Design Manual Phase Checklist

The following checklist show the general items required by the Agreement and the Program Directives. Unless included in the lump sum fee or the Schedule B of the Consultant’s Agreement, some items below related to existing conditions and capacities may be provided through extra compensation when approved by the Fund. Provide those items that are applicable to the actual scope of this project. Since this Checklist repeats portions of the Schematic Phase Checklist, major changes are shown in **bold** type face.

(A) **Design Manual Report**: Based on the approved Schematic deliverables and by revising the approved Schematic Phase Report, provide the applicable content listed below:

(1) Cover page contains the Project No., Project Name, Campus, Architect and other Consultants

☐ Yes  ☐ NA

(2) Contents page has a table of contents and all pages are numbered.

☐ Yes  ☐ NA

(3) Incorporates all comments made during reviews by the Fund and campus.

  a) Provide copies of all comments with responses in an appendix.

  ☐ Yes  ☐ NA

  b) List all changes, if any, to building, site and equipment programs.

  ☐ Yes  ☐ NA

  c) Provide copies of meeting minutes in an appendix.

  ☐ Yes  ☐ NA

  d) Provide copies of all campus standards in an appendix.

  ☐ Yes  ☐ NA

  e) **Provide representative photos and images via email to coordinator.**

  ☐ Yes  ☐ NA

(4) Provides the Consultant’s certification of completeness per Directive 1A-5, item 1e and confirming that documents comply with all applicable campus standards.

☐ Yes  ☐ NA

(5) **Updates the** Executive Summary, describing program, costs and schedule.

☐ Yes  ☐ NA

(6) **Updates the** analysis of the project work area indicating the status of all data required for a complete design, including:

  a) **Updates the** existing condition analysis of the work area.

  ☐ Yes  ☐ NA
b) Confirms that surveys for topographical, utility, asbestos, and hazardous material data, borings and geo-technical studies, as built/field measured drawings and other data required for the design have/will be obtained by the Consultant when needed to complete the design work.

ii) Append geotechnical report per Directive 1C-5 and asbestos, lead and hazardous material survey results.

iii) Confirm that project survey mapping per Directive 2-1 is complete for all work areas.

c) Updates the listing of Governing Agency submissions required per Directive 1D-3. Confirmation that right of way improvements, if any, have been reviewed with AHJ per Directive 2-2.

d) Confirm that design meets all campus standards per Directive 1C-10.

(7) Updates the analysis describing the construction phasing of the project, including:

a) Describes time frames for when the work area(s) are available.

i) Describes known time restrictions due to site availability, shut down / cutovers, etc.

ii) Describes known special events, environmental limitations, etc. that may impact the work.

b) Describes temporary work necessary to maintain adjacent occupancies in active use.

i) Describes alternate pedestrian routes

ii) Describes alternate vehicle routes / parking

c) Describes a general sequence of the construction of the major project components by phase, contract or other delivery method.

i) Describes a construction access route

ii) Describes a construction trailer / office for onsite representation

iii) Describes site stabilization / underpinning.

iv) Describes phasing of construction to fit campus occupancy.

d) Recommends unit prices per Directive 1D-1.
Provide confirmation that the applicable Directive noted below has been reviewed, updates the description of significant design criteria and issues related to the applicable Directive (including proposed variation, if any, from the applicable Directive), and updates the brief description of the design approach to the applicable Directive:

a) For the proposed design concepts, spatial interrelationships, forms and massing.
   i) Describe internal spatial interrelationships at the program level.  □ Yes □ NA
   ii) Describe spatial relationships to programs in existing and proposed buildings.  □ Yes □ NA
   iii) Describe how design facilitates/controls work flow, way finding and access and other programmatic interactions.  □ Yes □ NA
   iv) Describe how it relates to local vocabulary per Directive 1C-3.  □ Yes □ NA

(1) Provide a brief description of all significant materials and finishes.  □ Yes □ NA
(2) Provide representative samples of significant exterior materials at the Design Manual presentation.  □ Yes □ NA
(3) Provide three sets of actual samples of significant interior and exterior materials on boards keyed to plans per Directive 1C-3.  □ Yes □ NA
(4) Provide an analysis justifying the proposed materials and components based on their historical performance compared to other available options.  □ Yes □ NA

v) Describe how it relates to historic context per Directive 1C-9. Summarize SHPO review status per Directive 1C-9. Append reports, letters of resolution, etc. Confirm that design complies with all SHPO comments.  □ Yes □ NA

vi) Describe masonry walls per Directive 4-1.  □ Yes □ NA
vii) Describe roofing materials per Directive 7-1.  □ Yes □ NA
viii) Updates the economic analyses provided for the concept report justifying the proposed structural, mechanical, electrical, etc. systems through a comparison with available options.  □ Yes □ NA
ix) **Updates the analyses** of the constructability of significant building systems and components, verify their ability to be fabricated and local availability.

x) **Updates the** analysis of the maintainability and operational efficiency of the completed project.

