Facilities Planning and Management

Consultant Procedures and Design Guidelines

BALL STATE
UNIVERSITY

Ball State University Document – CONSULTANT PROCEDURES AND DESIGN GUIDELINES
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1.0 ORIENTATION

1.1 INTRODUCTION

This manual is for use by design Consultants providing services to Ball State University and describes the minimum design and submittal criteria for University projects. It is recommended that all members of the design team thoroughly read this manual prior to beginning design. The manual has the following sections.

Section I, Orientation, describes the general business relationship between the Consultant and University.

Section II, Planning and Contract Document Development Guidelines, lists University codes, standards, design review, drawing, and project manual requirements.

Section III presents **Design Guidelines** to be used in the design of University facilities and are available on online at this link: www.bsu.edu/facilities/consultants

1.1.1 Ball State University

Founded in 1918, Ball State is a state-assisted residential university in Muncie, Indiana, a midsize Midwestern city one hour northeast of Indianapolis. About 21,000 undergraduate and graduate students enroll each year in diverse academic programs on and off campus. Ball State is ranked as a research university, high research activity by the Carnegie Foundation for the Advancement of Teaching and is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. Individual programs are accredited by various regional and national organizations.

The University Finance Office shall approve the hiring of Architects and Engineers and other Consultants recommended by BSU Facilities Planning and Management for University construction projects.

1.2 AGREEMENTS BETWEEN THE UNIVERSITY AND CONSULTANT

1.2.1 The University Director of Facilities Planning or his/her designee [PM] is the Owner's Representative while completing the agreement between the University and the Consultant from the start of design up through receipt of bids. All instructions and approvals come to the Consultant from the PM and/or the Finance Office.

1.2.2 The Architect shall provide Professional services for the project as defined in the Owner-

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Architect Agreement. The form of agreement shall be the Standard Form of Agreement Between Owner and Architect, AIA Document B101-2017, as amended by the Owner. Review this document carefully; the University allows no deviation from this agreement form. The Agreement also includes the Building Information Modeling and Digital Data Exhibit, AIA Document E203-2013 and Digital Data Protocol, AIA Document G201-2013, both as amended by the Owner. For projects with a sustainable design goal, the Agreement also includes the Sustainable Projects Exhibit, AIA Document E204-2017, as amended by the Owner.

On smaller projects, the Ball State University Agreement for Consulting Services may be used in lieu of the B101-2017 form.

1.2.3 The Consultants provide all basic services noted in the agreement form and as detailed in this document.

1.2.4 Renovation projects normally include a review of existing conditions as a part of the basic services. The University will make all existing documentation available to the Consultant, however, this documentation should be considered for information only. Accuracy is not guaranteed and should not be viewed as reliable without field verification. It is the responsibility of the Consultant to perform necessary site surveys of all accessible areas including but not limited to ceiling cavities, within accessible chases, tunnels and crawl spaces. Include existing equipment that will be retained for re-use in the survey including all dimensional and utility information. Every effort shall be made to reduce the potential for "unforeseen conditions" claims during construction.

1.2.5 On major projects, the University will issue a Request for Qualifications (RFQ) to potentially qualified Consultants. This may be a multi-step process involving short listing and interview(s). Where a Consultant proposes using sub-Consultants on the design team, such as an engineering firm for MEP design, the University may request that a change in the proposed sub-Consultant be considered. It is recommended Consultants inquire about the acceptability of proposed sub-Consultants prior to submitting a response to the RFQ. Once selected, the University and the Consultants shall negotiate a design fee. Fee may be based upon a percentage of <u>estimated</u> construction cost that will be then converted to a fixed fee. On smaller projects, the Consultant will be asked for a fixed fee proposal. Any subsequent changes in sub-consultants must be approved in advance by the Owner.

1.2.6 Fee proposals should include the Consultant's interpretation of the University's project scope of work and recommended scope of services. The Consultant will include proposed fee and estimate of reimbursable expenses, project schedule, and University provided information. Fee proposal shall also include a schedule of hourly rates for the Consultant

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and any sub-consultants in the event additional services are required.

1.2.7 Fee proposals shall be broken down into design and construction services that align with design deliverable submittals or design milestones. Progress payments will not be released for each design phase until all deliverables for that phase have been received and are complete and are approved by the PM.

1.2.8 Reimbursable and non-reimbursable expenses are described in the agreement. The Consultant should discuss any potential reimbursable expenses with the PM before the proposal is submitted. Reimbursable expenses shall be per University guidelines, shall be approved in advance by the PM, will be paid at cost, and must be accompanied by supporting documentation and/or receipts. Reimbursable expenses for travel have limits; the PM will provide the Consultant a schedule.

1.2.9 The Consultant's proposal shall identify project milestones and include two weeks for University review of submittals and return of comments. The PM will provide the Consultant with any University schedule requirements.

1.2.10 All design review meetings, user group meetings and field survey/existing site verification, including existing fixed and portable equipment survey, should be included in the Consultant's basic services fee. Basic services also include a pre-bid meeting, the bid opening, a pre-construction meeting, bi-weekly job progress meetings, commissioning team meetings, Owner's demonstration and training sessions, punch-list inspections as needed, and a final inspection.

1.2.11 The number of proposed construction observation trips should be identified by the Consultant as a part of basic services during construction. At a minimum observation shall be made on a weekly basis throughout construction but more trips may be requested. Any trips required as a result of deficiencies in the design or design documents will be at no additional cost to the University. The Consultant shall discuss the preferred method for additional trip payment with the PM before submitting a proposal. If a per trip unit cost for additional construction trips is used, a trip refers to one person on site for one day and includes the issuance of any related meeting minutes and site visit reports.

1.2.12 Unless requested to provide services involving asbestos containing materials [ACM], the University will provide the Consultant with the specification for ACM removal. The Consultant assumes no design responsibility for work related to ACM removal.

1.2.13 The University requires a minimum of $2,000,000 professional liability insurance. The PM will notify the Consultant if additional professional liability insurance is required. Additional coverage may be required on major projects and/or projects that present

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unusual risks. The PM may require this additional coverage as a reimbursable expense. The Consultant may be asked to detail their current professional liability coverage and costs in determining the additional cost to the University.

1.2.14 The Consultant shall submit proof of the required insurance with the signed agreement. The University will not execute the agreement or approve payments without approved insurance.

1.2.15 The University and/or the PM will provide instructions on how to submit payment requests. The University will not process payment requests unless an executed agreement is on file. In general, invoices shall include a detail of the work completed, summarize the total bill for services to date, and include the amount of the current request and shall align with the design milestones / phases (e.g. SD, 100 % DD, 50% CD, 100% CD, CA, Final Closeout etc.)

