

# NC State Design and Construction Guidelines

## 01100 – NC State’s Requirements

### 1.0 Purpose:

- A. The following guidelines apply to North Carolina State University’s (“NC State”) requirements specific to the needs of NC State. It is the goal of NC State to identify specific needs relevant to working on a public university campus that will help the contractor be more knowledgeable and fully aware of NC State’s expectations while working on campus.
- B. References include the following:
- NCSU Transportation's Contractor Parking Policies.
  - NC State University, Environmental Health and Safety, Fire Protection Department Jot Work Permit Procedures. Contractor shall access the following website to obtain hot work permits:  
[http://www.ncsu.edu/ehs/fire/hot\\_work.htm](http://www.ncsu.edu/ehs/fire/hot_work.htm)

### 2.0 General Requirements:

- A. The Owner’s Representative: NC State will designate a Project Manager to act as the Owner’s Representative in all matters pertaining to construction contracts. All official contacts, decisions, directions, problem resolution, coordination and other liaison activities required from NC State will be through the Project Manager. This requirement does not modify the responsibilities of the Designer as stated in the General Conditions of the Contract.
- B. Behavior policy: All construction personnel shall be respectful of all members of NC State community. Any incidents of disrespect, verbal abuse, threatening statements, unwelcome comments, unwelcome interaction or any form of harassment from any construction personnel toward any member of NC State community is strictly prohibited. Any such act shall constitute sufficient cause for NC State to remove any individual permanently from the project and NC State property. In addition, any of the contractor(s) project personnel who ignore or refuse to take action on any requirements of the contract documents; ignore or refuse to take immediate action to correct any endangerment to the health and safety of the public; as solely determined by NC State; then those actions shall be sufficient cause for NC State to permanently remove those individuals from the project and NC State property. If in the sole determination of NC State it would be in the best interest of the project and NC State to have any of the contractor(s) personnel removed from the project then the contractor shall do so upon request by NC State. Such actions taken by NC State shall not constitute grounds for a delay claim. NC State will not be responsible for any delays caused to the project due to any individual being removed from the project by NC State.
- C. Protection of Work, Property, and Public:

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- The single prime contractor, Construction Manager at Risk or Project Expediter (on a multi prime project), henceforth referred to as “the Contractor,” shall insure that campus streets connecting to the project are protected from mud, sand, and stones/gravel. Streets and adjacent property sites shall be kept free from run-off, litter and/or debris in any form from the project site. Mud, litter and/or debris from the construction site that appears on adjacent property sites shall be removed immediately. All mud collected on vehicle tires shall be removed before leaving the construction area. Should any mud or debris from the project site collect on the streets, it shall be removed immediately to prevent any hazards to vehicular or pedestrian traffic as well as from entering the storm sewer system. In any event, all streets and property sites adjacent to the project site shall be cleaned of construction related debris, dust, litter and mud daily. The contractor, in the preparation of bids, shall account for the daily cleaning of adjacent streets and property sites. The contractor(s) is prohibited from discharging any waste products from concrete trucks or from concrete coring work, or any other unsuitable materials, fluids or other products on the site or into the storm sewer system. Should the contractor fail to comply with these requirements, N. C. State NC State reserves the right, with twenty-four (24) hours prior notice to the contractor, to clean and or remove mud, trash, litter, debris or any unauthorized discharge from the project site and/or the adjacent streets or properties. In such case the cost of the cleaning and/or removal or mobilization for cleaning and/or removal shall be deducted from the contractor's contract.
- Blasting on NC State property is prohibited.
- Each contractor doing excavation work is responsible for locating all existing underground utilities prior to commencing excavation. The contractor shall be responsible for the associated cost of any utility interruption and repair due to his excavation if utility location was not requested, location procedures performed and followed prior to commencing excavation. The contractor shall immediately notify NC State and restore the service of any utility disrupted due to excavation or any contractor action whatever the circumstance. NC State reserves the right to immediately restore the service of any utility disrupted due to actions of the contractor and deduct the cost of such restoration from the contractor’s contract.
- For emergency situations during construction, the contractor shall furnish NC State with the names, pager numbers, and telephone numbers (day and night) of the contractor’s project manager and superintendent prior to beginning work. The numbers shall remain current or be updated as required for the duration of the project. The contractor shall contact the Owner’s Representative via cell phone immediately in the event of an emergency. NC

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State will only provide security, as it deems prudent and necessary for its own protection. The contractor shall be responsible for the security and safety of the project within the project limits. NC State must approve any "watchman" service instituted by the contractor.