(1) Confirm compliance with campus standards for window cleaning.

xi) **Updates the** analysis of the effect of the proposed work on the existing campus, systems and building components. For work in existing buildings, provide photographic documentation of existing areas where work will occur.

xii) For laboratory buildings, **update** the design criteria and confirm compliance with campus standards.

xiii) If the project has a sound system, **update** the design criteria and confirm that there is a plan in place to address the design questions from applicable campus staff.

xiv) If there are vertical transportation systems, **update** the design criteria and confirm that at least one elevator serves each mechanical space and mezzanine.

xv) **For each anticipated technical specification section, provide catalog cuts of all major equipment, materials and systems.**

b) **For the proposed site design concept.**

i) Describe proposed landscaping. **Describe proposed landscaping, paving, drainage, etc. improvements based on geotechnical report findings.**

ii) **Update the** site work overview following the format of Directive 2-1.

(1) **Describe the type of emergency and service vehicle or equipment for which loading facilities, trash removal, window washing or road/walkway systems are to be designed**

(2) **Describe site improvements, earthwork, site utilities connections and capacities, erosion/sediment controls, and other engineering aspects.**
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<td>(3) Confirm that available utilities have sufficient capacity to support the work, or propose means to supplement or provide such utilities as part of the project.</td>
<td>□ Yes □ NA</td>
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<td>(4) <strong>Update the</strong> overall estimates of earthwork removed and backfill required</td>
<td>□ Yes □ NA</td>
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<td>(5) <strong>Update the</strong> total square footage / acreage of site.</td>
<td>□ Yes □ NA</td>
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<td>(6) Describes extent of rock excavation per Directive 2-5</td>
<td>□ Yes □ NA</td>
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<td>iii) Describe roads and pavements per Directive 2-2.</td>
<td>□ Yes □ NA</td>
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<td>iv) <strong>Show calculations for applicable site utility systems design loads and summarize design criteria. Provide storm drain calculations and sanitary system calculated peak flow</strong></td>
<td>□ Yes □ NA</td>
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<td>v) Environmental requirements per Directive 2-4.</td>
<td>□ Yes □ NA</td>
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<td>(1) <strong>Bind Storm Water Pollution Prevention Plan in Appendix</strong></td>
<td>□ Yes □ NA</td>
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<td>vi) <strong>Where building demolition is contemplated, confirm that SUNY has “surplused” the structure per Directive 1D-2.</strong></td>
<td>□ Yes □ NA</td>
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<td>vii) Describe <strong>compliance with Directive 16-7 for electrical distribution</strong></td>
<td>□ Yes □ NA</td>
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<td>viii) For each anticipated technical specification section, provide catalog cuts of all major equipment, materials and systems.</td>
<td>□ Yes □ NA</td>
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<td>c) <strong>Update the</strong> structural system descriptions (Directives 3-1 and 5-1).</td>
<td>□ Yes □ NA</td>
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<td>i) <strong>Update the</strong> structural and seismic analyses required by the Building Code of New York State.</td>
<td>□ Yes □ NA</td>
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<td>ii) <strong>List Special Inspections required by the Building Code of NYS and estimate their cost to the Fund.</strong></td>
<td>□ Yes □ NA</td>
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<td>iii) Confirm that the design complies with the geotechnical recommendations.</td>
<td>□ Yes □ NA</td>
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<td>iv) For each anticipated technical specification section, provide catalog cuts of all major equipment, materials and systems.</td>
<td>□ Yes □ NA</td>
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d) **Update the** mechanical, electrical and plumbing system descriptions and calculations.  

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i) Describe where critical operating equipment is located. For work in existing buildings, **update the** photographic documentation of existing areas where work will occur.  

