



THE UNIVERSITY *of* NORTH CAROLINA
GREENSBORO

Designer Checklist

Jan 2011 Edition

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Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1	Are the specifications and drawings sealed?				
2	Are the following sections included in the specifications and listed in the Table of Contents:				
	A. Advertisement for Bids				
	B. Notice to Bidders				
	C. Notice to Bidders for Preferred Brand Alternates				
	D. Instructions to Bidders and General Conditions of Contract				
	E. Supplementary Instructions to Bidders				
	F. Supplementary General Conditions				
	G. Guidelines for Recruitment and Selection of Minority businesses for participation in State				
	H. Geotechnical Report				
	I. Form of Proposal				
	J. MBE Affidavit A				
	K. MBE Affidavit B				
	L. MBE Affidavit C				
	M. MBE Affidavit D				
	N. MBE Appendix E				
	O. For of Bid Bond Proposal				
	P. Form of Construction Contract (SCO or GA, Formal or Informal)				
	Q. Form of Performance Bond				
	R. Form of Payment Bond				
	S. Sheet for Attaching Power of Attorney				
	T. Sheet for Attaching Insurance Certificates				
	U. Approval of the Attorney General and Certification of the Office of State Budget and Management (University Attorney for GA Projects)				
3	Invitation to Bidders and Notice to Bidders will include the following statement: "Plans and specifications are also available for review at the Gray Home Management House, UNCG Facilities Design and Construction office, Monday through Friday, 8:00 am to 5:00 pm."				

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4	Include the drawing of a project construction sign in the bid documents. (Design Project Manager will provide a sample drawing.)				
5	On renovation projects, the Design Project Manager will coordinate with the designer and schedule meetings for the design team to visit the project to verify existing building systems conditions for all disciplines (G.P.M.E.). If the need for any destructive testing is required, locations will be identified during the visit.				
6	The Designer shall include in the specifications a proposed list of pre-construction meetings for review by the Construction Project Manager as part of the Construction Document submission.				
7	Require in the project specifications that the General Contractor is to coordinate with the individual subcontractors to produce coordination drawings showing the locations of duct work, piping and conduit above the ceiling to confirm they will fit. The General Contractor will submit these coordination drawings to the designer for review and approval. In addition to shop drawings, Coordination Drawings are also required. Under the direction of the General Contractor, the subcontractors will be required to collectively, (and in the order of HVAC, Plumbing, Fire Protection, Electrical, General Construction) prepare coordination drawings showing each trade's work in a different color on the same drawing. After all information has been recorded, submit these drawings to the Architect. Do not begin any HVAC, plumbing, fire protection, or electrical work until Coordination Drawings have been approved in writing by the architect.				
8	<p>Notice to Bidders</p> <p>A. The Advertisement for Bids should state that the pre-bid conference and bid opening will be held at the Gray Home Management House conference room.</p>				

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<p>B. It is the responsibility of the bidder to deliver his bid to the above named place at the proper time. If the bidder elects, on his own responsibility, to mail his bid, it should be posted in ample time to ensure delivery. Such bid should be addressed to the UNCG FDC Design Project Manager (NAME), Gray Home Management House, 105 Gray Drive, Greensboro, NC 27412-5008 and should be clearly marked with the Contractor's name, address, license number, and the contract for which the proposal is being submitted. All bidders who utilize a delivery service shall submit their bids in a separate sealed envelope contained within the delivery service shipping envelopes.</p>				
<p>C. Bidders are advised that parking is extremely limited on the campus. Finding available visitor parking in the immediate vicinity of Gray Home Management House is unlikely. Vehicles improperly parked are subject to fine and/or towing. Bidders should park in the McIver Street parking deck (directly east of GHMH) for a nominal hourly fee. Inability to find nearby parking will not be considered as justification for a late bid.</p>				
<p>D. The Notice to Bidders should state that the contractors will be required to hold their price for 60 days.</p>				
<p>E. The notice to bidders and advertisement for bids should be list Fredrick A. Patrick, AIA, PE, LEED AP, Director of Facilities Design and Construction.</p>				
<p>9 Supplementary General Conditions</p> <p>A. Article 8: Provide a statement that substitutions shall be submitted 15 days prior to receipt of bids.</p>				
<p>B. Article 11: Utility Interruptions</p> <p>1. Any necessary shutdowns of electrical or other utilities must be approved at least 48 hours in advance with UNCG FDC at 336-334-5269 and the University's Facilities Operations personnel. It is imperative that adjacent utilities and other existing services be maintained at all times except for scheduled interruptions.</p>				

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<p>2. The University's personnel will perform certain functions in connection with utility outages, such as operating electrical switches, operating water valves, etc. The Owner will bear these expenses; however, when contractor requires extra outages because of shortage of material, improper material, shortage of labor, poor coordination, etc., the contractor shall pay the Owner all expenses incurred in the use of the University personnel for the extra outages. It is imperative that campus utilities and other campus services be maintained at all times except for scheduled interruptions.</p>				
<p>C. Article 18: Provide a statement that the designer will attend all monthly construction progress meetings and that he will record the minutes of each meeting and distribute to all attendees within 3 working days. The Designer and appropriate sub-consultants will also attend all weekly meetings with the General Contractor providing the meeting minutes. Designer to check as-built drawings at monthly meetings.</p>				
<p>D. Article 38: Use of Premises</p> <p>1. Storage/Laydown/Staging Area: A 6 foot tall steel chain-link fence with privacy screen shall be constructed around the laydown/staging area. Contractors must confine their storage to within the limits of the staging area fence. Parking for storage trailers is also limited to within this laydown/staging area. Security of stored items is the responsibility of the contractor.</p>				
<p>2. Construction Parking Parking is extremely limited at UNCG. All contractors are hereby notified that non-permitted parking will be restricted to the area within the project fence. The University Parking Services Dept. will ticket any vehicles parked outside of the construction fence without a parking permit. Parking permits can be purchased by the contractor.</p>				
<p>E. Article 23: Define time of construction and liquidated damages.</p>				
<p>F. Article 40: Temporary Utilities</p> <p>1. Small Renovation Projects:</p>				

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<p>The Owner will pay for all temporary utilities during the construction of the project. The contractor shall pay for any required connections. The contractor shall connect to existing University power and water service on site as required. If the contractor connects to City owned utilities, it will be the contractor's responsibility to pay for those utilities and obtain and coordinate all that is required.</p>				
<p>2. Moderate to Large Projects: The General Contractor is responsible for bringing power to a disconnect and for paying for the power company connection and all expenses for power consumption for the entire project until permanent power is energized.</p>				
<p>3. Removal of Temporary Utilities and Facilities: General Contractor shall remove all temporary utilities and facilities at the end of the construction period, earlier with the Architect's approval. Designer should coordinate with the Design Project Manager.</p>				
<p>G. Article 45: Sales tax reporting documents will be bound into the project specifications.</p>				
<p>H. The UNC Greensboro Facilities Design and Construction Department represents the Owner in all matters pertaining to contract construction. A Project Manager from this department will be the single spokesman for the University. All official contact, decisions, problem resolution and coordination will be through the assigned FDC Construction Project Manager. The campus Police should be contacted during any emergency or for after- hours assistance.</p>				
<p>I. Construction Site Security. The Owner will supply only the security measures required for University operations. The contractor shall provide the necessary security means to protect his work, materials, tools, and construction equipment from vandalism, theft, and fire. Security services shall be supplied by the contractor as he deems necessary. Any security service set up by the contractor shall be approved by the Owner. The contractor shall be responsible for replacement of his materials, machinery, equipment, tools and supplies due to theft.</p>				

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<p>J. University Program-Working Hours The contractor may establish a working schedule of his own choosing for the portions of construction involved in the project that do not require interruptions of utility services (electric, water, steam, etc.) to campus facilities. The contractor shall submit to UNCG and to the designer his regular daily work schedule, and shall notify the University Project Manager in advance of any deviations from the schedule. The University reserves the right to limit the contractor's activities when they conflict with University operations. The Owner will solely approve the scheduling of all interruptions of utilities to campus facilities. UNCG provides an academic calendar on its web page, (www.uncg.edu) listing special events that will occur on campus during the construction period of the contract. The contractor shall restrict his operations, as required and outlined below, on these days:</p>				
<p>a. During examination periods, generally occurring in May and December for six (6) days each, and June and July for two (2) days each.</p>				
<p>b. Graduation, generally in mid-May and mid-December</p>				
<p>c. Student move-in/out days, generally twice a year for one (1) week each. During examination periods, the contractor will restrict noise-making activities to the hours of 8:00 am to 5:00 pm. If the project involves work in or near a building in which an examination is being conducted. The contractor will be required to restrict operations that are disturbing to students during the hours of the exam(s). Work will not be permitted on Graduation Day, nor the day preceding it, nor on University Day. Extra clean-up, warning signs, and barricades will be provided by the contractor during these days. Work is normally permitted on days of sporting events, but traffic is extremely heavy on these days, and contractors may have difficulty and experience delays getting to and from the job site. Work is normally permitted on student move-in/out days, but traffic is heavier than normal, parking is restricted, and some campus roads are temporarily closed or designated one-way.</p>				

