COMMUNITY SAFE ROOM

HURRICANE FLOYD HOUSING INITIATIVE

NORTH CAROLINA

DRAWING INDEX	
COVER SHEET	
FUTURE SITE PLAN (FURNISHED BY OTHERS)	C1
FLOOR PLAN	A1
BUILDING DETAILS	A2
ELEVATIONS	A3
STRUCTURAL NOTES	S1
FOUNDATION PLAN	S2
SLAB REINFORCING & JOINT LAYOUT	S3
ROOF REINFORCING	S4
SECTIONS & DETAILS	S5
SECTIONS & DETAILS	S6
MECHANICAL PLAN & SCHEDULES	M1
POWER PLAN & SCHEDULES	E1
LIGHTING PLAN & SCHEDULES	E2
PLUMBING PLAN & SCHEDULES	P1

ACCESSIBILITY NOTES: ADA/ANSI A117.1

THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGN SHALL BE DISPLAYED AT ALL ACCESSIBLE RESTROOM FACILITIES AND AT ACCESSIBLE BUILDING ENTRANCES UNLESS ALL ENTRANCES ARE ACCESSIBLE. INACCESSIBLE ENTRANCES SHALL HAVE DIRECTIONAL SIGNS INDICATING THE ROUTE TO THE NEAREST ACCESSIBLE ENTRANCE.

RECEPTACLES ON WALLS SHALL BE MOUNTED NO LESS THAN 15" ABOVE THE FLOOR. EXCEPTION: HEIGHT LIMITATIONS DO NOT APPLY WHERE THE USE OF SPECIAL EQUIPMENT DICTATES OTHERWISE OR WHERE ELECTRICAL RECEPTACLES ARE NOT NORMALLY INTENDED FOR USE BY BUILDING OCCUPANTS.

WHERE EMERGENCY WARNING SYSTEMS ARE PROVIDED, THEY SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. THE VISUAL ALARMS SHALL BE LOCATED THROUGHOUT, INCLUDING RESTROOMS, AND PLACED 80" ABOVE THE FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER.

DOORS TO ALL ACCESSIBLE SPACES SHALL HAVE ACCESSIBLE HARDWARE (i.e. LEVER-OPERATED, PUSH-TYPE, U-SHAPED) MOUNTED NO HIGHER THAN 48" ABOVE THE FLOOR.

FLOOR SURFACES SHALL BE STABLE, FIRM, AND SLIP-RESISTANT. CHANGES IN LEVEL BETWEEN 0.25" AND 0.5" SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2". CHANGES IN LEVEL GREATER THAN 0.5" REQUIRE RAMPS. CARPET PILE THICKNESS SHALL BE 0.5" MAX. GRATINGS IN FLOOR SHALL HAVE SPACES NO GREATER THAN 0.5" WIDE IN ONE DIRECTION. DOORWAY THRESHOLDS SHALL NOT EXCEED 0.5" IN HEIGHT.

GRAB BARS REQUIRED OF ACCESSIBILITY SHALL BE 1.25"-1.50" IN DIAMETER WITH 1.5" CLEAR SPACE BETWEEN THE BAR AND THE WALL.

ACCESSIBLE WATER CLOSETS SHALL BE 17"-19" FROM FLOOR TO THE TOP OF THE SEAT. GRAB BARS SHALL BE 36" LONG MINIMUM WHEN LOCATED BEHIND WATER CLOSET AND 42" MINIMUM WHEN LOCATED ALONG SIDE OF WATER CLOSET, AND SHALL BE MOUNTED 33"-36" ABOVE THE FLOOR.

ACCESSIBLE URINALS SHALL BE STALL-TYPE OR WALL HUNG WITH ELONGATED RIMS AT A MAXIMUM OF 17" ABOVE THE FLOOR.

ACCESSIBLE LAVATORIES SHALL BE MOUNTED WITH THE RIM NO HIGHER THAN 34" ABOVE THE FLOOR AND A CLEARANCE OF AT LEAST 29" ABOVE THE FLOOR TO THE BOTTOM OF THE APRON.

ACCESSIBLE SINKS SHALL BE MOUNTED WITH THE RIM NO HIGHER THAN 34" ABOVE THE FLOOR AND A CLEARANCE OF AT LEAST 27" HIGH, 30" WIDE, AND 19" DEEP UNDERNEATH SINK. THE SINK DEPTH SHALL BE 6.5" MAXIMUM.

HOT WATER AND DRAIN PIPES UNDER ACCESSIBLE LAVATORIES AND SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER ACCESSIBLE LAVATORIES AND SINKS.

ACCESSIBLE LAVATORIES AND SINKS SHALL HAVE ACCESSIBLE FAUCETS (i.e. LEVER-OPERATED, PUSH-TYPE, ELECTRONICALLY CONTROLLED.)

WHERE MIRRORS ARE PROVIDED IN RESTROOM, AT LEAST ONE SHALL BE PROVIDED WITH ITS BOTTOM EDGE NO HIGHER THAN 40" ABOVE THE FLOOR.

COMMUNITY SAFE ROOM

HURRICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

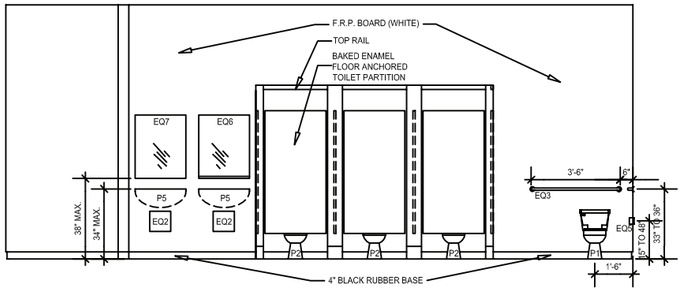
COVER SHEET

SHEET No.:

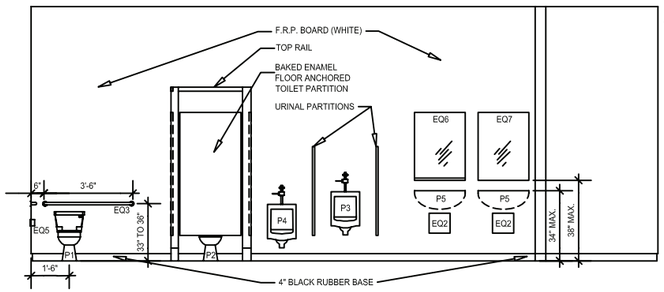
DATE: 7 MARCH 2000

REVISED: AUGUST 2008 | REV. NO.

FEMA



102 WOMENS RESTROOM
SCALE: 3/8" = 1'-0"



103 MENS RESTROOM
SCALE: 3/8" = 1'-0"

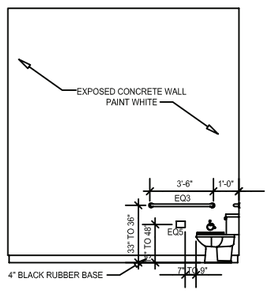
GENERAL NOTES:

1. ALL GYP. BOARD WALLS 1/2" THICK.

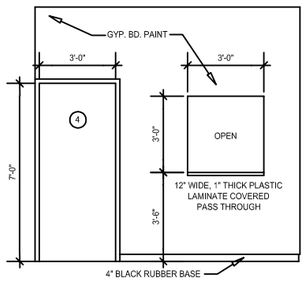
2. CONTRACTOR SHALL PROVIDE SOLID WOOD BLOCKING IN WALLS FOR ANCHORAGE OF SINKS, MIRRORS, PARTITIONS, ETC.

3. INTERIOR WALL CONSTRUCTION SHALL BE METAL FRAMING 25 GAUGE AT 16" ON CENTER.

4. F.R.P. BOARD SHALL BE INSTALLED USING ALL EDGE, CORNER & JOINT MATERIALS OF THE SAME COLOR.

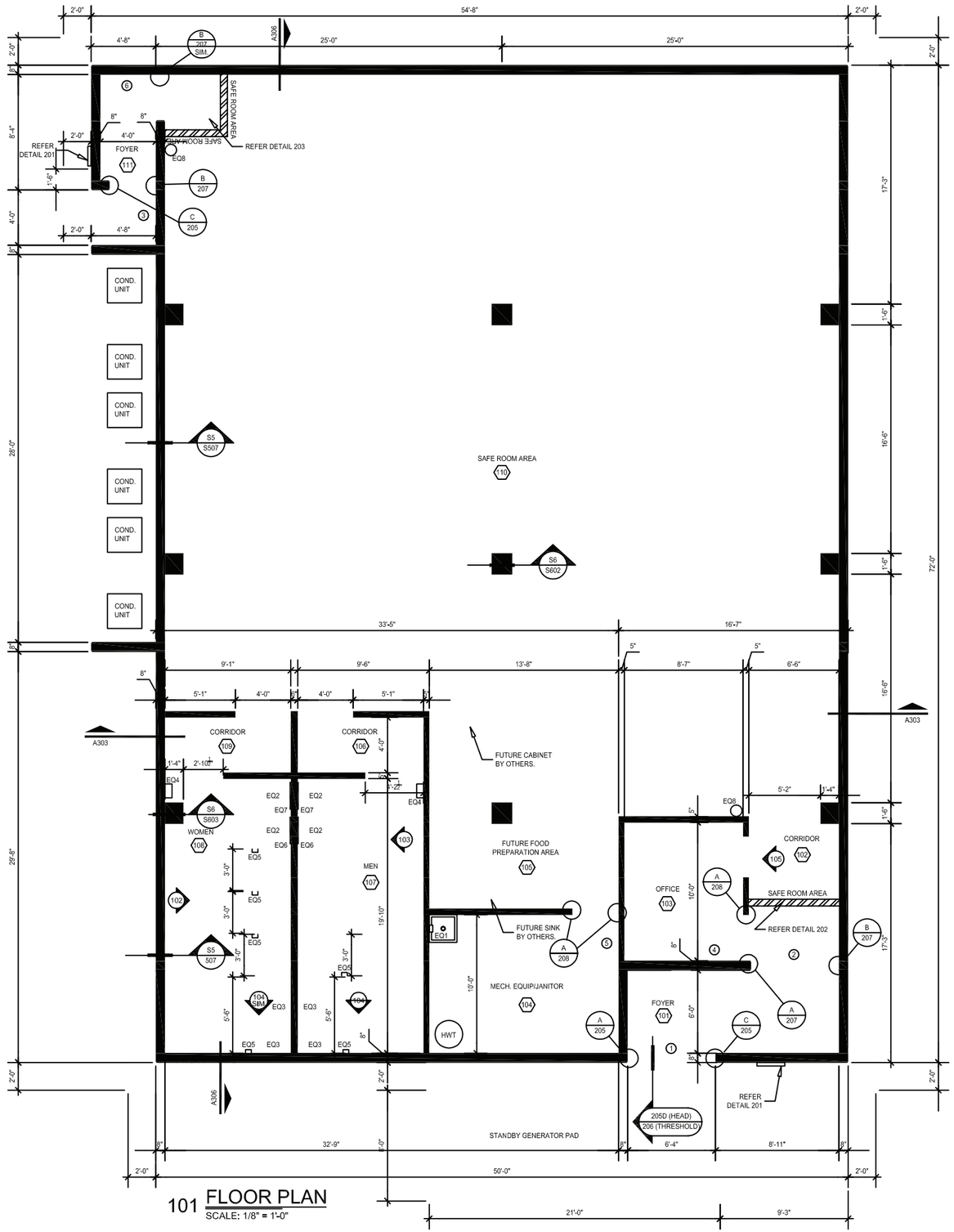


104 RESTROOM
SCALE: 3/8" = 1'-0"



105 CORRIDOR
SCALE: 3/8" = 1'-0"

EQUIPMENT SCHEDULE				
ITEM	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
EQ1	MOP HANGER	ELGER	24" LONG x 3"	STAINLESS STEEL WITH 3 RUBBER TOOL GRIPS
EQ2	DRAIN COVERS	PLUMBEREX	3011	
	VALVE AND SUPPLY COVERS	PLUMBEREX	3021	
	TAILPIECE COVERS	PLUMBEREX	3041	
EQ3	42" GRAB BARS	BRADLEY	MODEL 812 TYPE 304 001-42-2	
EQ4	TOWEL DISPENSER WASTE RECEPTACLE	BRADLEY	MODEL 2017-11 TYPE 304	30" DROP-IN, UP-FRONT CONTROLS, WHITE
EQ5	TISSUE DISPENSER	BRADLEY	MODEL 508	
EQ6	MIRROR	BRADLEY	7815-2430-2 24" x 30"	MIRROR WITH SHELF
EQ7	MIRROR	BRADLEY	782-2436-2	TILT MIRROR
EQ8	FIRE EXTINGUISHER	ANY		10LB. ABC WALL MOUNTED



101 FLOOR PLAN
SCALE: 1/8" = 1'-0"

COMMUNITY SAFE ROOM
HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

FLOOR PLAN

SHEET No.: A1

DATE: 7 MARCH 2000

REVISED: | REV. NO.