1.2.16 Fee schedule shall be based upon the standard breakdown in the AIA Owner-Consultant agreement as follows: Programming - 5%, SD's - 15%, DD's - 25%, CD's - 35%, Bidding - 5%, CA - 15%. Further breakdown and/or progress payments between submittals or during construction for CA phase is negotiable. The final closeout payment will not be released until all O&M and record drawings have been reviewed and received.

1.3 DESIGN PROCESS AND APPROVAL

1.3.1 Project Management

1.3.1.1 The University's Project Manager [PM] is the Owner's Representative during the design of the project. All instructions and approvals come to the Consultant from the PM. Services rendered but not requested by the PM will not be compensated.

1.3.1.2 The PM manages the total project budget and requires the Consultant to manage the construction budget during design.

1.3.1.3 The PM will manage internal University approvals and instruct the Consultant accordingly.

1.3.1.4 The Consultant should insist on the timely Owner provided information and approvals. The University asks the Consultant to notify the PM of Owner related delays before the schedule is jeopardized.

1.3.1.5 The Consultant must notify the PM immediately if the Consultant believes additional services are requested by the University. This also applies to abandoned work. A fee

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must be negotiated and the agreement adjusted immediately.

1.3.2 Meetings and Shareholders

1.3.2.1 University projects normally involve many academic, student, and service groups as shareholders in a project. The PM arranges for and coordinates the Consultant's contact with these groups. Meetings are scheduled by the PM's office.

1.3.2.2 BSU Facilities Planning, Facilities Engineering and Facilities Management provide in-house design & construction related services. The PM will arrange for and coordinate the Consultant's contact with these groups.

1.3.2.3 Meeting minutes are kept by the Consultant and reviewed by the PM before issue. Meeting minutes should be issued to all participants within five working days.

1.3.2.4 The University asks the Consultant to respect the University's time and conduct effective, productive meetings. The Consultant should review meeting agendas with the PM at least one day in advance.

1.3.3 Submittals

1.3.3.1 The University asks the Consultant to provide timely and complete submittals. The University will review the Consultant's work for program conformance and constructability. Incomplete and/or poor quality submittals are of no values and waste University and Consultant time. The PM is authorized to reject incomplete submittals. Progress payments will not be released for each design phase submittal until a complete deliverable has been received and approved.

1.3.3.2 The Consultant is responsible for the management and performance of their sub-consultants. Delay of a sub-consultant's part of a submittal is considered an incomplete submittal from the Consultant.

1.3.3.3 Delay of a project due to incomplete submittals is the responsibility of the Consultant.

1.3.3.4 Detailed submittal requirements are described in Section II.

1.3.3.5 The Consultant shall allow two weeks of review time by the University between submittal of review documents and the review meeting. The University considers the milestone achieved only when the review meeting is complete and the submittal approved by the PM.

1.3.3.6 Final review documents should be ready to issue for bid. Bid documents shall be

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delivered to the University in .pdf format. The Consultant shall also provide documents in AutoCAD .dwg format as well as the Revit model for use by the University. It is preferred that each drawing be a separate .pdf file and that specification files be divided into volumes and sections.

1.3.3.7 The University will supply the Consultant with an electronic copy of the bid form, Procurement and Contracting Documents in Divisions 00 and minimum General Conditions in Divsion 01 of the specification. Use of the BSU Division 00 document is required. BSU Division 01 specifications may be used at Consultant's option and tailored to the project as required.

1.3.4 Electronic Documents

1.3.4.1 Bid documents shall be delivered to the University in .pdf format. The Consultant shall also provide documents in AutoCAD .dwg format as well as the Revit model for use by the University. It is preferred that each drawing be a separate .pdf file and that specification files be divided into volumes.

1.3.4.2 Larger projects require the use of the Owner's project management software by the Consultant and the successful contractor. Project team members will be furnished usernames and passwords to access the project via the internet. The University will conduct a training session in basic software navigation and use for those unfamiliar with the software.

1.4 BIDDING

1.4.1 The PM coordinates the advertisement after the final review documents are approved. The PM in concert with BSU Purchasing sets the advertisement, pre-bid conference and bid opening dates. In general the bid schedule (in reverse) is as follows:

Bid Opening	10 days minimum, not to exceed 6 weeks after 2nd Advertisement and 17 days minimum after 1st Advertisement.
Pre-bid Conference	Between 2nd Advertisement and Bid Opening. Schedule w/ PM. At least 24 hours after 2nd Advertisement.
2nd Advertisement	10 days minimum prior to bid opening. 1 week from 1st Adv.
1st Advertisement	1 week prior to 2nd Advertisement, Wed., Thur. or Fri. only.
1st Ad Receipt by Newspaper	Friday by 3:00pm for following Wednesday publication of 1st

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	Advertisement
	Monday by 3:00pm for Thursday publication of 1st Advertisement
	Tuesday by 3:00pm for Friday publication of 1st Advertisement
Bid docs to Purchasing	By noon 1 full working day prior to 1st Ad publication by Newspaper

1.4.2 BSU Purchasing will distribute bid documents in .pdf format on CD. CD's will be mailed to planholders upon their request or may be picked up in the BSU Purchasing office. BSU Purchasing will provide the Notice to Bidders with the bid documents.

1.4.3 BSU Purchasing maintains the planholder list. A list of plan holders will be published by BSU Purchasing on their website.

1.4.4 Addenda are part of the contract documents and will be expeditiously distributed by BSU Purchasing to all planholders and plan rooms. It is preferred that final addenda be issued at least 7 days prior to date of bid opening. At a minimum the final addendum must be issued at least four (4) calendar days before the bid opening. BSU Purchasing needs any addenda by noon the day prior to issue. The Consultant shall prepare addenda for the PM to approve. Addenda will be distributed in .pdf format on CD and will be mailed to all planholders. BSU Purchasing will also post addenda to their website. In the event there is an imperative need to issue an addendum less than four calendar days prior to the bid date the bid date must be extended.

1.4.5 The PM assisted by the Consultant, will conduct a prebid meeting. Meeting date, time and location will be determined by the PM in conjunction with BSU Purchasing. Plan holders are invited to attend to ask questions about the drawings and specifications and to inspect the project site. The Consultant will be asked to describe the project and emphasize important facets of the work and schedule. Simple clarifications can be made in response to questions. Other questions will be recorded and clarified by addendum. Questions requiring interpretations by the Consultant will be answered by addendum.

1.4.6. To assure an adequate number of bids is received:

1. The Consultant will review the local bidding climate prior to the preparation of bidding documents. The size and composition of projects will be considered to encourage competitive bidding. If it appears a conflict among projects will occur in the bidding market, the rescheduling of the bids will be considered if time permits

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and if this rescheduling can result in additional bids.

