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Unit Masonry

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A. Summary

This section contains general design criteria for unit masonry, including brick veneer, concrete masonry, and masonry repair and remodeling of existing construction.

B. Materials

1. Provide severe weathering grade, type FBS brick that conforms to ASTM C216 standards, or that necessary to match existing brick units. Use type FBX brick where a high degree of mechanical perfection is required.
2. Provide C90 Type 1, Grade N concrete masonry units of normal weight that conform to ASTM C145 standards. The unit face size must be 7-5/8" by 15-5/8" and of thickness required by the design. Masonry units at fire rated partitions must conform to ASTM C129 standards.
 - a. Use split-faced block by Plasticrete Architectural Products or an approved equivalent.
 - b. Use ground-faced block by Plasticrete Architectural Products, Trenwyth Industries Inc., or an approved equivalent.
 - c. Glazed block must conform to ASTM C744 standards. Use Spectra-Glaze II by Burns and Russell Co., Astra-Glaze by Trenwyth Industries Inc., or an approved equivalent.
3. Provide mortar that conforms to ASTM C270 standards. Use Portland Type N cement-lime mortar above grade and Type M below grade. Use other types as required by the application. The use of masonry cement mortar is not permitted.



4. Provide reinforcing as follows:
 - a. Provide hot-dipped galvanized ties and reinforcing that conforms to ASTM A 153 standards.
 - b. Provide welded, truss-type horizontal reinforcing with 9-gauge wire and deformed side rods.
 - c. Provide two-piece, horizontal reinforcing brick-to-concrete masonry ties with 3/16" diameter, tab-type, adjustable drip ties.
 - d. Provide masonry-to-concrete ties with 24-gauge steel dovetail slots, fillers, and 1" wide, 16-gauge corrugated steel anchors.
 - e. Provide 3/16" diameter masonry-to-steel ties. Provide two-piece steel wire ties for lateral restraint, and for horizontal and vertical movement.
 - f. Provide DW-10 brick-to-metal stud ties by Hohmann & Barnard or an approved equivalent, consisting of 3/16" diameter vee ties with drip and 12-gauge wall slots.
 - g. Provide Grade 60 deformed reinforcing bars that conform to ASTM A 615 standards.

C. Installation Guidelines

1. Install masonry within tolerances of $\pm 1/8"$ in 20' from dimensions and locations in the contract documents for plumb, level, and alignment.
2. Lay exposed face brick in bonds required by the design or to match existing masonry. Concrete masonry units may be laid in running or stacked bond as required by the design.
3. Maintain joints of a uniform 3/8" width as required by the design. Tool concave joints or as required by the design. Provide full bed, head and collar joints, except at weep holes. Provide a clean cavity in cavity wall construction.
4. Provide weep holes by placing fully open head joints at 2' on center above all ledges, flashings, and lintels. Fill then cavity 8" high with weep baffle material.
5. Provide expansion joints no greater than 30' on center.
6. Reinforce all concrete masonry partitions.
7. Clean all traces of excess mortar/grout efflorescence and other construction stains from new exposed masonry surfaces.

End of Section



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Masonry Restoration and Cleaning

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A. Summary

This section contains general design criteria for masonry restoration and cleaning.

B. System Design and Performance Requirements

1. The preservation of Yale University's historic masonry buildings is critical to maintaining the character of the campus. When undertaking masonry restoration and cleaning, use extreme care to renew and extend the life of these buildings. Specify the minimum possible treatment necessary to attain a clean masonry surface.
2. Refer to the National Park Service publication, "Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing,"
3. During the design phase, review products and methods for masonry cleaners, pointing, and color of mortar with Yale University.

C. Submittals

Submit a list of cleaning products and methods to Yale University, and specify the recommended mortar color.



D. Special Requirements

Masonry restoration and cleaning may entail unforeseen changes in the work. To maintain fair pricing to Yale University for changes in construction work, the bid documents should contain a bid schedule of anticipated types of work (by architect), unit prices (by contractor), anticipated quantities (by architect), the cost of work (by contractor), additional work unit prices (by contractor), verified final quantities, and the final cost of work. This bid schedule enables adjustments, based on quantity, to fairly compensate for increases or decreases in the scope of work. The owner, architect, and contractor must document and agree on the final scope of work.

E. Restoration and Cleaning Guidelines

Take the necessary precautions to protect adjacent materials, buildings, and people in the area from masonry restoration and cleaning activities. Refer to environmental, health, and safety dust control measures.

- Use wet methods or vacuum systems to minimize dust.
- Control dust at the building exterior and at air intakes to the building's ventilation system.
- Seal all openings in the building envelope, including windows and doors, during dusty operations.
- When the HVAC systems allows, the building air pressure should be positive to keep dust from infiltrating through windows and doors.

F. Quality Control

Masonry restoration contractors must provide Yale University with evidence of similar work and must have at least five years experience.

End of Section



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