- NC State will conduct normal operations during the duration of the project. The contractor shall coordinate with NC State's representative to minimize any disruptions to the functions of NC State.

D. Working Hours: The Contractor may establish a work schedule of his own choosing. The Contractor shall submit to the NCSU Project Manager and to the Designer his regular daily work schedule and shall notify the NCSU Project Manager in writing one week in advance of any deviations from the schedule. **Work hours are \_\_\_\_\_ to \_\_\_\_\_ [Designer to determine requirements for special work hours].** NC State reserves the right to limit the contractor's activities when they conflict with NC State operations. These operations include but are not limited to the following: examination periods (typically for 2 weeks in December and 2 weeks in May), graduation (typically for one weekend in December and May), athletic events, and student move in/move out days. During these times, the Contractor may be required to cease all construction activities; limit activities to on-site only, modify working hours or restrict noise-making activities as determined by the NCSU Project Manager.

E. Inspection of the work: NC State will conduct the following inspections, as applicable, which shall be included in the construction schedule: in-wall inspections, above ceiling inspections, generator test, fire pump test, fire sprinkler main drain tests, pre-final inspections, 100% test of the fire detection and alarm system, and a final inspection for project acceptance. Any inspections that are not satisfactory shall be repeated at no cost to NC State and shall not be cause for a time extension. All inspections will be conducted by NC State at the same time as the Designer's inspection and a punch list generated. The contractor shall give the Designer and NC State a minimum of fourteen (14) calendar days prior notice that the systems have been verified by the contractor to be complete, fully functional and ready for inspection. The following general guidelines apply to the above ceiling inspections:

- The systems must be complete, including but not limited to controls, insulation, labeling, tagging, fireproofing, fire stopping, wiring, light fixtures installed, and all piping in place.
- Ceiling grid may be installed as required, framing for hard ceilings shall be in place, and access door locations shall be framed and noted.

Under no circumstance shall any ceiling or wall area be covered prior to the above ceiling inspection. All punch list items generated from the inspections shall be completed by the contractor and verified by the Designer and NC State. **Any re-inspection costs, including but not limited to Designer, NC State, SCO or**

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**third party personnel, that result from punch list items not being 100% complete shall be at the expense of the contractor.**

- F. Use of the Premises: Parking is extremely limited at NC State. Parking for personal vehicles on campus is not provided. Contractors must limit parking of company vehicles and storage of materials to within the limits of the construction site and staging area. The contractor is required to follow NCSU Transportation's Contractor Parking Policies.
- G. Utilities: It is imperative that all campus utilities and all other campus services are maintained at all times except for scheduled interruptions. Required utility interruptions shall be scheduled with and requested through NC State’s Project Manager at least fourteen (14) days in advance for minor outages and thirty (30) days in advance for major outages. NC State is the sole determiner of the utility outage being major or minor. Major outages include but are not limited to those that affect an entire floor of a building, all of a building, all or parts of several buildings, all or parts of an area, and any high voltage outage. No utility interruption regardless of the advance notice given shall be undertaken without expressed, specific approval from NC State Construction Management. If requested by NC State, utility outages shall be performed after hours and/or at night, or over the weekend, or during holidays. No extra payment will be made for such work. NC State personnel will perform certain activities in connection with utility outages such as operating existing electrical switches, turning existing water and steam valves, placing existing building systems back in operation, operating existing fire alarm systems, etc. NC State will bear the expense of the work of their personnel. When the contractor requires an additional or extra outage to complete their work because of a shortage of or improper materials, shortage of labor, poor coordination, failure to finish the work during the outage scheduled length of time, the contractor will pay all expenses incurred for NC State’s services for an additional outage(s). No service disruptions shall take place until barricades (if applicable) and signs are in place to notify or protect the public. Barricades must be maintained at all times and signs shall be neat and legible, hand-made signs are not acceptable. Signs for utility outage notice shall be written and placed as directed by NC State seven (7) workdays prior to the outage. NC State may determine the utility service cannot be interrupted for the length of time or frequency requested by the contractor. In such case the contractor shall include in his bid provisions for temporary utility services for the duration of the outage at no cost to NC State.
- H. Traffic Movement and Interruptions: Road and sidewalk blockages shall be scheduled fourteen (14) days in advance and made only after NC State Project Manager has approved them. Appropriate detours shall be planned, subject to approval by NC State, giving consideration to the handicapped access. No excavations shall take place prior to placing proper barricades, lighting, and other devices as shall be required. The contractor shall install warning signs, barricades and detour information signs to maintain traffic flow as directed by NC State’s

