

SUPPLEMENTAL INFORMATION

HORIZONTAL SURFACES / STONE STAIR TREADS

SECTION 1. INTRODUCTION

1.01 Installation Methods. Stone stair treads can be installed by several methods, each dependent upon the design detail. Consideration should be given to the various features of each method in making a selection for a specific installation. (See Data Sheet Installation section and illustrations of installation examples at the close of this section).

SECTION 2. DESIGN CRITERIA

2.01 Final design should always be based on physical properties of the stone to be used. If the open-tread detail is planned utilizing the stone tread as a structural member spanning the stringers, the thickness should be developed by an Engineer based on the strength properties furnished by the Stone Supplier.

2.02 Slip Resistance. Slip resistant strips or filled grooves are recommended in heavy- traffic areas. These can be specified as shop fabricated or field installed per applicable code or building requirements.

2.03 Deflection. The backup for stone steps must be of limited (<L/720) deflection for installation of thin (1-1/4" or less) treads. If there is greater deflection, the thickness of the tread is determined by calculating the load and ensuring that the flexural strength (ASTM C880) of the stone is sufficient to resist the load, including a safety factor. In any event, the minimum recommended thickness is 1-1/4" for treads and 3/4" for risers.

2.04 Traffic after Installation. After the stone treads have been installed, the General Contractor must keep all traffic off the treads for at least 48 hours. No heavy traffic should be permitted on newly installed treads for at least two weeks.

2.05 Thin stone (1/2" and under) treads and risers may be installed using a thin-set Portland cement mortar bed over clean and level concrete subtreads or double layers of 3/4" plywood installed in opposite directions with 1/8" gaps between sheets. These types of applications will not withstand high impact or wheel loads. No overhang is permitted when stones of this thickness are used.

2.06 White Portland cement is recommended as a setting bed for light- colored granite and marble. White Portland cement with a low alkali content is recommended for limestone.

For additional information, refer to Chapter 13, INSTALLATION - GENERAL INFORMATION.

2.07 Geographic Methods. Some installation methods and materials are not recognized and may not be suitable in some geographical areas because of local trade practices, building codes, climatic conditions, or construction methods. Therefore, while every effort has been made to produce accurate guidelines, local building codes should be consulted for compliance.

SECTION 3. PRODUCT DESCRIPTION

3.01 Basic Use. Horizontal top part of a step in a staircase.

3.02 Limitations. Only varieties having a minimum abrasive hardness (H) of 12.0 or a more, as measured by ASTM C241, are recommended.

3.03 Finishes. Honed, polished, abrasive, thermal, and natural cleft for interior uses; rough, textured, abrasive, thermal, honed, and natural cleft for exterior uses.

3.04 Colors. Most of the commercially available varieties.

3.05 Sizes. Tread thicknesses of 3/4", 1-1/4", and 1-1/2" for interior uses. Thicknesses of 1-1/2", 2" and cubic (greater than 2") for exterior. Risers may be 3/4" or 1-1/4" thick.

SECTION 4. TECHNICAL DATA

4.01 Each stone variety used for stone stair treads should conform to the applicable ASTM standard specification and the physical requirements contained therein. The specification for each stone type follows:

- 1. Granite:** ASTM C615 Standard Specification for Granite Dimension Stone

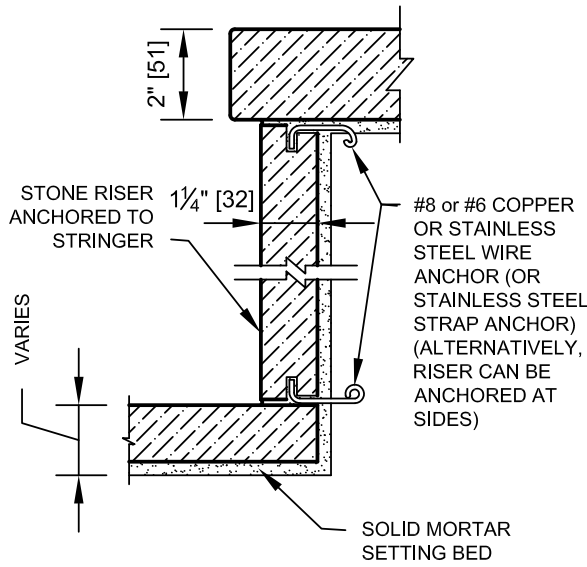
SECTION 5. INSTALLATION

5.01 Methods. Stone stair treads may be installed in a cement mortar bed, or in a thin- set cement mortar bed, over a subtread, or supported by stringers. (See detail illustrations at the close of this section).

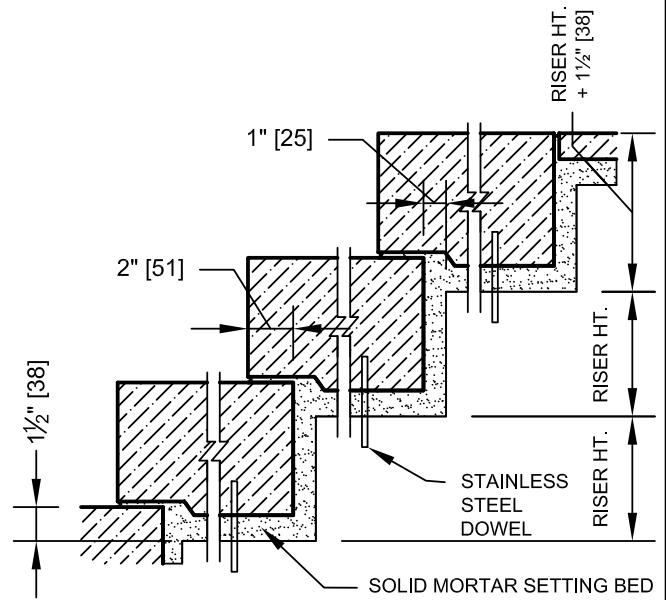
1. 100% coverage of mortar bed material between tread and subtread is desirable.
2. Risers 3/4" or thicker must be anchored with wire or stainless steel strap anchors. If risers thinner than 3/4" are used, they may be installed using the thin-bed Portland cement mortar method.

