BUILDING USE, CLASSIFACATION & OCCUPANCY AS PER TABLES 503 & 1004.1.1, FLORIDA BUILDING CODE, 2007 ED.	
BUILDING GROUP OCCUPANCY	GROUP B
TABLE 503 TYPE OF CONSTRUCTION	TYPE V
TABLE 503 AREA/HEIGHT LIMITATIONS	9,000 SF/1 STORY
OCCUPANT LOAD:	
BUSSINESS OCCUPENCY	
4400 SF @ 100 SF/PERSON	44
WAITING AREAS	
400 SF @ 15 SF/PERSON	27
MECHANICAL USE	
98 SF @ 300 SF/PERSON	1
WAREHOUSE USE	
4302 SF @ 500 SF/PERSON	9
TOTAL OCCUPANT LOAD:	81 PERSONS

ABBREVIATIONS

A.B.	Anchor Bolt	Flr.	Floor	Plt. Ht.	Plate Height
Abv.	Above	Fdn.	Foundation	Plt Sh.	Plant Shelf
A/C	Air-Conditioner	Flr. Sys.	Floor System	PSF	Pounds per square foot
Adj.	Adjustable	F.Pl.	Fireplace	P.T.	Pressure Treated
A.F.F.	Above Finished Floor	Ft.	Foot / Feet	Pwd.	Powder Room
A.H.U.	Air Handler Unit	Ftg.	Footing	Rad.	Radius
ALT.	Alternate	FX	Fixed	Ref.	Refrigerator
B.C.	Base Cabinet	Galv.	Galvanized	Req'd.	Required
B.F.	Bifold Door	G.C.	General Contractor	Rm.	Room
Bk Sh	Book Shelf	G.F.I.	Ground Fault Interrupter	Rnd.	Round
Bm.	Beam	G.T.	Girder Truss	R/SH	Rod and Shelf
BOT.	Bottom	Hdr.	Header	SD.	Smoke Detector
B.P.	Bypass door	Hgt.	Height	S.F.	Square Ft.
Brg.	Bearing	HB	Hose Bibb	Sh.	Shelves
Cir.	Circle	Int.	Interior	SHT	Sheet
Clg.	Ceiling	K/Wall	Kneewall	S.L.	Side Lights
Col.	Column	K.S.	Knee Space	S.P.F.	Spruce Pine Fir
Comp.	A/C Compressor	Laun.	Laundry	Sq.	Square
C.T.	Ceramic Tile	Lav.	Lavatory	S.Y.P.	Southern Yellow Pine
D	Dryer	L.F.	Linear Ft.	Temp.	Tempered
Dec.	Decorative	L.T.	Laundry Tub	Thik'n.	Thicken
Ded.	Dedicated Outlet	Mas.	Masonry	T.O.B.	Top of Block
Dbl.	Double	Max	Maximum	T.O.M.	Top of Masonry
Dia.	Diameter	M.C.	Medicine Cabinet	T.O.P.	Top of Plate
Disp.	Disposal	MDP	Master Distribution Panel	Trans.	Transom Window
Dist.	Distance	Mfgr.	Manufacturer	Typ.	Typical
D.S.	Drawer Stack	Micro.	Microwave	UCL	Under Cabinet Lighting
D.V.	Dryer Vent	Min	Minimum	U.N.O.	Unless Noted Otherwise
D.W.	Dishwasher	M.L.	Microlam	VB	Vanity Base
Ea.	Each	Mir.	Mirror	Vert.	Vertical
E.W.	Each Way	Mono	Monolithic	V.L.	Versalam
Elec.	Electrical	N.T.S.	Not to Scale	VTR	Vent through Roof
Elev.	Elevation	Opn'g.	Opening	W	Washer
Ext.	Exterior	Opt.	Optional	W/	With
Exp.	Expansion	Pc.	Piece	W/C	Water Closet
F.B.C.	Florida Bldg. Code	Ped.	Pedestal	W.A.	Wedge Anchor
Fin. Flr.	Finished Floor	P.L.	Parallam	Wd	Wood
F.G.	Fixed Glass	PLF	Pounds per linear foot	WP	Water Proof

STRUCTURAL DESIGN CRITERIA

CODES: FLORIDA BUILDING CODE, 2010 EDITION WITH REVISIONS
2011 NATIONAL ELECTRIC CODE
MINIMUM DESIGN LOADS ASCE 7-10

LIVE LOADS: ROOF — 20 PSF (REDUCIBLE)

CONCRETE STRENGTH @ 28 DAYS:
ALL CONCRETE UNLESS OTHERWISE INDICATED — 3000 PSI
PEA GRAVEL CONCRETE FOR MASONRY CELLS ONLY — 3000 PSI
(DO NOT USE FOR CONCRETE COLUMNS OR TIE BEAMS)

REINFORCING:
WELDED WIRE FABRIC SHALL CONFORM TO — ASTM A185
ALL REINFORCING BARS — ASTM A615-60 60,000 PSI
ALL STIRRUPS AND TIES — ASTM A615-60 60,000 PSI

CONCRETE MASONRY UNITS:
ASTM C90-99b, STANDARD WEIGHT UNITS, fm=1500 PSI
MORTAR TYPE "S" 1800 PSI
CONCRETE GROUT 3000 PSI
CONTINUOUS MASONRY INSPECTION IS REQUIRED DURING CONSTRUCTION

STRUCTURAL STEEL:
ALL STRUCTURAL AND MISCELLANEOUS STEEL A36 36,000 PSI, U.N.O
SHOP AND FIELD WELDS: E70XX ELECTRODES
ALL BOLTS CAST IN CONCRETE: ASTM A36 OR ASTM A-307

WOOD FRAMING:
BEAMS, RAFTERS, JOIST, PLATES, ETC. U.N.O.
NO. 2 SOUTHERN YELLOW PINE (19% M.C.)
ROOF DECK: PLYWOOD C-C/C-D, EXTERIOR, or OSB
FLOOR SHEATHING: T&G A-C GROUP 1 APA RATED (48/24)
WALL SHEATHING: PLYWOOD C-C/C-D, EXTERIOR OR OSB
VERSA LAM BEAM Fb = 2900 PSI (2.0E)
WOOD COLS. PARALLAM 2.0E U.N.O.

WOOD AND LIGHT GAGE STEEL ROOF TRUSSES:
DESIGN LOADS:
TOP CHORD LIVE AND DEAD LOAD: 30 PSF
BOTTOM CHORD DEAD LOAD: 10 PSF
TOTAL: 40 PSF

SEE DRAWINGS FOR SPECIAL CONCENTRATED LOADS. DESIGN FOR NEW WIND UPLIFT AS PER SPECIFIED CODES, DEDUCTING A MAXIMUM OF 5 P.S.F. DEAD LOAD, BUT NOT EXCEEDING ACTUAL DEAD LOAD.

SOIL BEARING VALUE:
ASSUMED ALLOWABLE SOIL BEARING PRESSURE AFTER COMPACTION: 1500 PSF
SEE SOILS REPORT AND SPECIFICATIONS FOR COMPACTION REQUIREMENTS
IF SOIL CONDITIONS IN THE PROJECT DO NOT MEET OR EXCEED THE CAPACITY THE GENERAL CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO FOUNDATION POUR FOR VERIFICATION OF FOUNDATION DESIGN.

PROJECT LOCATION



EMORY MEDICAL
NEW OFFICE FACILITY

CONSTRUCTION DOCUMENTS

THE CUSTOMER IS RESPONSIBLE FOR DELIVERING THE REQ'D SETS OF CONSTRUCTION DOCUMENTS TO THE PERMIT ISSUING AUTHORITIES, FOR THE ISSUANCE OF CONSTRUCTION PERMITS. THE CONTRACTOR SHALL REVIEW THE CONSTRUCTION DOCUMENTS AND VERIFY ALL DIMENSIONS, ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK OR FABRICATION OF ANY MATERIALS.

DO NOT SCALE OFF THESE PLANS

AMPLE DIMENSIONS ARE SHOWN ON THE PLANS TO LOCATE ALL ITEMS. SIMPLE ARITHMETIC MAY BE USED TO DETERMINE THE LOCATIONS OF THOSE ITEMS NOT DIMENSIONED.

CHANGES TO FINAL PLAN SETS

PLEASE DO NOT MAKE ANY STRUCTURAL CHANGES TO THESE PLANS WITHOUT CONSULTING THE ENGINEER. THE OWNER SHALL ASSUME ANY AND ALL LIABILITY FOR STRUCTURAL DAMAGE RESULTING FROM CHANGES MADE TO THE PLANS OR BY SUBSTITUTION OF MATERIALS DIFFERENT FROM SPECIFICATIONS ON THE PLANS.

MISC. NOTES

THE CONTRACTOR SHALL INDEMNIFY THE OWNER AGAINST ALL CLAIMS, WHETHER FROM PERSONAL INJURY OR PROPERTY DAMAGE, ARISING FROM EVENTS ASSOCIATED WITH THE WORK PERFORMED UNDER THE CONTRACT FOR THIS PROJECT.

THE CONTRACTOR AND/OR SUB-CONTRACTORS SHALL WARRANTY ALL WORK FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF FINAL COMPLETION AND ACCEPTANCE BY THE OWNER. DEFECTS IN MATERIALS, EQUIPMENT, COMPONENTS AND WORKMANSHIP SHALL BE CORRECTED AT NO FURTHER COST TO THE OWNER DURING THE ONE YEAR WARRANTY PERIOD.

AT THE OWNER'S OPTION, A WARRANTY INSPECTION SHALL BE PERFORMED DURING THE ELEVENTH MONTH FOLLOWING THE COMMENCEMENT OF THE WARRANTY PERIOD, FOR THE PURPOSE OF DETERMINING ANY WARRANTY WORK THAT MAY BE REQUIRED. THE CONTRACTOR SHALL BE PRESENT DURING THIS INSPECTION IF REQUESTED BY THE OWNER.

THE OWNER SHALL PAY FOR ALL PERMITS, LICENSES, TESTS AND THE LIKE THAT MAY BE REQUIRED BY THE VARIOUS AUTHORITIES HAVING JURISDICTION OVER THIS PROJECT BE THEY CITY, COUNTY, STATE OR FEDERAL.

THE OWNER SHALL FILE A "NOTICE OF COMMENCEMENT" PRIOR TO THE BEGINNING THE THE PROJECT AND THE CONTRACTOR(S) SHALL FILE "NOTICE TO OWNER" AND PROVIDE "RELEASE OF LIEN" FOR ALL PAYMENT REQUESTS PRIOR TO DISBURSEMENT OF ANY FUNDS.

ANY AND ALL DISPUTES ARISING FROM EVENTS ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT BETWEEN THE OWNER, CONTRACTOR(S) AND SUPPLIERS SHALL BE RESOLVED THROUGH BINDING ARBITRATION.

ALL WORK SHALL BE IN ACCORDANCE W/ APPLICABLE CODES AND LOCAL REGULATIONS, INCLUDING APPLICABLE ENERGY CODES. ALL COMPONENTS OF THE BUILDING SHALL MEET WITH THE MINIMUM ENERGY REQUIREMENTS OF THE BUILDING CODE. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IN WRITING PRIOR TO THE COMMENCEMENT OF THE WORK.

ALL INSULATION SHALL BE LEFT EXPOSED AND ALL LABLES LEFT INTACT ON THE WINDOWS AND DOORS UNTIL INSPECTED BY THE BUILDING OFFICIAL.

ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

INDEX OF SHEETS

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A-4	ELEVATIONS SIDES
A-5	FOUNDATION PLAN
A-6	SECTIONS AND DETAILS
P-1	PLUMBING NOTES
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E-1	ELECTRICAL NOTES
E-2	ELECTRICAL LAYOUT
M-1	MECHANICAL NOTES
M-2	HVAC LAYOUT
LS-1	LIFE SAFETY PLAN

COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY
Code Compliance
PLANS EXAMINER

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION NO. 28022
P.O. BOX 970
LAKE CITY, FL 32056
PHONE: 386.754.4085
6-4-2013
Brett A. Crews, P.E. 65592

DRAWN BY: TM
APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

COVER SHEET

CES PROJECT NO.: 2012-030

SHEET:

GENERAL NOTES:

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER PROJECT DRAWINGS BY OTHER DISCIPLINES. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT LOCAL BUILDING CODE. THESE DRAWINGS ARE NOT TO BE USED IN LIEU OF SHOP DRAWINGS AND ARE NOT INTENDED TO BE SCALED.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS RELATING TO EXISTING CONDITIONS BY MAKING FIELD SURVEYS AND MEASUREMENTS PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION.
3. THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION METHODS USED WILL NOT CAUSE DAMAGE TO ADJACENT BUILDINGS, UTILITIES, OR OTHER PROPERTY. THIS REQUIREMENT IS PARTICULARLY IMPORTANT DURING FOUNDATION INSTALLATION.
4. THE GENERAL CONTRACTOR IS ADVISED TO CONSIDER PERFORMING PHOTOGRAPHIC SURVEYS AND OTHER DOCUMENTATION OF THE CONDITION OF ADJACENT BUILDINGS AND OTHER STRUCTURES BEFORE THE START OF CONSTRUCTION.
5. THE GENERAL CONTRACTOR SHALL OBTAIN COPIES OF THE LATEST CONTRACT DOCUMENTS, INCLUDING ALL ADDENDA, AND PROVIDE THE RELEVANT PORTIONS TO ALL SUB-CONTRACTORS AND SUPPLIERS PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND FABRICATION AND ERECTION OF STRUCTURAL MEMBERS.
6. THE GENERAL CONTRACTOR SHALL COMPARE AND COORDINATE THE DRAWINGS OF ALL DISCIPLINES AND REPORT ANY DISCREPANCIES BETWEEN THE DRAWINGS TO THE ENGINEER.
7. DETAILS LABELED "TYPICAL" SHALL APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SEE DETAIL TITLES FOR APPLICABILITY OF A PARTICULAR DETAIL. TYPICAL DETAILS SHALL APPLY WHETHER OR NOT THEY ARE SPECIFICALLY KEYED AT EACH LOCATION. THE ENGINEER SHALL HAVE FINAL AUTHORITY TO DETERMINE APPLICABILITY OF TYPICAL DETAILS.
8. WHERE CONFLICTS EXIST BETWEEN STRUCTURAL DOCUMENTS THE STRICTEST REQUIREMENTS, AS INDICATED BY THE STRUCTURAL ENGINEER SHALL GOVERN.
9. THE GENERAL CONTRACTOR SHALL REVIEW AND DETERMINE THAT DIMENSIONS ARE COORDINATED BETWEEN ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO FABRICATION OR START OF CONSTRUCTION.
10. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED OR OTHERWISE REDUCED IN STRENGTH UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

RESPONSIBILITY:

1. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE, AND ARE NOT INTENDED TO INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES, AND FOR JOB SAFETY.
2. THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. PERIODIC SITE OBSERVATION VISITS MAY BE PROVIDED BY THE STRUCTURAL ENGINEER. THE SOLE PURPOSE OF THESE OBSERVATIONS IS TO REVIEW THE GENERAL CONFORMANCE OF THE CONSTRUCTION WITH THE STRUCTURAL CONTRACT DOCUMENTS. THESE LIMITED OBSERVATIONS SHOULD NOT BE CONSTRUED AS CONTINUOUS OR EXHAUSTIVE TO VERIFY THAT ALL CONSTRUCTION IS IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.

FOUNDATIONS:

1. ALL VEGETATION, TOPSOILS, ROOTS AND ORGANIC ZONES SHALL BE STRIPPED AND REMOVED FROM THE CONSTRUCTION AREA FOR A DISTANCE OF AT LEAST 5 FEET BEYOND THE EXTERIOR OF BUILDING FOUNDATION LIMITS. THE DEPTH OF STRIPPING SHALL BE THAT REQUIRED TO REMOVE SIGNIFICANT ROOT ZONES, SMALL TREE STUMPS AND OTHER UNACCEPTABLE MATERIALS, BUT IN NO CASE LESS THAN 6 INCHES.
2. EXCAVATIONS FOR LARGE STUMPS, ABANDONED UTILITIES, UNDERGROUND TANKS, ETC. SHALL BE BACKFILLED IN LAYERS WITH COMPACTION AND TESTING OF EACH LAYER AS DESCRIBED FOR PLACEMENT AND COMPACTION OF FILL MATERIAL. USE LOOSE BACKFILL LAYER THICKNESS APPROPRIATE FOR THE SIZE OF COMPACTOR BEING USED.
3. THE EXPOSED SOILS AT THE STRIPPED SURFACE WITHIN AND TO A POINT 5 FEET OUTSIDE THE BUILDING CONSTRUCTION AREA SHALL BE COMPACTED WITH OVERLAPPING PASSES WITH A LIGHT WEIGHT VIBRATORY DRUM ROLLER. DENSITIES OF AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557) SHALL BE UNIFORMLY OBTAINED TO A DEPTH OF AT LEAST 24 INCHES BELOW THE COMPACTED SURFACE. REGARDLESS OF THE DEGREE OF COMPACTION ACHIEVED, A MINIMUM OF EIGHT COMPLETE COVERAGES SHALL BE MADE WITHIN THE BUILDING AREA. THE ROLLER COVERAGES SHALL BE DIVIDED EVENLY INTO TWO PERPENDICULAR DIRECTIONS. THE CONTRACTOR IS ADVISED NOT TO USE THE VIBRATORY MODE OF COMPACTORS IN CLOSE PROXIMITY TO EXISTING STRUCTURES. THE CONTRACTOR SHALL COORDINATE COMPACTION EFFORTS AND FOUNDATION INSTALLATIONS TO INSURE THAT NO DAMAGE OCCURS TO ADJACENT STRUCTURES.
4. AFTER COMPLETION OF DENSIFICATION OF EXISTING SOILS, STRUCTURAL FILL SHALL THEN BE PLACED IN LIFTS NOT EXCEEDING 6 INCHES IN LOOSE THICKNESS WHEN USING THE ROLLER PREVIOUSLY DESCRIBED. EACH LIFT SHALL BE THOROUGHLY COMPACTED WITH THE VIBRATORY ROLLER UNTIL DENSITIES EQUIVALENT TO AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY ARE UNIFORMLY OBTAINED. STRUCTURAL FILL SHALL CONSIST OF AN INORGANIC, NON-PLASTIC, GRANULAR SOIL CONTAINING LESS THAN 10 PERCENT MATERIAL PASSING THE NO. 200 MESH SIEVE, A RELATIVELY CLEAN SAND WITH A UNIFIED SOIL CLASSIFICATION OF SP OR SP-SM.
5. FOOTINGS AND MAT HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 4000 PSF. THE UPPER 12 INCHES OF SANDY BEARING SOILS IN THE FOOTING EXCAVATION BOTTOMS SHALL BE COMPACTED TO DENSITIES EQUIVALENT TO 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. COMPACTION, OR RECOMPACTION OF THE FOOTING EXCAVATION BEARING LEVEL SOILS LOOSENED BY THE EXCAVATION PROCESS, SHALL BE ACHIEVED BY MAKING SEVERAL PASSES WITH A RELATIVELY LIGHTWEIGHT, WALKBEHIND VIBRATORY SLED OR ROLLER COMPACTOR.
6. UNLESS NOTED, ALL FOOTINGS SHALL BE CENTERED UNDER COLUMNS, PIERS AND WALLS.
7. SLAB-ON-GRADE CONSTRUCTION SHALL BE SUPPORTED ON SUBGRADE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557) TO A DEPTH OF AT LEAST 12 INCHES. INTERIOR SLABS-ON-GRADE SHALL BE CAST OVER A VAPOR RETARDER. SEE SPECIFICATIONS.
8. RETAINING WALLS HAVE BEEN DESIGNED FOR AN ASSUMED LATERAL EARTH PRESSURE OF 110 PSF PER FOOT OF DEPTH AND AN ASSUMED SURCHARGE OF 200 PSF. DESIGN ASSUMES WELL GRADED AND DRAINED BACKFILL.

AS - BUILT DRAWING REQUIREMENTS:

1. ELECTRICAL CONTRACTOR SHALL PREPARE "AS-BUILT" SHOP DRAWINGS INDICATING ALL ELECTRICAL WORK, INCLUDING ANY CHANGES TO THE ELECTRIC PLAN, ADDITIONS, RISER DIAGRAM, AS-BUILT PANEL SCHEDULE WITH ALL CIRCUITS IDENTIFIED WITH CIRCUIT NUMBER, DESCRIPTION, AND BREAKER, & ALL UNDERGROUND WIRE LOCATIONS/ROUTING/DEPTH. RISER DIAGRAM SHALL INCLUDE WIRE SIZES/TYPE AND EQUIPMENT TYPE WITH RATINGS AND LOADS.
2. PLUMBING CONTRACTOR SHALL PREPARE "AS-BUILT" SHOP DRAWINGS INDICATING ALL PLUMBING WORK, INCLUDING ALL PLUMBING LINE LOCATIONS AND RISER DIAGRAM

CONCRETE MASONRY:

1. SEE NOTES ON PRIMARY CODES AND SPECIFICATIONS.
2. CONCRETE MASONRY UNITS SHALL BE LOAD BEARING TYPE CONFORMING TO ASTM C-90 HAVING A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI (NET AREA).
3. MORTAR SHALL CONFORM TO ASTM C-270 TYPE S.
4. PLAIN END TWO CELLED UNITS SHALL BE USED FOR BLOCKS THAT ARE TO HAVE CELLS REINFORCED AND FILLED. WEB SHELLS ADJACENT TO CELLS THAT ARE TO BE FILLED ARE TO BE BEDDED IN MORTAR.
5. FILL CELLS AS NOTED ON DRAWINGS WITH 3000 PSI GROUT, OR GROUT CONFORMING TO ASTM C-476,SPECIFICALLY DESIGNED FOR FILLING OF CELLS.
6. IN SPLICING VERTICAL BARS, LAP ENDS, PLACE IN CONTACT AND WIRE-TIE TOGETHER OR USE BAR POSITIONERS. LAP BARS SIDE BY SIDE IN THE PLANE OF THE WALL TO MAINTAIN PROPER COVER.
7. SEE PRIMARY CODES, SPECIFICATIONS AND DRAWINGS FOR GROUTING PROCEDURES.
8. INSTALLATION OF CONCRETE MASONRY SHALL BE COMPATIBLE WITH ALL APPLIED FINISHES SUCH AS STUCCO OR PAINT. DO NOT SPONGE WALLS WITHOUT PROPER CLEANING COMPATIBLE WITH FINISHES.
9. PROVIDE GALVANIZED WIRE TYPE HORIZONTAL JOINT REINFORCING AT 16" O.C. (MAX) AND AS INDICATED ON ARCHITECTURAL DRAWINGS. PROVIDE HOT DIP GALVANIZED HJR ON ALL EXTERIOR WALLS. IN ADDITION TO SCHEDULED OR DETAILED LINTEL AND SILL REINFORCING, PROVIDE TWO LAYERS OF HJR AT 8 INCHES ON CENTER ABOVE AND BELOW ALL LINTELS AND SILLS WHICH SPAN MORE THAN 12 INCHES. EXTEND ADDED HJR 24 INCHES BEYOND THE OPENING JAMBS EXCEPT AT WCJ.
10. MASONRY BOND BEAMS AND CONCRETE TIE BEAMS CAST ON MASONRY WALLS SHALL BE CONSTRUCTED SO AS TO KEY AND BOND INTO BLOCK CELLS. THE USE OF BUILDING PAPER OR SHEET PLASTIC TO CLOSE VOIDS BELOW BEAMS IS NOT ALLOWED DUE TO BREAKAGE OF MORTAR BOND.
11. SEE ENGINEER'S DRAWINGS FOR THE EXTENT AND EXACT LOCATION OF MASONRY WALLS.

    WALL CONTROL JOINTS (WCJ):
    A. WALL CONTROL JOINTS SHALL BE PROVIDED IN ALL CONCRETE MASONRY CONSTRUCTION AT LOCATIONS INDICATED ON THE STRUCTURAL OR ARCHITECTURAL DRAWINGS BUT UNLESS NOTED OTHERWISE AT A SPACING NOT GREATER THAN 24' O.C.
    B. HORIZONTAL JOINT REINFORCING SHALL BE INTERRUPTED EACH SIDE OF WALL CONTROL JOINTS.
    C. WALL CONTROL JOINTS SHALL NOT BE PLACED OVER OPENINGS OR WITHIN AN OPENING JAMB WIDTH. SEE PLANS AND/OR JAMB REINFORCING SCHEDULE FOR MINIMUM JAMB WIDTHS.
    D. SEE ARCHITECTURAL DRAWINGS FOR SEALANT REQUIREMENTS AT WALL CONTROL JOINTS.
    E. SEE THESE DRAWINGS FOR ADDITIONAL REQUIREMENTS.
12. MASONRY WALLS SHALL BE BRACED EITHER BY OTHER INTERSECTING WALLS OR BY ANCHORAGE OR BRACING TO THE STRUCTURE ABOVE, OR TO ADJACENT WALLS, AS DETAILED ON THE STRUCTURAL DRAWINGS.
13. BLOCK LINTELS SHALL BE SPECIALLY FORMED U-SHAPED LINTEL OR LOW WEB LINTEL UNITS WITH REINFORCING BARS, OR PRECAST UNITS DESIGNED FOR THE WEIGHT OF MASONRY ABOVE AND OTHER APPLIED LOADS.
14. ALL MASONRY WALLS SHOWN ON THE STRUCTURAL DRAWINGS HAVE BEEN DESIGNED TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES IN THE FINAL CONSTRUCTED CONFIGURATION ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADEQUATELY BRACE THE WALLS FOR VERTICAL AND LATERAL LOADS THAT COULD POSSIBLY BE APPLIED PRIOR TO COMPLETION OF LATERAL SUPPORT BY CONNECTIONS AT FLOORS OR ROOF FRAMING LEVELS.
15. QUALITY ASSURANCE: ALL REINFORCED MASONRY SHALL BE TESTED/INSPECTED IN CONFORMANCE WITH THE REFERENCED ACI 530/ASCE 5/TMS 402 CODES AND THE PROJECT SPECIFICATIONS.
16. TYPICAL SCHEDULED VERTICAL WALL REINFORCING SIZE AND SPACING SHALL ALSO BE CONTINUED ABOVE AND BELOW ALL OPENINGS.

REINFORCING STEEL:

1. REINFORCING STEEL: ASTM A 615, GRADE 60.
2. WELDED WIRE FABRIC. ASTM A 185 (FLAT SHEETS), MINIMUM YIELD STRENGTH OF 70,000 PSI.
3. MINIMUM REINFORCING STEEL CLEAR COVER (U.N.O.):
    A. CONCRETE CAST DIRECTLY AGAINST EARTH ..... 3"
    B. INTERIOR SLABS ..... 1"
    C. INTERIOR BEAMS ..... 1-1/2" TO TIES
    D. SLABS ON GRADE ..... 1-1/2" FROM TOP
4. WHERE REINFORCING BARS ARE NOTED AS CONTINUOUS, THE FOLLOWING SHALL BE COMPLIED WITH:
    A. THE TERMINATION OF ALL CONTINUOUS REINFORCING BAR RUNS SHALL BE A STANDARD HOOK UNLESS NOTED OTHERWISE.
    B. SPLICES IN CONTINUOUS TOP BARS, IF REQUIRED, SHALL OCCUR OVER PARALLEL CMU WALLS OR AT THE CENTER OF THE OPENING SPAN.
    C. SPLICES IN CONTINUOUS BOTTOM BARS, IF REQUIRED, SHALL OCCUR OVER CMU WALLS OR CENTERED OVER COLUMNS.
5. WHERE SPLICE LENGTHS ARE NOT SPECIFIED, USE 48 BAR DIAMETERS IN MASONRY AND 40 BAR DIAMETERS IN CAST CONCRETE.
6. REINFORCING STEEL SHALL NOT BE TACK WELDED FOR ANY REASON. WELDED REINFORCING STEEL SPLICES ARE NOT PERMITTED
7. LAP ALL WELDED WIRE FABRIC A MINIMUM DISTANCE OF ONE CROSS WIRE SPACING PLUS 2 INCHES.
8. ALL REINFORCING STEEL SHALL BE SUPPORTED ON STANDARD ACCESSORIES, HELD RIGIDLY AND ACCURATELY IN PLACE, AND PROTECTED AGAINST DISPLACEMENT BEFORE AND DURING PLACEMENT OF CONCRETE. SUPPORTING ACCESSORY LEGS THAT REST ON CONCRETE SURFACES THAT WILL BE EXPOSED IN THE FINISHED STRUCTURE SHALL BE FABRICATED OF STAINLESS STEEL.
9. DOWELS AND OTHER MISCELLANEOUS STEEL EMBEDDED ITEMS SHALL BE LOCATED AND HELD IN SPECIFIED POSITION PRIOR TO PLACEMENT OF CONCRETE AND SHALL NOT BE PUSHED INTO CONCRETE FOLLOWING CONCRETE POUR.
10. FOUNDATION AND GRADE BEAM REINFORCING SHALL BE SUPPORTED ON SPECIALLY CAST 3-1/2 INCH HIGH CONCRETE BLOCKS CAST IN ACCORDANCE WITH DETAILS FURNISHED ON DRAWINGS. SLAB-ON-GRADE REINFORCING, INCLUDING WIRE FABRIC, SHALL BE SUPPORTED ON PRECAST BLOCKS OR 3000 PSI CONCRETE BRICK OF THE PROPER THICKNESS.

STRUCTURAL STEEL (SHOP DRAWINGS REQ'D):

1. SEE NOTES ON PRIMARY CODES AND SPECIFICATIONS.
2. MATERIALS:
    W-SHAPES & WT-SHAPES..... ASTM A992
    S-SHAPES, M-SHAPES, HP-SHAPES..... ASTM A36
    ST-SHAPES & MT-SHAPES..... ASTM A36
    C-SHAPES & MC-SHAPES..... ASTM A36
    ANGLES & PLATES..... ASTM A36
    HSS SHAPES..... ASTM A500, GRADE B
    STEEL PIPE..... ASTM A53 (TYPE E OR S), GRADE B
    HIGH STRENGTH BOLTS..... ASTM A325
    MACHINE BOLTS..... ASTM A307
    ANCHOR RODS..... ASTM F1554, GRADE 55 TYPE S1(UNO)
    WELDED HEADED STUDS..... ASTM A108
    DEFORMED BAR ANCHORS..... ASTM A496
    WELDING ELECTRODES..... AWS D1.1, E70 SERIES
3. NON-SHRINK, NON-METALLIC GROUT WITH A 28 DAY STRENGTH OF 5000 PSI SHALL BE USED UNDER BASE PLATES AND SHALL CONFORM TO CORPS OF ENGINEERS CRD-C621, FACTORY PREMIX GROUT. SEE SPECIFICATIONS FOR TESTING REQUIREMENTS.
4. ENGINEER SHALL BE CONTACTED FOR APPROVAL OF ANY FIELD MODIFICATIONS OF ANCHOR BOLTS OR RODS AND COLUMN BASE PLATES (PER OSHA).
5. TEMPORARY BRACING OF STRUCTURAL STEEL ELEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURAL STABILITY SHALL BE MAINTAINED AT ALL TIMES DURING THE ERECTION PROCESS.
    CONTRACTOR MUST PROVIDE NOTIFICATION TO THE ERECTOR THAT, BY TESTING, THE FOUNDATION AND SUPPORTING WALLS HAVE ATTAINED SUFFICIENT STRENGTH TO SUPPORT THE STEEL TO BE ERECTED BEFORE ERECTING STRUCTURAL STEEL.
6. PROVIDE ONE SHOP COAT OF PRIMER (TT-P-636) ON ALL STEEL EXCEPT FOR ITEMS TO BE HOT DIPPED GALVANIZED OR SPRAY FIREPROOFED. DO NOT PAINT PORTIONS EMBEDDED IN CONCRETE.
7. FRAMING CONNECTIONS NOT DETAILED, OR CONNECTIONS THAT ARE MODIFIED FROM THOSE DETAILED, SHALL BE DESIGNED BY SUPPLIER FOR THE END REACTION SHOWN ON THE PLAN. IF NO REACTION IS PROVIDED, DESIGN FOR 1/2 THE BEAM MAXIMUM UNIFORM LOAD PER AISC MANUAL FOR STEEL CONSTRUCTION. SUBMIT SIGNED AND SEALED CALCULATIONS.
8. ALL WELD OPERATORS SHALL BE CURRENTLY AWS QUALIFIED.
9. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED. USE 1/8" FILLET WELD MINIMUM.
10. FIELD CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED AS DETAILED. NO FIELD WELDING OF HOT DIPPED GALVANIZED MEMBERS WILL BE ALLOWED. USE 3/16" FILLET WELD MINIMUM.
11. DURING THE ERECTION OF STEEL BEAMS AND DIAGONAL BRACING, ALL BOLTING AND FIELD WELDING SHALL BE COMPLETE BEFORE RELEASING HOISTING CABLES.
12. SUBMIT FOR REVIEW SHOP DRAWINGS OF STEEL DETAILS PRIOR TO FABRICATING STRUCTURAL STEEL.
13. ALL EXTERIOR ELEMENTS AND THOSE ELEMENTS NOTED TO BE GALVANIZED SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER SANDBLAST CLEANING PER SSPC-SP10. USE ASTM A325 BOLTS HOT DIPPED GALVANIZED WITH GALVANIZED HARDENED WASHERS AND GALVANIZED HEAVY HEX NUTS FOR BOLTING OF GALVANIZED ITEMS.
14. STEEL COLUMNS, BASE PLATES AND ALL STEEL BELOW GRADE SHALL HAVE A MINIMUM 3" CONCRETE COVER PROTECTION.
15. MEMBERS NOTED AS "CONTINUOUS" SHALL BE FULLY WELDED AT ALL BUTT SPLICES OR CONNECTIONS SHALL BE DETAILED TO PROVIDE CONTINUITY.

