



## Facilities Design and Operations



# **QUALITY ASSURANCE DOCUMENT REVIEW CHECKLIST**

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**July 2011**

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## PURPOSE

The purpose of this document is to provide the design professionals and Facilities Design and Operations staff with the design review requirements frequently overlooked or for those items requiring special attention for the quality of the various phases of the design submittals. This quality assurance plan shall assist in how well the facility houses the academic programs in the fulfillment of the University mission with flexibility and excellence for 100 years of the best possible results.

## SCOPE

The scope of this document describes the quality expected in the various design drawing submittals. All "No" responses of the quality checklist require a written explanation from the Design Team including what is necessary to provide the quality item listed.

In all situations contract documents will govern and this guideline does not relieve the Contractors nor Architect/Engineer design professionals of any responsibility for the work performance.

SUMMARY

Early and complete responses by the Architect/Engineer shall be directed to the address below to ensure quality and timely document review and approval.

Douglas E. Schlagel  
Director of Construction and Quality Assurance  
University of Notre Dame du Lac  
Facilities Design and Operations  
200 Facilities Building  
Notre Dame, Indiana 46556  
(574) 631-4200 Phone  
(574) 631-8585 Fax

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# QUALITY CHECKLIST



## CONCEPTUAL DESIGN DRAWINGS

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**ARCHITECT OR ENGINEER OF RECORD**

|              |                           |       |
|--------------|---------------------------|-------|
| _____        | _____                     | _____ |
| Company Name | Principal in Charge       | Date  |
| _____        | _____                     | _____ |
| Company Name | Project Architect         | Date  |
| _____        | _____                     | _____ |
| Company Name | Mechanical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Electrical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Civil/Structural Engineer | Date  |

**UNIVERSITY OF NOTRE DAME**

|                                                                 |       |
|-----------------------------------------------------------------|-------|
| _____                                                           | _____ |
| AVP for Facilities Design & Operations and University Architect | Date  |
| _____                                                           | _____ |
| Senior Director, Project Management                             | Date  |
| _____                                                           | _____ |
| Director of Construction & Quality Assurance                    | Date  |
| _____                                                           | _____ |
| Director of Utilities                                           | Date  |
| _____                                                           | _____ |
| Chief Mechanical Engineer                                       | Date  |
| _____                                                           | _____ |
| Chief Electrical Engineer                                       | Date  |

CONCEPTUAL DESIGN DRAWINGS QUALITY CHECKLIST

| QUALITY ITEM                                                                                                     | Yes                      | No                       |
|------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1) Does design conform to existing master plan?                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2) Does site plan show utilities and circulation?                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 3) Does site plan show topographic features?                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 4) Are small-scale line drawings of plans and sections adequate to define horizontal and vertical relationships? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5) Do plans show existing and proposed facilities in their relative arrangement?                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 6) Do plans accommodate the disabled?                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 7) Is there a general description of architectural, engineering, structural and mechanical systems to be used?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 8) Is there a listing of minimum codes to be used?                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 9) Do square footage areas correlate to the program requirements?                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 10) Does cost model correlate to established budgets?                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 11) Has the LEED scorecard been reviewed?                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 12) Has the project been LEED registered?                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 13) Has the preliminary building energy model been prepared?                                                     | <input type="checkbox"/> | <input type="checkbox"/> |



| OTHER QUALITY ITEMS |       | Yes                      | No                       |
|---------------------|-------|--------------------------|--------------------------|
| 1)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 2)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 3)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 4)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 5)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 6)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 7)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 8)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 9)                  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 10)                 | _____ | <input type="checkbox"/> | <input type="checkbox"/> |

| EXPLANATION OF "NO" RESPONSES |       |
|-------------------------------|-------|
| 1)                            | _____ |
| 2)                            | _____ |
| 3)                            | _____ |
| 4)                            | _____ |
| 5)                            | _____ |
| 6)                            | _____ |
| 7)                            | _____ |
| 8)                            | _____ |
| 9)                            | _____ |
| 10)                           | _____ |

\_\_\_\_\_ Signature \_\_\_\_\_ Date

\*Add additional sheets as required.

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# QUALITY CHECKLIST



SCHEMATIC DESIGN DRAWINGS

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**ARCHITECT OR ENGINEER OF RECORD**

|              |                           |       |
|--------------|---------------------------|-------|
| _____        | _____                     | _____ |
| Company Name | Principal in Charge       | Date  |
| _____        | _____                     | _____ |
| Company Name | Project Architect         | Date  |
| _____        | _____                     | _____ |
| Company Name | Mechanical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Electrical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Civil/Structural Engineer | Date  |

**UNIVERSITY OF NOTRE DAME**

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| _____                                                                   | _____ |
| AVP for Facilities Design<br>and Operations<br>and University Architect | Date  |
| _____                                                                   | _____ |
| Senior Director, Project<br>Management                                  | Date  |
| _____                                                                   | _____ |
| Director of Construction &<br>Quality Assurance                         | Date  |
| _____                                                                   | _____ |
| Director of Utilities                                                   | Date  |
| _____                                                                   | _____ |
| Chief Mechanical Engineer                                               | Date  |
| _____                                                                   | _____ |
| Chief Electrical Engineer                                               | Date  |

