NORTHWEST
MISSOURI STATE UNIVERSITY

DESIGN DEVELOPMENT DELIVERABLES LIST

The Design Development Phase should provide definite design conclusions based on the approved Schematic Design framework and represent approximately 50% of design completion. Where the consultant requires a decision or recommendation to proceed to the Construction Document Phase, adequate supportive and explanatory information should be provided upon which a determination can be made. The submittal should be presented in the Standard Plan and Specification format with additional narrative materials as necessary. Provide written response to owners schematic review comments. Resolve any outstanding issues on schematic design checklist. Designer shall insure all sub-consultant work is coordinated.

Objective: To develop in further detail the approved conceptual design. The design documents should clearly identify the developed civil, architectural, structural, mechanical, electrical, plumbing and fire protection design solutions. All major features and components of the design solution should be documented and included in the updated cost estimate. Upon approval of the Design Development Package by the owner, the design team will begin execution the final construction design details. The approved Design Development Package constitutes a complete concept and no further changes to the plans, elevations or building systems will be allowed except to comply with construction or code requirements.

The following represents the minimum deliverables under this phase of the project, unless specifically struck out during fee negotiations. The A/E shall submit this checklist with each item checked/initialed as a representation that all minimum deliverables have been satisfied.

CIVIL DRAWINGS

A. Site Plan

- ☐ Building location plan
  a. Tie building dimensionally with pertinent adjacencies, permanent bench mark, street lines, property lines, required setbacks, easements, rights of way
  b. Indicate manholes, sewers, hydrants, light standards, interface with survey.
- ☐ Grading and paving plans, include contours, critical spot elevations, main floor level datum elevation
  a. Include sidewalks, ramps, stairs, driveways, parking areas including layout geometry
  b. Site drainage and retention areas
- ☐ Utility Plans
  a. Identify existing and new utilities to the building (electrical, water, gas, fiber and telephone)
  b. Identify sanitary and storm laterals from the building to the mains
  c. Identify site storm sewers, inlets, manholes, etc.

B. Site Sections

- ☐ Include typical driveway, parking area, sidewalk cross sections.

C. Typical Design Details

- ☐ Railing, stairs, ramps, walkway paving types and patterns, benches, site lighting, other significant features

ARCHITECTURAL DRAWINGS

A. Code Analysis Plan

- ☐ Code Footprint (include all fire rated walls, partitions, barriers, etc.)
- ☐ Code Analysis (show on drawings)

B. Architectural Floor Plans

- ☐ Dimensioned structural bay system
- ☐ Internal partitions located, drawn and dimensioned
- ☐ All casework and other equipment called out on plans
- ☐ Major mechanical/electrical systems determined and their requirements reflected and indicated on the plans including louvers, areaways and utility entrances
- ☐ Locate all plumbing fixtures
- ☐ All rooms named and numbered
- ☐ Locate exterior and interior doors and windows
- ☐ Locate typical and fire rated partition types
- ☐ All keyed references complete (match lines, building sections, large scale plans, key notes, etc.)
- ☐ Finish floor elevations noted
- ☐ Expansion joints indicated
- ☐ Building cores (stairs, elevators, toilets, shafts, etc) drawn to a larger scale (+/ - ¼”=1’-0”), dimensioned and keyed to larger scale plans
- ☐ Plans and elevations of feature areas (lobby, special spaces) drawn to a larger scale (+/ - ¼”=1’-0”) with all surfaces shown and materials called out and keyed to larger scale plans
- ☐ Demolition plan

C. Reflected Ceiling Plan

- ☐ Located lighting fixtures, speakers, cameras
- ☐ Soffits/bulkheads, skylights
- ☐ Identify major ceiling materials and their relationship with partitions
- ☐ Identify all areas with exposed structure

D. Roof Plan

- ☐ Dimensioned structural grid and building offsets
- ☐ Roof access locations and types
- ☐ Roof material and slopes
- ☐ Primary and secondary roof drain locations
- ☐ Typical roof details denoting system components
- ☐ Locate rooftop equipment
- ☐ Locate expansion joints
- ☐ For roof replacement projects, reference core cuts and indicate components to be removed vs. to remain

