *	Hop Hornbeam*
<i>Oxydendron arboreum</i>	Sourwood
<i>Prunus sargentii</i>	Sargent Cherry
<i>Pyrus calleryana</i> 'Aristocrat'	Aristocrat Pear
<i>Pyrus calleryana</i> 'Bradford'	Bradford Pear
<i>Syringa reticulata</i> 'Ivory Silk'	Ivory Silk Tree Lilac
 <u>Deciduous Shrubs</u>	
<i>Cornus sericea</i> 'Kelseyi'	Kelsey Dwarf Red Osier Dogwood
<i>Ilex verticillata</i> 'Nana'*	Dwarf Winterberry*
<i>Rhus aromatica</i> 'Gro-low'	Dwarf Fragrant Sumac
<i>Vaccinium angustifolium</i> *	Lowbush Blueberry*
 <u>Groundcovers</u>	
<i>Cotoneaster horizontalis</i>	Rockspray
<i>Hedera helix</i> 'Baltica'	Baltic Ivy
<i>Juniperus chinensis sargentii</i>	Sargent Juniper
<i>Juniperus horizontalis</i> varieties	Creeping Juniper
<i>Spiraea bumalda</i> 'Anthony Waterer'	Anthony Waterer Spirea
<i>Vinca minor</i>	Periwinkle

* Native Plants

+ These plants are recommended for planting on portions of the site away from walks or roads.

3.07: continued

(4) List IV: Invasive Plants. Partial list of plants known to be invasive in Massachusetts. For a complete list of invasive and potentially invasive species, refer to the Invasive Plant Atlas of New England (IPANE). Species on these lists are prohibited from being planted in Devens.

Botanical Name	Common Name
<u>Shade Trees</u>	
<i>Acer ginnala</i>	Amur Maple
<i>Acer platanoides</i>	Norway Maple
<i>Acer pseudoplatanus</i>	Sycamore Maple
<i>Populus alba</i>	White Cottonwood
<i>Robinia pseudoacacia</i>	Black Locust
 <u>Deciduous Shrubs/Vines</u>	
<i>Ampelopsis brevipedunculata</i>	Porcelain Berry
<i>Berberis thunbergii</i>	Japanese Barberry
<i>Berberis vulgaris</i>	Common Barberry
<i>Celastrus orbiculata</i>	Oriental Bittersweet
<i>Cynanchum louiseae</i>	Black Swallow-wort
<i>Elaeagnus umbellata</i>	Autumn Olive
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Euonymus alatus</i>	Winged Euonymus
<i>Euphorbia cyparissias</i>	Cypress Spurge
<i>Hesperis matronalis</i>	Dame's Rocket
<i>Ligustrum obtusifolium</i>	Blunt-leaved Privet
<i>Ligustrum vulgare</i>	Privet
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>Lonicera maackii</i>	Amur Honeysuckle
<i>Lonicera morrowii</i>	Morrow's Honeysuckle
<i>Lonicera tatarica</i>	Tatarian Honeysuckle
<i>Lonicera xbella</i>	Morrow's x Tatarian Honeysuckle
<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Pueraria lobata</i>	Kudzu
<i>Rhamnus cathartica</i>	Common Buckthorn
<i>Rhamnus frangula</i>	Shining Buckthorn
<i>Rosa multiflora</i>	Multiflora Rose
 <u>Meadow Grasses/Wildflowers</u>	
<i>Achillea millefolium</i> var. <i>millefolium</i>	Common Yarrow
<i>Aegopodium podagraria</i>	Goutweed
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Cabomba caroliniana</i>	Fanwort
<i>Centaurea maculosa</i>	Spotted Knapweed
<i>Cirsium canadense</i>	Field or Canada Thistle
<i>Coreopsis lanceolata</i>	Lance-leaved Coreopsis (Tickseed)
<i>Cytisus scoparius</i>	Scotch Broom
<i>Daucus carota</i>	Queen Anne's Lace
<i>Egeria densa</i>	Giant Waterweed
<i>Epilobium hirsutum</i>	Hairy Willow-herb
<i>Euphorbia cyparissias</i>	Cypress Spurge
<i>Galium mollugo</i>	Field Madder
<i>Glaucium flavum</i>	Sea Poppy
<i>Glechoma hederacea</i>	Gill-over-the-ground (Ground Ivy)
<i>Holcus lanatus</i>	Velvet Grass
<i>Hypericum perforatum</i>	Common St. John's Wort
<i>Iris pseudacorus</i>	Yellow Iris
<i>Linaria vulgaris</i>	Butter and Eggs
<i>Lysimachia nummularia</i>	Moneywort
<i>Lythrum salicaria</i>	Purple Loosestrife

3.07: continued

Botanical Name	Common Name
<u>Meadow Grasses/Wildflowers</u> (continued)	
<i>Myosotis scorpioides</i>	True Forget-me-not
<i>Myriophyllum heterophyllum</i>	Variable Water-milfoil
<i>Myriophyllum spicatum</i>	Spiked Water-milfoil
<i>Najas minor</i>	Lesser Naiad
<i>Nasturtium officinale</i>	Watercress
<i>Phalaris arundinace</i>	Reed Canary Grass
<i>Phragmites australis</i>	Phragmites
<i>Plantago lanceolata</i>	Ribgrass (Lance-leaved Plantain)
<i>Poa compressa</i>	Canada Bluegrass
<i>Potamogeton crispus</i>	Curly or Crisped Pondweed
<i>Ranunculus acris</i>	Tall Buttercup
<i>Ranunculus bulbosus</i>	Bulbous Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Ribes rubrum</i>	Garden Red Currant
<i>Rumex acetosella</i>	Sheep Sorrel
<i>Rumex crispus</i>	Curled Dock
<i>Rumex obtusifolius</i>	Bitter or Broad-leaved Dock
<i>Solanum dulcamara</i>	Bittersweet Nightshade
<i>Trapa natans</i>	Water Chestnut
<i>Tussilago farfara</i>	Coltsfoot
<i>Verbascum thapsus</i>	Flannel-leaved Mullein
 <u>Lawn Grasses</u>	
<i>Agrostis gigantea</i>	Redtop, Upland Bentgrass
<i>Festuca longifolia</i>	Hard Fescue
<i>Festuca ovina</i>	Sheep Fescue

(5) List V: Street Trees.

(a) Shade trees that are particularly useful as street trees.