**SCHEMATIC DESIGN DRAWINGS QUALITY CHECKLIST**

| QUALITY ITEM                                                                                                                               | Yes                      | No                       |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1) Have applicable codes, standards and rules been cited?                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2) Is there a differentiation between new construction and existing items?                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 3) Are the "outline specifications" included?                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 4) Architectural:                                                                                                                          |                          |                          |
| a) Is life safety plan information provided?                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Is occupancy classification indicated?                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Are separations (fire and smoke) shown?                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Are sprinkler requirements explained?                                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Is construction type stated?                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are typical exterior wall and roof sections shown?                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Are the numbers of floors described?                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Is the square footage per floor shown in accordance to the program?                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Does cost correlate to established budgets?                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Have the estimates of construction costs by the Architect/Engineer and Construction Manager or Owner's Cost Consultant been reconciled? | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Are overall plan dimensions indicated?                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Are the plans developed with the principles of "Universal Design" related to accessibility?                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 5) Civil/Structural:                                                                                                                       |                          |                          |
| a) Are the design parameters given?                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Is a topographical survey provided?                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is a narrative of drainage concept provided?                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Is statement on flood considerations provided?                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Is a statement of availability of utility services provided?                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Is the building system narrative provided?                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Are the proposed roads and parking described?                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Is a soil and geotechnical report provided?                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Are overall plan dimensions indicated?                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Is there a Storm Water Pollution Prevention Plan/Soil Erosion Control Plan described?                                                   | <input type="checkbox"/> | <input type="checkbox"/> |

SCHEMATIC DESIGN DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                                    | Yes                      | No                       |
|-------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 6) Mechanical:                                                                                  |                          |                          |
| a) Are the design parameters given?                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Is the source of utility services shown?                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is the design of any specialty system provided (i.e. laboratory gases)?                      | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Are the energy requirements included?                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Are the energy management/temperature controls and/or building automation systems described? | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are indoor environmental requirements described?                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 7) Electrical:                                                                                  |                          |                          |
| a) Are the design parameters provided?                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Is the source and voltage of electrical service provided?                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is the fire alarm system described?                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Is the security system described?                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Is the communication system described?                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Is the lighting system described?                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Is the computing data networking system described?                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Has the updated building energy model been prepared?                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 8) Has the LEED scorecard been re-evaluated and updated?                                        | <input type="checkbox"/> | <input type="checkbox"/> |



OTHER QUALITY ITEMS

Yes No

|     |       |                          |                          |
|-----|-------|--------------------------|--------------------------|
| 1)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 2)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 3)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 4)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 5)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 6)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 7)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 8)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 9)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 10) | _____ | <input type="checkbox"/> | <input type="checkbox"/> |

EXPLANATION OF "NO" RESPONSES

|     |       |
|-----|-------|
| 1)  | _____ |
| 2)  | _____ |
| 3)  | _____ |
| 4)  | _____ |
| 5)  | _____ |
| 6)  | _____ |
| 7)  | _____ |
| 8)  | _____ |
| 9)  | _____ |
| 10) | _____ |

\_\_\_\_\_  
Signature Date

\*Add additional sheets as required.

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# QUALITY CHECKLIST



## DESIGN DEVELOPMENT DRAWINGS

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**ARCHITECT OR ENGINEER OF RECORD**

|              |                           |       |
|--------------|---------------------------|-------|
| _____        | _____                     | _____ |
| Company Name | Principal in Charge       | Date  |
| _____        | _____                     | _____ |
| Company Name | Project Architect         | Date  |
| _____        | _____                     | _____ |
| Company Name | Mechanical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Electrical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Civil/Structural Engineer | Date  |

**UNIVERSITY OF NOTRE DAME**

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| _____                                                                   | _____ |
| AVP for Facilities Design<br>and Operations<br>and University Architect | Date  |
| _____                                                                   | _____ |
| Senior Director<br>Project Management                                   | Date  |
| _____                                                                   | _____ |
| Director of Construction &<br>Quality Assurance                         | Date  |
| _____                                                                   | _____ |
| Director of Utilities                                                   | Date  |
| _____                                                                   | _____ |
| Chief Mechanical Engineer                                               | Date  |
| _____                                                                   | _____ |
| Chief Electrical Engineer                                               | Date  |

DESIGN DEVELOPMENT DRAWINGS QUALITY CHECKLIST

| QUALITY ITEM                                                                                           | Yes                      | No                       |
|--------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1) Does the design development submission represent the philosophy of design?                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 2) Are the "final draft" specifications included?                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 3) Do the drawings show overall floor plans, outside elevations, location and orientation on the site? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4) Are the system schematics shown for the facility?                                                   |                          |                          |
| a) HVAC                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Plumbing                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Electrical Power Distribution                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Fire Alarm                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Security                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Site Water                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Site Storm Sewer                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Site Sanitary Sewer                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 5) Does HVAC schematic diagram depict the following?                                                   |                          |                          |
| a) Approved results of the life-cost analysis.                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Approved results of the energy analysis.                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 6) Are schematic diagrams shown for campus type of utilities for the following:                        |                          |                          |
| a) Chilled Water                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Steam                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Fire                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Domestic Water Distribution                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 7) Do the "final draft" specifications describe the following:                                         |                          |                          |
| a) Scope of project.                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Applicable codes.                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Applicable rules.                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Applicable standards.                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Applicable regulations.                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Each discipline with required design values shown.                                                  | <input type="checkbox"/> | <input type="checkbox"/> |

