

# CUSTOM HANGAR BUILDERS

## PROJECT FOR

# ORLANDO APOPKA AIRPORT

### LOT 9

SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

#### PROJECT MANAGER

**RALPH BRAGG**  
PHONE: 352-357-5180  
FAX #: 352-357-3042  
CELL: 407-469-3424

#### DEVELOPER

**ORLANDO COUNTRY AVIATION SERVICES, INC.**  
1320 NORTHRIDGE DRIVE  
LONGWOOD, FLORIDA 32750  
(407)392-6107

#### ARCHITECT

**ROBERT A. HARRIS, ARCHITECT**  
SUITE 201  
650 N. WYMORE ROAD  
WINTER PARK, FLORIDA 32789  
(407) 647-7340  
(407) 647-2355 FAX

#### CIVIL ENGINEER

**DAO CONSULTANTS**  
1110 EAST MARKS STREET  
ORLANDO, FLORIDA 32803  
(407)898-6872

#### STRUCTURAL ENGINEER

**RICHARDSON ENGINEERING**  
131 ZELMA STREET  
ORLANDO, FL 32803-3878  
CONTACT: FELIX CROMIE - PROJECT MANAGER  
PHONE: 407.425.4002  
FAX: 407.841.7932

#### METAL BUILDING FABRICATOR

**DEAN STEEL BUILDINGS, INC.**  
2929 INDUSTRIAL AVE.  
FORT MYERS, FLORIDA 33901  
CONTACT: JOHN AMMAN  
PHONE: 239-334-1051  
E-MAIL: deanfny@deansteelbuildings.com

#### FIRE SPRINKLER DESIGN

**ANDERSON FIRE SPRINKLERS**  
311 ALTAMONTE COMMERCE BLVD.  
ALTAMONTE SPRINGS, FL 32714  
CONTACT: GREG ANDERSON  
PHONE: 407-788-2110  
FAX: 407-862-5731

#### GENERAL NOTES

- EXISTING CONDITIONS: THE EXISTING CONDITIONS ARE SHOWN ON THESE DRAWINGS.
- DRAWINGS: THESE DRAWINGS SHOULD NOT BE SCALED, BUT RATHER REFER TO DIMENSIONS INDICATED.
- DIMENSIONS: DIMENSIONS ON PLANS ARE TO FACE OF INTERIOR STUDS CENTERLINE OF CONSTRUCTION LINES, AND FACE OF MASONRY, U.N.O.

#### AREA TABULATIONS

PROPOSED BUILDING: **2,458** SQ. FT.

#### CODE REVIEW

**APPLICABLE BUILDING CODES**  
FLORIDA BUILDING CODE 2004  
- ELECTRICAL CODE 2004  
- PLUMBING CODE 2004  
- MECHANICAL CODE 2004

**LIFE SAFETY CODE:**  
NFPA 101  
NFPA 409 (FIRE SPRINKLERS)

#### INDEX OF DRAWINGS

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A1.2 MEZZANINE PLAN  
A2.0 ELEVATIONS  
A3.0 BUILDING SECTIONS  
A3.1 WALL SECTIONS AND SCHEDULES

##### STRUCTURAL

S1.0 FOUNDATION PLAN  
S2.0 STRUCTURAL NOTES

##### ELECTRICAL

E1.0 ELECTRICAL PLAN AND SCHEDULES

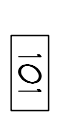
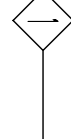


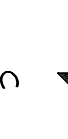



##### PLUMBING

P1.0 PLUMBING PLAN AND SCHEDULES

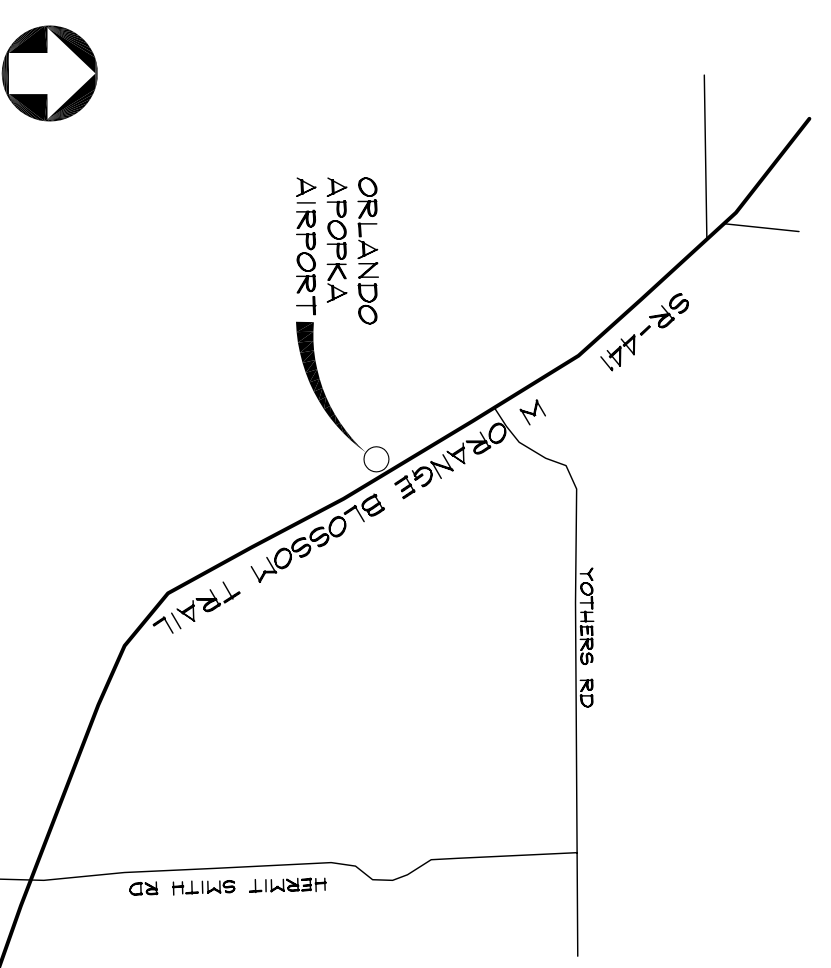
##### STEEL BUILDING DRAWINGS

1 JOB INFORMATION  
2 MATERIAL PROPERTIES  
3 ANCHOR BOLT PLAN  
RECTIONS & BASE PLATE DETAILS  
4 ROOF FRAMING PLAN AND  
WALL ELEVATIONS  
5 FRAMING GROSS SECTIONS  
MEZZANINE DETAILS

#### DRAWING NOTATION

SYMBOL	DESCRIPTION
	ROOM NUMBER
	WALL AND PARTITION TYPE (REFER TO PARTITION DETAILS)
	DETAIL REFERENCE (PLAN DETAIL NUMBER & DRAWING WHERE SHOWN)
	ELEVATION REFERENCE (SECTION DETAIL LETTER & DRAWING WHERE SHOWN)
	ELEVATION REFERENCE (EXTERIOR ELEVATION NUMBER & DRAWING WHERE SHOWN)
	ELEVATION REFERENCE (INTERIOR ELEVATION LETTER & DRAWING WHERE SHOWN)
	SECTION REFERENCE (WALL SECTION NUMBER & DRAWING WHERE SHOWN)
	SECTION REFERENCE (BUILDING SECTION LETTER & DRAWING WHERE SHOWN)

#### VICINITY MAP



**ROBERT A. HARRIS ARCHITECT**  
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32789  
TEL. 407.647.7340  
FAX 407.647.2355  
bob@robertharrisarchitect.com  
FLA. REG. NO. AR 4859

REV	DATE	DESCRIPTION
1	09/07/06	PERMIT
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**CUSTOM HANGAR BUILDERS**  
LOT 9  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

#### COVER SHEET

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JAW  
CHECKED BY: RH  
FILENAME: CS.DWG

**CS**

NO.	DATE	ISSUED FOR
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**CUSTOM HANGAR BUILDERS**  
LOT 9

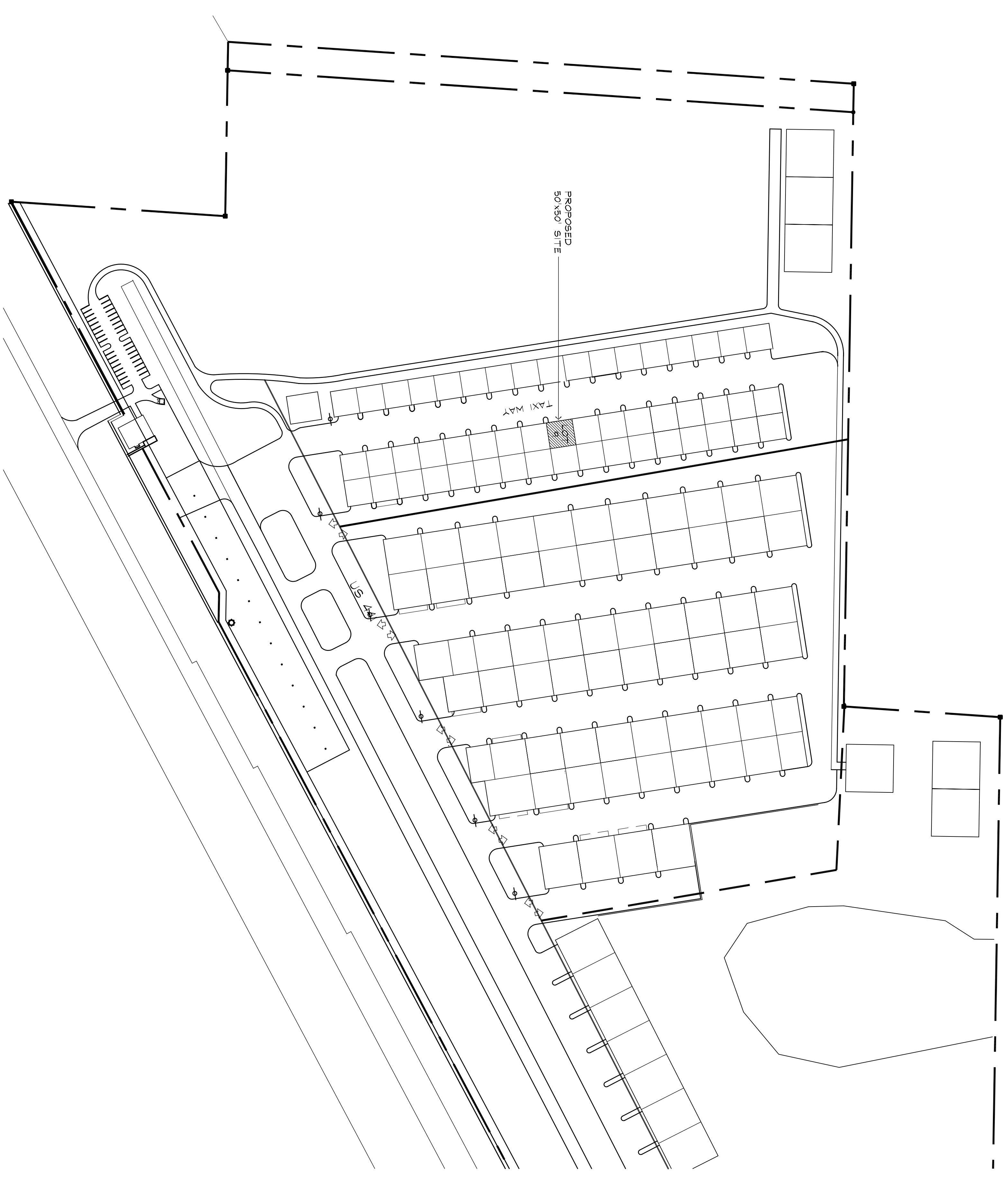
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SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

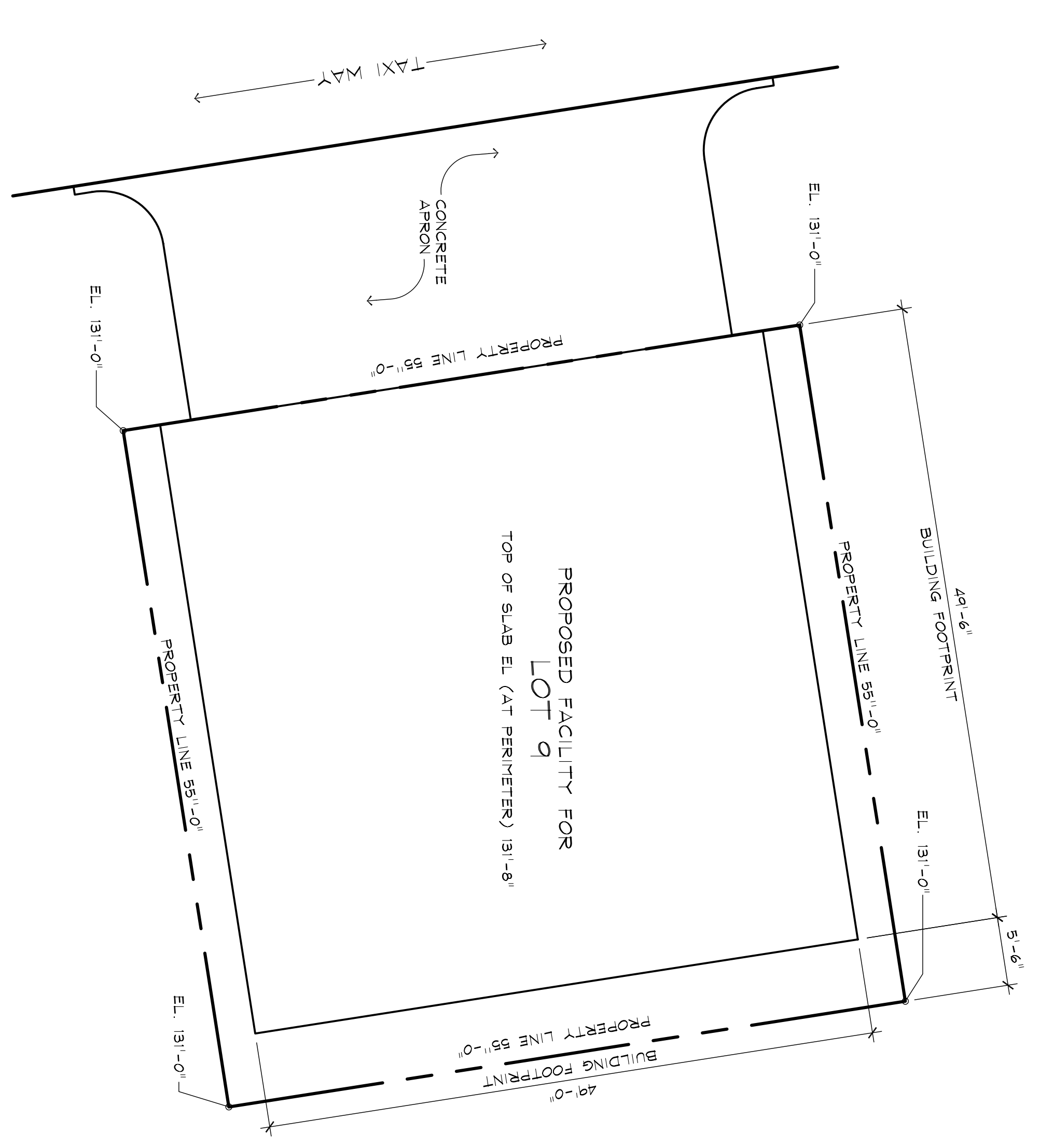
**SITE PLANS**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JW  
CHECKED BY: RH  
FILENAME: A1.0.DWG

**A1.0**



**1 PARTIAL AIRPORT SITE PLAN**  
SCALE: 1/8"=1'-0"



**2 HANGAR SITE PLAN**  
SCALE: 1/8"=1'-0"

ROBERT A. HARRIS, ARCHITECT AR48559

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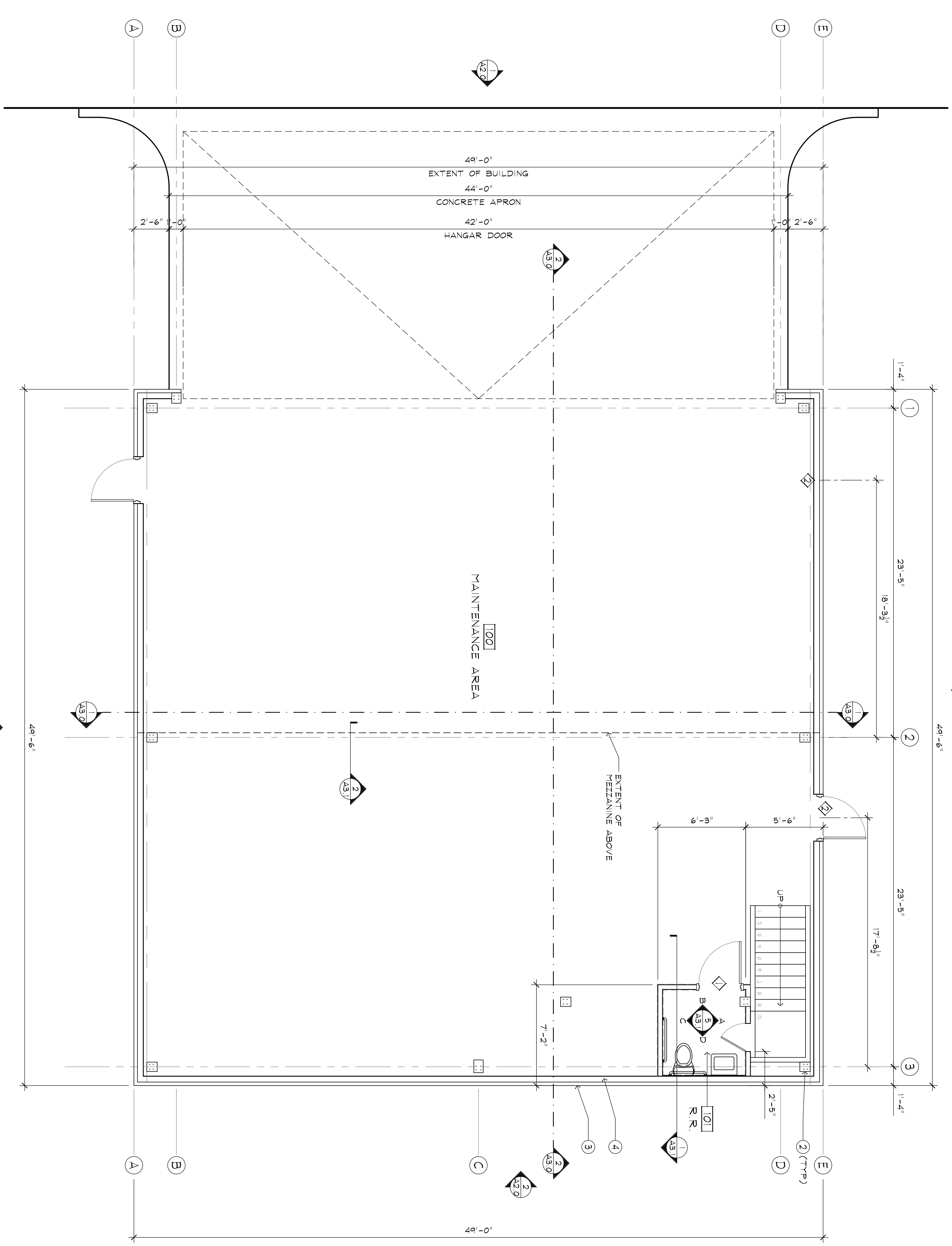
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**CUSTOM HANGAR BUILDERS**  
LOT 9  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