1.4.7 The BSU Purchasing Office will conduct a public bid opening. Consultant attendance at the bid opening is required.

1.4.8 The Consultant shall perform a bid evaluation to determine the lowest and best bidder. The PM along with BSU's Finance Office, BSU Facilities Engineering, Director of Construction and the Director of Planning will also review the bids. The Consultant's review and analysis includes, but is not limited to:

1. A thorough analysis of the "Bidder's Statement of Qualifications" to determine if the low bidder is qualified.

2. A thorough analysis of the low bid against the scope of work to determine if the bid is responsive.

3. Checking of references for the contractor and his proposed subcontractors.

4. An analysis and explanation of the bid spread

5. A comparison and analysis of the Consultant's prebid construction estimate to the low bid and the average bid.

6. An analysis and explanation of why there were variations in the bids

1.4.9 Once the project has been awarded and the Letter of Intent to Award and Notice to Proceed has been issued by BSU Finance Office the Consultant shall immediately prepare a "For Construction" set of documents for use by the contractor and the University. This set will consist of the bid documents with all addenda incorporated. The Consultant shall furnish this set in .pdf and .dwg formats and shall provide an updated Revit model where Revit was used in the design of the project.

1.5 CONSTRUCTION

1.5.1 Once the contract is awarded, the PM ceases to be the Owner's Representative and the University Director of Construction or his/her designee, Construction Project Manager (CPM) becomes the Owner's Representative. All instructions and approvals will come to the Consultant from the CPM. Services rendered but not requested by the CPM will not be compensated.

1.5.2 Communications during construction, including letters, memos, directives, etc., shall be

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directed through the CPM. Submittals and Applications for Payment shall be submitted directly to the Consultant for review and approval prior to submitting to the CPM. The CPM will review communications with the Consultant and the Contractor at the pre-construction meeting.

1.5.3 The Consultant shall attend bi-weekly construction progress meetings throughout the course of the project and shall also attend commissioning meetings and Owner's training sessions. Refer to BSU standard specification section 017900 for details on Owner's demonstration and training. Refer to paragraphs 1.2.9 through 1.2.11 of this document for additional requirements during construction. The Consultant shall incorporate specific requirements in Part 3 of the appropriate technical specifications sections.

1.5.4 The CPM will schedule inspections prior to establishment of Substantial Completion and at Final Completion. The Consultant, Owner and Contractor must inspect the work, system by system and room by room, if appropriate, making a record of deficiencies or corrections required (Punch List) to fully comply with the contract documents.

1.5.5 The Consultant shall prepare a final punch list, by room, system, or area, and send the requested number of copies to the CPM, who will make them available to the Contractor. The Consultant must field verify completion of punch list.

1.5.6 The University will not make final fee payment until all outstanding items, including the sustainable certification documents and the record drawings in the format required by the University, have been received and approved. Record Drawing and O&M documents shall be reviewed and approved by the Consultant. Record drawing review by the Consultant shall be thorough, not just a cursory "pass through" review. All clarifications and changes issued during construction shall be indicated.

1.5.7 The Consultant shall utilize the Contractor provided record drawings and other documents provided during construction to prepare AutoCAD record drawings for the Owner's use.

2.0 PLANNING & DEVELOPMENT GUIDELINES

2.1 INTRODUCTION

2.1.1 The Consultant shall use the planning information in this section to plan and develop University facilities.

2.1.2 The criteria represent minimum levels of performance, quality, and/or standardization that are sometimes different from those accepted in private and

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commercial industry. This is in recognition that these facilities must be cost effective over the life of the facility, while supporting the academic and research missions of the University.

2.1.3 The planning and development criteria compliment the Design Guidelines. The Consultants shall familiarize themselves and be responsible for implementing all criteria and guidelines.

2.1.4 The Consultant shall plan facilities with consideration given to serviceability and maintainability of these facilities.

2.2 GENERAL

2.2.1 Design submittals shall, as a minimum, include items in this section.

2.2.2 The Consultant shall:

Develop and economically justify designs within the prescribed budget and space allocations and design to obtain the lowest life-cycle cost consistent with a high quality facility.

Design to harmonize architecturally with the buildings upon the University campus and/or as instructed by the PM. Design shall be consistent with the 2105 Ball State University Campus Master Plan and architectural guidelines available here: https://www.bsu.edu/about/campus-master-plan

Cooperate mutually with the Owner and with any other such Consultants employed by the Owner.

2.2.3 Provide an experienced Architectural or Engineering Project Manager capable of effectively coordinating a multi-disciplined team and with experience in the communication and administrative skills necessary for that role. The same manager shall be used for both design and construction unless approved by the University.

2.2.4 Design to Ball State University's Standards and Guidelines as listed in section 2.4 and 3.0 of this document and as available at : www.bsu.edu/facilities/consultants

2.2.5 Make all correspondence between the University and the Consultant during the design phase through the PM.

2.2.6 Make project design presentations to University Administration for projects as requested

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by the PM.

2.2.7 Identify any construction alternates included in the design as additional to base bid design. The University typically includes construction alternatives to protect the budget.

2.2.8 Schedule and conduct a design kickoff meeting between the Consultant and the University Architects and Engineers. The Consultant and all sub-Consultants shall be present at this meeting. Design approach, available utilities, Ball State University Standards and Guidelines should be on the agenda.

2.3 ENERGY

2.3.1 The energy conservation criteria contained in this section shall be followed by the Consultant.

2.3.2 Facility designs shall include energy conservation features that can be economically justified on life cycle cost criteria. Principal considerations are first cost, operational cost, maintenance cost, climatic conditions, site configuration, building orientation, building functional arrangement, building envelope, and mechanical systems as applicable to minimize the use of fossil fuels.

2.3.3 Develop an energy budget for new building, building additions, and renovations based on the following:

1. Building function and classification, and information received from the PM.

2. Indiana Energy Conservation Code (ASHRAE 90.1 with Indiana amendments)

3. LEED requirements if requested in the RFQ or RFP.

2.3.4 Building envelope and mechanical and electrical systems shall meet the minimum requirements of the Indiana Energy Conservation Code.

1. The Consultant shall document compliance at the conclusion of schematic design, design development, and contract document phases.

2. If the design does not achieve compliance, then redesign is required at no additional cost to the University.

2.4 BUILDING CODES AND STANDARDS FOR UNIVERSITY FACILITIES

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2.4.1 Basic Building Code Policy

2.4.1.1 All University facilities construction projects shall comply with the current Indiana Building Codes.

2.4.1.2 Designs shall comply with Ball State University Mechanical, Plumbing and Electrical guidelines and standards. Copies of these documents are available at:

www.bsu.edu/facilities/consultants

2.4.1.2 Automatic Fire Suppression Systems. All new buildings will be designed with automatic fire suppression systems throughout. Exceptions to this requirement may be granted by BSU facilities engineering department after consultation with the BSU risk mangagement group for facilities such as garages, temporary facilities, etc. Work to existing facilities shall be designed to comply with current Codes. It is highly recommended to provide automatic fire suppression systems as a part of major renovation projects. Fire Suppression Systems design requires review by the University's insurance carrier, FM Global, at the 100% DD and 100% CD level. FM Global also requests review of the contractor's submittals and shop drawings.