CONCRETE FORMWORK:

1. SEE NOTES ON PRIMARY CODES AND SPECIFICATIONS.
2. ALL FORMWORK SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED, AND MAINTAINED ACCORDING TO ACI 347, RECOMMENDED STANDARD PRACTICE FOR CONCRETE FORMWORK.
3. RESPONSIBILITY: THE DESIGN, CONSTRUCTION, AND SAFETY OF ALL FORMWORK SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL FORMS, SHORES, BACKSHORES, FALSEWORK, BRACING, AND OTHER TEMPORARY SUPPORTS SHALL BE ENGINEERED TO SUPPORT ALL LOADS IMPOSED INCLUDING THE WET WEIGHT OF CONCRETE, CONSTRUCTION EQUIPMENT, LIVE LOADS, LATERAL LOADS DUE TO WIND AND WET CONCRETE IMBALANCE. SEE SPECIFICATIONS FOR DETAILED REQUIREMENTS.
4. TOLERANCES: UNLESS SPECIFIED OTHERWISE, ALL TOLERANCES FOR CONCRETE FORMWORK SHALL CONFORM TO ACI STANDARD 117, STANDARD TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS. THE CONTRACTOR SHALL ENGAGE A LICENSED SURVEYOR TO VERIFY THAT WORK IS WITHIN SPECIFIED TOLERANCES UNLESS WRITTEN AUTHORIZATION IS OBTAINED FROM THE ENGINEER TO PROVIDE TOLERANCE CONTROL USING THE CONTRACTOR'S OWN FORCES PRIOR TO BEGINNING WORK.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED WHERE SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS.
6. PLUMBING SLEEVE SPACING SHALL BE THE LARGER OF THREE (3) DIAMETERS CENTER TO CENTER OF THE LARGER SLEEVE, OR 6" CLEAR BETWEEN SLEEVES. SUBMIT SLEEVE LOCATIONS AND SIZES TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
7. PENETRATIONS SHALL NOT BE PERMITTED IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS WITHOUT THE WRITTEN REVIEW OF THE STRUCTURAL ENGINEER OF RECORD. THE CONTRACTOR SHALL SUBMIT DRAWINGS TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW INDICATING ANY CONCENTRATION OF PIPES, OPENINGS OR PENETRATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS PRIOR TO CONCRETE POURS.

SLABS ON GRADE

1. ALL CONCRETE SLABS ON GRADE SHALL BE REINFORCED PER PLANS.
2. ALL CONCRETE SLABS ON GRADE SHALL BE IN ACCORDANCE WITH "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION" (ACI 302)
3. JOINTS SHALL BE PROVIDED IN ALL SLABS ON GRADE WHERE INDICATED ON DRAWINGS. CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE SUBJECTED TO ENGINEER'S APPROVAL.
4. PROVIDE SAWCUT JOINTS IN ALL SIDEWALKS AT A MAXIMUM SPACING OF 5 FEET O.C. AND ISOLATION JOINTS AT A MAXIMUM SPACING OF 20 FEET APART.
5. DEPTH OF SAWCUT JOINTS SHALL BE AS FOLLOWS: 4" & 6" SLABS = 1-1/2" AND 8" SLABS = 2". CUTTING SHOULD BE DONE AS SOON AS POSSIBLE AFTER THE CONCRETE HARDENS, NORMALLY WITHIN 6 HOURS. THE CONCRETE IS HARD ENOUH WHEN THE BLADE DOES NOT DISLODGE AGGREGATE AND WHEN THE EDGES OF THE CUT DO NOT RAVEL.
6. CONCRETE SLABS SHALL BE SLOPED AS SHOWN ON THE DARWINGS.

CAST-IN-PLACE CONCRETE:

1. THE LATEST EDITION OF THE FOLLOWING ACI STANDARDS APPLY:

ACI 318 (CODE)	ACI 304 (PLACING)
ACI 306 (WINTER CONCRETING)	ACI 315 (DETAILING)
ACI 305 (HOT WEATHER CONCRETING)	ACI 347 (FORMWORK)
ACI 211.1 (MIX PROPORTIONING)	ACI 301 (SPECIFICATIONS)

2. ALL CONCRETE SHALL BE NORMAL WEIGHT (148 PCF DRY DENSITY, MIN), WITH MIXES DESIGNED TO MEET THE FOLLOWING CRITERIA FOR USE IN VARIOUS ELEMENTS OF THE

STRUCTURAL ELEMENT	28-DAY COMPRESSIVE STRENGTH (PSI)	MAX. SIZE AGGREGATE	MAX. W/C RATIO	SLUMP RANGE (IN)
A. FOOTINGS	3000	3/4"	0.45	3-5
B. FOUNDATION WALLS	3000	3/4"	0.45	3-5
C. SLAB-ON-GRADE	3000	3/4"	0.50	3-5
D. ELEVATED BEAMS	3000	3/4"	0.45	3-5

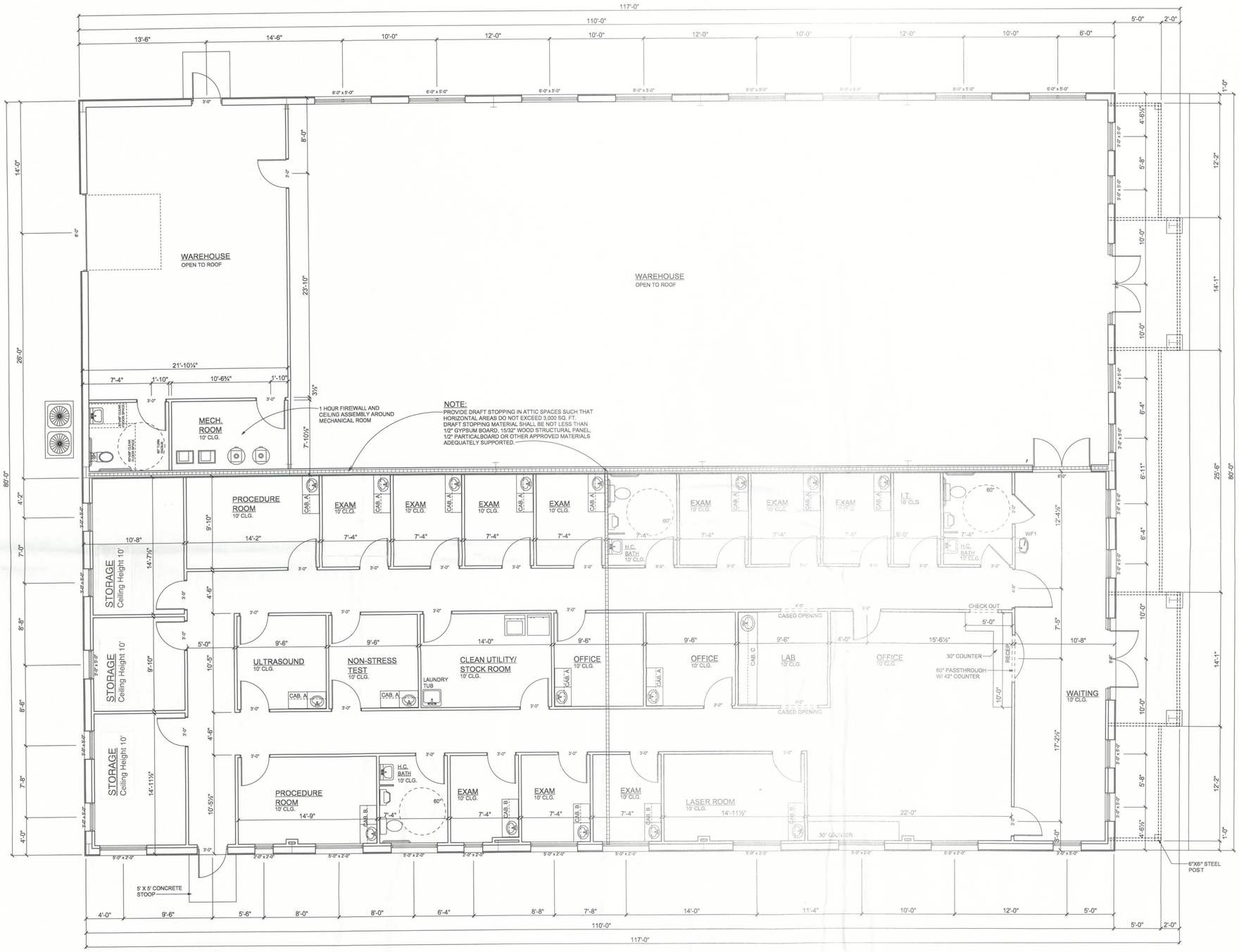
3. CONCRETE SLUMP IS TAKEN AT POINT OF PLACEMENT INTO STRUCTURE.
4. WATER REDUCING AND AIR ENTRAINING AGENTS SHALL BE INCLUDED IN DESIGN MIXES. SUPERPLASTICIZERS MAY BE USED AT THE CONTRACTOR'S OPTION.
5. A CONCRETE MIX DESIGN FOR EACH UNIQUE COMBINATION OF STRENGTH, COARSE AGGREGATE GRADATION AND WATER CEMENT RATIO SPECIFIED SHALL BE PREPARED BY THE SUPPLIER OR AN INDEPENDENT TESTING LABORATORY AND BE SUBMITTED FOR REVIEW PRIOR TO CASTING ANY CONCRETE. MIXES THAT WILL BE TRANSPORTED AT THE PROJECT SITE BY PUMPING SHALL BE SPECIFICALLY DESIGNED FOR PUMPING.
6. SLABS ON GRADE: UNLESS NOTED OTHERWISE, CONCRETE SLABS ON GRADE SHALL BE A MINIMUM OF 4" THICK, REINFORCED WITH 6x6 W1.4Xw1.4 WWF PLACED 1-1/2" CLEAR FROM THE TOP OF THE SLAB. SLABS SHALL BE PLACED OVER PROPERLY COMPACTED EARTH.
7. CONCRETE TIE BEAMS: UNLESS NOTED OTHERWISE, CONCRETE TIE BEAMS SHALL BE A MINIMUM OF 16" DEEP BY THE SUPPORTING WALL WIDTH, REINFORCED WITH 2 #5 CONTINUOUS TOP AND BOTTOM AND #3 TIES AT 24" O.C.

TERMITE PROTECTION:

1. A PERMANENT SIGN WHICH IDENTIFIES THE TERMITE TREATMENT PROVIDER AND NEED FOR REINSPECTION AND TREATMENT CONTRACT RENEWAL SHALL BE PROVIDED. THE SIGN SHALL BE POSTED NEAR THE WATER HEATER OR ELECTRIC PANEL. FBC 104.2.6
2. CONDENSATE AND ROOF DOWNSPOUTS SHALL DISCHARGE AT LEAST 1'-0" AWAY FROM BUILDING SIDE WALLS. FBC 1503.4.4
3. IRRIGATION/SPRINKLER SYSTEMS INCLUDING ALL RISERS AND SPRAY HEADS SHALL NOT BE INSTALLED WITHIN 1'-0" FROM BUILDING SIDE WALLS. FBC 1503.4.4
4. TO PROVIDE FOR INSPECTION FOR TERMITE INFESTATION, BETWEEN WALL COVERINGS AND FINAL EARTH GRADE SHALL NOT BE LESS THAN 6". EXCEPTION: PAINT AND DECORATIVE CEMENTIOUS FINISH LESS THAN 518" THICK ADHERED DIRECTLY TO THE FOUNDATION WALL. FBC 1403.1.6
5. INITIAL TREATMENT SHALL BE DONE AFTER ALL EXCAVATION AND BACKFILL IS COMPLETE. FBC 1816.1.1
6. SOIL DISTURBED AFTER THE INITIAL TREATMENT SHALL BE RETREATED INCLUDING SPACES BOXED OR FORMED. FBC 1818.1.2
7. BOXED AREAS IN CONCRETE FLOOR FOR SUBSEQUENT INSTALLATION OF TRAPS, ETC., SHALL BE MADE WITH PERMANENT METAL OR PLASTIC FORMS. PERMANENT FORMS MUST BE OF A SIZE AND DEPTH THAT WILL ELIMINATE THE DISTURBANCE OF SOIL AFTER THE INITIAL TREATMENT. FBC 1816.1.3
8. MINIMUM 6 MIL VAPOR RETARDER MUST BE INSTALLED TO PROTECT AGAINST RAINFALL DILUTION. IF RAINFALL OCCURS BEFORE VAPOR RETARDER PLACEMENT, RETREATMENT IS REQUIRED. FBC 1816.1.4
9. CONCRETE OVERPOUR AND MORTAR ALONG THE FOUNDATION PERIMETER MUST BE REMOVED BEFORE EXTERIOR SOIL TREATMENT. FBC 1816.1.5
10. SOIL TREATMENT MUST BE APPLIED UNDER ALL EXTERIOR CONCRETE OR GRADE WITHIN 1'-0" OF THE STRUCTURE SIDEWALLS. FBC 1816.1.6
11. AN EXTERIOR VERTICAL CHEMICAL BARRIER MUST BE INSTALLED AFTER CONSTRUCTION IS COMPLETE INCLUDING LANDSCAPING AND IRRIGATION. ANY SOIL DISTURBED AFTER THE VERTICAL BARRIER IS APPLIED,SHALL BE RETREATED. FBC 1816.1.6
12. ALL BUILDINGS ARE REQUIRED TO HAVE PER CONSTRUCTION TREATMENT. FBC 1816.1.7
13. A CERTIFICATE OF COMPLIANCE MUST BE ISSUED TO THE BUILDING DEPARTMENT BY LICENSED PEST CONTROL COMPANY BEFORE A CERTIFICATE OF OCCUPANCY WILL BE ISSUED. THE CERTIFICATE OF COMPLIANCE SHALL STATE: "THE BUILDING HAS RECEIVED A COMPLETE TREATMENT FOR THE PREVENTION OF SUBTERRANEAN TERMITES. THE TREATMENT IS IN ACCORDANCE WITH THE RULES AND LAWS OF THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES". FBC 1816.1.7
14. AFTER ALL WORK IS COMPLETED, LOOSE WOOD AND FILL MUST BE REMOVED FROM BELOW AND WITHIN 1'-0" OF THE BUILDING. THIS INCLUDES ALL GRADE STAKES, TUB TRAP BOXES, FORMS, SHORING OR OTHER CELLULOSE CONTAINING MATERIAL. FBC 2303.1.3
15. NO WOOD, VEGETATION, STUMPS, CARDBOARD, TRASH, ETC., SHALL BE BURIED WITHIN 15'-0" OF ANY BUILDING OR PROPOSED BUILDING. FBC 2303.1.4

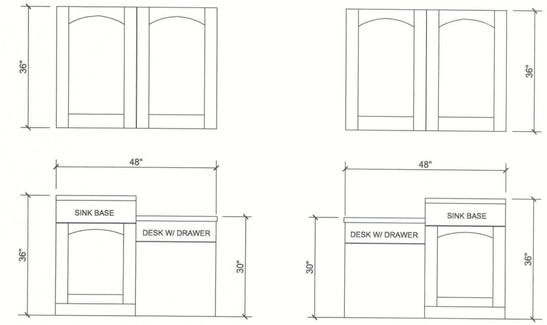
MISCELLANEOUS:

1. CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, ARE SUBJECT TO THE APPROVAL FOR THE ENGINEER.
2. CONTRACTOR TO COORDINATE EXACT SIZE AND LOCATION OF CONCRETE EQUIPMENT PADS, PIPES, PIPE ENCASEMENT, PIPE SUPPORTS, CHASES, AND OTHER MISCELLANEOUS ITEMS TO BE PLACED PRIOR TO POURING CONCRETE, WITH MECHANICAL AND ELECTRICAL DRAWINGS AND MANUFACTURERS REVIEWED SHOP DRAWINGS.
3. NO CONDUITS, PIPES, SLEEVES OR ANY OTHER ITEM SHALL BE EMBEDDED IN CONCRETE ALONG, THROUGH OR UNDER ANY BEAM, COLUMN, FOOTING, GRADE BEAM, SLAB, WALL OR ANY OTHER STRUCTURAL MEMBER WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
4. ALL PHASES OF CONCRETE CONSTRUCTION INCLUDING MATERIALS, FOUNDATIONS, CAST-IN-PLACE AND PRECAST CONCRETE, REINFORCING STEEL, MASONRY, FORM WORK AND ALL OTHER RELATED PROCEDURES AND MATERIALS SHALL COMPLY WITH THE MOST STRINGENT ALLOWED TOLERANCES OF ACI-301 AND ACI-117 STANDARDS. (LATEST VERSION



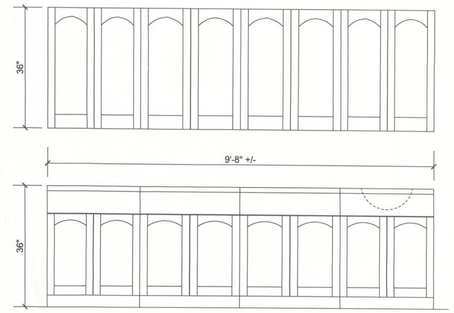
FLOOR LAYOUT
SCALE: 3/16" = 1'-0"

AREA SUMMARY	
OFFICE SPACE	4,660 SF
WAREHOUSE	4,128 SF
COVERED WALK	704 SF
TOTAL AREA	9,492 SF

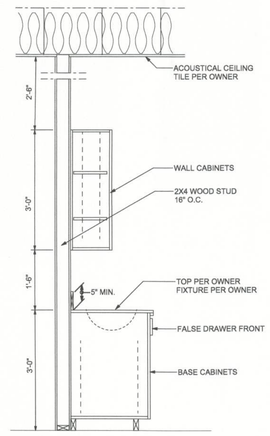


CAB. A.
SCALE: NTS

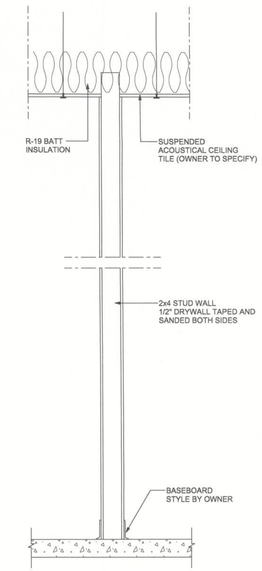
CAB. B.
SCALE: NTS



CAB. C.
SCALE: NTS



1 CABINET SECTION
SCALE: NTS



2 TYPICAL INTERIOR PARTITION WALL SECTION
SCALE: NTS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION NO. 28022
P.O. BOX 970
LAKE CITY, FL 32056
PHONE: 386.754.4085
Brett A. Crews, P.E. 65592

6-21-2013

DRAWN BY: TM
APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

FLOOR PLAN

CES PROJECT NO.: 2012-030

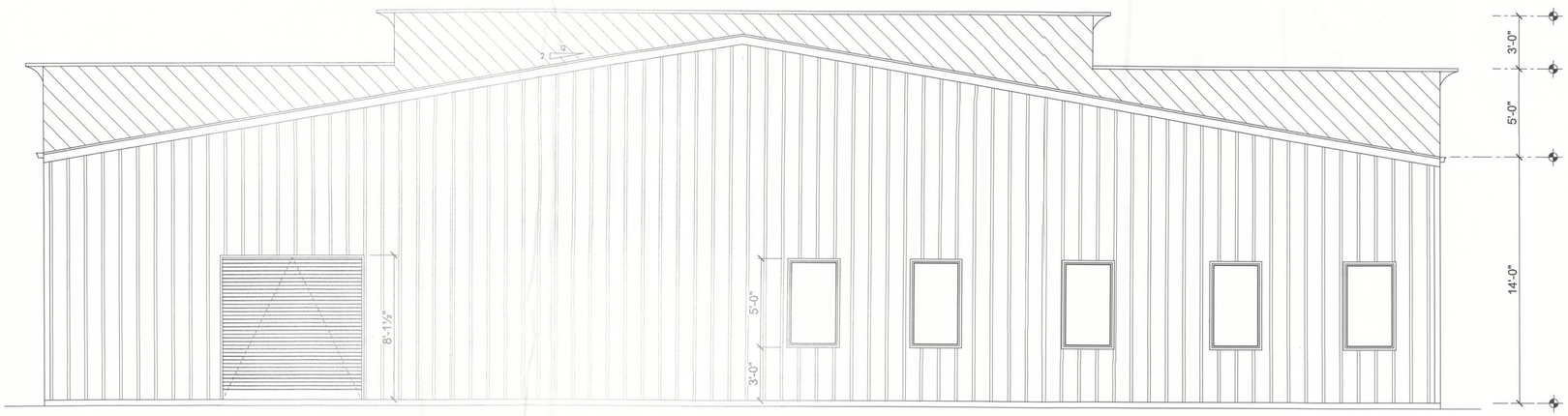
SHEET: A-2



CONTRACTOR TO FABRICATE STEEL PERGOLA AND SHALL PROVIDE SHOP DRAWINGS TO LOCAL BUILDING OFFICIAL IF REQUIRED

FRONT ELEVATION

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



NOTE:
CONTRACTOR TO VERIFY ROUGH OPENING SIZE FOR STEEL BUILDING MANUFACTURER

REAR ELEVATION

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

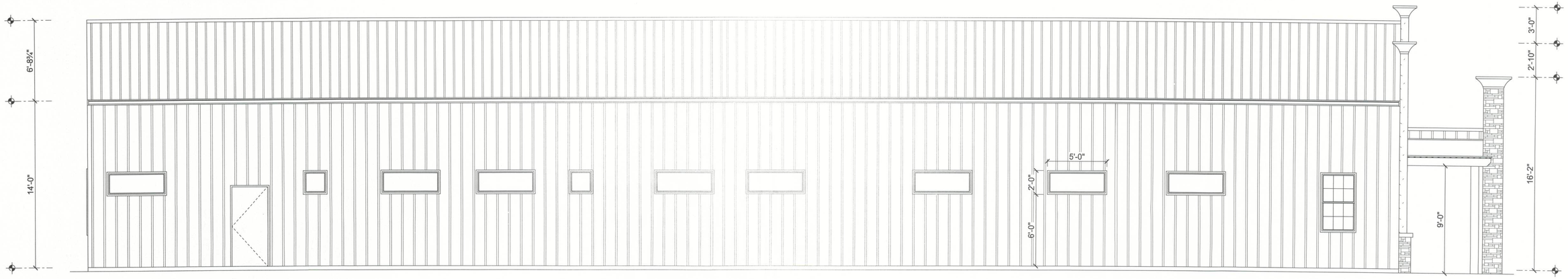
CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION
NO. 28022
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Brett A. Crews, P.E. 65592

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APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

ELEVATIONS
FRONT AND REAR

CES PROJECT NO.: 2012-030
SHEET: A-3

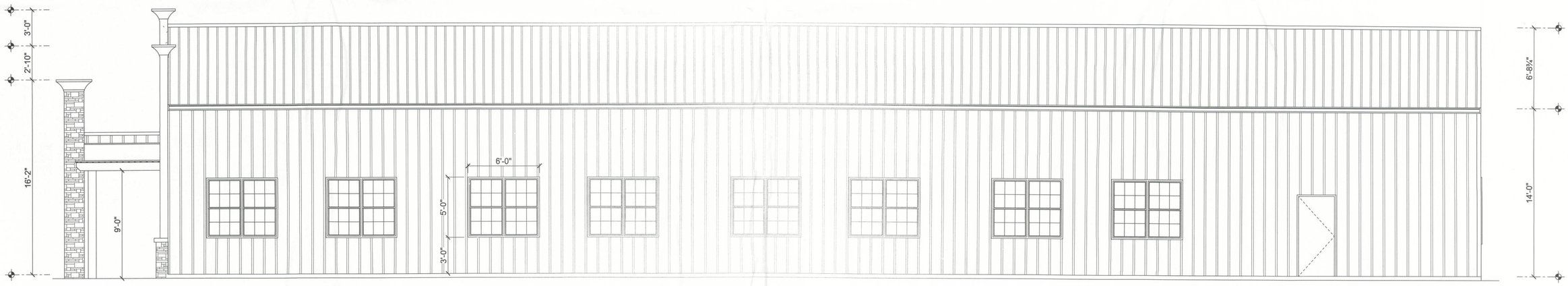


NOTE:
SEE FLOOR PLAN FOR
OPENING LOCATIONS

ELEVATIONS SHOWN ARE APPROXIMATE.
CONTRACTOR SHALL VERIFY COLUMN HEIGHTS
WITH STEEL MANUFACTURER.

LEFT ELEVATION

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



RIGHT ELEVATION

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
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6-4-2013
Brett A. Crews, P.E. 65592

DRAWN BY: TM

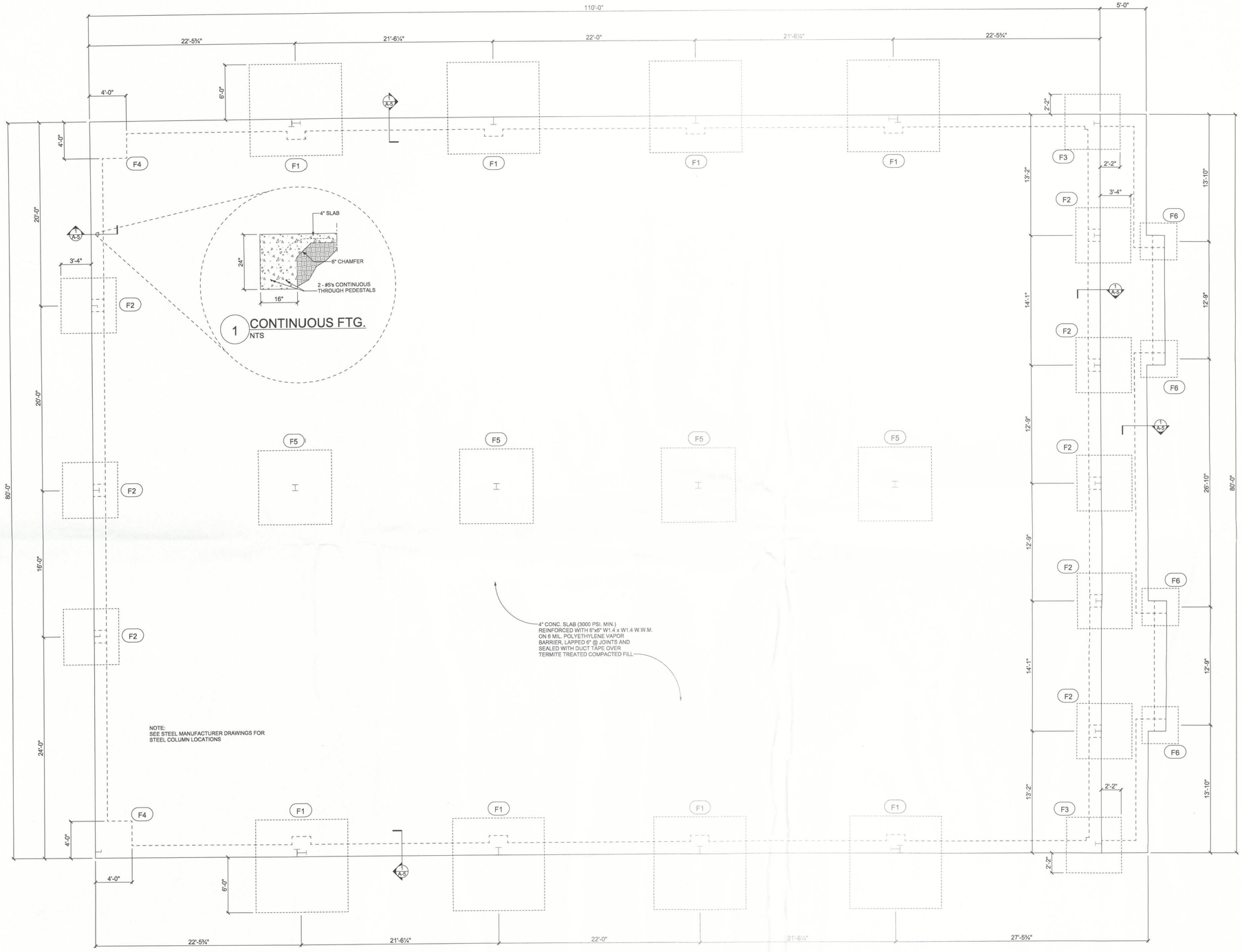
APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

ELEVATIONS
SIDES

CES PROJECT NO.: 2012-030

SHEET: A-4



1 CONTINUOUS FTG.
NTS

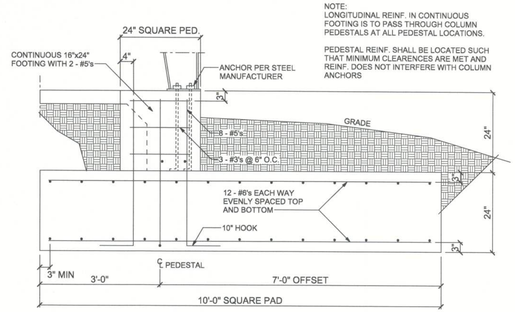
4" CONC. SLAB (3000 PSI. MIN.) REINFORCED WITH 6"x6" W1.4 x W1.4 W.W.M. ON 6 MIL. POLYETHYLENE VAPOR BARRIER, LAPPED 6" @ JOINTS AND SEALED WITH DUCT TAPE OVER TERMITE TREATED COMPACTED FILL

NOTE:
SEE STEEL MANUFACTURER DRAWINGS FOR STEEL COLUMN LOCATIONS

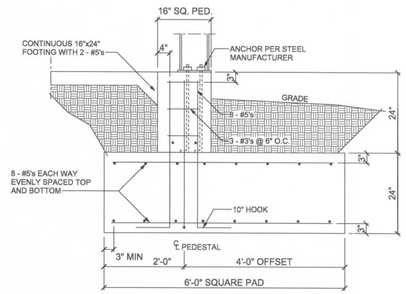
FOUNDATION LAYOUT
SCALE: 3/16" = 1'-0"

NOTE:
LONGITUDINAL REINF. IN CONTINUOUS FOOTING IS TO PASS THROUGH COLUMN PEDESTALS AT ALL PEDESTAL LOCATIONS.