**FIRST FLOOR PLAN**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JW  
CHECKED BY: RH  
FILENAME: A1.1.DWG

**A1.1**



- KEYNOTES**
- HANGAR DOOR, SEE MANUFACTURER DRAWINGS FOR DETAILS AND SPECS.
  - STEEL COLUMN, SEE STEEL DRAWINGS SHEET 3 FOR LOCATION AND DETAILS
  - METAL SPAN, 3" INSULATED METAL WALL PANELS
  - CPU BLOCK LOM WALL

**GENERAL NOTES**

SEE STEEL BUILDING DRAWINGS FOR GRID REFERENCES.  
ALL INTERIOR FRAMING DIMENSIONS ARE FROM FACE OF STUD U.N.O.  
SEE SHEET A3.1 FOR DOOR SCHEDULE WINDOW SCHEDULE AND NOTES

**1 FLOOR PLAN**  
SCALE: 1/4"=1'-0"

ROBERT A. HARRIS, ARCHITECT AR4859

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**CUSTOM HANGAR BUILDERS**  
LOT 9  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

**MEZZANINE PLAN**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JW  
CHECKED BY: RH  
FILENAME: A1.2.DWG

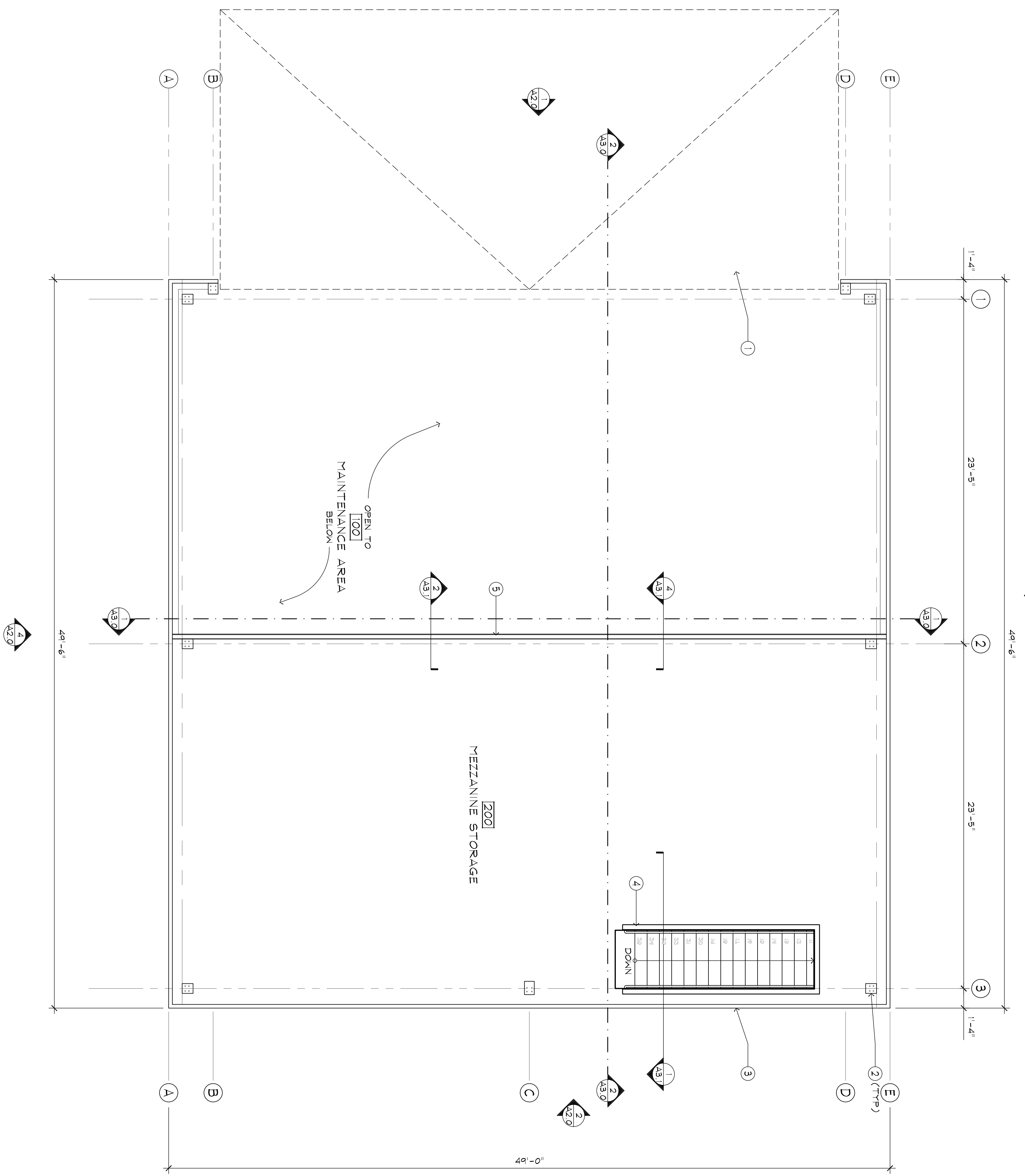
**A1.2**

**KEYNOTES**

- ① HANGAR DOOR, SEE MANUFACTURER DRAWINGS FOR DETAILS AND SPECS.
- ② STEEL COLUMN, SEE STEEL DRAWINGS SHEET 3 FOR LOCATION AND DETAILS
- ③ METAL SPAN 3" INSULATED METAL WALL PANELS
- ④ 42" HIGH RAILING
- ⑤ 42" HIGH MEZZANINE RAIL, SEE DETAIL 9/A3.1

**GENERAL NOTES**

SEE STEEL BUILDING DRAWINGS FOR GRID REFERENCES.  
ALL INTERIOR FRAMING DIMENSIONS ARE FROM FACE OF STUD U.N.O.  
SEE SHEET A3.1 FOR DOOR SCHEDULE WINDOW SCHEDULE AND NOTES



**1 MEZZANINE PLAN**  
SCALE: 1/4"=1'-0"

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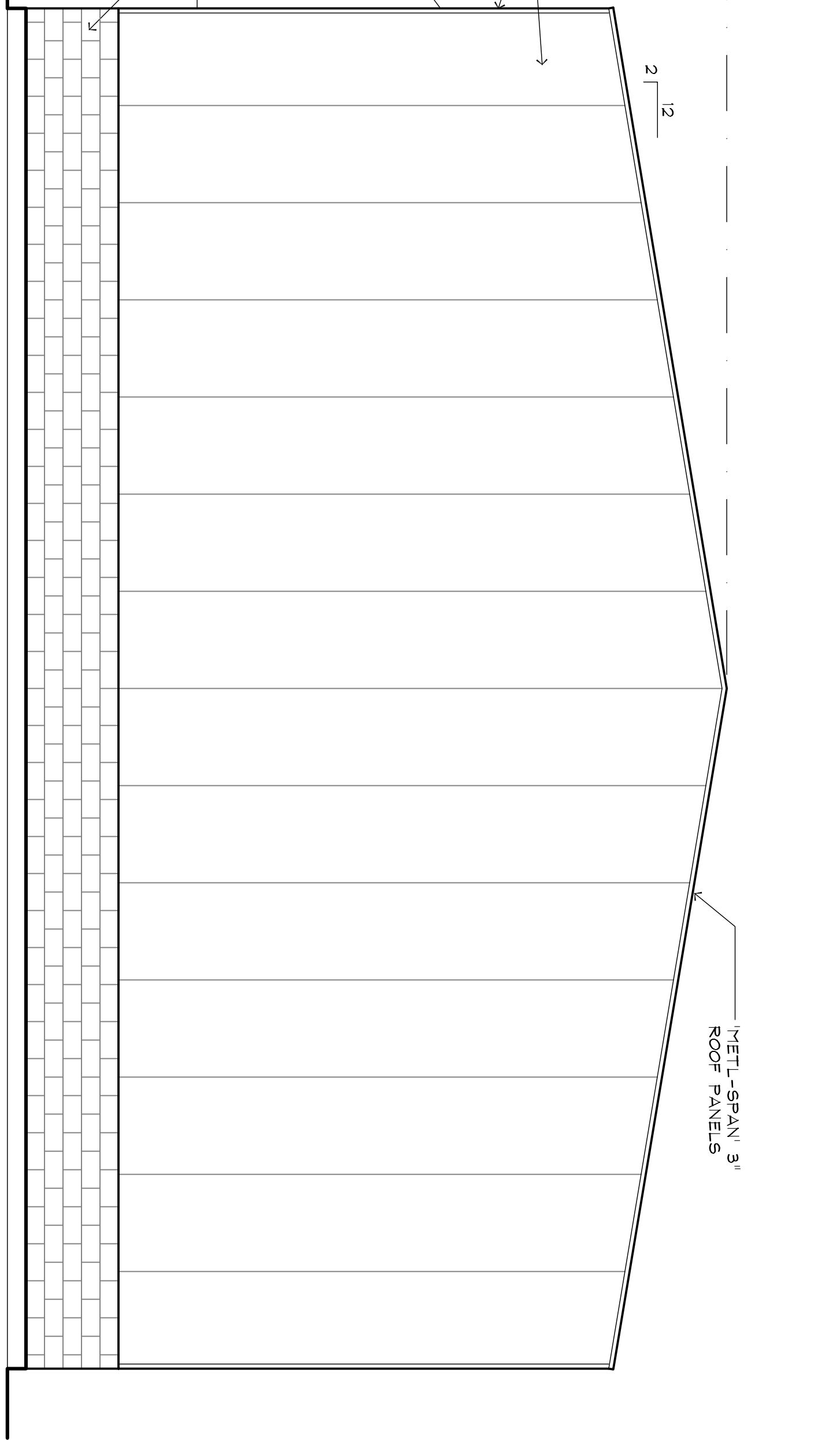
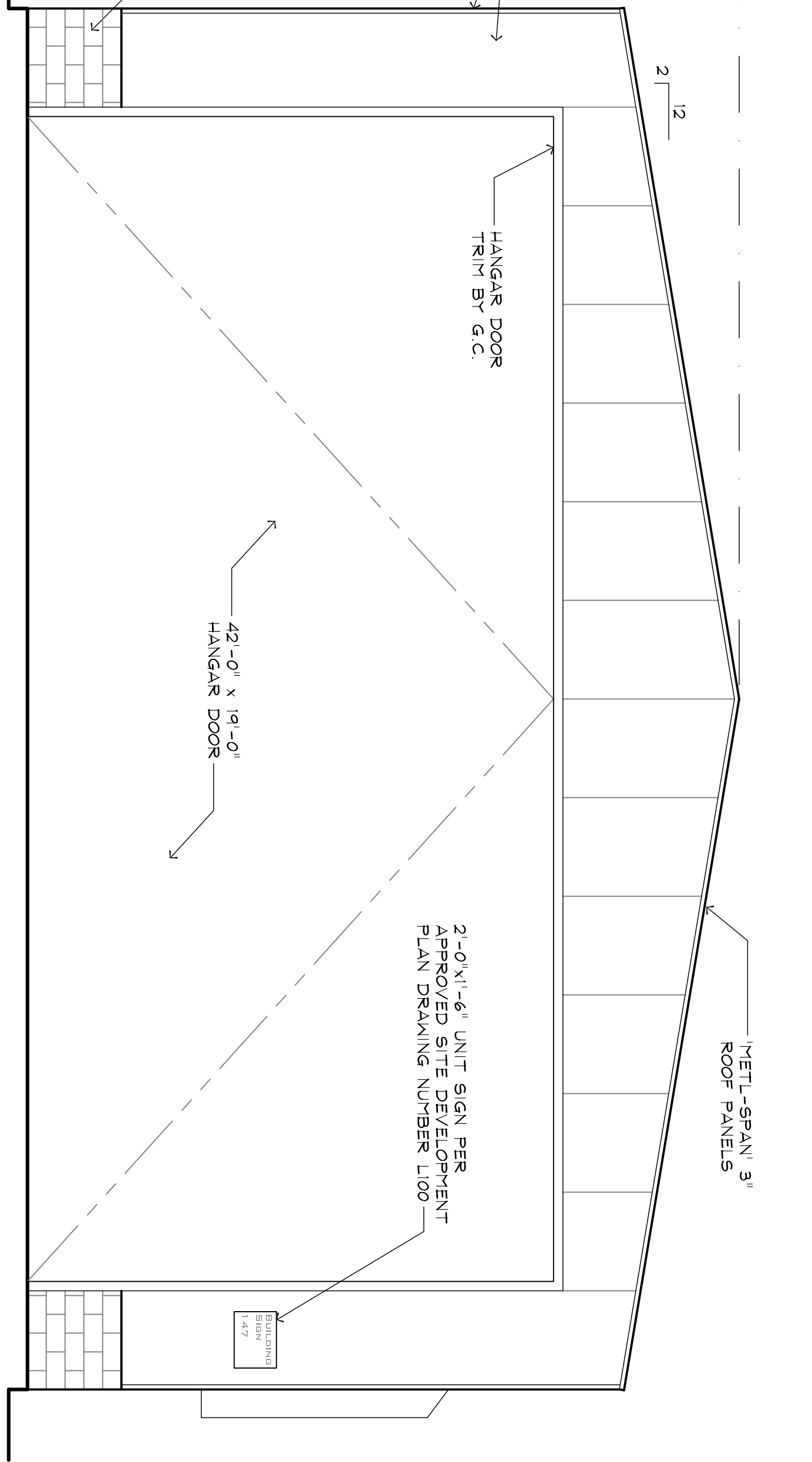
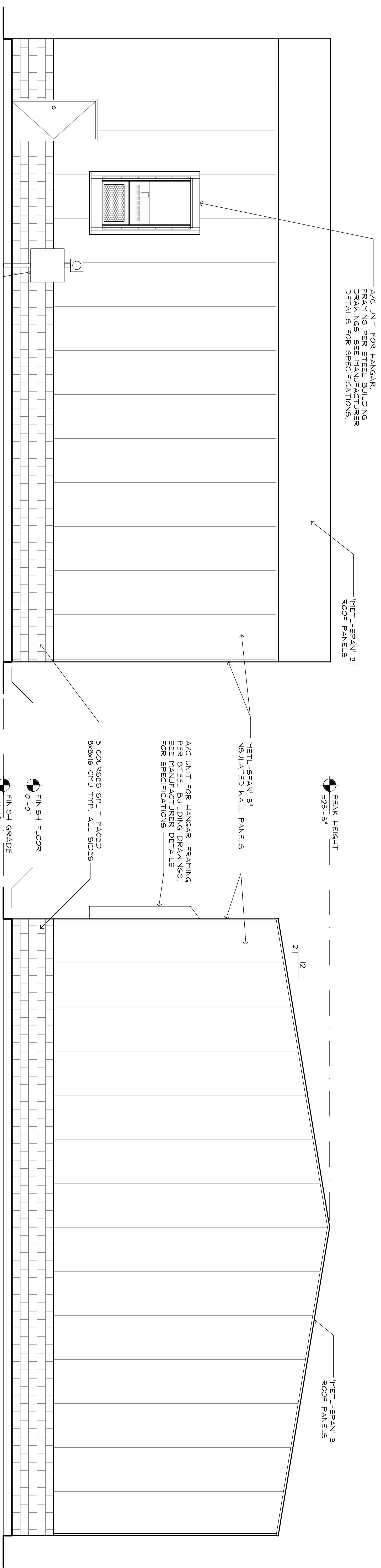
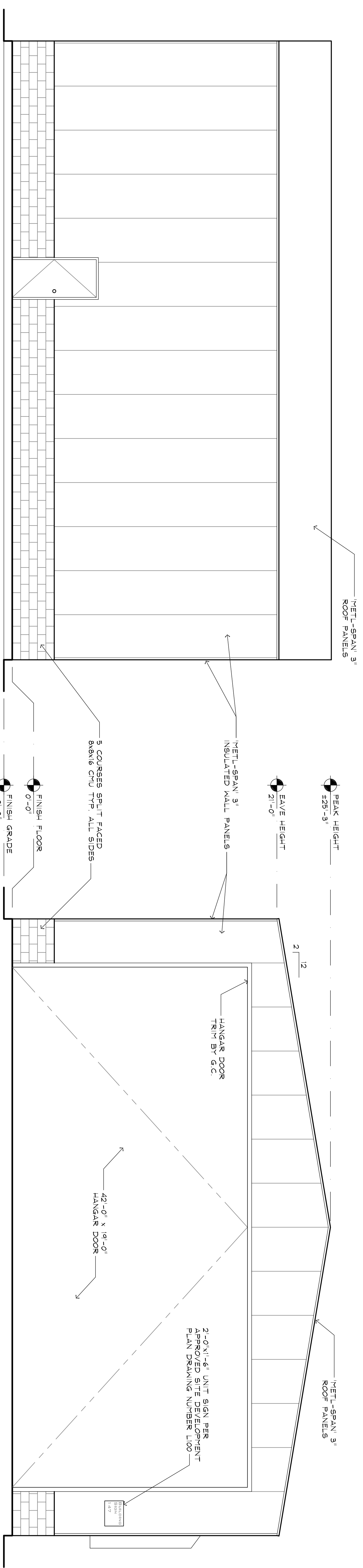
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LOT 9  
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APOPKA, FLORIDA