E. Exterior Building Elevations

- ☐ Building elevations including roof structures and foundations
- ☐ Identify and locate all exterior windows and doors
- ☐ Identify floor levels, vertical dimensions and overall building heights
- ☐ Column center lines
- ☐ Locate expansion joints and major panel joints
- ☐ Exterior mechanical equipment
- ☐ All materials noted; demarcation of materials shown
- ☐ Detailed elevations at a larger scale (+/ - ¼”=1’-0”) as necessary to explain intent (building entrance, special brickwork/masonry, building canopy, etc.)
- ☐ Major keyed references: match lines, buildings sections, wall sections

F. Building and Wall Sections

- ☐ Include major building sections, identify column lines, feature openings and relationships between floors, ceilings, structure and mechanical systems
- ☐ Vertical dimensions including floor to floor and ceiling heights
- ☐ Finish grades around the building
- ☐ Typical wall sections or assembly details

G. Landscaping Plans

- ☐ Site plan indicating lawn and plantings.
- ☐ Consideration is to be given to the topographic information for drainage

H. Details

- ☐ Large scale details of major exterior wall assemblies, (parapets to foundation)
- ☐ Large scale details of major foundation and perimeter treatment
- ☐ Typical window and door details (i.e. head jamb and sill conditions)
- ☐ Typical interior and exterior columns details
- ☐ Key areas shown including stairs, elevators, loading docks, shafts and other conditions where wall sections reveal the third dimension
- ☐ Major casework elevations and millwork profiles
- ☐ Partition types

I. Interior Elevations

- ☐ Elevations of significant interior spaces

J. Schedules

- ☐ Draft interior finish schedule
- ☐ Draft door and frame schedule
- ☐ Draft window and glazing schedule

STRUCTURAL DRAWINGS

A. Structural Plans

- ☐ Foundation plan including interior and perimeter foundations, footings, piles, caissons, wall beams and grade beams as needed.
- ☐ Framing plans for all floors and roof including major member sizes noted or scheduled
- ☐ Typical column sizes shown
- ☐ Locate columns, beams, purlins, joists, etc .

B. Structural Sections/Details

- ☐ Major penetrations (i.e. slab openings, pits, tunnels and ramps) located on drawings
- ☐ Expansion joints located
- ☐ Typical edge of slab details for cladding attachment
- ☐ Footing, beam, column and connection details.
- ☐ Provide wind, seismic, dead and live loads design information.
- ☐ Location of in-floor electrical system
- ☐ Special conditions noted (shoring, underpinning, etc.)
- ☐ Updated structural building elevations.

MECHANICAL DRAWINGS

A. Mechanical Floor Plans

- ☐ Locate major equipment such as boilers, cooling towers, air handling units, heat pumps, exhaust fans, unit heaters, perimeter fin tubes, etc.
- ☐ Mechanical room equipment layouts are shown
- ☐ Size and locate utility risers, shafts, chases and equipment coordinated with architectural plans
- ☐ Consider access and replacement requirements with all equipment room layouts.
- ☐ Indicate typical layouts of all ceiling devices
- ☐ Heating and cooling load criteria for each space and major duct or pipe runs sized to interface with structural and architectural building components.
- ☐ Locate intake and exhaust louvers
- ☐ Coordinate ceiling plenum space with architectural, plumbing, fire protection, electrical, structural
- ☐ Air and water flow diagrams showing CFM and GPM respectively.
- ☐ Show electrical requirements such as panel size, location, voltage and current requirements for mechanical equipment.