Botanical Name	Common Name
<i>Acer rubrum</i>	Red Maple
<i>Acer saccharum</i> 'Green Mountain'	Sugar Maple 'Green Mountain'
<i>Cladrastis lutea</i>	'Yellowwood'
<i>Fraxinus americana</i> 'Summit'	'Summit' White Ash
<i>Fraxinus pensylvanica</i> 'Patmore'	Green Ash 'Patmore'
<i>Liquidambar styraciflua</i> 'Rotundifolia'	Seedless Sweet Gum
<i>Liriodendron tulipifera</i>	Tulip Tree
<i>Nyssa sylvatica</i>	Tupelo
<i>Quercus alba</i> *	White Oak
<i>Quercus bicolor</i> *	Swamp White Oak
<i>Quercus palustris</i> *	Pin Oak
<i>Quercus rubra</i> *	Red Oak
<i>Tilia americana</i> 'Redmond'	Redmond American Linden
<i>Ulmus american</i> (disease resistant)	American Elm

(b) Street trees where no sidewalk or trail is located within the Right-of-way, all of the above species are recommended in addition to the following:

Botanical Name	Common Name
<i>Quercus alba</i>	White Oak
<i>Quercus bicolor</i>	Swamp White Oak
<i>Quercus palustris</i>	Pin Oak
<i>Quercus rubra</i>	Red Oak

3.07: continued

(c) Urban Conditions. In Village Growth I and II, ITC, BCS, and within the Historic District overlay, where development density and/or intensity of use may be higher, the following list of non-native urban-tolerant plant material is recommended in addition to 974 CMR 3.07(5): *List V*: (a).

Botanical Name	Common Name
<i>Acer platanoides</i>	Norway Maple
<i>Ginkgo biloba-male</i>	Maidenhair Tree
<i>Gleditsia triacanthos</i>	Honeylocust
<i>Platanus acerifolia</i> 'Bloodgood'	London Plane 'Bloodgood'
<i>Pyrus calleryana</i> 'Bradford'	Bradford Pear or 'Aristocrat'
<i>Tilia cordata</i>	European Littleleaf Linden*
	(*except on streets with on-street parking)
<i>Zelcova serrata</i> 'Village Green'	'Village Green' Zelcova

(6) List VI: Edible Landscape Plantings.* To promote locally grown foods, the following plants are recommended to satisfy landscaping requirements for commercial/industrial lots, residential parks, community gardens, and individual residential lots:

<u>Groundcover Herbs</u>	<u>Edible-fruiting Groundcovers</u>
Basil	Strawberry
Rosemary	Low-bush blueberry (<i>Vaccinium angustifolia</i>)
Thyme	Bunchberry (<i>Cornus canadensis</i>)
Mint	Wintergreen (<i>Gaultheria procumbens</i>)
Sage	Mountain cranberry (<i>Vaccinium vitis-idaea</i>)
Parsley	

<u>Foliage Crops</u>	<u>Vegetable Producing</u>
Swiss chard	Chili peppers
Rhubarb	Tomatoes
Kale	Eggplant
Lettuces	Brussels sprouts
Asparagus	
Beets	
Onions	
Purple cabbage	

<u>Fruit-bearing Trees</u>	<u>Nut-bearing Trees</u>
Apple	Walnut
Pear	Filbert
Cherry	
Peach	
Plum	

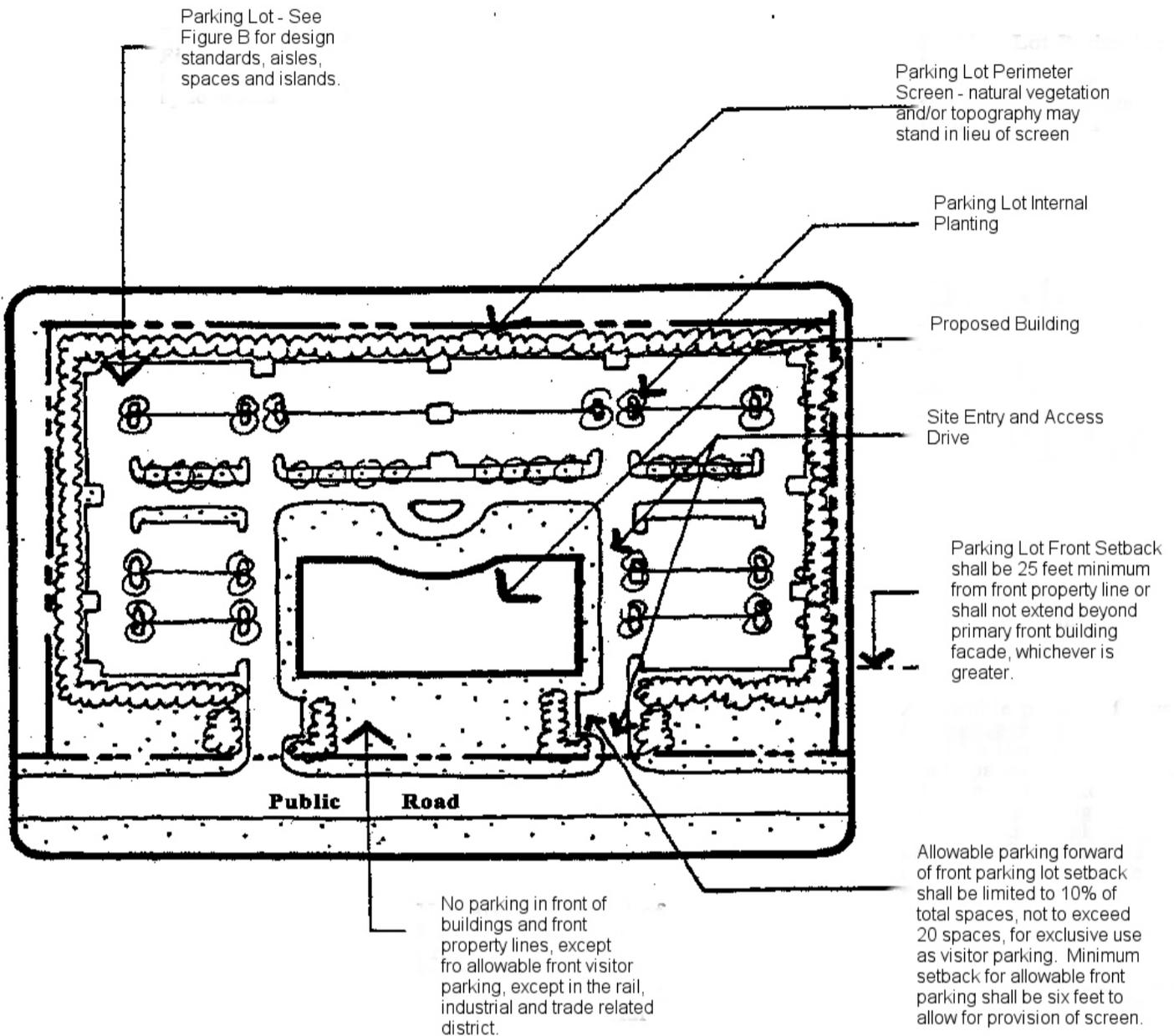
Traditional Landscaping Plants that Also Bear Fruit.
 Shadbush (*Amelanchier*)
 Grape, blueberry (*Vaccinium*)
 Flowering crabapple (*Malus*)
 Mountain ash (*Sorbus*)
 Aronia and elderberry (*Sambucus*)

*Ensure minimal use of non-organic, chemical fertilizers and pesticides is factored in to maintenance plans for edible landscape plantings.

REGULATORY AUTHORITY

3.08: Appendix B: Figures

(1) Figure A: Typical Parking Lot Design Standards.

