Appendix A

SPU Design Checklist

This checklist shows the expected level of care and standard deliverables needed to produce a quality pipeline project. It may be useful for other types of SPU engineering design projects. The list is not exhaustive and is not intended to substitute for your engineering judgment. *Note: On many projects, deliverables listed during 30% design should have started earlier during preliminary engineering*.

The checklist is organized into six phases:

1. Scoping
2. 30% design
3. 60% design
4. 90% design
5. Bid documents
6. Construction

More detailed follow-up questions and lists are associated with most major checklist questions. Potentially useful contacts/links/documents are noted as Resource(s).

Minimum deliverables are shown in **red**.

Coordination points with physical security discipline are shown in **green**.

Coordination points with electrical design are shown in **brown**.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 Scoping | Yes | | N/A | | Comments | |
| 1.1 Project History |  | |  | |  | |
| Have you reviewed preliminary documents? |  | |  | |  | |
| Service requests |  | |  | | Click or tap here to enter text. | |
| PE Study |  | |  | | Click or tap here to enter text. | |
| Design criteria sheet (criteria for physical security, electrical and I&C) |  | |  | | Click or tap here to enter text. | |
| Business Case |  | |  | | Click or tap here to enter text. | |
| Existing service agreements |  | |  | | Click or tap here to enter text. | |
| Memorandums of Agreement |  | |  | | Click or tap here to enter text. | |
| Budget |  | |  | | Click or tap here to enter text. | |
| SEPA documentation |  | |  | | Click or tap here to enter text. | |
| Easement documentation |  | |  | | Click or tap here to enter text. | |
| Permit analysis and correspondence |  | |  | | Click or tap here to enter text. | |
| 1.2 Objectives |  | |  | |  | |
| Are project objectives clearly defined? |  | |  | | Click or tap here to enter text. | |
| Have you discussed project with: |  | |  | | Click or tap here to enter text. | |
| Your supervisor? |  | |  | | Click or tap here to enter text. | |
| PM? |  | |  | | Click or tap here to enter text. | |
| Project team? |  | |  | | Click or tap here to enter text. | |
| Operations? |  | |  | | Click or tap here to enter text. | |
| **Security Program?** |  | |  | | Click or tap here to enter text. | |
| USM? |  | |  | | Click or tap here to enter text. | |
| Other staff with historical knowledge of the project area? |  | |  | | Click or tap here to enter text. | |
| Does the preferred alternative meet the objectives? |  | |  | | Click or tap here to enter text. | |
| Would you recommend value engineering for this project? |  | |  | | Click or tap here to enter text. | |
| 1.3 Schedule |  | |  | |  | |
| Do you agree to the overall project schedule and staffing plan? |  | |  | | Click or tap here to enter text. | |
| Is project team established? |  | |  | | Click or tap here to enter text. | |
| Working days estimate for your time? |  | |  | | Click or tap here to enter text. | |
| Working days estimate for your team? |  | |  | | Click or tap here to enter text. | |
| Have you identified schedule conflicts for your supervisor? |  | |  | | Click or tap here to enter text. | |
| Have you arranged access to secured sites? |  | |  | | Click or tap here to enter text. | |
| 1.4 Site Visit |  | | | | | |
| Have you made a site visit and photographic record checking for: |  | |  | |  | |
| ROW Conditions: |  | | | | | |
| What are street conditions? Click or tap here to enter text. | | | | | |  |
| Is it arterial or residential? Click or tap here to enter text. | | | | | | |
| What is pavement type and condition? Click or tap here to enter text. | | | | | | |