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<p>(The Designer can get a copy of the Academic Calendar for the applicable period of construction from UNCG website: www.uncg.edu/reg/calendar/)</p>				
<p>K. For roof projects: The contractor shall be responsible for all repairs of water damage to the building, including furnishings, occurring during the construction phase of the project. The designer shall survey in the presence of the Owner and contractor existing water damage prior to construction and prepare a written and photographic record of this survey with the copies distributed to the Owner and contractor. The contractor shall be responsible for all damage not so documented.</p>				
<p>10 Confirm that the correct form of construction contract (formal/informal) is included in the Project Specifications.</p>				
<p>11 New and existing work must be clearly differentiated on the drawings and in the specifications.</p>				
<p>12 For new buildings: Confirm that the correct building identification sign has been designed, specified, and located on the drawings (coordinate with Project Manager).</p>				
<p>13 Verify Alternates are consistent between drawings and specifications.</p>				
<p>14 Asbestos abatement: Provide floor plans showing locations of materials to be abated and specifications for abatement.</p>				
<p>15 If special testing or measurement of construction tolerances is required for a project, the designer should define in the specifications how the measurements will be made and verified.</p>				
<p>16 Specify that an equipment training session for the Owner's maintenance and operating personnel will be scheduled as a separate meeting after equipment start-up. Systems should include but not be limited to electrical, mechanical, water supply and treatment, fluid treatment and disposal, elevators, A/V equipment.</p>				
<p>17 Include in the specifications an article that states that the designer will check "As Built" drawings on a monthly basis to verify construction conditions.</p>				

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18	The designer will meet with the State Construction Office and review the building classification, exit requirements, exit access paths, fire rated walls, and corridors. The designer will document this meeting with Meeting Minutes.				
19	<p>Fire Safety Plans</p> <p>Prior to bidding, the designer will deliver to the UNCG FDC Design Project Manager two complete sets of Fire Safety Plans as described below. One set of these plans will be delivered to the University Safety Office. The second set will be filed at FDC for future reference.</p> <p><u>Description of Fire Safety Plans</u></p> <p>1. The plans should be 11" x 17" and capable of providing clear copies when Xeroxed.</p> <hr/> <p>2. The plans should clearly define the location of all fire rated walls and their fire rating (1 hr, 2 hr, etc.)</p> <hr/> <p>3. Exit pathways to the fire exits should be clearly defined with shading.</p> <hr/> <p>4. The fire exits from the building should be obvious.</p> <hr/> <p>5. Room names and numbers should be readable.</p> <hr/> <p>6. Each Plan should be consistently labeled "Fire Safety Plan" in the lower right hand of the corner of the sheet, followed with the name of the building and the floor number (Ground, First, Second, etc.)</p>				
20	Designer will specify that the University may use a third party scheduling consultant (paid for by the University). Coordinate with Project Manager for latest version.				
21	Designer will include in the project specifications a description of the University's Craftsmanship-Quality Award Program. Coordinate with Project Manager for latest version.				
22	<p>Building Commissioning</p> <p>Services for commissioning of the building will occur by an independent firm retained by the Owner. The extent of the building commissioning is described in the mechanical and electrical specifications. Contractors shall include all personnel, time, and resources as required to ensure that the commissioning is accomplished as specified.</p>				

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23	<p>Preferred bid alternates to be included in the construction documents will include (as indicated) but will not necessarily be limited to the following:</p> <p>A. Alternate: Hardware: Provide separate quote for the difference in cost to furnish Corbin ML 20XX series locksets with H5, 7 pin keyway, Von Duprin exit devices, and LCN closers in lieu of those specified in Section 08710.</p>				
	<p>B. Alternate: Master, Wireless, Satellite, Synchronized Time Clocks; State the amount to be added to the Base Bid to provide "Primex Wireless" synchronized satellite time system, using the 14000 Wireless Master (FM) Transmitter with GPS Receiver. Install per the electrical drawings and specifications. The individual clocks will be securely mounted per the manufacturer's recommendations and will be model number 14155, 12.5" - Black, with clock lock.</p>				
	<p>C. Alternate: Site Light Fixture and Pole Fixtures: High pressure sodium, painted black, without finial, with multitap ballast for applications up to 277 volts, and without fuses. A NEMA Type V horizontal beam pattern (circular) is to be used except where special conditions warrant otherwise. Houseside shields will be used where appropriate. Fixtures up to 150 watts shall be Holophane Fluted Gran Ville (#GVU-100HP-MT-B-5-N-N-US/LU100, Holophane Dwg. US-2590) and fixtures from 250 to 400 watts shall be Holophane Washington (WA-250HP-MT-B-4-B-WHS120(if needed), Holophane Dwg. US-1452). Poles: Fluted, painted black, with weatherproof fuses inside the bases. Poles up to 16 feet high shall be Holophane Wadsworth extruded aluminum shaft and cast aluminum base (12' pole model # W 12F4/17- CA/BK). Poles higher than 16 feet shall be Holophane Columbia tapered steel shaft with cast iron base (20' pole model #: C20FT16AZ/24CSB-CIS/PP- BC(1.0X10.5)-T(3.0X3.0)-2BA30B/1/BO-CA/BK-(1)PGK, Holophane Dwg. US-2627). Banner arms will be provided only on poles higher than 16 feet, only when specifically requested, and will be factory installed. Pole factory printed and field painted to match the light fixture color.</p>				
	<p>D. Alternate: Telecommunications Provide a separate quote to provide only AMP copper products in lieu of copper products in Base Bid.</p>				

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E. Alternate: Telecommunications Provide a separate quote to provide only Siecor fiber optic products in lieu of fiber optic products in Base Bid.				
F. Alternate: Schneider Control System State the amount to be added to the Base Bid to Mechanical Contract to provide a control system manufactured by Schneider as described in the plans and specifications.				
G. Alternate: Steam Valves SPENCE pressure reducing valves				
H. Alternate: Trash/Recycling Receptacles Provide a separate quote to provide Model SD-42 by Victor Stanley, with standard tapered lid and non-locking latch. Color shall be VS Tavern Square Green.				
I. Alternate: Exterior Wood Benches Provide a separate quote to provide Smith & Hawken - Giverny - Teak Wood Bench 96 inches long or as appropriate for location.				
J. Alternate: Exterior Metal Benches Victory Stanley Inc., "Steelsites RB Bench" Model RB-28, 8 feet long, with powder coat finish, color matching Victor Stanley-"Tavern Square Green."				
K. Millennium "Enterprise" System: Wired Electronic Access Control Doors-by Kaba Ilco, Inc., Montreal, Canada.				
24 Confirm that the E-mail address and Fax number of the University Architect and FDC Design Project Manager is included on the coversheet of the construction drawings.				
25 UNCG Material Color Boards				

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<p>In an effort to make our submittals meaningful and consistent UNCG has prepared the following requirements for all color board submittals. There will be two times these material and color boards are required. The first is in the design stage usually close to the completion of CD's. This is to get the basic design intent approved. The second time is the final material color board and this submittal is during the construction stage where all of the final material suppliers have been chosen by the contractor and therefore, the final samples are available. The Designer will assemble the second color board from samples supplied from the Contractor. The Designer will meet with the University to present the second color board for University approval.</p>				
<p>The requirements for each submission are the same and are as follows:</p> <ol style="list-style-type: none"> 1. The background board is to be a neutral gray. 				
<ol style="list-style-type: none"> 2. Colors or material that will be next to each other shall be adjacent to each other on the board with no gap in between. This may require some creative placement on the board which is OK. Use your creativity! 				
<ol style="list-style-type: none"> 3. Colors and/or samples should be of a representative or proportional size of the spaces to indicate the overall feel of the space-(i.e.. do not have a smaller wall sample next to a large rubber base sample). 				
<ol style="list-style-type: none"> 4. Have a color board or portion of a board dedicated to each "major" space in the building. If you have 20 classrooms or offices and they are all similar in size and function, one representative board will suffice for all of them. However, each space that has a different purpose or special condition needs its own board. 				
<ol style="list-style-type: none"> 5. Label boards clearly and professionally on the front. A separate sheet of paper may be passed around to the viewers as a key to understanding the boards when viewed at a distance. 				
<ol style="list-style-type: none"> 6. Label the boards with the name of the project. 				
<ol style="list-style-type: none"> 7. Samples that may be changed are recommended to be attached with Velcro for ease in changing or viewing adjacent samples. 				