2.4.2 Design Procedures

2.4.2.1 The University's general policy is not to deviate from the adopted codes. Consultant must certify in writing on the contract document that the project has been designed in compliance with the applicable codes.

2.4.2.2 The Consultant shall perform a project code analysis before the completion of design development, but preferably during the schematic design phase. The Consultant shall reference applicable codes and editions and note the occupancy, construction type, egress conditions, and other information necessary. The Consultant is encouraged to use drawings to illustrate conditions. The code analysis will note any potential nonconforming construction. The Consultant may employ a Code Consultant to augment their design team. Failure of design work to meet the applicable code requirements will result in redesign at no additional cost to the University. If said failure is not discovered until the project is already in construction cost of re-work shall be the responsibility of the Consultant. The Consultant shall provide a printed copy and copy in .pdf format to the PM.

2.4.2.3 The University may employ an independent code Consultant to review designs for code compliance. This does not relieve the Consultant from responsibility to design to

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Code or perform its own code analysis.

2.4.3 Variance Procedures

2.4.3.1 Consultant must request approval of any code variances in writing through the University Project Manager (PM) to the BSU Director of Facilities Planning and the BSU Department of Facilities Engineering.

2.4.3.1.1 If approved, the Consultant shall prepare necessary Variance documents and present them to the Authorities Having Jurisdiction for approval.

2.4.3.1.2 Approved Variances may be incorporated into the design. Documentation of approval shall be included with the Consultant's certification of Code compliance.

2.4.3.1.3 If a Variance is not approved, Consultant may consult with the PM to determine if revision and resubmittal for the Variance is warranted. If a Variance is not approved, Consultant shall complete design in accordance with Code.

2.5 STANDARD FLOOR AND ROOM NUMBERING

2.5.1 General

2.5.1.1. BSU Facilities Planning will provide all room number and name assignments. The Consultant shall provide BSU with an electronic copy of the plan drawings once the floor plan is set.

2.5.1.2. The definitions used here facilitate general understanding of floor and room and do not always conform to NFPA or ICC code definition.

2.5.1.3. Include room numbers and names in the project drawings. Room numbers must be shown correctly on drawings before advertisement for bids.

2.6 BUILDING AREAS DEFINITIONS

2.6.1 Gross Area

2.6.1.1. Gross Area is the sum of the floor areas of the building included within the outside faces of exterior walls for all stories or areas having floor surfaces. Gross area is gross square feet (GSF).

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2.6.1.2. Calculate gross area by measuring from the outside face of exterior walls, disregarding cornices, pilasters, buttresses, etc., which extend beyond the wall face. Gross area includes basements (except unexcavated portions), occupiable attics, garages, enclosed porches, penthouses, mechanical equipment floors, lobbies, mezzanines, balconies (inside or outside) utilized for operational functions, and corridors, provided they are within the outside face lines of the building. Stairways, elevator shafts, mechanical service shafts, and ducts count as gross area on each floor through which the shaft passes. Exclude open courts and light wells, or portions of upper floors eliminated by rooms or lobbies rising above single-floor ceiling height.

2.6.2 Net Assignable Area

2.6.2.1. Net Assignable Area is the sum of all areas on all floors of a building assigned to, or available for assignment to, an occupant, including every type of space functionally usable by an occupant (except spaces defined as custodial, circulation, mechanical, and restroom areas). Net assignable area is assignable square feet (ASF).

2.6.2.2. Calculate assignable area by measuring from the inside finishes of surfaces that form the boundaries of the designated areas. Do not include unusable areas having less than 6'6" clear headroom. Include space subdivisions for offices, classrooms, laboratories, seminar and conference rooms, libraries, file rooms, storage rooms, etc., including those for special purposes (e.g., auditoriums, cafeterias, TV studios, faculty and student locker and shower rooms, maintenance and repair shops, garages), which can be put to useful purposes in accomplishment of the institution's mission. Deductions are not made for columns and projections necessary to the building.

2.6.3 Nonassignable Area

2.6.3.1. Nonassignable area is the building area that is not available for assignment to building occupants but is necessary for the general operation of the building. By definition, nonassignable area consists exclusively of the following: circulation, custodial, mechanical, and restroom areas. Calculate nonassignable area the same as assignable area.

2.7 SCHEMATIC DESIGN PHASE

2.7.1 Design kick-off

2.7.1.1 Schedule and conduct a design kickoff meeting between the Consultant and the University Architects and Engineers. The Consultant and all sub-consultants shall be present at this meeting. Design approach, available utilities, Ball State University Standards and Guidelines and LEED should be on the agenda.

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2.7.1.2 Perform a preliminary site survey / investigation. Field investigation shall be performed by the architects and engineers actually performing the design work on the project.

2.7.1.3 Engage Land Surveyor. The surveyor shall be hired by the Consultant. Meet with the surveyor and BSU Engineering on site to discuss the project prior to performing the survey. Request utility locates by both BSU and the public utilities via the Indiana 811 service. Do not perform the survey until utilities have been located. Where manholes or vaults are affected request assistance of BSU Facilities Management to remove covers in order to shoot pipe inverts and record vault sizes.

2.7.1.4 Contact local utilities where utility owned gas, domestic water, fire protection, storm and sanitary sewer services are affected. Consult with BSU Engineering to help determine this.

2.7.1.5 Begin user group meetings as scheduled by the PM.

2.7.1.6 Determine if a phased approach to construction will be required, particularly in major renovation projects, as occupants are displaced / relocated either temporarily or permanently.

2.7.1.7 Determine potential staging areas for construction offices and materials.

2.7.1.8 Begin work on the Sustainability Plan in accordance with the Sustainable Projects Exhibit, AIA Document E204-217, as amended by the Owner, on LEED projects as well as the Owner's Project Requirements (OPR) and Basis of Design (BOD) and the Phase 1 Environmental Site Assessment. Although the Sustainability Plan, including the OPR, is an Owner's document, the University expects the Consultant to author this document base on the Owner's input and requests.

2.7.2 Schematic Design Report

For major construction projects, the PM will direct the Consultant to produce and present a Schematic Design Report. The report is distributed to University administrators and other officials and may be used in conjunction with development activities by the University. It is imperative this document be succinct, accurate, and of professional quality. The following outline should be used in developing the report along with any supplementary directions given by the PM.