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ii) Calculate mechanical, electrical and plumbing systems design loads and summarize design criteria, if not covered in the building systems below  

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1. Append the results of the Energy Modeling per Directive 1B-7.  
2. Provide a description of the proposed Building Management System and discuss requirements for connecting new equipment to the existing. See Directive 1C-2 for a proprietary system.  
3. Provide detailed heating and cooling loads prepared using a computer-based program.  
4. Describe the criteria used in sizing and selecting equipment and its origin (i.e. ASHRAE or other engineering standards, Program Directives, Campus request, code requirement, etc.)  
5. Describe access for equipment installation and how this equipment will be removed and new equipment installed at a future date.  
6. Describe required maintenance and the space necessary to perform the maintenance (i.e. coil pull, tube pull filter replacement, etc.)  
7. Provide an analysis of mechanical system design on a room by room basis with occupancy, heating and cooling loads, acoustical requirements, humidity requirements, etc.  
8. Provide a detailed sequence of operation for each piece of major equipment.  

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iii) Whenever connection to an existing building or campus wide utility system is required, the following information shall be provided:

1. Capacity and condition of existing systems.
2. Capacity and condition of means of distribution, as applicable.
3. **Update the analysis** of the existing system's ability to satisfy the additional loads.
4. Stand-alone or back-up systems required for this building when the existing system is shut down for regular maintenance.

iv) **Update the** compliance with items 1 thru 6 in Part 1c of Directive 15H-1.

1. Describe metering.
2. Describe sound and vibration control.
3. Describe system selection and cost evaluation.

v) Confirm that air system design meets the requirements of Directive 15H-2.

1. **Update the** design load calculations and space design criteria based on actual number of occupants for each space, as shown on the Code Conformance Drawings.
2. Describe separation of air intakes.
3. Describe system requirements.
4. Describe air handlers.
5. Describe air distribution.

vi) Describe air permit modifications required per Directive 1D-8.

1. Describe status of required preconstruction approvals.
2. Append permitting consultant's report.

vii) Describe proposed smoke control system work per Directive 15H-2. Provide draft system analyses required by the Building Code of New York State.

viii) Describe proposed hydronic system work per Directive 15H-3.
   (1) **Update the** design criteria and load calculations. **Confirm that system criteria comply with campus standards.**

x) Describe proposed chiller system work per Directive 15H-5.
   (1) **Update the** design criteria and load calculations. **Confirm that system criteria comply with campus standards.**

xi) Describe proposed heat distribution system work per Directive 15H-6.
   (1) **Update the** design criteria and load calculations.

xii) Describe proposed special air system work per Directive 15H-7.
   (1) **Update the** design criteria and load calculations.

xiii) Describe proposed laboratory air system work per Directive 15H-8.
   (1) **Update the** design criteria and load calculations.


xv) Describe proposed gas system work per Directive 15P-1 and 15H-10.
    (1) **Update the** design criteria and load calculations.

xvi) Describe proposed plumbing systems.
    (1) **Update the** design criteria and load calculations.
    (2) Describe compliance with Directives 15P-3 and 15H-10.
    (3) **Describe type and number of code-required plumbing fixtures.**

xvii) Describe proposed backflow prevention system work per Directive 15P-5.
xviii) Describe proposed sprinkler system work per Directive 15F-1.
   (1) Update the design criteria and load calculations.
   (2) Describe fire pump and identify the fuel/power source required for its operation.

xix) Describe proposed fire alarm system work per Directive 16-3.

xx) Describe proposed outdoor lighting system work per Directive 16-6.

xxi) Describe proposed electrical distribution system work per Directive 16-7.
   (1) Update the design criteria and load calculations for normal and emergency power.
   (2) Update the Electrical Panel list with amperage.
   (3) Update the a lightning risk assessment per Directive 16-9.
   (4) Describe lighting conservation per Directive 1B-7.
   (5) Describe approach to emergency lighting, night lighting, and other special lighting systems.

xxii) Describe proposed communications system work per Directive 27-1.
   (1) Describe the final requirements for a Campus access control system.
   (2) Describe the typical routing of communication wiring from the typical point of use back to the communications closet.
   (3) Describe the required communication interface. Include the number of inputs and type of wiring required.

xxiii) For each anticipated technical specification section, provide catalog cuts of all major equipment, materials and systems.

   e) Describe energy conservation features and proposed compliance with Directive 1B-7.
i. **Update the** LEED checklist in Appendix per Directive 1B-7

(9) Describe significant code requirements.
   a) **Update the** narratives describing significant code items.
   b) Describe anticipated variances.
   c) **Update the** draft of SUCF code checklist in Appendix.
   d) **Append copies of typical campus hot work permits, other documents that may be developed by the Campus Fire Prevention Program Superintendent and other special conditions.**

(10) **Update the** anticipated proprietary sources per Directive 1C-2.

(11) **Update the** anticipated design delegation per Directive 1C-13

(12) **Update the description of** presumed asbestos, hazardous materials or contamination that must be addressed to perform the work (Directives 1D-5 and 6).