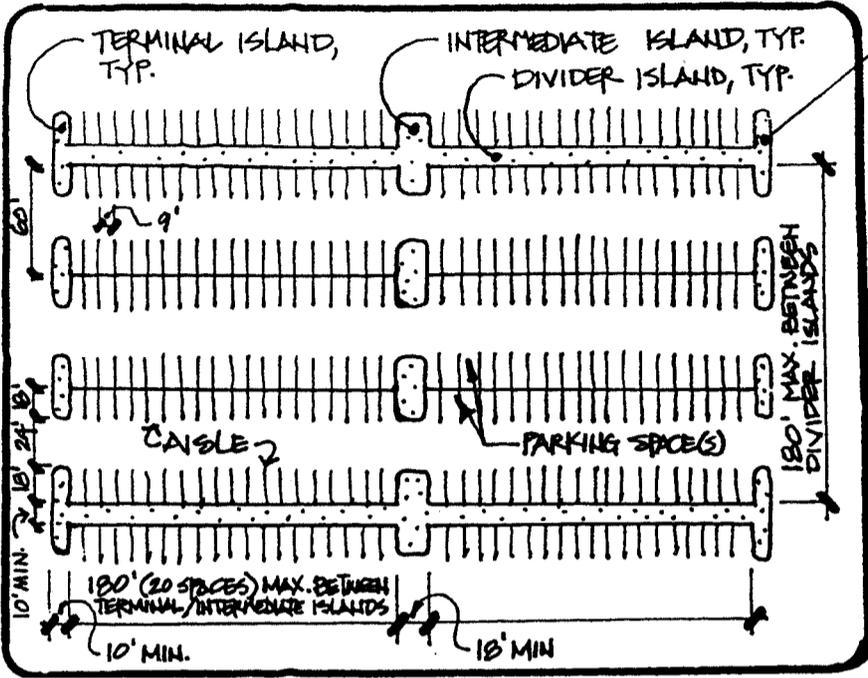


Note a. Parking lot & access drive side & rear setbacks shall be as described in the Design Standards

Note b. See Design Standards for complete description of parking lot perimeter and internal landscape requirements.

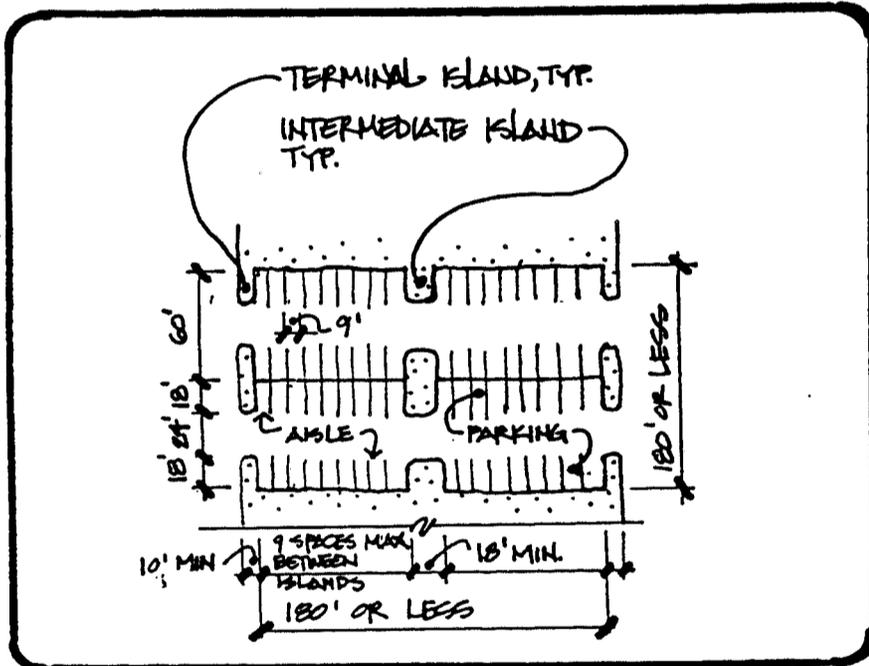
3.08: continued

(2) Figure B: Parking Lot Layout and Design Standards.



All islands must have no more than 25% impermeable surface. The remaining shall be planted with lawn as a minimum. Any proposed shrubs shall not exceed 4' in mature or maintained height to allow for visual surveillance within parking lot.

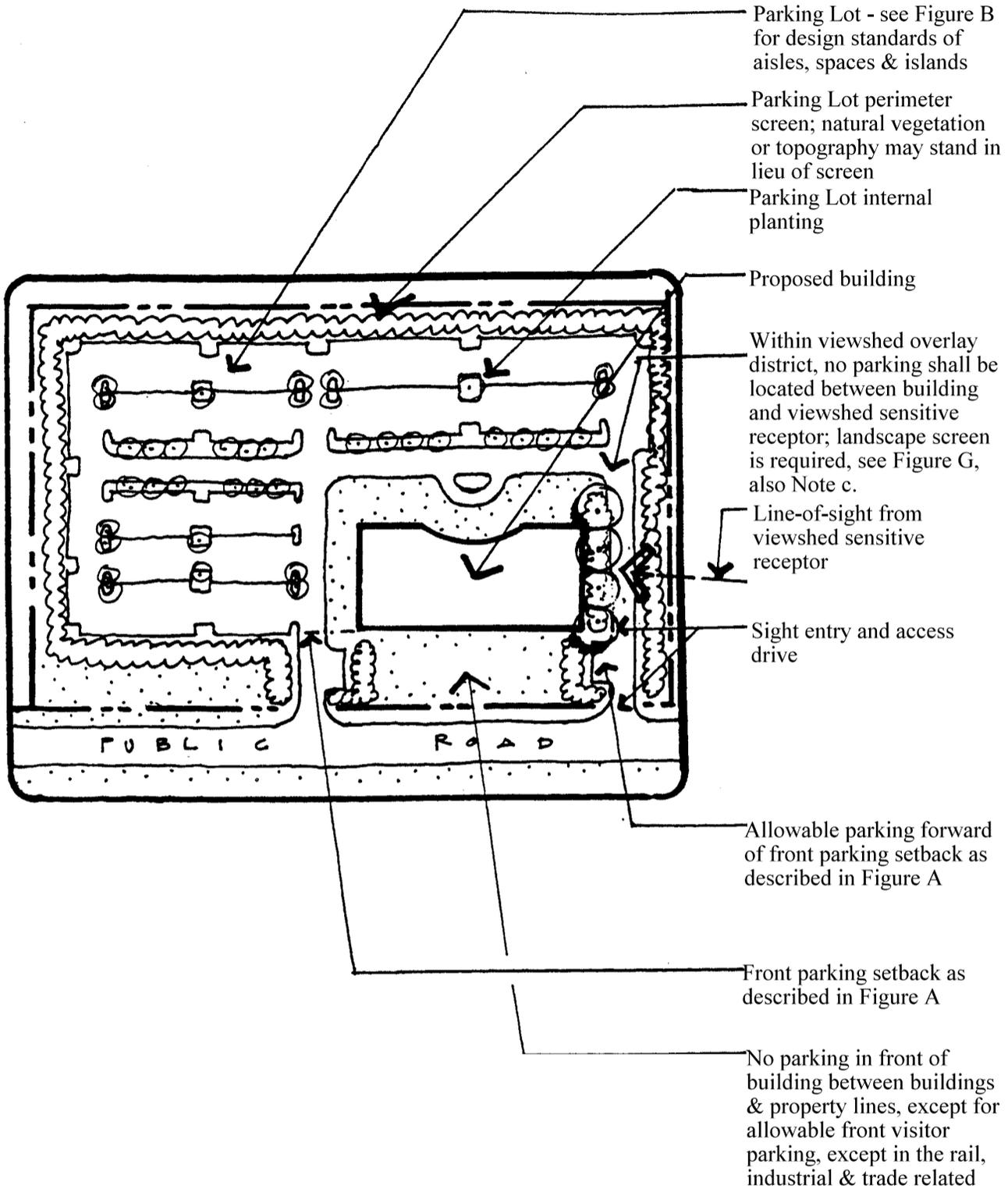
(a) For parking lots greater than 180 feet in either direction, provide intermediate and divider islands as shown above.