**ELEVATIONS**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JW  
CHECKED BY: RH  
FILENAME: A2.0.DWG

**A2.0**



REV	DATE	DESCRIPTION
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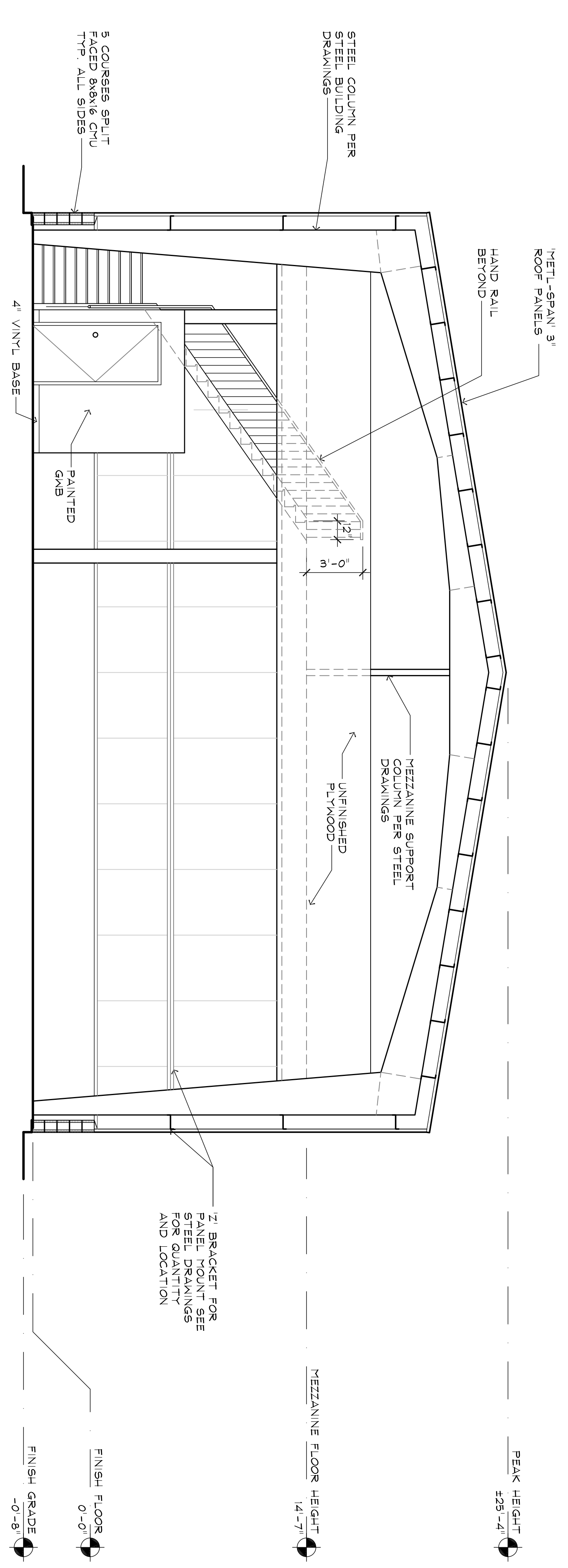
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APOPKA, FLORIDA

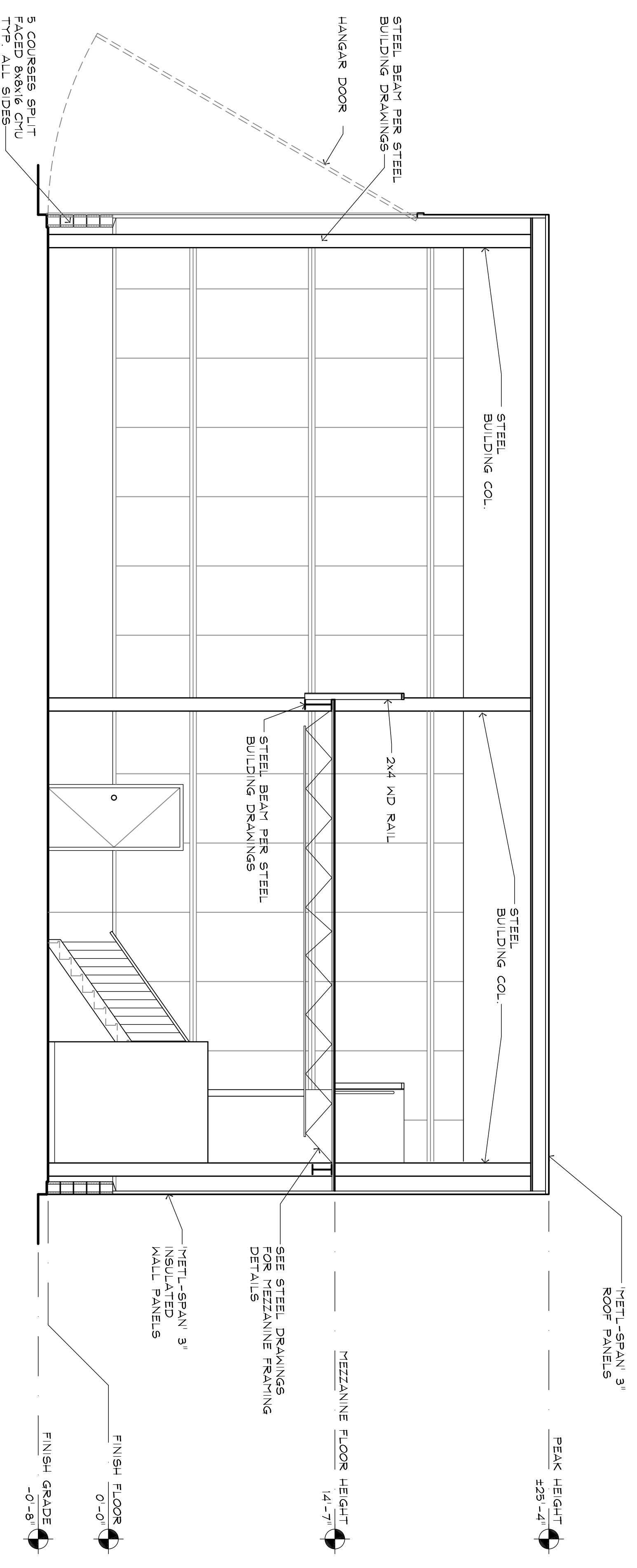
**BUILDING SECTIONS**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JW  
CHECKED BY: RH  
FILENAME: A3\_0.DWG

**A3.0**



**1 BUILDING SECTION**  
SCALE: 1/4"=1'-0"



**2 BUILDING SECTION**  
SCALE: 1/4"=1'-0"

REV#	DATE	DESCRIPTION
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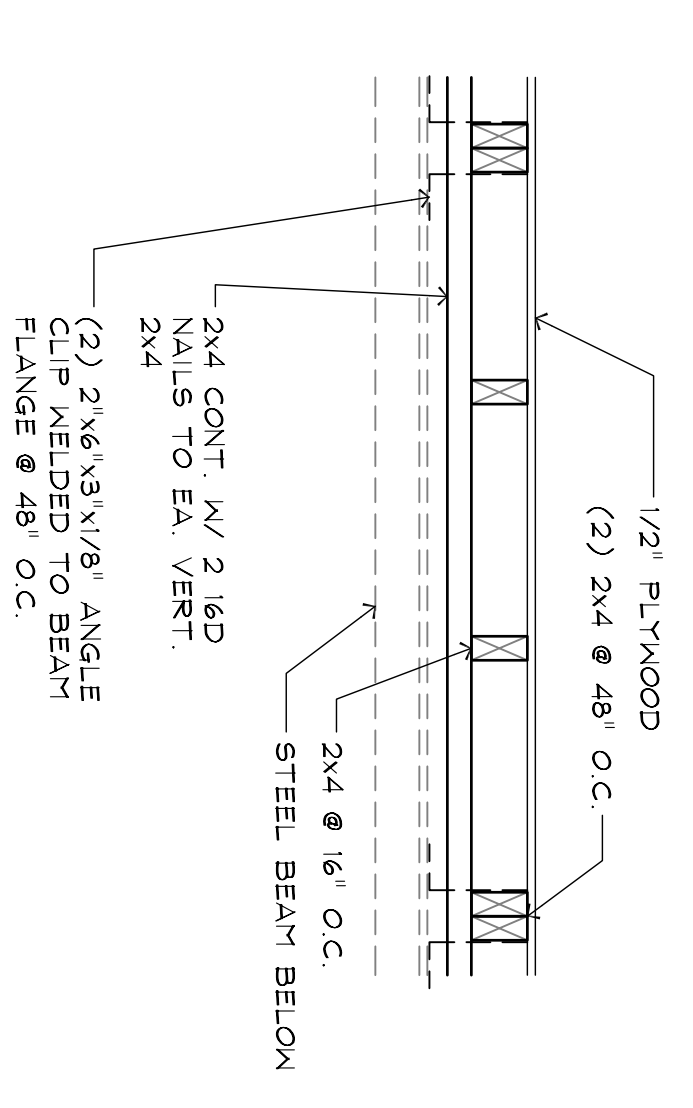
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LOT 9  
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APOPKA, FLORIDA

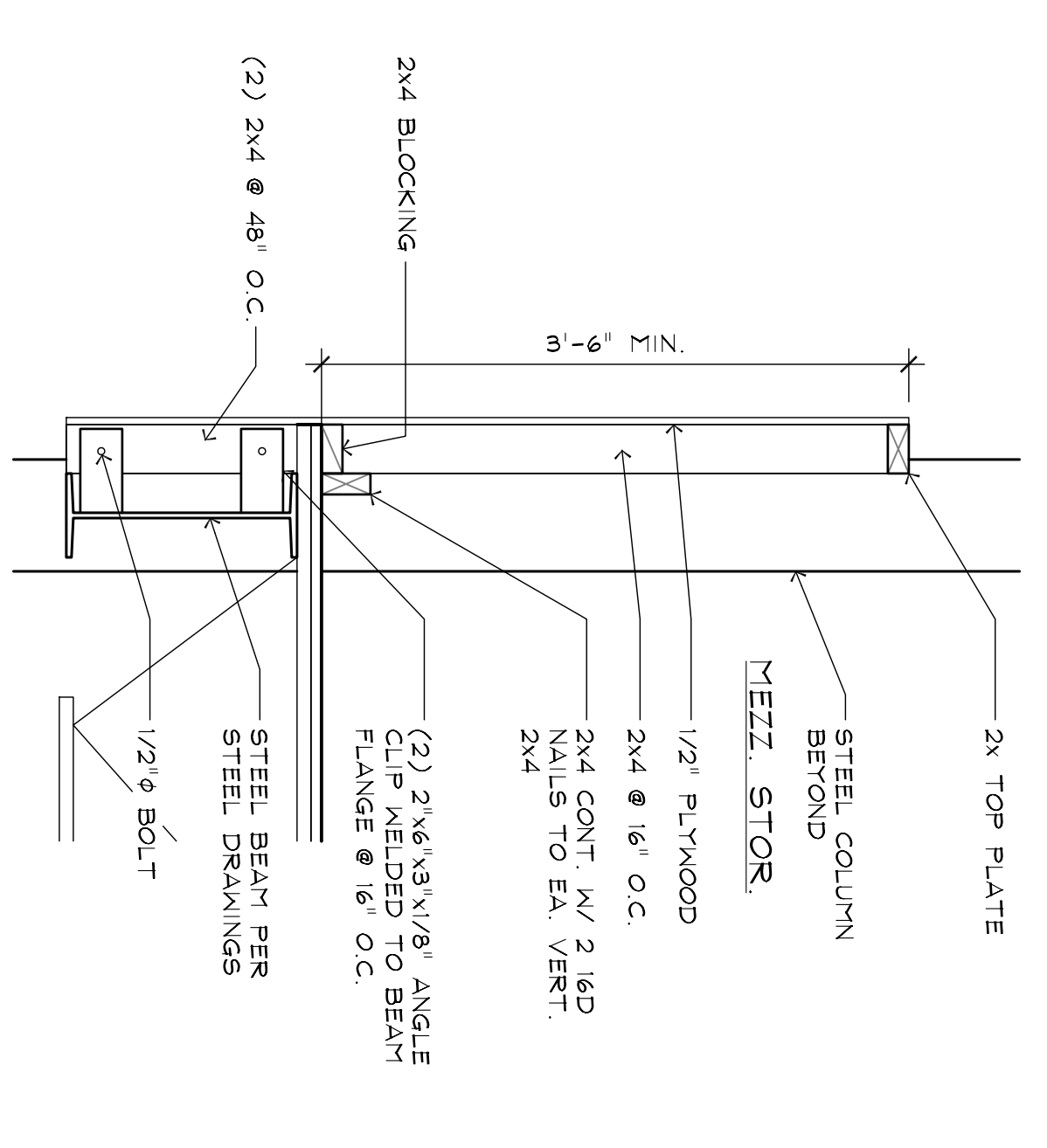
**WALL SECTIONS AND SCHEDULES**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JH  
CHECKED BY: RH  
FILENAME: A3.1.DWG