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26 On all new building and interior building renovation projects, the designer will provide space for the collection of recyclable waste materials. Space for the collection of recyclable waste material will be provided on each floor level. The space provided for the collection of recyclable waste material may be an individual room or it may be an area set-aside for that specific purpose inside of a custodial closet. Recycling rooms should be located off of a main corridor with nearby access to an elevator or an exterior delivery area or loading dock if possible. Individual recycling rooms should be no less than 11' - 8" L x 6' - 8" W. Recycling areas incorporated into custodial closets should provide a 7' - 6" L x 3' - 0" W space for recycling containers and a clear walking area 3' - 8" wide adjacent to the containers. These are considered minimum design standards for a (3) container recycling space. Typical University collection containers are 2' - 6" W x 3' - 0" D x 3' - 10" H.				
27 During the Construction Document phase the Designer will provide manufacturers cut sheets illustrating examples of the type of equipment being specified for the following items: A. Toilet fixtures & accessories				
B. Door hardware				
C. Roofing System				
D. Planting materials (provide photograph and description for each tree type, shrub type and grass type specified).				
E. Assistive listening system for handicapped				
28 For new buildings and projects connecting directly or indirectly to City utilities, the Designer will submit drawings for a courtesy review by the City of Greensboro. The review is performed by the TRC (Technical Review Committee) and requires 13 sets of site drawings and a special coversheet. Contact the Greensboro Planning Department for additional information.				
29 Safety and HAZMAT information Required: A. Ask the FDC Design Project Manager for any Department of Insurance review comments regarding the project area.				

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B. Ask the FDC Design Project Manager for a safety report from the University Safety Office regarding the project area.				
C. Ask the FDC Design Project Manager for a copy of the University's Asbestos Survey for the project area. D. Request the FDC Design Project Manager contact the University Safety Office and confirm that no hazardous materials are existent in the project area. E. Request the FDC Design Project Manager confirm with the End User that no hazardous materials will be used or stored in the building. F. If hazardous materials are anticipated to be used or stored within the project area the FDC Project Manager will work with the Designer, the End User and the University Safety Office to define the quantities and provide Material Safety Data Sheets (MSDS) to the designer for each identified hazardous material.				
G. Request the FDC Design Project Manager provide the following if applicable: i. List of hazardous materials				
ii. Hazard Classification of each material				
iii. Quantity of each hazardous material				
iv. A description of how each hazardous material will be stored and used.				
v. Where in the building the hazardous material will be stored and used.				
H. Once the MSDS are provided and the quantities and locations are known, the Designer will comply with the NC Building Code (307, 2701.4.1, 2701.4.2, etc). The Hazardous Materials Guide is available at SBCCI.org. Links to additional information are available at www.msdsearch.com				
30 Direct the designer to consult with the project Geotechnical Engineer when setting up allowances for rock and unsuitable soil removal. Confirm that allowances include replacement of unsuitable materials removed with suitable materials (soil, crushed stone, concrete). For each allowance, there should be a unit cost that will be used to adjust the contract amount if the actual quantities are more or less than the allowance quantity.				

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31	Add the following to Sections 08000 and 16000: A shop drawing coordination meeting shall be held before door, door frame, door hardware, and security system shop drawings are submitted. The purpose of this meeting will be to coordinate doors, frames, door hardware, electrical rough-ins, and security systems hardware and openings. The contractor shall notify the Owner, Designer, and affected subcontractors, and schedule the meeting. The contractor shall prepare conduit and box rough-in drawings for each door/frame requiring security system or other wiring and bring these drawings to the coordination meeting. The affected trades shall coordinate wiring, rough-ins, door opening construction, door frame and door hardware installation prior to the submission of door shop drawings or electrical rough-in.				
32	FDC Project Manager to obtain a copy of Facilities Operations Movable Equipment List and Cost Estimate.				
33	Designer will provide a letter, addressed to the UNCG Design Project Manager, from the Geotechnical Engineer stating that the Structural Foundation Design has been reviewed and is approved by the Geotechnical Engineer.				
34	The Designer will communicate and consult with the Geotechnical Engineer throughout the design phases of the project as necessary. Prior to submission of completed Construction Documents for agency review, the Designer will provide a complete set of Construction Documents for review by the Geotechnical Engineer.				
35	The specifications should state in the proper section that all contractors and subcontractors are to wear Photo ID"s with their company name and the employee name, on all projects that take place in or around occupied University buildings.				
36	Unit Prices: Designer should ask for unit prices for additional electrical and data outlets to be added after rough-in, and GWB is in place.				
37	PreBid Meeting Minutes - Design Project Manager to discuss prebid conference with designer. Minutes of PreBid should be separate from Addenda. Items to include in agenda (order is up to designer): 1. HUB 2. Parking 3. Staging				

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<p>4. Any project specifications</p> <p>5. Time, date and place of Bid opening</p> <p>6. Attendance sheet completed</p> <p>7. Basic "page turning" review of the Contract Documents. If an Addendum is issued at the PreBid conference, it can be referenced as part of the PreBid conference meeting minutes, but is to be issued as a separate document.</p>				
<p>38 Information in the contract documents must be "OVER COMMUNICATED". It is our recent experience that the designer's age old arguments regarding the "intent" of the construction documents and work being "inferred" or "understood", simply are not sufficient any longer. The work defined in the construction documents must be specific and clearly communicated. Otherwise, the contractor will not follow through based on inference, the designer's intent, or on what, in the opinion of the designer, the contractor should have understood. Information in the contract documents must be "OVER COMMUNICATED."</p>				
<p>39 The lead design firm should engage their mechanical and electrical consultants early in the design phase of the project to assure an appropriate amount of space is being provided for mechanical, electrical and telecommunications rooms. Some input should be sought during programming, but it is extremely important that in the early schematic development of the floor plan, the consulting engineer be consulted to confirm the size, shape, and location of these rooms in the completed floor design.</p>				
<p>40 Any fixed equipment that is existing or is to be purchased or donated to become part of the project, requires that the designer inspect the equipment, document the equipment specifications, and confirm its usefulness to the project or inform the University that the equipment is not adequate or appropriate for the intended use.</p>				

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1	The Designer shall review the Master Plan for storm sewer.				
2	The Designer shall review the Master Plan for water.				
3	The Designer shall review the Master Plan for sanitary sewer.				
4	For non-University utilities, i.e. utilities to be installed by others (Bell South, Cable TV, Duke Power, etc.), their coordinated (expected) routes shall be shown on the utility site plans, from origin to connection, with notes.				
5	Verify that all trees, those to be saved as well as those to be removed, have been identified on the plans.				
6	Tree protection should be placed a minimum of 1' from the tree for every 1" of tree diameter, 8 foot tall steel chain link fencing is preferred.				
7	Provide a quantity allowance and corresponding unit cost for rock excavation and replacement in specifications and on the Bid Form. The same for unsuitable soils removal and replacement.				
8	Confirm that the campus-wide handicapped accessibility route is being maintained during and after construction. Coordinate with Project Manager.				
9	Confirm that the loading dock and dumpster areas have concrete paving, as specified in the UNCG Design and Construction Guidelines.				
10	Coordinate the number and size of dumpsters to be used and the turn around area necessary for a dumpster truck with Facilities Operations.				
11	Masonry pavers should be placed on a concrete, mortar or asphalt substrate rather than a sand bed.				
12	If existing plant materials are being disturbed, verify they are being moved and replaced properly, or new landscaping is being provided.				
13	When abatement of steam lines is part of the scope of work, the designer will re-insulate as part of the project.				
14	Construction Fence A. The construction fence should be clearly identified on the drawings and in the specifications. Confirm that the location has been approved by the Construction Project Manager.				

