

## 30% Design Package Deliverables

### Purpose

The **Project Engineer** works with the Project Team to ensure 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.

<b>Project Name</b>	Enter Project Name
<b>Project Number</b>	Enter Project Number
<b>Project Manager</b>	Enter Project Manager
<b>Project Engineer</b>	Enter Project Engineer
<b>Summary of Quality Control</b>	<ul style="list-style-type: none"> <li>• Civil Design/&lt;&lt;Checker Name&gt;&gt;</li> <li>• Mechanical Design/&lt;&lt;Checker Name&gt;&gt;</li> <li>• Structural Design/&lt;&lt;Checker Name&gt;&gt;</li> <li>• Electrical Design/&lt;&lt;Checker Name&gt;&gt;</li> <li>• &lt;&lt;Other Discipline&gt;&gt;/&lt;&lt;Checker Name&gt;&gt;</li> <li>• &lt;&lt;Other Discipline&gt;&gt;/&lt;&lt;Checker Name&gt;&gt;</li> </ul>

<b>Describe exceptions from the standard Design Package below</b>

**Deliverables Expected at 30% Design**

30% Design Deliverables	Description
<p><b>Basis of Design Technical Memo</b></p> <p><b>Comments:</b></p>	<p><input type="checkbox"/> Final Basis of Design Technical Memorandum</p> <p>Summarizes technical criteria and assumptions used for the preferred design and includes an evaluation of code interpretation and permit requirements for the Project. Also include an evaluation of safety considerations for equipment access, facility access and egress, daily maintenance considerations.</p>
<p><b>General Drawing</b></p> <p><b>Comments:</b></p>	<p><input type="checkbox"/> A Drawing Index that reflects the drawings anticipated for the project.</p> <p><input type="checkbox"/> Title blocks and drawing layouts that allow verification of City standards.</p> <p><input type="checkbox"/> General symbols, legends and abbreviations that allow verification of City standards.</p> <p><input type="checkbox"/> Design Data and Criteria (Process Schematic) established and depicted in an acceptable format.</p> <p><input type="checkbox"/> Basis of Design Plan Sheet completed started for 30% Design.</p>
<p><b>Civil/Site Work Drawings</b></p> <p><b>Comments:</b></p>	<p><b>Existing Site and Utility Plans</b></p> <p><input type="checkbox"/> <u>Base Map and Vicinity Map</u> that accurately depict the existing site features and boundaries</p> <p>Include:</p> <ul style="list-style-type: none"> <li>○ Topographical data</li> <li>○ Existing utilities and structures (above and below ground)</li> <li>○ Coordinate system</li> <li>○ Zoning</li> <li>○ Geotechnical boring locations</li> </ul> <p><b>Revised Site, Utility and Piping Plans</b></p> <p><input type="checkbox"/> <u>Site Plans</u> that accurately depict new structure footprints, locations and orientation onsite.</p> <p>Include:</p> <ul style="list-style-type: none"> <li>○ Preliminary finished floor elevations,</li> <li>○ Site access</li> <li>○ Parking areas</li> <li>○ fencing and gates</li> </ul> <p><b>Site Grading</b></p> <p><input type="checkbox"/> <u>Site Plan</u> also to include preliminary site grading coordinated with the geotechnical requirements.</p>