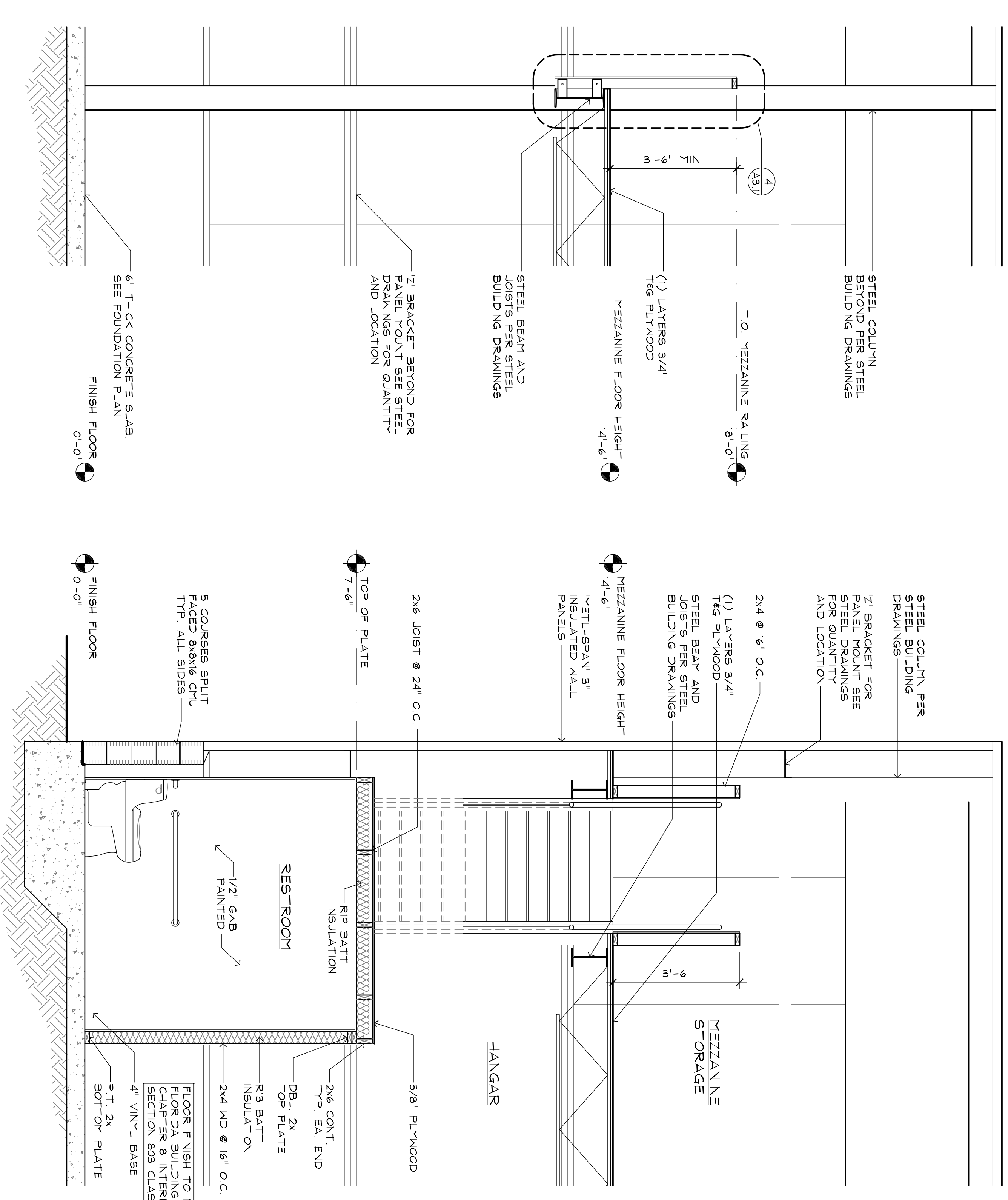
**A3.1**



**3 MEZZANINE RAIL PLAN**  
SCALE: 1"=1'-0"



**4 MEZZANINE RAIL SECTION**  
SCALE: 1"=1'-0"



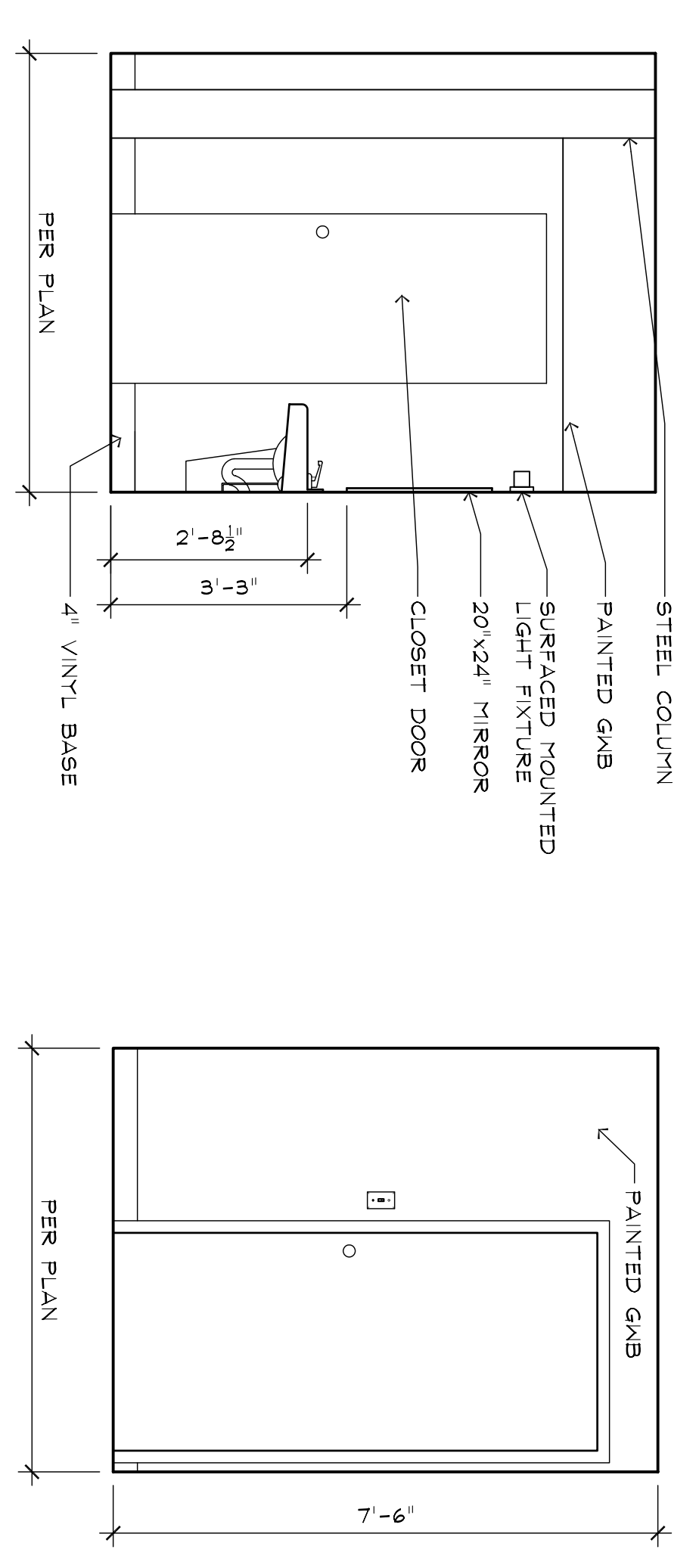
**2 WALL SECTION**  
SCALE: 1/2"=1'-0"

**1 WALL SECTION**  
SCALE: 1/2"=1'-0"

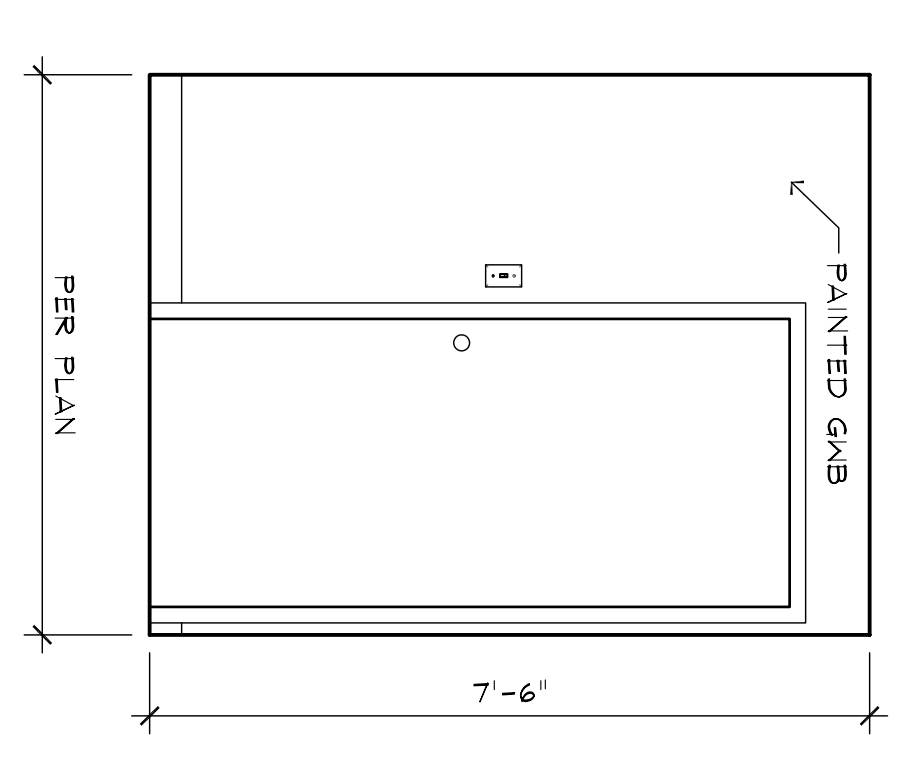
**DOOR SCHEDULE**

CODE	DOOR	TYPE	THRESHOLD	NOTES
◇	3'-0" x 6'-8"	HC / WOOD	ALUMINUM	INTERIOR DOOR
◇	3'-0" x 6'-8"	HM / METAL	ALUMINUM	EXTERIOR DOOR

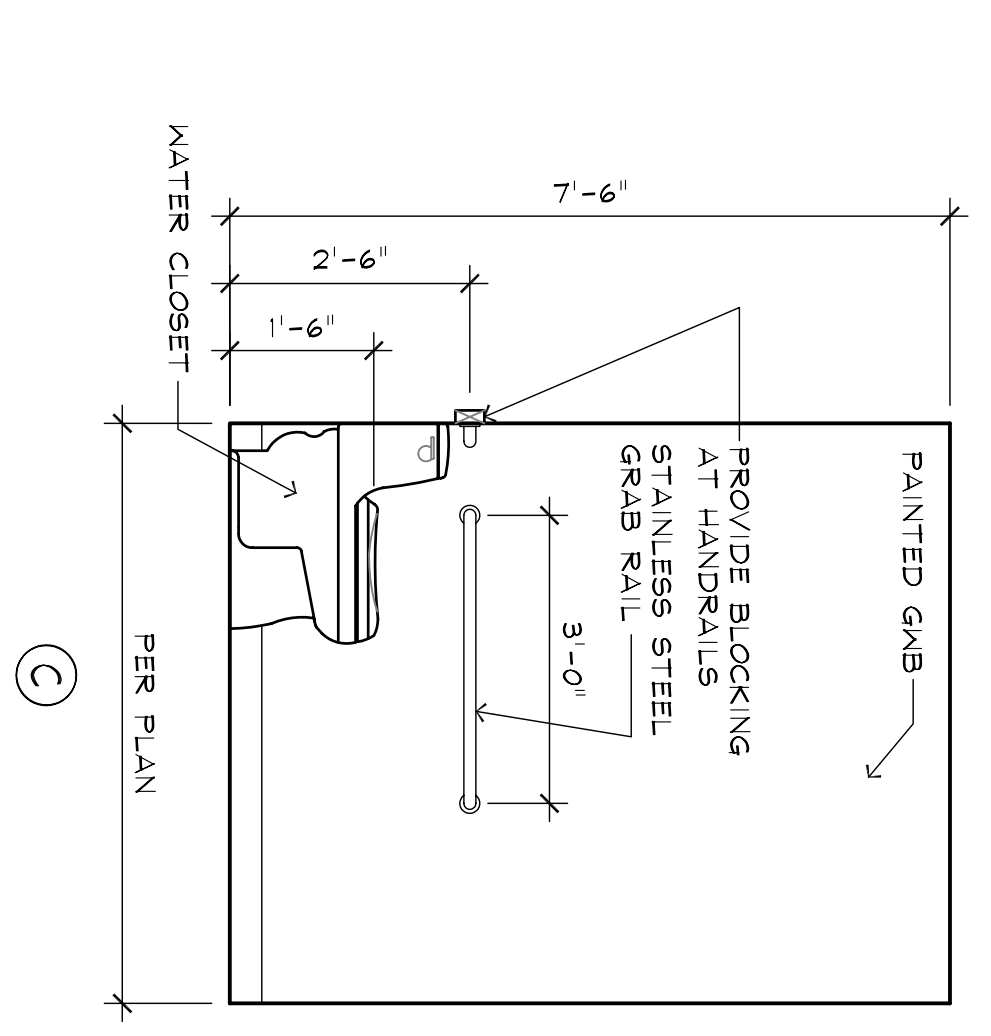
ALL DOORS AND HARDWARE TO BE SUPPLIED AND INSTALLED BY G.C.  
THRESHOLDS AT EXTERIOR ENTRIES AND STAIR WELLS



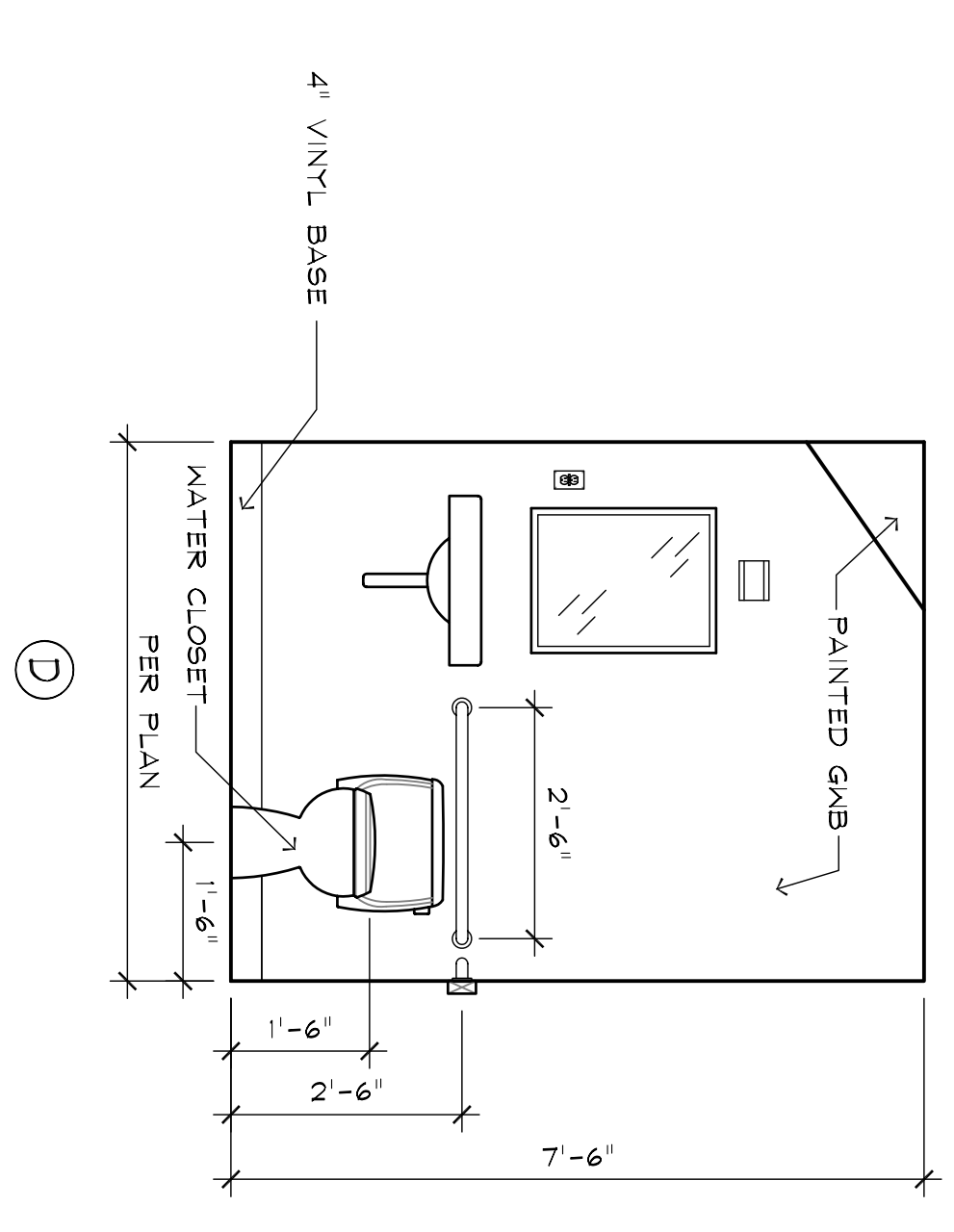
**A**



**B**



**C**



**D**

**5 INTERIOR H.C. R.R. ELEVATIONS**  
SCALE: 1/2"=1'-0"

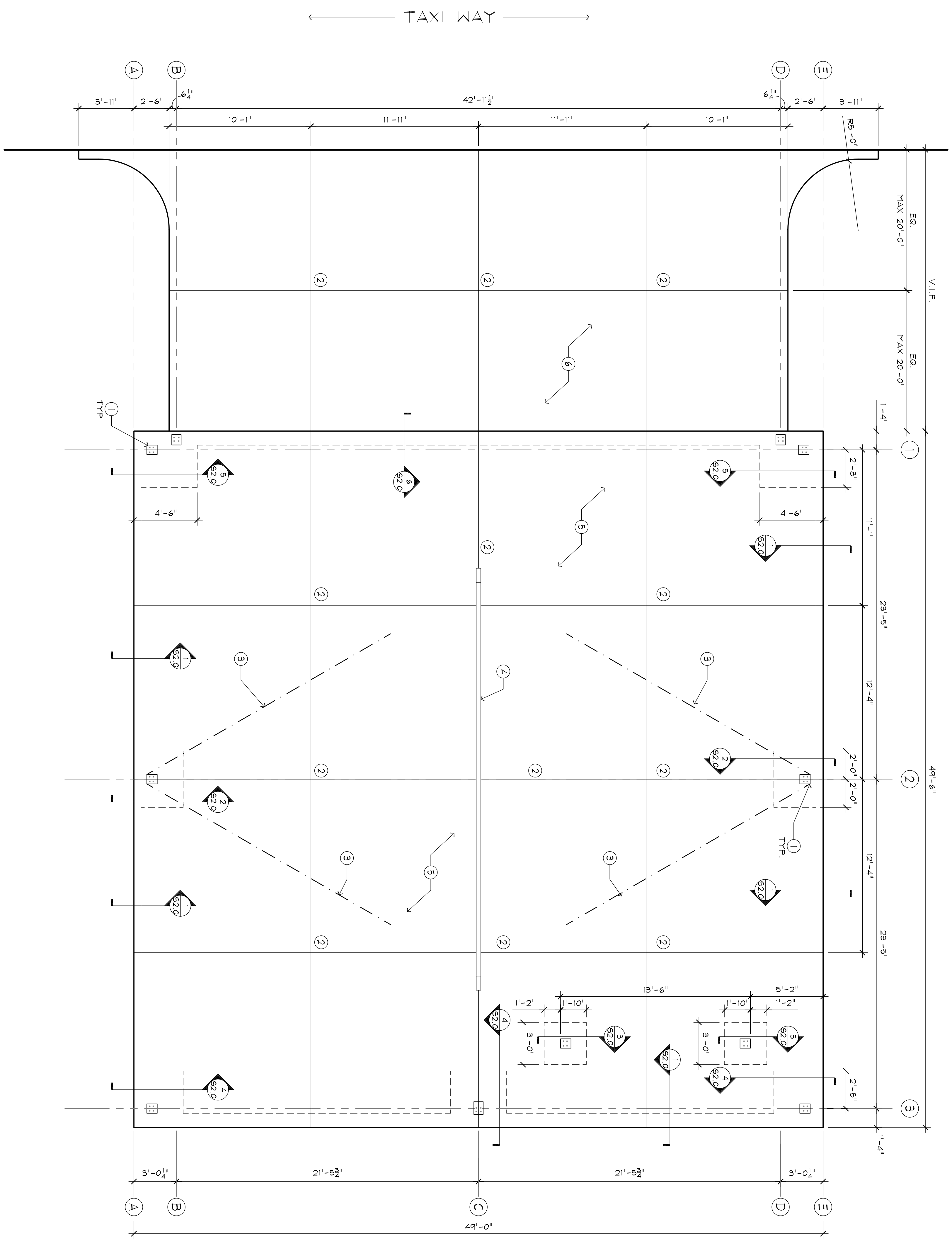
NOTE: SEE STEEL BUILDING DRAWINGS FOR GRID REFERENCES.