FEMA

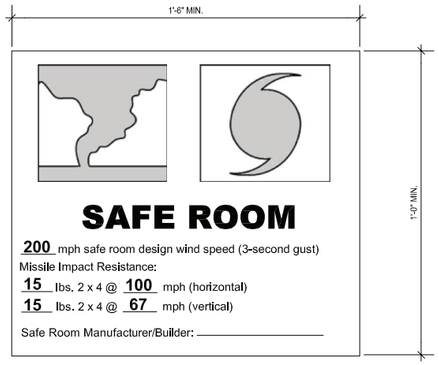
ROOM FINISH SCHEDULE

MK	DESCRIPTION	FLOOR	BASE	WALL 1	WALL 2	WALL 3	WALL 4	CEILING	HEIGHT	REMARKS
101	FOYER	SEALED CONC.	NONE	EXPOSED CONCRETE PAINT	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	VARIES	
102	CORRIDOR	SEALED CONC.	NONE	--------	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	GYP. BOARD PAINTED	EXPOSED CONCRETE PAINTED	VARIES	4" RUBBER BASE WALL 4
103	OFFICE	SEALED CONC.	4" RUBBER ALL WALLS	GYP. BOARD PAINTED	GYP. BOARD PAINTED	EXPOSED CONCRETE PAINTED	GYP. BOARD PAINTED	EXPOSED CONCRETE PAINTED	VARIES	
104	MEC. JANITORIAL EQUIP.	SEALED CONC.	4" RUBBER WALL (1, 2 & 4)	FRP BOARD	FRP BOARD & EXPOSED CONCRETE, PAINTED	EXPOSED CONCRETE PAINTED	FRP BOARD	EXPOSED CONCRETE PAINTED	VARIES	
105	FUTURE FOOD PREP. AREA	SEALED CONC.	4" RUBBER ALL WALLS	--------	FRP BOARD	FRP BOARD	FRP BOARD	EXPOSED CONCRETE PAINTED	VAIRES	
106	CORRIDOR	SEALED CONC.	4" RUBBER	FRP BOARD	FRP BOARD	FRP BOARD	FRP BOARD	EXPOSED CONCRETE PAINTED	VARIES	
107	MEN'S RESTROOM	SEALED CONC.	4" RUBBER	FRP BOARD	FRP BOARD	EXPOSED CONCRETE PAINTED	FRP BOARD	EXPOSED CONCRETE PAINTED	VARIES	
108	WOMEN'S RESTROOM	SEALED CONC.	4" RUBBER	FRP BOARD	FRP BOARD	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	VARIES	
109	CORRIDOR	SEALED CONC.	4" RUBBER	FRP BOARD	FRP BOARD	FRP BOARD	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	VARIES	
110	SAFE ROOM AREA	SEALED CONC.	NONE 4" RUBBER WALL 3	EXPOSED CONCRETE PAINT	EXPOSED CONCRETE PAINT	GYP. BOARD PAINTED	EXPOSED CONCRETE PAINT	EXPOSED CONCRETE PAINTED	VARIES	
111	FOYER	SEALED CONC.	NONE	EXPOSED CONCRETE PAINT	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	EXPOSED CONCRETE PAINTED	VARIES	

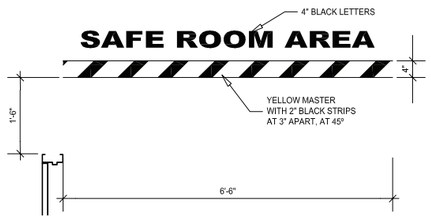
DOOR FINISH SCHEDULE

MK	TYPE	SIZE	MATERIAL	FINISH	FRAME	FINISH	GLAZING	HEAD	JAMB	TRESH	REMARKS
1	A	CECO MEDALLION PR 3'-0"x7'-0"x1 3/4" LEVEL4	14 ga. STEEL	PAINT	12 ga. STEEL	PAINT	NONE	205 D	205 A,B,C	206	14 ga. STEEL DOOR WITH 20 ga. RIBS.
2	A	CECO MEDALLION PR 3'-0"x7'-0"x1 3/4" LEVEL 4	14 ga. STEEL	PAINT	12 ga. STEEL	PAINT	NONE	205 D	207 A & B	NONE	14 ga. STEEL DOOR WITH 20 ga. RIBS.
3	B	CECO MEDALLION PR 3'-0"x7'-0"x1 3/4" LEVEL 4	14 ga. STEEL	PAINT	12 ga. STEEL	PAINT	NONE	205 D	205 B (SIM)	206 (SIM)	14 ga. STEEL DOOR WITH 20 ga. RIBS.
4	B	CECO MEDALLION 3'-0" x 7'-0" x 1¾" LEVEL 1	20 ga. STEEL	PAINT	16 ga. STEEL	PAINT	NONE	208 B	207 A	NONE	
5	B	CECO MEDALLION 3'-0" x 7'-0" x 1¾" LEVEL 1	20 ga. STEEL	PAINT	16 ga. STEEL	PAINT	NONE	208 B	208 B (SIM)	NONE	
6	B	CECO MEDALLION PR 3'-0"x7'-0"x1 3/4" LEVEL 4	14 ga. STEEL	PAINT	12 ga. STEEL	PAINT	NONE	205 D	207 A & B	NONE	14 ga. STEEL DOOR WITH 20 ga. RIBS.

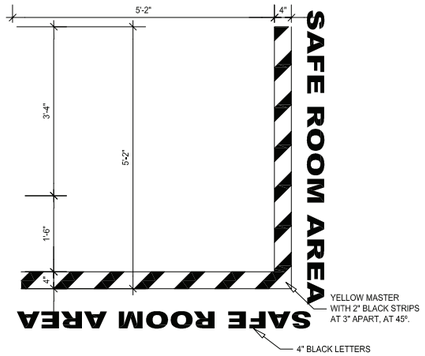
ALUMINUM SIGN BACKGROUND NON-REFLECTIVE. "HURICANE - SAFE ROOM" AND LOGO SHALL BE REFLECTIVE USING 3M SCOTCHLITE DIAMOND GRADE REFLECTIVE SHEETING. YELLOW IN COLOR. VERIFY WITH MANUFACTURER THAT SIGN WILL GLOW FOR A MIN OF 6 HOURS, IN THE EVENT OF POWER LOSS.



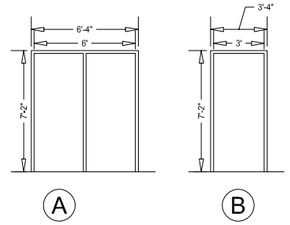
201 BUILDING I.D. SIGN
N.T.S.



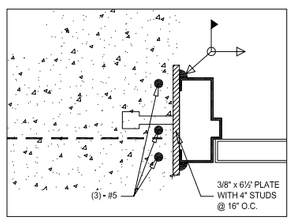
202 FLOOR SIGNAGE
SCALE : ¾" = 1'-0"



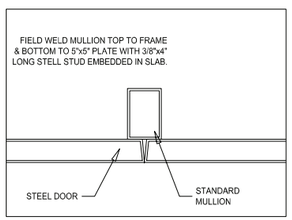
203 FLOOR SIGNAGE
SCALE : ¾" = 1'-0"



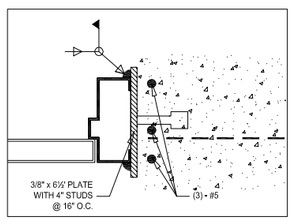
204 DOOR TYPE
SCALE : ¼" = 1'-0"



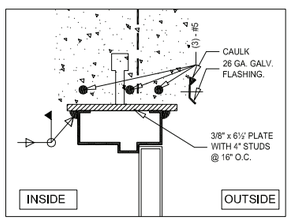
A JAMB



B MULLION

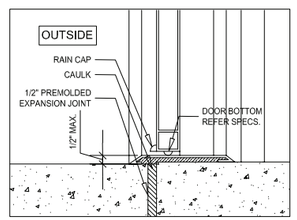


C JAMB



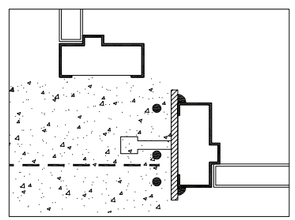
D HEAD

205 DOUBLE DOOR ENTRY DETAILS
SCALE : 3" = 1'-0"

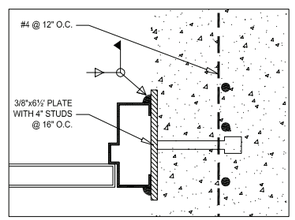


NOTE:
THRESHOLD IS LEVEL AT DOOR 6 & DOOR 2

206 THRESHOLD DETAIL
SCALE : 3" = 1'-0"

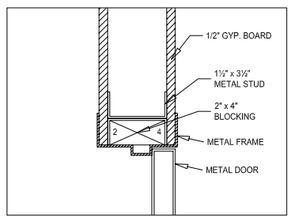


A JAMB

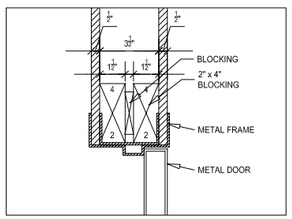


B JAMB

207 JAMB DETAIL
SCALE : 3" = 1'-0"



A JAMB



B HEAD

208 DETAILS AT DRYWALL
SCALE : 3" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

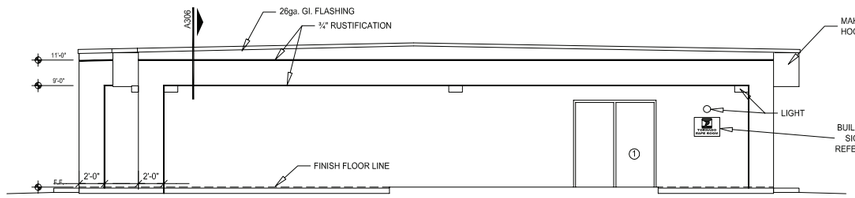
Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

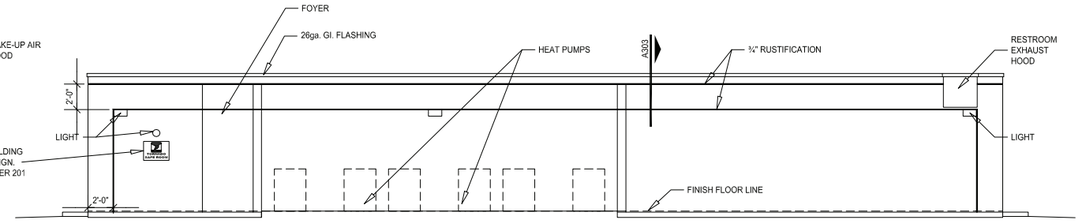
SCHEDULES & DETAILS

SHEET No.:	A2
DATE:	7 MARCH 2000
REVISED:	AUGUST 2008
REV. NO.	

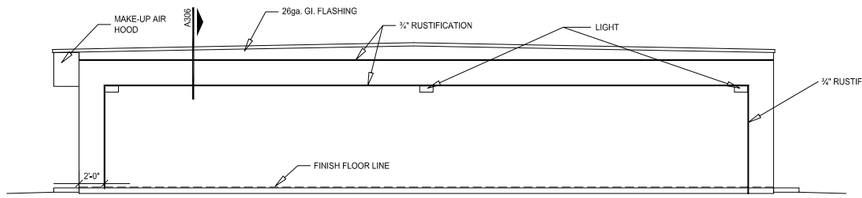
FEMA



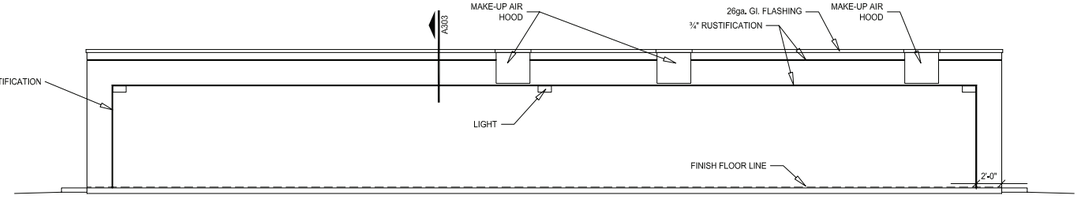
301 FRONT ELEVATION
SCALE: 3/16" = 1'-0"



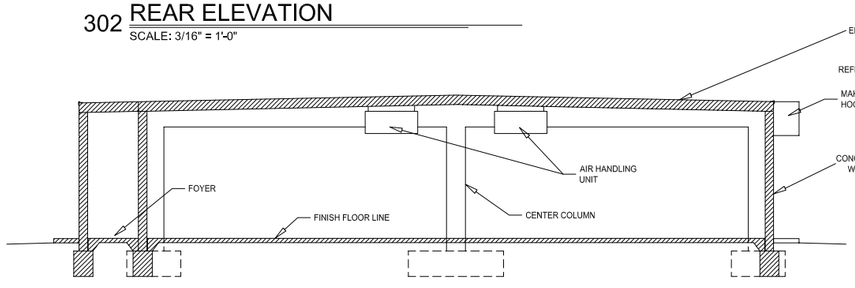
304 SIDE ELEVATION
SCALE: 3/16" = 1'-0"



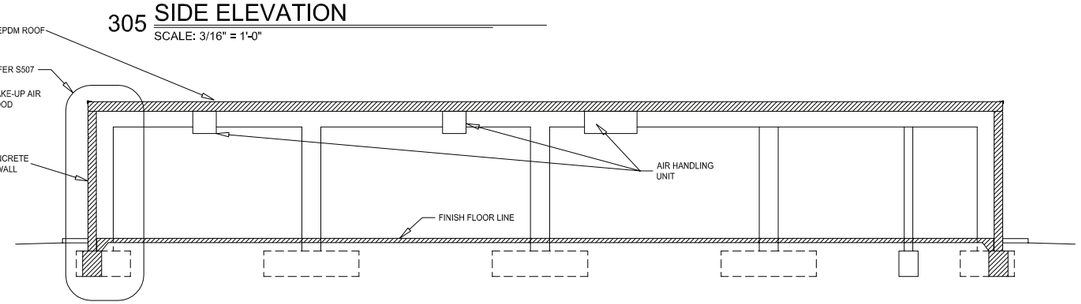
302 REAR ELEVATION
SCALE: 3/16" = 1'-0"



305 SIDE ELEVATION
SCALE: 3/16" = 1'-0"



303 CROSS SECTION
SCALE: 3/16" = 1'-0"



306 CROSS SECTION
SCALE: 3/16" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

ELEVATIONS

SHEET No.: A3

DATE: 7 MARCH 2000

REVISED:	REV. NO.

FEMA

GENERAL NOTES

1. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.

2. THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO THE APPLICATION OF ROOF DIAPHRAGMS AND FINISH MATERIALS. HE SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE APPLICATION OF THE AFOREMENTIONED MATERIALS.

3. REFER TO PROJECT SPECIFICATIONS FOR MATERIAL SPECIFICATIONS AND PERFORMANCE REQUIREMENTS NOT COVERED BY THE STRUCTURAL DRAWINGS.

4. ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

5. REFER TO DRAWINGS OF OTHER SECTIONS FOR ALL NON-STRUCTURAL INFORMATION INCLUDING EXACT LOCATION OF DOORS, WINDOWS, NONBEARING WALLS, PIPES, CONDUITS, DEPRESSIONS, DRAINS, INSULATION, FINISHES, ETC.

