**STATE OF IDAHO**

**DIVISION OF PUBLIC WORKS**

**QUALITY ASSURANCE DOCUMENT REVIEW CHECKLIST FOR DESIGN PROFESSIONALS**

Summary:

1. **The attached checklist is intended to assist the project team in meeting the design objectives. This checklist could be shortened for smaller projects, expanded for larger projects, or revised for particular building types or specific projects.**
2. **The Architect or Engineer of record shall submit this document along with the deliverables for the project at the end of each design phase for Owner review. The status of each item shall be indicated, with a “X” meaning the item has been submitted, or “N/A” meaning it is not applicable to the project. For any item not submitted, the Design Professional shall be able to provide justification to the DPW Project Manager.**
3. **Each item required in the previous phase shall be further developed and submitted as part of the subsequent phases. In other words, Schematic Phase items will be re-submitted, further developed, as part of the Design Development Phase and likewise the Design Development Phase and Construction Document Phase. In projects greater than $500,000 DPW will require at least one intermediate review of the Construction Documents prior to the 99%, in which case deliverables for the construction document phase shall be submitted and be complete to the percentage previously agreed upon (i.e. 50%, or 75%).**

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| SCHEMATIC PHASE | | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE | |
| GENERAL INFORMATION | | | | |
| 1. Building name and location, DPW job number, Agency name, and Scope of work narrative  2. Building and space occupancy schedules  3. List of applicable building codes  4. Building code review, means of compliance for major code issues, building systems, fire separations, and construction type  5. Drawing sheet index  6. Define building performance criteria  7. Define MEP performance criteria  8. List of key team members and consultants  9. List of utility providers  10. Identify potential hazardous materials and need for abatement- coordinate with DPW Rep  11. Narrative on existing fire sprinkler and alarm system and new requirements for new construction  12. Define Owner requirements  13. Vicinity map and key plan of campus and or area within the project building  14. Main Floor plans for all disciplines are at the same scale and oriented in the same direction  15. Approval Signature Sheet | | 1. Life safety egress plans with identification of security and access points  2. Description of any proposed occupancy within the construction area  4. Schematic Phase Review Comments and Responses. Unresolved items shall be highlighted  5. Approval Signature Sheet | 1. Occupant load for each room  2. Copy of application for any applicable energy incentive programs  3. If there are bid alternates provide a clear indication of the scope of each alternate  4. Identify construction phasing, if any  5. Design Development Phase design review comments and responses  6. Approval Signature Sheet | |
| COST | | |
| 1. Cost Estimate, for CM projects a comparison between the Architects estimate and the CM’s estimate | 1. Updated cost estimate | 1. Updated cost estimate |
| SPECIFICATIONS | | |
| 1. System and material narrative descriptions  2. Outline of anticipated divisions and sections | 1. Preliminary Boilerplate  2. Preliminary (DPW specific) Division One specifications  3. Preliminary specifications (including Mechanical, Plumbing, and Electrical) that indicate project specific features of major equipment as well as component materials, i.e. “welded Schedule 40 steel pipe, quarter sawn oak, etc. w/ same number section as the specifications  4. Preliminary List of any potential sole source specified items | 1. Complete Boilerplate  2. Complete (DPW specific) Division One specifications  3. Complete specifications with minimum of 3 manufacturer’s per item unless sole source item has been previously approved by DPW Administrator |

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| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| SPECIFICATIONS continued | | |
|  | 3. Preliminary specifications (including Mechanical, Plumbing, and Electrical) that indicate project specific features of major equipment as well as component materials  4. Preliminary list of any potential sole source specified items  5. Specifications are coordinated with drawings | 3. Complete specifications with minimum of 3 manufacturer’s per item unless sole source item has been previously approved by DPW Administrator  4. Specifications are coordinated with drawings |
| SITE AND CIVIL | | |
| 1. Site plans to include the following:  a. Existing conditions (all inclusive)  b. Areas of demolition  c. Building outlines  d. Future expansion  e. Site entrance  f. Roads and driveways  g. Parking locations, including service vehicles, special user needs, and ADA spaces  h. Loading and service entrance locations  i. Security during construction  j. Waste and recycling collection locations  k. Walkway locations  l. Stairway locations  m. Emergency telephone locations  n. Site utilities  o. Emergency vehicle access showing turnarounds, width, code compliance verification, fire dept. Connection point  2. Schematic grading and drainage plan  3. Schematic Stormwater management plan  4. Preliminary site lighting plan  5. Site logistics plan i.e. Contractor staging area, preliminary limits of construction, contractor access, and location of temporary facilities | 1. General dimensions, elevations, and contours  2. Permanent exterior signage  3. Parking, roadway, and walkway plans and elevations  4. Vehicular and pedestrian traffic controls  5. Grading and drainage plan(s) that show tie in locations to roof drains and FFEs  6. Site lighting plans, simulations. Specifications, equipment cut sheets, and photometrics  7. Conceptual details of site fixtures, furnishings, and equipment  8. Utility plans, elevations, & details, for local AHJ approval  9. Soil erosion and sedimentation control plan for both construction and post occupancy  10. Survey information  11. Site and civil plans are coordinated with Architectural, MEP, and FP drawings | 1. Site development phasing plan  2. Keyed details of all site elements, fixtures, and furnishings (i.e. Curbs, bollards, etc.)  3. Profiles for underground utilities  4. Pipe sizes  5. Connection details  6. Site and civil plans are coordinated with Architectural, MEP, and FP drawings |

