STRUCTURAL

**DESIGN REVIEW CHECKLIST**

**☑Reviewers should -** Use Checklists when reviewing any type of VA construction project for the following disciplines:

* Architectural,
* Electrical,
* Heating, Ventilating, and Air Conditioning (HVAC),
* Incineration/Solid Waste,
* Plumbing, Fire Protection, and Sanitary,
* Site and Landscape,
* Steam Distribution,
* Steam Generation, and
* Structural.

**☑Reviewers should -** Ensure that A/E Submission Instructions
(PG-18-15) for Schematic, Design Development, and Construction Documents are followed for various types of VA construction projects.

**☑Reviewers should -** Ensure that every VA construction project is in compliance with all life safety issues.

**☑Reviewers should -** Be aware that these checklists are not all-inclusive but only provide minimum review items.

**STRUCTURAL**

**DESIGN REVIEW CHECKLIST**

**TITLE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_PROJECT NO.**

**LOCATION\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE**

**REVIEWED BY**

**ORGANIZATION**

**GENERAL INFORMATION FOR REVIEWERS**

The reviewer should be thoroughly familiar with the following VA standards before conducting a design review. These are available on the CFM Internet Web site: <https://www.cfm.va.gov/til>

| ITEM | DESCRIPTION |
| --- | --- |
| **1.** | **DESIGN MANUALS (PG-18-10)** |
| **2.** | MASTER CONSTRUCTION SPECIFICATIONS (PG-18-1) |
| **3.** | **STANDARD DETAILS (PG-18-4)**  |
| **4.** | **DESIGN AND CONSTRUCTION PROCEDURES (PG-18-3)** |
| **5.** | DESIGN GUIDES (PG-18-12) |
| **6.** | DESIGN ALERTS |
| **7.** | **MINIMUM REQUIREMENTS FOR A/E SUBMISSION (PG-18-15)** |
| **8.** | **VA BIM CAD STANDARDS** |

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**DESIGN REVIEW CHECKLIST**

**TITLE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_PROJECT NO.**

**LOCATION\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE**

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**SCHEMATIC AND DESIGN DEVELOPMENT**

| NO. | STRUCTURAL – SCHEMATIC AND DESIGN DEVELOPMENT ITEM | COMMENTS/YES/NO/NA |
| --- | --- | --- |
| 1 | Compliance with AE submission instructions/requirement (PG 18-15) |  |
| 2 | Structural Narrative – Explain the basis of design  |  |
| 3 | Base isolation method if required for seismic location buildings |  |
| 4 | Building Code & VA Design Criteria |  |
| 5 | Design Parameters (Floor Live Load and wind, Seismic and Soil Bearing Pressure) |  |
| 6 | Geotechnical Report |  |
| 7 | Selected Structural System |  |
|  | a. Steel/Concrete/Other |  |
|  | b. Bay Size |  |
|  | c. High Stress Elements (if any) |  |
| 8 | Lateral Load Resisting System |  |
| 9 | Gravity Load Transfer system |  |
| 10 | Framing Plan for each floor and roof  |  |
| 11 | Foundation System |  |
| 12 | Tentative sizes of columns, beams and slabs in major areas |  |
| 13 | Plans correlated with architectural and mechanical features |  |
| 14 | Typical sections and details to define construction features |  |
| 15 | Detail at exterior walls  |  |
| 16 | Existing Utilities’ Interference (if applicable) |  |
| 17 | Detail at the interface of existing building (if applicable) |  |

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**DESIGN REVIEW CHECKLIST**

**TITLE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_PROJECT NO.**

**LOCATION\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE**

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**CONSTRUCTION DOCUMENTS**

| NO. | STRUCTURAL – CONSTRUCTION DOCUMENTS ITEM | COMMENTS/YES/NO/NA |
| --- | --- | --- |
| 1 | Percent Complete |  |
|  | a. Drawings |  |
|  | b. Specifications |  |
|  | c. Calculations |  |
| 2 | Drawings (Spot Check) Comply with VA Appl Guide |  |
|  | a. Dimensions |  |
|  | b. Size of Beams |  |
|  | c. Size of Columns & Base Plates |  |
|  | d. Size of Steel Decking (Type & Properties) |  |
|  | e. Size of Floor Slab |  |
|  | f. Floor Depressions |  |
|  | g. Floor & Roof Openings |  |
|  | h. Elevation of Top of Beams |  |
|  | i. Beam reactions shown (or addressed otherwise) for steel framing and Transfer/Frame forces necessary for connection design as well (delegated design) |  |
|  | j. Concept of connection details and member reinforcement (steel-delegated design) |  |
|  | k. Lateral force- Resisting system Elements, Locations and Details |  |
|  | l. Expansion Joint Detail (Special attention in seismic areas) |  |
|  | m. Construction Joints & Control Joints |  |
|  | n. Orientation of Columns |  |
|  | o. Foundations |  |
|  | p. Shallow & Deep Foundations-Typical Footing (Size & details including Elevation) |  |
|  | q. Pile Cap (Detail including Cut-off Elevation) |  |
|  | r. Grade beam Details (if applicable) |  |
|  | s. Total Linear Feet of Piles/Caissons |  |
|  | t. Caisson (Detail including Elevation, Top & Bottom) |  |
|  | u. Rock Elevation (Assure classification with Soil Report) |  |
|  | v. Estimate of Quantity of Rock Excavation |  |
|  | w. Water Proofing Detail  |  |
|  | x. Design Parameters (Floor Live Load, Wind, Seismic, & Soil Bearing Pressure) |  |
| 3 | Special Details & Notes (Spot Check) |  |
|  | a. Grades of Steel, Types of Concrete |  |
|  | b. Schedules (Footing, Grade Beam, Column, etc.) complete |  |
|  | c. Reinforcing Details (conform with ACI, including seismic. details) |  |
|  | d. Spacing of bars allow vibrating concrete |  |
|  | e. Connection Details |  |
|  | f. Sleeve Details |  |
|  | g. Shelf Angle Detail |  |
|  | h. Fireproofing Details |  |
|  | i. Pre-cast Panel Design & Details |  |
|  | j. Masonry Wall Anchorage |  |
|  | k. Boring Logs |  |
|  | l. Structural General Notes |  |
|  | m. Special Load Areas Identified |  |
|  | p. Cumulative Loads on Columns  |  |
| 4 | Calculations (Spot Check manually the computer results).  |  |
|  | a. Framed Slab |  |
|  | b. Beam (Unbraced Length) |  |
|  | c. Column (KL/R) |  |
|  | d. Base Plate |  |
|  | e. Foundation (coordinate with Geotechnical Report) |  |
|  | f. Other Design Considerations (L.L. Reduction, Continuity) |  |
|  | g. Deflection (Short & Long Term) |  |
|  | h. Drift (from lateral load analysis compared with allowable) |  |
|  | i. Non-structural Elements Anchorage |  |
|  | j. Lateral Load Analysis |  |
|  | k. Physical Security/Blast Calculations |  |
|  | l. Progressive Collapse |  |
| 5 | Computer Application |  |
|  | a. Computer output summarized for primary load resisting members |  |
|  | b. Computer Program Documentation |  |
| 6 | Ensure that that all review issues have been resolved, and the project files contain information on how each issue was finalized |  |
| 7 | Ensure that the project files contain a final set of structural calculations for future reference  |  |
| 8 | All structural drawings and calculations to show evidence that they have been done and checked by professional structural engineer listed under key personnel in the A/E contract |  |