DESIGN DEVELOPMENT DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                                         | Yes                      | No                       |
|------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 8) Are the project location, Architect and Engineering firms' addresses and telephone numbers shown? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9) Architectural:                                                                                    |                          |                          |
| a) Are occupancy types and floor areas indicated?                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Are square footage calculations shown for every space in accordance with program requirements?    | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is a description of the shape and façade of the building provided?                                | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Are all code-required features shown?                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Is the fire protection system described?                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are the insulation "U" values shown?                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Are the glazing type "U" values shown?                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Are the exiting requirements stated?                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Are the required numbers of exits clearly shown?                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are the capacity calculations clearly shown?                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Are dimensions strings indicated on column grid?                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Are interior handrail posts noted to be set in Portland cement grout?                             | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Is sufficient access provided to all elevator machine components?                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| l) Is tempered glass indicated where required?                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Is VCT indicated at OIT closets?                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Are sightlines into bathrooms appropriate?                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Do exterior elevations depict visible rooftop mechanical equipment?                               | <input type="checkbox"/> | <input type="checkbox"/> |
| p) Are exterior hollow metal frames treated with a bituminous coating on the back/throat side?       | <input type="checkbox"/> | <input type="checkbox"/> |
| q) Are the plans developed with the principles of "Universal Design" related to accessibility?       | <input type="checkbox"/> | <input type="checkbox"/> |
| 10) Civil/Structural:                                                                                |                          |                          |
| a) Is a site plan shown?                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Is a grading plan, including contours and finish floor elevations provided?                       | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is a utility plan included?                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Is a statement of loadings provided?                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Are preliminary foundation plans shown?                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are preliminary floor and roof plans shown, including beam sizes & slab depths?                   | <input type="checkbox"/> | <input type="checkbox"/> |

**DESIGN DEVELOPMENT DRAWINGS QUALITY CHECKLIST** (continued)

| QUALITY ITEM                                                                                                                                                                                                            | Yes                      | No                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| g) Is a soil and geotechnical report relating to foundation design provided?                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Are dimension strings indicated on column grid?                                                                                                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Are exterior handrail posts noted to be set in Portland cement grout?                                                                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Is there a Storm Water Pollution Prevention Plan / Soil Erosion Control Plan described?                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 11) Mechanical/Plumbing:                                                                                                                                                                                                |                          |                          |
| a) Are HVAC and plumbing plans showing preliminary layout of equipment areas provided?                                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Are air handling units specified with "wing" type coils?                                                                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is a description of HVAC controls included?                                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Is a description of energy management system included?                                                                                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Is a description of the building automation system included?                                                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are the critical interfaces with life safety systems such as fire/smoke dampers, firestopping and fire control interlocks described?                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Are special plans and criteria for mechanical/plumbing systems shown (i.e., kitchen hoods, food service equipment, vending, paint storage ventilation, fuel systems, laundry equipment, and compressed gas systems)? | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Are fire protection plans shown?                                                                                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Were the NFPA requirements for construction phase submittal reviewed?                                                                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Do the drawings reflect the approved scheme resulting from the energy and life cycle cost analysis?                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Is adequate access provided to mechanical equipment located in attic spaces via ladders, catwalks, etc.?                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 12) Electrical:                                                                                                                                                                                                         |                          |                          |
| a) Is the lighting layout provided?                                                                                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Are the calculations to show foot-candle intensities in each room provided?                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Are exterior lighting levels/photometrics indicated?                                                                                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Do lighting illumination levels comply with the requirements of the Energy Analysis?                                                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Are the preliminary electrical equipment locations shown?                                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are the phase and voltage electrical characteristics shown?                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Is the type of wiring system indicated?                                                                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |

DESIGN DEVELOPMENT DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                                                                                                                | Yes                      | No                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| h) Are the preliminary communications and data plans shown?                                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Are the preliminary fire alarm plans shown?                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Are the preliminary security plans with card readers shown, including electrical power requirements?                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Is a narrative on proposed power distribution system provided?                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| l) Is the emergency generator fuel fill vent and whistle indicated?                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Is electrical closet construction of fire rated assembly?                                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Do OIT closets indicate surface mounted 3/4" fire retardant plywood on all wall surfaces, painted?                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Has the updated building energy model been prepared?                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| p) Are special plans and criteria for electrical systems shown (i.e., grounding, kitchen hoods, food service equipment, emergency power, laundry equipment, vending, etc.)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 13) Cost:                                                                                                                                                                   |                          |                          |
| a) Does cost correlate to established budgets?                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have the estimated costs of construction between the Architect/Engineer and the Construction Manager or Owner's Cost Consultant been reconciled?                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 14) Has the LEED scorecard been re-evaluated and updated?                                                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |



OTHER QUALITY ITEMS

Yes No

|     |       |                          |                          |
|-----|-------|--------------------------|--------------------------|
| 1)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 2)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 3)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 4)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 5)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 6)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 7)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 8)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 9)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 10) | _____ | <input type="checkbox"/> | <input type="checkbox"/> |

EXPLANATION OF "NO" RESPONSES

|     |       |
|-----|-------|
| 1)  | _____ |
| 2)  | _____ |
| 3)  | _____ |
| 4)  | _____ |
| 5)  | _____ |
| 6)  | _____ |
| 7)  | _____ |
| 8)  | _____ |
| 9)  | _____ |
| 10) | _____ |

\_\_\_\_\_  
Signature Date

\*Add additional sheets as required.

