

DESIGN DELIVERABLES CONTENT AND FORMAT REQUIREMENTS 2.2009

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PREDESIGN DOCUMENTS (DESIGN-BID-BUILD AND DESIGN-BUILD)

100% Draft Predesign Documents shall consist of the following (Additional types of information, processes and considerations may be required for certain projects.):

Contextual Analysis (Initiation) – (Not Required for Designated Historic Structures and Historic Landscapes)

- Initiate the [Contextual Analysis Template](#) for assessing the existing character of the project site and buildings by filling in "Description of Existing". See definitions for [Site Character](#) and [Building Character](#) prior to undertaking this effort. The "Contextual Analysis" shall be prepared utilizing the [Contextual Analysis Template](#).

Project Program

The Project Program shall consist of the following, as applicable, for the specific project (additional considerations may be required for certain projects).

- Architectural Program
 - Functional Requirements
 - Functional Relationships (Bubble Diagrams and/or Matrices)
 - Square Foot Area Requirements
 - Dimensional Requirements and/or Limitations
 - Unique Design Parameters
 - Interpretative Program
- Site Program
 - Functional Requirements
 - Functional Relationships (Bubble Diagrams and/or Matrices)
 - Square Foot Area Requirements (i.e. parking)
 - Dimensional Requirements and/or Limitations
 - Unique Design Parameters
 - Interpretative Program
- Site Analysis

The Site Analysis (narrative/graphic format) shall be prepared based on the following Site Analysis Checklist:

- Topographic Analysis
- Slope Analysis
- Analysis of Physical Features
- Access and Circulation, Traffic and Parking Studies
- Vegetation
- Existing Water Bodies
- Site History
- History of Existing Structures and Landscape
- On-site Utility Studies
- Off-site Utility Studies
- Environmental Studies and Reports
- Climate Studies
- Geotechnical/soils
- Hydrologic Studies, Watershed Modeling Studies
- Project Requirements

- Existing Conditions Assessment, Hazmat Investigation

Contextual Analysis (Completion) – When Required

- Using the same character analysis process utilized for existing character, complete the [Contextual Analysis Template](#) by filling in "Description of Proposed" to document the proposed character of all new site(s) and building(s) concepts. The completed Contextual Analysis Template will be used by the NPS to assess contextual compatibility of all forthcoming design concepts.

Class C Construction Cost Estimate

- The Class C Construction Cost Estimate shall be prepared in a format matching the [Class C Construction Cost Estimate](#) sample.

Cost Comparability Data

- The Cost Comparability Data Checklist shall be prepared utilizing the [Cost Comparability Data Checklist](#) template /sample.

Scope and Cost Validation Documentation

- Document all scope, functionality and cost variations of three similar built non-NPS projects using the [Scope and Cost Validation Report](#).

100% Draft Predesign Documents Submittal Formats

- Submit 100% Draft Predesign Documents in [Hard Copy Formats](#) only.
 - Project Program
 - Contextual Analysis (When Required)
 - Class C Construction Cost Estimate
 - Cost Comparability Data
 - Scope and Cost Validation Report

Final Predesign Documents Submittal Formats

- Submit Final Predesign Documents in both [Hard Copy Formats](#) and [Electronic Formats](#).
 - Project Program
 - Contextual Analysis (When Required)
 - Class C Construction Cost Estimate
 - Cost Comparability Data
 - Documentation of Scope and Cost Variations
 - NPS Review Form with Responses

SCHEMATIC DESIGN DOCUMENTS (DESIGN-BID-BUILD AND DESIGN-BUILD)

100% Draft Schematic Design Documents shall consist of the following (Additional types of information, processes and considerations may be required for certain projects.):

Design Concepts Assessment

Present and revise, as needed, site integrated massing and architectural design concepts based on the completed Contextual Analysis and/or Project Program. NPS will verify conformance with the Contextual Analysis and/or Project Program. [Design Concepts](#) include:

- Sketches
- Massing Models
- Character sketches
- Diagrams
- Images

In consultation with NPS, choose Final Design Concepts for advancement to Schematic Design. [Final Design Concepts](#) may include:

- Sketches
- Massing Models
- Character sketches
- Diagrams
- Images

Schematic Design Alternatives

Each Schematic Design Alternative may consist, as applicable, of the following for the specific project (additional information may be required for certain projects):

- Drawings
 - Site Plan
 - Grading Plan
 - Demolition Plan
 - Site Details
 - Floor Plans
 - Typical Sections
 - Typical Elevations
 - Utility Plan
 - Process Diagrams
 - Character Sketches
- Presentation Options
 - Physical study model
 - Computer-generated three dimensional model images
 - Film or digital images
 - MS Powerpoint presentation
 - Color hand-drawn perspective and oblique drawing prints

Class C Construction Cost Estimates for Each Schematic Design Alternative

- Class C Construction Cost Estimates shall be prepared in a format matching the [Class C Construction Cost Estimate](#) sample.

Value Analysis Report

- Format the Value Analysis Report per the [Value Analysis Report Template](#)

Fully Developed Schematic Design Preferred Alternative

The Fully Developed Schematic Design Preferred Alternative shall consist of the following, as applicable, for the specific project (additional information may be required for certain projects):

- Site and Utility Plans
- Building Floor Plans, Elevations and Sections
- Basis of Design Report

Narrative and drawings that capture all aspects of the project including descriptions of engineering systems, building, site and utility design; structural, mechanical, electrical, water and wastewater analysis; energy analysis; and materials analysis. The report shall include:

- Project Program
- Systems Analysis
 - Civil Engineering
 - Storm water management
 - Utility corridor or routing
 - Roadway and parking
 - Landscape Architecture
 - Functional analysis of site program
 - Accessible Route Plan
 - Roadway and parking siting and analysis
 - Vegetation and planting
 - Materials analysis
 - Character defining features listing (cultural landscape)
 - Statement of historic significance (cultural landscape)
 - Water/Wastewater Systems
 - Code analysis and verification
 - Descriptions of water/wastewater systems and alternatives
 - Design flow calculations
 - Fire flow requirements
 - Results of soils testing, e.g. percolation test results
 - Results of sampling and testing of wastewater
 - Utility corridor or routing
 - Calculations for utility system sizing
 - Modeling
 - Special studies, e.g. hazmat
 - Architecture and Preservation Architecture
 - Code analysis

- Accessible Route Plan
- Functional analysis of building program
- Materials analysis (interior and exterior materials and finishes)
- Character defining features listing (historic structures)
- Statement of historic significance (historic structures)
- Structural Systems
 - Analysis of code and loading requirements
 - Foundation system description
 - Roof and floor framing systems description
 - Lateral load-resisting elements description
- Mechanical Systems
 - Descriptions of alternative mechanical systems
 - Mechanical code review, listing special code requirements
 - Adequacy of site utilities for mechanical systems, based on actual measurements of flow and pressure available or based on information from local utility companies
 - Justifications for and descriptions of preferred alternative mechanical systems
- Electrical Systems
 - Descriptions of electrical systems and alternatives
 - Load summary and calculations (if applicable)
 - Adequacy of site utilities for electrical systems based on information from local utility companies; verification of phase and voltage available
 - Electrical code review, listing special code requirements
 - Discussion of telecommunication, fire, and intrusion
- Energy Analysis
 - Comparison of energy source alternatives, including renewable energy
 - Life cycle costing for value analysis of mechanical system alternatives
 - Preliminary mechanical system sizing
 - Energy analysis for US Green Building Council's (USGBC) LEED™ certification
 - Energy budgeting for proposed facilities
- Fire Protection
 - Fire Safety Plan (Code Analysis). RM 58 requires that all projects develop a Fire Safety Plan to address the unique fire and life safety issues. The Fire Safety Plan consists of the following elements:

