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SUGGESTED AAC MASONRY STRUCTURAL NOTES

GENERAL

All construction shall conform to the 2000 International Building Code (IBC) and/or 1997 Uniform Building Code (UBC).

AAC block walls designed per ICC ESR 1371.

The contractor shall be responsible for and provide all measures necessary to protect the structure during construction. These measures shall include, but not be limited to bracing and/or shoring for loads due to wind. The contractor shall be responsible for the design implementation of all scaffolding, bracing and shoring.

Contractor shall verify all dimensions and coordinate the site conditions with the drawings prior to construction. Any discrepancies and omissions shall be resolved with the architect. Do not use scaled dimensions.

Where any discrepancies occur between plans, details, general notes and specifications, the greater requirement shall govern, where no specific detail is shown. All details shown shall be incorporated into the project at all appropriate locations, whether specifically indicated or not.

In general, like all other construction products, autoclaved aerated concrete (AAC) is susceptible to minor damage if mishandled. Less handling means lower potential for damage. In some instances, damage may occur from shipping. Damaged blocks should be trimmed and installed to reduce job waste.

FOR ALL AAC CONSTRUCTION PRODUCTS:

Deliver only an amount of material that can readily be installed.

Unload pallets using pallet forks (either forklift or pallet fork on a crane cable). Consult your OSHA safety manual for "rigging" for other safety considerations. It is not advisable to use crane straps and slings. Storage areas should be accessible to delivery trucks and convenient to materials staging areas. If possible, drop-deliver the material right to the material staging areas.

Storage materials should always be stored away from other construction activities on a flat-graded area that is not susceptible to standing water, erosion or settling.

Keep material covered and banded until ready for installation.

LEVELING MORTAR BED (FIRST COURSE ONLY)

Mortar shall conform to ASTM C270, type S or M with 28-day compressive strength of 1800 PSI, tested per UBC standard 21-16 Masonry cement.

THIN BED MORTAR

Thin-bed mortar as provided by E-CRETE AAC manufacturer per ICC ESR 1371.

GROUT

Grout shall conform to ASTM C476, fine grout, 28-day compressive strength of 2000 PSI, tested per UBC standards. Grout shall be free of fly ash and /or chloride.

See details and notes on drawings for size and spacing of reinforcing bars. Lap splices of reinforcing in AAC walls, unless noted otherwise, shall be 40 bar diameters for grade 40 and 48 bar diameter for grade 60 bars. Provide vertical dowels from footings continuous through stem walls into AAC walls above. All shall match size and spacing of vertical reinforcing above. Extend all horizontal bond beam reinforcing in AAC walls continuous around corners and intersections or provide bent corner bars to match and lap horizontal bond beam reinforcing at corners and intersections or provide bent corners and intersections. All reinforcing in AAC walls shall be accurately located prior to grouting and the position maintained during grouting.

All cells and courses with reinforcing shall be filled solid with grout. Maximum grout lift 8'-0" with each grout pour stopping 1-1/2 inches below the top course of lift. Provide cleanouts if grout lift exceeds 4'-0". Place grout continuously. Do not interrupt grouting for more than one hour. Mechanically vibrate grout in vertical spaces immediately after pouring and again about 5 minutes later.

Unless noted otherwise on the drawings, provide vertical AAC wall control joints such that no straight run of wall exceeds 24'0". Coordinate locations with architect.

REINFORCING

Reinforcing steel shall conform to ASTM A615, grade 40 (Fy=40 KSI) Deformed bars for all bars #5 and smaller.

Welding of reinforcing shall be in accordance to AWS D1.4. No tack welding of reinforcing bars allowed.

Extend all horizontal reinforcing continuous around corners and intersections or provide bent bars to match and lap with horizontal bars at corners and intersections of walls.

Provide vertical wall reinforcing at all corners, wall ends, and within 24" of all wall openings. See plans for size and additional requirements.

Provide two horizontal reinforcing bars in solid grouted AAC "U" blocks at roof and floor supports and one horizontal reinforcing at top of parapet. See plans for size and additional requirements.