| What is the general pattern of concrete panels? Click or tap here to enter text. | | | | | | |
| Is there reflective cracking in asphalt? Click or tap here to enter text. | | | | | | |
| What is the pavement condition around castings? Click or tap here to enter text. | | | | | | |
| Are there curbs and how high? |  | |  | | Click or tap here to enter text. | |
| Are there sidewalks? |  | |  | | Click or tap here to enter text. | |
| Are there curb ramps to current standard? Click or tap here to enter text. | | | | | | |
| What is the channelization? Click or tap here to enter text. | | | | | | |
| Are there traffic signals and signal boxes? |  | |  | | Click or tap here to enter text. | |
| What are major street uses? |  | |  | |  | |
| Traffic? Click or tap here to enter text. | | | | | | |
| Bicycles? Click or tap here to enter text. | | | | | | |
| Bus routes, bus loading zones, trolley wires? Click or tap here to enter text. | | | | | | |
| What other miscellaneous uses are present: | | | | | | |
| Overhead utilities? | | | | | | |
| 1 Scoping (cont.) | Yes | | N/A | | Comments | |
| Underground utility vaults and castings? | | | | | | |
| Signs? | | | | | | |
| Fire hydrants? |  | |  | | Click or tap here to enter text. | |
| Survey monuments? | | | | | | |
| Trees? |  | |  | | Click or tap here to enter text. | |
| Planting strip improvements? | | | | | | |
| Irrigation? | | | | | | |
| Private structures or improvements within ROW? Click or tap here to enter text. | | | | | | |
| Mailboxes? | | | | | | |
| Other critical infrastructure? Click or tap here to enter text. | | | | | | |
| Utilities: |  | |  | |  | |
| Have you identified castings? |  | |  | |  | |
|  |  | |  | |  | |
| Condition? Click or tap here to enter text. |  | |  | | Click or tap here to enter text. | |
| Sewer and drainage castings less than 24” diameter? |  | |  | |  | |
| Type of drainage grates? | | | | | Click or tap here to enter text. | |
| Do utility cuts in pavement match utility mapping? |  | |  | |  | |
| Local Drainage Patterns: |  | |  | |  | |
| Is street crowned or thrown? Click or tap here to enter text. | | | | | | |
| What is general topography, including street profile? Click or tap here to enter text. | | | | | | |
| Are there inlets, CBs or ditches? Click or tap here to enter text. | | | | | | |
| Is there evidence of ponding? |  | |  | | Click or tap here to enter text. | |
| Is there evidence of erosion? |  | |  | | Click or tap here to enter text. | |
| Construction Issues: |  | |  | |  | |
| Have you considered constructability issues, like: |  | |  | |  | |
| Access for construction equipment? |  | |  | | Click or tap here to enter text. | |
|  | | | | | | |
| 1 Scoping (cont.) | Yes | | N/A | | Comments | |
| Private property excavations and possible tie-backs? Click or tap here to enter text. | | | | | | |
| Space for trailers, equipment and materials? |  | |  | | Click or tap here to enter text. | |
| Overhead wire conflicts? |  | |  | | Click or tap here to enter text. | |
| Poles that would need supporting? |  | |  | | Click or tap here to enter text. | |
| Proximity to buildings/structures & type of foundations? | | | Click or tap here to enter text. | | | |
| Tree and tree canopy conflicts? |  | |  | | Click or tap here to enter text. | |
| Options for disposal of trench or pipe dewatering |  | |  | | Click or tap here to enter text. | |
| Have you considered neighborhood needs, like: | |  | |  |  | |
| Access to building entrances? | |  | |  | Click or tap here to enter text. | |
| Driveways and access to parking lots? | |  | |  | Click or tap here to enter text. | |
| **Physical Security Issues?** | |  | |  | Click or tap here to enter text. | |
