UTAH NATIONAL GUARD

CAMP W.G. WILLIAMS
BUILDING 3030 REMODEL
BLUFFDALE, UTAH

DFCM PROJECT NO. - 08262480
CRSA PROJECT NUMBER: B08-081

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OWNER:
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12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020-1776

35% PRELIM DESIGN
17 SEPT. 2008

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BID	9/10/08	BID CHECK DOCUMENTS

PROJECT NO:
CAD DWG FILE: gi001 cover sheet.dwg
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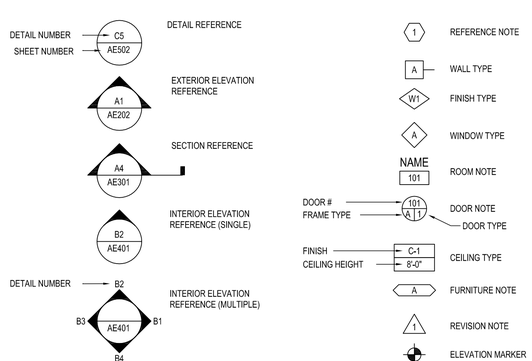
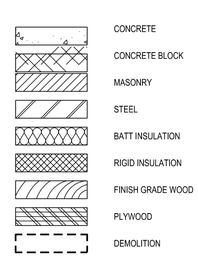
COVER SHEET

GI001
SHEET OF

SYMBOLS LEGEND





NOTE: ALL MATERIALS REFERENCED ARE NEW UNLESS NOTED OTHERWISE

CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2006	National Electrical Code	2005
International Mechanical Code	2006	Uniform Code for Building Conservation	N/A
International Plumbing Code	2006	ADA Accessibility Guildelines	2006
International Fire Code	2006		
International Energy Conservation Code	2006		

A. Occupancy and Group: A-1 and B _____ _____ _____ _____
Change in Use: Yes _____ No __X__ Mixed Occupancy: Yes __X__ No _____
Special Use and Occupancy (e.g. High Rise, Covered Mall): N/A

B. Seismic Design Category: D Design Wind Speed: N/A mph

C. Type of Construction (circle one):

I/A I/B II/A (II/B) III/A III/B IV/HT V/A V/B

D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours):
North: 0 South: 0 East: 0 West: 0

E. Mixed Occupancies: N/A Nonseparated Uses: N/A

F: Sprinklers:
Required: YES Provided: YES Type of Sprinkler System: _____

G: Number of Stories: 2 Building Height: 26' (APPROX.)

H: Actual Area per Floor (square feet):
LEVEL 1: (A-1) 6,929 S.F. + (B) 12,703 = 19,632 S.F. EXISTING AND FUTURE
LEVEL 2: (A-1) 2,390 S.F. + (B) 4,250 = 6,640 S.F. EXISTING AND FUTURE
TOTAL: (A-1) 2,390 S.F. + 6,929 S.F. = 9,319 S.F. EXISTING AND FUTURE
TOTAL: (B) 4,250 + 12,703 = 16,953 S.F. EXISTING AND FUTURE
TOTAL: (A-1 + B) 9,319 + 16,953 = 26,272 S.F. EXISTING AND FUTURE

I: Tabular Area: A-1: 8,500 SF B: 23,000 SF

J: Area Modifications:

a) $A_a = A_1 + \left[\frac{A_1 I_f}{100}\right] + \left[A_1 I_s\right]$ $I_f = 100\left[\frac{F}{P} - 0.25\right]\frac{W}{30}$

b) Sum of the Ratio Calculations for Mixed Occupancies:
$\frac{9{,}319 \text{ SF}}{17{,}000} \leq 1$

c) Total Allowable Area for:
1) One Story: 8,500 SF
2) Two Story: A_a(2) 8,500 SF
3) Three Story: A_a(3) N/A

d) Unlimited Area Building: Yes _____ No __X__ Code Section: N/A

K. Fire Resistance Rating Requirements for Building Elements (hours).

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls	0		Floors - Ceiling Floors	0	
Interior Bearing Walls	0		Roofs - Ceiling Roofs	0	
Exterior Non-Bearing Walls	0		Exterior Doors and Windows	0	
Structural Frame	0		Shaft Enclosures	0	
Partitions - Permanent	0		Fire Walls	0	
Fire Barriers	0		Fire Partitions	0	
			Smoke Partitions	0	

L. Design Occupant Load: A-1: 9,319 S.F. / 15 = 621.26
B: 16,953 S.F. / 100 = 196.53
TOTAL: 621.26 + 196.53 = 817.79

Exit Width Required: 163.5" Exit Width Provided: 384"

M. Minimum Number of Required Plumbing Facilities: (EXISTING TO REMAIN)
EXISTING FACILITIES ON-SITE, INCLUDING PRIMARY BUILDING, EXCEED REQ'S.

A-1 OCCUPANCY: 622

a) Water Closets - Required (m) 3 (f) 4 Provided (m) 3+ (f) 4
b) Lavatories - Required (m) 2 (f) 2 Provided (m) 2+ (f) 2+
c) Bath Tubs or Showers: N/A
d) Drinking Fountains: 2 Service Sinks: 1

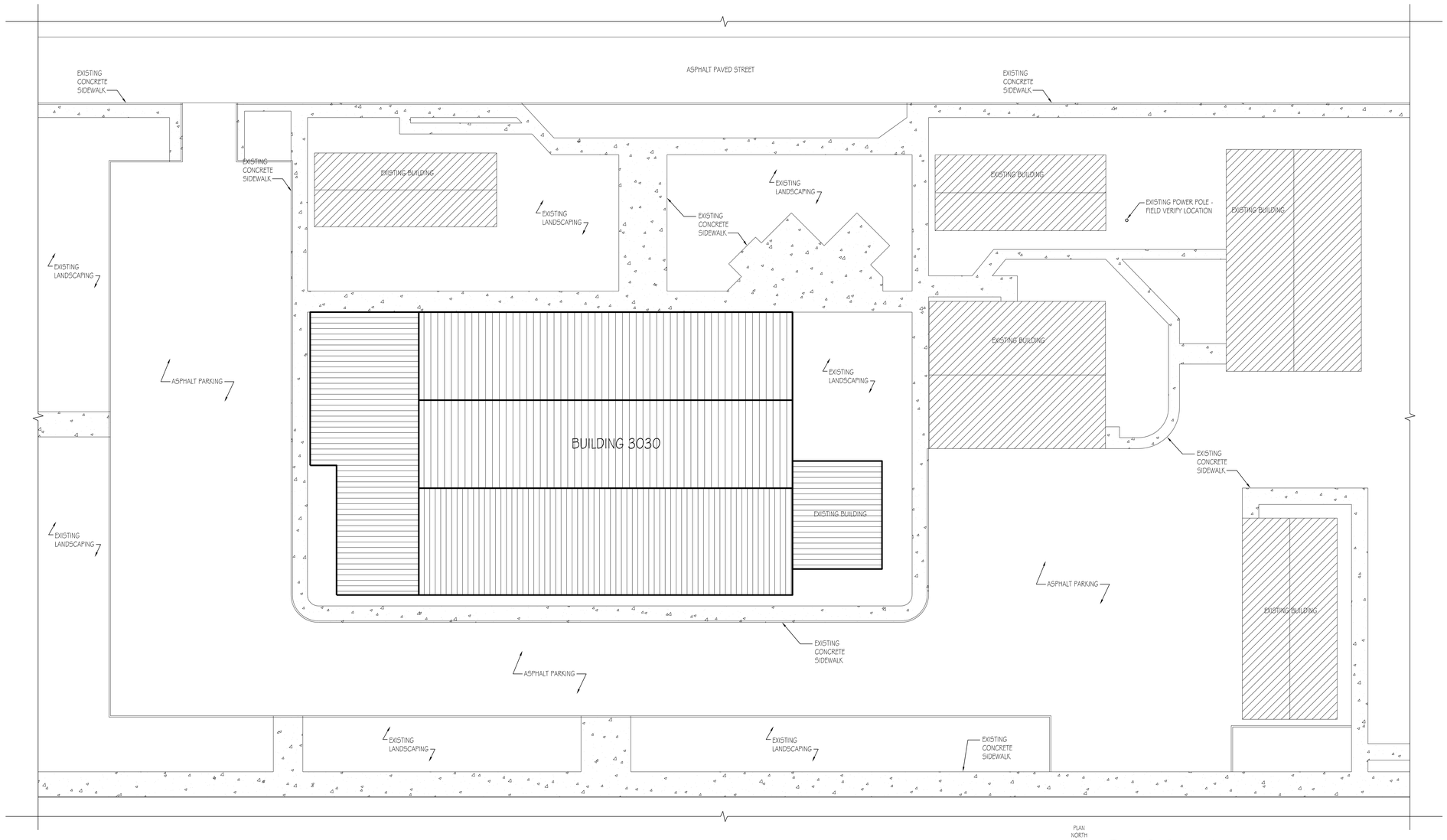
B OCCUPANCY: 197

a) Water Closets - Required (m) 3 (f) 3 Provided (m) 3+ (f) 3+
b) Lavatories - Required (m) 3 (f) 3 Provided (m) 3+ (f) 3+
c) Bath Tubs or Showers: N/A
d) Drinking Fountains: 2 Service Sinks: 1

FOOTNOTES:

1) In case of conflict with the U.S. Department of Justice Federal Registers Parts I through Σ - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.

2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:
a) High Rise Requirements.
b) Atriums.
c) Performance Based Criteria.
d) Means or Egress Analysis.
e) Fire Assembly Locator Sheet.
f) Exterior and Interior Accessibility Route.
g) Fire Stopping, Including Tested Design Number.



PLAN NORTH

1 SITE PLAN

SCALE: 1" = 20'-0"

0 10' 20' 40'

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PROJECT NO:
CAD DWG FILE: as101 site plan.dwg
DRAWN BY: #
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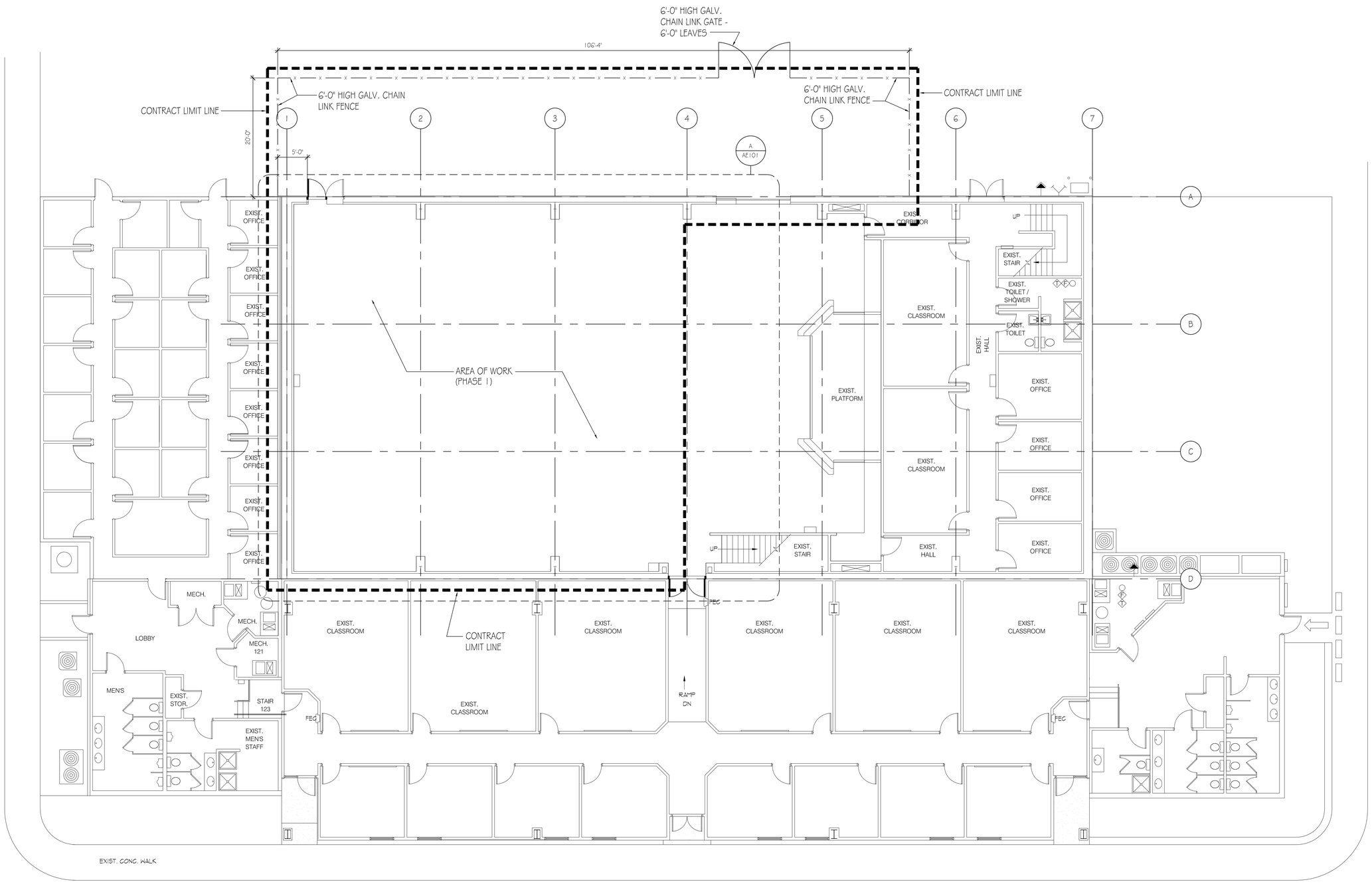
SITE PLAN

AS101
SHEET OF



PLAN NORTH

A

OVERALL BUILDING PLAN

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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PROJECT NO:
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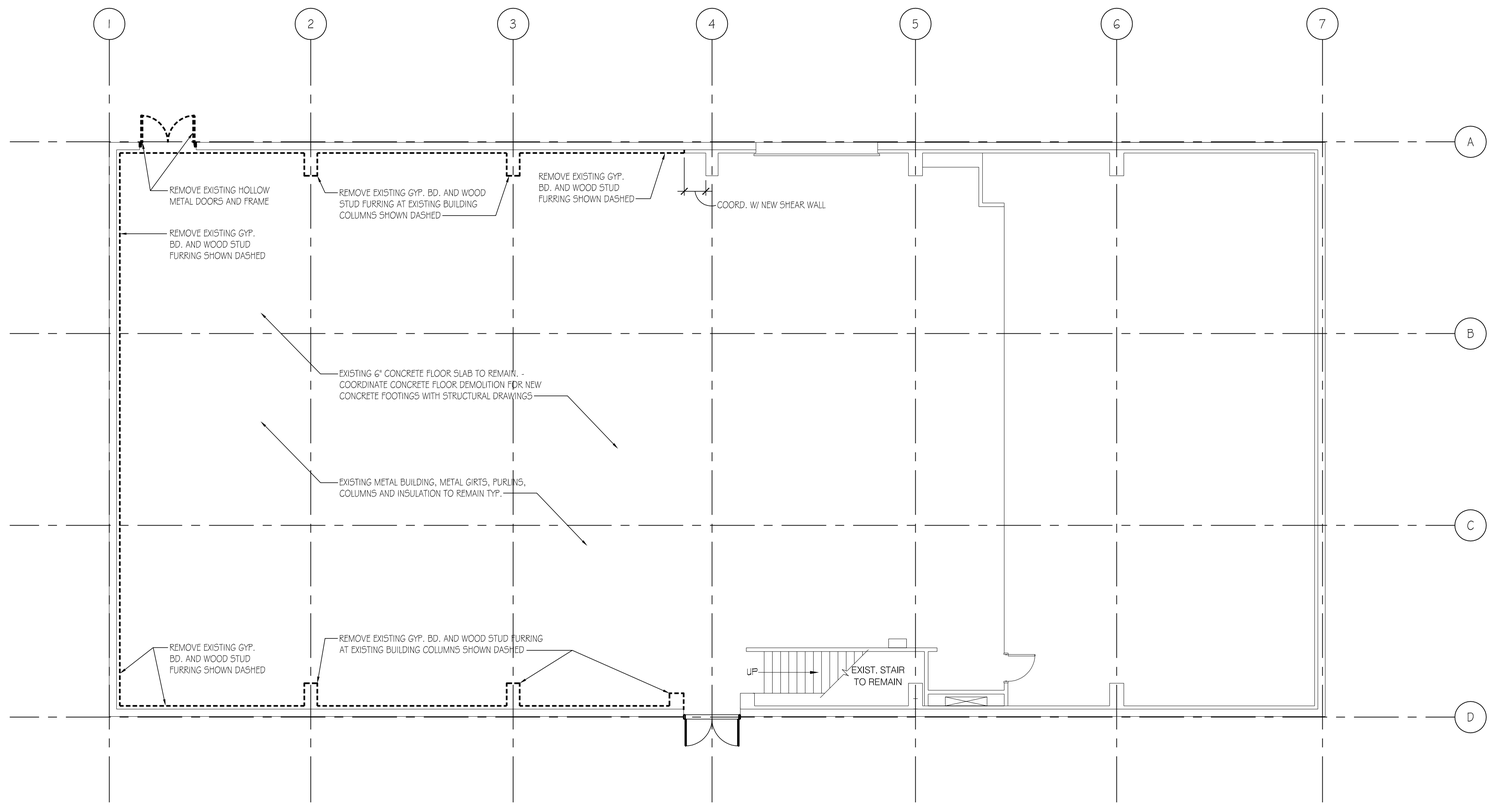
OVERALL BUILDING PLAN

AS102
SHEET OF



PLAN NORTH

A

PHASE ONE DEMOLITION PLAN

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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PROJECT NO:
CAD DWG FILE: ad101.dwg
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DEMOLITION PLAN