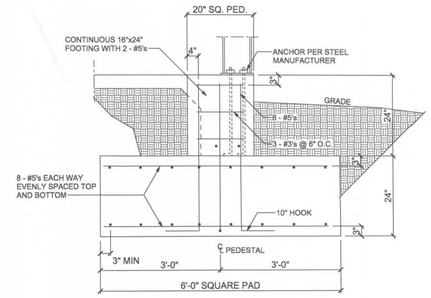
PEDESTAL REINF. SHALL BE LOCATED SUCH THAT MINIMUM CLEARENCES ARE MET AND REINF. DOES NOT INTERFERE WITH COLUMN ANCHORS



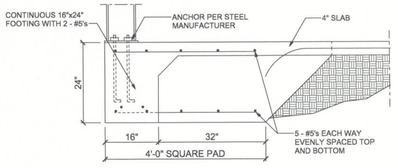
F1 FOOTING SECTION
NTS



F2 FOOTING SECTION
NTS



F3 FOOTING SECTION
NTS



F4 FOOTING SECTION
NTS

SEE SHEET A-6 FOR F5 AND F6

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
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P.O. BOX 970
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PHONE: 386.754.4085
6-11-2013
Brett A. Crews, P.E. 65592

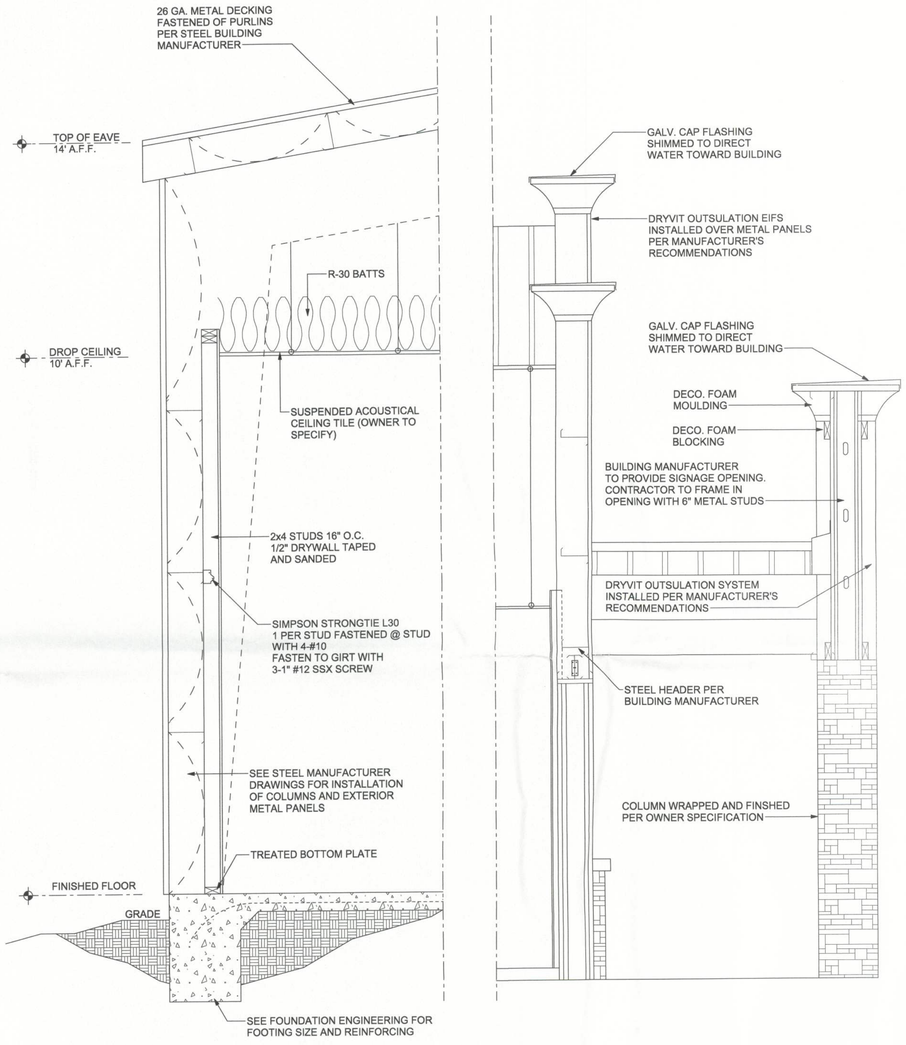
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EMORY MEDICAL OVERFLOW OFFICE

FOUNDATION PLAN

CES PROJECT NO.: 2012-030

SHEET: A-5



1 EXTERIOR SIDE WALL
SCALE: 3/4" = 1'-0"

2 EXTERIOR FRONT WALL
SCALE: 3/4" = 1'-0"

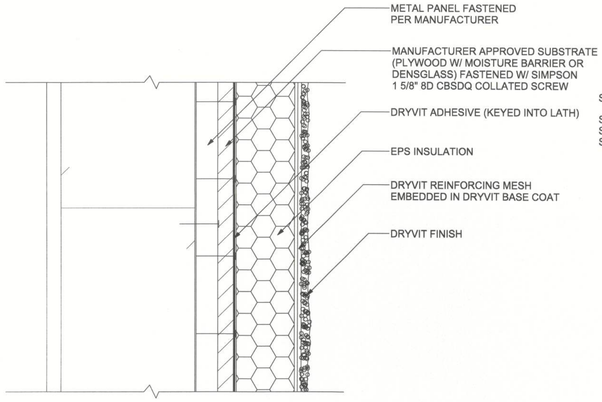
LIGHT GAGE STEEL CONNECTION NOTES:

type	location
#8 self drilling x 1/2" low profile	stud to track with gypsum board and sheathing
#10, 3/4" hex-washer head self drilling screws	all other areas up to three layers of 33-mil material
#8 self piercing screws	sheathing to steel 20 gage or less
#8 self drilling screws	sheathing to steel 18 gage or more
#6 self piercing screws	gypsum board to steel 20 gage or less
#6 self drilling screws	gypsum board to steel 18 gage or more

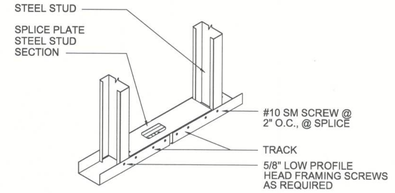
STEEL STUD BRACING NOTES:

The flanges of load bearing steel studs shall be laterally braced in accordance with on of the following methods.

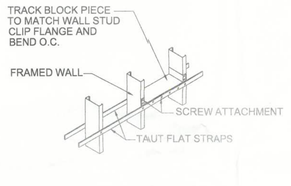
1. Gypsum wall board or structural sheathing on both sides of load bearing walls installed in accordance with table above.
2. Horizontal steel strapping installed on both sides at mid-height for 8 foot walls, and third lenghts for 9 foot and 10 foot walls. Horizontal steel straps shall be at least 1 1/2" wide and 33 mills in thickness. Straps shall be attached to the flanges of studs with at least one No. 8 screw. In-line blocking shall be installed between studs at the termination of staps and at 12-foot intervals along the strap; straps shall be fastened to the blocking with at least two No.8 screws.
3. Gypsum wall board or structural sheathing on one side and horizontal stee strapping on the other side of load bearing walls.



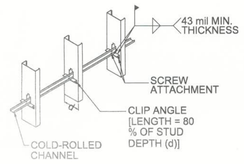
TYPICAL DRYVIT OUTSULATION APPLICATION (SEE MANUFACTURER'S SPECS FOR PRODUCT TYPES)



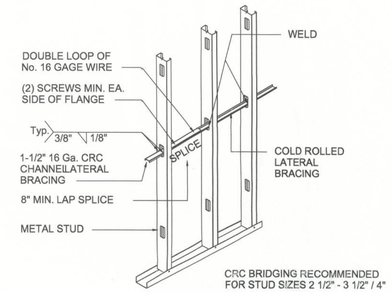
TRACK SPLICE



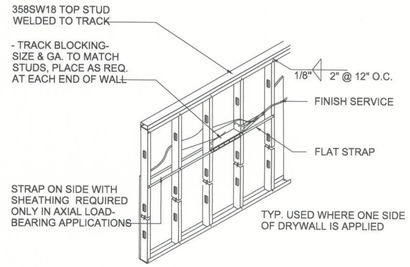
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DOUBLE FLAT STRAP W/BLOCKING



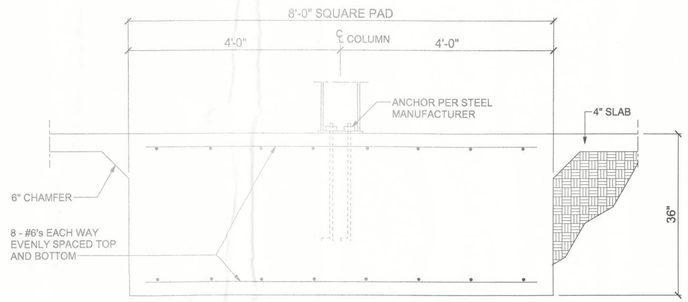
BRIDGING
COLD-ROLLED CHANNEL W/CLIP ANGLE



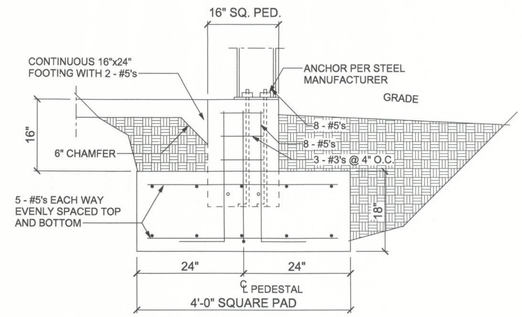
WELDED CRC BRIDGING



FLAT STRAP LATERIAL BRACING



F5 FOOTING SECTION
NTS



F6 FOOTING SECTION
NTS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION NO. 28022
P.O. BOX 970
LAKE CITY, FL 32056
PHONE: 386.754.4085
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APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

SECTIONS AND DETAILS

CES PROJECT NO.: 2012-030
SHEET: A-6

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 Standard Plumbing Code 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 Engineer.
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 excauation 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 Engineer immediately.
d. Engineer'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 thoroughy 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 Engineer 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. 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.

COPPER PIPE

A. Domestic Water Supply Above Grade or Slab
1. Type L, Hard copper
2. Joints
a. Solder using lead-free solder and non-corrosive flux
3. Fittings
a. Wrought copper or cast brass
b. Steel fittings prohibited.
B. Water Supply Below Grade or Under Slab (Larger than 3/4")
1. Type K hard drawn copper tubing.
2. Joints
a. Solder using Silver solder or "Sil-Fos."
3. Fittings:
a. Wrought copper or cast brass

PLASTIC PIPE AND FITTINGS

A. Vent piping (Above grade).
1. Piping shall be PVC
2. Polyvinyl Chloride (PVC) - ASTM D-1784-60T
a. Schedule 80
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.
B. Sanitary piping (Below Grade).
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 Standard Plumbing Code.
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 cast brass with chrome finish.
5. All traps below grade shall be cast iron.
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. Permanently 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, clips 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. Bronze Gate Valve
2. Shutoff valves below grade
a. Bronze Gate Valve
(1) Install in fiberglass box with cover
3. Drain valves
a. Bronze Gate Valves
B. Acceptable Manufacturers
1. Crane
2. Vogt
3. Sterling
4. Nibco
C. Bronze gate valves:
1. 3 inch and smaller
a. Rising stem, wedge disc gate, bronze body
b. 200 psi, water, oil, gas
c. Stuffing, box and brass gland, screw-in bonnet
d. Threaded ends
e. Model equall to Nibco T-111
D. Bronze Globe Valve
1. 3 inch and smaller
a. Rising stem, bronze only
b. 150 psi, water oil gas
c. Stuffing box, brass gland, screw-in bonnet
d. Threaded ends
E. 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.
F. Check Valve
1. Swing check valve
2. Screwed ends and cap
3. Bronze ground disc
4. 200 lb WOG
5. NIBCO T413 or equal
G. 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 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. Shower 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.
D. Floor Sinks
1. Cast iron floor drain with integral clamping collar.
2. Sized as noted on Drawings.
E. 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.

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.

DOMESTIC WATER HEATERS - ELECTRIC

A. Water heaters shall be UL listed, ASME constructed,and meet ASHRAE 90-80 energy efficiency standards.
B. Acceptable Manufacturers
1. A.O. Smith
2. Lochinvar
3. Teledyne Laars
C. Water Heaters
1. Glass lining fused to steel tank
2. Natures Gas
3. Working pressure - 150 PSI
4. Fully automatic thermostat controls with high temperature limit safety shutoff
5. Pvc combustion air and vent, per. mfgr Instructions
6. Three-year warranty
7. 3/4" inlet, outlet, and relief opening
8. Outer jacket of baked enamel finish

D. Model and Capacity
1. REFER TO WATER HEATER SCHEDULE.

E. Install per manufacturer's recommendations
F. Mount units on wall shelf where noted
F. Provide thermostatic relief valve on each unit

PLUMBING FIXTURES

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

ELECTRIC WATER COOLERS (EWC)

A. Acceptable Manufacturers
1.. Oasis
2. Halsey Taylor
3. Elkay
B. Regular Model - dual height, ada
1. Semi-recessed
2. Stainless steel top, sides and front
3. 14 inches from wall to front
4. Self-closing pushbutton valve with optional "soft touch" handle (Part No. 023754.001, wrist blade).
5. Automatic pressure regulating valve
6. Model height - 31" floor to top of basin
7. Water delivery:
a. 14 GPH of 50 degrees F water
8. Model and Manufacturer:
a. Equal to Oasis Model ODP-14M
9. Accessories:
a. Furnish with 1-1/4" ground joint tubular, 17 gauge, chrome-plated P-trap, deep flange with brass nuts; less cleanout, Sterling 50190 or Dearborn 207-D-F-BN.
b. Furnish with supply assembly equal to Kohler 7666 with loosekey stop and flexible 3/8" tube risers.
C. Unit shall be installed on wall using bracket supplied by the manufacturer.
D. Unit shall be blocked and supported per manufacturer recommendations.
E. Unit shall be installed per ANSI Standard 117.1-1980, Section 4.15.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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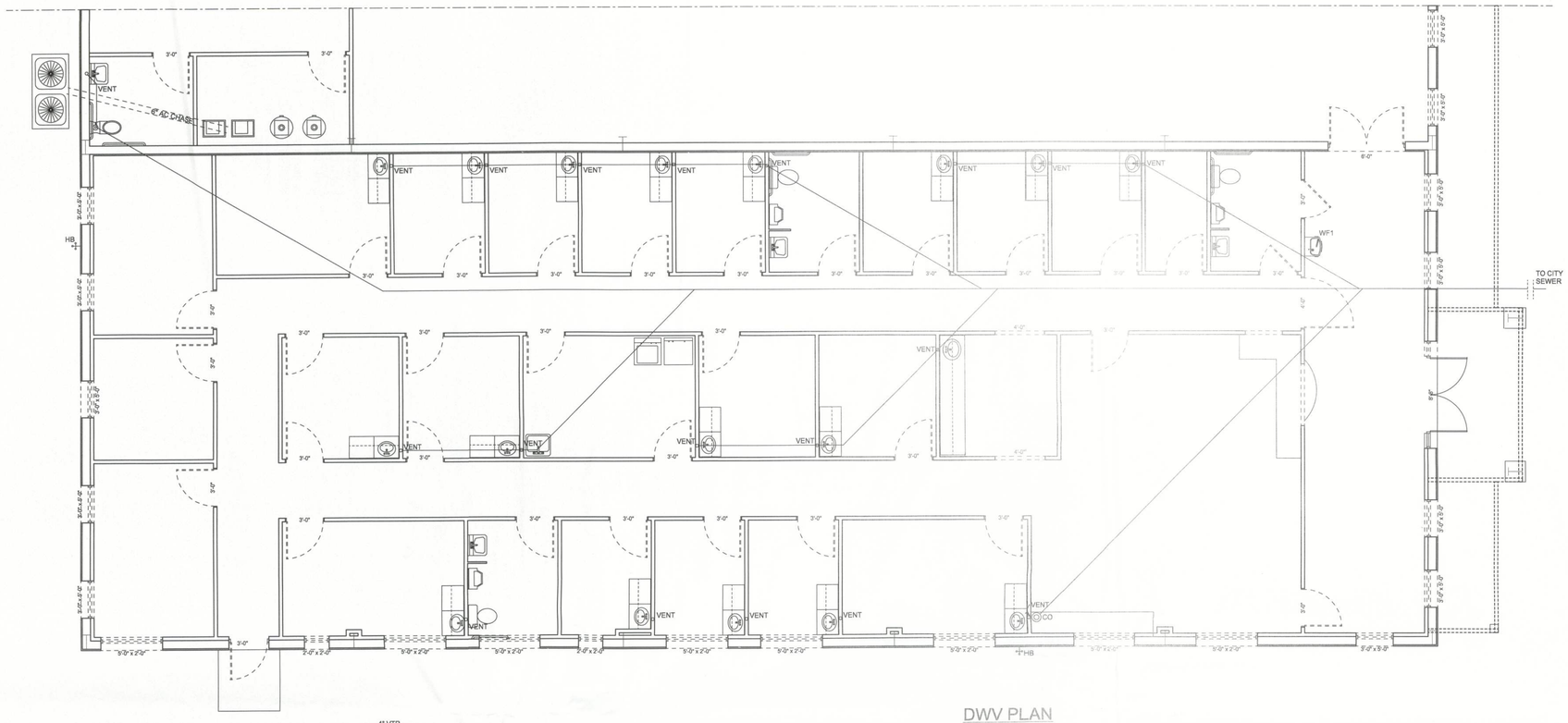
6-14-2017
Brett A. Crews, P.E. 65592

DRAWN BY: TM
APPROVED BY: BC

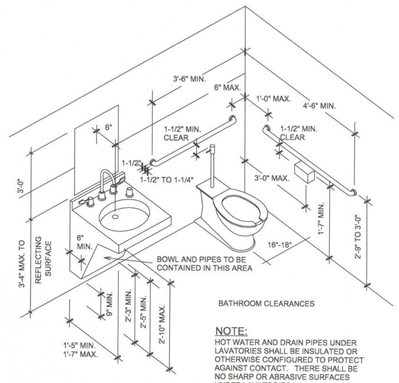
EMORY MEDICAL OVERFLOW OFFICE

PLUMBING NOTES

CES PROJECT NO.: 2012-030
SHEET: P-1

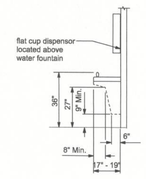


DWV PLAN
SCALE: 3/16" = 1'-0"

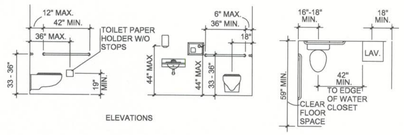


BATHROOM CLEARANCES

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



WATER COOLER OR BUBBLER CLEARANCES

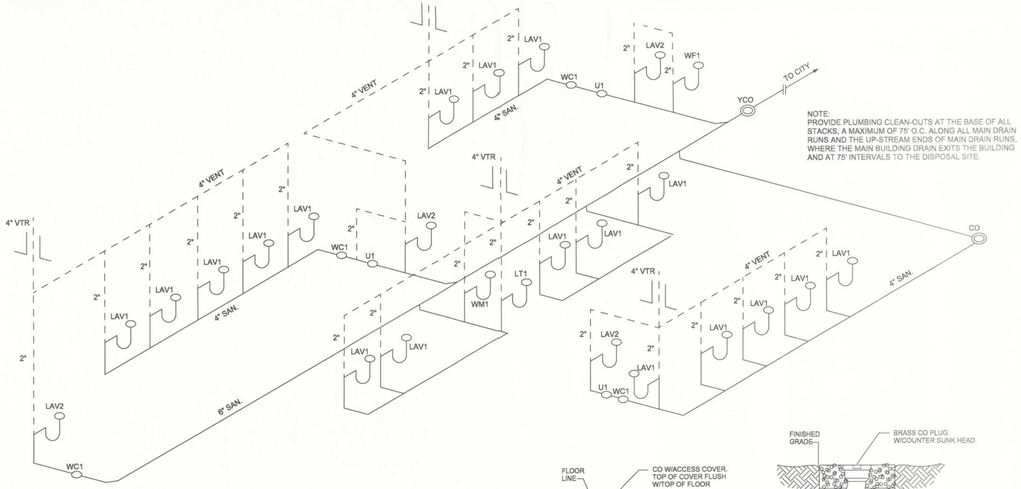


ELEVATIONS

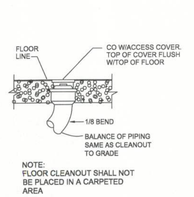
WATER CLOSETS CLEARANCES

NOTE:
FLORIDA LAW, SECTION 553.504(5), F.S., STIPULATES THAT " . . REQUIRED BATHING ROOMS AND TOILET ROOMS IN NEW CONSTRUCTION SHALL BE DESIGNED AND CONSTRUCTED. . " WITH AN ACCESSIBLE LAVATORY IN THE WHEELCHAIR ACCESSIBLE COMPARTMENT AND THE WATER CLOSET LOCATED IN A CORNER DIAGONAL TO THE DOOR. THE ADA STANDARDS FOR ACCESSIBLE DESIGN AND THEREFORE THIS CODE REQUIRE WHEELCHAIR ACCESSIBLE COMPARTMENTS IN NEW CONSTRUCTION AND IN ALTERATIONS OF EXISTING BUILDINGS TO HAVE SELF CLOSING DOORS.

ADA CLEARANCE REQUIREMENTS
NTS

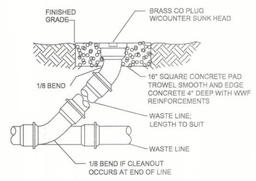


DWV RISER
NTS

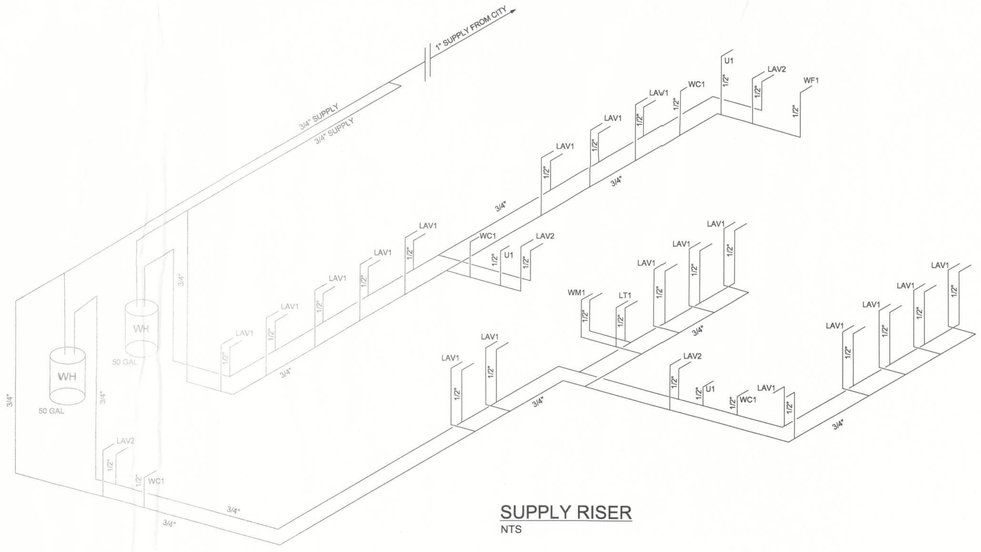


NOTE:
FLOOR CLEANOUT SHALL NOT BE PLACED IN A CARPETED AREA

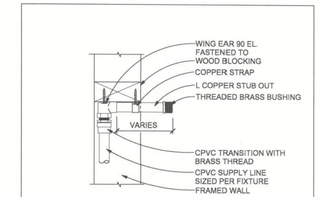
FLOOR CLEANOUT
NTS



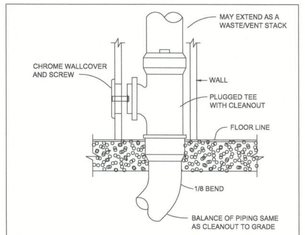
YARD CLEANOUT
NTS



SUPPLY RISER
NTS



1 WALL STUBOUT DETAIL
NTS



2 WALL CLEANOUT DETAILS
NTS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION NO. 28022
P.O. BOX 970
LAKE CITY, FL 32056
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6-6-2013
Brett A. Crews, P.E. 65592

DRAWN BY: TM
APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

PLUMBING PLAN

CES PROJECT NO.: 2012-030

SHEET: P-2

ELECTRICAL SPECIFICATIONS

BASIC ELECTRICAL MATERIALS AND METHODS
PART 1 GENERAL
1.1 SUMMARY
A. GROUNDING AND BONDING.
B. CONNECTION OF UTILIZATION EQUIPMENT.
C. SUPPORTS.
D. IDENTIFICATION.
1.2 SUBMITTALS
A. PRODUCT DATA: FOR REVIEW; PROVIDE CATALOG DATA FOR GROUNDING AND BONDING DEVICES.
1.3 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF NFPA 70.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
C. FLORIDA BUILDING CODE
1.4 PROJECT CONDITIONS
A. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS ARE AS SHOWN ON DRAWINGS.
PART 2 PRODUCTS
2.1 GROUNDING MATERIALS
A. GROUND ROD: PER ELECTRICAL PLAN
B. MECHANICAL CONNECTORS: BRONZE. ABOVE GRADE ONLY.
C. EXOTHERMIC WELDS: BELOW GRADE CONNECTORS.
2.2 BASIC MATERIALS
A. STEEL CHANNEL: GALVANIZED
B. MISCELLANEOUS HARDWARE: TREAT FOR CORROSION RESISTANCE.
C. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND.
D. WIRE AND CABLE MARKERS: CLOTH MARKERS, SPLIT SLEEVE OR TUBING TYPE.
PART 3 EXECUTION
1 INSTALLATION
A. INSTALL WORK ACCORDING TO NECA "STANDARD OF 2.5 BUILDING WIRE AND CABLE INSTALLATION."
B. PROVIDE BONDING TO MEET REGULATORY REQUIREMENTS.
C. MAKE ELECTRICAL CONNECTIONS TO UTILIZATION EQUIPMENT IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
1. VERIFY THAT WIRING AND OUTLET ROUGH-IN WORK IS COMPLETE AND THAT UTILIZATION EQUIPMENT IS READY FOR ELECTRICAL CONNECTION, WIRING, AND ENERGIZING.
2. MAKE WIRING CONNECTIONS IN CONTROL PANEL OR IN WIRING COMPARTMENT OF PRE-WIRED EQUIPMENT. PROVIDE INTERCONNECTING WIRING WHERE INDICATED.
3. INSTALL AND CONNECT DISCONNECT SWITCHES, CONTROLERS, CONTROL STATIONS, AND CONTROL DEVICES AS INDICATED.
4. MAKE CONDUIT CONNECTIONS TO EQUIPMENT USING FLEIBLE CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT IN DAMP OR WET LOCATIONS.
5. INSTALL PRE-FABRICATED CORD SET WHERE CONNECTION WITH ATTACHMENT PLUG IS INDICATED OR SPECIFIED, OR USE ATTACHMENT PLUG WITH SUITABLE STRAIN-RELIEF CLAMP.
6. PROVIDE SUITABLE STRAIN-RELIEF CLAMPS FOR CORD CONNECTIONS TO OUTLET BOXES AND EQUIPMENT CONNECTION BOXES.
D. INSTALL SUPPORT SYSTEMS SIZED AND FASTENED TO ACCOMMODATE WEIGHT OF EQUIPMENT AND CONDUIT, INCLUDING WIRING WHICH THEY CARRY.
3.1 EXAMINATION AND PREPARATION
1. FASTEN HANGER RODS, CONDUIT CLAMPS, AND OUTLET AND JUNCTION BOXES TO BUILDINGS STRUCTURE USING PRECAST INSERT SYSTEM BEAM CLAMPS.
2. USE TOGGLE BOLTS OR HOLLOW WALL FASTENERS IN HOLLOW MASONRY, PLASTER, OR GYPSUM BOARD PARTITIONS AND WALLS; EXPANSION ANCHORS OR PRESET INSERTS IN SOLID MASONRY WALLS; SELF-DRILLING ANCHORS OR EXPANSION ANCHOR ON CONCRETE SURFACES; SHEET METAL SCREWS IN SHEET METAL STUDS; AND WOOD SCREWS IN WOOD CONSTRUCTION.
3. DO NOT FASTEN SUPPORTS TO PIPING, CEILING SUPPORT WIRES, DUCTWORK, MECHANICAL EQUIPMENT, OR CONDUIT.
4. DO NOT USE POWER-ACTUATED ANCHORS.
5. DO NOT DRILL STRUCTURAL STEEL MEMBERS.
6. FABRICATE SUPPORTS FROM STRUCTURAL STEEL R STEEL CHANNEL.
E. IDENTIFY ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT, AND LOADS SERVED, TO MEET REGULATORY REQUIREMENTS AND AS SCHEDULED.
1. DEGREASE AND CLEAN SURFACES TO RECEIVE NAMEPLATES AND TAPE LABELS.
2. SECURE NAMEPLATES TO EQUIPMENT FRONTS USING SCREWS, RIVETS, OR ADHESIVE, WITH EDGES PARALLEL TO EQUIPMENT LINES. SECURE NAMEPLATE TO INSIDE FACE OF RECESSED PANELBOARD DOORS IN FINISHED LOCATIONS.
3. USE NAMEPLATES WITH 1/8 INCH LETTERING TO IDENTIFY INDIVIDUAL SWITCHES AND CIRCUIT BREAKERS, RECEPTACLE CIRCUITS, AND LOADS SERVED.
4. USE NAMEPLATES WITH 1/4 INCH TO IDENTIFY DISTRIBUTION AND CONTROL EQUIPMENT.
F. INSTALL WIRE MARKERS ON EACH CONDUCTOR IN PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND AT LOAD CONNECTIONS.
1. USE BRANCH CIRCUIT OR FEEDER NUMBER TO IDENTIFY POWER AND LIGHTING CIRCUITS.
2. USE CONTROL WIRE NUMBER AS INDICATED ON FROM FOUNDATION WALL: PLASTIC CONDUIT. PROVIDE EQUIPMENT MANUFACTURER'S SHOP DRAWINGS TO IDENTIFY CONTROL WIRING.
WIRING METHODS
PART 1 GENERAL
1.1 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF NFPA 70.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
PART 2 PRODUCTS
2.1 PRODUCT REQUIREMENTS
A. USE ONLY SPECIFIED RACEWAY IN THE FOLOWING LOCATIONS:
1. INSTALLATIONS IN OR UNDER CONCRETE SAB, OR UNDERGROUND WITHIN 5 FEET FROM FOUNDATION WALL: PVC SCHDUE 40 CONDUIT.
2. IN SLAB ABOVE GRADE: PLASTIC CONDUIT.
3. EXPOSED OUTDOOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING. USE THREADED OR RAINTIHT FITTINGS.
4. WET INTERIOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING. USETHREADED OR RAINTIGHT FITTINGS FOR METAL CONDUIT.
5. DRY INTERIOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING.
6. EXPOSED LOCATIONS IN WAREHOUSE AT CEILING JOISTS AND CONCEALED BRANCH CIRCUITS IN OFFICES MAY BE MC CABLE. ALL HOMERUNS SHALL BE CONDUCTORS IN CONDUIT.
B. USE WIRE AND CABLE IN LOCATIONS AS FOLLOWS:
1. ALL POWER WIRES AND CABLES SHALL BE IN RACEWAY D. USE NO WIRE SMALLER THAN 12 AWG FOR POWER AND LIGHTING CIRCUITS, AND NO SMALLER THAN 14 AWG FOR CONTROL WIRING. USE 10 AWG CONDUCTOR FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET; AND FOR 20 AMPERE.
2.2 CONDUIT AND FITTINGS
A. CONDUIT:
1. METAL CONDUIT AND TUBING: GALVANIZED STEEL.
2. FLEXIBLE CONDUIT: STEEL
3. LIQUID TIGHT FLEXIBLE CONDUIT: FLEXIBLE CONDUIT WITH PVC JACKET.
4. PLASTIC CONDUIT AND TUBING: NEMA TC 2, PVC. USE SCHEDULE 40 CONDUIT.
B. CONDUIT FITTINGS:
1. METAL FITTINGS AND CONDUIT BODIES: NEMA FB 1.
2. PLASTIC FITTINGS AND CONDUIT BODIES: NEMA TC 3.
3. EMT FITTINGS: STEEL COMPRESSION TYPE FOR WET LOCATION. SET SCREW FOR DRY LOCATION
2.3 ACCESS PANELS
A. PROVIDE CEILING ACCESS PANELS FOR EQUIPMENT, DEVICES, BOXES AND OTHER LIKE ITEMS REQUIRING ADJUSTMENT, MAINTENANCE OR ACCESSIBILITY IF THEY ARE NOT LOCATED OVER LAY-IN TYPE CEILING OR ARE NOT OTHERWISE ACCESSIBLE. OBTAIN APPROVAL FROM ARCHITECT FOR TYPE AND LOCATION OF ACCESS PANELS.
2.4 ELECTRICAL BOXES
A. BOXES:
1. SHEET METAL: NEMA OS 1, GALVANIZED STEEL, 4" x 4" x 1 1/4" deep.
2. CAST METAL: CAST FERALLOY, DEEP TYPE, GASKETED COVER, THREADED HUBS.
2.5 BUILDING WIRE AND CABLE
A. FEEDERS AND BRANCH CIRCUITS LARGER THAN 6 AWG: COPPER STRANDED CONDUCTOR, 600 VOLT INSULATION, THHN/THWN AND XHHW.
B. FEEDERS AND BRANCH CIRCUITS 6 AWG AND SMALLER: COPPER CONDUCTOR, 600 VOLT INSULATION, THHN/THWN, XHHW 6 AND 8 AWG, STRANDED CONDUCTOR; SMALLER THAN 8 AWG, SOLID CONDUCTOR.
C. CONTROL CIRCUITS: COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, THW.
2.6 REMOTE CONTROL AND SIGNAL CABLE
A. CONTROL CABLE FOR CLASS 1 REMOTE CONTROL AND SIGNAL CIRCUITS: COPPER CONDUCTOR, 600 VOLT INSULATION, RATED 60 DEGREE C, INDIVIDUAL CONDUCTORS TWISTED TOGETHER, SHIELDED, AND COVERED WITH PVC JACKET. (PLENUM RATED)
B. CONTROL CABLE FOR CLASS 2 OR CLASS 3 REMOTE CONTROL AND SIGNAL CIRCUITS: COPPER CONDUCTOR, 300 VOLT INSULATION, RATED 60 DEGREEC, INDIVIDUAL CONDUCTORS TWISTED TOGETHER, SHIELDED, AND COVERED WITH PVC JACKET; UL LISTED. (PLENUM RATED)
PART 3 EXECUTION
3.1 EXAMINATION AND PREPARATION
A. VERIFY THAT INTERIOR OF BUILDING IS PHYSICALLY PROTECTED FROM WEATHER.
B. VERIFY THAT MECHANICAL WORK THAT IS LIKELY TO DAMAGE CONDUCTORS HAS BEEN COMPLETED.
C. COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.
D. ELECTRICAL BOXES ARE SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED.
1. OBTAIN VERIFICATION FROM ENGINEER OF JUNCTION BOX LOCATIONS, AND LOCATIONS OF OUTLETS IN OFFICES AND WORK AREAS, PRIOR TO ROUGH-IN.
2. IT SHALL BE UNDERSTOOD THAT ANY OUTLET MAY BE RELOCATED A DISTANCE NOT EXCEEDING 5FT FROM THE LOCATION SHOWN ON THE DRAWINGS PRIOR TO OR DURING ROUGH-IN, IF SO DIRECTED BY THE ARCHITECT-ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
3. LOCAL SWITCHES WHICH ARE SHOWN NEAR DOORS SHALL BE LOCATED AT THE STRIKE SIDE OF THE DOOR AS FINALLY HUNG, REGARDLESS OF SWING ON THE DRAWINGS.
3.2 INSTALLATION
A. PERFORM WORK ACCORDING TO NECA STANDARD OF INSTALLATION.
B. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT NEAT APPEARANCE.
1. ROUTE EXPOSED RACEWAY PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING.
2. MAINTAIN MINIMUM 6-INCH CLEARANCE TO PIPING AND 12" CLEARANCE TO HEAT SURFACES SUCH AS FLUES, STEAM PIPES, AND HEATING APPLIANCES.
3. MAINTAIN REQUIRED FIRE, ACOUSTIC, AND VAPOR BARRIER RATING WHEN PENETRATING WALLS, FLOORS, AND CEILINGS.
4. ROUTE CONDUIT THROUGH ROOF OPENINGS FOR PIPING AND DUCTWORK WHERE POSSIBLE; OTHERWISE, ROUTE THROUGH ROOF JACK WITH PITCH POCKET.
5. GROUP IN PARALLEL RUNS WHERE PRACTICAL. USE RACK CONSTRUCTED OF STEEL CHANNEL. MAINTAIN SPACING BETWEEN RACEWAYS OR DERATE CIRCUIT AMPACITIES TO NFPA 70 REQUIREMENTS.
6. USE CONDUIT HANGERS AND CLAMPS; DO NOT FASTEN WITH WIRE OR PERFORATED PIPE STRAPS.
7. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION.
8. TERMINATE CONDUIT STUBS WITH INSULATED BUSHINGS.
9. USE SUITABLE CAPS TO PROTECT INSTALLED RACEWAY AGAINST ENTRANCE OF DIRT AND MOISTURE.
10. PROVIDE NO. 12 AWG INSULATED CONDUCTOR OR SUITABLE PULL STRING IN EMPTY RACEWAYS, EXCEPT SLEEVES AND NIPPLES.
11. INSTALL EXPANSION JOINTS WHERE RACEWAY CROSSES BUILDING EXPANSION OR SEISMIC JOINTS.
12. INSTALL PLASTIC CONDUIT AND TUBING ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
13. USE STEEL COMPRESSION TYPE FITTINGS WITH EMT CONDUITS.
C. INSTALL ELECTRICAL BOXES AS SHOWN ON THE DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND REGULATORY REQUIREMENTS.
1. USE CAST OUTLET BOX IN EXTERIOR LOCATIONS EXPOSED TO WEATHER AND WET LOCATIONS.
2. USE HINGED COVER ENCLOSURE FOR INTERIOR PULL AND JUNCTION BOX LARGER THAN 12 INCHES IN ANY DIMENSION.
3. LOCATE AND INSTALL ELECTRICAL BOXES TO ALLOW ACCESS. PROVIDE ACCESS PANELS IF REQUIRED.
4. LOCATE AND INSTALL ELECTRICAL BOXES TO MAINTAIN HEADROOM AND TO PRESENT NEAT MECHANICAL APPEARANCE.
5. INSTALL PULL BOXES AND JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS OR IN UNFINISHED AREAS.
6. PROVIDE KNOCKOUT CLOSURES FOR UNUSED OPENINGS.
7. ALIGN WALL-MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES.
8. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS ABOVE COUNTERS AND BACKSPLASHES.
9. USE RECESSED OUTLET BOXES IN FINISHED AREAS AND WHERE INDICATED.
10. SECURE BOXES TO INTERIOR WALL AND PARTITION STUDS, ACCURATELY POSITIONING TO ALLOW FOR SURFACE FINISH THICKNESS.
11. USE STAMPED STEEL STUD BRIDGES FOR FLUSH OUTLETS IN HOLLOW STUD WALL, AND ADJUSTABLE STEEL CHANNEL FASTENERS FOR FLUSH CEILING OUTLET BOXES.
12. LOCATE BOXES IN MASONRY WALLS TO REQUIRE CUTTING CORNER ONLY. COORDINATE MASONRY CUTTING TO ACHIEVE NEAT OPENINGS FOR BOXES.
13. DO NOT INSTALL BOXES BACK-TO-BACK IN WALLS; PROVIDE 6 INCHES SEPARATION, MINIMUM; EXCEPT PROVIDE 24 INCHES SEPARATION, MINIMUM IN ACOUSTIC-RATED WALLS.
14. DO NOT DAMAGE INSULATION.
D. INSTALL CABLE AND WIRE ACCORDING TO MANUFACTURER'S INSTRUCTIONS
1. NEATLY TRAIN AND SECURE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.
2. USE WIRE PULLING LUBRICANT FOR PULLING 4 AWG AND LARGER WIRES.
3. SUPPORT CABLES ABOVE ACCESSIBLE CEILINGS TON KEEP THEM FROM RESTING ON CEILING TILES.
4. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITHOUT PERCEPTIBLE TEMPERATURE RISE.
5. TERMINATE SPARE CONDUCTORS WITH ELECTRICAL TAPE.
E. INSTALL WIRING DEVICES ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
F. INSTALL WALL PLATES FLUSH AND LEVEL.
1. INSTALL PLATES ON SWITCH, RECEPTACLE, AND BLANK OUTLETS IN FINISHED AREAS, USING JUMBO SIZE PLATES FOR OUTLETS INSTALLED IN MASONRY WALLS.
2. INSTALL GALVANIZED STEEL PLATES ON OUTLET BOXES AND JUNCTION BOXES IN UNFINISHED AREAS, ABOVE ACCESSIBLE CEILINGS, AND ON SURFACE-MOUNTED OUTLETS.
G. INSTALL SERVICE FITTINGS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
H. BEFORE INSTALLING RACEWAYS AND PULLING WIRE TO ANY MECHANICAL EQUIPMENT OR PLUMBING EQUIPMENT, VERIFY ELECTRICAL CHARACTERISTICS WITH FINAL SUBMITTAL ON EQUIPMENT TO ASSURE PROPER NUMBER AND AWG OF CONDUCTORS.
I. UNDERGROUND CABLE AND CONDUIT INSTALLATION SHALL CONFORM TO ANSI C2 AND NEC EXCEPT AS OTHERWISE INDICATED. THE CONTRACTOR SHALL PROMPTLY REPAIR ANY UTILITY LINES OR SYSTEM DAMAGED BY HIS OPERATION. THE TOP OF UNDERGROUND CONDUIT SHALL NOT BE LESS THAN 24 INCHES BELOW GRADE. THE BOTTOM OF CONDUITS TRENCH SHALL BE GRADED SMOOTH, WHERE ROCK AND SHARP EDGED MATERIAL ARE ENCOUNTERED, THE BOTTOM SHALL BE EXCAVATED FOR ADDITIONAL 3 INCHES, FILLED AND TAMPED LEVEL TO THE ORIGINAL BOTTOM WITH SAND OR EARTH FREE FROM ROCKS AND SHARP MATERIALS. PROVIDE MAGNETIC YELLOW WARNING TAPE ABOVE THE ENTIRE LENGTH OF UNDERGROUND CONDUITS TAPE SHALL BE BURIED 12" BELOW GRADE.
J. SURFACES DISTURBED DURING THE INSTALLATION OF UNDERGROUND CONDUITS SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS. PROVIDE SOD OF QUALITY EQUAL TO THAT REMOVED, PATCH PAVEMENT, SIDEWALK CURB, ETC. EXCAVATED MATERIAL NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED FROM PROJECT SITE. REMOVE WATER FROM EXCAVATION BY PUMPING OR OTHER APPROVED METHOD. BACKFILL SHALL BE FREE FROM LARGE CLODS OF EARTH OR STONES OVER 1 INCH IN SIZE.