| Environmental Issues: | |  | |  |  | |
| Are there steep slopes? | |  | |  | Click or tap here to enter text. | |
| Are there vegetation issues? | |  | |  | Click or tap here to enter text. | |
| Are wetlands present? | |  | |  | Click or tap here to enter text. | |
| Is the project within 200 feet of a shoreline? | |  | |  | Click or tap here to enter text. | |
| How far is the project from a water body? Click or tap here to enter text. | |  | |  | Click or tap here to enter text. | |
| 1.5 Hydraulics | |  | |  |  | |
| Have you gathered system and hydraulic information from resources? | |  | |  | Click or tap here to enter text. | |
| Water Infrastructure | |  | |  |  | |
| Have you talked to USM Hydraulic Modeler? | |  | |  | Click or tap here to enter text. | |
| Have you talked to Water Operations and Control? | |  | |  |  | |
| Checked Pressure Zone Mapping? | |  | |  | Click or tap here to enter text. | |
| Checked Water Valve Mapping? | |  | |  | Click or tap here to enter text. | |
| 1 Scoping (cont.) | | Yes | | N/A | Comments | |
| Drainage and Wastewater Infrastructure | |  | |  |  | |
| Have you talked to USM Modeling Group? | |  | |  |  | |
| 1 Scoping (cont.) | | Yes | | N/A | Comments | |
| Is there an existing hydraulic model? | |  | |  | Click or tap here to enter text. | |
| Have you checked system mapping to understand: | |  | |  |  | |
| Basic topography? Click or tap here to enter text. | |  | |  |  | |
| Surrounding system type? | |  | |  |  | |
| Downstream surface waters and outfalls? | |  | |  | Click or tap here to enter text. | |
| Backwater sources, such as: | |  | |  |  | |
| Downstream water body? | |  | |  | Click or tap here to enter text. | |
| Tidal outfall? | |  | |  | Click or tap here to enter text. | |
| Regulated King County sewer? | |  | |  | Click or tap here to enter text. | |
| Known downstream pipe, ditch, or stream constraints? | |  | |  | Click or tap here to enter text. | |
| Known flooding? | |  | |  | Click or tap here to enter text. | |
| Critical drainage area listing? | |  | |  | Click or tap here to enter text. | |
| 1.6 Environmental Review | |  | |  |  | |
| Geology and Soils | |  | |  |  | |
| Have you done a preliminary check for geological and soils information:: | | | |  | Click or tap here to enter text. | |
| Typical local soil conditions? | |  | |  | Click or tap here to enter text. | |
| Corrosive soils? | |  | |  | Click or tap here to enter text. | |
| Records of contaminated soils? | |  | |  | Click or tap here to enter text. | |
| High groundwater? | |  | |  | Click or tap here to enter text. | |
| Landfills? | |  | |  | Click or tap here to enter text. | |
| Slopes and landslide prone areas? | |  | |  | Click or tap here to enter text. | |
| Faults? | |  | |  | Click or tap here to enter text. | |
| 1 Scoping (cont.) | | Yes | | N/A | Comments | |
| Resource: [Geomap](http://geomapnw.ess.washington.edu) | |  | |  |  | |
| SPU Geotechnical Engineers | |  | |  | Click or tap here to enter text. | |
| Stormwater | |  | |  |  | |
| Have you checked [stormwater code compliance](http://www.seattle.gov/dpd/news/20080730a.asp?%7d)? | |  | |  | Click or tap here to enter text. | |
| Where would project stormwater drain to? | | Click or tap here to enter text. | | | | |
| What are the general requirements for this project? | | Click or tap here to enter text. | | | | |
| Resource: SPU Engineering Plan Reviewers | |  | |  |  | |
| **Electrical: Established the need for power supply sources?**  Checked Electrical Design Checklist (see DSG Chapter 9)? | |  | |  |  | |
| 1.7 Records Review | |  | |  |  | |
| Have you reviewed records? | |  | |  |  | |
| Resource GIS | |  | |  |  | |
| Resources at SPU: | |  | |  |  | |