INTRODUCTION

DESIGN TEAM

APPLICABLE CODES

FIRE PROTECTION/LIFE SAFETY APPROACH

General Description

General Fire Resistive

Construction Aspects

Occupancy Classifications

Fire Resistive Separations

Doors and Windows

Interior Wall, Ceiling and Floor Finishes

Deliverables, Schematic Design Documents

Decorative Structures within Buildings
Egress
Special Design
Emergency Signage
Suppression Systems
Fire Department Access
Fire Detection and Alarm System
Emergency Communication Systems
Smoke Management Description
Central Control Station
Emergency and Standby Power
Elevators

ACCEPTANCE TESTING
PERIODIC OPERATION AND MAINTENANCE
CONCLUSION

- Fully Developed Schematic Design Documents may also include the following:
 - Renderings and illustrative plans
 - Color hand-drawn perspective and oblique drawings
 - Computer-generated three dimensional model
 - Physical study model
 - Photographs or digital images
 - Microsoft PowerPoint presentation
- Class B Construction Cost Estimate
 - Class B Construction Cost Estimates shall be prepared in a format matching the [Class B Construction Cost Estimate](#) sample.
- LEED™ Project Checklist
 - Use the [LEED™ Project Checklist](#)

Cost Comparability Analysis

- The Cost Comparability Analysis shall be prepared utilizing the [Cost Comparability Analysis](#) template.

100% Draft Schematic Design Documents Submittal Formats

- Submit 100% Draft Schematic Design Documents in [Hard Copy Formats](#) only.
 - Schematic Design Alternatives
 - Class C Construction Cost Estimates for Each Schematic Design Alternative
 - Value Analysis Report
 - Fully Developed Schematic Design Preferred Alternative
 - Site and Utility Plans
 - Building Floor Plans, Elevations and Sections
 - Basis of Design Report:
 - Class B Construction Cost Estimate
 - LEED™ Project Checklist
 - Cost Comparability Analysis

Final Schematic Design Documents Submittal Formats

- Submit Final Schematic Design Documents in both [Hard Copy Formats](#) and [Electronic Formats](#).
 - Schematic Design Alternatives
 - Class C Construction Cost Estimates for Each Schematic Design Alternative
 - Value Analysis Report
 - Fully Developed Schematic Design Preferred Alternative
 - Site and Utility Plans
 - Building Floor Plans, Elevations and Sections
 - Basis of Design Report
 - Class B Construction Cost Estimate
 - LEED™ Project Checklist
 - Cost Comparability Analysis
- Development Advisory Board (DAB) Support Documents
 - Submit DAB Documents in [Electronic Formats](#).
 - Proposed Design Development and Construction Document Value Analysis activities on remaining key decisions.
 - Five or fewer graphics providing an overview of the project, for example:
 - Existing Conditions Plan - location plan
 - Site Plan
 - Building Plans for each level
 - Building Elevations
 - Building and Site Sections
 - Information required to update the Environmental Screening Form (ESF)

DESIGN DEVELOPMENT DOCUMENTS (DESIGN-BID-BUILD AND DESIGN-BUILD)

The following “Design Development” Deliverable Content and Format Requirements are required for Design-Bid-Build projects. These same requirements also apply to Design-Build, however, Design-Build documents will generally have less detail since both the design and construction portions of a project are provided by the Design-Build Contractor (DBC). Design-Build documents must clearly communicate the design intent so that all project team members understand the project design intent and approach. In addition, the design must meet the requirements of the RFP.

100% Draft Design Development Documents shall consist of the following (Additional types of documents and information may be required for certain projects.):

Design Development Drawings (Design-Bid-Build and Design-Build)

- Standard [NPS cover sheet](#)
- Index sheet (may be included on cover sheet)
- General sheets
 - Overall site plan showing total project
 - Existing conditions (as base)
 - Contractor staging areas (construction storage, field office, construction camp) with adequate space or sequencing needs
 - Construction limits
 - Construction access
 - Survey control information, monuments and benchmarks with coordinates and elevations
 - Property lines with bearings, easements, utility corridors and setbacks
 - Proposed construction (i.e. outline of new structures, utilities, roadways, walks)
 - Unique construction requirements
 - Existing Conditions Plan:
 - Existing Contours and spot elevations
 - Existing Buildings and other structures
 - Existing Site Features: roads, parking, structures, walks, steps, walls, etc.
 - Existing Utilities, above and below ground, shown to scale (transformers, inlets, lift stations, propane tanks, septic tanks, culverts, etc.) include spot elevations for each, invert elevations for all below ground structures. Use appropriate symbols for small utility items (i.e. lighting, transformers, pull boxes, manholes, inlets, etc.)
 - Existing land features and vegetation
 - Overall symbol legend and abbreviations list
 - Demolition plan, as appropriate. Demolition may be shown on discipline sheets if more appropriate.
 - Code Analysis and Architectural Barriers Act Accessibility Standards (ABAAS) Compliance Plans
 - Accessible Route Site Plan
 - Accessible Route Building Plan
 - Fire Safety Plan
 - Fire Egress Plan

- Civil Engineering Sheets
 - Site Plans
 - Existing conditions
 - Discipline specific notes, legends, code references, symbols and abbreviations.
 - Site features: roads, parking, structures, walks, steps, walls, etc.
 - Utilities shown to scale (lighting, transformers, pull boxes, manholes, inlets, lift stations, propane tanks, septic tanks, culverts, etc.) Use appropriate symbols for small utility items (i.e. lighting, transformers, pull boxes, manholes, inlets, etc.
 - Geotechnical testing areas, boring locations, percolation test holes
 - Construction limits
 - Road and Parking
 - Existing conditions (as base) with plan and profile sheet outlines, as appropriate.
 - Plan and profile sheets
 - Typical cross-sections
 - Road and parking centerline stations, bearings, distances, and curve data (layout tables, as appropriate)
 - Intersections and other site radii identified with radius and coordinates
 - Construction limits
 - Storm Water
 - Existing conditions (as base)
 - Collection, treatment (i.e. settlement ponds), and layouts (plan and profile sheets, as appropriate)
 - Structures plans, elevations and details
 - Construction limits
 - Utilities
 - Existing conditions (as base)
 - Water systems and components: collection, treatment, and distribution layouts (plan and profile sheets, as appropriate)
 - Wastewater disposal systems and components: location, size, and layouts (plan and profile sheets, as appropriate)
 - System processes and flow diagrams
 - Utilities (identified for removal or abandonment, as appropriate)
 - Construction limits
 - Details Sheets
 - Details (i.e. trenching details, thrust blocks, water/sewer line crossings, silt fence, sewer cleanouts, manholes, valves and boxes, curb stops, fire hydrants, air release valves, sewage air release valves, irrigation details, pressure relief valves, meters and boxes, pressure regulators, check valves and boxes, backflow preventors, septic tanks, absorption trenches, distribution boxes, piping connections, water well details, lift station details, storm water details, storage tank details)
- Landscape Architecture Sheets
 - Demolition Plan (if required)
 - Existing conditions (as base)