AD101
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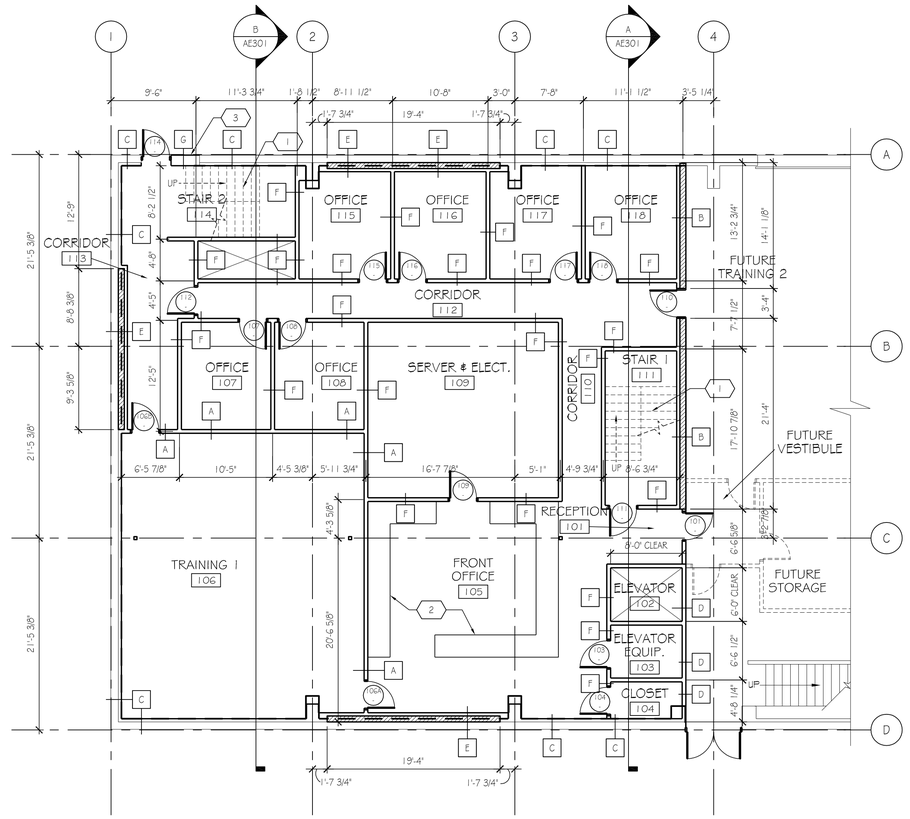

A LEVEL ONE PARTIAL FLOOR PLAN

SCALE: 1/8" = 1'-0"

DOOR SCHEDULE

DOOR NUMBER	SINGLE	DOUBLE	DOOR TYPE	DOOR SIZE	HARDWARE GROUP	FRAME TYPE	COMMENTS
101	●		T-1	S-1	H-5	F-1	
103	●		T-2	S-1	H-3	F-1	
104	●		T-2	S-1	H-2	F-1	
106A	●		T-2	S-1	H-5	F-1	
106B	●		T-2	S-1	H-5	F-1	
107	●		T-2	S-1	H-4	F-1	
108	●		T-2	S-1	H-4	F-1	
109	●		T-2	S-1	H-2	F-1	
110	●		T-1	S-1	H-5	F-1	
111	●		T-2	S-1	H-2	F-1	
112	●		T-2	S-1	H-5	F-1	
114	●		T-1	S-1	H-5	F-1	
115	●		T-2	S-1	H-4	F-1	
116	●		T-2	S-1	H-4	F-1	
117	●		T-2	S-1	H-4	F-1	
118	●		T-2	S-1	H-4	F-1	

DOOR TYPES

T-1 = HOLLOW METAL INSULATED FLUSH
T-2 = SOLID CORE WOOD - PLANE SLICED OAK VENEER

DOOR SIZES

S-1 = 3'-0" X 7'-0" X 1-3/4"

HARDWARE GROUPS

H-1 NOT USED
H-2 CLOSET DOOR
H-3 ELEVATOR EQUIPMENT ROOM
H-4 OFFICE DOORS
H-5 STAIRWELL EXIT DOOR

FRAME TYPES

F-1 = HOLLOW METAL

COMMENTS

SEE SHEET AE501 FOR DOOR DETAILS
ALL DOORS ARE TO BE PAINTED

KEYED NOTES

1. FUTURE STAIR
2. RECEPTION COUNTER
3. INFILL OPENING - MATCH INTERIOR AND EXTERIOR FINISHES

FINISH SCHEDULE

ROOM NUMBER	FLOOR	BASE	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CEILING
101	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
102	-	-	-	-	-	-	SEE SHEET AE111
103	VCT	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
104	VCT	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
105	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
106	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
107	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
108	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
109	VCT	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
110	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
111	-	-	-	-	-	-	SEE SHEET AE111
112	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
113	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
114	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
115	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
116	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
117	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111
118	CARPET	4" RUBBER	PAINT	PAINT	PAINT	PAINT	SEE SHEET AE111

GT = CERAMIC TILE
VCT = VINYL COMPOSITION TILE
SC = SEALED CONCRETE

MEZZANINE ROOMS 201 AND 202 ARE PART OF ALTERNATE #2

CABINETS, PLUMBING FIXTURES, FLOOR TILE, RUBBER BASE, IN BREAK ROOM 105 ARE PART OF ALTERNATE #3 - STUB IN ROUGH PLUMBING AS PART OF BASE BID

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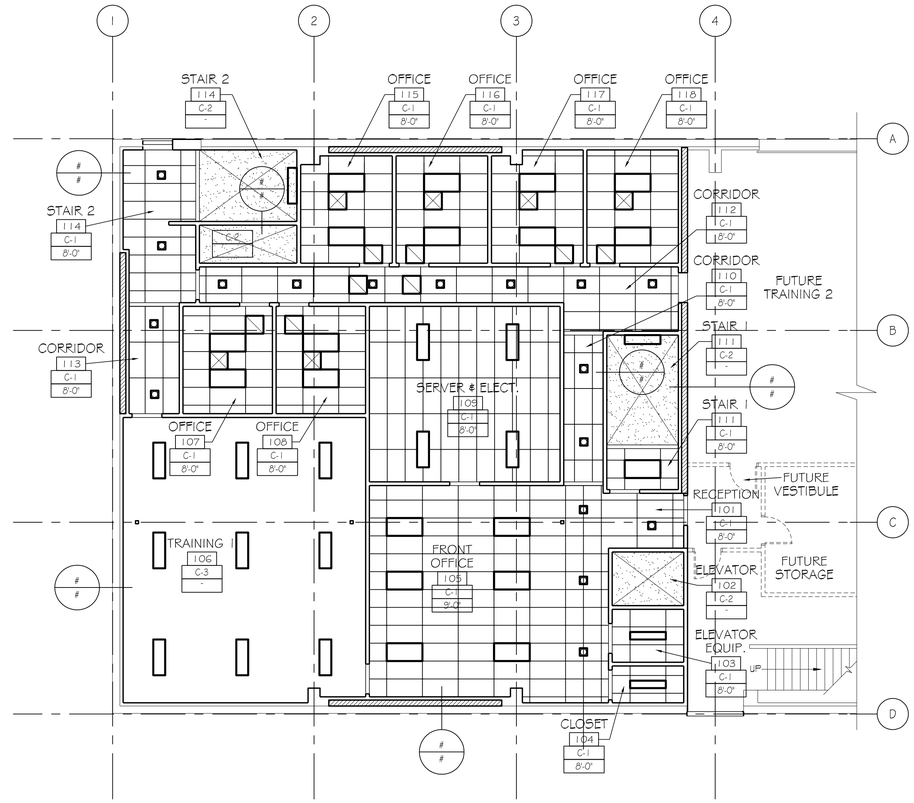
PROJECT NO:
CAD DWG FILE: ae101.dwg
DRAWN BY: #
CHECKED BY: ###

MAIN LEVEL
FLOOR PLAN

AE101
SHEET OF

CEILING FINISH SCHEDULE

C-1	2'-0" X 4'-0" SUSPENDED CLG. SYSTEM.
C-2	GYP. BOARD W/ FOIL LINER
C-3	OPEN TO STRUCTURE ABOVE.



PLAN NORTH

A CEILING PLAN - FIRST LEVEL

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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CAD DWG FILE: ae111.dwg
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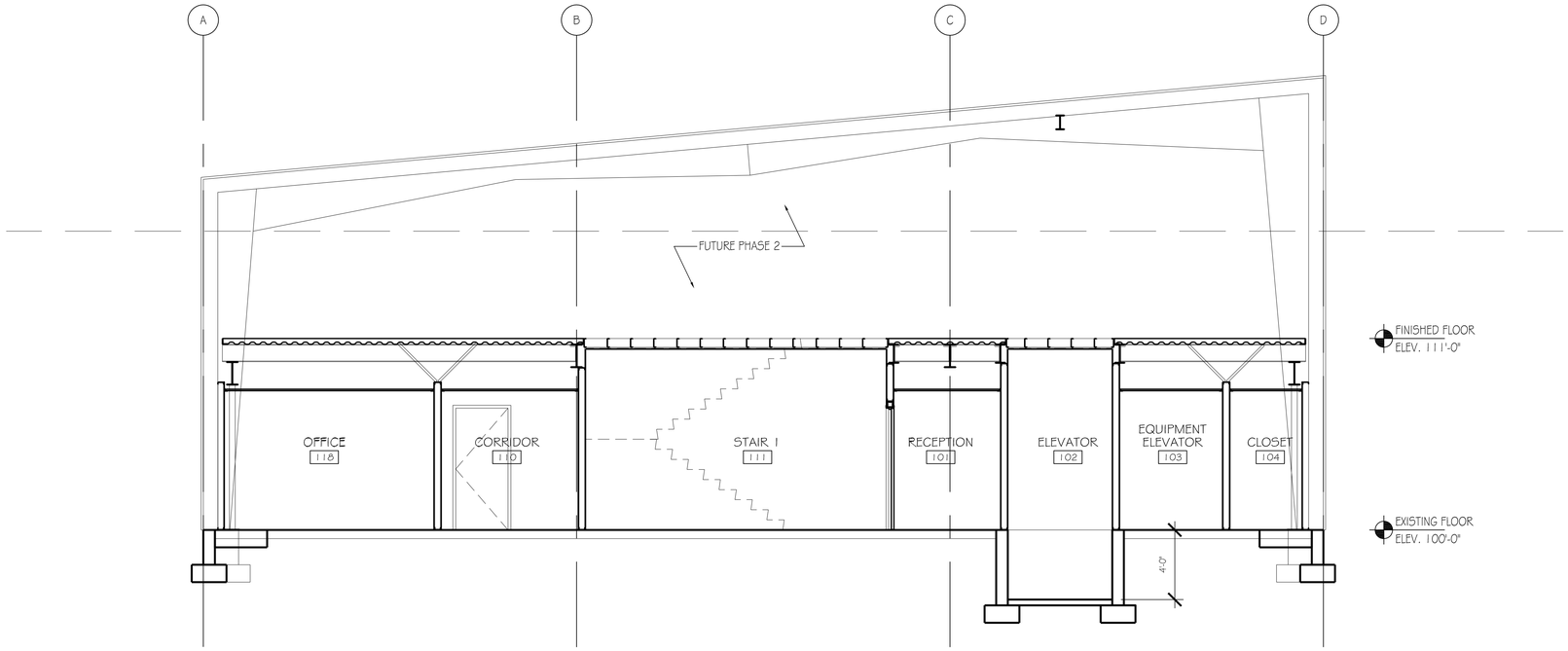
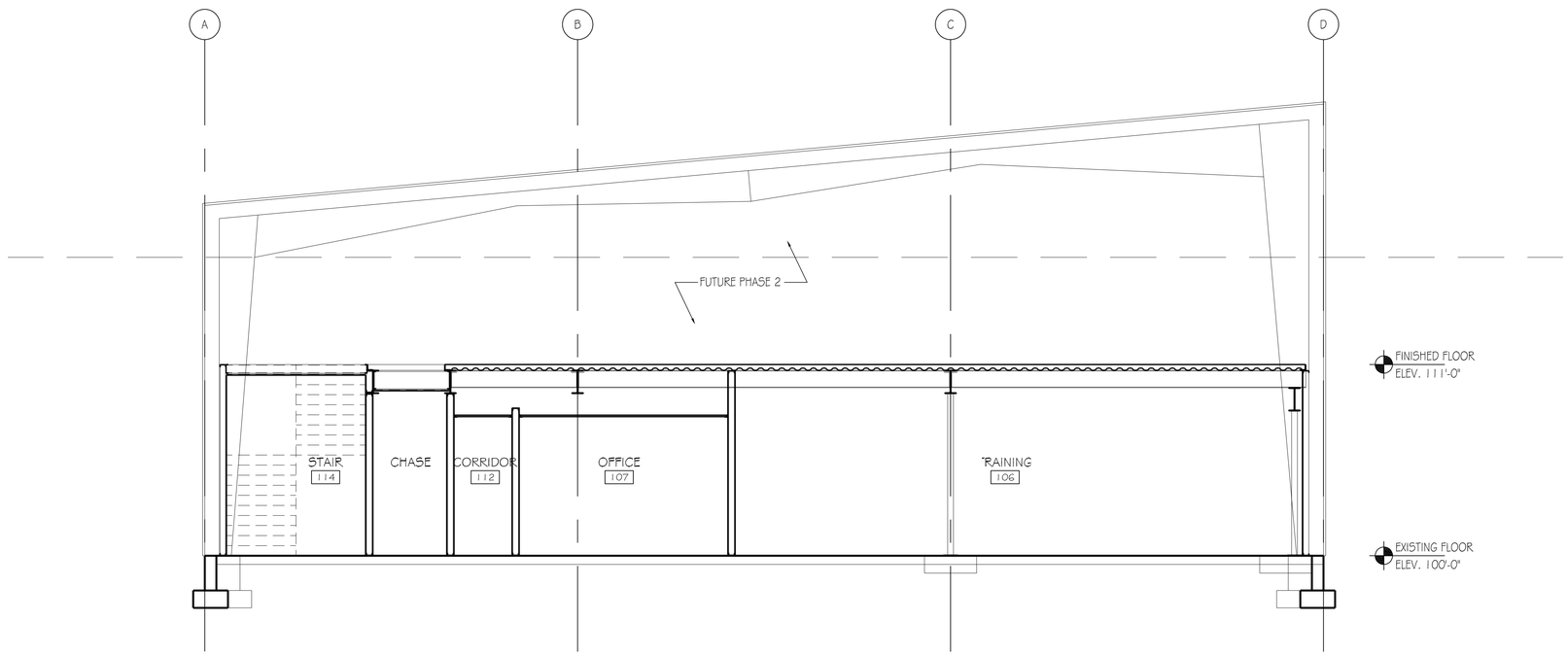
FIRST LEVEL
REFLECTED
CEILING PLAN

AE111
SHEET OF



A BUILDING SECTION

SCALE: 1/4" = 1'-0" 0 2' 4' 8'



B BUILDING SECTION

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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PROJECT NO:
CAD DWG FILE: ae301.dwg
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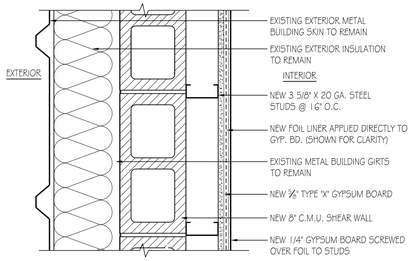
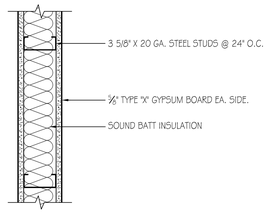
BUILDING SECTIONS

AE301

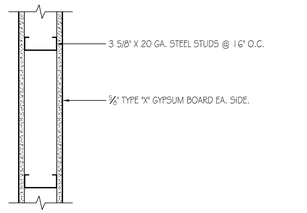
SHEET OF



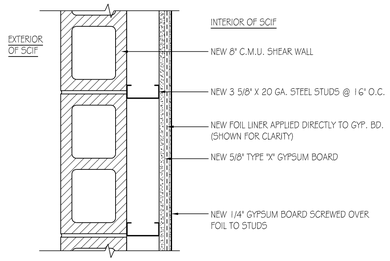
D4 WALL TYPE 'E' PLAN
1 1/2" = 1'-0"



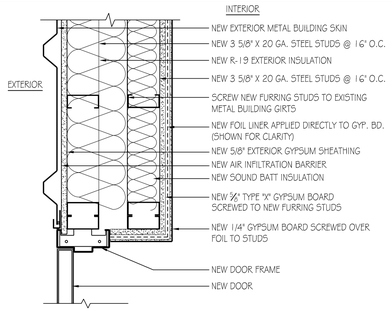
D5 WALL TYPE 'A' PLAN
1 1/2" = 1'-0"



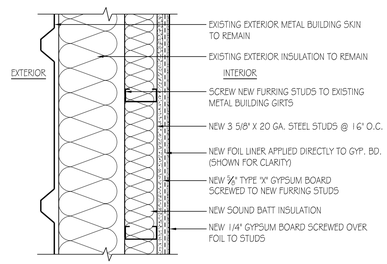
C4 WALL TYPE 'F' PLAN
1 1/2" = 1'-0"



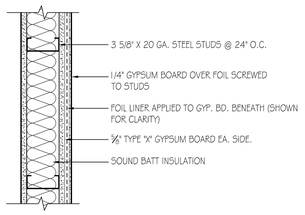
C5 WALL TYPE 'B' PLAN
1 1/2" = 1'-0"



B4 WALL TYPE 'G' PLAN
1 1/2" = 1'-0"



B5 WALL TYPE 'C' PLAN
1 1/2" = 1'-0"



A5 WALL TYPE 'D' PLAN
1 1/2" = 1'-0"

COOPER
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ASSOCIATES

crsa

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(801)328-5151 (801)401-9471
# #

PROJECT:
BUILDING 3030
UTAH NATIONAL GUARD
CAMP W.G. WILLIAMS

OWNER:
UTAH NATIONAL GUARD
12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020-1776

35% PRELIM DESIGN
17 SEPT. 2008

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BID	9/10/08	BID CHECK DOCUMENTS

PROJECT NO: B08-081
CAD DWG FILE: ae501.dwg
DRAWN BY: #
CHECKED BY: ###

DETAILS AND
WALL TYPES

AE501
SHEET OF

STRUCTURAL NOTES

GENERAL

1. ALL DESIGN, CONSTRUCTION, AND INSPECTION SHALL BE IN CONFORMANCE WITH THE 2006 INTERNATIONAL BUILDING CODE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE.
3. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED.
4. DRAWINGS INDICATE THE FINISHED PRODUCT. THEY DO NOT INDICATE A METHOD OF CONSTRUCTION. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH PRECAUTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, ETC.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPENSATING THE OWNER FOR ANY CHANGES MADE AS A RESULT OF A DEVIATION FROM THE CONTRACT DOCUMENTS, DEVIATION FROM THE SPECIFICATIONS, FAULTY MATERIALS, OR FAULTY WORKMANSHIP.
6. OPTIONS ARE FOR THE CONTRACTORS CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED DESIGN CHANGES. COST ASSOCIATED WITH ANY DESIGN WORK INITIATED BY THE OPTION SHALL BE BORN BY THE CONTRACTOR.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION WITHIN AND ADJACENT TO THE JOB SITE.
8. TEMPORARY SHORING AND BRACING SHALL BE PROVIDED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED. SUCH BRACING SHALL BE LEFT IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY OR UNTIL ALL THE STRUCTURAL ELEMENTS ARE COMPLETE.
9. DURING AND AFTER CONSTRUCTION THE CONTRACTOR AND/OR OWNER SHALL KEEP LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN LOADS.
10. THE GENERAL CONTRACTOR SHALL HAVE SHOP DRAWINGS REVIEWED BY THE ARCHITECT PRIOR TO THE FABRICATION OR ERECTION FOR THE FOLLOWING ITEMS: REINFORCING STEEL, STRUCTURAL STEEL, AND MISCELLANEOUS METALS.
11. ALL DETAILS, SECTIONS, AND NOTES ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS UNLESS NOTED OR SHOWN OTHERWISE.
12. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION NOT COVERED ON THE DRAWINGS.
13. OBSERVATION VISITS TO THE JOB SITE BY FIELD REPRESENTATIVES OF CALDER RICHARDS CONSULTING ENGINEERS SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
14. SIZES, LOCATIONS, AND ANCHORAGES OF EQUIPMENT SHALL BE VERIFIED IN THE FIELD WITH EQUIPMENT MANUFACTURERS (SUPPLIERS) PRIOR TO PLACING CONCRETE OR FABRICATING STEEL.