5.02 General Precaution. During construction, the General Contractor shall protect all stone from staining or damage.

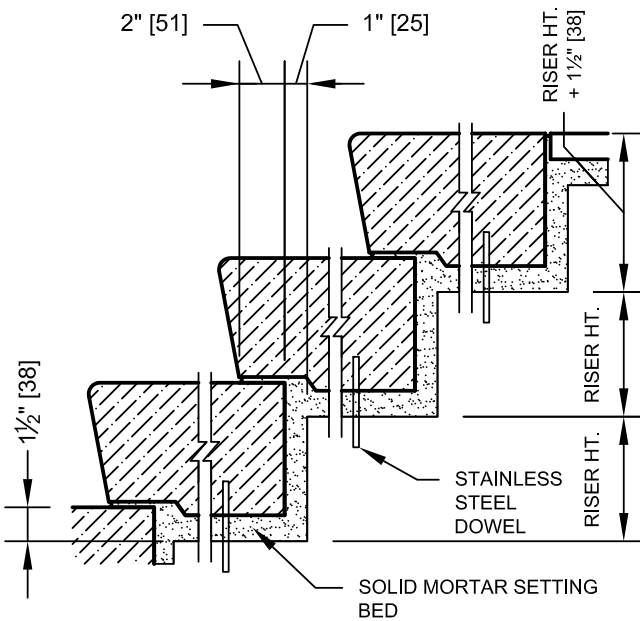
SUPPLEMENTAL INFORMATION HORIZONTAL SURFACES / STONE STAIR TREADS



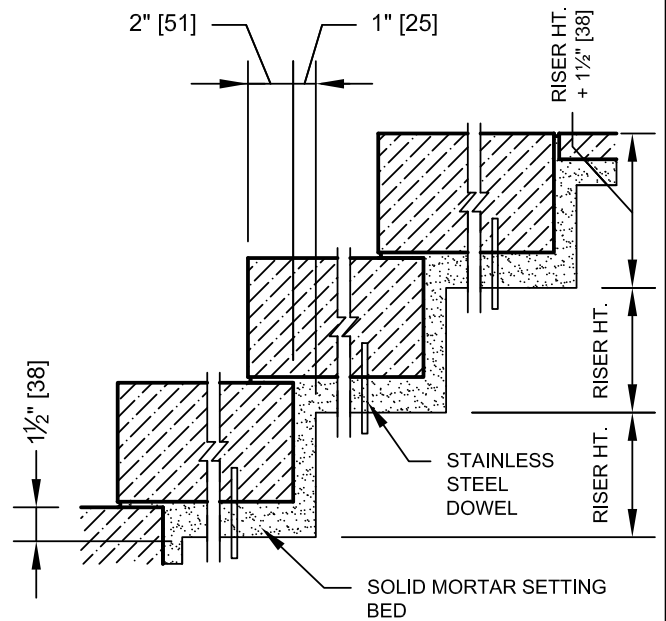
1 VENEERED STEP DETAIL
SCALE: 3" = 1'-0" (1:4)



2 CUBIC STEP DETAIL
SCALE: 1 1/2" = 1'-0" (1:8)



3 CUBIC STEP DETAIL
SCALE: 1 1/2" = 1'-0" (1:8)



4 CUBIC STEP DETAIL
SCALE: 1 1/2" = 1'-0" (1:8)

NOTES: 1. A ROUGH OR TEXTURED FINISH IS RECOMMENDED FOR EXTERIOR USAGE.
2. MINIMUM ABRASION RESISTANCE OF 12.0 (TESTED PER ASTM C 241) IS RECOMMENDED FOR STONE TREADS.



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REV	DATE
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1	Oct 2006
2	Dec 2009

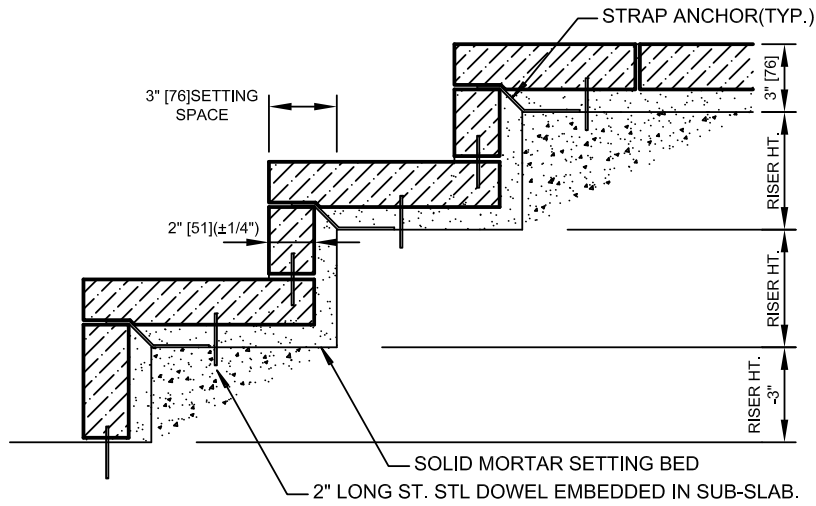
STONE STAIR TREAD DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