SERVICE AND DISTRIBUTION
PART 1 GENERAL
1.1 SUBMITTALS
A. SHOP DRAWINGS: FOR REVIEW; INDICATE CONSTRUCTION DETAILS FOR THE FOLLOWING:
1. PANELBOARDS.
B. PRODUCT DATA: FOR REVIEW; PROVIDE RATINGS AND COMPONENT DETAILS FOR THE FOLLOWING:
1. ENCLOSED SWITCHES.
2. FUSES.
3. CIRCUIT BREAKERS.
1.2 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF NFPA 70.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
C. CONFORM TO REQUIREMENTS OF UTILITY COMPANY.
PART 2 PRODUCTS
2.1 ENCLOSED SWITCHES
A. MANUFACTURERS: SQUARE D, GE, SIEMENS
B. ENCLOSED SWITCH ASSEMBLIES: HEAVY DUTY FUSE CLIPS DESIGNED TO ACCOMMODATE CLASS R OR J FUSES.
C. ENCLOSURES: NEMA-1 FOR INTERIOR LOCATIONS, NEMA-3R FOR EXTERIOR LOCATIONS.
2.2 FUSES
A. FUSES 600 AMPERES AND LESS: CURRENT LIMITING, ONE-TIME FUSE, 250 VOLT, UL CLASS RK 1, RK 5 OR J
2.3 PANELBOARDS
A. MANUFACTURERS: SQUARE D, GE, SIEMENS
B. DISTRIBUTION PANELBOARDS: NEMA PB 1; CIRCUIT BREAKER TYPE.
1. ENCLOSURE: TYPE 1
2. PROVIDE SURFACE CABINET FRONT WITH SCREW COVER AND HINGED DOOR.
3. BUS: COPPER.
C. LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS: NEMA PB 1; CIRCUIT BREAKER TYPE.
1. ENCLOSURE: NEMA PB 1; TYPE 1
2. PROVIDE FLUSH OR SURFACE CABINET FRONT WITH LOCKABLE DOOR, KEYED ALIKE.
3. BUS: COPPER BUS.

PART 3 EXECUTION
3.1 INSTALLATION
A. COORDINATE WITH UTILITY COMPANY TO OBTAIN PERMANENT ELECTRIC SERVICE TO THE PROJECT. PROVIDE CONCRETE PAD FOR UTILITY TRANSFORMER.
B. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
C. INSTALL PANELBOARDS TO NEMA PB 1.1.
D. CLEAN EQUIPMENT
E. PROVIDE TYPED CIRCUIT CARDS AT THE COMPLETION OF THE PROJECT.
INTERIOR LUMINAIRES
PART 1 GENERAL
1.1 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF ANSI/NFPA 70.
B. CONFORM TO REQUIREMENTS OF NFPA 101.
C. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES, INC. AS SUITABLE FOR PURPOSE SPECIFIED AND SHOWN.
PART 2 PRODUCTS
2.1 LUMINARIES
A. FURNISH PRODUCTS AS SPECIFIED IN SCHEDULE ON DRAWINGS.
B. INSTALL BALLASTS, LAMPS, AND SPECIFIED ACCESSORIES AT FACTORY.
PART 3 EXECUTION
3.1 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
B. INSTALL SUSPENDED LUMINARIES USING PENDANTS SUPPORTED FROM SWIVEL HANGERS. PROVIDE PENDANT LENGTH REQUIRED TO SUSPEND LUMINAIRE AT INDICATED HEIGHT.
C. LOCATE RECESSED CEILING LUMINARIES AS INDICATED ON REFLECTED CEILING PLAN.
D. INSTALL SURFACE MOUNTED LUMINARIES AND EXIT SIGNS PLUMB AND ADJUST TO ALIGN WITH BUILDING LINES AND WITH EACH OTHER. SECURE TO PROHIBIT MOVEMENT.
E. EXPOSED GRID CEILINGS: SUPPORT SURFACE MOUNTED LUMINARIES ON GRID CEILING DIRECTLY FROM BUILDING STRUCTURE OR PROVIDE AUXILIARY MEMBERS SPANNING CEILING T(S) TO SUPPORT SURFACE MOUNTED LUMINARIES.
F. INSTALL RECESSED LUMINARIES TO PERMIT REMOVAL FROM BELOW.
G. INSTALL CLIPS TO SECURE RECESSED GRID-SUPPORTED LUMINARIES IN PLACE. PROVIDE A MINIMUM OF 2 GALVANIZED STEEL WIRES TO SUPPORT LIGHTING FIXTURE FROM BUILDING STRUCTURE. PLACE WIRES DIAGONALLY AT LONG SIDES OF FIXTURE.
H. INSTALL SPECIFIED LAMPS IN EACH LUMINAIRE, EMERGENCY LIGHTING UNIT AND EXIT SIGN.
I. ADJUST EXIT SIGN DIRECTIONAL ARROWS AS INDICATED.
J. RELAMP LUMINARIES THAT HAVE FAILED LAMPS AT SUBSTANTIAL COMPLETION.
K. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND DELETERIOUS MATERIALS. REMOTE DIRT AND DEBRIS FROM ENCLOSURE. CLEAN FINISHES AND TOUCHUP DAMAGE.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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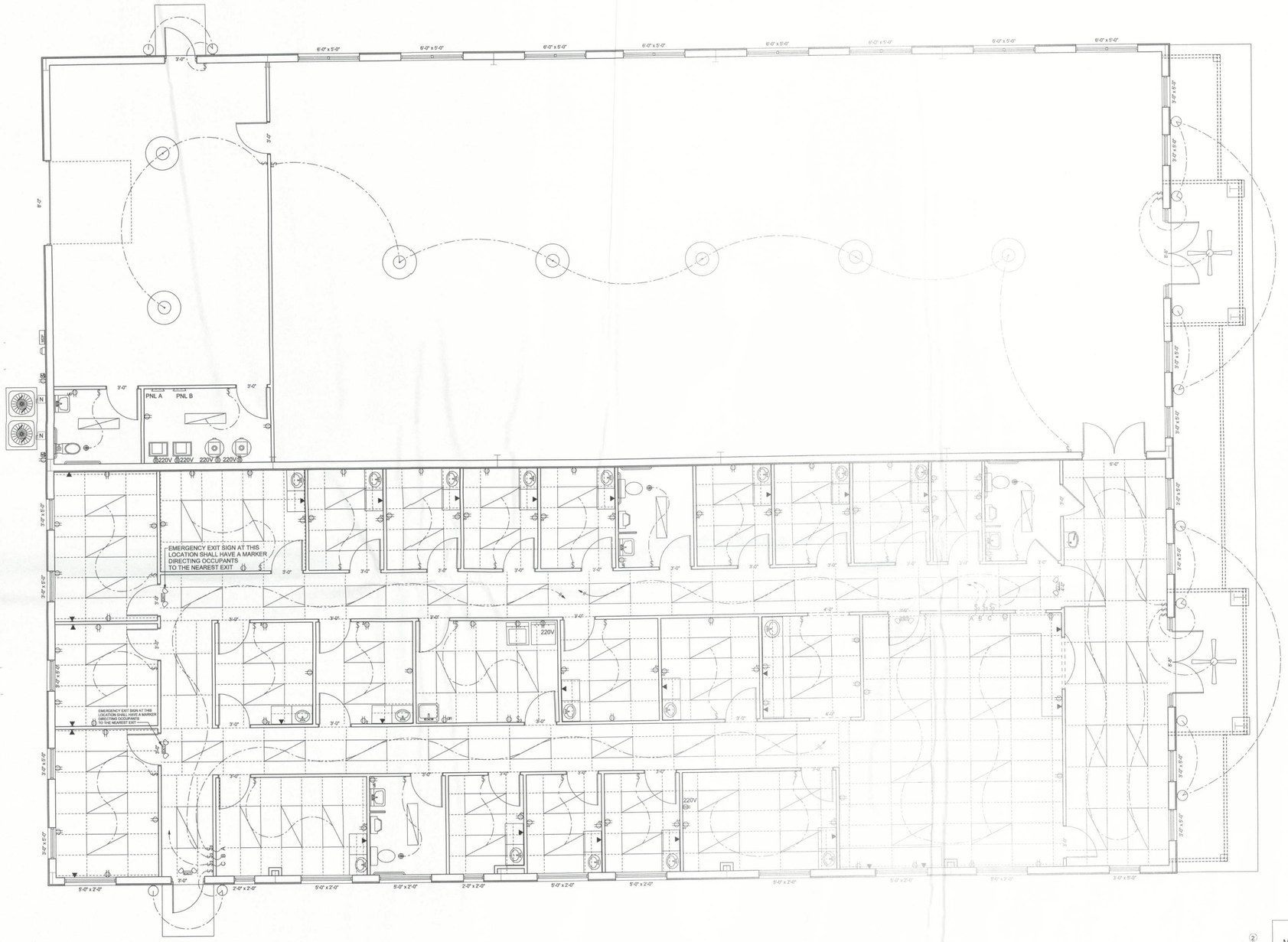
Brett A. Crews, P.E. 65592

DRAWN BY: TM
APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

ELECTRICAL NOTES

CES PROJECT NO.: 2012-030
SHEET: E-1



ELECTRICAL LAYOUT

SCALE: 3/16" = 1'-0"

ELECTRICAL	COUNT	SYMBOL
WEATHER RESISTANT CEILING FAN	2	
HIGH BAY LIGHT (SPEC. PER OWNER)	7	
RECESSED FLUORESCENT LIGHT 2 x 4	90	
EXTERIOR LIGHT	12	
EMERGENCY EXIT SIGN WITH BATTERY BACKUP	5	
HVAC MOTOR	2	
MDP	1	MDP
METER CAN	1	
ELECTRICAL PANEL	2	
NON-FUSED DISCONNECT	2	N
50 CFM EXHAUST FAN	4	
LAN CONNECTION	29	
OUTLET	48	
OUTLET 220V	6	
OUTLET DOUBLE	37	
OUTLET GFI	5	GFCI
SWITCH	36	$
SWITCH 3 WAY	10	$3
WEATHER PROOF GFI	2	WP
FLUSH FLUORESCENT LIGHT 1 x 4	5	

ELECTRICAL PLAN NOTES

WIRE ALL APPLIANCES, HVAC UNITS AND OTHER EQUIPMENT PER MANUF. SPECIFICATIONS.

CONSULT THE OWNER FOR THE NUMBER OF SEPARATE TELEPHONE LINES TO BE INSTALLED.

INSTALLATION SHALL BE PER NAT'L. ELECTRIC CODE.

ALL SMOKE DETECTORS SHALL BE 120V W/ BATTERY BACKUP OF THE PHOTOELECTRIC TYPE, AND SHALL BE INTERLOCKED TOGETHER.

TELEPHONE, TELEVISION AND OTHER LOW VOLTAGE DEVICES OR OUTLETS SHALL BE AS PER THE OWNER'S DIRECTIONS, & IN ACCORDANCE W/ APPLICABLE SECTIONS OF NEC-LATEST EDITION.

ELECTRICAL CONT'R SHALL PREPARE "AS-BUILT" SHOP DWGS INDICATING ALL ELECTRICAL WORK, INCLUDING ANY CHANGES TO THE ELEC. PLAN, ADD'NS TO THE ELEC. PLAN, RISER DIAGRAM, AS-BUILT PANEL SCHEDULE W/ ALL CKTS IDENTIFIED W/ CKT Nr., DESCRIPTION & BRKR, SERVICE ENT. & ALL UNDERGROUND WIRE LOCATIONS/ROUTING/DEPTH. RISER D/A, SHALL INCLUDE WIRE SIZES/TYPE & EQUIPMENT TYPE W/ RATINGS & LOADS.
CONTRACTOR SHALL PROVIDE 1 COPY OF AS-BUILT DWGS TO OWNER & 1 COPY TO THE PERMIT ISSUING AUTHORITY.

GENERAL LIGHTING LOAD (CONTINUOUS)

BUSINESS USE		
TOTAL BUILDING AREA (SF)		8800
3.5 VA PER SQUARE FOOT		30800
SUBTOTAL		30800
DEMAND FACTOR	125%	**38500** w

OUTSIDE LIGHTING (CONTINUOUS)

2,000 VA x 125% = **2500** w

SIGN AND OUTLINE LIGHTING (CONTINUOUS)

1,200 VA PER SIGN
1 NUMBER OF SIGNS
1200 w

RECEPTACLE LOADING (NON-CONT.)

NUMBER OF RECEPTACLES		133
180 VA PER RECEPTACLE		23,940
FIRST 10,000 VA X 100% =		10,000
REMAINING 2,420 X 50% =		6,970
		16,970 w

WATER HEATER

5,500 VA PER WATER HEATER
2 NUMBER OF WATER HEATERS
11000 w

WELL PUMP

CITY WATER		0
PUMPS =	0	0
TOTAL		**0** w

SEWAGE PUMP

CITY SEWER		0
PUMPS =	0	0
TOTAL		**0** w

HEATING LOADS

5 TON HEAT PUMP		18,000
HEAT PUMPS =	2	36000
TOTAL		**36000** w

A/C MOTOR LOADS

4 TON AIR HANDLER		5,500
AIR HANDLERS =	2	11000
TOTAL		**11000** w

APPLIANCE LOADS

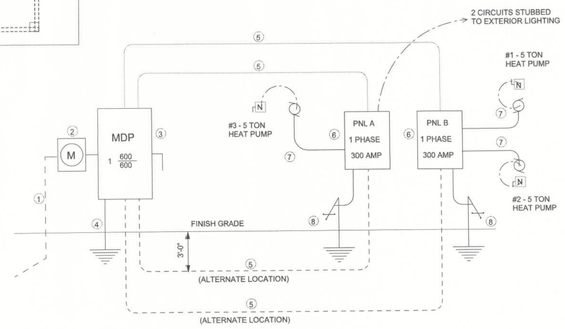
SPECIALTY MEDICAL EQUIPMENT		5,000
DEMAND FACTOR =	90%	**4500** w

OCPD

GENERAL LIGHTING	38500.0
OUTSIDE LIGHTING	2500.0
SIGN AND OUTLINE	1200.0
RECEPTACLE LOAD	16970.0
WATER HEATER	11000.0
WELL PUMP LOADS	0.0
SEWAGE PUMP	0.0
HEATING LOADS	36000.0
A/C LOADS	11000.0
APPLIANCE LOADS	4500.0
TOTAL LOAD	**121670.0** w

I = TOTAL LOAD/(240) = 506.9583333 AMPS

USE MIN. 600 AMP 1 PHASE POWER 120/240



1. SERVICE/FEEDER ENTRANCE CONDUCTORS: 3" RIGID CONDUIT, MIN 18" DEEP, W. CONTINUOUS GROUND BONDING CONDUCTOR, SERVICE/ENTRANCE CONDUCTORS SHALL NOT BE SPLICED EXCEPT THAT BOLTED CONNECTIONS AT THE METER, DISCONNECTION DEVICES AND PANEL SHALL BE ALLOWED.
2. METER ENCLOSURE, WEATHERPROOF, U.L. LISTED.
3. MAIN DISCONNECT SWITCH: FUSED OR MAIN BREAKER, WEATHERPROOF, U.L. LISTED.
4. SERVICE ENTRANCE GROUND: 5/8" DIAMETER IRON/STEEL ROD X 8'-0" LONG AND/OR CONCRETE ENCASED FOUNDATION STEEL REBAR X 20'-0" LONG. GROUNDING CONDUCTOR SHALL BE BONDED TO EACH PIECE OF SERVICE/ENTRANCE EQUIPMENT, AND SHALL BE SIZED PER ITEM #5 BELOW.
5. 300 AMPERE FEEDER: 3-3/0-THW-CU, 1-#2-CU-GND, 2 1/2" CONDUIT.
6. ELECTRICAL PANEL (PNL), U.L. LISTED, SIZED PER DIAGRAM.
7. EQUIPMENT DISCONNECT SWITCH: NON-FUSED, IN WEATHER PROOF ENCLOSURE, SIZE ACCORDING TO ELECTRICAL EQUIPMENT LOADS.
8. PROVIDE GROUND BOND WIRE TO METAL PIPING, SIZE IN ACCORDANCE WITH THE SERVICE GROUND CONDUCTOR.

NOTE:
ALL ELECTRICAL FIXTURES (LIGHTS, OUTLETS, ETC.) SHALL BE PRE-APPROVED BY OWNER PRIOR TO ANY INSTALLATION BY ELECTRICAL CONTRACTOR OR BY THE GENERAL CONTRACTOR OR ANY SUB-CONTRACTORS.

NOTE:
ALL FLUORESCENT FIXTURES TO BE FLUSH MOUNTED UNLESS OTHERWISE NOTED.

OCCUPANT NOTIFICATION:
AUDIBLE AND VISIBLE ALARMS SHALL BE PROVIDED TO ALERT OCCUPANTS OF A FIRE OR OTHER EMERGENCY.

INITIATION:
INITIATION OF THE REQUIRED FIRE ALARM SYSTEM SHALL BE BY MANUAL MEANS AND BY OPERATION OF ANY REQUIRED SMOKE DETECTORS.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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6-4-2013

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APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

ELECTRICAL PLAN

CES PROJECT NO.: 2012-030

SHEET: E-2

MECHANICAL SPECIFICATIONS

PART 1 - GENERAL

1.01 INSTRUCTIONS
A. SCOPE OF WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM IN ACCORDANCE WITH LOCAL AND STATE CODES, AND CONTRACT DRAWINGS AND SPECIFICATIONS.

1.02 LOCAL CONDITIONS
A. CONTRACTOR SHALL VISIT THE SITE AND OBSERVE ALL EXISTING LOCAL CONDITIONS WHICH WOULD AFFECT WORK UNDER THIS CONTRACT. CONTRACTOR SHALL EXAMINE ALL PLANS AND SPECIFICATIONS FOR THIS PROJECT AND CONSULT THEM FOR INSTRUCTIONS PERTAINING TO WORK OF THIS SECTION.

1.03 PERMITS AND FEES
A. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR PERTAINING TO WORK UNDER THIS CONTRACT AND PAY
ALL CHARGES INCIDENTAL THERETO. DELIVER TO ARCHITECT ALL CERTIFICATES OF INSPECTION ISSUED BY AUTHORITIES HAVING JURISDICTION.

1.04 CODES AND STANDARDS
A. FURNISH AND INSTALL MECHANICAL SYSTEMS TO MEET ALL CURRENT REQUIREMENTS OF NATIONAL, STATE AND MUNICIPAL CODES, RULES REGULATIONS, LAWS, AND STANDARDS AS THEY ARE ADOPTED BY THE GOVERNING AGENCY AND AS THEY MAY APPLY.
1. FLORIDA BUILDING CODE 2010, BUILDING (WITH ALL ADDENDUMS)
2. FLORIDA BUILDING CODE 2010, MECHANICAL (WITH ALL ADDENDUMS)
3. FLORIDA BUILDING CODE 2010, PLUMBING (WITH ALL ADDENDUMS)
4. FLORIDA FIRE PREVENTION CODE (NFPA 70, 2012)
5. STANDARD FOR THE INSTALLATION OF A/C AND VENT SYSTEMS, NFPA 90A

1.05 SUBMITTALS
A. MATERIAL LIST: WITHIN TWENTY (20) DAYS OF AWARD OF CONTRACT, CONTRACTOR SHALL SUBMIT TO ENGINEER A COMPLETE LIST OF
MATERIALS TO BE PROVIDED FOR THE HVAC WORK. THE LIST SHALL
INCLUDE SUPPLIERS' NAMES AND MANUFACTURERS' NAMES AND NUMBER
OR SERIES FOR EACH ITEM ON LIST.
B. SHOP DRAWINGS: SUBMIT TO THE ARCHITECT FOR APPROVAL, BEFORE
COMMENCING WORK, SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT
TO BE PROVIDED UNDER THIS CONTRACT. THE FOLLOWING APPLIES TO
THE SHOP DRAWINGS:
1. CONTRACTOR SHALL SUBMIT WITHIN 30-DAYS AFTER AWARD OF CONTRACT, DRAWINGS AND/OR CUT SHEETS OF ALL MATERIALS AND EQUIPMENT, AND 1/4" SCALE EQUIPMENT ROOM DRAWINGS FOR APPROVAL BY ENGINEER. SUCH SUBMITTALS MUST CONTAIN OUTLINE DIMENSIONS, OPERATING CLEARANCES, INSTALLATION, OPERATING AND MAINTENANCE INFORMATION AND SUFFICIENT ENGINEERING DATA TO INDICATE SUBSTANTIAL COMPLIANCE WITH SPECIFICATIONS. ALL SHOP DRAWINGS FOR ONE SECTION OF WORK OR ONE MECHANICAL SYSTEM SHALL BE SUBMITTED AT ONE TIME IN LOOSE-LEAF 3-RING BINDERS; NO APPROVAL WILL BE GIVEN IF SUBMITTED PIECEMEAL.
2. WHERE CONTRACTOR CONSIDERS ADDITIONAL DETAIL OR SHOP DRAWINGS ESSENTIAL TO PROPER FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING HE SHALL PREPARE SUCH CONSISTENT WITH CURRENT INDUSTRY METHODS AND STANDARDS. ENGINEER RESERVES THE RIGHT TO DIRECT REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH, IN HIS OPINION, DO NOT PRESENT AN ORDERLY AND REASONABLY NEAT AND WORKMANLIKE APPEARANCE, PROVIDED SUCH AN ORDERLY INSTALLATION CAN BE MADE USING CUSTOMARY TRADE METHODS. REMOVAL AND REPLACEMENT SHALL BE DONE WHEN DIRECTED IN WRITING BY ENGINEER AT THE CONTRACTOR'S EXPENSE AND WITHOUT ADDITIONAL EXPENSE TO OWNER.
3. APPROVAL GRANTED ON SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY AND SHALL NOT BE CONSIDERED AS GUARANTEE OF MEASURES SUITABLE TO BUILDING CONDITIONS; NOR SHALL IT BE CONSTRUED AS RELIEVING THE MECHANICAL CONTRACTOR OF BASIC RESPONSIBILITIES UNDER THIS CONTRACT.
4. CHANGES IN FOUNDATIONS, BASES, CONNECTIONS, PIPING, CONTROLS, STARTERS, ELECTRICAL EQUIPMENT, WIRING AND CONDUIT, SPACE OPENINGS, WALLS AND CEILINGS, AND VIBRATION ISOLATION IN ORDER TO ACCOMMODATE SUBSTITUTE EQUIPMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND RECEIVE ENGINEER'S APPROVAL BEFORE INSTALLING MATERIALS OR EQUIPMENT. ANY EQUIPMENT OR MATERIALS INSTALLED PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS FROM ENGINEER SHALL BE SUBJECT TO REMOVAL AND/ OR ALTERATION AT THE DISCRETION OF THE MECHANICAL ENGINEER AT NO ADDITIONAL COST.
6. APPROVAL OF ANY SUBMITTED DATA OR SHOP DRAWINGS FOR MATERIALS, EQUIPMENT, APPARATUS DEVICES, ARRANGEMENTS AND/OR LAYOUTS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF FURNISHING SAME OF PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITIES AND INSTALLATION DETAILS TO EFFICIENTLY PERFORM REQUIREMENTS AND INTENT OF CONTRACT. SUCH APPROVAL SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT.
C. ANY ELECTRICAL DEVIATIONS BETWEEN THE CONTRACT DOCUMENTS AND THE FURNISHED EQUIPMENT MUST BE SEPARATELY ACKNOWLEDGED BY A SUBSTITUTION REQUEST AND ADDITIONALLY NOTED ON THE SUBMITTAL.
D. PROVIDE MECHANICAL SHOP DRAWINGS FOR: AIR HANDLING UNITS, CONDENSING UNITS, VENTILATORS, AIR INLETS AND OUTLETS, DUCT ACCESSORIES, DUCT INSULATION, PIPE INSULATION, TEMPERATURE CONTROLS, DUCT MATERIALS, REFRIGERANT PIPING, CONDENSATE PIPING.

1.06 CONNECTING TO WORK OF OTHERS
A. BEFORE STARTING HIS WORK, AND FROM TIME TO TIME AS WORK PROGRESSES, MECHANICAL CONTRACTOR SHALL EXAMINE WORK AND MATERIALS INSTALLED BY
OTHERS INSOFAR AS THEY APPLY TO HIS WORK AND SHALL NOTIFY ENGINEER IMMEDIATELY IN WRITING IF CONDITIONS EXIST WHICH WILL.
B. SHOULD CONTRACTOR START HIS WORK WITHOUT SUCH NOTIFICATION, IT SHALL BE CONSTRUED AS AN ACCEPTANCE BY HIM OF ALL CLAIMS OR QUESTIONS AS TO SUITABILITY OR WORK OF OTHERS TO RECEIVE HIS WORK. HE SHALL REMOVE AND REPLACE, AT HIS OWN EXPENSE, ALL WORK UNDER THIS CONTRACT WHICH MAY HAVE TO BE REMOVED ON ACCOUNT OF SUCH DEFECTS.