| PERC | |  | |  |  | |
| Record drawings | |  | |  |  | |
| Existing base mapping | |  | |  |  | |
| Grading plans | |  | |  |  | |
| Utility maps and books | |  | |  |  | |
| Leak history | |  | |  |  | |
| Comprehensive Plans and Studies | |  | |  |  | |
| Science Library | |  | |  |  | |
| Operations/MAXIMO database | |  | |  |  | |
| Customer Service | |  | |  |  | |
| Resources at DPD: | |  | |  |  | |
| Sewer cards: Sewer plats | |  | |  |  | |
| Building plans | |  | |  |  | |
| Neighborhood Plans | |  | |  |  | |
| Land Use | |  | |  |  | |
| Private Construction | |  | |  |  | |
| Resources at Other Records Vaults: | |  | |  |  | |
| Seattle City Light | |  | |  |  | |
| King County | |  | |  |  | |
| 1 Scoping (cont.) | | Yes | | N/A | Comments | |
| WSDOT | |  | |  |  | |
| Resources at SDOT: | |  | |  |  | |
| Franchise Utility Agreements | |  | |  |  | |
| Inspection Records on permits | |  | |  |  | |
| Resources at Department of Neighborhoods: | |  | |  |  | |
| Historic districts | |  | |  |  | |
| Resources at City Clerk’s Office: Municipal Codes and Ordinances | |  | |  |  | |
| Memorandums of Agreement | |  | |  |  | |
| Archived photographic records | |  | |  |  | |
| 1.8 Coordination | |  | |  |  | |
| Have you checked for other infrastructure needs and opportunities, such as: | |  | |  |  | |
| Has the condition of sewers and drains been assessed with CCTV? | |  | |  |  | |
| Are there work orders or CIP listings for sewer and drainage work in the project area? | |  | |  |  | |
| Are there spot drainage complaints in the project area? | |  | |  |  | |
| Should SPU consider adding drainage & wastewater elements to project? | |  | |  |  | |
| Has the condition of water mains been assessed? | |  | |  |  | |
| Have or should water mains be potholed? | |  | |  |  | |
| Are there work orders or CIP listings for water main work in project area? | |  | |  |  | |
| Should SPU consider adding a water main element to the project? | |  | |  |  | |
| Does this project overlap with SDOT’s transportation’s CIP list? | |  | |  |  | |
| Is SDOT Utility Coordinator aware of private utility work planned for area? | |  | |  |  | |
| **Have electrical and I&C design issues been coordinated**?  Does the project require coordination for electrical power utilities? | |  | |  |  | |
| **Has SPU Security Manager been consulted**? | |  | |  |  | |
| Is there potential for coordination of projects? | |  | |  |  | |
| 1.9 Signature | |  | |  |  | |
| Have you signed the scope of work? | |  | |  |  | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2 30% Design** | **Yes** | | **N/A** | | **Comments** | |
| **2.1 Base map** |  | |  | |  | |
| Was the base map completed in preliminary engineering? |  | |  | |  | |
| Have you determined the project’s standard and special base map needs, such as: | | |  | |  | |
| Surface features and measure downs? |  | |  | |  | |
| CB outfall inverts? |  | |  | |  | |
| Topographic lines and additional topography for grade matching? |  | |  | |  | |
| Private property information? |  | |  | |  | |
| Easement delineation? |  | |  | |  | |
| 2 30% Design (cont.) | Yes | | No | | Comments | |
|  |  | |  | |  | |
| Lot lines? |  | |  | |  | |
| Local conversions to other vertical datums? |  | |  | |  | |
| Tie ins to other mapping? |  | |  | |  | |
| Search of vaults beyond SPU’s? |  | |  | |  | |
| Search of DPD’s private property records? |  | |  | |  | |
| Addresses? |  | |  | |  | |
| Meter numbers? |  | |  | |  | |
| Foundations of bridges and walls? |  | |  | |  | |
| Street channelization with paint records? |  | |  | |  | |
| Have you requested the base map? |  | |  | |  | |
| **Are there inconsistent or missing records?** |  | |  | |  | |