(13) **Update the list** of Program spaces and their Net Area

(14) **Update the** Area Analysis per Directive 1C-1 includes the following
   a) **DESIGN:** Net Area _____ Sq. Ft.
   b) Gross Area _____ Sq. Ft
   c) Net Area to Gross Area Ratio:
   d) Describe how design provides for all functional and special requirements of Building and Site Programs and list deviations (if none, specify "NONE")

(15) **Update the** proposed exterior and interior finish schedule listing all major and typical surfaces, areas or spaces.

(16) Describe current adherence to the Design and Construction schedules. Justify and explain proposed changes.

(B) **Design Manual Drawings:** Based on the approved **Schematic** deliverables and by revising the approved **Schematic** drawings and model, provide **and update** the applicable information listed below:

(1) **Update the** applicable Site Drawings scaled at least 1" - 50' including
   a) Key plan showing relation to campus plan
   b) Plans showing existing conditions and Property Lines.
c) Plans showing relationship of building to site and proposed site improvements,

i. Show major Grading - existing and proposed contours (one or two foot intervals).
   (1) Use of on-site material for structural fill and reuse of topsoil is not permitted.
   (2) Show stockpile areas within the staging area if reuse of on-site material and cut/fill balance is proposed.
   (3) Show the Grading Limit per Directive 1D-4.

ii. Show major outdoor spaces, their proposed levels, and the levels of elevation for all entrances to the building.

iii. Show location, materials and extent of roads, service drives, parking, walks, and terraces, athletic fields, loading docks, etc. and describe proposed materials per Directive 2-2.
   (1) Show the accessible route.
   (2) Show Fire protection Hydrants and fire-fighting routes.
   (3) Show Temporary Traffic Control plans.
   (4) Show fire apparatus access roads that extend within 100 feet of the point(s) of firefighter access and to the point(s) required for aerial access shown in Section D105 of the Fire Code of NYS. These points should be determined in consultation with the local fire department.

iv. Show all site features and site amenities and differentiate between existing and proposed. See campus standards for pavers, Directive 2-9 for walls and stairs and Directive 2-10 for synthetic surfaces.

v. Show slopes complying with campus mowing standards.
vi. Provide dimensional of construction layout (coordinates, radii, and dimensions) information for buildings, pavements, fields, and other site features.

vii. Show site features including building footprint, walkways, pavements, curbing etc. consistently on all site drawings.

viii. Highlight paved areas with grades greater than 8% or less than 2% and request approval.

ix. Show road profiles and banking diagrams when major road improvements are associated with the work.

x. Show sedimentation and erosion control information

xi. Provide larger scale details of typical improvements and reference them accordingly. (see Directives 2-2).

xii. Include plant list of all major trees, shrubs and ground cover. See Directive 2-8.

d) Plans showing demolition and removals. Show extent of earth retention systems, over excavation for poor soils and other geotechnical recommendations.

i. Show pavement, curbing, sidewalk removals and extent of removed utilities and structures, utilities appropriate to be abandoned in place, etc.

ii. Show removals and abandonments graphically.

iii. Reference asbestos abatement or hazardous material removal plans as required.

iv. If structural demolition is significant (demolition of buildings, site features), provide a separate structural demolition plan

v. Provide larger scale details of typical removals and reference them accordingly.
e) Plans show all site utility systems and connection points in a coordinated manner. Separate utility plans by discipline (i.e. mechanical, electrical, etc.) are not permitted. Consolidate layers into one plan.

i. Show site utility system connection at points of known capacity. □ Yes □ NA

ii. Show all new utilities from building thru proposed line to last manhole of existing lines: electric power (See Directive 16-7), signal, gas (See Directive 15P-1), water, heat (See Directive 15H-6), sanitary, storm, lighting, etc. □ Yes □ NA

iii. Show profiles for those major utilities as necessarily to adequately describe and identify their installation and conflicts with existing and proposed utilities. (Directive 2-3). Show rock in profile per Directive 2-5. □ Yes □ NA

iv. Submit iso-footcandle plots for exterior lighting per Directive 16-6. □ Yes □ NA

v. Provide larger scale details of typical improvements and reference them accordingly. □ Yes □ NA

vi. Show storm water management improvements required by the SWPPP. □ Yes □ NA


i. Show Contract limit lines (including area for staging, new site utilities and other peripheral work.) □ Yes □ NA

ii. Show construction staging area, parking and storage areas, temporary utility connection points and access route. □ Yes □ NA

iii. Show considerations for maintenance of traffic. □ Yes □ NA

g) Update the sections through site required for a description of design shown in plans above. □ Yes □ NA