1.07 CONTRACT DRAWINGS
A. IT IS THE INTENT OF DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND FULLY OPERATIONAL, AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND COMPLETELY DEFINE WORK UNDER THIS CONTRACT. HOWEVER, SUCH SEPARATE DIVISIONAL DRAWINGS AND SPECIFICATIONS SHALL NOT RELIEVE CONTRACTOR FROM FULL RESPONSIBILITY FOR COMPLIANCE WITH WORK OF HIS TRADE WHICH MAY BE INDICATED ON ANY DRAWING OR IN ANY SECTION OF THE SPECIFICATIONS.
B. CONTRACTOR SHALL CAREFULLY EXAMINE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS PRIOR TO SUBMITTING BID. CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND CONNECT WITH APPROPRIATE SERVICES ALL ITEMS SHOWN ON ANY DRAWINGS WITHOUT ADDITIONAL EXPENSE TO OWNER. ARCHITECT SHALL BE NOTIFIED PRIOR TO BID DATE OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS RECEIVED IN ADEQUATE TIME, ADDITIONAL DATA OR CHANGES WILL BE ISSUED BY ADDENDUM TO ALL BIDDERS. SUBMITTAL OF BID BY CONTRACTOR SHALL INDICATE THE CONTRACTOR'S ACKNOWLEDGEMENT AND ACCEPTANCE TO PROVIDE ALL NECESSARY EQUIPMENT, MATERIALS AND LABOR TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IN ACCORDANCE WITH ALL CODE REQUIREMENTS.
C. ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER MECHANICAL DRAWINGS WITH REFERENCE TO BUILDING CONSTRUCTION. MECHANICAL DRAWINGS ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF BUILDING AND WORK OF OTHER TRADES WILL PERMIT. WHERE LOCATIONS OF EQUIPMENT, DEVICES OR FIXTURES ARE CONTROLLED BY ARCHITECTURAL FEATURES, ESTABLISH SUCH LOCATIONS BY REFERRING TO DIMENSIONS ON ARCHITECTURAL DRAWINGS AND NOT BY SCALING DRAWINGS.
CHANGES FROM DRAWINGS NECESSARY TO MAKE WORK OF CONTRACTOR CONFORM WITH BUILDING AS CONSTRUCTED AND TO FIT WORK OF OTHER TRADES OR RULES OF BODIES HAVING JURISDICTION SHALL BE MADE BY CONTRACTOR AT HIS OWN EXPENSE. SOME DRAWINGS MAY HAVE BEEN PREPARED FROM EXISTING DRAWINGS WITH INTENT OF PROVIDING THE CONTRACTOR WITH INFORMATION CONCERNING THE EXISTING CONDITIONS. DATA SHOWN HAS NOT BEEN COMPLETELY VERIFIED BY ARCHITECT/ ENGINEER AND NO GUARANTEE OF ACCURACY OF THIS INFORMATION IS GIVEN OR INTENDED. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS. DATA WHICH IS SHOWN BUT PROVES TO BE INCORRECT SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM INSTALLING HIS WORK WITHIN THE INTENT OF PLANS AND SPECIFICATIONS, NOR SHALL IT CONSTITUTE BASIS FOR A CHANGE ORDER UNLESS, IN THE OPINION OF THE ARCHITECT/ENGINEER IT IS DETERMINED TO BE AN EXTRA COST OVER AND ABOVE THE BASIC INTENT OF THESE PLANS AND SPECIFICATIONS.

1.08 DAMAGE TO OTHER WORK
A. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PROTECTIVE MEASURES WHEN WORKING OVERHEAD OR IN FINISHED AREAS. HE/SHE SHALL REPAIR, REPLACE OR TOUCH-UP ALL FINISHED SURFACES WHICH MAY BE DAMAGED AS A RESULT OF HIS OPERATIONS.

1.09 STORAGE AND WORK AREAS
A. ALL EQUIPMENT AND MATERIALS SHALL BE PROTECTED FROM THE WEATHER, DAMAGE, MOISTURE, DIRT, DEBRIS, ETC. USE OF CARDBOARD, VISQUEEN, OR OTHER SIMILAR MATERIALS WHILE STORED OUTSIDE IS NOT ACCEPTABLE. DO NOT INSTALL DAMAGED EQUIPMENT.

1.10 APPROVAL OF MATERIAL
A. EQUIPMENT OTHER THAN SPECIFIED IN THE CONTRACT DOCUMENTS REQUIRES APPROVAL FROM ENGINEER.

2.01 SPLIT SYSTEM HEAT PUMPS
A. GENERAL: FURNISH AND INSTALL SPLIT SYSTEM HEAT LIMPS OF THE CAPACITY, OPERATING CHARACTERISTICS, AND ELECTRICAL CHARACTERISTICS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
B. MANUFACTURER: TRANE, CARRIER, OR LENNOX MAY B SUBMITTED FOR APPROVAL PROVIDED THEY CONFORM TO ALL REQUIREMENTS OF THISE SPECIFICATIONS.
C. WARRANTY: CONTRACTOR SHALL INCLUDE IN HIS PRICE THE COST OF ONE YEAR'S WARRANTY ON ENTIRE SYSTEM PLUS AN ADDITIONAL FOUR YEARS WARRANTY ON COMPRESSOR. THE CONTRACTOR SHALL WARRANT EACHSYSTEM IN ITS ENTIRETY FOR ONE (1) FULL YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. CONTRACTOR SHALL ALSO PROVIDE AN ADDITIONAL FOUR-YEAR WARRAITY ON EACH COMPRESSOR TO INCLUDE PARTS, REFRIGERANT AND OIL, EXCLUSIVE OF LABOR.
D. INDOOR UNITS:
1. FAN SECTION: SHALL BE INSULATED AND CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. THE VARIABLE-SPEED FAN MOTOR SHALL BE FACTORY LUBRICATED, HAVE INTERNAL OVERLOAD PROTECTION AND BE RESILIENTLY MOUNTED. FAN-MOTOR ASSEMBLY SHALL SLIDE OUT FOR SERVICE. REVERSIBLE FILTER RACK SHALL BE EQUIPPED WITH PERMANENT TYPE FILTER THAT SLIDES OUT FOR SERVICE.
2. COOLING COIL: SHALL BE CONSTRUCTED WITH ALUMINUM PLATE FINS MECHANICALLY BONDED TO NONFERROUS TUBING (FOR UNITS 5 TONS AND SMALLER) OR SEAMLESS COPPER TUBING (FOR UNITS LARGER THAN 5 TONS) WITH ALL JOINTS BRAZED. COILS SHALL HAVE A FACTORY-INSTALLED REFRIGERANTMETERING DEVICE AND BE EQUIPPED WITH REFRIGERANT LINE FITTINGS WHICH PERMIT MECHANICAL CONNECTIONS. COIL CASING SHALL BE INSULATED AND CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL.
3. ELECTRIC HEATER: ENCLOSURE SHALL BE INSULATED AND HAVE LARGE FRONT SERVICE ACCESS DOOR. HEATING ELEMENTS SHALL BE STAGED AS INDICATED IN THE EQUIPMENT SCHEDULE ON THE MECHANICAL PLANS. HEATER SHALL BE EQUIPPED WITH BOTH THERMAL AND CURRENT OVERLOAD DEVICES, AND THE REQUIRED HEATING AND COOLING SYSTEM CONTROLS, INCLUDING CONTROL CIRCUIT 24-V TRANSFORMER.
E. OUTDOOR UNIT:
1. GENERAL: HOUSING SHALL BE CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. THE UNIT SHALL BE DESIGNED AND TESTED FOR USE WITH R-410A AND CONTAIN A SUFFICIENT CHARGE FOR THE ENTIRE SYSTEM. BRASS SERVICE VALVES WITH REFRIGERANT LINE FITTINGS AND SERVICE PARTS SHALL BE LOCATED IN EXTERIOR OF UNIT.
2. COIL: SHALL CONSIST OF ALUMINUM FINS MECHANICALLY BONDED TO COPPER TUBING (FOR UNITS LARGER THAN 5 TONS) OR ALUMINUM TUBING (FOR UNITS 5 TONS AND SMALLER) WITH ALL JOINTS BRAZED. FACTORY INSTALLED COIL REFRIGERANT METERING DEVICE SHALL BE MOUNTED ON UNIT LIQUID SERVICE VALVE. LIQUID LINE SHALL INCLUDE A BI-FLOW FILTER DRIER.
3. FAN: SHALL BE PROPELLER TYPE, DIRECT DRIVEN, AND ARRANGED FOR VERTICAL DISCHARGE. PROVIDE GRILLE OVER DISCHARGE. FAN MOTOR SHALL BE FACTORY LUBRICATED, INHERENTLY PROTECTED AND RESILIENTLY MOUNTED. TWO-SPEED FAN MOTOR SHALL AUTOMACALLY SWITCH TO HIGH SPEED ABOVE 95 DEGREES F AND BELOW 55 DEGREES F OUTDOOR TEMPERATURE.
4. COMPRESSOR: SHALL BE OF THE WELDED-HERMETIC TYPE WITH INTERNAL VIBRATION ISOLATION AND BE COVERED WITH A SHIELD TO MUFFLE OPERATING SOUND. COMPRESSOR MOTOR SHALL HAVE BOTH THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICE, AND START CAPACITOR AND RELAY. COMPRESSOR SHALL BE EQUIPPED WITH A CRANKCASE HEATER AND HAVE INTERNAL HIGH PRESSURE PROTECTION.
5. CONTROLS: SHALL BE FACTORY WIRED AND LOCATED IN A READILY ACCESSIBLE LOCATION ON UNIT SWING-OUT SERVICE DOOR. CONTROLS AND PROTECTIVE DEVICE SHALL INCLUDE A LIQUID LINE LOW-PRESSURE SWITCH, SUCTION LINE ACCUMULATOR AND PRESSURE RELIEF DEVICE. AN AUTOMATIC DEFROST CONTROL SHALL BE INCLUDED TO ACCOMPLISH DEFROSTING (ONLY IF COIL TEMPERATURES) EVERY 90 MINUTES SATURATED SUCTION TEMPERATURE INDICATES FREEZING FOR A PERIOD OF NOT MORE THAN 10 MINUTES. CONTROL WIRING TERMINAL BOARD SHALL BE DESIGNED TO MATCH INDOOR UNIT TERMINAL BOARD FOR STANDARDIZED POINT-TO-POINT CONNECTION. A TIME-DELAY RELAY SHALL PREVENT THE COMPRESSOR FROM SHORT-CYCLING AT LESS THAN 5-MINUTE INTERVALS.
F. SPACE TEMPERATURE CONTROLS: THE INDOOR THERMOSTAT SHALL BE A FULLY-PROGRAMMABLE, 7-DAY, 4-EVENT PER DAY.

2.02 AIR DISTRIBUTION SYSTEMS
A.LOW PRESSURE SHEET METAL DUCTWORK: LOW PRESSURE SHEET METAL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL. CONSTRUCTION OF JOINT CONNECTIONS, CROSS-BREAKING, AND BRACING SHALL CONFORM TO THE LATEST EDITION OF THE SMACNA "LOW PRESSURE DUCT CONSTRUCTION STANDARDS".

1. INSULATED SHEET METAL DUCTWORK:
A. SHEET METAL MATERIALS SHALL BE GALVANIZED SHEET STEEL, LOCKFORMING QUALITY, ASTM A 527, AND COATING DESIGNATION G 90.
B. JOINT AN SEAM SEALANT SHALL BE ONE-PART, NONSAG, SOVENT-RELEASE CURING, POLYMERIZED BUTYL SEALANT COMPLYING WITH FS TT-S-001657, TYPE I; FORMULATED WITH A MINIMUM OF 75 PERCENT SOLIDS.
C. DUCTS ATTACHMENTS SHALL BE SHEET METAL SCREWS, BLIND RIVETS, OR SELF TAPPING METAL SCREWS; COMPATIBLE WITH DUCT MATERIALS.
D. DUCT FABRICATION: CONSTRUCT IN ACCORDANCE WITH SMACNA REQUIREMENTS.
2.SOUND-LINED INSULATION:
A. SOUND LINING SHALL BE ARMACELL FIBER FREE LINER MIN. 1.5 LB. DENSISTY, 1" THICKNESS AND 0.25 K FACTOR AT 75 DEGREES F. MEAN TEMPERATURE AND MUST HAVE A MAXIMUM WATER VAPOR TRANSIMISSION RATIO OF 0.0 PERM-IN (FLAME SPREAD LESS THAN 25, SMOKE DEVELOPED LESS THAN 50.)
B. APPLYING LINING WITH ADHESIVE OVER ENTIRE SURFACE AND SECURE WITH WELD PINS SPACED 16" ON CENTERS. COAST EDGES WITH SEALER AND PROVIDES SHEET METAL EDGE PROTECTORS. SEALER SHALL BE IN COMFORMANCE WITH NFPA 90A AND NFPA 90B. PROVIDE 2" SOUND LINING FOR MIXED AIR AND RELIEF AIR PLENUMS AND SUPPLY AIR PLENUMS AT SLOT DIFFUSER.
C.DIMENSIONS SHOWN ARE CLEAR INSIDED DIMENSIONS.
3. ACCEPTABLE: OWENS-CORNING ENDURAGOLD FIBERGLASS TYPE 475 OR 800, CERTAIN TEED ULTRA DUCT BOARD SD (475EI) OR SD (800EI), KNAUF AIR DUCT TYPE EI-475 OR EI-800, OR MANVILLE EQUIVALENT OR PRIOR APPROVED EQUAL.
C. LOW PRESSURE FLEXIBLE DUCTS: FLEXIBLE DUCT SHALL CONSIST OF A ZINC COATED SPRING STEEL HELIX PERMANENTLY BONDED TO A FULL INTERIOR LINER TO FORM THE DUCT CORE WITH POSITIVE INTERIOR AIR SEAL. CORE SHALL BE COVERED WITH FACTORY APPLIED ONE
INCH, ONE POUND PER CUBIC FOOT FIBERGLASS INSULATION OF 0.25 THERMAL CONDUCTANCE SHEATHED IN A SEAMLESS EXTERIOR CLASS 1 VAPOR BARRIER JACKET WITH A VAPOR CUFF ON BOTH ENDS. DUCT SHALL BE MADE FOR USE WITH QUADRANT DAMPERED TWIST IN TYPE FITTINGS WITH EXTRACTOR SCOOPS SUITABLE FOR SHEET METAL OR FIBROUS GLASS DUCTWORK. DUCT SHALL BE NFPA 90A, CLASS 1 (UL-181). PROVIDE IN FACTORY FINISHED LENGTHS NOT IN EXCESS OF LENGTHS REQUIRED TO MAKE SUITABLE CONNECTIONS WITH MINIMUM PRESSURE DROP. ACCEPTABLE; GENFLEX TYPE SLR WITH STAINLESS STEEL HOSE COUPLINGS AND WITH FACTORY INSTALLED CROWN 3200-DS SPIN IN FITTING (FOR GLASS FIBER DUCTWORK), EACH TYPE WITH INTEGRAL VOLUME DAMPER AT CONNECTION TO RECTANGULAR MAIN DUCT BRANCH OR EQUIVALENT PRODUCTS OF ATCO.
D. DUCT SYSTEM ACCESSORIES:
1. GENERAL: PROVIDE ALL NECESSARY DUCT SYSTEM ACCESSORIES TO ASSURE PROPER BALANCE, QUIET AND DRAFTLESS DISTRIBUTION AND CONVEYANCE, AND MINIMIZATION OF TURBULENCE, NOISE AND PRESSURE DROP FOR ALL SUPPLY, RETURN, EXHAUST AND VENTILATION AIR QUANTITIES INDICATED. ACCESSORIES SHALL BE RECOMMENDED BY THEIR MANUFACTURER FOR EACH SPECIFIC APPLICATION.
2. FLEXIBLE DUCT CONNECTIONS: PROVIDE WHERE AIR HANDLERS, FANS AND BLOWERS CONNECT TO THEIR DUCTWORK. SHALL BE AT LEAST 4-INCHES LONG CONNECTED ON EACH SIDE TO METAL (EITHER METAL DUCTWORK, AIR HANDLING APPARATUS, OR HEAVY GAUGE STEEL SLEEVES), AND BE SUITABLE FOR USE IN MEDIUM AND/OR LOW PRESSURE DUCT SYSTEMS. PROVIDE BRAIDED COPPER BRIDGE STRAP EQUAL TO THOMPSON LIGHTNING PROTECTION, ING. NO. 588 ACROSS EACH CONNECTION. ACCEPTABLE: VENTFABRICS, INC. "VENTGLAS METAL- EDGE" OR PRIOR APPROVED EQUAL.
3. LOW PRESSURE METAL TURNING VANES: PROVIDE IN ALL ELBOWS, BENDS AND TEES OF ALL LOW VELOCITY SUPPLY AIR DUCTS WHETHER OR NOT SHOWN IN DETAIL; PROVIDE IN ALL ELBOWS, BENDS AND TEES OF ALL OTHER LOW VELOCITY DUCTS WHERE PORTIONS OF SUCH DUCTS CONVEY AIR AT GREATER THAN 700 FPM AVERAGE VELOCITY. UNIT TO BE OF THE PERMANENT FIXED TYPE, HAVING ADEQUATE RIGIDITY AND STRENGTH TOBE COMPLETELY FLUTTER-PROOF. ALUMINUM, OR STEEL WITH CORROSION RESISTANT COATING, OR GALVANIZED STEEL. AIRFOIL TYPE IN ALL MITERED ELBOWS, MITERED BENDS AND MITERED TEES. AIR FOIL TYPE MUST BE MANUFACTURED BY TUTTLE & BAILEY, ANEMOSTAT, METALAIRE, BARBER-COLMAN OR OTHER APPROVED MANUFACTURER AND MUST BE EQUAL TO BARBER-COLMAN "AIRTURNS", TUTTLE & BAILEY "DUCTURNS", OR DURA-DYNE "VR" WITH 24-GAUGE RAILS AND HOLLOW VANES.

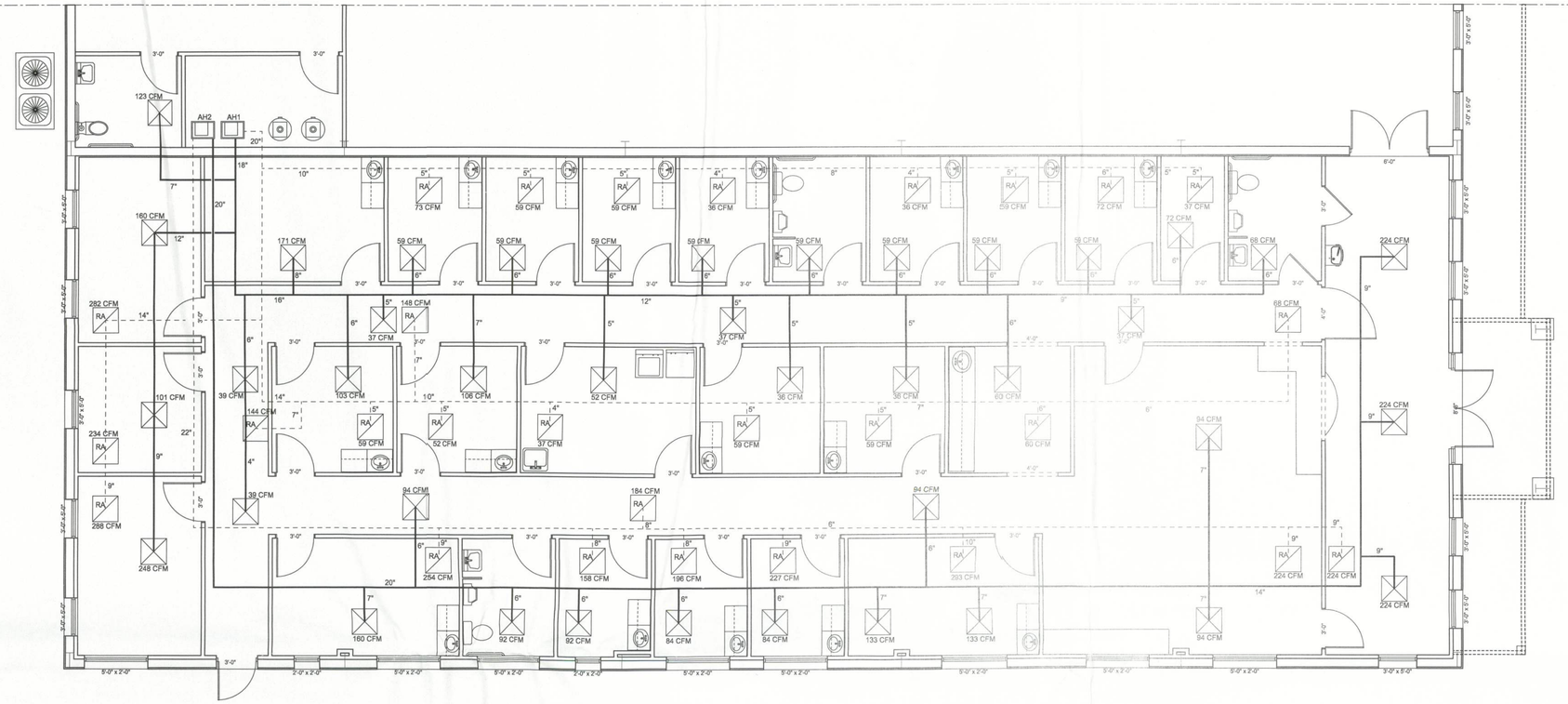
2.02 AIR DISTRIBUTION SYSTEMS (CONT)
5. FIRE DAMPERS: PROVIDE FIRE DAMPERS WHERE INDICATED ON DRAWINGS AND/OR WHERE OTHERWISE NECESSARY. FIRE DAMPERS SHALL BE UL LABELED CLUSTERED BLADE TYPE, SPRING ACTUATED, FOR HORIZONTAL OR VERTICAL MOUNTING AS REQUIRED. DAMPER BLADES SHALL BE HELD IN POSITION BY A 165 DEGREE F FUSIBLE LINK. DAMPER SLEEVES SHALL BE 14-GAUGE MINIMUM AND ALL OTHER DETAILS OF INSTALLATION SHALL COMPLY WITH THE UL INSTALLATION DATA SHEETS FURNISHED WITH THE DAMPERS. OPENINGS BETWEEN THE FIRE DAMPER SLEEVES AND THE WALL OR FLOOR OPENINGS SHALL BE FILLED WITH FIBERGLASS BATTING TO PREVENT SOUND FLANKING. CLUSTER BLADES SHALL COMPLETELY OUTSIDE AIR STREAM FOR ALL DUCT SYSTEMS (TYPE B). ACCEPTABLE: RUSKIN, AIR BALANCE; AMERICAN WARMING AND VENTILATING; TUTTLE & BAILEY; UNITED SHEET METAL, OR APPROVED EQUAL.
6. LOW PRESSURE DUCT ACCESS DOORS: PROVIDED FOR EACH MANUAL AND MOTORIZED DAMPER; FIRE DAMPER; ELECTRIC DUCT HEATER; AND WHERE ACCESS IS OTHERWISE NECESSARY. FACTORY-FABRICATED DOUBLE WALL INSULATED TYPE OF 24- GAUGE GALVANIZED STEEL (OF SAME OR THICKER GAUGE THAN DUCTWORK PANEL IN WHICH INSTALLED, WHICHEVER IS GREATER. MINIMUM SIZE SHALL BE AS LARGE AS IS COMPATIBLE WITH DUCT SIZE BUT IN NO CASE LESS THAN THE FOLLOWING. PROVIDE LARGER SIZES IF NECESSARY TO PERMIT PROPER ACCESS OPERATION):

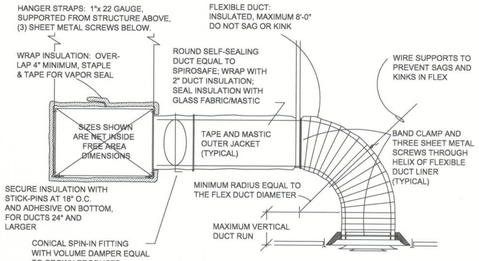
MAXIMUM DUCT DIMENSIONS	ACCESS DOOR SIZE
11" AND LESS	MAXIMUM DUCT DIMENSIONS X 12"
12" THROUGH 16"	12 X 16"
17" AND OVER	6 X 24"

DOORS SHALL BE PROVIDED WITH HAND OPERATED ADJUSTABLE TENSION CATCHES AND SHALL BE COMPLETELY GASKETED AROUND THEIR PERIMETERS. DOORS SHALL BE VENTLOK "ACCESS DOORS". INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS USING VENTLOK #360 SEALANT.
E. AIR DISTRIBUTION DEVICES:
1. SCOPE: PROVIDE AIR DISTRIBUTION DEVICES AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN FOR A COMPLETE AND OPERABLE SYSTEM FREE FROM DRAFTS AND EXCESSIVE NOISE.
2. RELATION TO OTHER WORK: COORDINATE WITH WORK OF THE CEILING, DRYWALL AND PLASTERING TRADES AS REQUIRED TO INSURE AN ORDERLY PROGRESSION OF WORKAND FIRST CLASS FINISHED SYSTEM WITH RESPECT TO PLACEMENT, ALIGNMENT, FINISH AND GENERAL FIT.
3. DESIGN CONDITIONS:
A. ACOUSTICAL: COORDINATE AIR DISTRIBUTION DEVICES, SOUND ATTENUATION MEASURES, AND EQUIPMENT ACTUALLY PROVIDED TO INSURE THAT THE DESIGN GOALS ARE NOT EXCEEDED BY THE SYSTEM INSTALLED.
B. PRESSURE DROP ACROSS ANY AIR DISTRIBUTION DEVICE SHALL NOT EXCEED 0.15 IN W.G. STATIC PRESSURE UNLESS OTHERWISE INDICATED.
C. QUALITY: AIR DISTRIBUTION EQUIPMENT SHALL BE GUARANTEED BY THE MANUFACTURER TO OPERATE WITHOUT EXCESSIVE NOISE AND WITH VELOCITIES IN THE FIVE FOOT OCCUPANCY ZONE, WHEN HANDLING AIR WITH TEMPERATURE DIFFERENTIALS AS HIGH AS 25 DEGREES, NOT TO EXCEED 30 FPM AT A 2 DEGREE DIFFERENCE, 50 FPM AT A 1-1/2 DEGREE DIFFERENCE, OR 75 FPM AT A 1 DEGREE DIFFERENCE WHEN OPERATING WITH AN AVERAGE 75 DEGREE ROOM TEMPERATURE AND MEASURED NO CLOSER THAN 6 INCHES FROM A WALL SURFACE.
4. MANUFACTURER: TITUS, METAL*AIRE, CARNES, KRUEGER, ANEMOSTAT OR TUTTLE & BAILEY MANUFACTURERS MODEL NUMBERS INDICATED ARE EXAMPLES FOR PRODUCTS TO BE PROVIDED.
5. MANUFACTURERS MUST BE MEMBERS OF THE AIR DISTRIBUTION COUNCIL UNLESS OTHERWISE INDICATED.
6. ALL AIR DISTRIBUTION DEVICES SHALL BE CONSTRUCTED OF EXTRUDED ALUMINUM UNLESS OTHERWISE INDICATED.
7. WHERE CONTINUOUS LINEAR SUPPLY AND RETURN DEVICES ARE SHOWN AS ABUTTING ONE ANOTHER IN A SINGLE DIRECTION, THEN THE TOTAL UNBROKEN VISIBLE LENGTH OF THE LINEAR SUPPLY/RETURN DEVICE SHALL EQUAL THE SUM OF THE NOMINAL LENGTHS OF THE ABUTTING DEVICES. 8.EACH AIR DISTRIBUTION DEVICE SHALL BE A PORTION THEREOF (FRAME,
8. CORE, ETC.) EXPOSED TO VIEW IN THE FINISHED AREA SHALL HAVE A FACTORY APPLIED FINISH WHICH MATCHES AND IS COMPATIBLE WITH THE COLOR OF THE SURROUNDING SURFACE ON WHICH THE DEVICE IS INSTALLED. COLORS MUST BE APPROVED BY ARCHITECT PRIOR TO DEVICE FABRICATION.
9. ALL DAMPERS, BLANK-OFF BAFFLES AND OTHER COMPANION DEVICES WHICH FORM AN INTEGRAL PART OF AN AIR DISTRIBUTION DEVICE SHALL BE FACTORY MADE ITEMS PRODUCED BY THE MANUFACTURER OF THE AIR DISTRIBUTION DEVICE.

PART 3 - EXECUTION
3.01 METHODS OF WORK:
A. APPLICATION: SELECT METAL DUCT FOR EXHAUST AND OUTSIDE AIR DUCTWORK.
B. SEAM AND JOINT SEALING: SEAL ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS.

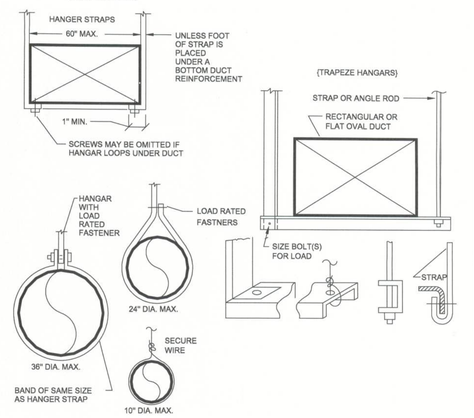
3.02 AIR DISTRIBUTION SYSTEMS
A. GENERAL: CONSTRUCT ALL DUCTWORK AND ACCESSORIES IN ACCORDANCE WITH LATEST EDITIONS OF APPLICABLE SMACNA MANUALS. STREAMLINE ALL DUCTWORK TO THE FULL EXTENT PRACTICAL AND EQUIP WITH TURNING VANES WHERE ANGULAR CHANGES IN DIRECTION OCCUR. PROVIDE SMOOTH AND QUIET DRAFTLESS DISTRIBUTION OF INDICATED AIR QUANTITIES. PROTECT ALL DUCTWORK AND SYSTEM ACCESSORIES FROM DAMAGE DURING CONSTRUCTION UNTIL ARCHITECT'S FINAL ACCEPTANCE OF PROJECT. PRIOR TO DUCTWORK FABRICATION, VERIFY IF ALL DUCTWORK AS DIMENSIONED AND GENERALLY SHOWN WILL SATISFACTORILY FIT ALLOCATED SPACES. TAKE PRECAUTIONS TO AVOID SPACE INTERFERENCE WITH BEAMS, COLUMNS, JOISTS, PIPES, LIGHTS, CONDUIT, OTHER DUCTS, EQUIPMENT, ETC. NOTIFY ENGINEER IF ANY SPATIAL CONFLICTS EXIST, AND THEN OBTAIN ARCHITECT'S APPROVAL OF NECESSARY OFFSETTING. MAKE ANY SUCH NECESSARY REVISIONS WHICH ARE MINOR AT NO ADDITIONAL COST. CAREFULLY CORRELATE ALL DUCT CONNECTIONS TO AIR HANDLING UNITS AND FANS TO PROVIDE PROPER CONNECTIONS. ELBOWS AND BENDS WHICH MINIMIZE NOISE AND PRESSURE DROP. PROVIDE ALL CURVED ELBOWS WITH RADIUS RATIOS OF NOT LESS THAN 1.5 UNLESS OTHERWISE SHOWN OR APPROVED BY ENGINEER. PROVIDE ALL MITERED ELBOWS WITH TURNING VANES. COORDINATE ANY AND ALL DIMENSIONS AT INTERFACES OF DISSIMILAR TYPE OF DUCTWORK AND AT INTERFACES OF DUCTWORK WITH EQUIPMENT SO THAT PROPER OVERLAPS, INTERFACES, ETC., OF INSULATION AND CONTINUITY OF VAPOR BARRIERS ARE MAINTAINED. IF NECESSARY, WHERE INTERFACING DIFFERENT TYPES OF INSULATION PROVIDE TRANSITIONS SO THAT INTERNAL FREE AREA OF DUCT REMAINS UNCHANGED. INSTALL HORIZONTAL RIGID DUCTWORK AS HIGH AS PRACTICAL ABOVE SUSPENDED CEILINGS SO THAT MOVABLE LIGHT FIXTURES MAY BE RELOCATED WITHOUT INTERFERENCE TO MEET ANY FUTURE PARTITION RELOCATION REQUIREMENTS.
B. HANGERS AND SUPPORTS:
1. HANGERS:
A.





DUCT FABRICATION NOTES:

1. SHEET METAL DUCTS SHALL BE FABRICATED & INSTALLED PER THE LATEST EDITION OF SMACNA DUCT CONSTRUCTION STANDARDS.
2. ALTERNATE INTERPRETATIONS OF SMACNA DUCT MATERIAL, HANGERS AND REINFORCEMENTS ARE SUBJECT TO ENGINEER APPROVAL, AND REQUIRE SEPARATE SUBMITTAL OF THE ALTERNATES.
3. FLEXIBLE DUCT CONNECTORS SHALL BE PROVIDED WHERE SHOWN ON THE PLAN.
4. SUPPLY AIR DROPS FROM ROOFTOP UNITS SHALL TRANSITION FROM THE UNIT OPENING SIZE TO SQUARE NECK ELBOWS, WITH SIZES AS SHOWN ON THE PLAN. IF TWO SUPPLY AIR DUCT RUNS ARE AT THE UNIT, THEN TWO SEPERATE DROPS & ELBOWS SHALL BE PROVIDED.
5. RETURN AIR DROPS FROM THE ROOFTOP UNITS SHALL BE FULL SIZE OF THE UNIT OPENING.
6. ELBOWS SHALL BE SQUARE NECK (SAME IN OUT DIMENSION) WITH 2" DOUBLE THICKNESS TURNING VANES.
7. OFFSETS SHALL NOT REDUCE THE FREE AREA, AND SHALL NOT EXCEED 30°. A RADIUS HEEL HEEL SHALL BE PROVIDED ON 30° OFFSETS. SMALLER OFFSETS SHALL BE MITERED AT BOTH THE HEEL & THROAT.
8. TRANSITIONS SHALL NOT EXCEED 1:3 RATIO (4" TRANSITION PER FOOT SINGLE SIDED TRANSITION, AND 8" PER FOOT DOUBLE SIDED TRANSITION).
9. INSULATION SHALL BE NFPA 90 APPROVED, WITH MINIMUM 4.2 R VALUE. WRAP INSULATION SHALL BE 2" THICK WITH ALUMINUM FOIL FACING. LINER SHALL BE 1" THICK, 1-1/2 PCF DENSITY.
10. RECTANGULAR BRANCH CONNECTIONS SHALL BE 45° ENTRY TYPE PER SMACNA FIGURE 2-6.
11. ROUND DUCT CONNECTIONS SHALL BE WITH "CROWN PRODUCTS COMPANY" 3200-DS FITTINGS, DAMPER AND HANDLE. SPRAY PAINT LOCATIONS OF HANDLES.
12. FLEXIBLE DUCT SHALL INCLUDE AN INNER POLYETHYLENE LINER, A SPRING HELIX, 1-1/4" BLANKET INSULATION (R-6.0), A FOIL OUTER VAPOR BARRIER, AND BE UL-181 APPROVED.
13. SEAL ALL SUPPLY, RETURN & OUTSIDE AIR DUCT JOINTS WITH DUCT SEALER; SEAL ALL INSULATION JOINTS WITH GLASS FABRIC AND MASTIC.