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| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| SITE AND CIVIL continued | | |
| 4. Schematic Site Lighting plan  5. Site Logistics Plan i.e. Contractor staging area, preliminary limits of construction, contractor access, and location of temporary facilities |  |  |
| LANDSCAPE | | |
| 1. Existing Conditions  2. Demolition Plans  3. Schematic Landscape Plans | 1. Planting Plan  2. Irrigation Plan with tie-in locations  3. Hardscape Plan  4. Landscape plans are coordinated with Architectural, MEP, and FP drawings | 1. Protection of existing trees and significant plantings during construction  2. Soil Preparation and Planting Specifications  3. Guying Diagrams  4. Piping Diagrams  5. Pipe Sizes  6. Keyed Landscape Irrigation Details and legends  7. Landscape plans are coordinated with Architectural, MEP and FP drawings |
| STRUCTURAL | | |
| 1. Existing conditions (all inclusive)  2. Demolition plans  3. Schematic structural plans  4. Written description, proposed materials, foundation types, design criteria, design loads | 1. Foundation plan  2. Floor framing plans  3. Roof framing plans  4. Member sizes  5. Structural sections  6. Preliminary structural details  7. Structural plans are coordinated with Architectural, MEP and FP drawings | 1. Location and details of control joints  2. Beam column and slab schedules  3. M/E housekeeping pads  4. Keyed foundation details  5. Keyed Structural details  6. Structural notes  7. Structural calculations  8. Required special inspections checklist  9. Structural plans are coordinated with Architectural, MEP and FP drawings |
| BUILDING EXTERIOR ENVELOPE | | |
| 1. Schematic elevations with existing conditions  2. Fenestration layout  3. Material designations | 1. All building elevations w/ dimensioned height  2. Keyed wall sections and assembly types  3. Parapet, coping, and roof penetration details | 1. Keyed roof details  2. Keyed wall details  3. Keyed flashing details |
| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| BUILDING EXTERIOR ENVELOPE continued | | |
| 4. Overall building cross sections  5. Schematic roof plan | 4. Roof plans showing all equipment, scuppers, penetrations, and parapet heights  5. Exterior door details and schedules  6. Window details and schedules  7. Expansion joint locations  8. Large Scale building cross sections  9. Plans, elevations, sections, and details are coordinated with Architectural, MEP and FP drawings | 4. Keyed exterior details  5. Control Joint locations and details  6. Plans, elevations, sections, and details are coordinated with Architectural, MEP and FP drawings |
| BUILDING INTERIOR | | |
| 1. Schematic floor plans (including existing conditions)  2. Demolition plans  3. Area use identification and area in ft2.  4. Mechanical rooms, electrical and other service closets and rooms to provide ample shaft and service areas  5. Strategy for flexibility for expansion & alterations  6. Preliminary layout of major spaces with fixed equipment | 1. All floor plans  2. Plans show all plan elements of MEP (i.e. floor drains, fire extinguishers, electrical panels, etc.)  3. Enlarged plans at elevation changes (i.e. stairs)  4. Enlarged plans for toilet rooms, janitor’s closets, breakrooms, etc.  5. Reflected ceiling plans that show all ceiling elements of MEP and FP  6. Wall types, fire ratings, smoke control zones  7. Fixed seating and equipment layouts  8. Proposed room numbering scheme  9. Preliminary interior elevations  10. Preliminary finish schedule  11. Preliminary door and window schedules  12. Attic Stock Storage Location  13. Plans, elevations, sections, and details are coordinated with Architectural, MEP and FP drawings | 1. Dimensioned and keyed floor and ceiling plans coordinated with MEP drawings  2. Dimensioned and keyed enlarged plans coordinated with MEP drawings  3. Dimensioned and keyed partition and wall details  4. Dimensioned and keyed interior details  5. Dimensioned and keyed Interior elevations  6. Finish schedules  7. Door, Window ,& hardware schedules  8. Keyed signage  9. Schedule of proposed moveable equipment not indicated on the contract documents  10. Schedule of lab fixtures if applicable  11. Plans, elevations, sections, and details are coordinated with Architectural, MEP and FP drawings |