| Have corrections been sent to GIS when records don’t match? |  | |  | |  | |
| **2.2 Flow Analysis** |  | |  | |  | |
| Is flow analysis complete and hydraulic grade line set? |  | |  | |  | |
| Are calculations documented, stamped and archived? |  | |  | |  | |
| Who prepared the calculations? |  | |  | |  | |
| Was a model developed? |  | |  | |  | |
| **2.3 Pipe Layout** |  | |  | |  | |
| Are pipe layout and preliminary profile shown? |  | |  | |  | |
| Is pipe in [standard location](http://www.seattle.gov/util/Engineering/Standard_Plans_&_Specs/index.asp)? See Standard Plan #030 |  | |  | |  | |
| Are [standard clearances](http://www.seattle.gov/util/Engineering/Standard_Plans_&_Specs/index.asp) maintained? |  | |  | |  | |
| Are critical cross sections identified and drawn? |  | |  | |  | |
| Other utility infrastructure improvements identified and design started? |  | |  | |  | |
| Resource: Drafting and plan presentation standards |  | |  | |  | |
| **2.4 Geotechnical Report** |  | |  | |  | |
| Have you requested a geotechnical report? Report done during preliminary engineering? |  | |  | |  | |
| Did the request identify: |  | |  | |  | |
| Pipeline location and depth? |  | |  | |  | |
| Location of any major structures? |  | |  | |  | |
| Geotechnical information needed by other designers? |  | |  | |  | |
| Does the project need additional information, such as: |  | |  | |  | |
| Slope stability calculations and project seismic standards? |  | |  | |  | |
| Seismic risk evaluation? To what standard? |  | |  | | Click or tap here to enter text. | |
| Soil or groundwater contamination testing? |  | |  | |  | |
| 2 30% Design (cont.) | Yes | | No | | Comments | |
|  |  | |  | |  | |
| Have you requested soil resistivity testing? |  | |  | |  | |
| Resource: SPU Geotechnical Engineers |  | |  | |  | |
| **2.5 Regulations and Permits** |  | |  | |  | |
| Have you reviewed project -related regulations? Have you reviewed list of required permits from preliminary engineering? |  | |  | |  | |
| Have you updated any permit requirements? |  | |  | |  | |
| Are the permit applications started? |  | |  | |  | |
| Resource: [City codes, rules and guidelines](http://www.seattle.gov/leg/clerk/clerk.htm) |  | |  | |  | |
| Resource: WA [State Health Department codes and rules](http://www.doh.wa.gov/a-z_topics/w.htm) |  | |  | |  | |
| Resource: WA State [Department of Ecology codes and rules](http://www.ecy.wa.gov/laws-rules/ecyrcw.html) |  | |  | |  | |
| **2.6 Reviews** |  | |  | |  | |
| **Electrical: Has 30% Electrical Design been developed?**  Basis of Electrical Design document done? (see DSG Ch 9).  Preliminary service load determined?  One-line diagram developed? |  | |  | |  | |
| Real property issues and needs identified? |  | |  | |  | |
| Customer impacts identified? |  | |  | |  | |
| Operations review? |  | |  | |  | |
| Constructability review? |  | |  | |  | |
| **Physical Security review?** |  | |  | |  | |
| **Electrical and I&C review?** |  | |  | |  | |
| Are other agency impacts identified? |  | |  | |  | |
| **2.7 Are we on the right track?** |  | |  | |  | |
| Re-examine the alternative choice and 30% design and consider: |  | |  | |  | |
| Are there alternatives with fewer environmental impacts? |  | |  | | Click or tap here to enter text. | |
| **Are there alternatives with fewer security limts**? |  | |  | | Click or tap here to enter text. | |
| Are there lower cost alternatives? |  | |  | | Click or tap here to enter text. | |
| Are there easier to maintain alternatives? |  | |  | | Click or tap here to enter text. | |
| Is value engineering or further brainstorming warranted? |  | |  | | Click or tap here to enter text. | |