FOOTINGS

1. ALL FOOTINGS SHALL BEAR 12" MINIMUM INTO ORIGINAL UNDISTURBED EARTH OR ON ENGINEERED FILL COMPACTED TO 95% OF MAXIMUM RELATIVE DENSITY BASED ON ASTM D1557-91. SUCH FILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 6" IN DEPTH AFTER COMPACTION AND SHALL EXTEND DOWN TO IN-SITU GRANULAR SOILS.
2. FOOTING ELEVATIONS SHOWN ON PLAN ARE TOP OF FOOTINGS AND ARE MINIMUM DEPTH. DIFFERENT OR UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ARCHITECT AND/OR ENGINEER.
3. WALL FOOTINGS, WHERE NOT SHOWN OTHERWISE, SHALL BE 12" THICK WITH AN 8" SPREAD EACH SIDE OF WALL AND PROVIDE 1 #5 CONTINUOUS AT BOTTOM FOR EACH 8" OF FOOTING WIDTH.
4. WHERE 6" DIAMETER OR LARGER PIPE PASSES THROUGH AN INTERIOR FOUNDATION WALL, STEP THE FOOTING DOWN TO PASS BELOW PIPE AND THEN STEP BACK UP TO INDICATED ELEVATION. PROVIDE PIPE SLEEVE THROUGH FOUNDATION WALL.
5. SITE PREPARATION, PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE OBSERVED AND TESTED BY THE OWNER'S TESTING LABORATORY.
6. SLABS ON GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 4" OF FREE-DRAINING GRANULAR MATERIAL. GRANULAR MATERIAL SHALL BE PLACED UPON PROPERLY PREPARED SUBGRADE AS DESCRIBED ABOVE.

CONCRETE

1. CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS:
   FOOTINGS & FOUNDATION WALLS.....3000 PSI
   SLABS ON GRADE & SUSPENDED SLABS.....4000 PSI
2. A STATEMENT OF MIX DESIGN FOR ALL CONCRETE SHALL BE SUBMITTED TO AND REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
3. ALL CONCRETE WORK SHALL BE PLACED, CURED, STRIPPED, AND PROTECTED AS DIRECTED BY THE SPECIFICATIONS AND ACI STANDARDS AND PRACTICES.
4. UNLESS NOTED OTHERWISE ON THE DRAWINGS, REINFORCE CONCRETE WALLS AS FOLLOWS:

WIDTH	HORIZ REINF	VERTICAL REINF
6" WALL	#4 @ 13"	#4 @ 16" IN CENTER OF WALL
8" WALL	#5 @ 15"	#5 @ 18" IN CENTER OF WALL

   DOWEL VERTICAL BARS 36 DIAMETERS INTO STRUCTURE ABOVE AND FOOTINGS BELOW. PROVIDE 90 DEGREE HOOK WHERE 36 DIAMETER IS NOT POSSIBLE. IN ADDITION, PROVIDE #6 CONTINUOUS BARS TOP AND BOTTOM OF 6" AND 8" WALLS.
5. BEFORE CONCRETE IS POURED CHECK WITH ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, ETC. RELATIVE TO WORK.
6. ADD (2) #5 BARS MINIMUM AROUND ALL OPENINGS (UNLESS OTHERWISE NOTED) AND EXTEND 24" BEYOND CORNER OF OPENING.

CONCRETE, CONT.

7. WHERE OPENINGS LARGER THAN 16" IN ANY DIRECTION OCCUR IN WALLS OR SLABS, PROVIDE SAME SIZE ADDITIONAL, FULL LENGTH REINFORCING AT EACH SIDE OF OPENING EQUAL TO 1/2 THE NUMBER OF BARS INTERRUPTED BY THE OPENING. SPACE ADDITIONAL BARS AT 4 x BAR DIAMETER.
8. UNLESS OTHERWISE NOTED, SLABS ON GRADE SHALL BE 4" THICK AND SHALL BE REINFORCED WITH 6x6-W1.4xW1.4 WELDED WIRE FABRIC.
9. WHERE INTERIOR MASONRY WALLS DO NOT BEAR ON A FOOTING PROVIDE A TYPICAL THICKENED SLAB (12" THICK x 16" WIDE) UNDER WALL. REINFORCE WITH (2) #4 CONTINUOUS. DOWEL WALL REINFORCING TO SLAB.

MASONRY

1. ALL MASONRY SHALL BE REINFORCED WITH BOTH HORIZONTAL AND VERTICAL REINFORCEMENT. ALL BLOCK CELLS OR BRICK CAVITIES WITH REINFORCEMENT SHALL BE GROUTED FULL USING CONCRETE 2000 PSI GROUT. CELLS SHALL BE ALIGNED TO PRESERVE UNOBSTRUCTED VERTICAL CAVITIES OF 2" x 3" MINIMUM.
2. CONCRETE FOR BLOCK FILL SHALL HAVE 3/8 INCH MAXIMUM SIZE COURSE AGGREGATE AND SUFFICIENT WATER SO THE CONCRETE WILL FLOW INTO THE BLOCK CELLS WITHOUT LEAVING VOIDS. WHERE BEAMS BEAR ON CONCRETE BLOCK WALLS. BLOCK CELLS SHALL BE FILLED WITH CONCRETE 1'-4" WIDE TO FOUNDATION AND REINFORCE WITH A #5 EACH CELL, UNLESS OTHERWISE SHOWN.
3. AN ADDITIONAL VERTICAL BAR (MATCHING WALL REINFORCEMENT) SHALL BE PLACED AT EACH CORNER, END OF WALL, AND JAMB OF ALL OPENINGS.
4. HORIZONTAL BARS SHALL BE PLACED IN BOND BEAMS FILLED WITH GROUT AT THE TOP OF ALL WALLS AND AT 48" O.C. MAXIMUM BETWEEN TOP OF WALL AND FOUNDATION. BOND BEAM UNITS AND REINFORCING SHALL CONTINUE UNINTERRUPTED AROUND ALL CORNERS AND WALL INTERSECTIONS. WHERE STRUCTURAL STEEL COLUMNS OR BEAMS INTERRUPT THE CONTINUITY OF A BOND BEAM, DEFORMED BAR ANCHORS MATCHING BOND BEAM REINFORCEMENT SHALL BE WELDED TO THE STRUCTURAL STEEL TO PROVIDE CONTINUITY.
5. ALL VERTICAL REINFORCING BARS SHALL BE DOWELED TO STRUCTURE BELOW WITH BARS OF SAME SIZE AND SPACING. LAP ALL SPLICES IN MASONRY 48 BAR DIAMETERS. PLACE ALL BARS SECURELY PRIOR TO GROUTING.
6. MASONRY REINFORCEMENT: REINFORCEMENT SHALL BE PLACED IN GROUTED CELLS AND SHALL BE A MINIMUM OF:

WIDTH	HORIZ REINF	VERTICAL REINF
6" WALL	(1)#4 @ 48" OC	#4 @ 32" IN CENTER OF WALL
8" WALL	(2)#3 @ 48" OC	#5 @ 32" IN CENTER OF WALL

   IN ADDITION LADDER-TYPE REINFORCING CONSISTING OF #9 WIRE FOR EACH FACE SHELL OF EACH WYTHE SHALL BE USED AT 16 IN. O.C. HORIZONTALLY IN ALL MASONRY WALLS.
7. ALL HORIZONTAL REINFORCING SHALL TERMINATE WITH A HOOK AROUND VERTICAL REINFORCING.
8. CONCRETE MASONRY UNITS SHALL BE GRADE N UNITS CONFORMING TO A.S.T.M. DESIGNATION C90 AND SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET SECTION.
9. MORTAR SHALL BE TYPE "S" AND SHALL HAVE THE FOLLOWING PROPORTIONS BY VOLUMES:
   PORTLAND CEMENT . . . . 1 PART
   HYDRATED LIME . . . . . 1/4 - 1/2 PART
   DAMP LOOSE AGGREGATE. . NOT LESS THAN 2-1/4 AND NOT MORE THAN 3 TIMES THE SUM OF CEMENT AND LIME USED.
10. STOP GROUT POURS 1-1/2" BELOW TOP OF BLOCK UNITS WHEN WALL CONTINUES ABOVE.
11. ALL ANCHOR BOLTS MUST BE PLACED IN GROUTED CELLS.
12. ALL REINFORCING SHALL BE IN PLACE PRIOR TO GROUTING. VERTICAL REINFORCING BARS SHALL BE HELD IN POSITION AT THE TOP, BOTTOM AND AT INTERVALS NOT FARTHER APART THAN 200 BAR DIAMETERS. PROVIDE WIRE TIES AT ALL LAP SPLICES.

REINFORCING STEEL

1. ALL REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI DETAILING MANUAL 315-99 AND ACI STANDARD 318-05.
2. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. LAP ONE MESH TIE.
4. ALL REINFORCEMENT SHALL BE SECURELY TIED AND HELD IN PLACE.
5. REINFORCING BARS THAT ARE TO BE WELDED, INCLUDING DEFORMED BAR ANCHORS (D.B.A.) SHALL COMPLY WITH ASTM A706 OR ANOTHER WELDABLE GRADE AND SHALL BE WELDED IN ACCORDANCE WITH THE A.W.S. RECOMMENDATIONS.
6. ALL CONTINUOUS REINFORCEMENT SHALL TERMINATE WITH A 90 DEG. TURN OR A SEPARATE CORNER BAR. ALL SPLICE SHALL HAVE A MINIMUM LAP OR EMBEDMENT PER REINFORCING SCHEDULE.
7. WHERE THE LENGTH OF A BAR IS GIVEN AND IT IS TO BE HOOKED, THE HOOK SHALL BE IN ADDITION TO THE LENGTH GIVEN, UNLESS SHOWN OTHERWISE.
8. COVER TO MAIN REINFORCEMENT FROM ADJACENT SURFACES SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE:
   UNFORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER (BOTTOM OF FOOTINGS). . 3"
   SLABS ON GRADE . . . . . 2"
   FORMED SURFACES IN CONTACT WITH THE GROUND OR EXPOSED TO THE WEATHER (GRADE BMS, WALLS, ETC.), BEAMS AND COLUMNS . . . . . 2"
9. PRIOR TO FABRICATION AND PLACEMENT, SHOP DRAWINGS FOR ALL REINFORCING STEEL SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL AND STRUCTURAL STEEL WORK SHALL COMPLY WITH BOTH THE AISC "MANUAL OF STEEL CONSTRUCTION" CONTAINING THE SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS, INCLUDING THE "CODE OF STANDARD PRACTICES" (LATEST EDITION), AND WITH THE IBC 2006 EDITION.
2. ALL WIDE FLANGE STRUCTURAL STEEL SHALL BE ASTM A992 AND ALL MISCELLANEOUS SHAPES SHALL BE ASTM A36, UNO.
3. STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500 GRADE B; YIELD STRESS = 46 KSI.
4. USE A325 BOLTS FOR STEEL TO STEEL CONNECTIONS AND A307 BOLTS FOR ALL OTHER CONNECTIONS INCLUDING ANCHOR BOLTS. USE 3/4" DIAMETER MINIMUM.
5. PRIOR TO FABRICATION AND ERECTION, SHOP DRAWINGS FOR ALL STEEL ITEMS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL VERIFY ALL SHOP DRAWING DIMENSIONS WITH STRUCTURAL AND ARCHITECTURAL PLANS AND DETAILS.
6. ALL WELDS SHALL BE MADE WITH E70XX ELECTRODES AND BY WELDERS CERTIFIED BY AWS STANDARDS WITHIN THE PAST 12 MONTHS; PROVIDE WRITTEN CERTIFICATION IF REQUESTED.
7. ALL HIGH-STRENGTH BOLTS SHALL BE TIGHTENED TO THE APPROPRIATE MINIMUM BOLT TENSION IN ACCORDANCE WITH "AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS." THE PREFERRED METHOD OF TIGHTENING IS BY USING TENSION CONTROL BOLTS WITH TWIST OFF ENDS. THE TURN-OF-NUT METHOD MAY ALSO BE USED. PROVIDE CARBONIZED WASHERS UNDER THE TURNED ELEMENT.
8. CONCENTRATED LOADS SHALL NOT BE PLACED ON NOR HUNG FROM JOISTS UNLESS THEY ARE PLACED AT PANEL POINTS OR A BRACE IS INSTALLED BETWEEN THE LOAD AND PANEL POINT (SEE DETAIL C5/S501).
9. SPECIAL INSPECTIONS AND TESTING OF WELDS AS REQUIRED BY IBC 2006 SHALL BE PROVIDED BY THE OWNER.
10. WHERE INDICATED ON PLAN PROVIDE 3/4 INCH DIAMETER, 4 INCH LONG (AFTER WELDING) HEADED STUD SHEAR CONNECTORS. STUD SHEAR CONNECTORS SHALL COMPLY WITH ASTM A 108-81. WHERE STEEL DECK IS PERPENDICULAR TO BEAMS, STUDS SHALL BE WELDED THROUGH DECK TO BEAM.
11. NUMBERS THAT ARE SHOWN IN PARENTHESIS AT BEAMS ARE NUMBER OF HEADED STUD CONNECTORS THAT ARE TO BE SPACED EQUALLY BETWEEN INTERSECTION BEAMS OR LINES SHOWN ON PLAN.

LIGHT GAGE METAL FRAMING

1. DESIGN, FABRICATION AND ERECTION OF LIGHT-GAGE METAL FRAMING SHALL COMPLY WITH REQUIREMENTS OF: AISC "MANUAL OF STEEL CONSTRUCTION", AWS "STRUCTURAL WELDING CODE", AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS", AND ICBO REPORT ER-4943P.
2. FRAMING SHOWN ON PLANS ARE MINIMUM SIZES AND CONDITIONS. SUBSTITUTION OF FRAMING MEMBERS SHALL BE APPROVED BY ARCHITECT AND ENGINEERS. THEY SHALL HAVE CAPACITY FOR GRAVITY LOADS AND LATERAL LOADS EQUAL TO OR BETTER THAN SPECIFIED FRAMING MEMBERS AND SHALL BE ICBO APPROVED.
3. ALL COMPONENTS SHALL BE GALVANIZED ACCORDING TO REQUIREMENTS OF ASTM A-525 FOR MINIMUM G-60 COATING.
4. ALL 16 AND 18 GAGE STUDS, AND ALL TRACK, BRIDGING, END CLOSURES AND ACCESSORIES SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE MINIMUM REQUIREMENTS OF ASTM A-446, WITH A MINIMUM YIELD OF 33 KSI FOR 18 GAGE AND 50 KSI FOR 16 GAGE, FOR STUDS AND 33 KSI FOR RUNNERS, BRIDGING, END CLOSURES AND ACCESSORIES.
5. ALL WELDS SHALL BE ACCOMPLISHED USING 1/8 INCH AWS TYPE 6013 OR 7014 ROD WITH A WELDING HEAT OF 60 TO 110 AMPERES DEPENDING ON THE GAGE OF MATERIAL AND THE FIT OF THE PARTS. WIRE TYING OF FRAMING COMPONENTS IS NOT PERMITTED.
6. ADEQUATE LATERAL BRACING MUST BE PROVIDED DURING CONSTRUCTION.
7. UNLESS NOTED OTHERWISE, METAL FRAMING MEMBERS @ LOAD BEARING, SHEAR WALLS AND EXTERIOR WALLS SHALL BE 18 GAGE FOR STUDS, 16 GAGE FOR TOP AND BOTTOM RUNNER. 16 GAGE FOR STUDS @ HOLD DOWNS.
8. RUNNER TRACKS: INSTALL CONTINUOUS TRACKS SIZED TO MATCH STUDS. ALIGN TRACKS ACCURATELY TO LAYOUT AT BASE AND TOPS OF STUDS. UNLESS INDICATED OTHERWISE, SECURE TRACKS AS RECOMMENDED BY STUD MANUFACTURER FOR TYPE OF CONSTRUCTION INVOLVED, EXCEPT DO NOT EXCEED 24" O.C. SPACING FOR NAIL OR POWER-DRIVEN FASTENERS, OR 16" O.C., FOR OTHER TYPES OF ATTACHMENT. PROVIDE FASTENERS AT CORNERS AND ENDS OF TRACK.
9. FASTENINGS: FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS OR BY WELDING. SCREWS AND WELDS SHALL BE OF SUFFICIENT SIZE TO ENSURE THE STRENGTH OF THE CONNECTION. WIRE TYING OF COMPONENTS SHALL NOT BE PERMITTED. ALL WELDS SHALL BE TOUCHED UP WITH A ZINC-RICH PAINT. FASTENING OF PLYWOOD DIAPHRAGMS AND SILL PLATES SHALL BE AS INDICATED IN STRUCTURAL NOTES, AND DETAILED.
10. STUD SECTIONS USED AS RAFTERS OR JOISTS SHALL BE UNPUNCHED.
11. ALL NON-LOAD BEARING WALLS SHALL BE ERECTED SO AS TO ALLOW FOR PROPER DEFLECTION OF STRUCTURE ABOVE. THE TOPS OF ALL SUCH WALLS SHALL BE HORIZONTALLY BRACED TO THE STRUCTURE ABOVE AT A MAXIMUM OF 8'-0" O.C.