(b) For parking lots 180 feet or less in length (measured along length of aisle), provide intermediate islands as shown above.

3.08: continued

(3) Figure C: Parking Lot Design Standards Within Viewshed Overlay District.



Note a. Parking & access drive side & rear setbacks shall be as described in the Design Standards.

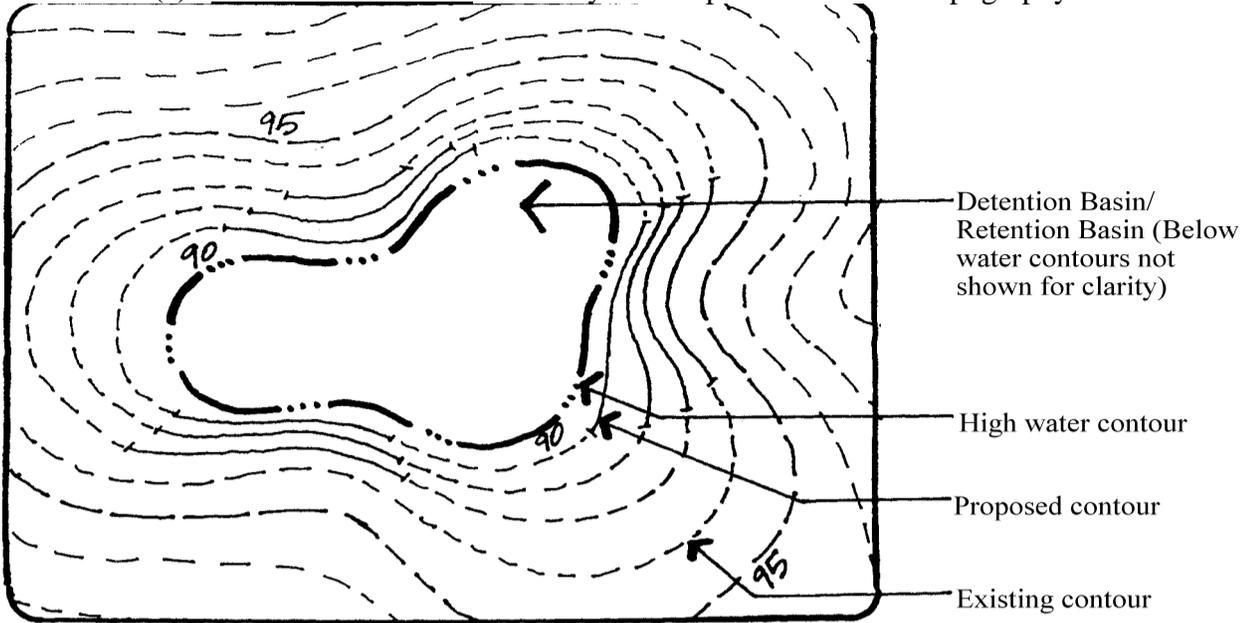
Note b. See Design Standards for complete description of parking lot perimeter and internal landscape requirements.

Note c. Visitor parking may be allowed between building and viewshed sensitive receptor.

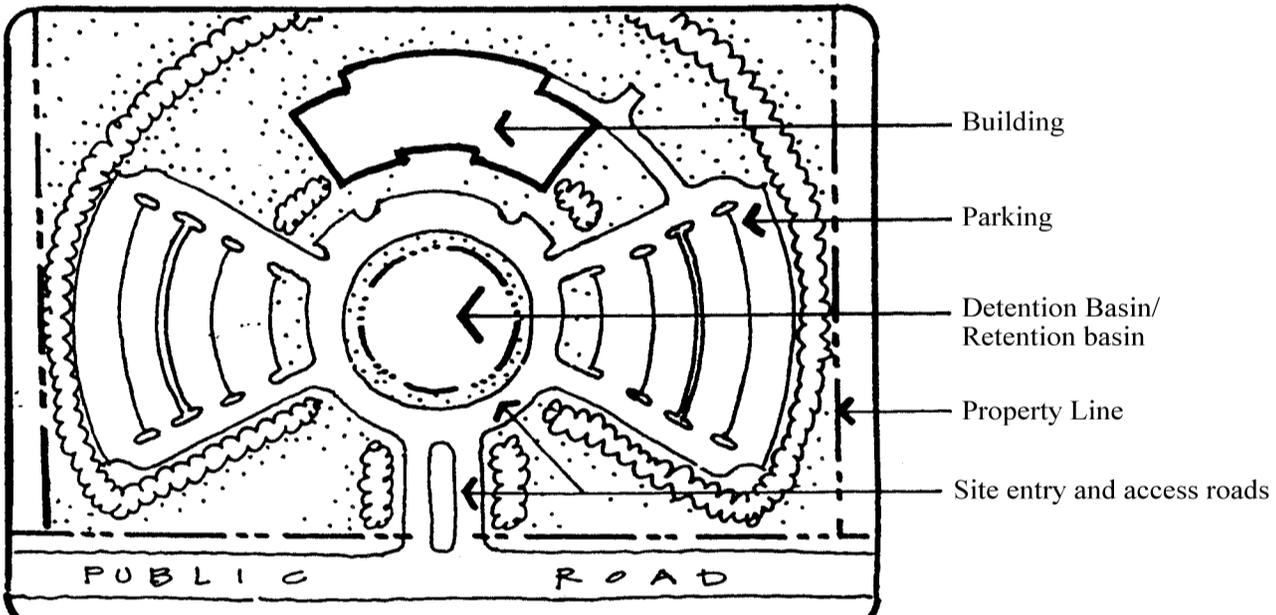
3.08: continued

(4) Figure D: Favorable Detention/Retention Pond Layout.