| 30% Design (cont.) | Yes | | No | | Comments | |
| Have you verified that Asset Management Committee (AMC) approved objectives are met? |  | |  | | Click or tap here to enter text. | |
| **2.8 Completed 30% Design** |  | |  | |  | |
| **Completed Base map** |  | |  | |  | |
| **Updated cost estimate** |  | |  | |  | |
| **Updated schedule** |  | |  | |  | |
| **30% Review Comments Log** |  | |  | |  | |
| 3 60% Design |  | |  | |  | |
| **3.1** **30% comments** |  | |  | |  | |
| Have the 30% review comments all been addressed? |  | |  | |  | |
| 3.2 60% plans with final sizes, layout, profile, structures & major details |  | |  | |  | |
| On the plans, are: |  | |  | |  | |
| Major conflicts resolved? |  | |  | |  | |
| Is potholing and survey of critical conflicts needed? |  | |  | |  | |
| Conflicts discussed with other utility owners? |  | |  | |  | |
| Minor conflicts identified? |  | |  | | Click or tap here to enter text. | |
| All regulatory requirements incorporated? |  | |  | |  | |
| Materials called out? |  | |  | |  | |
| Shoring needs identified? |  | |  | |  | |
| Paving/restoration? |  | |  | |  | |
| **Access points secured w/ Integrated Security System (ISS)?** |  | |  | |  | |
| **Electrical and I&C?** |  | |  | |  | |
| Has the design considered: |  | |  | |  | |
|  |  | |  | |  | |
| Is trench or pipe [dewatering required](http://www.seattle.gov/dpd/publications/cam/cam506.pdf)? |  | |  | |  | |
| Is a dechlorination plan required? |  | |  | |  | |
| Construction pollution control? |  | |  | |  | |
| Need a [permit from Ecology](http://www.ecy.wa.gov/programs/wq/stormwater/construction?) (storm drain discharge) ? |  | |  | | Click or tap here to enter text. | |
| Need a [permit King Co. Industrial Waste](http://www.kingcounty.gov/environment/wastewater/IndustrialWaste/Forms/ApprovalForms.aspx) (sewer discharge)? |  | |  | | Click or tap here to enter text. | |
| Resource: SPU Plan Reviewers |  | |  | | Click or tap here to enter text. | |
| Sewer or Drainage Bypassing required? |  | |  | |  | |
| **3.3 Is the geotechnical report complete?** |  | |  | |  | |
| **3.4 Is SEPA DNS complete?** |  | |  | |  | |
| **3.5 Are other permit applications submitted?** |  | |  | |  | |
| 3 60% Design (cont.) | Yes | | No | | Comments | |
| Resource (See DSG Ch 2 Design for Permitting) |  | |  | |  | |
| **3.6 Are easement acquisitions started?** |  | |  | |  | |
| Resource Real Property Services |  | |  | |  | |
| **3.7 Is there a draft customer service plan, considering:** |  | |  | |  | |
| Critical water services? |  | |  | |  | |
| Water main construction/ shutdown sequence? |  | |  | |  | |
| Fire protection analysis? |  | |  | |  | |
| **Security Plan?** |  | |  | |  | |
| **Electrical?** |  | |  | |  | |
| **3.8 Reviews** |  | |  | |  | |
| Real property issues and needs identified? |  | |  | |  | |
| Operations review and crew resources/scheduling identified? |  | |  | |  | |
| Preliminary order of work plan |  | |  | |  | |
| Constructability review? |  | |  | |  | |
| Internal and external plan circulation? |  | |  | |  | |
| **Security elements?** |  | |  | |  | |
| **Electrical and I&C elements?** |  | |  | |  | |
| **3.9 Have preliminary technical specifications been prepared?** |  | |  | |  | |
| **3.10 On track? Have you verified that AMC approved objectives are met?** |  | |  | |  | |
| **3.11 Completed 60% Design** |  | |  | |  | |
| **Construction cost estimate** |  | |  | |  | |
| **Updated schedule** |  | |  | |  | |
| **60% Review Comments Log** |  | |  | |  | |
| 4 90% Design |  | |  | |  | |
| **4.1 60% Comments** |  | |  | |  | |
| Have all the 60% review comments been addressed? |  | |  | |  | |
| **4.2 90% Plans substantially ready for bid** |  | |  | |  | |