CONCEALED DUCTWORK DETAIL
NTS

FLEX DUCT SCHEDULE			
ROUND FLEX SIZES			
SIZE	NOMINAL CFM RANGE	SIZE	NOMINAL CFM RANGE
4"ø	20 - 45	9"ø	130 - 320
5"ø	30 - 75	10"ø	170 - 420
6"ø	50 - 125	12"ø	270 - 650
7"ø	70 - 160	14"ø	350 - 880
8"ø	100 - 250	16"ø	480 - 1200

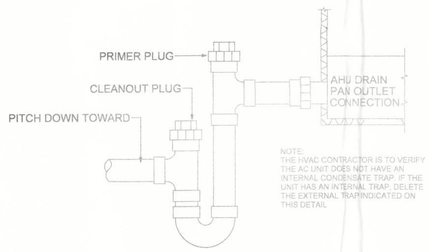
DIFFUSER SCHEDULE					
SUPPLY (CD)			RETURN (CR)		
CFM RANGE	NECK SIZE (INCH)	FLEX DUCT DIA. (INCH)	CFM RANGE	NECK SIZE (INCH)	
0 - 100	6 x 6	6" ø	0 - 200	8 x 8	
101 - 200	8 x 8	8" ø	201 - 500	12 x 12	
201 - 300	10 x 10	9" ø	501 - 800	15 x 15	
301 - 500	12 x 12	12" ø	801 - 1100	18 x 18	
501 - 800	15 x 15	14" ø	1101 - 1700	22 x 22	
801 - 1100	18 x 18	16" ø			

AIR DISTRIBUTION DEVICE SCHEDULE						
TYPE		DESCRIPTION	NECK	FACE SIZE	MANUF.	NOMINAL CFM RANGE
SUPPLY	A	aluminum, concentric-cone ceiling diffuser model TMS-AA	6"ø	12" x 12"	Titus	0 - 150
			8"ø	12" x 12"	Titus	151 - 275
			6"ø	24" x 24"	Titus	0 - 150
			8"ø	24" x 24"	Titus	151 - 275
			10"ø	24" x 24"	Titus	276 - 425
			12"ø	24" x 24"	Titus	426 - 625
			14"ø	24" x 24"	Titus	626 - 850
RETURN	B	aluminum eggcrate ceiling return grill, model 50F	12 x 12	12 x 12	Titus	0 - 450
			24 x 24	24 x 24	Titus	0 - 1875
EXHAUST	C	aluminum eggcrate ceiling return grill, model 50F	12 x 12	12 x 12	Titus	0 - 450
			16 x 16	16 x 16	Titus	451 - 800
			20 x 20	20 x 20	Titus	801 - 1300
			24 x 24	24 x 24	Titus	1301 - 1875

COOLING LOAD DESIGN CONDITIONS INSIDE TEMP: 72°F	OUTSIDE TEMP: 92°F
HEATING LOAD DESIGN CONDITIONS INSIDE TEMP: 70°F	OUTSIDE TEMP: 33°F
UNIT REQUIREMENTS UNIT 1 TOTAL CFM UNIT 2 TOTAL CFM NOMINAL TONAGE OF EACH UNIT UNIT 1 UNIT 2	 1,500 1,600 4 TON 4 TON

NOTE:
DUCT SMOKE DETECTORS SHALL BE WIRED TO SHUT DOWN AHU UPON DETECTION OF SMOKE

NOTE:
ALL BUILDING CAVATIES WHICH WILL BE USED AS RETURN AIR PLENUMS SHALL MEET SECTION M1601.4.1.8 OF THE FBC AND BE LINED WITH A CONTINUOUS AIR BARRIER MADE OF DURABLE NONPOROUS MATERIALS. ALL PENETRATIONS TO THE AIR BARRIER SHALL BE SEALED WITH A SUITABLE LONG-LIFE MASTIC MATERIAL.



CONDENSATE TRAP DETAIL
NTS

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION
NO. 28022
P.O. BOX 970
LAKE CITY, FL 32056
PHONE: 386.754.4085
6-4-2013
Brett A. Crews, P.E. 65592

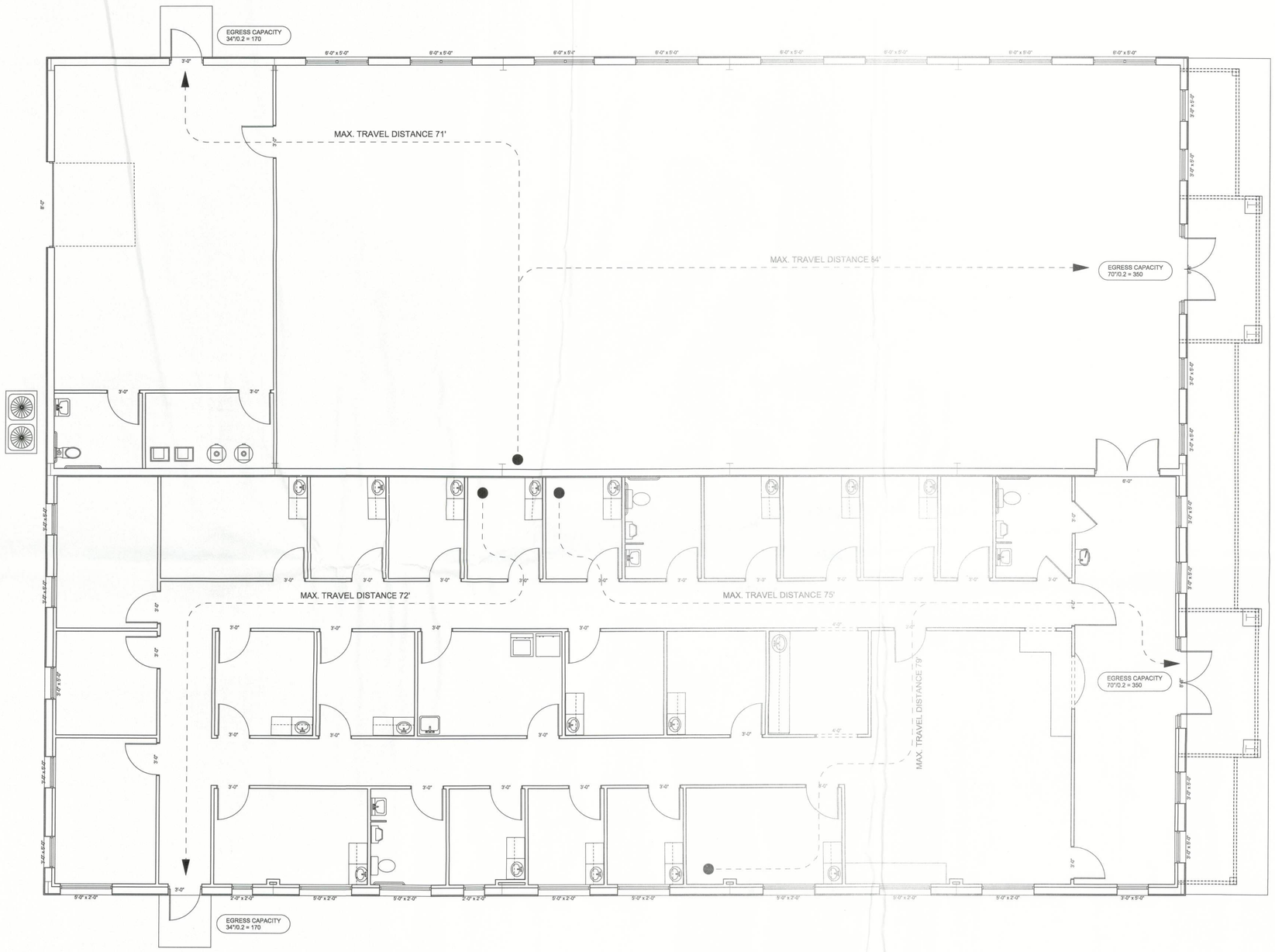
DRAWN BY: TM
APPROVED BY: BC

EMORY MEDICAL OVERFLOW OFFICE

HVAC LAYOUT

CES PROJECT NO: 2012-03

SHEET: M-2



TRAVEL DISTANCES
SCALE: 3/16" = 1'-0"

LIFE SAFETY NOTES

ALL EXIT AND EMERGENCY LIGHTING SHALL BE INSTALLED PER NEC 2011 EDITION.

ACCESS TO EXITS SHALL BE MARKED BY APPROVED READILY VISIBLE SIGNS IN ALL CASES WHERE THE EXIT OR WAY TO REACH THE EXIT IS NOT READILY APPARENT TO THE OCCUPANTS. SIGN PLACEMENT SHALL BE SUCH THAT NO POINT IN THE EXIT ACCESS CORRIDOR IS MORE THAN 100 FT FROM THE NEAREST EXTERNALLY ILLUMINATED SIGN AND INS NIT IN EXCESS OT THE MARKED RATING OFR INTERNALLY ILLUMINATED SIGNS.

ALL FIRE EXTINGUISHERS SHALL BE TYPE 20ABC AND SHALL BE LOCATED SO THAT NO POINT IN THE DIRECTION OF TRAVEL FROM ANY POINT IS MORE THAN 75 FT TO THE FIRE EXTINGUISHER.

NOTE:

COMBO EXIT LIGHT w/ EMERGENCY LIGHTING MAY BE USED

EXIT AND EMERGENCY LIGHTING SHALL BE INSTALLED PER NEC 2011 EDITION.

MEANS OF EGRESS FBC CHAPTER 10		
OCCUPANCY CLASSIFICATION	UNSPRINKLERED & UNPROTECTED	
GROUP B BUSINESS	REQUIRED	PROVIDED
MAX. TRAVEL DIST. (TABLE 1016.1)	200 FT	MAX. 86'
MAX. DEAD-END CORRIDOR (FBC 1018.4)	LESS THAN 20'	0'
TOTAL # OF EXITS (TABLE 1021.1)	2	4
EGRESS WIDTH PER PERSON (LEVEL) (TABLE 1005.1)	0.2 81 x 0.2 = 16.2"	208"
MIN. CLEAR OPENING OF EXIT DOORS (FBC 1008.1.1)	32"	34"

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC
CERTIFICATE OF AUTHORIZATION
NO. 28022
P.O. BOX 970
LAKE CITY, FL 32056
PHONE: 386.754.4085
Brett A. Crews, P.E. 65592

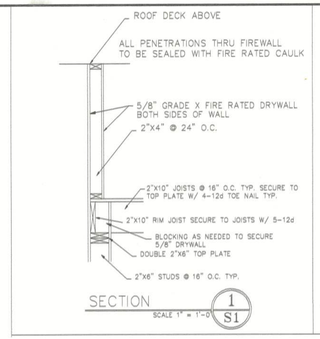
6-4-2013

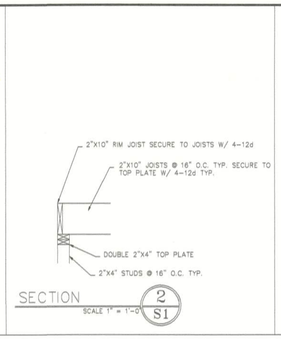
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APPROVED BY: BC

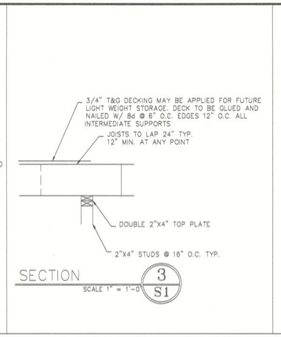
EMORY MEDICAL OVERFLOW OFFICE

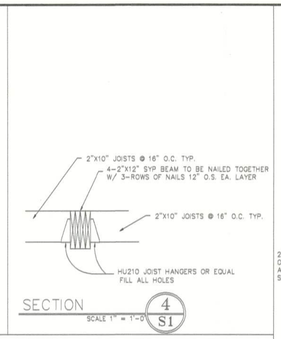
LIFE SAFETY PLAN

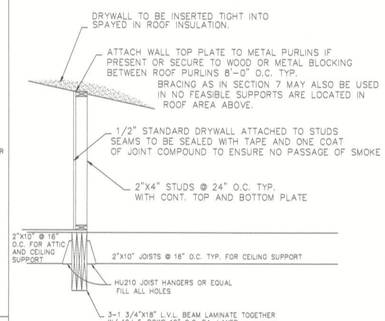
CES PROJECT NO.: 2012-030
SHEET: LS-1

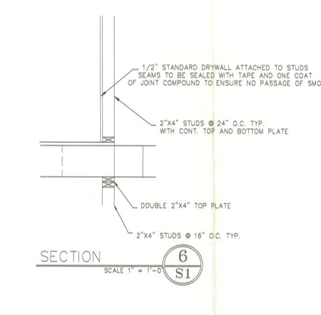


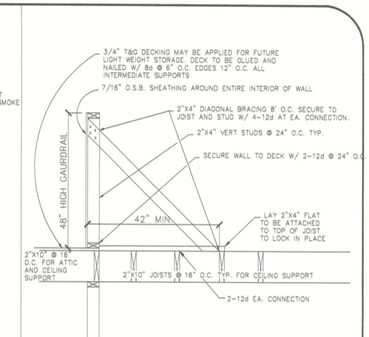


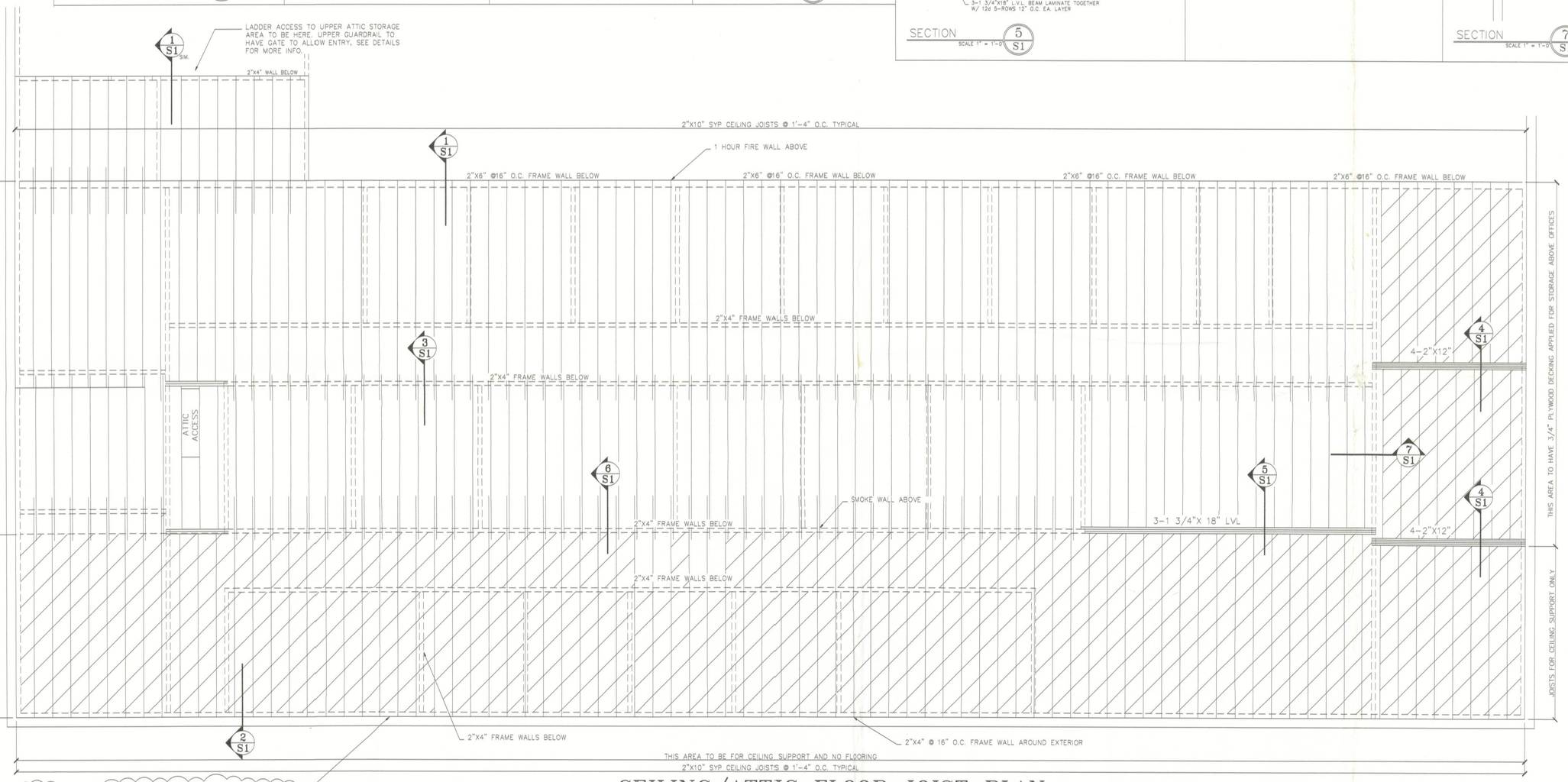












CEILING/ATTIC FLOOR JOIST PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!! SCALE 1/4" = 1'

NOTE:
2"X10" JOISTS ARE CALCULATED TO HAVE NO MORE THAN 55LBS PER SQUARE FOOT LOADING APPLIED ABOVE. THIS WILL ALLOW FOR SOME STORAGE OVER PORTION OF BUILDING NO STORAGE OVER AREA WITH HATCH FILL LINES.

NOTE:
STORAGE DECKING SQUARE FOOTAGE TO BE 2838 SQFT MAXIMUM

GENERAL NOTES

The structure is designed to be self-supporting and stable after the building is fully completed. It is solely the contractor's responsibility to determine erection procedure and sequence and to insure the safety of the building and its component parts during erection. This includes the addition of whatever shoring, sheeting, temporary bracing, guys or tiedowns which might be necessary.

It is solely the contractor's responsibility to follow all applicable safety codes and regulations during all phases of construction.

Should any of the detailed instructions shown on the plans conflict with the general structural notes, the specifications or with each other, the strictest provision shall govern.

The general contractor shall be responsible for verifying all dimensions and elevations shown on the plans and for coordinating all dimensions and elevations shown on the structural drawings with those shown on the architectural and mechanical drawings. If discrepancies in the dimensions occur, it shall be the contractor's responsibility to bring the discrepancy to the attention of the architect before proceeding with the work.

Unless noted otherwise, requirements given for one or more locations also apply at other locations at which conditions are similar. The requirements given shall be adapted to conditions at such other locations.

The site shall be graded to provide drainage away from the structure.

This structure not designed to resist additional wind loads imposed by the installation of wall panels & framing not shown on this plan.

TIMBER NOTES

Structural lumber design and construction shall conform to ANSI/NFoPA NDS-1991 National Design Specification for wood construction.

Wood product sizes are stated in terms of standard nominal sizes.

Design values are applicable to lumber that will be used under dry conditions such as in most covered structures.

Design values used are for normal load duration.

All structural wood members shall be Visually Graded Southern Pine Dimension Lumber No. 2 Minimum Grade unless otherwise indicated.

Wood members shall be pressure treated where in contact with poured concrete, soil, masonry, or where otherwise indicated.

Lumber shall be so handled and covered as to prevent marring, and moisture absorption from rain.

CONCRETE NOTES

All concrete work shall conform to the building code requirements for reinforced concrete (ACI 318-89) and specifications for structural concrete for buildings (ACI 301-84) of the American Concrete Institute.

Provide at least one copy of the ACI Field Reference Manual, SP-15, in the field office at all times.

All reinforcing steel shall be ASTM A615 Grade 60.

C.I.P. concrete construction or control joints in slab on grade to be as shown on plans. Where not shown, limit control joint spacing to no greater than 15 feet on any side for 5 inch slabs and 12 feet for 4 inch slabs on grade. The sections bounded by control or construction joints shall be approximately square, with the length to width ratio less than 1.5.

Coordinate concrete work with architectural drawings and specifications for architectural finished concrete, recessed areas, embedded items, and special control joints.

NOTE:

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I HEREBY CERTIFY THAT I HAVE REVIEWED THE ATTACHED DESIGN AND FOUND IT TO BE IN COMPLIANCE WITH ASCE 7-10 AND THE FLORIDA BUILDING CODE 2010 ED.

DAVID W. SMITH 53608

DATE: 3-13-14

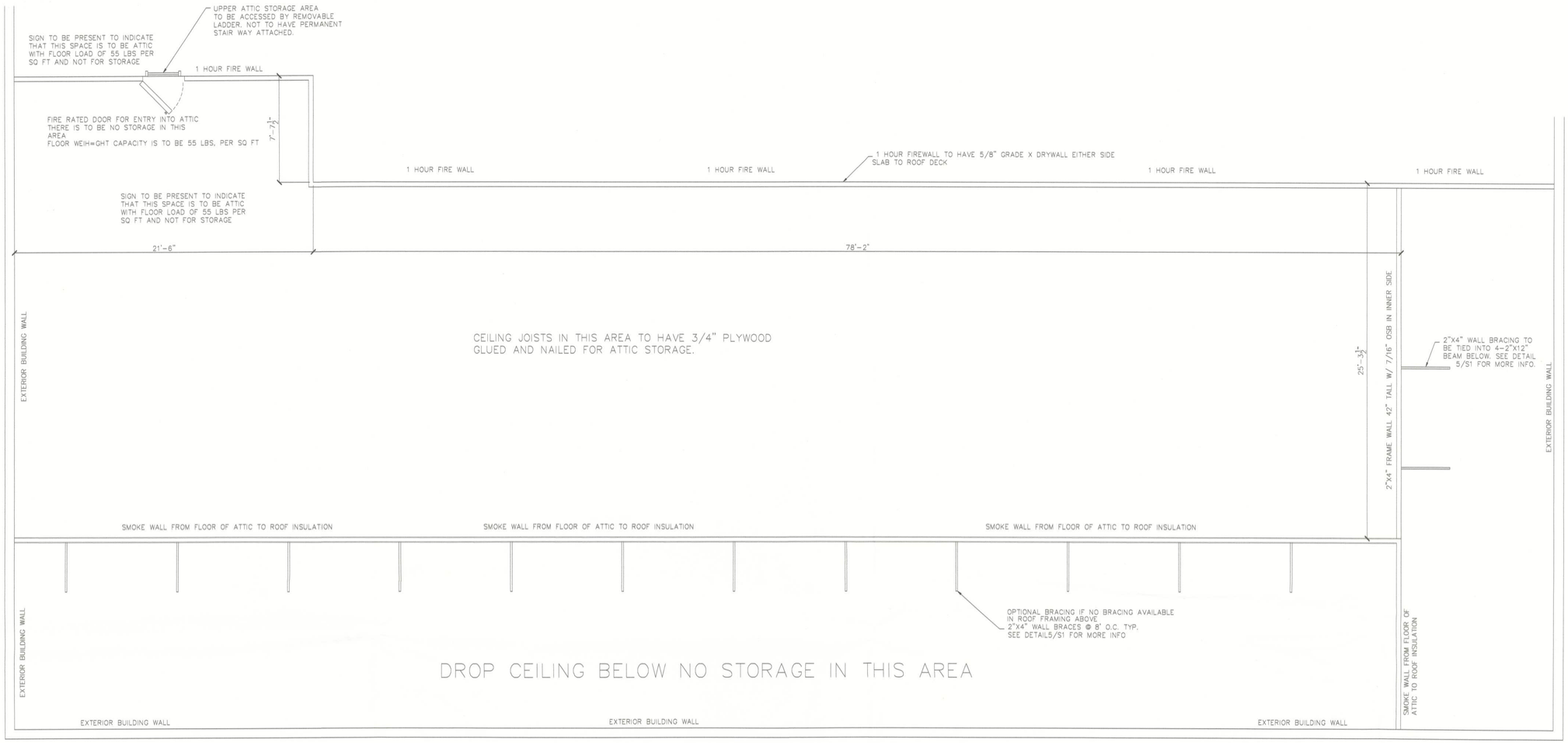
DATE:	REV. BY: COMMENTS:

EMORY MEDICAL OVERFLOW OFFICE
4784 E US HIGHWAY 90
LAKE CITY, FL. 32055

ENGINEER OF RECORD:
DAVID W. SMITH M.S.P.E.
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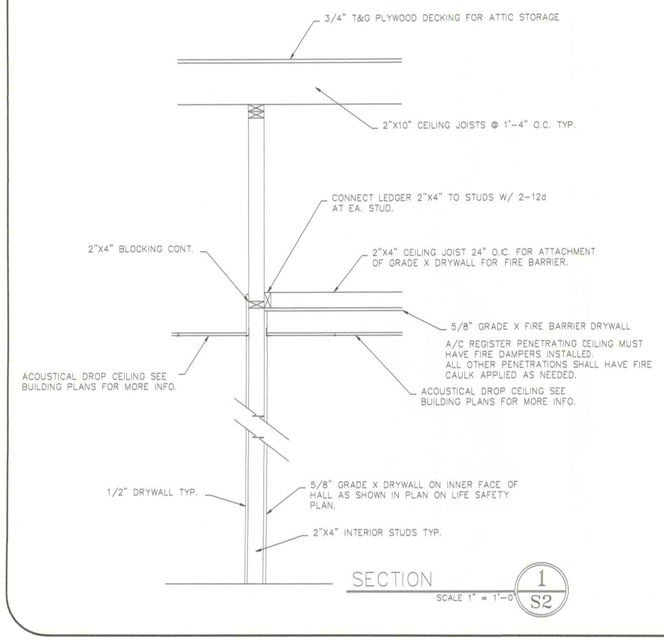
Checked By: Mike Martin
Drawn By: Mike Martin
Job No: 14005
S1 OF 3



ATTIC FLOOR PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!

SCALE 1/4" = 1'



SECTION 1/S2

SCALE 1" = 1'-0"

NOTE:

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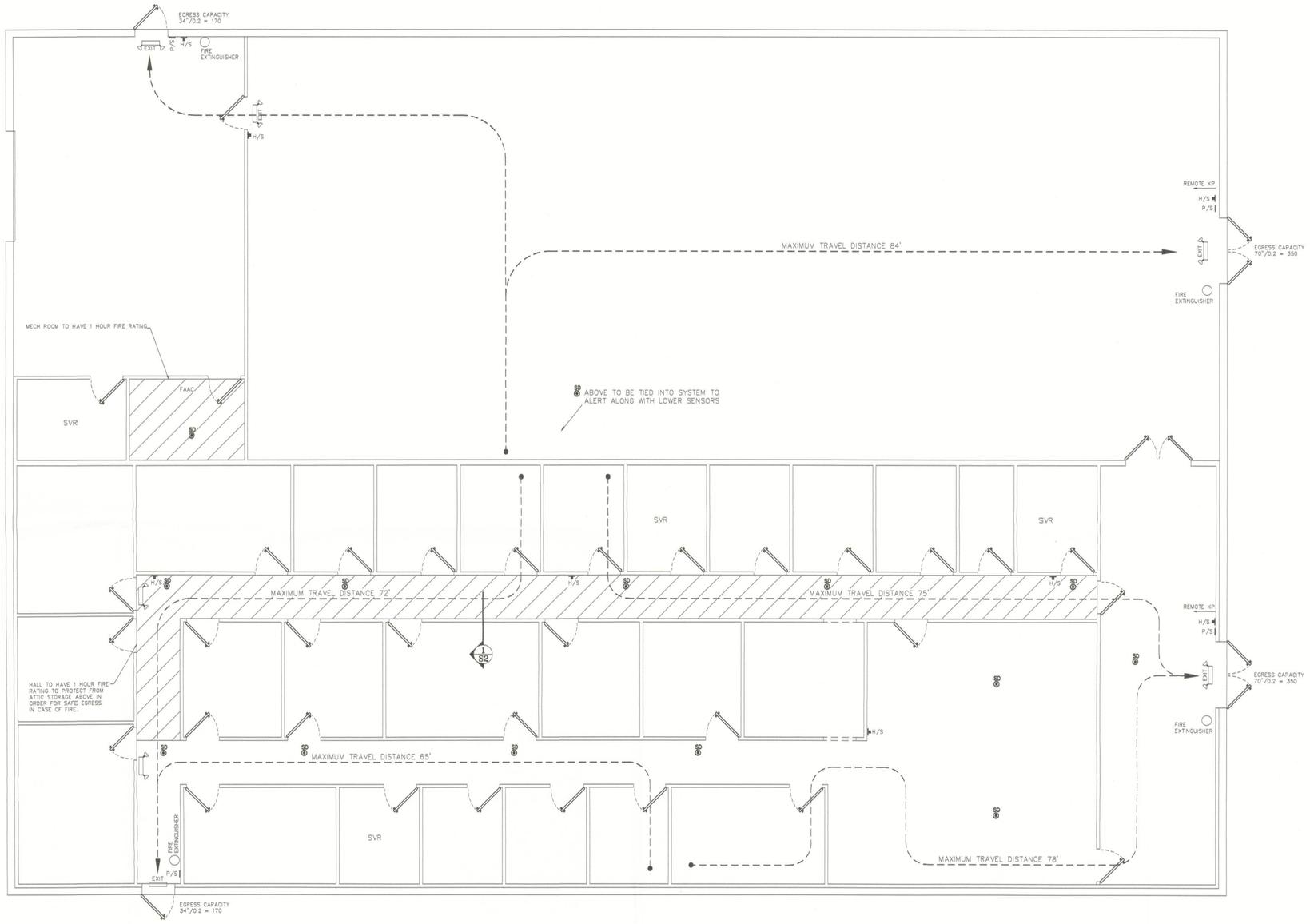
(352)397-9142

Checked By: Mike Martin

Drawn By: Mike Martin

Job No: 14005

S2 OF 3



LIFE SAFETY PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!!

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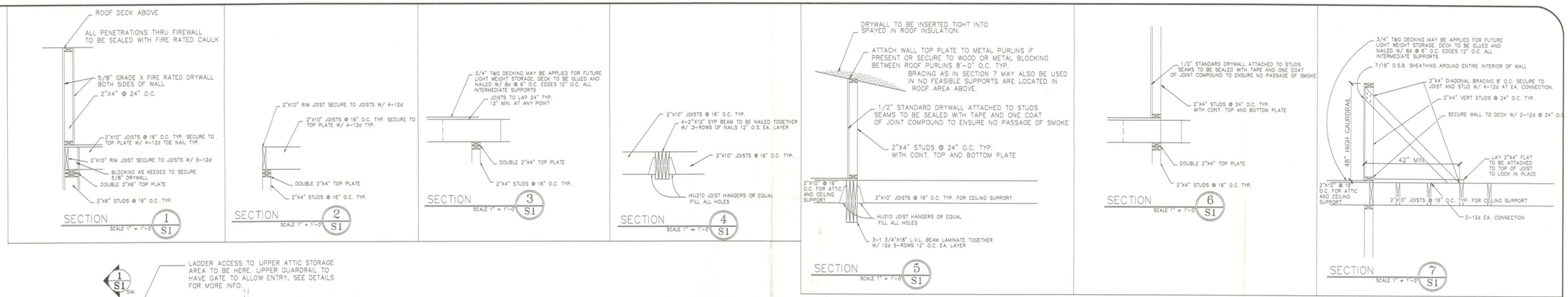
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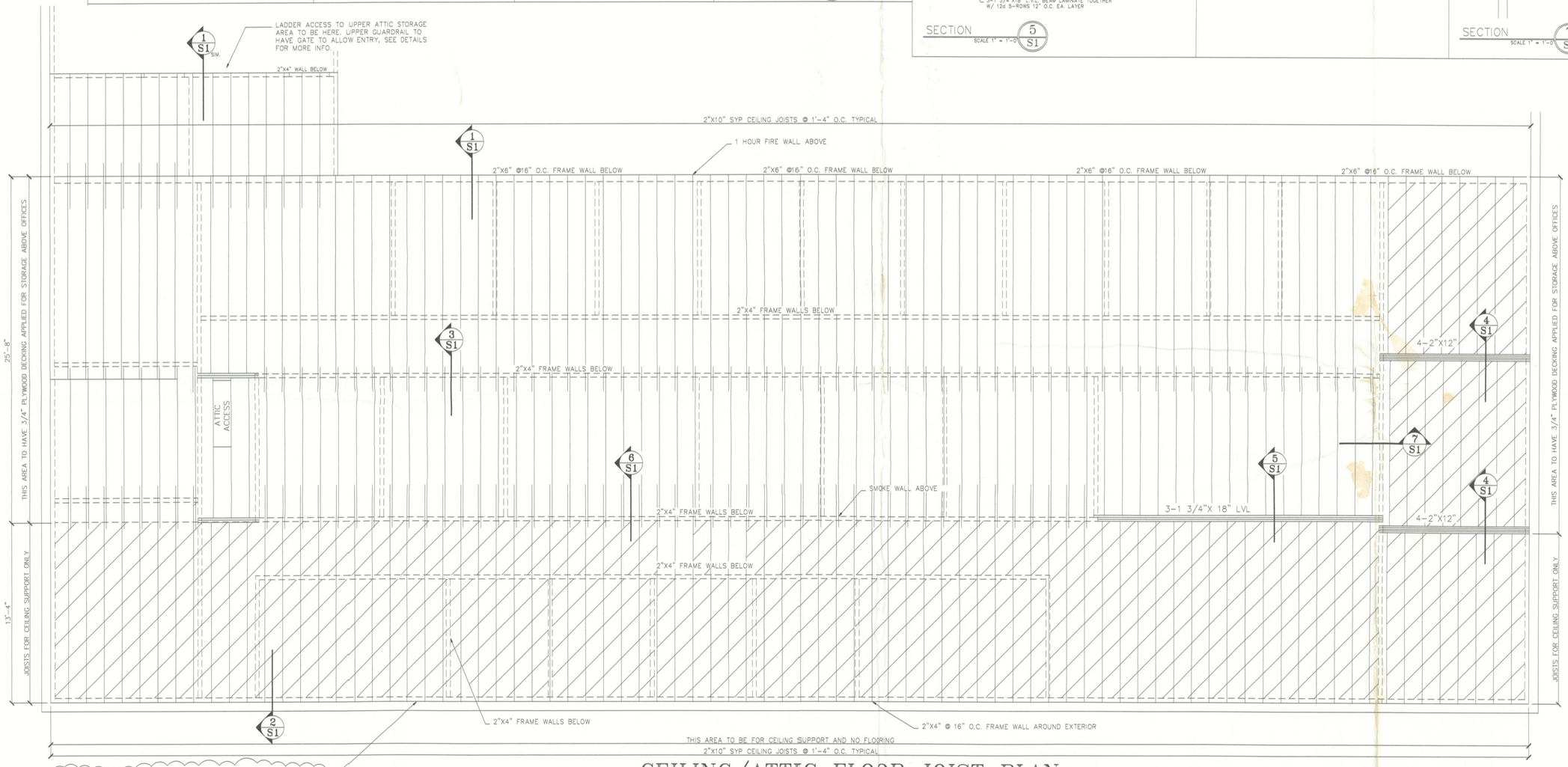
Checked By: Mike Martin

Drawn By: Mike Martin

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S3 OF 3





CEILING/ATTIC FLOOR JOIST PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS! SCALE 1/4" = 1'

GENERAL NOTES

The structure is designed to be self-supporting and stable after the building is fully completed. It is solely the contractor's responsibility to determine erection procedure and sequence and to insure the safety of the building and its component parts during erection. This includes the addition of whatever shoring, sheeting, temporary bracing, guys or tiedowns which might be necessary.

