PLUMBING/FIRE PROTECTION/SANITARY

**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),
* Plumbing, Fire Protection, and Sanitary,
* Site and Landscape,
* Steam Distribution, and
* Steam Generation/

**☑Reviewers should –** Ensure that DESIGN REVIEW 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.

**PLUMBING/ FIRE PROTECTION/ SANITARY**

**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.** | **DESIGN REVIEW SUBMISSION INSTRUCTIONS, PROGRAM GUIDE (PG-18-15)** |
| **8.** | **VA CAD & BIM STANDARD** |

**PLUMBING/ FIRE PROTECTION/ SANITARY**

**DESIGN REVIEW CHECKLIST**

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

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

**REVIEWED BY**

**ORGANIZATION**

**SCHEMATIC 1**

| NO. | PLUMBING – SCHEMATIC 1 ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions. |  | |
| 2 | Is non-structural seismic, hurricane, or major flood protection necessary for this system? If yes, is that included in the design? |  | |
| 3 | Coordinate drawings with other disciplines |  | |

| NO. | FIRE PROTECTION – SCHEMATIC 1 ITEM (Related to Plumbing / Sanitary Engineering) | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions |  | |

| NO. | SANITARY – SCHEMATIC 1 ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions. |  | |
| 2 | Is seismic, hurricane, or major flood protection necessary for this system? If yes, is that included in the design? |  | |
| 3 | Coordinate drawings with other disciplines |  | |

**PLUMBING/ FIRE PROTECTION/ SANITARY**

**DESIGN REVIEW CHECKLIST**

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

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

**REVIEWED BY**

**ORGANIZATION**

**SCHEMATIC 2**

| NO. | PLUMBING – SCHEMATIC 2 ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions below. |  | |
| 2 | Were previous VA comments satisfied? |  | |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures? |  | |
| 4 | Have correct plumbing fixtures been located where required? |  | |
| 5 | Coordinate drawings with other disciplines |  | |
| 6 | Have AE reviewed the incoming water chemistry for any requirement of water treatment for the intended usage in the facility? |  | |

| NO. | FIRE PROTECTION – SCHEMATIC 2 ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions below. |  | |
| 2 | Were previous VA comments satisfied? |  | |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures and Design Manuals? |  | |
| 4 | Coordinate drawings with other disciplines |  | |

| NO. | SANITARY – SCHEMATIC 2 ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions below. |  | |
| 2 | Were previous VA comments satisfied? |  | |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures & Design Manuals? |  | |
| 4 | Is seismic, hurricane, or major flood protection necessary for this system? If yes, is that included in the design? |  | |
| 5 | Coordinate drawings with other disciplines |  | |

**PLUMBING/ FIRE PROTECTION/ SANITARY**

**DESIGN REVIEW CHECKLIST**

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

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

**REVIEWED BY**

**ORGANIZATION**

**DESIGN DEVELOPMENT**

| NO. | PLUMBING – DESIGN DEVELOPMENT ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions. |  |
| 2 | Were previous VA comments satisfied? |  |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures? |  |
| 4 | Have correct plumbing fixtures been located where required? |  |
| 5 | Coordinate drawings with other disciplines |  |
| 6 | Have Legionella Prevention and Eradication measures been addressed for the domestic water supply system? Are the point of use thermostatic mixing valves been provided at each associated fixture? |  |
| 7 | Has the hot water re-circulating loop system provided for water discharge at a minimum of 54.4 deg C [130 deg F] or as necessary to maintain minimal hot-water recirculating of 51.1 deg C [124 deg F] to limit the scald risk and to prevent the growth of bacteria (Legionella)? |  |
| 8 | Are the domestic hot water heaters sized to provide water at 170 to 180 deg. F at a reduced flow for Legionella eradication? |  |
| 9 | Have drawings been prepared in compliance with VA Design & Construction Procedures? |  |
| 10 | Have design calculations been submitted for the following equipment: |  |
|  | a. Medical air compressors & receivers |  |
|  | b. Laboratory air compressors & receivers |  |
|  | c. Dental air compressors & receivers |  |
|  | d. Vacuum pumps & receivers |  |
|  | e. Hot water heaters, accumulator, & circulating pump |  |
|  | f. Fire, sump, & jockey pumps |  |
|  | g. Water treatment equipment |  |
| 11 | Have piping and fixture locations been coordinated with architectural and structural drawings? |  |
| 12 | Have adequate number of isolations shut-off valves been provided for the following piping systems? |  |
|  | a. Water |  |
|  | b. Fuel Gas |  |
|  | c. Medical Gases |  |
| 13 | Are emergency eye wash/showers provided where chemicals and other hazardous materials are handled? |  |
| 14 | Have room names and numbers been provided for floor plans? |  |