2.7.2.1. Provide a one to two page Executive Summary summarizing the size and scope of

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the project, estimated costs, and general programmatic information identifying programs and activities directly benefiting the University.

2.7.2.2. Provide background information on the history of the project; the programs benefitting from the project; and problems it will solve, e.g. space shortages, obsolete facilities, future growth. Describe other parameters affecting definition of the problem, such as master planning issues, existing structural limitations, and site conditions. Typical subheadings might include Project Background, Space Program, Planning Issues, and Design Objectives.

2.7.2.3. When the project is a Master Plan or is part of a multi-phase development, include a summary of the planning associated with the total project. The summary should describe how the project fits into the overall objectives and parameters of the master plan, and may include conceptual plans and other available drawings, and projected costs.

2.7.2.4. Include a table of assignable square footage that clearly illustrates the proposed assignments of space and use the column headings shown below.

Department/Type of Space	Current Assignments *	Proposed Assignments		
		Renovated	New	Total

* If available or applicable

2.7.2.5. Prepare a presentation rendering at the direction of the PM for University approval.

2.7.2.6. Provide a concise presentation of the proposed Schematic Design solution. The narrative should focus on important features of the design addressing the project statement outlined in the introduction. Include a general description of proposed materials and building systems. Also explain how the design accommodates future modifications (flexibility) and expansion (expandability). Typical subheadings might include Site Plan, Interior Design/Building Organization, Architectural Solution, Exterior Design/Building Appearance, and Future Expansion.

2.7.2.7. Schematic design drawings should include site plan(s), floor plans, primary elevations, at least one primary building section, and any other drawings necessary to adequately convey important features of the proposed building.

2.7.2.8. It is incumbent on the consultant to be aware of features that can be included to enhance safety in and around the building, Consultant should also be aware of problematic conditions that might make the property less safe. Some of the features to

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consider include landscaping, path routing, building and hallway configuration, common spaces, lighting (both interior and exterior) and emergency exits.

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2.7.2.9. Use the following Project Cost Estimate with approved costs from the PM.

Construction Cost (Approved Estimate)	$
New Construction (if applicable)	$
Renovation (if applicable)	$
Site Development (if applicable)	$
Total Construction Cost	$
Construction Contingency (By Owner)	$
Other Construction Costs (By Owner)	$
Consultant Fees (By Owner)	$
Other Consultant Costs (By Owner)	$
Project Management (By Owner)	$
Other Project Costs (By Owner)	$
Total Project Costs	$
Construction Cost Per GSF	$/GSF
Total Project Cost Per GSF	$/GSF

2.7.2.10. Use the following project schedule outline of project schedule milestones:

Project Kickoff Meeting	(date)
Submit SD's for Review	(date)
Schematic Design Approval	(date)
Submit DD's for Review	(date)
Design Development Approval	(date)
Submit CD's for Review	(date)
Construction Document Approval	(date)
Issue for Bids	(date)
Receive Bids	(date)
Contract Award (if known)	(date)
Construction Complete (if known)	(date)

For projects with unknown construction awards and completion (usually due to funding), indicate the construction period in months.

2.7.2 Schematic Design Submittal

2.7.3.1 Schematic design drawings must include site plans, floor plans, roof plan, primary

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elevations, at least one primary building section, and any other drawings necessary to adequately convey important features of the proposed building. Include a code summary on the schematic plans. Refer to table in section 2.10 for additional requirements. Preferred drawing size is 24x36 (Arch D). 30x42 (Arch E) may be used with prior approval by the PM.

2.7.3.2. Project Cost Estimate

2.7.3.2.1 Submit a written quantitative estimate of construction developed from complete schematic plans.
2.7.3.2.2 Break down the construction estimate into the major architectural, civil, structural, mechanical, and electrical building components by labor and material for major divisions of work.
2.7.3.2.3 Include and identify the design contingency.

2.7.3.3. Description of construction. Provide a description of:

2.7.3.3.1 Construction, i.e., structural system, wall system, roof design, waterproofing, exterior, and interior finishes, etc.
2.7.3.3.2 Plumbing, air conditioning, heating and ventilating systems, including controls, ducts, filtration, and piping. Include appropriate code references to be followed in design.
2.7.3.3.3 Electrical services, including voltage, number of feeders, and whether feeders are overhead or underground. Provide a specific description of items to be served by emergency power and describe consideration for special areas.
2.7.3.3.4 Fire protection system required for building occupancy.

2.7.3.4. Provide estimate for construction period and lead time for special items.

2.7.4 Schematic Design Meeting

2.7.4.1. The PM will schedule the SD review and approval meeting to be held approximately 2 weeks after the SD submittal. The purpose of the meeting will be to discuss the SD review comments and give approval of the submittal and authorization to move into Design Development.

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2.8 DESIGN DEVELOPMENT PHASE

2.8.1 General Requirements

2.8.1.1 Site Plan:

- 2.8.1.1.1 Overall dimensions of the proposed building(s) or work area including alternatives. Indicate reference to a benchmark and baseline.
- 2.8.1.1.2 Location and extent of existing structures on the site. Identify structures and streets by proper names.
- 2.8.1.1.3 Existing and proposed contours.
- 2.8.1.1.4 Method of general drainage of the site as affected by the proposed building.
- 2.8.1.1.5 Indication of exterior elements; e.g., outdoor facilities, streets, service drives, parking areas, disabled access, paved areas, covered walks, landscape development, stairs, pools, retaining walls, terraces, etc. Include any elements to be demolished. Final landscape design and installation is typically done by the BSU Grounds department with input from the Consultant.
- 2.8.1.1.6 Section(s) through site, to explain changes in level in the proposed building as related to the site.
- 2.8.1.1.7 Underground campus utilities and structures.
- 2.8.1.1.8 Small-scale campus map indicating project location on title sheet.
- 2.8.1.1.9 Appropriate scale for project location, staging, limits, and parking areas.

2.8.1.2 Floor Plans:

- 2.8.1.2.1 Locations, sizes, and space numbers of programmed spaces and other required gross areas, including corridors (width), stairs, toilets, janitors' closets, mechanical spaces, storage rooms, etc.
- 2.8.1.2.2 Location of doors and windows. Indicate door swings. Indicate fire separation.
- 2.8.1.2.3 Overall dimensions of each major area of the building(s).
- 2.8.1.2.4 Provisions for making facilities accessible to persons with disabilities.
- 2.8.1.2.5 Location of plumbing fixtures such as lavatories, floor drains, water closets, urinals, service sinks, drinking fountains, fire hose cabinets, fire extinguishers, and sprinkler systems.
- 2.8.1.2.6 Indicate principal built-in features such as fixed auditorium seats,

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kitchen equipment, display cases, counters, shelves, lockers, etc.

