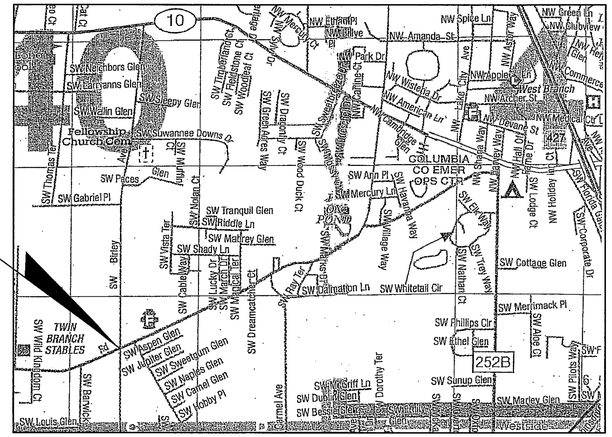


S&S FOOD STORE NO. 29

PINEMOUNT RD. & BIRLEY RD.
LAKE CITY - COLUMBIA COUNTY - FLORIDA

STRUCTURAL DESIGN DATA

BASIC WIND SPEED:	110 MPH
WIND IMPORTANCE FACTOR (1):	I = 1.00
BUILDING CATAGORY:	CATAGORY II
WIND EXPOSURE:	"B"
INTERNAL PRESSURE COEFFICIENT:	+/- 0.18

COMPONENTS & CLADING (P.S.F.)				
SIZE	END ZONE (5)		INTERIOR ZONE (4)	
(S.F.)	POS. +	NEG. -	POS. +	NEG. -
0-20	20.8	27.2	20.8	22.6
20-50	19.5	24.6	19.5	21.3
50-100	18.5	22.6	18.5	20.4

NOTE: DIMENSION OF ZONE 5 IN FT. 10' FRONT & BACK, 5' SIDES

DESIGN CRITERA

FLORIDA BUILDING CODE	2007
FLORIDA PLUMBING CODE	2007
FLORIDA MECHANICAL CODE	2007
FLORIDA GAS CODE	2007
FLORIDA FIRE PREVENTION CODE	2007
NFPA 96, VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS	2007
NFPA 101, LIFE SAFETY CODE, FLORIDA EDITION	2007

BUILDING AREA = 5,000 G.S.F.

STANDARD ABBREVIATIONS

@	AT	GALV.	GALVANIZED
#	NUMBER or POUND(S)	HORZ.	HORIZONTAL
=	EQUALS	INS.	INSULATION
ϕ	DIAMETER	INT.	INTERIOR
W/	WITH	LAV.	LAVATORY
W/O	WITHOUT	LVL.	LAMINATED VENEER LUMBER
℄	CENTERLINE	MAX.	MAXIMUM
&	AND	MIN.	MINIMUM
+/- or ±	PLUS OR MINUS	MISC.	MISCELLANEOUS
1'	ONE FOOT	M.O.	MASONRY OPENING
1"	ONE INCH	No. or Nr.	NUMBER
1/4" or ¼"	ONE QUARTER INCH	O.C.	ON CENTER
8d	8 PENNY	O/H	OVERHEAD
BM	BEAM	OHD	OVERHEAD DOOR
BOT.	BOTTOM	PLYWD.	PLYWOOD
CLG.	CEILING	P/T	PRESSURE TREATED
CO	CLEANOUT	REINF.	REINFORCING (ED)
CONC.	CONCRETE	REQ'D	REQUIRED
COTG	CLEANOUT TO GRADE	RM.	ROOM
DBL.	DOUBLE	SF	SQUARE FEET
DIM.	DIMENSION	SGD	SLIDING GLASS DOOR
DN.	DOWN	SHT.	SHEET
ELEV.	ELEVATION	SRLH	SUWANNEE RIVER LOG HOMES
EXT.	EXTERIOR	TYP.	TYPICAL
F	FRENCH (DOORS)	VERT.	VERTICAL
FDN.	FOUNDATION	WC	WATERCLOSET (TOILET)

SYMBOLS

THESE SYMBOLS ARE MOST OFTEN ENCOUNTERED IN THE FOLLOWING DRAWINGS: ELEVATIONS, DIMENSION PLANS, SECTIONS & STRUCTURAL PLANS

TYPE OF ELEVATION MARK USED TO INDICATE A PREFERRED TARGET ELEVATION - TRUE MEASUREMENT.

TYPE OF DETAIL MARK USED TO INDICATE A SECTION OR DETAIL ASSOCIATED WITH A PLAN VIEW

TYPE OF DETAIL MARK USED TO INDICATE A SECTION ie: SECTION "A" ON SHEET "A5", TAIL INDICATES DIRECTION OF VIEW

TYPE OF SECTION MARK USED TO INDICATE A VIEW TAKEN IN THE DIRECTION OF THE ARROW ie: SECTION "A" FOUND ON "A5"

PROJECT LOCATION

LOCATION MAP
SECTION 05, TOWNSHIP 4 SOUTH, RANGE 16 EAST
COLUMBIA COUNTY, FLORIDA

A.D.A NOTES: ACCESSIBILITY

RESTROOM NOTES

WATERCLOSETS: SHALL COMPLY WITH SEC. 4.16 OF ADA
HEIGHT OF SEAT SHALL BE IN ACCORDANCE WITH SEC. 4.16.3 OF ADA
FLUSH CONTROLS SHALL BE IN ACCORDANCE WITH SEC. 4.16.5 OF ADA

GRAB BARS: SHALL COMPLY WITH SEC. 4.16.4 OF ADA

DISPENSERS: SHALL COMPLY WITH SEC. 4.16.6 OF ADA

LAVATORIES, SINKS & MIRRORS: SHALL COMPLY W/ SECTION 4.19 OF ADA
HEIGHTS SHALL COMPLY WITH SEC. 4.19.2.1 OF ADA
EXPOSED PIPES & SURFACES SHALL COMPLY W/ SECTION 4.19.4 OF ADA
FAUCETS SHALL COMPLY WITH SEC. 4.19.5 OF ADA
MIRRORS SHALL COMPLY WITH SEC. 4.19.6 OF ADA

OWNER SELECTED MATERIAL AND INSTALLATION OF FINISH FLOORING MATERIALS TO COMPLY WITH THE FOLLOWING:

SEC. 4.5 OF ADA
SEC. 4.3 OF ADA
APPLICABLE SECTIONS OF NFPA FIRE CODES
APPLICABLE SECTIONS OF NFPA 101-LATEST LIFE SAFETY CODE

FIXTURES, DEVICES AND RELATED HARDWARE NOT SPECIFICALLY DEFINED OR MENTIONED ELSEWHERE ARE TO BE OWNER SELECTED AND INSTALLED TO COMPLY WITH THE ABOVE APPLICABLE ADA SECTIONS.

STANDARD MOUNTING PER A.D.A. REQUIREMENTS

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

DRAWING INDEX

CRAIG SALLEY AND ASSOCIATES
ARCHITECTS · PLANNERS · INTERIOR DESIGNERS
3911 NEWBERRY ROAD · GAINESVILLE, FLORIDA · LIC. NO. AA0002479 · 352-372-8424

S & S FOOD STORE NO. 29
BIRLEY & PINEMOUNT ROAD
LAKE CITY, FLORIDA

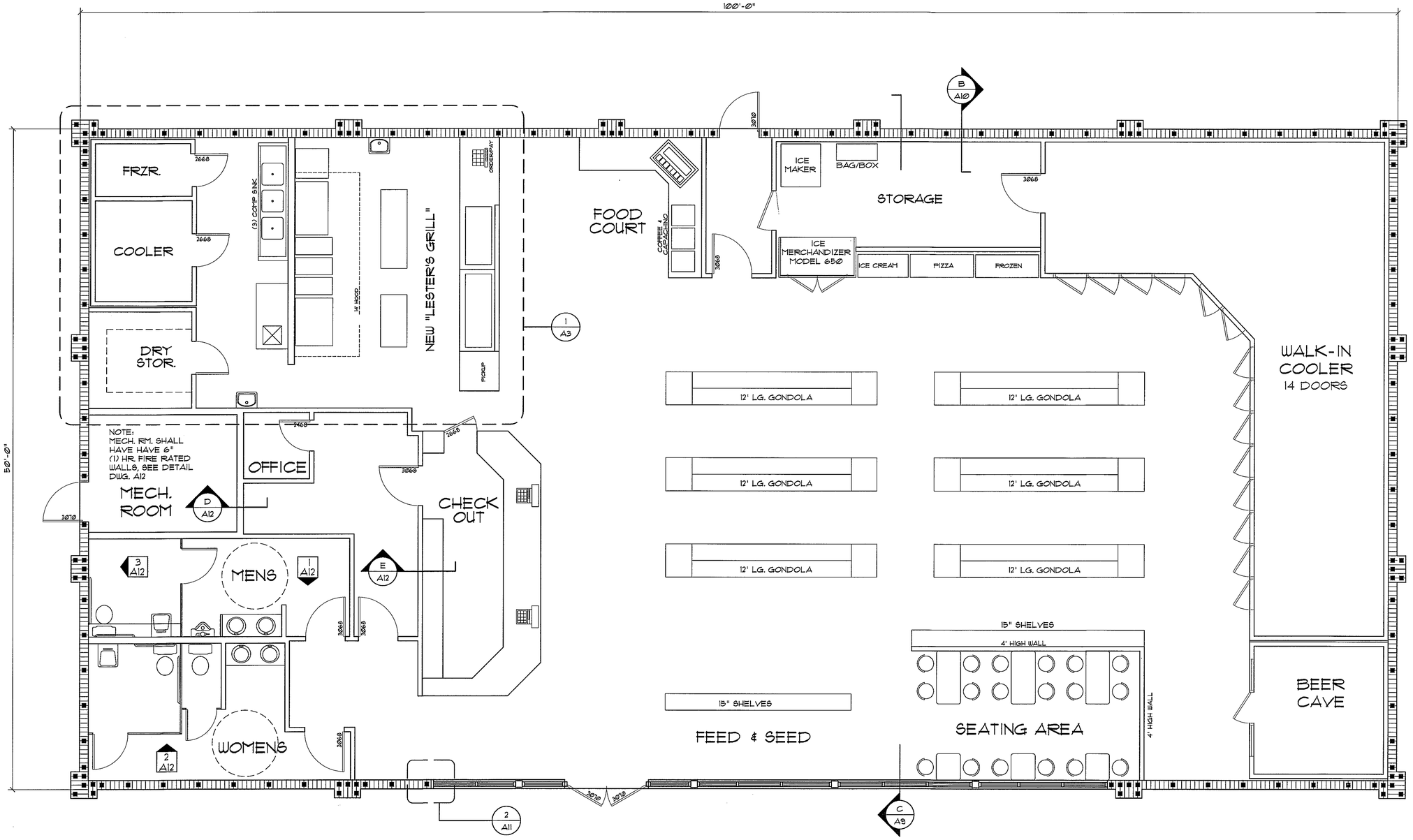
Craig Salley
3/10/10

CRAIG SALLEY, R.A.
FL. REG. NO. 4475

DATE	2/12/10
DRAWN	DJR
APPROVED	

G-1

OF 18 SHEETS



FLOOR PLAN

SCALE: 1/4" = 1'

2007 FLORIDA BUILDING CODE - COMPLIANCE SUMMARY

BASIC WIND SPEED:	110 MPH
WIND IMPORTANCE FACTOR (I):	I = 1.00
BUILDING CATAGORY:	CATAGORY II
WIND EXPOSURE:	"B"
INTERNAL PRESSURE COEFFICIENT:	+/- 0.18
MWFRS PER TABLE 1609.2.A (FBC 2007) DESIGN WIND PRESSURES:	ROOF: - 23.1 PSF WALLS: + 26.6 PSF EAVES: + 32.3 PSF
COMPONENTS & CLADING PER TABLES 1609.2.A, 1609.2.B & 1609.2.C (FBC 2007) DESIGN WIND PRESSURES:	OP'NGS: + 21.8 / - 29.1 PSF EAVES: - 68.3 PSF ROOF: + 19.9 / - 25.5 PSF

TYPE OF CONSTRUCTION
- Roof: Hip Roof Construction, Wood Trusses @ 24" O
- Walls: 8" C.M.U. Walls - Reinf. per Drawings
- Floor: 4" Thk. Concrete Slab W/ 6x6 W2.1/2.1 W.W.M.
- Foundation: Continuous Footer/Stem Wall

ROOF DECKING
- Material: 5/8" CDX Plywood
- Sheet Size: 48"x96" Sheets Perpendicular to Roof Framing
- Fasteners: "8 Common Nails @ 6" O.C. Edge, 12" O.C. Field

SHEARWALLS
- Material: 8" C.M.U. W/#5 Vert. Reinforcing @ 32" o.c.

HURRICANE UPLIFT CONNECTORS
- Truss to CMU Wall: "SIMPSON" META20 @ Ea. Truss End W/ TSS Galvanized Saddle
- Truss to Steel Bm.: "SIMPSON" LTT20B @ Ea. Truss End W/ 1/2" Anchor Bolt
- Girder to CMU Wall: "SIMPSON" HHETA24 @ Ea. Truss End W/ Galvanized Moisture Barrier

FOOTINGS AND FOUNDATIONS
- Footing: 12"X24" W/3 #5 Rebar - continuous
- Stemwall: 8" C.M.U. with #5 Vert. Reinforcing @ 32" o.c.
- Column Piers: 60" X16" W/6 #5 Bars ea. way, Bot.

ALL WIND LOADS ARE IN ACCORDANCE WITH SECTION 1609, FLORIDA BUILDING CODE, 2007 EDITION.

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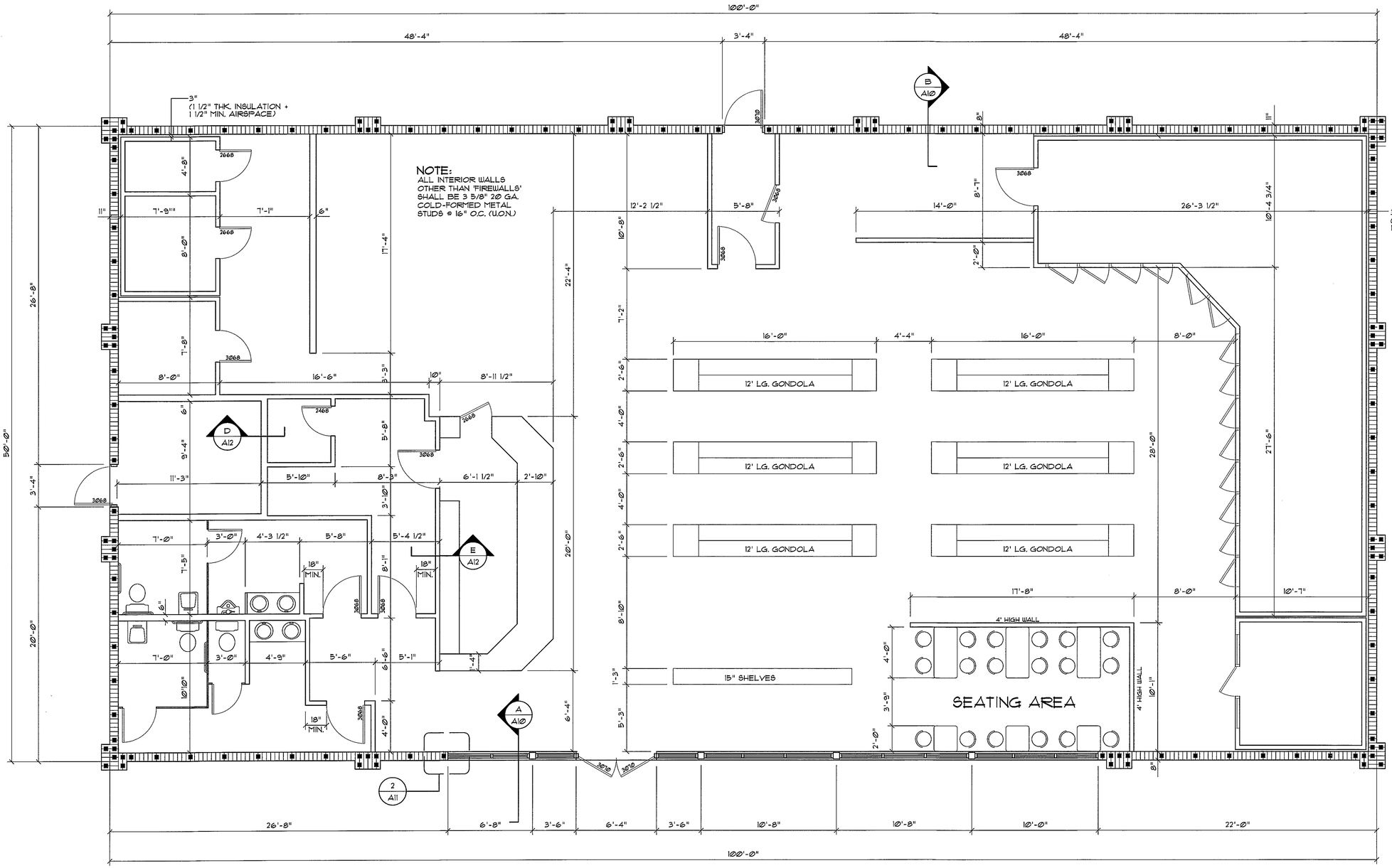
A-1

OF 18 SHEETS



DIMENSION PLAN

SCALE: 1/4" = 1'

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A-2

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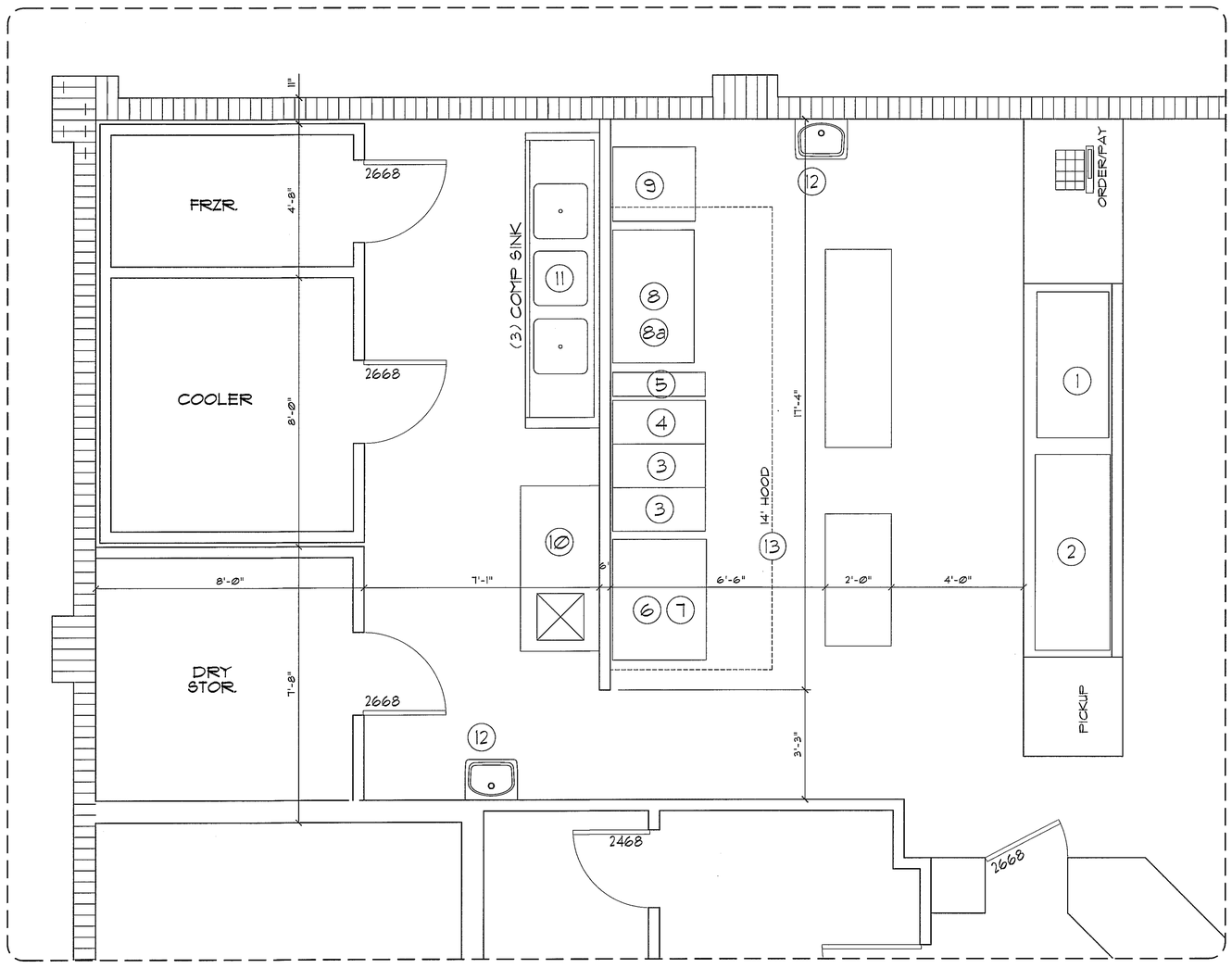

KITCHEN EQUIPMENT LAYOUT

SCALE: 1/2" = 1'

1
A3

EQUIPMENT SCHEDULE		
NO.	DESCRIPTION	ELEC./GAS REQUIREMENTS
1	5' DROP-IN HOT WELL W/WARMING DRAWER	120V/60/1, 20A, NEMA L5-30P, STD.
2	8' COLD FOOD DROP-IN	115V/60/1, 17.5A, NEMA 5-30P
3	14" GAS DEEP FRYER	120V/60/1, 8A, 111,000 BTU
4	FRYER FILTER MATE	-
5	2 BURNER COOK TOP	(2) 33,000 BTU BURNERS
6	GAS COMBI-OVEN	120V/60/1, 5.7A, NEMA 5-15P, 91,000 BTU
7	CONVECTION OVEN	120V/60/1,12.5A,NEMA 5-15P, 50,000 BTU
8	GRIDDLE	60,000 BTU
8a	CHARBROILER	80,000 BTU
9	REFRIGERATED SANDWICH PREP	115V/60/1,
10	5' SS PREP TABLE	-
11	3-COMPARTMENT SINK	-
12	HAND SINK	-
13	14' EXHAUST HOOD	SEE - CAPTIVE AIRE SPECIFICATIONS

FIRE/VENTILATION SYSTEM

THIS BUILDING SHALL BE EQUIPPED WITH ALL THE REQUIREMENTS OF NFPA 96: STANDARD FOR VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS.

1.1 SCOPE. 1.1.1 THIS STANDARD SHALL PROVIDE THE MINIMUM FIRE SAFETY REQUIREMENTS (PREVENTATIVE AND OPERATIVE) RELATED TO THE DESIGN, INSTALLATION, OPERATION, INSPECTION AND MAINTENANCE OF ALL PUBLIC AND PRIVATE COOKING OPERATIONS. 1.1.2 THIS STANDARD SHALL APPLY TO RESIDENTIAL COOKING EQUIPMENT USED FOR COMMERCIAL COOKING OPERATIONS. 1.1.3 THIS STANDARD SHALL NOT APPLY TO COOKING EQUIPMENT LOCATED IN A SINGLE DWELLING UNIT. 1.1.4* THIS STANDARD SHALL NOT APPLY TO FACILITIES WHERE ALL OF THE FOLLOWING ARE MET: (1) ONLY RESIDENTIAL EQUIPMENT IS BEING USED, (2) FIRE EXTINGUISHERS ARE LOCATED IN ALL KITCHEN AREAS IN ACCORDANCE WITH NFPA 10, STANDARD FOR PORTABLE FIRE EXTINGUISHERS, (3) FACILITY IS NOT AN ASSEMBLY OCCUPANCY. (4) THE AUTHORITY HAVING JURISDICTION HAS APPROVED THE INSTALLATION. A.1.1.1 THESE REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO, ALL MANNER OF COOKING EQUIPMENT, EXHAUST HOODS, GREASE REMOVAL DEVICES, EXHAUST DUCTWORK, EXHAUST FANS, DAMPERS, FIRE-EXTINGUISHING EQUIPMENT, AND ALL OTHER AUXILIARY OR ANCILLARY COMPONENTS OR SYSTEMS THAT ARE INVOLVED IN THE CAPTURE, CONTAINMENT, AND CONTROL OF GREASE-LADEN COOKING EFFLUENT. A.1.1.4 THIS JUDGMENT SHOULD TAKE INTO ACCOUNT THE TYPE OF COOKING BEING PERFORMED, ITEMS BEING COOKED, AND THE FREQUENCY OF COOKING OPERATIONS. EXAMPLES OF OPERATIONS THAT MIGHT NOT REQUIRE COMPLIANCE WITH THIS STANDARD INCLUDE THE FOLLOWING: (1) DAY CARE CENTERS WARMING BOTTLES AND LUNCHES (2) THERAPY COOKING FACILITIES IN HEALTH CARE (3) CHURCHES AND MEETING OPERATIONS THAT ARE NOT COOKING MEALS THAT PRODUCE GREASE-LADEN VAPORS (4) EMPLOYEE BREAK ROOMS WHERE FOOD IS WARMED

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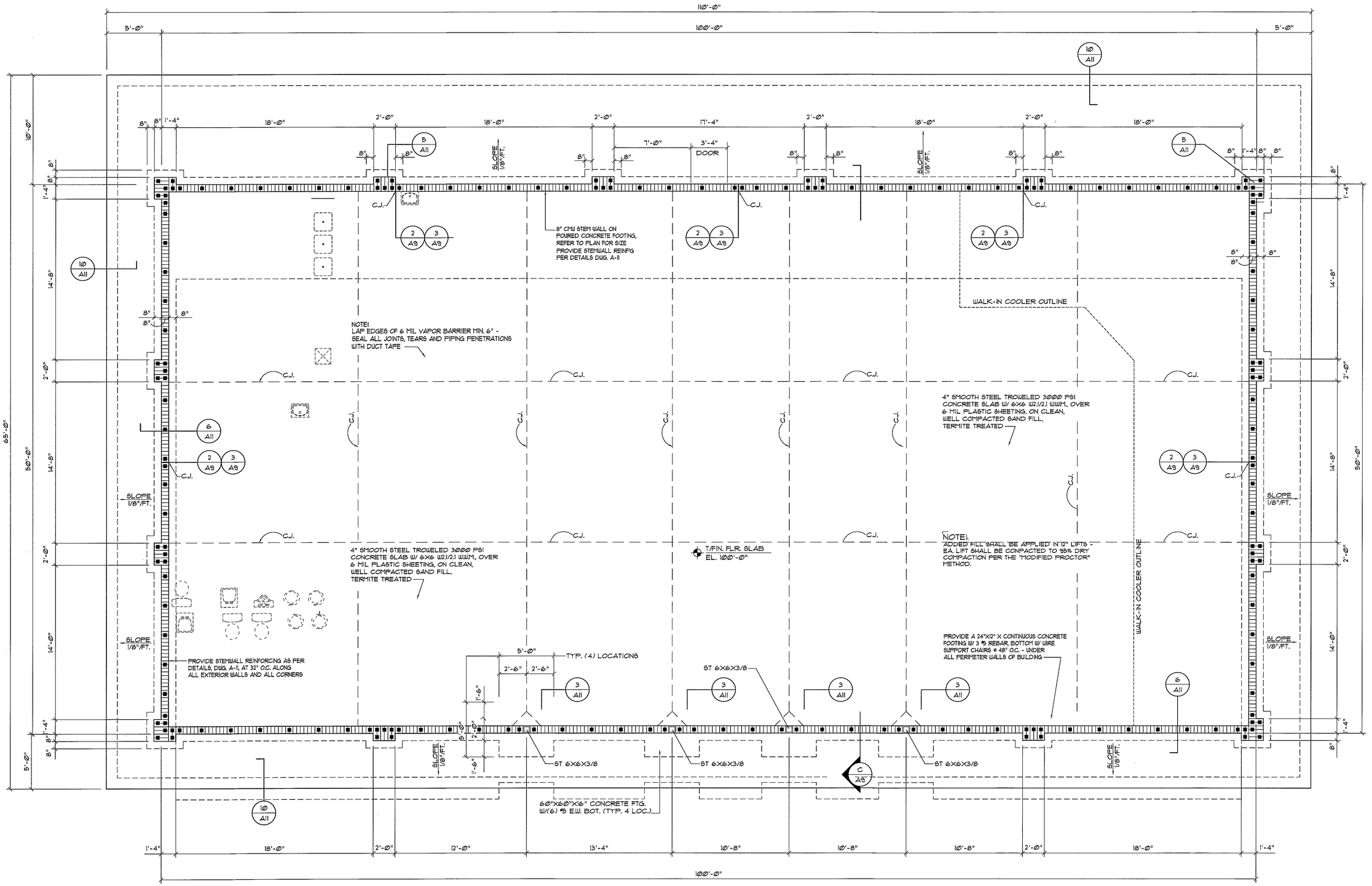
A-3

OF 18 SHEETS



FOUNDATION PLAN

SCALE: 1/4" = 1'

CONCRETE SLAB JOINT NOTE:

SAW-CUT CONTRACTION JOINTS AS PER DETAIL ON SHT. A9 WITH A MAXIMUM SPACING OF 20'-0" EACH WAY.

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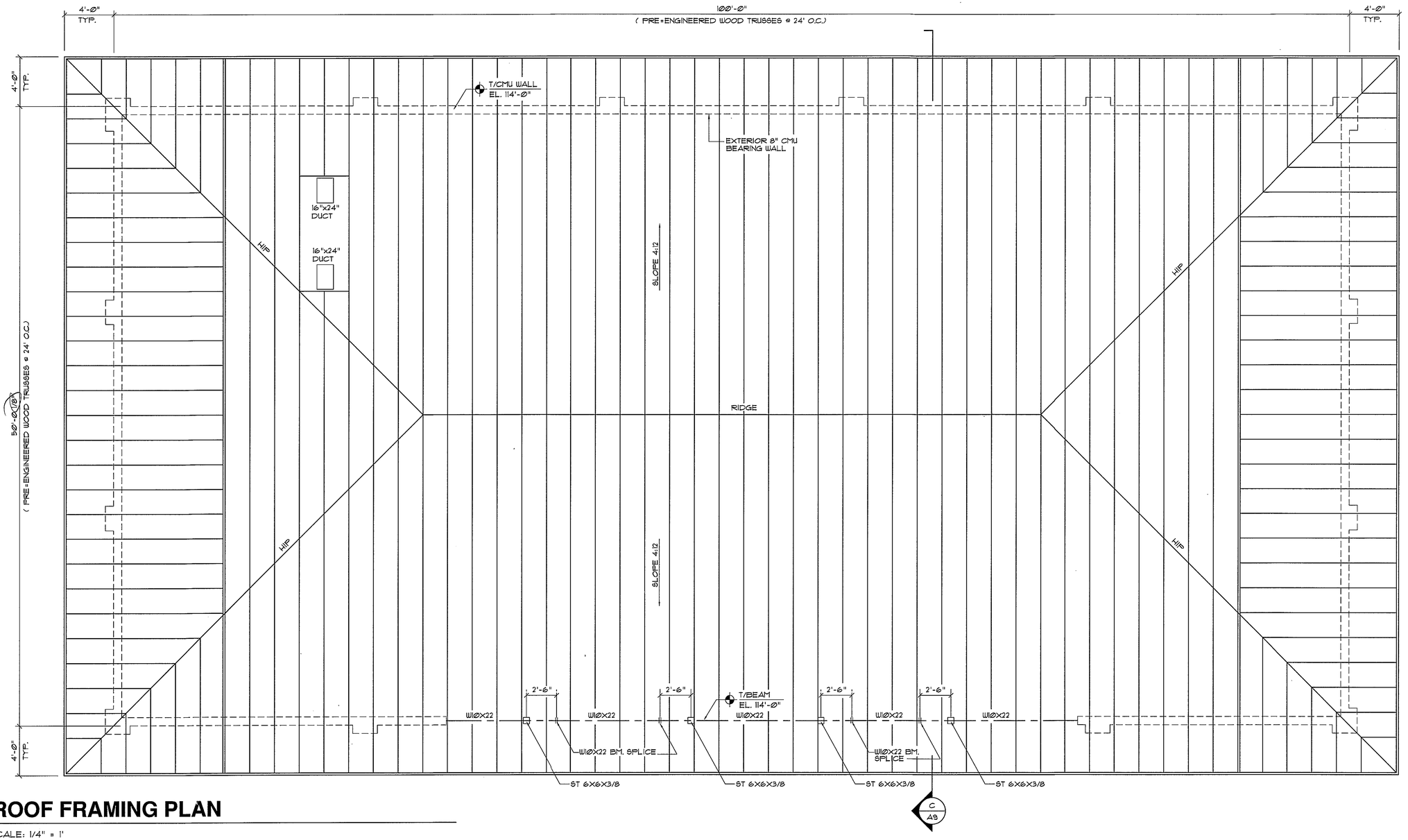
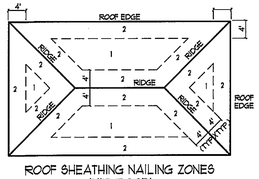


ROOF FRAMING PLAN

SCALE: 1/4" = 1'

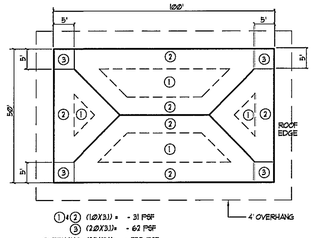
ROOF SHEATHING FASTENINGS			
NAILING ZONE	SHEATHING TYPE	FASTENER	SPACING
1	5/8" CDX	8d COMMON OR 8d HOT DIPPED GALVANIZED BOX NAILS	6 in. o.c. EDGE 12 in. o.c. FIELD
2			4 in. o.c. EDGE 8 in. o.c. FIELD



ROOF SHEATHING NAILING ZONES (HIP ROOF)

Roof Nail Pattern DETAIL

SCALE: NONE



① ② (10X3½ " - 31 PSF
③ (12X3½" - 62 PSF
OVERHANG (12X3½" - 715 PSF

Wind Uplift DIAGRAM

SCALE: NONE

SHOP DWG COORDINATION: THE TRUSS ANCHOR STRAPS AS INDICATED IN THE CONSTRUCTION DOCUMENTS ARE SUGGESTED STRAPS AND THAT THE TRUSS ENGINEERED SHOP DRAWING LOADS TAKE PRECEDENCE OVER THAT INDICATED IN THE CONSTRUCTION DOCUMENTS.

THE UPLIFT LOADS INDICATED FOR EACH TRUSS IN THE ENGINEERED TRUSS SHOP DRAWINGS MAY BE MATCHED TO STANDARD PRODUCT UPLIFT RATINGS FOR COMPARABLE UPLIFT CONNECTORS, AND THAT THE PRODUCTS THAT PROVIDE EQUAL OR GREATER UPLIFT RESISTANCE FOR THE LISTED LOADS MAY BE USED IN LIEU OF THOSE INDICATED IN THE CONSTRUCTION DOCUMENTS OR AS APPROVED BY THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL COORDINATE THE TRUSS TO TRUSS ANCHOR REQUIREMENTS WITH THE TRUSS ENGINEERING SHOP DRAWINGS. SOME OF THE TRUSS TO TRUSS CONNECTIONS WILL REQUIRE ANCHOR STRAPS IN ADDITION TO TYPICAL NAILING. ANCHOR DEVICES SHALL BE REQUIRED FOR ALL JOINTS WITH AN UPLIFT OR GRAVITY LOAD OF 100 LBS OR GREATER.

WOOD STRUCTURAL NOTES

1. TEMPORY BRACING OF THE STRUCTURE DURING ERECTION, REQUIRED FOR SAFE AND STABLE CONSTRUCTION, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR SO ENGAGED. TEMPORY AND PERMANENT BRACING OF ROOF TRUSSES SHALL BE AS PER THE STANDARD GUIDELINES OF THE "TRUSS PLATE INSTITUTE".
2. ALL TRUSSES SHALL BE DESIGNED BY A LICENSED PROFESSIONAL FLORIDA ENGINEER & SHALL BE SIGNED AND SEALED BY THE SAME. DESIGN SHALL INCLUDE ALL PLACEMENT PLANS, TRUSS DETAILS, TRUSS TO TRUSS CONNECTIONS & THE STANDARD SPECIFICATIONS AND RECOMMENDATIONS OF INSTALLATION OF THE "TRUSS PLATE INSTITUTE".
3. THE DESIGN WIND SPEED FOR THIS PROJECT IS 110 MPH PER THE 2007 FLORIDA BUILDING CODE SECTION 1609 AND LOCAL JURISDICTION REQUIREMENTS.
4. SHEATH ROOF WITH 5/8" CDX PLYWOOD W/LONG EDGE PERPENDICULAR TO THE ROOF TRUSSES, SECURE TO FRAMING WITH 8d NAAILS SPACED PER THE NAILING SCHEDULE.

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A-5

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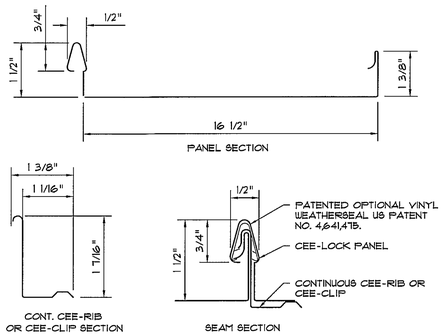
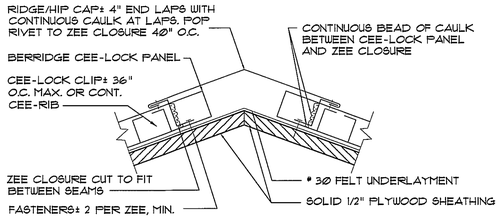


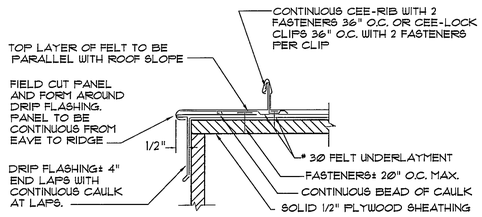
PANEL DETAIL

SCALE: NONE



RIDGE/HIP DETAIL

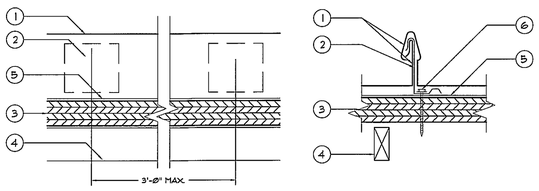
SCALE: NONE



NOTE: FIELD CUT AND FORM LAST PANEL AROUND DRIP FLASHING. PANEL MUST BE CONTINUOUS FROM RIDGE TO EAVE.

GABLE DETAIL / PANEL TURNDOWN

SCALE: NONE



1. CEE-LOCK PANEL * NO. 24 M&G (MIN. YIELD STRENGTH 40,000 PSI) THICKNESS COATED STEEL, 16 1/2 IN. WIDE 1 1/2 IN. HIGH. PANEL (NON-STRUCTURAL VINYL WEATHER SEAL OPTIONAL IN SEAM) CONTINUOUS OVER TWO OR MORE SPANS WITHOUT LAPS.

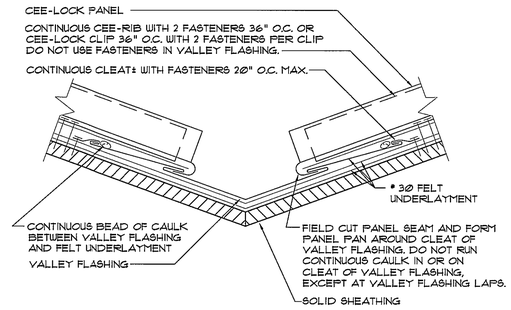
2. CEE-CLIP (PANEL CLIP) - ONE PIECE ASSEMBLY FABRICATED FROM NO. 24 M&G (MIN. YIELD STRENGTH 40,000 PSI) COATED STEEL. CEE-CLIP LOCATED AT EACH PANEL SIDE LAPS BEING PLACED AT 3'-0" O.C. MAXIMUM.

3. DECK - 5/8" APA 40/20 PLYWOOD.

4. JOIST - 2" X 4" AT 2'-0" O.C. MAXIMUM WITH #12 X 2" PAN HEAD WOOD SCREW AT 12" O.C. MAX. AT PLYWOOD TO JOIST CONNECTION AND AT PLYWOOD ENDS.

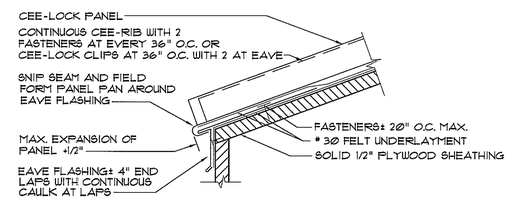
5. * 30 FELT UNDERLAYMENT.

6. FASTENERS (SCREWS) - FOR ATTACHING "CEE-CLIP" (ITEM TWO) TO DECK USE NO. 10 PANCAKE HEAD TEKS STEEL SCREWS, TWO FASTENER PER "CEE-CLIP".



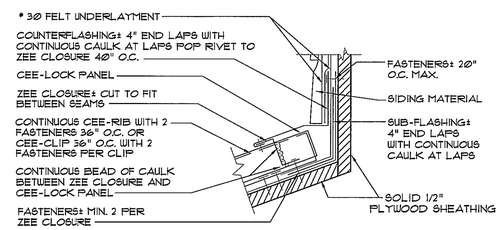
VALLEY DETAIL

SCALE: NONE



EAVE DETAIL

SCALE: NONE



NOTE: FIELD CUT ZEE CLOSURE TO FIT BETWEEN PANEL SEAMS.

FLASHING DETAIL

SCALE: NONE

NOTE: ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, SHALL BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER.

ALL ARCHITECTURAL PANELS ARE 24 GAUGE METAL, TAKE CARE IN HANDLING AND INSTALLATION TO AVOID DAMAGING OR DEFORMING THE PANELS.

NOTE:

THE STANDING SEAM METAL ROOF SYSTEM SHALL COMPLY WITH 'BERRIDGE MANUFACTURING COMPANY' SPECIFICATIONS & DETAILS AS SHOWN ON THIS DRAWING, OR AN APPROVED PRODUCT OF EQUAL DESIGN.

BERRIDGE MANUFACTURING COMPANY
1120 MAURY STREET
HOUSTON, TX 77026
1-800-231-8127
http://www.berridge.com

APPROVED ALTERNATE:

ENGLERT, INC.
1000 AMBOY AVENUE
PERTH AMBOY, NJ 08862

STANDING SEAM PANEL INSTALLATION NOTES

1. DOUBLE LAYER OF NUMBER THIRTY FELT UNDERLAYMENT OR EQUAL AND THE CEE-LOCK OPTIONAL VINYL WEATHERSEAL (US PATENT NO. 4641,475) ARE RECOMMENDED FOR ALL APPLICATIONS WHERE THE ROOF SLOPE IS 3 ON 12 OR LESS.

2. STRIPPABLE FILM: THE STRIPPABLE PLASTIC FILM WHICH IS APPLIED OVER MOST BERRIDGE PREFINISHED PRODUCTS, PANELS, FLASHINGS, COILS, AND FLAT SHEETS PROVIDES PROTECTION OF THE FINISH DURING FABRICATION AND TRANSIT. THIS FILM MUST BE REMOVED PRIOR TO INSTALLATION.

3. SOLID SHEATHING REQUIREMENTS: 5/8" PLYWOOD SHEATHING SHALL BE USED TO PROVIDE SUFFICIENT HOLDING POWER FOR FASTENERS.

4. SHEATHING INSPECTION:
   A. SHEATHING END JOINTS SHOULD BE STAGGERED.
   B. ALL END JOINTS SHOULD MEET AT EITHER A JOIST OR RAFTER.
   C. BLOCKING OR "H" CLIPS SHOULD BE USED IF JOISTS DO NOT REMAIN FLAT UNDER THE WEIGHT OF WORKMEN.
   D. USE SHIMS TO KEEP ENTIRE SUBSTRATE EVEN. UNEVEN SUBSTRATE WILL RESULT IN "OIL-CANNING" IN PANELS. SUBSTRATE SHOULD BE LEVEL TO 1/4" IN 20'-0".
   E. ALL CUTS AT PENETRATIONS SHOULD BE TIGHT, WITHOUT GAPS.
   F. USE WOOD-FRAMED CRICKETS AT LARGE PENETRATIONS.
   G. MAKE SURE SUBSTRATE JOINTS ARE TIGHT AT ALL HIPS, VALLEYS, AND RIDGES.

5. FASCIA/RAKE INSPECTION:
   A. STRIKE A LINE THE FULL LENGTH OF THE FASCIA OR RAKE. IF NOT STRAIGHT, CORRECT WITH SHIMS.
   B. MAKE SURE FASCIA/RAKE IS FLUSH WITH SHEATHING.

6. FELT UNDERLAYMENT: A MINIMUM SINGLE LAYER OF * 30 FELT UNDERLAYMENT (OR EQUAL) MUST BE APPLIED OVER SOLID SHEATHING AS SHOWN IN THE BERRIDGE MANUFACTURING COMPANY TYPICAL FELTING DETAILS. THE USE OF ADDITIONAL LAYERS OF * 30 FELT IS RECOMMENDED ON LOW-SLOPED ROOFS, AT ALL VALLEY CONDITIONS, AT ROOF PENETRATIONS, AND CERTAIN OTHER FLASHING CONDITIONS AS DEPICTED IN THE CEE-LOCK PANEL TYPICAL DETAILS. (THE UNDERLAYMENT MUST COVER THE ENTIRE ROOF DECKED SURFACE).

7. FELTING INSTALLATION:
   A. DO NOT USE RED ROSIN PAPER UNDER METAL ROOFING PANELS.
   B. SWEEP ROOF AREA CLEAN.
   C. USE FLAT HEAD GALVANIZED ROOFING NAILS x 1 1/4" LONG WITH BERRIDGE GALVANIZED FELT CAPS.
   D. INSTALL VALLEY FELT FIRST.
   E. INSTALL FELT PARALLEL TO EAVE (2 LAYERS REQUIRED AT EAVE), STARTING AT EAVE AND USING MINIMUM 6" LAPS. USE TWO LAYERS OF FELT ON ENTIRE ROOF DECK IF ROOF SLOPE IS 3 ON 12 OR LESS. 2 LAYERS OF FELT REQUIRED AT EAVE REGARDLESS OF SLOPE.

8. FLASHING: IF BERRIDGE MANUFACTURING COMPANY IS TO SUPPLY FLASHINGS, ALL FLASHINGS WILL BE FABRICATED IN 10'-0" LENGTHS WITH SQUARE END CUTS ONLY. THE PURCHASER MUST PROVIDE ALL DIMENSIONS AND DEGREE OF ANGLES.

9. FLASHING INSTALLATION:
   A. REMOVE STRIPPABLE PLASTIC FILM FROM ALL FLASHINGS PRIOR TO INSTALLATION.
   B. ALWAYS STAGGER JOINTS WHEN ONE FLASHING IS INSTALLED OVER OTHER FLASHING.
   C. INSTALL ALL FLASHINGS AS PER BERRIDGE TYPICAL DETAILS.
   D. ALL FLASHINGS ARE TO BE DESIGNED AND INSTALLED TO NOT TRAP WATER.

10. PANEL INSTALLATION:
   A. REMOVE STRIPPABLE PLASTIC FILM FROM EACH PANEL PRIOR TO INSTALLATION.
   B. START PANEL INSTALLATION AT ON GABLE END OF THE ROOF, WORKING TOWARD THE OTHER GABLE END. MAKE SURE PANELS ARE PERPENDICULAR TO THE EAVE. AT VALLEY AREAS, MAKE SURE PANELS ARE INSTALLED SO THAT DRAINAGE HAS FREE FLOW AND IS NOT OBSTRUCTED BY PANEL SEAMS.
   C. BEGIN BY INSTALLING J-CLIP AND/OR DRIP FLASHING AT GABLE THEN PLACING FIRST CEE-LOCK CONTINUOUS LENGTH PANEL.
   D. INSTALL CEE-LOCK CLIPS OR CONTINUOUS CEE-RIB AS PER BERRIDGE TYPICAL DETAILS AND CEE-LOCK CONTINUOUS RIB/CLIP INSTALLATION NOTES.
   E. IF OPTIONAL VINYL WEATHERSEAL (US PATENT 4,641,475) IS TO BE USED, THIS WILL BE EITHER FACTORY INSTALLED OR INSTALLED IN THE FIELD AS THE CEE-LOCK PANEL EXITS FROM THE CL-21 PORTABLE ROLL FORMER.
   F. INSTALL PANELS BY PLACING THE FEMALE LEG OVER THE MALE LEG AND CONTINUOUS CEE-RIB OR CLIP AND SNAPPING THE INTEGRAL SEAM INTO PLACE WITH HAND PRESSURE. DO NOT USE EXCESSIVE FORCE, FOOT PRESSURE OR OTHER TOOLS SUCH AS MALLETS AS THIS WILL SCRATCH OR DENT THE PANEL RIB AND CAUSE DEFORMATION TO THE VINYL WEATHERSEAL.
   G. EACH PANEL IS TO BE KEPT TIGHT AGAINST THE LEG OF THE ADJOINING PANEL. NEVER PERMIT A GAP BETWEEN VERTICAL LEGS.
   H. KEEP PANELS ALIGNED SO THAT SEAMS MATCH AT HIPS, VALLEYS AND WHERE VERTICAL PANELS ADJOIN ROOF PANELS. DO NOT INSTALL LONG CONTINUOUS RUNS OF PANELS ALL AT ONE TIME WHERE SEAM LINES MUST MATCH. INSTALL TEN OR TWELVE PANELS IN ONE ELEVATION AND THEN FOLLOW WITH A LIKE NUMBER OF PANELS ON THE OTHER ELEVATION. WHEN YOU INSTALL PANELS IN THIS MANNER, YOU WILL BE ABLE TO MAKE ANY ADJUSTMENTS REQUIRED TO INSURE SEAM MATCHING.
   J. COPPER-COTE, CHAMPAGNE, LEAD-COTE, AND PREWEATHER GALVALUME PANEL INSTALLATION: NOTE THE SERIES OF ARROWS PAINTED ON THE UNDERSIDE OF THE PANEL. ALL PANELS MUST BE INSTALLED IN CONSISTENT MANNER, MEANING THAT THE ARROWS ON EVERY PANEL ARE ALL POINTING IN THE SAME DIRECTION. IF A PANEL IS FROM A DISTANCE, A DIFFERENT SHADE DUE TO THE GRANULAR OF THE PIGMENTS IN THE FINISH. METALLIC FINISHES ARE MATCH - LOT FINISHES. DO NOT MIX LOTS.