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	<p>Show on the site plan all above ground utilities. Existing utilities in screened or lighter line type and proposed utilities in dark line.</p> <p><b>Pipeline Alignment and Site Utilities</b></p> <p><input type="checkbox"/> <u>Profiles of pipelines</u> that locate major utilities and piping corridors (horizontal and vertical).</p>
<p><b>Architectural Drawings</b></p> <p><b>Comments:</b></p>	<p><b>Buildings–Plan, Elevations and Sections</b></p> <p><input type="checkbox"/> <u>Architectural plans, Sections and Elevations</u></p> <p>Establish the preliminary room sizes, exterior architectural theme, materials of construction, roof type, etc. Plans adequate for preliminary verification of space requirements, ingress and egress, materials of construction, as well as general building and fire code requirements.</p>
<p><b>Landscape Drawings</b></p> <p><b>Comments:</b></p>	<p><input type="checkbox"/> Include a basic concept of the type of landscaping that is planned for the project.</p>
<p><b>Structural Drawings</b></p> <p><b>Comments:</b></p>	<p><b>Below Grade Structures–Plan and Section</b></p> <p><input type="checkbox"/> Structural plans that establish foundation type and depict the preliminary foundation layout.</p> <p><input type="checkbox"/> Foundation plans adequate to confirm approach in compliance with geotechnical requirements.</p> <p><input type="checkbox"/> General arrangement floor plans and section drawings coordinated with the architectural plans.</p>
<p><b>Mechanical Drawings</b></p> <p><b>Comments:</b></p>	<p><b>Major Equipment and Piping Layout</b></p> <p><input type="checkbox"/> <u>Mechanical Plans and Sections</u> that depict location of major equipment and major piping alignments to verify clearances and general configurations.</p> <p>Plans should indicate:</p> <ul style="list-style-type: none"> <li>○ Proposed equipment maintenance features</li> <li>○ Overhead crane and monorails</li> <li>○ Hatches and pads</li> <li>○ Areas requiring noise abatement</li> </ul> <p><b>HVAC Plans and Sections</b></p> <p><input type="checkbox"/> <u>HVAC Plans</u> that depict location of major equipment and major piping alignments.</p>

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	<p><b>Plumbing Plans and Sections</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <u>Plumbing Plans</u> that depict location of major equipment and major piping alignments.</li> <li><input type="checkbox"/> Recommendations that define the level of design for fire protection systems to be included in the final drawings. Define whether the approach will be to show details on the drawings or provide a performance specification.</li> </ul>
<p><b>Electrical Drawings</b></p> <p><b>Comments:</b></p>	<p><b>One-Line Diagrams</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preliminary electrical <u>one-line diagrams</u></li> </ul> <p><b>Major Equipment Layout/Electrical Room Plans</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preliminary layout of electrical rooms in adequate detail to determine size requirements and clearances.</li> <li><input type="checkbox"/> Identify available corridors for routing of electrical raceways and cable tray.</li> <li><input type="checkbox"/> Identify area classifications per National Electrical Code.</li> </ul>
<p><b>Security Drawings</b></p> <p><b>Comments:</b></p>	<p>Identify security and communication items and locations.</p>
<p><b>Instrumentation and Control Drawings</b></p> <p><b>Comments:</b></p>	<p><b>Process and Instrumentation Diagrams</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preliminary <u>Process and Instrumentation Diagrams (P&amp;IDs)</u> that depict the mechanical equipment, piping, instrumentation and control equipment interlocking.</li> </ul>
<p><b>Technical Specifications</b></p> <p><b>Comments:</b></p>	<p><b>First Draft of Specifications</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <u>Draft copies of specifications</u> or catalog cut sheets of major elements not covered by city guide specifications or that originate from sources other than city guide specifications.</li> <li><input type="checkbox"/> <u>Preliminary equipment list</u> that allows basic verification of equipment number, equipment size, equipment power requirements and basic controls and operating strategies.</li> </ul>

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<p><b>Other Submittal Items</b></p> <p><b>Comments:</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Draft Geotechnical Interpretive Report (GIR) (for smaller projects, provide at 60% design)</li> <li><input type="checkbox"/> Environmental Assessment (if required) that evaluates worker health and safety and identifies suspect, contaminated and hazardous materials of concern for the Project.</li> <li><input type="checkbox"/> Documentation of <a href="#">Value Engineering Study</a> and responses, if applicable</li> <li><input type="checkbox"/> Class 3 Capital Cost Estimates: Follow <a href="#">Cost Estimating Guidelines</a> Basis of Estimate completed</li> <li><input type="checkbox"/> O&amp;M Cost Estimates developed by the O&amp;M Representative</li> <li><input type="checkbox"/> Technical memo or document with list of permits required for project construction</li> <li><input type="checkbox"/> List of property acquisitions or known easements (temporary or permanent) required for project.</li> <li><input type="checkbox"/> FOM Lead aware of <a href="#">Asset O&amp;M Readiness Checklist</a> for 30% Design Complete</li> <li><input type="checkbox"/> <a href="#">Commissioning Activities</a> for 30% Design Complete Technical QC Review Form completed Basis of Design, Basis of Estimate, Cost Estimate, 30% Design Package Deliverable (this document), Basis of Design Plan Sheet and Technical QC Review Form filed in the P:\drive project folder</li> </ul>