It is solely the contractor's responsibility to follow all applicable safety codes and regulations during all phases of construction.

Should any of the detailed instructions shown on the plans conflict with the general structural notes, the specifications or with each other, the strictest provision shall govern.

The general contractor shall be responsible for verifying all dimensions and elevations shown on the plans and for coordinating all dimensions and elevations shown on the structural drawings with those shown on the architectural and mechanical drawings. If discrepancies in the dimensions occur, it shall be the contractor's responsibility to bring the discrepancy to the attention of the architect before proceeding with the work.

Unless noted otherwise, requirements given for one or more locations also apply at other locations at which conditions are similar. The requirements given shall be adapted to conditions at such other locations.

The site shall be graded to provide drainage away from the structure.

This structure not designed to resist additional wind loads imposed by the installation of wall panels & framing not shown on this plan.

TIMBER NOTES

Structural lumber design and construction shall conform to ANSI/NFoPA NDS-1991 National Design Specification for wood construction.

Wood product sizes are stated in terms of standard nominal sizes.

Design values are applicable to lumber that will be used under dry conditions such as in most covered structures.

Design values used are for normal load duration.

All structural wood members shall be Visually Graded Southern Pine Dimension Lumber No. 2 Minimum Grade unless otherwise indicated.

Wood members shall be pressure treated where in contact with poured concrete, soil, masonry, or where otherwise indicated.

Lumber shall be so handled and covered as to prevent marring, and moisture absorption from rain.

NOTE:
2"X10" JOISTS ARE CALCULATED TO HAVE NO MORE THAN 55LBS PER SQUARE FOOT LOADING APPLIED ABOVE. THIS WILL ALLOW FOR SOME STORAGE OVER PORTION OF BUILDING NO STORAGE OVER AREA WITH HATCH FILL LINES.

NOTE:
STORAGE DECKING SQUARE FOOTAGE TO BE 2838 SQFT MAXIMUM

CONCRETE NOTES

All concrete work shall conform to the building code requirements for reinforced concrete (ACI 318-89) and specifications for structural concrete for buildings (ACI 301-84) of the American Concrete Institute.

Provide at least one copy of the ACI Field Reference Manual, SP-15, in the field office at all times.

All reinforcing steel shall be ASTM A615 Grade 60.

C.I.P. concrete construction or control joints in slab on grade to be as shown on plans. Where not shown, limit control joint spacing to no greater than 15 feet on any side for 5 inch slabs and 12 feet for 4 inch slabs on grade. The sections bounded by control or construction joints shall be approximately square, with the length to width ratio less than 1.5.

Coordinate concrete work with architectural drawings and specifications for architectural finished concrete, recessed areas, embedded items, and special control joints.

NOTE:

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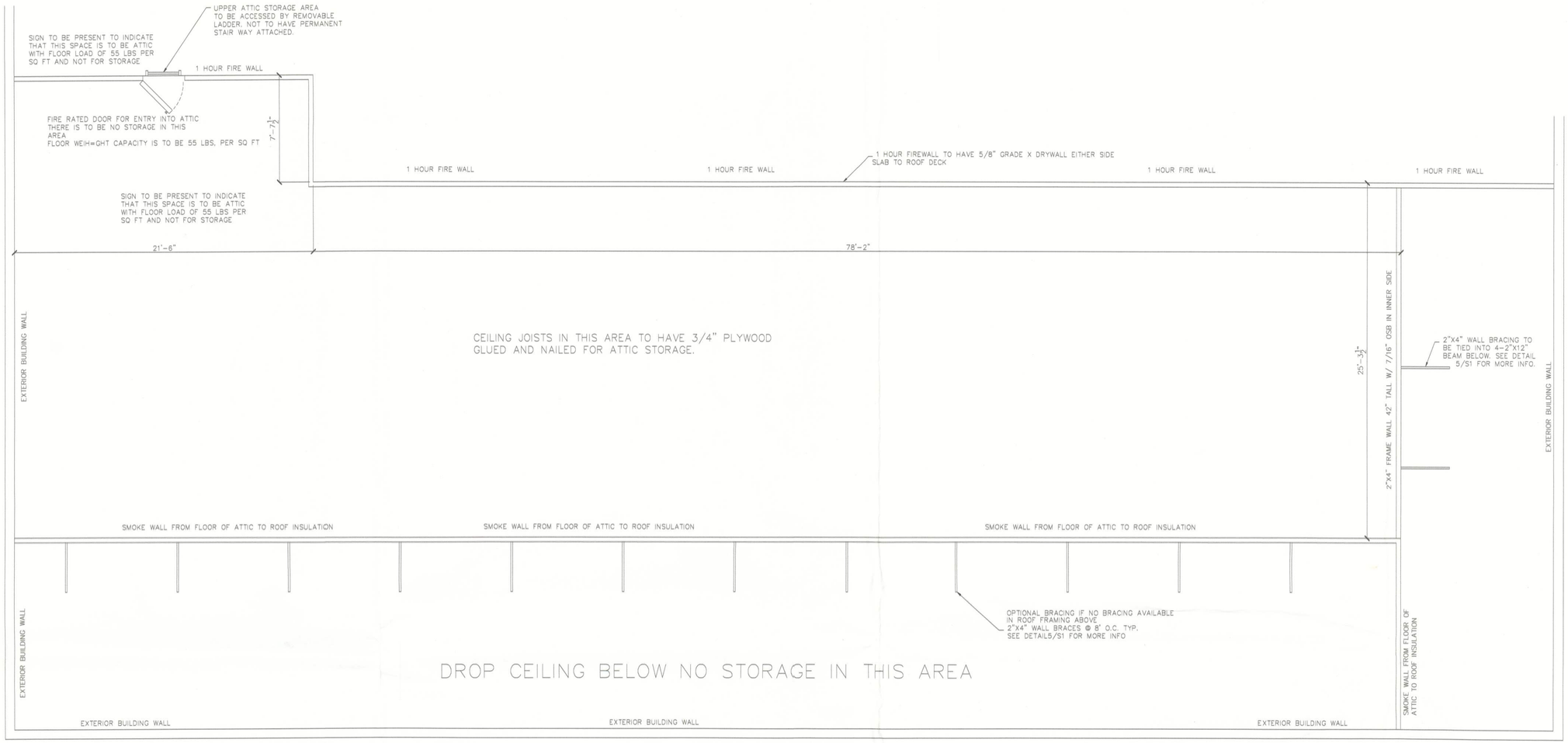
DATE: | REV. BY: | COMMENTS:

EMORY MEDICAL OVERFLOW OFFICE
4784 E US HIGHWAY 90
LAKE CITY, FL. 32055

ENGINEER OF RECORD:
DAVID W. SMITH M.S.P.E.
9909 WALLASTON DR.
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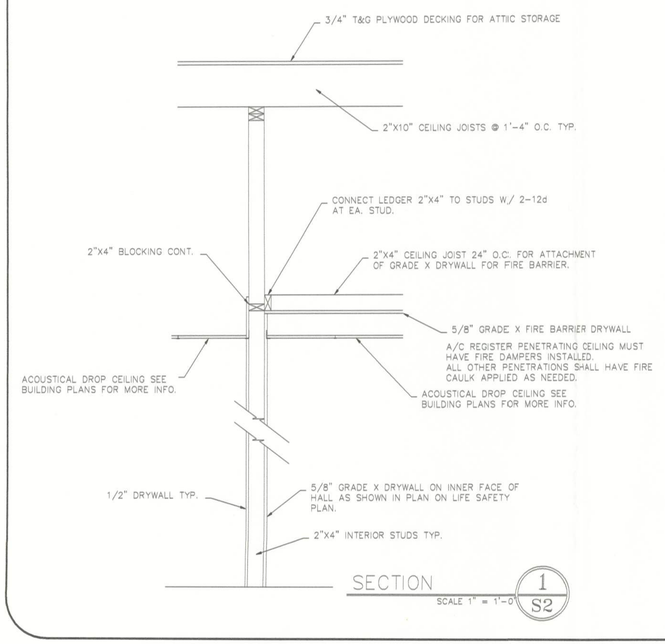
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Job No: 14005
S1 OF 3



ATTIC FLOOR PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!! SCALE 1/4" = 1'



SECTION 1/S2

SCALE 1" = 1'-0"

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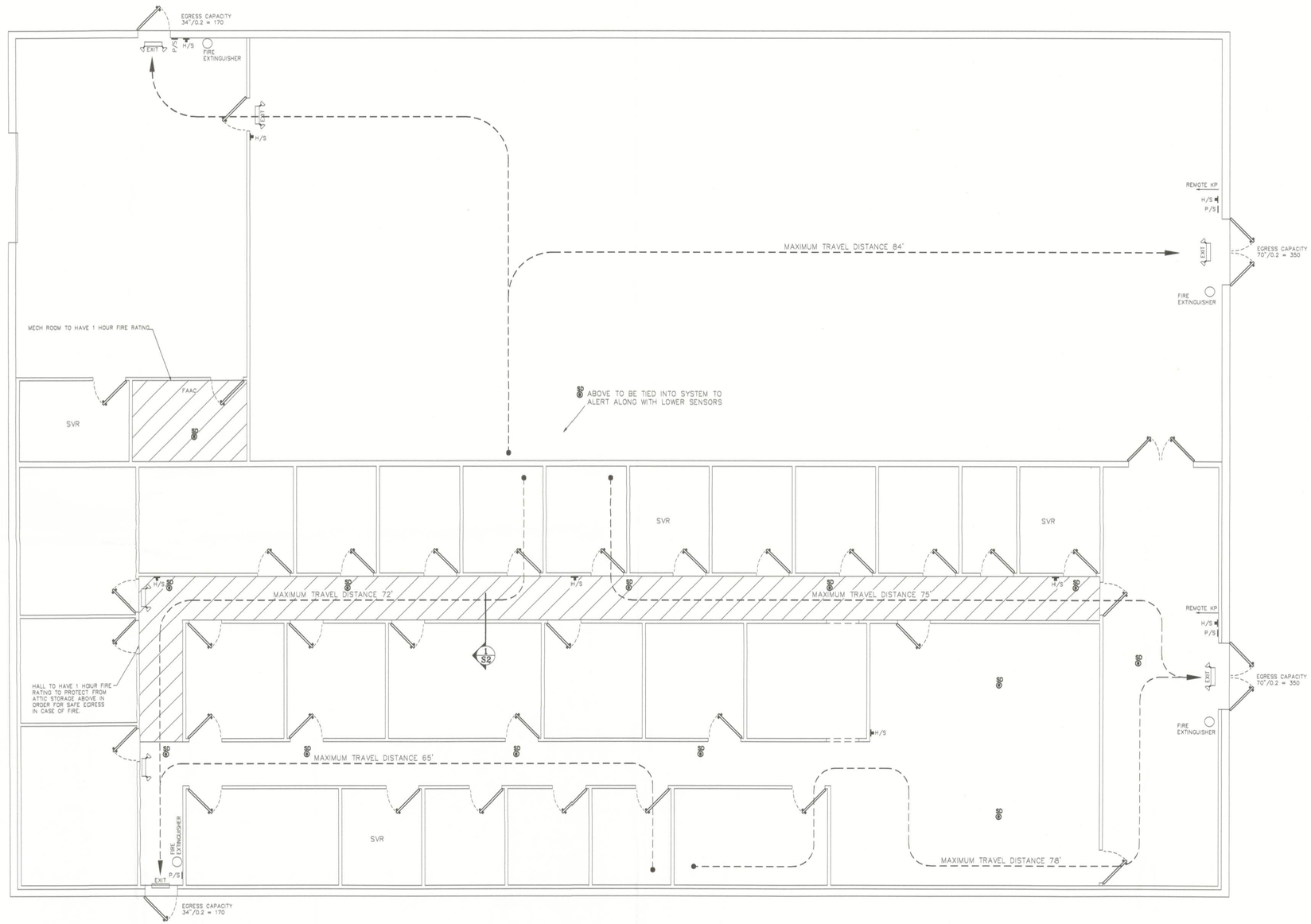
EMORY MEDICAL OVERFLOW OFFICE

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Checked By: Mike Martin
Drawn By: Mike Martin
Job No: 14005
S2 OF 3



LIFE SAFETY PLAN

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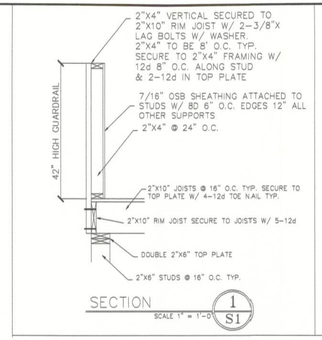
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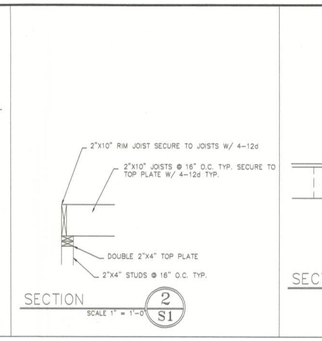
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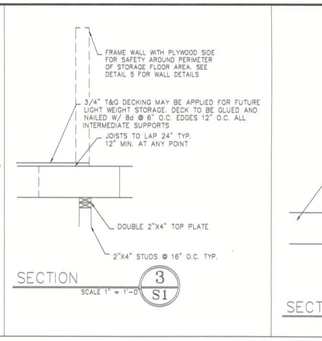
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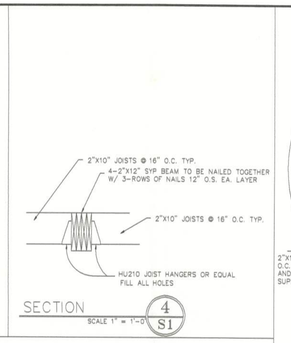
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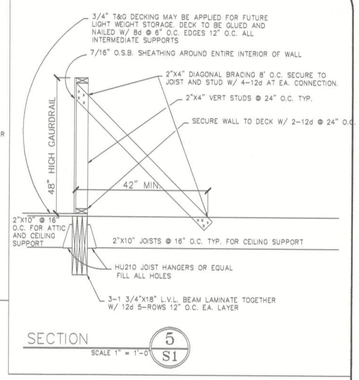
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Drawn By: Mike Martin
Job No: 14005
S3 OF 3

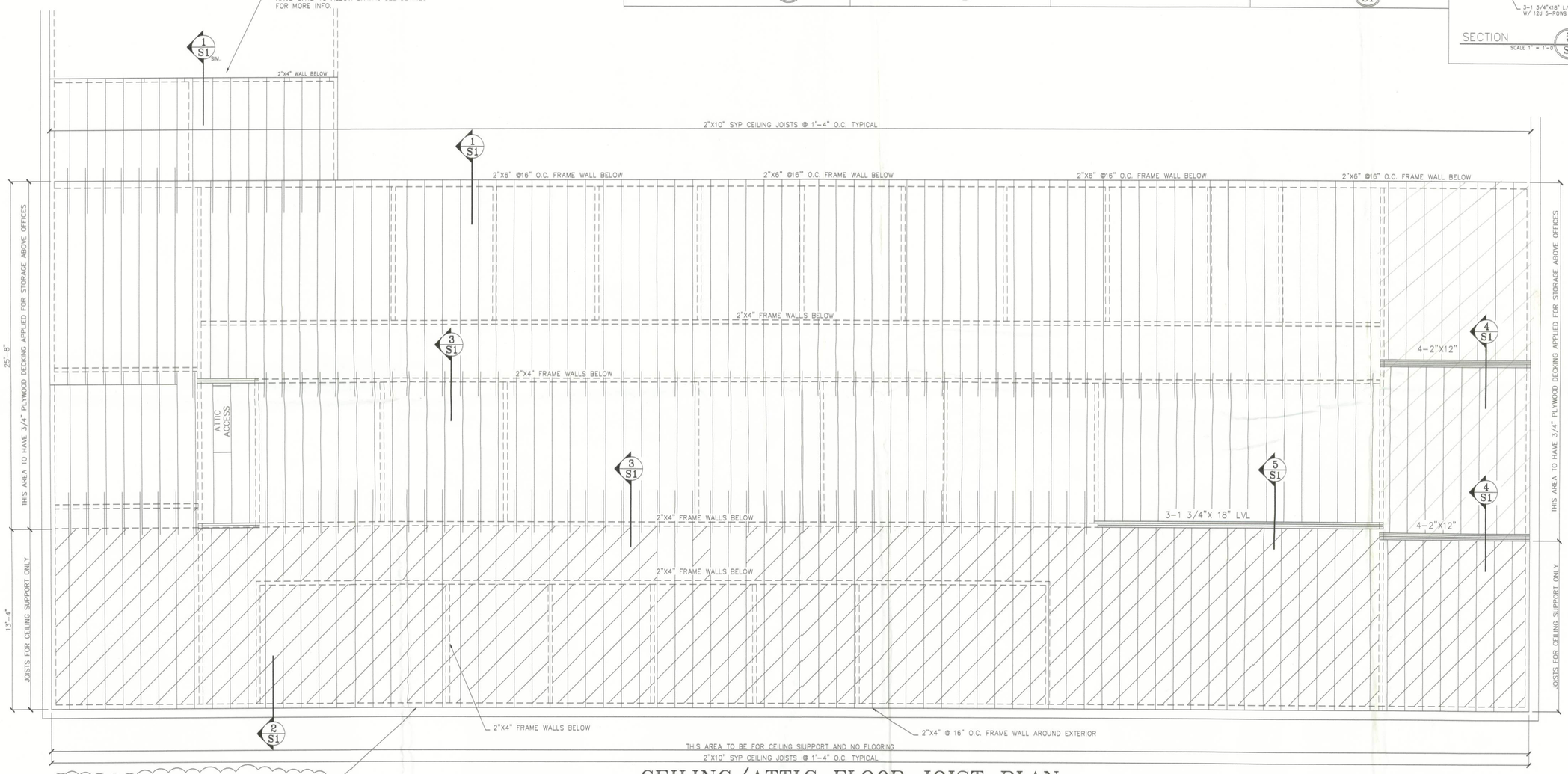












CEILING/ATTIC FLOOR JOIST PLAN

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GENERAL NOTES

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The site shall be graded tlo provide drainage away from the structure.

This structure not designed to resist additional wind loads imposed by the installation of wall panels & framing not shown on this plan.

TIMBER NOTES

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Design values are applicable to lumber that will be used under dry conditions such as in most covered structures.

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7/25-14

DAVID W. SMITH 53608

DATE: 3-13-14

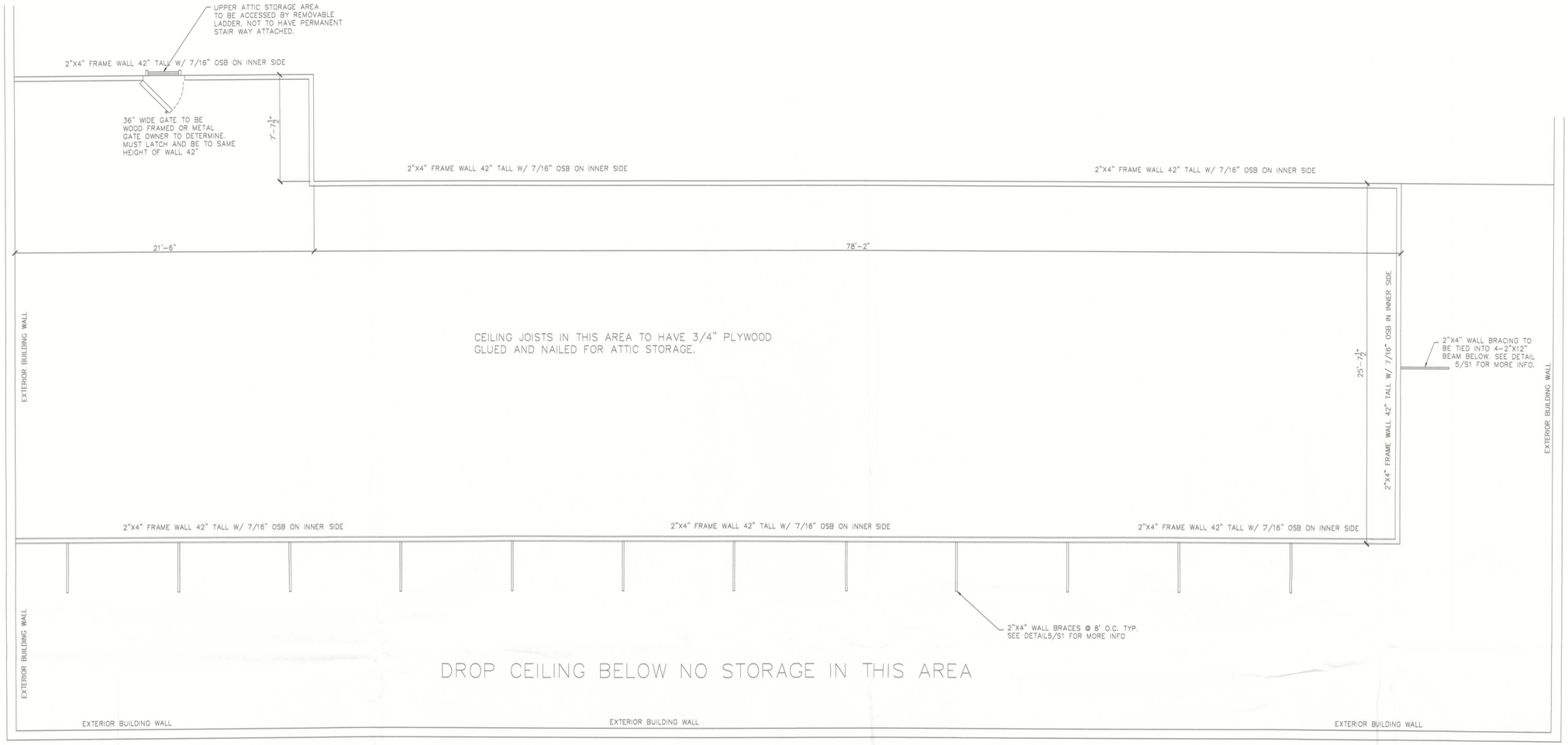
DATE:	REV. BY:	COMMENTS:

EMORY MEDICAL OVERFLOW OFFICE
4784 E US HIGHWAY 90
LAKE CITY, FL. 32055

ENGINEER OF RECORD:
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DADE CITY, FL. 33525
OFFICE 352-521-0865
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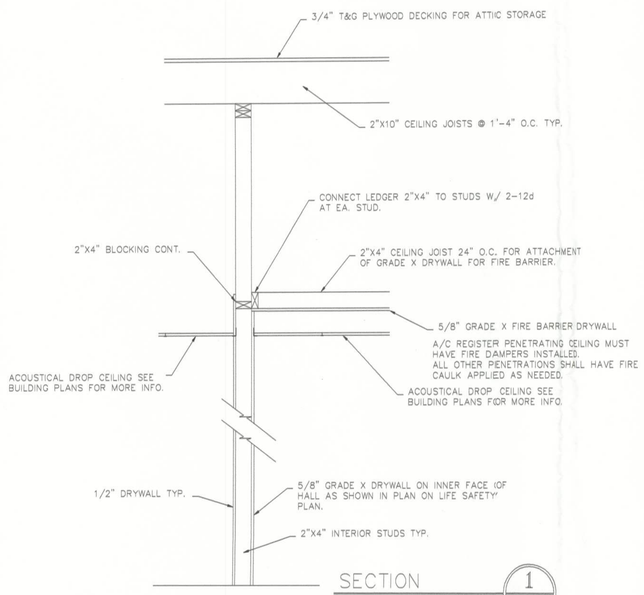
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Job No: 14005
S1 OF 3



ATTIC FLOOR PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!! SCALE 1/4" = 1'



SECTION 1/S2

SCALE 1" = 1'-0"

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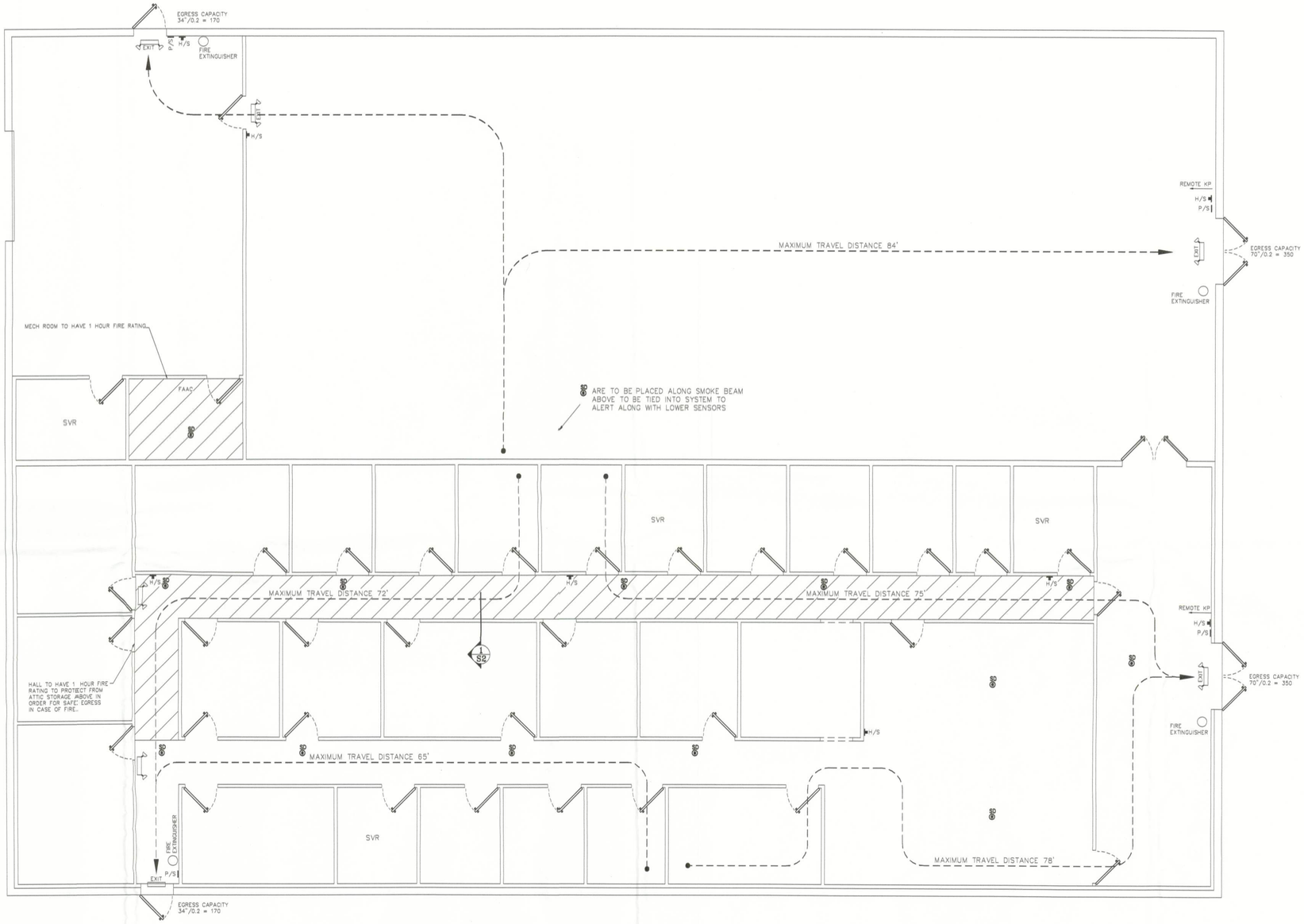
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LIFE SAFETY PLAN

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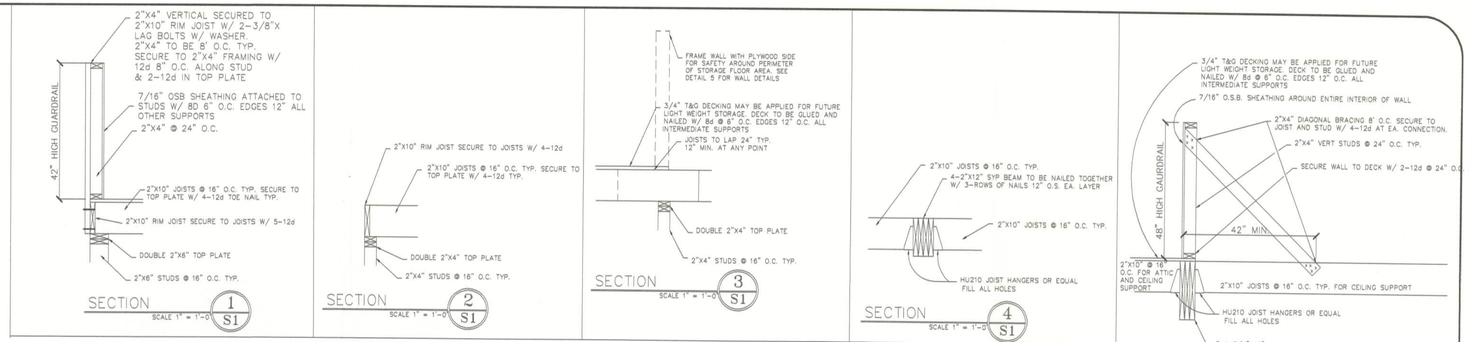
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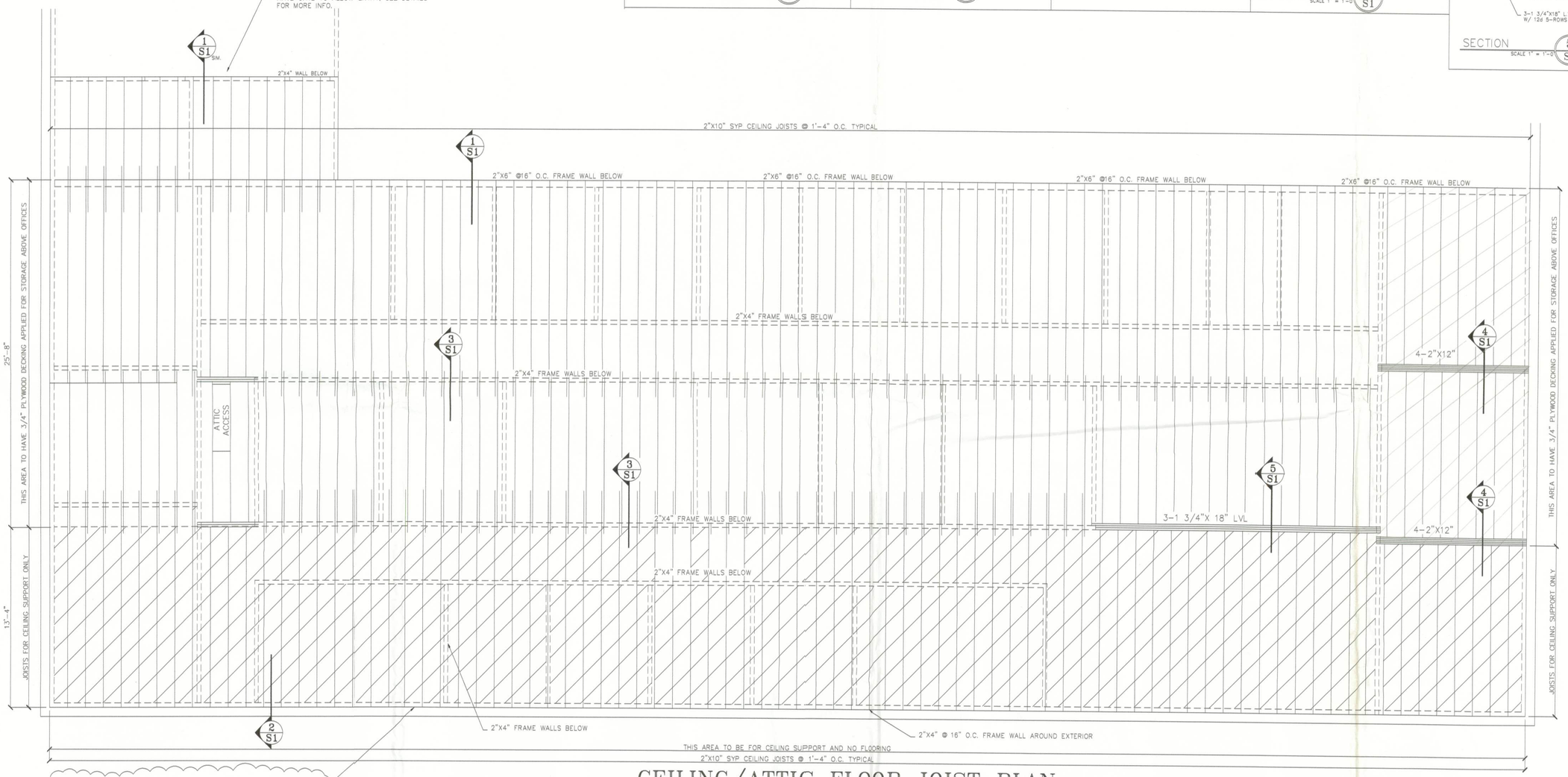
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Job No: 14005
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CEILING/ATTIC FLOOR JOIST PLAN

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It is solely the contractor's responsibility to follow all applicable safety codes and regulations during all phases of construction.