h) Locate the temporary field office on the site plan and shown all temporary utility connections and setbacks from existing and new buildings as required by NFPA 241 Table 4.2.1. □ Yes □ NA
(2) **Update the** applicable architectural design:

a) **Update the** detailed floor and roof plans at 1/8" = 1'-0" scale for all levels and indicate proposed materials.
   i. Show column lines and space numbers shown in compliance with the campus standard. Space names should be generic.
   ii. Show roof work per Directive 7-1. **For work creating odors, show areas of impact per Directive 7-1.**
      1. Show the location of any roof mounted equipment, roof drains, roof slope, etc.
      2. Show guard rails per M304.9 of the Mechanical Code of NYS.
      3. Where existing roof forms part of the access path to work areas, show extent of repairs.
   iii. Show selected room equipment and furniture layout
   iv. **For existing spaces with limited work,** show phasing and access route for mechanical, electrical and plumbing work.
   v. **For existing construction where exploratory demolition was performed,** show areas where test cuts and cores were taken and refer to the documented results.
   vi. **For existing spaces where components are removed and replaced,** such as windows, fan coil units, etc., provide phasing plans.
   vii. Indicate location of doors (including door swing) and windows
   viii. Indicate location of rated walls, fire separations, fire doors, exit enclosures and similar code required features.
   ix. Show all plumbing fixtures including water coolers, water closets, urinals, lavatories, service sinks, floor drains, etc. Identify the required handicap fixtures.
   x. Show built in features including laboratory equipment, casework, kitchen equipment, counters, lockers, etc.
xi. Show furniture, moveable furnishings, partitions, etc. Identify moveable furnishings that are not in contract as NIC.

b) Show reflected ceiling plans for ceiling related work.

c) Show finish plans and finish schedule. The schedule shall identify materials, texture and color for each proposed finished material per Directive 1C-3.

d) Provide a door schedule identifying door type, door label, material and frame. Note electric hardware. Provide motorized operation on all non-swing doors per Directive 8-2.

e) Provide schedules for windows, in-contract equipment, etc. as appropriate to the design.

f) Provide large scale detailed plans, sections and elevations of the following space types:
   i. Classrooms, Lecture Halls, dining areas and other meeting and/or assembly spaces
   ii. Laboratories (See Directive 15H-8)
   iii. Atriums, lobbies and other complex public spaces
   iv. Toilet Rooms, Locker and Shower areas and other fixture intensive spaces.
   v. Stairs, Elevators and other major vertical shafts (See Directives 15H-1)
   vi. Kitchens, loading dock and other significant service areas.

g) Show full and partial building and wall sections for all significant levels, space elements and ceilings and relative heights and relation to adjacent grades.
   i. Show at scale that provides the appropriate clarity of detail.
   ii. Show parapets, overhangs, soffits, arches and other significant physical characteristics.
   iii. Show air barrier and insulation that is consistent with the Energy Model.
iv. Show effectiveness of shading where sun shading in proposed. □ Yes □ NA
v. Where applicable, show earth retention, utility tunnels unexcavated areas, etc. □ Yes □ NA

h) Show exterior elevations (all sides) - indicate exterior color and materials for proposed envelope systems. □ Yes □ NA
i. Show detailed elevations (all faces, returns and offsets) - indicate exterior materials, finishes, colors and control joints. See Directive 4-1. □ Yes □ NA
ii. Include all building elements such as penthouses, entrances, stairs, windows, louvers, exhaust stacks, etc. Indicate the proposed finished grades. □ Yes □ NA
iii. Show at scale that provides the appropriate clarity of detail. □ Yes □ NA

i) Show typical large scale details, showing reinforcing and bracing for typical architectural details. Provide details for the following critical features: □ Yes □ NA
   i. Parapet wall and roof (See Directive 4-1 and 7-1) □ Yes □ NA
   ii. Roof deck and architectural steel sections □ Yes □ NA
   iii. Expansion joints □ Yes □ NA
   iv. Waterproofing, insulation and air barriers. □ Yes □ NA
   v. Window shades and treatment □ Yes □ NA
   vi. Doors (See Directive 8-2) □ Yes □ NA
   vii. Others as necessary to define development of the design. □ Yes □ NA
   viii. Show at scale that provides the appropriate clarity of detail. □ Yes □ NA

(3) Update the applicable demolition and removal plans. □ Yes □ NA
a) Show typical large scale details, showing removals and protection for typical demolition work. □ Yes □ NA
b) Provide schedules, keyed notes, etc. for removals as appropriate to the design. □ Yes □ NA
c) Show the temporary partitions required by NFPA 241. □ Yes □ NA
d) Show the closed exits, the temporary alternate routes that replace closed exits, or note the reduced occupancy if exits are not temporarily replaced. □ Yes □ NA
e) Show the extent of temporary protection and other temporary work required to permit continued occupancy by the campus. Show egress details that comply with Section 1009 of the Code.

f) Show existing and/or new permanent, combustible construction, if any, on the drawings and note protection of such construction per NFPA 51B.

