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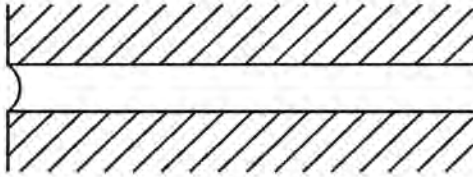


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Details

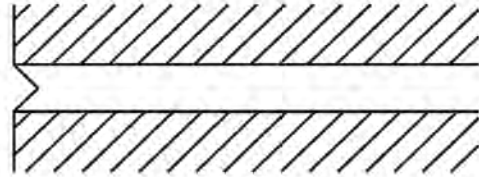
Mortar Joints

RECOMMENDED JOINTS Best Weather Protection



Concave Joint

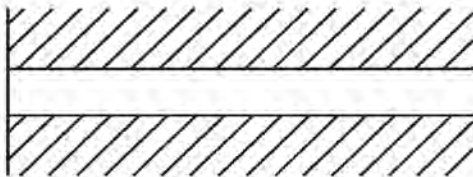
Most common joint used. Tooling works the mortar tight into the joint to produce a good weather joint. Pattern is emphasized and small irregularities in laying are concealed.



V Joint

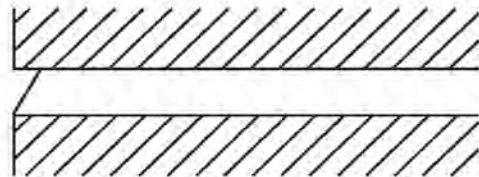
Tooling works the mortar tight and provides a good weather joint. Used to emphasize joints and conceal small irregularities in laying.

ACCEPTABLE JOINTS Weather Joint Possible with Proper Tooling



Flush Joint

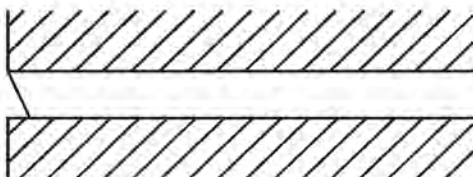
Use where wall is to be plastered or where it is desired to hide joints under paint. Special care is required to make joint weatherproof. Mortar joints must be compressed to assure intimate contact with the block.



Weathered Joint

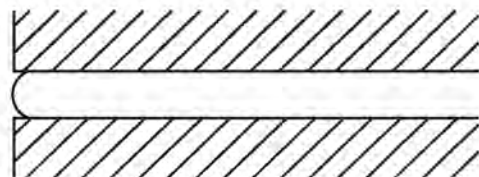
Use to emphasize horizontal joints. Acceptable weather joint with proper tooling. Care must be taken to properly paint the overhang ledge of the unit at each mortar joint.

NON-WEATHER JOINTS For Special Effects Only



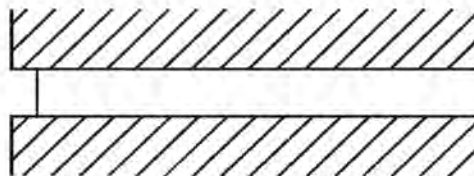
Struck Joint

Use to emphasize horizontal joints, poor weather joint - not recommended.



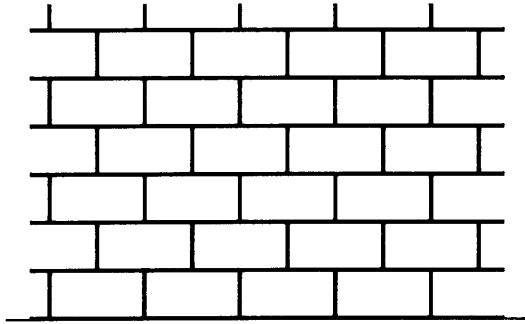
Beaded Joint

Special effect, poor exterior weather joint because of exposed ledge - not recommended.

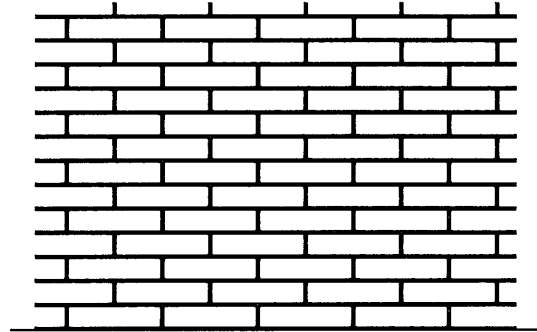


Raked Joint

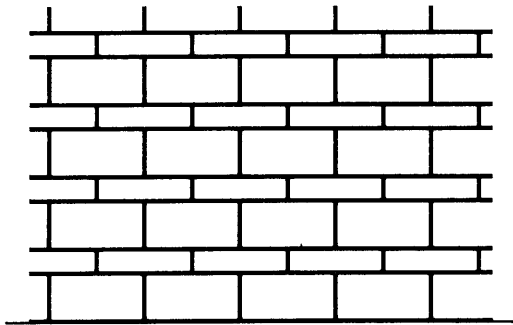
Strongly emphasized joints. Poor weather joint - not recommended.



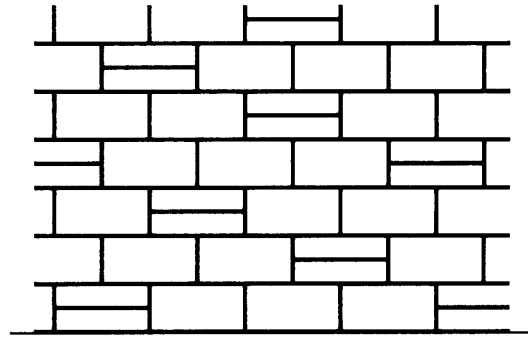
COMMON BOND
8"X16" UNITS



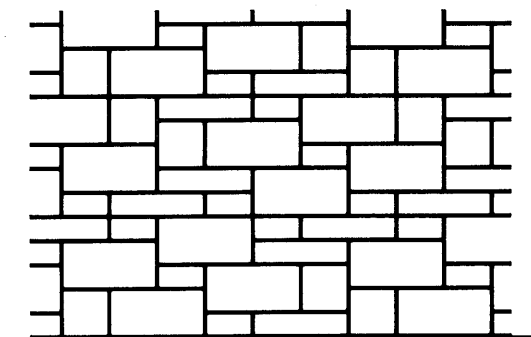
COMMON BOND
4"X16" UNITS



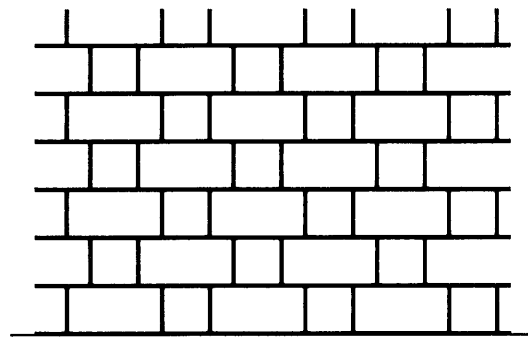
COURSED ASHLAR
8"X16" & 4"X16" UNITS



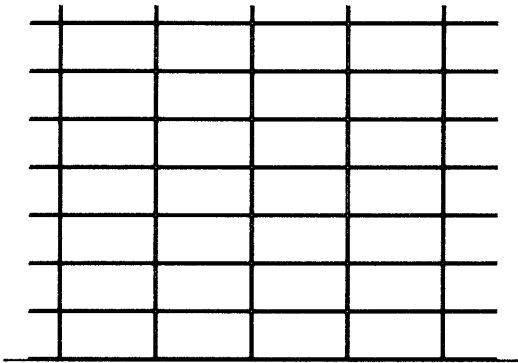
COURSED ASHLAR
8"X16" & 4"X16" UNITS



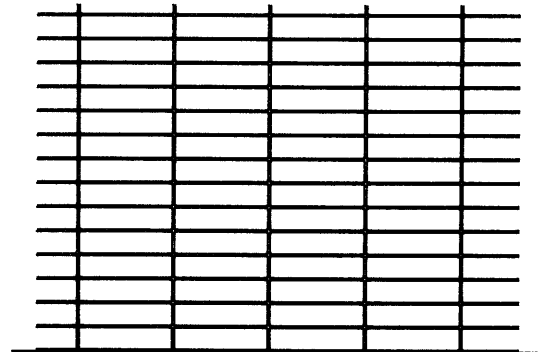
RANDOM ASHLAR
8"X16", 8"X8", 4"X16" UNITS
AND 4"X8" UNITS



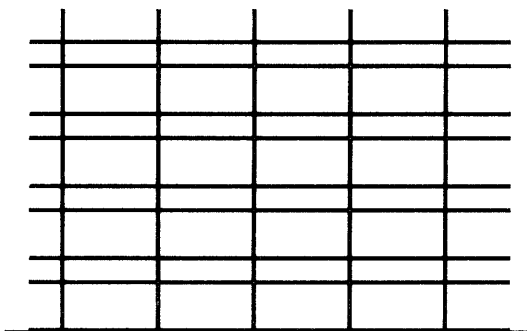
COURSED ASHLAR
8"X16" & 8"X8" UNITS
NOT RECOMMENDED BECAUSE
OF REINFORCING PROBLEM