6. NO CONCRETE WORK SHALL BE PERFORMED DURING HEAVY RAIN, SNOW, OR HAIL, OR WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 40ºF UNLESS APPROVED METHODS ARE USED TO PREVENT FREEZING OF CONCRETE. SUCH METHODS SHALL PREVENT THE MATERIALS FROM FREEZING FOR AT LEAST 48 HOURS. ALL MATERIALS USED AND MATERIALS BUILT UPON SHALL BE FREE FROM ICE AND SNOW. ALL MATERIALS ALLOWED TO FREEZE SHALL BE REMOVED AND REPLACED WITH NEW WORK ALL AT THE EXPENSE OF THE CONTRACTOR.

CONSTRUCTION JOINTS DESIGNATED TO HAVE ROUGHENED SURFACE SHALL BE PREPARED AS FOLLOWS: ALL OF THE CONSTRUCTION JOINT AREA EXCEPT 1" AROUND ALL EDGES SHALL BE ROUGHENED WITH A MIN. 1/8" WIDE x 1/8" DEEP GROOVE WITH A MINIMUM OF ½" CLEAR BETWEEN GROOVES. GROOVES SHALL BE MADE IN TWO DIRECTIONS THAT ARE AT RIGHT ANGLES TO EACH OTHER.

FOUNDATION NOTES

1. ALL FOOTINGS SHALL BE COMPLETELY FREE OF ANY LOOSE DIRT AND DEBRIS PRIOR TO PLACEMENT OF ANY CONCRETE.

2. ALL REINFORCING STEEL SHALL BE TIED AND SUPPORTED IN SUCH A MANNER TO INSURE THEY MAINTAIN THEIR PROPER LOCATION DURING THE PLACING OF THE CONCRETE. REINFORCING STEEL SHALL BE SUPPORTED ON APPROVED METAL CHAIRS OR BY SUSPENDING FROM ABOVE WITH ADEQUATE TIE WIRES DURING PLACEMENT OF CONCRETE. NO STEEL BARS DRIVEN INTO THE GROUND OR CONCRETE BRICKS WILL BE ALLOWED FOR SUPPORT OF THE REINFORCING STEEL.

3. THERE SHALL BE A VIBRATOR IN USE BY A QUALIFIED OPERATOR DURING THE PLACEMENT OF ALL CONCRETE. FAILURE TO USE A VIBRATOR BY A PERSON EXPERIENCED IN THE OPERATION THEREOF WILL BE CAUSE FOR REFUSAL TO ALLOW ANY CONCRETE PLACEMENT.

4. IF THE CONTRACTOR PLANS TO POUR THE GRADE BEAMS IN PHASES HE MUST SUBMIT A PLAN OF THE PHASES TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING THE FOUNDATIONS. INCLUDED WITH THE PLAN SHALL BE DETAILS OF THE METHOD OF MAKING THE CONSTRUCTION JOINTS BETWEEN THE PHASES.

5. PROVIDE CORNER BARS IN BOTH FACES OF ALL GRADE BEAMS. NUMBER SIZE AND SPACING TO MATCH HORIZONTAL REINFORCEMENT WITH WHICH THEY LAP AND SHALL EXTEND 2'-6" IN EACH DIRECTION.

CONCRETE NOTES

1. CONCRETE FOR FOOTINGS, SIDEWALKS, FLOOR SLAB & PADS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3000 PSI, A MINIMUM SLUMP OF 2" AND A MAXIMUM SLUMP OF 4"

2. CONCRETE FOR WALLS AND ROOF STRUCTURE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4000 PSI, A MINIMUM SLUMP OF 2" AND A MAXIMUM SLUMP OF 4". CONCRETE SHALL HAVE AIR ENTRAINMENT OF 5% ±1%

3. CEMENT SHALL CONFORM TO A.S.T.M C-150M TYPE I.

4. ALL # 3 AND SMALLER REINFORCEMENT STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 40 AND ALL #4 AND LARGER REINFORCEMENT STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60.

5. MINIMUM LAP FOR ALL REINFORCEMENT IS 30 BAR DIAMETERS BUT NOT LESS THAN 2'-0".

6. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH A.S.T.M C-94.

7. BEFORE PLACEMENT OF CONCRETE, THE CONTRACTOR SHALL VERIFY PROPER PLACEMENT OF ALL ITEMS OF WORK WHICH ARE EMBEDDED IN THE CONCRETE.

8. THE CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318 AND 347.

9. CONCRETE FINISHES AND CURING SHALL CONFORM TO THE PROJECT SPECIFICATIONS.

10. REFER TO MECHANICAL, ELECTRICAL, ARCHITECTURAL, ETC. DRAWINGS FOR LOCATIONS OF ALL PIPES, CONDUITS, ETC.

11. THE STRENGTH LEVEL OF THE CONCRETE WILL BE CONSIDERED SATISFACTORY IF THE AVERAGE OF THE STRENGTH TESTS OF A GIVEN AREA OR PANEL EQUALS OR EXCEEDS THE SPECIFIED STRENGTH AT 28 DAYS, WITH NO INDIVIDUAL STRENGTH TEST OF SUCH AREA OR PANEL MORE THAN 5% BELOW THAT SPECIFIED. CONCRETE THAT DOES NOT MEET OR EXCEED THESE CRITERIA SHALL BE REMOVED BY THE CONTRACTOR AND BE REPLACED WITH CONCRETE, WHICH CONFORMS TO THESE CRITERIA, AT THE CONTRACTORS EXPENSE.

12. ALL CONCRETE CORNERS 10'-0" ABOVE F.F. ELEVATION SHALL BE ¾" CHAMFERED AT CORNERS, UNLESS OTHERWIZE NOTED ON PLANS. (DOES NOT APPLY TO CONCRETE FLOOR PLAN)

13. PROVIDE CORNER BARS IN CENTER OF ALL WALLS. NUMBER SIDE AND SPACING TO MATCH HORIZONTAL REINFORCEMENT WITH WHICH THEY LAP AND SHALL EXTEND 2'-6" IN EACH DIRECTION.

DESIGN SPECIFICATIONS

ACI 318-95 (ALTERNATE DESIGN METHOD)
ASCE 7-98 (MINIMUM DESIGN LOADS)

FOUNDATION PRESSURE

ASSUMED BEARING ALLOWABLE OF 2100 PSF.
CONTRACTOR SHALL FURNISH SOIL REPORT AS PER SPECIFICATION

DESIGN LOADS:

WIND LOAD :	200 MPH (3 SECOND PEAK GUST @ 33') EXPOSURE "C", I=1.15
IMPACT LOAD :	BASED ON A 15lb MISSILE (A NOMINAL 2"x4" WOOD MEMBER) TRAVELLING HORIZONTALLY AT 100 MPH OR VERTICALLY AT 67 MPH AND IMPACTING THE SURFACE @ 90º

ROOFING COLLATERAL ROOF D.L. : 6 psf
ROOF L.L. : 20 psf

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

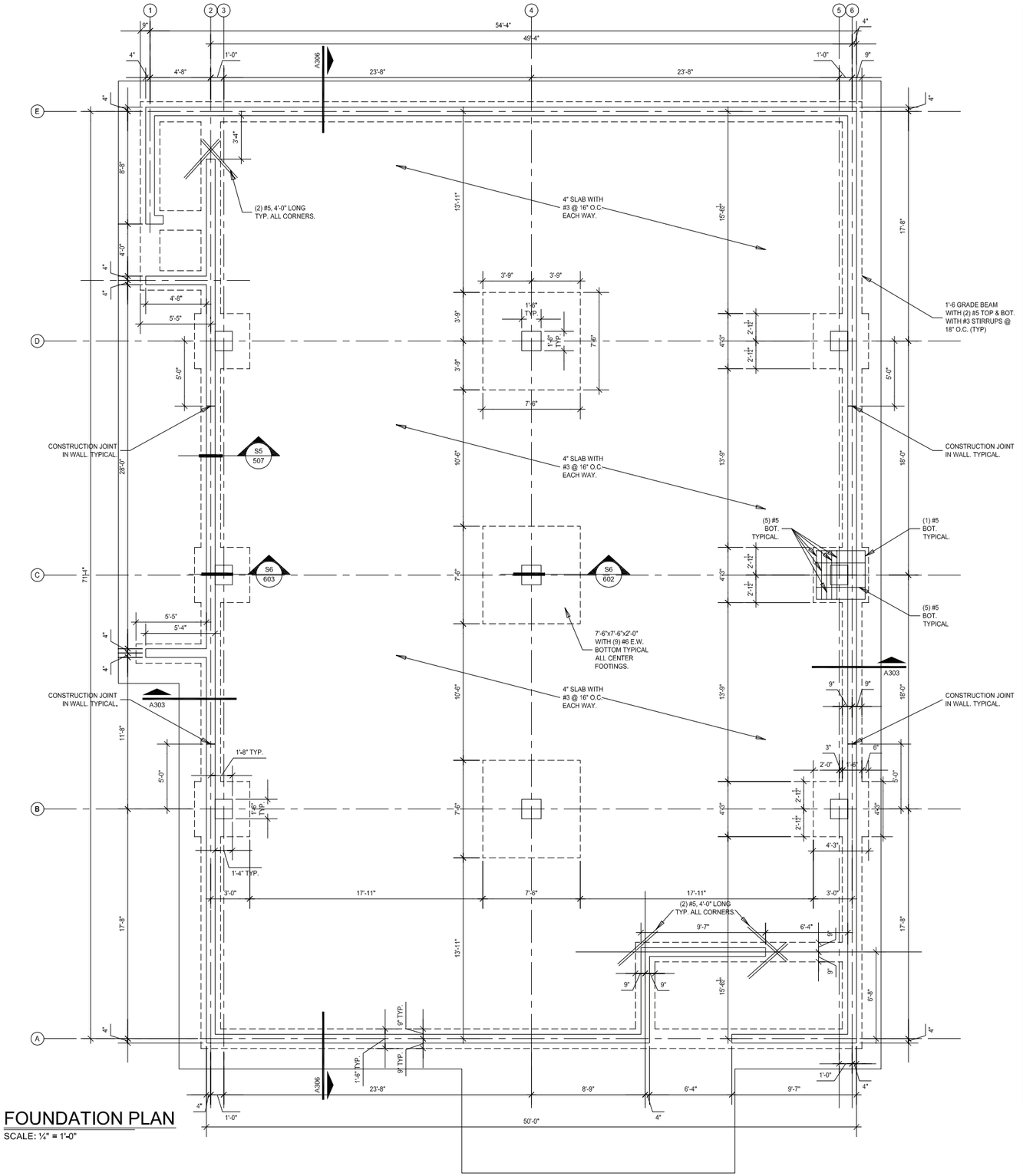
Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

STRUCTURAL NOTES

SHEET No.: S1	
DATE: 7 MARCH 2000	
REVISED:	REV. NO.

FEMA



S201 FOUNDATION PLAN
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

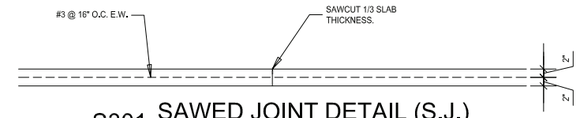
Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

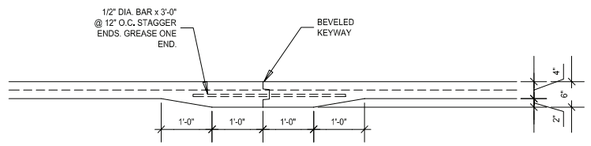
FOUNDATION PLAN

SHEET No.:	S2
DATE:	7 MARCH 2000
REVISED:	REV. NO.

FEMA

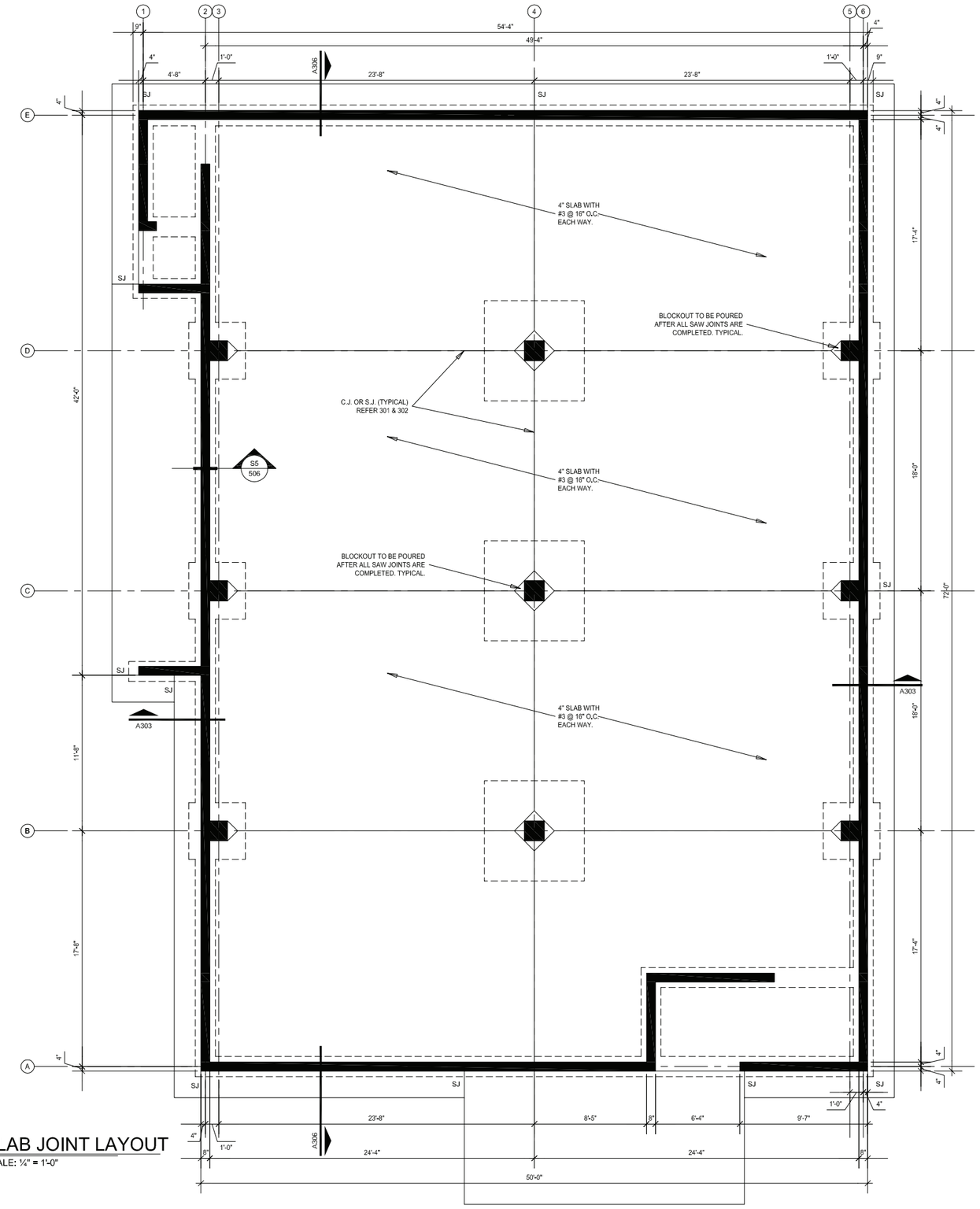


S301 SAWED JOINT DETAIL (S.J.)
SCALE: ¾" = 1'-0"



S302 CONSTRUCTION JOINT DETAIL (C.J.)
SCALE: ¾" = 1'-0"

SLAB JOINT NOTES:
1. BLOCKOUT AROUND ALL COLUMNS AND PILASTERS.
2. CONTRACTOR MAY USE EITHER CONSTRUCTION JOINT OR SAWED JOINTS AT LOCATIONS SHOWN.
3. FILL ALL BLOCKOUTS WITH 3000 PSI CONCRETE AFTER ALL THE SLAB HAS BEEN PLACED AND ALL SAWING HAS BEEN COMPLETED.



