

PART 4: OWNER’S SITE STANDARDS

4.1. General Site Development Standards

- A. **Site Development:** open space around each project is to be designed to enhance the student learning experience, promote student interaction and engagement, and support community building on campus.
- B. **Integration of Building and Site:** all proposed project landscape design is to be consistent and coherent with the overall campus landscape. The landscape design for each project is to conform to the campus master plan and reinforce a unified character for the campus. The site design is to include integration of all new work with existing conditions and utilities within the proposed Limits of Disturbance (LOD) area and adjacent site and utility conditions. The following resources are to be reviewed for information that is critical to the success of the project:
 - 1. The current Facilities Master Plan and Utility Master Plan contain information regarding existing site and infrastructure conditions and planned future improvements.
 - 2. The most recent version of the **Conceptual Landscape Master Plans** document and the **Standards for Landscape Designs** documents contain the College’s current landscaping standards.
- C. **Demolition and Selective Demolition:** coordinate with the College to confirm extent and scope of demolition to be included in the project. Confirm and document existing conditions, including locations of existing utilities infrastructure, prior to preparing demolition drawings and specifications.
- D. **Subsurface Exploration and Evaluation and Foundation Recommendations:** the requirements for the sub-surface exploration and evaluation and the development of recommendations for foundation design are specific to each project, and are to be developed in coordination between the College team and the A/E during the development of the A/E services contract.
- E. **Site Remediation:** coordinate with the College to confirm the extent and scope of site remediation work for the project. Provide documentation to indicate the scope and the environmental regulations that are to be complied with during the construction phase.
- F. **Hazardous Materials Abatement:** request and review documentation from the College regarding findings from hazardous materials assessments for the project area. The College will perform all abatement of hazardous materials prior to commencement of demolition, renovation or construction, unless otherwise indicated. The A/E is to coordinate with the College to confirm whether any hazardous materials are to remain undisturbed in or adjacent to the project area. The A/E is to alert the College immediately if any hazardous materials are discovered during demolition, renovation or construction.
- G. **Excavations:** coordinate with the College to establish limits for excavation for the project, unit price requirements and documentation requirements. Coordinate the excavation scope with the results of the Subsurface Exploration and Evaluation work.
- H. **Paving:** the standard paver product for typical site conditions at which pavers are indicated is the “Traditional” 4” x 8” paver, in colors “Chocolate” and “Salmon/Charcoal Blend” by Hanover Architectural Products. See the **Landmark Gateway Signage** section below for a description of pavers at designated Landmark Gateway Signage locations.
- I. **Planting:** Consult the **Facilities Master Plan** and the **Standards for Landscape Designs** for hierarchy and vocabulary of the landscape elements on the campus. The following issues should be analyzed before planting material is selected:
 - 1. Maintenance: plants should be chosen for minimum maintenance. Avoid the overuse of ornamental plant materials as they may result in expensive maintenance requirements.

2. Physical conditions of the site: evaluate soil and climate conditions before selecting plant species.
 3. Visibility for security: broad visual access should be maintained in areas immediately adjacent to circulation routes.
 4. Circulation: use suitable plant material to regulate, reinforce and clarify intended movement paths of students, staff and visitors.
 5. Aesthetics: the design should be bold and simple. Forms and scale of the plants should be appropriate to the site and adjacent buildings. Attention is to be paid to seasonal colors of the plant material, to provide for year-round interest.
 6. Landscape sheets of all Construction Document sets must include a copy of all local jurisdiction Forest Conservation requirements for planting methods, soils, protection, etc.
- J. Outdoor furniture**: all outdoor furnishings are to conform to campus standards. Coordinate with the College to confirm current standards. Among other products, the standards include the following:
1. Planters: “Rosa” by Landscapeforms
 2. Table and Chairs: “Carousel” and “Manistee” by Landscapeforms
 3. Seating: “Plexus II” by Landscapeforms
 4. Trash Containers: “Plexus II” by Landscapeforms
 5. Umbrella: “Equinox” by Landscapeforms
 6. Bicycle Rack: “Ceres Bicycle Rack” by Hess America
 7. Bollard: “Regor Barrier Bollard” by Hess America
- K. Light Fixtures**: light fixtures to be located at campus pedestrian areas, parking lots and roads are to be as follows:
1. Light Fixtures for campus pedestrian areas: freestanding light fixtures for campus sidewalks, courtyards and other exterior areas are to be Model UCM LUM (GRN INNER LENS) BEL H3 150MH MT MAL FTG WIRED277V, by Architectural Area Lighting, with the following components:
 - a. Single Head Configuration: one Universe collection, Universe Medium (Horizontal Reflector) head with Bell Hood, Type 3 Horizontal Reflector, flat glass lens instead of sag glass lens, Matte Aluminum finish, Green Acrylic Inner Lens, Pulse start 150 Metal Halide ballast and medium base ED-17 lamp (GE). (#UCM LUM (GRN INNER LENS) BEL H3 150MH MT MAL FTG WIRED277V), one SLA20 Arm, one PR44R14 125 BC6 4 MAL BOLTS – AHEAD POST TOP ARM pole
 - b. Double Head configuration: two Universe collection, Universe Medium (Horizontal Reflector) heads with Bell Hood, Type 3 Horizontal Reflector, flat glass lens instead of standard sag glass lens, Matte Aluminum finish, Green Acrylic Inner Lens, Pulse start 150 Metal Halide ballast and medium base ED-17 lamp (GE). (#UCM LUM (GRN INNER LENS) BEL H3 150MH MT MAL FTG WIRED277V), one SLA20-2 arm, one PR44R14 125 BC6 4 MAL BOLTS – AHEAD POST TOP ARM pole
 - c. *Concrete footing for each pole is to match the College’s standard detail for footings for these poles*
 2. Light fixtures for roadways and parking lots: fixtures for these locations are to be pole-mounted “Archetype” AR Model (150 to 400 watt Mogul Base lamps) and SAR Model (75 to 175 watt Medium Base lamps) aluminum fixtures and poles with “Super TGIC powder coat paint over chromate conversion coating” by Kim Lighting. Coordinate optical system, lamp selection, quantity and array of heads and other fixture options with College to achieve appropriate lighting levels for each site application. *Concrete footing for each pole is to match the College’s standard detail for footings for these poles – see Civil Detail C.27 in Part 7 of this document.*

