# 60% Design Package Deliverables

Purpose

The **Project Engineer** works with the Project Team to ensures that the deliverable meets the expectations documented in this checklist, documenting all exceptions.

The **Project Manager** ensures that the Project Engineer has completed this checklist and saves it in the project files.

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| **Project Name** | Enter Project Name |
| **Project Number** | Enter Project Number |
| **Project Manager** | Enter Project Manager |
| **Project Engineer** | Enter Project Engineer |
| **Summary of  Quality Control** | * Civil Design/<<Checker Name>> * Mechanical Design/<<Checker Name>> * Structural Design/<<Checker Name>> * Electrical Design/<<Checker Name>> * <<Other Discipline>>/<<Checker Name>> * <<Other Discipline>>/<<Checker Name>> |

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| **Describe exceptions from the standard Design Package below** |
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Deliverables Expected at 60% Design

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| **60% Design Deliverables** | **Description** |
| **General Drawing**  **Comments:** | Title Sheet, Drawing Index, Location and Vicinity Map essentially complete.  General Symbols, Legends, Match Sheet Numbers, Stationing and Abbreviations essentially complete.  Design Data and Criteria essentially complete.  Basis of Design Plan Sheet completed for 60% Design  60% drawings sent to LOB representative to assign asset numbers. |
| **Civil/Site Work Drawings**  **Comments:** | **Site and Utility Plans**  Site Plan with proposed final location of structures, roadways and major site elements (fencing, gates, etc).  All Major structures located by stationing and elevation via stationing offset or Northing/Easting or other survey method.  **Site, Utility and Piping Plans**  Site Plan with horizontal control and proposed grading. Show on the site plan all above ground utilities. Existing utilities in screened or lighter line type and proposed utilities in dark line. Include Details of manholes, pavement and trench sections, and other civil details.  Include proposed contractor staging, storage, access, and offsite corridors (traffic routing plans).  **Pipeline Alignment and Site Utilities**  Profiles of pipelines with final proposed alignments (horizontal and vertical) that consider construction sequencing needs |
| **Architectural Drawings**  **Comments:** | **Buildings–Plans, Elevations and Sections**  Architectural plans, sections and elevations that depict the proposed final exterior architectural theme, materials of construction and floor plan of structures. |
| **Landscape Drawings**  **Comments:** | **Conceptual Landscaping–Plan**  Proposed landscaping plan and schedules. |

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| **60% Design Deliverables** | **Description** |
| **Structural Drawings**  **Comments:** | **Foundation–Plans and Sections**  Structural notes, design criteria and inspection plan (meets requirements of DPD or Building Dept of the appropriate jurisdiction)  Structural plans, sections and details. This should be coordinated with other design disciplines.  **Building – Plans, Sections and Details**  Large structural penetrations should be identified and potential conflicts with mechanical and electrical features should be resolved.  **Below Grade Structures –Plans and Sections**  Foundation plans, floor plans and roof plans should include dimensional information and structural member sizes with reinforcement detailing partially complete. |
| **Mechanical Drawings**  **Comments:** | **Major Equipment and Piping Layout–Plans, Sections and Details**  Mechanical plans, sections and details with proposed final location of major equipment, piping and appurtenances. Minor piping partially complete however adequate corridors identified. Location of equipment maintenance features finalized.  **HVAC Plans and Sections**  HVAC plans and sections adequately complete to verify building code compliance.  **HVAC Schedules and Schematics**  Preliminary equipment schedules and system schematics should be sufficient to allow review of system configuration and design intent. Conceptual fire protection system design (if required) should be included.  **Plumbing Plans and Sections**  Plumbing plans and sections adequately complete to verify building code compliance. |

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| **Electrical Drawings**  **Comments:** | **One Line Diagrams**  Proposed final electrical one-line diagrams, control room layouts and panel layouts.  **Power Plans, Control Diagrams and Schedules**  Power plans, control diagrams and schedules adequately complete to review layout and design intent.  Location of handholds and equipment racks  **Lighting Plans and Reflective Ceiling Plans**  Proposed final lighting plan and reflective ceiling plan. |
| **Instrumentation and**  **Control Drawings**  **Comments:** | P&IDs developed to greater detail including revisions based on proposed final equipment selection and configuration. |
| **Draft Project Manual**  **Comments:** | Table of Contents and First Draft of Technical Specifications coordinated such that project specific information has been included and non-pertinent information has been removed  Draft commissioning and testing requirement  List of project constraints that impact construction sequence or timing such as permit requirements, community commitments, etc)  Equipment list that includes equipment number, equipment size, equipment power requirements, basic controls and operating strategies for all equipment anticipated on the projects. |

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| **Other Submittal Items**  **Comments:** | Draft Construction Stormwater Control Plan  Draft Traffic Control plans (if necessary)  Draft Water Quality Protection Plan (if necessary)  Geotechnical Interpretive Report (GIR)  Geotechnical Baseline Report (GBR) and the Geotechnical Data Report (GDR) if necessary.  Incorporate all information obtained to date and recommendations for any additional investigations necessary for design completion.  Phase 2 Environmental Assessment Report (if required)  Class 2 Capital Cost Estimates: Follow [Cost Estimating Guidelines](http://spuforms/cgi-bin/GetTerm.pl?GetTerm=CEG&WL=C)  O&M Cost Estimates developed by the O&M Representative  30% Plan Review transmittal sheet with reviewers comments addressed  Constructability Review  FOM Lead is aware of [Asset O&M Readiness Checklist](http://spu-sharepoint/StageGate/Shared%20Documents/Asset_Readiness_CkList.docx) for 60% Design Complete  [Commissioning Activities](http://spuforms/cgi-bin/GetTerm.pl?GetTerm=Commissioning+Guidelines&WL=Chttp://spuforms/cgi-bin/GetTerm.pl?GetTerm=Commissioning+Guidelines&WL=C) for 60% Design Complete  Class 3 Capital Cost Estimates: Follow [Cost Estimating Guidelines](http://spuforms/cgi-bin/GetTerm.pl?GetTerm=CEG&WL=C)  Basis of Estimate completed  Technical QC Review Form Completed  Basis of Design, Basis of Estimate, Cost Estimate, 60% Design Package Deliverable (this document), Basis of Design Plan Sheet and Technical QC Review Form filed in the P:\drive project folder |