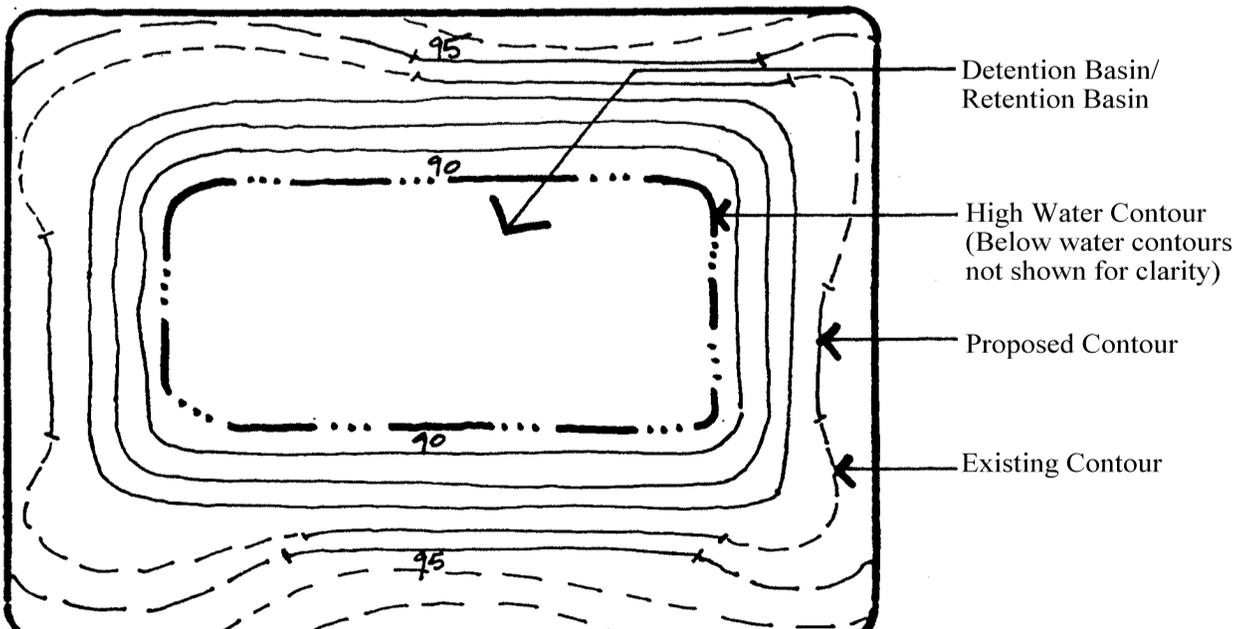
(a) Informal/naturalistic: basin layout complements natural topography



(b) Formal: Basin layout complements overall site design concept



(5) Figure E: Unfavorable Detention/Retention Pond Layout.

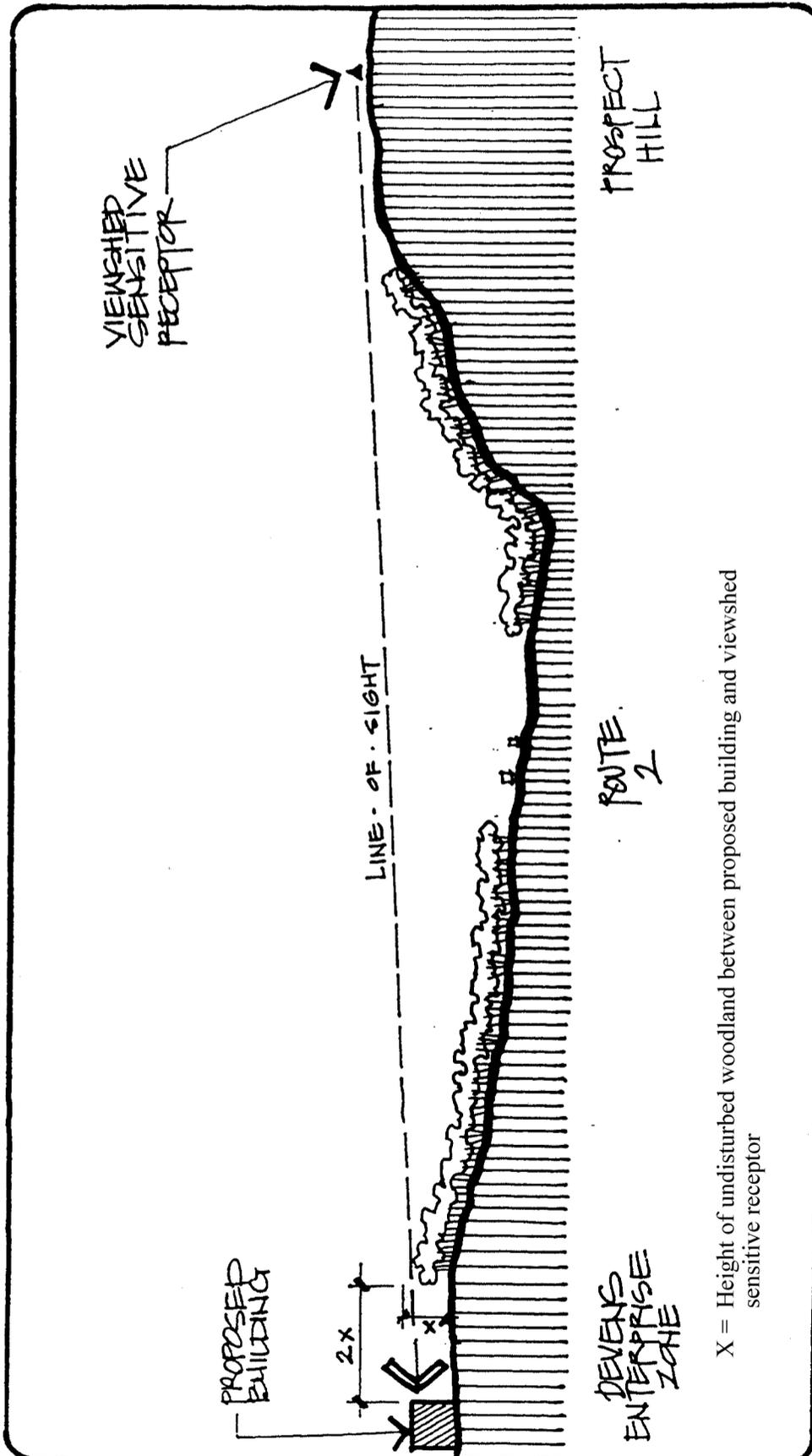


Rigid Geometry of Basin Layout Does Not Complement Natural Topography of Site.