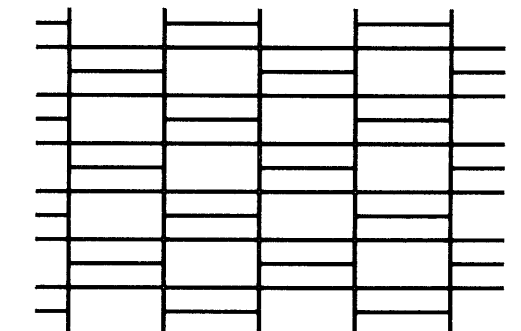
STACKED BOND
8"X16" UNITS



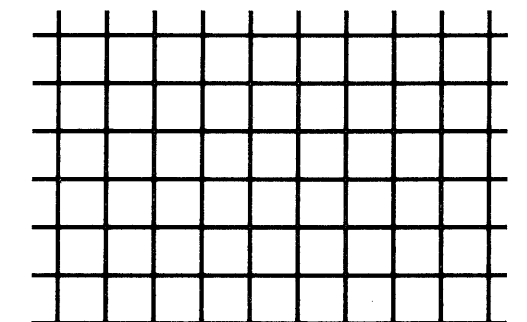
STACKED BOND
4"X16" UNITS



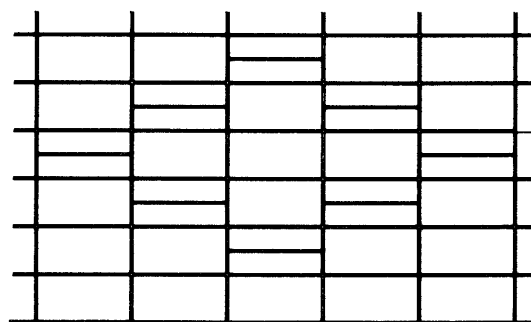
STACKED BOND
8"X16" & 4"X16" UNITS



STACKED BOND
8"X16" & 4"X16" UNITS



STACKED BOND VERTICAL
SCORED UNITS
8"X16" UNITS

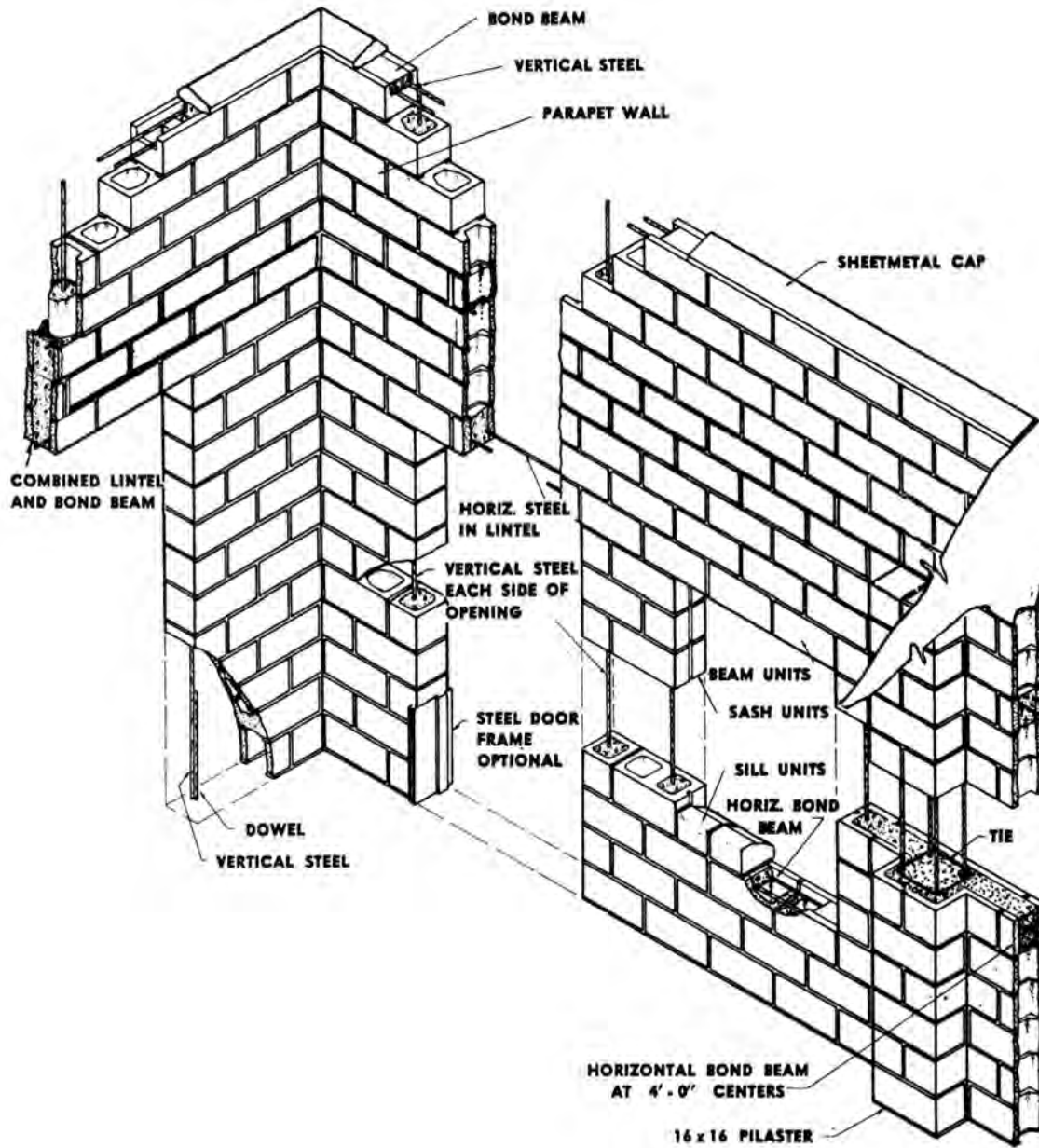


USE OF BLOCK DESIGN
IN STACKED BOND
8"X16" & 4"X16" UNITS

Conc. Masonry Wall Assembly

Details

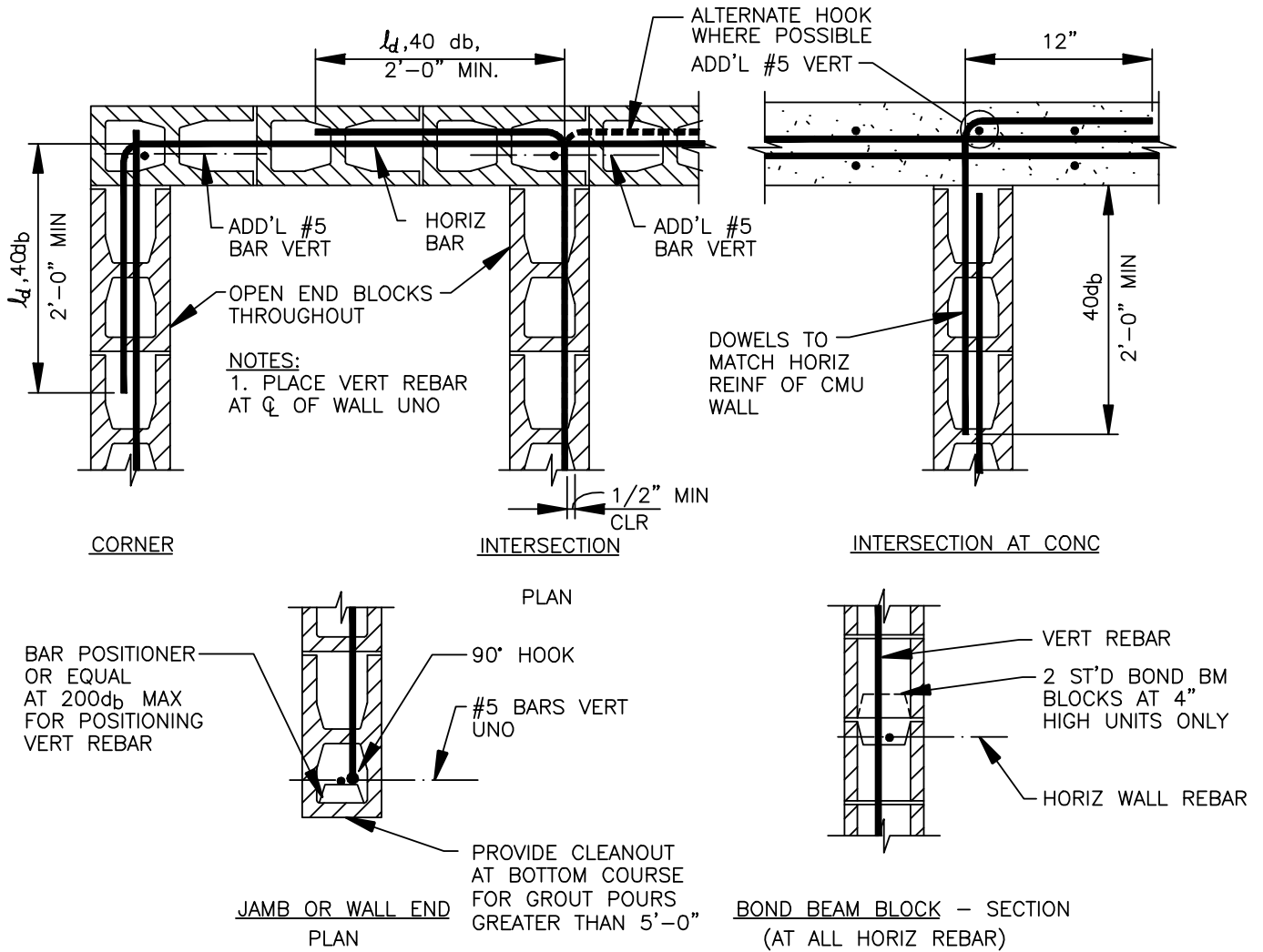
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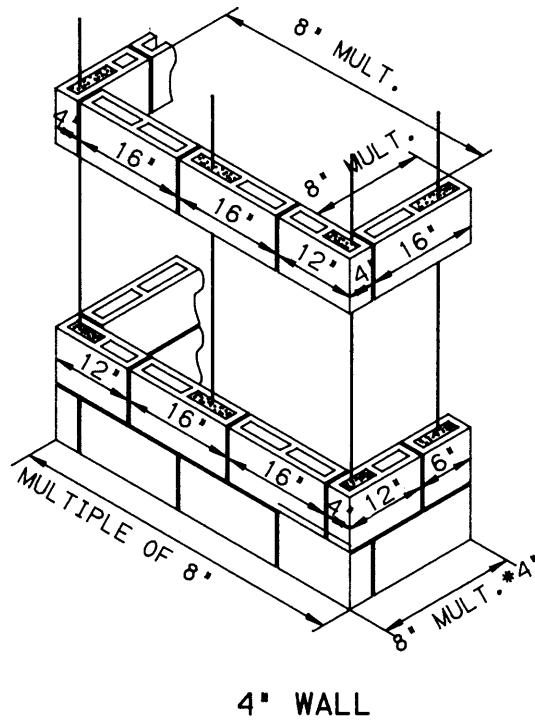
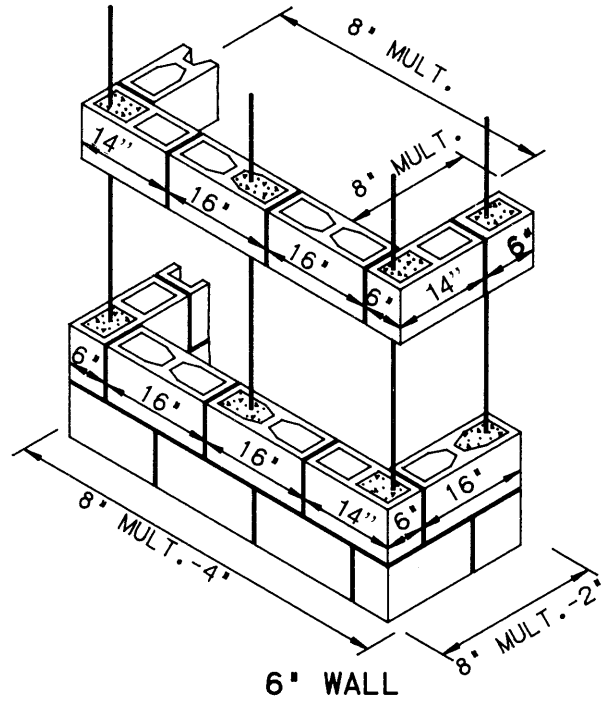
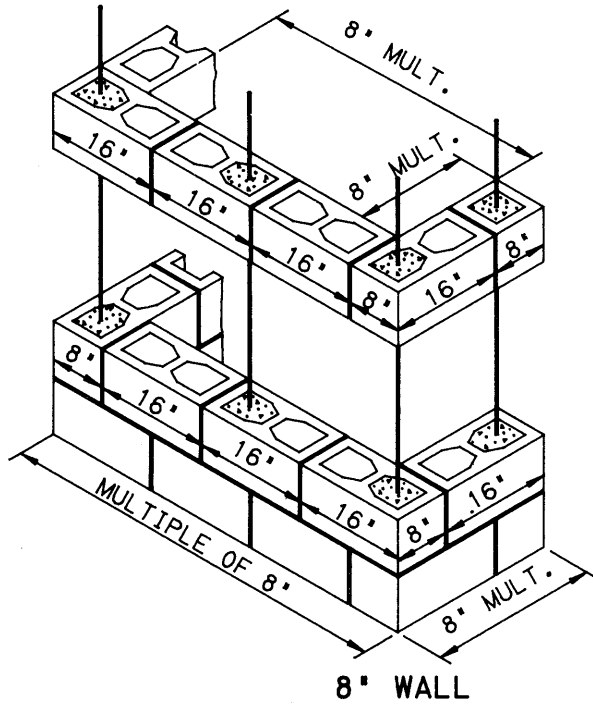
Details

Conc. Masonry Wall Assembly



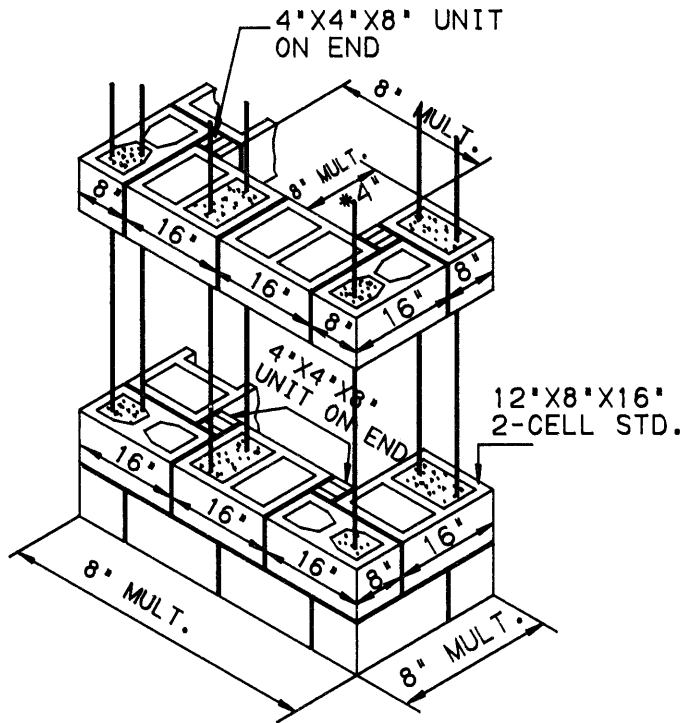
Corner Details Details

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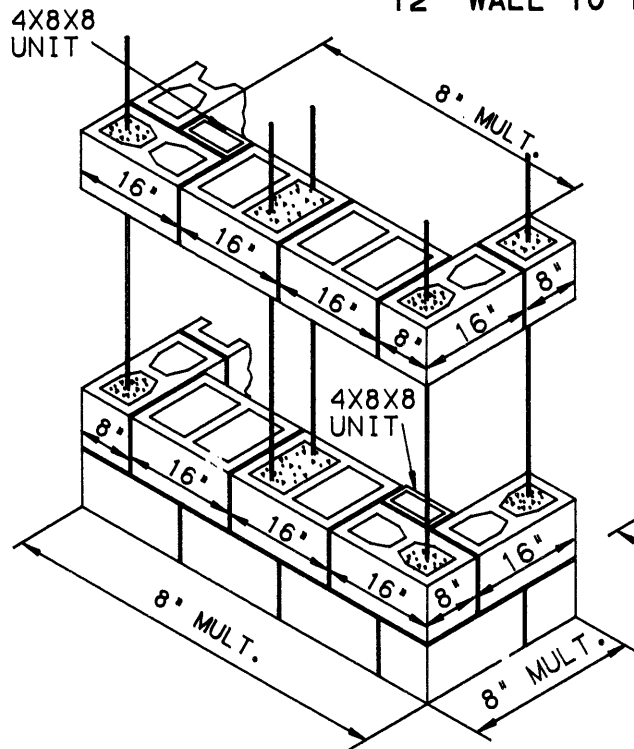


The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.

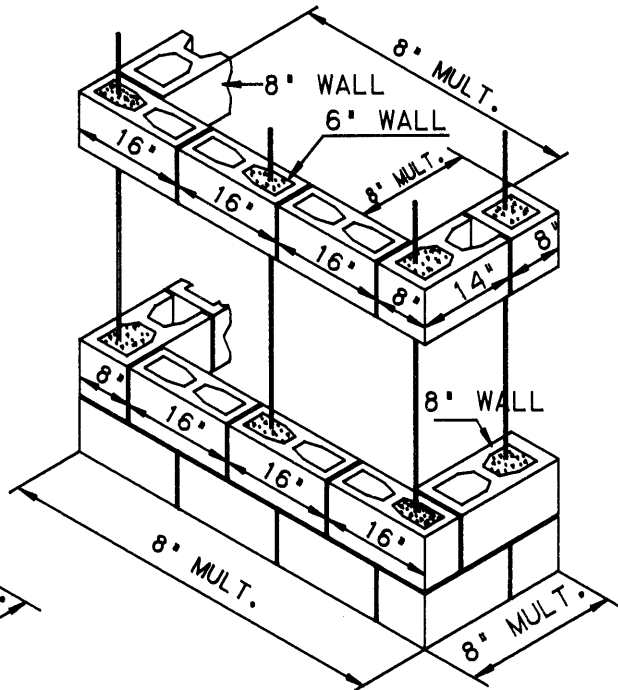
Details Corner Details



12" WALL TO 12" WALL



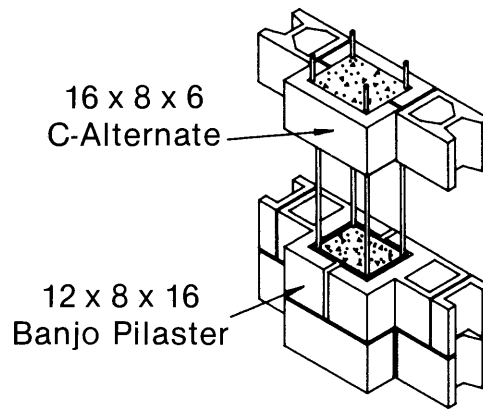
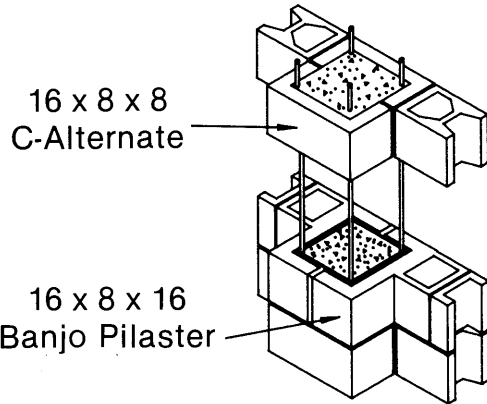
8" WALL TO 12" WALL



6" WALL TO 8" WALL

CLOSED END UNITS SHOWN IN EXAMPLES. WALLS MAY BE BUILT WITH OPEN UNITS

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16"X16" OPEN CENTER

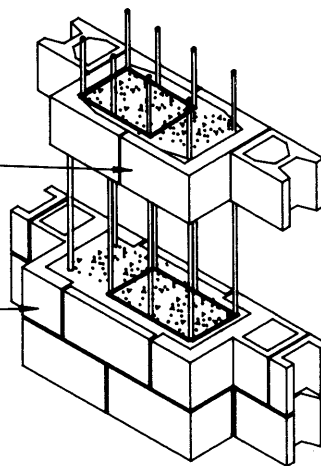
4-# BARS MINIMUM
TIES AS REQUIRED

12"X16" OPEN CENTER

4-# BARS MINIMUM
TIES AS REQUIRED

16 x 8 x 16 Ring
w/one face cut or
knocked out
-or-
16 x 8 x 16
U-Lintel
(Special Order)

16 x 8 x 16
Banjo Pilaster



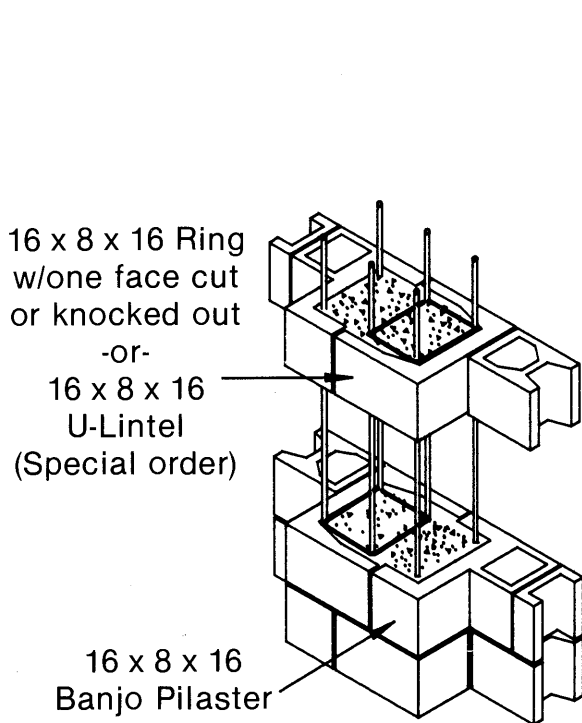
16"X32" OPEN CENTER

8-# BARS MINIMUM
TIES AS REQUIRED

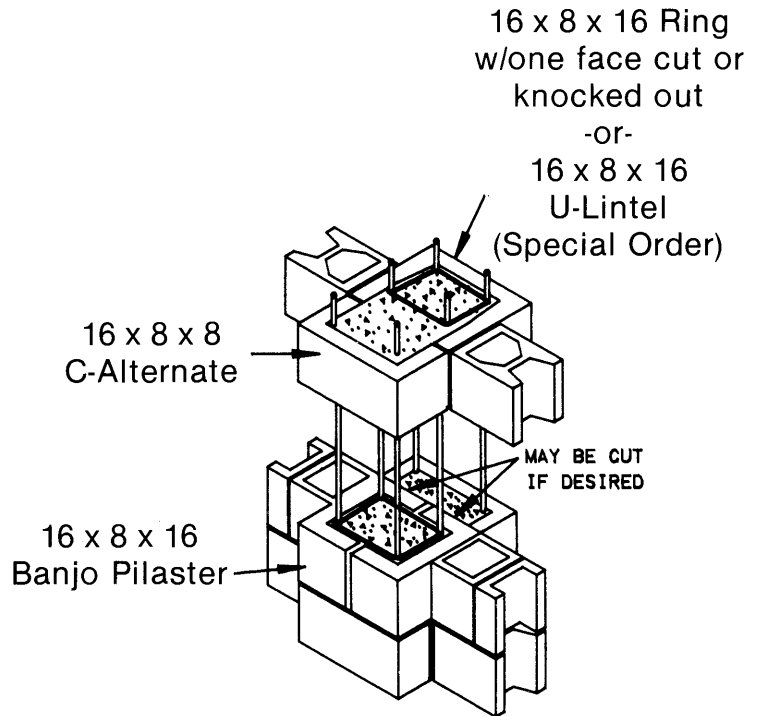
The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.