SPECIAL INSPECTIONS: (REQUIRED FOR ALL AAC MASONRY BLOCK WALLS)

- 1. Special inspections shall be preformed by a qualified inspector approved by the architect and the building official.
- 2. Special inspectors for structural Autoclaved Aerated Concrete (AAC) walls shall be preformed by a qualified inspector under the direct supervision of a state registered structural engineer who is familiar with the structural design of this project. The special inspection certificate shall be sealed by the supervising structural engineer. The contractor shall be responsible to providing a minimum of 24 hours notice to the special inspector to begin any work for which special inspection is required.
- 3. In accordance with UBC 1701.6.2 some inspections may be made on a periodic basis and satisfy the requirements of continuous inspection.
- 4. Special inspection is required during the following operations per UBC.
 a. Structural AAC walls: During placement of reinforcing, inspection of grout space immediately prior to closing of cleanouts and during placement of all grout.
 Special inspection for placing of units may be performed on a periodic basis.
- 5. Duties and responsibilities of the special inspector:

a. The special inspector shall observe the work assigned for conformance with the approved design drawings and specifications. b. The special inspector shall furnish inspection reports to the building official and the engineer or architect of record. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the engineer or architect of record and the building official.

Upon completion of the assigned work, the special inspector shall complete and sign a final report certifying that to the best of the inspector's knowledge, the work is in conformance with the approved plans and specifications, and the applicable workmanship provisions of the code.



E-Crete Autoclaved Aerated Concrete (AAC) Block Wall Installation Guide TOOLS REQUIRED FOR INSTALLATION OF AAC BLOCK THERE ARE A FULL RANGE OF TOOLS THAT ARE SPECIALLY DESIGNED TO ASSIST THE BLOCK LAYER IN INSTALLING AAC BLOCK PRODUCTS AND INCREASE PRODUCTIVITY AT THE JOB SITE. AAC BLOCK INSTALLATION WILL ALSO REQUIRE THE FOLLOWING STANDARD MASONRY TOOLS. SMALL HAND BRUSH HAND SAW-MARGIN TROWEL RASP SANDING FLOAT 4' LEVEL ELECTRIC BAND SAW NOTCHED TROWEL LOW SPEED DRILL RUBBER MALLET WITH MIXING PADDLE ADDITIONAL TOOLS REQUIRED FOR INSTALLING AAC JUMBO BLOCKS I 2 ELECTRIC JUMBO BAND SAW ELECTRIC MINICRANE 3 4

POINTS TO CHECK WHEN INSTALLING AAC BLOCK PRODUCTS

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POINT 1

LEVELING COURSE MUST BE LEVEL AND PLUMB. DO NOT PROCEED TO SUBSEQUENT COURSES UNTIL LEVELING HAS SET SUFFICIENTLY.



POINT 4 DO NOT ROUT HORIZONTALLY GREATER THAN 24" FROM TOP AND BOTTOM OF LOAD BEARING WALLS.



POINT 2

BLOCKS MUST BE INSTALLED IN A RUNNING BOND WITH A MINIMUM 4" BEARING (OVERLAP) OR 40% OF THE BLOCKS HEIGHT (WHICHEVER IS GREATER). LINTELS MUST BE INSTALLED WITH A MINIMUM 8" BEARING (OVERLAP).



POINT 3

ALL HEAD AND BED JOINTS MUST BE SOLID WITH APPROVED E-CRETE THIN BED MORTAR FOR FULL ADHESION.



POINT 6

POINT 5

TOTAL THICKNESS.

DO NOT ROUT BACK-TO-BACK WALL CHANNELS. OFFSET CHANNELS AT LEAST 12".

DO NOT ROUT HORIZONTALLY GREATER THAT 1/3

OF THE TOTAL WALL THICKNESS A + B < 1/3 OF



FAILURE TO ADHERE TO THESE PROPER INSTALLATION PROCEDURES WILL RENDER WARRANTY NULL AND VOID 6



LEVELING COURSE

LAY OUT WALL LINES ON BUILDING SLAB BY CONTROL LINES.



STEP | -LAYOUT WALL LINES

SET THE FIRST CORNER BLOCK IN THE SAND-CEMENT MORTAR AND
 ADJUST THE JOINT AS NEEDED.

- TO ACHIEVE THE REQUIRED HEIGHT, LOWER OR RAISE THE BLOCK BY TAPPING DOWN WITH A RUBBER MALLET OR BY ADDING MORTAR BENEATH.