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<p>B. The location of the construction fence will not impede pedestrian or vehicle traffic. If necessary, alternative routes will have to be identified and shown on the drawings.</p> <p>C. Note that all accessible entrance and/or fire exits are to be maintained by the General Contractor during the period of construction. Include the construction fence in the specification.</p> <p>D. The construction fence should be a minimum of 6' - 0" high chain link fence with privacy screen.</p> <p>E. Identify contractor responsible for removing the fence at the end of construction.</p> <p>F. Contractor must provide utility work barricades for excavations outside the construction fence area.</p> <p>G. Contractor will provide accident prevention signage per N.C. OSHA requirements.</p> <p>H. All contractor parking shall be restricted to the construction site.</p>				
<p>15 Construction Site Maintenance The General Contractor will be responsible for periodic watering of the site, as needed to reduce or limit fugitive dust. Burning of construction debris on the site is prohibited and proper off-site disposal of these materials in an approved landfill is required by all of the contractors. The site shall be well maintained including removal of debris. Debris shall be removed from University property. Use of University trash receptacles is prohibited. The General Contractor must cut grass and weeds inside the project boundary as necessary to maintain a neat appearance at the site. Grass should not exceed 8" in height. General Contractor will be responsible for trimming on both sides of the construction fence including up to 3' on the outside of the fence along the base.</p>				
<p>16 Bike racks should be provided at each major facility and shall be located to be convenient, accessible and safe (hoop type - color black). See Campus Master Plan for Bike Racks.</p>				
<p>17 Designer to note in specifications and on the drawings that the contractor will be responsible for locating all underground utilities, using a qualified utility locating company prior to any digging on site.</p>				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
18	Designer shall verify that storm lines are located during the design phase.				
19	Designer shall note in specifications and on the drawings that all non-metallic underground piping shall have attached a 10-gauge insulated solid copper wire to the top of the pipe to facilitate future location of lines. Wire will be terminated in waterproof boxes flush with grade. Designer will locate on As-built drawings the location of all non-metallic pipe and location of all termination boxes.				
20	The Designer should submit Civil Drawings to the City of Greensboro for review at the CD submission stage. The Designer must contact the City to determine the number of drawings to be submitted and who to submit them to.				
21	Discuss with the Designer and Civil Engineer the process for obtaining water resource permits and their cost.				
22	The design of all buildings and outside spaces will include provisions for exterior/outdoor waste and recycling receptacles. Location: the designer will consult with the Facilities Design and Construction, Design Project Manager in determining the number and location of trash receptacles for each project. Trash receptacles shall be placed in pairs, one for litter and one for recyclable waste. Typically each waste/recycling station will consist of a 4" thick concrete pad sized to accommodate two identical round ornamental metal containers, Each trash receptacle will be provided with a steel band label around the can with lettering, "Trash Only;" label height 2 1/4", clear background. For recycling, provide plaques with lettering "Recyclables Only." Plaque size 16 3/8 " x 6" with maximum label size `13" x 5". Provide decal labels for lid with lettering "Recycle" on top label, two recycling symbols on the side labels and "Commingled" on the bottom label. Labels will be clear with white lettering. Where exterior trash receptacles are to be included as part of a project, their location shall be shown on the construction drawings and included in the project specifications by the designer. The University standard exterior trash receptacle is model SD-42 by Victor Stanley, with standard tapered lid and non-locking latch. Color shall be the manufacturer's standard VS Tavern Square Green. An alternate will be included on the project bid form for this specific trash receptacle.				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
23	Define how long the Landscape Contractor will be responsible for maintaining lawns and planting areas after final acceptance, consult with Facilities Operations Grounds Department. Also, define what maintenance will consist of.				
24	Review with the FDC Construction Project Manager the staging and lay-down areas defined for the contractor's use. Confirm that the areas, size and vehicular access is sufficient. Identify and resolve issues such as pedestrian traffic around and through the site.				
25	Note: In most cases it is preferable to lay sod in lieu of seeding on new projects. Review each new project with Facilities Operations Grounds Department to define.				
26	Provide underground perforated drainage pipe connected to the storm drain system, under planting islands, where irrigation is provided. This will assure proper drainage of irrigation water and prevent drowning the planting materials.				
27	All buried ductile iron piping associated with University projects shall be fully restrained. Pipe joints shall be Flex-Ring by American Ductile Iron Pipe" or equal. Mechanical joint fittings and valves must utilize "Magalug" restraint glands by EBAA Iron Sales or equal. Piping systems include both chilled domestic and sprinkler water.				
28	<p>Steam Lines:</p> <p>When abatement of steam lines is part of the scope of work, verify that designer re-insulates the lines as part of the project.</p>				
29	<p>Underground Structures:</p> <p>Designer will review/inspect all underground manholes/vaults and take into account any special design issues regarding vertical loading of the structure such as additional dirt fill or future construction or vehicular traffic which might require reinforcing the structure.</p>				
30	<p>Walks and Steps:</p> <p>Designer shall verify that slopes and steps are well drained away from paved walks, and that sloping walkways are not allowed to let water sheet flow down steps. Trench drains are discouraged, but may be installed if no other means is available to properly drain water from steps and other paved walkways.</p>				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
31	<p>Pipe Bursting:</p> <p>When using "Pipe Bursting" as method of underground pipe replacement, wherever piping crosses under paving, (asphalt, or concrete walks or driveways) the designer should include removal and replacement of the surface paving in the construction documents and in the cost estimate.</p>				
32	<p>Utility Lines:</p> <p>When drafting RFPs for Land Surveys the designer shall include the requirement that the surveys locate and identify old abandoned utility lines as well as active ones.</p>				
33	<p>Site Work-Underground Piping:</p> <p>Specifications should state that the contractor is responsible for field verifying all gravity piping inverts to confirm positive slope at the designed elevations prior to start of any excavation work.</p>				
34	<p>Planting/Landscaping:</p> <p>A. If lawns are seeded, specifications should require 60 days of maintenance by the General Contractor past final acceptance.</p> <p>B. If lawns are sodded, specifications should require that maintenance duration should be for 3 cuttings or 30 days by the General Contractor.</p>				
35	<p>Continued General Contractor Maintenance Periods:</p> <p>1. Tree and Shrub Maintenance</p> <p>Maintain trees and shrubs by pruning, cultivating, and watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes, and guy supports, and resettling to proper grades or vertical positions as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damaged wrappings, maintain trees and shrubs for a period of three (3) months following substantial completion.</p> <p>2. Ground Cover and Plant Maintenance:</p> <p>Maintain ground cover and plant materials by pruning, cultivating, and watering, weeding, fertilizing, and other operations as required to establish healthy, viable plantings for a period of three (3) months following substantial completion.</p> <p>3. Lawn Maintenance by the General Contractor:</p>				

<p align="center">Project Checklist</p>	<p align="center">Not Applicable</p>	<p align="center">DD Check</p>	<p align="center">CD Check</p>	<p align="center">Location of designer's response incorporated: page/paragraph/line</p>
<p>A. Begin maintenance of lawns immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:</p> <ol style="list-style-type: none"> 1. Seeded Lawns: 60 days after the date of substantial completion. When the full maintenance period has not elapsed before the end of the planting season, or the lawn is not fully established at that time, continue maintenance during next planting season. 2. Sodded Lawns: When the full maintenance period has not elapsed before the end of the planting season, or the lawn is not fully established at that time, continue maintenance during next planting season. <p>B. Maintain and establish lawns by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and re-plant bare or eroded areas and re-mulch to produce a uniformly smooth lawn.</p>				
<p>C. Watering: Provide and maintain temporary piping, hoses and lawn- watering equipment to convey water from sources and to keep lawns uniformly moist to a depth of 4 inches.</p> <p>D. Mow lawns as soon as there is enough top growth to cut with mower at specified height for principle species planted. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height. Remove no more than 40 percent of grass leaf growth in initial of subsequent mowing. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.</p>				
<p>36 Tree Protection and Penalties for Damage:</p>				

<p align="center">Project Checklist</p>	<p align="center">Not Applicable</p>	<p align="center">DD Check</p>	<p align="center">CD Check</p>	<p align="center">Location of designer's response incorporated: page/paragraph/line</p>
<p>UNCG is very concerned about the protection and maintenance of existing trees on its campus, particularly during construction operations when existing trees are most likely to be severely damaged. For this reason the Designer is expected to include the following specific requirements in the project manual, in the appropriate specification section in the construction documents. To assure that the General Contractor is aware of this information the designer will be expected to include a review of these requirements and penalties at the preconstruction meeting with the General Contractor.</p> <p>Tree Protection and Repair:</p> <ul style="list-style-type: none"> A. The General Contractor shall take extra care to protect, and minimize to the greatest extent possible damage to existing trees that are identified in the construction documents to remain after construction operations are complete. B. If the drawings are not clear as to the status of specific trees or plant materials, consult the Designer and clarify any ambiguities prior to starting field operations. C. The General Contractor will be responsible for any trees damaged during construction due to careless construction methods, or damage above grade by construction equipment. D. All tree repair and evaluation work shall be paid for by the General Contractor and shall be performed by a Natural Resources Contractor (Arborist) certified by the International Society of Arboriculture, or licensed in the jurisdiction where the project is located, to perform all necessary fertilization, root pruning and repair to trees directly or indirectly affected by work related to the project. E. The General Contractor will remove any tree damaged to the extent that the Natural Resources Contractor determines it to be life threatening and not repairable. F. The General Contractor will repair all trees damaged by construction operations, by treating damaged trunks limbs, and or roots as directed by the Natural Resources limbs, and or roots as directed by the Natural Resources Contractor, within 24 hours after the damage occurs. 				