11. CEE-LOCK CLIP INSTALLATION:
   A. INSTALL CLIPS AT PER BERRIDGE TYPICAL CEE-LOCK PANEL DETAILS.
   B. CLIP SPACING ON SOLID SHEATHING TYPICALLY 36" ON CENTER.

12. FASTENERS:
   PLATED FASTENERS WHEN FASTENING TO WOOD. MAKE SURE ALL FASTENERS ARE DRIVEN STRAIGHT AND SET FLAT. DO NOT OVERDRIVE FASTENERS AS THIS WILL CAUSE THE CLIP AND/OR FLASHINGS TO BUCKLE OR BECOME RECESSED BELOW THE ELEVATION OF THE SUBSTRATE.

13. SEALANT RECOMMENDATIONS: TREMCO, INC. SPECTREM 1 SILICONE SEALANT.

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S & S FOOD STORE NO. 29
BIRLEY & PINEMOUNT ROAD
LAKE CITY, FLORIDA

Craig Salley 3/10/10

CRAIG SALLEY, R.A.,
FL. REG. NO. 4475

DATE 2/12/10
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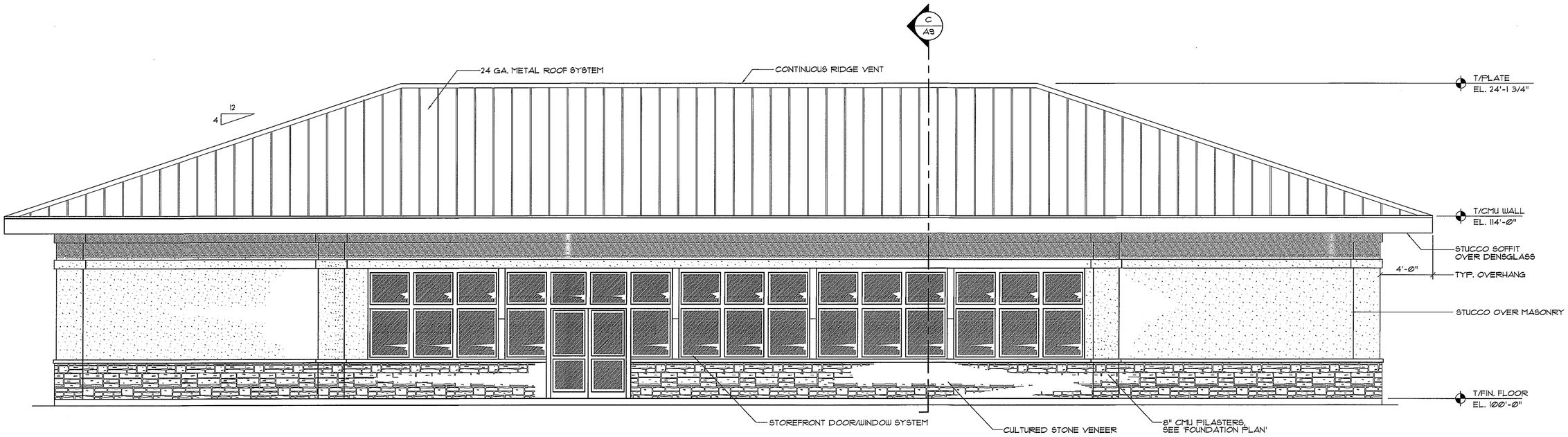
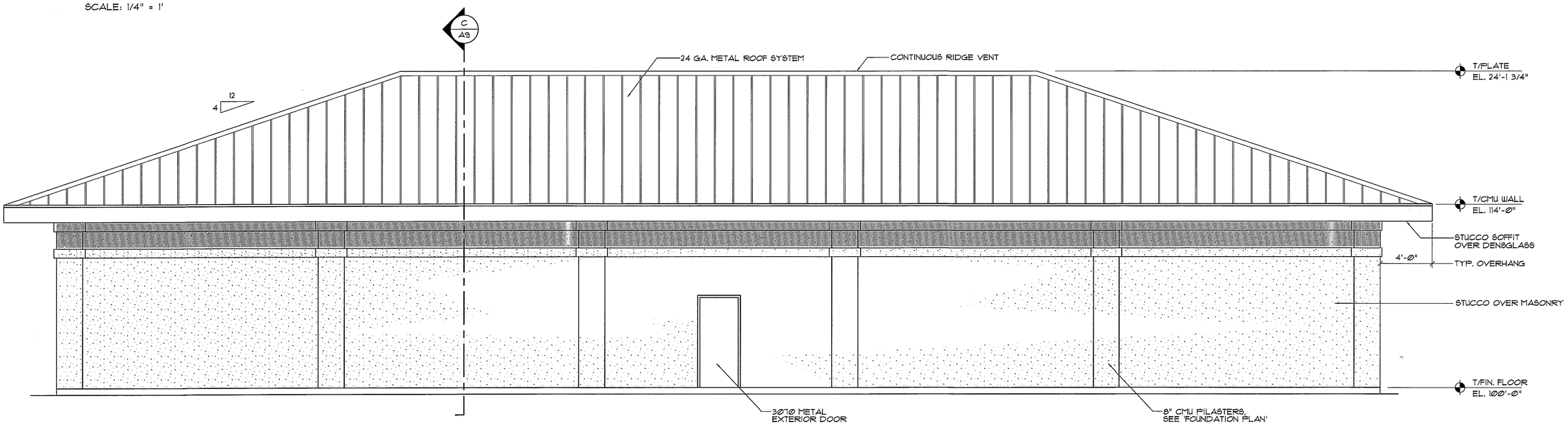
OF 18 SHEETS



FRONT ELEVATION

SCALE: 1/4" = 1'



REAR ELEVATION

SCALE: 1/4" = 1'

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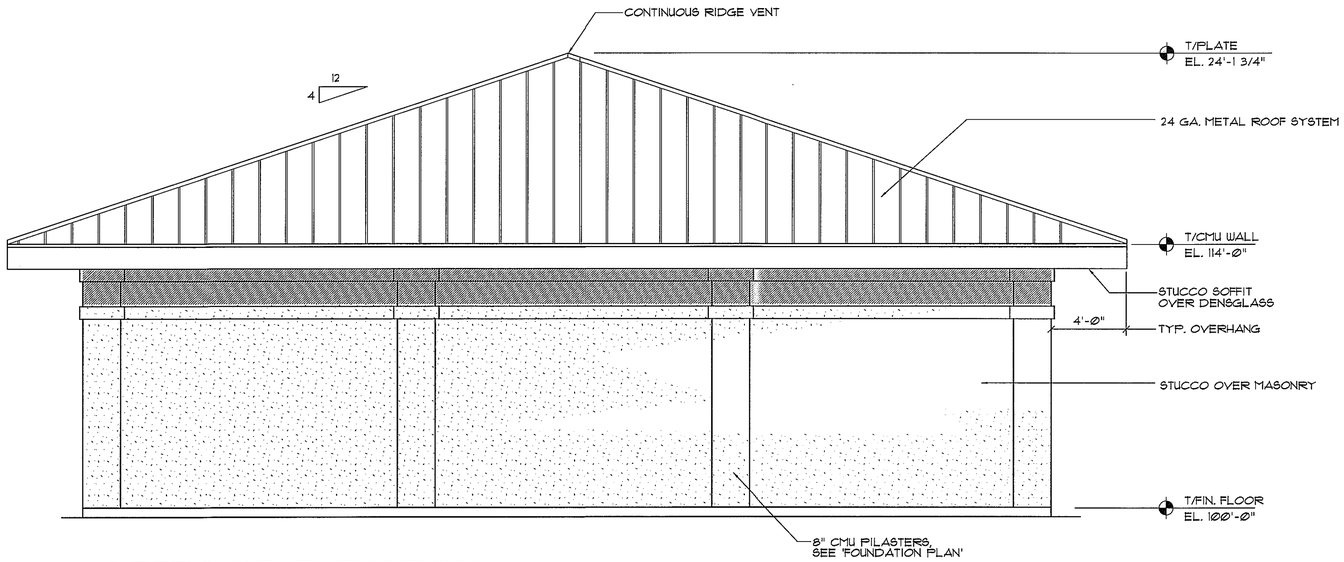
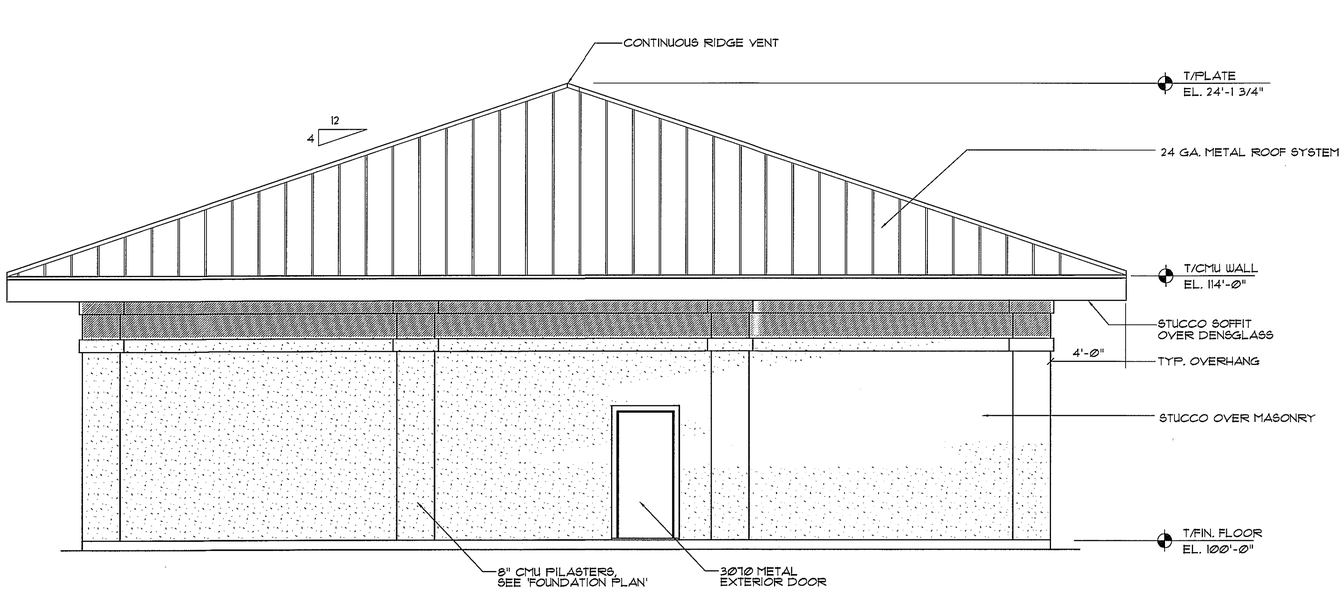


LEFT SIDE ELEVATION

SCALE: 1/4" = 1'



RIGHT SIDE ELEVATION

SCALE: 1/4" = 1'

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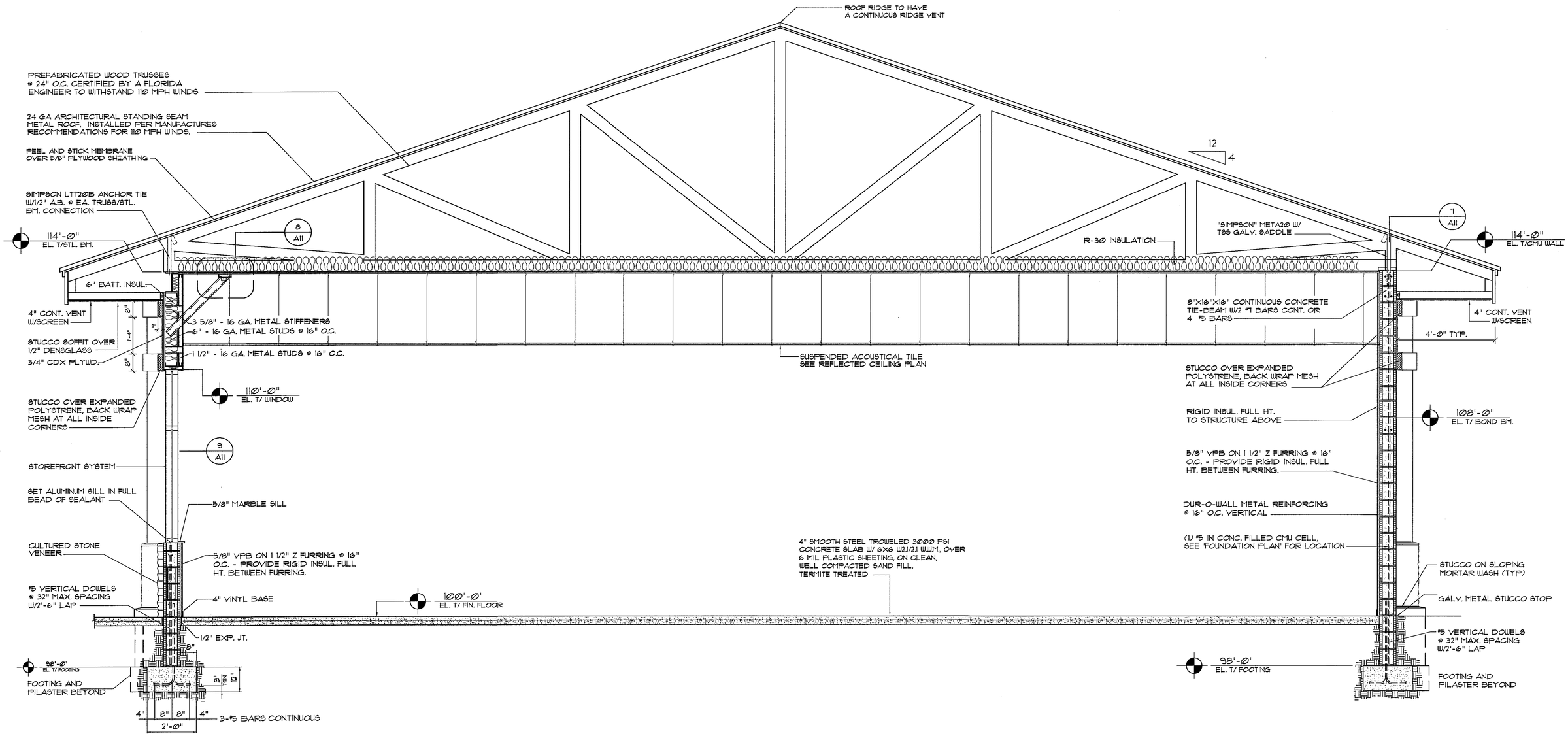
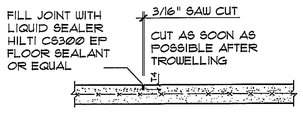


TYPICAL BUILDING SECTION

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

C
A9



CONCRETE SLAB JOINT NOTE:

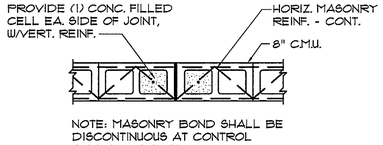
SAW-CUT CONTRACTION JOINTS AS PER DETAIL ON SHT. A9 WITH A MAXIMUM SPACING OF 20'-0" EACH WAY.

NOTE:
1. CUT SLAB AS SOON AS AGGREGATE DOES NOT DISLODGE (MUST BE WITHIN SAME DAY AS CONCRETE PLACEMENT)
2. PLACE REINFORCING 1 1/2" DEEP FOR 4" & 5" THK. SLABS. SLAB DEPTH FOR SLABS GREATER
3. HAND TOOL JOINT TO FACE OF WALL WHERE SAW-CUT DOES NOT REACH.

Typ. Construction Joint

SCALE:3/4" = 1'-0"

1
A9

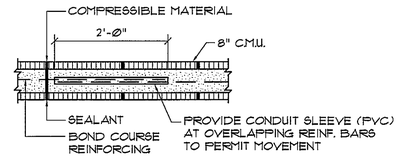


NOTE: MASONRY BOND SHALL BE DISCONTINUOUS AT CONTROL JOINT LOCATIONS

Masonry Control Jt. Detail

SCALE:3/4" = 1'-0"

2
A9



Bond Beam Control Jt. Detail

SCALE:3/4" = 1'-0"

3
A9

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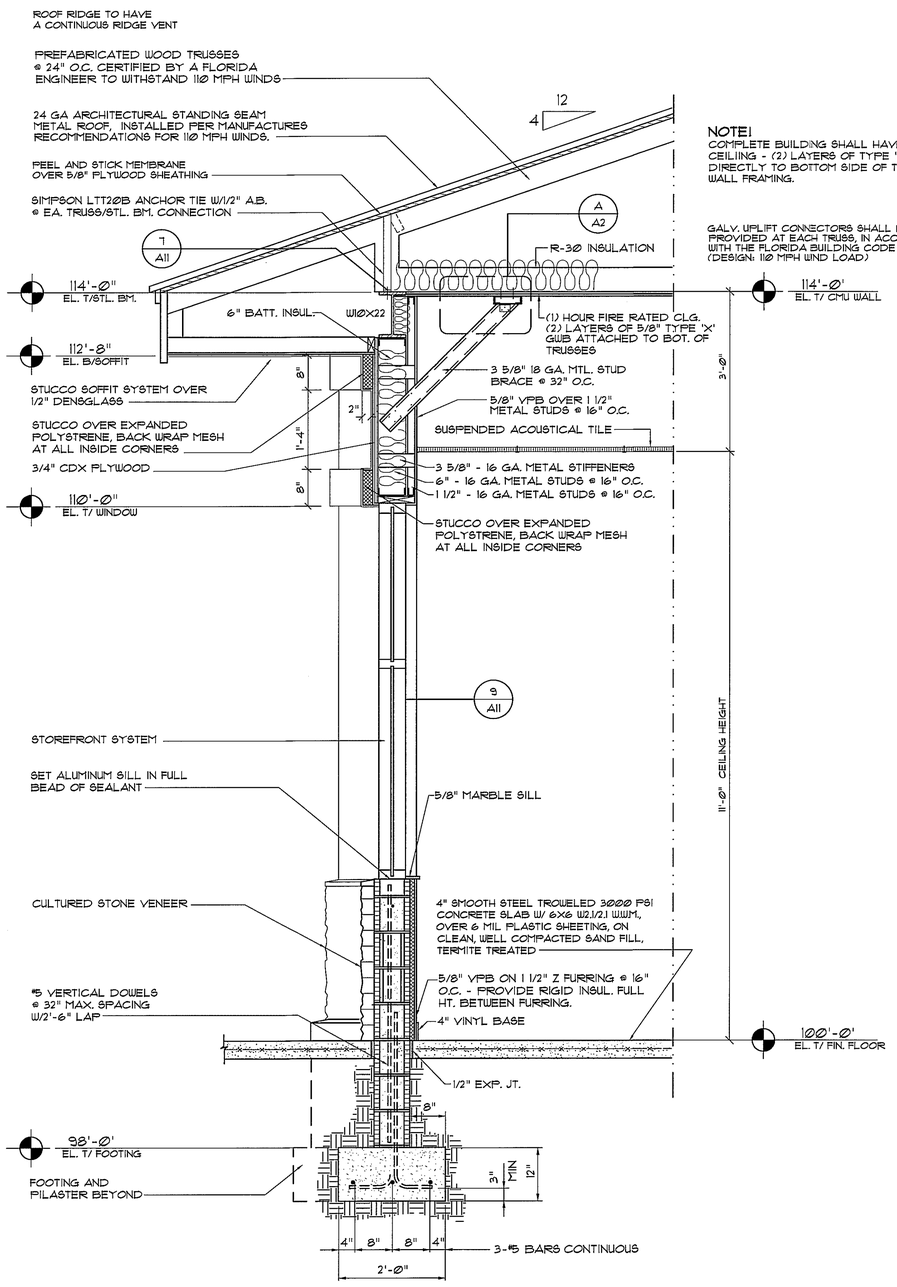
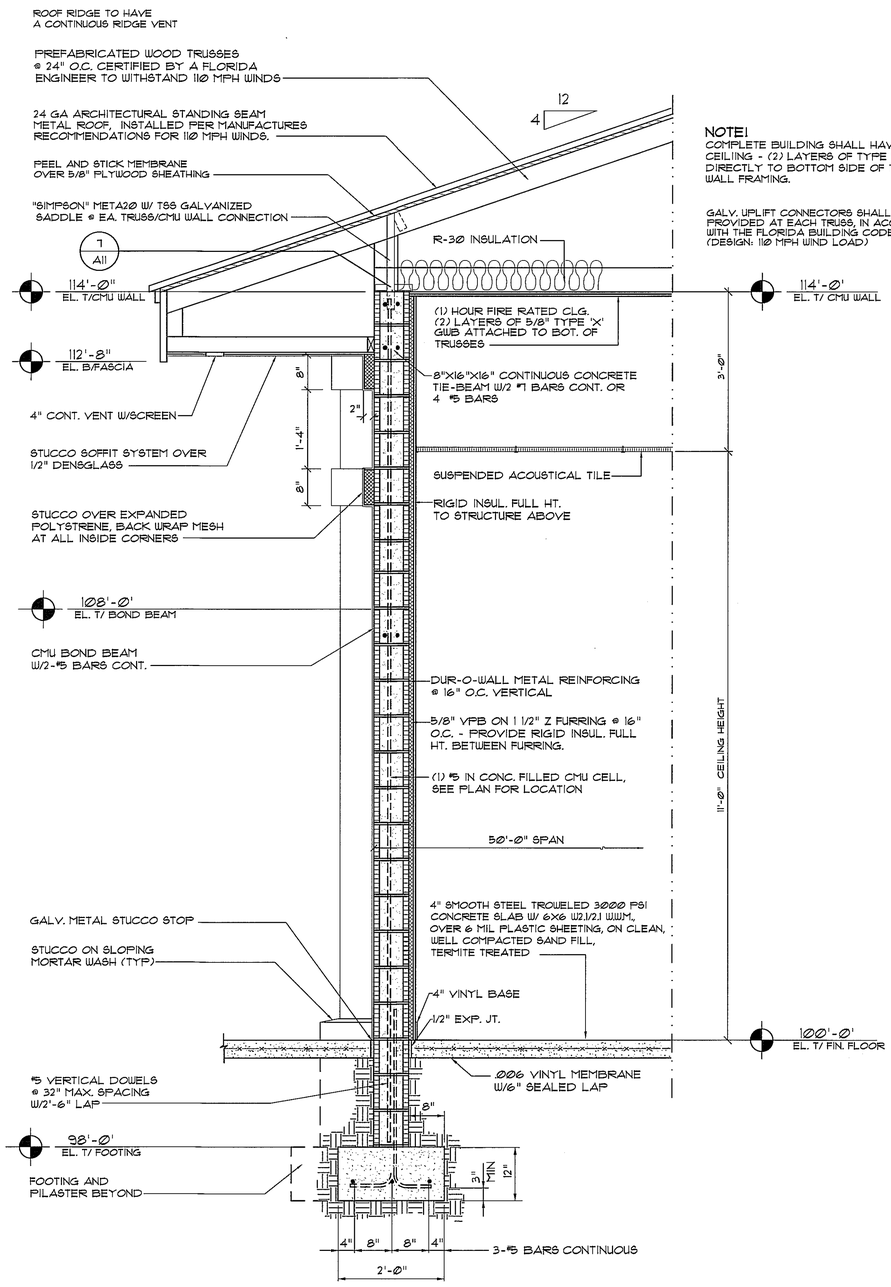


TYPICAL WALL SECTION

SCALE: 3/4" = 1'-0"

A3



TYPICAL WALL SECTION

SCALE: 3/4" = 1'-0"

B

A3

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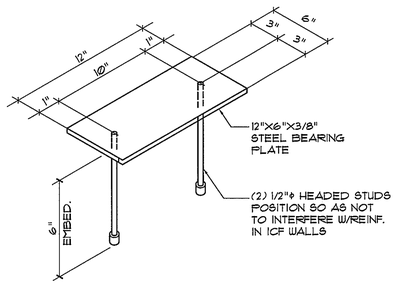
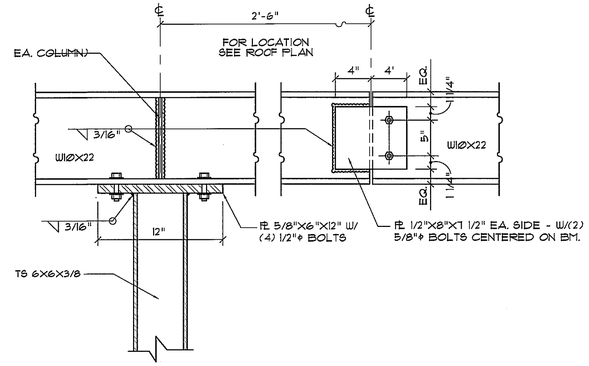


TYP. BEARING PLATE

SCALE: NTS

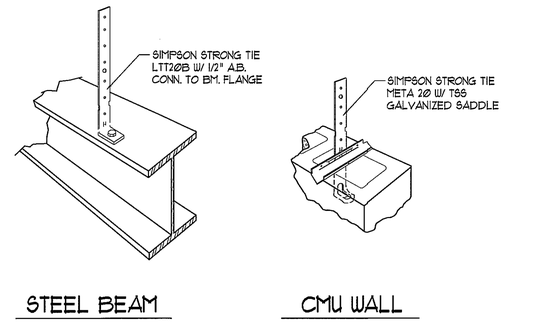
1 / All



BEAM SPLICE DETAIL

SCALE: NTS

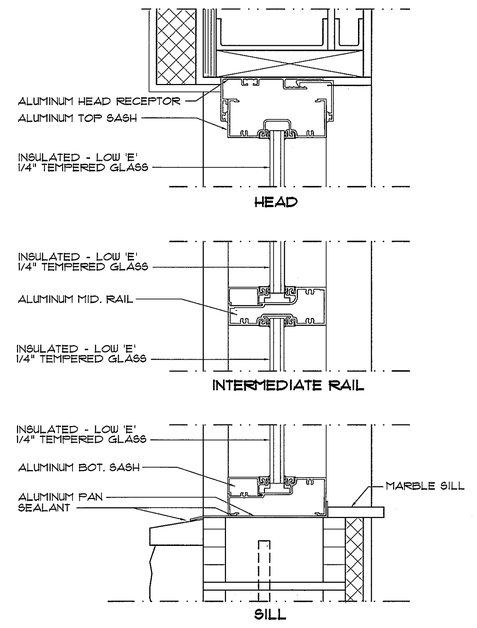
4 / All



TRUSS TO WALL ANCHOR DETAIL

SCALE: NTS

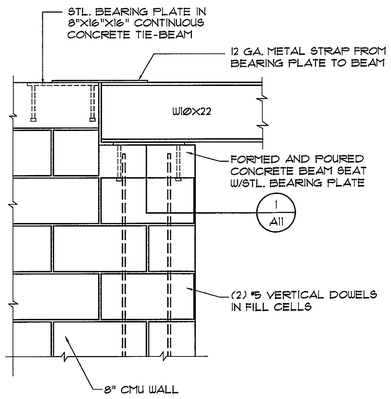
7 / All



STOREFRONT DETAILS

SCALE: NTS

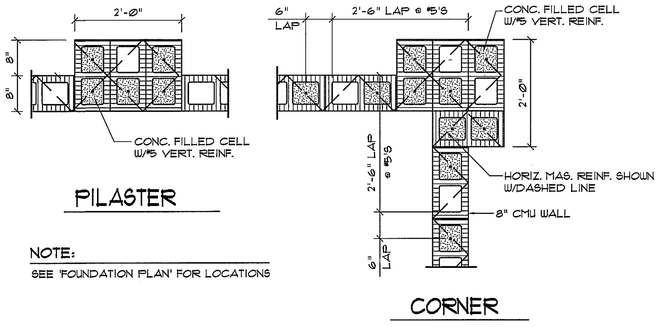
9 / All



BEAM SEAT DETAIL

SCALE: 1 1/2" = 1'-0" (TYP. EA. END OF BEAM)

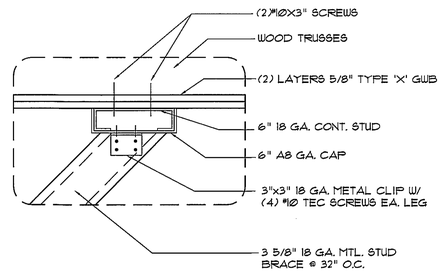
2 / All



CORNER/PILASTER REINF. DETAIL

SCALE:3/4" = 1'-0"

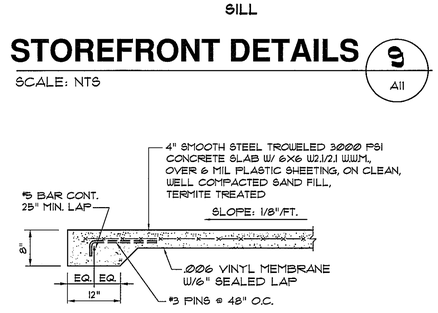
5 / All



KNEE BRACE CONNECTION DETAIL

SCALE: NTS

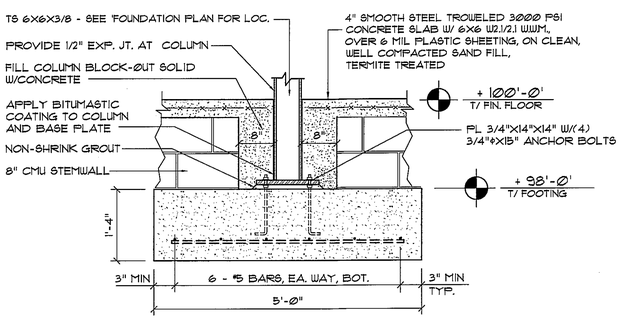
8 / All



MONOLITHIC FTG. DETAIL

SCALE:3/4" = 1'-0"

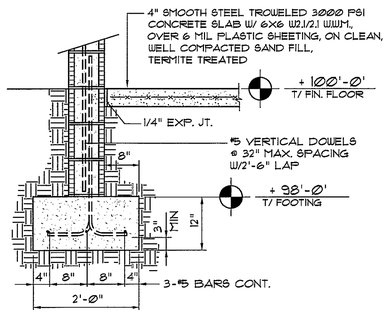
10 / All



TYP. STEEL COLUMN FTG.

SCALE: 3/4" = 1'-0" TYP (4) LOCATIONS

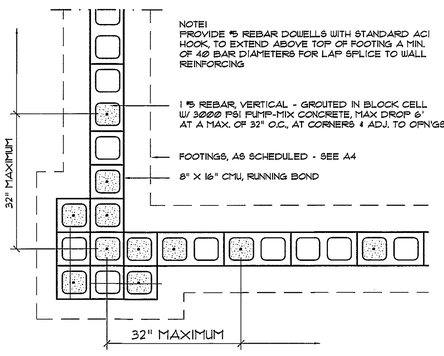
3 / All

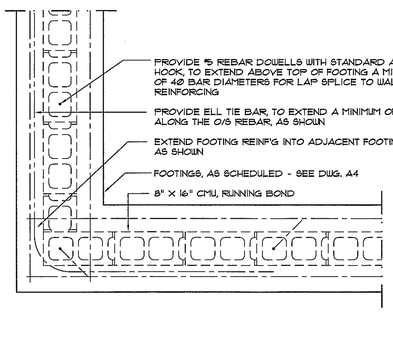


TYP. STEMWALL FTG.

SCALE: 3/4" = 1'-0"

6 / All





WALL FOUNDATION REINF. DETAIL

SCALE: 3/4" = 1'-0"

11 / All

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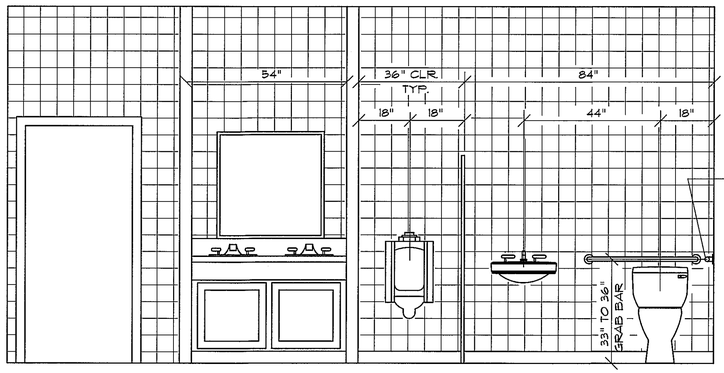
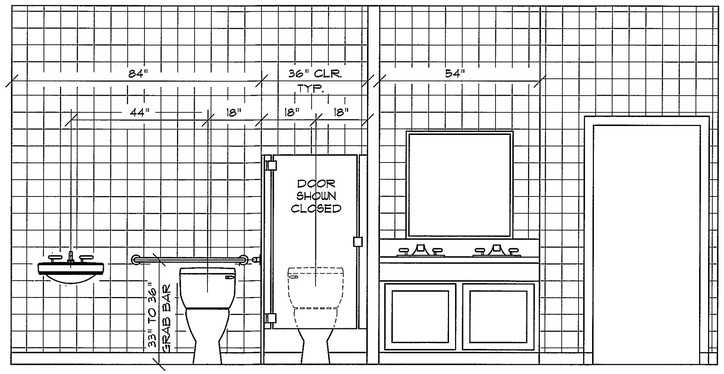


INTERIOR ELEVATION

SCALE 1/2" = 1'-Ø" - MENS RESTROOM

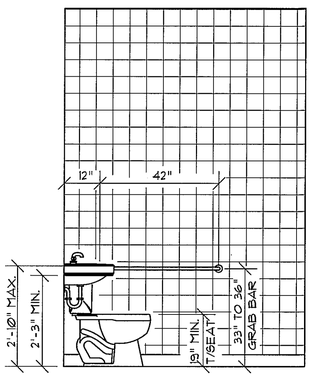
1 / A12

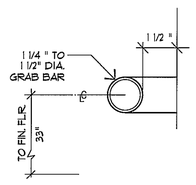


INTERIOR ELEVATION

SCALE 1/2" = 1'-Ø" - WOMANS RESTROOM

2 / A12





GRAB BARS AT WATER CLOSET (511.1A-9)

1. ONE AT SIDE 42" LONG EXTENDING 24" IN FRONT OF WATER CLOSET, MOUNTED 33" ABOVE FLOOR.
2. BARS SHALL BE 1-1/4" TO 1-1/2" IN DIAMETER WITH 1-1/2" CLEARANCE TO WALL.
3. BAR FASTENERS AND MOUNTING SUPPORT SHALL BE ABLE TO WITHSTAND 250 LBS. POINT LOAD IN BENDING, SHEAR TENSION, ROTATION IN FITTING NOT ALLOWED.
4. SURFACE OF WALL ADJACENT TO GRAB BAR IS TO BE FREE OF SHARP OR ABRASIVE ELEMENTS

TYP. GRAB BAR DETAIL

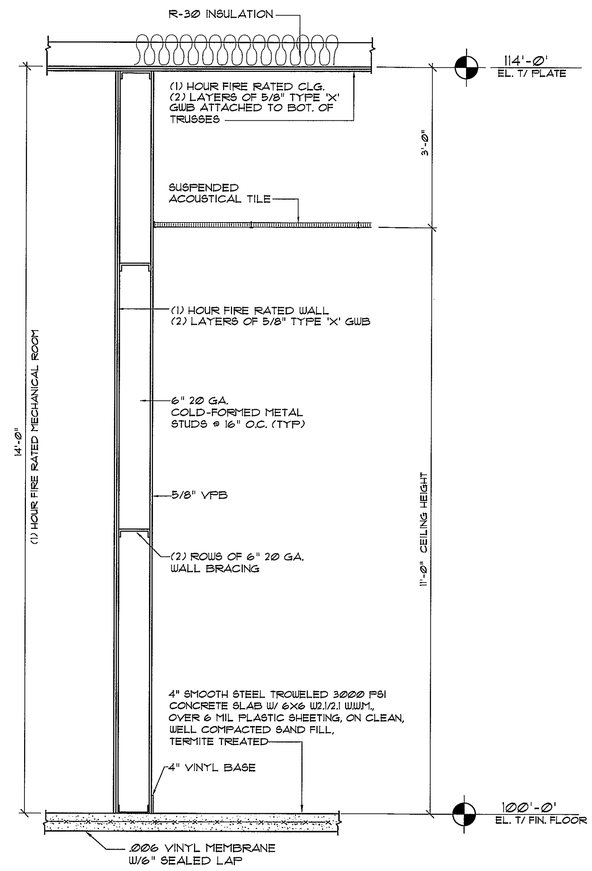
SCALE : NONE

1 / A12

INTERIOR ELEVATION

SCALE 1/2" = 1'-Ø" - TYP. HANDICAP RESTROOM

3 / A12

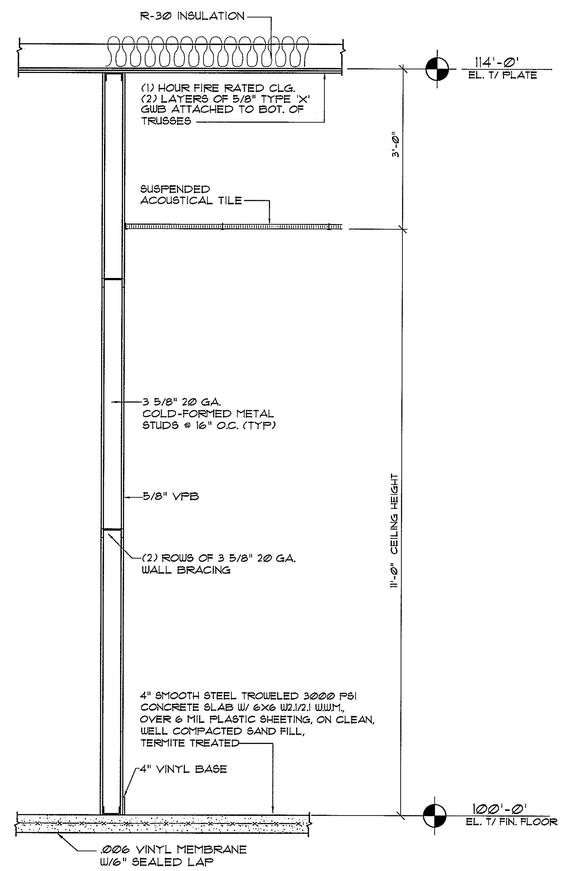


(1) HR. FIRE RATED WALL

TYPICAL WALL SECTION

SCALE: 3/4" = 1'-Ø"

D / A12



TYPICAL WALL SECTION

SCALE: 3/4" = 1'-Ø"

E / A12

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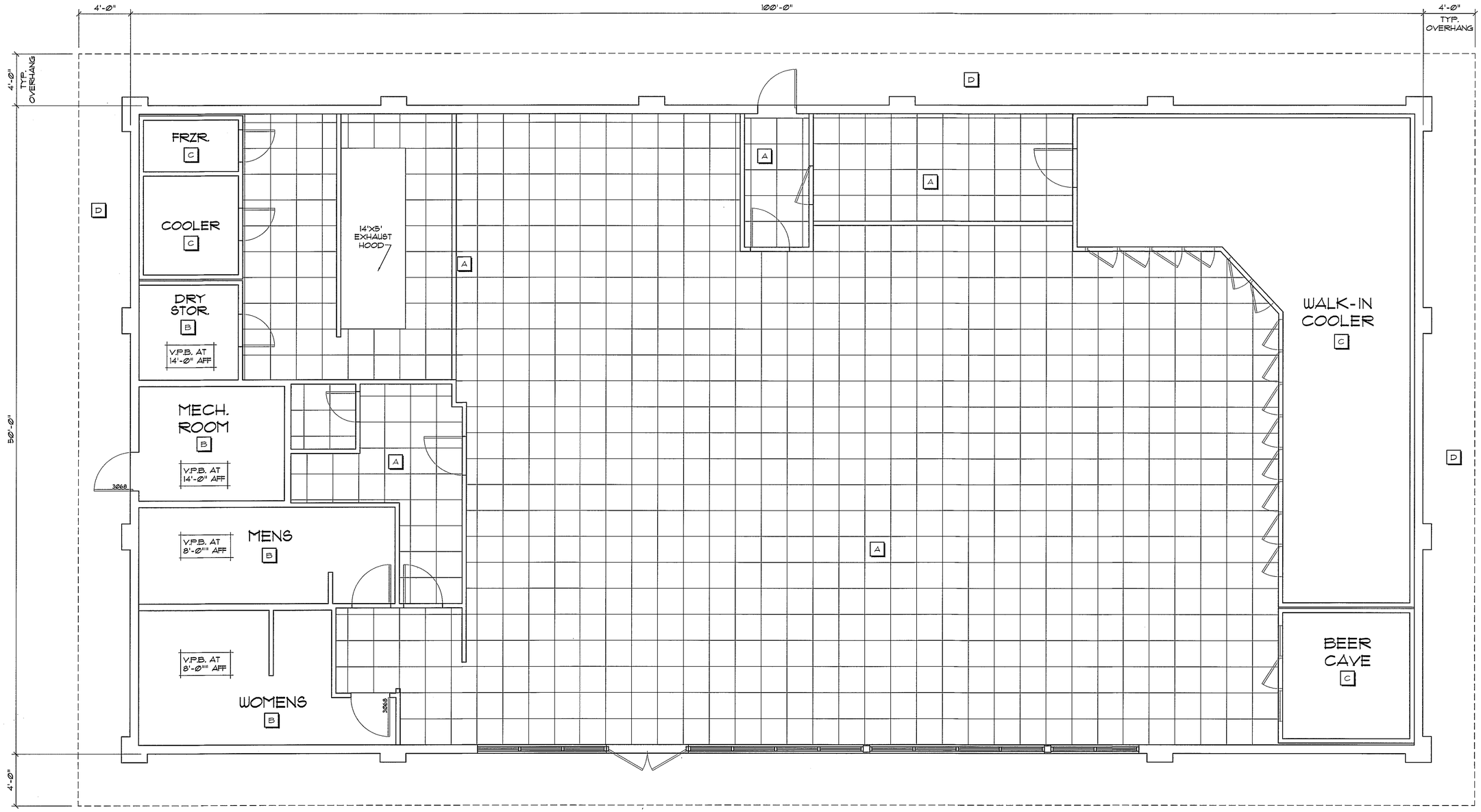

REFLECTED CEILING PLAN

SCALE: 1/4" = 1'

NOTE!
COMPLETE BUILDING SHALL HAVE A (1) HOUR FIRE RATED CEILING - (2) LAYERS OF TYPE 'X' 5/8" GWB ATTACHED DIRECTLY TO BOTTOM SIDE OF TRUSSES.

NOTE!
ALL CEILING AREAS SHALL BE NOMINAL 11'-0" ABOVE THE FINISHED FLOOR - UNLESS NOTED OTHERWISE

CEILING TYPES

- A — ACCOUSTICAL TILE, 24" X 24" X 3/4" ANGLED TEGULAR W/ PRELUDE 15/16" EXPOSED TEE GRID
- B — 5/8" VPB, DIRECT HUNG, TAPED & FINISHED, W/ 2 COATS OF LATEX CEILING PAINT, COLOR & GLOSS AS SELECTED BY THE OWNER
- C — COOLER CEILING, PER COOLER MANUFACTURER
- D — STUCCO SYSTEM ON 5/8" DENSGLASS BOARD

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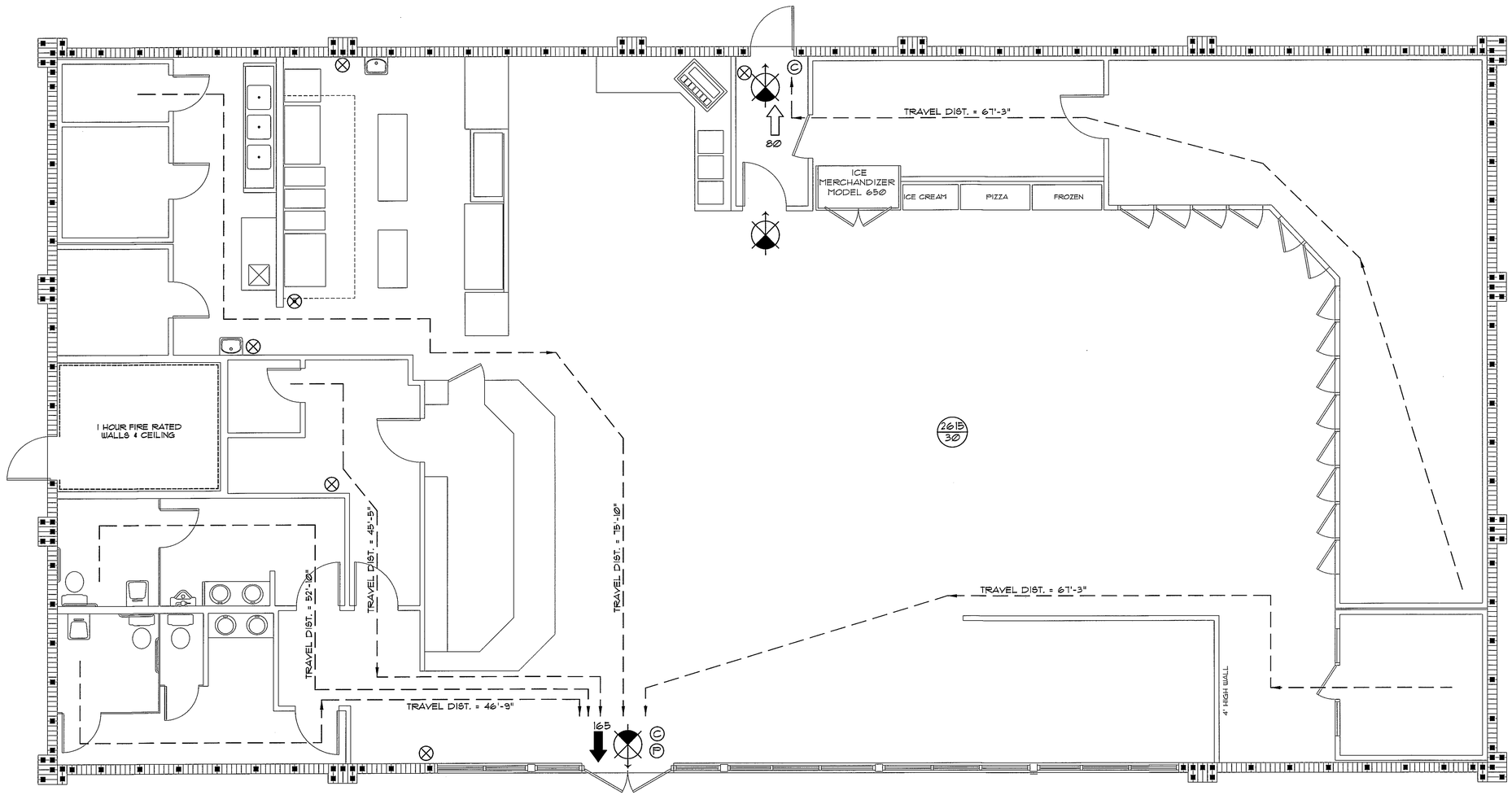

LIFE SAFETY PLAN

SCALE: 1/4" = 1'

OCCUPANCY LOAD - MERCHANTILE

AREA	TOTAL S.F.	ALLOWABLE	TOTAL OCCUP.
STORE	2615	1/30	87
KITCHEN	683	1/200	4
OFFICE	162	1/100	2
MECH. ROOM	122	1/300	1
BLDG. TOTAL	3582		94

EXIT ACCESS TRAVEL DISTANCE PER FBC 1016, TABLE 1016.1

OCCUPANCY - MERCHANTILE:
150 FT. (W/O SPRINKLER SYSTEM)

LEGEND

- EXIT LIGHT - ARROW REPRESENTS DIRECTION OF EXIT
- HD — HEAT DETECTOR - COORDINATE WITH ELECTRICAL DWGS.
- WALL HUNG "ABC" FIRE EXTINGUISHER
- WALL HUNG "K" FIRE EXTINGUISHER
- C — DOOR /CLOSER FOR EXITING OR RATING REASONS
- P — PANIC DEVICE
- 999 / 30 — ROOM SQUARE FOOTAGE / ROOM OCCUPANCY LOAD
- 165 — PRIMARY EGRESS W/EXIT CAPACITY
- SECONDARY EGRESS
- ---------- 1 HOUR FIRE RATED WALL

FIRE/VENTILATION SYSTEM

THIS BUILDING SHALL BE EQUIPPED WITH ALL THE REQUIREMENTS OF NFPA 96: STANDARD FOR VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS.

NOTE!
EMERGENCY LIGHTING AND EXIT SIGNS, SHALL BE PROVIDED AS DIRECTED BY THE FIRE MARSHAL, AND SHALL BE WIRED PER NEC 700-12F.

NOTE!
COMPLETE BUILDING SHALL HAVE A (1) HOUR FIRE RATED CEILING - (2) LAYERS OF TYPE 'X' 5/8" GWB ATTACHED DIRECTLY TO BOTTOM SIDE OF TRUSSES, PRIOR TO ANY WALL FRAMING.