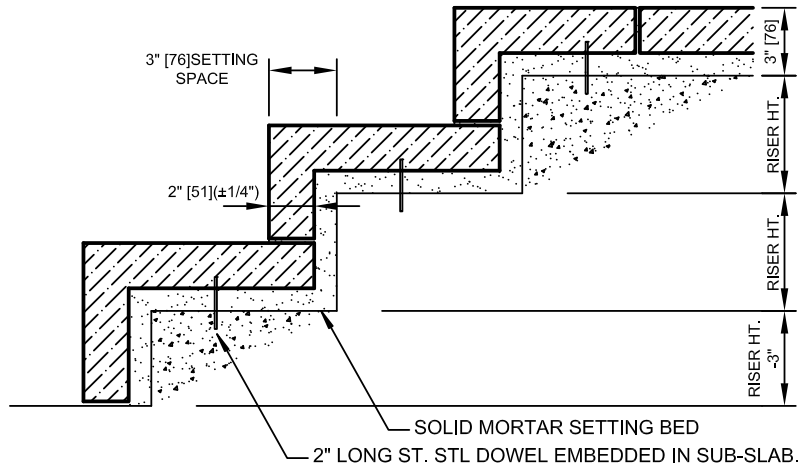
DRWG NO: 14-D-6

SCALE:
As Noted

SUPPLEMENTAL INFORMATION HORIZONTAL SURFACES / STONE STAIR TREADS



5 VENEERED STEP DETAIL



6 HOOKED STEP DETAIL

- NOTE: 1. A ROUGH OR TEXTURED FINISH IS RECOMMENDED FOR EXTERIOR USAGE.
 2. MINIMUM ABRASIVE HARDNESS OF 12.0 IS RECOMMENDED FOR STONE TREADS(ASTM C241).
 3. FABRICATION LABOR REQUIREMENTS COMMONLY MAKE DETAIL 6 A HIGHER COST ALTERNATIVE.



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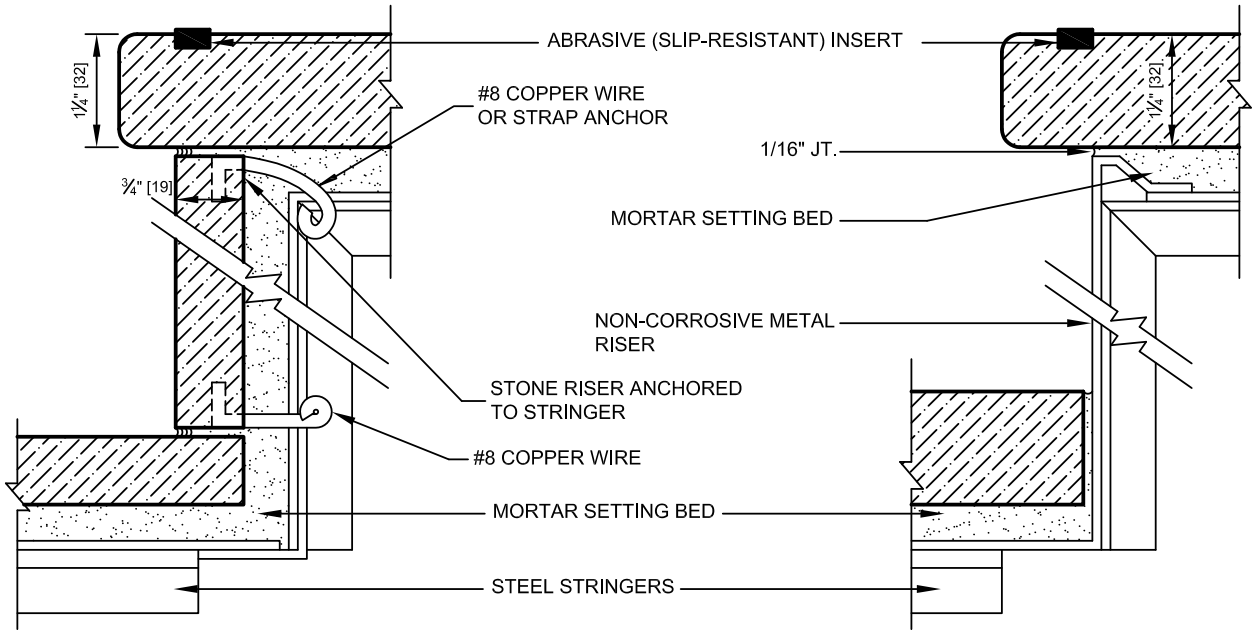
STONE STAIR TREADS