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# QUALITY CHECKLIST



100% CONSTRUCTION DRAWINGS

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**ARCHITECT OR ENGINEER OF RECORD**

|              |                           |       |
|--------------|---------------------------|-------|
| _____        | _____                     | _____ |
| Company Name | Principal in Charge       | Date  |
| _____        | _____                     | _____ |
| Company Name | Project Architect         | Date  |
| _____        | _____                     | _____ |
| Company Name | Mechanical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Electrical Engineer       | Date  |
| _____        | _____                     | _____ |
| Company Name | Civil/Structural Engineer | Date  |

**UNIVERSITY OF NOTRE DAME**

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| _____                                                                   | _____ |
| AVP for Facilities Design<br>and Operations<br>and University Architect | Date  |
| _____                                                                   | _____ |
| Senior Director<br>Project Management                                   | Date  |
| _____                                                                   | _____ |
| Director of Construction &<br>Quality Assurance                         | Date  |
| _____                                                                   | _____ |
| Director of Utilities                                                   | Date  |
| _____                                                                   | _____ |
| Chief Mechanical Engineer                                               | Date  |
| _____                                                                   | _____ |
| Chief Electrical Engineer                                               | Date  |

100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST

| QUALITY ITEM                                                                                                                                        | Yes                      | No                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1) Are the following shown?                                                                                                                         |                          |                          |
| a) All necessary information previously described.                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| b) All necessary details.                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| c) All sections.                                                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| d) All schedules.                                                                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| e) All system diagrams.                                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| f) All construction types.                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| g) All wall ratings - fire and "U" values.                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| h) All listed firestop systems.                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 2) Do the documents clearly depict the following?                                                                                                   |                          |                          |
| a) All design and construction requirements.                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Adequate information to permit accurate Contractor take-off and pricing.                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| c) The finalization of the previously submitted and approved design phases.                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| d) The agreed upon responses of earlier design review quality comments.                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| e) All items provided by Owner installed by Contractor, in matrix format.                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| f) All items installed by Owner, in matrix format.                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Project name, project number and project location.                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Compass orientation the same on all plan view sheets.                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| i) All easements, right-of-way, and interfaces with public, city or county utilities.                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| j) All proposed alternates shown clearly and accurately, and consistent between the specifications and drawings.                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| k) All previously approved energy and life-cycle cost analyses, schemes and architectural features.                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| l) All necessary building code approvals.                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Drawing sheet signed and sealed by Architect or Engineer?                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Do square footage areas correlate to program requirements?                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Does cost correlate to established budgets?                                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| p) Have the estimated costs of construction between the Architect/Engineer and the Construction Manager or Owner's Cost Consultant been reconciled? | <input type="checkbox"/> | <input type="checkbox"/> |
| q) Is there a Storm Water Pollution Prevention Plan / Soil Erosion Control Plan provided?                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 3) Architectural:                                                                                                                                   |                          |                          |
| a) Are wall details shown that ensure the minimum "U" value is met?                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Are roof details shown that ensure the minimum "U" value is met?                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |

100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                                                                                                | Yes                      | No                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| c) Floor plans:                                                                                                                                             |                          |                          |
| 1. Are all dimensions and all spaces identified?                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are all walls dimensioned from column lines?                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Are rated partitions identified?                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Are ADA disability features identified? Are assembly spaces with more than 50 seats equipped with amplification systems and assistive listening devices? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is the location of all drinking fountains, fire extinguishers, hoses, etc. shown?                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Is all built-in equipment identified?                                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Is the orientation (north arrow) shown on all plans?                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Is the scale shown for all drawings?                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Are all access panels shown and coordinated in locations for access to mechanical, electrical and plumbing equipment?                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Are left-handed tablet armed fixed seating evenly distributed at aisles and center of seating areas?                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Elevations:                                                                                                                                              |                          |                          |
| 1. Are all exterior and interior elevations of the building shown?                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are all materials labeled?                                                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Are all vertical dimensions shown?                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Is the roof slope identified?                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Do exterior elevations depict visible rooftop mechanical equipment?                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are exterior hollow metal frames treated with a bituminous coating on the back/throat side?                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Are all required masonry expansion and control joints indicated?                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Reflected Ceiling Plans:                                                                                                                                 |                          |                          |
| 1. Is the plan fully coordinated by CAD overlay with mechanical, electrical, data, and sprinkler system drawings, including access panels?                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are all ceiling materials identified?                                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Is the design intent of ceiling grid clearly shown?                                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Scale of Plans:                                                                                                                                          |                          |                          |
| 1. Are all plans shown at 1/8" = 1'-0" scale, except for enlarged plan view for equipment rooms, stairs, etc.?                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Section and Details. Identify:                                                                                                                           |                          |                          |
| 1. All exterior wall sections minimum 3/4" = 1'-0".                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. All interior wall sections minimum 3/4" = 1'-0".                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |

100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                                                              | Yes                      | No                       |
|---------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 3. All roof edges, expansion joints, penetrations shown with isometric drawing of scupper or any non-standard situations. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. All head, jamb and sill details shown for all doors and windows, complete with dimensions.                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. All expansion joints shown, complete with dimensions.                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are stairs, stringers, landings completely detailed with floor and base finishes?                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Schedules and Legends. Identify:                                                                                       |                          |                          |
| 1. Finishes.                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| a) 4" rubber base                                                                                                         |                          |                          |
| b) Ceramic tile thickness uniform on walls.                                                                               |                          |                          |
| c) Static dissipative tile floor in OIT closets.                                                                          |                          |                          |
| d) Use of acrylic enamel paints (no oil based paints).                                                                    |                          |                          |
| 2. Doors and windows.                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Toilet accessories.                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. All abbreviations.                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Miscellaneous:                                                                                                         |                          |                          |
| 1. Show mounting heights for all ADA items; toilet room accessories, ramp slopes, stair design, seating capacity.         | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. State on the drawings the code and year that applies to the project.                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Show all design loads on drawings.                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Are interior handrail posts noted to be set in Portland cement grout?                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is sufficient access provided to all elevator machine components?                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Is tempered glass indicated where required?                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Is privacy maintained with regard to sightlines into bathrooms?                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 4) Civil/Structural:                                                                                                      |                          |                          |
| a) Show anchor bolt embedments and projections.                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Provide footing elevations.                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Identify connections and services.                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Indicate top elevation of all catchbasins and manholes.                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Match contours with top elevations of catchbasins and manholes.                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Is the type of pipe specified?                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |

100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                               | Yes                      | No                       |
|--------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| g) Are the datum elevations correlated with the USGS elevations?                           | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Are the finish floor elevations shown?                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Is the finish floor elevation above 100-year flood?                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Are pavement sections shown?                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Are control joints shown in all slabs?                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| l) Are all structural elements properly and accurately dimensioned from column grid lines? | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Are exterior handrail posts noted to be set in Portland cement grout?                   | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Are there any special structural details that require a sequence of erection narrative? | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Are all design loads including dead, live, snow and wind loads shown and accounted for? | <input type="checkbox"/> | <input type="checkbox"/> |
| p) Has a roof snow/drift load analysis been performed?                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| q) Is sufficient access provided to all elevator machine components?                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 5) Mechanical/Plumbing:                                                                    |                          |                          |
| a) Are all fire/smoke dampers provided in all rated walls/ceilings?                        | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Is a detail shown for sealing all wall and ceiling penetrations?                        | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is the water heater relief piping and discharge point shown?                            | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Is all ductwork designed in compliance with ASHRAE and SMACNA?                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Are ductwork pressure testing/leakage restrictions indicated?                           | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Are all systems in compliance with University Basis of Design requirements?             | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Are "wing" type coils specified on air handling equipment?                              | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Are all plumbing systems in compliance with applicable codes?                           | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Is the following equipment provided in all attics?                                      |                          |                          |
| 1. Access opening, platforms, and walkways, where applicable.                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Lighting.                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Auxiliary pans/drains for air conditioning equipment.                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. GFI convenience outlets.                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Do all kitchen hoods conform to mechanical and fire codes?                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Do all chemical fume hoods conform to mechanical and fire codes?                        | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Are all air conditioning condensate lines with discharge shown?                         | <input type="checkbox"/> | <input type="checkbox"/> |

**100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST** (continued)

| QUALITY ITEM                                                                                                                       | Yes                      | No                       |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1. Does the discharge conform to code?                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Are all required backflow prevention devices shown?                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| l) Does the fire sprinkler system show:                                                                                            |                          |                          |
| 1. Details of water source?                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Type of sprinkler system?                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Plan of sprinkler system?                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Are risers shown?                                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Are connections to existing systems shown?                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are all valves and controls shown?                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Notation requiring fire protection contractor to provide the sprinkler head model number on the design submittal shop drawings? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Is an anti-microbial system flush specified?                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Is the temperature control system provided?                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Is the energy management system provided?                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Is the building automation system provided?                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| p) Are temperature control energy management and building automation systems' schematics shown on the drawings?                    | <input type="checkbox"/> | <input type="checkbox"/> |
| q) Are the sequences of the HVAC systems' of operation provided, complete with a point list?                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| r) Are the ceiling diffuser and sprinkler head locations coordinated with the architectural reflected ceiling plans?               | <input type="checkbox"/> | <input type="checkbox"/> |
| s) Was clash detection made of the mechanical work to ensure no conflicts with other work, equipment or structures?                | <input type="checkbox"/> | <input type="checkbox"/> |
| t) Is adequate access provided to mechanical equipment located in attic spaces via ladders, catwalks, etc.?                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 6) Electrical:                                                                                                                     |                          |                          |
| a) Is an electrical site plan shown?                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Was clash detection made of the electrical work to ensure no conflicts with other work, equipment or structures?                | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Is lighting system in accordance with University energy guidelines?                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Does all electrical design comply with the latest National Electrical Code?                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Are all conductors copper?                                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Is the electrical legend complete?                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |

100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                                                                             | Yes                      | No                       |
|----------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| g) Are all panelboard schedules provided?                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Do they show voltage and phase?                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is the rating of the main disconnect shown?                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Are all circuit numbers shown?                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Are the number of poles shown?                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Are all trip-amperes shown?                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are all volt-amperes shown?                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Are all wire sizes shown?                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Are all conduit sizes shown?                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Is lighting fixture schedule shown?                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Are all fluorescent lamps and ballasts of the energy-saving type?                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is an exterior lighting photometrics plan included?                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Are riser diagrams shown for the following:                                                           |                          |                          |
| 1. Electrical service?                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Fire alarm system?                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Intercom system?                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Telecommunications system?                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Computer data system?                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Is the following transformer data provided?                                                           |                          |                          |
| 1. Voltage?                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Phase?                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. KVA rating?                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Is the division of work between contractor, University of Notre Dame Utilities and AEP clearly shown? | <input type="checkbox"/> | <input type="checkbox"/> |
| l) Is the voltage and KVA rating of all generators shown?                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Is the voltage and KVA rating of all transfer switches shown?                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Is sufficient space shown as required by the National Electrical Code for the following?              | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. Panelboard locations?                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |

**100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST** (continued)

| QUALITY ITEM                                                                                            | Yes                      | No                       |
|---------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 2. Switchgear locations?                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Transformer locations?                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Are assurances made that no water lines are above electrical panels or switchgear?                   | <input type="checkbox"/> | <input type="checkbox"/> |
| p) Are all locations of mechanical equipment and their circuits shown?                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| q) Are all circuits for kitchen equipment shown?                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| r) Are all rooms designated as shown on the architectural plans?                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| s) Is the lighting layout coordinated with the architectural reflected ceiling plan?                    | <input type="checkbox"/> | <input type="checkbox"/> |
| t) Is all grounding shown?                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| u) Is all the electrical equipment shown on the floor plans?                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| v) Are all circuits shown on the floor plans?                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| w) Are specifications provided for the following?                                                       |                          |                          |
| 1. All electrical equipment                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. The fire alarm system.                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. The intercom system.                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. The lightning protection.                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. The security system.                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. The telecommunications system.                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. The computer data system.                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. The firestopping details.                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. All grounding, including equipment grounding.                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| x) Are the diagrams for door card swipe access systems shown?                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| y) Are the power requirements and sequence of control shown for elevator recall system?                 | <input type="checkbox"/> | <input type="checkbox"/> |
| z) Is the emergency generator fuel fill vent and whistle indicated?                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| aa) Are the security plans with card readers shown, including electrical power requirements?            | <input type="checkbox"/> | <input type="checkbox"/> |
| bb) Are OIT/data outlets indicated at vending machines?                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| cc) Is electrical closet construction of fire rated assembly?                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| dd) Do OIT closets indicate surface mounted 3/4" fire retardant plywood, on all wall surfaces, painted? | <input type="checkbox"/> | <input type="checkbox"/> |



100% CONSTRUCTION DRAWINGS QUALITY CHECKLIST (continued)

| QUALITY ITEM                                             | Yes                      | No                       |
|----------------------------------------------------------|--------------------------|--------------------------|
| ee) Has the final building energy model been prepared?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 7) Has the LEED scorecard been re-evaluated and updated? | <input type="checkbox"/> | <input type="checkbox"/> |



OTHER QUALITY ITEMS

Yes No

|     |       |                          |                          |
|-----|-------|--------------------------|--------------------------|
| 1)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 2)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 3)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 4)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 5)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 6)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 7)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 8)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 9)  | _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| 10) | _____ | <input type="checkbox"/> | <input type="checkbox"/> |

EXPLANATION OF "NO" RESPONSES

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_
- 7) \_\_\_\_\_
- 8) \_\_\_\_\_
- 9) \_\_\_\_\_
- 10) \_\_\_\_\_

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

\*Add additional sheets as required.

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# A/E DELIVERABLES CHECKLIST



## ARCHITECTURAL SERVICES

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**DESIGN PHASE**

|                                                                                                                                                                         | Agmt. Paragr. Ref. | Date Submitted       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|
| 1) Prepare and submit restatement of Owners project objectives                                                                                                          | 2a                 | <input type="text"/> |
| 2) Preparation of space program, room listing and conceptual floor plan                                                                                                 | 2b                 | <input type="text"/> |
| 3) Preparation of site selection analysis                                                                                                                               | 2c                 | <input type="text"/> |
| 4) Preparation of preliminary cost model                                                                                                                                | 2d                 | <input type="text"/> |
| 5) Preparation of design schedule                                                                                                                                       | 2e                 | <input type="text"/> |
| 6) Preparation of preliminary building energy model                                                                                                                     | 2f                 | <input type="text"/> |
| 7) Preparation of preliminary LEED scorecard                                                                                                                            | 2g                 | <input type="text"/> |
| 8) Preparation of schedule of A/E design services                                                                                                                       | 3a                 | <input type="text"/> |
| 9) Preparation of alternative design approaches                                                                                                                         | 3b                 | <input type="text"/> |
| 10) Preparation of Schematic Design documents                                                                                                                           | 3c                 | <input type="text"/> |
| 11) Preparation of preliminary Statement of Probable Construction Cost                                                                                                  | 3d                 | <input type="text"/> |
| 12) Preparation of summary comparison of final Schematic Design with previously approved space program listing                                                          | 3e                 | <input type="text"/> |
| 13) Preparation of preliminary Utilities impact statement                                                                                                               | 3f                 | <input type="text"/> |
| 14) preparation of preliminary Utilities services connection plan.                                                                                                      | 3g                 | <input type="text"/> |
| 15) Preparation of updated building energy model                                                                                                                        | 3i                 | <input type="text"/> |
| 16) Preparation of updated LEED scorecard                                                                                                                               | 3j                 | <input type="text"/> |
| 17) Preparation of Design Development documents                                                                                                                         | 4a-4i              | <input type="text"/> |
| 18) Preparation of updated Statement of Probable Construction Cost                                                                                                      | 4j                 | <input type="text"/> |
| 19) Preparation of updated schedule of A/E design services                                                                                                              | 4k                 | <input type="text"/> |
| 20) Preparation of formal Design Development presentation to the Owner                                                                                                  | 4l                 | <input type="text"/> |
| 21) Preparation of summary comparison of final Design Development with previously approved space program listing and Schematic Design                                   | 4m                 | <input type="text"/> |
| 22) Preparation of updated Utilities impact statement and connection plan                                                                                               | 4n                 | <input type="text"/> |
| 23) Preparation of updated building energy model                                                                                                                        | 4p                 | <input type="text"/> |
| 24) Preparation of updated LEED scorecard                                                                                                                               | 4q                 | <input type="text"/> |
| 25) Preparation of Construction Documents                                                                                                                               | 5a-5d              | <input type="text"/> |
| 26) Preparation and submittal of summary of list of work scope changes between final final Design Development and Construction Documents                                | 5f                 | <input type="text"/> |
| 27) Preparation of updated Statement of Probable Construction Cost                                                                                                      | 5g                 | <input type="text"/> |
| 28) Preparation of summary comparison of final Construction Documents with previously approved space program listing, Schematic Design and Design Development Documents | 5h                 | <input type="text"/> |