STRUCTURAL DESIGN LOADS

FLOOR(S): DEAD LOAD: 60 PSF
LIVE LOAD(S):
OFFICES = 50 PSF (+20 PSF PARTITION)
CORRIDORS = 100 PSF

SEISMIC: OCCUPANCY CATEGORY: II
SPECTRAL RESPONSE COEF: SDS = 0.79
SD1 = 0.47
SITE CLASS: D
BASIC SEISMIC FORCE-RESISTING SYSTEM:
SPECIAL REINFORCED MASONRY BEARING WALL SYSTEM
R=5, OMEGA=2.5, Cd=3.5, Cs=0.16

SOILS: NET ALLOWABLE SOIL PRESSURE = 1500 PSF (ASSUMED AND TO BE FIELD VERIFIED)

QUALITY ASSURANCE PLAN

1. SPECIAL INSPECTION SHALL BE PROVIDED BY THE OWNER ACCORDING TO IBC CHAPTER 17 FOR THE ITEMS IDENTIFIED IN THIS SECTION AND ON THE CONTRACT DOCUMENTS.
2. THE NAMES AND CREDENTIALS OF SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT WHEN APPLYING FOR A BUILDING PERMIT.
3. SPECIAL INSPECTION REPORTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD, ARCHITECT, AND OWNER (AS REQUESTED) BI-WEEKLY OR MORE FREQUENTLY AS REQUIRED BY THE INSPECTOR OR BUILDING OFFICIAL.
4. OFF-SITE FABRICATION: WHERE FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATORS SHOP, SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE IN ACCORDANCE WITH IBC SECTION 1704.2 UNLESS THE FABRICATOR IS APPROVED ACCORDING TO IBC SECTION 1704.2.2.
5. STEEL CONSTRUCTION: SPECIAL INSPECTIONS FOR STEEL ELEMENTS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 1704.3 AND TABLE 1704.3.
6. WELDING: WELDING INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH TABLE 1704.3. ELEMENTS THAT ARE PART OF THE SEISMIC-FORCE-RESISTING SYSTEM SHALL ALSO BE INSPECTED ACCORDING TO SECTION 1707.2 AND 1708.4.[JKW1]
7. HIGH-STRENGTH BOLTS: PERIODIC SPECIAL INSPECTION SHALL BE PROVIDED FOR INSTALLATION OF HIGH-STRENGTH BOLTS IN ACCORDANCE WITH AISC SPECIFICATIONS. SEE IBC SECTION 1704.3.3.
8. MASONRY CONSTRUCTION: LEVEL 1 SPECIAL INSPECTION SHALL BE PROVIDED FOR MASONRY CONSTRUCTION IN ACCORDANCE WITH SECTION 1704.5.2 AND TABLE 1704.5.1. TESTING SHALL COMPLY WITH SECTION 1708.1.3
9. SOILS: SPECIAL INSPECTION SHALL BE PROVIDED FOR PLACEMENT OF FILL 12 INCHES OR MORE DEEP IN ACCORDANCE WITH SECTION 1704.7.
10. EPOXY ANCHORS: PRIOR TO AND DURING EPOXY INJECTION TO INSURE PROPER INSTALLATION AS PER MANUFACTURERS REQUIREMENTS. CONTRACTOR SHALL SUBMIT PROPOSED EPOXY MANUFACTURERS I.C.C. EVALUATION SERVICE REPORT TO STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

QUALITY ASSURANCE PLAN CONTRACTOR RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR COMPONENT LISTED IN THE QUALITY ASSURANCE PLAN SHALL SUBMIT A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND TO THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING:

1. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE QUALITY ASSURANCE PLAN.
2. ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
4. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THE POSITION(S) IN THE ORGANIZATION.

STRUCTURAL OBSERVATION

CALDER RICHARDS CONSULTING ENGINEERS SHALL BE NOTIFIED BY THE CONTRACTOR 5 BUSINESS DAYS BEFORE THE COMPLETION OF THE ITEMS LISTED IN THIS SECTION SO THAT STRUCTURAL OBSERVATION MAY BE PERFORMED IN ACCORDANCE WITH IBC SECTION 1709. THE OBSERVATIONS WILL BE PERFORMED AT THE DISCRETION OF CALDER RICHARDS CONSULTING ENGINEERS.

1. BEFORE FIRST GROUT POUR FOR MASONRY WALLS.
2. BEFORE CONCRETE PLACEMENT ON SUSPENDED METAL DECK.
3. AT COMPLETION OF STRUCTURAL WORK SHOWN ON STRUCTURAL DRAWINGS.

FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICK	CROSSWISE REINF				LENGTHWISE REINF				NOTES
				NO	SIZE	LENGTH	SPACING	NO	SIZE	LENGTH	SPACING	
FCA	1'-6"	CONT	12"	–	#5	REQD	16" OC	(2)	#5 TOP & BOT	CONT	12" OC	SEE DETAILS **A4/S501** & **A5/S501**
FC2.0	2'-0"	CONT	12"	–	#4	1'-6"	18" OC	(2)	#5	CONT	18" OC	
FS3.5	3'-6"	3'-6"	12"	(3)	#4	3'-0"	18" OC	(3)	#4	3'-0"	18" OC	
FS4.5	4'-6"	4'-6"	12"	(4)	#5	4'-0"	16" OC	(4)	#5	4'-0"	16" OC	
FS5.5	5'-6"	5'-6"	12"	(5)	#5	5'-0"	15" OC	(5)	#5	5'-0"	15" OC	
FS6.0	6'-0"	6'-0"	12"	(6)	#5	5'-6"	13.2" OC	(6)	#5	5'-6"	13.2" OC	
FS6.5	6'-6"	6'-6"	13"	(7)	#5	6'-0"	12" OC	(7)	#5	6'-0"	12" OC	
FS7.0	7'-0"	7'-0"	14"	(7)	#5	6'-6"	13" OC	(7)	#5	6'-6"	13" OC	
FR4.0/6.0	4'-0"	6'-0"				3'-6"				5'-6"		

FOOTING NOTES:

1. PLACE CROSSWISE REINFORCING 3" CLEAR FROM GRADE AND LENGTHWISE REINFORCING ON TOP OF CROSSWISE.
2. WHERE TOP REINFORCING IS INDICATED, PLACE TOP CROSSWISE REINFORCING 2" CLEAR FROM TOP OF FOOTING AND LENGTHWISE REINFORCING UNDER CROSSWISE REINFORCING.
3. REINFORCE FOOTINGS MARKED WITH AN ASTERISK (*) EQUALLY TOP AND BOTTOM.
4. REINFORCE FOOTIINGS MARKED WITH A PLUS SIGN (+) W/ #4 @ 12" OC, EACH WAY AT TOP MAT AND BOTTOM MAT AS SCHEDULED.
5. ALL CONTINUOUS FOOTINGS SHALL BE FC2.0 AND SQUARE FOOTINGS SHALL BE FS3.0, MINIMUM, UNO ON PLANS.

A4 FOOTING SCHEDULE
3731_01 Footing Schedule SCALE: NONE

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CAD DWG FILE: S001.dwg
DRAWN BY: JRS / DJK
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STRUCTURAL GENERAL NOTES & DETAILS

S001

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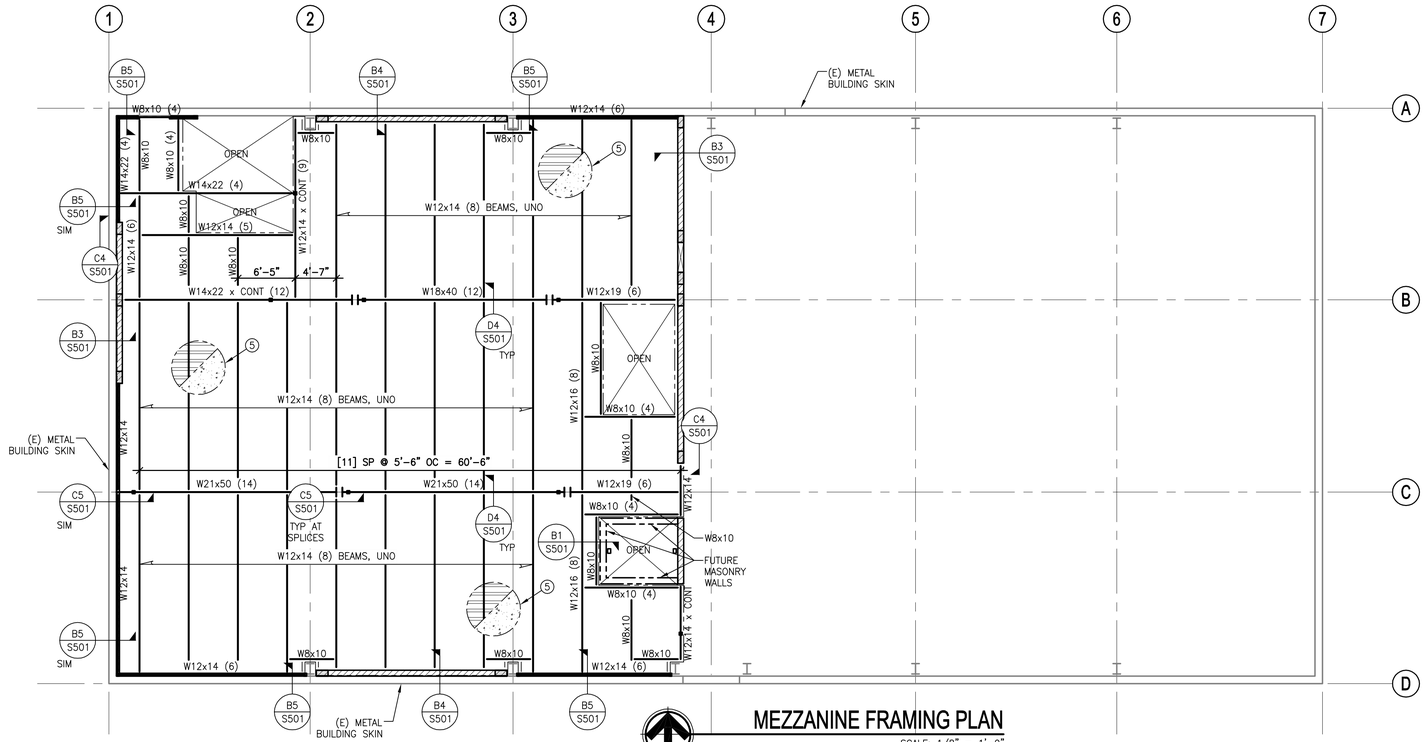
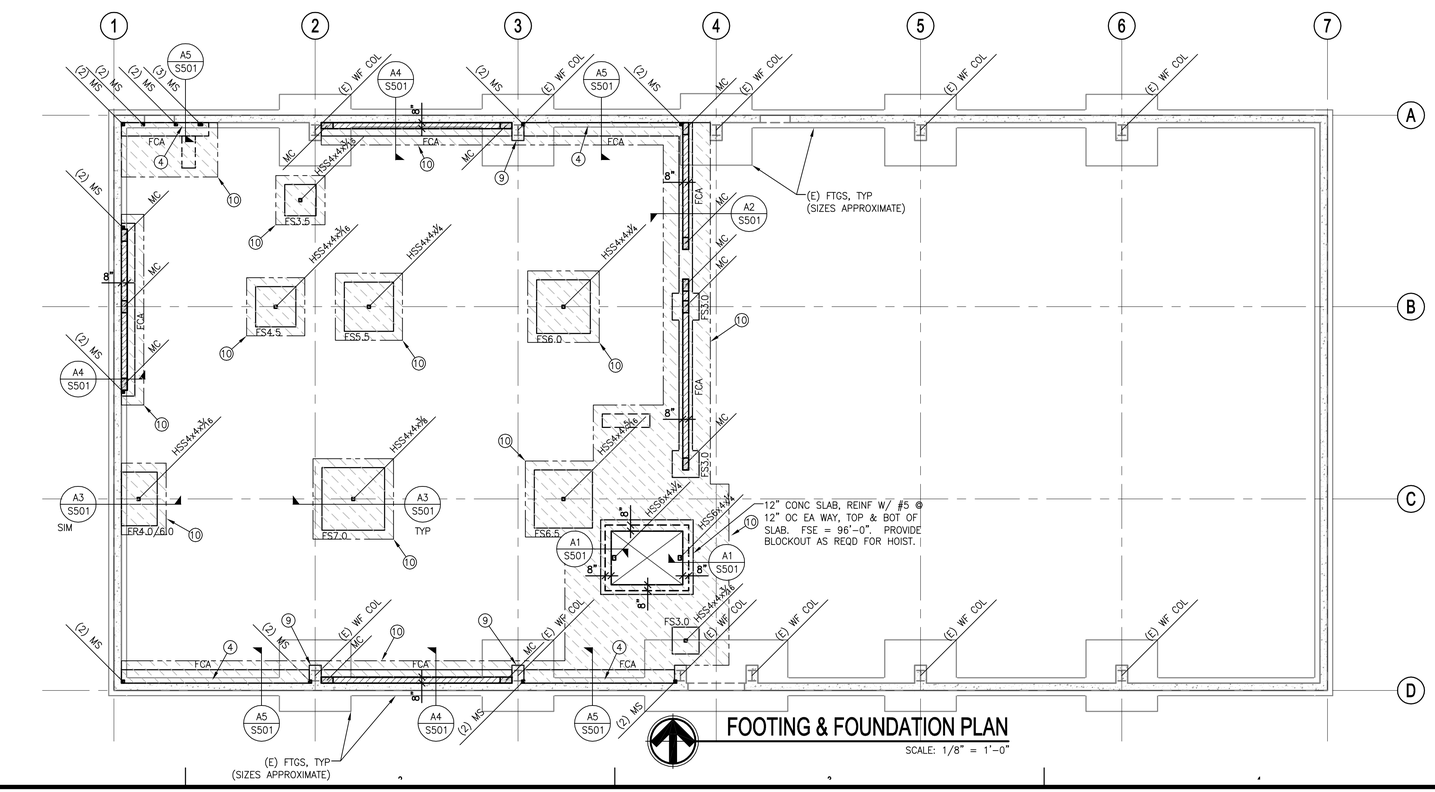


MEZZANINE FRAMING PLAN

SCALE: 1/8" = 1'-0"



FOOTING & FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

PLAN NOTES

◯ CIRCLED NOTES ARE KEYED TO PLAN.

1. SEE **SHEET S001** FOR STRUCTURAL NOTES, INCLUDING FOOTING PREPARATION NOTES.
2. FFE 100'-0" = EXISTING MAIN FLOOR ELEVATION.
3. FFE 111'-0" = EXISTING UPPER FLOOR ELEVATION. COORDINATE W/ ARCHITECTURAL DRAWINGS.
4. METAL STUD WALL FRAMING ALONG GRIDS A & D SHALL BE 400S162-43 (4"x1⅝"-18 GAGE) @ 16" OC. SEE ARCH DWGS FOR OTHER STUD WALLS.
5. TYPICAL SUSPENDED FLOOR SLAB, UNO: 4" (TOTAL THICKNESS) NORMAL WEIGHT CONCRETE SLAB ON 1½" DEEP, 20 GAGE, PHOSPHATIZED / PAINTED COMPOSITE "B FORMLOK" DECK, WITH INTERLOCKING SIDE LAPS. DECK SHALL HAVE A MINIMUM YIELD STRENGTH OF 38,000 PSI. REINFORCE CONCRETE SLAB WITH 6x6-W1.4xW1.4 WWF PLACED AT MIDDLE DEPTH OF SLAB. (USE FLAT SHEETS).
6. ATTACH FLOOR DECK AS FOLLOWS:
   - ATTACH SIDE LAPS WITH BUTTON PUNCH @ 12" OC
   - ATTACH TO PERPENDICULAR SUPPORTS WITH ¾"ø PUDDLE WELDS @ EVERY FLUTE.
   - ATTACH TO PARALLEL SUPPORTS WITH ¾"ø PUDDLE WELDS @ 12" OC
7. NUMBER IN PARENTHESES FOLLOWING BEAM SIZE DENOTES NUMBER OF ¾"ø x 3½" HSA TO BE EQUALLY SPACED ALONG THE TOP FLANGE OF THE BEAM.
8. BEAM TO BEAM CONNECTIONS SHALL BE AS PER BOLTING SCHEDULE **D5/S501**.
9. CONTRACTOR SHALL VERIFY IF TENSION TIES EXIST IN SLAB ON GRADE AT EXISTING COLUMNS PRIOR TO CUTTING SLAB ON GRADE. IF TENSION TIES ARE FOUND AT COLUMNS **DO NOT CUT SLAB** WITHOUT ENGINEER'S APPROVAL.
10. SAWCUT, REMOVE, AND REPLACE EXISTING SLAB AS REQD FOR INSTALLATION OF NEW FOOTINGS AND COLUMNS, TYP. NO REINF REQD IN NEW SLAB INFILL.