| NO. | FIRE PROTECTION – DESIGN DEVELOPMENT ITEM (Related to Plumbing/Sanitary Engineering) | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions. |  |
| 2 | Were previous VA comments satisfied? |  |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures and Design Manuals? |  |
| 4 | Coordinate drawings with other disciplines |  |
| 5 | Have smoke and fire partitions/compartments been indicated on drawings? Do the sprinkler /fire zones match the compartments indicated ? |  |
| 6 | Are shut-off valves and drains provided at base of fire standpipes? |  |
| 7 | Have calculations been provided for fire supply lines and fire standpipes? |  |

| NO. | SANITARY – DESIGN DEVELOPMENT ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions at bottom of this sheet. |  |
| 2 | Were previous VA comments satisfied? |  |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures & Design Manuals? |  |
| 4 | Coordinate drawings with other disciplines |  |
| 5 | Have design calculations been submitted for the following systems: |  |
|  | a. Sanitary sewerage |  |
|  | b. Sewage treatment |  |
|  | c. Cathodic protection |  |
| 6 | Are sanitary drawings coordinated with plumbing, electrical site, steam site, and landscape drawings? |  |

**PLUMBING/ FIRE PROTECTION/ SANITARY**

**DESIGN REVIEW CHECKLIST**

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

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

**REVIEWED BY**

**ORGANIZATION**

**CONSTRUCTION DOCUMENTS**

| NO. | | | PLUMBING - CONSTRUCTION DOCUMENTS ITEM | COMMENTS/  YES/NO/NA | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | | | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions. |  | | | | |
| 2 | | | Were previous VA comments satisfied? |  | | | | |
| 3 | | | Have drawings been prepared in compliance with VA Design & Construction Procedures? |  | | | | |
| 4 | | | Have design calculations been submitted for the following systems: |  | | | | |
|  | | | a. Soil, waste, & vent |  | | | | |
|  | | | b. Roof drainage |  | | | | |
|  | | | c. Domestic cold water |  | | | | |
|  | | | d. Domestic hot water & return |  | | | | |
|  | | | e. Hot water generation |  | | | | |
|  | | | f. Reagent grade water |  | | | | |
|  | | | g. Fuel gas |  | | | | |
|  | | | h. Oxygen |  | | | | |
|  | | | i. Vacuum |  | | | | |
|  | | | j. Medical air |  | | | | |
|  | | | k. Nitrous Oxide |  | | | | |
|  | | | l. Nitrogen |  | | | | |
|  | | | m. Laboratory air |  | | | | |
|  | | | n. Laboratory vacuum |  | | | | |
|  | | | o. Dental air |  | | | | |
|  | | | p. Oral Evacuation |  | | | | |
|  | | | q. Shop air |  | | | | |
|  | | | r. Therapeutic pool |  | | | | |
| 5 | | | Do drawings indicate locations, sizes, & capacities of: |  | | | | |
|  | | | a. Medical air compressors & receivers |  | | | | |
|  | | | b. Laboratory air compressors & receivers |  | | | | |
|  | | | c. Dental air compressors & receivers |  | | | | |
|  | | | d. Vacuum pumps & receivers |  | | | | |
|  | | | e. Hot water heaters, accumulator, & circulating pump |  | | |
|  | | | f. Sumps & pumps |  | | |
|  | | | g. Water treatment equipment |  | | |
| 6 | | | Do plumbing fixture numbers agree with those provided in contract specifications? |  | | |
| 7 | | | Have correct plumbing fixtures been located where required? |  | | |
| 8 | | | Has adequate wall space been provided for piping to serve wall-hung fixtures and back-to-back fixtures? |  | | |
| 9 | | | Has location, size, and invert or centerline elevations of sanitary and storm sewers, water and fuel gas lines been coordinated with civil/sanitary engineer? |  | | |
| 10 | | | Do "P" numbers provided for plumbing fixtures on drawings match those indicated in specifications? |  | | |
| 11 | | | Have piping and fixture locations been coordinated with architectural and structural drawings? |  | | |