Details

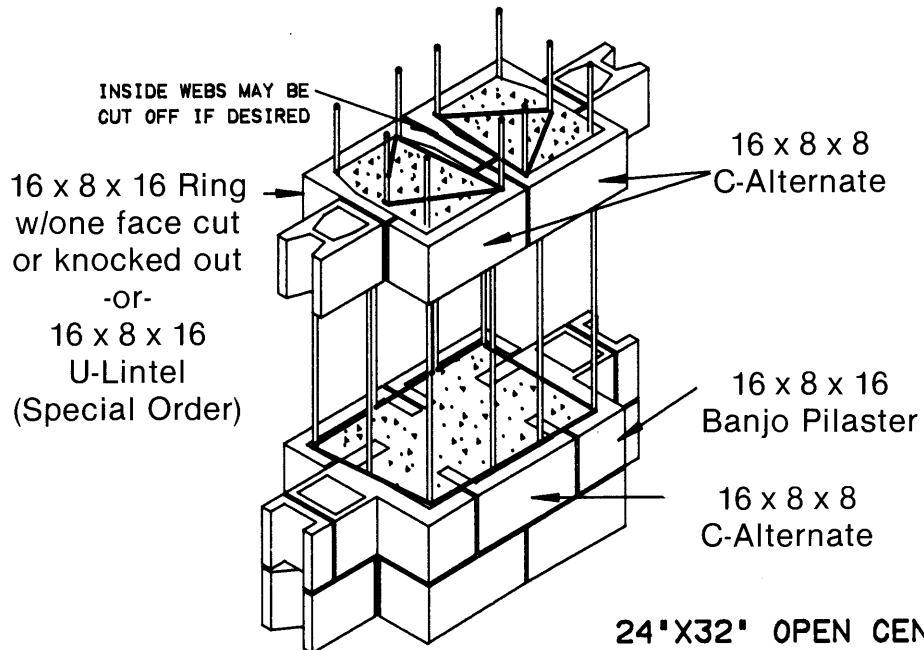
Pilasters



16'X24' OPEN CENTER
6-* BARS MINIMUM
TIES AS REQUIRED



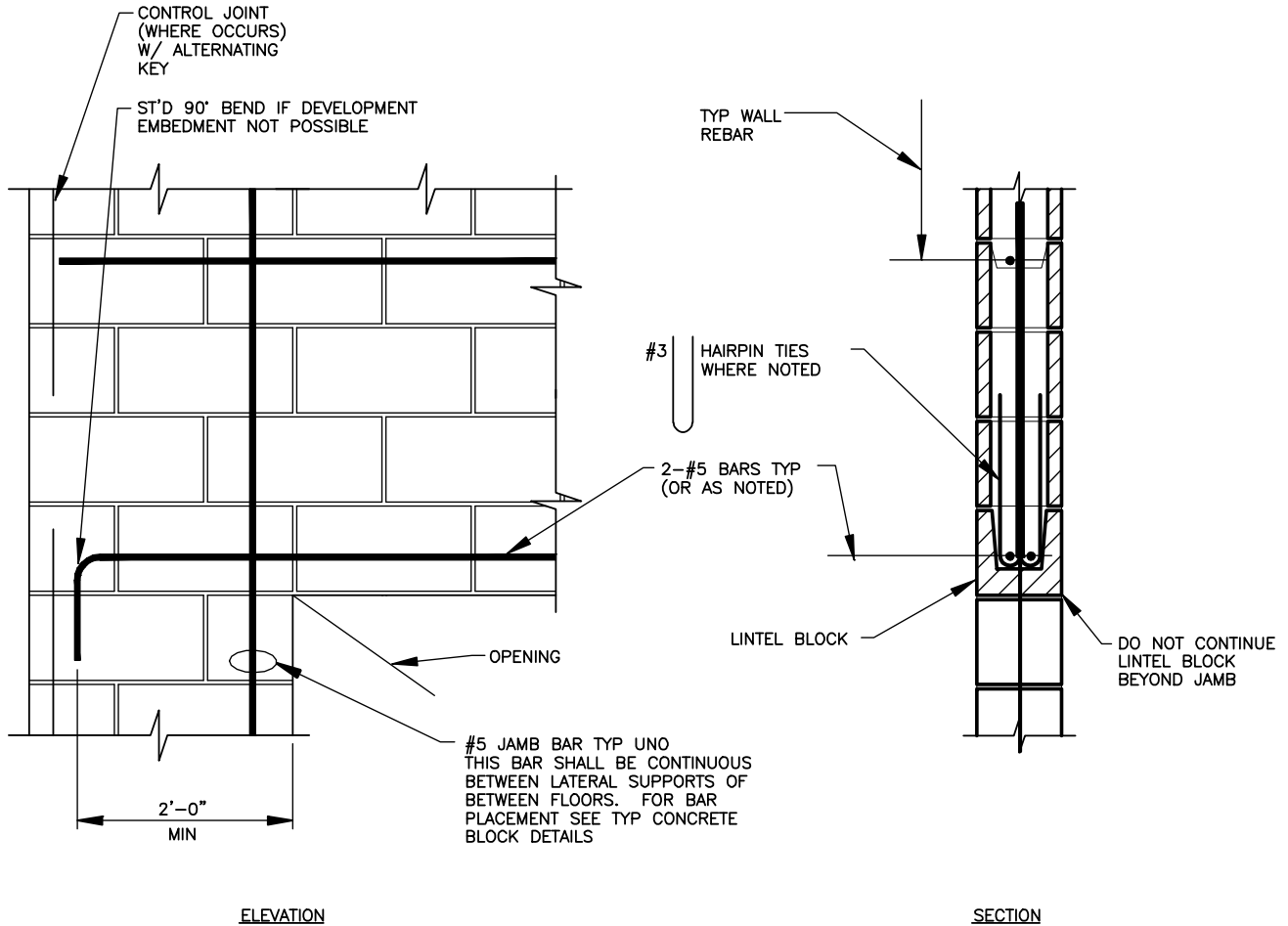
24'X16' OPEN CENTER (CENTERED IN WALL)
6-* BARS MINIMUM
TIES AS REQUIRED



24'X32' OPEN CENTER (CENTERED IN WALL)
4-* AND 6-* BARS MINIMUM
TIES REQUIRED

Rebar at Wall Opening Details

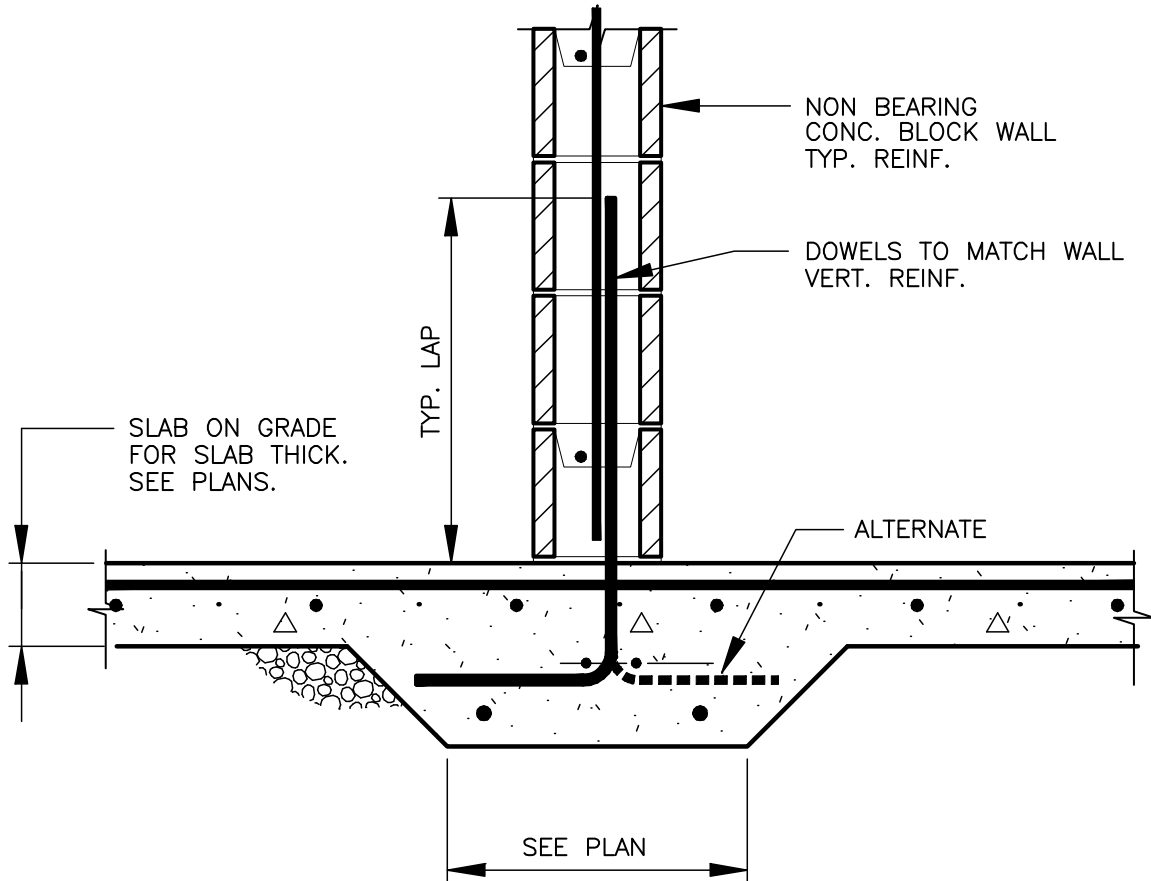
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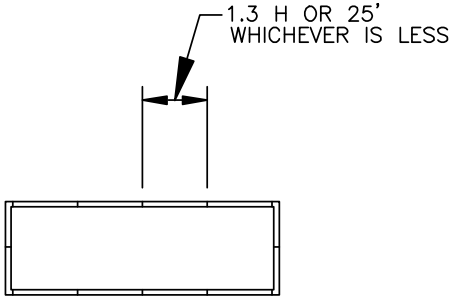
Details

Wall / Slab on Grade

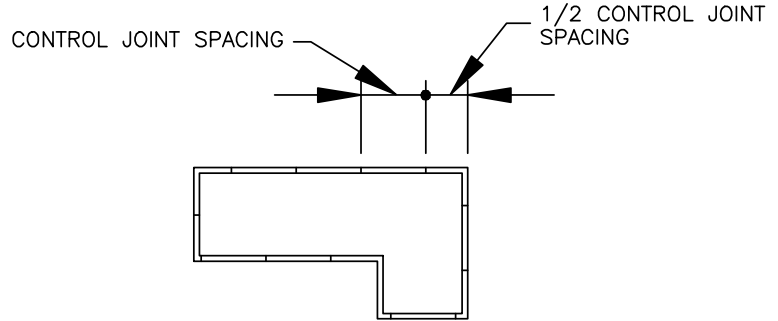


Control Joints Details

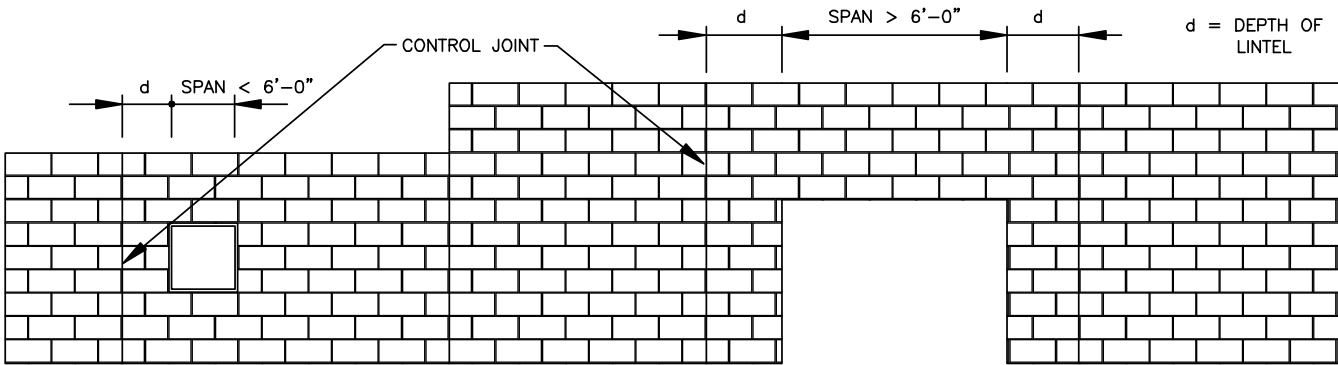
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RECTANGULAR BUILDING PLAN



IRREGULAR BUILDING PLAN



CRITERIA FOR CONTROLLING CRACKING IN REINFORCED CONCRETE MASONRY WALLS

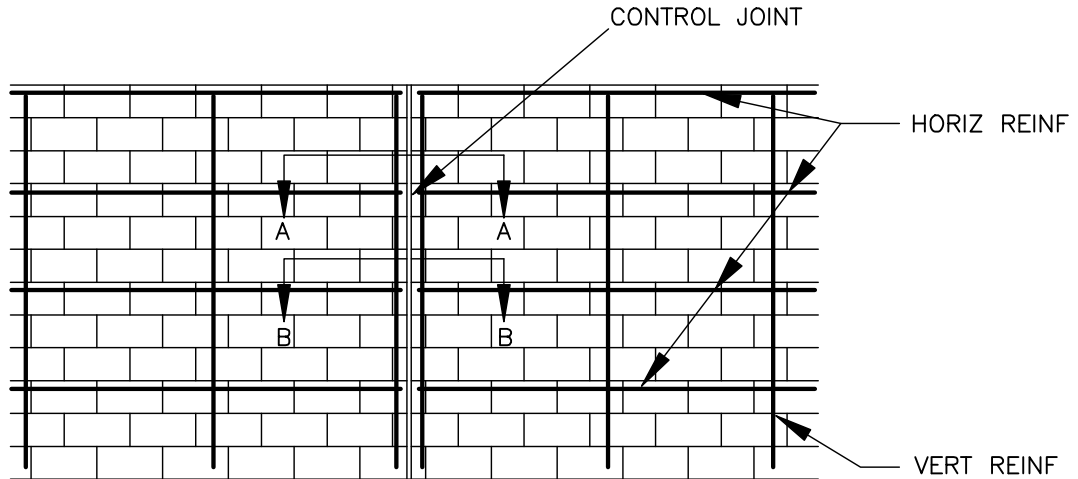
		Crack Control Coefficient in/in (mm/mm)	
Maximum wall panel dimensions	length, ft (m)	0.0010 25 (7.62)	0.0015 20 (6.10)
	length / height ratio	2 1/2	2
Minimum horizontal		0.0007	0.0007

- A_s = cross-sectional area of steel, in.²/ft (mm²/m).
- A_n = net cross-sectional area of masonry, in.²/ft (mm²/m).
- The minimum horizontal reinforcement ratio criteria need not apply for walls with a length not exceeding on half the maximum length values shown above.
- CCC's less than 0.0010 may be available in some areas and spacing could be adjusted accordingly for this as well.
- This criteria is based on an analytical study over a wide geographical area with wide temperature and material property variations. Control joint spacing may be adjusted up or down based on local experience.
- As shrinkage is related to moisture content, consider using the higher crack control coefficient for masonry units that are wet from lack of protection while stored on the jobsite.
- Maximum linear shrinkage = 0.00065

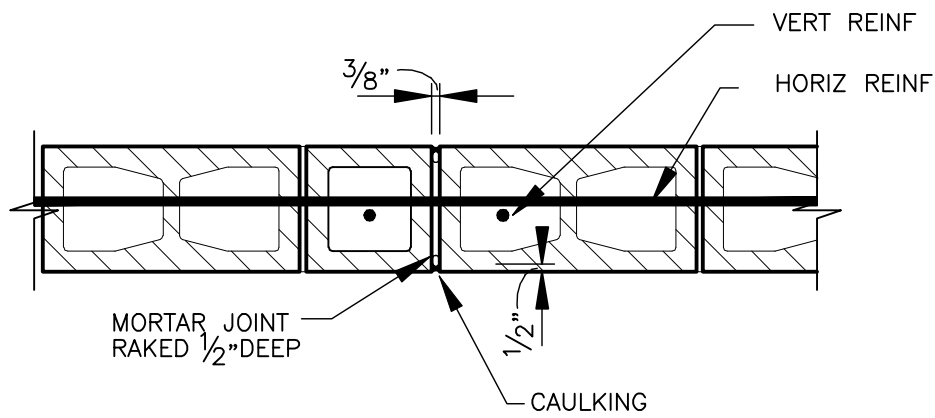
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Details

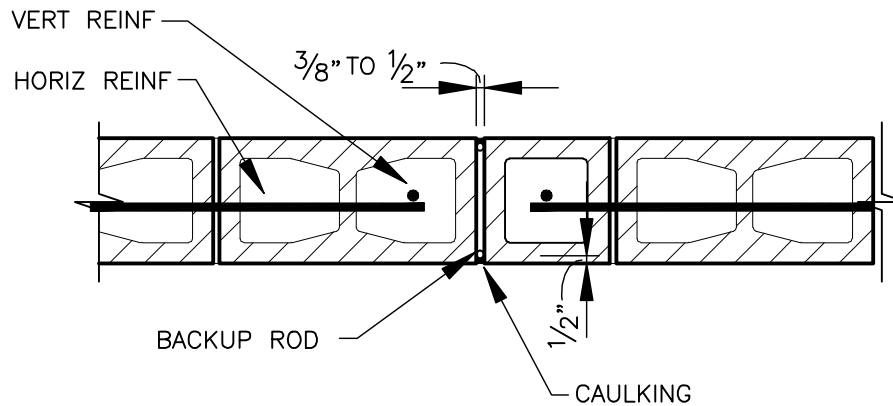
Control Joints



ELEVATION OF MASONRY WALL WITH CONTROL JOINT



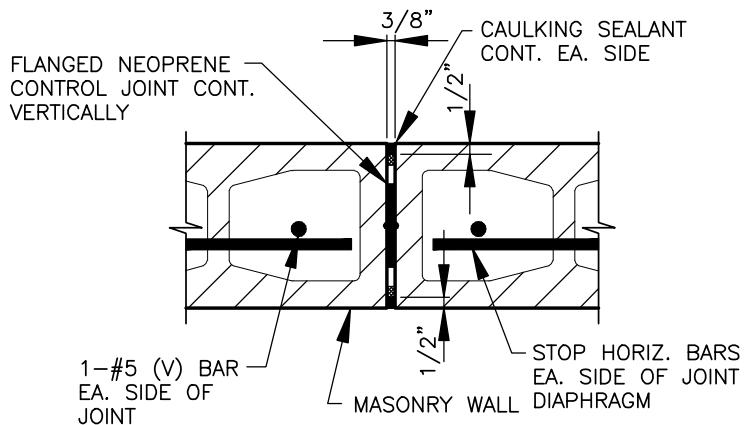
SECTION A-A
HORIZ REINF CONTINUOUS THROUGH JOINT ONLY AT LEDGER OR LINTEL



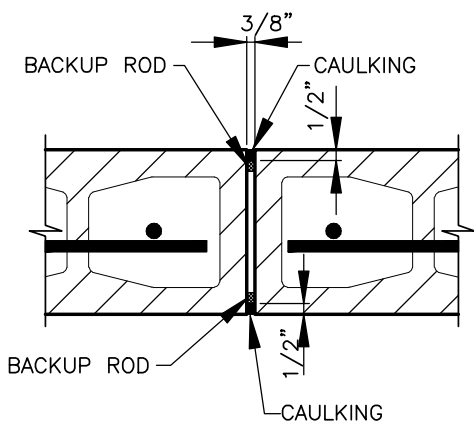
SECTION B-B
HORIZ REINF DOES NOT CROSS JOINT

Control Joints Details

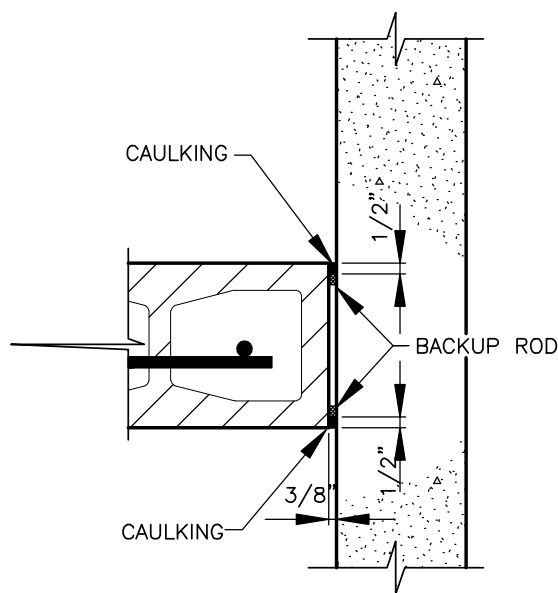
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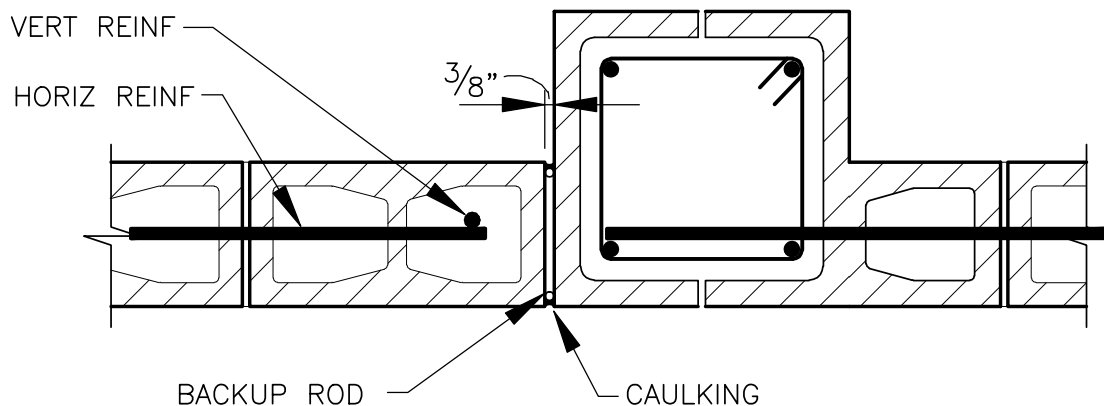
WALL CONTROL JOINT W/ FLANGED NEOPRENE