B. Sections

- ☐ Critical mechanical room cross sections
- ☐ Corridor sections indicating duct clearances

C. Cut Sheets / Product Data

- ☐ Grills and diffusers
- ☐ Special equipment
- ☐ Controls/Building Management Control Systems (BMCS)

PLUMBING / FIRE PROTECTION DRAWINGS

A. Plumbing / Fire Protection Floor Plans / Detail Plans

- ☐ Locate all toilets, urinals, lavatories, mop sinks, floor drains and drinking fountains
- ☐ Size and locate utility risers, shafts, chases and equipment on architectural plans
- ☐ Locate underslab sanitary and supply lines
- ☐ Locate maintenance hose bibs in toilet rooms, custodial rooms and on exterior of building
- ☐ Include roof drainage system (quantity and location of roof drains, internal and external downspouts)
- ☐ Coordinate fixture sizes and mounting heights (including any special accessibility and age groups)
- ☐ Coordinate plumbing chase and shaft depths with architectural
- ☐ Consider access and replacement requirements with all room layouts
- ☐ Coordinate ceiling plenum space with architectural, fire protection, mechanical, electrical and structural
- ☐ Coordinate piping site and flows with existing sprinklers if applicable.
- ☐ Fire Sprinklers: On new construction, make arrangements to perform a flow test. Include the flow test report in the Contract Documents.

B. Cut Sheets / Product Data

- ☐ Plumbing fixtures
- ☐ Sprinkler heads
- ☐ Special Equipment
- ☐ Fire suppression system

ELECTRICAL DRAWINGS

A. Electrical Floor Plans

- ☐ Size and locate utility equipment on architectural plans.
- ☐ Major electrical equipment (switch gear, distribution panels, emergency generator, transfer switches, UPS system, etc.) dimensioned and drawn to scale into the space allocated, also include riser diagram or one line diagram.
- ☐ Identify service amperage and voltage requirements
- ☐ Locate size of conduit runs, cable trays, risers, shafts, chases, etc
- ☐ Locate size site electrical: transformers, underground service, entrance details, etc
- ☐ Identify typical and feature lighting fixtures: ceiling and wall types
- ☐ Identify electric and telephone panel room locations
- ☐ Locate electrical devices for typical classroom, offices, special classrooms including power receptacles, computer, telephone, TV, light switches, closed circuit TV, fire alarm, security and intercom devices
- ☐ Locate exit and emergency lighting and fire alarm devices (consider ADA requirements)
- ☐ Consider access and replacement requirements with all utility room layouts
- ☐ Coordinate ceiling plenum space with architectural, plumbing, fire protection, mechanical, structural
- ☐ Update design calculations to include power consuming equipment and load characteristics.
- ☐ Site lighting, locate and identify all lighting fixtures.

B. Cut Sheets / Product Data

- ☐ Light fixtures
- ☐ Fire alarm devices
- ☐ Special equipment
- ☐ Factory installed lighting and voltage surge protection equipment

OTHER REQUIREMENTS

A. Specialty Consultants

- ☐ All specialty consultants should provide the same level of information which is required for MEP disciplines. Typical specialty consultants include: Lab, security, acoustical, A/V and kitchen consultants

B. Specifications

- ☐ Draft specification
- ☐ When a product is specified, three manufacturers must be listed as acceptable. Contact the Project Manager if circumstances require a product to be dual or sole sourced.

C. Cost Estimates and Schedule

- ☐ Major line items costs for all building components, verify inclusion of all elements by cross-checking against specification for omissions
- ☐ Identify escalation to mid-point of construction
- ☐ Update cost estimate of construction and compare it to the allowable funds for construction.
- ☐ Estimate construction period, identify any phased work and any long-lead time for special items.
- ☐ Sole source items identified as approved.

D. Energy Report

- ☐ Updated energy report

E. General

- ☐ As documents develop, confer with regulatory agencies
- ☐ Identify all documents with Northwest's project name and number
- ☐ Apply the same date to all documents
- ☐ Review the building design program, scope of work and verify compliance
- ☐ Mechanical and electrical engineers:
  a. Contact utility companies and public authorities for all services and initiate approval process as needed for connection to their systems.
  b. Investigate and report on their review of all applicable local, public and utility regulations;
  c. Notify the Architect of space and location requirements for systems
  d. Prepare estimates of probable operating costs with recommendations for implementation

F. Submittals

- ☐ Two (2) complete sets of submittals for review
- ☐ Electronic thumb drive of all submittals