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LAKE CITY, FLORIDA

Craig Salley 3/10/10
CRAIG SALLEY, R.A.
FL. REG. NO. 4475

DATE	2/12/10
DRAWN	DJR
APPROVED	

A-14

OF 18 SHEETS

GENERAL CONDITIONS

1. THE 1987 EDITION OF "THE GENERAL CONDITIONS OF THE CONTRACT FOR THE CONSTRUCTION OF BUILDINGS STANDARD FORM OF THE AMERICAN INSTITUTE OF ARCHITECTS" IS HEREBY MADE A PART OF THESE SPECIFICATIONS.
2. ANY MENTION IN THESE SPECIFICATIONS OR INDICATION ON THE DRAWINGS OF ARTICLES, MATERIALS, OPERATIONS, METHODS, ETC. REQUIRES THAT THE CONTRACTOR FURNISH EACH ITEM SO MENTIONED OR INDICATED, OF THE KIND, TYPE OR DESIGN AND QUALITY SPECIFIED OR SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPERVISION TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND INTENT OF THESE SPECIFICATIONS EVEN THOUGH SUCH MENTION OF ARTICLES, MATERIALS, OPERATIONS, METHODS, QUALITY, QUALIFICATIONS OR CONDITIONS IS NOT EXPRESSED IN COMPLETE SENTENCES.
3. WHERE DEVICES, ITEMS OR PARTS THEREOF, ARE REFERRED TO IN THE SINGULAR, IT IS INTENDED THAT SUCH REFERENCE SHALL APPLY TO AS MANY SUCH DEVICES, ITEMS OR PARTS AS ARE REQUIRED TO PROPERLY COMPLETE ALL DIVISIONS OF THE WORK IN THE SCOPE OF THIS PROJECT.
4. SCHEDULES OF WORK INCLUDED IN THESE SPECIFICATIONS ARE GIVEN FOR CONVENIENCE AND SHALL NOT BE CONSIDERED AS A COMPREHENSIVE LIST OF ITEMS NECESSARY TO COMPLETE THE WORK AS DESCRIBED, DRAWN AND SPECIFIED.
5. THE CONTRACTOR SHALL COORDINATE THE WORK COVERED HEREAFTER DESCRIBED WITH THE WORK OF OTHERS INVOLVED IN THIS PROJECT. THE NECESSARY INFORMATION AND THE ITEMS, MATERIALS AND EQUIPMENT SHALL BE DELIVERED WHEN REQUIRED IN ORDER TO PREVENT ANY DELAY IN THE PROGRESS AND COMPLETION OF WORK.
6. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND DETAILS AND NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
7. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL LOCAL GOVERNING AGENCIES AND CODES.
8. CONTRACTOR SHALL PROVIDE TEMPORARY WATER, POWER AND TOILET FACILITIES AS REQUIRED BY CODE OR ORDINANCE.
9. IF REQUIRED, A CONSTRUCTION BARRICADE SHALL BE INSTALLED BY THE CONTRACTOR THAT IS AS REQUIRED BY THE GOVERNING AUTHORITY. NO SIGNS OTHER THAN THOSE AUTHORIZED BY THE OWNER WILL BE PERMITTED ON THIS BARRICADE.
10. CONTRACTOR SHALL PAY FOR ALL CONSTRUCTION RELATED PERMITS AND FEES REQUIRED TO CONSTRUCT THIS PROJECT.
11. APPROVED CONSTRUCTION PERMIT DOCUMENTS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY ANY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ON THE PREMISES AT ALL TIMES UNDER THE CARE OF THE SUPERINTENDENT. ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AS-BUILT CONDITIONS, AND CHANGE ORDERS POSTED. THE CONTRACTOR MUST TURN THIS DRAWING SET OVER TO THE OWNER AT THE COMPLETION OF THIS PROJECT.
12. THE CONTRACTOR SHALL VERIFY AND CONFORM TO ALL REQUIREMENTS OF ALL UTILITY COMPANIES WHENEVER ANY MATERIAL, EQUIPMENT OR METHOD IS SPECIFIED OR INDICATED BY PROPRIETARY NAME OR MANUFACTURER, THE MATERIAL, EQUIPMENT, METHOD SO SPECIFIED OR INDICATED SHALL BE DEEMED TO BE FOLLOWED BY THE WORDS "OR EQUAL" EXCEPT IN THOSE CASES WHERE ITEMS SPECIFIED BY NAME ARE MARKED "NO SUBSTITUTE."
13. ALL WORK IS TO BE DONE IN THE BEST WORKMANLIKE MANNER.
14. ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER COMPLETION, EXCEPT AS OTHERWISE SPECIFIED. ALL WARRANTY REPAIRS, CORRECTIONS, DISCREPANCIES, ETC. MUST BE MADE WITHOUT ANY ADDITIONAL COST TO THE OWNER, AND WITHIN FIVE (5) DAYS AFTER NOTICE IS GIVEN.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE BUILDING AND SITE WHILE JOB IS IN PROGRESS AND UNTIL JOB IS COMPLETED.
16. ALL DEBRIS SHALL BE REMOVED FROM PREMISES AND ALL AREAS SHALL BE KEPT IN A CLEAN (BROOM) CONDITION AT ALL TIMES.
17. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE SAFETY OF THE WORKERS, OWNER'S STAFF AND CUSTOMERS AT ALL TIMES.
18. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN. CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES.
19. ALL ITEMS MARKED "N.I.C." ARE NOT PART OF THIS CONTRACT. CERTAIN ITEMS MAY BE SUPPLIED BY THE OWNER BUT INSTALLED BY THE CONTRACTOR. CAREFULLY REVIEW THE DRAWINGS AND SCHEDULES.
20. ALL WORK SHALL BE CONSTRUCTED OR INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LATEST RECOMMENDATIONS OR WRITTEN DIRECTIONS.
21. REPAIR AND/OR REPLACE ANY AND ALL BROKEN AND DAMAGED CONCRETE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE REQUIREMENTS OF LOCAL GOVERNING AGENCIES.

GRADING, COMPACTION, EXCAVATION AND SITE WORK

1. REMOVE ALL SUBSURFACE STRUCTURES, DEBRIS, GROWTH, VEGETATION OBJECTIONABLE MATERIALS NOT SUITABLE FOR FILL. CAP ALL DISCONNECTED UTILITIES IN APPROVED MANNER, PER N.E.C., AS REQUIRED AND COORDINATED WITH THE APPROPRIATE UTILITY/ AGENCY
2. ALL HOLES RESULTING FROM AFOREMENTIONED DEMOLITION AND REMOVALS SHALL BE BACKFILLED AND COMPACTED TO 95% OF MAXIMUM OPTIMUM DENSITY WITH ENGINEERED FILL MATERIAL.
3. THE ENTIRE SITE SHALL BE GRADED TO MEET REQUIRED FINISH GRADES. THE CONTRACTOR SHALL COORDINATE THE WORK OF THIS CONTRACT WITH ACCOMPANYING CIVIL DRAWINGS AND SPECIFICATIONS.
4. EXCAVATE FOR ALL FOOTINGS AND FOUNDATIONS AS CALLED FOR ON THE DRAWINGS. COMPACT BOTTOM OF FOUNDATIONS TO A DEPTH OF 12" BELOW THE FOOTING BOTTOM TO 95% MAXIMUM OPTIMUM DENSITY.
5. ALL FOOTINGS SHALL BE ON UNDISTURBED NATURAL SOIL OR APPROVED ENGINEERED COMPACTED FILL. REFER TO FOUNDATION PLAN AND DETAILS.

CUTTING AND PATCHING

1. "CUTTING AND PATCHING" IS HERE BY DEFINED TO INCLUDE, BUT IS NOT LIMITED TO, THE CUTTING AND PATCHING OF NORMALLY COMPLETED OR PREVIOUSLY EXISTING WORK, IN ORDER TO ACCOMMODATE THE CONDITION OF WORK, OR THE INSTALLATION OF OTHER WORK, OR TO UNCOVER OTHER WORK FOR ACCESS OR INSPECTION, OR TO OBTAIN SAMPLES FOR TESTING, OR FOR SIMILAR PURPOSES; CUTTING AND PATCHING IS DEFINED TO EXCLUDE INTEGRAL CUTTING AND PATCHING DURING THE MANUFACTURING, FABRICATING, ERECTING AND INSTALLING PROCESS FOR INDIVIDUAL UNITS OF WORK.
2. PROVIDE MATERIALS FOR CUTTING AND PATCHING WHICH WILL RESULT IN EQUAL-OR-BETTER WORK THAN THE WORK BEING CUT AND PATCHED IN TERMS OF PERFORMANCE CHARACTERISTICS; INCLUDING VISUAL EFFECTS WHERE APPLICABLE. USE MATERIALS IDENTICAL WITH THE ORIGINAL MATERIALS WHERE FEASIBLE AND WHERE RECOGNIZED THAT SATISFACTORY RESULTS CAN BE PRODUCED THEREBY.
3. INSPECT EXISTING CONDITIONS, INCLUDING ELEMENTS SUBJECT TO DAMAGE OR MOVEMENT DURING CUTTING AND PATCHING. AFTER UNCOVERING, INSPECT CONDITIONS AFFECTING PERFORMANCE OF WORK. BEGINNING OF CUTTING OR PATCHING MEANS ACCEPTANCE OF EXISTING CONDITIONS.
4. PROVIDE SUPPORTS TO ASSURE STRUCTURAL INTEGRITY OF SURROUNDINGS; DEVICES AND METHODS TO PROTECT OTHER PORTIONS OF THE PROJECT FROM DAMAGE. PROVIDE PROTECTION FROM ELEMENTS FOR AREAS WHICH MAY BE EXPOSED BY UNCOVERING WORK. MAINTAIN EXCAVATIONS FREE OF WATER.
5. REFINISH SURFACES TO MATCH ADJACENT FINISHES. FOR CONTINUOUS SURFACES, REFINISH TO NEAREST INTERSECTION; FOR AN ASSEMBLY, REFINISH ENTIRE UNIT; FOR PATCHES IN WALLS, REFINISH WALL-TO-WALL AND FLOOR TO CEILING; FOR PATCHES IN MASONRY WALLS, CUT OUT FACE SHELL OF BLOCK AND REPLACE.
6. IT IS ENVISIONED THAT A CONSTRUCTION DUMPSTER WILL BE IN PLACE ON THE SITE AND EMPTIED AT AN APPROVED DUMP AS REQUIRED.

DEMOLITION

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY REVIEW THE CONTRACT DOCUMENTS AND REMOVE ANY ITEMS IDENTIFIED ON THE CONTRACT DOCUMENTS OR REQUIRED TO ACCOMPLISH THE NEW CONSTRUCTION TO THE DEPTH REQUIRED, WHERE INTERFERENCE WITH NEW UNDERGROUND CONSTRUCTION WILL OCCUR.
2. PROTECTIONS: ENSURE THE SAFE PASSAGE OF PERSONS AROUND AND IN THE AREA OF DEMOLITION, CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, OTHER FACILITIES, AND PERSONS. CONFORM WITH ALL OF OSHA REGULATIONS.
3. WEATHER PROTECTION: PROTECT BUILDING INTERIOR AND ALL MATERIALS AND EQUIPMENT FROM THE WEATHER AT ALL TIMES.
4. REMOVE FROM THE SITE WEEKLY AS A MINIMUM, ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND DISPOSE OF IN AN APPROVED DUMP. TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON STREETS OR ADJACENT PROPERITY.
5. PROVIDE SHORING WHERE REQUIRED TO ALLOW FOR THE CUTTING OF NEW OPENINGS OR THE REPLACEMENT OR INSTALLATION OF NEW BEAMS.

CONCRETE

1. ALL CONCRETE SHALL BE TRANSIT MIXED AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. MIX AND MATERIALS SHALL MEET ALL REQUIREMENTS OF LOCAL CODES, A.C.I. AND INDUSTRY STANDARDS.
2. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE ASTM A-15 AND ASTM A-305. MINIMUM LAP SHALL BE 30 BAR DIAMETERS OR MORE IF NOTED ON THE DRAWINGS. REINFORCEMENT SHALL BE FREE OF SCALE, RUST OR OTHER COATINGS WHICH WOULD REDUCE BOND TO CONCRETE. MAINTAIN 3" MINIMUM COVER AROUND STEEL AT ALL BELOW GRADE LOCATIONS.
3. WELDED WIRE FABRIC SHALL BE INSTALLED IN ALL FLOOR SLABS AND SIDEWALKS AND SHALL BE 6 X 6 X W1.4 X W1.4 W.W.F. ASTM A-185. CONCRETE FLOOR SLABS SHALL BE AS INDICATED ON THE DRAWINGS.
4. ALL CONCRETE FLOOR SLABS AND WALKS SHALL BE A MINIMUM OF 4" THICK, UNLESS OTHERWISE NOTED TO BE THICKER. NOTE RECESSED AREAS FOR HARD TILE.
5. MAKE PROPER PROVISIONS FOR AND INSTALL ALL SCREEDS, GROUNDS, BOLTS, CURBS, DRAINS, ETC. COORDINATE WITH ALL OTHER TRADES INVOLVED PRIOR TO PLACING CONCRETE . SLOPE SLABS TO DRAINS AND/OR AS SHOWN ON THE DRAWINGS.
6. PROVIDE AND INSTALL 6 MIL POLYETHYLENE MOISTURE BARRIER UNDER ALL INTERIOR SLABS. LAP AND TAPE ALL JOINTS. USE CAUTION SO AS NOT TO PUNCTURE MOISTURE BARRIER PRIOR TO SLAB POUR.
7. SAW CUT FLOOR SLAB 1/2" DEEP A MINIMUM OF 16 HOURS AFTER POURING. DIVIDE INTO AREAS NO GREATER THAN 400 SQ. FT. OR AS SHOWN ON PLANS FOR CONTROL JOINTS.
8. ALL INTERIOR FLOOR SLABS SHALL BE SMOOTH TROWELED FINISH, FREE FROM MARKS AND BLEMISHES.
9. WHEN FREEZING TEMPERATURES PREVAIL OR ARE ANTICIPATED, CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT CONCRETE INSTALLATION. PLACED CONCRETE SHALL BE KEPT AT A MINIMUM OF 60°F FOR A PERIOD OF 72 HOURS AFTER POURING.

MASONRY

1. MASONRY AND VENEER UNITS SHALL BE PROPERLY WETTED TO REDUCE EXCESSIVE ABSORPTION AND SHALL BE DAMP AT TIME OF LAYING.
2. MASONRY SHALL BE LAID PLUMB, LEVEL AND TRUE TO LINE WITH ALL CORNERS AND ANGLES SQUARE. PATTERN WORK, BONDS, AND SPECIAL DETAILS ARE TO BE ACCURATELY AND UNIFORMLY FOLLOWED PER THE DRAWINGS.
3. CEMENT MORTAR SHALL CONSIST OF 1 PART PORTLAND CEMENT (TYPE I OR TYPE II LOW ALKALI), 1/4 PART HYDRATED LIME, SAND (3 1/2 TIMES THE SUM OF THE VOLUME OF CEMENT AND LIME)
4. ALL CELLS CONTAINING REINFORCING, ANCHORS, BOLTS, ETC. SHALL BE GROUTED SOLID WITH CEMENT GROUT OR 3,000 P.S.I. PEA GRAVEL CONCRETE. INSPECTION AND APPROVAL OF REINFORCING SHALL BE MADE BY LOCAL BUILDING DEPT. PRIOR TO GROUTING.
5. HORIZONTAL JOINT REINFORCEMENT SHALL BE EQUAL TO "DUR-O-WALL." SIZE AND SPACING SHALL BE AS INDICATED ON THE DRAWINGS.

STRUCTURAL STEEL, BAR JOISTS AND METAL DECKING

1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36 OR A.S.C.I. BAR JOISTS SHALL CONFORM TO STEEL BAR JOIST INSTITUTE REQUIREMENTS.
2. STRUCTURAL STEEL AND RELATED WORK INCLUDE THE FOLLOWING: COLUMNS, STEEL TUBES, BASE PLATES (W/ ANCHORS), BEAMS AND BEAM SEATS (W/ ANCHORS), MISCELLANEOUS ANGLES, STEEL BAR JOISTS AND BEARING PLATES (W/ ANCHORS).
3. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND INSTALLED IN CONFORMANCE WITH LATEST EDITION OF STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL IN BUILDINGS, AS ADOPTED BY THE A.I.S.C.
4. PREPARE COMPLETE AND DETAILED SHOP DRAWINGS UNDER THE SUPERVISION AND SEAL OF A FLORIDA REGISTERED STRUCTURAL ENGINEER, PRIOR TO FABRICATION OR INSTALLATION OF ANY STRUCTURAL STEEL.
5. ALL STRUCTURAL WELDING SHALL BE ELECTRIC ARC, PERFORMED BY CERTIFIED WELDERS IN THE SHOP OF LICENSED FABRICATOR. FIELD WELDING SHALL BE DONE BY CERTIFIED WELDERS AND REQUIRE CONTINUOUS INSPECTION BY THE GENERAL CONTRACTOR. TOUCH UP ALL WELDS WITH PRIMER.
6. ALL STRUCTURAL STEEL SHALL BE PRIME COATED IN SHOP PRIOR TO DELIVERY ON JOB.
7. ALL EXTERIOR EXPOSED STEEL SHALL BE GALVANIZED.
8. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF ALL EMBED ITEMS.
9. THE CONTRACTOR SHALL NOT PERMIT THE INSTALLATION OF ROOFING COMPONENTS UNTIL JOISTS ARE BRACED AND BRIDGING INSTALLED IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
10. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT THE ARCHITECT'S WRITTEN APPROVAL.
11. METAL DECKING SHALL BE EITHER 20 GAUGE TYPE 1.0E OR 22 GAUGE TYPE B. ALL DECKING TO BE 33 KSI STEEL, GALVANIZED.

METAL STUDS AND FRAMING

1. REFER TO PLANS AND DETAILS FOR SIZE, SPACING, LOCATION AND DETAILS, TO DETERMINE WHERE METAL STUDS ARE USED ON THIS PROJECT.
2. NON-LOAD BEARING TYPE INTERIOR PARTITIONS SHALL BE CONSTRUCTED OF MINIMUM 25 GAUGE GALVANIZED STEEL STUDS. ALL EXTERIOR STUDS AND RUNNERS SHALL BE MINIMUM OF 16 GAUGE. REFER TO DRAWINGS AND USE HEAVIER GAUGE STUDS WHERE CALLED FOR. PROVIDE RUNNER (CHANNELS), BRIDGING AT 8'-0" O.C. VERTICALLY, CLIPS AND REINFORCED AS INDICATED
3. STUDS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, DETAILS AND PLANS. MAXIMUM SPACING SHALL NOT EXCEED 16" O.C. SEE DOOR FRAMING DETAILS FOR SPECIFIC REQUIREMENTS AT OPENINGS.

CARPENTRY AND MILLWORK

1. ALL WOOD PLATES AND BLOCKING IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED DOUGLAS FIR OR NO. 2 PINE.
2. ALL LUMBER SHALL BE GRADE MARKED PER AREA STANDARDS.
3. WOOD BLOCKING SHALL BE NO. 2 PINE OR DOUGLAS FIR STANDARD GRADE.
4. CARPENTRY MATERIALS SHALL BE AS LISTED BELOW:
   A. PLYWOOD SHALL BE MINIMUM GRADE C-D WITH EXTERIOR GLUE, MINIMUM 5/8" THICK.
5. PLASTIC LAMINATES SHALL BE AS SELECTED BY OWNER AND SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
6. ALL FINISH WOOD WORK SHALL BE FINISHED SMOOTHLY, SANDED WITH NAIL HOLES SET AND SHALL BE FREE FROM ALL DEFECTS. ALL JOINTS SHALL BE MITERED WITH CLOSE, TIGHT FIT.
7. COORDINATE AND VERIFY ALL WORK WITH EQUIPMENT INSTALLERS. PROVIDE ALL PROPER BACKING, BLOCKING AND SUPPORTS IN STUD WALLS AS REQUIRED.
8. CONTRACTOR TO PROVIDE WOOD BLOCKING AT ALL STUD WALL MOUNTED SHELVING AND SINKS.

INSULATION

1. INSULATION SHALL BE FOIL BACKED TYPE II CLASSIC BATT INSULATION INSTALLED IN COMPLETE ACCORDANCE WITH MANUFACTURER'S LATEST SPECIFICATIONS.
2. SOUND INSULATION SHALL BE PROVIDED AT TOILET ROOM WALLS AND SHALL BE FULL THICK ROCKWOOL KRAFT PAPER WRAPPED.

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SP-1

OF 18 SHEETS

ROOFING

1. ALL ROOFING INSTALLATIONS SHALL COMPLY WITH N.R.C.A. AND S.M.A.C.N.A. STANDARDS.
2. DELIVER, STORE AND HANDLE MATERIALS AND EQUIPMENT SO AS TO PREVENT DAMAGE OR DETERIORATION.
3. BUILT-UP ROOF SYSTEM SHALL CONSIST OF A TWO PLY, GRANULAR SURFACED, CLASS A RATED MODIFIED BITUMEN SYSTEM BY ONE OF THE FOLLOWING MANUFACTURERS: SIPLAST, SOPREMA, JOHNS MANVILLE OR AN APPROVED EQUAL.
4. ROOF MEMBRANE AND SUBSTRATE SHALL RESIST 110 M.P.H. WIND UPLIFT (FM 1-90) ACCORDING TO BASIC WIND LOAD PRESSURES PER A.S.C.E. 7, EXPOSURE B.
5. ROOF INSULATION SHALL BE POLYISOCYRANURATE, OF A THICKNESS NECESSARY TO MAINTAIN AN AGED VALUE OF R-20 AND A SLOPE OF 1/4" PER FOOT MINIMUM.
6. ALL ANCILLARY ITEMS, FASTENERS, ROOFING ASPHALT, ROOFING CEMENT, CANT STRIPS, ECT. AS REQUIRED FOR A WEATHERTIGHT INSTALLATION.
7. SEE DRAWINGS FOR SPECIFIC DETAILS.
8. REFERENCES
   A. MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
   B. ASTM STANDARDS AND TEST PROCEDURES AS REFERENCED HEREIN.
   C. SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA): LATEST EDITION.
   D. NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM) STANDARDS AS REFERENCED HEREIN, LATEST EDITION.
   E. FLORIDA BUILDING CODE, CURRENT EDITION WITH UPDATES.
9. THE ROOFING CONTRACTOR SHALL VERIFY ALL DIMENSIONS, SHALL MAKE ANY FIELD MEASUREMENTS NECESSARY AND SHALL BE FULLY RESPONSIBLE FOR ACCURACY AND LAYOUT OF WORK.
10. ROOF JACKS AND CURBS: PANEL MANUFACTURER'S PROFILE; SIZES SHALL BE COORDINATED WITH APPLICABLE MECHANICAL EQUIPMENT. FURNISH AND INSTALL ALL ROOF CURBS REQUIRED FOR ALL ROOF PENETRATIONS ON THIS PROJECT.
11. FLASHING BOOT: STANDARD PROFILE; SIZES SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING VENTS THROUGH ROOF. FURNISH AND INSTALL ALL BOOTS AT PLUMBING STACKS ON THIS PROJECT.
12. ROOFING CONTRACTOR SHALL ISSUE THE OWNER A WRITTEN GUARANTEE TO MAINTAIN THE ROOFING, FLASHINGS, COUNTER FLASHINGS IN A WATER-TIGHT CONDITION FOR A PERIOD OF TWO (2) YEARS FROM FINAL COMPLETION.

SHEET METAL

1. ALL SHEET METAL SHALL BE .040" THICK ALUMINUM W/ FACTORY BAKED-ON KYNAR FINISH. COLOR TO BE SELECTED BY OWNER.
2. ALL SHEET METAL SHALL BE IN CONFORMANCE WITH S.M.A.C.N.A STANDARDS., ACCURATELY FORMED TO DIMENSIONS AND SHAPES AND SHALL BE COPIED TO FIT PRECISELY. ALL SEAMS SHALL BE PROPERLY RIVETED AND SEALED WITH NEAT, THIN, SMOOTH JOINTS. ALL EXPOSED ENDS SHALL BE HEMMED AND CLIPPED.
3. ALL SHEET METAL WORK SHALL BE FORMED AND INSTALLED TO PROVIDE SUITABLE ALLOWANCE FOR EXPANSION AND CONTRACTION. ALL INSTALLATIONS SHALL ENSURE WATERTIGHT CONDITIONS.
4. GUTTERS AND DOWNSPOUTS SHALL BE FORMED OF METAL SPECIFIED ABOVE IN ACCORDANCE WITH THE DRAWINGS AND SMACNA STANDARDS. OUTLET TUBES AND GUTTER ENDS SHALL BE FURNISHED AND INSTALLED AS REQUIRED IN ACCORDANCE WITH INDUSTRY STANDARDS.
5. SECURELY ANCHOR GUTTERS WITH HANGERS OF THE SAME MATERIAL. TELESCOPE END JOINTS OF DOWNSPOUTS 1 1/2 INCHES AND LOCK LONGITUDINAL JOINTS. FURNISH ALL ACCESSORIES AS REQUIRED, INCLUDING STAINLESS STEEL FASTENERS.

CAULKING

1. ALL WINDOWS, DOOR FRAMES, STOREFRONT, FLASHING, CRACKS, JOINTS, ETC. SHALL BE PROPERLY PROPERLY CAULKED WITH AN APPROVED CAULKING COMPOUND, AND SUCH SHALL BE APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. CAULKING MATERIAL SHALL BE URETHANE BASED AS MANUFACTURED BY DOW-CORNING CO., 3M, OR GENERAL ELECTRIC CO.

HOLLOW METAL FRAMES AND DOORS

1. METAL DOOR FRAMES SHALL BE FORMED OF #16 U.S. STANDARD GAUGE STEEL FOR DOOR OPENINGS INDICATED. CORNERS SHALL BE MITERED, WELDED AND GROUND SMOOTH, COLD ROLLED, ANNEALED STEEL. REINFORCE JAMBS FOR HARDWARE AND PROVIDE AS REQUIRED. TEMPORARY STEEL ANGLE SPREADERS SHALL BE WELDED AT BOTTOM OF DOOR FRAMES TO ENSURE ALIGNMENT. FRAMES SHALL BE AS MANUFACTURED BY STEEL CRAFT, SECURITY, PIONEER OR APPROVED EQUAL.
2. METAL DOORS SHALL BE OF FLUSH TYPE CONSTRUCTION WITH 16 GAUGE SHEET OUTER SHELLS WITH VERTICAL STIFFENERS SPACED AT 6" ON CENTER. DOOR SHALL BE REINFORCED, DRILLED AND TAPPED TO RECEIVE HARDWARE. AFTER ASSEMBLY, THOROUGHLY CLEAN. GRIND ALL WELDS AND JOINTS SMOOTH, FILL FLUSH WITH MINERAL FILLER TO CONCEAL SEAMS. APPLY TWO COATS OF MANUFACTURER'S STANDARD BAKED-ON RUST INHIBIT PRIMER. DOORS SHALL BE AS MANUFACTURED BY STEEL CRAFT, SECURITY PIONEER OR APPROVED EQUAL.

WOOD DOORS

1. DOORS SHALL BE 1-3/4" INCHES THICK W/ SOLID NON-RATED CORE COMPLYING W AWI SECTION 1300, PC5 EXCEPT DOORS SHALL HAVE 1-1/8" INCH MEDIUM WIDTH HARDWOOD STILES MATCHING FACE VENEER.
2. VENEER TO BE "YELLOW BIRCH" NATURAL SPECIES, ROTARY SLICED. FACING QUALITY TO BE EQUAL TO AWI. PREMIUM GRADE.
3. DOORS TO BE FACTORY MACHINED FOR HARDWARE. SHOULD TRIMMING BE REQUIRED, TRIM EQUALLY FROM OPPOSING SIDES.
4. FACES, STILES AND BOTH PULLS TO BE SOLID (AFTER NECESSARY TRIMMING) PRIOR TO INSTALLATION. DO NOT SEAL DOORS UNTIL BUILDING HAS REACHED THE AVERAGE PREVAILING RELATIVE HUMIDITY OF LOCALITY.
5. DELIVER DOORS TO PROJECT SITE AFTER MOISTURE PRODUCING OPERATIONS ARE COMPLETE.
6. PROVIDE WRITTEN GUARANTEE FROM DOOR MANUFACTURER STATING THAT DOORS WILL NOT DELAMINATE OR SHOW WARPAGE OF MORE THAN 1/4" FROM A TRUE PLANE FOR ONE YEAR FROM THE DATE OF ACCEPTANCE BY OWNER. TELEGRAPHING OF TOP AND BOTTOM RAILS, INTERMEDIATE RAILS, REINFORCING OR STILES SHALL ALSO CONSTITUTE A FAILURE TO PERFORM UNDER THIS GUARANTEE.

STOREFRONT, GLASS AND GLAZING

1. REFER TO PLANS, AND DETAILS FOR SIZE, AND TYPE.
2. MATERIALS: ALL GLASS AND GLAZING SHALL BE IN ACCORDANCE WITH THE STANDARDS AND RECOMMENDATIONS OF THE CURRENT EDITION OF THE GLAZING MANUAL OF THE FLAT GLASS JOBBERS ASSOCIATION.
   A. EACH PIECE OF GLASS SHALL BE LABELED, NOTING THE NAME OF THE MANUFACTURER, GRADE, QUALITY AND TYPE. LABELS SHALL BE INTACT BEFORE AND AFTER INSTALLATION.
3. EXTERIOR GLASS SHALL BE 1" INSULATED" CLEAR, FULLY TEMPERED WITH 1/4" SHEETS
4. MIRRORS SHALL BE "A" QUALITY 1/4" THICK POLISHED PLATE WITH FULL STAINLESS OR ALUMINUM FRAME AND CONCEALED FASTENERS.
5. ALL ALUMINUM STOREFRONT FRAMING AND DETAILS INDICATED ON THE DRAWINGS AND/OR DETAILS, SHALL BE EQUAL TO VISTAWALL SERIES 3000. THE FRAMING SHALL BE ACCURATELY ASSEMBLED WITH UNEXPOSED FASTENERS UTILIZING EXTRUDED SPLINES, CLIPS AND/OR SNAP-IN FEATURES. ALL GLAZING SHALL BE HELD IN PLACE BY E.P.D.M. GLAZING GASKETS. NO APPLIED STOPS SHALL BE PERMITTED. ALL EXPOSED SURFACES SHALL BE FREE OF UNSIGHTLY SCRATCHES AND BLEMISHES. THE FINISH SHALL BE AS SELECTED BY OWNER. OTHER APPROVED MANUFACTURES ARE KAWNEER COMPANY AND EFCO.
7. FINISH OF ALL SILL FLASHING SHALL BE .040 ALUMINUM TO MATCH STOREFRONT MATERIAL.
8. DOOR FRAMES FOR ENTRANCE DOORS SHALL BE ALUMINUM STOREFRONT FRAME WITH CUT OUTS AND BACKING PLATES FOR (3) BUTT HINGES FOR EACH DOOR LEAF. LOCATION OF HINGES TO BE COORDINATED BY GENERAL CONTRACTOR WITH STOREFRONT SUBCONTRACTOR.
9. ALL DOOR AND FRAMING SECTIONS SHALL BE EXTRUDED ALUMINUM ALLOY AND TEMPERED TO MEET OR EXCEED FINISHING AND STRUCTURAL CRITERIA. DOOR STILES AND RAILS, EXCLUDING GLASS STOPS, SHALL BE TUBULAR AND HAVE 0.125" WALL THICKNESS. ALL WEATHER STRIPPING SHALL BE HARDBACKED SILICONE TREATED POLYPROPYLENE. ANY EXPOSED FASTENERS SHALL BE ALUMINUM, STAINLESS STEEL OR OTHER NON-CORROSIVE MATERIAL.
10. ALL EXPOSED SURFACES SHALL BE FREE OF UNSIGHTLY SCRATCHES AND BLEMISHES . THE FINISH SHALL BE ANODIZED OR KYNAR, PER OWNER'S SELECTION IN CONFORMANCE WITH ARCHITECTURAL PRODUCTS STANDARD.
11. DOOR STILES AND RAILS SHALL BE ACCURATELY JOINED AT CORNERS WITH CONCEALED REINFORCEMENT BRACKETS SECURED WITH BOLTS AND SCREWS, AND SHALL BE "MIG" WELDED. DOORS SHALL HAVE SNAP-IN STOPS WITH BULB GLAZING VINYL ON BOTH SIDES OF GLASS. NO EXPOSED SCREWS SHALL BE PERMITTED. EACH DOOR LEAF SHALL BE EQUIPPED WITH AN ADJUSTING MECHANISM LOCATED IN THE TOP RAIL NEAR THE LOCK STILE WHICH PROVIDES FOR MINOR CLEARANCE ADJUSTMENTS AFTER INSTALLATION. WEATHER STRIPPING SHALL BE INSTALLED IN THE HINGE STILE OF PAIRS OF DOORS. DOOR FRAME AND SIDE-LIGHT FRAMING SHALL BE ACCURATELY JOINED AT CORNERS WITH CONCEALED SCREWS.
12. DESIGN CRITERIA FOR WIND LOADS SHALL BE IN ACCORDANCE WITH ASCE-7 DESIGN WIND VELOCITY OF 110 M.P.H., BUILDING IMPORTANCE FACTOR OF 1.15
13. ALL HARDWARE FOR ENTRANCE DOORS, WITH THE EXCEPTION OF THE CYLINDERS, SHALL BE FURNISHED AND INSTALLED BY ALUMINUM STOREFRONT CONTRACTOR AS SELECTED BY OWNER.
14. ALL ITEMS SHALL BE SET IN THEIR CORRECT LOCATIONS AS SHOWN ON THE DRAWINGS AND SHALL BE LEVEL, SQUARE, PLUMB, AND AT PROPER ELEVATION AND IN ALIGNMENT WITH OTHER WORK. THIS CONTRACTOR SHALL DO ALL CAULKING AND SEALING ASSOCIATED WITH HIS WORK.
15. SEAL ALL JOINTS. FRAMING MEMBERS SHALL BE SCREWED IN PLACE USING BACKING, ANCHOR PLUGS, OR STRAPS AS REQUIRED. WHERE MOLDINGS ARE JOINED, THEY SHALL BE ACCURATELY CUT AND FITTED TO RESULT IN A TIGHTLY CLOSED HAIR-LINE JOINT. NO UNFINISHED MATERIAL SHALL BE VISIBLE.
16. DOORS SHALL OPERATE FREELY AND SHALL NOT RATTLE WHEN CLOSED. SWING TYPE DOORS SHALL HAVE HEAD AND JAMB CLEARANCE OF 3/32" PLUS OR MINUS 1/32".
17. AFTER ERECTION, THE CONTRACTOR SHALL PROTECT EXPOSED PORTIONS FROM DAMAGE BY MACHINES, PLASTER, LIME, PAINT, ACID, CEMENT, OR OTHER HARMFUL COMPOUNDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF PROTECTIVE MATERIALS AND CLEANING PER STOREFRONT FRAMING MANUFACTURER'S PRINTED INSTRUCTIONS.

FINISH HARDWARE

1. ALL HARDWARE SHALL BE GUARANTEED FOR A PERIOD OF TWO (2) YEARS AFTER INSTALLATION, CONTRACTOR SHALL PROVIDE WRITTEN GUARANTEE TO OWNER.
2. ALL LOCKS SHALL BE CONSTRUCTION KEYED. ALL PERMANENT KEYS AND CONSTRUCTION KEYS SHALL BE GIVEN TO OWNER ONLY. KEYING SHALL BE AS PER DIRECTION OF OWNER.

VENEER PLASTER AND EFS (EXTERIOR FINISH SYSTEM)

1. ALL INTERIOR WALLS, PARTITIONS, CEILINGS AND OTHER INTERIOR SURFACES AS CALLED FOR SHALL BE COVERED WITH 5/8" GWB AS MANUFACTURED BY U.S.G. CO. GWB SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS LATEST SPECIFICATIONS INCLUDING ALL METAL GROUNDS, BEADS, FURRING, ECT.
2. ALL SURFACES WHICH ARE TO REMAIN EXPOSED SHALL BE FINISH TAPED AND SANDED SMOOTH.
3. USE WATER RESISTANT (GREENBOARD) GWB AT ALL AREAS EXPOSED TO MOISTURE AND FOR ALL WALLS RECEIVING CERAMIC TILE, SUCH AS SERVICE, STORAGE ROOMS, TOILET ROOMS, MECHANICAL ROOMS, ECT.
4. VENEER PLASTER TO CONFORM TO A.S.T.M. C587 MIX AND APPLICATION PER MANUFACTURERS RECOMMENDATIONS.
5. EFS SYSTEM SHALL BE COMPOSED OF 5/8" DENSGLASS AS MANUFACTURED BY GEORGIA PACIFIC AND COVERED WITH AN ELASTOMERIC ACRYLIC FINISH IN ALL RESPECTS EQUAL TO THOSE COMPONENTS MANUFACTURED BY DRYVIT. THE THE SUBSTRATE FOR CORNICE SHALL BE EXPANDED POLYSTYRENE, ADHESIVE APPLIED.

CERAMIC TILE & TILE PAVERS

1. TILE TO BE STANDARD GRADE COMPLYING WITH THE CURRENT REQUIREMENTS OF THE TILE COUNCIL OF AMERICA (TCA) AND INSTALLED PER TCA AND THE TILE MANUFACTURER RECOMMENDATIONS.
2. FINISH, COLOR, SIZE AND PATTERN OF TILE TO BE SELECTED BY THE OWNER. PROVIDE ALL REQUIRED TRIM PIECES FROM SAME MANUFACTURERS AS TILE.
3. PROVIDE GRADE A MARBLE THRESHOLDS AND OTHER TILE ACCESSORIES AT LOCATIONS AND SIZES INDICATED.
4. GROUT AND SETTING BED COMPONENTS SHALL BE AS RECOMMENDED BY TILE MANUFACTURER. THRESHOLDS SHALL BE SET IN EPOXY GROUT.

SUSPENDED CEILING SYSTEMS

1. METAL SUSPENSION SYSTEM SHALL BE AS MANUFACTURED BY ARMSTRONG, UNITED STATES GYPSUM, CHICAGO METALLIC OR, AN APPROVED EQUAL.
2. PROVIDE ALL REQUIRED BRACING AND BACKING FOR ARCHITECTURAL TREATMENT INDICATED ON THE PLANS.
3. 2 X 2 LAY-IN ACOUSTICAL TILE SYSTEM SHALL BE ARMSTRONG, U.S. GYPSUM, OR EQUAL. PROVIDE MOISTURE RESISTANT PANELS (TYPE 2) IN KITCHEN AND OTHER AREAS AS DIRECTED BY OWNER.
4. SUBMIT SAMPLES FOR OWNER'S APPROVAL.
5. CONTRACTOR SHALL PROVIDE OWNER WITH ONE (1) EXTRA BOX OF EACH TYPE TILE USED ON THE PROJECT.

PAINTING

1. ALL PAINT MATERIAL SHALL BE OF FIRST QUALITY, EQUAL TO SHERWIN-WILLIAMS.
2. ALL HOLES, CRACKS, ETC. SHALL BE FILLED AND SANDED SMOOTH.
3. HOLIDAYS, BRUSH MARKS AND PAINT SPOTTING IS NOT ACCEPTABLE AND SHALL BE CORRECTED.
4. SURFACE PREPARATION AND APPLICATION OF PAINT AND STAIN MATERIALS SHALL BE DONE IN STRICT COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS.
5. ALL WOOD SURFACES TO BE NATURAL FINISH SHALL BE SEALED OR STAINED AND SEALED. USE FILLERS AS REQUIRED. USE APPROVED STAIN, SEALER AND FILLER APPLIED IN STRICT COMPLIANCE WITH LATEST MANUFACTURERS SPECIFICATIONS. USE MINWAX OR OLYMPIC STAIN SEALER AND FILLER, OR EQUAL.
6. ALL EXTERIOR HOLLOW METAL DOORS AND FRAMES SHALL RECEIVE TWO COATS OF PAINT OVER SHOP APPLIED PRIME COAT, UNLESS OTHERWISE NOTED. PAINT COLOR SHALL BE SELECTED BY OWNER.

TOILET ROOM ACCESSORIES

1. PROVIDE AND INSTALL ALL TOILET ROOM ACCESSORIES, GRAB BARS, T.P. HOLDERS, MIRRORS, ETC. AS CALLED FOR ON DRAWINGS. MOUNTING HEIGHTS SHALL BE IN CONFORMANCE WITH HANDICAPPED CODE REQUIREMENTS IN THE LATEST EDITION OF THE FLORIDA BUILDING CODE.

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LAKE CITY, FLORIDA

Craig Salley 3/10/10
CRAIG SALLEY, R.A.
FL. REG. NO. 4475

DATE	2/12/10
DRAWN	DJR
APPROVED	

SP-2

OF 18 SHEETS

GENERAL MECHANICAL REQUIREMENTS

1. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF A.S.H.R.A.E., S.M.A.C.N.A. AND ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BID. BY SUBMITTING BID, CONTRACTOR STATES THAT HE HAS EXAMINED ALL EXISTING CONDITIONS. IF CONTRACTOR ENCOUNTERS EXISTING CONDITIONS WHICH NEED CLARIFICATION, CONTACT OWNER'S REPRESENTATIVE FOR RESOLUTION OR CLARIFICATION.
3. PERMITS AND FEES: CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES AND CHARGES REQUIRED FOR THE CONSTRUCTION AND UTILITIES CONNECTIONS.
4. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL HAVE ONE (1) YEAR WRITTEN GUARANTEE FOR ALL MATERIALS AND WORKMANSHIP. ALL COMPRESSORS SHALL HAVE FIVE (5) YEAR FACTORY WARRANTY.
5. ALL MATERIALS SHALL BE NEW AND OF FIRST CLASS QUALITY. NO "USED" MATERIALS WILL BE PERMITTED TO BE INSTALLED ON THIS PROJECT.
6. AT COMPLETION OF PROJECT, CONTRACTOR SHALL DELIVER TO OWNER ALL DOCUMENTS (INCLUDING BUILDING PERMITS, OPERATION AND MAINTENANCE MANUALS AND ALL OTHER FINAL CLOSE OUT DOCUMENTS).
7. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST S.M.A.C.N.A. MANUALS.
8. ALL DUCT SIZES INDICATED ARE "FREE AREA" INSIDE DIMENSION REQUIREMENTS.
9. ALL SUPPLY AND RETURN DUCTWORK SHALL BE 1" THICK FIBERBOARD WITH "HARDCAST" JOINTS.
10. ALL EXHAUST DUCTWORK SHALL BE SHEET METAL UNLESS OTHERWISE INDICATED OR NOTED ON PLANS.
11. ALL FLEXIBLE DUCT RUN OUTS TO DIFFUSERS SHALL BE CLASS 1 PRE-INSULATED FLEXIBLE DUCT. THE MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0". WHERE RUN OUT EXCEEDS THIS DISTANCE, USE ROUND RIGID SHEET METAL WITH 1" THICK EXTERNAL FIBERGLASS INSULATION.
12. ALL OUTSIDE AIR SUPPLY DUCTWORK SHALL BE SHEET METAL.
13. PIPING MATERIALS: REFRIGERANT PIPING SHALL BE TYPE K COPPER SIZED AND INSTALLED IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE SIGHT GLASS AND FILTER DRIER ON EACH SYSTEM. CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 STEEL. SCHEDULE 40 PVC MAY BE USED IF APPROVED BY LOCAL CODES. RUN TO APPROVED WASTE OR DRYWELL AS REQUIRED BY GOVERNING AUTHORITY.
14. INSULATION: ALL REFRIGERANT PIPING SHALL BE INSULATED WITH 3/4" THICK CLOSED CELL ELASTOMERIC INSULATION. ALL KITCHEN HOOD MAKEUP DUCTWORK SHALL BE INSULATED WITH 1" THICK EXTERNAL FIBERGLASS INSULATION WRAP. CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 3/4" THICK CLOSED CELL ELASTOMETRIC INSULATION.
15. AIR CONDITIONING EQUIPMENT SHALL BE AS SCHEDULED ON THE DRAWINGS. SYSTEMS SHALL BE COMPLETE WITH FILTERS, MOTOR STARTERS, MOTOR DISCONNECTS, AND ROOF CURBS (WHERE UNITS ARE ROOF MOUNTED) AND ALL OTHER ACCESSORIES, RELAYS, AND OTHER ITEMS OF EQUIPMENT REQUIRED FOR A COMPLETE, OPERATING SYSTEM.
16. FANS SHALL BE AS SCHEDULED ON THE DRAWINGS. FANS SHALL BE COMPLETE WITH BACKDRAFT DAMPERS, BIRD SCREEN, MOTOR STARTERS, MOTOR DISCONNECTS, AND ROOF CURBS (WHERE FANS ARE ROOF MOUNTED).
17. CONTROLS: EACH A/C SYSTEM SHALL BE CONTROLLED BY A THERMOSTAT WITH "HEAT-OFF-COOL" SWITCH AND FAN "ON-AUTO" SWITCH. EACH SYSTEM HANDLING 2,000 CFM AND GREATER SHALL HAVE FIRESTATS INSTALLED IN THE SUPPLY AND RETURN AIR DUCTWORK.
18. AIR DEVICES SHALL BE AS SCHEDULED ON THE DRAWINGS. DEVICES SHALL BE COMPLETE WITH ALL MOUNTING HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. ALL SIDEWALL SUPPLY REGISTERS SHALL HAVE DOUBLE DEFLECTION LOUVERS WITH FRONT SET VERTICALLY MOUNTED. DEVICES SHALL BE FIELD PAINTED IF INDICATED ON ARCHITECTURAL DRAWINGS. (COLOR TO BE SELECTED BY OWNER.)
19. COORDINATE EXACT LOCATION OF ALL AIR DEVICES IN CEILING WITH LIGHTING FIXTURES. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS IN CEILINGS. COORDINATE EXACT LOCATION OF ALL WALL MOUNTED AIR DEVICES WITH ARCHITECTURAL INTERIOR ELEVATIONS AND STRUCTURAL COMPONENTS.
20. DAMPERS SHALL BE PROVIDED AT ALL BRANCH TAKE-OFFS FROM MAIN DUCTWORK AND AT EACH AIR DEVICE FOR SYSTEM BALANCING. DAMPERS AT DEVICES SHALL BE OF THE OPPOSED BLADE TYPE.
21. CONTRACTOR SHALL TEST AND BALANCE THE SYSTEMS UPON COMPLETION OF WORK. ANY DEFECTS OR DEFICIENCIES DISCOVERED AS A RESULT OF TESTS SHALL BE IMMEDIATELY CORRECTED OR REPAIRED AND TESTS SHALL BE REPEATED UNTIL THE TEST REQUIREMENTS ARE FULLY COMPLIED WITH. SUBMIT TEST AND BALANCE REPORT TO OWNER AT COMPLETION OF TESTING.
22. CONTRACTOR SHALL FURNISH SUBMITTAL DATA TO OWNER FOR APPROVAL ON ALL A/C EQUIPMENT, FANS, AIR DEVICES, ETC. PRIOR TO ORDERING ANY ITEMS. CONTRACTOR MAY OFFER SUBSTITUTIONS ON ITEMS FOR APPROVAL BY OWNER. SUBSTITUTIONS MUST BE EQUAL IN ALL RESPECTS TO ITEMS SCHEDULED OR SPECIFIED.
23. CONTRACTOR SHALL PROVIDE ALL MATERIAL AND LABOR REQUIRED TO MAKE ALL FINAL CONNECTIONS TO OWNER/FOOD SERVICE EQUIPMENT. REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL NOTES AND INSTALLATION DETAILS FOR FOOD SERVICE EQUIPMENT (INCLUDING ALL ROUGH-IN LOCATIONS).

GENERAL PLUMBING REQUIREMENTS

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BID. BY SUBMITTING BID, CONTRACTOR STATES THAT HE HAS EXAMINED ALL EXISTING CONDITIONS. IF CONTRACTOR ENCOUNTERS EXISTING CONDITIONS WHICH NEED CLARIFICATION, CONTACT OWNER'S REPRESENTATIVE FOR RESOLUTION OR CLARIFICATION.
2. CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES AND CHARGES REQUIRED, INCLUDING UTILITY CONNECTION CHARGES APPLICABLE TO HIS WORK.
3. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL HAVE ONE (1) YEAR WRITTEN GUARANTEE FOR ALL MATERIALS AND WORKMANSHIP.
4. ALL MATERIALS SHALL BE OF FIRST CLASS QUALITY. NO "USED" MATERIALS WILL BE PERMITTED TO BE INSTALLED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
5. AT COMPLETION OF PROJECT, CONTRACTOR SHALL DELIVER TO OWNER ALL DOCUMENTS (INCLUDING BUILDING PERMITS, OPERATION AND MAINTENANCE MANUALS, ETC.)
6. ALL WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS. EXPOSED WASTE PIPING SHALL BE CHROME PLATED BRASS. ALL PENETRATIONS THROUGH WALLS SHALL HAVE CHROME PLATED ESCUTCHEON PLATES.
7. ALL INTERIOR ABOVE GRADE WATER PIPING SHALL BE SCHEDULE 40 GALVANIZED STEEL WITH SCREWED JOINTS OR TYPE L COPPER WITH SWEATED JOINTS. WATER PIPING BELOW SLAB SHALL BE TYPE K SOFT COPPER WITH NO JOINTS BELOW SLAB. WRAP ALL PIPING PENETRATIONS OF SLAB WITH TWO (2) LAYERS OF 30 LB. ROOFING FELT OR PLASTIC SLEEVES MADE SPECIFICALLY FOR THIS PURPOSE.
8. EXTERIOR WATER PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS, UNLESS OTHERWISE NOTED ON THE CIVIL DRAWINGS. PROVIDE THRUST BLOCKING AT ALL ELBOWS AND OFFSETS IN PIPING SYSTEM. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
9. ALL ABOVE GRADE GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL WITH SCREWED JOINTS. PIPING EXPOSED TO WEATHER SHALL BE PROTECTED FROM ELEMENTS PER LOCAL CODES (I.E. PAINTING, ETC.) ALL PIPING IN RETURN AIR PLENUMS SHALL BE SLEEVED AND VENTED TO ATMOSPHERE PER LOCAL CODES. UNDERGROUND GAS PIPING SHALL BE POLYETHYLENE PIPE WITH HEAT FUSION JOINTS AND COPPER TRACER WIRE OF PIPING.
10. CONTRACTOR SHALL COORDINATE SERVICES TO BUILDING WITH LOCAL UTILITY COMPANIES. CHARACTERISTICS AND SIZE OF SERVICE SHALL BE AS INDICATED ON THE DRAWINGS. REFER TO CIVIL DRAWINGS FOR SPECIFIC INFORMATION.
11. PIPING INSULATION: ALL HOT WATER PIPING SHALL BE INSULATED WITH 3/4" THICK CLOSED CELL ELASTOMERIC INSULATION. ALL COLD WATER PIPING EXPOSED TO AMBIENT TEMPERATURES (INCLUDING ATTICS AND EXTERIOR WALLS) SHALL BE INSULATED WITH 3/4" THICK CLOSED CELL ELASTOMERIC INSULATION. HORIZONTAL STORM PIPING SHALL BE INSULATED WITH 1" THICK FIBERGLASS INSULATION WITH VAPOR BARRIERS. WASTE PIPING FOR LAVATORIES SHALL HAVE 3/4" THICK ELASTOMERIC INSULATION.
12. PLUMBING FIXTURES SHALL BE AS SCHEDULED ON THE DRAWINGS. FIXTURES SHALL BE FURNISHED COMPLETE WITH SHUT-OFF VALVES, TRAPS, FAUCETS, AND ALL OTHER REQUIRED TRIM. ALL FIXTURES SHALL COMPLY WITH LOCAL WATER CONSERVATION RULES AND REGULATIONS.
13. WATER HEATERS SHALL BE AS SCHEDULED ON THE DRAWINGS. HEATERS SHALL HAVE FIVE (5) YEAR FACTORY WARRANTY (MINIMUM) ON TANK.
14. WATER SYSTEM SHALL BE PROVIDED WITH VALVES ON COLD WATER AND HOT WATER CONNECTIONS AT EACH FIXTURE, AT PLACES INDICATED ON THE DRAWINGS AND AS REQUIRED BY FIELD CONDITIONS FOR SERVICING SYSTEM.
15. GAS SYSTEM SHALL BE PROVIDED WITH AN APPROVED SHUT-OFF VALVE AT EACH GAS APPLIANCE. PROVIDE AND INSTALL SOLENOID VALVES ON LINES AT LOCATIONS INDICATED ON PLANS OR REQUIRED BY CODE. IN ADDITION PROVIDE PRESSURE REDUCING VALVES AT EACH GAS APPLIANCE WHERE SYSTEM PRESSURE EXCEEDS 4 OUNCES. VENT PRESSURE REDUCING VALVES TO ATMOSPHERE.
16. EACH PLUMBING FIXTURE SHALL BE PROVIDED WITH 12" LONG AIR CHAMBERS ON BOTH THE COLD WATER AND HOT WATER CONNECTIONS TO FIXTURE.
17. ALL INDIRECT WASTE PIPING SHALL BE TYPE M COPPER WITH SWEATED JOINTS. COPPER PIPING SHALL BE ISOLATED FROM STAINLESS STEEL FIXTURES OR CASEWORK WITH TWO (2) LAYERS OF INSULATING TAPE.
18. CONTRACTOR SHALL FURNISH SUBMITTAL DATA TO OWNER FOR APPROVAL ON ALL FIXTURES, EQUIPMENT, WATER HEATERS, ETC. PRIOR TO ORDERING ANY ITEMS. CONTRACTOR MAY OFFER SUBSTITUTIONS ON ITEMS FOR APPROVAL BY OWNER. SUBSTITUTIONS MUST BE EQUAL IN ALL RESPECTS TO ITEMS SCHEDULED OR SPECIFIED.
19. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHTS OF ALL FIXTURES. HEIGHTS SHALL COMPLY WITH A.D.A. CODE REQUIREMENTS.

