

Quality Assessment

DEVELOPMENT CHECKLIST

Instructions:

- The PM will provide a copy of the Quality Assessment (QA) Development and Construction Checklists to the Project Architect (PA) and General Contractor (GC) during the identified project process step.
- The PA has prime responsibility for quality assurance on the project.
- The PA should ensure completion of both QA checklists with the assistance of the GC.
- These checklists are to be used throughout the duration of the project.
- The PM ensures that the QA checklists are applied during all new construction projects and that all required verification information is gathered and filed upon completion of the project.

QA Checklist requirements and responsibilities:

- The PA reviews each of the QA checklist items with the assistance of the GC and uses the indicated Verification Criteria to verify that each item has been completed correctly.
- The PA & GC provides the requested evidence (photographs, field reports, test results, record drawings, contract documentation, etc.) verifying compliance.
- The PA provides both completed QA checklists and documented evidence to the PM at the completion of the project.

The checklists and documentation serve as a basis for the project Quality Assessment (QA) review. All documentation should be brought to the QA review. This information is critical for an effective QA assessment and any missing or incomplete information may negatively impact the QA score.

Item Number	Discipline Name	Training Item #	Item	Verification Criteria
1	CIVIL	1	Building is sited properly to ensure positive drainage away from building pad and building entrances.	<p>Verification Criteria</p> <p>Verify that the site/civil drawings show contours and elevations for draining water away from building. The grade should slope downward 4% for the first 12' (1/2 inch per foot) away from the building. Grades adjacent to the building should be 6" lower than the interior floor elevation.</p> <p>Verify that the site/civil drawings show contours and elevations for draining water away from entrances. The grade should slope downward 1% (minimum) and 2% (maximum) at doors, for width of doors.</p> <p>For handicap accessibility, limit slopes to 5% on sidewalks, 8.3% on ramps, or as required by local codes.</p>
2	CIVIL	2	Site design minimizes slope of entrance driveways.	<p>Verification Criteria</p> <p>Verify that the site/civil drawings show contours and elevations that minimize slopes at entrance driveways. At entrance driveways, the slope should not exceed 5%; 8% is acceptable occasionally, with project manager approval.</p>
3	CIVIL	3	Site design provides minimum positive slopes required at landscaped and paved areas for water drainage.	<p>Verification Criteria</p> <p>Verify that site/civil drawings show contours and elevations that provide minimum slopes at landscaped and paved areas to provide adequate water drainage. At landscaped areas, the slope should not exceed 2 horizontal to 1 vertical. At lawn areas, the slope should not exceed 3 horizontal to 1 vertical.</p> <ul style="list-style-type: none"> • The minimum slope of gutters to catch basins should be .5%. The maximum slope should be 8%. • At asphalt paved areas, the minimum slope should be 2%. At concrete paved areas, the minimum slope should be 1%. The maximum slope should be 5%.
4	CIVIL	4	The recommendations of the geotechnical report have been incorporated into design requirements for earthwork and pavement.	<p>Verification Criteria</p> <p>Verify that the letter from the geotechnical engineer has been provided, confirm that the recommendations of the geotechnical report have been incorporated into the contract documents.</p> <ul style="list-style-type: none"> • This is required per Section 6.C.5.m of the Agreement Between Owner and Architect