2.8.1.2.7 Indicate extent of any demolition work.

2.8.1.3 Roof Plans and Roof Details

2.8.1.3.1 A roof plan and detail of existing conditions (reroof) or other components and penetrations (new).

2.8.1.3.2 Photographs of overall roof condition and show locations of inspection openings (reroof project only).

2.8.1.3.3 An outline of the method of reroofing.

2.8.1.3.4 A narrative report discussing major design features and options (reroof).

2.8.1.3.5 Identification of existing components and methods of attachment.

2.8.1.3.6 Simple sketches showing method of detailing new system.

2.8.1.4 Elevations and Sections

2.8.1.4.1 Exterior elevations for the building must show windows, doors, window vents, stairs, platforms, retaining walls, louvers etc. Indicate grades, paved areas, etc.

2.8.1.4.2 Indicate floor heights and windowsill heights.

2.8.1.4.3 Include longitudinal and transverse sections for each major area, indicating floor elevations, finish exterior grades, ceiling heights, pipe tunnels, unexcavated areas, basement and areaways, rooflines, and parapets.

2.8.1.4.4 Include small-scale plan or diagram to indicate section lines for each elevation and section (see scale requirements).

2.8.1.4.5 Include larger scale (1/4" = 1'0") details of special design features with notes related to materials and design.

2.8.1.4.6 Various floor and grade elevations including those for interior and exterior stairways, walls, terraces, walks, etc.

2.8.1.5 Interior Planning

2.8.1.5.1 The following space types must be thoroughly dimensioned to illustrate details clearly:

(a) Classrooms and lecture halls
(b) Kitchens and related service areas
(c) Laboratories and any other programmed spaces
(d) Toilet and locker rooms
(e) MDF and IDF Telecomm rooms

2.8.1.5.2 Include an interior finish schedule that indicates, in general terms, floor, wall, and ceiling finishes together with special items of finish.

2.8.1.5.3 Indicate location of moveable items of furniture and equipment

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listed in the space description sheets. Differentiate from built-in furniture and fixed equipment. Differentiate between new and existing relocated/re-used fixed and mobile equipment.

2.8.1.5.4 See scale requirements later in this section.

2.8.1.6 Area Tabulation - Tabulate net assignable square foot (NASF) and overall gross square foot (GSF) areas. Show space-by-space comparison of preliminary assignable area with program assignable areas. Tabulate by floor and include totals for the building.

2.8.1.7 Outline Specifications and Design Summary

2.8.1.7.1 Specifications must be in outline form using CSI format. Provide a complete Table of Contents and at a minimum the basis of design products, materials and equipment for each Division 02 through 33.

2.8.1.7.2 Provide a design summary documentation in an indexed report format with all assumptions and references stated. Include:

(a) Architectural design calculations (including occupancy classifications, type of construction, fire resistive ratings, exiting calculations, allowable building height and area, toilet fixture calculations and any unusual provisions or exceptions applicable to the project)
(b) Basis of design equipment and material information (e.g.catalog material, charts, tables, performance curves, etc.)
(c) Lighting fixture cut sheets for all proposed fixtures
(d) Updated energy conservation report and life cycle costing
(e) Verification of compliance with University standards, guidelines, and codes

2.8.1.8 Cost Estimate

2.8.1.8.1 Submit a written quantitative estimate of construction developed from complete design development plans and specifications.

2.8.1.8.2 Indicate estimated contractor overhead and profit, unit costs applied and materials and labor quantities.

2.8.1.9 Construction Phasing Schedule - Provide a construction-phasing schedule in bar chart and/or outline (narrative) form.

2.8.1.10 LEED – Provide adjustments of the Sustainability Plan as necessary to reflect the level of design development. Provide a complete LEED Checklist, Owner's Project Requirements document and Basis of Design narrative with the

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Sustainability Plan for BSU to include in the RFP for potential Commissioning Agents.

2.8.1.11 Make final determination as to the need to apply for any variances and begin that process.

2.8.1.12 Submit details on any proposed alternate bids for consideration by BSU.

2.8.1.13 Define any Owner furnished items.

2.8.2 Design Development (DD) Submittal

2.8.2.1 Scale

1.1 Plot, site, & utility plans shall be either 1" = 10' or 1" = 20' scale.
1.2 Building floor plans and roof plans shall be 1/8" or 1/4" = 1'0".
1.3 Details shall be drawn at 1/2", 1", or 11/2" = 1'0".

2.8.2.2 Existing Utilities Capacity - Show verified capacity at points of connection to existing utilities.

2.8.2.3 Plot Plan

Indicate routing of outside utility lines from point of connection to existing utilities to the building.

a. Show existing utilities including those underground.
b. Show existing and final topography of site.
c. Show proposed site access, staging areas, and project limits.

2.8.2.4 Structural Plans

2.8.2.4.1 Include the design loadings (dead, live, wind, snow, seismic), material specifications and design stresses (steel, concrete, masonry, soil bearing, etc.) assumed during the design, plus assembly stresses where applicable.

2.8.2.4.2 When structures employ a beam-column framework, a grid reference system using alphabetic and numeric symbols will be utilized. When additions are made to existing structures, the original reference system will be extended where practical.

2.8.2.4.3 Detail junctions between floors, roof, and exterior wall to assure continuity and load path.

2.8.2.5 Plumbing and Mechanical

2.8.2.5.1 Plumbing Plans

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a. Indicate all required demolition.
b. Indicate locations of main wastes and vents, as well as service mains, including water, air, gas, vacuum, etc.
c. Indicate pieces of equipment, showing location and required piping connections, including pumps, tanks, softeners, water heaters, mixing valves, etc.
d. Provide equipment and fixture schedules.

2.8.2.5.2 Heating, Ventilating, Air Conditioning and Piping Plans

a. Indicate all required demolition.
b. Indicate service mains, including steam, condensate return, hot water, chilled water, condenser water, refrigerant piping etc.
c. Indicate air moving equipment and double line duct runs to all outlets including supply, return and exhaust fan systems, fume hoods, etc.
d. Indicate pieces of equipment, showing locations and required piping connections including, pumps, tanks, exchangers, receivers, etc., including maintenance / service access areas around equipment.
e. Provide equipment schedules indicating sizes, capacities and operating characteristics.
f. Provide air and water flow diagrams for supply and exhaust air, and water distribution systems. Diagrams are to indicate flow rates in mains and branches to assist in balancing.
g. Control schematics and sequence of operations.

2.8.2.5.3 Large Scale Drawings of Equipment Rooms

a. The scale should be no smaller than 1/4" = 1'0".
b. Indicate layout of equipment to assure adequate space allowance.
c. Include elevations of built-up fan units to assure proper air flow and access to component parts of the units.
d. Show pump layout and piping runs.