- L. **Site Accessibility:** see the site accessibility standards indicated in the **Accessibility** section in **Part 2 Owner’s Project Requirement** of this document.
- M. **Emergency Vehicle Accessibility:** access is to be provided to the building for fire trucks, police vehicles and ambulances. Access requirements for fire apparatus and other emergency vehicles shall be provided for in compliance with the College, Montgomery County Fire and Rescue Service, and local jurisdiction Fire Marshall’s requirements. In all emergency access areas requiring use of walkways for vehicular lanes, the walkways shall comply with structural and dimensional requirements to accommodate those vehicles. The A/E shall confirm requirements and coordinate review of proposed site plans for compliance with the College and the local jurisdiction Fire Marshal’s Office.
- N. **Forest Conservation:** all projects are to be developed in accordance with the Forest Conservation procedures and requirements indicated in the pertinent regulations for the jurisdiction in which the project is to be constructed, including referenced Maryland state standards and all tree replacement requirements. A thorough review of the statutes, the regulations, the *Rockville Forest Conservation Manual* and a current approved Forest Conservation Plan for the campus are necessary for a complete understanding of the law, the current agreements, and the A/E’s subsequent responsibilities.
- O. **Wetland and Floodplain:** the identification of regulated wetlands and floodplain areas within the site limits is required in accordance with Maryland Department of the Environment (MDE) regulations and guidelines. The identification of such areas shall be the first priority of the site design, and the existence of these areas shall be brought to the immediate attention of the College. Any disturbance within a non-tidal wetland or its buffer is subject to regulation as is construction within any 100-year floodplain. Approval from the appropriate reviewing agency(s) is necessary for any such disturbance or construction.
- P. **Service Area Standards:** building service areas are essential to the functioning of the building operations, but can be incompatible with other activities on or adjacent to the building site. Consequently, they shall be designed to minimize adverse visual and audio impacts and be screened as best as possible from adjacent buildings, open areas, and circulation pathways. Service requirements are to be accommodated in the building design starting in the Site Analysis and Program Verification Phase, as these factors will impact the building location, orientation and footprint. The following criteria should govern the design of the service area(s):
 - 1. Separation of public and private areas: the site development should be designed so that public and private spaces are clearly defined. Public parking areas located directly adjacent to service areas without visual separation can be a source of security problems and vehicular circulation conflict. Service areas shall be located to best avoid conflicts with pedestrians, vehicle circulation and incompatible activities such as recreation, and shall be screened from activity areas, public parking and public walkways.
 - 2. Consolidation, screening and access: service activity functions shall be consolidated in a service area so that loading/unloading impacts can be minimized. Parking for service vehicles shall, if possible, be located in the service area.
 - 3. Service vehicle access: provide for service vehicle access to the locations of receiving and service areas of the building, including access for delivery vehicles (including overnight deliveries), armored vehicles (if needed), maintenance vehicles and waste container vehicles. Service vehicle requirements are to be confirmed, documented and coordinated by the architect/engineer. See Emergency Vehicle Accessibility section above for related requirements.
 - 4. Material delivery and removal: delivery of materials for the operations of the building and its occupants’ functions shall be well accommodated. A receiving entrance shall be