GENERAL ELECTRICAL REQUIREMENTS

1. CONTRACTOR SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES. ALL WORK SHALL BE IN CONFORMANCE WITH N.E.C.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BID. BY SUBMITTING BID, CONTRACTOR STATES THAT HE HAS EXAMINED ALL EXISTING CONDITIONS. IF CONTRACTOR ENCOUNTERS EXISTING CONDITIONS WHICH NEED CLARIFICATION, CONTACT OWNER'S REPRESENTATIVE FOR RESOLUTION OR CLARIFICATION.
3. CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES AND CHARGES REQUIRED, INCLUDING UTILITY COMPANY CHARGES APPLICABLE TO HIS WORK.
4. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL HAVE ONE (1) YEAR WRITTEN GUARANTEE FOR ALL MATERIALS AND WORKMANSHIP.
5. ALL MATERIALS SHALL BE OF FIRST CLASS QUALITY, EQUAL TO SQUARE "D", FEDERAL PACIFIC, OR CUTLER-HAMMER. NO "USED" MATERIALS WILL BE PERMITTED TO BE INSTALLED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
6. AT COMPLETION OF PROJECT, CONTRACTOR SHALL DELIVER TO OWNER ALL DOCUMENTS (INCLUDING BUILDING PERMITS, OPERATION AND MAINTENANCE MANUALS, ETC.).
7. ALL INTERIOR CONDUIT SHALL BE EMT. ALL EXTERIOR AND UNDERGROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL. MINIMUM SIZE OF CONDUIT SHALL BE 3/4". ALL CONDUIT SHALL BE ROUTED PERPENDICULAR TO BUILDING LINES WHERE EXPOSED TO VIEW.
8. ALL WIRE SHALL BE THHN COPPER UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM SIZE OF WIRE SHALL BE NO. 12. ALL WIRING SHALL BE SIZED AND INSTALLED SO THAT MAXIMUM VOLTAGE DROP TO FARTHEST CONNECTION IN CIRCUIT SHALL NOT EXCEED 5%.
9. ALL DISCONNECT SWITCHES SHALL BE GENERAL DUTY, EQUAL TO SQUARE "D", FEDERAL PACIFIC, OR CUTLER-HAMMER, WITH NEMA CONFIGURATION AS INDICATED ON DRAWINGS OR AS REQUIRED BY CODE.
10. ALL SWITCHES SHALL BE SPECIFICATION GRADE. COLOR OF ALL SWITCHES AND COVER PLATES SHALL BE IVORY. MOUNTING HEIGHT OF ALL SWITCHES SHALL COMPLY WITH A.D.A. CODE REQUIREMENTS.
11. ALL RECEPTACLES SHALL BE SPECIFICATION GRADE. COLOR OF ALL SWITCHES AND COVER PLATES SHALL BE IVORY. MOUNTING HEIGHT OF RECEPTACLES SHALL COMPLY WITH A.D.A. CODE REQUIREMENTS UNLESS SPECIFIC OR SPECIAL MOUNTING HEIGHT IS SHOWN ON DRAWINGS OR REQUIRED BY EQUIPMENT.
12. ALL TELEPHONE AND COMPUTER OUTLETS SHOWN ON DRAWING SHALL HAVE EMPTY 3/4" CONDUIT ROUTED FROM BOX TO ABOVE ACCESSIBLE CEILING OR TO TELEPHONE TERMINAL BOARD IF CEILING ABOVE ACCESSIBLE IS NOT ACCESSIBLE. PROVIDE PULL STRING IN CONDUIT FOR INSTALLATION OF CABLES. CABLES WILL BE INSTALLED UNDER SEPARATE CONTRACT. MOUNTING HEIGHT OF DEVICES SHALL COMPLY WITH A.D.A. CODE REQUIREMENTS.
13. CONTRACTOR SHALL MARK PROPOSED LOCATION OF ALL SWITCHES, RECEPTACLES, TELEPHONE OUTLETS, ETC. ON WALLS FOR OWNER'S APPROVAL PRIOR TO ROUGH-IN OR INSTALLATION OF ANY BOXES AND CONDUIT. ALL DEVICES MAY BE RELOCATED A MAXIMUM OF 6'-0" PRIOR TO INSTALLATION AT NO ADDITIONAL COST TO OWNER.
14. TRANSFORMERS SHALL BE DRY-TYPE OF SIZE AND VOLTAGE REQUIREMENTS AS INDICATED ON THE DRAWINGS. TRANSFORMERS SHALL BE GROUNDED AS PER THE N.E.C.
15. ENTIRE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C. ARTICLE 250. GROUNDING TO PLUMBING SYSTEM SPECIFICALLY PROHIBITED.
16. CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE TO BUILDING WITH LOCAL POWER COMPANY. CHARACTERISTICS AND SIZE OF SERVICE SHALL BE AS INDICATED ON THE DRAWINGS. REFER TO CIVIL DRAWINGS FOR MORE SPECIFIC INFORMATION, AS TO LOCATION OF POWER POLES, ETC.
17. ELECTRICAL EQUIPMENT SHALL BE RATED FOR SERVICE ENTRANCE. ALL BUSSING SHALL BE COPPER WITH FULL LENGTH GROUND BUS. OVER CURRENT DEVICES SHALL BE FUSIBLE SWITCH (FS) OR CIRCUIT BREAKER (CB) AS INDICATED ON EQUIPMENT SCHEDULE. INTERRUPTING CURRENT OF EQUIPMENT AND DEVICES SHALL BE AS NOTED ON EQUIPMENT SCHEDULE OR AS REQUIRED BY LOCAL POWER COMPANY.
18. ALL PANELBOARDS SHALL HAVE BOLT-ON BREAKERS. PANELBOARDS SHALL HAVE COPPER BUSING WITH AMPERE RATINGS, MAIN BREAKER (MCB) OR MAIN LUGS ONLY (MLO), AND MOUNTING AS SHOWN ON PANEL SCHEDULES. PANELS SHALL BE EQUAL TO SQUARE "D", FEDERAL PACIFIC, OR CUTLER-HAMMER.
19. LIGHT FIXTURES SHALL BE LITHONIA OR EQUAL. FIXTURES SHALL BE COMPLETE WITH ALL LAMPS. CONTRACTOR SHALL PROVIDE OWNER WITH ONE SET OF SPARE LAMP(S) FOR EACH TYPE FIXTURE USED ON THE PROJECT.
20. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHTING FIXTURES IN CEILING. REFER TO ARCHITECTURAL INTERIOR AND EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF ALL WALL MOUNTED FIXTURES. ARCHITECTURAL LOCATIONS GOVERN.
21. CONTRACTOR SHALL FURNISH SUBMITTAL DATA TO OWNER FOR APPROVAL ON ALL FIXTURES AND EQUIPMENT, PRIOR TO ORDERING ANY ITEMS. CONTRACTOR MAY OFFER SUBSTITUTIONS ON ITEMS FOR APPROVAL BY OWNER. SUBSTITUTIONS MUST BE EQUAL IN ALL RESPECTS TO ITEMS SCHEDULED OR SPECIFIED.

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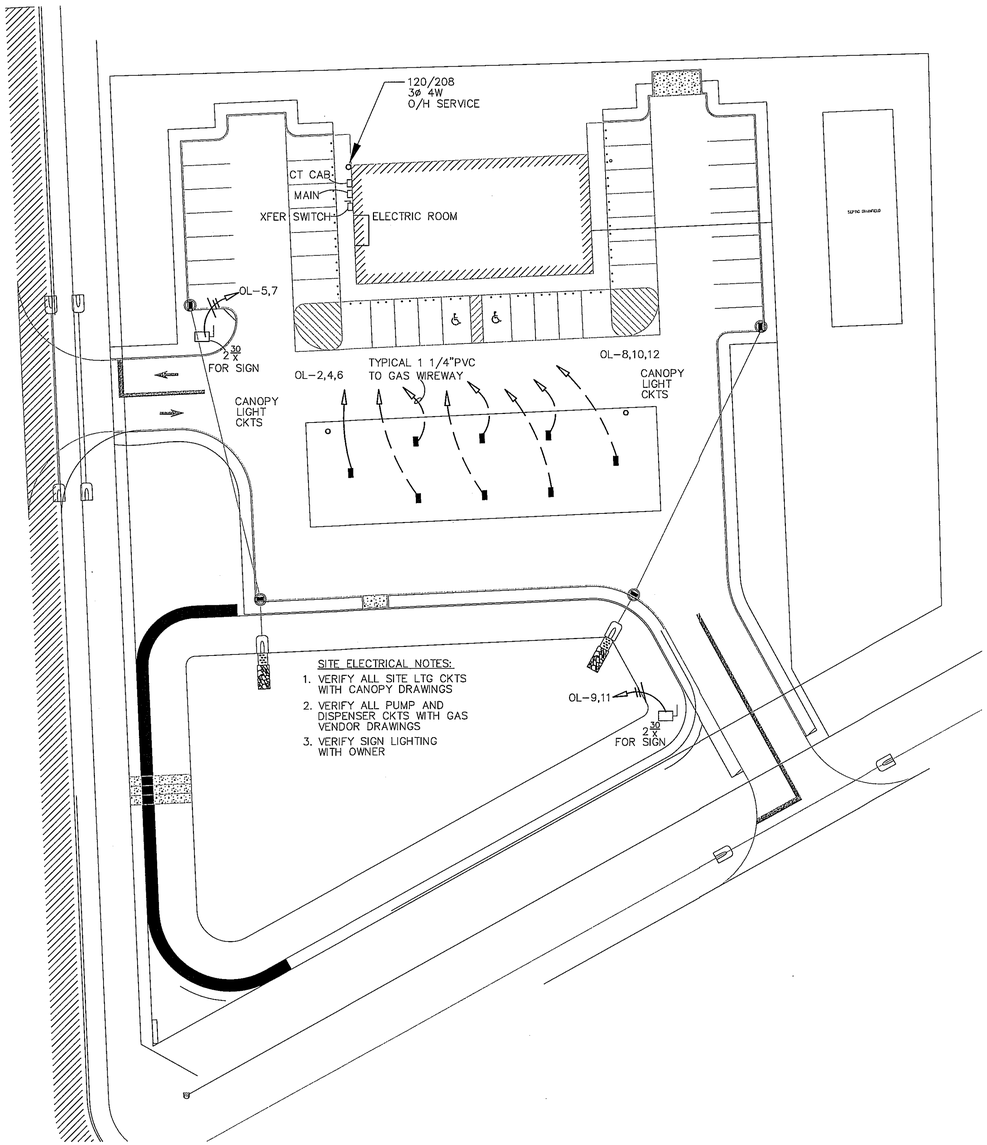
Craig Salley 3/16/10

CRAIG SALLEY, R.A.
FL. REG. NO. 4475

DATE 2/12/10
DRAWN DJR
APPROVED

SP-3

OF 18 SHEETS



ELECTRICAL SITE PLAN
SCALE 1" = 40'-0"

LIGHTING LEGEND

MARK	DESCRIPTION
A	4' LONG FLUORESCENT STRIP CHANNEL, SURFACE MOUNTED WITH ONE (1), ELECTRONIC BALLAST. FURNISH FIXTURES WHERE NOTED 'WG' WITH WIRE GUARDS 120 VOLT, MODEL NUMBER EQUAL TO DAY-BRITE MODEL T132-120-1/2 EB.
B	4' SURFACE MTD FLUORSCENT IN OFFICE
C	2'X4' FLUORSCENT LAYIN FIXTURE, 3 TUBE, WITH ACRYLIC PRISMATIC .125" THK LENSE. FLAT STEEL DOOR WITH 4100 K LAMPS, SINGLE ELECTRONIC BALLAST, 120 VOLT MODEL NUMBER EQUAL TO DAYBRITE 2SPW232SF12-120-1/2EB-LPT841HL
D	DECORATIVE PENDANT ABOVE TABLE.
E	4' LONG FLUORESCENT VAPOR TIGHT WET LOCATION INDUSTRIAL , SURFACE MOUNTED WITH TWO (2) F32T8 LAMPS, ELECTRONIC BALLAST, FIBERGLASS REINFORCED POLYESTER BODY, CLOSED CELL GASKET, WET LOCATION, NSF CERTIFIED FOR FOOD ZONE INSTALLATION 120 VOLT, ELECTRONIC HO BALLAST FOR COLD AMBIENT APPLICATIONS FOR 0'F OPERATION, TWO GASKETED THREADED COUPLINGS FACTORY INSTALLED ON ENDS OF LUMINAIRE. MODEL NUMBER EQUAL TO DAY-BRITE MODEL DWAE248120-1/2EB
F	6" X4' FLUORSCENT SURFACE MOUNTED FIXTURE, 1 TUBE, WITH OPAL ACRYLIC LENSE. COATED STEEK HOUSING, 4100 K LAMPS, SINGLE ELECTRONIC BALLAST, 120 VOLT MODEL NUMBER EQUAL TO DAYBRITE CLDDW132-120-1/2-EB
G	RECESSED 8"ø HID FIXTURE W/ 50 WATT METAL HALIDE, MP50/C/U/MED, 120 VOLT, WITH CLEAR WHITE BAFFLE TRIM AND LENS INSERT, UL LISTED FOR WET LOCATION. MODEL NUMBER EQUAL TO CAPRI CM8-M50C-V85WBC
H	SURFACE MOUNTED WALL PACK, 70 WATT METAL HALIDE, 120 VOLT, BRONZE FINISH PRISMATIC GLASS REFLECTOR, PHOTOCELL CONTROL. MODEL NUMBER EQUAL TO NIGHT BRIGHT WPG070M-MT-LP PE.
X	UNIVERSAL MOUNT WHITE ABS EXIT SIGN WITH RED LED LAMP, UNIVERSAL FACE WITH CHEVRON DIRECTIONAL KNOCKOUTS, 120.277 SELECTABLE VOLTAGE. MODEL NUMBER EQUAL TO McPHILBEN CXL-3-R-W
Y	UNIVERSAL MOUNT WHITE ABS EXIT SIGN WITH RED LED LAMP, UNIVERSAL FACE WITH CHEVRON DIRECTIONAL KNOCKOUTS, 120.277 SELECTABLE VOLTAGE, WITH CHARGER, INVERTER LEAD CALCIUM BATTERY PACK AND TWO 5.4w TUNGSTEN LAMPS MODEL NUMBER EQUAL TO McPHILBEN VCRB

LIGHTING LEGEND

a	FLUORESCENT FIXTURE MULTITUBE-RECESSED OR SURFACE MTD. 24X48 "a"= FIXTURE TYPE DESIGNATION, SEE SCHEDULE -TYPICAL ALL LIGHT SYMBOLS
a	FLUORESCENT FIXTURE MULTITUBE-RECESSED OR SURFACE MTD. 24X24
a	FLUORESCENT FIXTURE MULTITUBE-WALL OR CEILING MTD.
a	FLUORESCENT FIXTURE MULTITUBE-WALL MTD.
a	FLUORESCENT FIXTURE SINGLE TUBE-SURFACE MTD.
a	FLUORESCENT FIXTURE SINGLE TUBE-WALL MTD.
a	SURFACE MOUNTED FIXTURE PER SCHEDULE, "a := FIXTURE TYPE
a	RECESSED FIXTURE PER SCHEDULE, "a := FIXTURE TYPE
a	WALL MOUNTED FIXTURE PER SCHEDULE, "a := FIXTURE TYPE
X	EXIT LIGHT-DIRECTION ARROW(S) AS INDICATED-SURFACE OR WALL MTD.
Y	EMERGENCY BATTERY OPERATED LIGHT, SEE SCHEDULE y= FIXTURE TYPE
$	TOGGLE SWITCH UP 42" UNLESS NOTED OTHERWISE
$3 $4	TOGGLE SWITCH UP 42" UNLESS NOTED, 3 WAY, 4 WAY
$P $K	TOGGLE SWITCH UP 42", P= PILOT/ K= KEY OPERATED
$T	TOGGLE SWITCH, MOTOR RATED WITH THERMAL PROTECTION
$	MOTION SENSOR LIGHT SWITCH
EM	FIXTURE WITH BATTERY PACK AND INVERTER
NL	NIGHT LIGHT

POWER LEGEND

	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE GFI
	QUADRAPLEX RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE AS NOTED
	FLOOR OUTLET
J	JUNCTION BOX
T H	THERMOSTAT OUTLET HUMIDISTAT OUTLET
	DATA OUTLET UP 12" UNLESS NOTED- EACH SYMBOL = 2 CATSE CABLES AND TWO RJ45 JACKS IN SINGLE GANG BOX. ▷▷ = (4) CABLES AND 4 JACKS DOUBLE GANG BOX, ▷▷▷ =(6) EACH ETC.
	TELEPHONE OUTLET (VOICE ONLY) UP 12" UNLESS NOTED/ FLOOR OUTLET
J 30 15	DISCONNECT,3=NO. OF POLES, 30=FRAME SIZE, 15=FUSE, X=NO FUSE
2	MAGNETIC MOTOR STARTER OR CONTACTOR, 2= NEMA SIZE
2 J 30 15	COMBINATION STARTER AND DISCONNECT
	ELECTRIC MOTOR-VOLTAGE,PHASE & SIZE AS SHOWN
	ELECTRICAL LIGHTING OR APPLIANCE PANEL BOARD
	ELECTRICAL DISTRIBUTION OR POWER PANEL BOARD
	CURRENT TRANSFORMER CABINET PER UTILITY SPECS
	UTILITY METER (PER UTILTIY CO SPECS)
	TELEPHONE TERMINAL CABINET OR BOARD-SIZE AS NOTED
	SIGNAL OR SOUND CABINET OR BOARD-SIZE AS NOTED
	4'X8'/3/4" TELEPHONE TERMINAL BOARD W/ GROUND AND RECEPTACLE
	CONDUIT RUN CONCEALED IN WALL OR CEILING
	CONDUIT RUN UNDERFLOOR OR UNDERGROUND
	HOME RUN TO PANEL,LONG LINE=NEUTRAL OR GND.,SHORT LINE(S)=CIRCUIT(S)
	ELECTRIC HEATER
P	PHOTOCELL
W.P.	WEATHERPROOF
G.F.I.	GROUND FAULT INTERRUPTER
•	MTD. UP 48" OR ABOVE COUNTERTOP BACKSPLASH
TV	T.V. OUTLET
SP	SPEAKER OUTLET
I	INTERCOM CALL-IN SWITCH 48"AFF

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S & S FOOD STORE NO. 29
BIRLEY & PINEMOUNT ROAD
LAKE CITY, FLORIDA

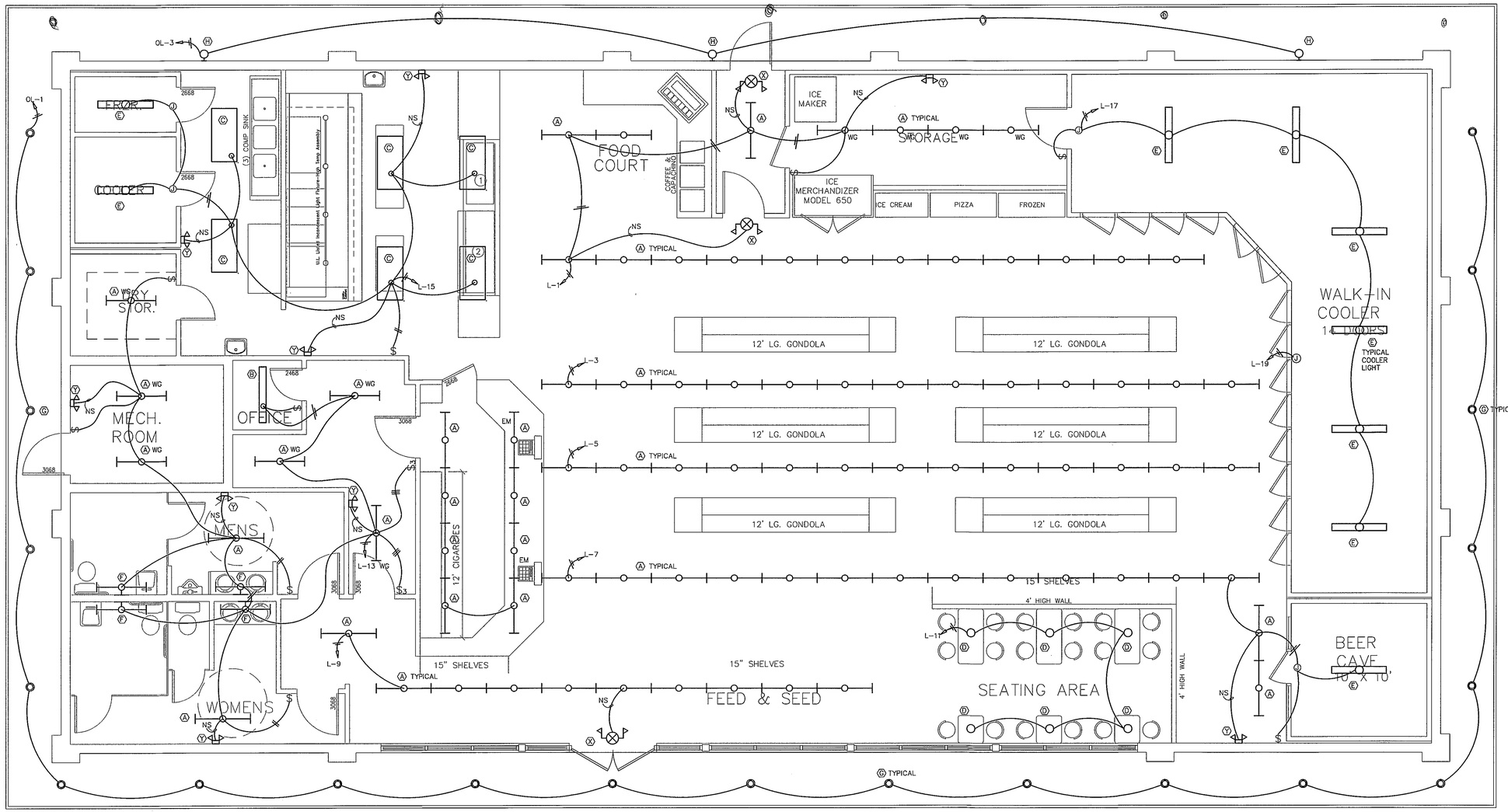
COBURN & ASSOCIATES
FLORIDA LICENSED
ENGINEERS EB 0003887
HIGH SPRINGS, FLORIDA
32655-4577
PH 386-454-1748
RICHARD E COBURN PE
E-28280

DATE 2/12/10
DRAWN CAA
APPROVED REC

1007

E1

OF SHEETS



17-8" PC

ELECTRICAL LIGHTING PLAN

1/4" = 1'-0"

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S & S FOOD STORE NO. 29
BIRLEY & PINEMOUNT ROAD
LAKE CITY, FLORIDA

COBURN & ASSOCIATES
ENGINEERING, INC.
ENGINEERS LB 0003661
P.O. BOX 577
HIGH SPRINGS, FLORIDA
32655-0577
PH 386-454-3748
RONALD W. COBURN P.E.
E-32820

DATE	2/12/10
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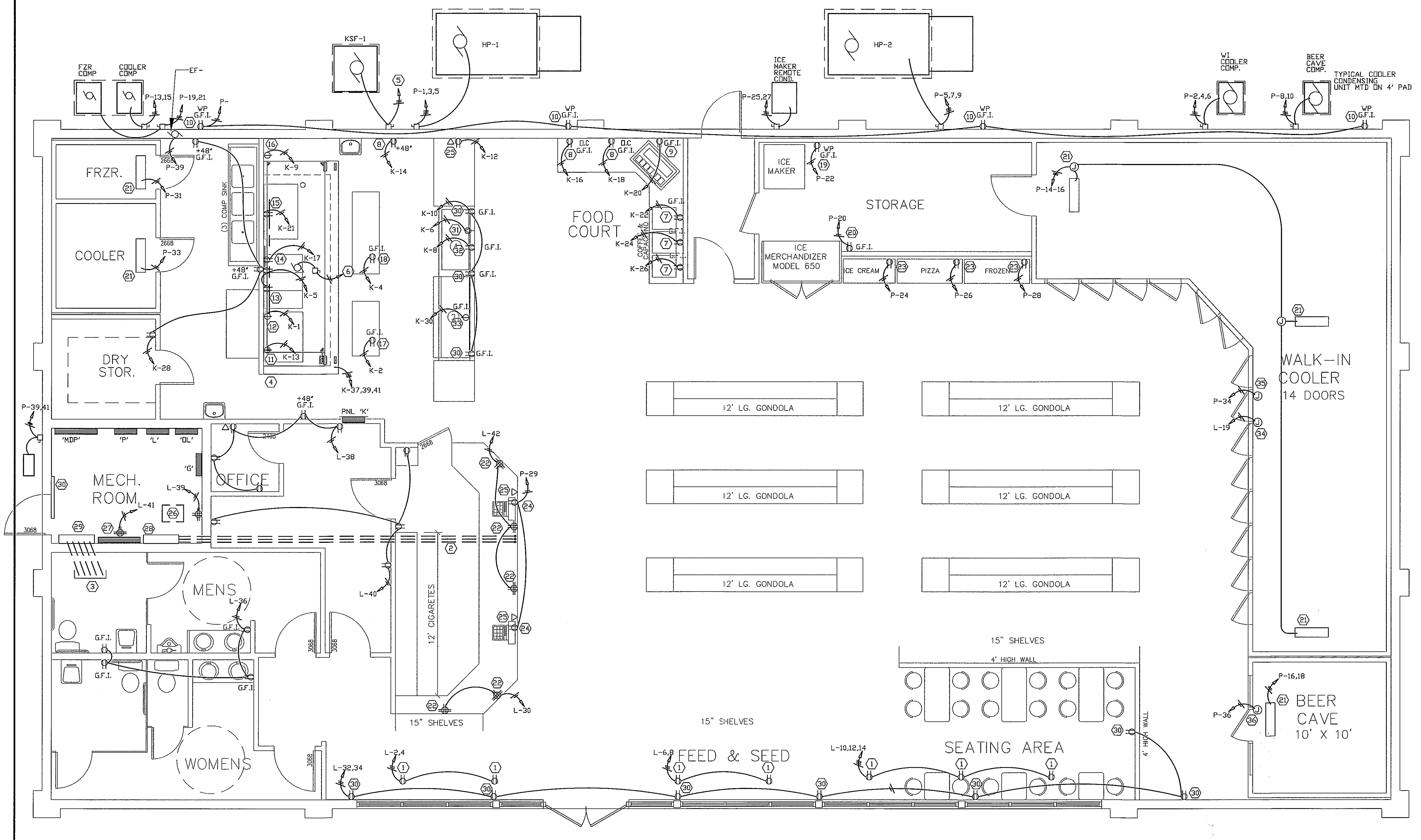
	E2
OF SHEETS	

EQUIPMENT SCHEDULE

		VOLTS	PH	KW	AMPS	CW	HW	FW	DRAIN	GAS	BTUH
1A	5' DROP-IN HOT WELL	120	1	2.36							
1B	WARMING DRAWER	120	1	1.05							
2	8' COLD FOOD DROP-IN	120	1								
3	14" GAS DEER FRYER (2)	120	1	0.1	8					3/4"	11,000
4	FRYER FILTER MATE	120	1	1.2							
5	2 BURNER COOK TOP										
6	GAS COMBI-OVEN	120	1	0.67	5.7	3/4		3/4	1 1/2" IW	3/4"	45,000
7	CONVECTION OVEN										
8	GRILL / CHARBROILER									3/4"	210,000 *
9	REFRIGERATED SANDWICH PREP	120	1	0.35	–						
10	5' SS PREP TABLE										
11	3-COMPARTMENT SINK					1/2	1/2		1 1/2"		
12	HAND SINK (2)					1/2	1/2		1 1/4"		
13	14' EXHAUST HOOD										
14	FOOD WARMER (FRYER)	120	–	0.5	–	–	–	–	–	–	–

* GRILLE 36" @ 30,000 X 3 = 90,000
CHARBROILER 36" @ 20,000 X 6 = 120,000



ELECTRICAL POWER PLAN

1/4" = 1'-0"

SPECIFIC POWER NOTES, DRAWING E3

1. CELING MOUNTED RECEPTACLE FOR SHOW WINDOW LIGHTING
2. THREE (3)- 2 INCH CONDUIT FOR GAS PUMP CONTROLS AND POINT OF SALE LOW VOLTAGE WIRING
3. 1 1/2" CONDUIT WITH SEAL OFF FITTINGS, ONE TO EACH GAS DISPENSER FOR LOW VOLTAGE CONTROLS FOR GAS DISPENSER CONTROL
4. KITCHEN EXHAUST HOOD CONTROL CABINET, POWER AND CONTROLS TO KEF-1 AND KSF-1
5. POWER WIRING TO KITCHEN HOOD CONTROL PANEL FROM KSF-1, SEE RISER
6. POWER WIRING TO KITCHEN CONTROL PANEL FROM KEF-1, ON ROOF, SEE POWER RISER
7. 120V,10, 20A RECEPTICLE FOR COFFEE MAKERS, MOUNTED ABOVE COUNTER, VERIFY REQUIREMENTS WITH EQUIPMENT
8. 120V, 10, 20A, RECEPTACLES FOR APPLIENCES MOUNTED ABOVE COUNTER OR AS NOTED
9. 120V, 10, 20A, RECEPTICLE FOR SODA DISPENSER, VERIFY MOUNTING HEIGHT WITH EQUIPMENT INSTALLATION INSTRUCTIONS
10. MAINTENANCE RECEPTICLE, GFI
11. 120V, 10, 20A RECEPTACLE FOR CONTROL POWER TO CONVECTION OVEN SHUNT TRIP BREAKER
12. 120V, 10, 20A RECEPTACLE FOR CONTROL POWER TO CONVECTION OVEN SHUNT TRIP BREAKER
13. 120V, 10, 20A RECEPTACLE FOR CONTROL POWER TO FRYERS/FILTER OVEN SHUNT TRIP BREAKER
14. 120V, 10, 20A RECEPTACLE FOR CONTROL POWER TO FRYER WARMER OVEN SHUNT TRIP BREAKER
15. 120V, 10, 20A RECEPTACLE FOR CONTROL POWER TO GRILLE/ BRIOLER, SHUNT TRIP BREAKER
16. 120V, 10, 20A RECEPTACLE FOR POWER TO REFRIGERATED SANDWICH PREP, SHUNT TRIP BREAKER
17. RECEPTACLE BELOW TABLE . 120V, 10, 20A, GFI
18. RECEPIACLE BELOW TABLE.120V, 10, 20A GFI
19. 120V, 10, 20A RECEPTACLE FOR ICE MAKER, VERIFY MOUNTED HEIGHT AND REQUIREMENTS WITH MANUACTUER DATA SHEETS
20. 120V, 10, 20A RECEPTACLE FOR ICE MERCHANDISER, VERIFY MOUNTING HEIGHT AND POWER REQUIREMENTS WITH MANUFACTURER DATA SHEETS
21. 120V, 10A RVAPORATOR CIRCUIT TO COOLER (FREEZER) EVAPORATOR UNITS, VERIFY EXACT REQUIREMENTS WITH MANUFACTURER DATA
22. TYPICAL UNDER COUNTER, GENERAL PURPOSE QUAD PLEX RECEPTACLES FOR GENERAL USE, 120V, 10, 20A CIRCUIT
23. 120V, 10, 20A RECEPTACLES FOR DISPLAY CASES, VERIFY REQUIREMENTS WITH MANUFACTURER DATA, MOUNTED @ 48"
24. 120V, 10, 20A POINT OF SALE RECEPTACLE MOUNTED BELOW COUNTER
25. DATA OUTLET, PROVIDE 4 X 4 X 2 1/2" J-BOX WITH SINGLE GANG COVER AND FOUR (4) CAT 5E CABLES FROM DATA RACK, PROVIDE A 4 POSITION DATA JACK IN BOX AND FOUR (4) WIRED RJ-45 JACKS, VERIFY WITH OWNER
26. DATA RACK
27. 4' X 8' X 3/4 PLYWOOD BACKBOARD PAINTED WITH BLACK FIRE RETARDANT PAINT
28. 8" X 8" X 36" WIREWAY MOUNTED 12" AFF, WITH FRONT MOUNTED REMOVABLE COVER, FOR ROUTING OF LOW VOLTAGE TO SALES COUNTER THROUGH CONDUT (2)
29. 8" X 8" X 36" WIREWAY MOUNTED 12" AFF WITH FRONT MOUNTED REMOVABLE COVER, FOR ROUTING OF LOW VOTAGE TO GAS DISPENSERS
30. 120V, 10A, GENERAL PURPOSE RECEPTACLES
31. 30A, 120V 10A, SPECIAL PURPOSE RECEPTACLE FOR HOT FOOD WELL, VERIFY RECEPTACLE CONFIGURATION WITH MANUFATTURER
32. 120V, 20A, 10, RECEPTACLE FOR WARMING DRAWER
33. 208V, 3Ø, 3 WIRE PLUS GROUND, MOUNTED AT 48" AFF.
34. 120V, 1Ø, 3W CKT FOR DOOR LIGHTS VERIFY CONNECTION POINT WITH MFGR DETAILS
35. 120V, 1Ø, 20A CKT FOR DOOR HEATERS, 4.37A TOTAL
36. 120V, 1Ø, 20A CKT FOR BEER CAVE DOOR & WINDOW HTRS 6AMPS TOTAL

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E3

OF SHEETS

PANEL–L LOCATION– MECH ROOM MOUNTING– xx SURFACE FLUSH
SERVICE– 120 / 208 VOLTS, 3 Ø, 4 W 60 HZ BUSS SIZE– 225 A. AIC BKRS.
MAIN LUGS ONLY

WATTS AØ	BØ	CØ	CIRCUIT	WIRE	POLE	AMP	NO.	NO.	AMP	POLE	WIRE	CIRCUIT	WATTS AØ	BØ	CØ
608			SALES LIGHTS	12	1	20	1	2	20	1	12	SHOW WINDOW LTG	1400		
	416		SALES LIGHTS	12	1	20	3	4	20	1	12	SHOW WINDOW LTG		1400	
		416	SALES LIGHTS	12	1	20	5	6	20	1	12	SHOW WINDOW LTG			1400
480			SALES LIGHTS	12	1	20	7	8	20	1	12	SHOW WINDOW LTG	1400		
	320		SALES LIGHTS	12	1	20	9	10	20	1	12	SHOW WINDOW LTG		1600	
		600	DINING LIGHTS	12	1	20	11	12	20	1	12	SHOW WINDOW LTG			1600
448			OFFICE/RR LIGHTS	12	1	20	13	14	20	1	12	SHOW WINDOW LTG	1600		
	832		KITCHEN/COOLER	12	1	20	15	16				SPACE			
		192	WALK IN LIGHTS	12	1	20	17	18							
600			WALK IN DOOR LIGHTS	12	1	20	19	20							
	1000		SPARE		1	20	21	22							
		1000	SPARE		1	20	23	24							
1000			SPARE		1	20	25	26							
	1000		SPARE		1	20	27	28							
		1000	SPARE		1	20	29	30	20	1	12	GEN RECEPT			360
1000			SPARE		1	20	31	32	20	1	12	GEN RECEPT	540		
	1000		SPARE		1	20	33	34	20	1	12	GEN RECEPT		540	
		1000	SPARE		1	20	35	36	20	1	12	GEN RECEPT			720
1000			SPARE		1	20	37	38	20	1	12	GEN RECEPT	900		
	1000		DATA RECEPT		1	20	39	40	20	1	12	GEN RECEPT		720	
		1000	DATA RECEPT		1	20	41	42	20	1	12	GEN RECEPT			360

TOTAL CONN. WATTS=__________ TOTAL CALC. LOAD= 34070 W.: (208X1.7) VOLTS= 95 AMPS
FEEDER SIZE 3/0 CONDUIT SIZE 2" FEEDS FROM MDP
CONNECTED WATTS ADJUSTED WITH APPROPRIATE MULTIPLIERS AND DIVERSITIES

PANEL–K LOCATION– SEE PLAN MOUNTING– SURFACE xx FLUSH
SERVICE– 120 / 208 VOLTS, 3 Ø, 4 W 60 HZ BUSS SIZE– 225 A. 10,000 AIC BKRS.
MAIN LUGS ONLY

WATTS AØ	BØ	CØ	CIRCUIT	WIRE	POLE	AMP	NO.	NO.	AMP	POLE	WIRE	CIRCUIT	WATTS AØ	BØ	CØ
670			GAS COMBI–OVEN	12	1	20	1	2	20	1	12	APPLIANCE	1200		
			SHUNT TRIP				3	4	20	1	12	APPLIANCE		1200	
		1500	FRYER / FILTER	12	1	20	5	6	30	1	10	HOT WELL			2360
			SHUNT TRIP				7	8	20	1	12	WARMING DRAWER	1050		
	350		REF. SAND PREP	12	1	20	9	10	20	1	12	CONVENIENCE RECEPT		720	
			SHUNT TRIP				11	12	20	1	12	POS RECEPT			200
500			CONVECTION OVEN	12	1	20	13	14	20	1	12	APPLIANCE	1200		
			SHUNT TRIP				15	16	20	1	12	APPLIANCE		1200	
		960	FRYER WARMING	12	1	20	17	18	20	1	12	APPLIANCE			1200
			SHUNT TRIP				19	20	20	1	12	SODA	1200		
	500		GRILLE–BROILER CTR	12	1	20	21	22	20	1	12	COFFEE		1200	
			SHUNT TRIP				23	24	20	1	12	COFFEE			1200
1000			SPARE		1	20	25	26	20	1	12	COFFEE	1200		
	1000		SPARE		1	20	27	28	20	1	12	GEN RECEPT		720	
		1000	SPARE		1	20	29	30							
1000			SPARE		1	20	31	32							
	1000		SPARE		1	20	33	34							
		1000	SPARE		1	20	35	36							
1344			HOOD CONTROL PANEL	10	3	30	37	38							
	1344		2.5 HP				39	40							
		1344					41	42							

TOTAL CONN. WATTS=__________ TOTAL CALC. LOAD= 29151 W.: (208X1.7) VOLTS= 81 AMPS
FEEDER SIZE 3/0 CONDUIT SIZE 2" FEEDS FROM
CONNECTED WATTS ADJUSTED WITH APPROPRIATE MULTIPLIERS AND DIVERSITIES

PANEL–OL LOCATION– MECH ROOM MOUNTING– xx SURFACE FLUSH
SERVICE– 120 / 208 VOLTS, 3 Ø, 4 W 60 HZ BUSS SIZE– 125 A. 10,000 AIC BKRS.
MAIN LUGS ONLY

WATTS AØ	BØ	CØ	CIRCUIT	WIRE	POLE	AMP	NO.	NO.	AMP	POLE	WIRE	CIRCUIT	WATTS AØ	BØ	CØ
1000			SOFFIT LIGHTS	10	1	20	1	2	20	1	10	CANOPY LIGHTS	1500		
	210		REAR SECURITY	10	1	20	3	4	20	1	10	CANOPY LIGHTS		1500	
		1000	SIGN	8	2	20	5	6	20	1	10	CANOPY LIGHTS			1500
1000							7	8	20	1	10	CANOPY LIGHTS	1500		
	1000		SIGN	8	2	20	9	10	20	1	10	CANOPY LIGHTS		1500	
		1000					11	12	20	1	10	CANOPY LIGHTS			1500
1000			SPARE		1	20	13	14				SPACE			
	1000		SPARE		1	20	15	16							
		1000	SPARE		1	20	17	18							
1000			SPARE		1	20	19	20							
	1000		SPARE		1	20	21	22							
		1000	SPARE		1	20	23	24							
			SPACE				25	26							
							27	28							
							29	30							
							31	32							
							33	34							
							35	36							
							37	38							
							39	40							
							41	42							

TOTAL CONN. WATTS=__________ TOTAL CALC. LOAD= 23763 W.: (208X1.7) VOLTS= 66 AMPS
FEEDER SIZE #1 CONDUIT SIZE 1 1/2" FEEDS FROM MDP
CONNECTED WATTS ADJUSTED WITH APPROPRIATE MULTIPLIERS AND DIVERSITIES

PANEL–P LOCATION– MECH ROOM MOUNTING– xx SURFACE FLUSH
SERVICE– 120 / 208 VOLTS, 3 Ø, 4 W 60 HZ BUSS SIZE– 225 A. 10,000 AIC BKRS. SERIES RATED
MAIN LUGS ONLY

WATTS AØ	BØ	CØ	CIRCUIT	WIRE	POLE	AMP	NO.	NO.	AMP	POLE	WIRE	CIRCUIT	WATTS AØ	BØ	CØ
1000			SPARE		1	20	1	2	40	3	10	WALK–IN COND #1	2016		
	1000		SPARE		1	20	3	4						2016	
		1000	SPARE		1	20	5	6							2016
1000			SPARE		1	20	7	8	2	2	2	BEER CAVE COND	804		
	1000		SPARE		1	20	9	10						804	
		1000	SPARE		1	20	11	12							804
504			SMALL COOLER COND	12	2	15	13	14	20	1	12	WI EVAP (3)	648		
	504						15	16	15	2	12	BEER CAVE EVAP		915	
		504					17	18							915
756			SMALL FREEZER COND	12	3	15	19	20	20	1	12	ICE MERCH	1200		
	756						21	22	20	1	12	ICE MKR		1200	
		756					23	24	20	1	12	ICE CREAM			1200
1000			ICE MACHINE COND	12	2	15	25	26	20	1	12	PIZZA	1200		
	1000						27	28	20	1	12	FROZEN		1200	
		360	POS RECEPT	12	1	20	29	30	20	2	12	BEER CAVE DOOR HTR			540
1000			SPARE	12	1	15	31	32					540		
	120		SMALL FZR EVAP	12	1	15	33	34	20	1	12	DOOR HEATER		524	
		915	SMALL FZR EVAP	12	2	20	35	36	20	1	12	DOOR HTR BEER CAVE			720
915							37	38				SPACE			
	1000		AC–1	12	2	20	39	40							
		1000					41	42							

TOTAL CONN. WATTS=__________ TOTAL CALC. LOAD= 33181 W.: (208X1.7) VOLTS= 92 AMPS
FEEDER SIZE 3/0 CONDUIT SIZE 2" FEEDS FROM MDP
CONNECTED WATTS ADJUSTED WITH APPROPRIATE MULTIPLIERS AND DIVERSITIES

PANEL–G LOCATION– MECH/ELEC RM MOUNTING– ■ SURFACE □ FLUSH
SERVICE– 120 / 208 VOLTS, 3 Ø, 4 W 60 HZ BUSS SIZE– 125 A. 10,000 AIC BKRS*
MAIN LUGS ONLY

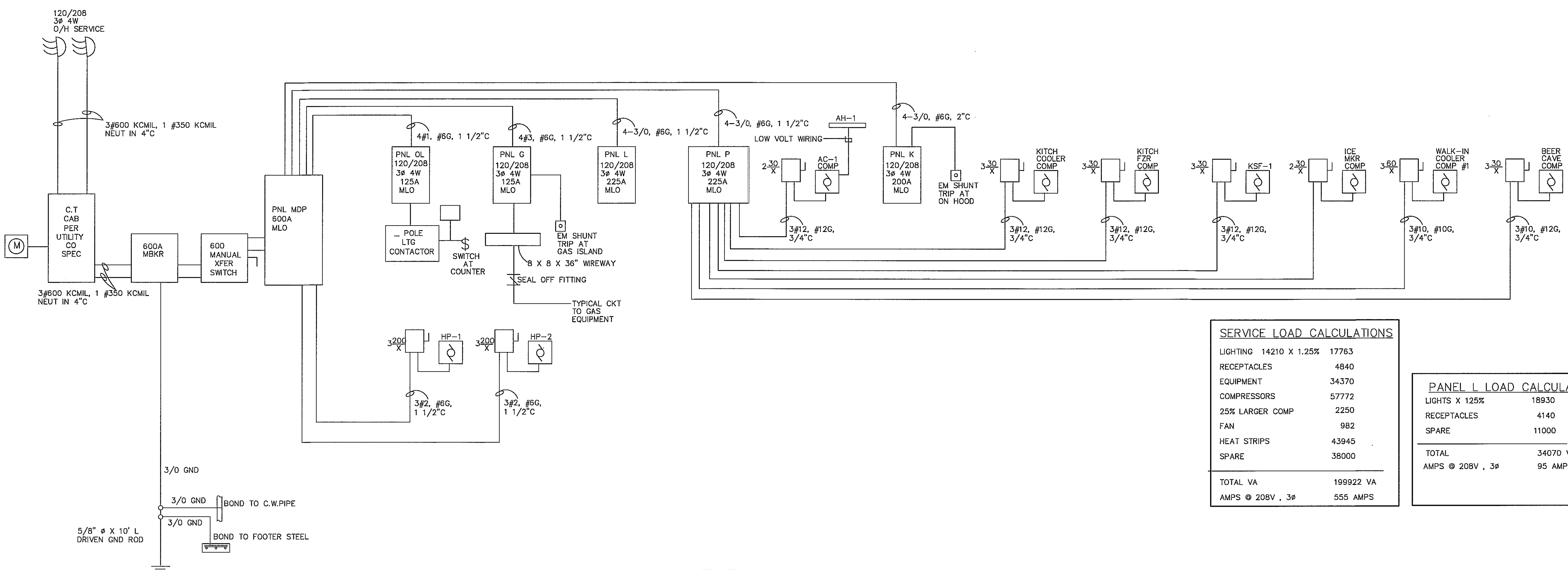
WATTS AØ	BØ	CØ	CIRCUIT	WIRE	POLE	AMP	NO.	NO.	AMP	POLE	WIRE	CIRCUIT	WATTS AØ	BØ	CØ
1700			SUB PUMP–REG	8	3	20	1	2	20	3	8	SUB PUMP–HIGH TEST	1700		
	1700		2 HP (ALTERNATING)				3	4				2 HP		1700	
		1700					5	6							1700
1700			SUB PUMP–MID GRADE	8	3	20	7	8	20	3	8	SUB PUMP–DIESEL	1700		
	1700		2 HP (ALTERNATING)				9	10				2 HP		1700	
		1700					11	12							1700
1000			SPARE		1	20	13	14	20	1	10	DISPENSER #1	1320		
	1000				1	20	15	16	20	1	10	DISPENSER #2		1320	
		1000			1	20	17	18	20	1	10	DISPENSER #3			1320
1000					1	20	19	20	20	1	10	DISPENSER #4	1320		
	1000				1	20	21	22	20	1	10	DISPENSER #5		1320	
		1000			1	20	23	24	20	1	10	DISPENSER #6			1320
1000					1	20	25	26	20	1	10	DISPENSER #7	1320		
	1000				1	20	27	28	20	1	10	DISPENSER #8		1320	
		1000					29	30	20	1		SPARE			1000
							31	32							
							33	34							
							35	36							
							37	38							
							39	40							
							41	42							

TOTAL CONN. WATTS=__________ TOTAL CALC. LOAD= 41235 W.÷ (208/1.73) VOLTS= 114 AMPS
FEEDER SIZE #1 CONDUIT SIZE 1 1/2" FEEDS FROM MDP
CONNECTED WATTS ADJUSTED WITH APPROPRIATE MULTIPLIERS AND DIVERSITIES

PANEL–MDP LOCATION– ELECTRIC ROOM MOUNTING– xx SURFACE FLUSH
SERVICE– 120 / 208 VOLTS, 3 Ø, 4 W 60 HZ BUSS SIZE– 600 A. 100,000/10,000 AIC BKRS. – SERIES RATED
MAIN LUGS ONY

WATTS AØ	BØ	CØ	CIRCUIT	WIRE	POLE	AMP	NO.	NO.	AMP	POLE	WIRE	CIRCUIT	WATTS AØ	BØ	CØ
11060			PANEL 'P'	#3/0	3	200	1	2	125	3	#1	PANEL 'OL'	7921		
	11060						3	4						7921	
		11060					5	6							7921
11357			PANEL 'L'	#3/0	3	200	7	8	100	3	#3	PANEL 'G'	13745		
	11357						9	10						13745	
		11357					11	12							13745
9719			PANEL 'K'	#3/0	3	200	13	14	110	3	#2	HP–1	12960		
	9719						15	16						12960	
		9719					17	18							12960
							19	20	110	3	#2	HP–2	12960		
							21	22						12960	
							23	24							12960
							25	26							
							27	28							
							29	30							
							31	32							
							33	34							
							35	36							
							37	38							
							39	40							
							41	42							

TOTAL CONN. WATTS=__________ TOTAL CALC. LOAD= 199922 W.: (208X1.7) VOLTS= 555 AMPS
FEEDER SIZE (2) 350 KCMIL CONDUIT SIZE (2) 4" FEEDS FROM O/H SERVICE
CONNECTED WATTS ADJUSTED WITH APPROPRIATE MULTIPLIERS AND DIVERSITIES



ELECTRICAL RISER DIAGRAM
NTS

PANEL G LOAD CALCULATIONS

MOTORS	20,400
25% LARGER MOTOR	1275
DISPENSERS	10560
SPARE	9000
TOTAL	41235 VA
AMPS @ 208V , 3ø	114 AMPS

PANEL K LOAD CALCULATIONS

APPLIANCE	17810
MOTORS	4032
25% LARGEST COMP	594
RECEPT	720
SPARE	6000
TOTAL	29156 VA
AMPS @ 208V , 3ø	81 AMPS

PANEL P LOAD CALCULATIONS

COMPRESSORS	15340
25% LARGER COMP	1512
FAN	984
HEAT STRIPS	3345
FIXED EQUIP	6000
SPARE	6000
TOTAL	33181
AMPS @ 208V , 3ø	92 AMPS

SERVICE LOAD CALCULATIONS

LIGHTING 14210 X 1.25%	17763
RECEPTACLES	4840
EQUIPMENT	34370
COMPRESSORS	57772
25% LARGER COMP	2250
FAN	982
HEAT STRIPS	43945
SPARE	38000
TOTAL VA	199922 VA
AMPS @ 208V , 3ø	555 AMPS

PANEL L LOAD CALCULATIONS

LIGHTS X 125%	18930
RECEPTACLES	4140
SPARE	11000
TOTAL	34070 VA
AMPS @ 208V , 3ø	95 AMPS

PANEL OL LOAD CALCULATIONS

LIGHTS X 125%	17763
SPARE	6000
TOTAL	23763 VA
AMPS @ 208V , 3ø	66 AMPS

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DATE	2/12/10
DRAWN	CAA
APPROVED	REC

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OF
SHEETS

ELECTRICAL SPECIFICATIONS

GENERAL

A. Furnish all labor, materials, fixtures, equipment, tools and service necessary for installation, testing and adjusting of all electrical systems shall be furnished and installed in compliance with the Drawings, Specifications, and any Addenda thereto.