Should any of the detailed instructions shown on the plans conflict with the general structural notes, the specifications or with each other, the strictest provision shall govern.

The general contractor shall be responsible for verifying all dimensions and elevations shown on the plans and for coordinating all dimensions and elevations shown on the structural drawings with those shown on the architectural and mechanical drawings. If discrepancies in the dimensions occur, it shall be the contractor's responsibility to bring the discrepancy to the attention of the architect before proceeding with the work.

Unless noted otherwise, requirements given for one or more locations also apply at other locations at which conditions are similar. The requirements given shall be adapted to conditions at such other locations.

The site shall be graded to provide drainage away from the structure.

This structure not designed to resist additional wind loads imposed by the installation of wall panels & framing not shown on this plan.

TIMBER NOTES

Structural lumber design and construction shall conform to ANSI/NFoPA NDS-1991 National Design Specification for wood construction.

Wood product sizes are stated in terms of standard nominal sizes.

Design values are applicable to lumber that will be used under dry conditions such as in most covered structures.

Design values used are for normal load duration.

All structural wood members shall be Visually Graded Southern Pine Dimension Lumber No. 2 Minimum Grade unless otherwise indicated.

Wood members shall be pressure treated where in contact with poured concrete, soil, masonry, or where otherwise indicated.

Lumber shall be so handled and covered as to prevent marring, and moisture absorption from rain.

NOTE:
2"X10" JOISTS ARE CALCULATED TO HAVE NO MORE THAN 55LBS PER SQUARE FOOT LOADING APPLIED ABOVE. THIS WILL ALLOW FOR SOME STORAGE OVER PORTION OF BUILDING NO STORAGE OVER AREA WITH HATCH FILL LINES.

NOTE:
STORAGE DECKING SQUARE FOOTAGE TO BE 2838 SQFT MAXIMUM

CONCRETE NOTES

All concrete work shall conform to the building code requirements for reinforced concrete (ACI 318-89) and specifications for structural concrete for buildings (ACI 301-84) of the American Concrete Institute.

Provide at least one copy of the ACI Field Reference Manual, SP-15, in the field office at all times.

All reinforcing steel shall be ASTM A615 Grade 60.

C.I.P. concrete construction or control joints in slab on grade to be as shown on plans. Where not shown, limit control joint spacing to no greater than 15 feet on any side for 5 inch slabs and 12 feet for 4 inch slabs on grade. The sections bounded by control or construction joints shall be approximately square, with the length to width ratio less than 1.5.

Coordinate concrete work with architectural drawings and specifications for architectural finished concrete, recessed areas, embedded items, and special control joints.

NOTE:

WHILE EVERY EFFORT HAS BEEN TAKEN TO AVOID OMISSIONS AND ERRORS, MICHAEL MARTIN DESIGN AND IT'S AGENTS CANNOT GUARANTEE AGAINST HUMAN ERROR. CONTRACTOR MUST VERIFY ALL LOCATIONS, FINISHES, DIMENSIONS, AND SPECIFICATIONS PRIOR TO CONSTRUCTION OF STRUCTURE.

I HEREBY CERTIFY THAT I HAVE REVIEWED THE ATTACHED DESIGN AND FOUND IT TO BE IN COMPLIANCE WITH ASCE 7-10 AND THE FLORIDA BUILDING CODE 2010 ED.

4/25/14

DAVID W. SMITH 53608

DATE: 3-13-14

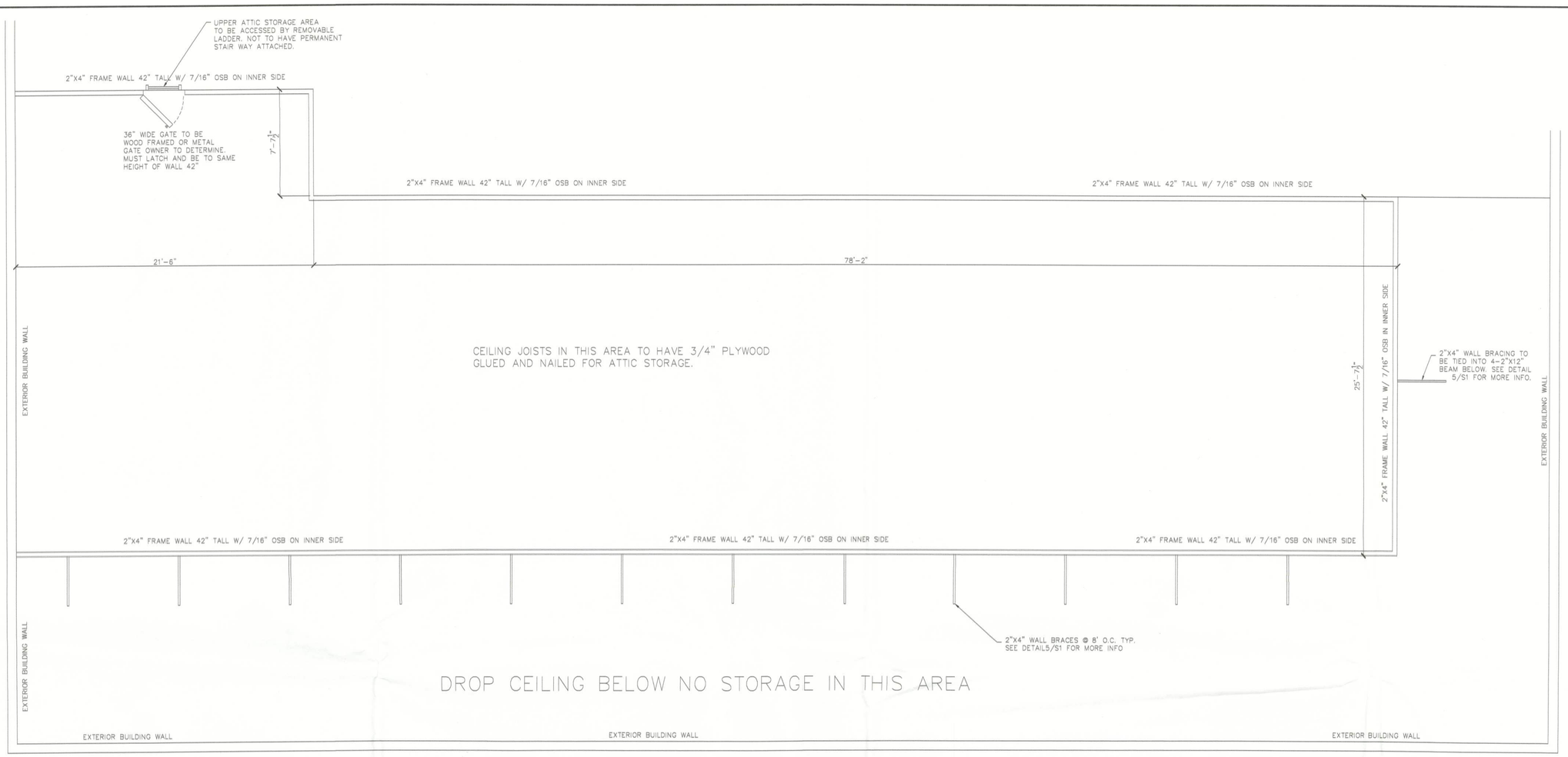
DATE:	REV. BY:	COMMENTS:

EMORY MEDICAL OVERFLOW OFFICE
4784 E US HIGHWAY 90
LAKE CITY, FL. 32055

ENGINEER OF RECORD:
DAVID W. SMITH M.S.P.E.
9909 WALLASTON DR.
DADE CITY, FL. 33525
OFFICE 352-521-0865
FAX 352-521-0867

MICHAEL MARTIN
RESIDENTIAL & COMMERCIAL
DRAFTING & ENGINEERING
P.O. BOX 11107
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michaelmartindesign@yahoo.com
(352)397-9112

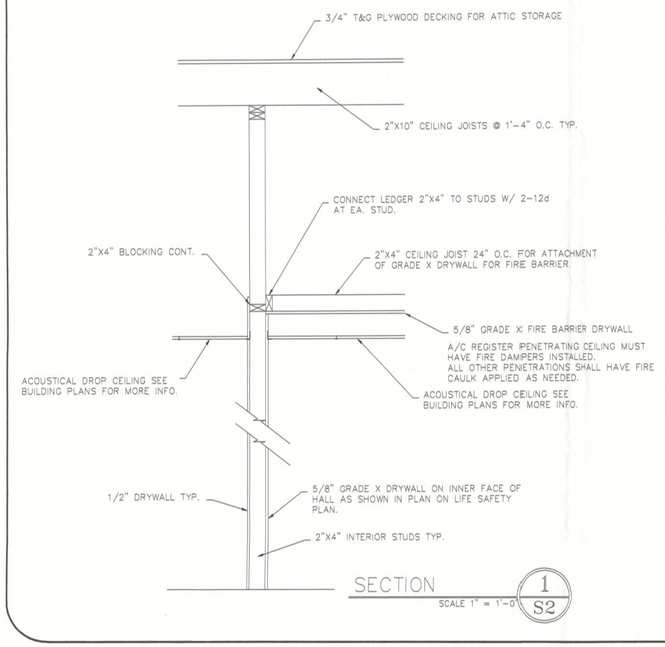
Checked By: Mike Martin
Drawn By: Mike Martin
Job No: 14005
S1 OF 3



ATTIC FLOOR PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!!

SCALE 1/4" = 1'



SECTION 1/S2

SCALE 1" = 1'-0"

NOTE:

WHILE EVERY EFFORT HAS BEEN TAKEN TO AVOID OMISSIONS AND ERRORS, MICHAEL MARTIN DESIGN AND IT'S AGENTS CANNOT GUARANTEE AGAINST HUMAN ERROR. CONTRACTOR MUST VERIFY ALL LOCATIONS, FINISHES, DIMENSIONS, AND SPECIFICATIONS PRIOR TO CONSTRUCTION OF STRUCTURE.

I HEREBY CERTIFY THAT I HAVE REVIEWED THE ATTACHED DESIGN AND FOUND IT TO BE IN COMPLIANCE WITH ASCE 7-10 AND THE FLORIDA BUILDING CODE 2010 ED.

7-25-14

DAVID W. SMITH 53608

DATE: 3-13-14

DATE:	REV. BY:	COMMENTS:

EMORY MEDICAL OVERFLOW OFFICE

4784 E US HIGHWAY 90

LAKE CITY, FL. 32055

ENGINEER OF RECORD:

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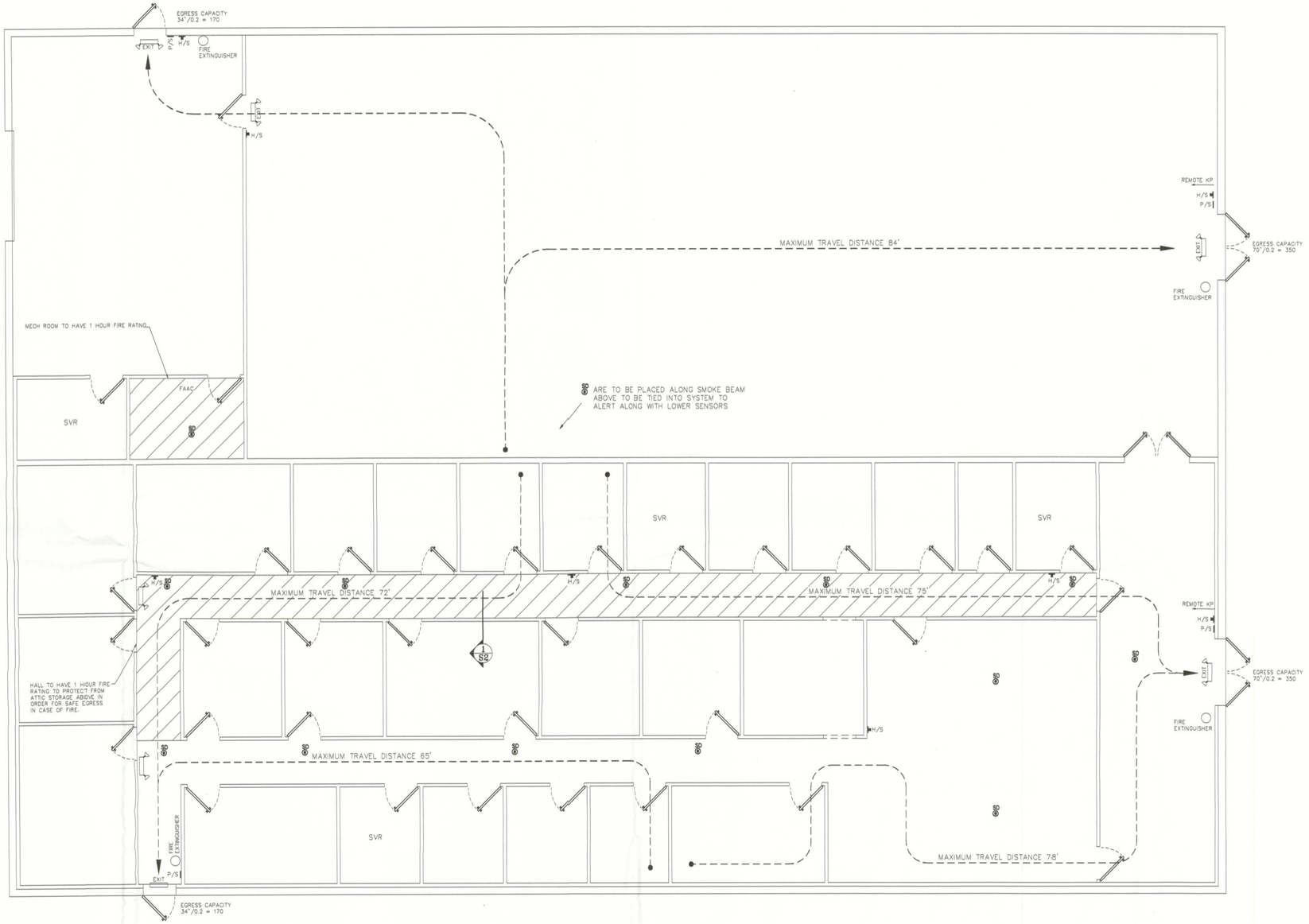
(352)397-9142

Checked By: Mike Martin

Drawn By: Mike Martin

Job No: 14005

S2 OF 3



LIFE SAFETY PLAN

WARNING: DO NOT SCALE DRAWINGS USE DIMENSIONS AS SHOWN OR CALL DESIGNER WITH QUESTIONS!!

SCALE 1/4" = 1'

NOTE:

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7-25-14

DAVID W. SMITH 53608

DATE: 3-13-14

DATE:	REV. BY:	COMMENTS:

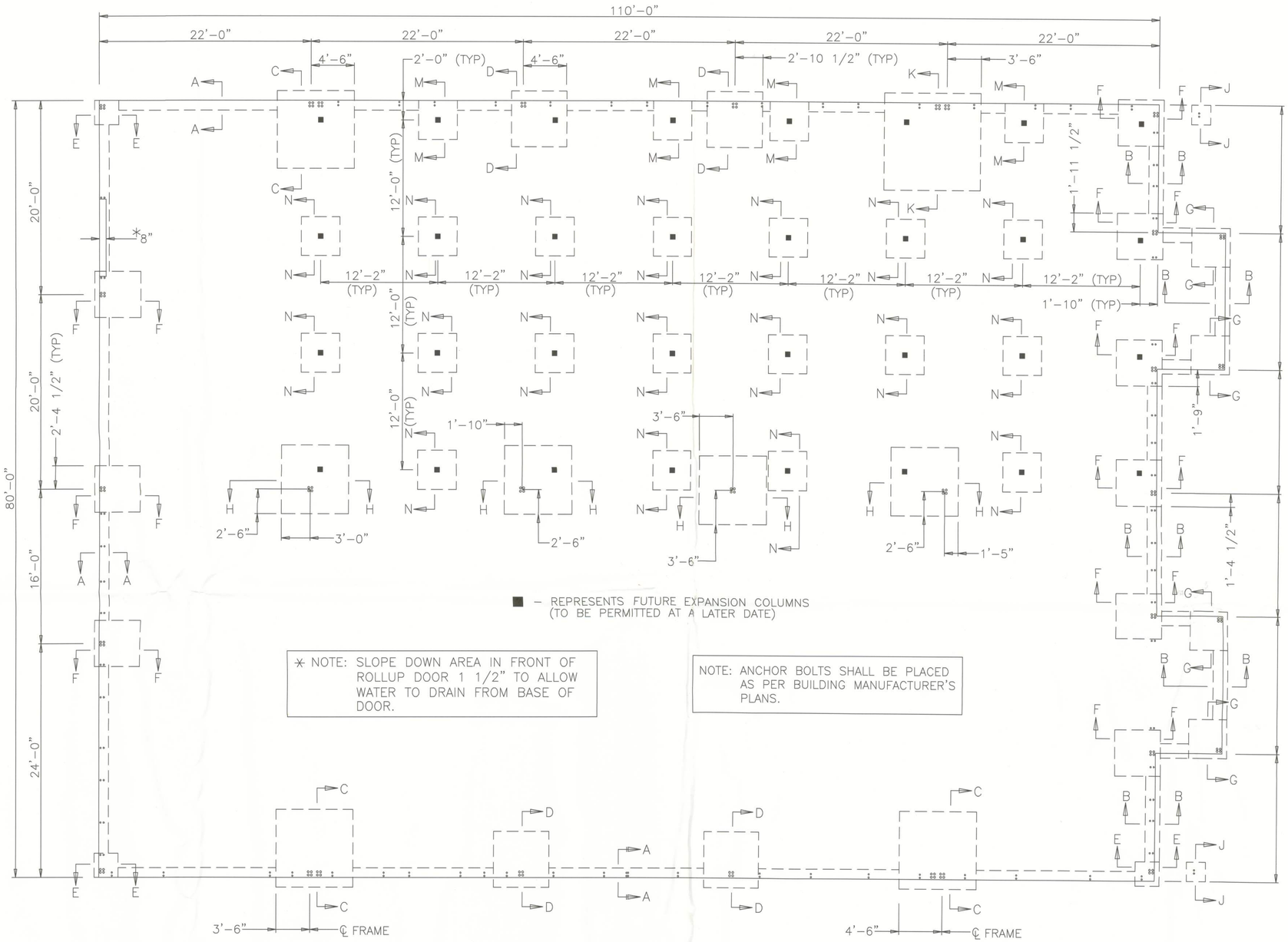
EMORY MEDICAL OVERFLOW OFFICE

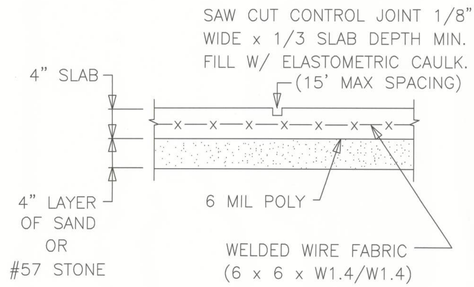
4784 E US HIGHWAY 90
LAKE CITY, FL. 32055

ENGINEER OF RECORD:
DAVID W. SMITH M.S.P.E.
9909 WALLASTON DR.
DADE CITY, FL. 33525
OFFICE 352-521-0865
FAX 352-521-0867

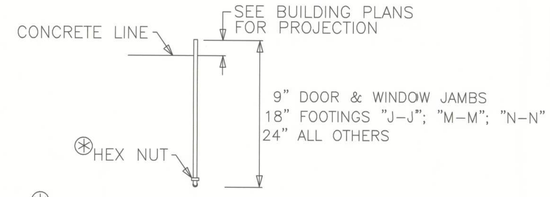
MICHAEL MARTIN
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(352)397-9112

Checked By: Mike Martin
Drawn By: Mike Martin
Job No: 14005
S3 OF 3





SLAB DETAIL



ANCHOR BOLTS SHALL BE ASTM A307 GR36

ANCHOR BOLTS

COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY
Code Compliance
PLANS EXAMINER

NO.	REVISION	DATE
1	ISSUE FOR CONSTRUCTION	8/14/2013
2	ADDED EXPANSION FOOTINGS	8/23/2013

FOUNDATION PLANS

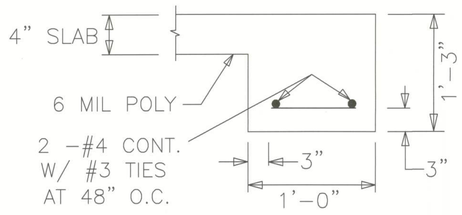
ADAM'S CONSTRUCTION & DESIGN
OFFICE/STORAGE BUILDING
LAKE CITY, FL

JOB #: GSB-0465

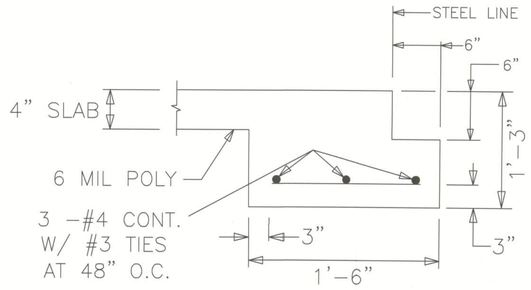
GREGORY S. BARFIELD, PE
2149 NELL PURVIS ROAD
ADEL,GEORGIA 31620

GREGORY S. BARFIELD
LICENSE
No 54419
STATE OF FLORIDA
PROFESSIONAL ENGINEER
8-23-13

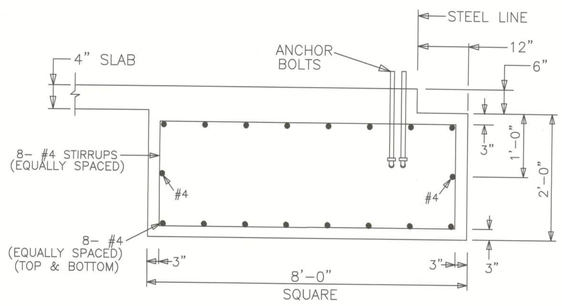
SHEET NO.
1 of 3



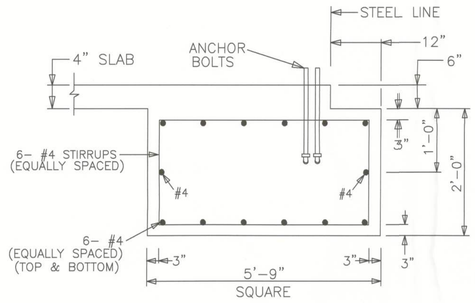
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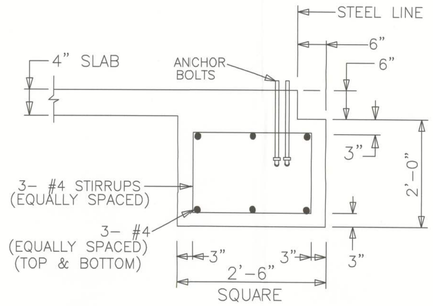
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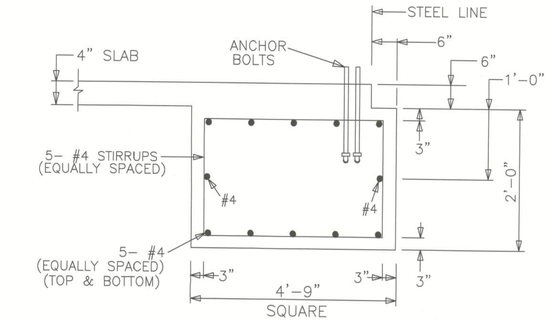
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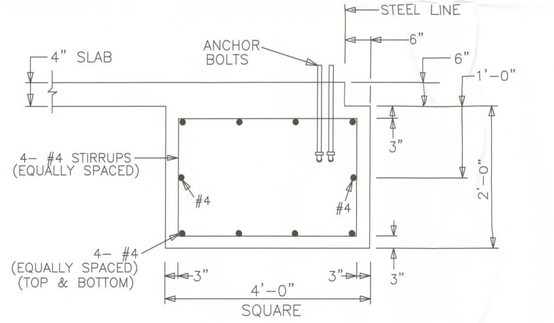
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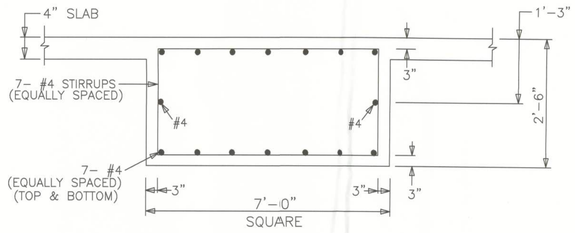
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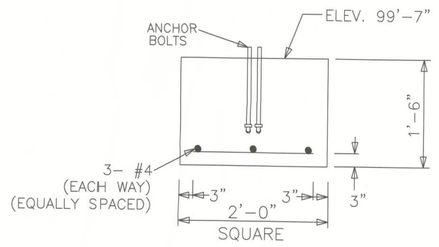


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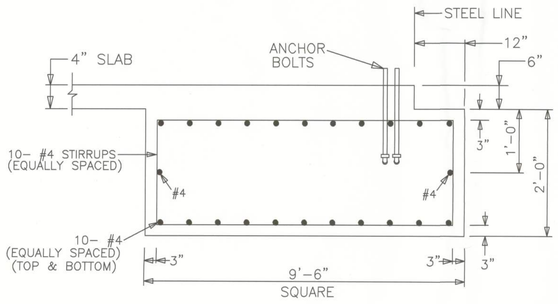
SECTION H – H

(ANCHOR BOLTS NOT SHOWN)

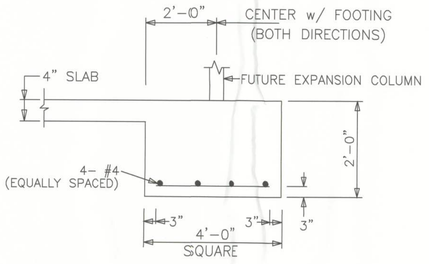


CENTER BASE PLATE w/ FOOTING

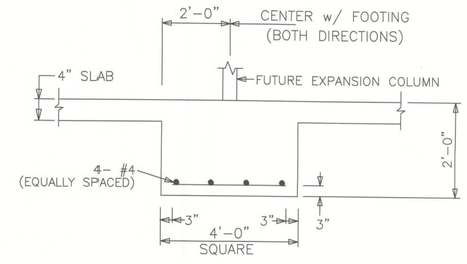
SECTION J – J



SECTION K – K



SECTION M – M



SECTION N – N

NO.	REVISION	DATE
1	ISSUE FOR CONSTRUCTION	8/14/2013
2	ADDED EXPANSION FOOTINGS	8/23/2013

FOUNDATION PLANS

ADAM'S CONSTRUCTION & DESIGN

OFFICE/STORAGE BUILDING
LAKE CITY, FL

JOB #: GSB-0465

GREGORY S. BARFIELD, PE

2149 NELL PURVIS ROAD
ADEL, GEORGIA 31620

GREGORY S. BARFIELD
LICENSE
No 54419
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

8-23-13

SHEET NO.
2 of 3

GENERAL NOTES:

1. All foundation work and materials shall be in accordance with the latest edition of the IBC (International Building Code) and ACI 318.

2. Prior to construction all vegetation, stumps, roots, foreign material, and surficial topsoil shall be removed from the area under the foundation and to a minimum distance of 5 feet beyond the limits of the proposed building. After this striping and clearing has been completed the exposed natural soils shall be compacted to 95% of Modified Proctor in accordance with ASTM D 1557. At a distance of 50 feet or more from an existing structure this compaction shall be achieved by use of a vibratory drum roller in which the drum weighs a minimum of 5 tons with a minimum drum diameter of 3 feet. At a distance of within 50 feet from an existing structure this compaction shall be achieved by use of a light weight vibratory drum or sled compactor having a maximum weight of 1000 pounds.

3. Groundwater levels shall be controlled to a minimum of 2 feet below the construction level. Groundwater elevations may fluctuate during construction therefore temporary dewatering may be necessary to control the groundwater levels.

4. All fill material shall be placed in lifts not to exceed 8 inches and shall be compacted to 95% of Modified Proctor in accordance with ASTM D 1557.

5. If "pumping" of the near surface soils or fill material occurs during construction which results in strength loss of the subsequent soil, work shall be terminated in these areas and the disturbed soils removed. After removal of these soils, fill material which has a water content of not more than 10% shall be replaced and compacted. In lieu of removing the disturbed soils the excess moisture may be allowed to dissipate and the soil re-compacted.

6. When the fill material has been placed and properly compacted a "smoothed" bucket backhoe may be used to excavate to the planned foundation levels. After this excavation all soils at the bearing level shall be compacted to 95% of Modified Proctor in accordance with ASTM D 1557 to a depth of at least 1 foot. If backfilling is required in the footing excavations the fill shall be placed in lifts not to exceed 6 inches.

7. All fill material shall consist of soil with no more than 10% of the particles passing a #200 sieve and shall be free of vegetation, organic material, construction debris, large rocks, and all foreign material.

8. All footings have been designed for the following assumed soil properties:

   Bearing Capacity = 2,500 psf
   Angle of Internal Friction (phi angle) = 28 degrees
   Coefficient of Friction = 0.45
   Soil Weight = 110 lbs per cubic ft.

   If it is determined after the soils survey that the actual soil properties are different than these assumed values, the contractor shall follow the recommendations of the geotechnical engineer.

9. The outlying perimeter areas of the proposed building shall be graded in such a way as to provide positive drainage away from the proposed building.

10. A vapor retarder shall be installed underneath the slab consisting of 6 mil minimum polyethylene with joints lapped not less than 6 inches and sealed.

11. All concrete shall have a minimum compressive strength of 3,000 psi at 28 days.

12. All concrete shall contain 2.5% to 6% entrained air to enhance frost resistance.

13. The maximum water-cement ration of the concrete shall be 0.45.

14. The slump limits of all concrete shall be 2 - 4 inches.

15. All concrete shall be mixed until there is a uniform distribution of materials in accordance with ACI 318.

16. All reinforcing bars that do not require welding shall conform to ASTM-615, Grade 60. All reinforcing bars that are to be welded shall conform to ASTM A706, Grade 60. Welded wire fabric shall conform to ASTM A-185.

17. The #4 rebar in the slab turn down shall be continuous for the entire perimeter of the foundation and shall be lap spliced a minimum of 2 feet at terminal points in order to maintain continuity.

18. The slab reinforcing including the welded wire fabric and hairpins shall not be cut during or anytime after construction since this reinforcement provides structural stability for the building.

19. Since the passive resistence of the soil is an integral part of the ability of the foundation to resist the horizontal forces that will be present when the design loads are applied to the building system, it is expressly forbidden for any future excavation to take place within 50 feet of the building without the consent of the Engineer of Record.

20. Control joints shall be installed in the foundation at intervals not to exceed 15 feet.

21. Maintain 3 inches minimum clearance for all rebar and anchor bolts, unless otherwise noted.

22. The finished grade elevation of the floor slab shall be determined by the owner.

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LAKE CITY, FL

JOB #: GSB-0465

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