- Structures
- Plant material (tree protection, plants to be removed or salvaged)
- Utilities (identified for removal or abandonment)
- Site furnishings
- Clearing and grubbing
- Construction Limits

- Site Plan
 - Existing conditions (as base)
 - Major site features: roads, parking, structures, site drainage, walks, steps, walls, etc.
 - Utilities shown to scale. Use appropriate symbols for small utility items (i.e. lighting, transformers, pull boxes, manholes, inlets, etc.)
 - Discipline specific notes, legends, symbols and abbreviations.
 - Sections and elevations identified
 - Major site elements and details identified
 - Storm water protection measures
 - Construction Limits

- Site Layout Plan
 - Existing conditions (as base)
 - Roads, parking, walks and service areas locating:
 - Dimensioned traffic markings
 - Dimensioned walks, steps, terraces, and site elements

 - Buildings and structures
 - Finish floor elevations noted
 - Roof overhangs

 - Outdoor lighting
 - Above and below ground utilities
 - Construction Limits

- Grading Plan
 - Existing conditions (as base)
 - Existing contours and spot elevations
 - Proposed grading
 - Proposed contours (maximum 2' contour interval with each 10' interval in heavier pen weight and labeled)
 - Spot elevations of key walks, ADA accessible routes, walls, parking, drainages and site elements
 - Spot elevations at top and bottom of walls, steps and ramps
 - High points, low points, swale centerlines
 - Finish floor elevations at each access point of structures

 - Tree and vegetation protection
 - Utility systems
 - Construction Limits

- Planting/Revegetation/Irrigation Plan
- Site Elevations:

- Entrances
- Exterior materials with major site elements
- Dimensions
- Site Sections (One longitudinal and one transverse)
 - Typical section through site
 - Stairs
 - Site Walls
- Architecture Sheets
 - Compliance Drawings (similar to Historic Structure Report Drawings), annotated floor plans, elevations, roof plans, and building sections that illustrate the anticipated impact or effects of recommended treatments to historic structures (typically for SHPO review).
 - General Sheet(s)
 - Notes, legends, code references, fire safety plan, symbols and abbreviations legends. (This information may alternately be included on the beginning “G” sheets – see General Sheets)
 - Demolition Drawings (typically historic structures)
 - Floor Plans
 - Spaces individually delineated and labeled
 - Section cut references
 - General notes and annotations on the same sheet
 - Dimensions
 - Clearly Identify demo items
 - Roof Plans
 - Section cut references
 - Plan dimensions
 - General notes and annotations
 - Clearly Identify demo items
 - Identify roof assembly, substrate, and drainage items
 - Elevations
 - Entrances, window arrangements, doors
 - Exterior materials with major vertical and horizontal joints
 - Vertical dimensions/floor levels
 - General notes and annotations on the same sheet
 - Clearly Identify demo items
 - Building Sections
 - Floor levels
 - Vertical dimensions/floor levels
 - Spaces labeled
 - General notes and annotations on the same sheet
 - Clearly identify demo items

- New or Adaptive Use Drawings
 - Building Floor Plans
 - Spaces individually delineated and labeled
 - Section cut references
 - Enlarged layouts of special spaces
 - Door swings and marks
 - Window openings and marks
 - General notes and annotations on the same sheet
 - Plan dimensions (verified with structural)
 - Clearly Identify new work
 - Building Roof Plans
 - General notes and annotations on the same sheet
 - Section cut references
 - Plan dimensions
 - Indicate roof pitch/taper and drainage arrows
 - Gutters and downspouts
 - Primary and secondary roof drains and scuppers
 - Label roof assembly and deck materials
 - Clearly Identify new work
 - Building Elevations
 - Entrances, window arrangements, doors
 - Exterior materials with major vertical and horizontal joints
 - Roof levels and overhangs
 - Vertical dimensions and finish floor elevations
 - General notes and annotations on the same sheet
 - Clearly Identify new work
 - Building Sections (Minimum one longitudinal and one transverse)
 - Vertical floor to floor dimensions/elevations (verified with structural)
 - Stairs and elevator shafts
 - Typical ceiling heights
 - Room labels
 - General notes and annotations on the same sheet
 - Clearly Identify new work
- General roof construction details (roughed out)
- Door and Window details (roughed out)
- Typical and special construction details (roughed out)
- Interior elevations
- Reflected ceiling plans
- Room finish, hardware, door and window schedules (roughed out)
- Equipment layout (roughed out)
- Keynotes shall contain complete note, not specification number
- Keynote Legend shall be on the same sheet as keynote reference
- All accessibility dimensions shall be located directly on accessibility layout sheets, not referenced remotely to a standards sheet.

- Structural Sheets
 - General
 - Applicable Codes and Standards
 - Listing of design loads in accordance with IBC 2003, Section 1603
 - Listing of all structural materials used, including material strengths
 - Diaphragm fastening requirements
 - Requirements for special inspection IBC 2003, Chapter 17
 - List of abbreviations
 - Symbol legend
 - Standard Details
 - Standard details applicable to the project
 - Control joint details
 - Reinforcing steel splice length schedule
 - Lintel schedule(s)
 - Foundation Plan
 - Fully dimensioned foundation plan (references to the architectural drawings for foundation dimensions are unacceptable) including:
 - Overall building dimensions
 - Column gridlines
 - Location of foundation elements with respect to column gridlines
 - Size of all foundation elements
 - Foundation wall thickness
 - Floor Framing Plan
 - Fully dimensioned floor framing plan (references to the architectural drawings for framing dimensions are unacceptable) including:
 - Overall building dimensions
 - Column gridlines
 - Location of framing elements with respect to column gridlines
 - Size and spacing of framing members
 - Size and direction of span of roof sheathing or decking
 - Roof Framing Plan
 - Fully dimensioned roof framing plan (references to the architectural drawings for framing dimensions are unacceptable) including:
 - Overall building dimensions
 - Column gridlines
 - Location of framing elements with respect to column gridlines
 - Size and spacing of framing members
 - Size and direction of span of floor sheathing or decking
 - Details
 - Foundation Details
 - Floor Framing Details

Deliverables, Design Development Documents

- Loading diagrams for special load cases for steel bar joists
- Column schedules for steel buildings
- Column and beam schedules for concrete buildings
- Roof Framing Details
 - Loading diagrams for special load cases for steel bar joists
 - Column schedules for steel buildings
 - Column and beam schedules for concrete buildings
 - Prefab wood truss profiles with loading diagrams for all load cases
- Mechanical
 - Discipline specific notes, legends, code references, symbols and abbreviations.
 - Preliminary equipment sizes, locations, and capacities
 - Preliminary equipment layout plans for mechanical rooms
 - Floor plans for: HVAC, plumbing, and fire protection systems
 - Preliminary HVAC system schematics and flow diagrams
 - Acoustical and vibration control measures
 - Energy conservation measures
- Electrical
 - Discipline specific notes, legends, code references, symbols and abbreviations.
 - Power, telephone, and telecommunication distribution to project: plan and details
 - Site electrical plan showing routing with transformers, generators and vaults drawn to scale
 - Approximate sizes, locations and capacities of major components
 - Preliminary equipment layouts plan for electrical rooms
 - Roof plan for lightning protection
 - Floor plans for: lighting, power, telephone, security, fire detection systems
 - Light fixture schedule
 - Single line diagrams for: power distribution, fire alarm and security systems

Division 1 Specifications (Design-Bid-Build only)

- Use the [Division 1 Specification Templates](#). Templates edited to meet requirements of this project.