5	CIVIL	5	Concrete strength and mix design are matched to local conditions.	<p>Verification Criteria The requirements for concrete are clearly indicated in the contract documents and matched to local conditions:</p> <ul style="list-style-type: none"> • It should be 3,000 psi (Concrete Mix Type A) unless the geotechnical report requires otherwise • For exterior concrete in areas of freeze thaw, the concrete strength in the Schedule of Construction Materials in the structural drawings should be 4,500 psi (Concrete Mix Type D)
6	CIVIL	6	Pavement mix design is matched to local conditions, materials and methods.	<p>Verification Criteria Verify that paving mix design has been site adapted.</p> <p>For asphalt: 1. Provide the specification used for the project. 2. For a Marshall or Hveem Mix Design, verify the standard viscosity grades in Specification Section 2.1.E.1.a of 32 1216 are: a. Cold climates - AC5 b. Moderate climatic conditions - AC10 c. Hot climatic conditions - AC20 3. For a Superpave Mix Design, verify the performance grade of the asphalt has been inserted in Specification Section 2.2.C. of 32 1216.</p> <p>For concrete: Verify that a minimum paving thickness for the project has been selected in Specification Section 3.2.B.1 of 32 1313.</p>
7	CIVIL	7	Site improvements minimize cut and fill requirements.	<p>Verification Criteria Verify that the building placement minimizes cut and fill requirements:</p> <ul style="list-style-type: none"> • Future additions are accommodated in the plan • The use of retaining walls is minimized • Good visibility of the building from the road is provided
8	LANDSCAPE	1	The landscape architect has provided and completed the required tables on the planting plan.	<p>Verification Criteria Verify on landscape planting plan that the plant coverage Design Criteria and Landscape Data tables have been provided and the information is complete.</p>
9	LANDSCAPE	2	Recommended plant coverage amounts as required by prototypical planting plans and local jurisdiction have been followed.	<p>Verification Criteria Landscape planting plan design complies with landscape requirements identified in prototypical planting plan and as modified to meet local jurisdiction requirements.</p>
10	LANDSCAPE	3	Landscape elements are appropriate per AEC Design Guidelines and local jurisdiction requirements.	<p>Verification Criteria Planting plan design complies with landscape requirements identified in AEC Design Guideline Table 4.2 and as modified based on local jurisdiction requirements.</p>
11	LANDSCAPE	4	Lawn areas have been minimized and do not exceed the standard lawn area maximum percentage.	<p>Verification Criteria Landscape planting plan lawn area percentage does not exceed lawn area percentage found in AEC Design Guideline Table 4.2.</p>
12	LANDSCAPE	5	Irrigation system is appropriate per AEC Design Guidelines and local jurisdiction requirements.	<p>Verification Criteria Landscape irrigation plan irrigation system matches irrigation elements identified in AEC Design Guideline Table 4.2 and as modified based on local jurisdiction requirements.</p>
13	LANDSCAPE	6	Meetinghouse Site Management Plan (MSMP) including Topsoil Testing Report was prepared by landscape architect and appropriate FM training completed.	<p>Verification Criteria Review MSMP to verify that: 1. Document follows standard format and is completed. 2. FM and subcontractor have signed the Plant Establishment Period and training verification section of the document.</p>

