

STATE UNIVERSITY CONSTRUCTION FUND

PROGRAM DIRECTIVES

DIRECTIVE 2-1

Issue date: September 2012

SITWORK OVERVIEW

1. General

This Directive outlines the Fund's requirements for the Consultant relative to the development, design and presentation of documents containing sitework elements. Design guidelines for architectural and aesthetic aspects are covered by design vocabularies developed for individual campuses by their respective master plans, campus standards, and/or as identified in project site programs.

2. Policy

- a. The design and development of sitework documents shall be the responsibility of the qualified consultant as approved by the Fund. At the project's orientation meeting, the Consultant shall review the allotment of responsibility with the Fund.
- b. This Directive has been developed as a general guide for the site engineering and landscape aspects for Fund projects. While the scope of sitework will vary between projects, the Consultant is required to review this Directive and apply the requirements outlined herein as appropriate.

3. Planning

- a. The Consultant shall review Campus vocabulary and design standards with Campus and Fund. See Directive 1C-10 Coordination with Individual Campus Standards.
- b. The Campus has aerial topographic mapping and limited utility mapping which may be made available to the Consultant. This mapping may be sufficient in early phases of design to discuss general site features and provide an overview of utilities. These documents shall not be used as the basis of design for sitework and for the development of contract documents.
- c. The use of smaller scale drawings is acceptable for site orientation or for providing a diagrammatic project overview. Site drawings shall be based on an acceptable engineering scale; the use of architectural scale for sitework is not generally acceptable.

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4. Project Mapping

- a. The Consultant shall be required to retain the services of a licensed surveyor for the purposes of documenting existing field conditions. (Coordinate with Directive 1C-12 Survey Mapping and Utility Locating.) Unless included in the lump sum fee or the Schedule B of the Consultant's Agreement, the services and fees related to project mapping as described in this Directive may be provided through extra compensation when approved by the Fund.
- b. Project mapping shall be a minimum scale of 1 inch = 50 feet. The field survey shall include, but may not necessarily be limited to, the following: property lines, rights-of-way, easements, topographic data and supplemental spots, finished floor elevations for adjacent buildings, site utilities, identification of asphalt and/or concrete pavements, walkways, plazas, curbing, pavements, signage, fencing, bollards, landscape and site amenities, etc.

5. Document Organization

While the Fund does not currently specify or require specific drafting and layering standards, the Consultant's documents shall be organized such that the components of the work may be readily manipulated when working with CADD files. Specific campuses may have CADD standards and layering preferences and as such those should be adhered to when available. Depending on the extent of the sitework associated with a project, the Fund's preference for sitework documents is as discussed below.

- a. Existing Conditions Plan: This plan should reflect existing topography, as-built information, and utilities as developed from a field survey. This plan shall be included in the contract documents in order to convey existing terrain, utilities, structures and site amenities. Benchmark and baseline data shall be provided on this plan. Refer to Survey, Mapping and Utility Locating directive for additional information.
- b. Site Plan:
 - 1) The site plan shall provide information for proposed site improvements such as roadways, parking, walkways, major outdoor spaces, athletic fields, lawns, handicap accessibility, site amenities, exterior stairs and walls, loading docks, signage, site lighting, bollards, etc. The plan shall provide descriptive information for construction requirements, detail references, and construction layout.

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- 2) This plan shall be coordinated with campus activities specific to the project and with adjacent building and spaces. Routes for firefighting apparatus, building egress and accessibility removal, trash removal, and delivery/service access shall be identified.
 - 3) Those proposed site features including building footprint, walkways, pavements, curbing etc. shall be shown consistently on all site drawings with the exception of survey and removal plans. Where required, larger scale details shall be provided and referenced accordingly.
- c. Landscape Plan
- 1) Depending on the extent of landscape proposed, a landscape plan shall include locations of plantings, landscape legend, identification of various groundcovers, tree protection, etc. The selection of the material shall be reviewed with the Campus.
 - 2) In some instances these plans may contain design detail for terraces, major outdoor spaces, hardscape areas, paving, and site amenities such as benches, planters, bollards, fencing, exterior stairs, and walls, paving, wayfinding signage, etc.
- d. Removals/Demolition Plan:
- 1) The intent of this plan is to identify and clarify the limits of removal and abandonment in order to supplement the complete set of contract documents.
 - 2) This plan shall identify the following: limits of pavement, curbing, sidewalk removals extend of removed utilities and structures, identification and methodology of utilities appropriate to be abandoned in place, etc. Such removals and abandonments should be identified through means of shading and/or hatching. Where warranted, the Consultant shall obtain and identify the composition of materials (including extent of concealed steel reinforcement) in order to provide a basis for the contractor's bid.
 - 3) Actual removal of such features from the survey base mapping is not the preference of the Fund since existing features (specifically site features and utilities) are helpful in orienting work and in facilitating phasing of the work.