B. Drawings and Specification shall be understood to cover, according to their intent and meaning, complete electrical systems. Work shown and not specified, or work specified and not shown shall be performed as though mentioned in both.

C. Minor items and accessories reasonably inferred as necessary for the complete and proper operation of any system shall be provided by contractor or subcontractor for such system whether or not they are specifically called for.

D. The Electrical Contractor shall include in his bid the cost of furnishing installing, maintaining and removing all material and equipment required to provide temporary lights and power to perform the work of all trades during construction and until work is completed. Adequate lighting and receptacle outlets for operation of hand tools shall be provided throughout the project, including shanties, trailers, field offices, temporary toilet enclosures, and shall be extended as construction progresses.

E. Before submitting a bid, the Electrical Contractor is to coordinate with the electric power company to ascertain, in detail, the division of work, and the extent of performance by the Power Company shall be furnished and performed by the Electrical Contractor.

F. All electrical work required by the telephone company shall be furnished and performed by the Electrical Contractor. The Electrical Contractor shall coordinate with the telephone company before bidding.

G. All work shall be performed or installed in strict accordance with the National Electrical Code and all applicable rules, regulations and codes of local, state, and Federal Governents having lawful jurisdiction, and each contractor and subcontractor shall be responsible for such compliance.

H. All panelboards, disconnects, relays, magnetic contractors and time clocks shall be labeled with the same designation shown on the Drawings.

I. Labels shall be laminated plastic engraved, with minimum 3/4 inch width, minimum letter size 3/8 inch.

J. Mount a typewritten directory behind glass or plastic on the inside of each panel door, showing circuit number and complete description of all outlets on each circuit.

K. Furnish all equipment and personnel and conduct all tests required to secure approval of the installation.

L. Safety Tests
1. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects and shall show and insulation resistance between phase conductors and ground of of not less than that reqired by the National Electrical Code.
2. All systems shall show proper neutrol connections.

M. Upon completion of each pory of the electrical system, the contractor shall demonstrate to the Engineer that eavh item on that system is installed with proper covers, safeties, controls, etc., and that all are in proper working order.

N. A set of "red-lined" electrical drawings shall be carefully maintained at the job site. Actual conditions are to be put on the drawings in red on a daily basis so the drawings will continuously show locations and routings of cable trays, conduits, pull boxes, circuit numbers, and other information required by the Engineer.

O. Equipment and materials shall meet or exceed specification requirements.
and be New, unused, of best quality and grade. Furnish current model for which replacement parts are available.

P. All work shall be performed in compliance with OSHA regulations.

Q. Shop drawings and product data shall be submitted on all equipment, fixtures, etc.
1. Shop drawings shall be labeled in the same designation as individual piece of equipment for which they are being submitted; the proper designation shall be the designation used on the various equipment schedules and or in other Sections of this Specification, i.e. Fixture A, Panel B, MDP, etc.

R. Job condition shall be determined prior to bidding in the following manner:
1. Site visit to determine:
a. Existing conditions
b. How and where materials will be delivered and stored.
c. Special problems encountered during construction.
2. Examine all Contract Drawings and Specifications to determine:
a. Type of construction to be used.
b. How construction or work will affect the work of this Section.
c. Nature and extent of work of other trades
3. Failure to determine existing conditions or nature of construction will not be considered as a basis for granting additional compensation.

S. General
1. Contract Drawings show the arrangements and sizes of principal apparatus and devices to be provided under this Contract and connection thereto these shall be followed as closely as actual building construction will permit.
2. Dimensions of work as indicated on Plans are not guarantee to be as-built dimensions.
3. No measurements shall be scaled from Drawings and used as definite dimensions for layout or fitting work in place.
4. Layout of equipment, as shown on the plan, shall be checked and exact locaion determined by dimension of equipment approved by the Architect.
5. Consult the Drawings for all dimensions, locations of partitions, sizes of structual member, foundations etc.
6. Do not make final layouts until shop or equipment drawings are approved and job conditions verified.
7. Electrical reference symbols are given on the electrical legend on the drawings.

T. Coordination:
1. Work shall be coordinated between all Contractors, Subcontractors, Installers, Suppliers, Trades, etc. to:
a. Insure a neatly fitted installation.
b. Determine the nature and extent of the work of others.
c. Eliminate interferences.
d. Maintain maximum headroom and clearances.
2. Any interference which develops or is foreseen and cannot be resolved by the affected trades, etc., shall be handled as follows:
a. Cease installation of that portion of the work which is in conflict as no additional compensation will be allowed for any relocation, etc.
b. Continue work only on other portions of the work which are not in conflict.
c. Notify the Architect immediately.
d. Architect's decision shall be final as to any relocation, rerouting, removal, etc.
e. No additional compensation will be allowed for removal, relocation, repairs or changes required by interferences.

U. Clear away all debris, surplus materials, etc. resulting from work on operations, leaving job and equipment in clean first-class condition.

V. Clean all panel board, switches, boxes, etc., and leave them in a ready-to-use condition.

W. Install with proper screws or bolts, all panelboard and junction box covers.

X. Where factory finish is provided on equipment, all marred or damaged surfaces shall be touched-up or refinished hereunder as approved.

Y. In addition to provisions and stipulation set forth in other Sections of these Specifications, provide various types of protection as follows:
1. Protect finished floors from chips and cutting oil by use of metal chip receiving pan and oil-proof floor cover.

Z. All pumps, motors, fans and other rotating equipment shall be stored at Site with openings, bearing, etc. covered to exclude dust and moisture; and protected form weather from entry of foreign materials.

SCOPE

A. Conduit for power, telephone, communication, control, and miscellaneous functions which are shown on the drawings or described in these specifications.
1. All boxes for wiring and devices and special systems.
2. Wiring for all power, communication, and auxiliary equipment, controls and other devices.
3. All panels for power, lighting, and distribution of electricity as shown on the Drawings and panel schedules.
4. All circuit breakers shown on lighting, power, distribution and main distribution panels.
5. All disconnects and starters as described herein.
6. All fuses as shown and specified.

EXCAVATION AND BACKFILL

A. Contractor shall be coordinate with the General Contractor to determine the extent of his responsibility to perform the excavation and backfilling related to the electrical scope of work..

ROUGH-IN

A. Contractor shall rough-in for all equipment, fixtures, etc., in building whether or not such equipment is furnished by this Contractor or under other divisions of Specifications or by Owner.

B. Determine in advance the location and size of all openings and chases necessary for proper installation of all work and have openings and chases provided during construction.

C. Install all inserts for hangers and supports of electrical work as general construction progresses.

D. Rough-in openings in masonry, brick, or stud walls shall be cut, not broken or chiseled.

E. Openings shall be smaller than the coverplate or box which fits over it.

F. Openings for recessed boxes shall not be larger than the coverplate which will cover the final opening

G. Sleeves shall be required at all points where exposed conduits pass through concrete walls, slabs or masonry walls. Sleeves installed below grade or where subject to high water conditions shall be installed water tight.

BASIC MATERIALS & METHODS

CONDUIT

A. Rigid metal conduit shall be steel, hot dip galvanized. Minimum size shall be 1/2".

B. Electrical Metallic Tubing (EMT) shall be steel, electro or hot dip galvanized.

C. Flexible Metallic Tubing shall be galvanized steel. Sealtite type UA or EF shall be used for all motor connections.

D. Rigid Non-metallic conduit shall be listed for use as electrical raceways. All PVC shall be high density Type I Schedule 40.

E. All conduit shall be installed in a first-class workmanship manner.

F. All conductors shall be installed in conduit.

G. Fitings or symmetrical bends shall be required wherever righ angle turns are made in exposed work.

H. Bends and offsets shall be avoided wherever possible, but where necessary, they shall be made with an approved conduit bending machine.

I. All conduit joints shall be cut square, reamed smooth and drawn up tight.

J. Conduit shall be installed in horizontal and vertical runs in such a manner as to insure against trouble from the collection of trapped condensation and shall be arranged so as to be devoid of traps.

K. Special care shall be used in insuring that exposed conduit runs are parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceiling.

L. During construction, all conduit work shall be protected to prevent lodgement of dirt, plaster or trash in conduits, fittings or boxes.

M. Conduits which have been pklugged shall be entirely freed of accumulations or be replaced.

N. All conduits in floors or below grade shall be swabbed free of debris and moisture before wires are pulled.

O. Conduit shall be properly supported as specified elsewhere in this Section.

P. Expansion fittings or other approved devices shall be used to provide for expansion and contraction where conduits cross building expansion joints.

Q. A flexible rounding strap shall bridge expansion joints and shall be banded to conduit.

R. Conduit, boxes, devices, lights, etc., shall be located so that they will not interfere with intended use of eyebeltsm manorails, or other lifting equipment.

S. Conduit above slab shall be run concealed in the walls or ceilings unless specifically noted to be exposed.

T. Conduit under ground and or slab shall be buried 24 inches minimum.

U. Exact routing of conduit shall be determined in the field for ease of installation provided that the following criteria is met:
1. All conduit, home runs, and circuits are made to the panel specified on the drawings and\or panel schedule. Any deviation in this reguard shall be done only with written approval of the Architect.
2. Conduits shall be run so as not to conflict with ductwork, diffusers, mechanical equipment and piping.
3. Conduit is not noted or detailed to be specifically run in a particular location.

V. Hangers and supports shall be attached to stud walls with wood screws.

W. Final connection to motors, etc., shall be made with either:
1. The same type of conduit which leads up to the equipment or.
2. Armored flexible conduit which shall be waterproof for any locations outside, in kitchens, or any inside area subject to water, heavy moisture, condensation, etc.

W. SPECIFIC CONDUIT TO BE USED
1. All conduit and fittings shall be in new, unused condition free from rust, excessive dirt and moisture, kinks, flats, cuts, or other distortions of shape caused by impact, crushing or bending.
2. Concealed conduit in building, above slab shall be EMT conduit with "set-screw" or compression fittings.
3. Exposed conduit in building, above slab shall be EMT conduit with "set-screw" or compression fittings.
4. Conduit embedded in or penetrating slab shall be PVC with waterproof joints.
5. Exposed conduit outside building, above grade shall be rigid galvanized steel with threaded waterproof fittings.
6. Underground conduit shall be PVC with waterproof joints.

SEAL-OFF FITTINGS

1. Provide seal-off fittings in all locations as required by NEC, ART 514

SUPPORTS AND HANGERS

A. All conduit shall be supported on structural building members, i.e. columns, beams, purlins, block, studs, etc.

B. Conduit shall be supported on galvanized or aluminum brackets, clamps, or straps.

C. Conduit hangers shall be attached to building steel by beam clamps or welding.

D. Hangers and supports shall be attached to stud walls with wood screws.

E. Hangers and supports shall be attached to masonry with expansion type anchors (shield).

F. Supports shall be channel type supports such as manufactured by Uni-Strut, Globe, Kindorf, or equal.

BOXES

A. Pullboxes inside buildings shall be code gauge and size, galvanized steel with screw type cover.

B. Pullboxes outside building above grade shall be code gauge and size, galvanized steel with enamel finish and screw type cover. Boxes shall be rainproof and waterproof

C. Pullboxes outside building in slab type gasketed cover and completely weatherproof.

D. Switch and outlet boxes in standard stud wall thicknesses shall be galvanized steel, 2 1/2 inch deep.

E. Switch and receptacle boxes in firred wall or wall less than standard stud depth shall be galvanized steel, 1 1/2 inch deep.

F. Wall boxes in four inch block shall be galvanized steel 2 1/2 inch deep.

G. In walls larger than four inch block-galvanized steel 3 1/2 inch deep.

H. Boxes may be ganged as required for multiple switches, etc.

I. Through-wall boxes are prohibited.

J. Lighting outlet boxes and specified junction boxes shall be galvanized steel, 4" octagon with cover.

K. Floor boxes shall be standard depth-cast steel, flush mounted cover with brass. Furnish with threaded brass receptacle covers.

L. Telephone boxes shall be standard gauge galvanized steel, 4 inch square.

M. All wiring devices shall be installed in metallic boxes. Provide outlet boxes, receptacle boxes, juction boxes, etc., where shown on the drawings and/or required by the National Electrical Code.

N. Provide pull boxes as shown on the Drawings, as required by code or as needed for ease of construction.

O. Outlet shall be installed in the location shown on the drawings.

P. Contractor shall study the general building plans in relation to the space surrounding each outlet, in order that his work may fit all other work required by these Specifications.

Q. All steel supports for outlet boxes shall be furnished and installed.

R. Outlets boxes for use with exposed steel conduit shall be cast steel. Cast metal fittings shall be cast steel. Cast metal fittings shall be Crouse-Hinds, Square D, Bryant, or equal.

S. All openings in electrical equipment, enclosures, cabinet, outlet and junction boxes shall be by means of welded bosses, standard knockouts, or shall be sawed, drilled, or punched with tools specially made for the purpose. The use of a cutting torch is prohibited.

T. All conduit connections to electrical boxes shall be made with locknuts and nonmetallic bushings.

U. Locknuts shall be drawn down tight to make ground connection between the conduit and box.

WIRE AND CABLES

A. All wire used throughout work shall be soft drawn copper of not less than 98% conductivity.

B. Wire and cable shall be new; and manufacturer's name permanently marked on the outer covering at regular intervals.

C. Conductors AWG No. 8 or smaller may be solid or stranded; larger sizes shall be stranded.

D. All conductors for general wiring shall be insulated with THW or THWN insulation.

E. Conductor markings and color coading shall be in accordance with the latest edition of the N.E.C.

F. Green color coding is required by the N.E.C. for conductors used for grounding.

G. All wiring shall be installed in conduit.

H. Conductors shall be sized according to the National Electrical Code or as shown on the drawings whichever is greater.

I. Minimum size for 20A receptacle and lighting circuits shall be No. 12 AWG-where distance from panelboard to load exceeds 65 feet, use No. 10 AWG minimum; over 100 feet, use No. 8 AWG.

J. All wiring shall be fully polarized throughout using white wires for neutral and making all switching connections in colored hot wires.

K. No conduwrins shall be drawn into conduits until all work which may cause damage is completed; only approved cable lubricants shall be used.

L. As far as practical, all feeder cables shall be continuous from origin to panel termination without running splices in intermediate pull boxes.

M. All cable terminals, taps and splices shall be made with solderless, pressure type connectors; connectors shall be Type QA-B or Q2A as manufactured by Burndy, Okanite, Molukin or equal.

N. The minimum free length of conductor at each box for the connetion of a fixture, switch or receptacle shall be 8".

PANELBOARDS

A. The panelboards shall be of dead-front construction with code gauge galvanized steel box, and hinged front finished in grey lacquer.

B. Doors shall be provided with a plate tumbler lock with flush handle and typed directory card and holders.

C. Panels rated 225 amp or less and 10,000 AIC shall be Square D, type NQO, or equal.

D. Panels rated 225 amp or less and greater than 10,000 A.I.C. shall be Square D, Type NQOB, or equal.

E. Panel rated 400 to 800 amp shall be Square D, "I-Line" or equal. Panels greater than 800 amps are considered to be Distribution Switchboards.

F. Furnish and install electrical system as described on Drawings, panel schedules and electrical riser diagram.

G. Panels shall be surface mounted or recessed as specified on the panel schedule.

H. All panelboards shall be circuit breaker type unless noted otherwise.

I. Voltage, phase, wires as specified on schedules.

J. Solid neutral.

K. Panels rated at 10,000 AIC shall have stab-in breakers.

L. Panels rated greater than 10,000 AIC shall have bolt-on breakers.

M. Breakers size and quanity as shown on Schedules.

N. Breakers listed as "spare" shall be furnished and installed.

O. Panel listed with "space" shall be provided with extra space for future breakers.
1. Each "space" shall be on one single pole.

P. Panels rated 225 amp. or less shall be provided as full 42 space panels unless specifically noted otherwise.

Q. Unless otherwise indicated on Drawings, install all panels with the top of the trim 6'-3" above finished floor.

R. Install panelboards in location shown on the Drawings.

S. Panelboards shall be mounted with screws, bolts, or anchors as required.

T. Panels shall not be supported by conduit alone.

U. Where panels are installed on or near conductive surfaces as defined by the National Electrical Code, 3/4 inch ply boards shall be installed on walls behind and beside the panels to assure code compliance.

CIRCUIT BREAKERS

A. Breakers shall be of the size specified on the Panel Schedules.

B. Breakers rated at 10,000 AIC shall be plug-on.

C. Breakers rated greater than 10,000 AIC shall be bolt-on.

D. Breakers shall have visual trip indicators.

E. Breakers sizes shall be verified against equipment it serves.

F. Current limiting breakers shall be used where shown on panel schedules.

G. On three-phase panel, breakers shall alternate consecutively between busses to provide a balance load.

H. Breakers type (Square D listed for reference only).

I. For Type NQO and NQOB Panels, the breakers shall be equal to the Square D numbers as listed below:
Main Breakers:
1. 10,000 AIC - QIB, Q2, KA, LA
2. 22,000 AIC - QIB-VH, Q2-H, KA, LA
3. 42,000 AIC - KH, LA
4. 65,000 AIC - KH, LH
Branch Breakers:
1. 10,000 AIC - QO, QOH, Q1-H
2. 22,000 AIC - QO-VH, Q1-VH
3. 42,000 AIC - Q1H
4. 65,000 AIC - QH

J. For I-Line panels, the main breaker shall be 65,000 AIC rated, and equal to Square D Models FA, FH, KA, LA, LH, MA, MH.

K. The branch breakers shall be rated at 65,000 AIC and equal to Square D Models FA, FH, FY, IF, Q2, Q2-H, Q2H, KA, KH, IK, Q4, LA, LH, MA, MH, ME.

L. Breakers listed as current limiting breakers shall be equal to Square D - I - Limiter, in IF or IK frame sizes.

M. Furnish and install all circuits breakers as described on the panel schedules and drawings.

FUSES

A. General duty fuses shall be equal to Bussman 250 volt, Tron, JJN Fuses.

B. Motor circuit fuses and compressor fuses shall be equal to Bussman 250V, "Fusetron FRN" dual element fuses.

C. Current limiting fuses shall be equal to Bussman KTN-R fast acting fuses.

DISCONNECTS

A. Ampere rated for general disconnects.

B. Horsepower rated for motor disconnects.

C. Meet Federal Spec. W-S-865c for Heavy Duty Switches.

D. UL Listed.

E. Grey baked enamel finish.

F. Quick-break operating mechanism.

G. Visible handle.

H. Meets NEMA KSI-1975 for Type HD.

I. Indoor disconnects shall be NEMA 1.

J. Outdoor disconnects shall be NEMA 3R.

K. Supply and install a disconnecting means for each motor where required by N.E.C. shown on drawings.

L. Locate disconnect as shown or as near as possible to motor.

M. Disconnects furnished as an integral part of any piece of equipment shall be accptable in lieu of a safety switch.

N. Switches shall be fused where shown on drawings.

O. Motor rated switches shall be acceptable as disconnects for motors of 1/3 HP or less.

STARTERS

A. Provide magnetic or manual starters and associated equipment as required for each motor.

B. Each starter shall have properly sized thermal overload protection for the motor it serves.

C. Overloads shall be manual reset type.

D. Supply and install magnetic motor starters with appropriate control buttons or switches for each piece of equipment unless other specifications call for starter to be furnished with equipment.

E. Contractor shall coordinate with both general contractor and mechanical contractor to assure that a starter has been provided for all equipment.

F. Provide all starters with H.O.A. switches.

COMBINATION STARTERS

A. Where both a disconnect switch and motor starter are required, a combination starter shall be acceptable in lieu of individual components.

B. Provide all starters with H.O.A. switches.

WIRING DEVICES

A. Model or part number listed below are for reference and establishing quality.

B. In so far as practical, all wiring devices shall be of the same manufacturer.

C. All catalog numbers listed are Hubbell unless noted.

D. Acceptable manufacturers shall be Hubbell, Pass and Seymour, Leviton, or Arrow-Hart.

E. General Purpose Receptacles
1. General purpose receptacles shall be specification grade, 120 volt AC, 15 amp, NEMA 5-15R, grounding type, ivory.
2. Catalog numbers shall be:
a. Single receptacle: 5261-I
b. Duplex receptacle: 5262-I

F. Single appliance type
1. Single appliance type receptacles shall be specification grade, 120 volt AC, NEMA 5-20r, 20 amp, grounding type, ivory.
2. Catalog numbers shall be:
a. Single receptacle: 5361-I
b. Duplex receptacle: 5362-I

G. Special purpose receptacle
1. Special purpose receptacles shall be installed as required and as shown to match equipment and appliance cord.
2. Catalog numbers for special purpose receptacles shall be as follows, based on voltage and amperage:

VOLT	AMPS	NEMA	COLOR CAT. NO.
125	30	5-30R	Black 9308
125	50	5-50R	Black 9360
250	30	6-30R	Black 9330
250	50	6-50R	Black 9367

H. Switches
1. General lights switches shall be specification grade, 125-277 volt, 15 amp, heavy duty, ivory.
2. Catalog numbers shall be:
SPST 1101-I
DPST 1102-I
3-Way 1103-I
4-Way 1104-I
3. Motor rated switches shall be used for any switches controlling singles phase motors.
4. Motor rated switches shall be 120-277 volt and rated in accordance with the voltage and amperage of the motor.

I. Cover plates
1. All cover plates shall be ivory plastic unless noted.
2. Catalog numbers:
a. Switches: Single gang---P1
Two gang------P2
Three gang----P3
b. Single Receptacle 93091
c. Duples Receptacle Single gang P8
Two gang P82
d. Telephone plate Single gang plate with rubber bushing
e. Televison plate Single gang with coaxial connector for cable connection.
f. Special purpose outlets: Single gang P7882
Duplex 7423
g. Weatherproof covers: Switches 7420
Receptacles 5205WO

SERVICE ENTRANCE, METERING, GROUNDING AND GROUND FAULT PROTECTION

A. Underground or overhead service entrance as shown on drawings.

B. Installation of metering equipment and hardware as described herein or as shown on the drawings.

C. All equipment and circuits shall be grounded in accordance with the National Electrical Code, Artical 250.

D. Provide ground fault protection for all circuits noted on the drawings as GFI or in all receptacles in bathroom, and exterior location

E. Provide ground fault protection on all temporary construction circuts as required by OSHA or the Nation Electrical Code.

SYSTEM DESCRIPTION

A. Service Entrance
1. Provide overhead service entrance, meter base and/or current transformer cabinets, feeders, etc., as shown on drawings.

B. System Ground
1. All conduits shall contain a continous "green" ground wore which shall be sized in accordance with Table 250-95 of the National Electrical Code.
2. The ground conductor shall be bonded to the conduit as the ground conductor.
3. Provide a driven ground rod as close as possible to the service entrance location, sized as shown on the drawings or in accordance with N.E.C.
4. Bond ground to nearest cold water supply pipe and to footer or slab steel with some size conductor as reqired for driven ground.
5. Provide ground wire #8 Minimum to the telephone board.

C. Mechanical Equipment
1. All mechanical equipment motors shall have grounded cases.
2. All equipment shall have a ground wire bonded theequipment cabinet fame, ect.,to the system ground.

D. Ground Fault Protection
1. Ground fault protection shall be provided for all receptacles labelled GFI or where required by letter A of this section
2. The designation GFI on the drawings denotes a ground fault protected receptacle.
3. Ground fault protection maybe provided by a ground fault receptacles or ground fault breaker.
4. Standard receptacles shall be considered ground fault protected if in series with an upstream GFI receptacle.

FLUORESCENT BALLASTS

A. Furnish all fluorescent lighting fixtures with electronic energy saving type ballasts, for all F 32 T8 and F 24 T8 fixtures

B. Ballasts for Fluorescent lamps shall be UL listed. Class P, FCC Certified, High Freqency (25 KHZ) Cathode Heat Cutback, and Transient Protected.

C. Maximun wattage input to each 48" fluorescent tube shall be 34 watts and 24 watts for a 30 inch tube.

D. Ballasts shall be manufactured by G.E., Advance, or equal.

DATA/TELEPHONE

A. Provide an empty conduit system for Telephone /Data including flish wires, boxes and blank plates.

B. Conduit and outlets shall be as shown on the drawings and the telephone riser.

C. Consult the local utility representative for any special requirements prior to starting the work.

D. Provide phone board as shown with 120 volt outlet and ground mounted on the board.

E.D. Provide DATA board as shown with 120 volt outlet and ground mounted on the board

SURGE SUPPRESSORS

A. All surge suppressions devices shall be manufactured by a company normally engaged in the design, development, and manufacture of such devices for electrical and electronics systems equipment. the said firm shall offer a five - year (5) warranty.

B. Equipment certificalon: Items shall be listed by underwritters' laboratories, shall bear the UL seal and be anrked in accordance with referenced standard.

C. Surge suppressions devices shall be installed and located in accordace with requirements of all applicable National Fire Protection Association (NFPA) codes.

D. Suppressors shall be designed for the specific type and voltage of electrical service and shall provide clanping action for both normal (L-N) and connon (L-N-G) node protecitton.

E. Suppressors shall be a hybrid design, and include circuit with tight, wave-tracking clanping characteristics.

F. Suppressors shall be designed to withstand a maxlum continuous operating voltage of not less thax 135 normal RMS line voltage.

G. Suppressors shall contain internal safty Fusing, when required, to disconnect the suppressor from the electrical source if the suppressor fails, in order to prevent catastrophic failure nodes.

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BIRLEY & PINEMOUNT ROAD
LAKE CITY, FLORIDA

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ELECTRICAL SPECIFICATIONS
NTS

PACKAGED UNIT SCHEDULE – ELECTRIC COOLING/ELECTRIC HEAT PUMP W/ AUX STRIP 208/3Ø

MARK	SYSTEM TYPE	MFGR	MODEL	L/W/H/WT	NOM TON	COOLING CAPACITY				RATING CONDITIONS		HEATING CAP @47/70		AIR FLOW		INDOOR FAN						AUXILLIARY HEATER					COMP	FAN	ELECTRICAL			COMMENTS
						TOTAL	SENS.	EER	IPLV	AMB	EAT-DB/WB	BTUH	HSPF/COP	CONFIG	AIR FLOW	CFM	EXT. SP	DRIVE	RPM	HP	VOLTS/Ø/FLA	KW	STAGE	VOLTS	PH	HTR AMP	AMPS	AMPS	MCA	BRKR	V/PH	
HP-1	PACKAGE HEAT PUMP	TRANE	WSC 090E3	88/54/97/840	7.5	91.75	51.31	11.1	12	95	80/67	80/59	3.4/2.2	PKG	SIDE	3000	0.5	B	658	1	208/3/	20.3	2	208	3	56.3	25	3.5	108	110	208/3	ALL
HP-2	PACKAGE HEAT PUMP	TRANE	WSC 090E3	88/54/97/840	7.5	91.75	51.31	11.1	12	95	80/67	80/59	3.4/2.2	PKG	SIDE	3000	0.5	B	658	1	208/3/	20.3	2	208	3	56.3	25	3.5	108	110	208/3	ALL

MINI-SPLIT SYSTEM AIR CONDITIONING SCHEDULE

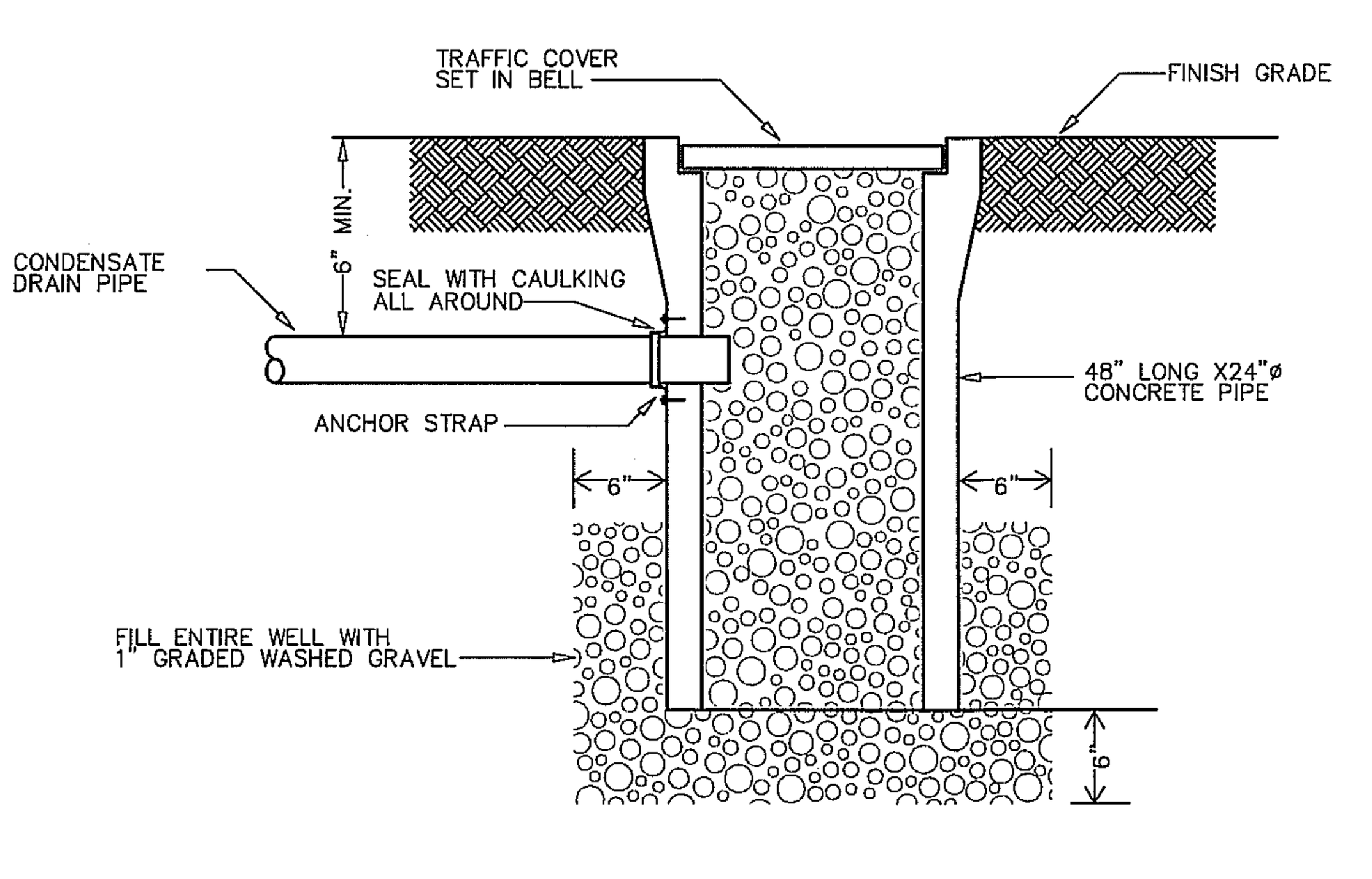
MARK	SYSTEM TYPE	MANUFACTURER	MODEL	NOM TON	COOLING CAPACITY		RATING CONDITIONS		INDOOR UNIT		FAN			ELECTRICAL				NOTES
					TOTAL BTUH	EER	AMB	EAT-DB/WB	CONFIG	AIR FLOW	CFM	SPEEDS	VOLTS/Ø/FLA	MCA	BRKR	V/PH	WIRE	
AC-1, AH-1	STRAIGHT COOL	COMFORT AIRE	DM12ASB-0	1	11,500	13	95	80/67	OVERHEAD	HORIZONTAL	330	3	115/1/11.7	6.2	15.0	115/1	14-3	1, 2, 3, 4, 5, 6

1. WIRELESS REMOTE CONTROL
2. USE LINE SET 0804F-50
3. VERTICAL AND HORIZONTAL OSCILLATING ADJUSTABLE AIR FLOW
4. LOW AMBIENT KIT FOR OPERATION DOWN TO 32° AMBIENT OUTDOOR TEMPERATURE.
5. CLEANABLE ANITBACTERIAL FILTERS
6. MOUNT OUTDOOR UNIT ON EQUIPMENT PAD AT GRADE.

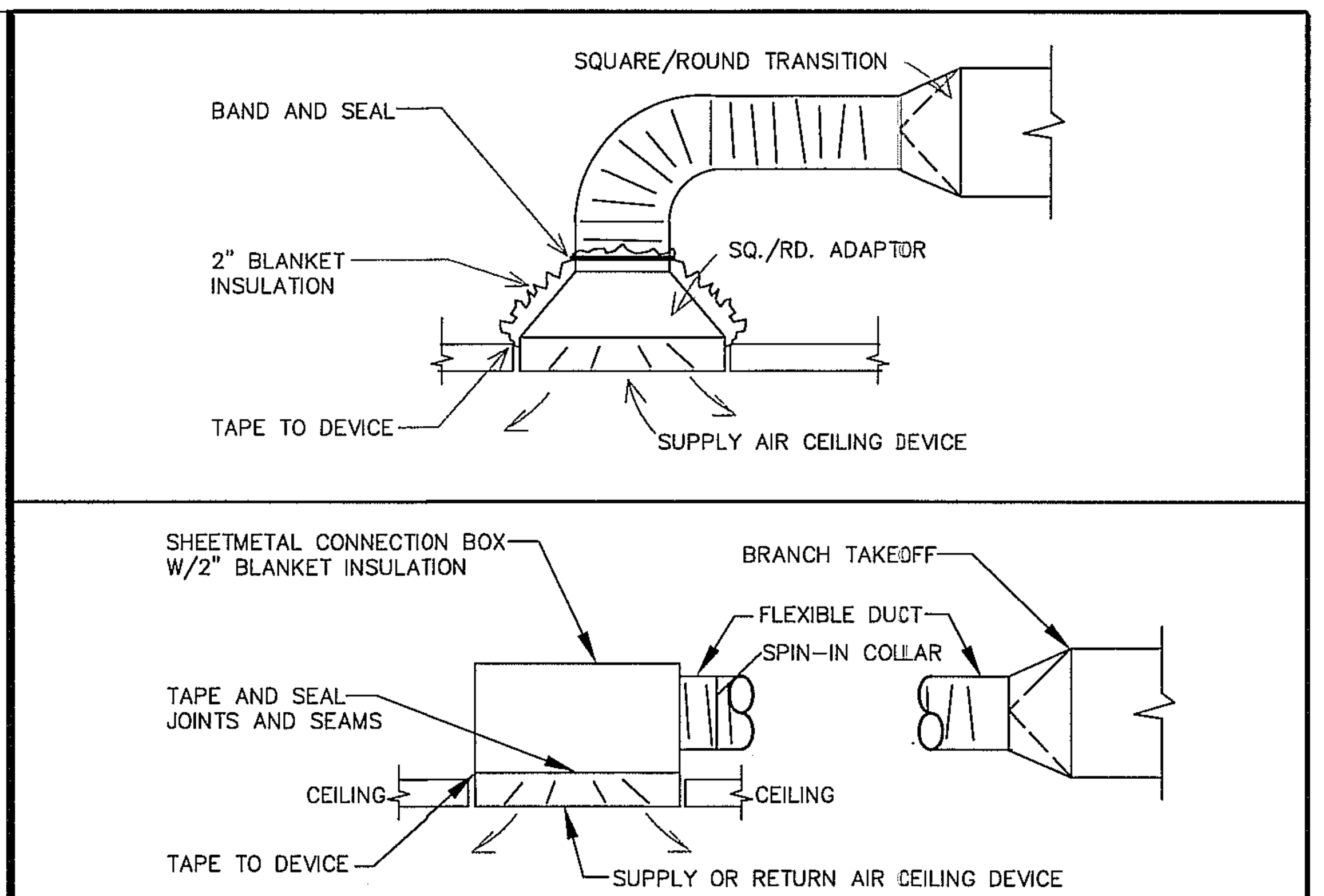
COMMENTS
1 – PAD MTD, SIDE DISCHARGE PACKAGED UNIT
2 – LOW AMBIENT START TO 0°F
3 – R410A REFRIGERANT
4 – SINGLE POINT POWER
5 – SUPPLY SMOKE DETECTOR
6 – 2" MERV 7 FILTERS
7 – PHASE MONITOR AND PHASE REVERSAL PROTECTION
8 – ECONOMIZER WITH FULL ENTHALPY CONTROLS AND INTAKE HOOD
9 – MOTORIZED O.A. DAMPER AND
10 – PROGRAMMABLE 7 DAY – 4/DAY THERMOSTAT
11 – CO2 SENSING WITH CONTROLS FOR MOTORIZED DAMPER OPERATION
12 – PROVIDE DAMPER CONTROL INTERLOCK WITH EXHAUST HOOD START

MECHANICAL LEGEND

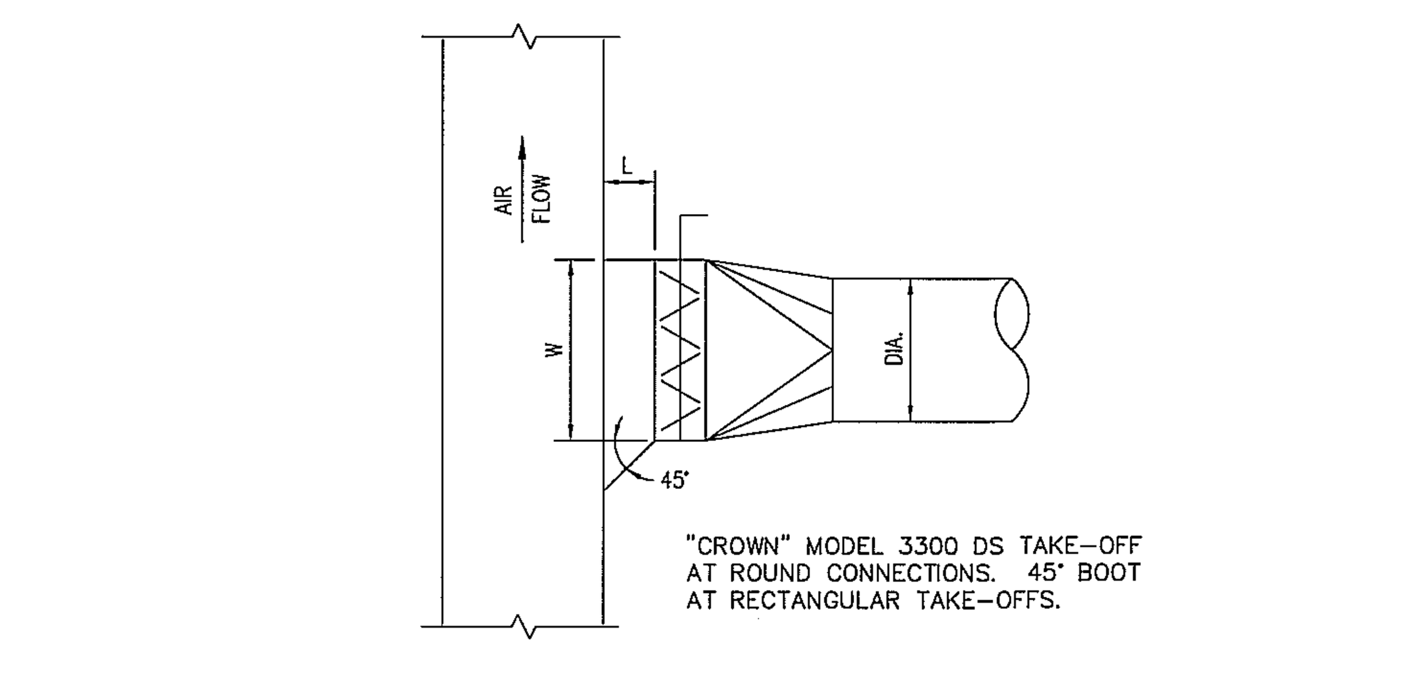
- SUPPLY DUCT
- RETURN DUCT
- EXHAUST DUCT
- FRESH AIR DUCT
- FLEXIBLE DUCT
- SQ SUPPLY DIFFUSER, SEE DESINATION FOR TYPE
- ROUIND SUPPLY DIFFUSER, SEE DESINATION FOR TYPE
- RETURN GRILLE, SEE DESINATION FOR TYPE
- EXHAUST GRILLE, SEE DESINATION FOR TYPE
- DUCT SCOOP TAKEOFF WITH BALANCING DAMPER
- DIFFER/GRILLE TYPE SEE SCHEDULE
- TURNING VANES
- VD MANUAL VOLUME DAMPER
- MOTORIZED VOLUME DAMPER
- CONDENSATE DRAIN LINES
- REFRIGERANT LINES
- (D.W) CONDENSATE DRYWELL, SEE DETAIL
- ROOF MTD EXHAUST FAN WITH CURB, SEE SECHEDULE
- ROOF MTD GRAVITY RELIEF OR INTAKE SEE SCHEDULE'
- WALL MOUNTED EXHAUST FAN
- EF CEILING MOUNTED EXHAUST FAN
- EF INLINE FAN WITH VIBRATION ISOLATION
- WALL LOUVER/ INTAKE OR EXHAUST BY ARROW DIRECTION
- (T) THERMOSTAT
- (T) TEMP SENSOR DUCT MTD
- (H) HUMIDISTAT
- (H) HUMIDITY SENSOR DUCT MTD
- (DSD) DUCT MTD SMOKE DETECTOR
- FD AP
- (S) REMOTE TEMP SENSOR



DRYWELL DETAIL
DET #1 M1

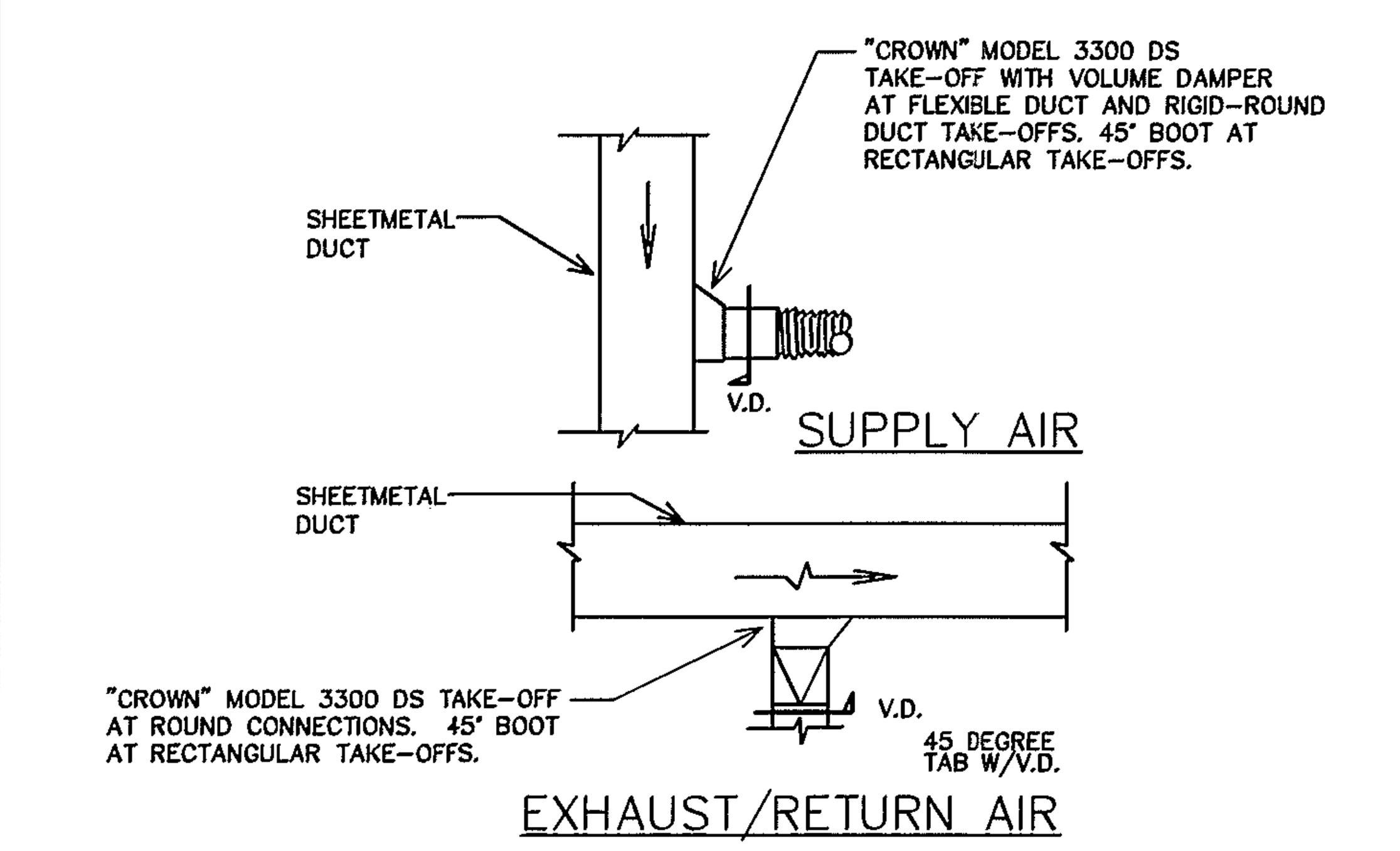


DIFFUSER CONNECTIONS
NTS DET #2 M1

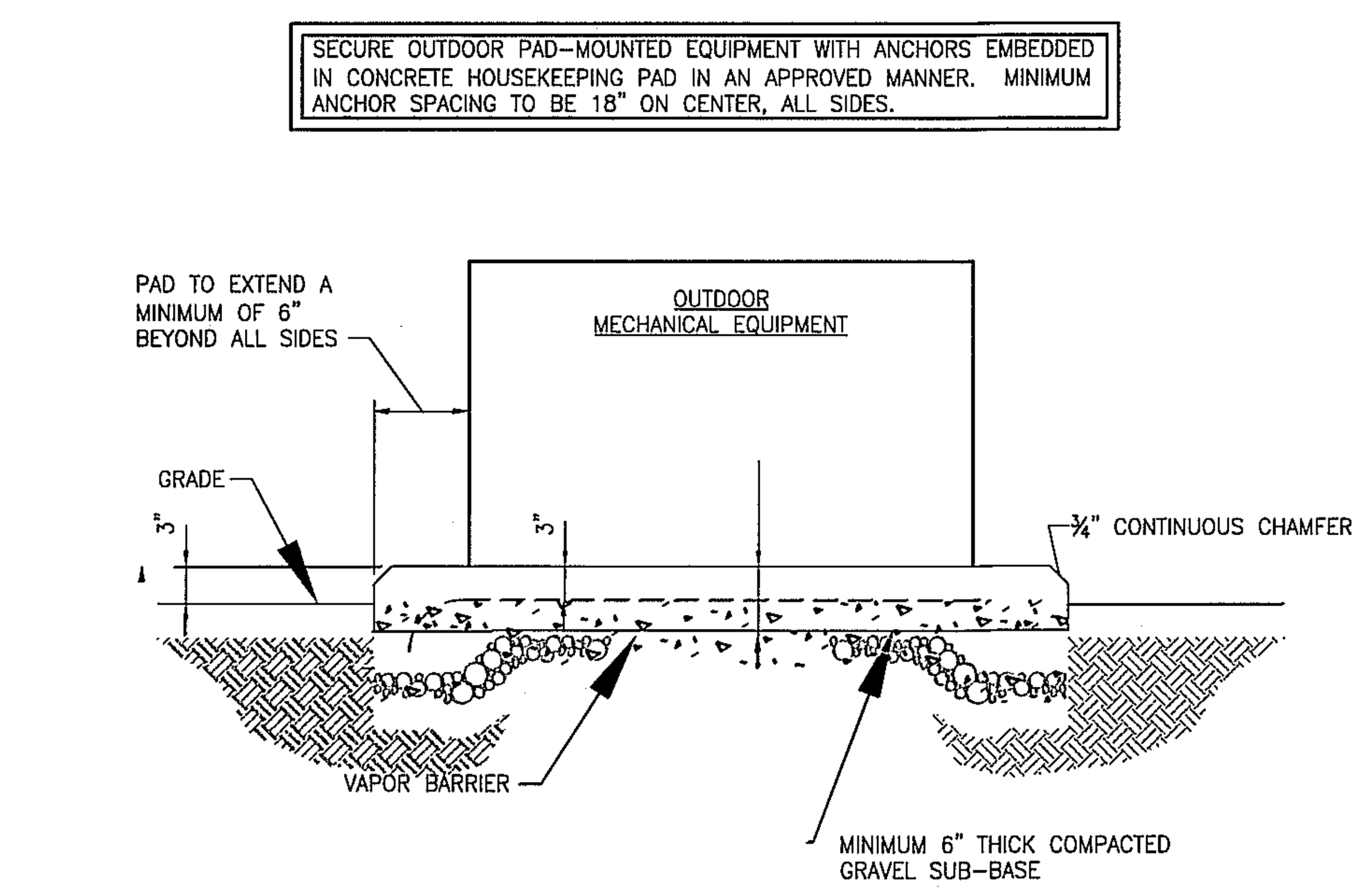


DIA. (INCHES)	W (INCHES)	X DEPTH (INCHES)	L (INCHES)
5	6	4	4
6	8	4	4
8	10	6	4
10	12	8	4
12	14	8	4
14	18	10	4
16	20	12	4

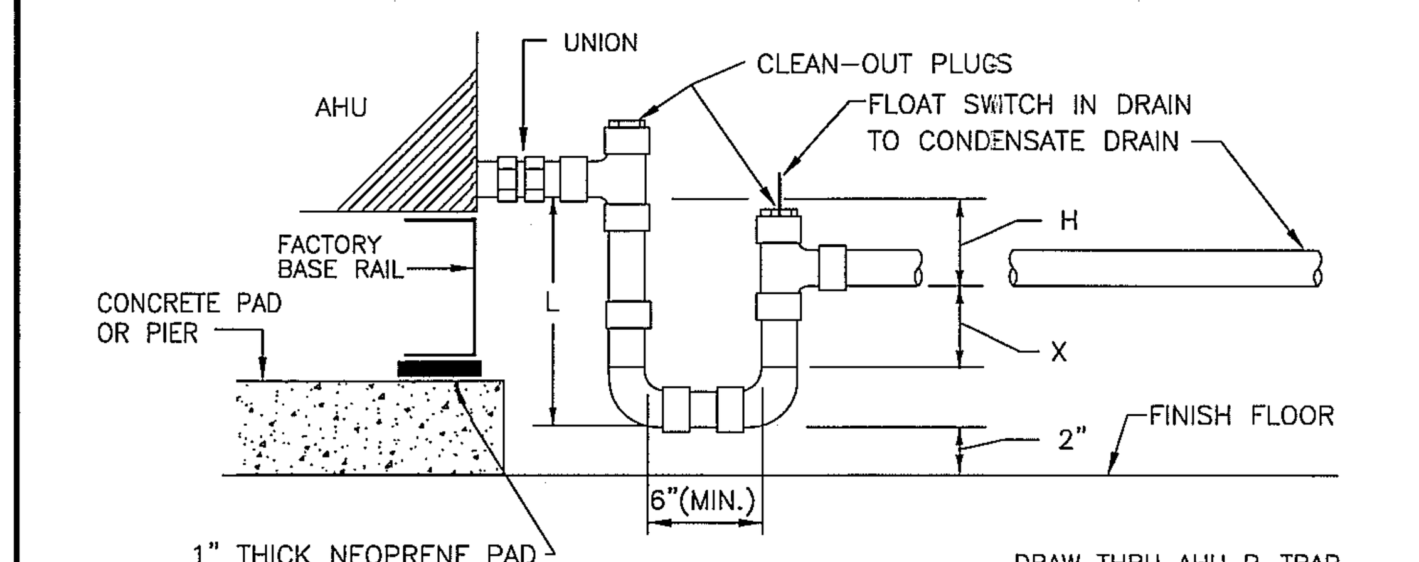
ROUND DUCT TAKEOFF DETAIL
DET #3 M1



AIR DUCT DETAILS
DET #4 M1



EQUIPMENT PAD DETAIL
NTS DET #5 M1



NOTES:
1. CONDENSATE DRAIN SHALL BE PIPED FULL SIZE OF UNIT CONNECTION.
2. EXTERNALLY ISOLATED UNIT SHOWN, INTERNAL ISOLATORS SIMILIAR, WITH NEOPRENE PAD BETWEEN UNIT BASE RAIL AND CONCRETE PAD.
3. COORDINATE HEIGHT OF CONCRETE PAD TO PROVIDE MINIMUM TRAP DIMENSIONS INDICATED.
4. CONDENSATE PANS SHALL BE INSTALLED WITH ADEQUATE PITCH TO ENSURE POSITIVE DRAINAGE OF CONDENSATE.