(4) Update the applicable phasing and building access plans showing work and timing of major phases and contracts.

(5) Update the applicable asbestos and hazardous materials removal plans per Directive 1D-6. Show column lines that match architectural plans.

a) Comply with Directives 1D-5 and 1D-6. Show either (1) abatement of all asbestos in the entire area involved; or (2) if there is a justifiable written reason for not removing all asbestos in the area involved; there is no loose asbestos material in the area involved that is not being removed; then identify the asbestos material being left in place and describe a satisfactory method for preventing the disturbance of asbestos material being left in place.

b) Provide or show quantities for all materials.

(6) Update the applicable structural drawings.

a) Show foundation, footing and wall plans, including other concrete elements.

i. Show rock excavation line per Directive 2-5 and other subsurface anomalies.

ii. Show items required in Directive 3-1.

iii. Where existing systems are modified or demolished, provide demolition plans.

b) Show floor and roof framing system. Show column lines that match architectural plans.

i. Show typical connection loads.

ii. Show items required in Directives 3-1 and 5-1.

iii. Show roof slopes required in Directive 7-1.

iv. Show MEP items that require lintels, impact reinforcing steel, etc.

v. Show significant architectural steel supporting special design features.
c) Show framing design of typical floor or areas that indicates the structural system (dimensioned), columns, shear walls, etc.  □ Yes □ NA

d) Provide larger scale details of typical and special elements and reference them accordingly.  □ Yes □ NA

e) Show pre-cast structural elements, if applicable, and typical anchorage and support details.  □ Yes □ NA

f) Show or schedule the extent and type of spray fire proofing.  □ Yes □ NA

g) Show or schedule extent of below grade waterproofing.  □ Yes □ NA

h) Show all design loads and confirm that design accounts for deflection per Directive 3-1.  □ Yes □ NA

(7) **Update the** applicable Mechanical Drawings  □ Yes □ NA

a) Show sizing and location for all air handling units, pumps, heat exchangers, chillers, cooling towers, etc., and routing of significant piping and ductwork. Show column lines that match architectural plans.

   i. Show all **ductwork** and **piping on the floor** where installed.  □ Yes □ NA

   ii. Show ductwork and piping over 4” diameter with double lines and to scale.  □ Yes □ NA

   iii. Show ducted returns per Directives 1B-1 and 15H-2.  □ Yes □ NA

   iv. Show VAV Terminal units, reheat coils, fin tube radiation, etc. and the zoning approach

   v. Show the locations of pipe chases and duct shafts.  □ Yes □ NA

   vi. Where existing systems are modified or demolished, provide demolition plans.  □ Yes □ NA

   vii. Show proposed path of travel for installation and future removal of major equipment.  □ Yes □ NA
b) Show mechanical equipment or system details. Show fully developed typical areas in plan. Typical areas include art areas (See Directive 15H-7), classrooms, health care areas (See Directive 15H-7) lecture halls, laboratories (See Directive 15H-8), offices, library special collections (See Directive 15H-7), computer rooms, atriums, conference rooms, etc.

□ Yes □ NA

c) Show plans and sections at 1/4” scale for congested spaces and concealed areas. Show all equipment (boilers, heat exchangers, chillers, pumps, air handling units, fans, etc.) in the mechanical equipment rooms. See Directive 15H-1.

i. Show access for maintenance and future removal (36” wide by 80” from door entry point to all service points per the Mechanical Code of NYS).

□ Yes □ NA

ii. Show layout and sizing of the main ductwork and piping runs serving the major equipment. Include the airflow and water flow rates.

□ Yes □ NA

iii. Show a minimum of two 1/4’ scale sections through each mechanical equipment room. Show all equipment visible from a view.

□ Yes □ NA

d) Show air riser diagrams for supply, return and exhaust systems. Ductwork mains are to be sized and fire dampers shown. Show dimensions for intake and exhaust separation per Directives 15H-2 and 15H-8.

□ Yes □ NA

e) Provide hydronic riser diagrams for heating and cooling systems. Pipe mains are to be sized. See Directives 15H-3 and 15H-5.