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Project Manager. If required flagmen shall direct traffic around the construction area or detour area. Contractors are reminded of the presence on campus of handicapped students, staff and faculty. All barricades, temporary walkways, excavations, and stockpiled materials shall be placed and/or constructed in such a manner as to accommodate, adequately warn, and protect this segment of the campus population. The contractor shall make requests for approval for any street, alley, driveway or any access way to be closed at least ten (10) work days prior to the date for the desired closing. The contractor shall close no street, alley, driveway or access-way without prior approval by NC State's Project Manager. Pedestrian and vehicle traffic way-finding around the construction limits must be maintained in a clean and safe condition at all times.

- I. Hot Work Permits: When the contractor is performing work that produces heat, flame, or sparks on or in an existing building or other structure the contractor is required to obtain a "hot work" permit from NC State Environmental Health and Safety, Fire Protection Department. The department's requirements for the hot work program and permit are attached.
- J. Cleanliness and Site Maintenance: The prime contractor(s) shall be responsible for keeping the project limits area, the project site, and the project itself clean and free of accumulated construction debris and trash. To that extent, the prime contractor(s) shall be responsible for cleaning their work areas weekly at a minimum and the proper disposal of their construction debris and trash. The construction site and staging areas shall be cleaned as previously noted, however; should trash, litter or debris from the project site migrate to any adjacent campus areas it shall be removed immediately. Grass in the construction site shall be mowed as often as required to maintain a neat appearance or as requested by NC State but in no case less than once per month. Should the contractor(s), in the sole judgment of NC State Construction Management fail to comply with these requirements, then NC State reserves the right to proceed with cleaning within the project limits area, immediate project site, the interior of the project or if applicable the adjacent areas to the project as it deems necessary. The cost of the cleaning and/or the mobilization cost of cleaning will be deducted from the contractor(s) contract.
- K. Storage of construction materials and equipment: Storage of construction materials and equipment shall be limited to the staging area. Should the contractor fail to remove any material stored or equipment outside the staging area within twenty-four (24) hours of notification received from NC State Construction Management, NC State shall have the right to remove and dispose of such materials from the campus. NC State will deduct the cost of such removal and disposal from the contractor(s) contract. The offending contractor(s) shall be responsible for any delay to the project resulting from NC State having to remove and dispose of such materials or equipment.

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- L. Construction site: A construction fence shall be installed around the perimeter of the project limits. The fence shall be constructed of heavy-duty chain link material, have a minimum height of six feet and shall have a continuous top tubular rail. Swing gates shall be included at every access to the enclosed area. The fence shall have an integral visual barrier or shall have shading type material applied and maintained for the duration of the project. Locks for the gates shall be interlocked with a padlock provided by NC State in order to allow access of NC State or other emergency personnel in case of an emergency.
- M. Inspection and Audit: Contractor’s “records” shall upon reasonable notice be open to inspection and subject to audit and/or reproduction during normal business working hours. A NC State’s representative may perform such audits or an outside representative engaged by NC State. NC State or its designee may conduct such audits or inspections throughout the term of this contract and for a period of three years after final payment or longer if required by law.
- Contractor’s records as referred to in this contract shall include any and all information, materials and data of every kind and character, including without limitation, records, books, documents, subscriptions, recordings, agreements, purchase orders, leases, contracts, commitments, arrangements, notes, daily diaries, superintendent reports, drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in NC State’s judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Contract Document. Such records shall include (hard copy, as well as computer readable data if it can be made available), written policies and procedures; time sheets, payroll registers; payroll records; cancelled payroll checks; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, etc.); original estimates; estimating work sheets; correspondence; change order files (including documentation covering negotiated settlements); back charge logs and supporting documentation; invoices and related payment documentation; general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends; and any other Contractor records which may have a bearing on matters of interest to NC State in connection with the Contractor’s dealings with NC State (all foregoing hereinafter referred to as “records”) to the extent necessary to adequately permit evaluation and verification of:
    - (a) Contractor compliance with contract requirements.
    - (b) Compliance with NC State’s business ethics policies, and Compliance with provisions for pricing change orders, invoices or claims submitted by the Contractor or any of his payees.
- N. Changes in the Work - Overhead shall also include all general conditions of the contract and all general requirements such as project management, scheduling, home office expense, engineering and layout, reproduction expenses, shop drawing processing and coordination, supervision, coordination, small tools, all

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vehicle expenses, temporary facilities, safety provisions, as built drawings, estimating, and general overhead.