2.8.2.5.4 Fire Protection

a. Show fire service, FD connections and test connections.
b. Show coverage rate of sprinklers.
c. Show any special equipment, Inergen, Safire, FM200, CO_2, etc.
d. Show proposed routing of mains and zone areas.
e. Show hazard category plan for FM Global Review.
f. Show a preliminary fire protection riser diagram.

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2.8.2.6 Electrical Plans

2.8.2.6.1 All required demolition.

2.8.2.6.2 Show all power, fire alarm and A/V and communications device layouts on one set of drawings and the lighting layouts including switching and controls on another set of drawings using standard symbol conventions. Large projects may benefit from a separate set of telecommunications drawings.

2.8.2.6.3 Provide single line electrical distribution diagrams showing primary service to transformer(s) and secondary feeders to distribution switchboards, motor control center, and panel boards for power and lighting. Show all conduit sizes and the size and number of conductors.

2.8.2.6.4 Indicate the point of connection to external utilities, i.e., high voltage, telecommunications and signal systems.

2.8.2.6.5 Show all electrical distribution equipment (switchboards, panelboards, transformers, disconnect switches, UPS's, etc.

2.8.2.6.6 Indicate type and locations of lighting fixtures in all areas and use a schedule for detail.

2.8.2.6.7 Indicate fault current at all exterior pad mounted transformers.

2.8.2.6.8 Show emergency distribution equipment.

2.8.2.6.9 Provide an electrical site plan including all feeders and branch circuit routing and site lighting.

2.8.2.6.10 Provide basis of design information on the Arc Flash Analysis, Short Circuit Analysis and Coordination Study.

2.8.2.7 MEP DD Review Checklist

2.8.2.7.1 To assist the consultant with completion of the DD submittal refer to the BSU MEP DD review checklist available at www.bsu.edu/facilities/consultants or specifically here: https://www.bsu.edu/-/media/www/departmentalcontent/facilities/pdf/large%20project%20mep%20dd%20review%20checklist.pdf

2.8.3 Design Development Meeting

Allow the Owner 2 weeks to provide DD comments to the Consultant. The Consultant shall

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schedule the DD review and approval meeting to be held after return of Owner review comments to the Consultant. The purpose of the meeting will be to discuss the DD review comments and give approval of the submittal and authorization to move into Construction Documents. The consultant shall track all Owner review comments in an MS Excel spreadsheet and respond in writing to each comment individually to ensure each comment is being addressed to the Owner's satisfaction.

2.8.4 Submission to the University's insurance carrier

The PM shall submit the DD documents to the University's insurance carrier, FM Global, for review and comment. FM is particularly interested in the Fire Protection and Fire Alarm systems as well as the building envelope. The PM will promptly forward any comments from FM Global to the Consultant for incorporation.

2.9 CONTRACT DOCUMENTS

2.9.1 Introduction

2.9.1.1 The Consultant shall prepare the contract documents that consist of the project manual, the drawings, and addenda as described in this section. Submit a 50% CD Owner review set that demonstrates significant progress from the DD submittal in the overall design for all disciplines. This 50% submittal will be used as a tool by the Owner to determine the design schedule is on track and major design elements remain in accordance with BSU standards as well as modifications made during design meetings. Also submit a 100% CD review set for BSU review and comment prior to final issue for bids. Allow 2 weeks for review of this set plus whatever time the Consultant needs to incorporate final review comments prior to final issue for bids. The Consultant shall also submit a 100% CD technical specification set for review 2 weeks prior to the 100% CD review set (i.e. approximately 4 weeks prior to final bid set). The consultant shall track all Owner review comments and respond in writing to each comment individually to ensure each comment is being addressed to the Owner's satisfaction.

2.9.1.2 The term "Project Manual" refers to the written portion of the contract documents.

a. Bid forms (Bid for Lump Sum, Bid Form Supplements, etc.)
b. Notice to Bidders
c. General Conditions of the Contract for Construction and Supplementary Conditions
d. Special Conditions
f. Specifications

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2.9.1.3 The term "Drawings" refers to the graphic portrayal of elements included within the scope of the contract documents.

2.9.1.4 There should be no duplication between portions of the contract documents; instead, they should be complementary.

2.9.2 Contract Documents (CD) Submittal

2.9.2.1. The Consultant shall develop the Contract documents to be complete and ready for registration seals and signatures. Contract document originals will be sealed, signed, and dated by the Architect and Engineer of record prior to issuance of bid documents.

2.9.2.2. The Consultant shall make all corrections to drawings and specifications identified during design development review, 100% CD review and any intermediate reviews in the contract documents.

2.9.2.3. The Consultant shall provide a final Gantt chart schedule for project construction. The schedule will include purchase and delivery activities and durations for all major equipment and building components.

2.9.2.4. The Consultant shall provide a revised and detailed construction estimate with the 100% CD review set. This estimate will become the basis for the University estimate to be used at bid opening. The estimate will include separate estimated costs for any construction alternates included in the bid documents but not part of the base bid.

2.9.2.5. During the bidding period, the Consultant will accept and reply to all contractor inquiries relating to clarification and interpretation of the plans and specifications. These questions and answers shall be formally documented, and those that identify significant change or clarification shall form the basis of a formal contract addendum prior to receipt of bids. The Consultant shall participate in the pre-bid meeting and publish minutes of that meeting as part of an addendum.

2.9.3 Drawing Format

2.9.3.1. The following are minimum requirements for projects involving construction of new facilities, or renovations of or additions to existing facilities.

2.9.3.2. A scale of 1/4" = 1'0" or 1/8" = 1'0" is preferred for building floor plans, elevations, and sections.

2.9.3.3. A scale of 1" = 10' or 1" = 20' is acceptable for site plans and utility plans.

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Location plans and plans showing contractor access routes may be smaller.

2.9.3.4. Details will be drawn 1/2", 1", or 1 1/2" = 1'0".

2.9.3.5. A graphic scale is required on drawings.

2.9.3.6. Drawing size shall be D size sheets (24" x 36"), unless otherwise directed or approved by Project Manager (PM). The Consultant will contact the PM for CADD requirements.

2.9.3.7. Drawings shall be segregated into disciplines (Architectural, Civil, Structural, Mechanical, Plumbing, Electrical).

2.9.3.8. Pertinent information shall be shown only on discipline drawings applicable to that Division of work. If information must be located on drawings of a different discipline, drawings shall be cross-referenced.

2.9.3.9. HVAC equipment, grilles and diffusers, and electrical equipment and light fixture schedules shall be included on the drawings. Door, window, and room finish schedules may be included on the drawings or in the project manual.