□ Yes □ NA

f) Provide riser diagrams for HTHW, steam and condensate systems, as applicable, including sizing of pipe mains. See Directives 15H-3, 15H-4 and 15H-6.

□ Yes □ NA

g) At the existing buildings, show the capacity of existing systems being connected to.

□ Yes □ NA

h) At the existing buildings, show significant existing, adjacent equipment and systems to remain.

□ Yes □ NA
i) Show connection points with site utilities and campus building management systems.

□ Yes □ NA

j) Show a draft single line diagram of the building temperature control system and provide a preliminary DDC point schedule.

□ Yes □ NA

k) Provide a draft equipment schedule for all equipment with sufficient data to show the capacity of major equipment.

□ Yes □ NA

l) For smoke control systems, show the information required by Chapter 9 of the Building Code of NYS.

□ Yes □ NA

m) Show heat recovery systems for exhausts per the Energy Model.

□ Yes □ NA

(8) Update the applicable Plumbing Drawings

□ Yes □ NA

a) Show major equipment and fixture locations. Show column lines that match architectural plans.

□ Yes □ NA

i. Show the general piping layout and sizes. Show locations of main waste lines, stacks, vents, water, gas, vacuum, air, etc.

□ Yes □ NA

ii. Show all piping on the floor it is installed. Show piping over 4” diameter as double line to scale.

□ Yes □ NA

iii. Show the locations of pipe chases.

□ Yes □ NA

iv. Where existing systems are modified or demolished, provide demolition plans.

□ Yes □ NA

v. Show a roof plan that locates all roof drains and identifies the direction of slope for all surfaces.

□ Yes □ NA

vi. Show connection point to site utilities drawings. Note the capacity of the existing system in specific metrics. Refer to Directive 2-3.

□ Yes □ NA

vii. Show fully developed layouts of all piping and fixtures, etc. for typical areas such as kitchens, toilet rooms, laboratories, etc.

□ Yes □ NA

viii. Show all major equipment in the mechanical room(s) such as tanks, pumps, chemical treatment system, emergency generator backflow prevention devices (See Directive 15P-5), pressure reducing valves, fire pumps and special equipment.

□ Yes □ NA
### b) Show plumbing mechanical room enlarged floor plans shall be drawn at 1/4” scale. Provide sections at 1/4” scale for congested areas.

- Yes □ NA

### c) Show riser diagrams for supply, sanitary, roof drain and special systems.

- Yes □ NA

### d) Provide an equipment schedule for all equipment with sufficient data to verify the capacity of major equipment.

- Yes □ NA

### e) Provide plumbing equipment details and system schematics.

- Yes □ NA

#### (9) Update the applicable Fire Protection Drawings

- Yes □ NA

### a) Where existing systems are modified or demolished, provide demolition plans.

#### i. Show the temporary plugs and valves on the drawings, as required to keep the sprinkler system operational for the longest time possible.

- Yes □ NA

### b) Show major equipment and fixture locations. Show column lines that match architectural plans. **Floor plans are to indicate the general piping layout and sizes.**

#### i. Show all piping on the floor it is installed. Piping over 4” diameter shall be shown double line to scale.

- Yes □ NA

#### ii. Indicate the locations of pipe chases.

- Yes □ NA

#### iii. Indicate the location of plumbing work required for the fire protection system. This includes standpipes, mains, building service, flow switches, floor control valve assemblies, etc.

- Yes □ NA

#### iv. Show connection point to site utilities drawings. Note the capacity of the existing system in specific metrics. Refer to Directive 2-3

- Yes □ NA

#### v. Show fully developed layouts of sprinklers for typical areas such as classrooms, lecture halls, laboratories, offices, computer rooms, atriums, conference rooms, toilet areas, etc.

- Yes □ NA

#### vi. Indicate the location of work required for the fire protection system. This includes standpipes, mains, building service, flow switches, floor control valve assemblies, etc.

- Yes □ NA
vii. Show all major equipment in the mechanical room(s) such as tanks, pumps, chemical treatment system, emergency generator backflow prevention devices, pressure reducing valves, fire pumps and special equipment.

c) Show sizing and location of fire pump, sprinkler, standpipe and other systems.

d) Show single line riser diagrams of sprinkler and/or standpipe system.

e) If required to progress the work, show temporary valves and plugs for sprinkler systems on the Drawings, as required to separate the portion of the system used by the campus occupied areas from the portion used in the construction areas.

f) Fire protection mechanical room enlarged floor plans shall be drawn at 1/4” scale.

  i. Provide sections at 1/4” scale for congested areas.

g) Provide an equipment schedule for all equipment with sufficient data to verify the capacity of major equipment.

h) Provide equipment details and system schematics.