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e. Grading Plan

- 1) The grading plan shall provide proposed contours and elevation information as required, no greater than 2 foot interval. Spot shots shall be included at high and low points, along interfaces with existing, and as needed to supplement design intent. Frame elevations for new utility structures and those existing structures which require resetting shall be identified. The plan shall also identify resetting of other surface features such as valve boxes and utilities specify cross slopes along sidewalks and pavements, grades for curbs and curb cuts, landscape berms, top and bottom of walls and planters, etc.
- 2) This plan shall be coordinated with road profiles and banking diagrams when major road improvements are associated with the work.
- 3) The Consultant shall investigate requirements of federal, state and local stormwater ordinances including mitigation of runoff related to development, stormwater detention, flow attenuation, and stormwater discharges. Findings shall be reviewed with the Campus and Fund; the College must understand and agree to all maintenance responsibilities associated with all post construction stormwater practices.
- 4) With regard to earthwork activities, the design shall attempt to balance cut and fill, providing the on-site soils are appropriate for the intended use and that there is space available for stockpiling. The suitability of on-site material for reuse shall be reviewed and the appropriate uses for on-site material documented and identified. The Consultant shall review and be mindful of the existence of soil condition, rock, and groundwater in developing foundation, site, and utility designs.
- 5) The Consultant will be required to provide general sedimentation and erosion control information on the grading plan or other appropriate plan regardless of the limits of disturbance. This plan shall set the minimum requirements for the contractor and shall reference the *New York State Guidelines for Urban Sedimentation and Erosion Control*. The plans shall identify general locations for measures such as stabilized construction entrance, silt fencing, hay bales, inlet protection, slope stabilization, temporary seeding, tree protection, etc

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- 6) Consultant shall review the project's requirements as related to the New York State Department of Environmental Conservation's permits for construction activities and stormwater discharges. The Fund will apply for the appropriate SPDES permit. This is addressed in Directive 2-4 Stormwater Management and Sedimentation/Erosion Control.
 - 7) Where soil restoration is required in order to be in compliance with the project's Stormwater Pollution Prevention Plan (SWPPP), these limits shall be clearly identified to this plan.
- f. Roadway Profiles and Banking Diagrams
- 1) The Consultant shall develop roadway profiles and banking diagrams when project involves new roadways or extensive reconstruction of existing roadways. These shall contain centerline stationing, geometric information for vertical alignments, proposed and existing grade lines, centerlines for intersections, rock profiles (when appropriate), etc. Where appropriate, utility information can be included as well. Banking diagrams shall be provided when cross slopes varies or deviates from a typical crowned section.
 - 2) Site plans shall include centerline stationing and geometric information of horizontal alignments. Grading plans shall contain centerline station elevations, both existing and proposed.
 - 3) Refer to Directive 2-2 Campus Roads and Pavements.
- g. Utility Plan
- 1) Site utilities shall be laid out and detailed in plan view on a consolidated Site Utility Plan. These utilities are identified in Directive 2-2-3 Site Utilities.
 - 2) Separate utility plans by discipline (i.e. mechanical, electrical, etc) are not preferred as those do not lend themselves to coordinated site utility installations. The installation of ductbank, power/communication manholes, HTHW, etc needs to be closely coordinated both horizontally and vertically with storm, sanitary, water, etc. for example. Where appropriate, based on the extent of required work and subsequent detail, utility plans may be further divided into specific plans (i.e. site electrical, storm drainage, etc) provided the installation of these utilities has been

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properly coordinated. Wiring diagrams, line diagrams etc. for site utilities shall be coordinated and referenced accordingly.

- 3) Building services shall be properly coordinated and shall include pipe size, material type and invert at building face.

g. Utility Profiles

- 1) It is the policy of the Fund to require the preparation of profiles for utilities as necessarily to adequately describe and identify their installation and conflicts with existing and proposed utilities.
- 2) The location and elevations of existing utilities shall be determined through either field investigation or confirmed as-builts. When unable to be identified, depths of bury shall be assumed based on standard construction and engineering practice. Assumed locations shall not be used in congested areas or near proposed structural footings.
- 3) Profiles should show assumed elevations of rock where encountered so that bidders can quantify such work during bid.

h. Phasing and Construction Staging Plan:

- 1) While it is the Contractor's responsibility to determine means and methods, the intent of this plan is to identify the minimum requirements and standard of care as to how the project site will be secured, accessed and maintained. See Directive 1D-4 Construction Site Requirements. This plan shall include but not be limited to: identification of material and location for securing the site, fire department access during construction, location of secured storage area, construction access, stabilization of construction access roads, temporary roads and walks, contractor parking, signage (including detours, closing of sidewalks, project signage, construction warning signs, etc), identify routes ongoing Campus activities, safe pedestrian movements, temporary utilities, construction trailer, etc.
- 2) As warranted, the plans and specifications shall identify milestone completion dates for significant sections of the work which shall be coordinated with the Campus and Fund.

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- 3) Maintenance and protection of traffic signage and requirements shall be detailed for work impacting campus roadways and parking. Access for emergency and Campus service vehicles shall be reviewed and special requirements shall be included in the contract documents under the Special Conditions section of the Contract's written specifications.

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