14	ARCHITECTURAL	1	Final site layout adequately accommodates targeted needs, including planned future needs for phased buildings with minimal acreage developed and any possible excess acreage created for disposition.	<p>Verification Criteria</p> <p>1. Verify by review of site development plan in comparison to following typical minimum site sizes:</p> <p>IND: 3.64 acres min. with 300 ft frontage HER 09T: 2.71 acres min. with 325 ft frontage HER 98: 2.54 acres min. with 276 ft frontage FAY 170-2/230-2: 1.86 acres min. with 286 ft. frontage FAY 230-3: 2.25 acres min. with 286 ft. frontage SHA 90/130: 1.10 acres min. with 220 ft. frontage</p> <p>2. Review defensible documentation explaining any over-development of site, such as, evidence from local jurisdiction unalterably mandating additional development, where applicable.</p>														
15	ARCHITECTURAL	2	Carpet, sisal, wall coverings, folding partitions, and plastic laminate comply with standard color scheme options.	<p>Verification Criteria</p> <p>Verify that the specifications have been edited to reflect the pre-set color scheme selected for the project and that no substitutions have been made. See specification sections 06 4005, 09 6816, 09 7216, 09 7226, and 10 2226.</p>														
16	ARCHITECTURAL	3	Ceramic tile and metal toilet partitions comply with standard color scheme options.	<p>Verification Criteria</p> <p>Verify specifications have been edited per approved colors only. See specification sections 09 3013 and 10 2113.</p>														
17	ARCHITECTURAL	4	Exterior architectural design reflects the Church image and cost standards with approved materials.	<p>Verification Criteria</p> <p>1. Verify that exterior elevation drawings utilize approved standard materials (such as brick, EIFS and siding). 2. Where any non-standard materials have been utilized, verify of documented cost, life and maintenance analysis that substituted materials are defensible in comparison with approved materials.</p>														
18	ARCHITECTURAL	5	Vehicle access to the site provides convenient entry and exiting with efficient on-site traffic flow.	<p>Verification Criteria</p> <p>Verify that site development plan property access provides safe and adequate traffic entry and exiting with smooth traffic circulation through parking areas and without dead-end driveways; no driveway is located within the area projected perpendicular to property line from the building facade containing chapel end wall.</p>														
19	ARCHITECTURAL	6	Parking layout accommodates the recommended range of parking spaces based on the capacity of the building.	<p>Verification Criteria</p> <p>Verify by review of site development plan that the number of parking spaces complies with the following ranges:</p> <table border="0"> <tr> <td>Ind 50: 15-25</td> <td>HER 98: 130-170</td> </tr> <tr> <td>Ind 90: 25-40</td> <td>LEG 98: 220-280</td> </tr> <tr> <td>Ind 130: 40-55</td> <td>SHA 90: 30-40</td> </tr> <tr> <td>Ind 170: 55-70</td> <td>SHA 130: 50-70</td> </tr> <tr> <td>Ind 230: 130-180</td> <td>FAY 170: 80-90</td> </tr> <tr> <td>Ind 300: 150-200</td> <td>FAY 230-3: 130-170</td> </tr> <tr> <td>H09T 300: 150-200</td> <td>H09TSC & Ind 230/300 SC: 210-240</td> </tr> </table> <p>Sites that exceed these ranges require documented PFAC approval or Annual Plan approval per Area Presidency Strategy & Key Assumptions.</p>	Ind 50: 15-25	HER 98: 130-170	Ind 90: 25-40	LEG 98: 220-280	Ind 130: 40-55	SHA 90: 30-40	Ind 170: 55-70	SHA 130: 50-70	Ind 230: 130-180	FAY 170: 80-90	Ind 300: 150-200	FAY 230-3: 130-170	H09T 300: 150-200	H09TSC & Ind 230/300 SC: 210-240
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20	ARCHITECTURAL	7	Location and number of accessible parking spaces and accessible building entrances comply with accessibility requirements.	<p>Verification Criteria</p> <p>Verify that site development plan shows at least 60% of building entrances meet accessibility requirements (IBC 1105) with the use of ramps, sloped walks, etc. and that accessible parking spaces are located convenient to these entrances.</p>														
21	ARCHITECTURAL	8	Building is oriented with chapel end wall facing the primary street and located within the standard frontage setback range.	<p>Verification Criteria</p> <p>Verify that site development plan shows building front setback is between 30 – 40 feet for a Sharon and 40 – 50 feet for a Fayette, Heritage and Legacy meetinghouse to avoid long access roads on site and to minimize site development costs.</p>														
22	ARCHITECTURAL	9	Meetinghouse identification sign has been located to provide maximum visibility from the street.	<p>Verification Criteria</p> <p>1. Verify that site development plan and/or building elevation sheet shows sign has been located to provide maximum visibility from the street (preferred location is building mounted). Sign is not to be surrounded with brick soldier courses, framing or other features. 2. Sign is not hidden by landscaping.</p>														