S303 SLAB JOINT LAYOUT
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

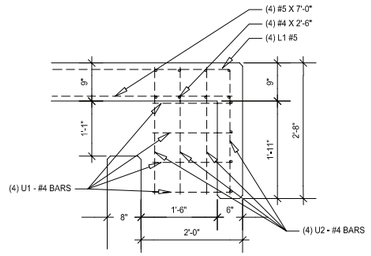
Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

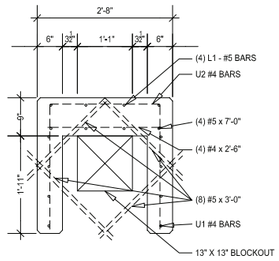
SLAB JOINT LAYOUT

SHEET No.: S3	
DATE: 7 MARCH 2000	
REVISED:	REV. NO.

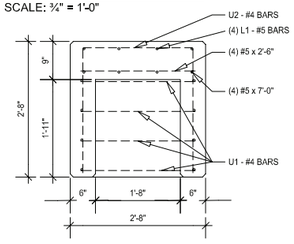
FEMA



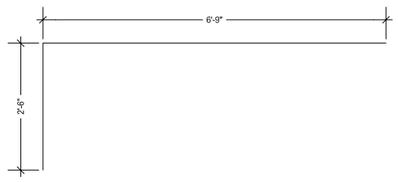
S401 SECTION THRU HOOD
SCALE: ¾" = 1'-0"



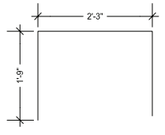
S402 SECTION THRU HOOD
SCALE: ¾" = 1'-0"



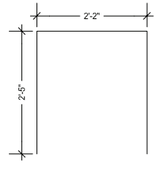
S403 SECTION AT HOOD
SCALE: ¾" = 1'-0"



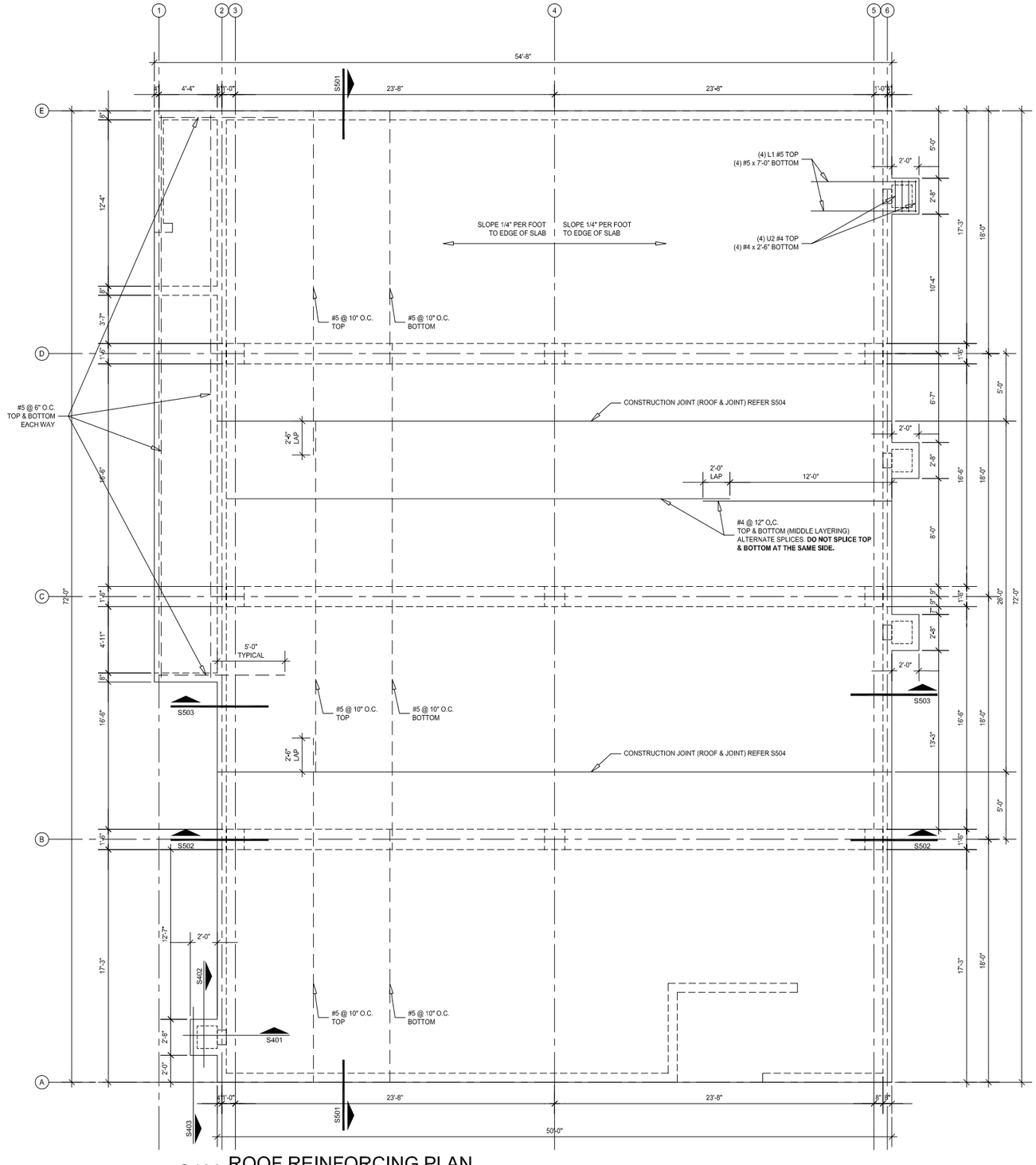
S404 L1 #5 BAR x 9'-3"
SCALE: ¾" = 1'-0"



S405 U1-#4 BARS x 5'9"
SCALE: ¾" = 1'-0"



S405 U2-#4 BARS x 7'0"
SCALE: ¾" = 1'-0"



S406 ROOF REINFORCING PLAN
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

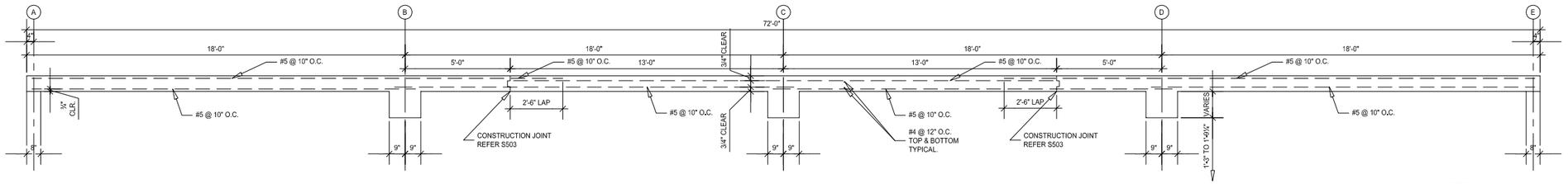
ROOF REINFORCING PLAN

SHEET No.: S4

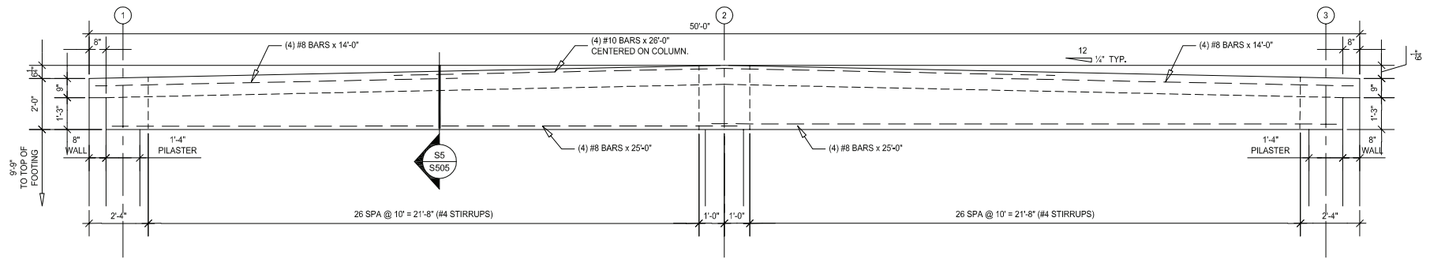
DATE: 7 MARCH 2000

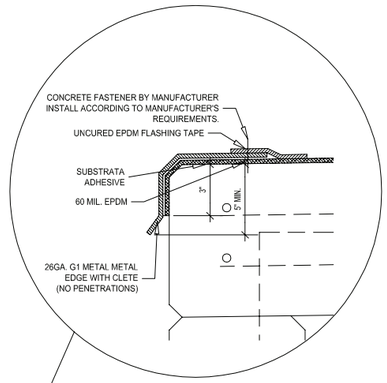
REVISED: | REV. NO.

FEMA

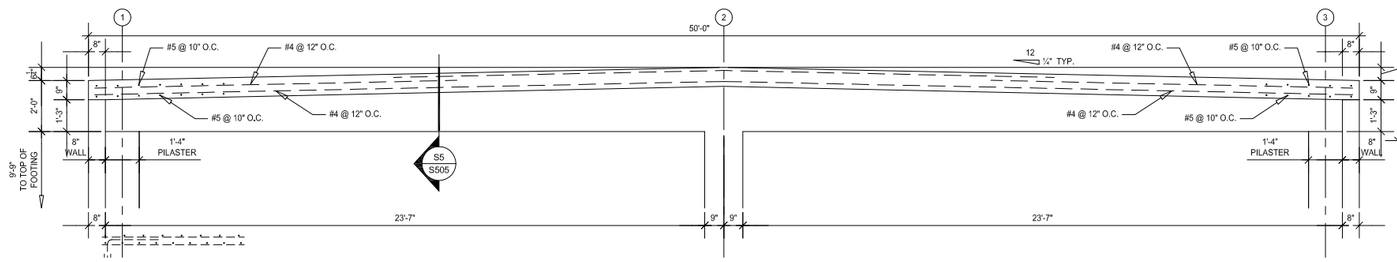


S501 SECTION THRU ROOF
SCALE: 3/8" = 1'-0"

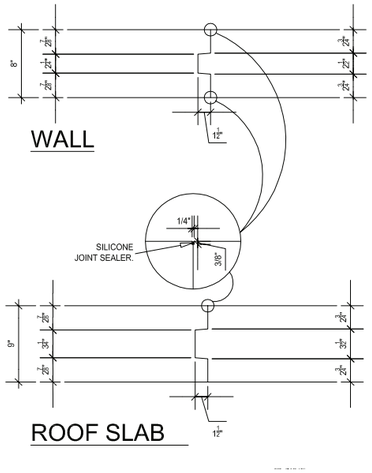




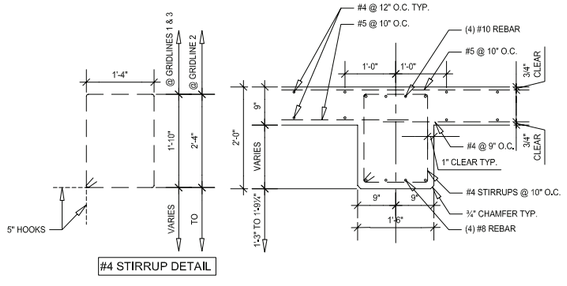
S502 SECTION THRU ROOF BEAM
SCALE: 3/8" = 1'-0"



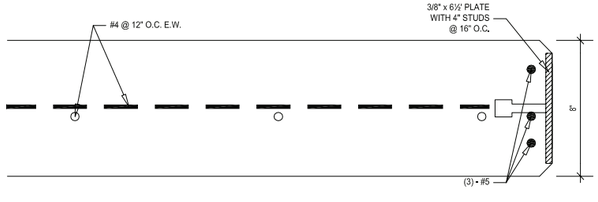
S503 SECTION THRU ROOF
SCALE: 3/8" = 1'-0"