DRAW THRU AHU P-TRAP
NEGATIVE STATIC PRESSURE
X = 1/2 "H"
H = AT LEAST 1" PLUS SCH. FAN STATIC PRESSURE
L= X + H + (1.5 x PIPE DIAMETER) + INSULATION THICKNESS.

AHU CONDENSATE DRAIN DETAIL
DET #6 M1

GRILLE & DIFFUSER SCHEDULE

MARK	TYPE	MANUF.	MODEL	NOM. CFM	NECK SIZE	AIR PATTERN	N.C.	MAT'L	FINISH	MOUNTING	COMMENTS
A	SUPPLY	TITUS	TMSA	300	24X24-10"ø	4 WAY	<29	2	1	1	1,3
B	SUPPLY		TMSA	300	24X24-10"ø	3 WAY	<29	2	1	1	1,3
C	SUPPLY		TMSA	400	24X24-12"ø	4 WAY	<29	2	1	1	1,3
D	SUPPLY		TMSA	100	24X24-6"ø	4 WAY	<29	2	1	1	1,3
E	SUPPLY		L201	100	6X4	1 WAY	<29	2	1	2	1,3
F	SUPPLY		TDC-AA	100	6X6	4 WAY	<29	2	1	2	1,3
G	SUPPLY		TMSA	200	24X24-8"ø	4 WAY	<29	2	1	1	1,3
H	RETURN		4FL	1350	24X48	RET.	<29	2	1	1	4
I	EXH		4FL	300	12X12	RET.	<29	2	1	1	4
J	EXHAUST		4FL	150	8X8	EXH.	<29	2	1	1	
K	EXHAUST										
L	EXHAUST										

MATERIAL:
1. STEEL
2. ALUMINUM
3. STAINLESS STEEL

FINISH:
1. WHITE ENAMEL
2. ANODIZED CLEAR
3. NATURAL

MOUNTING
1. 24" X 24" LAY-IN
2. DRYWALL
3. GRILL BOTH SIDES
4.
5. SOFFIT
6. FLANGE

COMMENTS:
1. OPPOSED BLADE DAMPER
2. EQUALIZING DEFLECTOR
3. SQUARE/ROUND ADAPTER
4. FILTER BACK

FURNISH ALL FANS WITH INTEGRAL DISCONNECT, THERMALLY PROTECTED MOTOR, FACE GRILLE AND BACKDRAFT DAMPER DISCHARGE CONFIGURATION TO BE RIGHT ANGLE UNLESS NOTED OTHERWISE.

EXHAUST FAN SCHEDULE

MARK	MFGR.	MODEL	TYPE	WATTS	HP	RPM	CFM.	EXT. SP.	VOLT/Ø	COMMENTS
EF-1	BREIDERT	CWD	090AS	–	1/4	1030	300	0.375	120/1	1,2
FOR HOOD SUPPLY AND EXHAUST SEE M4.1,2,3,4										

COMMENTS
1 – PROVIDE WITH BACK DRAFT DAMPER AT WALL
2 – PROVIDE SOLID STATE SPEED CONTROL

ASHRAE 62.1 STANDARD – OUTSIDE AIR REQUIREMENTS

ROOM NAME	AREA (SQ. FT.)	SPACE REQUIREMENTS		OCCUPANCY REQUIREMENTS				TOTAL O/A CFM
		CFM/SQFT	CFM	PEOPLE/SQFT	PEOPLE	CFM/PERSON	CFM	
SALES	2225	.12	267	15/1000	33	7.5	250	517
STORE	323	.12	38	—	—	—	—	38
CORR	140	.06	8	—	—	—	—	8
TOTAL								563

OUTSIDE AIR DIVIDED EQUALLY BETWEEN HP-1 AND HP-2

AIR BALANCE SCHEDULE

OPERATION MODE	HP-1	HP-2	EF-1	KEF-1	KSF-1	AIR BAL.	RELIEF	
1 STORE CLOSED (UNOCCUPIED)	0	0	OFF	OFF	OFF	0		
2 STORE OPEN GRILLE CLOSED	300	300	-300	OFF	OFF	+300		
3 STORE OPEN GRILLE OPEN	600	600	-300	-3500	2800	+200		
4 FREE COOLING *	600/3000*	600/3000*	-300	-3500	2800	+400	**5000-5600	

* IN FREE COOLING MODE O.A. DAMPERS SHALL MODULATE WITH A MINIMUM POSITION AS SHOWN BASED ON OPERATION MODE, TO FULL OPEN AS REQUIRED.
** RELIEF DAMPER SHALL MODULATE TO MAINTAIN BLDG PRESSUREIZATION OF +400 CFM

SET POINT SCHEDULE

OPERATION MODE	T1 / H1	T2/ H2	H-3
	C – H – RH	C – H – RH	RH
1 STORE CLOSED (UNOCCUPIED)	80-65-60	80-65-60	65
2 STORE OPEN GRILLE CLOSED	75-70-60	75-70-60	65
3 STORE OPEN GRILLE OPEN	75-70-60	75-70-60	65
4 FREE COOLING *	75-70-60	75-70-60	65

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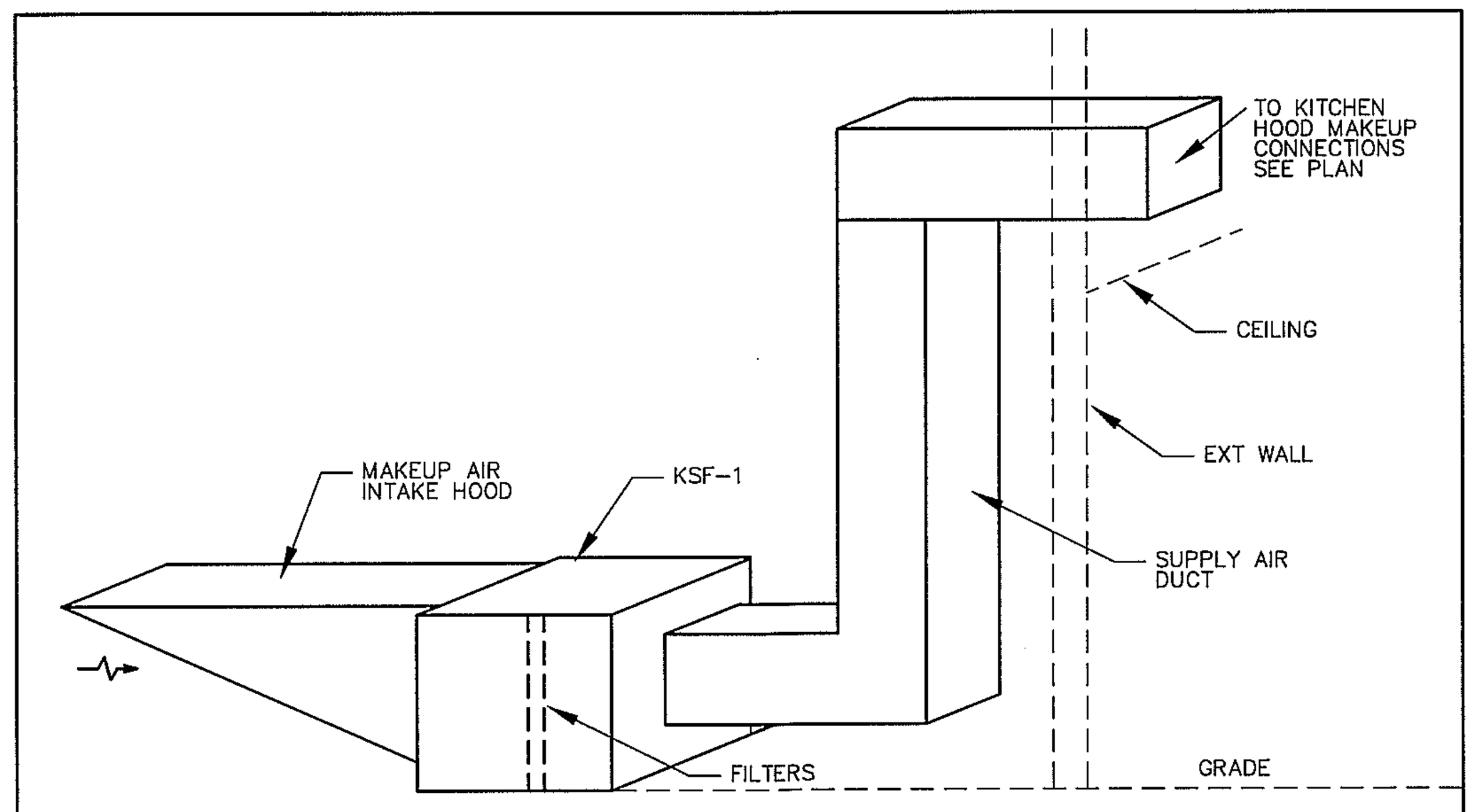
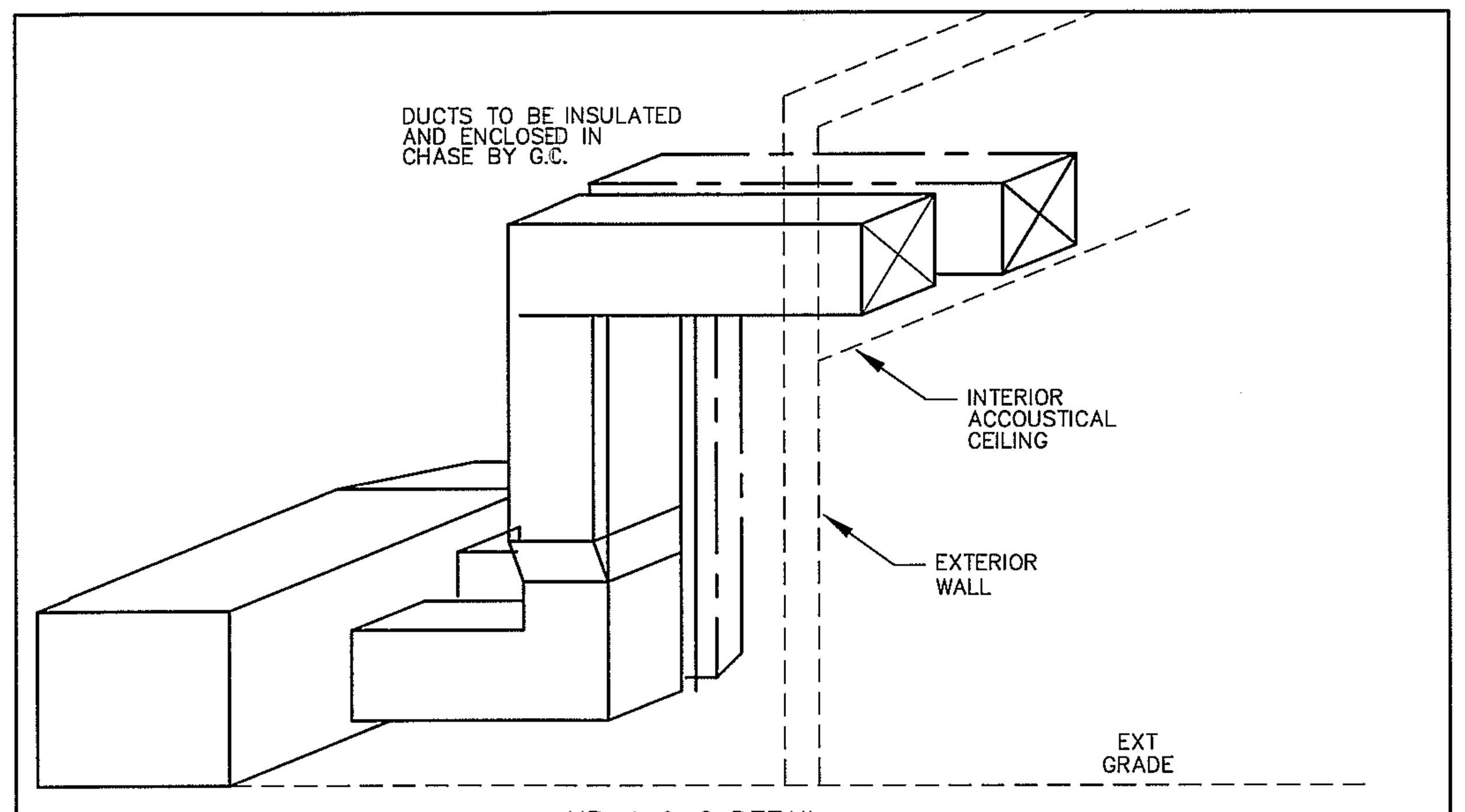


EXHAUST HOOD SUPPLY FAN DETAIL
NTS



HP-1 & 2 DETAIL
NTS

CONTROL SYSTEM

PART 1 – GENERAL

DESCRIPTION

A. Provide all Controls to perform the Sequence of Operations Listed in Part 3.

B. HP-1 and HP-2
  1. Provide Programmable Thermostats with auxiliary contacts. Two stage cooling and three stage heating.
    a. Thermostat shall be capable of providing four (4) separate set points each day, seven day per week with each.

C. HP-3 (100%) O. A. Unit
  1. Provide unit with self contained control system including but not necessarily limited to:
    a. Outdoor air thermostat.
    b. Supply air temperature sensor
    c. Internal control necessary to perform in accordance with control scheme.
  2. Provide an Enthalpy Controller on each unit or a single controller for both units to determine when the outdoor air conditions will allow "FREE" cooling.
  3. Provide a Room Humidity Sensor with adjustable set point for secondary humidity control.

PART 3 – SEQUENCE OF OPERATION

A. The systems shall operate in four separate modes of operation.
  1. Store Close – Unoccupied.
  2. Store Open – Grille is Closed (Hood Off)
  3. Store Open – Grille is Open (Hood is On)
  4. "FREE COOLING" Mode.

B. Store Closed – UNOCCUPIED
  1. Thermostats shall be Programmed to 80° F adj. Cooling and 60 ° F adj. Heating.
  2. Fan shall cycle ON/OFF with compressors.
  3. Compressor shall cycle ON/OFF based on Thermostat Set Points.
  4. O. A. Dampers shall be CLOSED.

C. Store Open – GRILLE CLOSED (HOOD OFF)
  1. Thermostats shall be Programmed to 74° F adj. Cooling and 65 ° F adj. Heating.
  2. Fan shall run continuously.
  3. Compressor shall cycle ON/OFF based on thermostat set points.
  4. O.A. Damper shall open to position 1 and Modulate to position 2 based on call from carbon dioxide sensors in space.

D. Store Open – GRILLE OPEN (HOOD ON)
  1. Hood start shall interlock with both HVAC UNITS .
  2. When Hood Starts, both Outdoor Air Dampers shall OPEN to position 3
  3. Both supply fans shall run continuously.
  4. Unit compressor shall cycle as required to maintain space temperature.
    a. Space Humidistat shall monitor store space humidity and cycle cooling compressors to "ON" if space humidity exceeds set point.
  5. The humidity sensor inside the thermostat shall cycle the compressors ON to provide space dehumidification and shall allow the compressors to run to up to 4 degrees below temperature set point. NOTE: This is an internal programming feature of the thermostat.
  6. A space humidity sensor shall monitor the stores relative humidity and be set 5% above the thermostat set points. If set point is exceed, and the space cooling is satisfied, the humidistat shall energize stage one (1) cooling heat strip until the space humidity drops below humidistat set point.

E. "FREE COOLING" MODE
  1. When the Enthalpy Controller is within set points for FREE COOLING, The O.A. Damper shall modulate to provide Free Cooling to the space. cooling is satisfied, the humidistat shall energize stage one (1) cooling heat strip until the space humidity drops below humidistat set point.
  2. Condition 1 – Hood OFF – The O.A. Damper shall modulate as necessary thru its range to maintain space temperature.
  3. Condition 2 – Hood ON – The O.A. Damper shall NOT modulate below the minimum set point (2) to maintain air balance .
    a. If room temperature drops below set point, return Heat Pump to Standard Operation Mode as described in "D" above; disengaging the "FREE COOLING" mode until room temperature is satisfied.

TOILET EXHAUST FAN

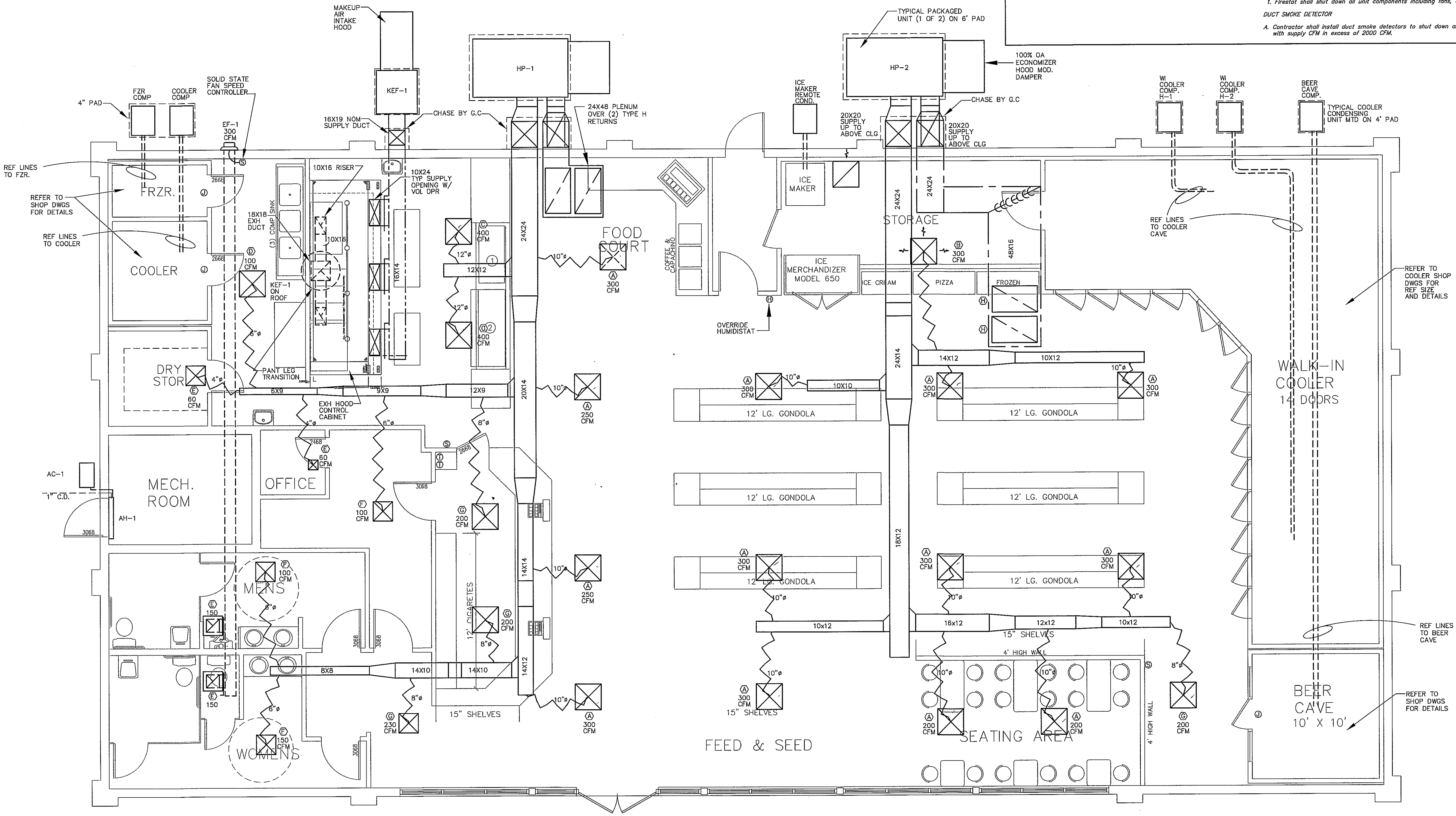
A. Toilet exhaust fan shall run continuously when store is open with O.A. Dampers to mainimum position #1.

FIRE STATS

A. Provide fire stats on each unit as required by code.
  1. Firestat shall shut down all unit components including fans, compressors, .

DUCT SMOKE DETECTOR

A. Contractor shall install duct smoke detectors to shut down all units with supply CFM in excess of 2000 CFM.



HVAC PLAN
1/4" = 1'-0"

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HOOD INFORMATION

HOOD NO.	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM						SUPPLY PLENUM						HOOD CONSTRUCTION	HOOD CONFIG.	
				TOTAL EXH. CFM	RISER(S)					TOTAL SUP. CFM	RISER(S)						END TO END	ROW
					WIDTH	LENG.	DIA.	CFM	S.P.		WIDTH	LENG.	DIA.	CFM	S.P.			
1	5424 ND-2-PSP-F	14' 0.00"	600 Deg.	3500	10"	16"		1750	-0.454"	2800						430 SS Where Exposed	ALONE	ALONE
					10"	16"		1750	-0.454"									

HOOD INFORMATION

HOOD NO.	FILTER(S)				LIGHT(S)			UTILITY CABINET(S)						FIRE SYSTEM PIPING	HOOD HANGING WGHT
	TYPE	QTY.	HEIGHT	LENGTH	QTY.	TYPE	WIRE GUARD	LOCATION	FIRE SYSTEM		ELECTRICAL	SWITCHES			
									TYPE	SIZE	MODEL #	QUANTITY	LOCATION		
1	SS Baffle with Handles	3	16"	16"	4	Incandescent Light Fixt	NO	Left	Ansul R102	3.0/1.5	EMS11102	1 Light 1 Fan 1 Other	Outside	YES	788 LBS
		6	16"	20"											

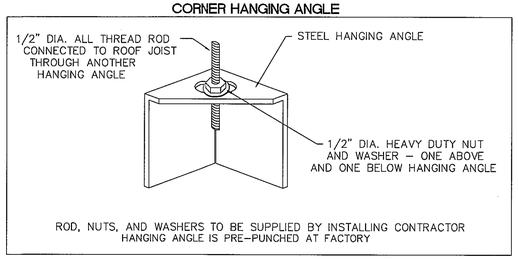
HOOD OPTIONS

HOOD NO.	OPTION
1	BACKSPLASH 84.00" High X 180.00" Long 430 SS

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	POS.	LENGTH	WIDTH	HEIGHT	RISER(S)				
					WIDTH	LENG.	DIA.	CFM	S.P.
1	Front	180"	12"	6"	10"	24"		933	0.135"
					10"	24"		933	0.135"
					10"	24"		933	0.135"

CORNER HANGING ANGLE



ROD, NUTS, AND WASHERS TO BE SUPPLIED BY INSTALLING CONTRACTOR
HANGING ANGLE IS PRE-PUNCHED AT FACTORY

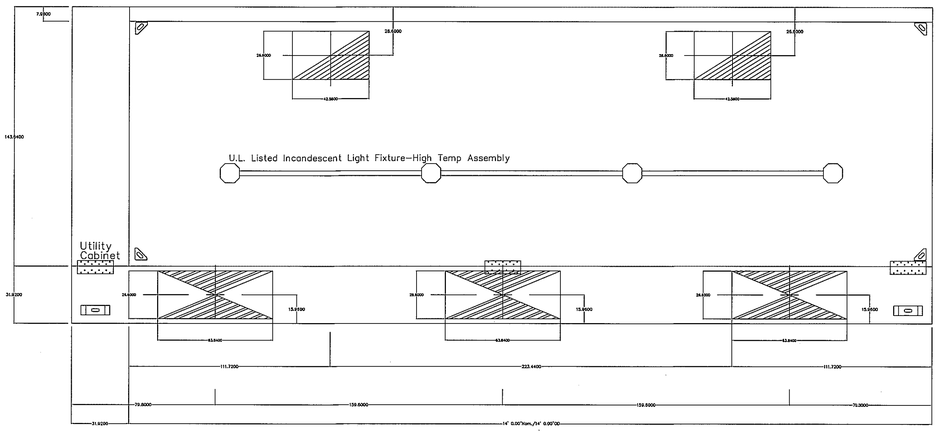
GENERAL NOTES :

1. ELECTRICAL HOOK-UP TO CAS MOTOR CONTROLS (MOTOR STARTERS, FAN SWITCHES, FAN DISCONNECTS, RELAYS, ETC.) BY OTHERS.
2. FIRE CHASE BY OTHERS, IF REQUIRED.
3. ALL PHASES OF INSTALLATION SHALL COMPLY WITH NFPA 96.
4. WRITTEN MEASUREMENTS HAVE PRECEDENCE OVER SCALE.
5. PROVIDE CLEANOUTS IN EXHAUST AIR DUCTS AS INDICATED TO ALLOW CLEANING AT ALL BENDS AND HORIZONTAL RUNS.
6. EXHAUST DUCT TO BE 16 GA. GAV STEEL ALL SEAMS AND JOINTS TO HAVE A LIQUID TIGHT CONTINUOUS EXTERNAL WELD.
7. FAN TO HAVE A MINIMUM OF 10 FT. OF CLEARANCE FROM THE OUTLET TO ADJACENT BUILDINGS, PROPERTY LINES, AIR INTAKES OR 3 FT. VERTICAL CLEARANCE PER NFPA96
8. HORIZONTAL EXHAUST DUCT TO SLOPE NOT LESS THAN 1/4" PER FOOT TOWARD HOOD FOR DUCT LESS THAN 75' LONG. 1" PER FOOT SLOPE FOR DUCT LONGER THAN 75'
9. HOOD TO OVERHANG COOKING EQUIPMENT 6" ON ALL OPEN SIDES.
10. EXHAUST DUCT TO BE PROTECTED FROM COMBUSTIBLES PER NFPA96 AND LOCAL CODE.
11. BUILDING PRESSURE SHALL NOT EXCEED 0.02" WATER COLUMN AT EXTERIOR DOORS.
12. KITCHEN SHALL BE BALANCED TO BE NEGATIVE WITH RESPECT TO THE DINING ROOM.

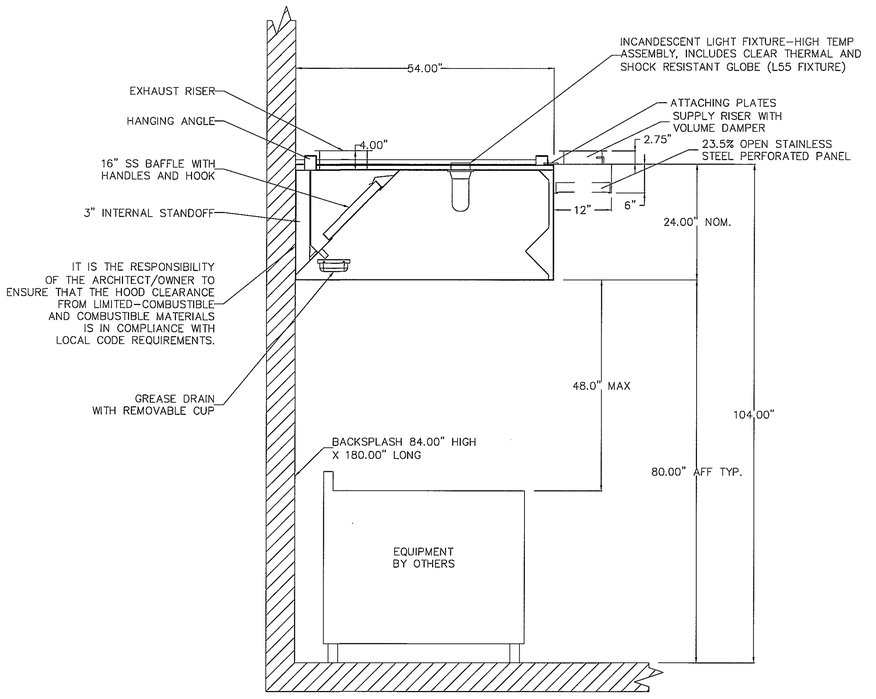
CAPTIVE-AIRE HOODS ARE
BUILT IN COMPLIANCE WITH

NFPA #96
NSF
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001
TESTED TO UL 710 STANDARDS

FOR QUESTIONS OR FURTHER INFORMATION, CONTACT
THE JACKSONVILLE, FL OFFICE (904) 389-8616



PLAN VIEW - Hood #1
14' 0.00" LONG 5424ND-2-PSP-F
NOTE: Additional hanging angles provided for hoods longer than 12 ft.



SECTION VIEW - MODEL 5424ND-2-PSP-F

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EXHAUST FAN INFORMATION

FAN UNIT NO.	FAN UNIT MODEL #	MODEL	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA	WEIGHT (LBS.)
1	NCA18FA	NCA18FA		3500	1.000	932	1.500	3	208	4.7	175.59

HEATER/MUA FAN INFORMATION

FAN UNIT NO.	FAN UNIT MODEL #	BLOWER	HOUSING	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA	WEIGHT (LBS.)
2	A2-G12	G12	A2		2800	0.650	724	1.000	3	208	3.3	322.38

FAN OPTIONS

FAN UNIT NO.	OPTION (Qty. – Descr.)
1	1 – Grease Box
	1 – Hinge Kit – Ships Loose for Curb Supplied by Others
2	1 – Separate 120V Wiring Package (Required for EMS or Prewire with VFD) – Three Phase Only

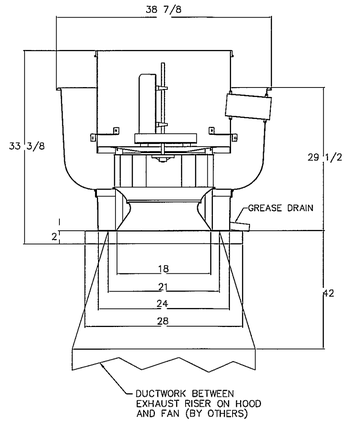
FAN ACCESSORIES

FAN UNIT NO.	FAN UNIT TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1		YES						
2					YES			

CURB ASSEMBLIES

NO.	ON FAN	ITEM	SIZE
1	# 1	Curb	26.500"W x 26.500"L x 22.000"H 4.000:12.000 Pitch Vented
2	# 2	Curb	31.000"W x 31.000"L x 15.000"H

FAN #1 NCA18FA – EXHAUST FAN



FEATURES:

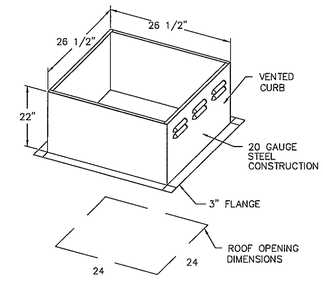
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL762
- AMCA SOUND AND AIR CERTIFIED
- WIRING FROM MOTOR TO DISCONNECT SWITCH
- WEATHERPROOF DISCONNECT
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

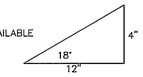
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

GREASE BOX
HINGE KIT – SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE

Fire System Information

FIRE SYSTEM NO.	TYPE	SIZE	FLOW POINTS	INSTALLATION	
				SYSTEM	LOCATION ON HOOD
1	Ansul R102	3.0/1.5	14	Fire Cabinet Left	Left

INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE. TWO SITE VISITS ONLY (ONE VISIT TO SET PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST; ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES). ONE MECHANICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.
EXCLUDES: UNION LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHER(S), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

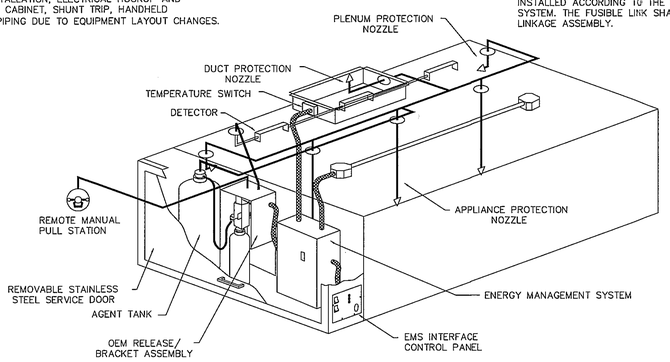
SPECIFICATIONS

THE RESTAURANT FIRE SUPPRESSION SYSTEM SHALL BE THE PRE-ENGINEERED TYPE WITH A FIXED NOZZLE AGENT DISTRIBUTION NETWORK. IT SHALL BE LISTED WITH UNDERWRITERS LABORATORIES, INC. (UL)

THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND ACTUATION WITH LOCAL OR REMOTE MANUAL ACTUATION. ACCESSORIES SHALL BE AVAILABLE FOR MECHANICAL OR ELECTRICAL GAS LINE SHUT-OFF APPLICATIONS.

THE EXTINGUISHING AGENT SHALL BE A POTASSIUM CARBONATE, POTASSIUM ACETATE-BASED FORMULATION DESIGNED FOR FLAME KNOCKDOWN AND SECUREMENT OF GREASE RELATED FIRES. IT SHALL BE AVAILABLE IN PLASTIC CONTAINERS WITH INSTRUCTIONS FOR LIQUID AGENT HANDLING AND USAGE.

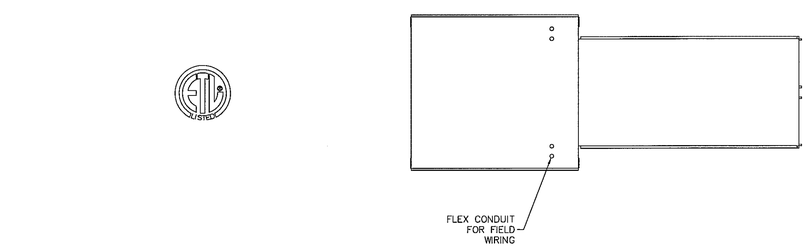
THE REGULATED RELEASE MECHANISM SHALL BE COMPATIBLE WITH A FUSIBLE LINK DETECTION SYSTEM. THE FUSIBLE LINK SHALL BE SELECTED AND INSTALLED ACCORDING TO THE OPERATING TEMPERATURE IN THE VENTILATING SYSTEM. THE FUSIBLE LINK SHALL BE SUPPORTED BY A DETECTOR BRACKET/ LINKAGE ASSEMBLY.

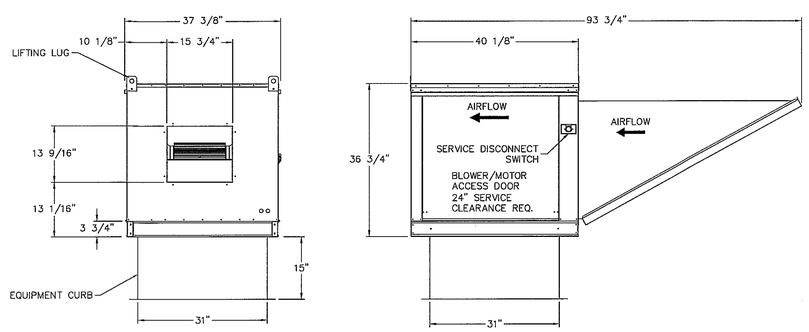


TYPICAL ANSUL R102 FIRE SUPPRESSION SYSTEM
WITH ENERGY MANAGEMENT SYSTEM
(UTILITY CABINET CAN BE LEFT OR RIGHT MOUNTED)

DWGSIZE

FAN #2 A2-G12 – SUPPLY FAN
1. UNTEMPERED SUPPLY UNIT WITH 12" BLOWER IN SIZE #2 HOUSING
2. INTAKE HOOD WITH EZ FILTERS
3. SIDE DISCHARGE – AIR FLOW RIGHT –> LEFT
4. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH EMS PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM EMS TO MUA SWITCH.





HVAC PLAN
1/4" = 1'-0"

CRAIG SALLEY AND ASSOCIATES
ARCHITECTS • PLANNERS • INTERIOR DESIGNERS

S & S FOOD STORE NO. 29
BIRLEY & PINEMOUNT ROAD

COBURN & ASSOCIATES
FLORIDA LICENSED
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P.O. BOX 97
HIGH SPRINGS, FLORIDA
32655-0097

DATE 2/12/10
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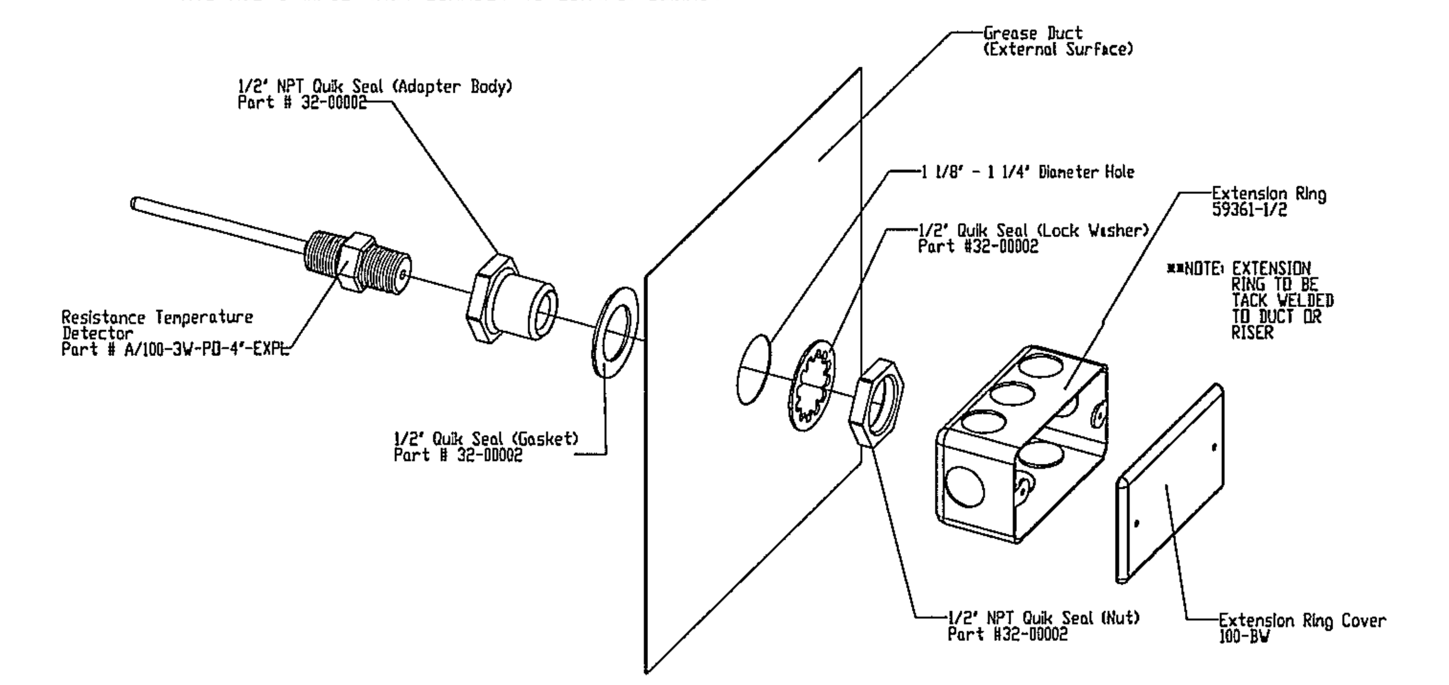
M3.

ELECTRICAL PACKAGES

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		ROOFTOP STARTERS	OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY			TYPE	Ø	H.P.	VOLT	FLA
1		EMS11102	Utility Cabinet Left	Utility Cabinet Left Hood # 1	1 Light 1 Fan 1 Other		Exhaust in Fire	Exhaust	3	1.500	208	4.7
								Supply	3	1.000	208	3.3

RTD SENSOR INSTALLATION

NOTES: One RTD per Exhaust Fan
: RTD has 3 wires that connect to control cabinet



The temperature interlock control package complies with IMC 2006 507.2.1.1 by interlocking with cooking appliances through means of a heat sensor to automatically activate exhaust fans during cooking operations.

Model: EMS Series

Certifications: Controls shall be listed by ETL (UL 508A).

Application: The Energy Management System (EMS) is capable of saving energy during idle cooking periods. The EMS is designed to automatically reduce exhaust and supply airflow quantities while ensuring hood performance is maintained. The EMS uses high and low speeds that shall be adjusted by variable frequency drives. A temperature switch in the exhaust duct shall control airflow set points and modulates the fans during cooking operation to maximize energy savings. A 100% airflow override button shall be supplied with an adjustable timer.

Construction: The control interface shall include (1) fan switch, (1) hood light switch, (1) 100% airflow override push button and indicator lights. Indicator lights shall include a "power" light, a "fans on" light, and a "100% airflow override" light. The control interface shall be screen printed on stainless steel and be able to be installed on the face of the hood, face of the utility cabinet, or on the face of the control enclosure. The control enclosure shall be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. The control enclosure may be constructed of stainless steel or painted steel.

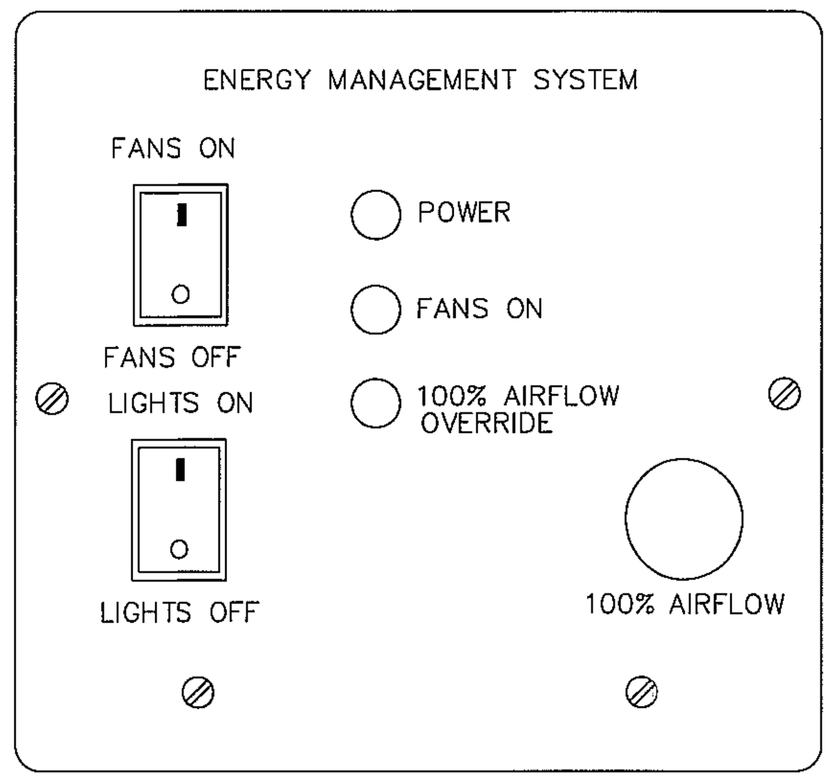
Variable frequency drives shall allow full adjustment of high speed and low speed airflows for proper kitchen balance. Drives shall contain motor thermal overload protection and control inputs for up to 7 preset speeds. Acceleration and deceleration times shall be fully adjustable as well as fan speed at each of the 7 different inputs. Drives shall also allow for a minimum and maximum frequency set–point. Drives are capable of controlling up to 5 HP each.

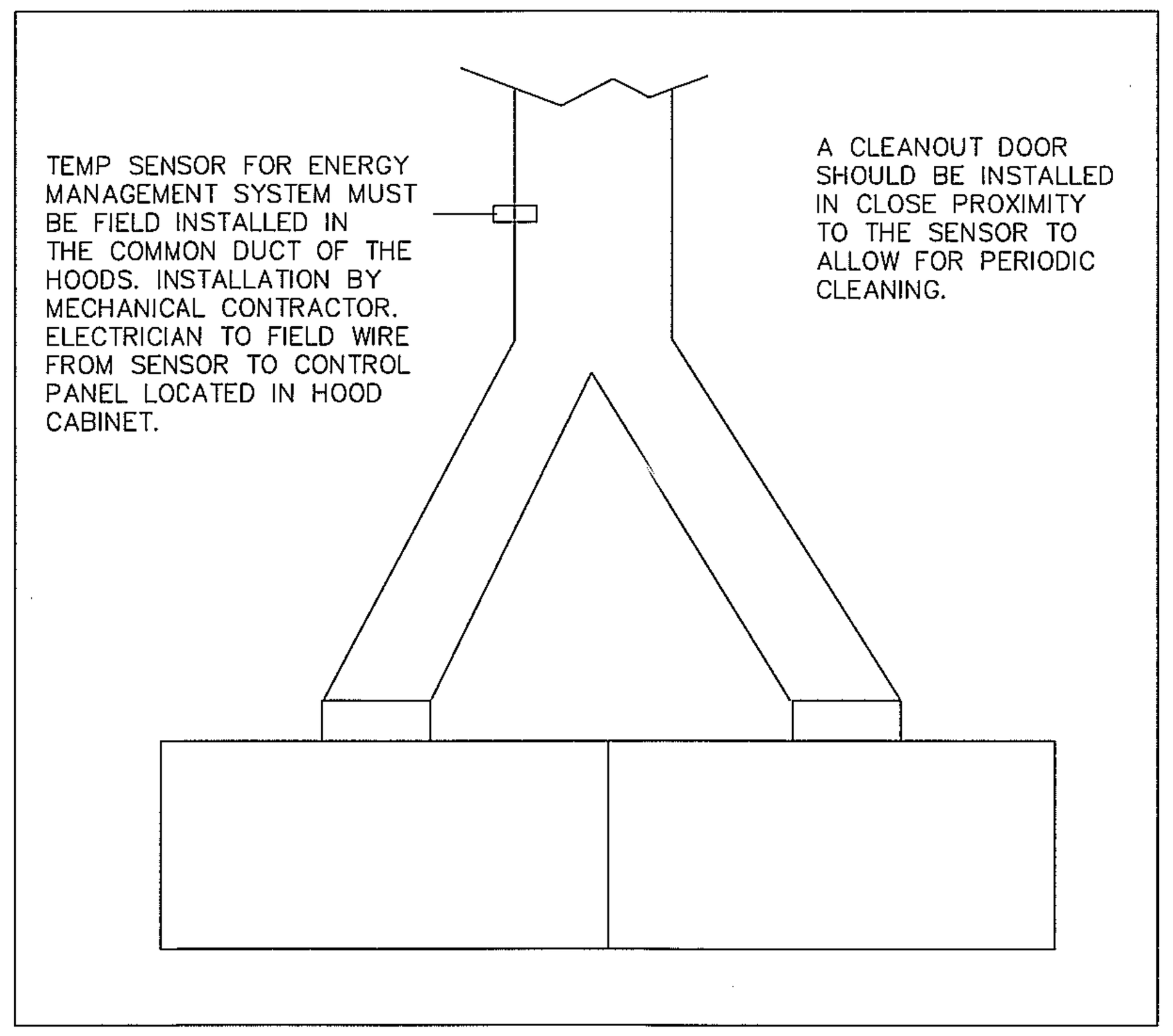
Adjustable temperature switch shall be mounted in the exhaust hood riser. Temperature probe shall be constructed of Stainless Steel. Temperature switch shall be factory set at 130°F for 600°F cooking applications and 90°F for 400°F cooking applications. The temperature sensor is fully modulating and adjusts on temperature changes. The riser mounted temperature sensor constantly monitors the exhaust air temperature and works in conjunction with a panel mounted temperature controller to modulate the system based on the temperature, therefore maximizing energy savings.