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<p>G. Tree protection fencing will be installed in accordance with the drawings or outside the drip line of the tree to protect from construction damage.</p> <p>H. Maintain and repair tree protection fencing during construction operations.</p> <p>I. Owner approval will be required for the General Contractor to access areas within the tree protection fence.</p> <p>J. Any excavation within the tree protection fence will be limited to 3" cut and fill and must be performed by hand.</p> <p>K. Shrubs, vines and ground cover, within the tree protection fence and designated for removal, must be removed by hand.</p> <p>L. Unless shown on the drawings, do not install conduit, sprinklers, or any utility line within any critical root zone area without prior approval of the Owner. Installation of conduit or any utility line within critical root areas must be supervised by the Natural Resources Contractor.</p> <p>M. Burning is not permitted on the Owner's property. Do not allow fires under or adjacent to trees or plant materials identified to remain after construction is completed.</p> <p>N. Do not store construction materials, debris or excavated material within the tree protection fence; critical root zone; drip line of existing trees to remain after construction is completed.</p> <p>O. Do not allow vehicle or pedestrian foot traffic within the tree protection fence; critical root zone; or drip line of the existing trees to remain after construction is completed.</p>				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 Concrete admixtures will not contain chloride or calcium chloride.				
2 Confirm that air-entrained concrete is used for exterior concrete.				
3 Provide metal nosings or continuous grooves on concrete steps.				
4 Confirm that an adequate number of expansion and control joints are provided. What is their spacing: walls, floors, sidewalks, etc?				
5 Confirm surface finish/texture is specified for all concrete that is exposed.				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 Provide brick samples for selection.				
2 Specify standard running bond coursing or match adjacent building brick.				
3 Verify that weeps are a vertical head joint in height and are placed a maximum of 24" apart. Cell vent is to be placed in weep holes.				
4 Verify that concave or vee mortar joints are specified and not raked or flush joints.				
5 Provide an adequate number of expansion and control joints, both vertically and horizontally. Comply with the NC Brick Institute requirements.				
6 Verify that specifications call for construction of up to 6 masonry sample panels, (48" x 54") for selection of brick color, and 6 mortar sample panels (48" x 54") for selection of mortar color.				
7 Specifications should require construction of an exterior wall mockup panel. Panel should be a minimum of 6'-0" high by 5'-4" wide and provide all materials and finishes to be included in the exterior wall including any precast banding or accents, special brick shapes or coursing, partial window frame installation, etc. using approved materials, brick, and masonry mortar. MOCKUP SHALL NOT BE CONSTRUCTED UNTIL BRICK COLORS AND MORTAR COLOR HAS BEEN APPROVED. Mockup will reflect proposed range of aesthetic effects and workmanship. Mockup will be used as the standard for judging workmanship. Notify the Designer and obtain approval of the mockup 7 days before starting work. Maintain mockup in an undisturbed condition throughout construction. Contractor will be responsible for demolition and removal of the mockup at the end of construction but only after the Designer has approved removal.				
8 For additions: Confirm that specified brick coursing matches the existing building.				
9 Masonry walls/parapets with a precast concrete cap: Designer will provide thru-wall flashings (copper) below cap and provide stainless steel dowels to anchor the cap in place and the flashing is to be sealed around the dowel penetrations.				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
10	For projects on campus that will utilize colored (tinted) mortar, the designer will specify the color range of the mortar sufficiently to determine the cost of the materials, or designate or specify building to which the new mortar will be matched.				
11	Check masonry details against recommendations of recognized authority such as B.I.A.				
12	On free standing exterior masonry screen and/or retaining walls, with brick caps (not precast concrete or metal copings), require the use of an integral polymeric admix for mortar equal to "Krete Gard Mortar mix by Krete Industries, Inc."				
13	Do a peer study on the exterior envelope of the building which includes looking at the roof, walls, waterproofing and all related details.				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 Verify that all exterior ferrous metals are hot-dip galvanized after fabrication.				
2 Confirm that handrail pockets, sleeves or anchor plates are designed to shed water.				
<p>3 Galvanizing: In order to assure that construction materials that are hot dip galvanized are properly prepared prior to painting, the designer will require in the specifications, adherence to the following guidelines:</p> <ul style="list-style-type: none"> • The American Galvanizers Association - "Duplex Systems - Painting Over Hot Dip Galvanized Steel". • American Society for Testing and Materials (ASTM) - A123, A153, A780, B201, D6386. • Canadian Standards Association (CSA) - G164-M • The Society for Protective Coatings (SSPC) – Surface Preparation Specifications No. 1, No. 2, No. 3, No. 7, Paint Specification No 27. <p>Briefly, items that receive hot-dip galvanizing are immediately quenched in a bath of water chromate, or phosphate by the galvanizer in order to halt the galvanizing process and facilitate shipment. In addition, the new zinc surfaces react to the atmosphere immediately after removal from the immersion process by forming a patina of zinc oxide, zinc hydroxide, and zinc carbonate. The zinc patina can take up to two (2) years to completely form. Most painting of zinc surfaces occur from 48 hours to 1 year after galvanizing. For these reasons it is absolutely necessary that the surfaces of the zinc coated items be properly prepared for painting. For this reason the Galvanizer must know that the items he is delivering will be painted so that he can adjust the quenching process to facilitate proper surface preparation. In addition, the designer should contact the paint manufacturer's to be specified to determine the proper surface preparation and the correct primer and paint to specify.</p>				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 Attic ventilation shall be designed such that good airflow is obtained and shall be adequate by code. Code is a minimum.				
2 Fire retardant roof framing or sheathing is not to be used.				
3 Any wood in contact with concrete or masonry shall be treated to provide decay resistance, as per the NC Construction Manual Design Criteria and Policy section and any other code requirements.				
4 Support blocking must be shown for wall-mounted accessories.				
5 For wood with preservative or fire retardant treatment, the Designer shall verify that the size and material type of each fastener shall be resistant to corrosion from the chemical preservative.				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1	Roof design shall comply with the latest version of North Carolina Construction Office "Roofing Design Criteria" and the North Carolina State building code.				
2	Specifications should note that roof drains shall be kept protected from debris and prior to inspection the contractor shall conduct a flood test of the roof in the presence of the designer and Owner to verify drainage. The designer will confirm that roof structure will support a flood test prior to specifying it.				
3	Specifications shall state that when an existing roof is to be removed, contractor shall remove no more than can be dried in the same day. The roof shall be water tight at the end of each day or when rain threatens.				
4	Specifications should state that the downspouts and underground lines, both new and existing, shall be tested by the contractor with a fire hose at the beginning of work and then at the completion of roof work to confirm they are clear and open.				
5	Specifications should state that the downspouts or roof leader connections to the underground piping shall have a clean out located below the boot for ease in routing the underground portion of the drain pipe. The clean out shall have a bolted or screwed on coverplate (see the UNCG Design and Construction Guidelines).				
6	The drawings and specifications should indicate prefabricated walkway protection from the roof access to roof mounted equipment for maintenance access.				
7	The designer will inspect and identify items on roofs that can be reused (i.e. roof drains) and identify in the documents.				
8	Require in Specification that roofing contractor is a manufacturer's certified installer and has installed at least 5 similar type roofs.				
9	Designer to require in specifications that contractor maintains superintendent on site at all times and that he be capable of speaking English.				
10	Roof drain pipes and roof drain housings shall be insulated from the bottom of the roof deck, throughout the building to the first or ground floor level where it becomes subgrade.				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
11	The specifications will require a preconstruction meeting for application of fireproofing. Also require a sample application for inspection at the preconstruction meeting for approval prior to application.				
12	Re-roof projects: Designer will specify that the vapor barrier be totally removed and replaced as part of the project.				
13	<p>Snow ice protection will be specified and detailed on the drawings at building perimeter and entrances to prevent snow/ice slides off of sloped roofs. Snow and ice guards should be specified specifically for the type of roofing system used (slate or metal). Systems using a continuous metal bar that attaches directly to a vertical seam with non-penetrating fasteners are acceptable for standing seam metal roofs. Snow guards with an integral "hook over head edge at slate" feature are acceptable for slate. Spacing of guards will be per the manufacturer's recommendations for each specific project. Acceptable materials are copper and stainless steel.</p> <p>Manufacturers the designer may want to contact are:</p> <ol style="list-style-type: none"> 1. Zaleski Snow Guards, model #s 4, and 8 for slate roofs 2. Old World Distributors for historic buildings 3. Berger Brothers for slate and metal roofs 4. L M Curbs S-5 SnoRail for metal roofs <p>Designer is encouraged to contact snow/ice guard manufacturers regarding their products and review the selected system with UNCG FDC prior to submission of Construction Documents.</p>				
14	<p>For all waterproofing applications, the specifications will require the following:</p> <ol style="list-style-type: none"> 1. Make sure the substrate is clean and smooth. 2. Brick/masonry joints in locations to receive waterproofing are to be struck flush below grade. 3. On existing construction, if necessary, require the walls to be parged. 				
15	For through wall flashings, the designer will detail end dams and lap joint details where they occur.				
16	Fall Protection:				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
<p>On all new roof and reroofing projects, the designer will provide a design for "Fall Protection" in accordance with OSHA - 29CFR 1926.502 (b). The design of the fall protection will be included in the construction documents as part of the base bid or as an alternate. The designer will discuss with FDC various options with regards to the types of fall protection equipment most suitable for the project's specific circumstances and make a recommendation based on the type of roof and other project specific issues.</p>				
<p>17 Fall Protection Systems: OSHA requires that one of the following systems must be in place whenever an employee is exposed to a fall greater than six feet:</p> <p>A. Guardrail Systems</p>				
<p>B. Personal Fall Protective Systems consisting of the following:</p> <ul style="list-style-type: none"> - Personal protective equipment 				
<ul style="list-style-type: none"> - Connecting devices 				
<ul style="list-style-type: none"> - Anchorage 				
<p>C. Warning Line Systems and Controlled Access Zones: Guidelines for the implementation of warning line systems and work in controlled access zones must be developed in accordance with OSHA regulation 1926.502 and approved by OSHA before employees are exposed to fall hazards.</p>				
<p>D. Monitoring System: OSHA emphasizes that safety-monitoring systems are a last resort and may only be used when other systems are infeasible or present a greater hazard. Monitoring systems must be developed in accordance with OSHA regulation 1926.502 and approved by OSHA before employees are exposed to fall hazards.</p>				
<p>18 The UNCG Office of Safety will be included in the identification, selection, and design of fall protection systems on all projects.</p>				
<p>19 Use only silicone sealants for exterior joints.</p>				
<p>20 UNCG prefers not to use "Hot Mop" application of BUR materials on buildings within the primary campus boundaries due to the bad smell resulting from this application method.</p>				