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 14-D-7

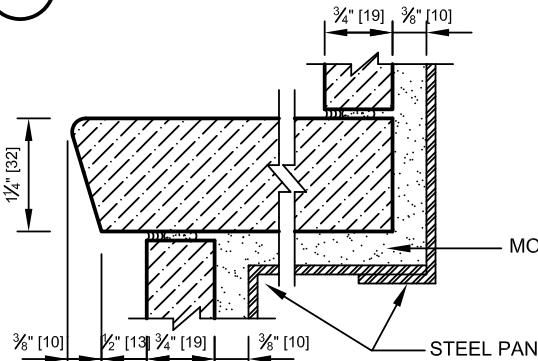
SCALE:
1 1/2" = 1'-0"

SUPPLEMENTAL INFORMATION HORIZONTAL SURFACES / STONE STAIR TREADS

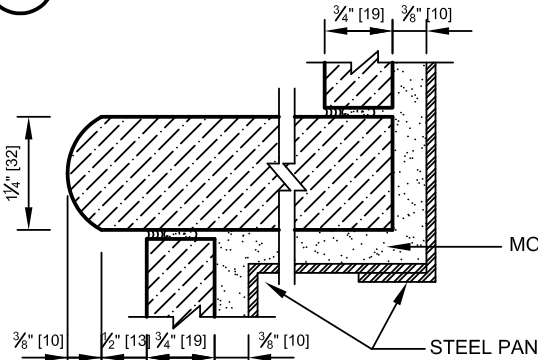


1 STEP DETAIL ON METAL PAN

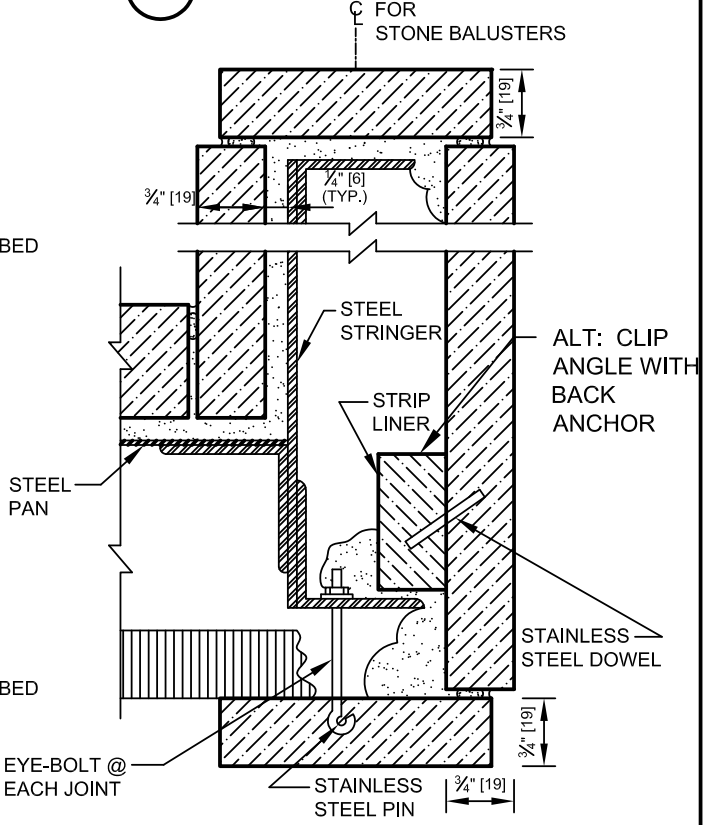
2 STEP DETAIL ON METAL PAN



3 STEP DETAIL ON METAL PAN



4 STEP DETAIL ON METAL PAN



5 STEP DETAIL ON METAL PAN

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