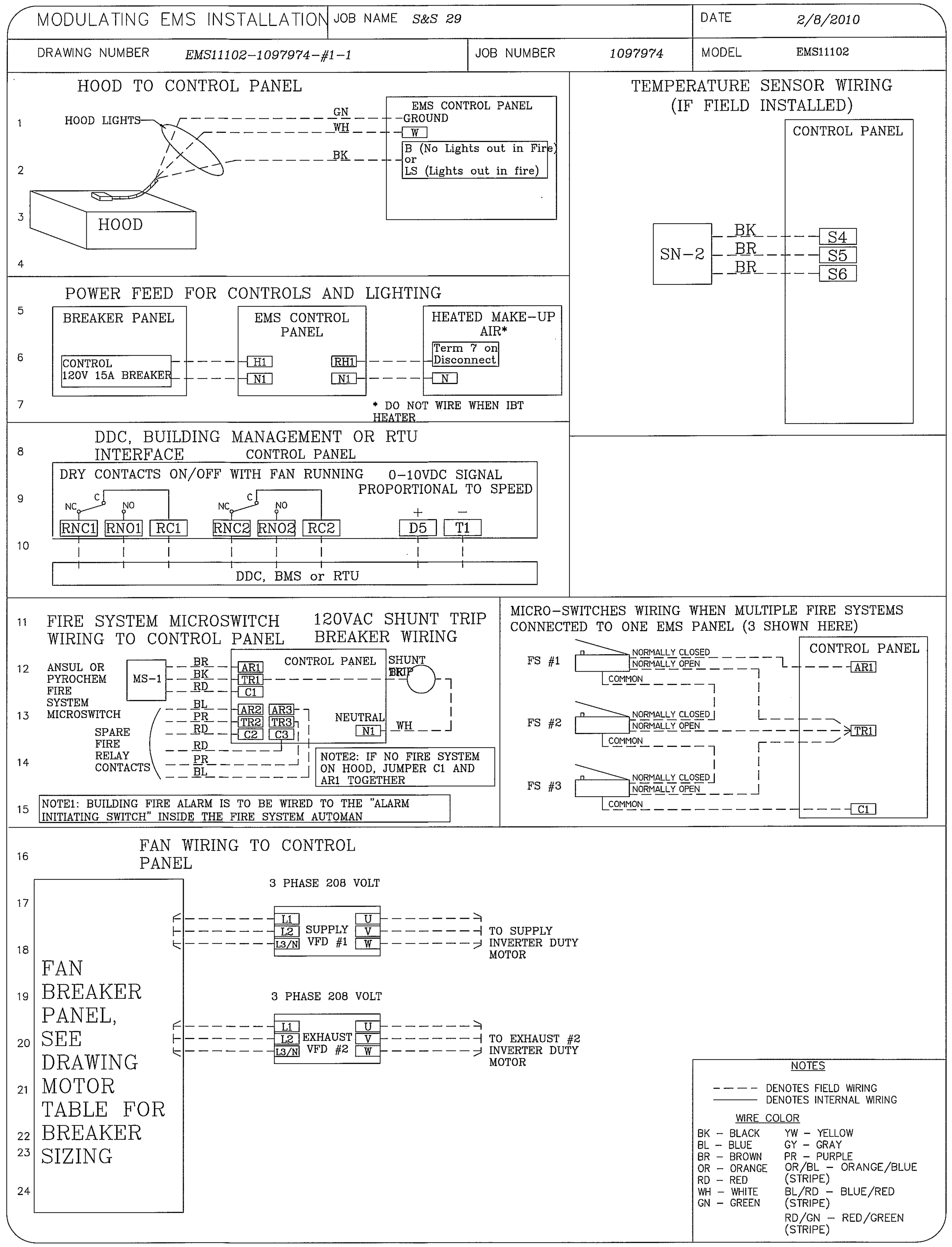
The timer shall contain one instantaneous contact and one delayed contact. Time shall be adjustable from .05 seconds to 30 days. Timer is energized with the 100% Airflow Override button. When button is depressed, time starts and fans go to high speed. Upon timeout, fans return to low speed or speed dictated by temperature switch.

The panels include color coded wiring with as–built wiring diagrams, and spare terminals controlled by the fire system micro switch. The panel is factory pre–wired to shut down supply fans in a fire condition. There is also a factory pre–wire option to turn on the exhaust fans in a fire condition (if required).

TYPICAL INTERFACE CONTROL







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S & S FOOD STORE NO. 29
BIRLEY & PINEMOUNT ROAD
LAKE CITY, FLORIDA

COBURN & ASSOCIATES
FLORIDA LICENSED ENGINEERS EB 0003687
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HIGH SPRINGS, FLORIDA 32655-0577
PH 386-454-3748
RICHARD E COBURN PE
E-32820

DATE	2/12/10
DRAWN	CAA
APPROVED	REC

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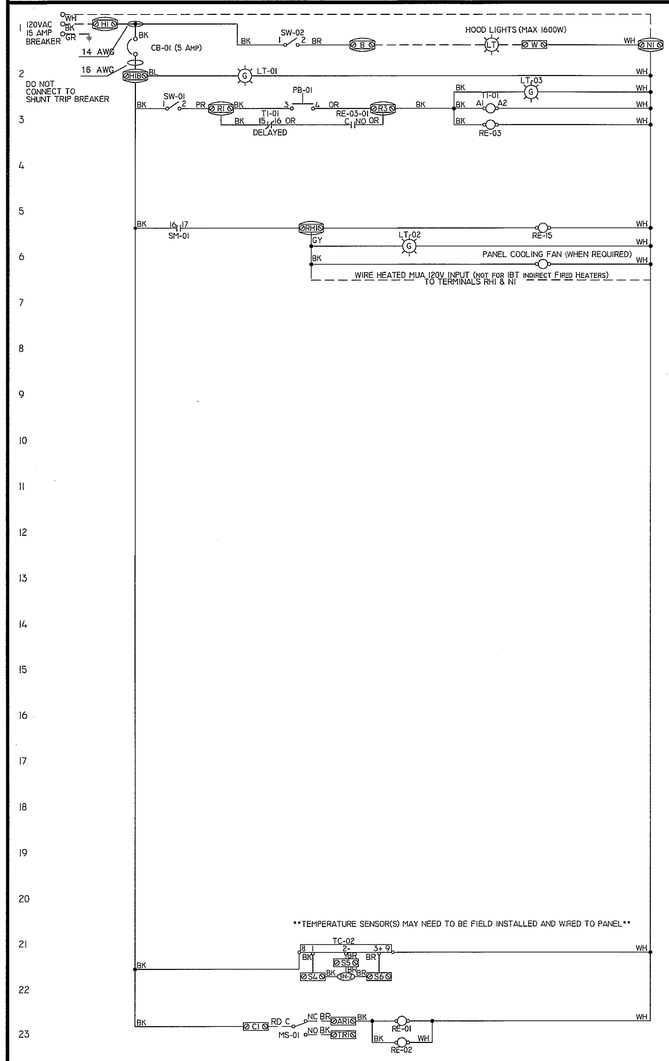
M3.3

OF SHEETS

ENERGY MANAGEMENT SYSTEM	JOB NAME S&S 29	DATE 2/8/2010
DRAWING NUMBER EMS11102-1097974-#1-2	JOB NUMBER 1097974	MODEL EMS11102



INSTALLED OPTIONS

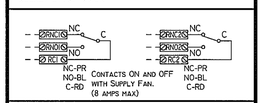
Hood Light Switch (Max 1600 W)
Exhaust On in Fire

COMPONENT IDENTIFICATION

Label	Description	Location
CB-01	Circuit Breaker UL489 (5 Amp)	[1]
LT-01	"Power On" Light-1052C5	[2]
LT-02	"Fans On" Light-1052C5	[2]
LT-03	"100% Override" Light-1052C5	[2]
MS-01	Fire System Micro-Switch	[23]
PB-01	Push Button Override-D7-F2XII	[2]
RE-01	DPDT Relay-34.110.0146.0	[23][29]
RE-02	Auxillary DPDT Relay-34.110.0146.0	[23]
RE-03	Timer/Push Button Relay-34.110.0146.0	[2]
RE-15	Run Relay DPDT Relay-34.110.0146.0	5[18]
SM-01	Sup-1 Speed Control-SMV Series	5[28-33]
SM-02	Exh-1 Speed Control-SMV Series	8[33-37]
SN-XX	Temperature Sensor-AC1/100-3W-1-4"-NW HTF	[21-22]
SW-01	Fan On/Auto Switch-82.40.82.95.9E	2[29]
SW-02	Hood Light Switch-82.40.82.95.9E	[1]
TC-XX	Temperature Controller-PXR3 w/DIN Rail Mount	[6-42]
TI-01	100% Overide Timer (30 Minutes)-RZ7-FSAAUU23	2[29]

SPARE RELAY CONTACTS

Spare relay contacts can be used to control items requiring shut down when the fire system discharges, such as shunt trips, signals, etc.



NOTES

- — — — FIELD WIRING
- ——— INTERNAL WIRING
- ⊘XX⊘ TERMINAL IN PANEL
- ⊘XX⊘ TERMINAL IN PANEL AND REMOTE

Drawing shown de-energized.

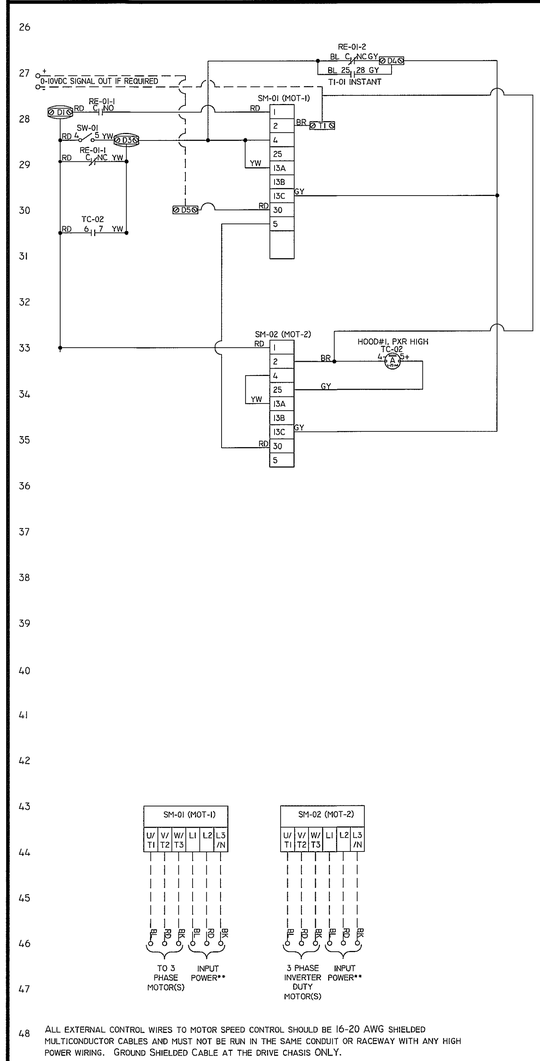
WIRE COLOR

BK - BLACK	YW - YELLOW
BL - BLUE	GR - GREEN
BR - BROWN	GY - GRAY
OR - ORANGE	OR/BL - ORANGE/BLUE (STRIPE)
RD - RED	BL/RD - BLUE/RED (STRIPE)
WH - WHITE	RD/GN - RED/GREEN (STRIPE)
PR - PURPLE	
PK - PINK	

PG. 1 OF 2

18in. x 20in. x 8.6in. Box

ENERGY MANAGEMENT SYSTEM	JOB NAME S&S 29	DATE 2/8/2010
DRAWING NUMBER EMS11102-1097974-#1-3	JOB NUMBER 1097974	MODEL EMS11102



TC PARAMATERS (400-450° Hoods)

SV = 85

LEVEL 1:
AL-H = 85
AL2 = 90

LEVEL 2:
P = 2.5 [P=(SV-H)-(SV-L))/2]

LEVEL 3:
SV-L = 85
SV-H = 90

TC PARAMATERS (600-700° Hoods)

SV = 85

LEVEL 1:
AL-H = 85
AL2 = 130

LEVEL 2:
P = 22.5 [P=(SV-H)-(SV-L))/2]

LEVEL 3:
SV-L = 85
SV-H = 130

ALL EXTERNAL CONTROL WIRES TO MOTOR SPEED CONTROL SHOULD BE 16-20 AWG SHIELDED MULTICONDUCTOR CABLES AND MUST NOT BE RUN IN THE SAME CONDUIT OR RACEWAY WITH ANY HIGH POWER WIRING. GROUND SHIELDED CABLE AT THE DRIVE CHASIS ONLY.

PG. 14 OF THE AC TECH SMV DRIVE MANUAL DESCRIBES THE ELECTRICAL INSTALLATION.

PG. 23 OF THE AC TECH SMV DRIVE MANUAL DESCRIBES THE PARAMETER SETTINGS OF THE DRIVE.

**3 PHASE INPUT, USE L1, L2, L3.
1 PHASE 240 VAC INPUT, USE L1 & L2 ONLY.
1 PHASE 120 VAC INPUT, USE L1 & N ONLY.

PG. 2 OF 2

INSTALLED OPTIONS

Hood Light Switch (Max 1000 W)
Exhaust On in Fire

COMPONENT IDENTIFICATION

Label	Description	Location
CB-01	Circuit Breaker UL489 (5 Amp)	[1]
LT-01	"Power On" Light-1052C5	[2]
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SN-XX	Temperature Sensor-AC1/100-3W-1-4"-NW HTF	[21-22]
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SW-02	Hood Light Switch-82.40.82.95.9E	[1]
TC-XX	Temperature Controller-PXR3 w/DIN Rail Mount	[6-42]
TI-01	100% Override Timer (30 Minutes)-RZ7-FSAAUU23	2[29]

GENERAL DRIVE PARAMETER SETTINGS (PW = 225)

SUPPLY FAN DRIVE EPM PROGRAM #1	EXHAUST FAN DRIVE(S) EPM PROGRAM #11
P100 - 01 (Term Strip)	P100 - 01 (Term Strip)
P101 - 03 (Preset #1)	P101 - 03 (Preset #1)
P102 - 0 Hz (Min Freq)	P102 - 0 Hz (Min Freq)
P103 - 60 Hz (Max Freq)	P103 - 60 Hz (Max Freq)
P104 - 30 SEC. (Accel Time)	P104 - 30 SEC. (Accel Time)
P105 - 30 SEC. (Decel Time)	P105 - 30 SEC. (Decel Time)
P110 - 03 (Auto Restart)	P110 - 03 (Auto Restart)
P121 - 01 (0 - 10 VDC)	P121 - 02 (4-20 MA)
P122 - 03 (Preset Speed #2)	P122 - 03 (Preset Speed #2)
P123 - 03 (Preset Speed #3)	P123 - 03 (Preset Speed #3)
P132 - 0 Hz (Wash Cycle Freq)	P132 - 15 Hz (Wash Cycle Freq)
P133 - 60 Hz (Must Match P103)	P133 - 60 Hz (Must Match P103)
P136 - 60 Hz (Must Match P103)	P136 - 60 Hz (Must Match P103)
P140 - 01 (Run)	P140 - 10 (Loss Of Load)
P144 - 00 (No Inverse P140)	P144 - 01 (Inverse P140)
P145 - 50% (Adjust @ Startup)	P145 - 50% (Adjust @ Startup)
P146 - 5 SEC (Loss Load Delay)	P146 - 5 SEC (Loss Load Delay)
P150 - 01 (0-10 VDC Output)	P150 - 01 (0-10 VDC Output)
P151 - 00 (No Output Addition)	P151 - 01 (ADD TB-5 to TB-30)
P152 - 60 Hz (Freq Scaling)	P152 - 60 Hz (=P161*#Exh Fans)
P160 - 0 Hz (Min Signal Speed)	P160 - 48 Hz (Min Signal Speed)
P161 - 60 Hz (Max Signal Speed) (Must Match P103)	P161 - 60 Hz (Max Signal Speed) (Must Match P103)

Adjust manually on all drives
P107 - 00 (If 120 or 208 VAC) or 01 (If 230, 480 or 575 VAC)
P108 - Motor FLA x 100 / Drive Output Rating

Speed #	TB-13A	TB-15B	TB-15C
2 (P132)	OPEN	CLOSED	OPEN
3 (P133)	OPEN	OPEN	CLOSED
6 (P136)	OPEN	CLOSED	CLOSED

MOTOR INFORMATION

MOTOR	TYPE	PH	VOLT	HP	FLA	BREAKER
SUP-2	SUPPLY	3	208	1	3.3	15 AMP
EXH-1	EXHAUST	3	208	1.5	6.7	15 AMP

NOTES

- — — — FIELD WIRING
- ——— INTERNAL WIRING
- ⊘XX⊘ TERMINAL IN PANEL
- ⊘XX⊘ TERMINAL IN PANEL AND REMOTE

Drawing shown de-energized.

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PR - PURPLE	
PK - PINK	

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RICHARD E. COBURN PE
E-52620

DATE 2/12/10
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M3.4

OF SHEETS

HVAC SPECIFICATIONS

A. It is the intent of these specifications to define the work and materials typically installed by a Mechanical Contractor. However, it is not intended to define a subcontract between the Mechanical Contractor and the General Contractor. The General Contractor is responsible for the entire project and any questions regarding scope of work shall be directed to the General Contractor.
B. Work shall include all labor, materials, fixtures, equipment, tools and service necessary for installation, testing and adjusting of all mechanical systems shall be furnished and installed in compliance with the Drawings, Specifications, and any Addenda thereto.
C. Drawings and Specifications shall be understood to cover, according to their intent and meaning, complete mechanical systems. Work shown and not specified, or work specified and not shown shall be performed as though mentioned in both.
D. Minor items and accessories reasonably inferred as necessary for the complete and proper operation of any system shall be provided by contractor or subcontractor for such system whether or not they are specifically called for.
E. Before submitting a bid, the Mechanical Contractor is to coordinate with the General Contractor to ascertain, in detail, the division of work, and the extent of performance other subs and the General Contractor.
F. All work shall be performed or installed in strict accordance with Florida Building Code 2007–Mechanical w/ 2008 and 2009 Supplements and all applicable rules, regulations and codes of local state and Federal Governments having lawful jurisdiction, and each contractor and subcontractor shall be responsible for such compliance.
G. Fees for permits, inspections, patent use, royalties, etc. shall be paid by the contractor.
H. All systems shall be tested for proper operation, rotation air supply, water supply, pressures, flows, balance, vibration, and appropriate interlocks as required by these specifications or manufacturers' recommendations.
I. All work shall be installed in accordance with the appropriate codes and satisfy the local inspector having jurisdiction.
J. Upon completion of each part of the mechanical system, the contractor shall demonstrate to the Engineer that each item on that system is installed with proper covers, safeties, controls, etc., and that all are in proper working order.
K. A set of "red-lined" mechanical drawings shall be carefully maintained at the job site. Actual conditions are to be put on the drawings in red on a daily basis so the drawings will continuously show locations and routings of piping, ducts, grilles, equipment, valves, and any equipment specified on the drawings or in these specifications.
L. Equipment and materials shall be new and meet or exceed specification requirements.
 1. All products shall be current model for which replacement parts are available.
M. Acceptable manufacturers are listed, additional manufacturers may request approval for their products up to 10 days in advance of bid. Engineer may require supplemental information prior to accepting or rejecting the alternate.
N. All work shall be performed in compliance with OSHA regulations.
O. Shop drawings and product data shall be submitted on all equipment, fixtures, etc
 1. Sumittals shall include all equipment to be installed by the subcontractor and all submittals must be made at same time.
 2. Each package must have the General Contractors review stamp prior to submittal.
 3. The Engineer will review one submittal and one resubmittal; subsequent resubmittals may require a review charge to be paid by subcontractor.
 4. Shop drawings shall be labeled in the same designation as the drawings
P. Job conditions shall be determined prior to bidding in the following manner:
 1. Site visit to determine:
  a. Existing conditions.
  b. How and where materials will be delivered and stored.
  c. Special problems encountered during construction.
 2. Examine all Contract Drawings and Specifications to determine:
  a. Type of construction to be used.
  b. How construction or work will affect the work of this Section.
  c. Nature and extent of work of other trades.
Q. Failure to determine existing conditions or nature of construction will not be considered as a basis for granting additional compensation.
R. Installation:
 1. Contract Drawings show the arrangements and sizes of principal apparatus and devices to be provided under this Contract and connection thereto. These shall be followed as closely as actual building construction will permit.
 2. Dimensions of work as indicated on Plans are not guaranteed to be as-built d dimensions.
 3. No measurements shall be scaled from Drawings and used as definite dimensions for layout or fitting work in place.
 4. Layout of equipment, as shown on the plans, shall be checked and exact location determined by dimension if equipment approved by the Architect.
 5. Consult the Drawings for all dimensions, locations of partitions, sizes of structural member, foundations, etc.
 6. Do not make final layouts until shop or equipment drawings are approved and job conditions verified.
 7. Mechanical reference symbols are given on the mechanical legend on the drawings.
S. Rough-in:
 1. Work included:
  a. Contractor shall rough-in for all equipment, fixtures, etc., in building whether or not such equipment is furnished by this Contractor or by Owner.
 2. Method:
  a. Determine in advance the location and size of all openings and chases necessary for proper installation of all work and have openings and chases provided during construction.
  b. Install all inserts for hangers and supports of mechanical work and equipment work as general construction progresses.
  c. Rough-in openings in masonry or stud walls shall be cut, not broken or chiseled.
  d. Sleeves shall be required at all points where piping passes through concrete walls, slabs or masonry walls; sleeves installed below grade or where subject to high water conditions shall be installed watertight.
T. Coordination:
 1. Work shall be coordinated between all Contractors, Subcontractors, Installers, Suppliers, Trades, etc., to:
  a. Insure a neatly fitted installation.
  b. Determine the nature and extent of the work of others.
  c. Eliminate interferences.
  d. Maintain maximum headroom and clearances.
 2. Any interference which develops or is foreseen and cannot be resolved by the affected trades, etc. shall be handled as follows:
  a. Cease installation of that portion of the work which is in conflict as no additional compensation will be allowed for any relocation, etc.
  b. Continue work only on other portions of the work which are not in conflict.
  c. Notify the Architect immediately.
  d. Architect's decision shall be final as to any relocation, rerouting, removal, etc.
  e. No additional compensation will be allowed for removal, relocation, repairs or changes required by interferences.
U. Clear away all debris, surplus materials, etc., resulting from work on operations, leaving job and equipment in clean first-class condition.
V. Clean all rotating equipment, ducts, piping, etc., and leave them in a ready-to-use condition.
W. Where factory finish is provided on equipment, all marred or damaged surfaces shall be touched-up or refinished hereunder as approved.
X. Thoroughly clean all items of equipment, leaving them in first-class condition.
Y. Wipe clean or wash if necessary air surfaces of all coils, fan housings, fan wheels, fan motors, air unit plenums, and all air filters.
Z. All pumps, motors, fans and other rotating equiment shall be stored at Site with openings, bearing, etc., covered to exclude dust and moisture; all stockpiled conduit shall be placed on dunnage, and protected from weather, from entry of foreign materials.

BALANCING OF AIR SYSTEMS

A. Balance and adjust each air distribution system shown on the Drawings.
B. Perform work in accordance with procedures and standards described in SMACNA Balancing and Adjustment Manual."
C. Balancing shall be done by a certified balancing firm independent of the Mechanical Contractor.
D. Reports shall be made on SMACNA forms.
E. Submit five (5) copies for approval and record.
F. Examine HVAC units to see that they are free from obstructions.
G. Open all dampers and grilles.
H. Check lubrication of all moving equipment.
I. Check for proper installation of filters.
J. Perform other inspection and maintenance activities necessary for proper operation of systems.
K. Fuse sizes and thermal overload heaters shall be checked against each motor nameplate.
L. The amperage shall be read at each electrical motor to determine the load imposed on it.
M. Adjustment and Balance:
 1. Adjust variable type pulleys, volume dampers, control dampers, etc. to provide correct volumes to main trunk lines.
 2. Check and adjust outside air quantities as required.
 3. Adjust air extractors and manual balancing dampers to supply correct air volume to each main branch duct from main trunk lines.
 4. Adjust manual balancing dampers to supply correct volume to each individual branch duct.
 5. Use terminal registers only for minimal adjustment of air flows, i.e. less than 5% of air volume.
 6. Adjust grilles and diffusers for proper air flow patterns.
 7. Air conditioning units shall be placed in operation and both wet and dry bulb temperature taken at one-hour intervals to determine the amount of cooling being accomplished and to indicate adjustments needed.
 8. After spaces have been brought down to design temperatures and equipment is functioning properly, air shall be rebalanced if necessary by means of calibrated thermometers placed in each room and in open spaces,not over 20' apart. There shall be no deviation in temperature of more than 3 F. throughout the space cooled.
 9. A thorough check shall be made, with an anemometer, of air motion in the occupied space. Any air motion exceeding 50 fpm shall be remedied.

COPPER PIPE

A. Refrigerant
 1. ACR Copper
 2. All refrigerant pipe and fittings having an external or internal working pressure greater than 15 psig shall comply with ANSI Code for Pressure Piping where applicable.
 3. Joints
  a. Solder using Silver solder or "Sil-Fos."
  b. Compression fittings may be used at equipment connections.
 4. Fittings
  a. Wrought copper
  b. Approved compression type brass.

PLASTIC PIPE AND FITTINGS

A. Air Conditioning condensate drains
 1. PVC – ASTM D-1784-60T
  a. Schedule 40.
  b. Type 1, Grade 1.
 2. Joints
  a. Bonded joints using adhesive per manufacturer's recommendations
 3. Fittings
  a. PVC – ASTM D-2665-69

Packaged Heat Pump Systems HP-1 & HP-2

A. Packaged Heat Pump Unit with reverse cycle and heat strip.
B. Acceptable Manufacturers
 1. Trane
 2. Carrier
 3. Lennox
C. Evaporator Blower
 1. Airflow as indicated on drawings.
 2. Fan shall be direct – drive, forward-curved, double inlet, statically and dynamically balanced.
 3. Fan motor shall be resiliently mounted and shall be easily removable for service.
 4. Fan motor shall be permanent -split-capacitor type with integal overload protection, high – efficency, Florida Energy Code Minimum.
 5. Cooling coil shall have aluminum fins machanically bonded to copper tubing. Coil shall have factory installed refrigerant metering devices.
D. Compressor and Condensing Section
 1. Outdoor unit shall be designed for use with Refrigerant R410 and contain sufficient charges (R22) for complete system. Brass service valves with refrigerant line fittings and service ports shall be located on exterior of unit.
 2. Outdoor coil shall be constructed with aluminum fins mechanically bonded to non-ferrous tubing. Factory installed coil refrigerant metering device shall be mounted on unit liquid service valve. Metering device internal components shall be removable for cleaning or replacement.
 3. Condenser Fan unit fan shall be propeller type, direct driven, and arranged for vertical air dischage. Fan motor shall be factory lubricated, inherently protected and resiliently mounted.
 4. Compressor shall be of the welded-hermetic type with internal vibration isolation and shall be covered with a shield to muffle operating sound. Compressor motor shall have both thermal and current -sensitive overload device. Compressor shall be equipped with a crank-case heater and have internal high-pressure protection.
 5. Controls shall be factory wired and located in a readily accessible location. Controls and protective devices shall include a liquid line low pressure switch, suction line accumulator and pressure relief device. Control wiring terminal board shall be designed to match indoor unit terminal board and accessory thermostat terminals for standardized point-to-point connection.
E. Resistance Heater:
 1. Heaters shall be wired for the number of stages of operation indicated on the Drawings.
 2. Heaters shall be equippd with thermal and current overload devices as required by equipment listings and applicable codes.
F. Elonomizer Hood and O.A. intake with Enthalpy Controller–
 1. O. A. Damper shall modulate to full open position to provide maximum use OA for cooling when Enthalpy Controller settings are within set points.
G. Refer to Mechanical Equipment Schedule for Model Numbers.

EXHAUST FANS

A. Wall mounted spun aluminum dome and ducted to the outside.
B. Meet the specification for air delivery at static pressure as specified on the Equipment Schedule.
C. Meet the noise criteria (if specified on Schedule).
D. Be of the manufacture and model number specified in the Equipment Schedule or equal.
E. Shall be UL listed.
F. Acceptable Manufacturers
 1.. Breidert
 2. Carnes
 3. Greenheck
G. General
 1. Acoustically insulated steel housing
 2. Spum Aluminum Dome,
 3. Adjustable mounting brackets
 4. Automatic backdraft damper at the fan intake.
 5. Lifetime lubricated motor
 6. Terminal box on housing with cord, plug and receptacle inside the housing.
 7. Fan motor and wheel shall be removable without removing entire fan housing.
 8. Provide speed control on direct drive fan.

GREASE EXHAUST HOOD:

A APPROVED.
 a. HOOD SHALL BE MANUFACTURED IN ACCORDANCE WITH NFPA #96 AND NSF
 b. CONSTRUCTION MATERIAL - TYPE 304 STAINLESS STEEL, 16 GAUGE AND 18 GAUGE.
 c. SUPPLY MAKE-UP AIR AND EXHAUST ON DUCT COLLARS.
 d. BAFFLE TYPE FILTERS MEETING NFPA 396 AND CLASSIFIED BY U.L.
 e. LIQUID TIGHT WELDED SEAMS.
 f. HOOD LIGHTS WITH GLOBES AND GUARDS.
 g. HOOD DESIGN FOR SUPPLY OF 80% MAKE-UP OF OUTSIDE AIR FROM SUPPLY FANS.
 h. SPECIFIC HOOD REQUIREMENTS SEE SCHEDULES.

B KITCHEN HOOD EXHAUST SHALL BE GALVANIZED STEEL WELDED SEAM, LIQUID TIGHT, MINIMUM 16 GAUGE. EXHAUST DUCTWORK SHALL COMPLY WITH FLORIDA MECHANICAL CODE AND NFPA 96.

C HOOD EXHAUST AND MAKE UP FANS SHALL BE UL AND NSF LISTED, SEE SCHEDULE FOR MODEL AND CAPACITY.

D GREASE EXHAUST HOOD EXTINGUISHING SYSTEM:
 1. DESIGNED TO MEET NFPA -96 AND FLORIDA BUILDING CODE 2007 MECHANICAL W/ 2008 & 2009 SUPPLEMENTS.
 2. AUTOMATIC, FIXED PIPES EXTINGUISHING SYSTEM
 3. GALVANIZED STEEL PIPE SIZED PER MANUFACTURER'S INSTRUCTIONS.
 4. AUTOMATIC AND MANUAL TRIP DEVICE.
 5. CONTRACTS TO SHUNT TRIP BREAKER OF KITCHEN EQUIPMENT BREAKERS AND CLOSE GAS SOLENOID VALVE.
 6. FIRE EXTINGUISHING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTING AND WITH MANUFACTURER'S INSTRUCTIONS.
 7. SYSTEM SHALL BE ACCEPTABLE TO THE FIRE MARSHAL'S OFFICE AND BUILDING DEPARTMENT.
 8. SYSTEM SHALL BE DRY CHEMICAL OR ANSUL.
 9. TRIP MECHANISM, MANUAL OR AUTOMATIC, SHALL HAVE AUXILIARY CONTACTS
 10. CONTRACTOR SHALL PROVIDE FIRE SUPPRESSION SYSTEM SHOP DRAWINGS TO SATISFY BUILDING OFFICIALS.
E GREASE HOOD EXHAUST DUCT FIRE WRAP
 a. WRAP ALL GREASE HOOD EXHAUST DUCT WITH THERMAL CERAMICS "FASTWRAP+", 1 1/2" THICK TO PROVIDE FIRE RESISTANCE RATING IN LIEU OF 1 HOUR CHASE. FIRE WRAP SHALL BE RATED AT 2000 ° F AND WILL PROTECT COMBUSTIBLES AT ZERO CLEARANCE.

DUCTWORK

A. All Supply Ductwork shall be low pressure sheetmetal ductwork.
 1. External insulation shall be installed on all duct, 2" fiberglass duct wrap.
B. All general exhaust ductwork shall be low pressure sheet metal.
 1. Insulation not required
C. RAW Outdoor air ductwork in shall be low-pressure metal.
 1. Insulation not required
D. Precondition Ventlation air shall be low pressure sheetmetal
 1. Extenal insulation with 2" fiberglass duct wrap.
E. LOW – PRESSURE SHEETMETAL DUCTWORK
 1. Except as otherwise specified or detailed on the Drawings, all ductwork shall be constructed in accordance with the Sheet Metal and Air Conditioning Contractor's National Association (SMACNA)
 2. Duct systems shall be complete, including all duct fittings, turning vaness, transverse reinforcing hangers, suppoorts, etc., as detailed on the Drawings or in the standards.
 3. Provide and install balancing dampers or adjustable splitters at all branch ducts, and where required for balancing the system.
 4. Each damper shall be adjustable with an approved guadrant or regulator. Dampers to be opposed blade type for ducts over 12" in any dimension, for ducts 12" single blade is acceptable except for outdoor air intakes which shall be low-leakage opposed blade.
 5. Dimensions shown are net inside dimensions (including insulation).
 6. Galvanized sheetmetal duct shall conform to the following thicknesses
  a. Largest dimension Gauge
   0-30 inches 24
   30-54 inches 22
   55-84 inches 20
   over 84 inches 18
F. KITCHEN HOOD EXHAUST SHALL BE GALVANIZED STEEL WELDED SEAM, LIQUID TIGHT, MINIMUM 16 GAUGE. EXHAUST DUCTWORK SHALL COMPLY WITH FLORIDA BUILDING CODE 2007 -MECHANICAL WITH 2008 AND 2009 SUPPLEMENTS AND NFPA 96.
G. Plenums shall be constructed and tested in accordance with SMACNA STANDARDS.
H. FLEXIBLE CONNECIONS
 1. Provide between duct system and air moving equipment
 2. Connection shall be made with not less than 4" wide flexible collar using "Ventglas" 30-ounce neoprene coated glass fabric.
I. Where construction methods for various items are not indicated on the Drawings or specified herein, all such work shall be fabricated and installed in strict accordance with the recommended methods, metal gauges, hanging procedures, access door and accessory installation, etc., as outlined, the latest edition of SMACNA'S Duct Manual and Sheet Metal Construction for Ventilating and Air Conditioning System.
J. Install all ductwork generally as shown on the drawings and as required by SMACNA Manual.
K. Sheetmetal
 1. Low pressure ductwork and fittings shall be made tight for minimum air leakage.
 2. Duct tape shall not be used to seal joints.
 3. All ductwork, except in equipment rooms shall be concealed in construction spaces above ceilings, in partitions, chases, etc.
 4. Ducts shall be constructed to provide specified air through building without adding noises to the air stream by sudden contractions as sharp edges.
 5. Ducts shall be securly fastened to the structure with hangers..
 6. Connections:
  a. Ducts shall be air tight braced and reinforced to prevent vibration and breathing
  b. Seal supply, return, exhaust and outside air ductwork with adhesive sealing compound
  c. Exterior ductwork to be housed with metal cover, galvanized or aluminum, or weather proofed using felt and AB 20 and asphalt mastic (bull).
  d. Rectangular duct connections shall be made with pocket slip or Bar-s slip not more than 8 ft. apart up to 24 in. largest dimension and not more than 4 ft. apart above 24 in. largest dimension
L. Leakage:
 1. Contractor shall make necessary repair and shall make duct system ready for a leakage test.
 2. Test shall be performed by Test and Balance Contractor.
 3. Leakage shall not exceed 1% leakage for high pressure duct and 5% for low pressure duct construction.

DUCT INSULATION

A. Acceptable Manufacturers
 1. Johns-Manville
 2. Certainteed
 3. Knauf
B. Duct Wrap:
 1. 2" inch thick fiberglass – R6 INSTALLED
 2. Flamespread 25 per ASTM E-84
 3. Smoke developed 50 per ASTM E-84
 4. Factory applied vapor barrier – heavy duty 4 mil vinyl film, class 1, meeting NFPA 90A and 90B, UL rated
 5. Product:
  a. Johns-Manville "Microlite"
C. Accessories:
 1. Insulation tape, mastic, adhesives, etc., shall have the same flamespread and smoke rating as the insulation to which they are applied and meet manufacturer's recommendations.
D. Ductwrap
 1. Overlap seams of ductwrap, secure with 4" wide open weave glass fabric and two coats of vapor retarder mastic.
 2. Underside of ductwork greater than 24" wide shall also be secured with mechanical fasteners with tape.
 3. Pressure tape is not acceptable.

DUCT HANGERS AND SUPPORTS

A. All ductwork for air supply, return, fresh air or exhaust shall be supported by duct hangers, clamps, clips or supports.
B. Acceptable Manufactureres
 Duct hangers may be a manufactured item or field fabricated as required.
C. Galvanized steel straps
 1. Minimum 16 gauge and one inch wide
D. Trapeze hangers
 1. Ducts 20 inches to 40 inches largest dimension.
  a. Minimum 1 inch x 1 inch x 1/4 inch steel angles.
  b. Minimum 1/4 inch threaded rod
 2. Ducts above 40 inches largest dimension and plenums
  a. Minimum 1-1/2 inch x 1-1/2 inch x 1/4 inch steel angles.
  b. Minimum 3/8 inch threaded rod.
E. Supports
 1. All ductwork shall be supported from structural building members, i.e. block, beams,columns, purlins, joists, etc.
 2. Ductwork shall not be supported from ceiling tile or grids, conduit, mechanical equipment, piping or non-structural steel.
 3. Ductwork hangers shall be attached to building steel by bolts, screws, clamps or welding.
F. Hanger Bands
 1. Horizontal concealed ductwork up to 20 inches largest dimension shall be supported by one (1) inch x 16 gauge galvanized steel straps at a maximum spacing of 10 ft. and at each elbow or branch takeoff.
 2. Bands and spacing shall be at a maximum spacing of 10 feet on horizontal runs and at each elbow or branch takeoff.
  a. No nails shall be driven through any ductwork and into floor joists, trusses, etc.
 3. Vertical ductwork, all sizes, shall be supported by bands bolted or screwed to walls, studs, etc.
 4. Hanger bands shall be bent over one (1) inch from end and turned under corners of rectangular duct.
 5. Duct hanger bands shall be fastened with sheet metal screws at six (6) inch intervals up sides and into bottom.
  a. Sheet metal screws shall be 3/4 inch so as not to penetrate duct liner completely.
G. Trapeze Hangers
 1. Horizontal ductwork larger than 20 inches largest dimension and all exposed ductwork shall be supported by trapeze type hangers.
 2. Trapeze hangers shall be at a maximum spacing of 10 feet and at each elbow or branch takeoff.
 3. Hanger rods shall be secured to bottom bracing angles with nuts and locknuts.

DUCT ACCESSORIES

A. Air distribution system shall be furnished complete with duct accessories necessary to allow complete air balancing and adjusting of flow and volume.
B. All square duct corners and "T" connections shall be fitted with turning vanes.
C. All branch duct takeoffs shall be fitted with nonadjustable air turning vanes AND manual volume control dampers, OR adjustable volume extractors which are adjustable from outside the duct.
D. Each grille and diffuser shall be fitted with a manual volume control register at the face of the grille and adjustable from the face of the grille without requiring removal of the grille.
E. Acceptable Manufacturers
 1. Barber Colman
 2. Titus
 3. Properly submitted approved equal
F. Air turning vanes:
 1. Multiple radius vanes
 2. Steel construction
 3. Electrocoated white finish
 4. Maximum pressure loss = 20% of velocity head
 5. Model number – equal to Barber Colman Models AOOA and AOOF
G. Volume Extractors:
 1. Gang operated parallel blade
 2. Fully adjustable from wide open to full closed
 3. Supply with supporting foot as required for branch takeoffs not in the same plane as trunk lines.

VOLUME DAMPERS

A. All return air and fresh air dampers shall be parallel blade pivot dampers with motorized control where noted.
B. All balancing dampers shall have manual control dampers with positive position locking.
C. Acceptable Manufacturers
 1. Prefco Manufacturing Co.
 2. Titus
 3. Ruskin
D. Parallel Blade Pivot Dampers:
 1. Low leakage non-degradable
 2. Friction free metal to metal seals incorporated into the blade and frame shapes
 3. Galvanized steel frame, 16 gauge
 4. Galvanized steel blades, 22 gauge with double-wrapped center and edge forming
 5. Maximum leakage – 11 CFM per sq. ft. @ 1 inch S.P.
 6. The static pressure loss shall not exceed 0.7" W.G. @ 2000 FPM and 50% modulation
 7. Model Number
  a. Equal to Prefco Model 5150

FIRE DAMPERS

A. Provide fire dampers at all locations shown or noted on the drawings.
 1. Fire dampers shall have only thermally actuated fusible links.
B. Acceptable Manufactureres
 1. Prefco Manufacturing Co.
 2. Ruskin
 3. Titus
C. Dampers – mounted vertically
 1. Damper construction shall meet the requirements of NFPA 90A.
 2. Type B, low profile, low pressure loss.
 3. Blade stack shall only enter the air stream to 4% of the damper height.
 4. Damper requires no extra height for duct installation, i.e., there shall be no "top cap."
 5. Blades shall be 4-1/2 inch depth – roll formed 21 gauge galvanized steel.
 6. Frame, E-shaped, one piece roll-formed 21 gauge galvanized steel.
 7. Blades rotate, travel and seal on a single central frame track.
 8. Classified 1-1/2 hour rating, UL Listed.
 9. Fire dampers shall have thermal link.
 10. Model:
  a. Dampers shall be equal to a Prefco "Low Profile B" or approved equal.
D. Dampers – mounted horizontally in ceiling:
 1. UL Listed ceiling damper
 2. Round or square as required
 3. 2 hour rated
 4. Single or dual blade depending on duct size
 5. Model Number
  a. Prefco Model 5650, 5600, or 5660
E Link:
 1. Fusible link rated at 165 Degrees F. release temperature.

DUCT ACCESS PANELS AND TEST HOLES

A. Provide an access panel at each return air and/or fresh air damper which will allow for inspection and cleaning of dampers.
 1. Where return and fresh air dampers are located adjacent, one access door is sufficient, providing each damper is accessible.
B. Provide an access panel at each fire damper for resetting and maintenance of each fire and smoke damper.
C. Provide test holes for measurement of air flow, on each branch duct and main trunk line or plenum.
D. Acceptable Manufacturers
 1. Penn Ventilator Co.
 2.. Ruskin
E. Access Doors:
 1. Insulated hinged duct access door
 2. Standard gauge galvanized steel
 3. Continuous piano hinge
 4. Gasketed at door frame surface and at frame to duct surface
 5. Positive acting cam latch handle
 6. Doors shall be of sufficient size to allow access to both sides of dampers
 7. If duct width is greater than 36 inches, provide access doors on each side of duct for access to entire dampers.
 8. Exception:
  a. Where access door must be installed in such a position that hinged opening is not possible, provide door that is completely removable.
  b. Removable door shall have cam-locks on both sides
 9. Model Numbers:
  a. Hinged doors shall be equal to Penn Ventilator Model DAD
  b. Non-hinged removable door shall be equal to Penn Ventilator Model DAD-RP.
F. Test Holes
 1. Provide a capped access hole in each trunk line or branch duct for insertion of air-flow pitot for flow measurement.

DISPOSABLE FILTERS

A. Provide 1" pleated with perforated metal back for AH-1, AH-2, AH-3, AH-4
B. MERV-7

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M4

OF
SHEETS

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	FITTINGS OR VALVES	SUPPLIES	TRAP	MOUNTING	ACCESSORIES	COLD	HOT	WASTE	VENT	REMARKS
P1	WATERCLOSET	AMERICAN STANDARD	CADET 2168.100 1.6 GPF	**BRASS SUPPLIES** AND STOPS	———	INTEGRAL	FLOOR	CHURCH #9500C SEAT	1/2"	——	3"	2"	HAN.CAP HEIGHT
P2	WATERCLOSET	AMERICAN STANDARD	CADET 2292.100 1.6 GPF	BRASS SUPPLIES AND STOPS	———	INTEGRAL	FLOOR	CHURCH #9500C SEAT	1/2"	——	3"	2"	STANDARD HEIGHT
P3	DROP-IN LAVATORY	AMERICAN STANDARD	AQUALYN 0478.028	RELIANT 2385.003	BRASS CRAFT OCR1912AZ	CHROME BRASS	COUNTERTOP	GRID STRAINER	1/2"	1/2"	1 1/4"	1 1/4"	HOT TEMP LIMIT STOP
P4	HANDICAP LAVATORY	AMERICAN STANDARD	ROXALYN 0195.073	AMERICAN STANDARD 1340.000 W/ESCUTCHEON	BRASS CRAFT OCR1912AZ	CHROME BRASS	WALLBRACKET	GRID STRAINER	1/2"	CAP	1 1/4"	1 1/4"	SUPPLY W/TRAP INSULATION KIT
P5	URINAL	AMERICAN STANDARD	MAYBROOK 6581.015	SLOAN ROYAL 186-1	———	INTEGRAL	WALLBRACKET		3/4"	——	2"	1 1/2"	MTG.HT. PER ARCH. ELEVATIONS
P6	JANITORY MOP SINK	STERN WILLIAMS	SERVICE CEPTOR SBC-1502	T-15-VB MOP SINK FITTING	———	13"	FLOOR	T-40 MOP HANGER T-35 HOSE	1/2"	1/2"			JAN SINK - FLOOR MODEL 24 X 24 X 12 W/ STAINLESS STEEL CAP
HAND SINK													PER KITCHEN EQUIP SPEC

WATER HEATER SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	FLOW (GPM)	BTUH (INPUT)	TEMP. RISE	RECOVERY (GPH)	REMARKS
WH-1	WATER HEATER	RINNAI	CONTINUUM V2532	8.5 MAX.	199,000 MAX.	90	200	PRIMARY CONTROL

120V/1ø, 72 W EACH UNIT.