WALL CONTROL JOINT



WALL ABUTMENT JOINT

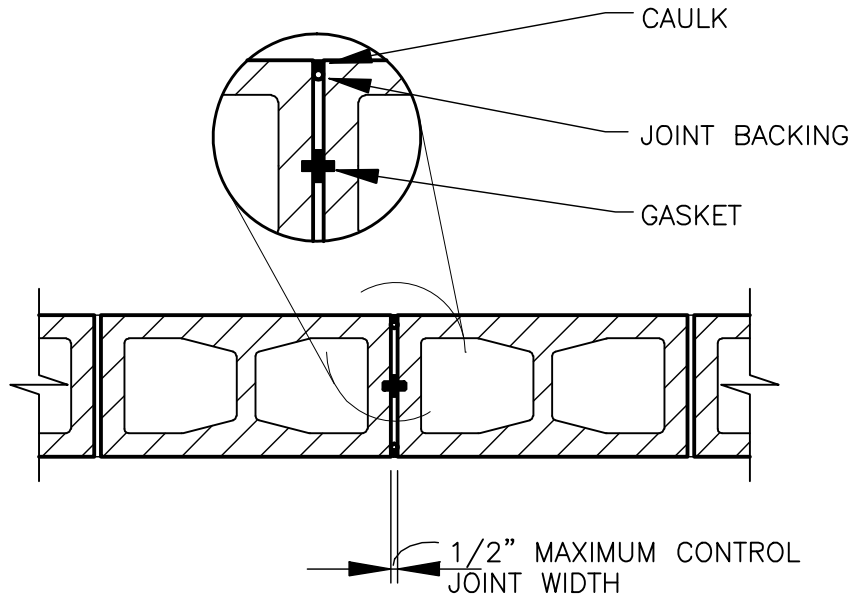


HORIZ REINF DOES NOT CROSS JOINT

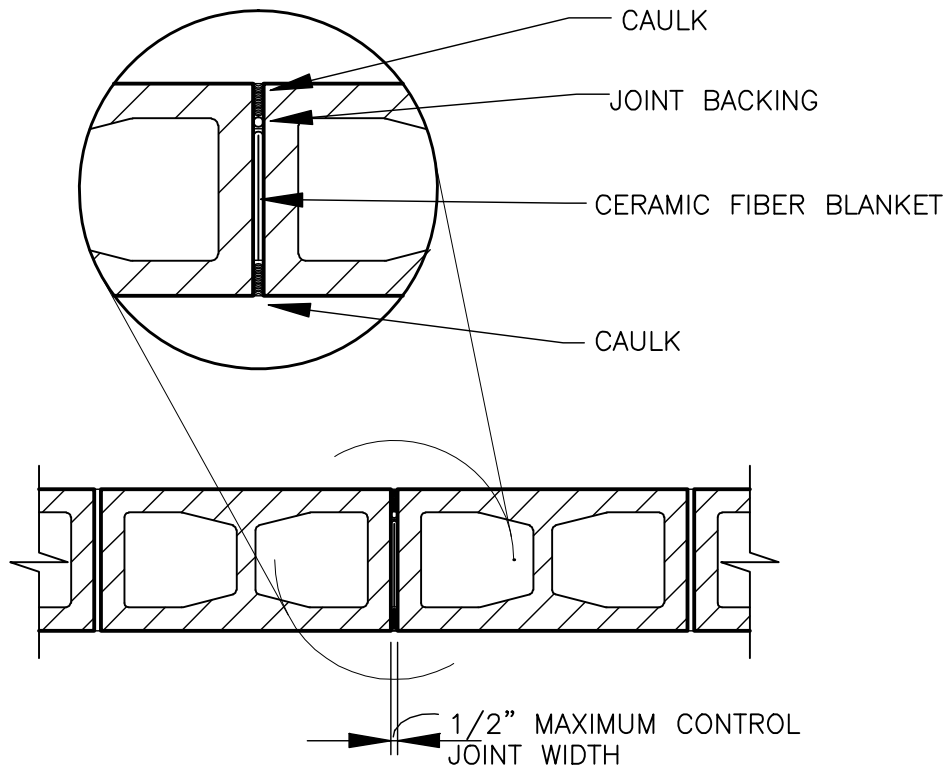
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Details

Fire Rated Control Joints



FOR RATINGS UP TO AND INCLUDING 2 HOURS

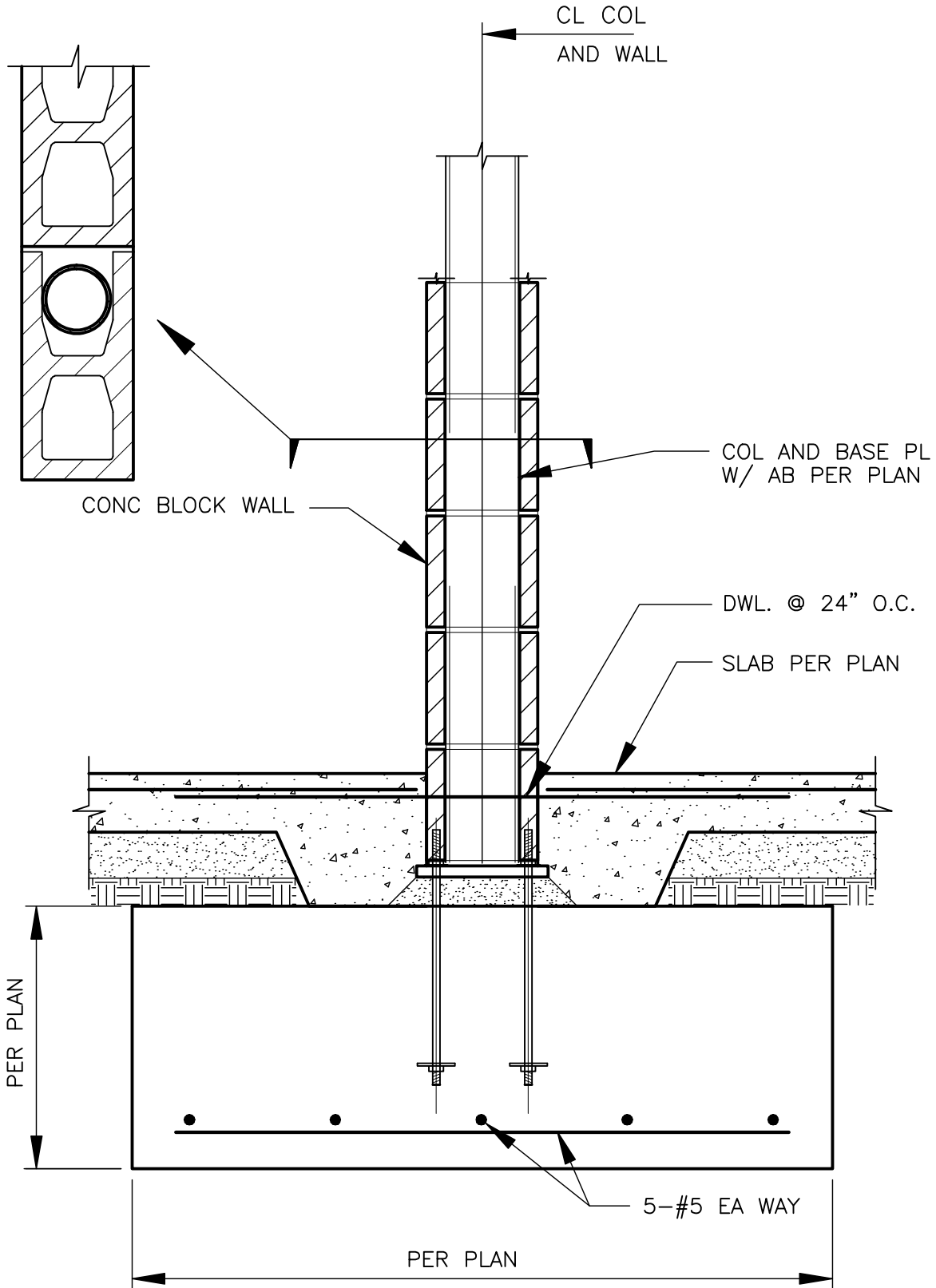


FOR RATINGS UP TO AND INCLUDING 4 HOURS

Pipe Column in Masonry Wall

Details

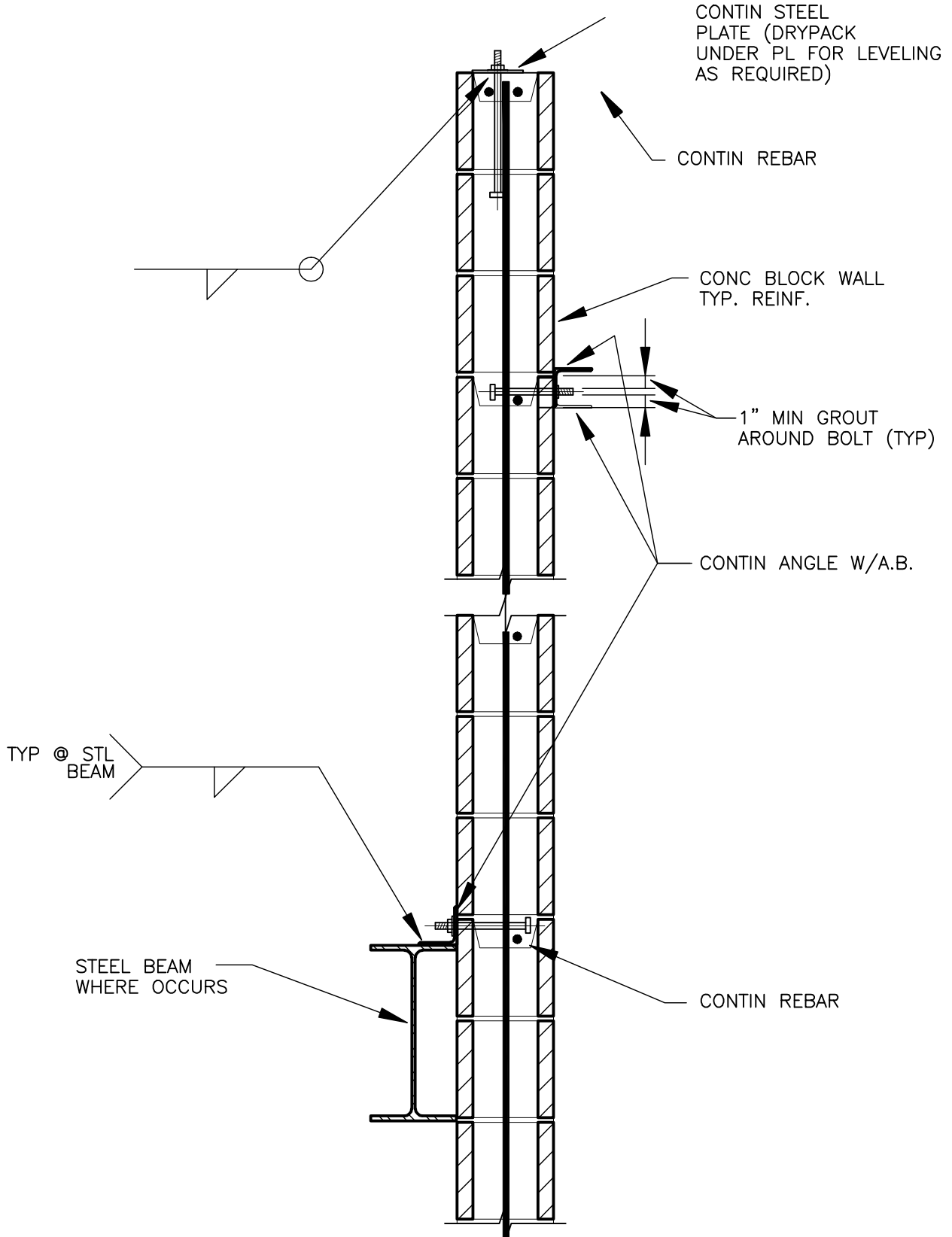
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Details

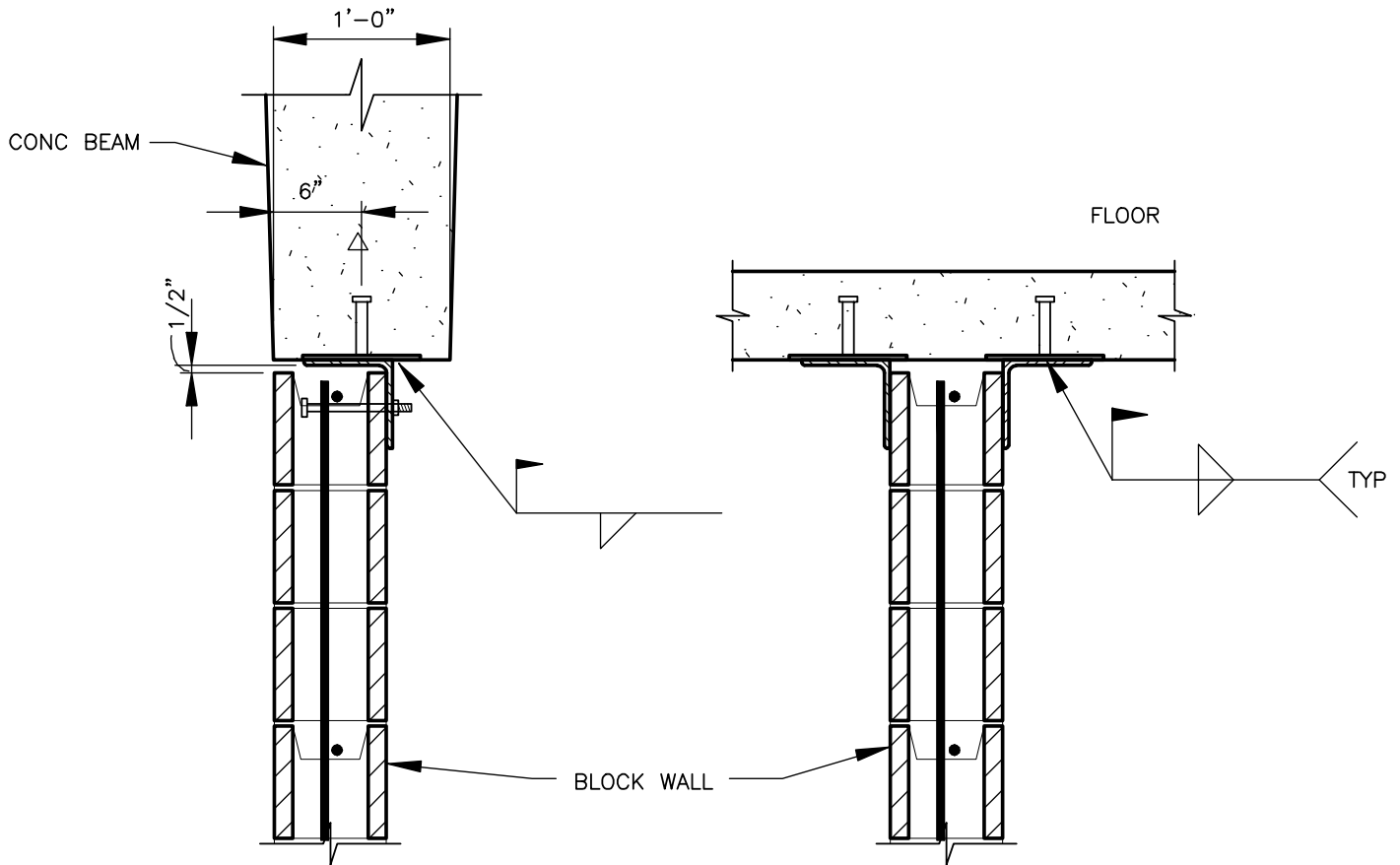
Anchor Bolts at Block Wall



Top of Wall Restraints

Details

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GROUT CELL SOLID WHERE ANCHOR BOLT OCCURS