DESIGN PHASE

|                                                                                                                        | Agmt. Paragr. Ref. | Date Submitted       |
|------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|
| 29) Preparation of final Utilities Impact Statement and Utilities Services Connection Plan                             | 5i                 | <input type="text"/> |
| 30) Preparation of all IDEM Rule 5 Documents                                                                           | 5j                 | <input type="text"/> |
| 31) Preparation of building energy model on projected energy use                                                       | 5k                 | <input type="text"/> |
| 32) Preparation of updated LEED scorecard                                                                              | 5l                 | <input type="text"/> |
| 33) Preparation of bid tabulation                                                                                      | 6a                 | <input type="text"/> |
| 34) File required documents to secure approval of all governmental authorities to secure applicable building permit(s) | 6b                 | <input type="text"/> |

**CONSTRUCTION PHASE**

|                                                                                                                                                                        | Agmt. Paragr. Ref. | Date Submitted       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|
| 1) Conduct field inspections of work in place and prepare and submit bi-weekly field observation reports                                                               | 8e                 | <input type="text"/> |
| 2) Prepare and submit additional detailed written reports on progress of the work.                                                                                     | 8e                 | <input type="text"/> |
| 3) Compile and deliver to the Owner one set of completed and approved submittals and shop drawings upon Substantial Completion of the project                          | 8k                 | <input type="text"/> |
| 4) Prepare and submit for execution by the Contractor and Owner the Certificates of Substantial Completion and Final Completions                                       | 8m                 | <input type="text"/> |
| 5) Receive, review, and transmit to Owner neatly bound binders of Manufacturer's Operations and Maintenance Manuals, together with all applicable warranty information | 8n                 | <input type="text"/> |
| 6) Conduct a project warranty wal-thru prior to the expiration of one year after the date of Substantial Completion                                                    | 8o                 | <input type="text"/> |
| 7) Prepare and submit project record drawings in electronic format illustrating all significant changes in the work during construction                                | 8q,14              | <input type="text"/> |

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# A/E DELIVERABLES CHECKLIST



ENGINEERING SERVICES

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**DESIGN PHASE**

|                                                                                                                                                                         | Agrmt. Paragr. Ref. | Date Submitted       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|
| 1) Prepare and submit restatement of Owners project objectives                                                                                                          | 2a                  | <input type="text"/> |
| 2) Preparation of space program, room listing, and conceptual floor plan                                                                                                | 2b                  | <input type="text"/> |
| 3) Preparation of site selection analysis                                                                                                                               | 2c                  | <input type="text"/> |
| 4) Preparation of preliminary cost model                                                                                                                                | 2d                  | <input type="text"/> |
| 5) Preparation of design schedule                                                                                                                                       | 2e                  | <input type="text"/> |
| 6) Preparation of preliminary building energy model                                                                                                                     | 2f                  | <input type="text"/> |
| 7) Preparation of preliminary LEED scorecard                                                                                                                            | 2g                  | <input type="text"/> |
| 8) Preparation of schedule of Engineering design services                                                                                                               | 3a                  | <input type="text"/> |
| 9) Preparation of alternative design approaches                                                                                                                         | 3b                  | <input type="text"/> |
| 10) Preparation of Schematic Design documents                                                                                                                           | 3c                  | <input type="text"/> |
| 11) Preparation of preliminary Statement of Probable Construction Cost                                                                                                  | 3d                  | <input type="text"/> |
| 12) Preparation of summary comparison of final Schematic Design with previously approved space program listing                                                          | 3e                  | <input type="text"/> |
| 13) Preparation of preliminary Utilities impact statement                                                                                                               | 3f                  | <input type="text"/> |
| 14) Preparation of preliminary Utilities services connection plan                                                                                                       | 3g                  | <input type="text"/> |
| 15) Preparation of updated building energy model                                                                                                                        | 3i                  | <input type="text"/> |
| 16) Preparation of updated LEED scorecard                                                                                                                               | 3j                  | <input type="text"/> |
| 17) Preparation of Design Development documents                                                                                                                         | 4a-4i               | <input type="text"/> |
| 18) Preparation of updated Statement of Probable Construction Cost                                                                                                      | 4j                  | <input type="text"/> |
| 19) Preparation of updated schedule of Engineering design services                                                                                                      | 4k                  | <input type="text"/> |
| 20) Preparation of formal Design Development presentation to the Owner                                                                                                  | 4l                  | <input type="text"/> |
| 21) Preparation of summary comparison of final Design Development with previously approved space program listing and Schematic Design                                   | 4m                  | <input type="text"/> |
| 22) Preparation of updated Utilities impact statement and connection plan                                                                                               | 4n                  | <input type="text"/> |
| 23) Prepare and submit updated building energy model                                                                                                                    | 4p                  | <input type="text"/> |
| 24) Preparation of updated LEED scorecard                                                                                                                               | 4q                  | <input type="text"/> |
| 25) Preparation of Construction Documents                                                                                                                               | 5a-5d               | <input type="text"/> |
| 26) Prepare and submit summary of list of work scope changes between final final Design Development and Construction Documents                                          | 5f                  | <input type="text"/> |
| 27) Preparation of updated Statement of Probable Construction Cost                                                                                                      | 5g                  | <input type="text"/> |
| 28) Preparation of summary comparison of final Construction Documents with previously approved space program listing, Schematic Design and Design Development Documents | 5h                  | <input type="text"/> |

DESIGN PHASE

|                                                                                                                        | Agmt. Paragr. Ref. | Date Submitted |
|------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|
| 29) Preparation of final Utilities Impact Statement and Utilities Services Connection Plan                             | 5i                 |                |
| 30) Preparation of all IDEM Rule 5 Documents                                                                           | 5j                 |                |
| 31) Preparation of building energy model and projected energy use                                                      | 5k                 |                |
| 32) Preparation of updated LEED scorecard                                                                              | 5l                 |                |
| 33) Preparation of bid tabulation                                                                                      | 6a                 |                |
| 34) File required documents to secure approval of all governmental authorities to secure applicable building permit(s) | 6b                 |                |