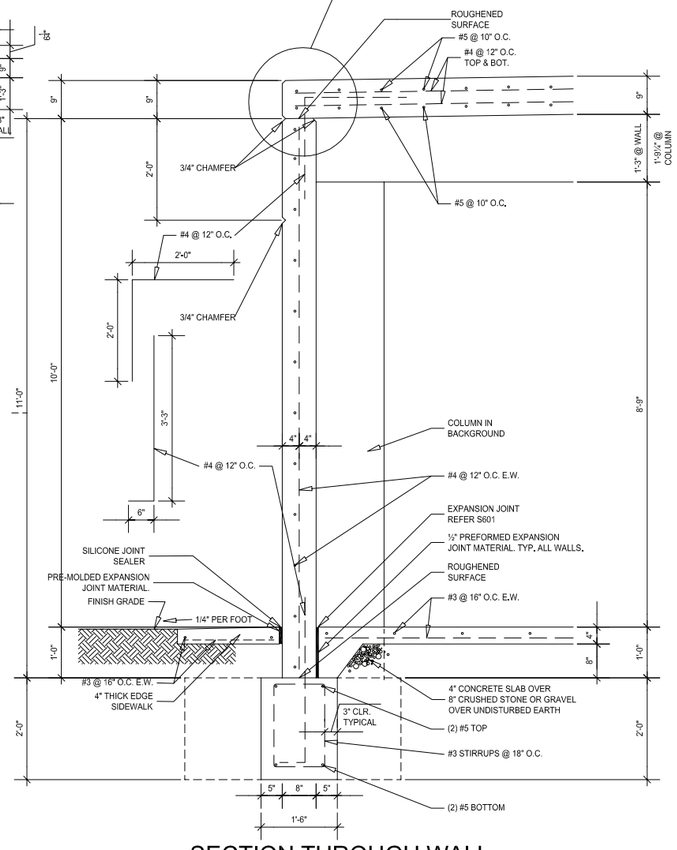
S504 CONSTRUCTION JOINT DETAIL
SCALE: 1½" = 1'-0"



505 SECTION THRU ROOF BEAM
SCALE: ¾" = 1'-0"



S506 WALL DETAIL AT OPENNING
SCALE: 3" = 1'-0"



S507 SECTION THROUGH WALL
SCALE: ¾" = 1'-0"

COMMUNITY SAFE ROOM
HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

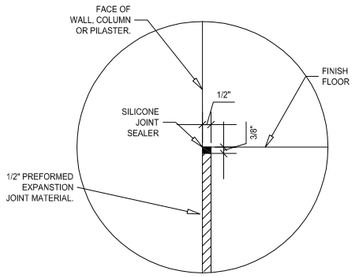
Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

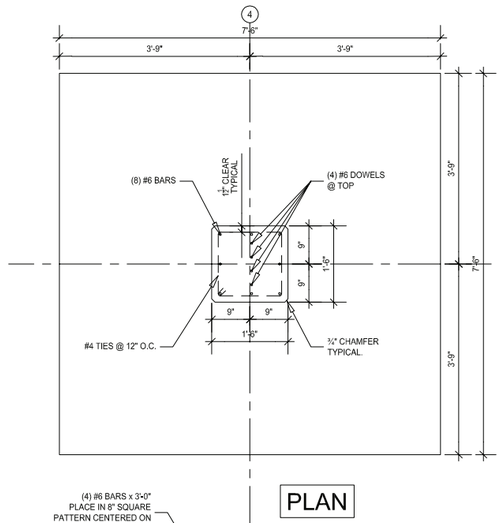
STRUCTURAL DETAILS

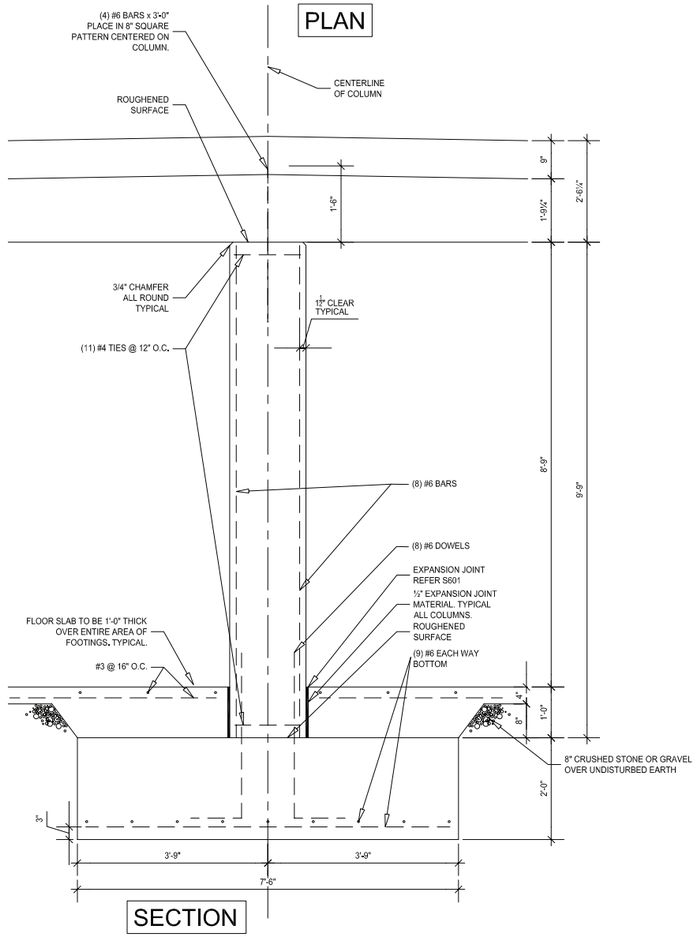
SHEET No.: S5	
DATE: 7 MARCH 2000	
REVISED:	REV. NO.

FEMA

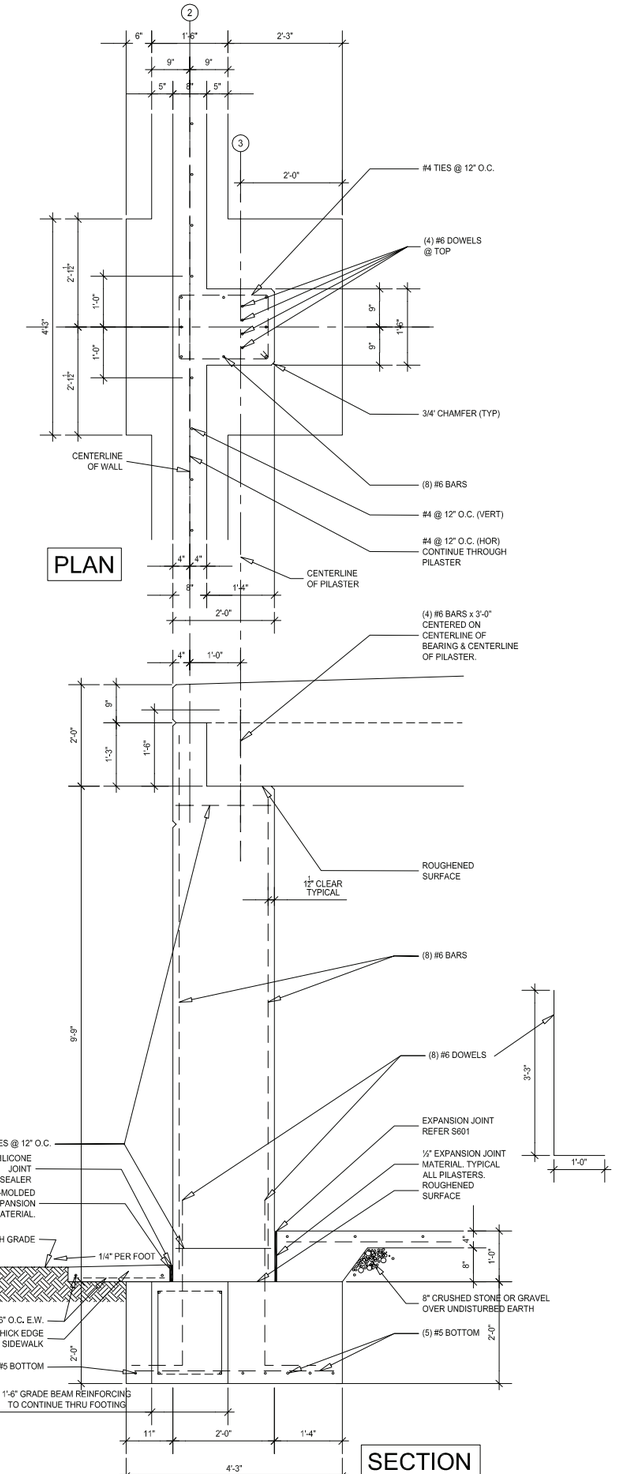


S601 SEALANT DETAIL
SCALE: 3" = 1'-0"





S602 DETAILS THRU CENTER COLUMN
SCALE: ¾" = 1'-0"



S603 DETAILS THRU PILASTER
SCALE: ¾" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

STRUCTURAL DETAILS

SHEET No.: S6	
DATE: 7 MARCH 2000	
REVISED:	REV. NO.

FEMA

Heating & Cooling Load Calculations:
BASED ON RALEIGH NORTH CAROLINA LOCATION

Heat Loss- 246,341 BTUH
Heat Gain- 259,057 BTUH

Equipment Schedule- Carrier- Electric Air Handler & Heat Pump

6- Air Handlers- FC4BNF048- 1700 CFM- 208-230/60/1- 3/4 H.P.- 4.3 FLA- Factory installed TXV metering device
Length- 49 5/8", Width- 22 1/16", Height- 21 1/8"
Weight- 150 Lbs.
6- Auxiliary Heat Strips- KFAEH0401N10- 10 KW@- 31,400 BTUH@ Fuse Size- 60 Amps.
6- Heat Pumps-38YCC048301- 46,000 BTUH Cooling@- 10.00 SEER- 208-230/60/1
47,000 BTUH@47 Degree DB- 3.20 COP- 7.20 HSPF
29,600 BTUH@13 Degree DB- 2.24 COP
Compressor- 24.4 RLA- MCA- 31.9 Amps.- Max. Fuse Size- 50 Amps.- Condenser Fan- 1/4 H.P.- 1.4 FLA
Width- 29 1/8", Depth- 29 9/16", Height- 39 15/16"
Weight-219 Lbs.
6-Thermostats- TSTATCCNHP01-A- Auto Changeover, Non-Programmable, 2 Stage Heat-1 Stage Cool- Auto/Manual Fan
6- Start Assist- KSAHS1601AAA
6- Outdoor Thermostats- KHAOT0301FST

Refrigeration Lines

From each air handler coil, install properly sized refrigeration lines to heat pumps. Secure refrigeration lines to concrete ceiling with proper fasteners.

Condensate Drains.

From air handlers hanging close together, bring 3/4" PVC from each and tee together. Run 3/4" PVC across and out thru wall.

SUPPLY AIR

Each horizontal air handler will have short 12" supply plenum on supply side of unit. Will install one supply diffuser on front to supply air to areas. On one unit near office, will install starting collar with air scoop. Will run 8" sheetmetal duct from plenum to supply box at office wall. Will elbow below concrete beam to high sidewall supply box. Duct will be secured to concrete ceiling with proper fasteners.

Return Air

Each horizontal air handler will have short 12" return air plenum on return air end of unit. Will install filter rack inside of return air so that filter can be easily changed.

Ventilation Air (885 CFM Fresh Air)

Each horizontal air handler will have 8" round sheetmetal fresh air duct coming off of return air plenum. Each 8" duct will run into 10" x 8" x 8" tee. 10" round sheetmetal duct will then be ran to wall mounted filter box at wall. This box will have 12" x 12" metal filter in box. On outside of wall there will be 12" x 12" Louvered Grille. All duct will be secured to concrete ceiling with proper fasteners.
Install manual damper in 10" duct near filter box.

Air Devices AirMate

Supply Diffusers

20" X 18"- #220-V- Multi-Shutter Damper - White
14" X 6"- #220-V- Multi-Shutter Damper - White

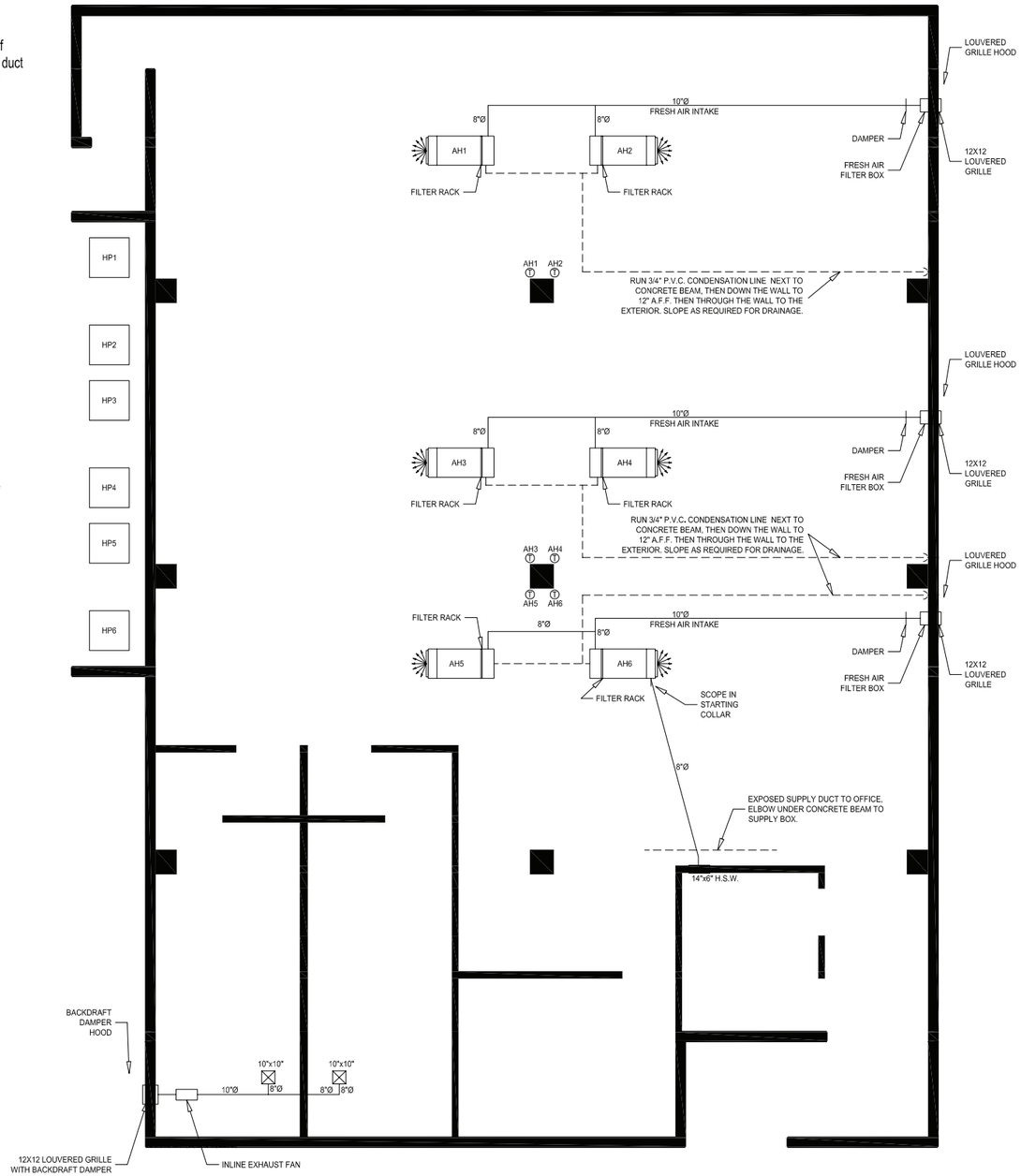
Return Air

None- Open return plenums with filter rack inside.