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| SCHEMATIC PHASE | | DESIGN DEVELOPMENT PHASE | | CONSTRUCTION DOCUMENT PHASE | |
| ELEVATORS | | | | | |
| 1. Elevator Location  2. Equipment room location  3. Basis of Design Description  4. Emergency Power Determination | | 1. Elevator shaft location  2. Equipment description  3. Elevator Phone Installation Design | | 1. Dimensioned plans that show ADA requirements  2. Description of shaft sump pits  3. Car and equipment support details  4. Description of controls and fixtures  5. Door and Frame details  6. Interior details including lighting (cab and lobby) | |
| ACCESSIBILITY REQUIREMENTS | | | | | |
| 1. Accessible entrance locations  2. Accessible route  3. Areas of Refuge | | 1. Plans and details demonstrate design is in compliance with ADA requirements | |  | |
| HVAC | | | | | |
| 1. Mechanical legend  2. Demolition plans  3. Schematic mechanical plans, sections, and elevations showing major equipment locations, and air intake and discharge locations  4. Initial building envelope energy calculations  5. One line diagrams required to describe the fundamental concept for all mechanical systems  6. Indication of redundancy for all major pieces of mechanical equipment  7. Basis of design for all systems  8. Gross HVAC zoning and typical individual space zoning and operating schedules of the zoned areas.  9. Analysis of existing utilities and or HVAC infrastructure with summary listing required upgrades to support new work | | 1. Mechanical floor and ceiling plans showing distribution, equipment, and air intake and discharge locations  2. Overall building airflow diagram showing interrelationships of air handlers exhaust fans, duct risers, and duct mains and primary dampers  3. Overall building hydronic diagrams showing interrelationship of main heating/cooling plant equipment or central utility source, heat exchangers, pumps, pipe risers and mains and primary isolation and control valves  4. Locations of air control devices (i.e. Damper locations along with shaft access requirements)  5. Duct layout for typical spaces with attention to air distribution and noise levels  6. Equipment schedules for major pieces of equipment | | 1. Mechanical floor and ceiling plans with all components and required service access areas drawn to scale. Indicate duct sizes and air flow quantities relative to each room including cfm in and out of all doors  2. Detailed piping and duct design with all sizes shown, and expansion compensation and structural support requirements coordinated  3. Location of control panels, transformers, lab air valves, volume control boxes, thermostats, and control valves  4. Detailed floor plans of mechanical rooms with all components and required service access areas  5. Enlarged plans and sections showing coordination of systems in constricted areas  6. Equipment details with structural support details and vibrations isolation methods  7. Roof, penetration, and sleeve details | |

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| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| HVAC continued | | |
| 10. Analysis of existing utilities and or HVAC infrastructure with summary listing required upgrades to support new work | 7. Equipment locations with enlarged mechanical room plans, sections, and elevations.  8. Preliminary calculations and load summaries with breakdowns for major areas, subsystems and equipment loads  9. Documents shall show required maintenance and service requirements  10. Indication of locations of fire dampers, smoke dampers, combination F/S dampers, and air control devices with access provisions  11. Control diagrams for all mechanical and plumbing systems  12. Outline of major control sequences of operation  13. Preliminary large scale mech. room plans with required service access areas show to scale  14. Meter locations  15. Sound and vibration control analysis, attenuation requirements, and methods for control  16. HVAC drawings are coordinated with all architectural, civil, MEP, and FP | 8. Space zoning diagram by system  9. Connection to fire alarm and security systems  10. Installation details  11. Final equipment schedules  12. Detailed control drawings, including clear differentiation of trade responsibility for control power, fire and control power wiring  13. Detailed sequence of operations including specific setpoints for all control loops including connection to fire alarm and security systems  14. Duct construction schedule and material pressure class  15. Final Design calculations and Energy modeling  16. Final HVAC Energy Performance Compliance Report  17. Final HVAC Sound and Vibrations provisions with calculations  18. HVAC drawings are coordinated with all architectural, civil, MEP, and FP s |
| PLUMBING | | |
| 1. Plumbing legend  2. Demolition plans  3. Schematic plumbing plans, sections, elevations showing major equipment locations | 1. Updated design criteria for each plumbing system including set points water quality levels etc.  2. Preliminary plumbing plans with all components and service access shown to scale | 1. Plumbing plans with all components and required service access  2. Detailed piping design with all pipe sizes indicated  3. Design calculations  4. Typical plumbing details including structural support requirements |