3.08: continued

(6) Figure F: Siting Buildings Within The Viewshed Overlay District. The intent is to utilize existing undeveloped woodland and/or natural topographic features to help visually screen the building from the viewshed sensitive receptor. The following criteria apply:

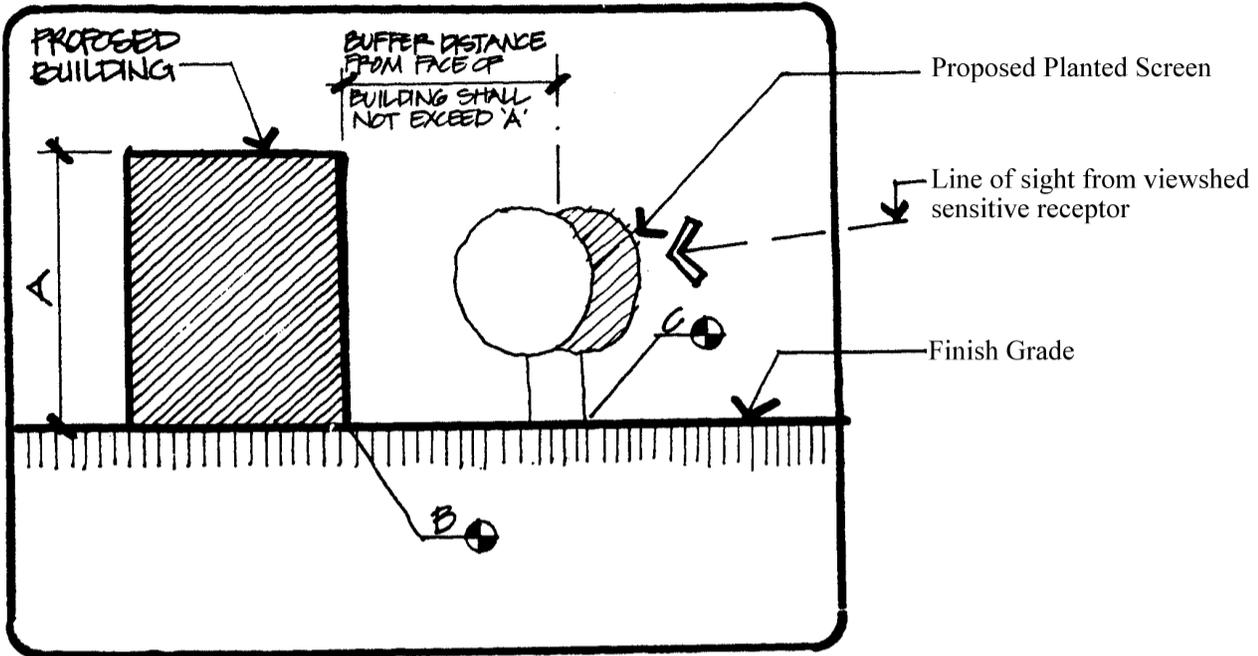
- (a) Where 'X' is equal to or greater than the height of the proposed building, a landscaped visual screen will be required on the side(s) of the building directly facing the sensitive receptor if the building is 2X or greater from the woodland edge. See 974 CMR 3.06(7) Figure G for landscape screen design criteria.
- (b) Where 'X' is less than the height of the proposed building, (or no natural vegetative or topographic screen exists), a landscaped visual screen will be required. See 974 CMR 3.06(7) Figure G.



3.08: continued

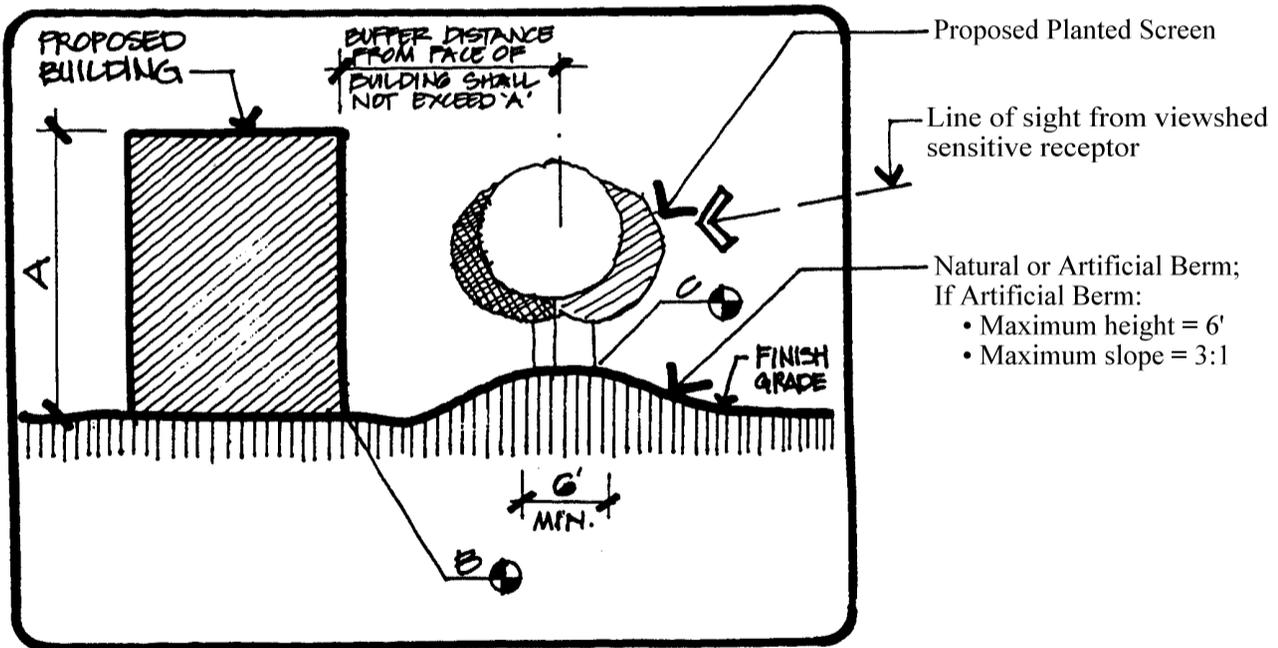
(7) Figure G: Landscaped Visual Screen Within Viewshed Overlay District.

(a) Where elevation is equal to Elevation C, trees shall be minimum four feet caliper with mature heights equal to or greater than A. Screen shall contain 25% of evergreen trees at ten feet height minimum.



(b) Where elevation B is lower than elevation C, tree caliper may be reduced by 1/2 inch or evergreen height can be reduced by 2.0 for every three feet of elevation to a min. Size of three feet cal. for deciduous trees, and six feet height for evergreen trees.

Where elevation B is higher than elevation C, deciduous tree sizes shall be increased by 1/2 inch and evergreen tree height increased by two inches for every two feet of elevation difference.