AT BEAM

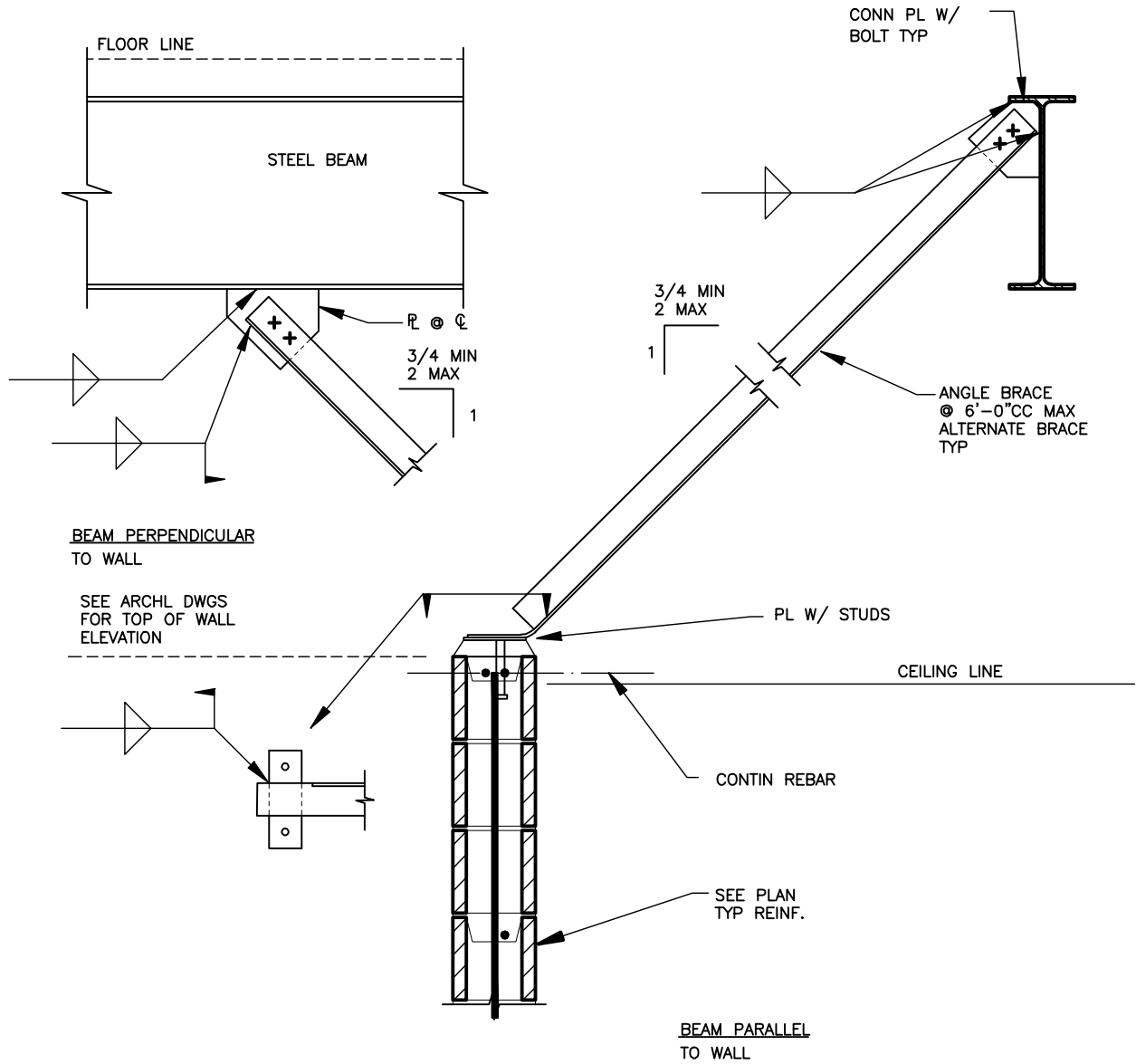
AT SLAB

MASONRY RESTRAINT AT CONCRETE

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Details

Top of Wall Restraints

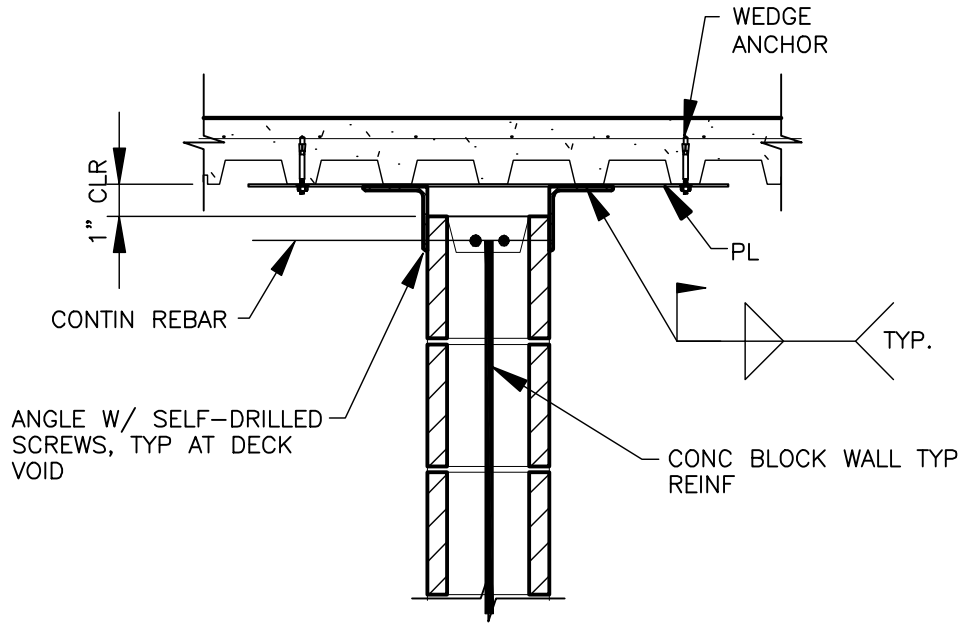


TOP / WALL BRACING

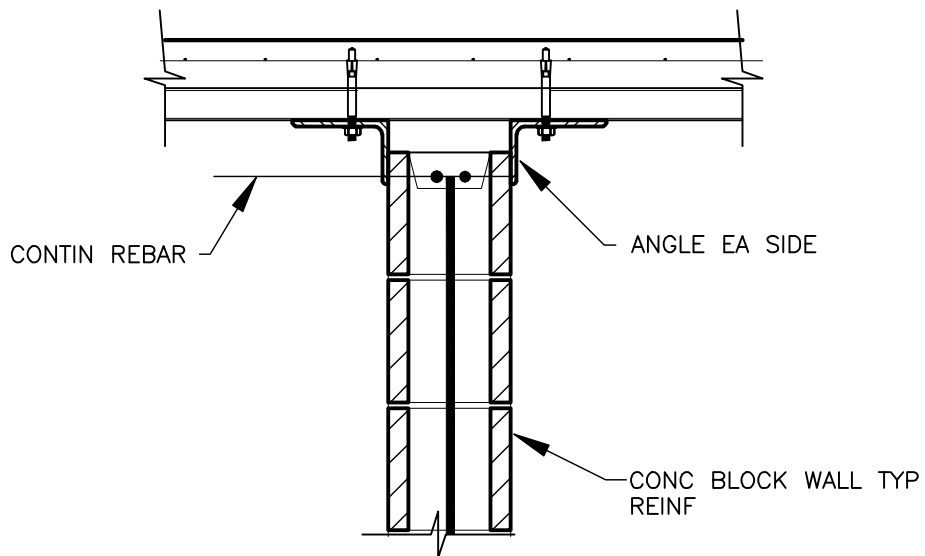
Top of Wall Restraints

Details

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WALL RESTRAINT PARALLEL TO DECK

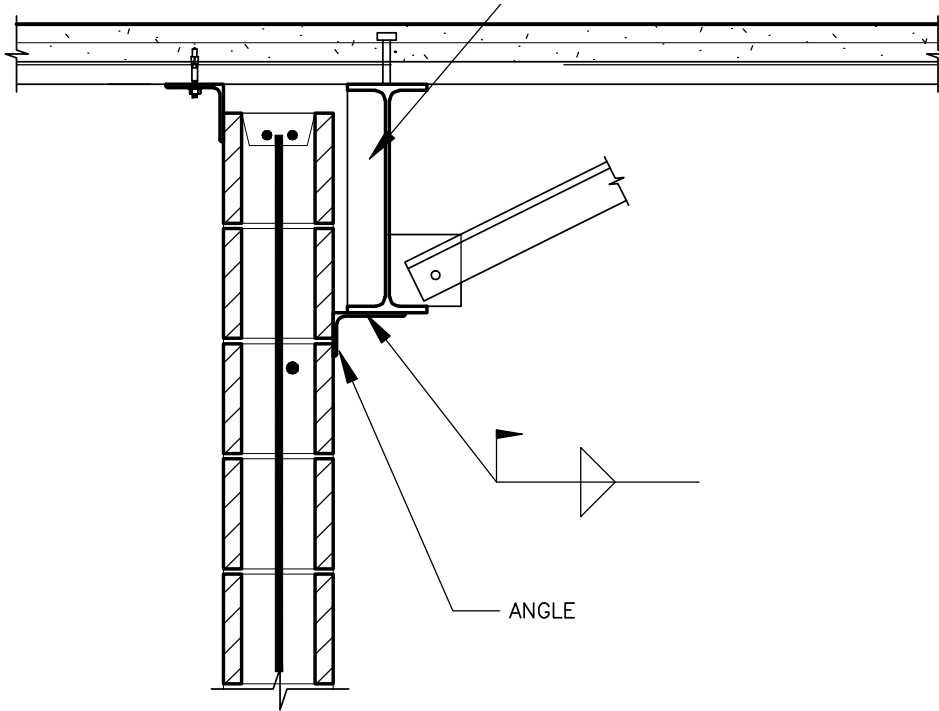


WALL RESTRAINT PERPENDICULAR TO DECK

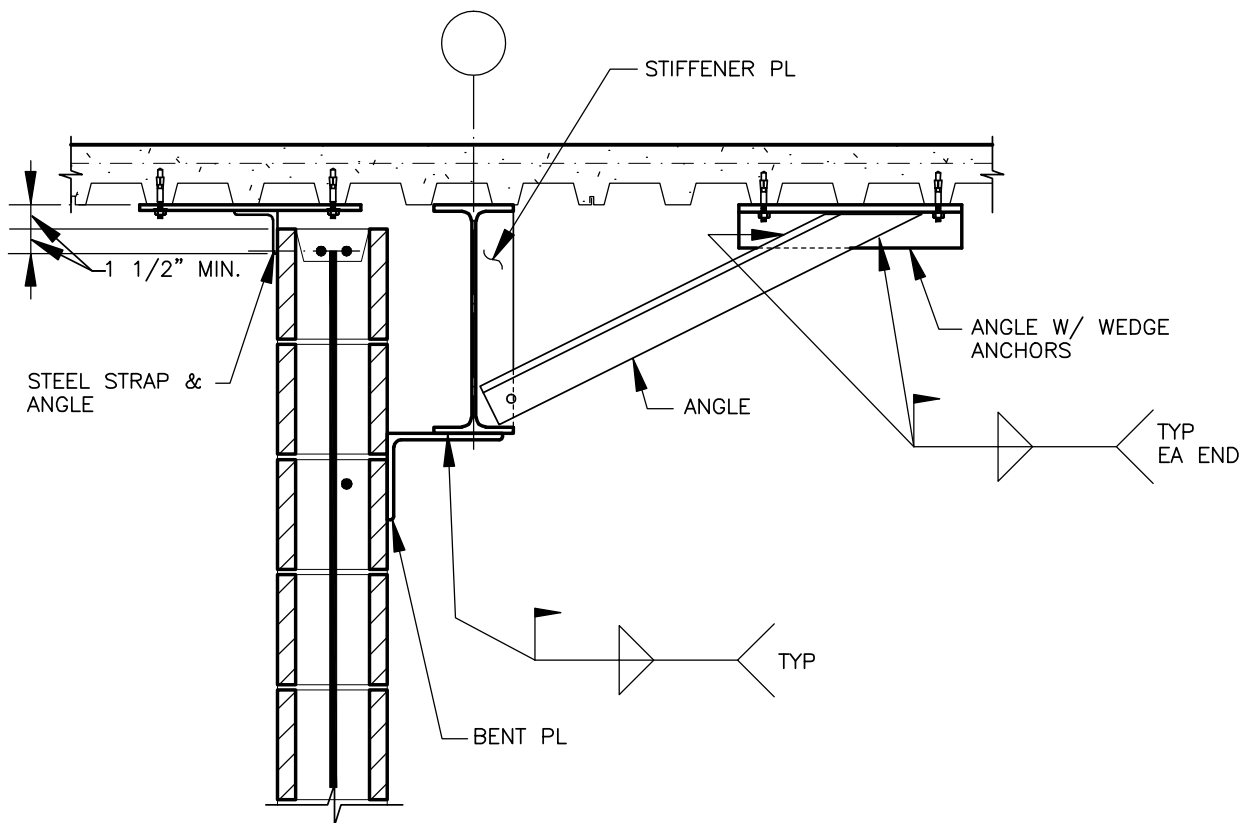
The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.

Details

Top of Wall Restraints



WALL RESTRAINT ADJACENT TO STEEL BEAM

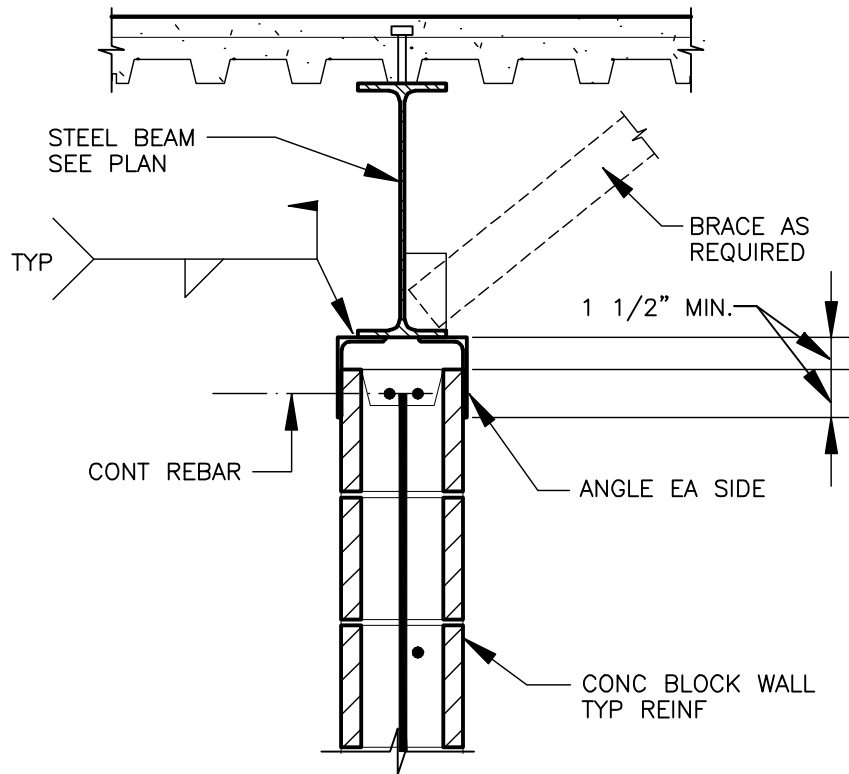


WALL RESTRAINT ADJACENT TO STEEL GIRDER

Top of Wall Restraints

Details

The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.