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| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| PLUMBING continued | | |
| 4. One line riser diagram for every plumbing system, i.e. domestic, sanitary, storm, gas, RO/DI, vacuum, processed water and other materials to describe the fundamental concept for all plumbing systems  5. Main water supply, storm and sanitary leads  6. Major equipment locations  7. Restroom locations | 3. Preliminary piping plans with indication of required service access areas  4. Meter locations  5. Backflow prevention locations  6. Fixture schedules  7. Equipment schedules (major equipment)  8. Foundation drain layout  9. Plumbing drawings are coordinated with all architectural, Civil, MEP and FP | 5. Equipment piping details  6. Penetration and sleeve details  7. Water riser diagram, including assumed fixture counts per floor connection  8. Waste and vent riser diagrams including assumed fixture counts per floor connection  9. Plumbing drawings are coordinated with all architectural, Civil, MEP and FP |
| ELECTRICAL POWER DISTRIBUTION | | |
| 1. Electrical power demolition plans  2. Schematic electrical power plans, sections, elevations showing major equipment locations  3. One line diagrams with equipment ratings  4. Manhole duct bank and building entry locations  5. Exterior equipment locations  6. Substation, generator, and electric room locations  7. Preliminary substation and generator room plans  8. Panel numbering schemes  9. Lightning protection analysis  10. Special systems and equipment listings | 1. Preliminary electrical power plans showing receptacle locations  2. Manhole, ductbank, and building entry plans and details  3. Power riser diagram with circuit breaker, fuse, conduit, and wire sizes and updated one line diagram  4. Emergency power riser diagram with circuit breaker, fuse, conduit, and wire sizes  5. Grounding riser diagram  6. List of equipment proposed to be on emergency or standby power  7. Electrical load calculations  8. Preliminary panel schedules  9. Electrical equipment location plans  10. Typical electrical outlet location plans  11. Plan for temporary power during construction  12. Power drawings are coordinated with all architectural, civil, MEP, and FP | 1. Details of power service to building  2. Electrical power plans, including primary cable, raceways, feeder conduits, electrical loads, duplex and special receptacles and branch circuitry design  3. Emergency power system plans, controls, and details  4. Connections to other building systems including fire alarm systems and HVAC; systems, bas systems and utility lan  5. Details of non-standard electrical installations  6. Conduit and wire sizes for services, feeders, and special branch circuits  7. Notes identifying locations of separate and shared neutrals  8. Switchgear and mcc elevations  9. Grounding details  10. Roof and penetration details  11. Settings for contractor furnished equipment  12. Power drawings are coordinated with all architectural, civil, MEP, and FP |