Exhaust Fan Tjernlund

1- #EF-10- 10" In-line exhaust fan. 115/60/1- 0.46 Amps.- 10" Duct connection.
Width- 15 1/2", Diam.- 10", Weight- 10 Lbs.

Attach 10" x 10" exhaust air box in each restroom. Run 8" sheetmetal from each to sheetmetal tee, then run 10" duct to inline exhaust fan. From fan, run 10" duct to 12" x 12" wall box. Mount 12" x 12" Louvered Grille W/Backdraft damper on outside of wall. Secure duct to concrete ceiling with proper fasteners.



M101 MECHANICAL PLAN
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

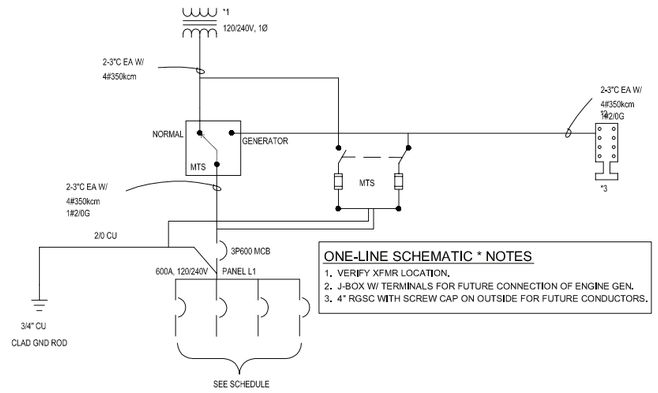
Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

MECHANICAL PLAN

SHEET No.:	M1
DATE:	7 MARCH 2000
REVISED:	REV. NO.

FEMA



E101 ONE LINE SCHEMATIC

ELECTRICAL SPECIFICATIONS

1. SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS

A. All material shall be UL approved where standards are establlshed.

B. Materials and equipment shall be of current production by recognized manufacturers with spare parts avallable. All units of the same class shall be of the same manufacturer.

C. Materials shall be installed as indicated and meet requirements of the NFPA, including NEC.

2. SECTION 16110 - RACEWAYS

A. Install according to NEC. Minimum size to be 1/2". Provide a complete assembly with all fittings and accessorles.

B. All conduit shall be surface mounted. No imbedded conduit.

C. EMT for all other Interlor applicatlons. EMT couplings and connectors shall be compression type. Rlgld galvanlzed steel condult for all outside conduit. Sealtight for connection to motors.

D. Seal all flre wall penetratlons wlth flre retardant sllllcone foam, CTC PR-855, Chase Technology.

3. SECTION 16120 - WIRE, CABLE AND CONNECTORS

A. Wlre and Cable

1. Copper conductors.
2. Mlnlmum slze No. 12 AWG, No. 8 and larger shall be stranded.
3. Insulation shall be type THHN/THWN.

B. Connectors

1. No. 10 AWG and smaller, solderless, screw-on pressure type.
2. Larger than No. 10 AWG bolt clamp-type.
3. 250 kcm or larger shall have at least two clampling elements.

C. Control Wlrlng

1. No. 16 AWG mlnlmum.
2. Refer to Division 15 for control wiring of mechanical equipment.

D. Signal Wiring as recommended by system manufacturer.

4. SECTION 16135 - ELECTRICAL BOXES AND FITTINGS

Interior boxes shall be sheet steel with knockouts. Exterior boxes shall be gasketed cast metal.

5. SECTION 16143 - WIRING DEVICES

A. Receptacles shall be 15 ampere, 125 volt AC, duplex. NEMA 15-5R.

B. Swltches shall be rated 20 amperes at 277 volts AC.

C. All switches and receptacles shall be quiet-type, specification grade.

D. Devlce plates shall be stalnless steel In flnlshed areas and zlnc coated steel for unflnlshed areas.

E. Photo electric control cell shall be rated 3000W, similar and equal to Tork #35403.

6. SECTION 16441 - ENCLOSED SWITCHES

A. Disconnect switches shall be fusible, NEMA KS 1, Type GD load break.

B. Enclosures: NEMA KS1. Interior dry locations: Type 1, Exterior locations: Type 3R.

C. Neutral and ground buses required.

D. Manual transfer switch shall be Double throw type similar and equal to Cutler Cutler Hammer #DT326FGK In NEMA1 enclosure.

E. Fuses:

Fuses protecting motors or transformers shall be Bussmann type FRN-R. Fuses for MTS to be Type T.

7. SECTION 16470 - PANELBOARDS

A. Circult breaker type for branch ckt. Lighting and Power equal to GE, Square D or Cutler Hammer, complete wlth protective devlces and accessorles as requlred.

B. Shall be dead-front safety type, enclosed in a sheet steel cabinet.

C. Neutral and ground buses requlred.

D. Molded case circuit breakers shall meet NEMA and UL standards.

1. Breakers shall be one, two, or three-pole units as Indlcated and shall operate both manually and automatically.
2. All poles shall operate slmultaneously and mechanlsm shall be trip free
3. Minimum interrupting capacity shall be 14,000 amps at 120/208 volts and 22,000 amps at 277/480 volts.

8. SECTION 16452 - GROUNDING

A. Ground buses and neutral buses shall be Isolated except In maln swltchgear and transformer terminal compartments.

B. All branch and feeder circuits shall include green grounding conductors.

9. SECTION 16515 - INTERIOR LIGHTING FIXTURES AND ACCESSORIES

Furnish as scheduled.

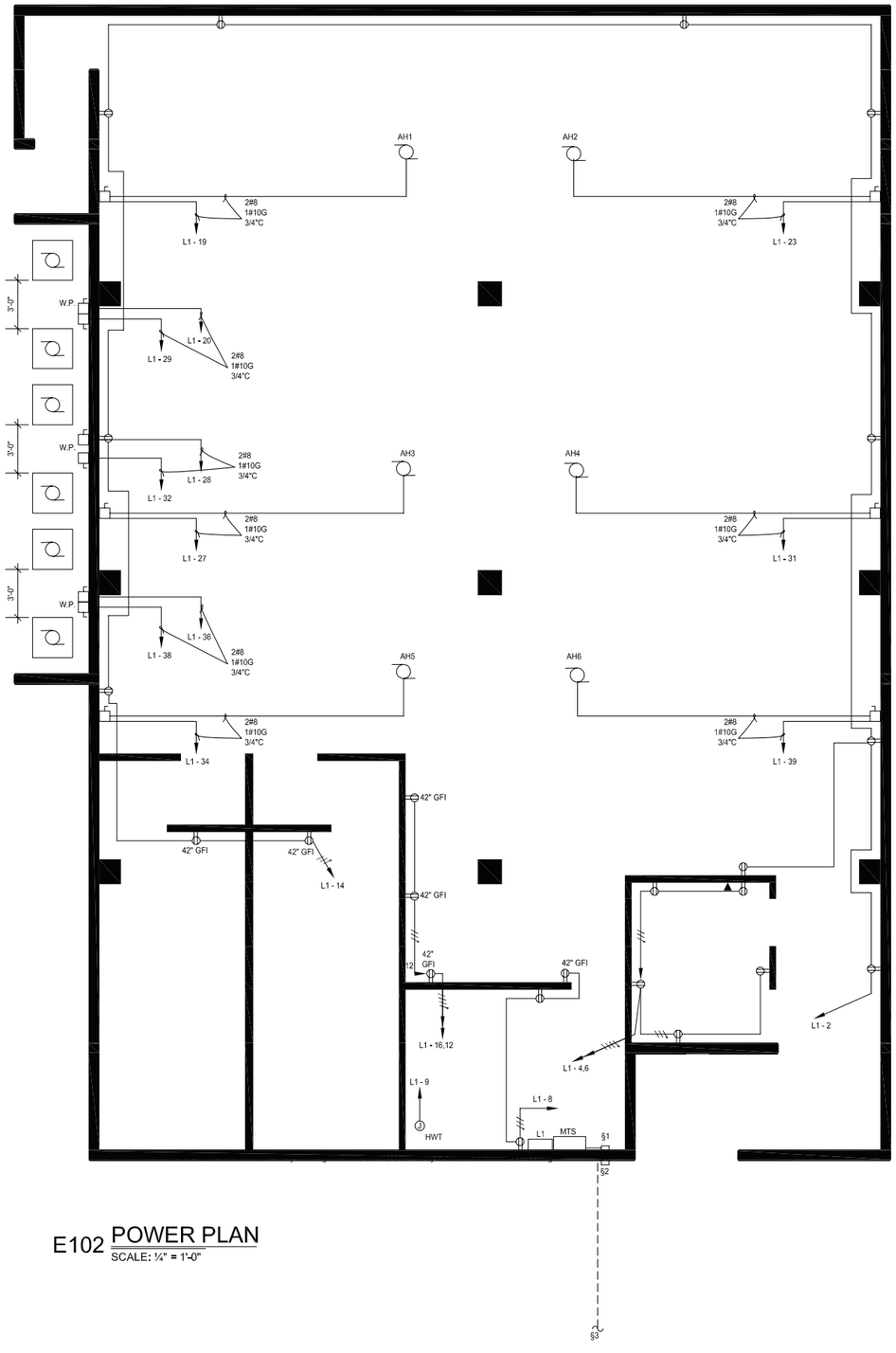
10. SECTION 16722 - FIRE ALARM SYSTEM

A. Shall be self contained, 120V, similar and equal to BRK #1839W1-2.

B. Comply wlth all local Codes.

POWER PLAN NOTES

§1. JUNCTION BOX WITH TERMINALS FOR FUTURE CONNECTION.
§2. RGSC STUBED THROUGH WALL WITH SCREW CAP.
§3. UNDERGROUND SERVICE FEEDER TO SERVICE TRANSFORMER.



E102 POWER PLAN
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The desIgner nelther manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

POWER PLAN

SHEET No.: E1	
DATE: 7 MARCH 2000	
REVISED:	REV. NO.

FEMA

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	FLUORESCENT LIGHTING FIXTURE, TYPE No. INDICATED
	INCANDESCENT LIGHTING FIXTURE, CEILING OR WALL MOUNTED
	EXIT LIGHTING FIXTURE, CEILING OR WALL MOUNTED
	EXIT LIGHTING FIXTURE WITH EMERGENCY LIGHTS
	JUNCTION BOX
F	JUNCTION BOX FOR FUTURE SPEAKER
U	UTILITY OUTLET BOX, SEE DETAIL
	DUPLEX RECEPTACLE
	DUPLEX RECEPT MNT'D IN HORZ POSITION, 6" ABOVE COUNTER
	DOUBLE DUPLEX RECEPTACLE
	SIMPLEX RECEPTACLE WITH DEDICATED CKT
	POLARIZED RECEPTACLE, STYLE AS NOTED
	COMPUTER RECEPTACLE, WALL OR FLOOR BOX
	LOW VOLTAGE RELAY
	SWITCH AND RECEPTACLE MOUNTED IN SINGLE OUTLET BOX
	MASTER CLOCK
	SECONDARY CLOCK
	CLOCK OUTLET
	DOUBLE FACE CLOCK
	FLOOR BOX WITH DOUBLE DUPLEX RECEPTACLE
	FLOOR BOX WITH RECEPTACLE OUTLET
	FLOOR BOX WITH TELEPHONE OUTLET
	MICROPHONE OUTLET
TV	TELEVISION OUTLET
	INTERCOM OUTLET
P	"PHONO" OUTLET FLOOR MOUNTED
P	"PHONO" OUTLET WALL MOUNTED
	SPEAKER
	SOUND SYSTEM VOLUME CONTROL
	TELEPHONE OUTLET, 12" AFF
C	TELEPHONE OUTLET MNT'D IN HORZ POSITION 6" ABOVE COUNTER
W	TELEPHONE OUTLET MNT'D AT 42" AFF
	SPECIAL CONDITIONS, SEE DETAIL
	KITCHEN ITEMS, SEE KITCHEN PLANS FOR DESCRIPTION
*1,*2,*3	SEE NOTES
	THERMOSTAT
	AQUASTAT
	TRANSFORMER
	FIRE ALARM VISUAL INDICATOR ONLY
	FIRE ALARM PULL STATION
	FIRE ALARM AUDIBLE-VISUAL INDICATOR
	FIRE ALARM HORN
	FIRE ALARM BELL
	FIRE ALARM SMOKE DETECTOR
	FIRE ALARM HEAT DETECTOR
	FIRE ALARM FLAME DETECTOR
	FIRE ALARM DUCT DETECTOR
$	SINGLE POLE WALL SWITCH
$2	TWO POLE WALL SWITCH
$3	THREE-WAY WALL SWITCH
$4	FOUR-WAY WALL SWITCH
$P	SINGLE POLE WALL SWITCH WITH PILOT LIGHT
$K	SINGLE POLE WALL SWITCH, KEY OPERATED
$LV	SINGLE POLE WALL SWITCH, LOW VOLTAGE
W	PLUG IN STRIP
M	MANUAL MOTOR STARTER, SINGLE PHASE
D	MOTOR DISCONNECT SWITCH
	MAGNETIC MOTOR STARTER
	MAGNETIC CONTACTOR
C	COMBINATION MOTOR DISCONNECT SWITCH
HP	MOTOR WITH HORSEPOWER RATING
MDP	ELECTRIC PANEL
TTB	TELEPHONE TERMINAL CABINET
TT	TELEPHONE TERMINAL BOARD
	CIRCUIT HOME RUN, TWO WIRES & GREEN GROUND INDICATED
	CONDUIT EXPOSED ON WALL OR AT CEILING
WP	DENOTES WEATHERPROOF
(E)	DENOTES EXISTING TO BE RETAINED
EDF	ELECTRIC DRINKING FOUNTAIN
EG	EQUIPMENT GROUND
MD	MOTION DETECTOR
PC	PART CIRCUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	NOTE: NOT ALL SYMBOLS USED

LIGHTING FIXTURE SCHEDULE

FIXT. I.D.	TYPE	MANUFACTURER & CATALOG NUMBER	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	REMARKS MOUNTING
A	STRIP	LITHONIA #UN432120GEB	4	32	F32T8/SP35	SURFACE *1
B	STRIP	LITHONIA #UN232120GEB	2	32	F32T8/SP35	SURFACE
C	EMERGENCY LT	LITHONIA #ELT125SSBH1212	2	12	FURNISHED	WALL SURFACE @ 8'AFF
D	WALL PACK	LITHONIA #TWH175M120LPI	1	175	175MVR175/U	WALL SURFACE @ 10' AFF
E	SIGN LT	GE #SBN03MOH	1	35	MH35/U	*2
X	EXIT	LITHONIA #LESB1R120ELN	-	-	FURNISHED	SURFACE ABOVE DOOR

LIGHTING FIX NOTES: *1 FURNISH W/ 2 BALLASTS FOR INSIDE & OUTER LAMPS.
*2 MOUNT JUST ABOVE SIGN, USE RGSC TO EXTEND FIX 24" FROM WALL, AIM FIX TOWARD SIGN.