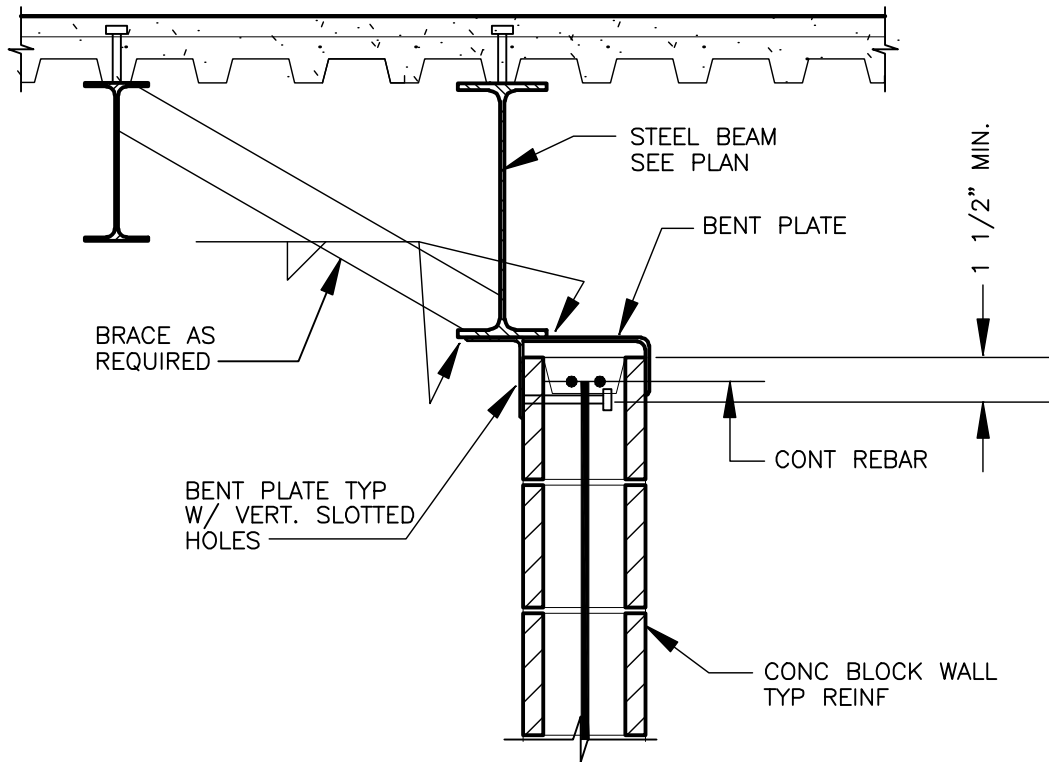


WALL UNDER STEEL BEAM

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Details

Top of Wall Restraints

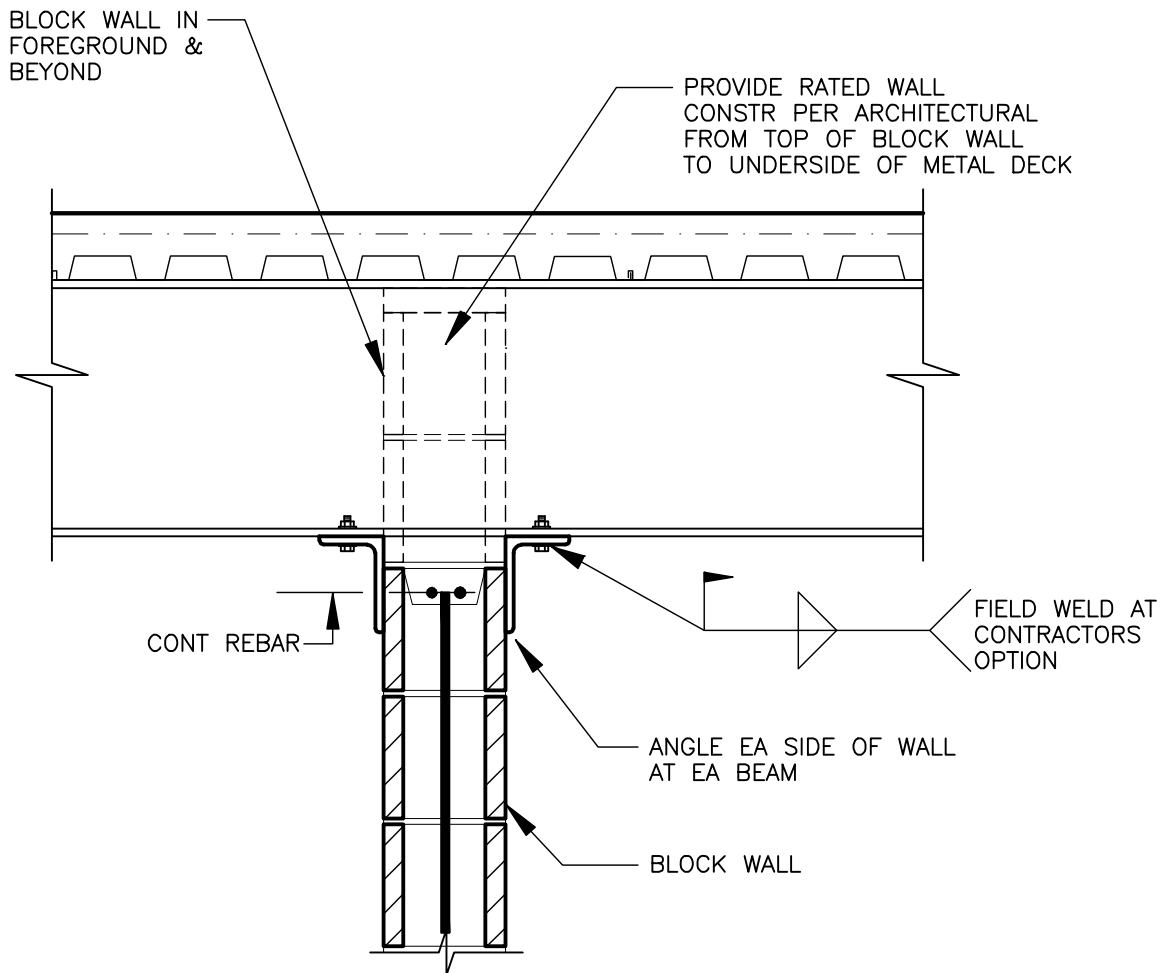


WALL OFFSET TO STEEL BEAM

Top of Wall Restraints

Details

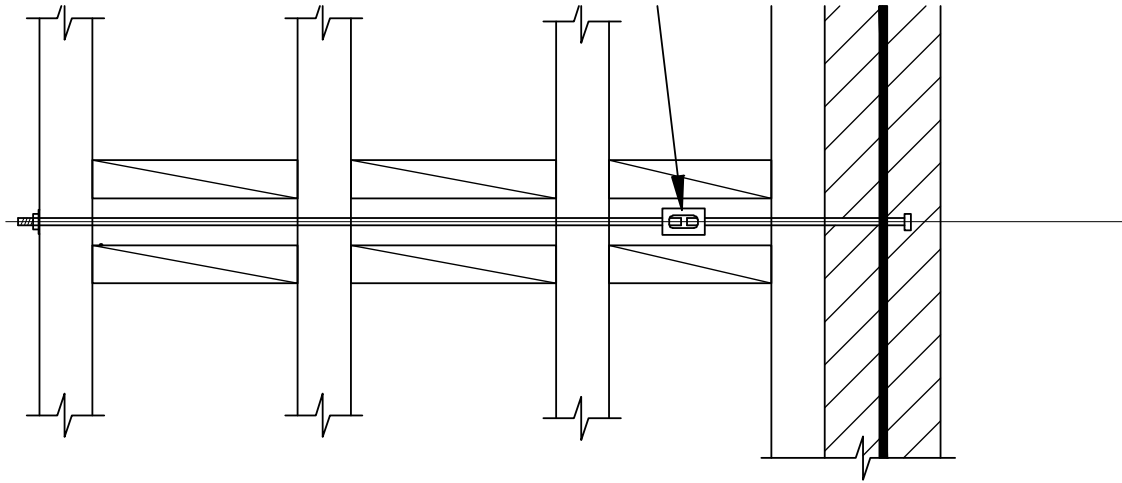
The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.



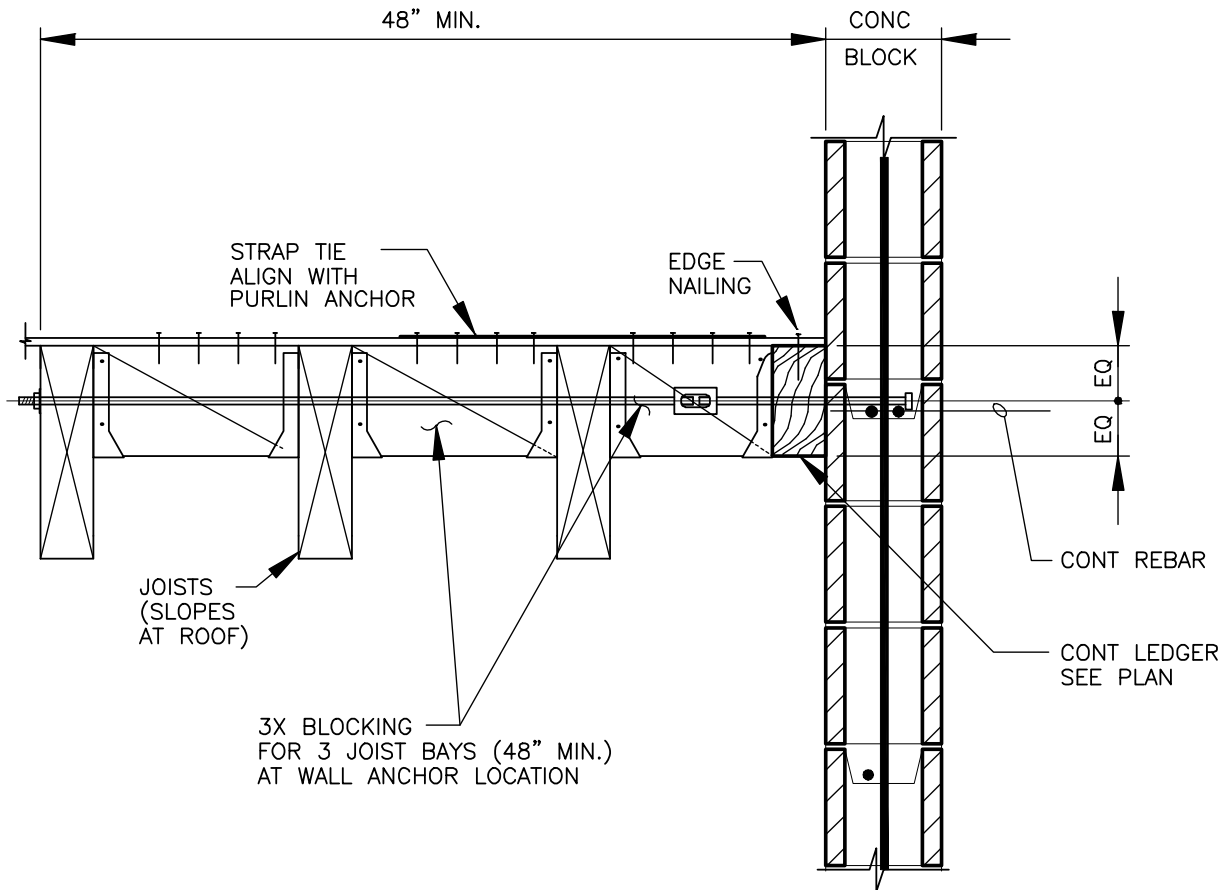
WALL RESTRAINT PERPENDICULAR TO STEEL BEAM

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Details Exterior Masonry / Wood Beam



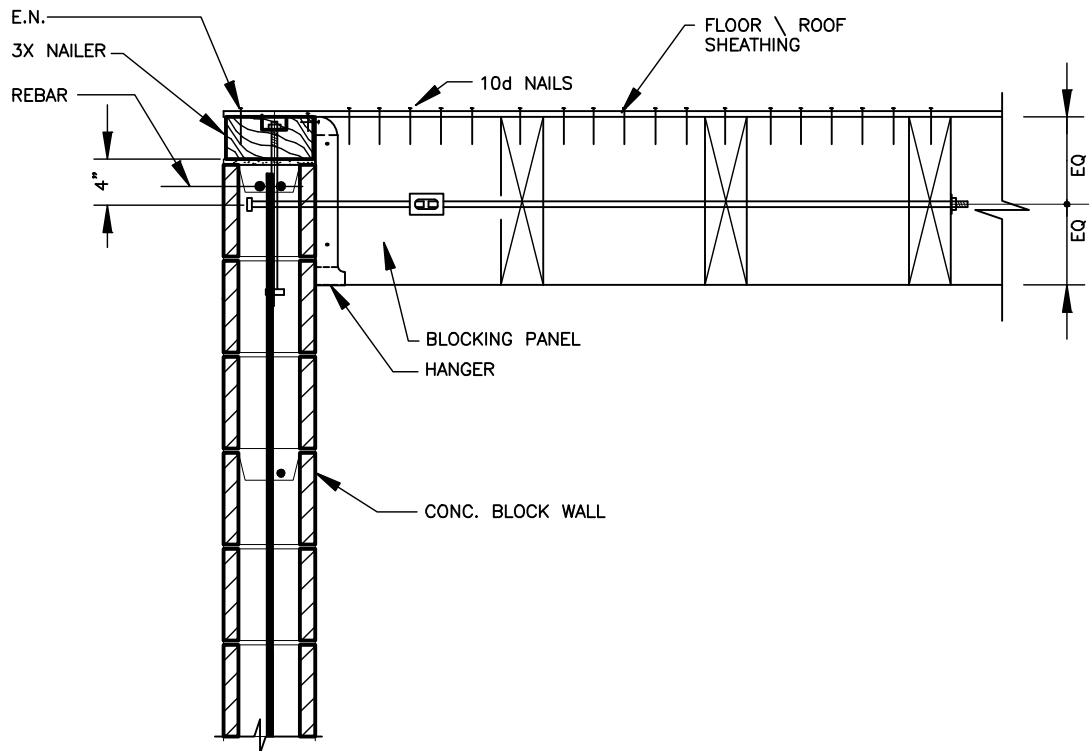
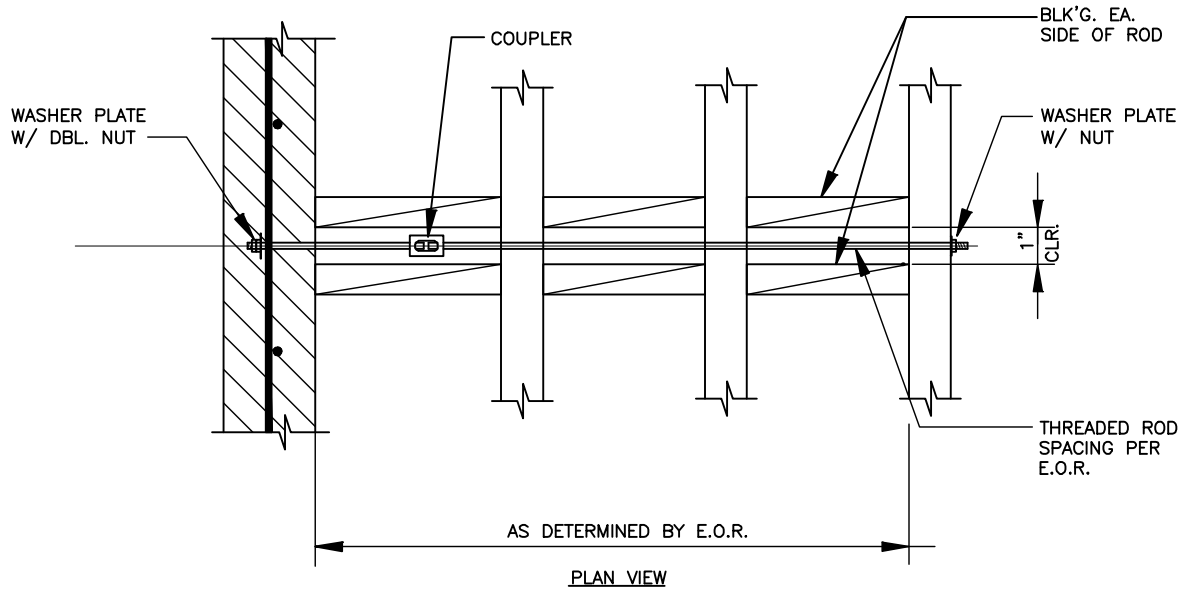
PLAN VIEW



WOOD JOISTS PARALLEL TO MASONRY

Exterior Masonry / Wood Beam Details

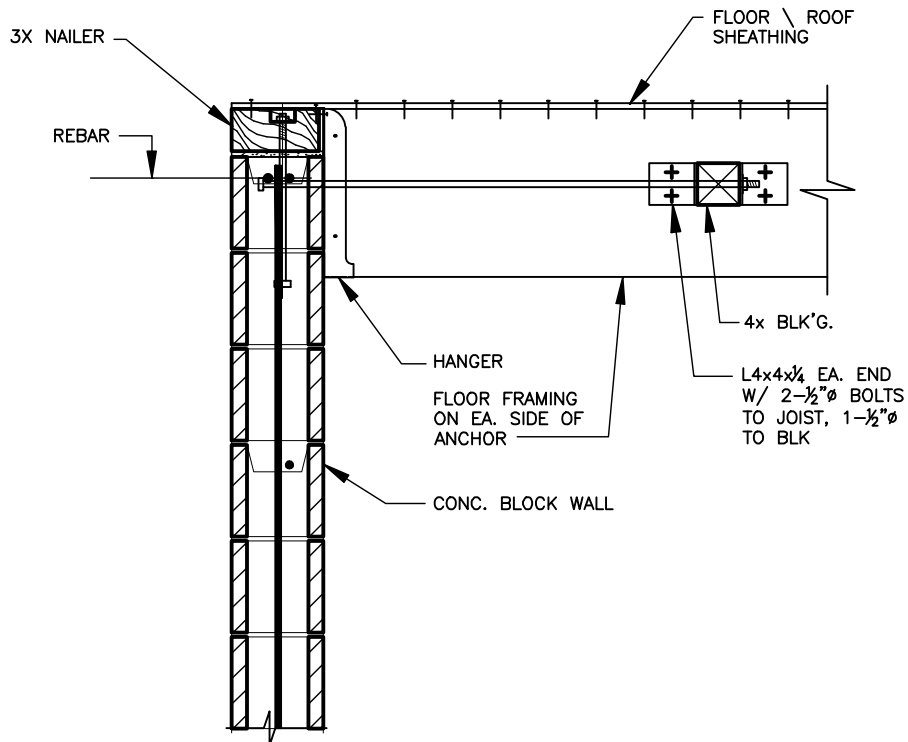
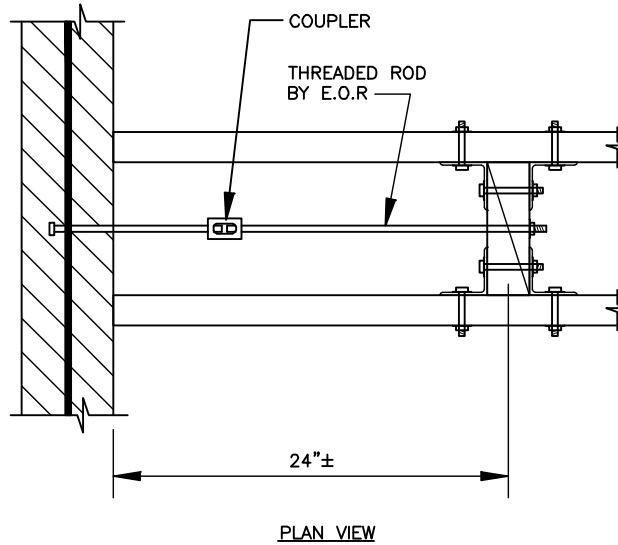
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EXTERIOR MASONRY - PARALLEL WOOD BEAMS