2.9.3.10. Basis of Design manufacturer and product names shall be referenced in equipment schedules on the drawings.

2.9.3.11. Symbols and abbreviations used on drawings shall be defined and shown on legends.

2.9.3.12. Design details shall be shown on the drawings, not in the specifications.

2.9.3.13. Each drawing sheet shall display the following:

a. Issue date
b. Title of the project
c. Alphanumerical number indicating discipline and sheet number in the lower right corner of the sheet.
d. Scale
e. The seal of a professional architect or engineer registered in the State of Indiana, signed and dated.
f. Ball State University project number

2.9.3.15. Every set of drawings shall have a title sheet that contains the following:

a. Title of the project and project number

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b. Owner's name: Ball State University
c. Consultant's and any subconsultant's names
d. Drawing index
e. Site location plan
f. Issue date
g. The seal of a professional architect or engineer registered in the State of Indiana, signed and dated.
h. Code review data

2.9.3.16. Sections and details shall be numbered and cross-referenced.

2.9.3.17. Project construction limits, construction fencing, and contractor access shall be clearly shown on the site plan drawings. Indicate required tree protection.

2.9.3.18. Roofing

a. The roof plans shall include all features and elements of the roof, including roof slope and drainage, all penetrations and mechanical equipment. On reroofing projects, clearly indicate items to be demolished and/or removed, existing materials to remain and new materials and construction. The following items should be shown on the roof plans, accurately located, and drawn to scale.
   - Mechanical units, exhaust fans, vents
   - Piping, conduit, and related supports
   - Roof walkways, screens, hatches, and ladders. Roof drains, overflow drains, and scuppers Miscellaneous penetrations
   - Expansion joints and area divided curbs
   - Gutters and downspouts
   - Valley, ridges, saddles and crickets

b. The drawings shall include complete details of roof system and components including:
   - Each roof perimeter condition
   - Each penetration condition, including vent flashing Each roof-related sheet metal fabrication Equipment curbs, skylight curbs, and roof hatches Roof expansion joints and area dividers
   - Piping & equipment supports
   - Typical roof drain and overflow drain including sumps and flashings
   - Scuppers

c. Roof flashing details shall indicate following components:
   - Roof deck and wall substrate and other adjacent materials

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Insulation including separate layers and vapor retarders Roof and flashing membrane
Cant strips, if applicable
Flashing attachment, if applicable
Counterflashing and reglets Sealants
Wood nailers and blocking, including adequate attachment

2.9.3.19. Structural construction drawings shall include structural loadings and details (floor, roof, cross-sectional, etc.)

2.9.3.20. Mechanical & Electrical construction drawings shall include:

a. Double line drawings for ductwork and equipment room piping. All other piping may be single line. Show ductwork on separate sheets, not with piping. Show location of all dampers and valves.
b. Completed equipment, lighting, and power panel schedules
c. All details, cross-sectional and elevation views
d. Air and water flow (balancing) diagrams
e. Control schematic, point listing, and sequence of operation
f. Show equipment schedules and sequence of operation information on mechanical drawings.
g. Identify circuits and show equipment schedules on electrical drawings.

2.9.3.21. The Consultant, at the direction of the PM, will incorporate drawings that illustrate the location of any expected asbestos containing materials. The Consultant will not be responsible for the identification and removal of asbestos.

2.9.4 Project Manual and Specifications and other drawing requirements

2.9.4.1. Language of the project manual will be brief and consistent.

a. Do not repeat information contained in either the General Conditions or the Special Conditions in any other section.
b. Do not repeat information contained in the specifications on the drawings (except in equipment schedules).

2.9.4.2. Consultant will use the CSI numbering system as directed by the PM.

2.9.4.3. There shall be no blank spaces between paragraphs or within sentences within sections in the specifications. The end of each section should be marked "End of Section".

2.9.4.4. The architect or engineer seal of professional registration in the State of Indiana shall

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be affixed to the cover sheet or certification sheet of the specifications, signed, and dated.

2.9.4.5. Provide the University original copies of the specifications in .pdf format.

2.9.4.6. No allowances shall be provided in the contract documents unless approved by the PM.

2.9.4.7. The term "Contractor" shall be used throughout the specifications in the context defined in the General Conditions.

2.9.4.8. The General Conditions cover all one-year guarantees. Guarantees other than one year will be stated in Part 1 of the applicable technical section.

2.9.4.10. As stated in the General Conditions, local building permits, inspections, etc. are the responsibility of the Contractor.

2.9.4.11. Only the "Owner", "Owner's Representative", "Architect", "Engineer" and "Contractor" shall be referred to in the specifications.

2.9.4.12. Design details, sketches, and drawings shall not be included in the specifications.

2.9.4.13. Specifications shall indicate the type and quality of material to be used. To the greatest extent possible, all colors will be identified in the specifications.

2.9.4.14. A minimum of three manufacturers shall be listed. Proprietary items may be specified only with the University's approval. Specify critical parameters which will identify what constitutes an approved equal.

2.9.4.15. If asbestos containing materials are expected to be removed during the construction of the project, the abatement will be performed by the University or its abatement contractor.

2.9.4.16. Consultant shall list all required submittals, shop drawings, operation manuals, warranties, and certifications in the specification.

2.9.4.17. The geotechnical report will be included as part of the contract documents clearly marked For Reference Only, in General Requirements, Division 00.

2.9.4.18. Utilize active voice for plan notes giving direction. Do not use passive voice. For example use "Remove abandoned 2" copper pipe" in lieu of "2" copper pipe to be

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removed."

2.9.4.19. Exercise proper use of "Provide", "Furnish" and "Install". Do not use "Provide and Install" in plan notes. Use terms in a manner consistent with the definitions given in Section 007313, Supplementary Conditions to the Contract Article 1.1.9.

2.9.4.20. Refrain from using "By Others" on the plans and specifications. All work shown is by the contractor unless noted specifically by the Owner, the Owner's specialty contractor or provided under a separate contract. Be clear in the drawing and specifications as to who is performing the work.

2.9.4.21. Refrain from using "As Required", "Field Verify" and "Coordinate" and similar language. It is the responsibility of the Consultant to determine exact requirements and clearly convey those requirements in the contract documents.

2.9.4.22. Plan notes shall be sheet or drawing specific. Do not use a single set of plan notes to cover all sheets of a given discipline. Every note shown on a sheet shall be used on that sheet. In the event a plan note is no longer needed due to a change late in design designate that note as "Not Used".

2.9.4.23. Only list materials in Part 2 of the technical specifications proposed for use on the project.

2.9.4.24 LEED – In coordination with the Commissioning Agent, provide Division 01 sections and specific requirements in the technical sections, Divisions 02 through 33, required to document the intent of the Sustainability Plan. Include a complete LEED Checklist and Submittal requirements necessary to provide documention required by the Certifying Authority.

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3.0 DESIGN GUIDELINES

Ball State University Design Guidelines are to be used in the design of University facilities. These guidelines are available on online at this link:
www.bsu.edu/facilities/consultants

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