PANEL L1, SINGLE Ø, 3 WIRE, 120/240 V, 600 A MCB.

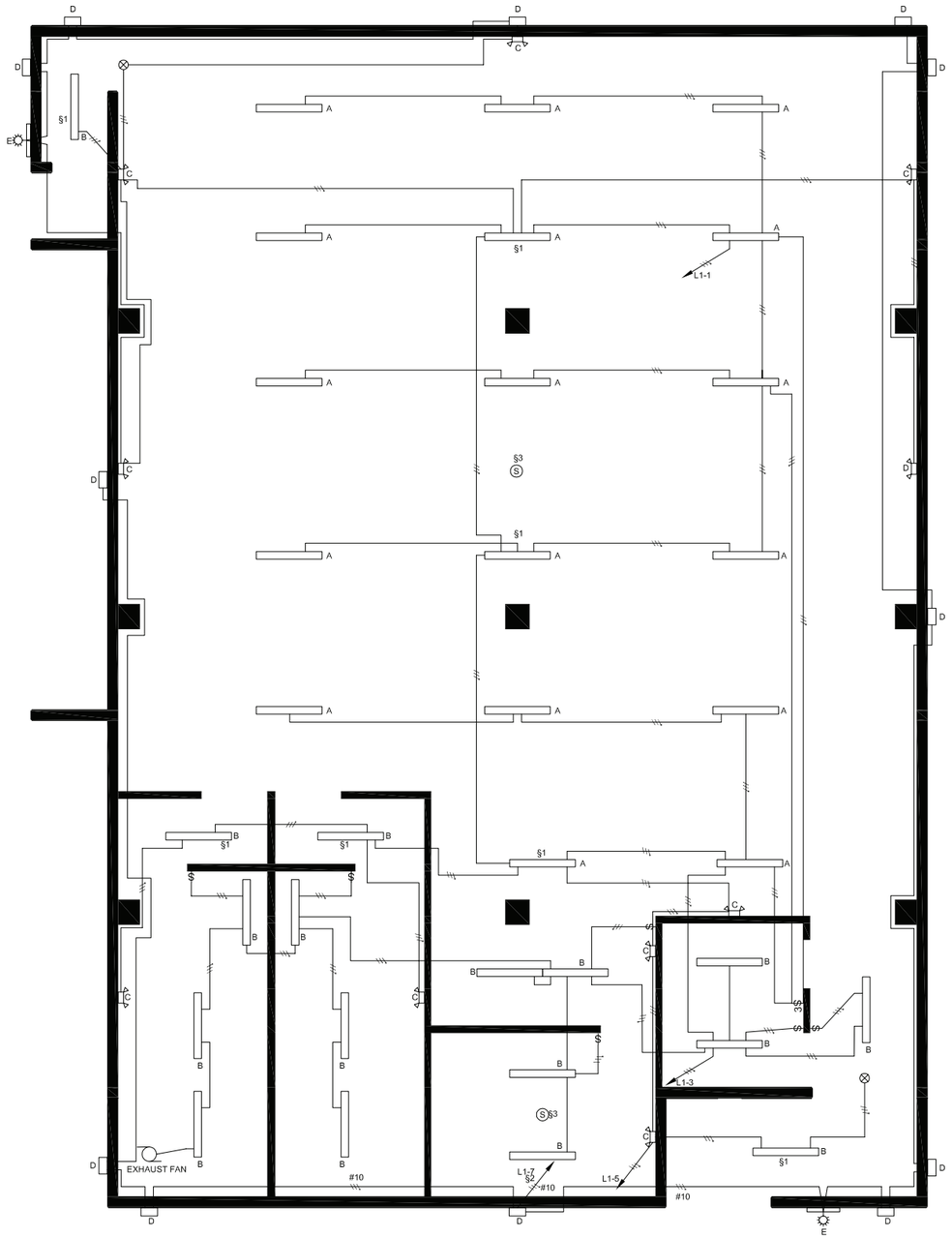
14,000 RMS SYM. A.I.C., ENCLOSURE: NEMA 1, MOUNTING: ELECT/MECH ROOM.
MLO-MAIN LUGS ONLY, MCB-MAIN CIRCUIT BREAKER, MCS-MOLDED CASE SWITCH, HCAR-AIR CONDITIONING BREAKER.

CIRCUIT USE	CCT. BKR.	NO.	CONNECTED LOAD VA Ø A	CONNECTED LOAD VA Ø C	NO.	CCT. BKR.	CIRCUIT USE
BACK LTS	1P20	1	1650			1P20	RECPT
			1200		2		
FRONT LTS	1P20	3		1750		1P20	RECPT OFFICE
				600	4		
EMG LTS	1P20	5	650			1P20	RECPT OFFICE
			600		6		
OUTSIDE LTS	1P20	7		2850		1P20	RECPT MECH RM
				600	8		
HOT WATER TANK	2P30	9	1200			1P20	RECPT KIT
			200		10		
HOT WATER TANK	2P30	11		1200		1P20	RECPT KIT
				400	12		
SPACE	--	13	--			1P20	RECPT
			1200		14		
SPACE	--	15		--		1P20	SPARE
				--	16		
SPACE	--	17	--			1P20	SPARE
			--		18		
AH1	2P60	19		5500		2P50	HP1 (HACR)
				2950	20		
** **	**	21	5500			**	** **
			2950		22		
AH2	2P60	23		5500		2P50	HP2 (HACR)
				2950	24		
** **	**	25	5500			**	** **
			2950		26		
AH3	2P60	27		5500		2P50	HP3 (HACR)
				2950	28		
** **	**	29	5500			**	** **
			2950		30		
AH4	2P60	31		5500		2P50	HP4 (HACR)
				2950	32		
** **	**	33	5500			**	** **
			2950		34		
AH5	2P60	35		5500		2P50	HP5 (HACR)
				2950	36		
** **	**	37	5500			**	** **
			2950		38		
AH6	2P60	39		5500		2P50	HP6 (HACR)
				2950	40		
** **	**	41	5500			**	** **
			2950		42		
			57,400	58100			

NOTES:
CONNECTED LOAD = 115.5 kVA
ESTIMATED DEMAND LOAD = 80.0kVA

LIGHTING PLAN NOTES

§1. 2 LAMPS ON ALL THE TIME.
§2. ROUTE THROUGH PE CELL MOUNTED ON ROOF FACING NORTH.
§3. SMOKE DETECTOR CONNECTED TO EMG. CKT. L1-5.



E201 LIGHTING PLAN
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The designer neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

LIGHTING PLAN

SHEET No.: E2
DATE: 7 MARCH 2000
REVISED: | REV. NO.

FEMA

PLUMBING SPECIFICATIONS

GENERAL PROVISIONS

1. SCOPE: PROVIDE ALL LABOR, MATERIAL, AND EQUIPMENT IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE ACCOMPANYING DRAWINGS TO PROVIDE A COMPLETE AND PROPERLY OPERATING PLUMBING SYSTEM FOR THE BUILDING.

   OBTAIN WATER & SEWER, GAS TAPS, AND ANY OTHER REQUIRED UTILITIES AND EXTEND SERVICE FROM SAME TO BUILDING AS SHOWN ON DRAWINGS. VISIT THE SITE FOR UNDERSTANDING OF THE WORK TO BE DONE BEFORE SUBMITTING BID.

   COORDINATE THIS WORK WITH THE WORK OF THE OTHER TRADES ON THE PROJECT. ALL PLUMBING IS TO BE ROUGHED IN WHILE THE BUILDING IS BEING CONSTRUCTED AT SUCH TIMES AS NOT TO DELAY THE GENERAL CONTRACTOR ON THE BUILDING.

2. GENERAL REQUIREMENTS: COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS, CODES, RULES, AND ORDINANCES GOVERNING WORK ON THIS CHARACTER. PAY FOR AND OBTAIN NECESSARY CONSTRUCTION PERMITS AND CERTIFICATES OF INSPECTION.

   A. DRAWINGS: THE LOCATION OF THE PIPING RUNS ARE APPROXIMATE AND THE CONTRACTOR MUST MAKE ANY NECESSARY CHANGES IN THE PIPING RUNS, ETC., AND AT NO ADDITIONAL COST TO THE OWNER. OUTLET LOCATIONS ARE CRITICAL AND MUST BE LOCATED EXACTLY ACCORDING TO THE PLUMBING PLAN. COORDINATE THIS WORK WITH THE INSTALLERS OF EQUIPMENT FURNISHED AND INSTALLED BY OTHERS. REFER TO THE OTHER DRAWINGS FOR DETAILS OF THE BUILDING CONSTRUCTION AND THE OTHER MECHANICAL, ELECTRICAL, AND EQUIPMENT FEATURES.

   B. COORDINATION AND WORKMANSHIP: SCHEDULE THIS WORK SO THAT IT WILL BE PROPERLY COORDINATED WITH ALL OTHER TRADES. WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE BEST PRACTICE FOR THE CLASS OF WORK INVOLVED. WORKMANSHIP SHALL ALLOW THE APPLIANCE TO OPERATE AS INTENDED AND BE INSTALLED TO BEST PROTECT THE PUBLIC AND OPERATORS FROM INJURY OR DAMAGE, AND TO PRESENT A NEAT, PLEASING, AND ORDERLY APPEARANCE.

MATERIALS AND PERFORMANCE

1. MATERIALS: ALL MATERIALS SHALL BE NEW AND OF THE QUALITY INDICATED BY THE SPECIFIED BRAND NAMES. SUBSTITUTIONS OF MATERIAL OF EQUAL QUALITY BY OTHER FIRST-LINE MANUFACTURERS MAY BE ACCEPTABLE PROVIDED A LIST OF SUCH SUBSTITUTIONS IS APPROVED IN WRITING BY FEMA REPRESENTATIVE
   A SUBSTITUTIONS LIST SHALL BE SUBMITTED IN TRIPLICATE WITHIN FIVE (5) DAYS AFTER THE CONTRACT IS LET.

2. BACKFILLING: PERFORM ALL NECESSARY EXCAVATING AND BACKFILLING REQUIRED FOR THIS INSTALLATION. PREPARE A PROPER BED OF SAND OR GRAVEL OR EQUIVALENT IN ROCK SCREENINGS SO AS TO ELIMINATE SHIMMING AND VOID SPACE UNDER ANY OF THE UTILITY SERVICE PIPES. BENDING OF ANY HARD PIPE WILL NOT BE PERMITTED. WHERE A CHANGE IN DIRECTION IS NECESSARY ON PRESSURE PIPES, "COMPATIBLE" COUPLINGS OR EQUAL SHALL BE USED AND BENDS MAY NOT EXCEED 90 DEGREES. ALL EXCAVATION BELOW THE BOTTOM OF FOOTINGS SHALL BE BACKFILLED WITH 2000 PSI CONCRETE. OTHER BACKFILL SHALL CONSIST OF 2-3" OF SAND OR ROCK SCREENINGS AND EARTH TO A FINAL LEVEL EQUAL TO ITS ORIGINAL CONDITION. IN THE EVENT THE BACKFILL SHOULD SETTLE BEFORE THE FINAL TOP SURFACE IS APPLIED, APPLY THE BACKFILL SHOULD SETTLE BEFORE THE FINAL TOP SURFACE IS APPLIED, APPLY ADDITIONAL BACKFILL TO SUSTAIN THE ORIGINAL LEVEL. CARE SHOULD BE TAKEN TO ADDITIONAL BACKFILL TO SUSTAIN THE ORIGINAL LEVEL. CARE SHOULD BE TAKEN TO MINIMIZE THE DUST LEVEL WHEN EXCAVATING AND BACKFILLING SO AS TO COMPLY WITH FEDERAL AND STATE E.P.A. REGULATIONS RELATING TO THIS TYPE OF WORK (FUGITIVE DUST).

3. PIPING INSTALLATION: CLEANOUTS MUST BE INSTALLED ON MINIMUM DROP LINES EVEN THOUGH NOT SHOWN ON THE BLUEPRINTS. USE REDUCING FITTINGS IN MAKING REDUCTIONS IN SIZE OF PIPE. REAM ALL PIPE AFTER CUTTING, THEN TURN PIPES ON END AND KNOCK OUT ALL LOOSE DIRT AND SCALE BEFORE INSTALLING. MAKE CHANGES IN HORIZONTAL DIRECTION OF SOIL AND WASTE PIPES WITH LONG RADIUS FITTINGS OR WITH "Y" BRANCHES AND 1/8" OR 1/16" BENDS. CONNECT SOIL STACKS AT BASE TO HORIZONTAL RUNS WITH "Y" CONNECTIONS.