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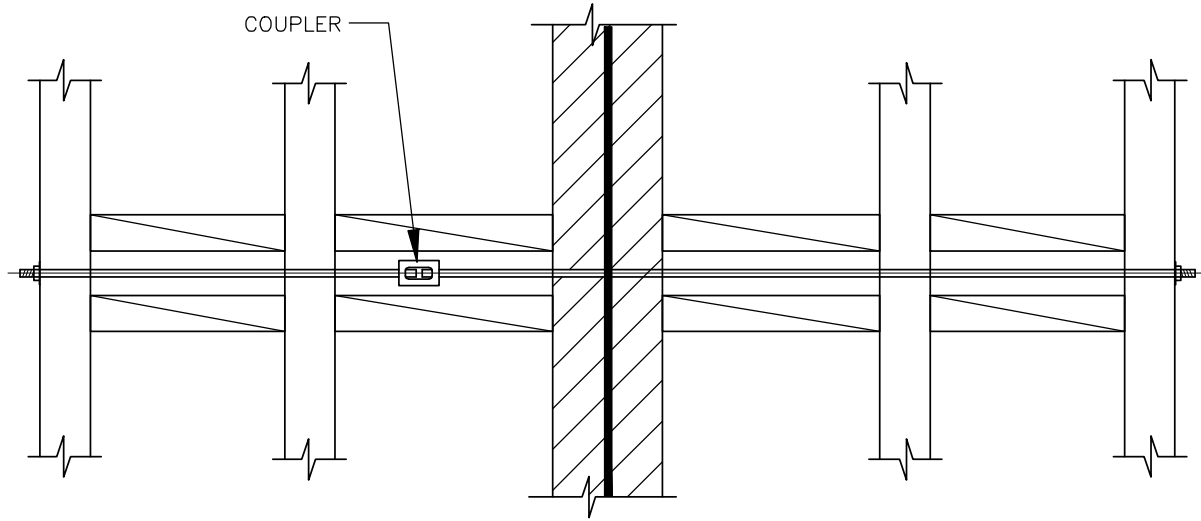
Details Exterior Masonry / Wood Beam



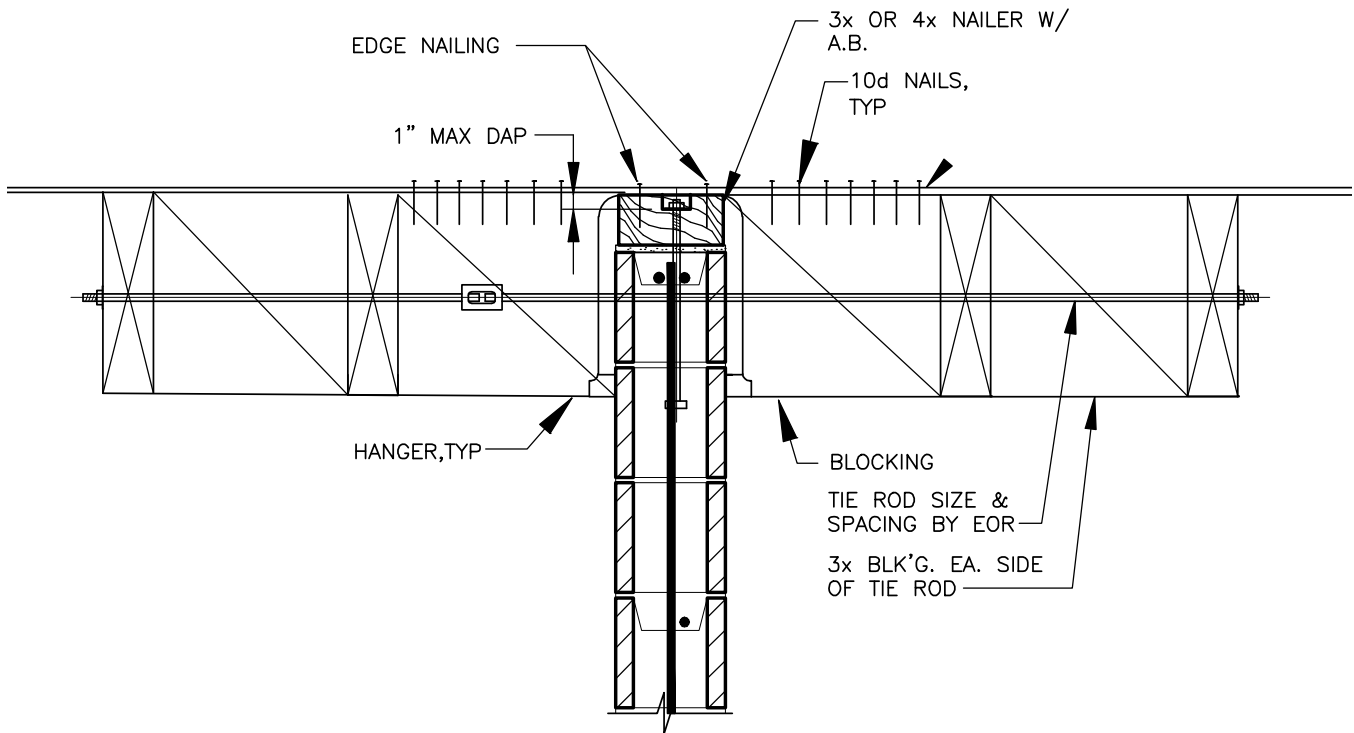
EXTERIOR MASONRY - PERPENDICULAR WOOD BEAMS

Exterior Masonry / Wood Beam Details

The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.



PLAN VIEW

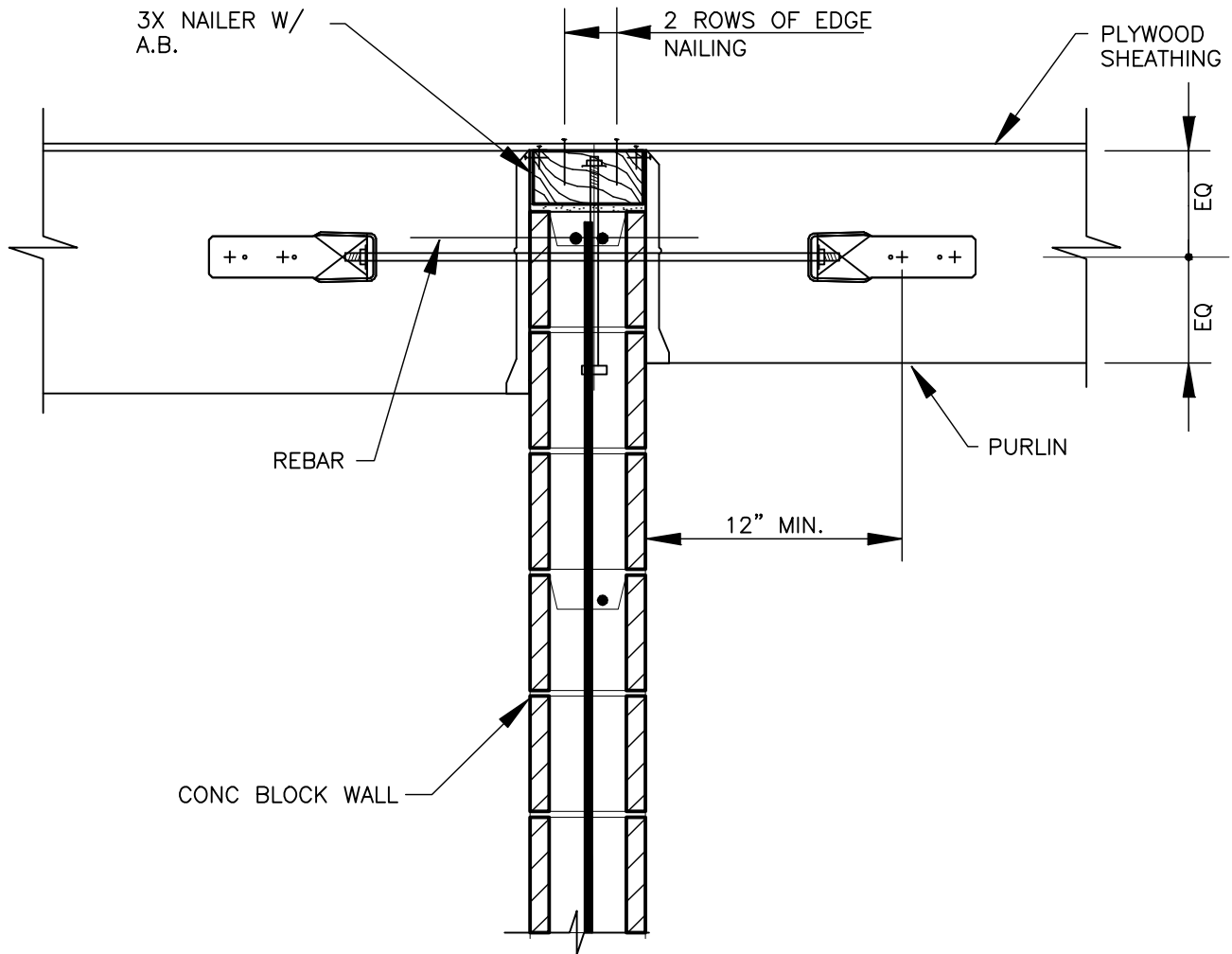


INTERIOR MASONRY - PARALLEL WOOD BEAMS

The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.

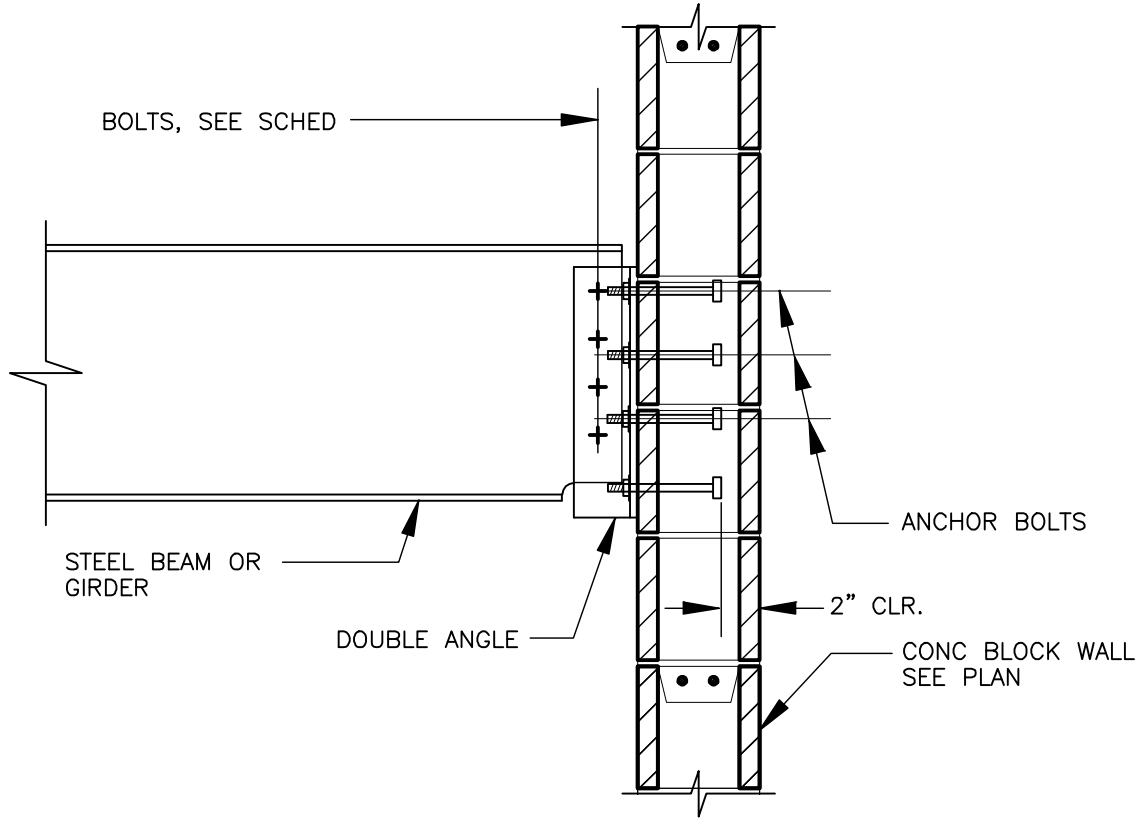
Details

Interior Masonry / Wood Beam



INTERIOR MASONRY - PERPENDICULAR WOOD BEAMS

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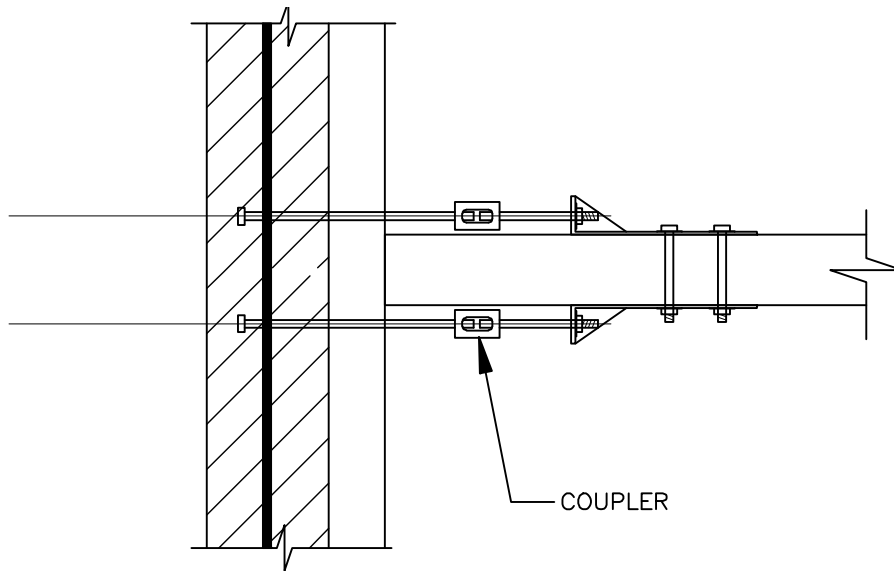


STEEL BEAM TO MASONRY WALL CONNECTION

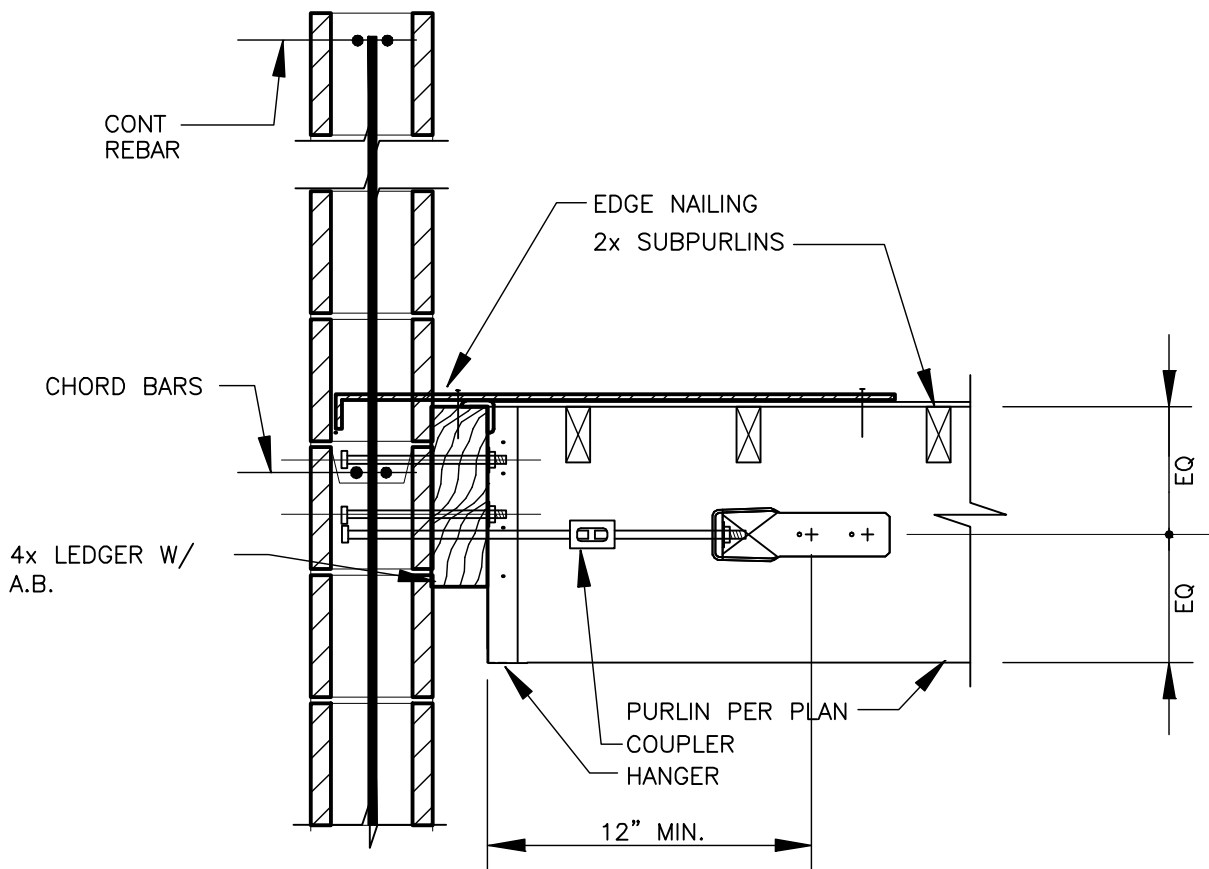
The details shown are intended to be used as an educational aid and are not to be used for construction without the approval and signature of a licensed professional engineer.