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| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| LIGHTING | | |
| 1. Electrical symbols legend  2. Electrical demolition plan  3. Schematic lighting plan  4. General drawing notes  5. Proposed light levels  6. Fixture, Lamp and controls description  7. Preliminary interior lighting plans  8. Preliminary Outdoor Lighting Plans | 1. Preliminary lighting and control plans  2. Outdoor lighting and control plans  3. Fixture types and schedules  4. Control systems and control device descriptions  5. Typical photometric calculations  6. Dimming, daylighting with calculations and low voltage control zones documentation  7. Proposed lighting fixture catalog cuts for review by Engineering Services  8. Energy Code Calculations  9. Lighting drawings are coordinated with all architectural, civil, MEP, and FP | 1. Interior and exterior lighting plans including control systems and devices, lighting panels, switching and circuiting  2. Lighting control systems detailed sequences of operations  3. Lighting control systems schematics and wiring diagrams  4. Installation details including structural support details  5. Lighting photometric calculations  6. Emergency lighting photometrics  7. General notes on conduit and wire sizes for lighting branch circuits  8. Lighting drawings are coordinated with all architectural, civil, MEP, and FP |
| FIRE SPRINKLER | | |
| 1. Fire Protection Legend  2. Demolition plans  3. One line diagrams for each fire protection system and other materials as required to describe the fundamental design concept for all fire protection systems  4. Location of entrance and sprinkler piping layout  5. Location of main utility connection  6. Fire pump need assessment, coordinated with OPP/Environmental Health and Safety, Fire Protection and & Prevention  7. Proposed locations of fire department connections and test headers | 1. Preliminary piping plans  2. Preliminary floor plans of mechanical rooms with all components and required service access drawn to scale  3. Fire sprinkler drawings are coordinated with all architectural, civil, and MEP | 1. Fire protection plans with header/riser layout and required services access area  2. Location of all sprinkler zone valves, drains, and hose connection points  *The following may be a differed submittal by fire sprinkler contractor:*  3. Piping design with major pipe sizes  4. Critical zone calculation area  5. Fire protection service entrance details  6. Typical sprinkler installation details including structural support details  7. Penetration details  8. Design calculations  9. Fire sprinkler drawings are coordinated with all architectural, civil, and MEP |
| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| FIRE ALARM | | |
| 1. System Description  2. FA panel locations  3. Preliminary FA device and appliance location plans | 1. Riser Diagram  2. FA panel, device, and appliance location plans  3. Verify coordination with all architectural, civil, plumbing, mechanical, and electrical plans | 1. Detailed FA panel, device and appliance location plans including duct detectors, fire smoke dampers, sprinkler flow and tamper switches, monitor and control modules, door hold opens, door lock releases  2. Strobe light candela ratings  3. General notes on conduit and wire sizes  4. Details of connections to HVAC, fire pump, fire suppression, door hold open and door lock systems  5. Detailed sequences of operations  6. Verify coordination with all architectural, civil, plumbing, mechanical, and electrical plans |
| COMMUNICATIONS (INCLUDING VOICE, DATA, AND VIDEO SYSTEMS) | | |
|  | 1. Backboard locations in TNS spaces  2. Raceway and grounding riser diagrams  3. Conduit and Cable tray layout and sizes  4. Material cut sheets  5. List of equipment and preliminary layout of telecom spaces  6. Typical voice data and video outlet locations  7. Emergency phone locations and type  8. Courtesy phone locations  9. Verify coordination with all architectural, civil, plumbing, mechanical, and electrical plans | 1. Detailed voice data and outlet locations  2. Details of service to the building  3. Floor box schedule  4. Conduit, outlet box, and floor box installation details  5. Power outlet locations in the TNS spaces  6. Final Equipment rack location in the TNS spaces  7. Verify coordination with all architectural, civil, plumbing, mechanical, and electrical plans |

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| SCHEMATIC PHASE | DESIGN DEVELOPMENT PHASE | CONSTRUCTION DOCUMENT PHASE |
| SECURITY (Access Controls Surveillance and Security Alarms) | | |
| 1. System descriptions. Access Controls, Surveillance and Security Alarms  2. Panel Locations, rack and wall space requirements  3. Preliminary Device Location Plans  4. Narrative of Security Systems needs | 1. Riser Diagrams  2. Equipment location Plans  3. Electronic Security Equipment Closet Layout  4. Emergency Phone Locations and type  5. Verify coordination with all architectural, civil, plumbing, mechanical, FP, and electrical plans | 1. Detailed equipment location plans  2. Equipment schedules (including all device specifications and electronic security system specifications)  3. Concealed and exposed raceways  4. Wiring Diagrams (Show quantity, typed, and splice and termination locations)  5. Installation Details (Must include field device installation details)  6. Detailed Sequences of Operations  7. Trade coordination diagrams showing clearly the responsibility of each trade contractor responsible for security system installation  9. Verify coordination with all architectural, civil, plumbing, mechanical, FP, and electrical plans |
| A/V AND SPECIAL SYSTEMS | | |
| 1. System Descriptions  2. Panel locations  3. Preliminary Device Locations | 1. Riser Diagrams  2. Equipment Locations  3. A/V Equipment location Plans  4. Verify coordination with all architectural, civil, plumbing, mechanical, FP, and electrical plans | 1. Detailed equipment location plans  2. Equipment schedules  3. Wiring Diagrams  4. Installation details, including cabinets, hangers, and connection boxes  5. Detailed sequences of operations  6. Verify coordination with all architectural, civil, plumbing, mechanical, FP, and electrical plans |