23	ARCHITECTURAL	10	Site has been properly fenced without vehicular and/or pedestrian access openings to neighboring properties.	<p>Verification Criteria</p> <p>Verify by review of site development plan that the standard chain link enclosure fence has been provided without gates or openings along interior property lines that do not face street frontage. Review defensible evidence from local jurisdiction requiring any non-standard openings in property enclosure fence or use of any other fence material, where applicable.</p>
24	STRUCTURAL	1	Structural system design is adapted for local snow, wind, and seismic conditions.	<p>Verification Criteria</p> <p>Verify that the design criteria in the Design Criteria Table and the Schedule of Construction Materials that the project is site adapted.</p> <p>For example:</p> <ul style="list-style-type: none"> • Verify that the 30 psf snow load has been changed to 20 psf live load in areas where there are no roof snow loads • Verify that the 30 psf snow load has been changed to a greater value in areas where roof snow loads exceed 30 psf • Verify that the phrase "TO BE VERIFIED BY SOILS REPORT" has been removed • Verify in the Schedule of Construction Materials there is only one line of requirements for "EXTERIOR CONCRETE"
25	STRUCTURAL	2	Foundation system and allowable bearing pressure, as recommended by the geotechnical report, are incorporated into the contract documents.	<p>Verification Criteria</p> <p>Verify by review of the Design Criteria Table that the foundation system type and the allowable soil bearing pressure used matches that recommended by the geotechnical report.</p> <p>For example:</p> <ul style="list-style-type: none"> • If the geotechnical report recommends drilled piers, verify the foundation plan indicates drilled piers • If the geotechnical report recommends "geopiers", verify the foundation plan indicates "geopiers" • If the geotechnical report recommends 2000 psf allowable soil bearing pressure, verify this is reflected in the Design Criteria Table
26	STRUCTURAL	3	Footing and foundation plan or footing details clearly indicates the required top of footing elevations.	<p>Verification Criteria</p> <p>Verify that the top of footing elevations are shown on the footing and foundation plan or in the footing details.</p>
27	STRUCTURAL	4	Civil / Structural testing and inspection requirements are established.	<p>Verification Criteria</p> <p>Verify by review of the agreement between the owner and the testing agency that the testing and inspection requirements are provided.</p> <p>For example:</p> <ul style="list-style-type: none"> • Engineered fill (required by code whenever used) • Asphalt paving (not required by code but required by owner per Civil and Structural Testing & Inspection Guidelines) • Concrete (not required by code, but required on some project sizes) • Wood (there should be no tests or inspections for wood unless nails have been spaced at less than 4" on center) • Masonry (there should be no tests or inspections for masonry) • Steel components (there should be no tests or inspections for steel)
28	FIRE PROTECTION	1	Seismic gas valve is included in project, if applicable.	<p>Verification Criteria</p> <p>Verify by review of the Seismic Design Category in the Design Criteria table of structural drawings. Valve is not required if Seismic Design Category is A, B or C. Valve is required if Seismic Design Category is D, E, or F.</p>
29	FIRE PROTECTION	2	Thermal envelope design and location has not been altered.	<p>Verification Criteria</p> <p>Verify on building sections that gypsum board is shown on bottom chord of trusses and that all joints and penetrations through thermal envelope are noted to be sealed.</p>

30	FIRE PROTECTION	3	Anti-freeze (glycol) protection to be at least 10° F. below winter design conditions.	<p>Verification Criteria Verify that specification, Section 21 1313 has been modified to include only those glycol percent concentrations that will protect the system to at least 10° F. below winter design conditions. Winter design conditions are found on sheet M1.1.</p> <p>For example: the Standard Plan shows a winter design temperature of 0° F. which means the only propylene glycol percent by weight values listed should be 40% and greater.</p>
31	MECHANICAL	1	HVAC system design is adapted for local design conditions.	<p>Verification Criteria Verify that local design conditions are shown on sheet M1.1 of the mechanical drawings. The Standard Plan shows a winter design temperature of 0° F. and a summer design temperature of 101° F. These temperatures should be edited for the project.</p>
32	MECHANICAL	2	Control equipment distributors list in the specification has been edited for the project.	<p>Verification Criteria Verify that the distributors list in the specification Section 23 0933 has been shortened for the project.</p>
33	ELECTRICAL	1	Electrical service transformer and metering equipment are located to minimize visual impact.	<p>Verification Criteria Review that the installation is at least 40 feet from center line of main entrance (subject to local power company requirements).</p>
34	ELECTRICAL	2	Parking area lighting layout meets AEC Design Guidelines and avoids light trespass.	<p>Verification Criteria Review pole heights (should be 18'), locations (should not be on outside perimeter of parking area), and type of lighting fixtures (should be cut-off type) are per AEC Design Guidelines.</p>
35	ELECTRICAL	3	The chapel pendant light fixtures are per the approved standard.	<p>Verification Criteria Review chapel pendant lighting and verify that bowls are white with single trim ring, finial, aircraft cable suspension, and brushed aluminum finish.</p>
36	SOUND	1	Satellite dishes have been located to optimize satellite look angle.	<p>Verification Criteria Verify on landscape planting plan that no part of satellite dish is blocked by fence, wall, landscaping (current or future growth), or other structure.</p>
37	Spare			