Divisions 2 through 16 Outline Specifications (Design-Bid-Build and Design-Build)

- Use the [Guide for Writing Outline Specifications](#)

Initiate Constructability Analysis (Design-Bid-Build only)

- Initiate [Constructability Analysis](#)

Product File (Design-Bid-Build and Design-Build)

- Assemble product file of preferred/selected material samples and literature from all disciplines.

Draft Contract Price Schedule (Design-Bid-Build only)

- Use the [Contract Price Schedule](#)

Updated Class B Construction Cost Estimate (Design-Bid-Build only)

- Class B Construction Cost Estimates shall be prepared in a format matching the [Class B Construction Cost Estimate sample](#).

Draft Design Development Documents Submittal Formats (Design-Bid-Build and Design-Build)

- Submit Draft Design Development Documents in [Hard Copy Formats](#). Draft Design Development Drawings shall also be submitted in [Electronic Format](#).
 - Completed Design Development Drawings
 - Division 1 Specifications (Design-Bid-Build only)
 - Divisions 2 through 16 Outline Specifications
 - Product File
 - Constructability Checklist (Design-Bid-Build only)
 - Draft Contract Price Schedule (Design-Bid-Build only)
 - Updated Class B Construction Cost Estimate (Design-Bid-Build and Design-Build)

CONSTRUCTION DOCUMENTS (DESIGN-BID-BUILD AND DESIGN-BUILD)

The following "Construction Documents" Deliverable Content and Format Requirements are required for Design-Bid-Build projects. These same requirements also apply to Design-Build, however, Design-Build documents will generally have less detail since both the design and construction portions of a project are provided by the Design-Build Contractor (DBC). Design-Build Construction Documents must clearly communicate the design intent so that all project team members understand the project design intent and approach. In addition, the design must meet the requirements of the RFP.

100% Draft Construction Documents shall consist of the following (Additional types of documents and information may be required for certain projects.):

Construction Drawings (Design-Bid-Build and Design-Build)

- Standard [NPS cover sheet](#)
- Index sheet (may be included on cover sheet)
- General Sheets
 - Overall site plan showing total project
 - Existing conditions (as base)
 - Contractor staging areas (construction storage, field office, construction camp) with adequate space or sequencing needs
 - Construction limits
 - Construction access
 - Survey control, monuments and benchmarks with coordinates and elevations
 - Property lines with bearings, easements, utility corridors and setbacks
 - Proposed construction (i.e. outline of new structures, utilities, roadways, walks)
 - Unique construction requirements
 - Existing conditions plan
 - Existing contours and spot elevations
 - Existing buildings and other structures
 - Existing site features: roads, parking, structures, walks, steps, walls, etc.
 - Existing utilities, above and below ground, shown to scale (inlets, lift stations, propane tanks, septic tanks, culverts, etc.) include spot elevations for each, invert elevations for all below ground structures. Use appropriate symbols for small utility items (i.e. lighting, transformers, pull boxes, manholes, inlets, etc.)
 - Existing land features and vegetation
 - Overall symbol legend and abbreviations list, if applicable.
 - Demolition plan, as appropriate. Demolition may be shown on discipline sheets if more appropriate.
 - Code Analysis and Architectural Barriers Act Accessibility Standards (ABAAS) Compliance Plans
 - Accessible Route Site Plan
 - Accessible Route Building Plan
 - Fire Safety Plan
 - Fire Egress Plan

- Civil Engineering Sheets
 - Site Plan
 - Existing conditions (as base)
 - Discipline specific notes, legends, code references, symbols and abbreviations.
 - Monuments and benchmarks identified with coordinates and elevations.
 - Site features: roads, parking, structures, walks, steps, walls, etc.
 - Utilities shown to scale (lighting, transformers, pull boxes, manholes, inlets, lift stations, propane tanks, septic tanks, culverts, etc.) Use appropriate symbols for small utility items (i.e. lighting, transformers, pull boxes, manholes, inlets, etc.
 - Geotechnical testing areas, boring locations, percolation test holes
 - Construction limits
 - Road and Parking
 - Existing conditions (as base) with plan and profile sheet outlines, as appropriate.
 - Plan and profile sheets
 - Typical cross-sections
 - Road and parking cross-sections
 - Road and parking centerline stations, bearings, distances, and curve data (layout tables, as appropriate)
 - Intersections and other site radii identified with radius and coordinates
 - Construction limits
 - Storm Water
 - Existing conditions (as base)
 - Collection, treatment (i.e. settlement ponds), and layouts (plan and profile sheets, as appropriate)
 - Structures plans, elevations and details
 - Construction limits
 - Utilities Plans
 - Existing conditions (as base)
 - Water pumping, treatment, storage, and distribution system layout and profile (plan and profile sheets, as appropriate), component sizes, material callouts
 - Wastewater collection, treatment, and disposal system layout and profile, component sizes, material callouts
 - System processes and flow diagrams
 - Utilities (identified for removal or abandonment, as appropriate)
 - Construction limits
 - Project Details
 - Details (i.e. trenching details, thrust blocks, water/sewer line crossings, silt fence, sewer cleanouts, manholes, valves and boxes, curb stops, fire hydrants, air release valves, sewage air release valves, irrigation details, pressure relief valves, meters and boxes, pressure regulators, check valves and boxes, backflow preventors, septic tanks, absorption trenches, distribution boxes, piping connections, water well details, lift station details, storm water details, storage tank details)

- Landscape Architecture Sheets
 - Demolition Plan (if required)
 - Existing conditions (as base)
 - Structures
 - Plant material (tree protection, plants to be removed or salvaged)
 - Utilities (identified for removal or abandonment)
 - Storm water protection
 - Site furnishings
 - Clearing and grubbing
 - Construction limits
 - Site Plan
 - Existing conditions (as base)
 - Discipline specific notes, legends, symbols and abbreviations.
 - Storm water protection
 - Site features: roads, parking, structures, walks, steps, walls, etc.
 - Utilities shown, as appropriate, to scale (lighting, transformers, pull boxes, manholes, inlets, lift stations, propane tanks, septic tanks, culverts, etc.) Use appropriate symbols for small utility items (i.e. lighting, transformers, pull boxes, manholes, inlets, etc.)
 - Sections and elevations identified
 - Site elements and details identified
 - Construction limits
 - Site Layout Plan
 - Existing conditions (as base)
 - Roads, parking, walks and service areas:
 - Coordinates for building and site layout (identify location of point – foundation, finish wall. . .)
 - Coordinates for all corner points of walks, parking, walls, and site features (identify location of point – foundation, face of curb. . .)
 - Control point, corner point, and radius point tables
 - Dimensioned traffic markings
 - Dimensioned walks, steps, walls with footings, terraces, drainage and utility structures, and site elements
 - Buildings and structures
 - Finish floor elevations noted
 - Roof overhangs, footings
 - Outdoor lighting
 - Above and below ground utilities, as appropriate
 - Construction limits
 - Grading Plan
 - Existing conditions (as base)
 - Existing contours and spot elevations
 - Proposed grading