- The change order cost break down shall include: labor (\$/hr) and material (\$/ea, l/ft, sq/ft etc) quantities, unit prices, (as listed in the contract documents) including such breakdowns for work performed by subcontractors and the cost extensions for the labor and material quantities. The cost extensions shall be added into a labor and material subtotal. The labor shall then show a percentage for labor burden, the materials shall show the applicable sales tax. These subtotals shall then be shown as a total for labor and material costs. The labor and material cost shall then show the allowed mark-up, and a final total. Subcontractor quotes shall be presented in the same format on the subcontractor's letterhead. Each item totaled on the contractor’s summary sheet shall be separated in the back up documentation by a colored sheet of paper. For change orders that delete any part of the work within the change order and/or contain deductive costs, the back up shall show the original material and labor for the deleted work or costs. If the change order contains both adds and deducts for the same type of work then the material unit and labor unit costs shown on the back up for the deleted work and the added work shall be the same and the net difference shown. Deductive change orders shall show the proper reduction in OH&P and the bond. The contractor shall also provide HUB utilization information on NC State’s Hub Utilization form. Failure by the contractor to provide the information requested in this paragraph shall result in rejection of the change order by the designer and a request for re-submittal. Delay in the processing of the change order due to lack of proper submittal by the contractor in accordance with this paragraph, or due to errors in the change order calculations shall not constitute grounds for a time extension or basis for a claim.
- In all change orders the procedure will be for the designer to request proposals for the change order work in writing. The contractor will provide such proposal and supporting data in suitable format and as required in General Conditions Article 19 – Changes in the Work, paragraph “c”, “d”, and “e”. The designer shall verify correctness and determine that the contractor’s proposed costs are equitable. After receipt of the contractor’s proposal and if the proposal is correct and it is agreed to by the designer and NC State that the cost is equitable then NC State shall prepare a change order and forward it to the contractor for his signature. If the change order proposal is incorrect, or the cost has not been agreed upon by the designer and NC State then the designer shall notify the contractor that the proposal is rejected and the proposal shall be re-submitted. If the proposal is rejected because the cost are deemed not to be equitable then the contracting parties shall negotiate and agree upon the

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equitable value of the change and the proposal shall be resubmitted with costs determined under General Conditions Article 19 – Changes in the Work Paragraph “e”. After receipt of the change order executed by the contractor, the designer shall, certify the change order by his signature and forward the change order and all supporting data to the to NC State for his signature. NC State shall execute the change order and forward to the State Construction Office for final approval. The State Construction Office shall act on the change order upon approval by the State Construction office, one copy remains with the State Construction office, and the remaining copies are sent to the designer for distribution to NC State(s) (two copies with original signatures), and to the contractor (two copies). The contractor shall forward a copy to his surety. In the case of an emergency or extenuating circumstances, the approval of the changes may be obtained verbally by telephone or field order approved by all parties.

- The change order shall contain a brief description of the work on the 1<sup>st</sup> page of the SCO form following the words:

“(Description of change order with detailed break down attached)” and again on the second sheet of the form under “DESCRIPTION OF CHANGE”. On the second sheet there shall also be a brief description of the reason for the change along with a cause code listed. Each item totaled on the contractor’s summary sheet shall be separated in the back up documentation by a colored sheet of paper. The contractor shall also provide HUB utilization information on NC State’s Hub Utilization form. Failure by the contractor to provide the information requested in this paragraph shall result in rejection of the change order by the designer and a request for re-submittal. Delay in the processing of the change order due to lack of proper submittal by the contractor in accordance with this paragraph, or due to errors in the change order calculations shall not constitute grounds for a time extension or basis for a claim.

- O. Time extensions due to Weather - A rain day is defined as any day that rain exceeds one tenth of one inch (0.1"). The contractor may only be entitled to extension of the contract period for the number of rain days that exceed the normal number of rain days. For the purpose of determining extent of delay attributable to unusual weather, a determination shall be made by comparing the weather for the contract period with the average of the preceding five (5) year climatic range average during the same time interval based on statistics kept at NC State's Marine, Earth and Atmospheric Sciences department located on NC State NC State campus and on daily weather logs kept on the jobsite by the CM, reflecting the effect of the weather on progress of the work and initialed by the designer’s representative. Time extensions for weather delays do not entitle the contractor to “extended overhead” recovery and are in all other ways non-compensable.