**ROBERT A. HARRIS ARCHITECT**

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TEL. 407/647-7340  
FAX 407/647-2355  
bob@robertharrisarchitect.com  
FLA. REG. NO. AR 4859

**KEYNOTES**

- 1) COLUMNS, SEE STEEL BUILDING DRAWINGS FOR ANCHOR BOLT LOCATIONS
- 2) CONTROL JOINTS, SEE 8/52.0
- 3) DEVIOTES (2) 45 HANGON X 20'-0" BOLTS CENTERED IN SLAB WITH CLEANOUTS EACH END
- 4) 3/8" THICK CONCRETE SLAB OVER 6 MIL. CONTROL JOINTS BREAKED PIER CLEAN, PROVIDE 6x6 MIL AX 1/4 KMF @ CENTER OF SLAB, HARD TROWEL FINISH
- 5) 4" CONC. APRON - 3000 PSI, 823 DAYS ACCEPTABLE ALTERNATIVE FOR W.M.F. PLACE OVER 6 MIL VAPOR BARRIER
- 6) W/6x6-10x10 W.M.F. FIBER MESH IS AN ACCEPTABLE ALTERNATIVE FOR W.M.F. PLACE OVER 6 MIL VAPOR BARRIER



**1 FOUNDATION PLAN**  
SCALE: 1/4"=1'-0"

REV	DATE	DESCRIPTION
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**CUSTOM HANGAR BUILDERS**  
LOT 9  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

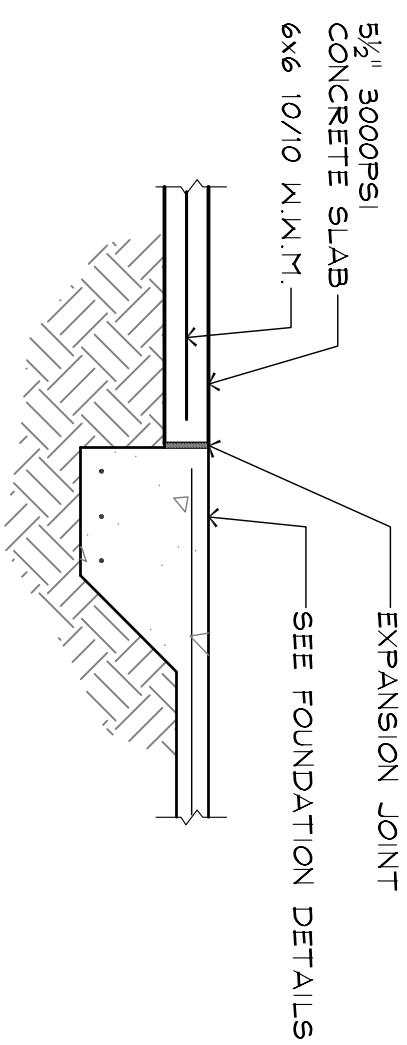
**FOUNDATION PLAN**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JW  
CHECKED BY: RH  
FILENAME: S1.0.DWG