   WATER SUPPLY PIPES TO FIXTURES AND WASTE PIPES FROM FIXTURES SHALL BE CENTERED IN THE PROPER PLACE RELATIVE TO THE CENTER LINE OF THE FIXTURE. NO OFFSETS WILL BE ALLOWED. ALL PIPES SHALL BE RUN MECHANICALLY STRAIGHT AND SQUARE WITH BUILDING LINES, EXCEPT FOR REQUIRED PITCH ON HORIZONTAL LINES, AND ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS. WATER PIPING TO BE ROUTED IN WALLS, UNDER THE FLOOR SLAB, AND ON CEILINGS AS NOTED. WHERE WATER LINES ARE ROUTED UNDER THE FLOOR SLAB, NO MECHANICAL JOINTS SHALL BE MADE UNDER THE SLAB EXCEPT AS LISTED BELOW. WATER PIPING SHALL BE INSTALLED NOT TO EXERT VERTICAL NOR HORIZONTAL STRESSES ON THE SEATING OF UNIONS, UNIONS SHALL BE COPPER TYPE NIBCO #733 OR EQUAL.

   NO WAX, PUTTY, OR VARNISH WILL BE PERMITTED. CRACKED FITTINGS SHALL BE REMOVED AND REPLACED WITH NEW FITTINGS. MAKE THREADED JOINTS IN BRASS PIPE AND FITTING WITH PIPE THREADING TO THE SHOULDER OF THE FITTINGS. NO SLIP JOINTS OR COUPLING JOINTS IN BRASS PIPE WILL BE PERMITTED, EXCEPT ON THE FIXTURE SIDE OF THE TRAP.

4. WATER PIPE:

   JOINTS SHALL BE CLEANED AND DEBURRED AS RECOMMENDED BY THE MANUFACTURER AND FEDERAL, STATE AND LOCAL CODES AND SOLDERED AS LISTED BELOW. FLUX SHALL BE NON-CORROSIVE.

   ABOVE GRADE - WHERE FITTINGS ARE SOLDERED BOTH FITTINGS AND TUBING SHALL BE CLEANED AS DESCRIBED ABOVE. UNDER NO CIRCUMSTANCES SHALL DISSIMILAR METALS COME INTO DIRECT CONTACT WITH COPPER TUBING. E.G., GALVANIZED STRAPPING, HANGERS, OR CLAMPS TO SECURE THE TUBINGS.

   BELOW GRADE, OR FLOOR SLAB ON EARTH OR STONE FILL - HIGH TEMPERATURE, SOLDER, 1200 DEG. F OR GREATER MELTING POINT.
   NOTE: WATER PIPE TO BE PROPERLY SECURED AND ALIGNED SO AS NOT TO EXERT VERTICAL OR HORIZONTAL STRESSES ON THE SEATING OF THE MATING (MALE AND FEMALE) SURFACES OF THE UNIONS.

   A. MATERIALS - UNDERGROUND: TYPE "K" COPPER TUBE, SOFT TEMPER

   B. MATERIALS - ABOVEGROUND: TYPE "L" COPPER TUBE, HARD DRAWN, OR CPVC

   C. INSULATION: INSULATION FOR HOT AND COLD WATER PIPING SHALL BE 1/2" THICK ARMAFLEX UL LABELED OR FIBERGLASS 25 WITH ASJ/SSL FOIL/VINYL JACKET OR EQUAL. INSULATE ALL PIPING AND FITTINGS.

5. WASTE PIPING: INSTALL HORIZONTAL DRAIN AND WASTE PIPES WITH 1/4" FT. SLOPE.

   MATERIALS: PVC SCH. 40 OR CAST IRON - HUB TYPE WITH NEOPRENE JOINTS.

6. PIPE SLEEVES/ESCUTCHEONS: PROVIDE CHROME-PLATED ESCUTCHEONS ON ALL PIPES PASSING THROUGH WALLS, FLOORS, OR CEILINGS OF FINISHED ROOMS. ESCUTCHEONS TO BE BEATON & CADWELL, #10, 40, 6A OR EQUIVALENT WITH SET-SCREWS. PROVIDE ESCUTCHEONS ON ALL WASTE LINES FROM PLUMBING FIXTURES, WHETHER THROUGH WALLS, FLOORS, AND WHETHER CONCEALED BEHIND COUNTERS OR EXPOSED. PIPE SLEEVES SHALL BE PROVIDED WHEN PIPES PENETRATE FOUNDATION AND SHALL BE 1" LARGER THAN PIPE, SEAL SLEEVE WITH CAULKING.

7. PLUMBING FIXTURES: FURNISH AND INSTALL PLUMBING FIXTURES AS SHOWN ON DRAWINGS WITH ALL ACCESSORIES AND TRIM AS LISTED. ALL FIXTURES SHALL BE PROTECTED THROUGH THE COURSE OF THE CONSTRUCTION. ANY FIXTURE DAMAGED SHALL BE REPLACED WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

8. CONNECTION TO OTHER FIXTURES: CONNECT BUILDING SERVICE PIPING, INCLUDING BUT NOT LIMITED TO WATER & DRAIN.

9. TESTS:

   A. DRAINAGE AND VENT PIPING - DRAINAGE AND VENT PIPING SHALL BE TESTED BEFORE THE PLUMBING FIXTURES ARE INSTALLED BY CAPPING THE OPENINGS AND FILLING THE ENTIRE SYSTEM WITH WATER AND ALLOWING IT TO STAND THUS FILLED NOT LESS THAN ONE (1) HOUR. INSPECT WATER LEVEL TO DETERMINE IF PIPING IS TIGHT.

   B. WATER PIPING - THE WATER SUPPLY PIPING LINES SHALL BE TESTED BEFORE THE PLUMBING FIXTURES ARE CONNECTED BY FILLING THE ENTIRE SYSTEM WITH POTABLE WATER AND APPLYING HYDROSTATIC PRESSURE OF 100 PSI AND ALLOWING TO STAND FOR NOT LESS THAN FOUR (4) HOURS AT THIS PRESSURE TO PROVE PLUMBING INTEGRITY.

10. DISINFECTION OF POTABLE WATER SYSTEM: UPON COMPLETION OF INSTALLATION DISINFECT THE WATER SYSTEM BY FILLING IT WITH SOLUTION CONTAINING 50 PARTS PER MILLION OF CHLORINE AND ALLOW IT TO STAND FOR NOT LESS THAN SIX (6) HOURS BEFORE FLUSHING THOROUGHLY AND RETURNING TO SERVICE. FURNISH CLEAN WATER SAMPLES TO THE LOCAL AUTHORITY FOR TESTING AFTER THE LINES HAVE BEEN DISINFECTED. THIS PROCEDURE TO BE IN ACCORDANCE WITH STATE PLUMBING CODE.

11. CLEANUP: CLEAN ALL PLUMBING FIXTURES AND EQUIPMENT THOROUGHLY BEFORE FINAL INSPECTION, LEAVING ALL READY FOR USE.

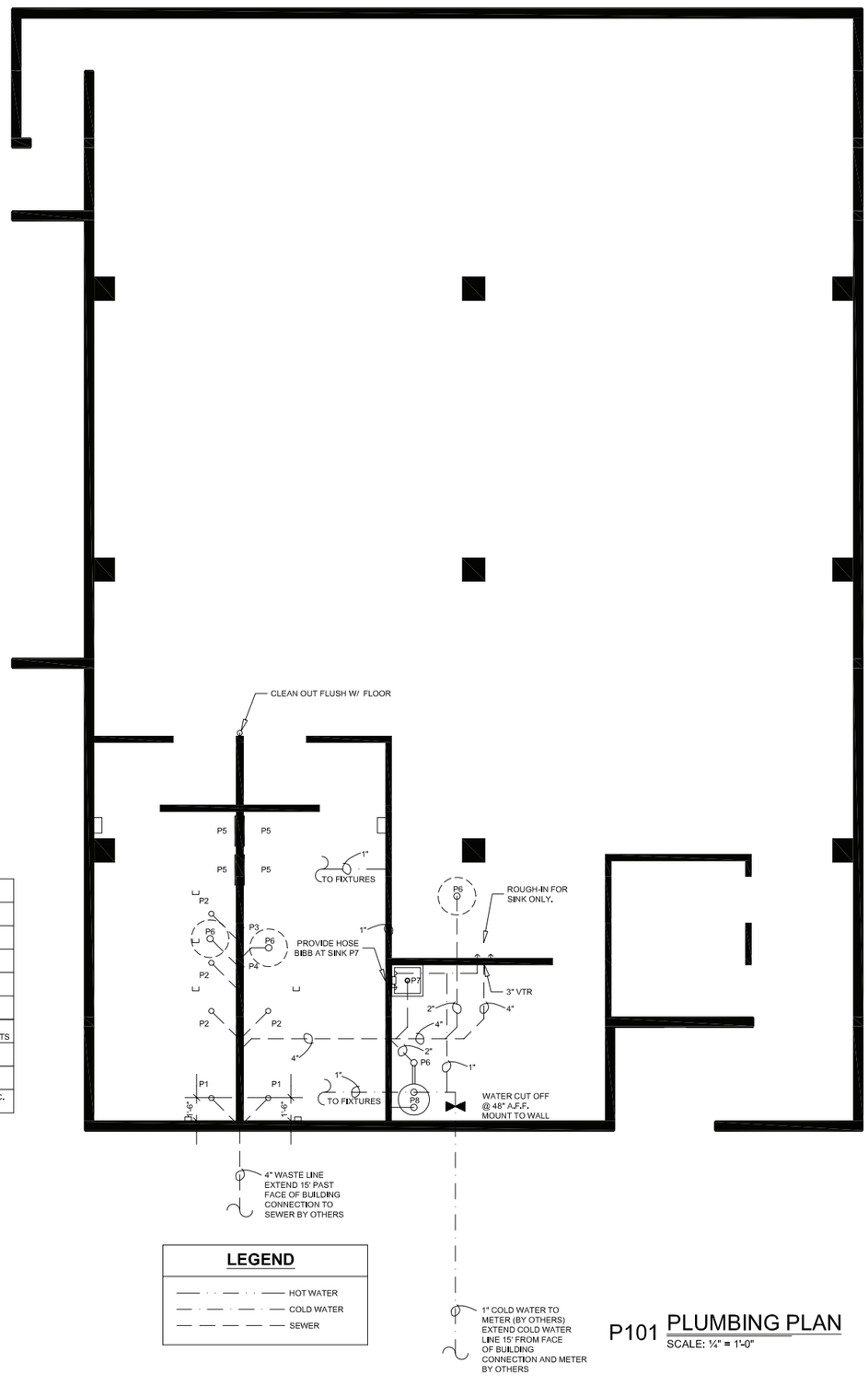
12. EXTENDED WARRANTY: WARRANT IN WRITING ANY EQUIPMENT OR MATERIALS USED IN THE INSTALLATION HAVING AN EXTENDED WARRANTY AS OFFERED BY THE MANUFACTURER. PROVIDE NEW OR REBUILT ASSEMBLIES TO THE SITE FOR ANY SUCH EQUIPMENT OR MATERIALS WHICH FAIL DURING THIS PERIOD, AND INSTALL AT NO ADDITIONAL COST TO THE OWNER.

PLUMBING SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
P1	H.C. WATER CLOSET	MANSFIELD	137-160	WHITE C965 12" R.I. 18" HIGH H.C. W/ WHITE SEAT & LID. USE STANDARD COMPONENTS
P2	WATER CLOSET	MANSFIELD	135-160	WHITE C938 12" R.I. W/ WHITE SEAT & LID. USE STANDARD COMPONENTS
P3	URINAL	MANSFIELD	410	ADA URINAL - SIPHON - JET WHITE URINAL W/ FLUSH VALVE C199
P4	URINAL	MANSFIELD	475 SUBURBAN	WHITE URINAL W/ FLUSH VALVE C199
P5	LAVATORIES	ELJER	051-2964	20 1/2"x27" VITREOUS CHINA 4" CENTERS - WHITE W/ Z1231-79 LAVATORY CARRIER W/ DELTA 27T3834 FAUCETS
P6	FLOOR DRAIN	WADE	W1102-STD6	
P7	JANITOR SINK	ELJER	24"x24"x10"	MOLDED STONE NO. 231 DRIFT WHITE W/ DELTA 289 8" WALL MOUNTED SINK FAUCET
P8	HOT WATER TANK	A. O. SMITH	DLE/DRE-52	50 GAL. SINGLE PHASE 1 1/4" INLET/OUTLET W/ 26" P.V.C. OVERFLOW PAN PIPED TO FLOOR DRAIN

PLUMBING FIXTURE RUN OUT SCHEDULE

NO.	DESCRIPTION	WATER		WASTE	VENT
		COLD	HOT		
P1	H.C. WATER CLOSET	1/2"		3"	4"
P2	WATER CLOSET	1/2"		3"	4"
P3	URINAL	1/2"		3"	4"
P4	URINAL	1/2"		3"	4"
P5	LAVATORIES	1/2"	1/2"	1 1/2"	1 1/2"
P6	FLOOR DRAIN			1 1/2"	
P7	JANITOR SINK	1/2"	1/2"	3"	4"
	SINK ROUGH-IN	1/2"	1/2"	1 1/2"	1 1/2"



P101 PLUMBING PLAN
SCALE: ¼" = 1'-0"

COMMUNITY SAFE ROOM

HURICANE FLOYD HOUSING INITIATIVE
NORTH CAROLINA

LIMIT OF LIABILITY:

The designs included herein are based on extensive research of the causes and effects of windstorm damage to buildings.
Safe Rooms designed and built to these designs should provide a high degree of occupant protection during tornadoes.
Any substitution of either materials or design concepts may decrease the level of occupant protection and/or increase the possibility of personal injury during a severe wind event.

Because it is not possible to predict or test all conditions that may occur during severe windstorms, or control the quality of construction, among other things, the designer does not warrant the design.

The desiger neither manufactures nor sells safe rooms built from this design. The designers have not made and do not make any representation, warranty, or covenant, express or implied, with respect to the design, condition, quality, durability, operation, fitness for use, or suitability of the safe room in any respect whatsoever. Designers shall not be obligated or liable for actual, incidental, consequential, or other damages of or to users of safe rooms or any other person or entity arising out of or in connection with the use, condition, and/or performance of safe rooms built from this design or from the maintenance thereof.

PLUMBING PLAN

SHEET No.: P1

DATE: 7 MARCH 2000

REVISED: | REV. NO.

FEMA