created where adequate vehicular access is achievable, separated from pedestrian traffic, screened from adjacent functions and designated as a service entrance. A trash room shall be constructed to serve as a point for trash and recycling to be collected, stored, and transported to a dumpster located on this site or at another site. Design consideration is to be given to providing a loading dock at buildings where large quantities of materials are expected to be transferred into and/or out of the building. A vestibule or some other kind of second barrier should be included at the receiving area to provide a weather/temperature separation between the outdoors and the interior of the building.

5. Lighting: adequate site lighting around the building and at all service areas must be provided at levels that meet safety requirements, the lighting criteria of these College Design Standards, and the Energy Design Guidelines.

Q. Landmark Gateway Signage: the College has designated key gateway locations on campuses to be developed with “landmark” signage and landscape projects. Prototype designs for hardscape and signage elements have been developed for the first of these gateway locations, and plant and hardscape material selections have been made. These prototype design elements and plants are to serve as a “kit of parts” for future development of gateway signage at additional locations.

The Landmark Gateway prototype design elements include the following:

1. Curb and gutter (where street intersections are included in design area)
2. Accessible curb transitions and ramps (at walkway conditions)
3. Paving:
 - a. Paver: “Prest® Pavers”, 4x8, 3” thick, traditional natural finish, by Hanover® Architectural Products, Hanover, PA
 - b. Colors: Color A: “Charcoal,” Color B: “Limestone Gray”
4. Sign wall:
 - a. Foundation and wall structure: concrete
 - b. Wall finish (sides): stone veneer to be Alverson Limestone® in Select bluegrey to tan, by Greystone Quarries, Inc., Evans Mills, NY
 - c. Wall finish (top): ½” stainless steel plate
 - d. Letter characters: 0.050 inch thick stainless steel faces, 0.031” thick stainless steel returns, aluminum plate internal reinforcement
 - e. Letter supports: stainless steel
5. LED Display:
 - a. Foundation and wall structure: concrete
 - b. Wall finish (sides): stone veneer to be Alverson Limestone® in Select bluegrey to tan, by Greystone Quarries, Inc., Evans Mills, NY
 - c. Wall finish (top): ½” stainless steel plate
 - d. Display screen and cabinet: W-series, 16mm BOD, by watchFire Signs by Time-O-Matic Inc.
6. Campus Name Panel
 - a. Foundation: concrete
 - b. Base structure: stainless steel
 - c. Panel frame: aluminum
 - d. Panels: stainless steel
 - e. Letters: campus name letters digitally printed on stainless steel panel, in Meta Bold Condensed font
7. Changeable Banner
 - a. Foundation: concrete

- b. Base structure and banner frame: stainless steel
- c. Banner rods: stainless
- 8. Lighting for signage, campus name panel and changeable banner

The Landmark Gateway Signage plant species include the following:

- 1. Nellie R. Stevens Holly (Ilex x “Nellie R. Stevens”)
- 2. Yoshino Cherry Tree (Prunus x yedoensis)
- 3. Flowering Quince (Chaenomeles x superb ‘Jet Trail’)
- 4. Yew (Taxus baccata ‘Repandens’)
- 5. Lesser Calamint (Calamintha nepetoides ‘White Cloud’)
- 6. Catmint (Nepeta x faassenii ‘Walker’s Low’)

Coordinate with the College for parameters for adaptation of prototype elements and prior Landmark Gateway Signage project concepts for new project locations. Request more detailed documentation on the prototype elements from the College.

4.2. General Utilities Standards

A. Integration of Site and Site Utilities

- 1. Relationship of Design to Utility Management: (reserved)
- 2. Integration with existing conditions: the utilities design is to include coordinated solutions for utilities, utility capacities and connections for the building, as well as any proposed project scope for upgrades, re-routing or replacement of existing utilities infrastructure serving adjacent buildings, future buildings, and outdoor areas. The current Utility Master Plan contains information regarding existing infrastructure locations, routes and sizes, and for planned future improvements. The locations and depths below grade of all existing infrastructure that might be impacted by the proposed project, or might impact the proposed design or construction are to be field verified to serve as a basis for project scope confirmation and systems design.
- 3. Geographical Information System (GIS):
 - a. GIS system description: (reserved)
 - b. Above and below ground utilities GIS data gathering and assimilation: data gathered using GIS technology for utility and site surveys required for a project shall, at a minimum, conform to Utility Quality Level ‘B’ as defined by **CI/ASCE 38-02 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data**. When installation of new above and below ground utilities or tie-in to such utilities are required in a project, the as-built survey of the involved utilities shall be of Quality Level ‘A’ with associated “Utility Attributes” and “Depictions.” If the General Contractor is to gather the as-built data for the A/E team to compile in the final as-built drawings, this requirement shall be clearly defined in the project specifications