LEGEND

FCx, FSx	CONTINUOUS FOOTING, SPOT FOOTING TYPES RESPECTIVELY, SEE SCHEDULE ON **SHEET S001**		CONCRETE FOOTING
	NEW CONC SLAB INFILL TO MATCH (E)	MC	MASONRY WALL W/ COLUMN AT END OF WALL, SEE DETAIL **C1/S501**
	CONC SLAB ON STEEL DECK, W/ SPAN DIRECTION INDICATED	(#) MS	METAL STUD WALL W/ (#) STUDS AT END OF WALL
	OPENING IN DECK		WALL BELOW SLAB OR DECK
	STEEL COLUMN		STEEL BEAM
			BEAM SPLICE, SEE DETAIL **C5/S501**
			STEEL FRAME ANGLES

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PROJECT NO: -
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DRAWN BY: JRS / DJK
CHECKED BY: SDC

FOOTING & FOUNDATION PLAN AND MEZZANINE FRAMING PLAN

S101

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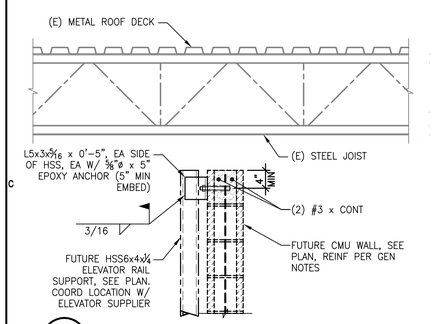
BOLT SCHEDULE

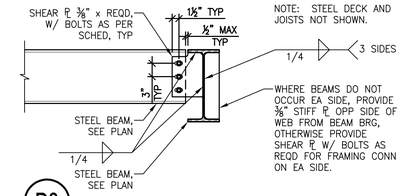
BEAM SIZE	SHEAR BOLTS
W8, W10	(2) ¾"ø
W12, W14	(3) ¾"ø
W16, W18	(4) ¾"ø
W21	(5) ¾"ø
W24	(6) ¾"ø

NOTES:
1. SEE FRAMING PLANS FOR BEAM SIZES.
2. ALL BOLTS SHALL BE A325-N, UNO



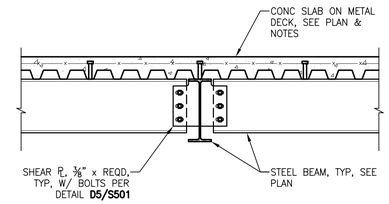
C1 SCALE: 3/4" = 1'-0"

C2 SCALE: 3/4" = 1'-0"



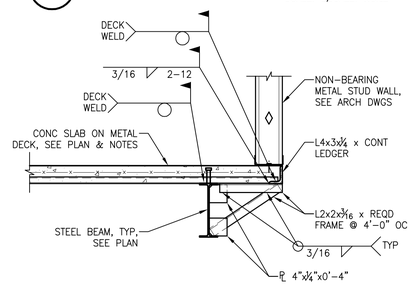
NOTE: STEEL DECK AND JOISTS NOT SHOWN.

D3 SCALE: 3/4" = 1'-0"



D4 SCALE: 3/4" = 1'-0"

D5 SCALE: 3/4" = 1'-0"



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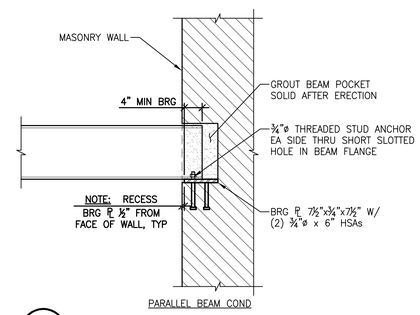
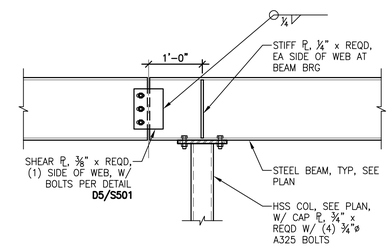


C4 SCALE: 3/4" = 1'-0"

NOTE: OTHER FRAMING MEMBERS NOT SHOWN.



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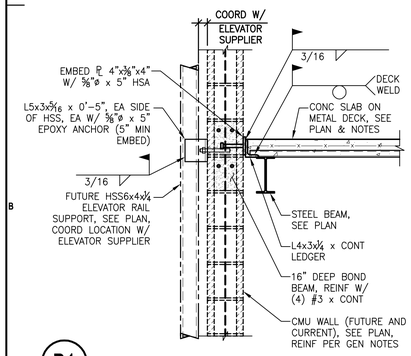
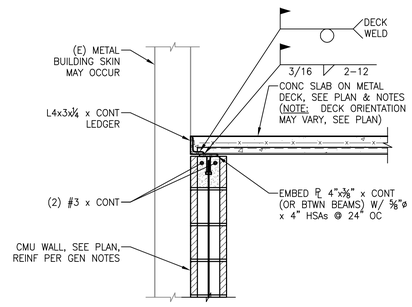


B1 SCALE: 3/4" = 1'-0"

B2 SCALE: 3/4" = 1'-0"



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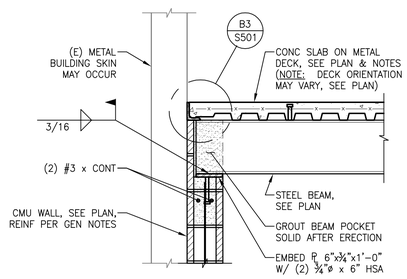

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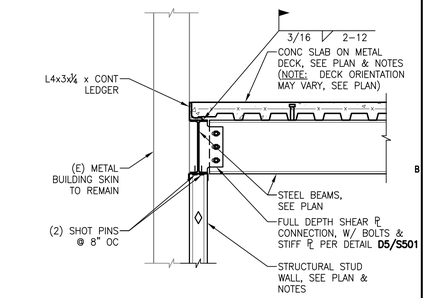

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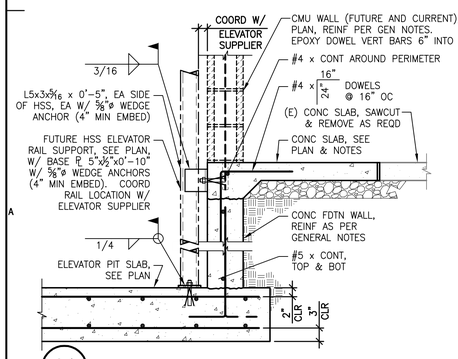
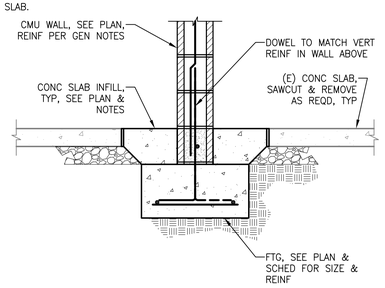


A1 SCALE: 3/4" = 1'-0"



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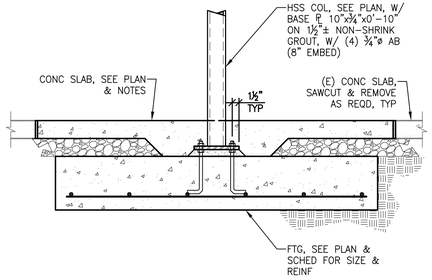

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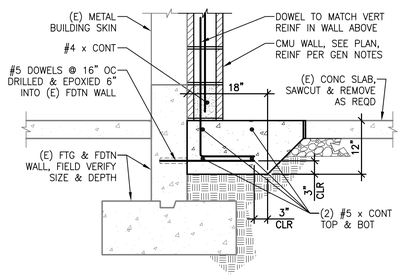
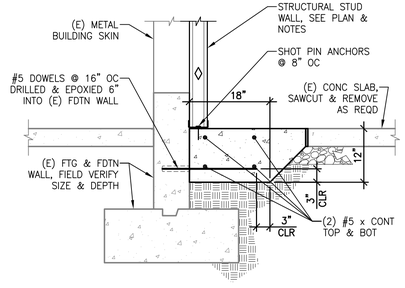


A4 SCALE: 3/4" = 1'-0"



A5 SCALE: 3/4" = 1'-0"

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STRUCTURAL DETAILS

S501

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ABBREVIATIONS

ø	ROUND, DIAMETER, PHASE	EWT	ENTERING WATER TEMPERATURE	OZ	OUNCE
ABS	ACRYLONITRILE–BUTADIENE–STYRENE, ABSOLUTE	EXH	EXHAUST	P	PUMP
ACCU	AIR COOLED CONDENSING UNIT	EXP	EXPANSION	PD	PRESSURE DROP/DIFFERENCE
A/C	AIR CONDITIONING	EXT	EXTERIOR	PE	POLYETHYLENE
AD	ACCESS DOOR, AREA DRAIN	F	FAHRENHEIT	PEX	CROSS–LINKED POLYETHYLENE
ADA	AMERICAN DISABILITIES ACT	FC	FLEXIBLE CONNECTION, FORWARD CURVED	PF	PRE–FILTER
AF	AIR FOIL, AIR FILTER	FCO	FLOOR CLEAN OUT	PH	PHASE
AFF	ABOVE FINISH FLOOR	FCU	FAN COIL UNIT	PIV	POST INDICATOR VALVE
AHU	AIR HANDLING UNIT	FD	FLOOR DRAIN, FIRE DAMPER	PLMB	PLUMBING
ALT	ALTITUDE, ALTERNATE	FDC	FIRE DEPARTMENT CONNECTION	POC	POINT OF CONNECTION
AMB	AMBIENT	FF	FINISH FLOOR, FINAL FILTER	PPM	PARTS PER MILLION
AMP	AMPERE (AMP, AMPS)	FL	FLOW LINE	PRS	PRESSURE REDUCING STATION
AP	ACCESS PANEL	FLEX	FLEXIBLE	PRV	PRESSURE REDUCING VALVE
APD	AIR PRESSURE DROP	FO	FLAT OVAL	PSF	POUNDS PER SQUARE FOOT
ARCH	ARCHITECT	FP	FIRE PROTECTION	PSI	POUNDS PER SQUARE INCH
AS	AIR SEPARATOR	FPM	FEET PER MINUTE	PTAC	PACKAGED TERMINAL AIR CONDITIONER
AV	ACID VENT, AIR VENT	FS	FLOOR SINK	PVC	POLYVINYL CHLORIDE
B	BOILER	FSD	FIRE SMOKE DAMPER	R	THERMAL RESISTANCE, RANKINE, RETURN
BAL	BALANCE	FSTAT	FREEZESTAT	RA	RETURN AIR
BAS	BUILDING AUTOMATION SYSTEM	FT	FEET	RAD	RADIUS
BBR	BASEBOARD RADIATOR	FTR	FIN TUBE RADIATION	RCP	RADIANT CEILING PANEL
BDD	BACKDRAFT DAMPER	FURN	FURNACE, FURNISH, FURNITURE	RD	ROOF DRAIN
BFP	BACKFLOW PREVENTER	FV	FACE VELOCITY	RECIRC	RECIRCULAT(E),(OR),(ING)
BFV	BUTTERFLY VALVE	G	GAUGE, NATURAL GAS	REF	REFRIGERAT(OR),(ION)
BHP	BRAKE HORSEPOWER	GA	GAGE	REQ'D	REQUIRED
BI	BACKWARD INCLINED	GAL	GALLON	RF	RETURN FAN
BOD	BOTTOM OF DUCT	GALV	GALVANIZED	RH	RELATIVE HUMIDITY
BOP	BOTTOM OF PIPE	GC	GENERAL CONTRACTOR	RM	ROOM
BT	BATH TUB	GD	GARAGE DRAIN	RPBP	REDUCED PRESS. BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT	GH	GRAVITY HOOD	RPM	REVOLUTIONS PER MINUTE
BTUH	BRITISH THERMAL UNITS/HR	GPM	GALLONS PER MINUTE	RTU	ROOF TOP UNIT
BV	BALL VALVE	GT	GREASE TRAP	REV	REVOLUTION, REVISION, REVERSE
C	CHILLER	HB	HOSE BIBB	S	SECONDS, SUPPLY, SINK
CA	COMPRESSED AIR, COMBUSTION AIR	H/C, HC	HEATING COIL	SA	SUPPLY AIR, SOUND ATTENUATOR
CAP	CAPACITY	HEPA	HIGH EFFICIENCY PARTICULATE AIR	SAN	SANITARY
CAV	CONSTANT AIR VOLUME	HOA	HAND, OFF, AUTO	SAT	SATURATED
C/C, CC	COOLING COIL	HP	HORSEPOWER, HEAT PUMP	SCFM	STANDARD CUBIC FEET PER MINUTE
CD	CONDENSATE DRAIN, CEILING DIFFUSER	HR	HOUR	SD	STORM DRAIN, SMOKE DAMPER
CFM	CUBIC FEET PER MINUTE	HSTAT	HUMIDISTAT	SECT	SECTION
CFOI	CONTRACTOR FURN., OWNER INSTALLED	HT	HEIGHT	SEN	SENSIBLE
CHW	CHILLER WATER	HVAC	HEATING, VENTILATING, AIR–CONDITIONING	SHT	SHEET
CO	CLEAN OUT, CARBON MONOXIDE	HX	HEAT EXCHANGER	SIM	SIMILAR
CO2	CARBON DIOXIDE	HZ	FREQUENCY	SL	SEA LEVEL
CONC	CONCRETE	IAQ	INDOOR AIR QUALITY	SP	STATIC PRESSURE
COND	CONDENS(ER),(ING),(ATE),(ATION)	ID	INSIDE DIAMETER	SPEC	SPECIFICATION
CONT	CONTINUOUS	IE	INVERT ELEVATION	SQ	SQUARE
COP	COEFFICIENT OF PERFORMANCE, COPPER	IN	INCH	SS	SERVICE SINK, STAINLESS STEEL
COTG	CLEANOUT TO GRADE	IN WC	INCHES, WATER COLUMN	STC	SOUND TRANSMISSION CLASS
CPVC	CHLORINATED POLY VINYL CHLORIDE	INV	INVERT	STD	STANDARD
CT	COOLING TOWER	I/O	INPUT/OUTPUT	STRUCT	STRUCTUR(E),(AL)
CU	CONDENSING UNIT, CUBIC	JS	JANITORS SINK	SUCT	SUCTION
CV	CONTROL VALVE, CONSTANT VOLUME	KEC	KITCHEN EQUIPMENT CONTRACTOR	T	TEMPERATURE, TIME
CUH	CABINET UNIT HEATER	KW	KILOWATT	T&P	TEMPERATURE AND PRESSURE
CW	CONDENSER WATER, CLOCKWISE	KWH	KILOWATT HOUR	TAB	TEST, ADJUST AND BALANCE
DA	DISCHARGE AIR	LAT	LEAVING AIR TEMPERATURE	TDH	TOTAL DYNAMIC HEAD
dB	DECIBELS	LAV	LAVATORY	TEMP	TEMPERATURE, TEMPORARY
DB	DRY BULB TEMPERATURE	LBS	POUNDS	TONS	TONS OF REFRIGERATION
DDC	DIRECT DIGITAL CONTROL	LF	LINEAR FEET	TOD	TOP OF DUCT
DF	DRINKING FOUNTAIN	LVR	LOUVER	TOP	TOP OF PIPE
DIA	DIAMETER	LWT	LEAVING WATER TEMPERATURE	TSP	TOTAL STATIC PRESSURE
DMPR	DAMPER	MA	MEDICAL AIR, MIXED AIR	TSTAT	THERMOSTAT
DP	DEWPOINT, DIFFERENTIAL PRESSURE	MAT	MATERIAL, MIXED AIR TEMPERATURE	TYP	TYPICAL
DR	DRAIN	MAU	MAKE UP AIR HANDLING UNIT	U	URINAL
DSN	DOWNSPOUT NOZZLE	MAV	MANUAL AIR VENT	UH	UNIT HEATER
DW	DISHWASHER	MAX	MAXIMUM	UNO	UNLESS NOTED OTHERWISE
DWG	DRAWING	MBH	BTU/HR X 1,000	V	VENT, VALVE
DWV	DRAIN, WASTE, VENT	MC	MECHANICAL CONTRACTOR	VA	VOLT AMPERE
DX	DIRECT EXPANSION	MCC	MOTOR CONTROL CENTER	VAC	VACUUM
(E) EXIST	EXISTING	MECH	MECHANICAL	VAV	VARIABLE AIR VOLUME
EAT	ENTERING AIR TEMPERATURE	MH	MAN HOLE	VD	VOLUME DAMPER
EC	ELECTRICAL CONTRACTOR	MIN	MINIMUM, MINUTE	VFD	VARIABLE FREQUENCY DRIVE
ECON	ECONOMIZER	MVD	MANUAL VOLUME DAMPER	VI	VIBRATION ISOLATOR
EDH	ELECTRIC DUCT HEATER	NA	NOT APPLICABLE	VOL	VOLUME
EER	ENERGY EFFICIENCY RATIO	NC	NOISE CRITERIA, NORMALLY CLOSED	VP	VELOCITY PRESSURE
EF	EXHAUST FAN	NIC	NOT IN CONTRACT	VSC	VARIABLE SPEED CONTROLLER
EFF	EFFICIENCY	NO	NORMALLY OPEN, NITROUS OXIDE	VTR	VENT THROUGH ROOF
EL, ELEV	ELEVATION	NO.	NUMBER	W	WASTE
EMER	EMERGENCY	NOM	NOMINAL	W/	WITH
ENCL	ENCLOSURE	NR	NOISE REDUCTION	W/O	WITHOUT
ESP	EXTERNAL STATIC PRESSURE	NRC	NOISE REDUCTION COEFFICIENT	WB	WET BULB
ET	EXPANSION TANK	NTS	NOT TO SCALE	WC	WATER CLOSET
EUH	ELECTRIC UNIT HEATER	OA	OUTSIDE AIR	WCO	WALL CLEAN OUT
EVAP	EVAPORAT(E),(ING),(ED),(OR)	OBD	OPPOSED BLADE DAMPER	WHA	WATER HAMMER ARRESTOR
EWB	ENTERING WET BULB	OD	OVERFLOW DRAIN, OUTSIDE DIAMETER	WT	WEIGHT
EWC	ELECTRIC WATER COOLER	OF/CI	OWNER FURN./CONTRACTOR INSTALLED	YCO	YARD CLEANOUT
EWH	ELECTRIC WATER HEATER	OF/OI	OWNER FURNISHED/OWNER INSTALLED		
EWS	EYE WASH STATION	OS&Y	OPEN SCREW & YOLK		