| 12 | | | Has freeze protection been considered for water piping? |  | | |
| 13 | | | Are floor drains correctly located and sized? |  | | |
| 14 | | | Are roof drains correctly located and sized? |  | | |
| 15 | | | Has location and number of cylinders of nitrous oxide manifold been indicated? |  | | |
| 16 | | | Has location and number of cylinders of inside oxygen manifold been indicated? |  | | |
| 17 | | | Has exterior oxygen storage pad been indicated? |  | | |
| 18 | | | Has location of medical gas alarm panels been shown? |  | | |
| 19 | | | Have pressure failure switches for oxygen, nitrous oxide, vacuum, and compressed air systems been indicated and coordinated with electrical? |  | | |
| 20 | | | Are fuel oil tanks for emergency generators provided? |  | | |
| 21 | | | Have balancing valves been provided in the domestic hot water system? |  | | |
| 22 | | | Are emergency eye wash/showers provided where chemicals and other hazardous materials are handled? |  | |
| 23 | | | Have room names and numbers been provided for floor plans? |  | |
| 24 | | | Have floor numbers, floor heights, and plumbing fixture numbers been shown on all riser diagrams? |  | |
| 25 | | | Have adequate number of isolation shut-off valves been provided for the following piping systems? |  | |
|  | | | a. Water |  | |
|  | | | b. Fuel Gas |  | |
|  | | | c. Medical Gases |  | |
| 26 | | | Have backflow prevention valves been installed in potable and non-potable water distribution systems |  | |
| 27 | | | Are acid waste and vent piping and neutralization/dilution tanks necessary? |  | |
| 28 | | | Are all plumbing items provided in specifications? |  | |
| 29 | | | Has type, speed, horsepower, and capacity of pumps and compressors been provided on drawings? |  | |
| 30 | | | Have necessary details been provided? |  | |
| 31 | | | Have riser diagrams been provided for the following systems? |  | |
|  | | | a. Soil, waste, & vent |  | |
|  | | | b. Cold water |  | |
|  | | | c. Hot water & return |  | |
|  | | | d. Reagent grade water |  | |
|  | | | e. Oxygen |  | |
|  | | | f. Medical air |  | |
|  | | | g. Vacuum |  | |
|  | | | h. Dental air |  | |
|  | | | i. Oral evacuation |  | |
|  | j. Shop air | | |  |
|  | k. Fuel gas | | |  |
|  | l. Nitrous oxide | | |  |
|  | m. Nitrogen | | |  |
|  | n. Roof drainage | | |  |
| 32 | Coordinate drawings with other disciplines | | |  |

|  |  |  |
| --- | --- | --- |
| NO. | FIRE PROTECTION – CONSTRUCTION DOCUMENT ITEM (Related to Plumbing/Sanitary Engineering) | COMMENTS/  YES/NO/NA |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions. |  | |
| 2 | Were previous VA comments satisfied? |  | |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures and Design Manuals? |  | |
| 4 | Have smoke and fire partitions been indicated on drawings? |  | |
| 5 | Have fire densities been indicated on drawings |  | |
| 6 | Have fire supply lines and fire standpipes been indicated? |  | |
| 7 | Are shut-off valves and drains provided at base of fire standpipes? |  | |
| 8 | Are all fire protection items provided in specifications? |  | |
| 9 | Coordinate drawings with other disciplines |  | |

| NO. | SANITARY – CONSTRUCTION DOCUMENT ITEM | COMMENTS/  YES/NO/NA |
| --- | --- | --- |
| 1 | Have DESIGN REVIEW Submission Requirements (PG-18-15) for this review been met? If not, list omissions at bottom of this sheet. |  | |
| 2 | Were previous VA comments satisfied? |  | |
| 3 | Have drawings been prepared in compliance with VA Design & Construction Procedures & Design Manuals? |  | |
| 4 | Have design calculations been submitted for the following systems: |  | |
|  | a. Sanitary sewerage |  | |
|  | b. Sewage treatment |  | |
| 5 | Are sanitary drawings coordinated with plumbing, electrical site, steam site, and landscape drawings? |  | |
| 6 | Coordinate drawings with other disciplines |  | |