- B. **Stormwater Design:** the stormwater design solution for new construction and renovations must comply with the Maryland Department of the Environment (MDE)’s Stormwater Design Manual, including the requirements for Environmental Site Design (ESD). The goals of ESD are to use surface environmental features in lieu of man-made structures to treat stormwater for quantity and quality. The stormwater management component of new construction and renovation projects must first be served by ESD facilities to the maximum extent practicable. Any requirements not met after all ESD options have been exhausted may be provided by traditional stormwater infrastructure methods.

- C. **Water:** (reserved)
- D. **Sanitary Sewer:** (reserved)
- E. **Natural Gas:** (reserved)
- F. **Heated Water & Chilled Water:** (reserved)

- G. **Electrical Service Distribution to Site and Building:** see the *Electrical Distribution System* subsection of the *General Electrical Systems Standards* section of **Part 5: Owner’s Building Construction Standards** of this document.
- H. **Exterior Below-Grade Conduit and Ducts:** the below-grade routing for electrical service is to comply with the following criteria:
1. Coordinate with the College to determine which below grade power feeds are to be routed through individual conduit, and which are to be routed through grouped conduit in concrete ductbanks.
 2. Quality Assurance: all underground ducts and raceways are to comply with ANSI C2 and NFPA 70
 3. Conduit:
 - a. Rigid Steel Conduit: galvanized. Comply with ANSI 80.1
 - b. Rigid Nonmetallic Conduit: NEMA TC 2, Type EPC-40-PVC and Type EPC-80-PVC, UL 651, with matching fittings, complying with NEMA TC 3 and UL 514B
 4. Below-Grade Duct Application:
 - a. Ducts for Electrical Feeders 600 V and Less: RNC, NEMA Type EPC-40-PVC, in concrete-encased duct bank, 2-inch minimum diameter, unless otherwise indicated
 - b. Ducts for Electrical Branch Circuits: RNC, NEMA Type EPC-40-PVC, in direct buried duct bank, 2-inch minimum diameter, unless otherwise indicated.
 - c. Underground Ducts for Telephone, Communications, or Data Utility Service Cables: RNC, NEMA Type EPC-40-PVC, in concrete-encased duct bank, unless otherwise indicated.
 5. Below-grade Duct Installation:
 - a. Slope: Pitch ducts a minimum slope of 1:300 down toward handholes and away from buildings and equipment. Pitch ducts a minimum slope of 1:50 down away from buildings for first 15 feet from building.
 - b. Curves and Bends: use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches horizontally and vertically, at other locations, unless otherwise indicated.
 - c. Joints: use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer’s written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.
 6. Concrete-Encased Ducts:
 - a. Support ducts on duct separators
 - b. Separator Installation: space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet of duct. Secure separators to earth and to ducts to prevent floating during installation of concrete. Stagger separators approximately 6 inches between tiers. Tie entire assembly together using non-metallic straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.
 - c. Minimum Space between Ducts: 3 inches between ducts and exterior envelope wall, 2 inches between ducts for like services, and 4 inches between power and signal ducts.
 - d. Depth: install top of duct bank at least 24 inches below finished grade in areas not subject to deliberate traffic, and at least 30 inches below finished grade in deliberate traffic paths for vehicles, unless otherwise indicated.
 7. Direct-Buried Duct Banks:
 - a. Support ducts on duct separators coordinated with duct sizes, duct spacing, and outdoor temperature.

- b. Space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6” between tiers.
 - c. Install ducts with a minimum of 3 inches between ducts for like services and 6 inches between power and signal ducts.
 - d. Depth: install top of ducts at least 36 inches below finished grade, unless otherwise indicated.
 - e. Set elevation of bottom of duct bank below the frost line.
- 8. The use of hand-holes or other exterior below-grade electrical junction/splice boxes is prohibited except with prior written approval by the College. Below-grade Hand-holes and junction boxes will be allowed for pulling cable through, with no splices. Hand-holes with cable splices will be considered for well-drained locations at high points in the grade, where the incursion of water is unlikely.
 - 9. Provide continuous conduit and cable from pole light fixture or other device to the next pole light fixture or other device, making all connections above grade. Coordinate with College regarding the solution for remediation of existing conditions where existing exterior fixtures or power systems will be altered.
- I. **Information Technology:** (reserved)