STEP 3 -SET THE FIRST CORNER BLOCK AT THE HIGHEST CORNER OF THE SLAB PLACE A FULL WIDTH 1/2" DEEP SAND-CEMENT MORTAR JOINT USING A MASONRY TROWEL (MORTAR TO BE EITHER READY-MIX OR 3:1 SAND: PORTLAND CEMENT RATIO).

- SALVAGE ADDITIONAL MORTAR, DO NOT USE THIN-BED MORTAR FOR THE LEVELING BED JOINT.
- IF MOISTURE AND WICKING IS A PROBLEM, ADD WATERPROOFING ADMIXTURE TO SAND-CEMENT MORTAR.



STEP 2 -START THE LEVELING BED

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- MIX APPROVED E-CRETE THIN-BED MORTAR IN A CLEAN MIXING CONTAINER (5 GALLON BUCKET OR PAIL) PER MANUFACTURER'S DIRECTIONS.
- THE CONSISTENCY OF THE MIXED THIN-BED MORTAR SHOULD BE SUCH THAT IT FLOWS EASILY THROUGH THE TEETH OF THE NOTCHED TROWEL LEAVING THE SHAPE OF THE TEETH IN THE MORTAR BEAD.
- THIN-BED MORTAR DROPPINGS SHOULD NOT BE USED.



STEP 4 -MIX THIN-BED MORTAR

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LEVELING COURSE

- SET THE SECOND CORNER BLOCK ADDING THIN-BED MORTAR TO THE HEAD JOINT WITH THE NOTCHED TROWEL.



STEP 5 -SET SECOND CORNER BLOCK

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- AFTER BUILDING THE LEAD CORNERS, PULL A STRING BETWEEN TWO CORNERS & COMPLETE THE LEVELING COURSE.
 SAND-CEMENT MORTAR SHOULD BE USED FOR THE BED JOINT AND THIN-BED MORTAR FOR EACH HEAD JOINT.
- LEVEL ACROSS EACH BLOCK TO INSURE A PLUMB WALL.



- REPEAT SUBSEQUENT STEPS FOR EACH CORNER USING BUILDERS LEVEL TO MAINTAIN AN EQUAL ELEVATION.
- TRIPLE CHECK EACH LEAD CORNER IN ALL PLANES.



STEP 6 - REPEAT FOR ADDITIONAL CORNERS

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POINTS TO CHECK

- · MIX THIN-BED MORTAR.
- BEFORE MIXING NEW BATCH, WASH OUT THE BUCKET OR PAIL TO PREVENT ANY OLD THIN-BED FROM ACCELERATING THE DRYING TIME OF THE NEW MIX.



STEP | -MIX THIN-BED MORTAR

- USING A CLEAN, NOTCHED TROWEL THE SAME WIDTH AS THE BLOCK, SPREAD THIN-BED MORTAR UP THE HEAD JOINT OF THE ADJOINING BLOCK AND THEN ALONG THE BED JOINT.
- SPREAD ONLY ENOUGH THIN-BED MORTAR TO LAY ONE BLOCK AT A
 TIME. THE THIN- BED MORTAR MUST COVER THE FULL WIDTH OF THE JOINTS.
- INSTALL BLOCK IN A RUNNING BOND WITH A MINIMUM 6' BEARING (OVERLAP) OR 40% OF THE BLOCKS HEIGHT (WHICHEVER IS GREATER).



STEP 3 - APPLY THIN-BED MORTAR TO HEAD AND BED JOINTS 16 WITH A BRUSH, SWEEP OFF ALL DUST AND LOOSE PARTICLES TO ENSURE ADHESION OF THIN-BED MORTAR.



STEP 2 -CLEAN BED JOINT SURFACE

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- 15
- PICK UP EACH BLOCK AND MOVE IT AS CLOSE TO THE HEAD JOINT AS POSSIBLE BEFORE LOWERING THE BLOCK ONTO THE BED JOINT.
- EXCESSIVE MOVEMENT ALONG THE BED JOINT WILL FORCE THE THIN-BED MORTAR INTO THE CORNER PREVENTING FULL ADHESION WITH THE HEAD JOINT.



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TYPICAL COURSING

- TAP THE END OF THE BLOCK TO ENSURE A FULL SURFACE COVERAGE OF THIN-BED MORTAR AT THE HEAD JOINT AND ALIGN WITH STRING LINE.
- CLEAN OFF SPILLED OR DRIPPED THIN-BED MORTAR FROM FACE OF WALL
 AS WORK PROCEEDS.
- REPEAT INSTALLATION FOR SUBSEQUENT COURSES.