(10) Update the applicable Electrical Drawings

a) Show major equipment and fixture locations. Show column lines that match architectural plans.

  i. Show power, signal, communications, lighting and other systems on the floor where they are installed.

  ii. Show telecommunications rooms per Directives 27-1.

  iii. Show the location of all exit signs.

  iv. Show floor lighting layout and typical controls.
v. Show fully developed typical areas shall be provided. Show the locations and types of lighting fixture, electrical outlets, and data outlets. Typical areas include classrooms, lecture halls, laboratories, offices, computer rooms, atriums, conference rooms, toilet areas, etc.

- Show existing conduit that is reused and confirm that it has been mandrelled during the design process.
- Where existing systems are modified or demolished, provide demolition plans.

b) Show connection points with the service for the electrical power, telecommunications, data, fire alarm and other systems.

c) **Update the** single-line diagrams that includes the following:

- **Location of service connection.** Confirm that existing system has capacity to accommodate design loads.
- **Sizing** and location of major transformers, transformer substations, switchboards, fused switches, circuit breakers, automatic transfer switches, distribution panels and motor control centers. See Directives 16-2 and 16-4.
- **Sizing** and location of major components of the emergency and standby power system.
- **Provide the conductor size for all major feeders.**
- **Show final primary service connections.**

<table>
<thead>
<tr>
<th>d)</th>
<th>Submit Iso-footcandle plots for major interior spaces.</th>
<th>□ Yes □ NA</th>
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<tbody>
<tr>
<td>e)</td>
<td>Show schedules for panel boards, motor control centers and automatic transfer switches.</td>
<td>□ Yes □ NA</td>
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<tr>
<td>f)</td>
<td>Show lighting fixture schedules for major spaces and other typical fixtures.</td>
<td>□ Yes □ NA</td>
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g) Show all major equipment in the electrical room at 1/4” scale and indicate access for maintenance and future removal. Show ventilation per Directive 16-8.
   i. Show equipment identification and layout for both primary and secondary systems.
   ii. Show coordination with site utility plans for connection to existing systems and site lighting.

h) Show communication and fire alarm systems. Show sizing, riser diagrams and locations for telephone, fire alarm, door control, security and other systems.
   i. For smoke detection, show ceiling vaults, beams, coffers, etc. that impact device location. See Directive 16-3.
   ii. Show information required by Fire Code of NYS F907.1.1.
   iii. Show emergency power and light to laboratories, mechanical equipment rooms and other spaces requested by the campus.
   iv. Where existing systems are modified or demolished, provide demolition plans.
   v. See Directives 16-5 and 27-1.

(11) Update the applicable Code Conformance Drawings

a) Show occupancy classification for total building and/or for each floor level or portion of floor if they contain different occupancies. Show separate plans for Group H occupancy.

b) For the existing building, show plans and diagrams for each level articulating the work areas and the level of alteration for each work area.

c) Show construction classification, building heights and number of stories, allowable height and fire areas, including code allowed increases, actual fire areas and smoke areas.

d) Show location of fire walls, horizontal exits and other code required fire separations.

e) Show the number of occupants in each major space, groups of spaces and per floor.
f) Based on the number of occupants, show the number of exit units required and provided for each space and floor level. ☐ Yes ☐ NA

g) Show the travel distance measurements for all significant spaces and maximum travel distance allowed for each floor. ☐ Yes ☐ NA

h) Show exit widths required and provided. ☐ Yes ☐ NA

i) Show fire protection systems required and provided. ☐ Yes ☐ NA

j) Show code compliance for unique design features, floor openings, atriums, etc. ☐ Yes ☐ NA

k) Show toilet fixture analysis for required and provided fixtures and spaces. ☐ Yes ☐ NA

l) For accessibility, show the spaces not on the accessible route. ☐ Yes ☐ NA

m) If a fire command center is required, is the complete layout shown per 911.1? ☐ Yes ☐ NA

(12) For projects where above-ceiling and/or shaft space is limited, Update the coordinated sections showing the routing of major Mechanical, Electrical and Plumbing components. ☐ Yes ☐ NA

a) Show the space required for routing the mechanical systems. Provide large scale sections through spaces showing ceilings, lighting, cable tray, ductwork, piping and structural steel, fireproofing, insulation, access space, etc. ☐ Yes ☐ NA

(13) If this is a hospital project, show compliance documentation for referenced standards NFPA 99, NFPA 101 and State Hospital Code. ☐ Yes ☐ NA