| Has drafting been checked, for: |  | |  | |  | |
| Standard layer control? |  | |  | |  | |
| Seattle standards? |  | |  | |  | |
| Spelling? |  | |  | |  | |
| Stationing? |  | |  | |  | |
| Cross referencing? |  | |  | |  | |
| Views adequate for construction? |  | |  | |  | |
| Complete details? |  | |  | |  | |
| Have all fittings and connections called out? |  | |  | |  | |
| 4 90% Design (cont.) |  | |  | |  | |
| Are design criteria notes on the plans? |  | |  | |  | |
| Is the hydraulic grade line on the profiles? |  | |  | |  | |
| Are notes clear and complete? |  | |  | |  | |
| Are all materials specified? |  | |  | |  | |
| Have easements been identified? |  | |  | |  | |
| Are boring log locations shown? |  | |  | |  | |
| Has surface restoration been identified for all disturbed areas? |  | |  | |  | |
| Are construction pollution control plans clear? |  | |  | |  | |
| Has all grading information to be supplied by SPU survey or design identified? |  | |  | |  | |
| Have easements been acquired and referenced? |  | |  | |  | |
| **4.3 Design Calculations** |  | |  | |  | |
| Are all structural calcs including pipe loading and blocking complete and stamped? |  | |  | |  | |
| Are all hydraulic calculations complete and stamped? |  | |  | |  | |
| **4.4 Draft Project Manual** |  | |  | |  | |
| Do special provisions include: |  | |  | |  | |
| Non-standard submittals required? |  | |  | |  | |
| Permit conditions? |  | |  | |  | |
| Traffic Control Plan? |  | |  | |  | |
| Community commitments? |  | |  | |  | |
| Access control policies/procedures to secured site? |  | |  | |  | |
| Other Agency commitments? |  | |  | |  | |
| Construction Management requirements? |  | |  | |  | |
| Temporary erosion and sediment control plan? |  | |  | |  | |
| Pre-bid meeting required? |  | |  | |  | |
| Have permits been acquired and incorporated into plans and specifications? |  | |  | |  | |
| **Site Security Plan for Construction** **complete**? |  | |  | |  | |
| **Electrical Design complete?** |  | |  | |  | |
| **4.5 Customer service plan?** |  | |  | |  | |
| **4.6 Reviews** |  | |  | |  | |
| Has operations reviewed and crew resources been scheduled? |  | |  | |  | |
| Constructability review comments been incorporated into plans & specs? |  | |  | |  | |
| **Security review comments?** |  | |  | |  | |
| **Electrical and I&C review comments?** |  | |  | |  | |
| Has the plan been circulated both internally and externally? |  | |  | |  | |
| **4.7 On track? Have you verified that AMC approved objectives are met?** |  | |  | |  | |
| **4.8 Completed 90% Design** |  | |  | |  | |
| 4 90% Design (cont.) | Yes | | No | | Comments | |
| Engineer’s Estimate |  | |  | |  | |
| Construction Schedule |  | |  | |  | |
| **90% Review Comments Log** |  | |  | |  | |
| 5 Bid Documents | |  | |  | |  |
|  | |  | |  | |  |
| **Finalize Plans** | |  | |  | |  |
| Have all review comments been addressed? | |  | |  | |  |
| **Has the Advertised Plan Set been Signed and Stamped?** | |  | |  | |  |
| **Project Manual Support** | |  | |  | |  |
| **Addendum Support** | |  | |  | |  |
| 6 Construction | |  | |  | |  |
| **Review submittals**  **Have all required Permits been issued?**  **Schedule any required Preconstruction Conferences with Permit Authority, contractors and city staff.** | |  | |  | |  |
| **Response to RFIs and field design change proposals** | |  | |  | |  |
| Support Construction Management in review change of condition claims | |  | |  | |  |
| Support construction manager and resident engineer at progress meetings | |  | |  | |  |
| **Final inspection and comments** | |  | |  | |  |
| Are as-built drawings complete? | |  | |  | |  |
| Have GIS records been updated? | |  | |  | |  |