CONSTRUCTION PHASE

|                                                                                                                                                                        | Agmt. Paragr. Ref. | Date Submitted       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|
| 1) Conduct field inspections of work in place and prepare and submit bi-weekly field observation reports                                                               | 8e                 | <input type="text"/> |
| 2) Prepare and submit additional detailed written reports on progress of the work                                                                                      | 8e                 | <input type="text"/> |
| 3) Compile and deliver to the Owner one set of completed and approved submittals and shop drawings upon Substantial Completion of the project                          | 8k                 | <input type="text"/> |
| 4) Prepare and submit for execution by the Contractor and Owner the Certificates of Substantial Completion and Final Completion                                        | 8m                 | <input type="text"/> |
| 5) Receive, review, and transmit to Owner neatly bound binders of Manufacturer's Operations and Maintenance Manuals, together with all applicable warranty information | 8n                 | <input type="text"/> |
| 6) Conduct a project warranty wal-thru prior to the expiration of one year after the date of Substantial Completion                                                    | 8o                 | <input type="text"/> |
| 7) Prepare and submit project record drawings in electronic format illustrating all significant changes in the work during construction                                | 8q,14              | <input type="text"/> |

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# DELIVERABLES CHECKLIST



PROFESSIONAL LAND SURVEYING

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PROFESSIONAL LAND SURVEYING

- 1) Prepare and deliver land survey reports and drawings
- 2) Establish project benchmark at projet site

| Agrmt. Paragr. Ref. | Date Submitted |
|---------------------|----------------|
| 3.5                 |                |
| 3.6                 |                |

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# DELIVERABLES CHECKLIST



SPECIAL SERVICES ENGINEERING

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**SPECIAL SERVICES ENGINEERING**

|                                                                       | Agrmt. Paragr. Ref. | Date Submitted       |
|-----------------------------------------------------------------------|---------------------|----------------------|
| 1) Prepare and submit geotechnical report and logs                    | 3.5,3.12            | <input type="text"/> |
| 2) Establish benchmark at project site with reference to NVGD 1929    | 3.6                 | <input type="text"/> |
| 3) Submit sketch showing locations and depth of proposed soil borings | 3.7                 | <input type="text"/> |
| 4) Submit all construction materials testing final reports            | 3.18                | <input type="text"/> |

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# DELIVERABLES CHECKLIST



SPECIAL PROJECT W/O  
A/E-LUMP SUM

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**CONSTRUCTION PHASE**

|                                                                                                                          | Agmt. Paragr. Ref. | Date Submitted |
|--------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|
| 1) Submit one record copy of Construction Drawings, Specifications, Addenda, Change Orders, noted with any field changes | 3r                 |                |
| 2) Submit one record copy of approved shop drawings, product data, samples, etc.                                         | 3r                 |                |
| 3) Submit list of incomplete work items prior to achieving Final Completion                                              | 11c                |                |
| 4) Submit closeout documents                                                                                             | 11j                |                |
| 5) Submit critical path schedule with monthly updates                                                                    | 11n                |                |
| 6) Submit schedule of submittals                                                                                         | 11o                |                |
| 7) Submit Consent of Surety to reduce retainage                                                                          | 14i                |                |
| 8) Submit payroll affidavits                                                                                             | 14r                |                |
| 9) Submit Certificate of Insurance                                                                                       | 14r                |                |
| 10) Submit statement of renewable insurance coverage                                                                     | 14r                |                |
| 11) Submit Consent of Surety to release all retainage                                                                    | 14r                |                |
| 12) Submit Final Lien Waivers                                                                                            | 14r                |                |
| 13) Submit one set of reproducible record drawings of the work                                                           | 18                 |                |
| 14) Submit Payment and Performance Bonds                                                                                 | 24r                |                |

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# DELIVERABLES CHECKLIST



SPECIAL PROJECT W/O  
A/E - COST PLUS W/ GMP

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**CONSTRUCTION PHASE**

|                                                                                                                    | Agmt. Paragr. Ref. | Date Submitted |
|--------------------------------------------------------------------------------------------------------------------|--------------------|----------------|
| 1) Submit one record copy of Construction Drawings, Specifications, Addenda, Change Orders, with any field changes | 3r                 |                |
| 2) Submit one record copy of approved shop drawings, product data, samples, etc.                                   | 3r                 |                |
| 3) Submit list of incomplete work items prior to achieving Final Completion                                        | 11c                |                |
| 4) Submit closeout documents                                                                                       | 11j                |                |
| 5) Submit critical path schedule with monthly updates                                                              | 11n                |                |
| 6) Submit schedule of submittals                                                                                   | 11o                |                |
| 7) Submit Consent of Surety to reduce retainage                                                                    | 14j                |                |
| 8) Submit payroll affidavits                                                                                       | 14r                |                |
| 9) Submit Certificate of Insurance                                                                                 | 14r,24c            |                |
| 10) Submit statement of renewable insurance coverage                                                               | 14r                |                |
| 11) Submit Consent of Surety to release all retainage                                                              | 14r                |                |
| 12) Submit Final Lien Waivers                                                                                      | 14r                |                |
| 13) Submit one set of reproducible record drawings of the work                                                     | 18                 |                |
| 14) Submit Payment and Performance Bonds                                                                           | 24r                |                |