Deliverables, Construction Documents

- Proposed contours (maximum 2' contour interval with each 10' interval in heavier pen weight and labeled)
 - Spot elevations at all change in gradient, at all corners of walks, walls, parking, drainage inlets and outlets, and all site elements
 - Spot elevations at top and bottom of walls, steps and ramps

 - High points, low points, swale centerlines
 - Storm water protection elements
 - Finish floor elevations at each access point of structures
- Tree and vegetation protection
- Utility systems
- Construction limits
- Planting/Revegetation/Irrigation Plan
 - Plant list with quantities and symbols
 - Details and cross-sections
- Site Details
 - Paving, finishes
 - Erosion control (Storm water protection)
 - Accessibility
 - Stairs, handrails, ramps
 - Site furnishings
 - Typical and special construction details
- Site Elevations
 - Entrances
 - Exterior materials with major site elements
 - Dimensions
- Site Sections
 - Typical sections
 - Stairs
 - Site Walls
 - Material changes/connections, paving (curb/walk)
 - Key site elements
- Sign Plan
 - Traffic signs (park wayfinding and MUTCD)
 - Accessible signs
 - Interpretive signs and waysides
 - Pedestrian and trail signs
 - Unique construction signs
- Architecture Sheets
 - Finalized General sheet(s)

Deliverables, Construction Documents

- Notes, legends, code references, fire safety plan, symbols and abbreviations legends.
- Wall types
- Finalized Demolition Drawings with Legends
 - Floor Plans
 - Spaces individually delineated and labeled
 - Section cut references
 - General notes and annotations on the same sheet
 - Dimensions
 - Clearly Identify demo work
 - Roof plans
 - Section cut references
 - Plan dimensions
 - General notes and annotations
 - Clearly Identify demo work
 - Building Sections
 - Floor levels
 - Vertical dimensions/floor levels
 - Spaces labeled
 - General notes and annotations on the same sheet
 - Clearly Identify demo work
 - Building Elevations
 - Entrances, window arrangements, doors
 - Exterior materials with major vertical and horizontal joints
 - Roof levels and overhangs
 - Vertical Dimensions
 - General notes and annotations on the same sheet
 - Clearly identify demo work
- Finalized New or Adaptive Use Drawings
 - All Building Floor Plans
 - Spaces individually delineated and labeled
 - Section cuts and detail references
 - Enlarged layouts of special spaces (dimensioned)
 - Plan Dimensions (verified with structural)
 - Finish floor elevations
 - Door swings and marks
 - Window openings and marks
 - Stairs and elevators
 - Overhead openings dashed
 - General notes and annotations on the same sheet
 - Material legends
 - Clearly distinguish new work from existing

- All Building Roof Plans
 - General notes and annotations on the same sheet
 - Section cut references
 - Plan dimensions
 - Indicate roof pitch/taper and drainage arrows
 - Gutters and downspouts
 - Primary and secondary roof drains and scuppers
 - Label roof assembly and deck materials
 - Clearly distinguish new work from existing
 - Identify plumbing, HVAC and electrical roof penetrations, equipment, and architectural features

- All Building Elevations
 - Entrances, window arrangements, doors
 - Exterior materials with major vertical and horizontal joints
 - Roof levels and overhangs dimensioned
 - Vertical dimensions and elevations
 - General notes and annotations on the same sheet
 - Clearly distinguish new work from existing

- Building Sections (minimum one longitudinal and one transverse)
 - Floor to floor dimensions (verified with structural)
 - Vertical dimensions with elevation targets
 - Stairs and elevator shafts
 - Typical ceiling heights
 - Room labels
 - General notes and annotations on the same sheet
 - Building and wall section references
 - Detail references
 - Clearly distinguish new work from existing

- Interior Elevations
 - Floor to floor dimensions with elevation targets
 - Doors and windows
 - Wall finishes
 - Ceiling heights and finishes
 - Materials legends
 - Clearly distinguish new work from existing
 - Floor finishes
 - Accessories with legends

- All Reflected Ceiling Plans
 - Ceiling configuration and materials legends
 - Lighting fixture layout
 - Clearly distinguish new work from existing

- All roof construction details
- All wall sections referenced to building plans and sections
- All roof, door, and window details referenced to plans and schedules
- All special construction details
- All Room finish, hardware, door and window schedules
- All millwork plans, sections, elevations, and details

Deliverables, Construction Documents

- All Equipment layouts dimensioned
 - Keynotes shall contain complete note, not specification number
 - Keynote Legend shall be on the same sheet as keynote reference
 - All accessibility dimensions shall be located directly on accessibility layout sheets, not referenced remotely to a standards sheet.
- Structural Sheets
 - General
 - Applicable Codes and Standards
 - Listing of design loads in accordance with IBC 2003, Section 1603
 - Listing of all structural materials used, including material strengths
 - Diaphragm fastening requirements
 - Requirements for special inspection IBC 2003, Chapter 17
 - List of abbreviations
 - Symbols legend
 - Standard Details
 - Standard details applicable to the project
 - Control joint details
 - Reinforcing steel splice length schedule
 - Lintel schedule(s)
 - Foundation Plan
 - Fully dimensioned foundation plan (references to the architectural drawings for foundation dimensions are unacceptable) including:
 - Overall building dimensions
 - Column gridlines
 - Location of foundation elements with respect to column gridlines
 - Location of slab edges
 - Location of control joints
 - Location of slab recesses
 - Location of elevator pits
 - Location of footing and foundation wall steps
 - Location of foundation wall masonry ledges
 - Size of all foundation elements
 - Foundation wall thickness
 - Top of footing elevations (locating top of footing with respect to finished grade is not acceptable)
 - Masonry ledge elevations
 - Top of wall elevations
 - All required section cuts
 - Floor Framing Plan
 - Fully dimensioned floor framing plan (references to the architectural drawings for framing dimensions are unacceptable) including:
 - Overall building dimensions
 - Column gridlines
 - Location of framing elements with respect to column gridlines
 - Top of beam elevations
 - Size and spacing of framing members

Deliverables, Construction Documents

- Locations of openings for floor penetrations
 - Size and direction of span of floor sheathing or decking
 - Camber requirements
 - All required section cuts
-
- Roof Framing Plan
 - Fully dimensioned roof framing plan (references to the architectural drawings for framing dimensions are unacceptable) including:
 - Overall building dimensions
 - Column gridlines
 - Location of framing elements with respect to column gridlines
 - Top of beam elevations
 - Size and spacing of framing members
 - Locations of openings for roof penetrations
 - Size and direction of span of roof sheathing or decking
 - Camber requirements
 - All required section cuts
-
- Details
 - Foundation Details
 - Footing/foundation wall details showing relationship to floor structural system
 - Piling/pile cap details showing relationship to floor structural system
 - Floor Framing Details
 - Connection Details
 - Loading diagrams for special load cases for steel bar joists
 - Column and base plate schedules for steel buildings
 - Column and beam schedules for concrete buildings
 - Roof Framing Details
 - Connection Details
 - Loading diagrams for special load cases for steel bar joists
 - Column and base plate schedules for steel buildings
 - Column and beam schedules for concrete buildings
 - Prefab wood truss profiles with loading diagrams for all load cases
-
- Mechanical Sheets
 - Site mechanical plan (if applicable, with all features drawn to scale)
 - Detail drawings showing major mechanical details and sections, including all piping and ductwork connections to mechanical equipment.
 - Mechanical floor plans (HVAC, plumbing, and fire protection), with all cross-references between sheets
 - Enlarged scale mechanical plans for mechanical rooms where all necessary plan information cannot be conveyed at a smaller drawing scale.
 - Discipline specific notes, legends, code references, symbols and abbreviations.