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<p>1 University policy is to provide automatic opening doors at handicapped entrance and at the men's and women's toilet rooms on one accessible floor, typically the main floor.</p>				
<p>2 Exterior doors shall be aluminum or steel. Specifications should state that these doors will be capped with flush end closures, finished to match the door. This is especially important at the top of the doors.</p>				
<p>3 Steel doors and frames shall be a minimum of 16-gauge thickness.</p>				
<p>4 All doors shall be certified to have asbestos free cores.</p>				
<p>5 Exterior aluminum doors shall have a stile width of 3 1/2" (minimum). Narrow style doors will not be accepted.</p>				
<p>6 Signs will not be attached to doors.</p>				
<p>7 Door numbers shall be assigned in the door schedule and shall be coordinated with floor level and room numbers into which they open. Refer to Section 8100- "Door Signs" in the UNCG Design and Construction Guidelines.</p>				
<p>8 Coordinate the room and door numbering system with the user-group and with Facilities Operations and Office of Space Management.</p>				
<p>9 Confirm that the University locksmith has reviewed the hardware specifications and door schedule and that his comments are included in the review comments at all submission stages.</p>				
<p>10 The designer is to furnish, with his construction document submittal, manufacturers' cut sheets and other descriptive data describing in detail all hardware items to be furnished. These will be reviewed by the University locksmith.</p>				
<p>11 Require that the contractor provide spare hardware items, lock set cylinders, exit alarms and devices with the job. Items and quantities for each job to be determined in consultation with the University locksmith. Spare items are to be delivered to the Owner at the same time hardware is delivered to the contractor.</p>				

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<p>12 Stair doors opening onto roofs or into mechanical penthouses shall be equipped with a self locking lock set, having free knob-lever on the roof or mechanical area inside with access by key only. Doors shall be equipped with closers. In cases of doors opening onto roofs, closers shall be mounted out of the weather and doors shall be equipped with overhead stops.</p>				
<p>13 Doors into mechanical, custodial and elevator machine rooms shall have self locking locks with free knobs on the inside. Elevator machine room and transformer vault doors shall be equipped with door closers. Exterior mechanical room doors shall have stops and holders.</p>				
<p>14 All locksets should be construction master keyed during construction. Confirm with the University Locksmith.</p>				
<p>15 Cylinders and keys are to be provided with Corbin-Russwin concealed key control. Master keys are to be delivered to the University locksmith directly by the Corbin Russwin factory via registered mails. Provide an alternate for Corbin ML 20XX series lock sets with H5, 7 pin keyway, Von Duprin exit devices, and LCN closers. The designer's hardware schedule should be based on these manufacturers hardware.</p>				
<p>16 Alarm shunt switches and key operated elevator call or lock out switches shall be provided with Corbin-Russwin interchangeable core cylinders.</p>				
<p>17 Security Access: The University will use a millennium access control system. This system will be included in the project as an alternate and in the base bid as one of the three manufacturers.</p> <ul style="list-style-type: none"> * The system design will be based on the millennium system. * The designer will require in the specifications that shop drawings for the Security Hardware installation and coordination with standard hardware and door frames be provided prior to door frame approval and that the needs of the security hardware equipment be reflected and specifically noted on the door frame submittal. * The designer will require a pre-installation meeting with all contractors involved in the work in attendance with the designer and the FDC Construction Project Manager. 				

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<p>18 Security Hardware/Millennium System: The Designer is to include in the specifications requirements for crosstrack coordination of all of the security hardware on the project. The General Contractor's hardware supplier/installer, aluminum store front supplier,/contractor, door and frame supplier and electrical subcontractor and his security systems supplier/installer should be responsible for reviewing and cross coordinating their shop drawings. The installation and wiring should also be included as part of the "Coordination Drawings" provided by the major subcontractors, delineating their above ceiling work.</p>				
<p>19 Aluminum window systems must be provided with an anodized finish or a "Duranar" (or fluoropolymer) painted finish.</p>				
<p>20 Automatic door opening hardware: Typically pneumatic operated. Generally the University will not accept electric operated door hardware unless there is a specific reason the pneumatic hardware will not work for a given use.</p>				
<p>21 For Window replacement and new window installation: The specifications will require that the Project Designer will conduct on-site tests for water infiltration. The Designer will select typical examples of each different window type for testing. Tests not meeting specified requirements and units having similar deficiencies shall be corrected at no cost to the Owner. Additional tests may be required if deficiencies are observed in the original tests. Contractor shall pay for additional water tests. Tests are to be conducted according to the requirements of ASTM E 1105. No water leakage will be permitted.</p>				

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1	Maintenance stock for each color, type, pattern, etc. of the following items shall be provided. Each is to be packaged, protected, identified and stored by the contractor at a location to be indicated in the specifications.						
	A. Carpet2% of installed amount						
	B. Paint 1 gallon of each type and color						
	C. Wall covering 5 linear yards						
	D. Tile (floor, wall, ceiling, etc.) .. 1% of installed amount or 4 cartons max.						
2	Refer to the UNCG Design and Construction Guidelines, Section 9000 for interior color selection requirements.						
3	Acoustical treatment should be provided in the walls and ceilings of toilet rooms, offices and conference rooms, typically.						
4	Refer to the UNCG Design and Construction Guidelines, Section 9000 for information regarding special flooring materials to be used in specific areas of the building.						
5	Refer to the UNCG Design and Construction Guidelines Section 9000 for specific types of paint to be used in different areas and in different situations.						
6	For Residence Life projects coordinate ceiling materials, tiles, pattern, style, etc. with Residence Life.						
7	Terrazzo: If a building has an existing terrazzo floor and it is in good shape - leave it. Do not remove it.						
8	Floor coverings on ground floor slabs: Specify a vapor barrier to prevent moisture from forming between floor slab and finish material whether terrazzo, tile, or carpet. Vapor barrier might be similar to Madwell 927 Penetrating Epoxy Primer/Sealer by Madwell Products Corporation of Roswell Georgia or equal. The Designer should evaluate the existing conditions and determine for himself the proper vapor barrier method to be used for specific situations.						
9	Floors: Where carpet will be installed, verify that asbestos containing tile is abated prior to installation of carpet.						