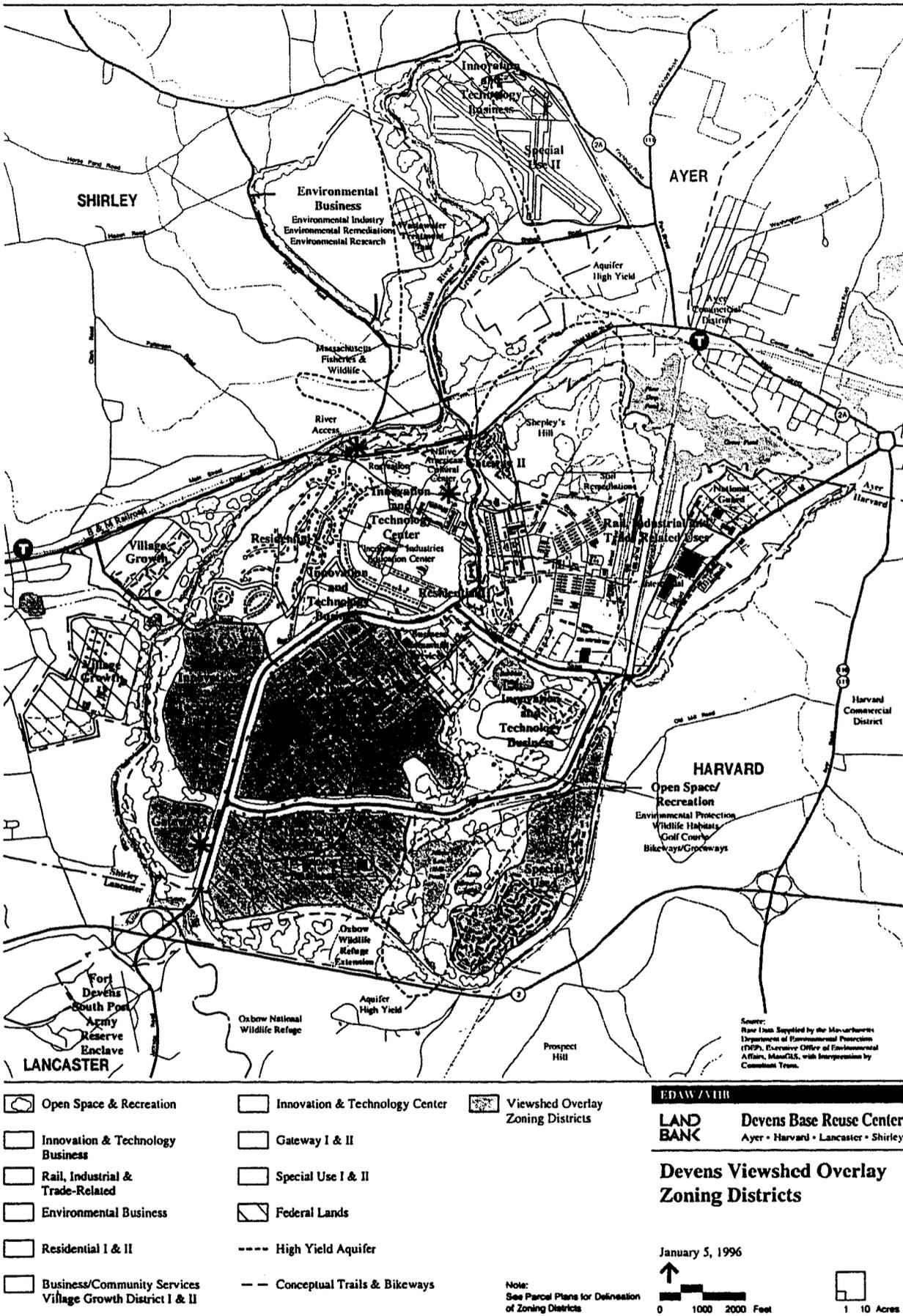
Note a. A = Height of building. B = Finish grade at face(s) of building directly facing viewshed sensitive receptor. C = Elevation at base of tree where trunk meets finish grade.

Note b. The requirements in this figure may be waived by the DEC if sufficient *existing* vegetative or topographic screening can be utilized to the same effect.

Note c. Tree buffer shall extend full length of building facing sensitive receptor. Trees shall be spaced 20 feet on center minimum. Trees shall be in two staggered rows with five feet minimum offset.

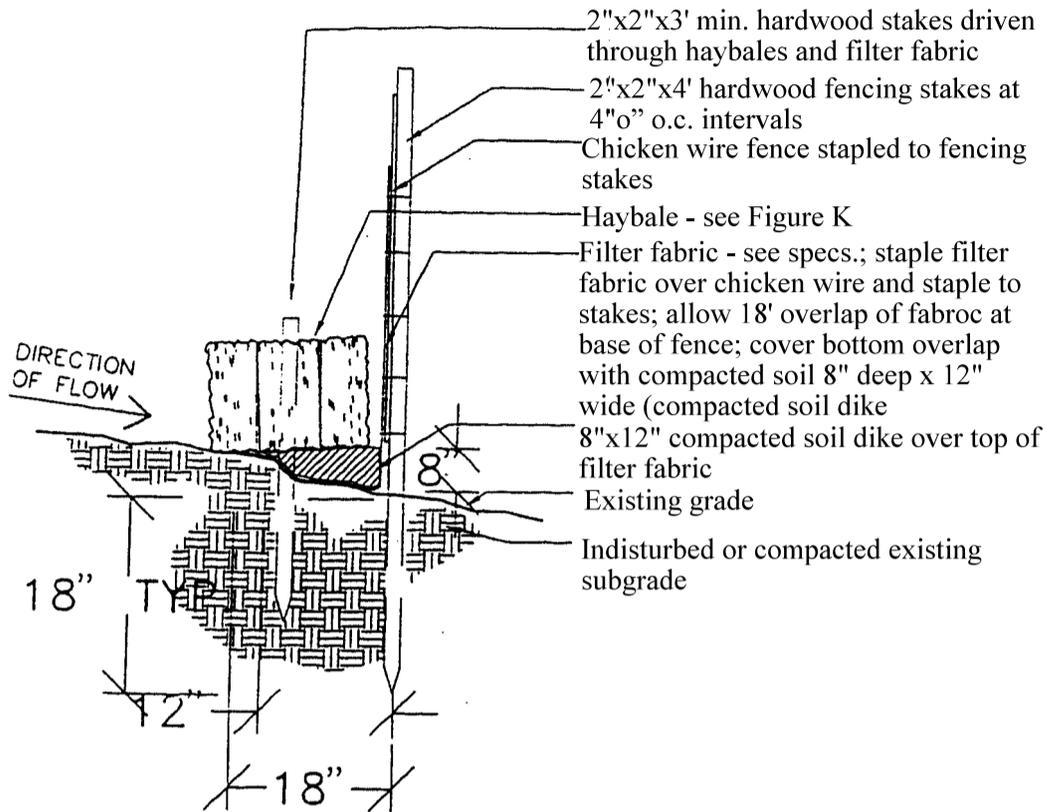
3.08: continued

(8) Figure H: Viewshed Overlay District.