Deliverables, Construction Documents

- HVAC system schematics and flow diagrams
- Mechanical equipment schedules
- Plumbing fixture connection schedule
- Plumbing isometrics or riser diagrams for water systems and drain, waste, and vent (DWV) systems for each restroom, plumbing stack, or other groups of plumbing fixtures where all information cannot be shown on plan sheets
- HVAC control schematics and sequences of operation

- Electrical Sheets
 - Electrical floor plans, with all cross-references between sheets
 - Enlarged scale electrical plans for critical spaces where all necessary plan information cannot be conveyed at a smaller drawing scale
 - Site electrical plan showing routing with transformers, generators and vaults drawn to scale
 - Detail drawings showing major electrical details and sections, including conduit routing to major electrical equipment
 - Branch circuiting for all electrical devices
 - Discipline specific notes, legends, code references, symbols and abbreviations.
 - Panel board and light fixture schedules
 - Fire alarm matrix, riser and device location plans
 - Lightning protection plans
 - Telecommunication plans
 - Security system plans
 - Control wiring diagrams

Division 1 Specifications (Design-Bid-Build only)

- Use the [Division 1 Specification Templates](#).
- Templates shall be fully edited to meet requirements of this project.

Divisions 2 through 16 Construction Specifications (Design-Bid-Build and Design-Build)

- Table of Contents: Indicate specification section number, title, and the number of sheets per section.
 - [Guide for Specifiers, March 2008](#)
- Divisions 2 through 16 Construction Specifications
 - Divisions 2 through 16 Construction Specifications shall comply with the Construction Specifications Institutes (CSI) Master Format.

Contract Price Schedule (Design-Bid-Build only)

- Use the [Contract Price Schedule](#) Template.

Product File (Design-Bid-Build and Design-Build)

- Copies of catalog cuts, as necessary, to explain all work.

Class A Construction Cost Estimate (Design-Bid-Build only)

- Class A Construction Cost Estimate shall be prepared in a format matching the [Class A Construction Cost Estimate](#) sample.

Material Submittal List (Design-Bid-Build only)

- Use the NPS [Material Submittal List and Review Estimate](#) Template.

Closeout and Operation & Maintenance (O&M) Requirements (Design-Bid-Build only)

- Use the [Closeout and Operation & Maintenance Requirements](#) Template.

Final Constructability Checklist (Design-Bid-Build only)

- Finalize the constructability analysis utilizing the [Constructability Checklist](#).

Design Calculations (Design-Bid-Build and Design-Build)

- Provide all design calculations used to arrive at the final design with narrative, as necessary, to explain all work. The following list is an example of possible calculations that may apply. Additional types of calculations may be required for certain projects:
- Earthwork Design Calculations and Data
 - Cut/fill calculations
- Water/Wastewater Calculations and Data
 - Utility sizing calculations
- Structural Design Calculations and Data
 - Final structural calculations, including:
 - Structural design criteria
 - References to applicable code sections (IBC, ACI, AISC, etc.)
 - References to applicable portions of the structure
 - Dead load calculations
 - Snow load calculations
 - Roof/floor live load calculations
 - Wind load calculations
 - Seismic load calculations
 - Gravity system calculations
 - Lateral system calculations
 - Connection design calculations
 - Foundation system calculations
- HVAC Design Calculations and Data
 - Building U value calculations for each conditioned building, demonstrating compliance with ASHRAE 90.1
 - Heating and cooling load calculations for each building, including summaries of all input data, zoning maps, and any assumptions that were made
 - Outside air (ventilation air) calculations
 - Exhaust air calculations
 - Psychometric calculations
 - Heating, cooling, humidifying, and ventilating equipment sizing calculations
 - Pump and fan static pressure calculations and selection curves

Deliverables, Construction Documents

- Plumbing Design Calculations and Data
 - Water service and sanitary sewer service capacity calculations for each building
 - Roof drain and drain leader calculations for each building, as applicable
 - Domestic water heater capacity calculations
 - Fuel gas system capacity calculations for each building, if applicable
- Fire Protection Design Calculations and Data
 - Hydraulic calculations for all fire sprinkler systems
 - Hydrant flow test data, if applicable
 - Fire pump and jockey pump capacity calculations, if applicable
 - Pressure tank capacity calculations, if applicable
- Electrical Design Calculations and Data
 - Electrical service calculations for each building
 - Fault current calculations and load summary

100% Draft Construction Documents Submittal Formats (Design-Bid-Build and Design-Build)

- Submit 100% Draft Construction Documents in [Hard Copy Formats](#). 100% Draft Construction Drawings shall also be submitted in [Electronic Format](#).
 - Construction Drawings
 - Division 1 Specifications (Design-Bid-Build only)
 - Divisions 2 through 16 Construction Specifications
 - Contract Price Schedule (cost fields blank) (Design-Bid-Build only)
 - Contract Price Schedule (cost fields filled in based on Class A Construction Cost Estimate) (Design-Bid-Build only)
 - Product File
 - Class A Construction Cost Estimate (Design-Bid-Build only)
 - Material Submittal List (Design-Bid-Build only)
 - Closeout and Operation & Maintenance (O&M) Requirements (Design-Bid-Build only)
 - Constructability Checklist (Design-Bid-Build only)
 - Design Calculations

100% Complete Construction Documents Submittal Formats (Design-Bid-Build and Design-Build)

- Submit Complete Construction Documents in [Hard Copy Formats](#). 100% Complete Construction Drawings shall also be submitted in [Electronic Format](#).
 - Construction Drawings
 - Division 1 Specifications (Design-Bid-Build only)
 - Divisions 2 through 16 Construction Specifications
 - Contract Price Schedule (cost fields blank) (Design-Bid-Build only)
 - Contract Price Schedule (cost fields filled in based on Class A Construction Cost Estimate) (Design-Bid-Build only)
 - Product File
 - Class A Construction Cost Estimate (Design-Bid-Build only)
 - Material Submittal List (Design-Bid-Build only)
 - Closeout and Operation & Maintenance (O&M) Requirements (Design-Bid-Build only)
 - Constructability Checklist (Design-Bid-Build only)
 - Design Calculations

**Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
Submittal Formats**

- Submit Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents in both [Hard Copy Format](#) and [Electronic Format](#).
 - Final (Design-Bid-Build) or Approved (Design-Build) Construction Drawings
 - Division 1 Specifications (Design-Bid-Build only)
 - Final (Design-Bid-Build) or Approved (Design-Build) Divisions 2 through 16 Construction Specifications
 - Final Contract Price Schedule (cost fields blank) (Design-Bid-Build only)
 - Final Contract Price Schedule (cost fields filled in based on Class A Construction Cost Estimate) (Design-Bid-Build only)
 - Approved Product File (Design-Build only)
 - Supplemental Design Reports
 - Final Class A Construction Cost Estimate (Design-Bid-Build only)
 - Final Material Submittal List (Design-Bid-Build only)
 - Final Constructability Checklist (Design-Bid-Build only)
 - Final Closeout and Operation & Maintenance (O&M) Requirements (Design-Bid-Build only)
 - Final (Design-Bid-Build) or Approved (Design-Build) Design Calculations

SUBMITTAL FORMATS (DESIGN-BID-BUILD (DBB) AND DESIGN-BUILD (DB))

Hard-Copy Document Submittal Format

Pre-design, Schematic Design and Request-for-Proposal Submittals

- 8-1/2" x 11" portrait and/or with 11" x 17" fan-fold 1/2 size drawings (reports only), as appropriate.
- Plastic comb or spiral coil bind all hard-copy sections with a cover page, table of contents, numbered pages, and page-dividers that mirror the NPS Workflow sequence. Use cover-stock for cover and back page (Break into volumes as appropriate.).
- Provide NPS Review Form with Responses as an appendix to the document.

Design Development Submittals

In addition to the above the following applies:

- Design Development Drawings (Design-Bid-Build and Design-Build)
 - Drawings shall be half-sized
 - 2 staple bind with black strip binding.
 - No cover stock
 - When appropriate, break drawings into volumes at logical breaking points (i.e. between disciplines).
Each volume shall have a cover sheet with volume number noted and accompanying index sheet.
If applicable, a legend sheet should accompany each volume.
- Division 1 Specifications (Design-Bid-Build only) and Divisions 2 through 16 Outline Specifications (Design-Bid-Build and Design-Build)
 - Bind specifications separate from drawings
 - Provide Table of Contents with Divisions, Specification Section Numbers, Specification Section Titles.
 - Font: Times New Roman 11 point
 - When appropriate, break specifications into volumes at logical breaking points (i.e. between divisions). Cover Sheet shall note volume and divisions included.
- Product File (Design-Bid-Build and Design-Build)
 - Add as appendix to Specifications
- Constructability Analysis (Design-Bid-Build and Design-Build)
 - Add as appendix to Specifications
- Draft Contract Price Schedule (Design-Bid-Build only)
 - Add as appendix to Specifications

- Class B Construction Cost Estimate (Design-Bid-Build only)
 - Add as appendix to Specifications

Construction Documents Submittals

In addition to the above, the following applies:

- Construction Drawings
 - 100% Draft Construction Drawings (Design-Bid-Build and Design-Build)
 - Same format as Design Development Drawings
 - 100% Complete Construction Drawings (Design-Bid-Build and Design-Build)
 - Same format as 100% Draft Construction Drawings
 - Final Construction Drawings (Design-Bid-Build) or Approved Construction Documents (Design-Build)
 - Final or Approved Construction Drawings shall have the following completed prior to Final Submission:
 - All drawing sheets shall be professionally stamped or sealed, as appropriate, and signed by licensed A/E personnel.
 - Contract Solicitation Number (Design-Bid-Build only)
 - The Contract Solicitation Number shall be electronically affixed to the cover sheet.
 - The Contract Solicitation Number will be furnished by the DSC Project Manager upon request.
 - If the project is going to be shelved, the Contract Solicitation Number is not required.
 - Contract Number (Design-Bid-Build only)
 - The Contract Number shall be electronically affixed to the cover sheet.
 - The Contract Number will be furnished by the DSC Project Manager upon request.
 - Full-size Construction Drawings print media requirements:
 - Paper
 - Full-size (ANSI D) 22" x 34" prints, on 20 pound white engineering bond paper, 400 dots per inch resolution.
 - Binding: Separate, unbound
 - Mylar
 - Full-size (ANSI D), 22" x 34" prints, 0.004 inch thickness, 400 dots per inch resolution.
 - Binding: Separate, unbound

- Mylar copies of Final Construction Drawings will be required when a project is expected to be shelved for a time period of 9 months or greater before construction occurs.
- As-Constructed Drawings
 - Same format as full-size Final Construction Drawings (Design-Bid-Build) or Approved Construction Drawings (Design-Build)
 - As-Constructed Drawings are Final Construction Drawings (Design-Bid-Build) or Approved Construction Drawings (Design-Build) that have been updated with all relevant information recorded on record drawings and all other documents developed during construction (i.e. contract modifications, shop drawings, etc.) which modified the original design and now best represents the built project.
 - As-Constructed Drawings shall be printed on mylar per the above Full-size Construction Drawings print media requirements.
- Division 1 Specifications (Design-Bid-Build only) and Divisions 2 through 16 Construction Specifications (Design-Bid-Build and Design-Build)
 - 100% Draft Division 1 Specifications (Design-Bid-Build only) and Divisions 2 through 16 Construction Specifications (Design-Bid-Build and Design-Build)
 - Bind separate from drawings
 - Font: Times New Roman 11 point
 - Paper Size: 8-1/2" x 11" portrait
 - Headers and Footers
 - Headers are not used for NPS Specifications.
 - Footer formatting shall be consistent for all specification sections
 - Spec section number and page number on the right upper corner of the footer (flush right)
 - Spec title in all caps below page number (flush right)
 - Park and PMIS number on the upper left of footer (flush left)
 - Provide Table of Contents with Divisions, Specification Section Numbers, Specification Section Titles and number of sheets in each Specification Section.
 - 100% Complete Division 1 Specifications (Design-Bid-Build only) and Divisions 2 through 16 Construction Specifications (Design-Bid-Build and Design-Build)
 - Same format as 100% Draft Divisions 1 through 16 Construction Specifications
 - Final (Design-Bid-Build) or Approved (Design-Build) Divisions 2 through 16 Construction Specifications
 - Electronic Submission Only
- Contract Price Schedule (Design-Bid-Build only)
 - 100% Draft Construction Documents and 100% Complete Construction Documents

- Add as appendix to Specifications.
- Final Construction Documents
 - Electronic Submission Only
- Product File (Design-Bid-Build and Design-Build)
 - 100% Draft Construction Documents and 100% Complete Construction Documents
 - Include Table of Contents
 - Plastic comb bind separately
 - Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - No Submission Required for Design-Bid-Build
 - Electronic Submission only for Design-Build
- Supplemental Design Reports (Design-Bid-Build and Design-Build)
 - 100% Draft Construction Documents and 100% Complete Construction Documents
 - No Submission Required Unless Otherwise Specified
 - Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - Electronic Submission Only
- Class A Construction Cost Estimate (Design-Bid-Build only)
 - 100% Draft Construction Documents and 100% Complete Construction Documents
 - Add as appendix to Specifications.
 - Final Construction Documents
 - Electronic Submission Only
- Material Submittal List (Design-Bid-Build only)
 - 100% Draft Construction Documents and 100% Complete Construction Documents
 - Add as appendix to Specifications.
 - Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - Electronic Submission Only
- Closeout and Operation & Maintenance (O&M) Requirements (Design-Bid-Build only)
 - 100% Draft Construction Documents and 100% Complete Construction Documents
 - Add as appendix to Specifications.

- Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - Electronic Submission Only
- Constructability Checklist (Design-Bid-Build only)
 - 100% Draft Construction Documents and 100% Complete Construction Documents
 - Add as appendix to Specifications.
 - Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - Electronic Submission Only
- Design Calculations (Design-Bid-Build and Design-Build)
 - 100% Draft Construction Documents and 100% Complete Construction Document
 - Include Table of Contents
 - Plastic comb bind as a separate document
 - Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - Electronic Submission Only

Electronic Document Submittal Format

Software Requirements

- Text Files
 - Use MS Word for text documents.
- Presentation Files
 - Use MS PowerPoint for presentations.
- Spread Sheet Files
 - Use MS Excel for spread sheets.
 - Use MS Excel software or other NPS-approved equivalent estimating software for Construction Cost Estimates.
- Image Files
 - Use JPEG format for photographs.
 - PDF files shall be 300 dots per inch resolution.
- CAD Files
 - Use AutoCAD for drawing files.

Folder and File Requirements

- Folder name shall match Deliverable Submittal Milestone Title (i.e. Final Predesign Documents, Final Schematic Design Documents, Final Construction Documents, Approved Construction Documents, etc.)
- If sub-folders are required, names shall match Deliverable Submittal Component Title (i.e. Construction Drawings, Construction Specifications, etc.)
- File names shall match Deliverable Submittal Component Titles (i.e. Project Program, Class C Construction Cost Estimate, Product File, etc.)
 - Final Schematic Design Documents
 - Development Advisory Board (DAB) Support Documents
 - Final Predesign Documents: Provide each Final Predesign Subcomponent (i.e. Project Program, Cost Comparability Data) as an individual Adobe *.pdf file. Each subcomponent file name shall follow the following naming convention: "Park four letter alpha code (space) PMIS # (space) Date (space) Subcomponent Name.pdf" (i.e. SEKI 005555 11-05-06 Project Program.pdf). All Final Predesign Subcomponents shall be placed in a folder named "Park four letter alpha code (space) PMIS # (space) Date (space) - (space) Final Predesign Documents"(i.e. SEKI 005555 11-05-06 - Final Predesign Documents)
 - Final Schematic Design Documents: Utilize the same format and file/folder naming convention for Final Schematic Design Documents as used above for Final Predesign Documents.
 - Draft Design Development Documents, 100% Draft Construction Documents and 100% Complete Construction Documents (Design-Bid-Build and Design-Build)
 - Drawing Files
 - Each construction drawing shall be an individual AutoCAD file.
 - Each file name should try to best describe the design content of the specific drawing sheet.
 - File names shall not exceed 8 characters excluding the dot and extension.
 - File names shall only include alpha (A-Z), numeric (0-9), spaces, and dashes (-).
 - File names shall include subsheet number (*dash*) and short description (i.e. G01-INDX, E01- PLAN.dwg, C23-PP06.dwg, M16-DETL.dwg). Cover Sheet shall be named COVER.dwg.
 - Each discipline shall have its own folder name.
 - Folder names shall not exceed 2 characters.
 - Folders names shall only include alpha (A-Z), no spaces (i.e. LA, AR, SE, EE, etc.)
 - General sheets, including the cover sheet and index sheet, shall be placed in a folder named G.

- External Reference Files (often called “bases”)
 - All drawing files to be used as external reference (xrefs) files shall begin with an “X” to distinguish it as an xref file. The second letter of xref file names shall refer to the primary discipline of use (i.e. A for architecture, C for civil, L for landscape architecture). The remaining file name characters, not to exceed 6 characters, should be as descriptive as possible in describing the content of the xref drawing (i.e. XA-FLRPL.dwg, XC SITE.dwg, XEXCOND.dwg).
 - All xref and base files shall be in a folder named BASES.
 - All AutoCAD drawings with xrefs shall be created with relative xref paths (i.e. ..\BASES\XAFPLAN.dwg) so that the drawings load directly from CD ROMs.

- Specification Files
 - All Outline Specifications shall be in one individual file.
 - Each Construction Specification Section shall be an individual file.
 - Use 5 digit CSI Section Numbers for file names, except for Outline Specifications which shall be named “Outline Specifications”.
 - Construction Specifications shall have a Table of Contents (CSI Division Titles, Specification CSI Section Numbers, Specification Section Titles, and number of pages per Specification Section)
 - Table of Contents file shall be named “TOC”.
 - Construction Specifications shall have a Cover Sheet. Utilize [Standard NPS Cover Sheet Template](#) for Cover Sheet.
 - Cover Sheet file shall be named “Cover”.

- Final (Design-Bid-Build) or Approved (Design-Build) Construction Documents
 - Drawings Files
 - In addition to the 100% Complete Construction Documents Drawing File requirements, the Final (Design-Bid-Build) or Approved (Design-Build) Construction Drawings shall also have the following incorporated within the files before Final Construction Drawing Printing:
 - Contract Solicitation Number (Design-Bid-Build only):
 - The Contract Solicitation Number shall be added to the Cover Sheet.
 - The Contract Solicitation Number will be furnished by the PM upon request.
 - For projects to be shelved, the Contract Solicitation Number is not required.

- Contract Number (Design-Bid-Build only):
 - The Contract Number shall be added to the Cover Sheet.
 - The Contract Number will be furnished by the PM upon request.
- A/E Stamps and Signatures:
 - All drawing files shall be professionally stamped or sealed, as appropriate, and signed. If electronic stamps/seals and signatures are not permitted in the state where the project is located, non-electronic stamps/seals and signatures shall be applied to all Final Full Size Paper Drawing Prints.
- Specification Files
 - In addition to the 100% Complete Construction Documents Specification File requirements, the Final Construction Specification Files, including Cover Sheet file and Table of Contents file, shall also be provided in PDF file format.

Media Requirements

- All electronic files submitted shall be copied to CD ROM(s).
- CD ROMs shall be formatted single session; finalized disk; Joliet or ISO 9660 Level 2 file system and clearly labeled (electronically printed on CD ROMs) with the following project information:
 - Recipient (i.e. TIC, CS, PM, WASO)
 - Park four-letter alpha code and Drawing Number (ie. SEKI 41,019)
 - PMIS Number (i.e. PMIS 045555)
 - Deliverable Milestone (i.e. Final Pre-Design)
 - Project Title
 - Location within Park (if applicable)
 - Date submitted (i.e. December 14, 2004)
 - Name of A/E Prime Contractor
 - Number of CD ROM/Total number of CD ROMs (i.e. 1/1, 2/3)
- Deliver CD ROMs in Clear Slim Jewel Cases unless otherwise specified.
- 100% Final Predesign Documents and 100% Final Schematic Design Documents CD ROMs for TIC shall be placed in CD ROM page holders and inserted as an appendix to the TIC paper submittal.
- Design Development Drawings, 100% Draft Construction Drawings, and 100% Complete Construction Drawings CD ROMs for both Design-Bid-Build and Design-Build submissions shall be placed in CD ROM page holders and inserted as an appendix to the Construction Specifications.