Details

Purlin to Wall with Parapet

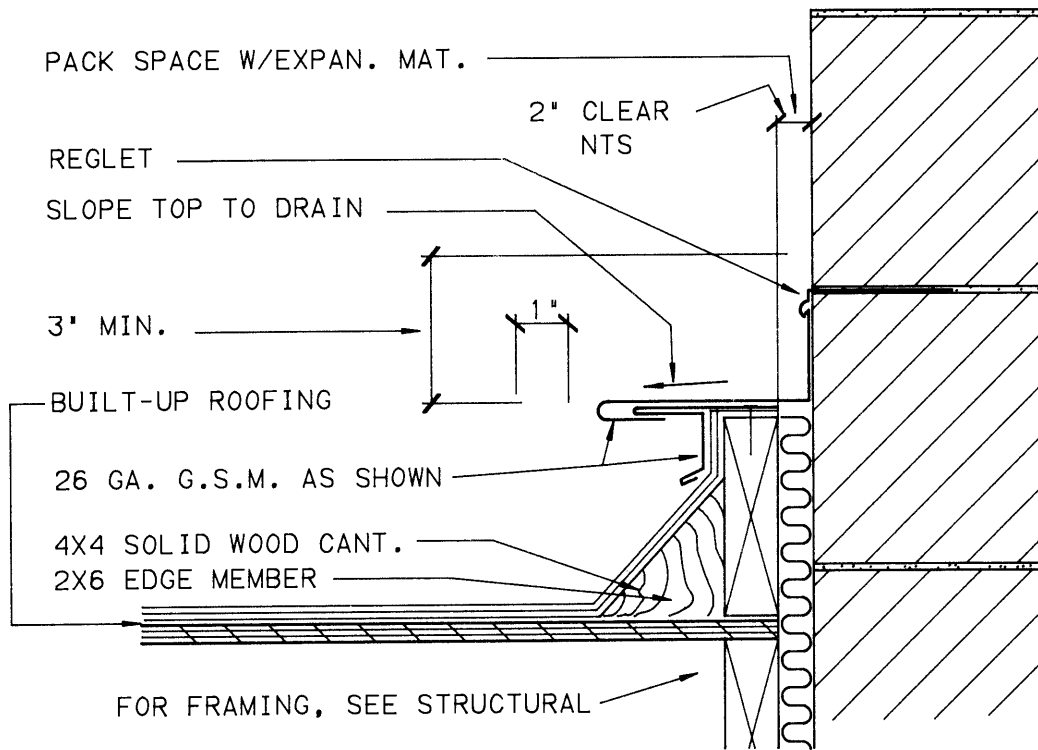


PLAN VIEW

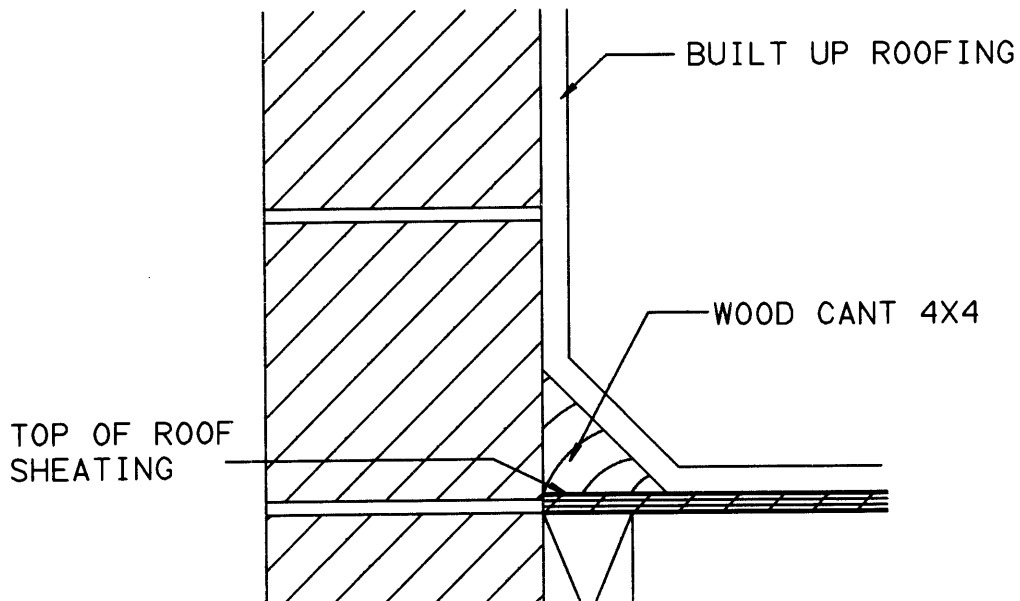


PURLIN PERPENDICULAR TO WALL WITH PARAPET

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EXPANSION JOINT

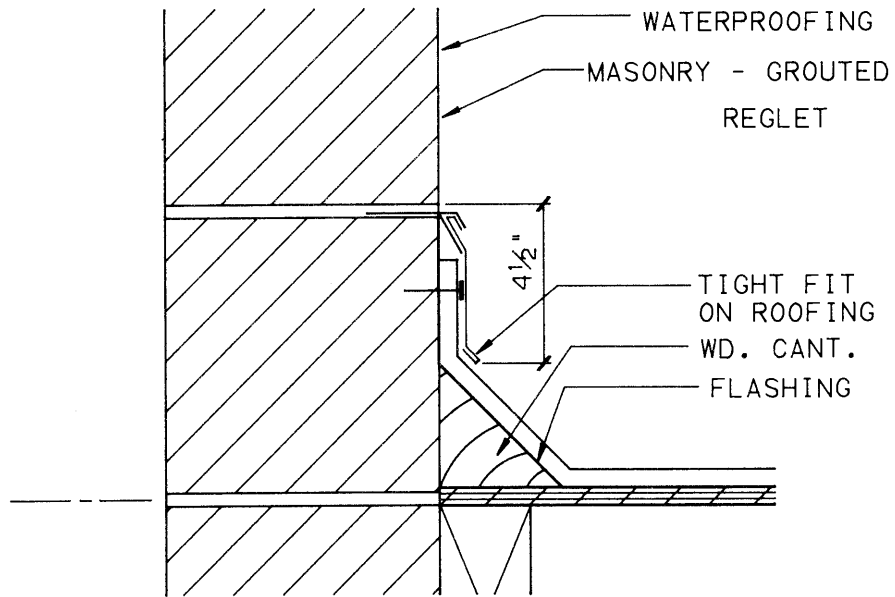


CANT STRIP AT BLK WALL

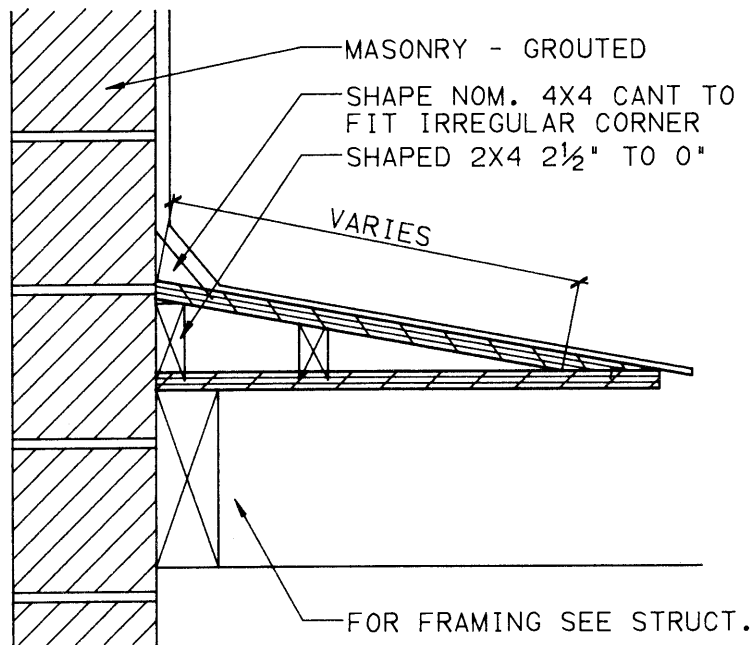
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Details

Roof Details



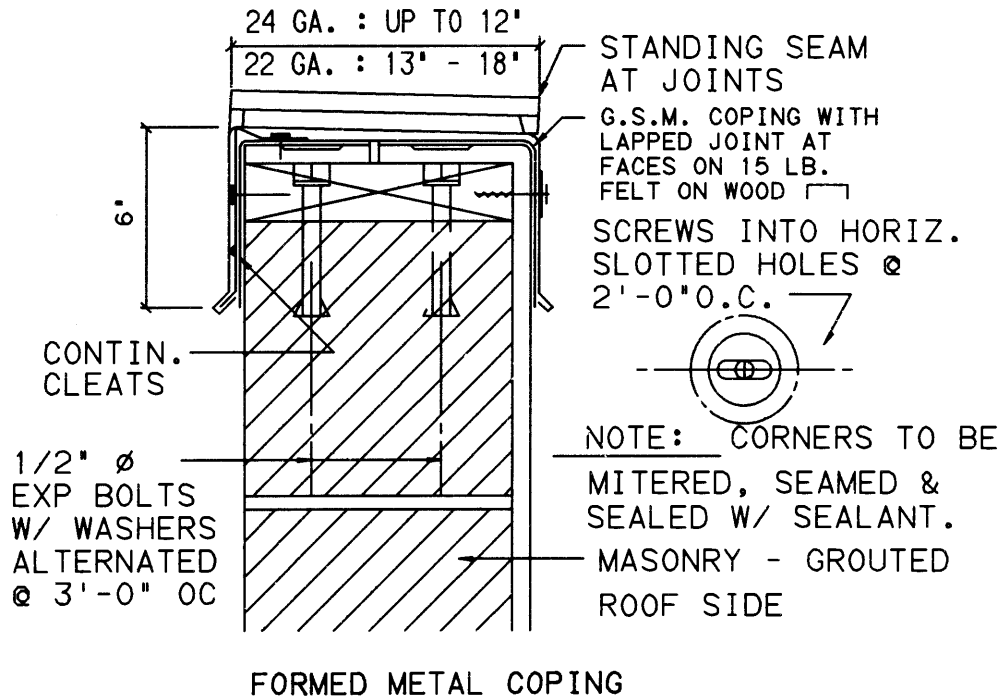
FORMED METAL COPING



CRICKET

Parapet Detail Details

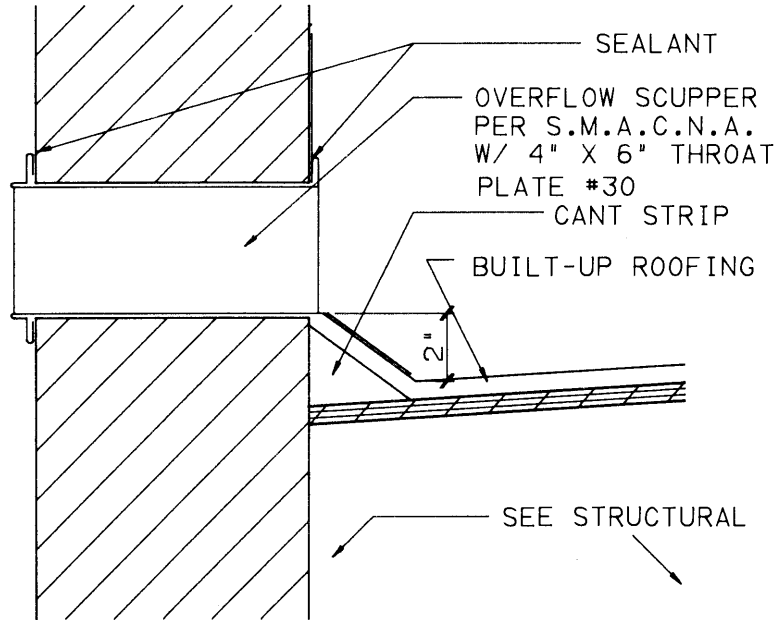
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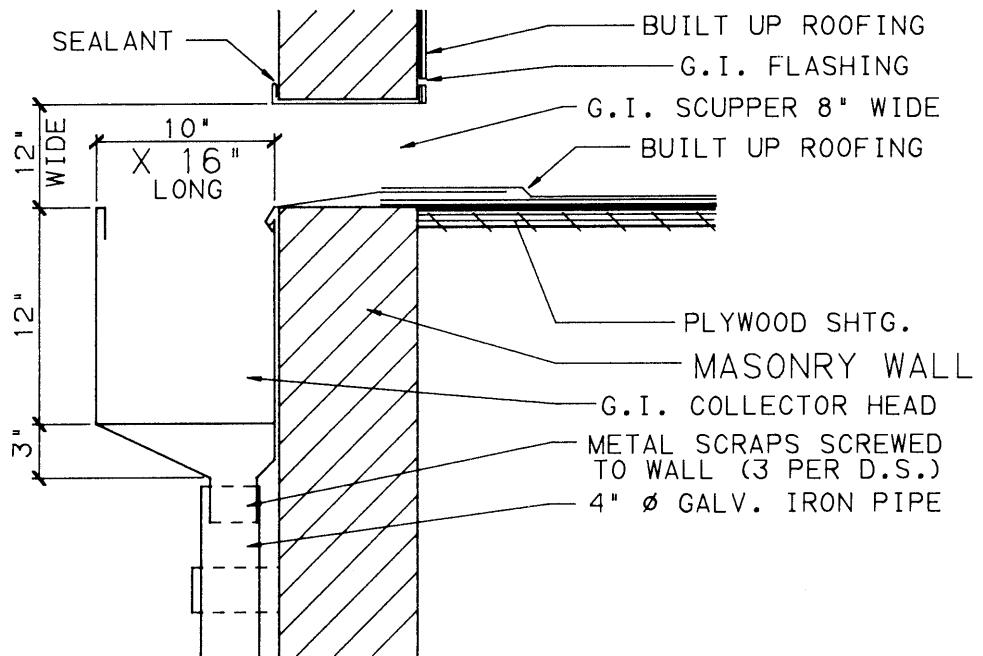
Details

Scupper Details



Note: For additional critical water repellent details, see the Technical Information section for *Clear Water Repellent Treatments*.

OVERFLOW SCUPPER

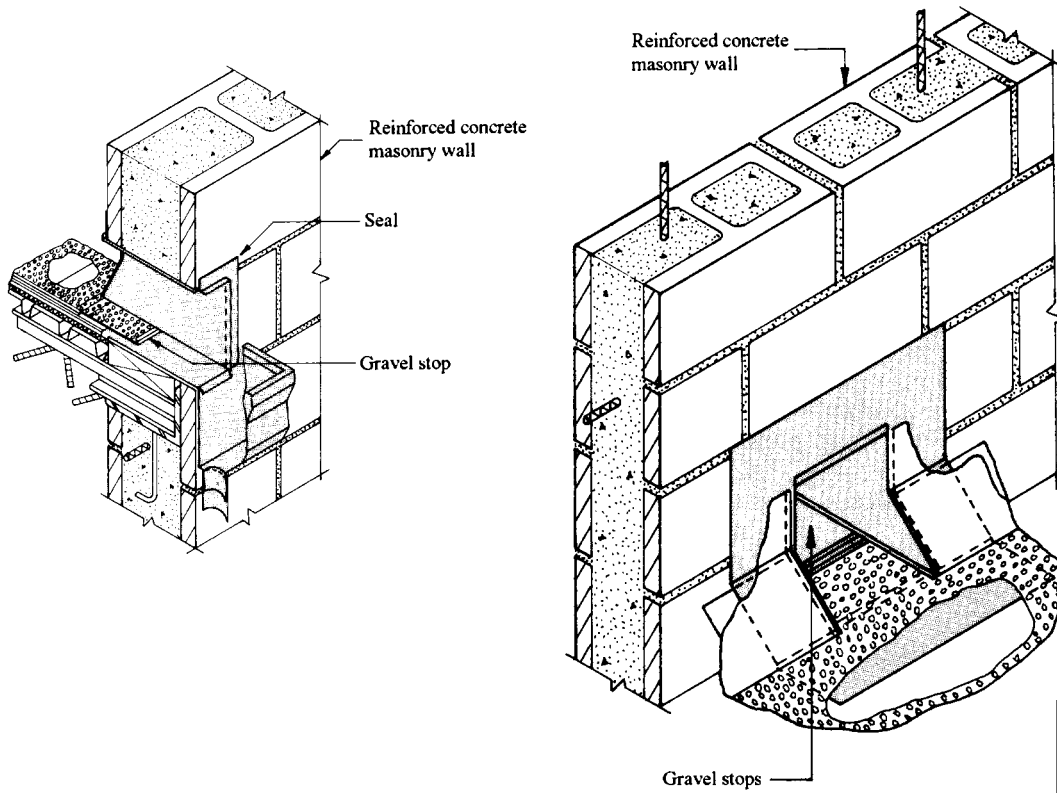


SCUPPER COLLECTOR

Scupper Details

Details

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Note: For additional critical water repellent details, see the Technical Information section for *Clear Water Repellent Treatments*.