MECHANICAL LEGEND

BALL VALVE
BUTTERFLY VALVE
GATE VALVE
GLOBE VALVE
3–WAY VALVE
ELECTRONIC/PNEUMATIC VALVE ACTUATOR
SOLENOID/DIAPHRAGM VALVE ACTUATOR
CHECK VALVE
SPRING CHECK VALVE
BALL VALVE W/HOSE END & CAP
NEEDLE VALVE
PRESSURE REDUCING VALVE
REDUCED PRESSURE BACKFLOW PREVENTER — RPBP
INLINE PUMP
PRESSURE & TEMPERATURE RELIEF VALVE
SQUARE HEAD COCK
STRAINER, W/BV HOSE END & CAP
TEMPERATURE & PRESSURE PLUG
CIRCUIT SETTER
AUTOMATIC FLOW CONTROL VALVE
AUTOMATIC/MANUAL AIR VENT — AV, MAV
VENTURI FLOW MEASURING DEVICE
THERMOMETER/PRESSURE GAGE W/COCK
TEMPERATURE SENSOR
CONCENTRIC/ECCENTRIC REDUCER
UNION
BUSHING/CAP
ELBOW UP/DOWN
TOP/BOTTOM CONNECTION, 45° OR 90°
TEE UP/SIDE/DOWN
FLOW/PITCH DOWN DIRECTION — 2%
ANCHOR/GUIDE
EXPANSION JOINT/FLEX CONNECTOR
HEATING WATER SUPPLY — HWS
HEATING WATER RETURN — HWR
NATURAL GAS — G
DETAIL TAG — DETAIL NO. 1, SHEET NO. M601

DUCT SIZE, (1ST FIGURE, SIDE SHOWN; 2ND FIGURE, OTHER SIDE) — 24/12
DIRECTION OF FLOW
LINED DUCT — 24/12
HIDDEN DUCT — (24/12)
WYE W/45° ENTRY
TEE W/45° ENTRY
ELBOW W/TURNING VANES
HELICAL FLEX DUCT
SUPPLY DUCT SECTION UP/DOWN — 24/12
RETURN DUCT SECTION UP/DOWN — 24/12
EXHAUST DUCT SECTION UP/DOWN — 24/12
SUPPLY DUCT SECTION UP/DOWN — 18ø
ROUND BRANCH — 12ø, 18ø
DUCT TRANSITION — 24/12, 18/12
SPIN–IN W/VOLUME DAMPER — 24/12
FIRE SMOKE DAMPER
FIRE DAMPER
SMOKE DAMPER
MOTORIZED DAMPER — M
GRAVITY BACKDRAFT DAMPER — G
MANUAL VOLUME DAMPER — VD
SIDE/PLAN ACCESS DOOR
SUPPLY AIR DEVICE
RETURN AIR DEVICE
EXHAUST AIR DEVICE
THERMOSTAT/HUMIDISTAT — T, H
POINT OF CONNECTION/REMOVAL
KEYED NOTE/REVISION — 1, 1
WALL SWITCH — $
EQUIPMENT CALLOUT — DESIGNATOR, CHARACTERISTIC
PLUMBING FIXTURE CALLOUT — FIXTURE

PROJECT NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH, 2006 INTERNATIONAL BUILDING CODE, 2006 INTERNATIONAL MECHANICAL CODE, 2006 INTERNATIONAL PLUMBING CODE, 2006 INTERNATIONAL FUEL GAS CODE, AND 2006 INTERNATIONAL ENERGY CODE, INCLUDING STATE AND LOCAL AMENDMENTS, SUBJECT TO AUTHORITY HAVING JURISDICTION INTERPRETATION.
2. CLOSELY COORDINATE NEW MECHANICAL CONSTRUCTION WITH ALL MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL MEMBERS. DUCTWORK AND PIPE ROUTING IS APPROXIMATE, DIAGRAMMATIC AND IS NOT TO BE SCALED. PROVIDE ALTERNATE ROUTING, OFFSETS AND TRANSITIONS AS REQUIRED FOR COORDINATION OF ALL WORK WITHOUT ADDITIONAL COST.
3. PROVIDE SEISMIC RESTRAINT FOR ALL MECHANICAL EQUIPMENT AND PIPING IN ACCORDANCE WITH 2006 IBC, IMC, AND IPC.
4. RECORD ALL FIELD CHANGES ON RECORD DRAWINGS AND SUBMIT TO ENGINEER DURING PROJECT CLOSE OUT.
5. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
6. PROJECT ELEVATION IS 5000 FT FOR EQUIPMENT SELECTION.
7. PROVIDE ALL DUCT IN ACCORDANCE WITH SMACNA STANDARDS FOR 2" WC PRESSURE CLASS. SEAL ALL TRANSVERSE AND LONGITUDINAL SEAMS AND JOINTS EXCEPT FOR WELDED OR LOCKING–TYPE LONGITUDINAL JOINTS.
8. LINE ALL RECTANGULAR DUCT WITH 1" THICK INSULATED DUCT LINER. GLUED AND STICK PINNED IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
9. INSULATE ALL SUPPLY ROUND DUCTWORK ABOVE CEILINGS WITH 1–1/2" THICK 1.5 LBS/CF FIBERGLASS DUCT WRAP. TRIM AND SEAL JOINTS.
10. PROVIDE 1–1/2" THICK INSULATED FLEXIBLE DUCT AS INDICATED ON DRAWINGS CONFORMING TO NFPA 90A, UL 181–CLASS 0 OR 1 STANDARDS. INSTALL FLEXIBLE DUCT AS SHORT AS POSSIBLE WITHOUT KINKS.
11. LOCATE DIFFUSERS AND RETURN GRILLES ACCORDING TO THE ARCHITECTURAL REFLECTED CEILING PLANS.
12. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.
13. PROVIDE TEST AND BALANCE REPORT TO ENGINEER FOR REVIEW AND APPROVAL.
19. ALL HEATING WATER PIPE SHALL BE SCHEDULE 40 STEEL PIPE WITH SCREWED FITTINGS OR TYPE "L" COPPER PIPE WITH SOLDERED FITTINGS.
20. INSULATE ALL HEATING WATER PIPE WITH 1" INSULATION WITH ASJ.
21. PROVIDE ISOLATION VALVES SERVING EACH PIECE OF EQUIPMENT.
22. T–DRILL FITTINGS SHALL NOT BE USED IN THIS PROJECT.
23. ALL NATURAL GAS PIPE SHALL BE SCHEDULE 40 STEEL PIPE WITH SCREWED FITTINGS FOR 2 LB SERVICE. CONTRACTOR MAY USE CSST DOWNSTREAM OF REGULATORS FOR FINAL EQUIPMENT CONNECTION.
24. PROVIDE "DIRT LEG" AHEAD OF EACH PIECE OF FUEL FIRED EQUIPMENT.

SHEET LIST

MH001 – MECHANICAL LEGENDS AND NOTES
MH101 – MECHANICAL FIRST LEVEL FLOOR PLAN
MH401 – ENLARGED MECHANICAL FIRST LEVEL FLOOR PLAN
MH601 – MECHANICAL SCHEDULES
MP401 – ENLARGED MECHANICAL FIRST LEVEL FLOOR PLAN

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PROJECT:
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UTAH NATIONAL GUARD
CAMP W.G. WILLIAMS

OWNER:
UTAH NATIONAL GUARD
12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020–1776

35% PRELIM DESIGN
17 SEPT. 2008

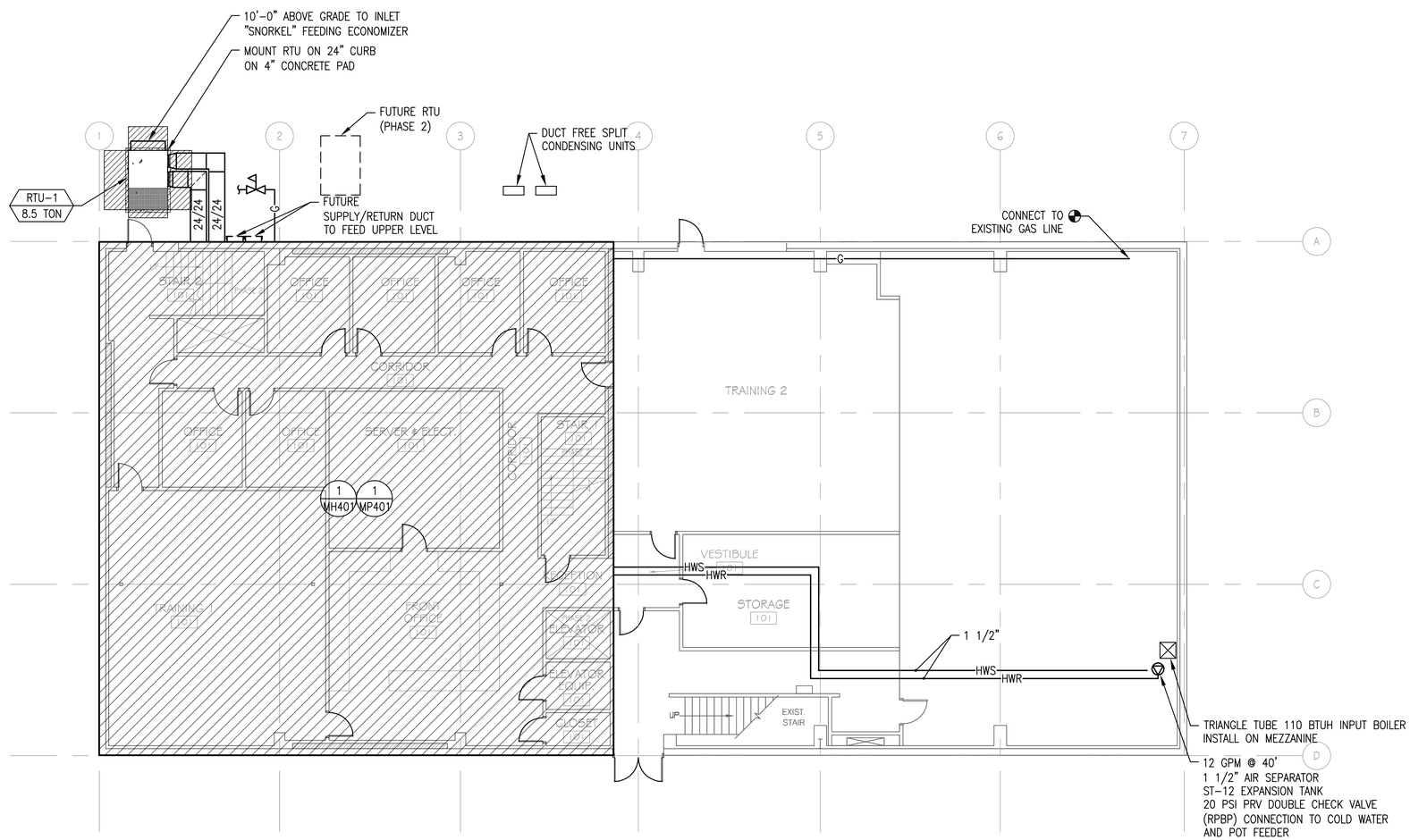
DATE: 9/10/08

PROJECT NO: 20080901
CAD DWG FILE:
DRAWN BY: BLK
CHECKED BY: SMD

MECHANICAL LEGENDS AND NOTES

MH001

SHEET OF



1
M101

MECHANICAL OVERALL FIRST LEVEL FLOOR PLAN

NORTH

8' 4' 2' 0 8' 16'

SCALE: 1/8" = 1'-0"

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CHECKED BY:	SMD

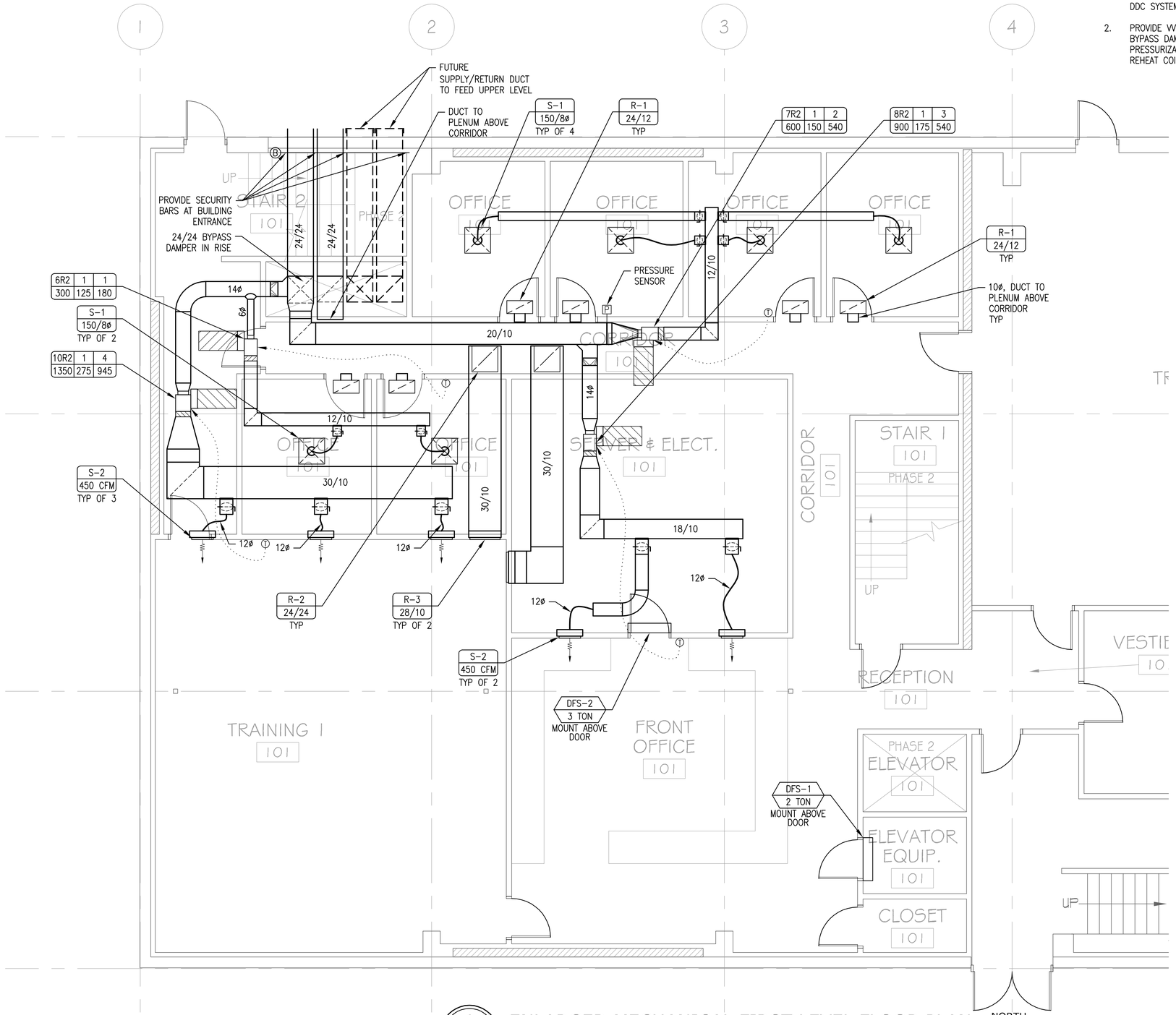
MECHANICAL
OVERALL
FIRST LEVEL
FLOOR PLAN

MH101

SHEET OF

SHEET NOTES

1. CONTACT UTAH CONTROLS – PROVIDE A COMPLETE AND FUNCTIONAL CONTROL SYSTEM INTEGRATED INTO THE BASES DDC SYSTEM.
2. PROVIDE VVT CONTROL SCHEME WITH BYPASS DAMPER TO MAINTAIN PRESSURIZATION AND HEATING WATER REHEAT COILS.



1 MH401 ENLARGED MECHANICAL FIRST LEVEL FLOOR PLAN

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ENLARGED MECHANICAL FIRST LEVEL FLOOR PLAN

MH401

SHEET OF

ROOF TOP UNIT SCHEDULE (RTU)

RTU / NOM. TON

MARK	AREA SERVED	NOM. TONS	EER	CFM @ ELEV.	ESP IN WC	COOLING CAPACITY						HEATING CAPACITY (PROJECT)						COMPRESSORS			CONDENSER FAN MOTORS			EVAPORATOR FAN MOTOR			ELECTRICAL			DIMENSIONS				MANUFACTURER MODEL	REMARKS
						TOTAL MBH	SENS. MBH	EAT °F DB/WB	LAT °F DB	AMB °F	REFRIG	STAGE	IN MBH	OUT MBH	TEMP RISE °F	MIN AFUE	FUEL	NO.	RLA	LRA	NO.	HP	FLA	NO.	HP	BHP	VOLT/ PHASE	MCA	MCOP	L IN	W IN	H IN	WT LBS		
RTU-1	PHASE 1	8.5	11.50	3,200	1.50	106	81	80/67	57.9	95	R410a	2	120	96	26.1	80	NAT. GAS	2	16	120	2	1/4	1.5	1	3	2.7	208/ 3ø	59.4	70	59	89	50	1,365	YORK ZH102N10Q2AAA4	NOTE 1

NOTE 1: ASHRAE 90.1 COMPLIANT, W/ THROUGH THE BOTTOM GAS AND ELECTRICAL KIT, "FACTORY" 36" DEEP ROOF CURB W/ SIDE INLET AND OUTLET, CONVENIENCE OUTLET, AND DISCONNECT. SET OUTSIDE AIR TO 1,000 CFM.