**RICHARDSON ENGINEERING**  
ORLANDO, FLORIDA 32806  
License # 0001280  
ID # FB 000683

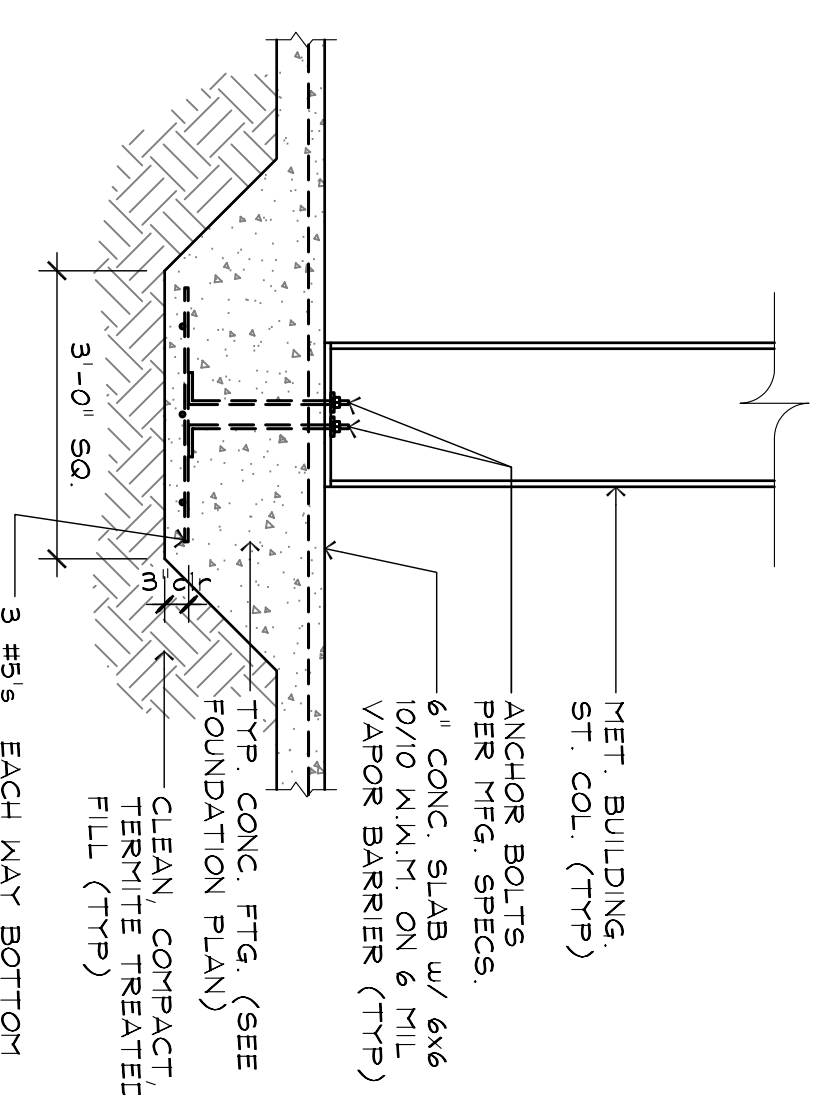
**S1.0**





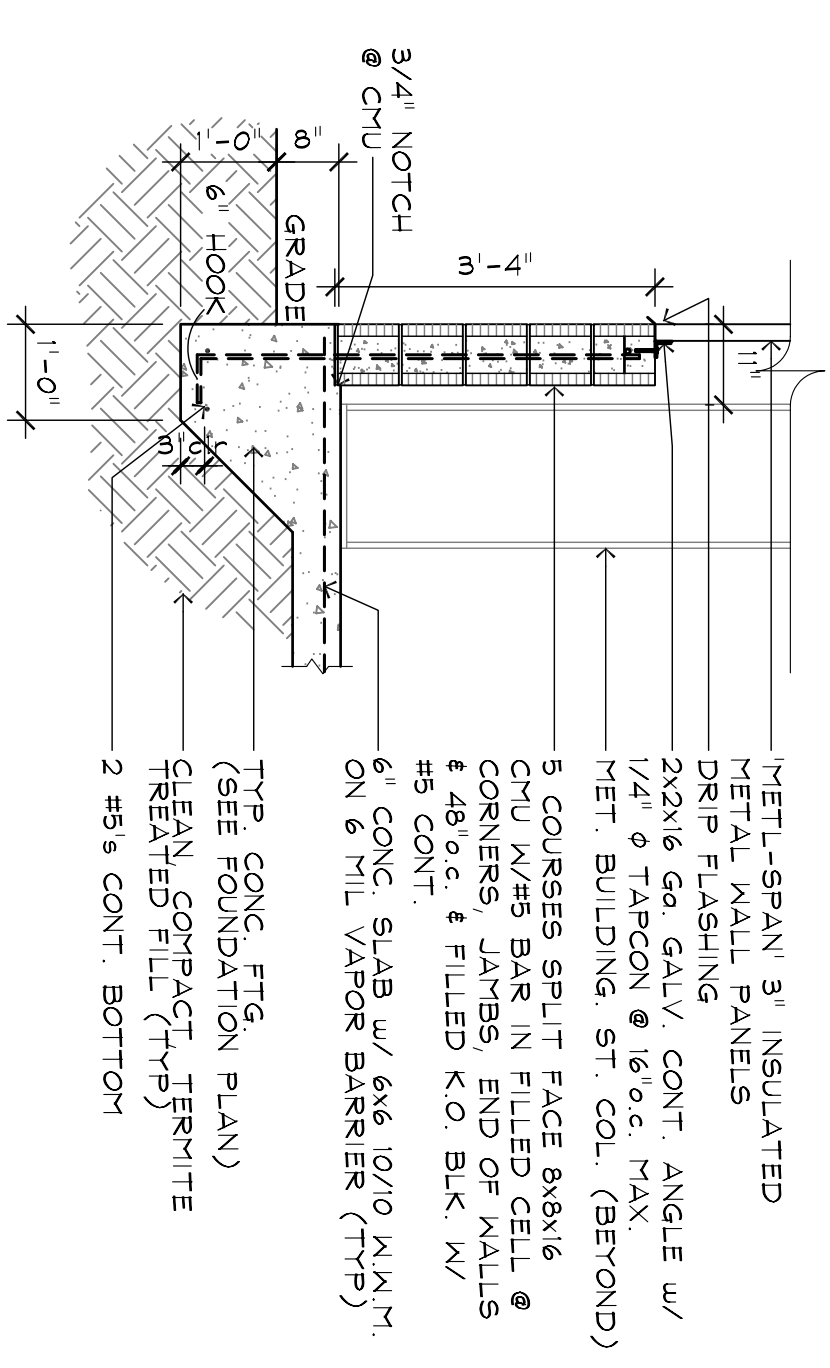
### 6 APRON / SIDEWALK

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



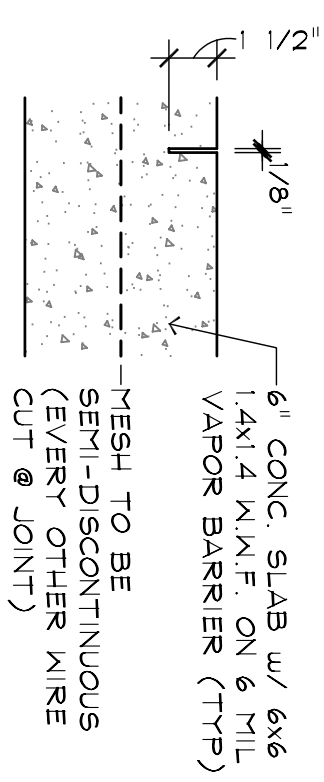
### 3 CENTER COLUMN FOOTING

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



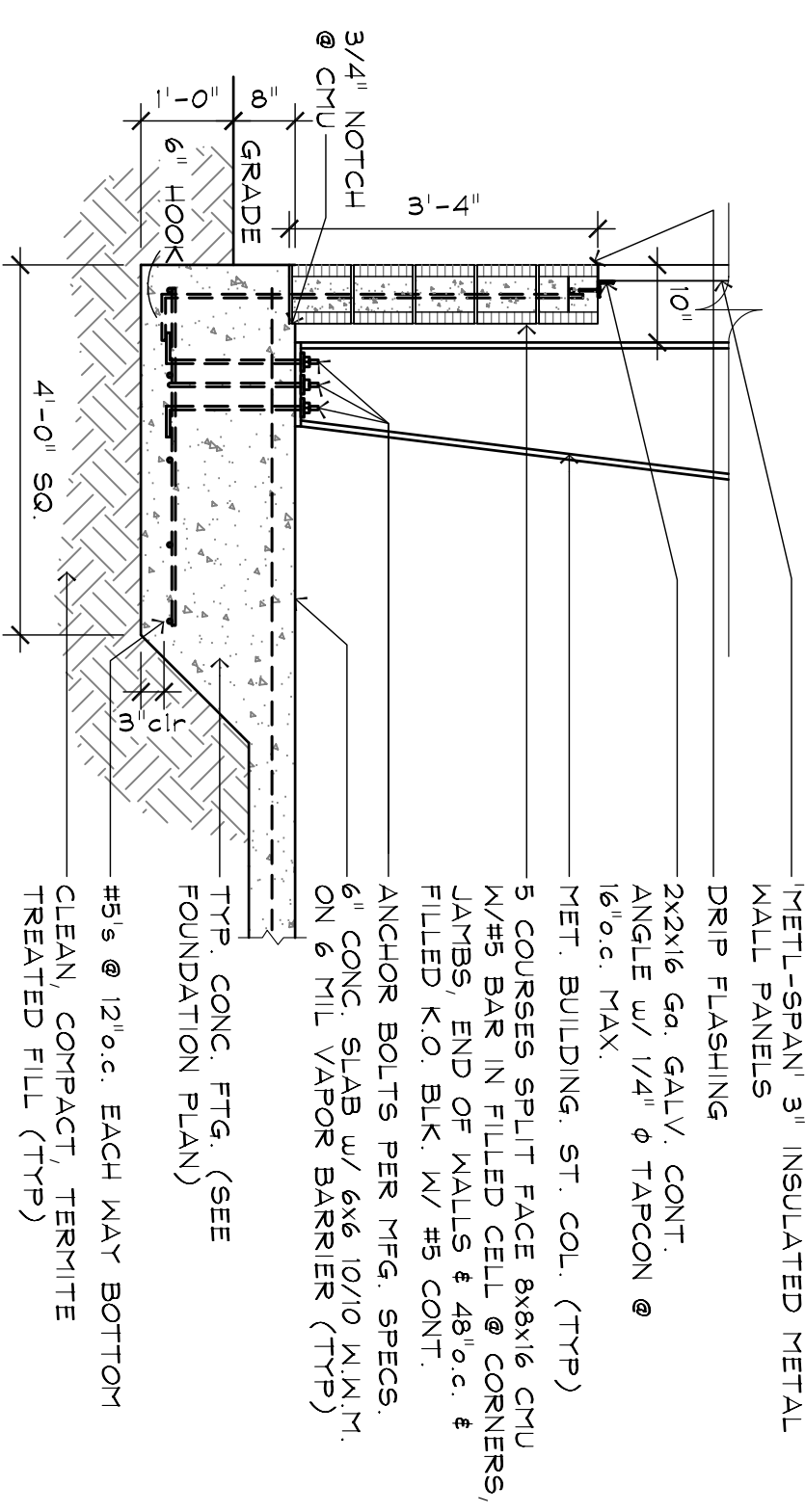
### 1 TYPICAL FOOTING

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



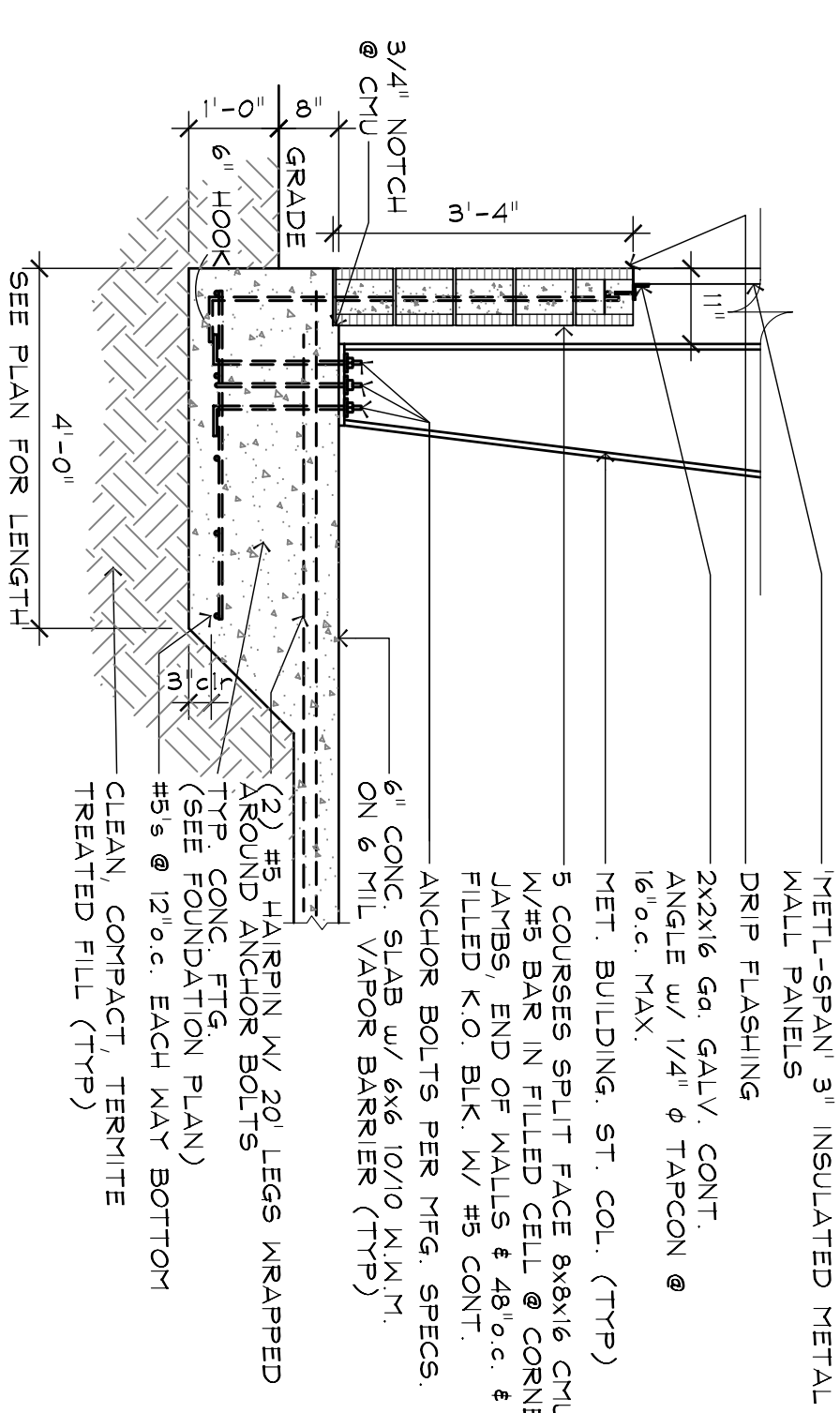
### 7 CONTROL JOINT

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



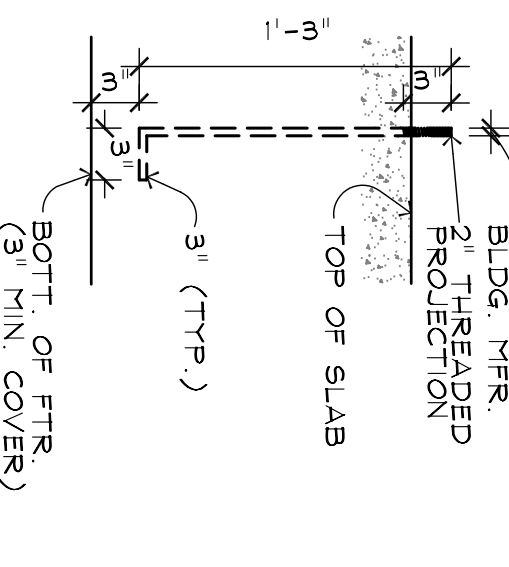
### 4 TYP. COLUMN FOOTING

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



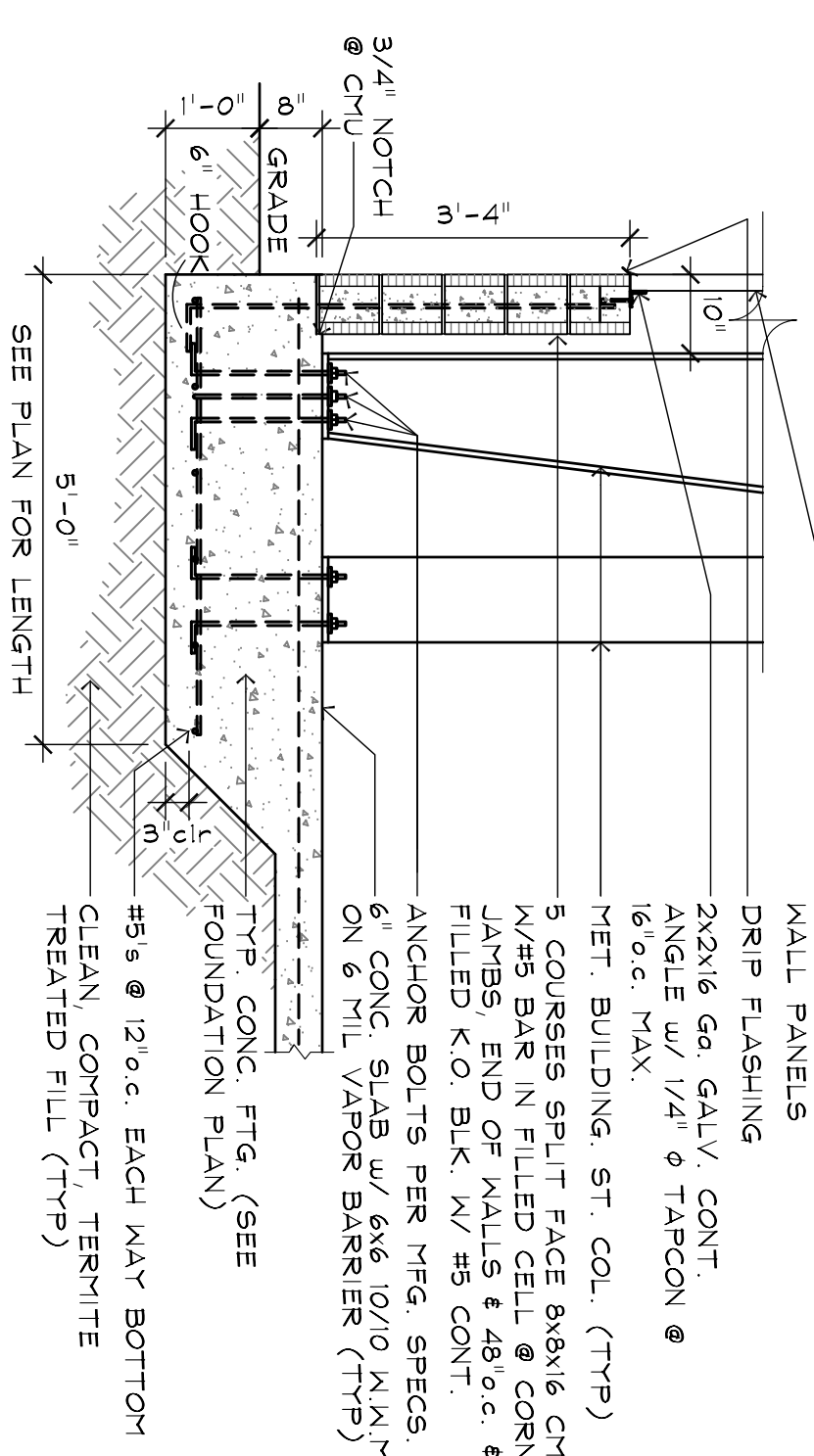
### 2 SIDE COLUMN FOOTING

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



### 8 ANCHOR BOLT

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



### 5 FRONT CORNER FOOTING

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

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PROJECT NUMBER	06-492
PLOT DATE	10.09.06
DRAWN BY	JW
CHECKED BY	RH
FILENAME	S2_0.DWG

**CUSTOM HANGAR BUILDERS**  
LOT 147  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

**FOUNDATION DETAILS**

**RICHARDSON ENGINEERING**  
ORLANDO, FLORIDA 32806  
License # 0001280  
ID # FB 000683

**S2.0**

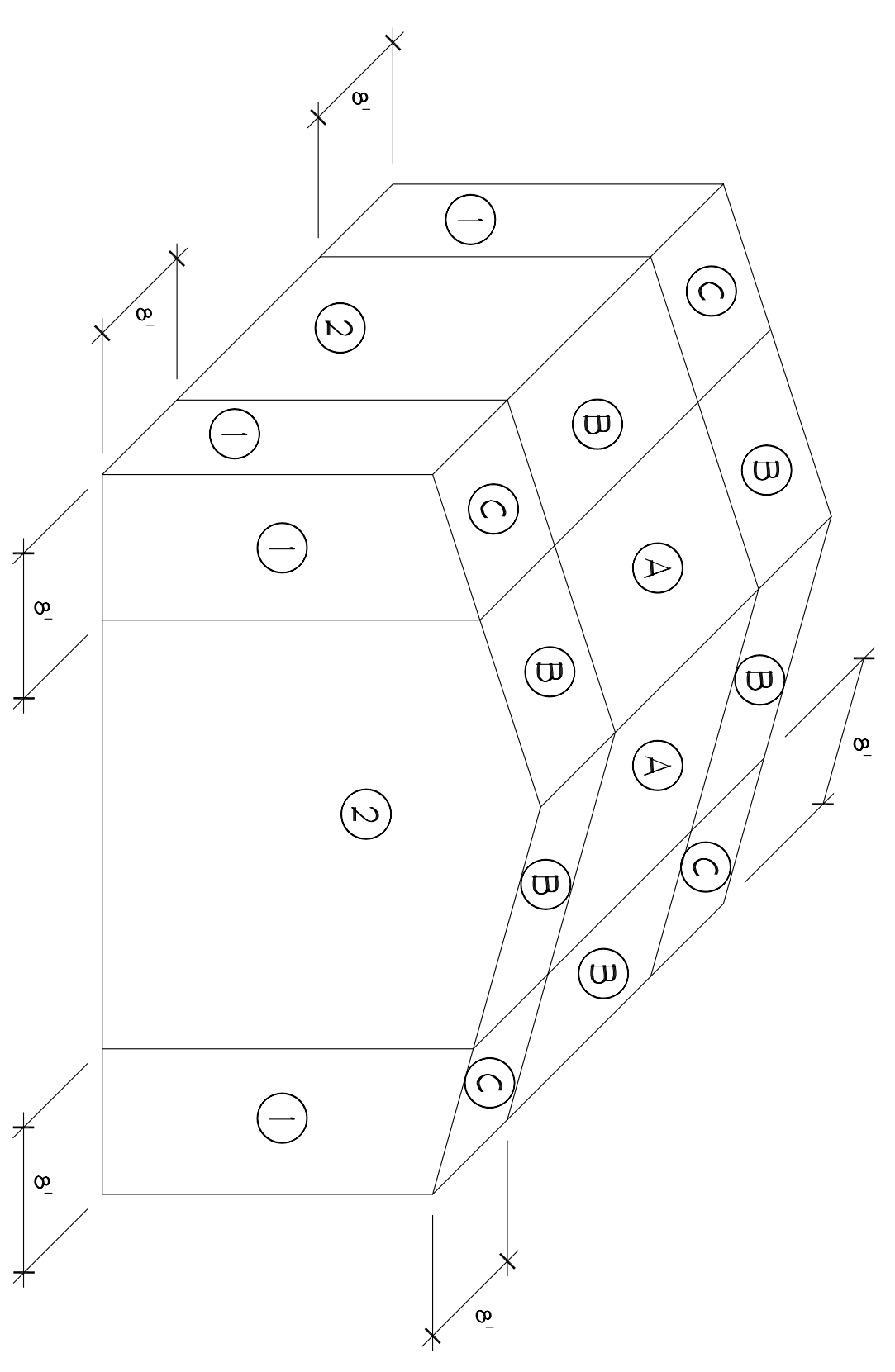
STRUCTURAL DESIGN CRITERIA :

- D-1 CODES - FLORIDA BUILDING CODE 2004 EDITION
- D-2 DESIGN LIVE LOADS:
- ROOF 20 PSF
- D-3 DESIGN WIND SPEED 110 MPH PER ASCE 7-98  
USE FACTOR =1.0, EXPOSURE C
- GENERAL NOTES:
- G-1 REVIEW ALL PROJECT DOCUMENTS PRIOR TO FABRICATION AND START OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO ARCHITECT OR STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH WORK.
- G-2 IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE DURING CONSTRUCTION.
- G-3 NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN SIZE OR STRENGTH WITHOUT PRIOR APPROVAL IN WRITING FROM THE STRUCTURAL ENGINEER.
- G-4 CONTRACTOR SHALL COORDINATE STRUCTURAL AND OTHER DRAWINGS THAT ARE PART OF THE CONTRACT DOCUMENTS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS WHICH MAY AFFECT THE STRUCTURAL DRAWINGS.
- G-5 ALL DETAILS AND SECTIONS ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUCTED TO APPLY TO ANY SIMILAR SECTION, UNLESS NOTED ON THE PROJECT EXCEPT WHERE A SEPARATE DETAIL IS SHOWN.
- G-6 THE INTENTION OF THE PLANS AND SPECIFICATIONS, IS TO PROVIDE ALL NECESSARY DETAILS TO CONSTRUCT A COMPLETE STRUCTURE. WHEN SPECIFIC INFORMATION IS MISSING OR IS IN CONFLICT, THE CONTRACTOR SHALL USE A SIMILAR DETAIL AND/OR THE MORE COSTLY ITEM OF CONFLICT. THE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- G-7 THE ENGINEER SHALL NOT BE RESPONSIBLE FOR LAYOUT, DIMENSIONAL ERRORS OR DISCREPANCIES RESULTING FROM THE REPRODUCTION AND USE OF CONTRACT DRAWINGS FOR ERECTION AND SHOP DRAWINGS. USE OF CONTRACT DRAWINGS REPRODUCED IN WHOLE OR ANY PART IN SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR NOR SUBCONTRACTOR FROM THEIR RESPONSIBILITY TO ACCURATELY LAY OUT, COORDINATE, DETAIL, FABRICATE AND INSTALL A COMPLETE STRUCTURE.
- G-8 REVIEW ALL SHOP DRAWINGS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND FOR COMPLETENESS AND ANSWER ALL CONTRACTOR RELATED QUESTIONS, STAMP AND INITIAL ALL SHEETS PRIOR TO SUBMITTING SHOP DRAWINGS TO ARCHITECT FOR REVIEW. NONCOMPLIANCE WITH THIS REQUIREMENT WILL RESULT IN REJECTION OF SUBMITTAL.
- SHALLOW FOUNDATIONS:
- SF-1 SOIL TO BE STRIPPED, COMPACTED AND TESTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- SF-2 CENTER ALL FOOTINGS UNDER THEIR RESPECTIVE COLUMNS OR WALLS UNLESS OTHERWISE SHOWN ON PLANS. MAXIMUM MISPLACEMENT OR ECCENTRICITY: 2". TOLERANCE FOR MISLOCATION OF COLUMN DOMELS OR ANCHOR BOLTS TO BE PER ACI OR AISC STANDARDS.
- SF-3 HORIZONTAL JOINTS IN FOOTINGS WILL NOT BE PERMITTED.
- SF-4 WHERE VERTICAL CONSTRUCTION JOINTS OCCUR IN CONTINUOUS FOOTINGS, PROVIDE A MINIMUM CONTINUOUS 2"x4" KEYWAY ACROSS JOINT FOR EACH 12" OF DEPTH.
- SF-5 CONTRACTOR TO NOTIFY ARCHITECT IF SOIL CONDITIONS ARE UNCOVERED THAT PREVENT THE REQUIRED SOIL BEARING PRESSURE FROM BEING OBTAINED.
- SF-6 COORDINATE PLUMBING LINES WITH FOOTING LOCATIONS FOR INTERFERENCE. INDIVIDUAL FOOTINGS SHOULD BE LOWERED WITH THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
- SF-7 EXCAVATION UNDER OR NEAR IN-PLACE FOOTINGS/FOUNDATIONS WHICH DISTURBS THE COMPACTED SOIL BENEATH THE FOOTINGS/ FOUNDATIONS WILL NOT BE PERMITTED.
- SF-8 REINFORCING SHALL BE SUPPORTED ON PRECAST CONCRETE PADS DOWN FOR COLUMNS AND FLEED GELLS SHALL BE SECURED IN PLACE PRIOR TO POURING CONCRETE. SETTING BOLTS FOR SETTING COLUMN DOMELS AND ANCHOR BELTS.
- SF-9 REFER TO PROJECT SPECIFICATIONS FOR REQUIREMENTS TO STABILIZE EXCAVATIONS ADJACENT TO EXISTING CONSTRUCTION.  
REINFORCED CONCRETE
- RC-1 ALL CONCRETE DESIGN AND PLACEMENT SHALL BE IN STRICT ACCORDANCE WITH THE ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-95.
- RC-2 STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS AND SHALL DEVELOP THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS  
FOOTINGS GRADE BEAMS AND PILE CAPS: 3000 PSI  
COLUMNS & WALLS 3000 PSI  
BEAMS AND SLABS 3000 PSI
- RC-3 USE REGULAR WEIGHT CONCRETE.
- RC-4 STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301 AND HAVE THE FOLLOWING SLUMPS & AGGREGATE REQUIREMENTS:

LOCATION SLUMP MAX. AGGREGATE

- FOOTINGS 4" ASTH#57
- COLUMNS 5" ASTH#57
- BEAMS AND SLABS 5" ASTH#57
- FILLED CELLS 8" ASTH#8 PEAROCK
- TIE BMS & TIE COL'S 5" ASTH#8 PEAROCK
- RC-5 FLYASH, WHEN USED, SHALL BE LIMITED TO 20 % OF THE CEMENTITIOUS MATERIAL.
- RC-6 THE USE OF JITTERBUGS TO CONSOLIDATE CONCRETE WILL NOT BE PERMITTED.
- RC-7 ALL PUMPED CONCRETE WITH #57 AGGREGATE IS TO CONTAIN A HIGH RANGE WATER REDUCING AGENT. MINIMUM SIZE OF DISCHARGE TO BE 4" I.D.
- RC-8 A 2" I.D. DISCHARGE MAY BE USED WITH #8 AGGREGATE. USE PLASTICIZER ADVISABLE IF NECESSARY TO INCREASE SLUMPS BEYOND THAT NOTED ABOVE.
- RC-9 ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND INSTALLED IN ACCORDANCE WITH ACI 318-95 AND ACI DETAILING MANUAL, ACI-315 1994 EDITION.
- RC-10 REINFORCING STEEL SHALL BE NEW DEFORMED BARS THAT ARE FREE FROM RUST, SCALE AND OIL AND CONFORM TO ASTM A-615, GRADE 60, WITH MINIMUM YIELD STRENGTH = 60,000 PSI.
- RC-11 ALL SLABS ON GRADE SHALL BE REINFORCED WHERE INDICATED WITH #X6 14X1.4 MM IN ACCORDANCE WITH MANUFACTURERS WRITTEN RECOMMENDATIONS AND SPECIFICATIONS.
- RC-12 WELDED WIRE FABRIC SHALL CONFORM TO ASTM-A185.
- RC-13 LAP CONTINUOUS REINF. AS NOTED IN LAP SPlice SCHEDULE. LAP CONT. BOTTOM STEEL OVER SUPPORT AND CONT. TOP STEEL AT MIDSPAN UNLESS OTHERWISE SPECIFIED.
- RC-14 TERMINATE ALL DISCONTINUOUS TOP BARS WITH STANDARD 90 DEGREE HOOK (PLACED VERTICALLY) UNLESS NOTED OTHERWISE.
- RC-15 PROVIDE THE FOLLOWING CONCRETE COVERAGES OVER REINFORCING:  
FOOTINGS, BOTTOM AND UNFORMED EDGES 3" CLR.  
BEAMS & COLUMNS: TIES 1 1/2" CLR. UNLESS NOTED OTHERWISE  
SLABS, (TOP AND BOTTOM STEEL)  
INTERIOR 3/4" CLR  
EXTERIOR 1 1/2" CLR  
SLABS ON GRADE: SINGLE MAT, CENTERED
- RC-17 SHOP DRAWINGS FOR PLACEMENT SHALL BE SUBMITTED FOR REVIEW PRIOR TO REBAR FABRICATION.
- RC-18 SLEEVE ALL PENETRATIONS THROUGH BEAMS AND SLABS INDIVIDUALLY. CORE DRILLING WILL NOT BE PERMITTED. SUBMIT LOCATION AND SIZE OF SLEEVES THROUGH BEAMS TO ENGINEER FOR REVIEW PRIOR TO CASTING CONCRETE.
- RC-19 NO REINFORCING BARS SHALL BE CUT TO ACCOMMODATE THE INSTALLATION OF ANCHORS, EMBEDS OR OTHER ITEMS.
- RC-20 USE THE STRUCTURAL DRAWINGS INCLUDING REVISIONS AND ADDENDUMS IN CONDUCTION WITH REVIEWED SHOP DRAWINGS FOR PLACEMENT OF REINFORCING.
- RC-21 AT CHANGES IN DIRECTION OF CONCRETE WALLS, BEAMS & STRIP FOOTINGS PROVIDE CORNER BARS OF SAME SIZE AND QUANTITY (UNO.) AS HORIZONTAL STEEL. REFER TO TYPICAL DETAIL.
- RC-22 ALL EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE PRIOR TO CONCRETE PLACEMENT.
- RC-23 WEDGE BOLTS SHALL BE 1/4" RANSET/REDHEAD BOLTS OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. 3/4" DIAMETER WEDGE BOLTS SHALL BE OF LENGTH REQUIRED TO PROVIDE 3 1/4" MIN. EMBEDMENT. 2.0 KIPS TENSION AND 41 KIPS SHEAR WORKING LOADS PER 3000 PSI CONCRETE UNO. DO NOT CUT EXISTING REINFORCING TO INSTALL. DO NOT INSTALL IN POST-TENSIONED CONCRETE.
- RC-24 DOWEL BAR SPICERS SHALL BE A COMPLETE ASSEMBLY, INCLUDING COUPLER, FORM ATTACHMENT (WHEN REQUIRED), AND THREADED BAR CAPABLE OF DEVELOPING THE BAR BEING SPLICED IN ACCORDANCE WITH ACI 318 SECTION 12.14.3.
- RC-25 HEADED STUD ANCHORS SHALL BE ASTM A108, GRADE 5, 1010 THROUGH 1020 AS MANUFACTURED BY NELSON STUD OR APPROVED EQUIVALENT. STUD WELDING SHALL CONFORM TO AWS D11 STRUCTURAL WELDING CODE.
- RC-26 GROUTED ANCHORS SHALL BE 1/4" RANSET/REDHEAD EPON CERAMIC & EPOXY ANCHORING SYSTEM OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. A SCREEN TUBE MUST BE UTILIZED FOR INSTALLATION IN HOLLOW BLOCK AND BRICK MASONRY. DO NOT CUT EXISTING REINFORCING TO INSTALL.
- RC-27 PLACE CONCRETE PER ACI 304. USE INTERNAL MECHANICAL VIBRATION FOR ALL CONCRETE. LIMIT MAXIMUM FREE FALL DROP OF CONCRETE TO 6'-0" FOR #57 AGGREGATE AND 8'-0" FOR #8 AGGREGATE. ALL PRECALCULATIONS SHOULD BE TAKEN TO AVOID SEGREGATION OF CONCRETE DURING PLACEMENT.
- RC-28 FOOTING SIZES SHOWN ARE FOR FOOTINGS CONSTRUCTED WITH SIDE FORMS. IF SOIL MATERIAL CAN HOLD A VERTICAL SHAPE, IT CAN BE USED AS AN EARTH FORM PROVIDED FOOTING WIDTH IS INCREASED IN EACH HORIZONTAL DIRECTION. ALL SLOUGHED MATERIAL SHALL BE REMOVED FROM EXCAVATION BEFORE AND DURING PLACEMENT OF CONCRETE.
- RC-29 PLACEMENT OF CONDUIT AND PIPES IN CONCRETE SHALL CONFORM TO ACI 318, SECTION 6.3.

M-COMPONENT & CLADDING DESIGN WIND PRESSURES



SIMPLIFIED WIND MAP OF BUILDING

ZONE	POSITIVE PRESSURE	NEGATIVE PRESSURE
1	+ 25.88 PSF	-34.65 PSF
2	+ 25.88 PSF	-28.1 PSF
3	+ 10.53 PSF	-25.88 PSF
4	+ 10.53 PSF	-43.43 PSF
5	+ 10.53 PSF	-65.36 PSF

W2 - BUILDING IS DESIGNED AS ENCLOSED STRUCTURE. WINDOWS, DOORS & STOREFRONT, DORIES SKYLIGHTS, SCUTTLERS, ETC. SHALL BE DESIGNED FOR PRESSURES INDICATED ON THE TABLE ABOVE. SHOP DRAWINGS INCLUDING SEALED CALCULATIONS BY A FLORIDA REGISTERED ENGINEER SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL PRIOR TO FABRICATION OR ERECTION.

**ROBERT A HARRIS ARCHITECT**

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FLA. REG. NO. AR 4859

REV	DATE	DESCRIPTION
1	09/07/06	PERMIT
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**CUSTOM HANGAR BUILDERS**  
LOT 147  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

**STRUCTURAL NOTES**

PROJECT NUMBER: 06-082
PLOT DATE: 10.09.06
DRAWN BY: JM
CHECKED BY: RH
FILENAME: S2.1.DWG

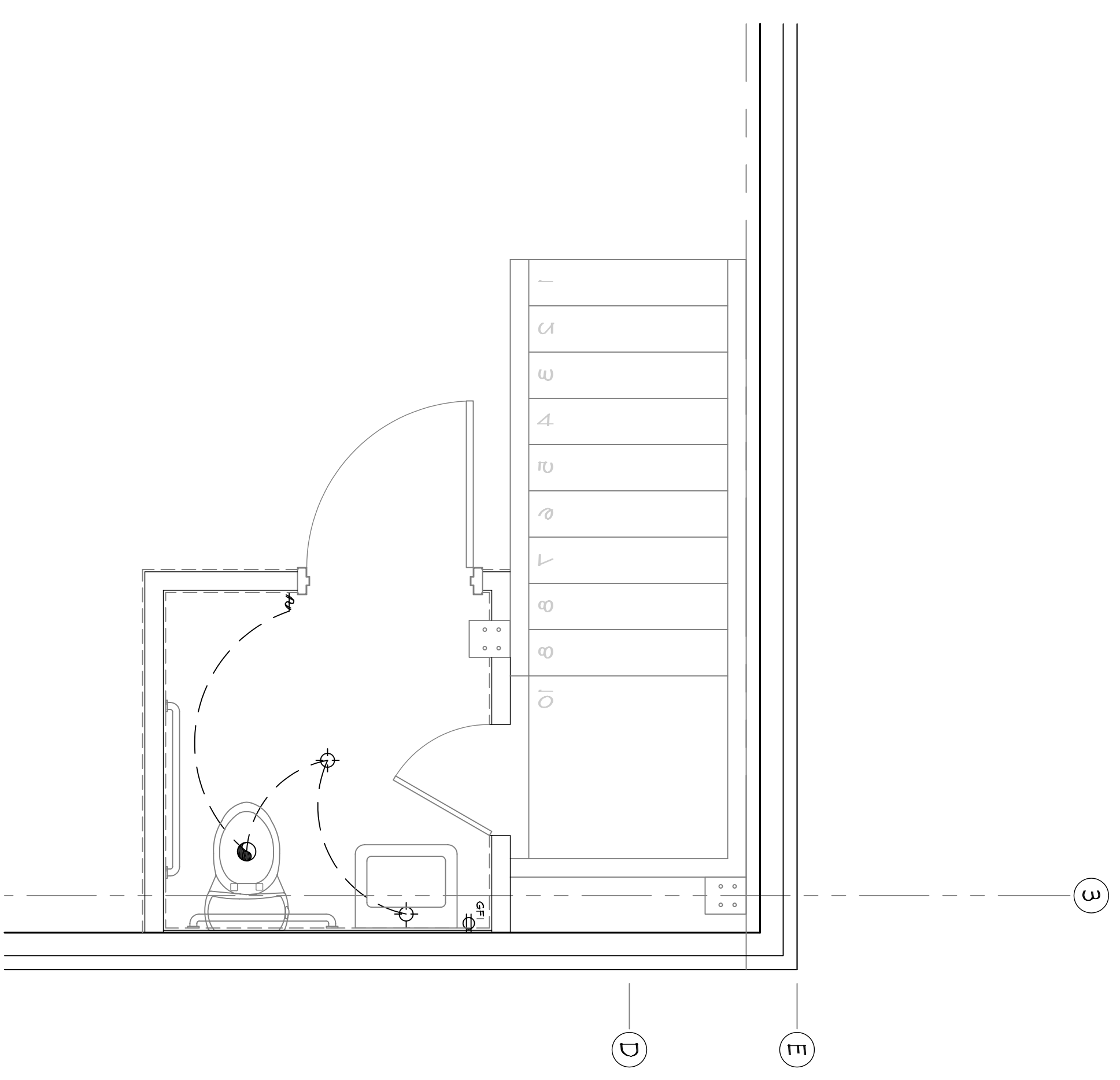
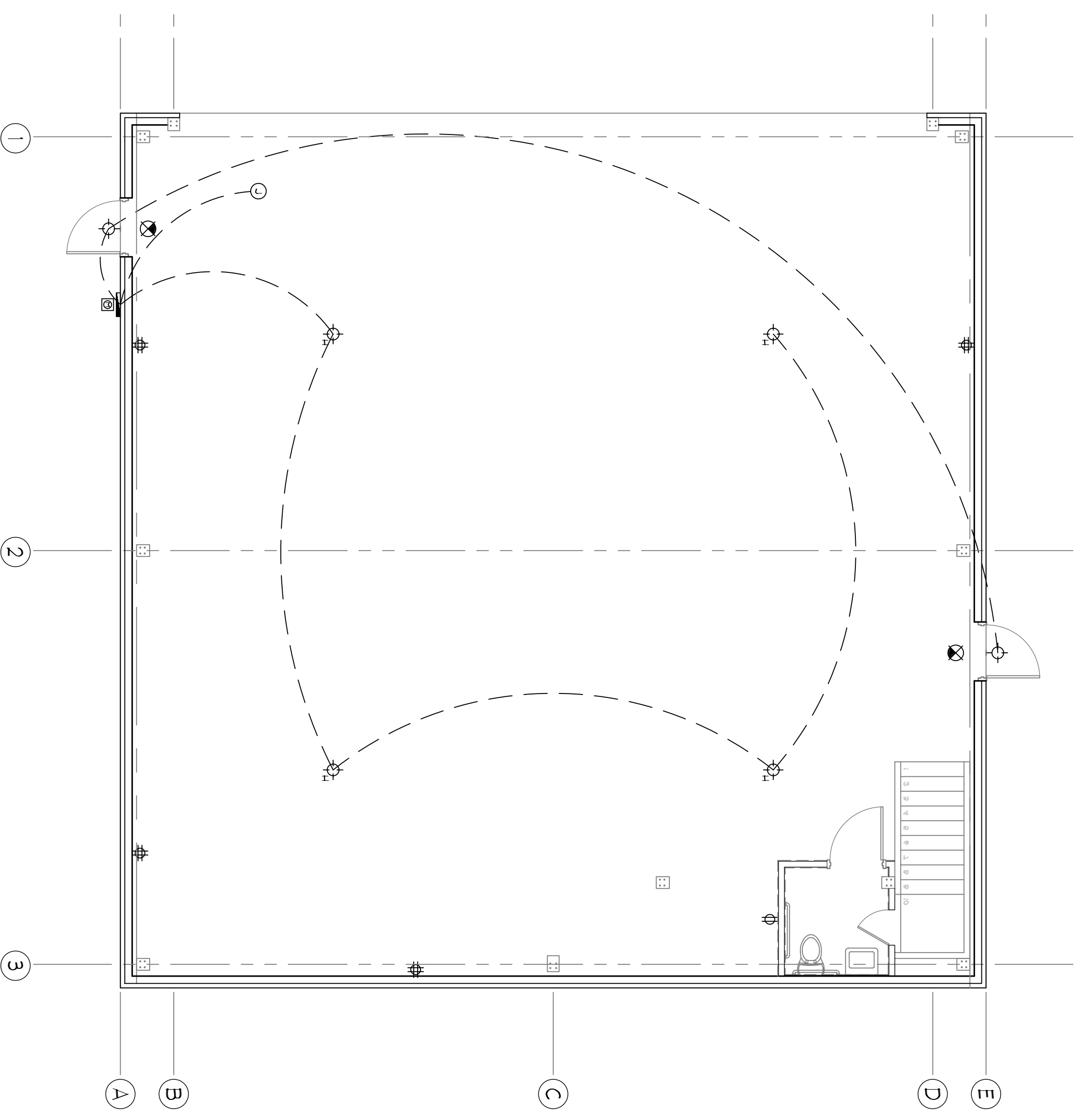
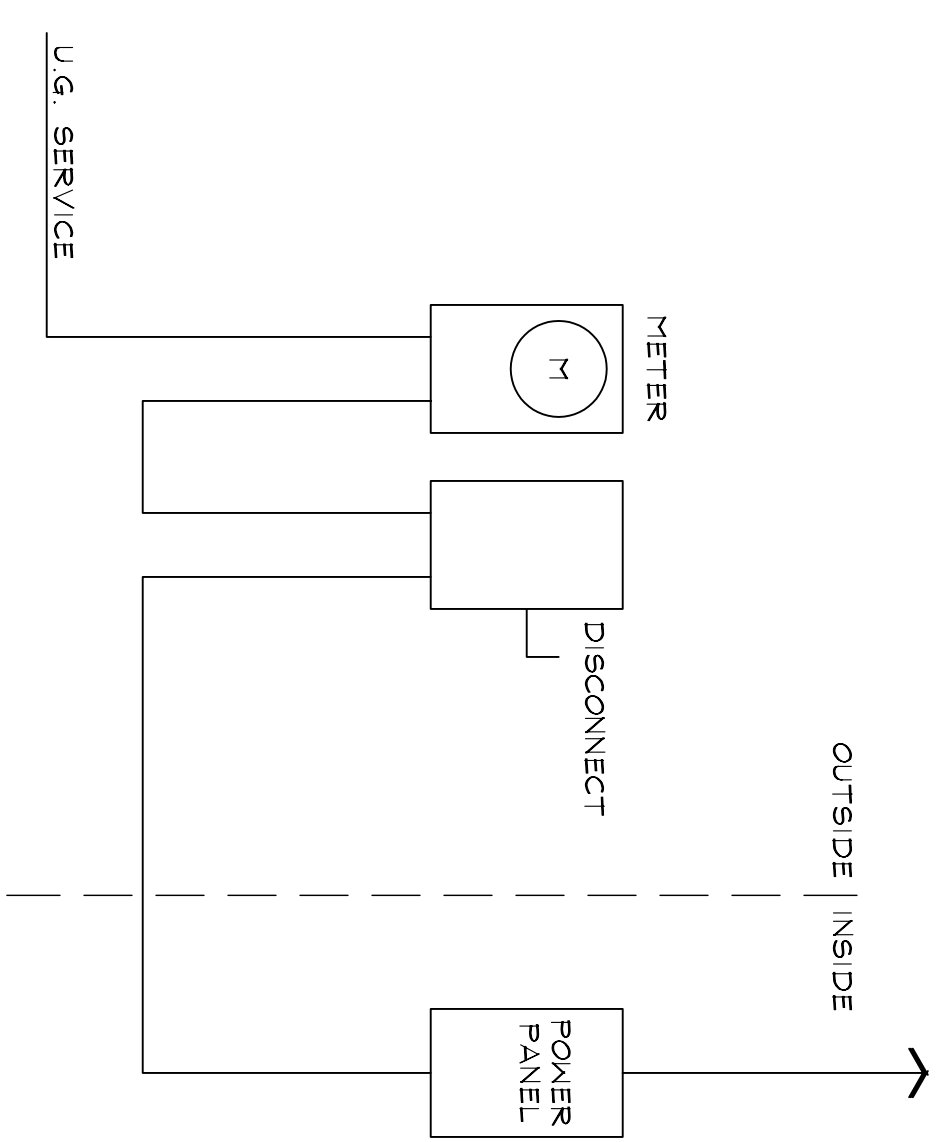
**RICHARDSON ENGINEERING**  
ORLANDO, FLORIDA 32803  
License # 0001280  
107 EFB 000683