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<p>1 Specifications should state that toilet and shower partitions are to be solid plastic, (a homogenous color, not coated or laminated), and should be floor mounted with continuous brackets. All hardware and trim should be stainless steel.</p>				
<p>2 See Division 10000 in the UNCG Design and Construction Guidelines for information regarding signage. Interior and exterior building signage will be identified by the architect. Interior signage will be specified as provided and installed by Owner, exterior signage will be provided by Owner and installed by contractor. A cost estimate of signage and installation will be provided by the University Facilities Operations and included in project budget.</p>				
<p>3 For renovation projects, identify all donation/dedication plaques on the interior and exterior of the building and/or project site. If plaque(s) will be affected by the new construction, require the General Contractor remove the plaques and store for reinstallation by the contractor when the renovation is completed.</p>				
<p>4 For New Buildings: Provide the correct building identification sign type to the designer and confirm that it is designed, specified, and located on the drawings.</p>				
<p>5 Paper towel dispensers are preferred over electric hand dryers and should be designed for single fold paper towels. Integral trashcans may be used for recessed or semi-recessed locations. Dispensers will have stainless steel finish and locking covers.</p>				
<p>6 The University will provide hand soap dispensers to be installed by the contractor at the locations shown on the drawings. Coordinate with Facilities Operations. They will order and install stainless steel soap dispensers that work with their liquid soap refills. Soap dispensers should be noted as Owner supplied and installed on the drawings but their location should be indicated on the drawings. Contact Facilities Operations for current costs associated with soap dispensers and include in project budget.</p>				
<p>7 Toilet paper holders shall be equipped to hold two rolls and furnished with lock covers or theft resistant spindles.</p>				
<p>8 Provide coat hooks inside all toilet partitions. Provide a minimum 12" wide book shelf in the toilet room if possible.</p>				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
9 At lavatories, a metal shelf, finished to match adjacent trim, should be provided.				
10 A minimum of one waste receptacle with a minimum 18 gallon capacity shall be provided for every two lavatories. Women's rooms stalls shall include sanitary napkin receptacles.				
11 Coat hooks shall be installed in a manner not to be a hazard to pedestrians. Coat hooks are required in classrooms and office buildings.				
12 10 Pound, ABC fire extinguishers (or those required by code) shall be provided for all facilities in recessed or semi-recessed cabinets.				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
<p>1 Vending area requirements will be coordinated by the Project Manager with the director of Auxiliary Services. The design will include connection requirements of equipment (power, water, data, etc.). This information shall be provided to the designer and included in the design documents. Typical requirements are as follows:</p> <ul style="list-style-type: none"> - Drinks, sandwich and candy machines require a 20 amp dedicated duplex receptacle for each machine. 				
<ul style="list-style-type: none"> - All water and electrical outlets should be 18 inches above finish floor level. 				
<ul style="list-style-type: none"> - Floor finishes should be hard surface, (ceramic, tile, etc.). 				
<ul style="list-style-type: none"> - Provide a data outlet adjacent to each vending machine. 				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 Are gypsum board ceilings provided in the elevator shafts and elevator equipment rooms?				
2 Specify a stainless steel vandal resistant telephone for the elevator cab.				
3 Coordinate the sump on the structural, architectural and plumbing drawings.				
4 The elevator sump pit pump must be indicated on the plumbing and electrical drawings.				
5 Confirm that the elevator sump-pump drain line is connected to the sanitary sewer through an oil separator.				
6 The electrical drawings should provide for a fusible disconnect switch for the main elevator power:				
7 Verify that no extraneous piping/wiring/etc. is in the elevator shaft.				
8 Does the elevator equipment room require HVAC and is it indicated on the drawings?				
9 The telephone connection to the elevator must be provided and wired directly to the elevator unit by the contractor (a wall telephone jack is not acceptable) and connected directly to the Police Station.				
10 Require a diagnostic system for all elevators (see DOI website for State elevator requirements).				
11 Alarm shunt switches and key operated elevator call or lock out switches shall be provided with Corbin-Russwin interchangeable core cylinders.				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 The Designer shall review the Master Plan for steam.				
2 The Designer shall review the Master Plan for chilled water.				
3 The Designer shall review the Master Plan for water.				
4 The Designer shall review the Master Plan for sanitary sewer.				
5 The Design Project Manager will verify that the mechanical designer has reviewed existing mechanical conditions for renovation projects as part of DD approval process.				
6 Specifications should require the mechanical designer to work with the General Contractor to produce coordination drawings to verify duct work and piping in corridors and mechanical rooms fits in the space provided.				
7 When asbestos abatement of steam lines or duct work is part of the scope of work, the designer will re-insulate as part of the project.				
8 The designer will specify that all valves will be identified with tags.				
9 Isolation valves will be provided at each riser, toilet room, house bib, and branch off main lines. Review number and locations with Facilities Operations.				
10 The designer will specify that all thermostats are non-mercury.				
11 The designer will specify that all utilities are to be metered (condensate, power and water typical).				
12 Verify that all pipes are insulated, (steam, hot and cold water, chilled water).				
13 The designer will confirm that the DDC controls are compatible with the existing campus system. Provide an alternate for University control system (Attachment 15).				
14 Verify that fire dampers are provided and in proper locations.				
15 HVAC ductwork insulation shall be specified for all ductwork shapes (rectangular, round, oval, etc.).				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
16 Review routing of mechanical ductwork, electrical and plumbing lines for conflicts.				
17 Confirm that water coolers are specified, <u>not</u> water fountains.				
18 Confirm there are no trap primers on floor drains in rooms with nonabsorbent floors that have hose bibs.				
19 Verify that steam manhole covers are 36" diameter.				
20 Specify battery powered automatic flush valves for water closets and urinals.				
21 Provide exterior freeze proof hose bibs at 100' intervals around building exterior, adjacent to each primary entrance and at service area. Coordinate locations with Facilities Operations.				
22 Verify that solid state motor overloads are specified.				
23 Verify that backflow preventers are shown and specified for potable water supply, fire prevention systems, irrigation systems, and in any other location where cross-connections may occur. Especially look at points in the system where makeup water or chemical connections are made.				
24 Confirm Systems Control Diagrams are provided on the drawings.				
25 Confirm Energy Code Data is included on Building Code Data Sheet.				
26 Confirm that any exposed ductwork included in the project in public spaces is finished galvanized steel ductwork and is to be painted. If ductwork is not to be painted it should be stainless steel. This include hangers, boots, connectors, fasteners, etc.				
27 Confirm that no "Air Admittance Valves" are installed on plumbing vents. All plumbing fixtures on all projects are to be connected to vent pipes extending through the roof.				
28 For all projects involving buildings and utility connections, require that each building can be isolated by valves, switches, etc. Coordinate with Facilities Operations and FDC.				

Project Checklist		Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
29	As part of design research, when applicable, have Facilities Operations confirm that steam and water isolation valves are functioning prior to start of construction.				
30	The designer will make sure that the intentions of and expectations of the fire sprinkler design are clear on the drawings. State boldly on drawings that the actual design of the sprinkler system will be done by the sprinkler subcontractor.				
	A. Provide design pressures for the fire sprinkler system on the drawings.				
	B. Show stand pipe design (if required) on the drawings.				
	C. Note on the drawings that sprinkler heads will be located in the center of ceiling tiles.				
	D. Note on the drawings that sprinkler heads are to be centered down corridors.				
	E. Note that all sprinkler head locations are to be coordinated with the Architect's reflected ceiling plans				
	F. The Architect is to review the sprinkler head locations on the shop drawings.				
	G. Note on the drawings that installation of sprinkler heads will not begin until the architect and engineer have reviewed and approved the shop drawings.				
	H. The sprinkler heads will not be relocated without the approval of the Architect.				
31	All buried ductile iron piping associated with University projects shall be fully restrained. Pipe joints shall be Flex-Ring by American Ductile Iron Pipe" or equal. Mechanical joint fittings and valves must utilize "Magalug" restraint glands by EBAA Iron Sales or equal. Thrust Blocks will not be permitted on UNCG construction projects. Piping systems include both chilled domestic and sprinkler water.				

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<p>32 All projects with air handling units and/or mechanical rooms on elevated floors, particularly floors above occupied areas, will be provided with curbs, sealers, waterproofing, area drains and/or any combination of these, to contain and eliminate water that may accumulate during regular maintenance, or for any other reason, and migrate into other areas of the building.</p>				
<p>33 VAV boxes: VAV boxes should not be located in corridors. They should be located in rooms over the entrance doors to avoid being over furniture and to assist in making them as accessible as possible.</p>				
<p>34 Fire sprinklers: Most problems associated with the design of fire sprinkler systems involve either flow or pressure. The Designer will look at overall University and City of Greensboro infrastructure prior to designing the fire sprinkler system. The Designer will do real water pressure and flow testing early in the design process to determine the most accurate pressure and flow data. He should not rely on previously done tests conducted outside his presence.</p>				
<p>35 Fire Pump Acceptance Test: The acceptance test for fire pump installations, its format and attendees, are required by NFPA 20. Compliance with NFPA is mandated by the North Carolina building and Fire Code.</p> <p>The installation of a fire pump will require a test with the following representatives (responsible parties) in attendance:</p> <ul style="list-style-type: none"> The Pump Controller Manufacturer The Controller Manufacturer The installing Contractor The Design Professional The Owner or their Representative The Department of Insurance or their Representative 				
<p>In the appropriate location in the specifications, require the General Contractor to initiate and coordinate the time, date and attendance of all responsible parties to attend the final acceptance test for any fire pump installation. The test should be conducted by the pump manufacturer's representative. The specifications should state that the General Contractor is responsible for contacting the Office of State Fire Marshall a minimum of two weeks in advance of the acceptance test so that a Department of Insurance representative may attend the test if scheduling permits.</p>				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
<p>If an emergency generator is a part of the building project, it should be tested with the fire pump running under 100% load, in order to ensure they are fully operational in the event they are needed.</p> <p>Designers are reminded that they should use NFPA 13 in lieu of NFPA 13R as the applicable sprinkler design for campus residence hall projects. In order to use NC Code design concessions granted for having sprinklers, or to obtain the insurance credit that institutions want, designers must follow NFPA 13.</p> <p>Ducted returns are always preferable to return air plenums. Provide ducted returns on all projects unless floor to floor heights make ducted returns not feasible.</p>				
<p>36 The Fire Sprinkler System should follow only one of the following two methods of design:</p> <p>1. The designer will hire a "Fire Protection Engineer" to completely design the fire sprinkler system.</p>				
<p>2. The designer will provide a prescriptive design based on a specific hazard level and note that the design is to be provided by the fire sprinkler contractor. The designer may wish to define sprinkler head layouts (locations) in historic or architecturally significant rooms or areas with ornate ceilings. The following notes serve as an example of what should be provided under these circumstances in both the drawings and specifications:</p> <ul style="list-style-type: none"> • The fire protection system design and shop drawings will be provided by the fire protection subcontractor. 				
<ul style="list-style-type: none"> • The fire protection subcontractor shall review the existing building conditions and all applicable construction. 				
<ul style="list-style-type: none"> • The fire protection system shall be coordinated with the final ductwork and piping layouts. 				
<ul style="list-style-type: none"> • The location of the sprinkler heads are based on architectural and aesthetic reasons. 				
<ul style="list-style-type: none"> • The sprinkler layout and piping is subject to review and approval by the Architect and Engineer. 				