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Notwithstanding the immediately preceding paragraph, not all rain days above the normal number of rain days will warrant a contract time extension. Justification for the request for rain related contract time extensions must also be based on the effect of the rain on critical path work activity in progress during the period of the request and additionally be predicated on the contractor’s diligent prosecution of the work. No additional rain days shall be granted for building projects after building “dry-in” as determined by the designer. The contract time extension request must incorporate work logs kept at the jobsite by the project superintendent showing the effect of the weather on the progress of the critical path work and the critical path schedule, both initialed by the designer’s project representative.

Requests for contract time extensions based on rain days must be received by the designer on or before the 20<sup>th</sup> day of the month immediately following the month in which the rain occurred. The request must include all required documentation. All parties to this contract agree that the contractor has no right to claim a contract time extension if the request is not received by the designer in strict accordance with the procedure set forth in this paragraph.

For other types of weather delays, the contractor is granted one (1) day of contract extension for each day NC State is closed due to weather.

### P. Final Inspection and Acceptance

- The following items shall be completed prior to scheduling a final inspection:
  - i. NC State's training conducted with approved operation and maintenance manuals.
  - ii. Delivery to NC State of shop drawings (submittals) as required in Article 5.
  
- The designer shall complete the following list, indicating the date of completion, prior to scheduling a final inspection and recommending acceptance of the project to NCSU. The designer shall coordinate with NC State project manager the completion of some items on the list as required:

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### **Project Acceptance Checklist** (also to be used for Beneficial Occupancy when applicable)

**Project Name:**

**Code: Item:**

**Note: All items must be checked off with dates & initialed accordingly.**

	Initial and Date
<b>I. Pre-final Inspections</b>	
<b>A. Critical Items Check List:</b>	
1. N.C.S.U. Environmental Health Safety Department certification of fume hoods *	
2. NCSU Fire Marshall’s inspection of life safety systems (FAS, Sprinkler System, Emergency Generator, Fire Pumps etc)*	
3. Fire Extinguishers installed or delivered to NC State	
4. Roof & window water tests (when required)	
5. Date confirmed with Facilities Operations Lock Shop to install locks *	
6. Department of Insurance electrical inspection(s) complete.	
7. Fire alarm inspection and certification by installer and design engineer complete	
8. Fire alarm inspected & approved by N.C.S.U. Electronics Shop & Fire Marshall	
9. Elevator inspection by Dept. of Labor, approval to operate the elevator obtained.	
10. Demonstration of operation of fire pumps to NCSU Fire Marshall	
11. Operation of emergency and stand by power circuits verified	
12. Operation of emergency generator verified	
13. Dept. of Health water test results and approvals delivered to designer.	
14. Dept. of Labor pressure vessel inspections and certificates issued and displayed.	
15. Endorsement of surety for beneficial occupancy (if applicable)	
16. Endorsement of contractor’s insurance company for beneficial occupancy (if applicable)	
17. Approval of SCO for beneficial occupancy (if applicable)	
18. Date for insurance transfers established *	
<b>II. Training and instruction of Facility Operations Personnel on Equipment</b>	
<b>A. Record of Instruction Sessions:</b>	
Plumbing	
HVAC	
Electrical	
Fire Alarm	
<b>B. NC State O &amp; M Manuals and pressure vessels info delivered to NC State</b>	
<b>III. Pre-Final Inspection</b>	
<b>A. Pre-final Punch list Certified as Complete by the Designer:</b>	
General	
Mechanical	
Plumbing	
Electrical (including fire alarm system)	
<b>IV. Final Inspections with SCO</b>	
<b>A. Date of Final Acceptance Inspection with SCO</b>	
1. Date SCO punch list items complete	

All items complete and verified by the Designer signed \_\_\_\_\_ Date:

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Q. Request for Payment - No payment may be made for stored materials that are not stored within the project limits or on property owned by the State of North Carolina. Exception...material may be stored in a third-party, bonded warehouse with all appropriate documentation provided to NC State. Designer must verify that material is stored in a bonded warehouse and that the stored material is identified as NC State property. No payment shall be certified/approved by the Designer and forwarded to NC State Construction Management for payment if not accompanied by the following:

- A letter from the surety company consenting to the progress payment in the amount requested. The amount of the payment shall be shown on the letter.
- A completed tax statement and form
- An updated CPM schedule
- Appendix “E”
- NC State project code, item number, project number and the State Construction Office ID number on the 1<sup>st</sup> sheet.
- Pay applications without the information listed shown shall be considered incomplete and cannot be approved.
- "Schedule of values" shall include payment line items for various commissioning activities.

NC State shall have 30 days from the time that correct and complete payment requests are received to pay the contractor.