**S2.1**

**ELECTRICAL FIXTURE SCHEDULE**

CODE	DESCRIPTION	NOTES	CODE	DESCRIPTION	NOTES
9 <sup>1/2</sup> "	110-120V/ DUPLEX RECEPTACLE 3' INDICATES HALF SWITCH RECEPTACLE	6 <sup>1/2</sup> " INDICATES GROUND FAULT INTERRUPTED	1	JUNCTION BOX FOR HANGAR DOOR OPENER	
#	110-120V/ QUADPLEX RECEPTICAL	8 <sup>1/2</sup> " INDICATES KEATHER PROOF.	2	ELECTRIC POWER METER	COORDINATE WITH LOCAL POWER COMPANY
3	WALL MOUNTED LIGHT SWITCH	3" INDICATES 3-WAY SWITCH	3	ELECTRIC POWER PANEL	CIRCUIT BREAKER
4	SURFACE MOUNTED LIGHT FIXTURE	SIZE AND TYPE VARY. EXTERIOR LIGHTING SWITCHED AT POWER PANEL	4	EXIT LIGHT	
5	CEILING LIGHT FIXTURE	4" INDICATES 400W METAL HALIDE PENDANT LIGHT FIXTURE (SWITCH AT POWER PANEL)	5	EXHAUST FAN WITH SCREENED VENT TO EXTERIOR	

NOTE: QUANTITY AND LOCATION OF ELECTRICAL FIXTURES TO BE APPROVED BY OWNER BEFORE ORDERING AND INSTALLATION



**3 ELECTRICAL RISER DIAGRAM**  
SCALE: N.T.S.

**2 HANGAR ELECTRICAL PLAN**  
SCALE: 3/16"=1'-0"

**1 REST ROOM ELECTRICAL PLAN**  
SCALE: 1/2"=1'-0"

ROBERT A. HARRIS, ARCHITECT AR4859

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**CUSTOM HANGAR BUILDERS**  
LOT 9  
SR 441, WEST ORANGE BLOSSOM TRAIL  
APOPKA, FLORIDA

**ELECTRICAL PLAN AND SCHEDULES**

PROJECT NUMBER: 06-083  
PLOT DATE: 10.09.06  
DRAWN BY: JM  
CHECKED BY: RH  
FILENAME: E1.0.DWG

**E1.0**

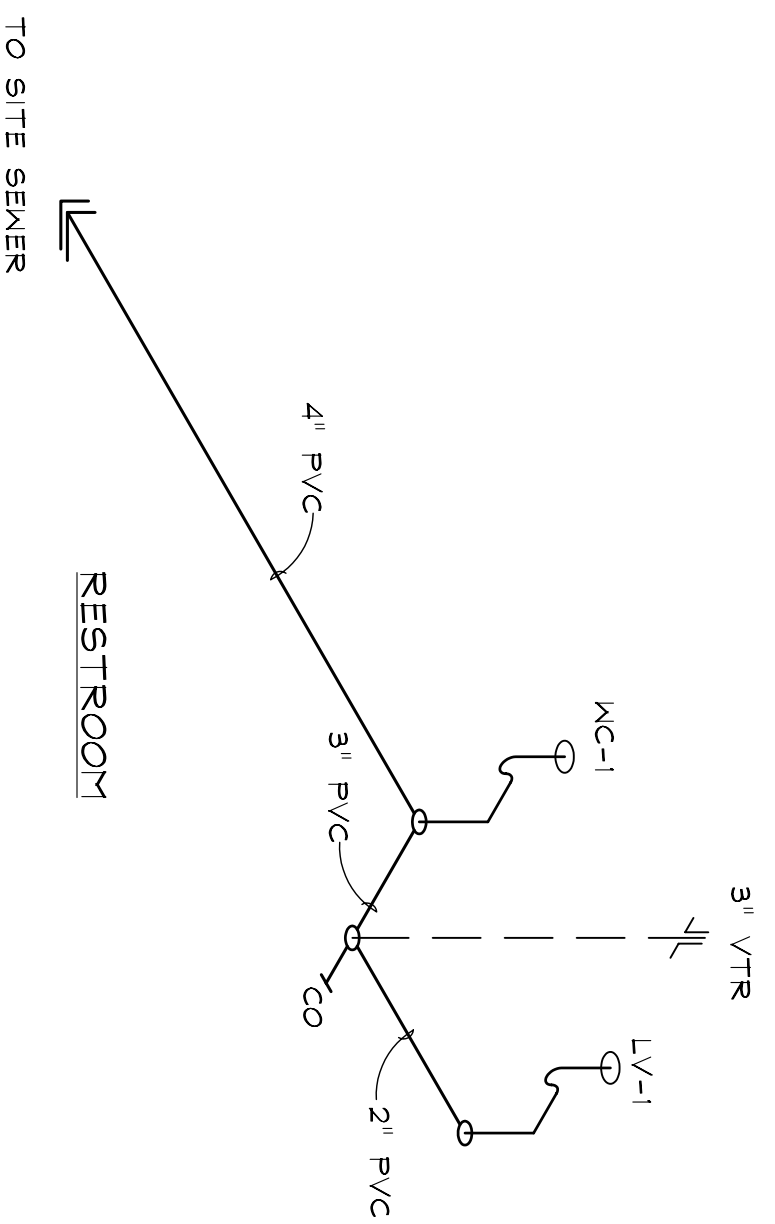
## KEYNOTES

- ① ZURN TRENCH DRAIN SYSTEM.
- ② PVC RUN TO OIL SEPARATOR, SEE PER MANUFACTURER RECOMMENDATIONS
- ③ OIL SEPARATOR, SEE MANUFACTURERS DRAWINGS

## PLUMBING SCHEDULE

CODE	FEATURE	NOTES
LV-1	LAVATORY	8x20 WALL MOUNTED LAVATORY
WC-1	WATER CLOSET	WATER CLOSET W/ TANK
MH-1	50 GAL. WATER HEATER	LOCATION TO BE DETERMINED IN FIELD
CO	CLEAN OUT	
HB-1	HOSE BIB	

\* NOTE: EQUIPMENT INDICATED FOR REFERENCE ONLY. EQUIPMENT SELECTION TO BE APPROVED BY OWNER.



## 3 PLUMBING RISER DIAGRAM

SCALE: N.T.S.

## PLUMBING SPECIFICATIONS

### GENERAL

THE GENERAL MECHANICAL SPECIFICATIONS APPLY TO THE WORK SPECIFIED IN THIS SECTION.

FURNISH AND INSTALL COMPLETE PLUMBING SYSTEM AS INDICATED ON THE DRAWINGS. ALL WORK SHALL BE IN ACCORDANCE WITH THE PLUMBING CODES AND RELATED REGULATIONS. THE COMPLETED PLUMBING SYSTEM SHALL MEET ALL APPLICABLE CODES AND STANDARDS.

MATER SUPPLY SYSTEM

IN SAVE FLOOR TRENCH AS WASTE WATER

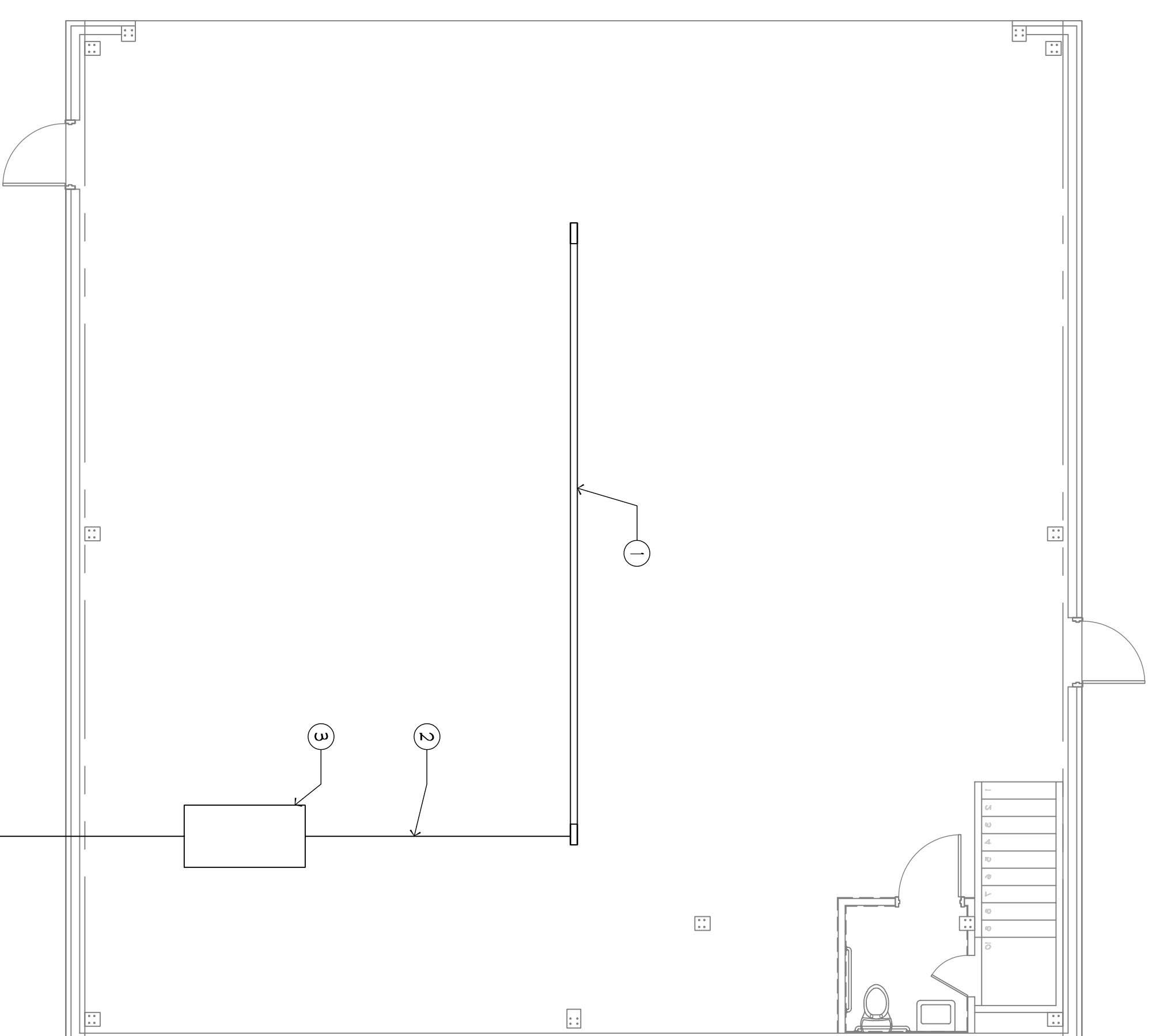
ALL SOLDER SHALL BE LEAD FREE

PROVIDE SHOCK ABSORBERS AND VACUUM BREAKERS WHERE REQUIRED

PIPE AND FITTINGS ABOVE GROUND - TYPE L HARD COPPER AND BRASS OR COPPER WITH SOLDERED JOINTS (USE ONLY "LEAD FREE" SOLDER)

PIPE AND FITTINGS BELOW GROUND - TYPE K' SOFT COPPER, PROVIDE POLYETHYLENE WRAPPING.

VALVES (2-1/2" NCL AND SMALLER) TWO PIECE 400 PSI USP FULL PORT BRONZE BODY BALL VALVE WITH PRE-ASSEMBLED ENDS, LOCKABLE LEVER HANDLE AND REPLACEABLE TEFLOON OR TFE SEALS



## 2 HANGAR PLUMBING PLAN

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

### DRAINAGE SYSTEM

EXTEND PIPING AS INDICATED ON THE DRAWINGS.

PIPE SLOPE:

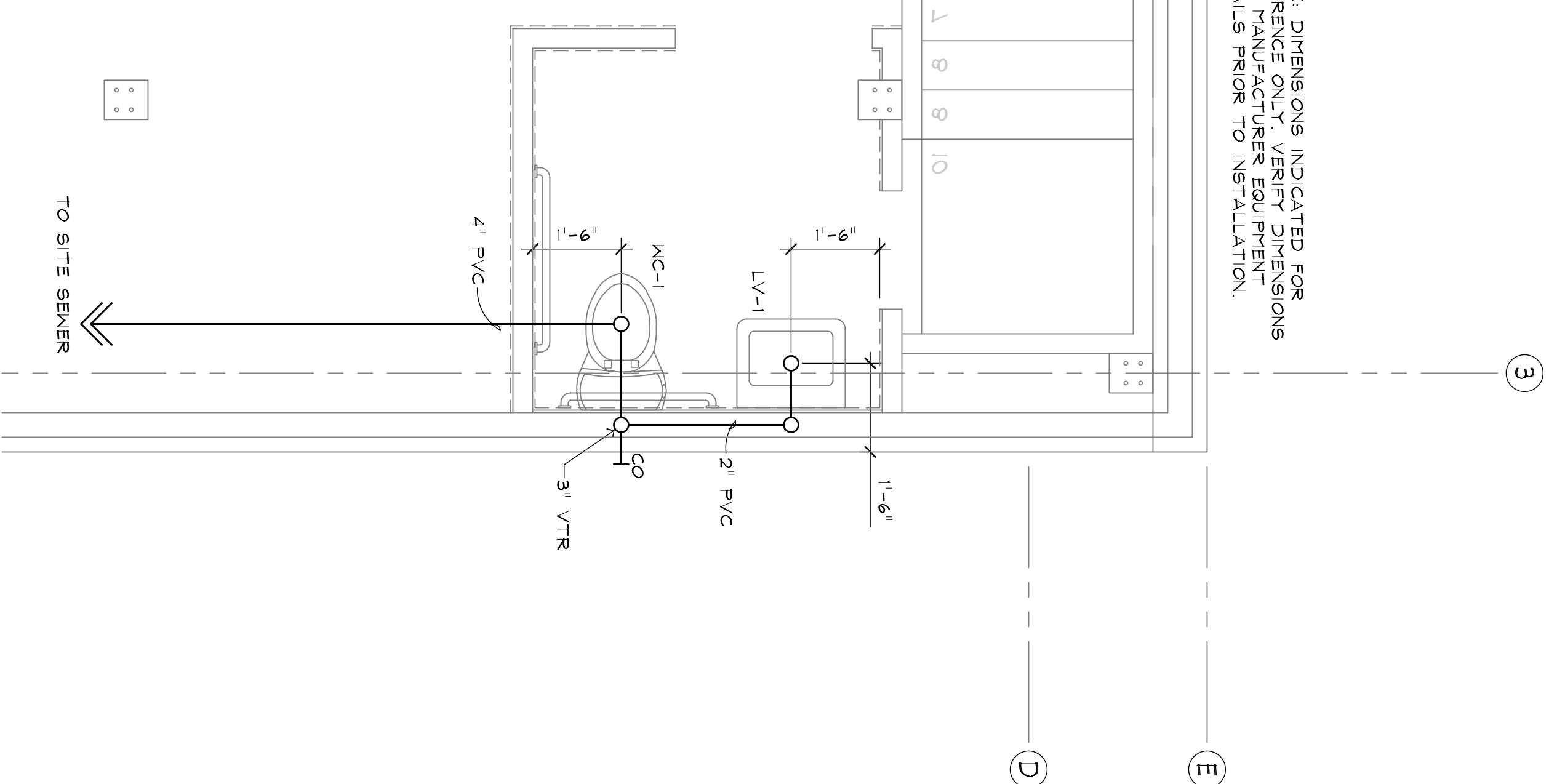
1. 1/2" NCL DIAMETER AND LESS SHALL BE INSTALLED WITH A FALL OF NOT LESS THAN 1/4 INCH PER FOOT.
2. 3 INCH DIAMETER OR LARGER SHALL BE INSTALLED WITH A FALL NOT LESS THAN 1/8 INCH PER FOOT.
3. SCHEDULE 40 PVC DRAIN, WASTE AND RETURN AIR PIPING LOCATED IN FIRE RATED WALL ASSEMBLIES AND RETURN AIR PLENUMS SHALL BE SERVICE-WEIGHT CAST IRON WITH SPOT FITTINGS.

## GENERAL PLUMBING NOTES

- 1) ALL PLUMBING INSTALLATIONS AND MATERIAL SHALL BE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES AND REGULATIONS AND AUTHORITIES HAVING JURISDICTION OVER THIS PROJECT.
- 2) COORDINATE ALL PIPE ROUTING WITH ALL OTHER TRADES PRIOR TO INSTALLATION. ROUTE ALL PIPING TO AVOID DUCTWORK, PIPING AND BUILDING STRUCTURE.
- 3) ROUTE ALL PIPING CONCEALED ABOVE CEILING, WITHIN WALLS OR IN CHASES EXCEPT WHERE SHOWN OTHERWISE.
- 4) PROVIDE ACCESS PANELS TO ALL VALVES, MAIN CHASES OR ABOVE NON-ACCESSIBLE AREAS. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
- 5) SEE ARCHITECTURAL DRAWINGS FOR FUTURE LOCATIONS AND MOUNTING HEIGHTS INCLUDING ROOF FLASH AND COUNTERFLASH ROOF PENETRATIONS.
- 6) SLEEVE AND FIRE STOP ALL PENETRATIONS OF RATED WALLS, CEILINGS, ETC.
- 7) ALL FLOOR DRAIN TRAP SEALS SHALL HAVE AN APPROVED AUTOMATIC PRIMING DEVICE.
- 8) PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL, WHEN REQUIRED BY CODE, AN AIR GAP SERVING SEVERAL FIXTURES, DEVICES, APPLIANCES OR APPLIANCE.

## 1 REST ROOM PLUMBING PLAN

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



NOTE: DIMENSIONS INDICATED FOR REFERENCE ONLY. VERIFY DIMENSIONS WITH MANUFACTURER EQUIPMENT DETAILS PRIOR TO INSTALLATION.



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## CUSTOM HANGAR BUILDERS

LOT 9

SR 441, WEST ORANGE BLOSSOM TRAIL  
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## PLUMBING PLAN AND SCHEDULES

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**P1.0**

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