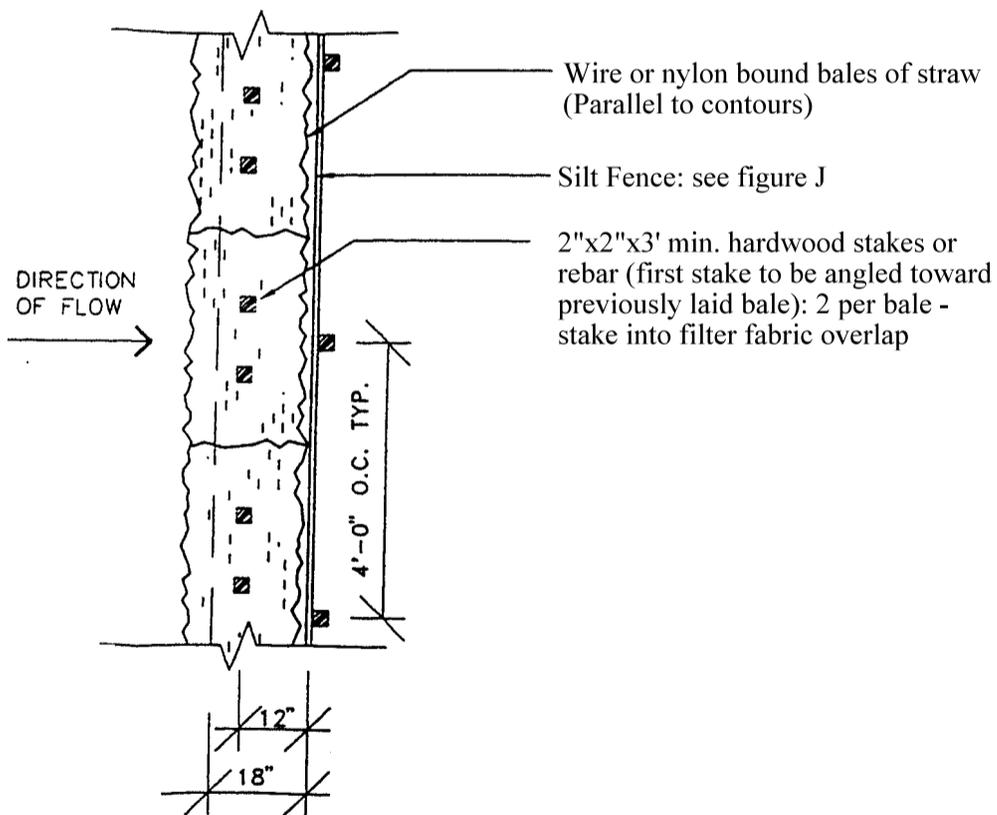


3.08: continued

(10) Figure J: Silt Fence.



(11) Figure K: Haybale Dike.



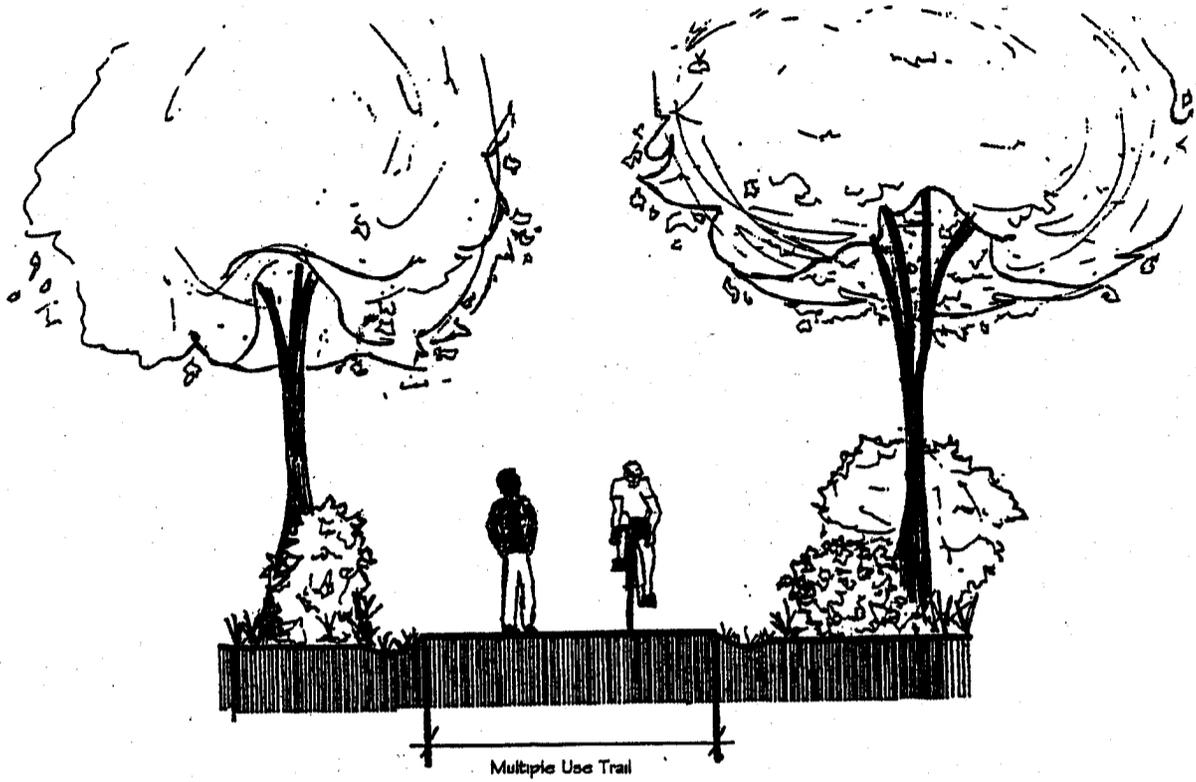
Note a. Bales shall be placed in a row with ends tightly abutting the adjacent bales.

Note b. Bales shall be securely anchored in place by 2"x2" hardwood stakes or rebar driven through the bales to a depth of one foot six inches minimum below grade; the first stake in each bale shall be angled to force bales together.

Note c. Inspection shall be frequent and repair or replacement will be made promptly as needed throughout duration of contract.

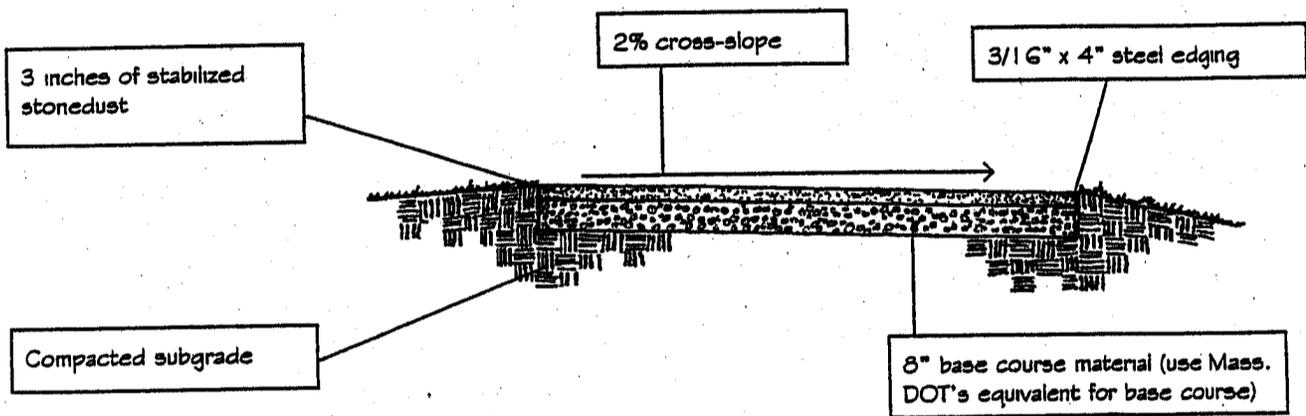
3.08: continued

(12) Figure L: Trail Detail.



Multiple Use Off-road Trail

Trails shall be designated primarily for pedestrian, bicycle, and equestrian use, as appropriate. The DEC shall determine the finished width.



3.08: continued

(13) Figure M.