STEP 5 -TAP THE END OF THE BLOCK

INSTALL LINTELS WITH A MINIMUM 24" BEARING - SEE DRAWINGS FOR

LINTEL DEPTH AND REINFORCING.

STEP 7 -

B

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- AS NEEDED, RASP (SAND) THE TOPSIDE OF THE WALL TO ENSURE A LEVEL BED-JOINT FOR THE NEXT COURSE.
- THIS IS REQUIRED LESS OFTEN IF BLOCK IS INSTALLED WITHIN TOLERANCES.



STEP 6 -RASP AS NEEDED

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INSTALL LINTELS AS REQUIRED



ROUTING CHANNELS

- CUT CHANNELS AS SMALL AS POSSIBLE. DO NOT USE IMPACT TOOLS
 SUCH AS HAMMERS OR ANY OTHER CUTTING TOOL THAT WILL DAMAGE
 THE ADJACENT WALL.
- REDUCE THE NUMBER OF CHANNELS BY TAKING SERVICES BEHIND WALL
 WHERE POSSIBLE.
- DO NOT ROUT CHANNELS IN FLOOR OR CEILING PANELS. A PERPENDICULAR HOLE MAY BE CORED THROUGH THE WALL IF LESS THAN 1/4 WALL THICKNESS.



ENSURING STRUCTURAL INTEGRITY

USE A STRAIGHTEDGE TO MARK BOTH SIDES OF THE GROOVE
WITH A PENCIL.



STEP I -MARK CHANNEL

1. VERTICAL ROUTING

VERTICAL CHANNELS MAY BE CUT BY ROUTER OR SAW TO A WIDTH NOT TO EXCEED 6". DO NOT CUT CHANNELS DIRECTLY UNDER POINT LOADS.

2. HORIZONTAL ROUTING

CUT HORIZONTAL CHANNEL(S) NO DEEPER THAT 1/3 OF THE WALL THICKNESS AND NO GREATER THAN THAT 24" FROM THE TOP AND BOTTOM OF A BEARING WALL. DO NOT CUT BACK-TO-BACK CHANNELS. OFFSET CHANNELS AT LEAST 12" WHEN ROUTING ON BOTH SIDES OF WALL. MAKE ACCESS HOLES IN THE WALL ON THE OPPOSITE SIDE OF THE CHANNEL WHERE NECESSARY.



A + B < 1/3 OF WALL THICKNESS

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S 170 OF WALL INICKILLESS

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- · METHOD 1: CUT CHANNEL WITH A CHANNEL ROUTER. (AAC ROUTER)
- METHOD 2: SET A BLADE ON A CIRCULAR SAW OR CONCRETE CUTTER TO THE NECESSARY CHANNEL DEPTH, IF USING A CIRCULAR SAW MAKE CUTS FOR EACH SIDE OF THE CHANNEL AND AN ADDITIONAL CUT IN THE MIDDLE.
- DO NOT CUT THE CHANNEL DEEPER THAN NECESSARY.



STEP 2 -CUT ALONG MARKINGS

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ROUTING CHANNELS

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IF A CIRCULAR SAW OR CONCRETE CUTTER WAS USED TO CUT THE CHANNEL THE UNWANTED MATERIAL CAN BE REMOVED BY SNAPPING IT AWAY WITH A CHISEL.



STEP 3 -REMOVE WASTE AND CLEAN CHANNEL

- INSTALL CABLE, FLEXIBLE, OR RIGGED CONDUIT IN CHANNEL AND SECURE WITH CHANNEL CLIPS. OBSERVE LOCAL CODES FOR TYPE OF CONDUIT, PROPER ATTACHMENT AND CHANNEL DEPTH.

STEP 5 -INSTALL CONDUIT

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CUT A TEMPLATE TO THE SIZE OF THE HOLE OR OUTLET AND TEMPORALLY . SECURE TO THE WALL. REMOVE AAC MATERIAL WITH A PLUNGE ROUTER TO THE REQUIRED DEPTH.



 ELECTRIC BOXES MAY BE FIXED TO THE WALL WITH COURSE THREADED SCREWS. AS AN OPTION, GLUE, FOAM OR THIN-BED MORTAR MAY BE USED.



STEP 6 -INSTALL ELECTRIC BOXES 28