DUCT FREE SPLIT (DFS)

DFS / NOM. TON

MARK	AREA SERVED	NOM. TONS	SEER	TOTAL MBH (ARI)	INDOOR UNIT								OUTDOOR UNIT									REMARKS
					FAN HP	CFM	VOLT/ PHASE	L IN	H IN	D IN	WT LBS	MANUFACTURER MODEL	VOLT/ PHASE	MCA	MCOP	FLA	L IN	H IN	D IN	WT LBS	MANUFACTURER MODEL	
DFS-1	ELEVATOR EQUIP. ROOM 101	2.0	18.0	24.2	75 W	647	208/ 1ø	39	13	9	31	FUJITSU "HALCYON" ASU24CL	208/ 1ø	21	29	10.1	31	23	13	97	FUJITSU "HALCYON" AOU24CL	NOTE 1
DFS-2	SERVER & ELECT. ROOM	3.0	15.0	33.1	100 W	706	208/ 1ø	40	13	9	31	FUJITSU "HALCYON" ASU36CLX	208/ 1ø	22	30	17.7	36	33	13	137	FUJITSU "HALCYON" AOU36CLX	NOTE 1

NOTE 1: ASHRAE 90.1 COMPLIANT, W/ "FACTORY" CONTROLS, "FACTORY" LINE KIT, AND REMOTE CONTROL, "FACTORY" CONDENSATE PUMP, 0°F LOW AMBIENT, "FACTORY" CURB, AND AUTOMATIC AIR SWEEP.

AIR DEVICE SCHEDULE

DEVICE / CFM

MARK	TYPE & DUTY	FACE SIZE H X W	NECK SIZE H X W	CEILING TYPE	MAX. CFM	MAX. T.P. (IN WC)	MAX. NC LEVEL	MIN T50 THROW (FT)	PATTERN	MANUFACTURER MODEL	REMARKS
S-1	LOUVERED FACE DIFFUSER	24/24	8ø	LAY-IN	250	0.07	16	13	4-WAY	KRUEGER 1400	LAY-IN
S-2	ADJ. DOUBLE DEFLECTION SIDEWALL	24/8	22/6	GYP.	550	0.106	22	19	ADJUSTABLE	KRUEGER AF880	SURFACE MOUNT FRAME AIRFOIL BLADES
R-1	PERFORATED RETURN	24/24	22/22	LAY-IN	1000	0.05	28	N/A	N/A	KRUEGER 6490	LAY-IN FRAME
R-2	PERFORATED RETURN	24/24	22/22	GYP.	1000	0.05	28	N/A	N/A	KRUEGER 6490	LAY-IN FRAME
R-3	PERFORATED EXHAUST	30/12	28/10	GYP.	750	0.020	13	N/A	N/A	KRUEGER EGC5	SURFACE MOUNT FRAME

VAV REHEAT BOX SCHEDULE

MARK	FLR	##
MXC	MNC	MXH

MARK	INLET SIZE IN	TOTAL PRESS IN WC	MAX N.C. @ 1" Ps	MAX CFM	MIN CNTRL CFM	HEATING COIL							DIMENSIONS				MANUFACTURER MODEL	REMARKS
						EAT °F	LAT °F	MAX HEAT CFM	ROWS	GPM @ 180°	PD FT WC	MBH	L IN	H IN	W IN	WT LBS		
6R2	6	0.47	25	515	89	55	100	450	2	1.0	0.30	18.7	21	8	12	20	KRUEGER LMHS	
7R2	7	0.52	24	700	121	55	99	560	2	1.0	0.40	22.2	21	10	12	23	KRUEGER LMHS	
8R2	8	0.75	25	920	159	55	98	720	2	2.0	1.2	30.9	21	10	12	23	KRUEGER LMHS	
9R2	9	0.61	23	1160	201	55	98	930	2	2.0	0.70	38.6	21	13	14	30	KRUEGER LMHS	
10R2	10	0.75	23	1350	248	55	94	1100	2	2.0	0.70	41.3	21	13	14	30	KRUEGER LMHS	
12R2	12	0.96	24	1880	357	55	94	1600	2	3.0	1.80	62.5	21	15	16	38	KRUEGER LMHS	
14R2	14	0.71	24	2690	486	55	93	2200	2	3.0	1.20	80.1	18	18	20	49	KRUEGER LMHS	

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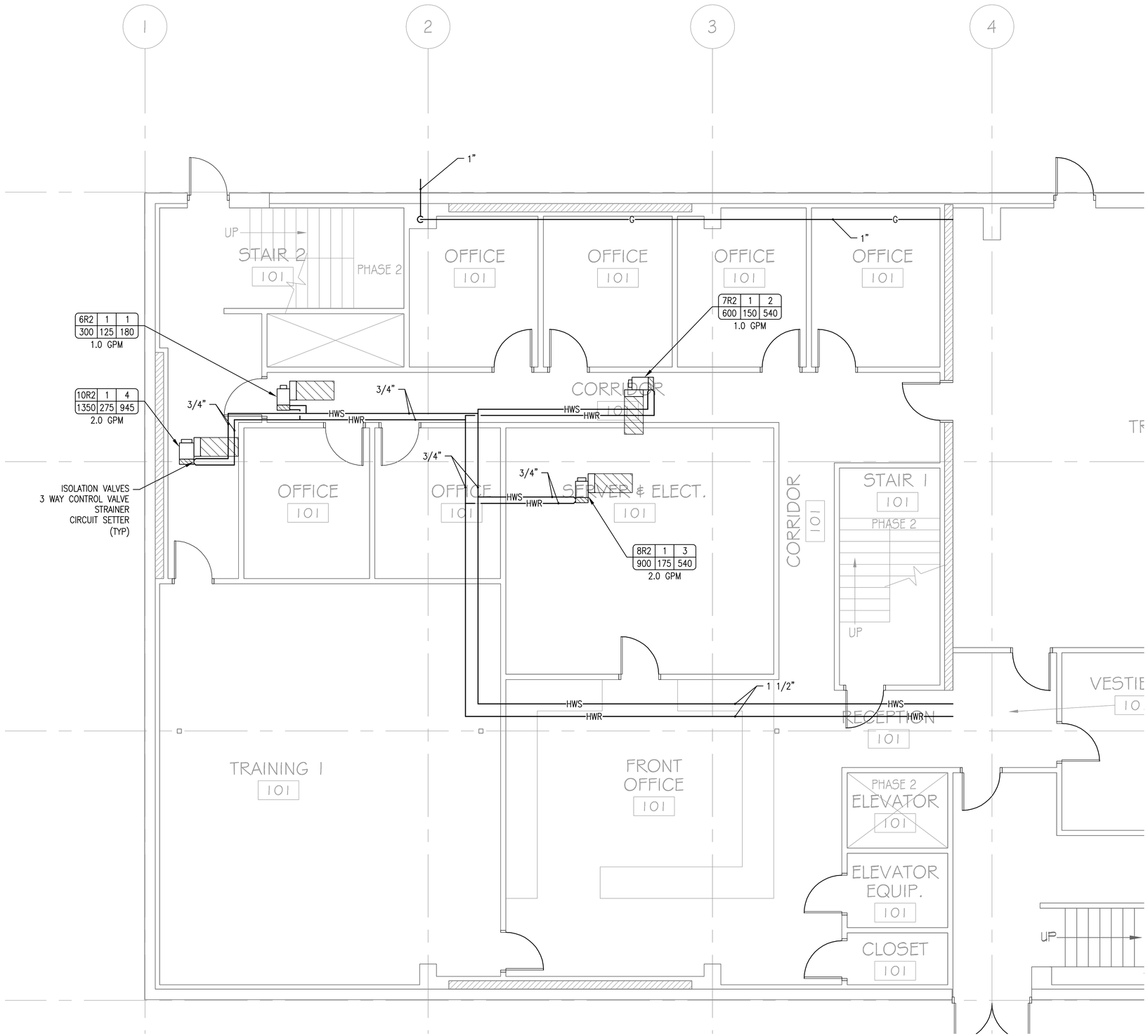
MECHANICAL SCHEDULES

MH601

SHEET OF



1
MP401

ENLARGED MECHANICAL PIPING FLOOR PLAN

NORTH

4' 2' 1' 0 4' 8'
SCALE: 1/4" = 1'-0"

COOPER
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SIMONSEN
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ENLARGED MECHANICAL PIPING FLOOR PLAN

MP401

SHEET OF

SYMBOL LEGEND

SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
A5 / E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 / E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
100	ROOM OR SPACE NUMBER.
1	KEYNOTE INDICATOR.
1	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING.
	BREAK, ROUND.
	NEW LINE: MEDIUM LINE.
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE.
WIRING METHODS	
	WIRING.
A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN SECTION 16120.
1 / A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE. FOR BRANCH WIRING USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN SECTION 16120.
— X —	WIRING AND/OR RACEWAY: THIN LINE. WHERE "X" = : CATV = CABLE TELEVISION; CCTV = CLOSED CIRCUIT TELEVISION; FA = FIRE ALARM; FO = FIBER OPTICS; I = INTERCOM; NC = NURSE CALL; P = POWER; RC = RIGID CONDUIT; S = SOUND; T = TELEPHONE; TV = TELEVISION OTHERS AS NOTED IN OTHER SCHEDULES. RACEWAYS AND WIRING SHALL BE SIZED AS SHOWN AND/OR SPECIFIED.
	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
	JUNCTION BOX.
	CABLE TRAY ABOVE ACCESSIBLE CEILING.
	EARTH GROUND (ONE-LINE DIAGRAM).
LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)	
(W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
(W-3)	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
LIGHTING CONTROL	
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
P	PHOTOCELL.
TC	TIME CLOCK.
STRUCTURED CABLING	
	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
N	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
X	OUTLET, DATA COMMUNICATION ("X" INDICATES QUANTITY OF CABLES).
S	OULET, SIPRNET COMM DEVICE.
	VERTICAL COMMUNICATIONS GUTTER.
	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
	LAN RACK, FLOOR STANDING.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	MOTOR.
	TRANSFORMER (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
225/3 "1H" 225/3 "1H"	PANELBOARD WITH SUB FEED LUGS (ONE-LINE DIAGRAM).
	TRANSITION CABINET (ONE-LINE DIAGRAM).
	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
	DISCONNECT SWITCH, FUSED.
	DISCONNECT SWITCH, UNFUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	STARTER OR MOTOR CONTROLLER.
	PUSHBUTTON.
	PUSHBUTTONS, MOTOR CONTROL.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
DP#___	DISTRIBUTION PANEL OR SWITCHBOARD.
$ST	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
75	TRANSFORMER: NUMBER INDICATES kVA.
WIRING DEVICES	
	RECEPTACLE, DUPLEX: NEMA 5-20R.
A	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
C	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
D	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
X $	SWITCH, SINGLE POLE ("x" INDICATES FIXTURES CONTROLLED).
X $3	SWITCH, THREE-WAY ("x" INDICATES FIXTURES CONTROLLED).
X $4	SWITCH, FOUR-WAY ("x" INDICATES FIXTURES CONTROLLED).

SYMBOL LEGEND

SYMBOL	DESCRIPTION
FIRE ALARM	
FCP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
CM	CONTROL MODULE.
MM	MONITOR MODULE.
P	FIRE ALARM MANUAL PULL STATION.
R	SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
	DETECTOR, SMOKE.
	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
	DETECTOR, HEAT.
75	STROBE. SUBSCRIPT INDICATES CANDELA RATING.
75	ALARM, HORN/STROBE, ONE ASSEMBLY. SUBSCRIPT INDICATES CANDELA RATING.
SD	SMOKE DAMPER.
FSD	FIRE AND SMOKE DAMPER.
TECHNOLOGY SYSTEMS	
	PROJECTOR, CEILING MOUNTED.

ELECTRICAL SHEET INDEX

SHEET NO	SHEET TITLE
EE001	SYMBOL LEGEND, SHEET INDEX & ABBREVIATIONS
EE501	TYPICAL MOUNTING HEIGHT DETAILS
EE502	DETAILS
EP101	1ST FLOOR POWER PLAN
EP102	2ND FLOOR POWER PLAN
EP601	ONE-LINE DIAGRAM
EL101	1ST FLOOR LIGHTING PLAN
EL102	2ND FLOOR LIGHTING PLAN
EL601	LIGHTING FIXTURE SCHEDULE
ET101	1ST FLOOR TECHNOLOGY PLAN
ET102	2ND FLOOR TECHNOLOGY PLAN
FA101	1ST FLOOR FIRE ALARM PLAN
FA102	2ND FLOOR FIRE ALARM PLAN
FA601	FIRE ALARM RISER

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE	KVA	KILOVOLT AMPERE
1PH	SINGLE-PHASE	kVAR	KILOVOLT AMPERE REACTIVE
1WAY	ONE-WAY	kW	KILOWATT
2/C	TWO-CONDUCTOR	kWh	KILOWATT HOUR
2WAY	TWO-WAY	LCD	LIQUID CRYSTAL DISPLAY
3/C	THREE-CONDUCTOR	LED	LIGHT EMITTING DIODE
3PH	THREE-PHASE	LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
3WAY	THREE-WAY	LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
4OUT	QUADRUPLE RECEPTACLE OUTLET	LPS	LOW PRESSURE SODIUM
4PDT	FOUR-POLE DOUBLE THROW	LRA	LOCKED ROTOR AMPS
4PST	FOUR-POLE SINGLE THROW	LTG	LIGHTING
4W	FOUR-WIRE	LV	LOW VOLTAGE
4WAY	FOUR-WAY	MATV	MASTER ANTENNA TELEVISION SYSTEM
A	ABOVE COUNTER	MAX	MAXIMUM
AC	ARMORED CABLE	MC	METAL CLAD
ADA	AMERICANS WITH DISABILITIES ACT	MCA	MINIMUM CIRCUIT AMPS
ADJ	ADJACENT	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
AFG	ABOVE FINISHED GRADE	MCP	MOTOR CIRCUIT PROTECTION
AIC	AMPERE INTERRUPTING CAPACITY	MDP	MAIN DISTRIBUTION PANEL
ALUM	ALUMINUM	MG	MOTOR GENERATOR
AMP	AMPERE	MH	MANHOLE
ANN	ANNUNCIATOR	MIN	MINIMUM
AP	ACCESS POINT (WIRELESS DATA)	MLO	MAIN LUGS ONLY
AR	AS REQUIRED	MOCP	MAXIMUM OVERCURRENT PROTECTION
ASC	AMPS SHORT CIRCUIT	NA	NOT APPLICABLE
ATS	AUTOMATIC TRANSFER SWITCH	NC	NORMALLY CLOSED
AV	AUDIO VISUAL	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAGE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BB XFMR	BUCK-BOOST TRANSFORMER	NFC	NATIONAL FIRE CODE
C	CEILING MOUNTED	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CATV	COMMUNITY ANTENNA TELEVISION	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NL	NIGHT LIGHT
CCBA	CUSTOM COLOR AS SELECTED BY ARCHITECT	NO	NORMALLY OPEN
CCTV	CLOSED CIRCUIT TELEVISION	NTS	NOT TO SCALE
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT	OC	ON CENTER
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	OCP	OVER CURRENT PROTECTION
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED	OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
CKT	CIRCUIT	OF/OI	OWNER FURNISHED/ OWNER INSTALLED
CM	CONSTRUCTION MANAGER	OFP	OBTAIN FROM PLANS
CND	CONDUIT	OH DR	OVERHEAD (COILING) DOOR
CO	CONVENIENCE OUTLET	OL	OVERLOAD
COR	CONTRACTING OFFICER'S REPRESENTATIVE	PB	PUSHBUTTON
CP	CONTROL PANEL	PF	POWER FACTOR
CT	CURRENT TRANSFORMER	PH	PHASE
CTV	CABLE TELEVISION	PNL	PANEL
CU	COPPER	PT	POTENTIAL TRANSFORMER
dBA	UNIT OF SOUND LEVEL	PTZ	PAN/TILT/ZOOM
DPDT	DOUBLE POLE DOUBLE THROW	QTY	QUANTITY
DS	DISCONNECT SWITCH	R	REMOVE
EA	EACH	RCP	REFLECTED CEILING PLAN
EM	EMERGENCY	RMC	RIGID METAL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	RNC	RIGID NONMETALLIC CONDUIT
ENT	ELECTRICAL NONMETALLIC TUBING	RPM	REVOLUTIONS PER MINUTE
EPO	EMERGENCY POWER OFF	RR	REMOVE AND RELOCATE
EQUIP	EQUIPMENT	SB	SMART BOARD
EX	EXISTING	SCA	SHORT CIRCUIT AMPS
F	FURNITURE MOUNTED	SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
FA	FIRE ALARM	SF	SQUARE FOOT (FEET)
FCP	FIRE ALARM CONTROL PANEL	SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
FLA	FULL LOAD AMPS	SPDT	SINGLE POLE, DOUBLE THROW
FMC	FLEXIBLE METALCONDUIT	SPEC	SPECIFICATION
FOB	FREIGHT ON BOARD	SPST	SINGLE POLE, SINGLE THROW
FVNR	FULL VOLTAGE NON-REVERSING	S/S	START/STOP
FVR	FULL VOLTAGE REVERSING	ST	SINGLE THROW
G	GROUND	SWBD	SWITCHBOARD
GEN	GENERATOR	SWGR	SWITCHGEAR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TL	TWIST LOCK
GFP	GROUND FAULT PROTECTION	TP	TELEPHONE POLE
HD	HEAVY DUTY	TP	TWISTED PAIR
HID	HIGH INTENSITY DISCHARGE	TTB	TELEPHONE TERMINAL BOARD
HOA	HAND-OFF-AUTOMATIC	TV	TELEVISION
HP	HORSE POWER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
HPF	HIGH POWER FACTOR	TYP	TYPICAL
HPS	HIGH PRESSURE SODIUM	UF	UNDERFLOOR
HV	HIGH VOLTAGE	UGND	UNDERGROUND
HZ	HERTZ	UPS	UNINTERRUPTIBLE POWER SUPPLY
IG	ISOLATED GROUND	V	VOLTS
IMC	INTERMEDIATE METAL CONDUIT	VA	VOLT AMPERE
IN/IS	INSULATED/ISOLATED	VFC/VFD	VARIABLE FREQUENCY MOTOR CONTROLLER
I/O	INPUT/OUTPUT	W/	WITH
IR	INFRARED	W/O	WITHOUT
J-BOX	JUNCTION BOX	WP	WEATHERPROOF
KV	KILOVOLT	XFMR	TRANSFORMER

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.