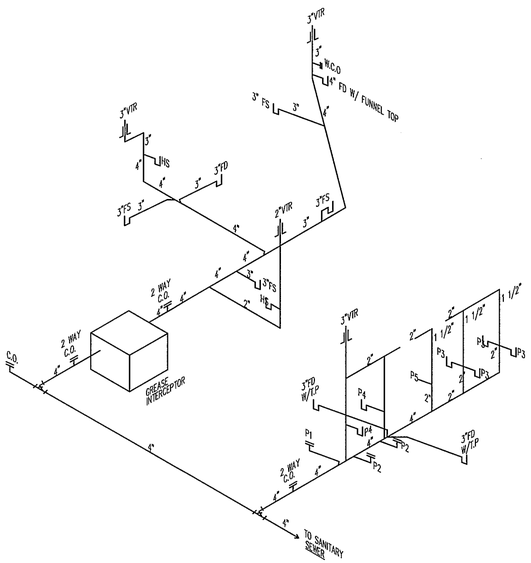
PIPING SCHEDULE - SEE NOTES

USE	SIZE	TYPE		CONNECTION	INSULATION	THICK.	COMMENTS
DOM. COLD	ALL	CPVC		GLUED	NONE		SCH 40 ASTM D2846
DOM. HOT	ALL	CPVC		GLUED	FIBERGLASS	1" MIN R4	SCH 40 ASTM D2846
SANITARY/VENT	ALL	DVW		GLUED	NONE		SCH. 40 ASTM D 1784 60T
LAB WASTE PIPING	ALL	POLYETHYLENE		GLUED	NONE		SCH 40 ASTM F714.3

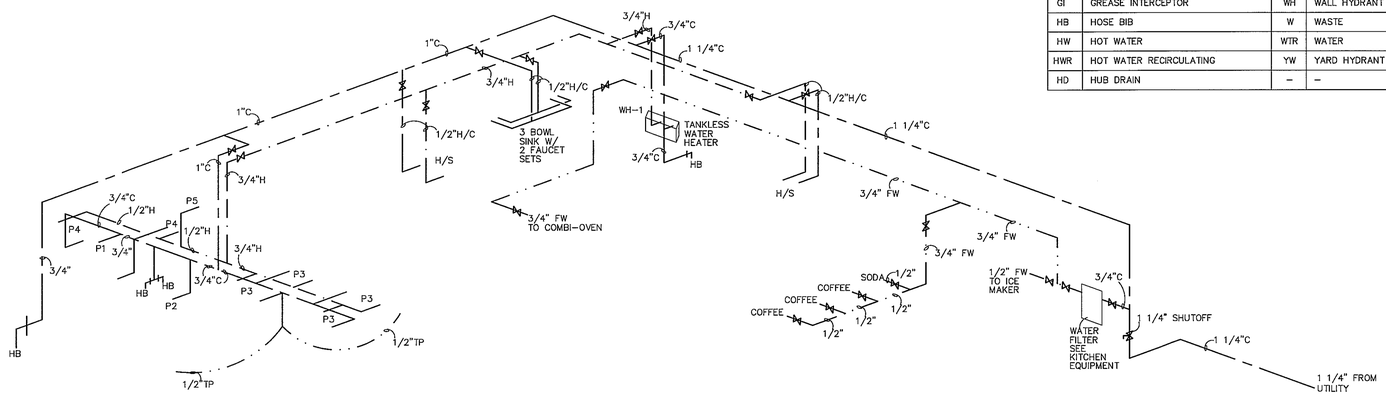
PLUMBING LEGEND

———	SANITARY OR WASTE PIPING-ABOVE FLOOR
— —	SANITARY OR WASTE PIPING-BELOW FLOOR
— —	VENT PIPING
———	COLD WATER PIPING
— —	HOT WATER PIPING
— —	HOT WATER RECIRCULATING PIPING
—RW—	RAIN WATER PIPING FLOOR
—RW—	RAIN WATER PIPING ABOVE FLOOR
—G—	GAS PIPING
—A—	COMPRESSED AIR
	ATMOSPHERIC BACK FLOW PREVENTER
	GAS VALVE
	FLOW VALVE
	DIRECTION OF FLOW
	CHECK VALVE
	REDUCED PRESSURE ZONE BACK FLOW PREVENTER
	PIPE TURNS UP
	PIPE TURNING DOWN
	P-TRAP
	CLEANOUT UP TO FLOOR OR GRADE
	WALL CLEANOUT OR CLEANOUT IN RUN
	PIPE CAP
	WALL HYDRANT
	DRAIN(S)
	ROOF DRAIN
	HOSE BIBB
	GATE VALVE
	HOT WATER CIRCULATOR

A/C	ABOVE CEILING	IW	INDIRECT WASTE
A/F	ABOVE FLOOR	INV	INVERT
A/G	ABOVE GRADE	MBH	1,000 BTU PER HOUR
AD	AREA DRAIN	NFWH	NON-FREEZE WALL HYDRANT
B/F	BELOW FLOOR	PRV	PRESSURE REDUCING VALVE
B/G	BELOW GRADE	RL	RAIN LEADER
BTUH	BRITISH THERMAL UNITS PER HOUR	RW	RAIN WATER
CLG	CEILING	RD	ROOF DRAIN
CO	CLEAN OUT	SS	SANITARY SOIL
CW	COLD WATER	SA	SHOCK ABSORBER
DN	DOWN	SAN	SANITARY
DS	DOWN SPOUT	TW	TEMPERED WATER
FD	FLOOR DRAIN	T&P	TEMPERATURE & PRESSURE
FA	FRESH AIR	SV	SANITARY VENT
G	GAS	VTR	VENT THRU ROOF
GI	GREASE INTERCEPTOR	WH	WALL HYDRANT
HB	HOSE BIB	W	WASTE
HW	HOT WATER	WTR	WATER
HWR	HOT WATER RECIRCULATING	YW	YARD HYDRANT
HD	HUB DRAIN	-	-



SANITARY RISER DIAGRAM
NTS



WATER SUPPLY RISER
NTS

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S & S FOOD STORE NO. 29
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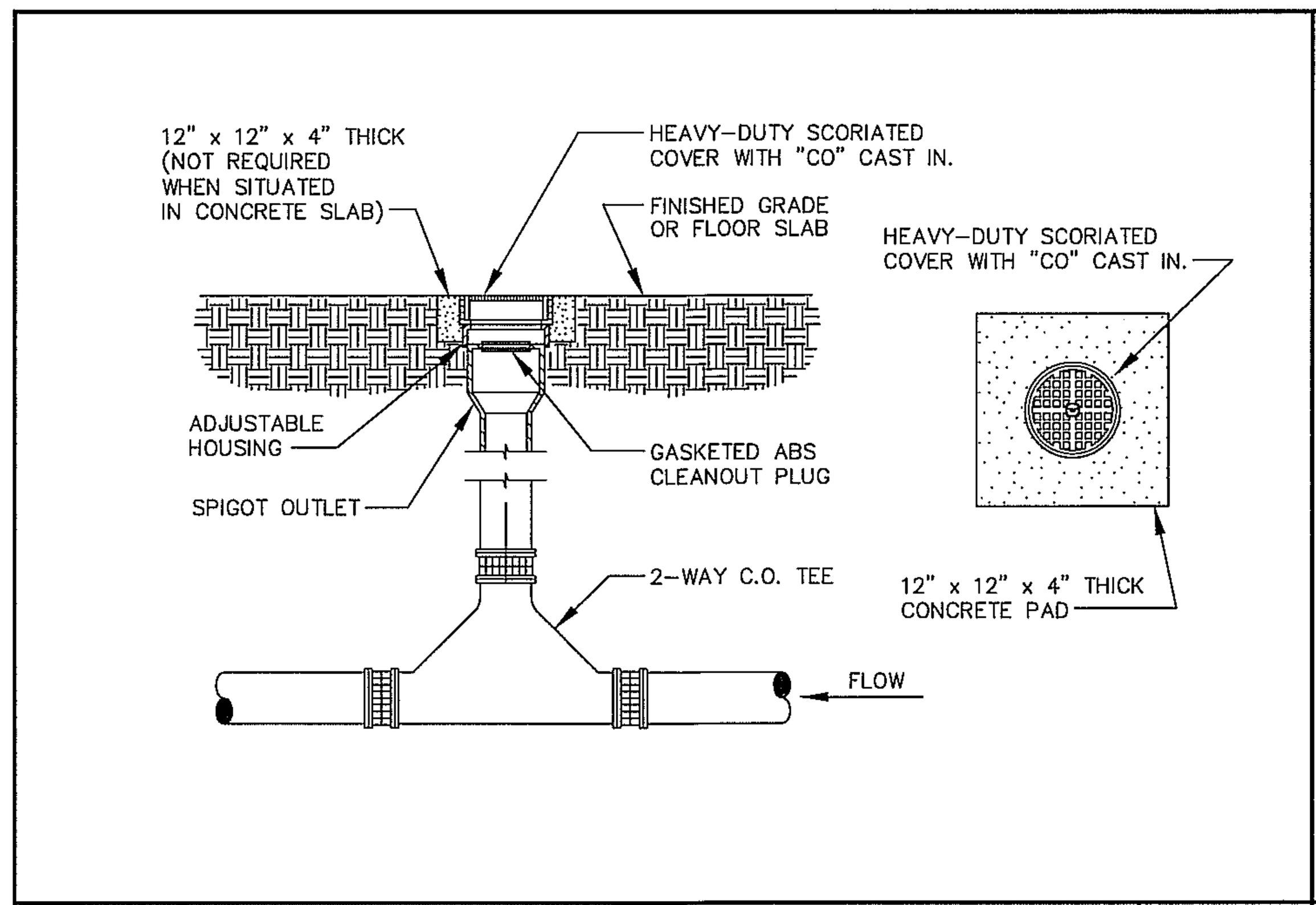
RICHARD E. CORBURN PE
E-32820

DATE 2/12/10
DRAWN CAA
APPROVED REC

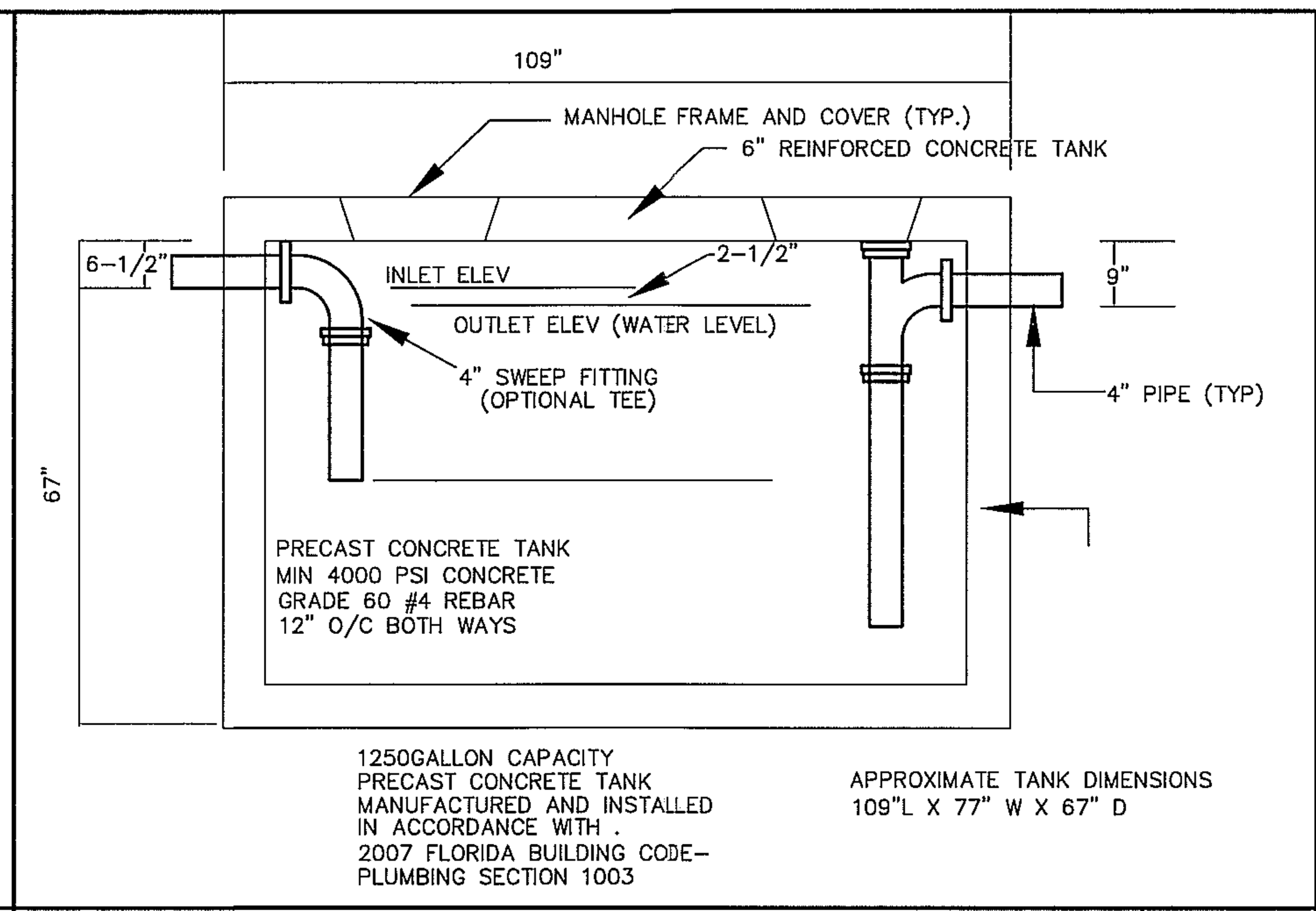
1007

P1

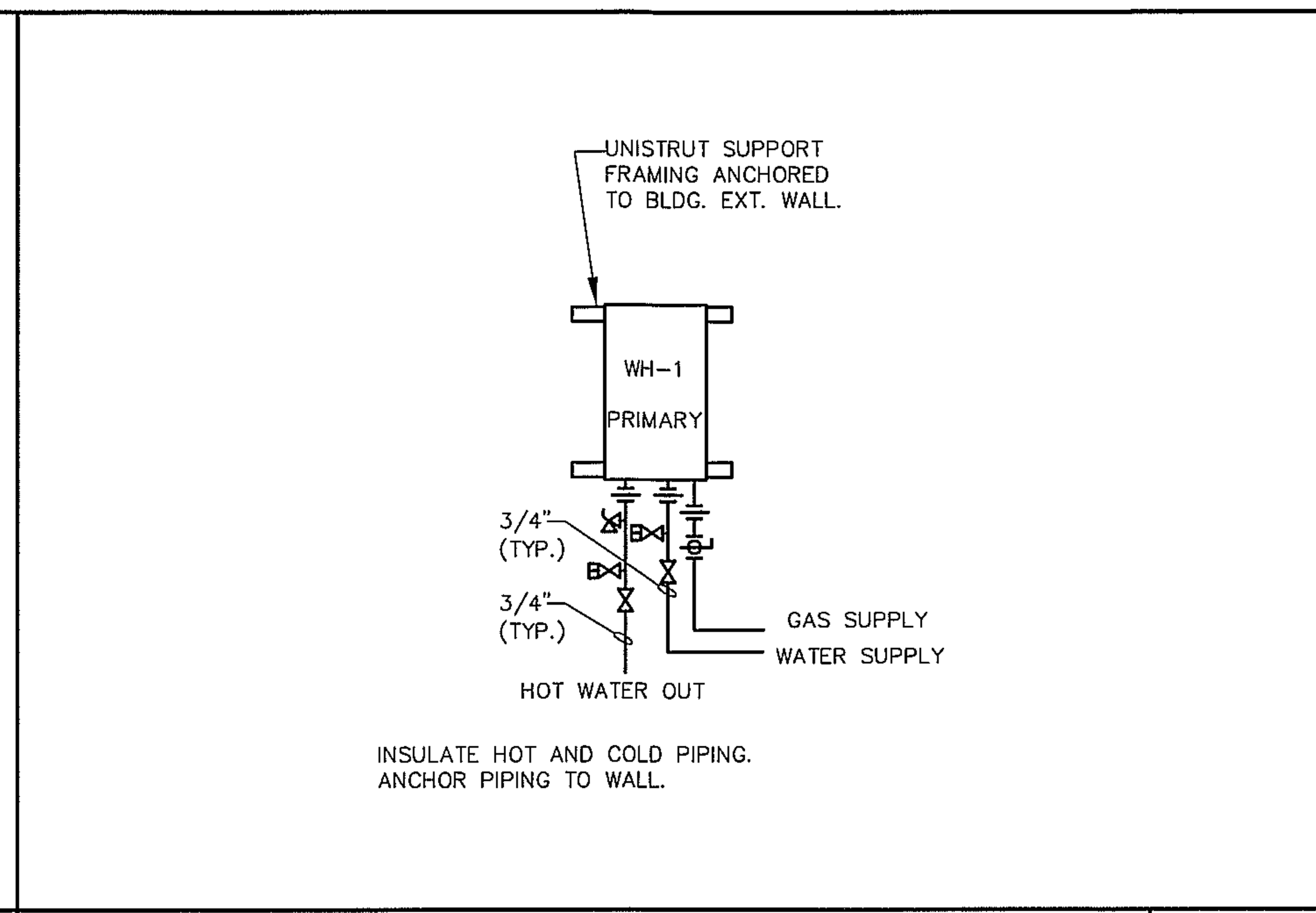
OF SHEETS



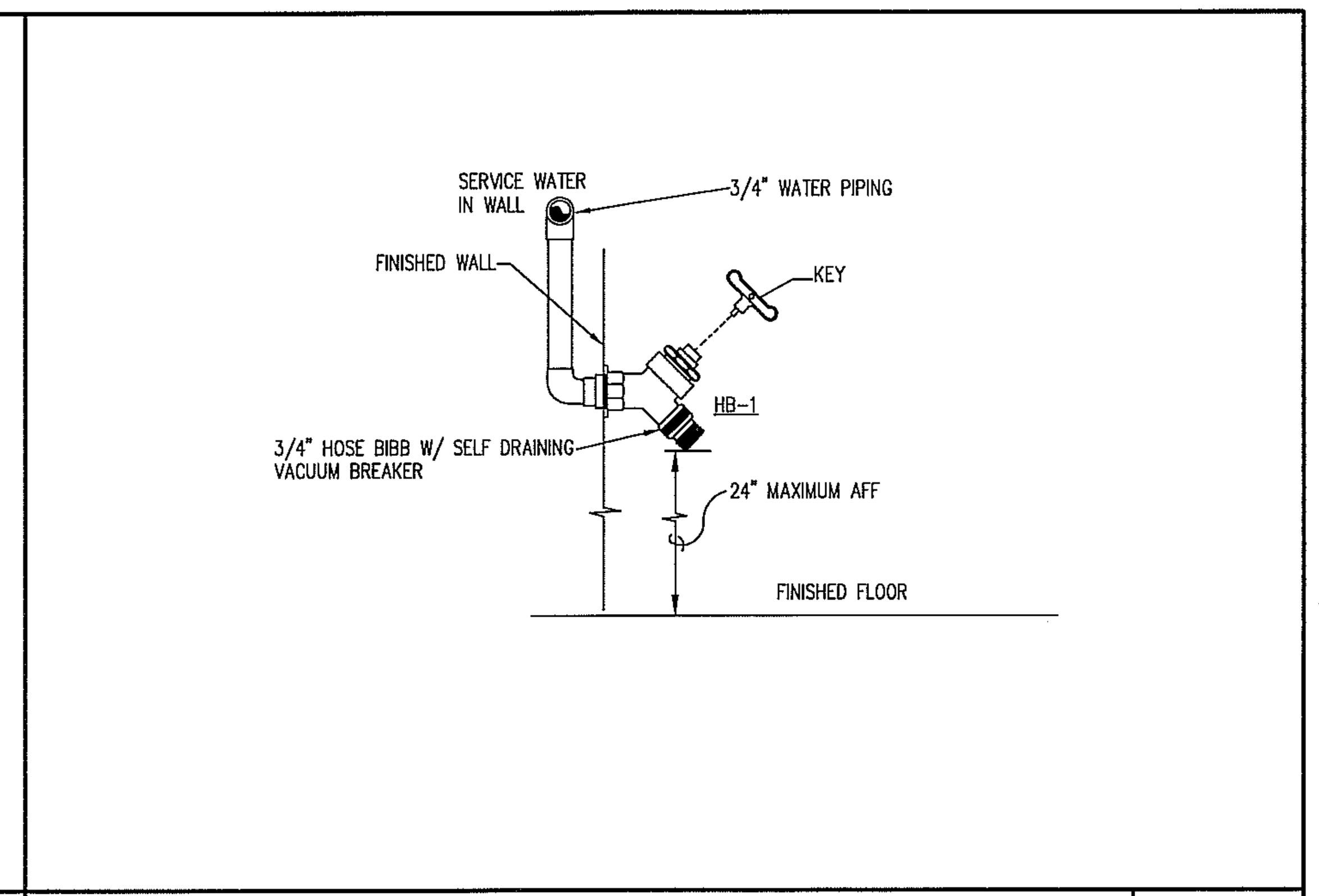
TWO-WAY CLEANOUT DETAIL — DET # 1 / P2



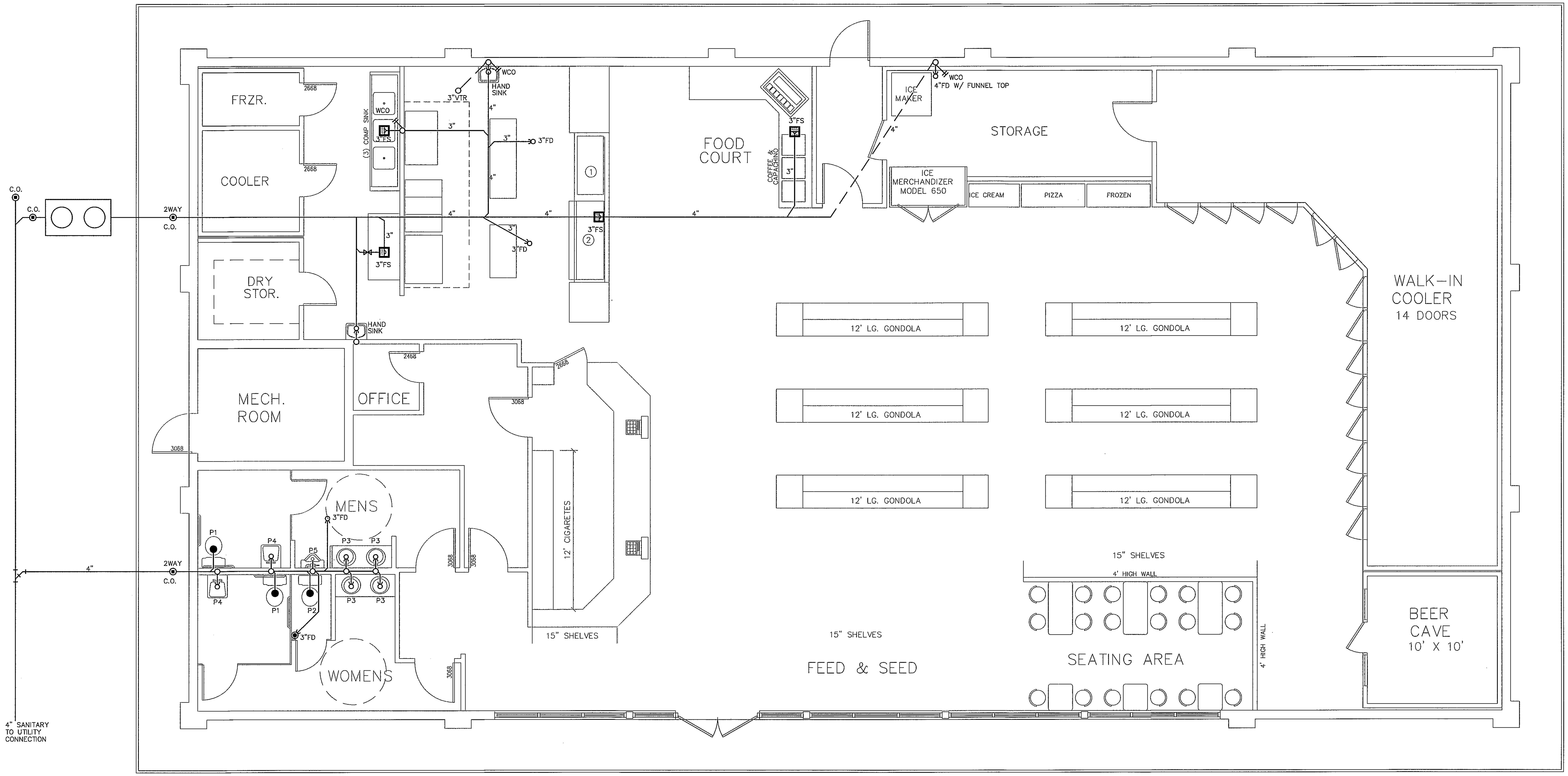
GREASE INTERCEPTOR DETAIL — DET # 2 / P2



WATER HEATER DETAIL — DET # 3 / P2



HOSE BIBB DETAIL (INTERIOR) — NTS — DET # 4 / P2



SANITARY PLAN
1/4" = 1'-0"

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P2

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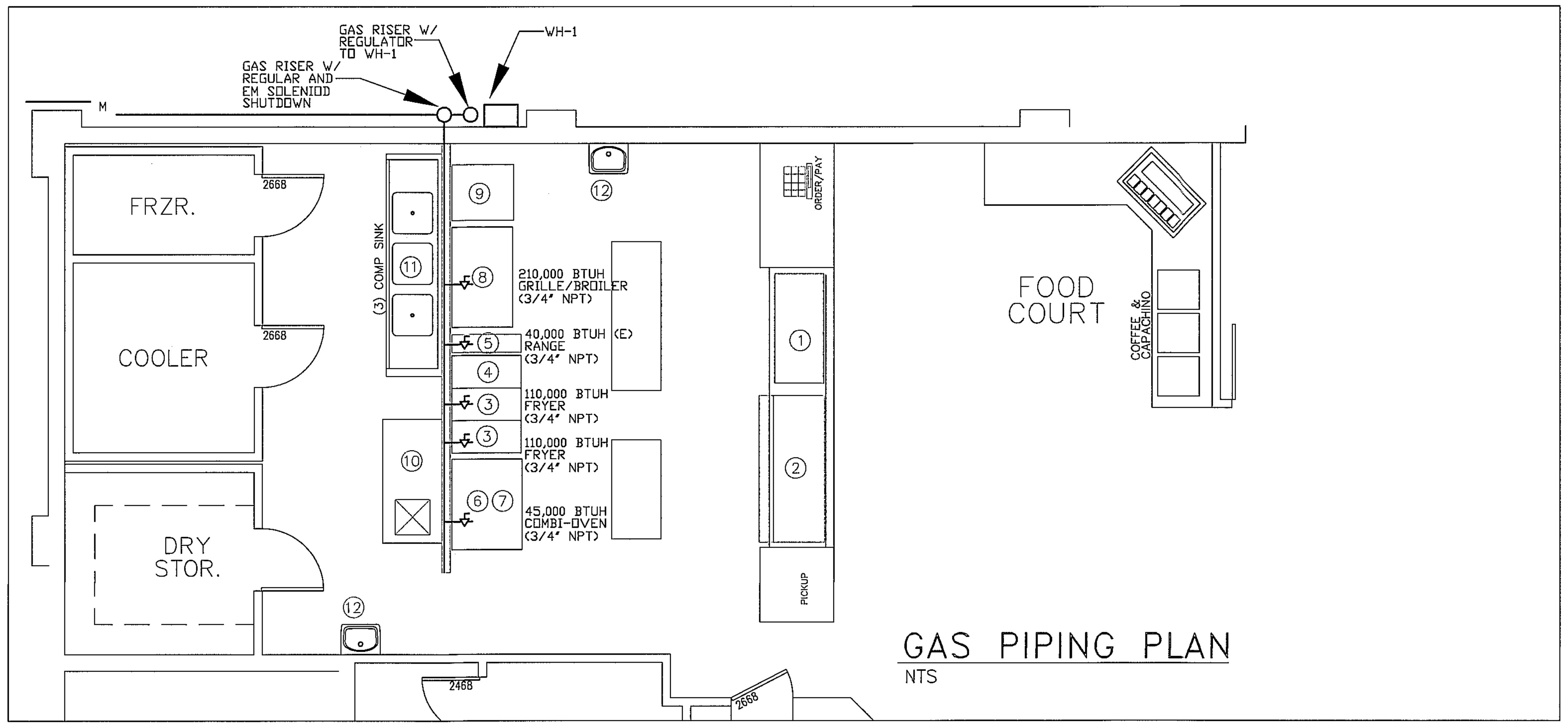
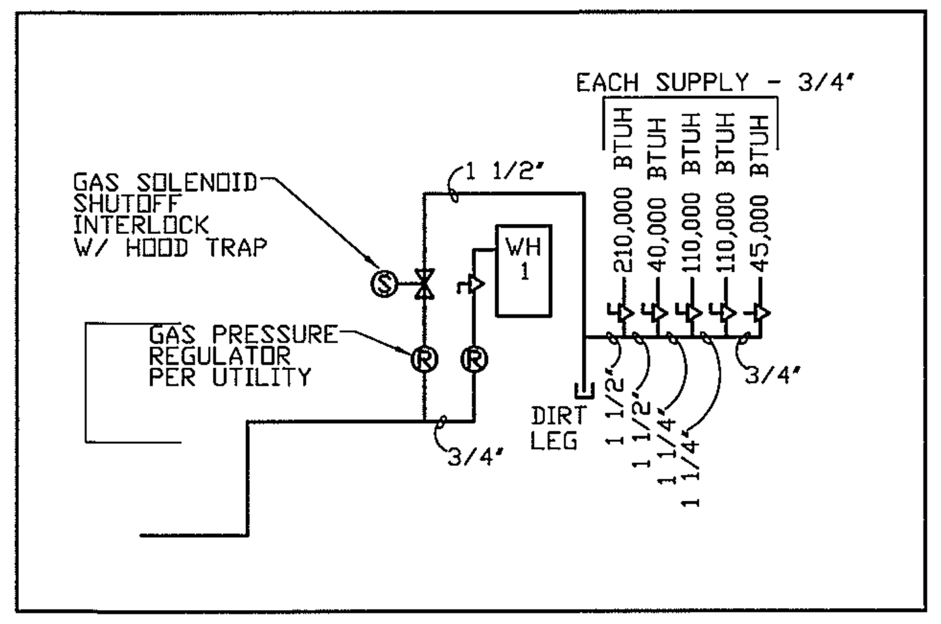
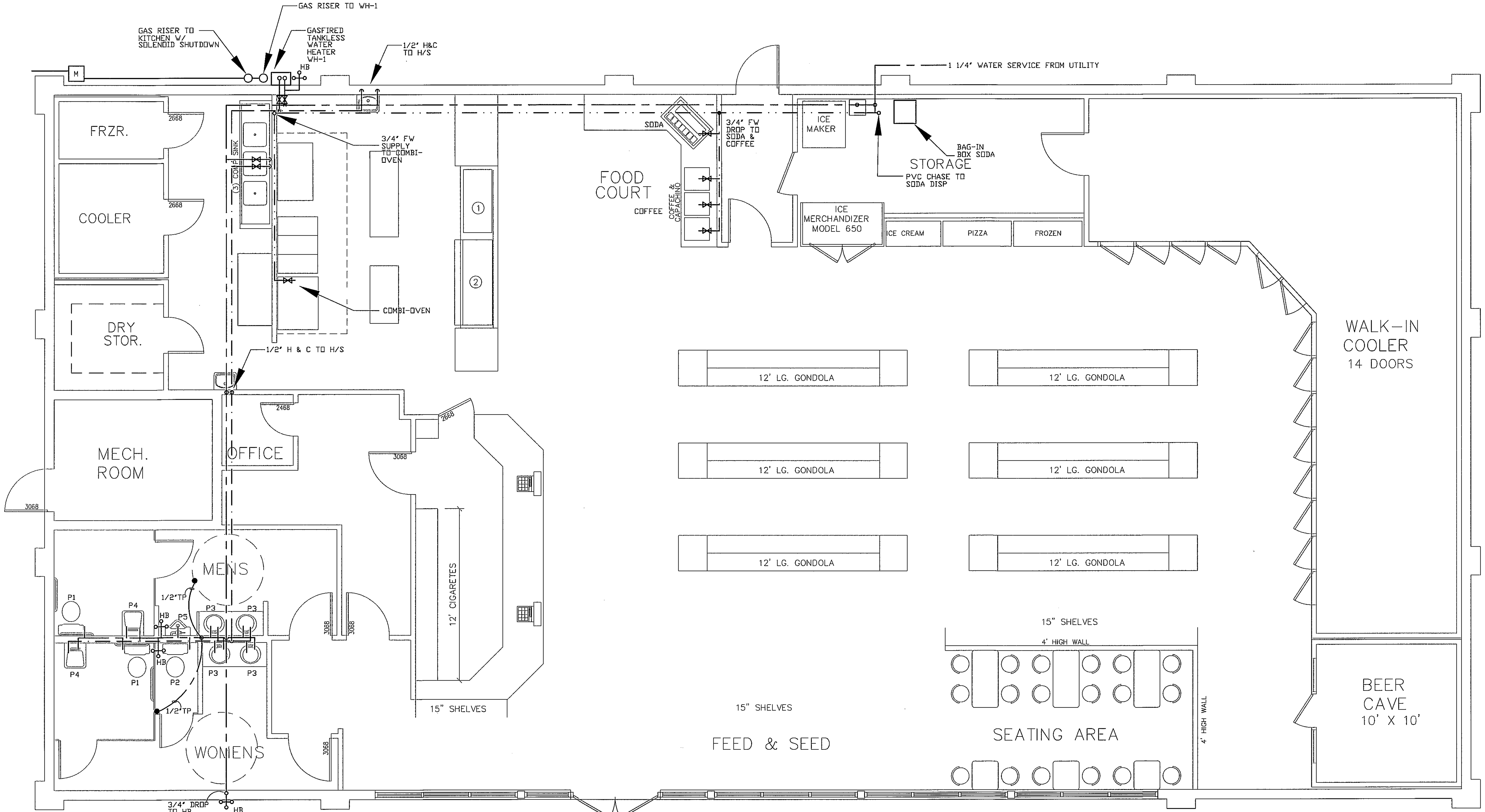


GAS PIPING PLAN
NTS



GAS PIPING RISER
NTS



WATER & GAS SUPPLY PLAN
1/4" = 1'-0"

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P3

OF
SHEETS

PLUMBING SPECIFICATIONS

A. It is the intent of these specifications to define the work and materials typically installed by a Plumbing Contractor. However, it is not intended to define a subcontract between the Plumbing Contractor and General. The General Contractor is responsible for the entire project and any questions regarding scope of work shall be directed to the General Contractor.
B. Work shall include all labor, materials, fixtures, equipment, tools and service necessary for installation, testing and adjusting of all mechanical systems shall be furnished and installed in compliance with the Drawings, Specifications, and any Addenda thereto.
C. Drawings and Specifications shall be understood to cover, according to their intent and meaning, complete mechanical systems. Work shown and not specified, or work specified and not shown shall be performed as though mentioned in both.
D. Minor items and accessories reasonably inferred as necessary for the complete and proper operation of any system shall be provided by contractor or subcontractor for such system whether or not they are specifically called for.
E. Before submitting a bid, the Plumbing Contractor is to coordinate with the utility company to ascertain, in detail, the division of work, and the extent of performance by the Utility Company shall be furnished and performed by the Plumbing Contractor.
1. If well and septic, contractor shall coordinate with General Contractor and review civil drawings to coordinate his scope of work.
F. All work shall be performed or installed in strict accordance with Florida Building Code 2007 – Plumbing with 2008 and 2009 Amendments all applicable rules, regulations and codes of local state and Federal Governments having lawful jurisdiction, and each contractor and subcontractor shall be responsible for such compliance.
G. Fees for permits, inspections, patent use, royalties, etc. shall be paid by the contractor.
1. Furnish all equipment and personnel and conduct all tests required to secure approval of the installation.
2. Any repairs or changes required to secure the approval of the installation shall be done at no additional expense to the Owner.
H. All work shall be installed in accordance with the appropriate codes and satisfy the local inspector having jurisdiction.
1. Furnish all equipment and personnel and conduct all tests required to secure approval of the installation.
2. Any repairs or changes required to secure the approval of the installation shall be done at no additional expense to the Owner.
I. Upon completion of each part of the mechanical system, the contractor shall demonstrate to the Engineer that each item on that system is installed with proper covers, safeties, controls, etc., and that all are in proper working order.
J. A set of "red-lined" mechanical drawings shall be carefully maintained at the job site. Actual conditions are to be put on the drawings in red on a daily basis so the drawings will continuously show locations and routings of piping, ducts, grilles, equipment, valves, and any equipment specified on the drawings or in these specifications.
K. Equipment and materials shall be new and meet or exceed specification requirements.
1. All product shall be current model for which replacement parts are available.
L. Acceptable manufacturers are listed, additional manufacturers may request approval for their products up to 10 days in advance of bid. Engineer may require supplemental information prior to accepting or requesting an alternate.
M. All work shall be performed in compliance with OSHA regulations.
N. Shop drawings and product data shall be submitted on all equipment, fixtures, etc.
1. Sumittals shall include all equipment to be installed by the subcontractor and all submittals must be made at same time.
2. Each package must have the General Contractors review stamp prior to submittal.
3. The Engineer will review one submittal and one resubmittal; subsequent resubmittals may require a review charge to be paid by subcontractor.
4. Shop drawings shall be labeled in the same designation as the drawings.
O. Job conditions shall be inspected to determine prior to bidding in the following manner:
1. Site visit to determine:
a. Existing conditions.
b. How and where materials will be delivered and stored.
c. Special problems encountered during construction.
2. Examine all Contract Drawings and Specifications to determine:
a. Type of construction to be used.
b. How construction or work will affect the work of this Section.
c. Nature and extent of work of other trades.
P. Failure to determine existing conditions or nature of construction will not be considered as a basis for granting additional compensation.
Q. Installation
1. Contract Drawings show the arrangements and sizes of principal apparatus and devices to be provided under this Contract and connection thereto. These shall be followed as closely as actual building construction will permit.
2. Dimensions of work as indicated on Plans are not guaranteed to be as-built d dimensions.
3. No measurements shall be scaled from Drawings and used as definite dimensions for layout or fitting work in place.
4. Layout of equipment, as shown on the plans, shall be checked and exact location determined by dimension if equipment approved by the Architect.
5. Consult the Drawings for all dimensions, locations of partitions, sizes of structural member, foundations, etc.
6. Do not make final layouts until shop or equipment drawings are approved and job conditions verified.
R. Excavation and Backfill:
1. Plumbing Contractor shall coordinate with General Contactor to determine the extent or has work regarding excavation and backfill.
S. Rough-in:
1. Contractor shall rough-in for all equipment, fixtures, etc., in building whether or not such equipment is furnished by this Contractor or by Owner.
2. Determine in advance the location and size of all openings and chases necessary for proper installation of all work and have openings and chases provided during construction.
3. Install all inserts for hangers and supports of mechanical work and equipment work as general construction progresses.
4. Rough-in openings in masonry or stud walls shall be cut, not broken or chiseled.
5. Sleeves shall be required at all points where piping passes through concrete walls, slabs or masonry walls; sleeves installed below grade or where subject to high water conditions shall be installed watertight.
T. Coordination:
1. Work shall be coordinated between all Contractors, Subcontractors, Installers, Suppliers, Trades, etc., to:
a. Insure a neatly fitted installation.
b. Determine the nature and extent of the work of others.
c. Eliminate interferences.
d. Maintain maximum headroom and clearances.
2. Any interference which develops or is foreseen and cannot be resolved by the affected trades, etc. shall be handled as follows:
a. Cease installation of that portion of the work which is in conflict as no additional compensation will be allowed for any relocation, etc.
b. Continue work only on other portions of the work which are not in conflict.
c. Notify the Architect immediately.
d. Architect's decision shall be final as to any relocation, rerouting, removal, etc.
e. No additional compensation will be allowed for removal, relocation, repairs or changes required by interferences.
U. Clear away all debris, surplus materials, etc., resulting from work on operations, leaving job and equipment in clean first-class condition.
V. Where factory finish is provided on equipment, all marred or damaged surfaces shall be touched-up or refinished hereunder as approved.
W. All plumbing fixures shall be thoroughly cleaned of all plaster, stickers, rust stains, and other foreign matter, and be left ready for use.
X. Surfaces of all floor drains, cleanouts and other equipment shall be cleaned and left in first-class condition.

CHLORINATION OF DOMESTIC WATER LINES

A. Disinfection of all water piping which shall carry potable water or any other piping connected thereto which is not separated by a backflow preventor.
B. Disinfection shall be chlorine, either in the form of hypochlorite solution or in the form of compressed gas applied through an approved cholorinator.
C. After completion of all tests, replacement, and repairs, all water supply systems shall be thoroughly flushed with water to remove sediment and/or debris.
D. Begin disinfection only after flushing system.
E. The system shall be filled with a solution containing 50 parts per million available chlorine and allowed to stand for twenty-four hours, or as required by local authorities, whichever is greater.
F. During Chlorination all valves and equipment shall be operated to insure that chlorine reaches all parts of the system.
G. Following disinfection all treated water shall be flushed from the system through its extremities until the quality of water delivered is comparable with the quality of the public water supply and satisfactory to the public health authority having jurisdiction.
H. Disinfection and flushing shall be repeated if samples taken daily over a period of three days show that water quality is not being maintained.
I. Samples shall be taken only from taps located and installed in such a manner that they will not contribute any contamination.
J. Samples shall not be drawn from hydrants or through unsterilized hose.
K. If disinfection and flushing has been repeated three times and water quality cannot be maintained, the Architect shall have the authority to require disassembly of piping as he shall deem necessary to determine the cause of contamination.
1. Any disassembly, cleaning or repair shall be at no additional expense to the Owner.
2. Disinfection, flushing and testing shall be repeated upon reassembly of the piping.

PIPE AND FITTINGS

A. Refer to "PIPING SCHEDULE" on drawings.
B. Any manufacturer engaged in the production of pipe, fittings and associated materials and who test, inspect and certify that said materials meet or exceed the ASTM designation for that material shall be acceptable.
C. Inspection for Underground Piping:
1. Examine areas to receive underground piping for:
a. Complete excavation to elevations and slopes indicated.
b. Obstructions which would interfere with drainage system installation.
2. Begin work only when conditions are satisfactory.
D. Inspection for above-Ground Piping:
1. Examine areas to receive piping for:
a. Obstructions.
b. Work to be done prior to other construction.
c. Work of other trades in other areas.
2. Begin work only when conditions are corrected satisfactorily.
E. Installation of Underground Piping
1. Excavation:
a. Excavate trenches of sufficient width for proper installation of pipe.
b. Sheet and brace trenches as necessary to protect workmen and adjacent structures.
c. Comply with current OSHA standards.
2. Final grading of trench:
a. Perform final grading of trench bottoms by hand tools; carry machine excavation only to such depth that soil bearing for pipes will not be disturbed.
b. Grade bottom of trenches evenly to insure uniform bearing for all piping.
c. Cut holes as necessary for joint making.
d. Keep trenches free from water while construction is in progress.
e. Use surveyor's level to establish elevations and grades.
f. Machine excavation shall be held a sufficient distance from foundations and footings.
g. Provide and maintain barricades and temporary bridges around excavations as required for safety.
h. Water lines may be benched above sanitary lines in same trench if they are 18 inches or more above the sanitary line.
i. Minimum bury depth for water piping shall be 24 inches.
j. Grade horizontal drainage 1/4 inch per foot minimum.
k. Install same type material specified for the inside building to 8 feet outside building.
3. Backfill:
a. Backfill for all sewer lines shall be placed in accordance with manufacturer's printed instructions.
b. Backfill trenches only after piping has been inspected.
c. The backfill below paved areas and walks shall be brought to within 6 inches of finished grade; the remaining six inches shall be backfilled with clean topsoil.
d. The backfill below sodded or seeded areas shall be brought to within 6 inches of finished grade; the remaining six inches shall be backfilled with clean topsoil.
e. Provide and place any additional fill material from off the site as may be required for backfill.
F. Installation of above-Ground Piping:
1. Pipe supports.
a. Support piping as specified in Section 15094 for permanent installation.
b. Pipe shall be adequately supported during construction with blocking or slings to prevent injury to personnel or damage to equipment or materials.
2. Exposed piping.
a. Run exposed piping true and level.
b. Run vertical exposed piping plumb.
c. Run exposed piping with as few elbows and bends as possible.
d. Group piping wherever practical at common elevations.
e. Install concealed pipes close to building's structure to keep furring to a minimum.
f. Slope water piping 1 inch in 40 feet and arrange to drain at low points.
g. On closed systems, equip low points with 3/4 inch drain valves and hose nipples.

PLASTIC PIPE AND FITTINGS

A. Domestic Water Supply – All
1. CPVC PER ASTM D2846
2. Joints
a. GLUED PER MANUFACTURERS RECOMMENDATIONS
3. Fittings
a. CPVC
B. Vent piping (Above grade).
1. Piping shall be PVC
2. Polyvinyl Chloride (PVC) – ASTM D-1784-60T
a. Schedule 40
b. Type 1, Grade 1
c. Pipe shall bear NSF seal and ASTM designation
3. Joints
a. Bonded joints using adhesive per manufacturer's recommendations
4. Fittings
a. PVC – ASTM D-2665-69.
b. ABS – ASTM D-2661-69.
C. Sanitary piping EXCEPT LAB FIXTURE (P8) DRAINS
1. PVC
a. Schedule 40
b. Type 1, Grade 1.
c. Pipe shall bear ASTM designation and NSF seal
2. Joints
a. Bonded joints using adhesive per manufacturer's recommendations
3. Fittings
a. PVC – ASTM D-2665-69

TRAPS

A. General
1. All fixtures shall be trapped according to the Florida Building Code – Plumbing
2. All traps shall be the same size as the pipe in which they are installed or as sized on the Drawings.
3. All traps above grade shall have a clean-out plug in the bottom of the trap.
4. All traps above grade shall be PVC except for P-8 which shall be POLYETHYLENE
5. All traps below grade shall be PVC or POLYETHYLENE WHERE NOTED
6. No trap below grade shall be less than 2 inches.
7. No fixture shall be double trapped.

SHOCK ABSORBERS

A. Furnish and install shock absorbers on all domestic water piping as shown on the drawings, and/or specified in this section.
B. Acceptable Manufactures
1. Wade
2. Josam
C. Description
1. Heavy duty casing
2. Minimum burst pressure – 4500 psig.
3. Nested bellows with built in stop.
4. Operating temperature 100 to 300 degrees F.
5. Permonently sealed charge of non-combustible gas.
6. All stainless steel.
7. Designed and built in accordance with plumbing and drawing standard PDI-WH201.
D. Model Numbers (Zurn numbers used for reference only)
1. SS-1, MODEL 1250 – A – 1/2"
2. SS-2, MODEL 1250 – B – 3/4"
3. SS-3, MODEL 1250 – C – 1"
4. SS-4, MODEL 1250 – D – 1"
5. SS-5, MODEL 1250 – E – 1"
6. SS-6, MODEL 1250 – F – 1"

PIPE HANGERS AND SUPPORTS

A. All piping shall be supported by pipe hangers, clamps, clps or supports as specified in this Section.
B. All clevis type hangers shall have a minimum of 1 1/2 inches of vertical adjustment by using turnbuckles and/or threaded rods.
C. All adjustments shall be positively secured by a locknut or setscrew.
D. Hangers shall support the pipe size for which they are manufactured.
E. Acceptable Manufactures
1. Grinell
2. Fee and Mason
F. All clamps, hangers, clevis, etc. shall be steel.
G. Pipe hangers in direct contact with copper shall be copper or lead plated, or of an approved dielectric material.
H. Installation:
1. All piping shall be supported from structural building members, i.e. block, beams, columns, purlines, floor joists, etc.
2. Piping shall not be supported from ceiling tile or grids, conduit, mechanical equipment, ductwork or non-structural steel.
3. Perforated strapping may be used only for piping 3/4 in. or smaller and only when concealed in walls or ceilings.
4. Hangers for piping run flush along the walls shall be stamped steel straps similar to conduit straps for pipe sizes two (2) inches and smaller.
5. Hangers for piping run flush along the walls shall be steel wall brackets with steel clevis type hangers and threaded rod supports for pipe over two (2) inches.
6. Hangers for piping not run along walls shall be clevis type hangers with threaded rod supports for all piping over 3/4 inches.
I. Spacing:
1. Vertical runs of piping not over 15 feet long shall be supported by hangers placed not over one foot from elbows or connecting horizontal run.
2. Hangers shall be placed so as to prevent sag and permit proper drainage.
3. Hangers shall not be placed at more than the maximum distances shown on the Table below

Pipe Size	Max. Span – Ft.
1/2 and 3/4	6
1 and 1-1/4	8
1-1/2, 2, 2-1/2	10
3 and 4	12
5 and 6	14
8 and larger	16

4. Concentrations of valves and fittings will require closer spacing.
J. Hanger Attachments:
1. Pipe hangers shall be attached to structural steel by heavy steel clamps.
a. Clamps shall be bolted to steel or welded.
2. Pipe hangers or clamps shall be attached to walls by means of expansion bolts (shields).

UNIONS

A. Size
1. All unions shall be the same size as the line in which they are installed unless noted otherwise.
B. Location
1. Unions shall be located between the shut-off valve and each of the following:
a. Inlet and outlet to all water heaters
b. Lavoratories and sinks
c. Water coolers
d. Water closets and toilets
e. Inlet and outlet of cooling coil
f. Inlet and outlet of pumps
2. Where final fixture connection is made by compression-type fitting, unions shall not be required.
a. This exception does not apply to water heater.
C. Acceptable Manufacturers
1. Crane
2. Jenkins
3. Vogt
4. Stockman
D. Unions for 2-1/2 inches and smaller copper
1. Brass ground joints, brass body
2. 150# rated
3. Sweat to threaded to match the system in which they are installed
E. Install in locations where wrenches can be used on each half of the union with enough clearance for at least 180 degrees of rotation on a 6" pipe wrench.

VALVES, COCKS AND FAUCETS

A. Hot, cold, and/or tempered water
1. Shutoff valves above grade
a. CPVC Ball Valves – 1/4 turn
2. Shutoff valves below grade
a. Bronze Gate Valve
(1) Install in fiberglass box with cover
3. Drain valves
a. CPVC Ball Valves – 1/4 turn
B. Acceptable Manufacturers
1. Crane
2. Vogt
3. Sterling
4. Nibco
C. Hose Bibbs
1. 3/4" Female thread inlet
2. 3/4" Male thread hose outlet
3. Rough chrome plated
4. Loose-key type
5. Provide with vacuum breaker
6. Model
a. Equal to Chicago No. 3877-E27, Nibco 763-LS or equal
7. Provide with vacuum breaker.
D. Wall Hydrant WH
1. Fully recessed with "key" operated cover.
2. 3/4" felmale inlet
3. 3/4" male threaded hose outlet
4. Rough chrome plated
5. Vacuum breaker.

PRESSURE – TEMPERATURE RELIEF VALVE

A. Supply a pressure relief valve on each hot water heater and hot water booster heater tank.
B. Valve size, pressure, and temperature rating shall be as specified by the tank manufacturer, except that in no case shall the valve be smaller than 3/4 inches inlet and outlet.
C. Valve shall have a handle for manual operation and testing.
D. Valve shall be cast brass or bronze.
E. Pipe the outlet of the pressure-temperature relief valve to outside of building and terminate 2" above grade or per local code.

INSULATION

A. Provide piping insulation on all piping designated on the "Piping Schedule" shown on drawings and per Florida Energy Code. Min R4 per inch.
B. Acceptable Manufacturers
1. Johns-Manville
2. Certainteed
C. Fiberglass Insulation
1. Rigid lightweight heavy density fiberglass with jacket.
2. Temperature applications to 650 F.
3. Insulation, jacket, and adhesive shall be tested under procedure ASTM E-84, NFPA 255, and UL 723, not exceeding
a. Flame spread – 25.
b. Smoke developed – 50.
4. Equal to Johns-Manville Micro-Lok 650 AP-T.
D. Closed Cell Rubber Insulation
1. Closed cell, elastomeric tubular pipe insulation.
2. Tested under procedure ASTM E-84, NFPA 255, and UL 723 not exceeding
a. Flame spread – 30.
b. Smoke density – 100.
3. Adhesive
a. Air drying contact cement
b. Equal to Johns-Manville "Aerotube Elastomeric Pipe Insulation."
E. Install insulation only after pipe has been thoroughly inspected and tested and accepted by the Architect, Engineer and State or local inspectors.
F. All surfaces to receive insulation shall be cleaned of all dirt, grease, and moisture prior to installing any insulation.
G. Installation of Fiberglass Insulation:
1. All insulation shall be continuous through wall and ceiling openings.
2. Vapor barrier jackets shall be used on piping except domestic hot water.
3. Hangers, supports, anchors, etc., that are secured directly to cold surfaces must be adequately insulated and vapor sealed to prevent condensation.
4. Metal shields shall be applied between hangers or supports and the pipe insulation.
5. Shields shall be formed to fit the insulation and shall extend up to the centerline of the pipe and a minimum of 9 inches long.
6. Shields shall be 16 gauge aluminum.
7. Fittings shall be covered equivalent density insulation and covered with preformed PVC insulation fitting covers.
a. Wrap fittings with insulation.
b. Pop the preformed cover in place, tape or tack.
H. Installation of Closed-Cell Rubber:
1. Make all cuts neatly with a razor blade or sharp knife.
2. All longitudinal cuts shall be sealed with adhesive.
3. All butt joints shall be made neatly and sealed with adhesive.
4. Tape shall not be allowed on joints or seams.
5. Insulation shall be applied in a relaxed state, not stretched or crushed.
6. Fittings shall be insulated by fabricating tees, elbows or crosses as required from the tube insulation as described in manufacturer's literature.
7. Valves shall be insulated up to the packing nut.
8. All insulation on exposed piping shall receive two (2) coats of paint, the same color as the wall against which it is mounted.
9. Joints shall be sealed with adhesive as recommended by the manufacturer.

FLOOR AND SHOWER DRAINS

A. Acceptable Manufactureres
1. Wade
2. Josam
3. Zurn
B. Floor Drains:
1. Cast iron floor drain with integral clamping collar.
2. Seepage openings.
3. Heavy duty grate, with vandalproof screws.
4. Square top, polished brass.
5. Adjustable top.
6. 4-inch outlet unless otherwise noted on Drawings.
7. Model – equal to Wade, Series W – 1390.
C. Installation
1. Floor drains shall be installed in the locations show on Plans.
2. Care shall be taken that rim of floor drain is not higher than finished floor in order to prevent "Puddling" of water around the drain.
3. Floor drain top shall be flush with finished floor.
4. Hub drains shall extend 1 inch above finished floor per details.
D. Floor Sinks
1. Enameled cast iron
2. 4" outlet unless otherwise noted
3. 12" X 12" overall, 8" X 8" X 6"ø basin size
4. Provide 1/2 top grate
5. Equal to Zurn FD2375

CLEANOUTS AND ACCESS COVERS

A. Provide cleanouts as shown on the Drawings or as required by Standard Plumbing Code.
B. Acceptable Manufacturers
1. Wade
2. Josan
3. Zurn
C. Floor Cleanouts:
1. Same size as drain pipe through 4 inches.
2. Adjustable housing to match finished floor.
3. Heavy duty top.
4. Nickel brass secured cover.
5. Ferrule as required to match soil pipe.
6. Cast iron.
7. Cover shall be marked "C.O."
8. Model Number:
a. Synthetic floor covering:
(1) Wade W-7030-D Series or equal
b. Finished slab – no covering:
(1) Equal to Wade W-7030 Series
c. Terrazzo finish:
(1) Wade W-7010-U Series, or equal.
D. Concealed Cleanouts:
1. Cleanouts in crawl space or in unfinished mechanical rooms.
2. Cast iron cleanout tee on T-wall with ferrule fitting and neoprene seal raised plug head.
3. Same size as drain pipe through 4 inches.
4. Position cleaout plug for easy access by electric eel.
5. Model Number:
a. Cleanout ferrule.
(1) Wade W-8530-B Series or equal.
E. Exposed Wall Cleanouts
1. Same size as pipe.
2. Polished chrome cleanout cover over wall opening.
F. Install all cleanouts and coverplates flush with the finished floor in which they are installed.
1. Any cleanout which presents a tripping hazard due to improper installation shall be removed and reinstalled.

PLUMBING FIXTURES

A. Furnish and install plumbing fixtures per Plumbing Fixture Schedule
1. Manufacturers and Model Numbers establish quality; equivalent fixtures by other manufacturers are acceptable.

PLUMBING SPECIFICATIONS
NTS

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