	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
<p style="text-align: center;">Project Checklist</p> <ul style="list-style-type: none"> • The exposed sprinkler head locations and piping locations may be subjected to relocation based on the Architect's and Engineer's review at no additional cost to the Owner. 				

Project Checklist	Not Applicable	DD Check	CD Check	Location of designer's response incorporated: page/paragraph/line
1 Designer shall review the Master Plan for electrical.				
2 All electrical ductbanks are to be concrete-encased.				
3 Verify all manhole covers are 30" in diameter.				
4 Exterior lighting design must meet University standards.				
5 The campus standard exterior lighting fixture must be specified and bid as an alternate. (Attachment 15)				
6 The designer will verify if the building needs lightning protection.				
7 Specifications should require the Electrical Designer to work with the General Contractor to produce coordination drawings to verify lights, cable tray, duct work, and piping in corridors and mechanical rooms fit in the space provided.				
8 All data and telephone wiring must be coordinated with the University computing department and the user-group.				
9 Confirm that the fire alarm is an analog addressable type. For Residence Life projects, bid EST as a preferred alternate.				
10 Confirm that the power connections have been coordinated with architectural, plumbing, and mechanical drawings.				
11 Confirm that a fused disconnect is provided for the elevator.				
12 Verify that emergency telephone requirements have been coordinated with the Safety Office, University Police, Telephone Services and the end user.				
13 Designer will verify that all egress pathways are clearly marked and illuminated.				
14 Designer will verify that all alarm indicating devices meet ADA requirements.				
15 Obtain cost estimates from Network Services and Telephone Services for telephone and data equipment and connections.				
16 Verify electrical outlets are provided at each floor landing in all stairs.				
17 All corridor electrical outlets are to be on separate circuits from offices and classrooms.				

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<p>18 Confirm a minimum of one GFI electrical outlet is provided in each toilet room.</p>				
<p>19 All conduits will be a minimum of 3/4" diameter.</p>				
<p>20 Drawings and specifications should note the installation of a "vending miser" device for all vending machines in vending rooms. This device works as a motion sensor, turning the machines on only when needed.</p>				
<p>21 Confirm power requirements for dumpster/compactor with Facilities Operations. Confirm number of outlets and GFI outlet locations with Facilities Operations.</p>				
<p>22 Renovation and demolition projects are likely to involve removal of lighting fixtures with ballasts containing Polychlorinated Biphenyls (PCB's). The University requires contractors to dispose of these ballasts by collecting them in drums provided and labeled by the University Safety Office, and to transport these drums to a location where they can be picked up by the UNCG Safety Office. Coordinate delivery and pick-up with the UNCG Safety Office through the FDC Construction Project Manager. The contractor's responsibility shall be to properly collect the ballasts and turn them over to the UNCG Safety Office. The University Safety Office will then obtain possession, and pay for disposal of these ballasts through an authorized disposal company at no additional cost to the contractor. The Designer shall include a note on the demolition drawings to dispose of these ballasts by turning them over to the University Safety Office, and shall add wording to the project specifications detailing this disposal. The contractor shall open the lighting fixtures and determine if the lighting fixtures contain ballasts with Polychlorinated Biphenyls (PCB's) Non PCB-containing ballasts will have printed on their labels "NO PCB's". If the ballast label is missing, illegible, or not explicitly labeled "NO PCBs," the ballast shall be considered to contain PCBs. Ballasts explicitly stating "NO PCBs" shall be disposed of by the contractor as a part of the normal demolition of material in the project. All other ballasts (missing labels, illegible labels, or those ballasts not explicitly marked "NO PCBs") shall have their wires cut close to the ballasts. The ballast shall be removed from the lighting fixtures, and shall be collected in containers provided by the University Safety Office. After taking possession of the drums, the UNCG Safety Office will dispose of the ballasts at no additional cost to the contractor.</p>				
<p>23 Millennium Lock System (see also Section 8 of Checklist)</p>				

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<p>A. Do drawings have details of conduit installations?</p>				
<p>B. Has a location for the master control unit been provided?</p>				
<p>C. Is type of wire for system specified?</p>				
<p>D. Are local control units indicated and powered on the drawings?</p>				
<p>E. Is the division of work clear and are all responsible contractors identified?</p>				
<p>24 Provide exterior GFI outlets around building perimeter. Coordinate locations with Facilities Operations.</p>				
<p>25 Confirm that solid state motor overloads are specified.</p>				
<p>26 Verify that all 3-Phase motors are provided with single phase protection.</p>				
<p>27 Add the following to the door, door hardware, electrical, and security system contractor's specification sections: <u>Millenium Security System</u> A door shop drawing coordination meeting shall be held before door, door frame, door hardware, and security system shop drawings are submitted. The purpose of this meeting will be to coordinate doors, frames, door hardware, electrical rough-ins, and security systems hardware and opening. The Contractor shall notify the Owner, Designer, and affected subcontractors, and schedule the meeting. The rough-in drawings for each door/frame requiring security system or other wiring and bring these drawings to the coordination meeting. The affected trades shall coordinate wiring, rough-ins, door opening construction, door frame and door hardware installation prior to the submission of door shop drawings or electrical rough-in.</p>				
<p>28 Where wall finishes are other than flat painted or ceramic tile covered finishes, coordinate electrical, mechanical, and fire protection wall mounted devices and device cover plates with finishes shown to avoid conflict with reveals or other decorative elements. Locations shown on plans are schematic and may require minor adjustment to avoid conflict with special finishes. Review with architect any special finish conflict with indicated standard device mounting height for adjustment directive. Verify color selections of device and device cover plates in special finish areas. Coordinate with special finish shop drawings for device detail and block out depth in special finish locations.</p>				

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29 Provide exterior emergency lights at all required fire exits. Lights must be connected to emergency power. Review requirements of Section 1003.2.11.2 "Means of Egress" in the 2000 International building Code/NC Building Code.				
30 Audio/Video Equipment Installation:				
A. Ceiling Mounted video Projectors must be mounted at least 12' to 13' away from a 7' projection screen.				
B. In all cases the projector lens must be centered on the projection screen.				
C. The Video Projectors will be supported by painted steel ceiling panels specified specifically for either lay-in or solid surface ceilings.				
D. In all cases, make sure that ceiling recesses, cove lighting, and the location of mechanical supply and return air louvers, HVAC duct work, light fixtures (not in front of the projector), sprinkler heads (not immediately in front of behind the projector), smoke detectors, etc., are coordinated with the projector location.				
E. Minimum conduit Size is 1 1/2 inches.				
F. Provide (2) - 1 1/2" (min.) conduits and a custom sized wall box to accept the oversized conduit. Locate these wall boxes on the wall adjacent to where the teaching station is to be located. Conduit will run from the wall box, through the wall, above the ceiling and to a second junction box located near the anticipated video projector location.				
G. It would be best to provide a floor mounted box to feed the remote teaching station. Conduit size and routing will be the same as for the wall mounted boxes.				
H. For less than 50 people the projector speaker will be adequate. For more than 50 people remote speakers will be necessary.				
I. Recessed, ceiling mounted Projection Screens, in return air plenums need UL listed plenum rated housings in the plenum space in order to meet the building code.				
J. Activate Projection Screens using in-line wiring, 110v, with switch on the wall.				

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<p>31 <u>Emergency Telephones:</u> The University Telephone Services Department will provide the Blue Light, Emergency Telephone Towers for projects that require them. The telephones will be Owner supplied and contractor installed. The contractor will provide the concrete base foundation, the electrical and telephone conduit and all wiring to the building from which the emergency telephone will be connected. The contractor will install the emergency telephone tower and strobe making all electrical connections including the grounding. Telephone Services will then make all the telephone connections and provide the dial tones. The basis of design is the Talk-A-Phone 40 - D; Model TF-ETPMT vandal resistant, 9'-6" x 10" tower with blue strobe and outdoor ADA compliant hands free operation. Finish Color: UNCG Blue, as on file. Markings: Right Side: "UNCG POLICE"; Left Side: "EMERGENCY" in yellow reflective lettering, as on file. The Local distributor is ADI. Local Telephone number is 336-668-3644. UNCG customer number for order comparison is: 35080-000.</p> <p>If wall mounted Emergency Telephones are required, additional information can be provided to the designer regarding these as well. We only use wall mounted Emergency Telephones in rare cases. They are also manufactured by Talk-A-Phone. For additional information coordinate with the University FDC Design Project Manager.</p>				