2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.

   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.

   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.

   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.

3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.

4. SUBMITTALS: PROVIDE SUBMITTALS IN THREE RING BINDERS WITH JOB NAME, SUBCONTRACTOR, AND VOLUME ON THE BINDING. PREPARE TABS FOR EACH SPECIFICATION SECTION REQUIRING SUBMITTALS. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.

5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

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PROJECT:
BUILDING 3030
UTAH NATIONAL GUARD
CAMP W.G. WILLIAMS

OWNER:
UTAH NATIONAL GUARD
12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020-1776

35% PRELIM DESIGN
17 SEPT. 2008

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SYMBOL LEGEND, SHEET INDEX & ABBREVIATIONS

EE001

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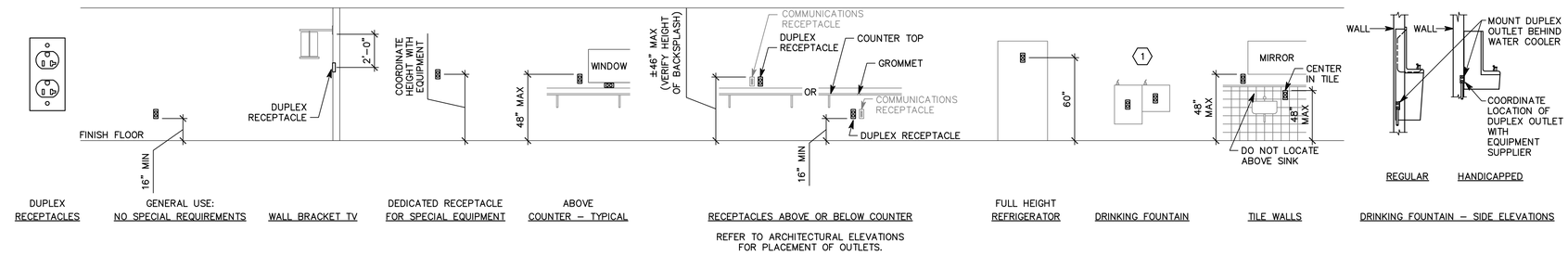

DUPLEX RECEPTACLES | GENERAL USE: NO SPECIAL REQUIREMENTS | WALL BRACKET TV | DEDICATED RECEPTACLE FOR SPECIAL EQUIPMENT | ABOVE COUNTER – TYPICAL | RECEPTACLES ABOVE OR BELOW COUNTER | FULL HEIGHT REFRIGERATOR | DRINKING FOUNTAIN | TILE WALLS | DRINKING FOUNTAIN – SIDE ELEVATIONS

REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.

D1 RECEPTACLE MOUNTING DETAILS

NTS

GENERAL SHEET NOTES

1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:

   1 – ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC).
   2 – EQUIPMENT SHOP DRAWINGS.
   3 – FIELD INSTRUCTIONS.

2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.
3. MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.
4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
6. LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
8. LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.

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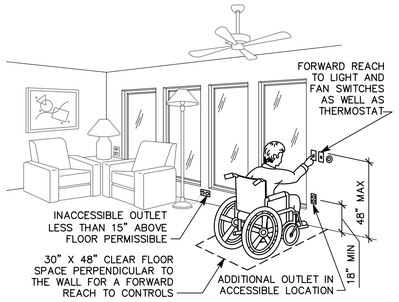
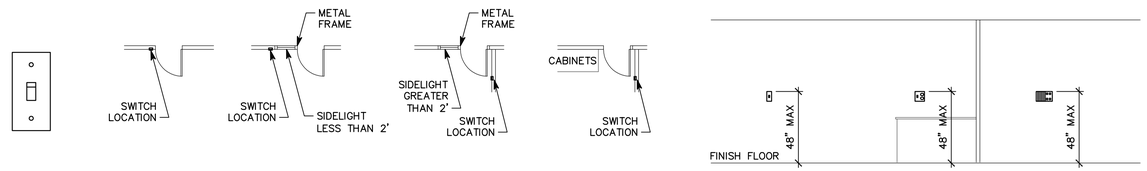


C1 ADA DETAIL

NTS



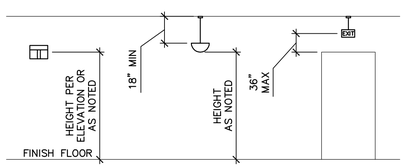
SWITCHES | STANDARD DOOR | DOOR WITH SIDELIGHT LESS THAN 2' | DOOR WITH SIDELIGHT GREATER THAN 2' | DOOR WITH NO PLACE FOR SWITCH AT LATCH SIDE | GENERAL USE: ADA | COMBINATION 48" MAX PLATE FOR SWITCH AND RECEPTACLE IN RESIDENTIAL BATHROOM | LIGHTING CONTROL STATION

C2 SWITCH MOUNTING DETAILS

NTS

SHEET KEYNOTES

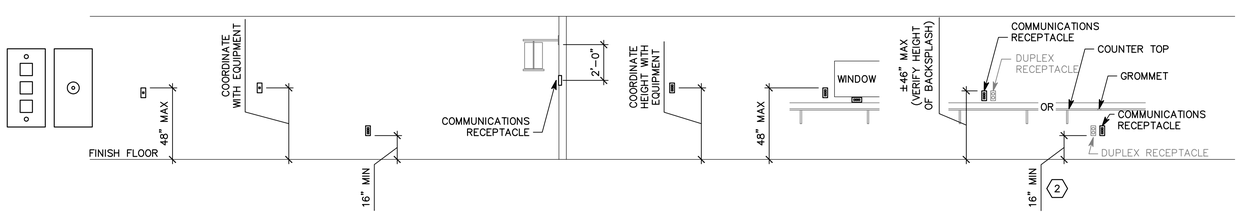
1. LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
3. LOCATE AT BOTTOM OF BEAMS (OR JOISTS) OR AT CEILING. (REDUCE SPACING BY .5 PERPENDICULAR TO BEAM OR JOIST DIRECTION.) FOR OTHER CONDITIONS, REFER TO NFPA 72.
4. LOCATE SMOKE DETECTOR ANYWHERE IN SHADED AREA.
5. LOCATE AT BOTTOM OF BEAMS IF EITHER D/H < .1 OR W/H < .4; OTHERWISE, LOCATE IN BEAM POCKET.



WALL MOUNTED LIGHT FIXTURE | PENDANT LIGHT FIXTURE | PENDANT EXIT SIGNS

B1 LIGHTING MOUNTING DETAILS

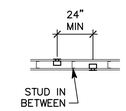
NTS



COMMUNICATION RECEPTACLES | WALL PHONE | PAY PHONE | GENERAL USE: NO SPECIAL REQUIREMENTS | WALL BRACKET TV | DEDICATED RECEPTACLE FOR SPECIAL EQUIPMENT | ABOVE COUNTER – TYPICAL | RECEPTACLES ABOVE OR BELOW COUNTER

B2 COMMUNICATION MOUNTING DETAILS

NTS



BOXES ON OPPOSITE SIDES OF WALL

B5 BOX MOUNTING DETAILS

NTS

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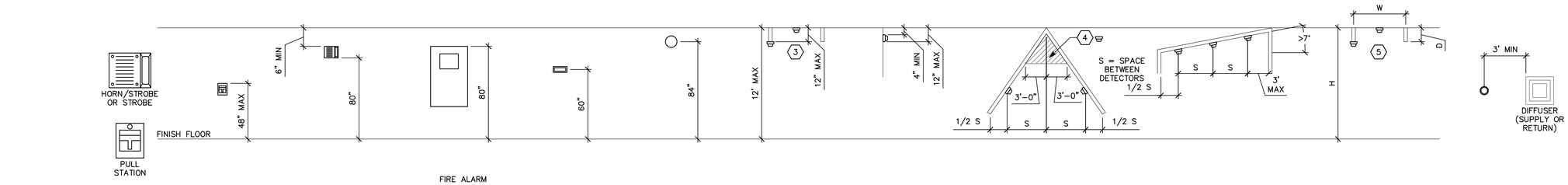

FIRE ALARM | PULL STATION | HORN, CHIME, OR STROBE | FIRE ALARM CONTROL PANEL "FCP" | FIRE SYSTEM ANNUNCIATOR "FSA" | BELL | SMOKE DETECTOR BETWEEN BEAMS | WALL MOUNTED SMOKE DETECTOR | SMOKE DETECTOR ON SLOPED CEILING (PEAKED) | SMOKE DETECTOR ON SLOPED CEILING (SHED) | HEAT DETECTOR BETWEEN BEAMS | SMOKE DETECTOR ADJACENT TO SUPPLY AIR

A1 FIRE ALARM MOUNTING DETAILS

NTS

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TYPICAL MOUNTING HEIGHT DETAILS

EE501

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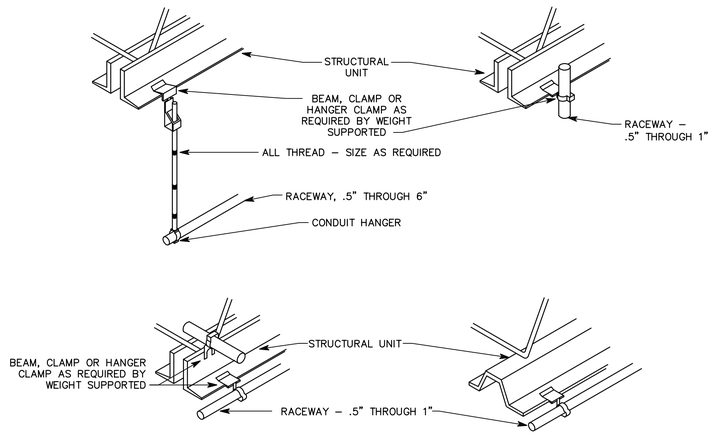
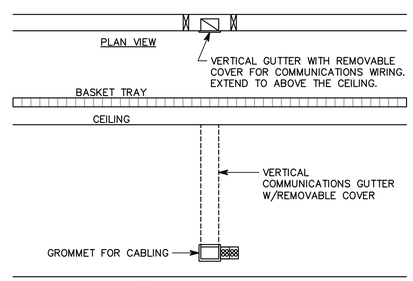
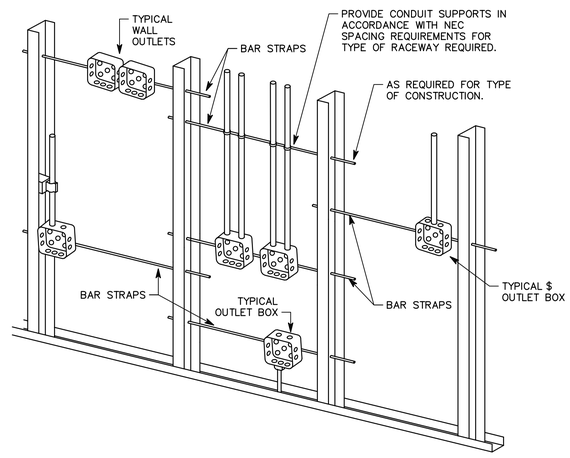
NOTE:
TIE WIRE SHALL NOT BE USED AS A COMPONENT OF ANY RACEWAY HANGER SYSTEM.



C4 TYPICAL RACEWAY SUPPORT METHODS DETAIL
NTS



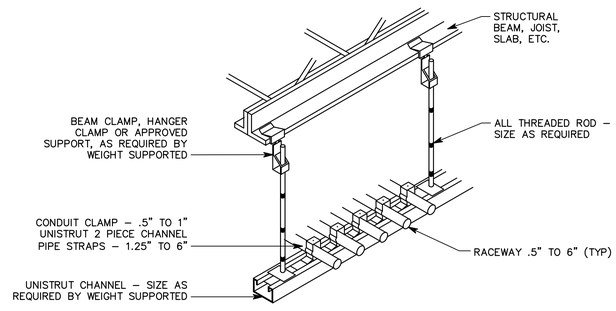
B3 COMMUNICATIONS GUTTER DETAIL
NTS



NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH–IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH IBC 711.3.2 EXCEPTION 1, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.
5. IN NON–RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

A4 TYPICAL ROUGH–IN REQUIREMENTS DETAIL
NTS



A2 TYPICAL CONDUIT RACK DETAIL
NTS

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ELECTRICAL ENGINEER
SPECTRUM
175 S MAIN STREET STE. 300
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(801)328-5151 (801)401-9471
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PROJECT:
BUILDING 3030
UTAH NATIONAL GUARD
CAMP W.G. WILLIAMS

OWNER:
UTAH NATIONAL GUARD
12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020-1776

35% PRELIM DESIGN
17 SEPT. 2008

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BID	9/2/08	BID DOCUMENTS

PROJECT NO:	
CAD DWG FILE:	82EE502.dwg
DRAWN BY:	PSS
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DETAILS

EE502
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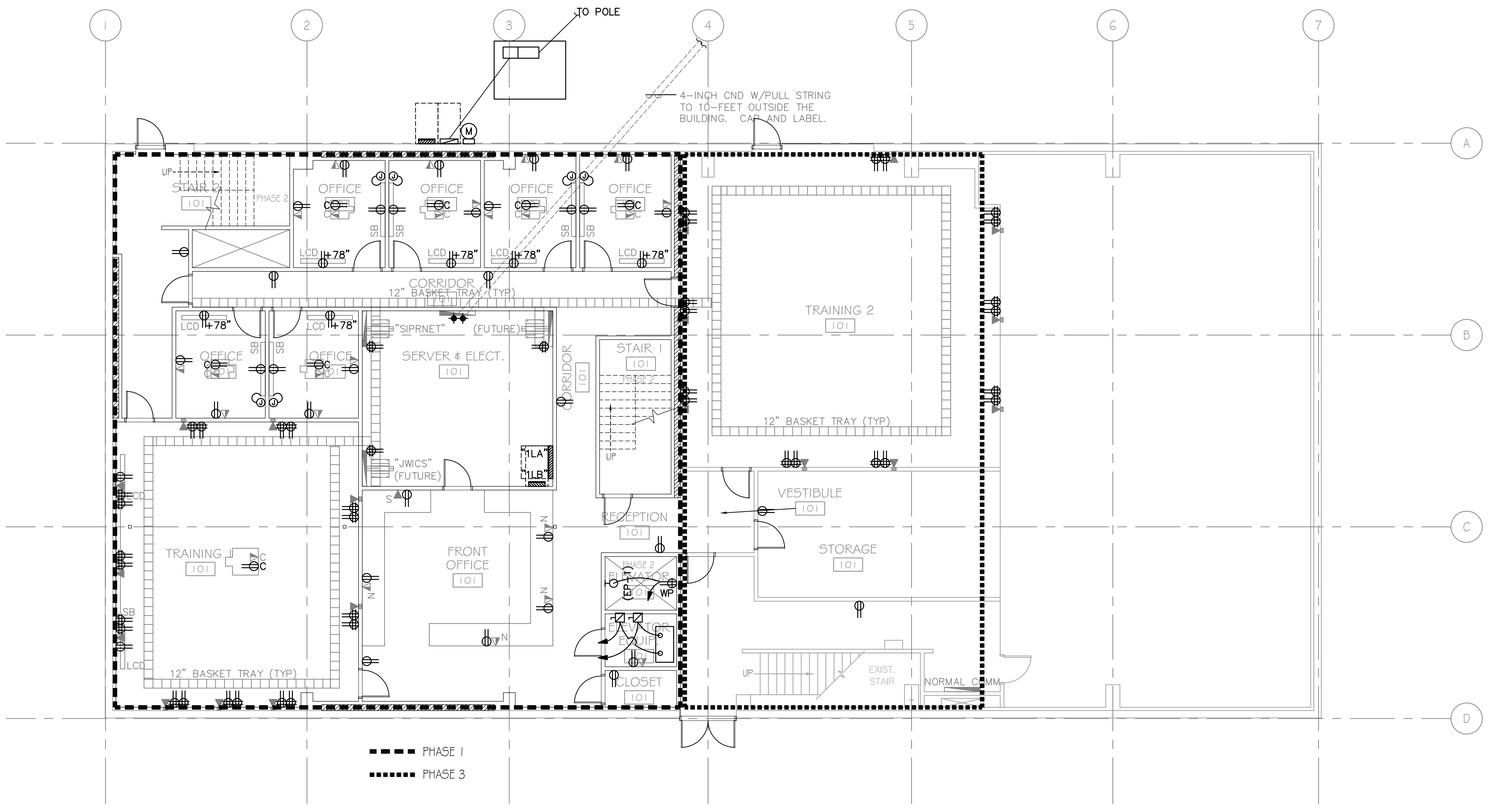

B1 1ST FLOOR POWER PLAN

1/8" = 1'-0"

0 4' 8' 16'

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PROJECT NO:	
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1ST FLOOR
POWER PLAN

EP101

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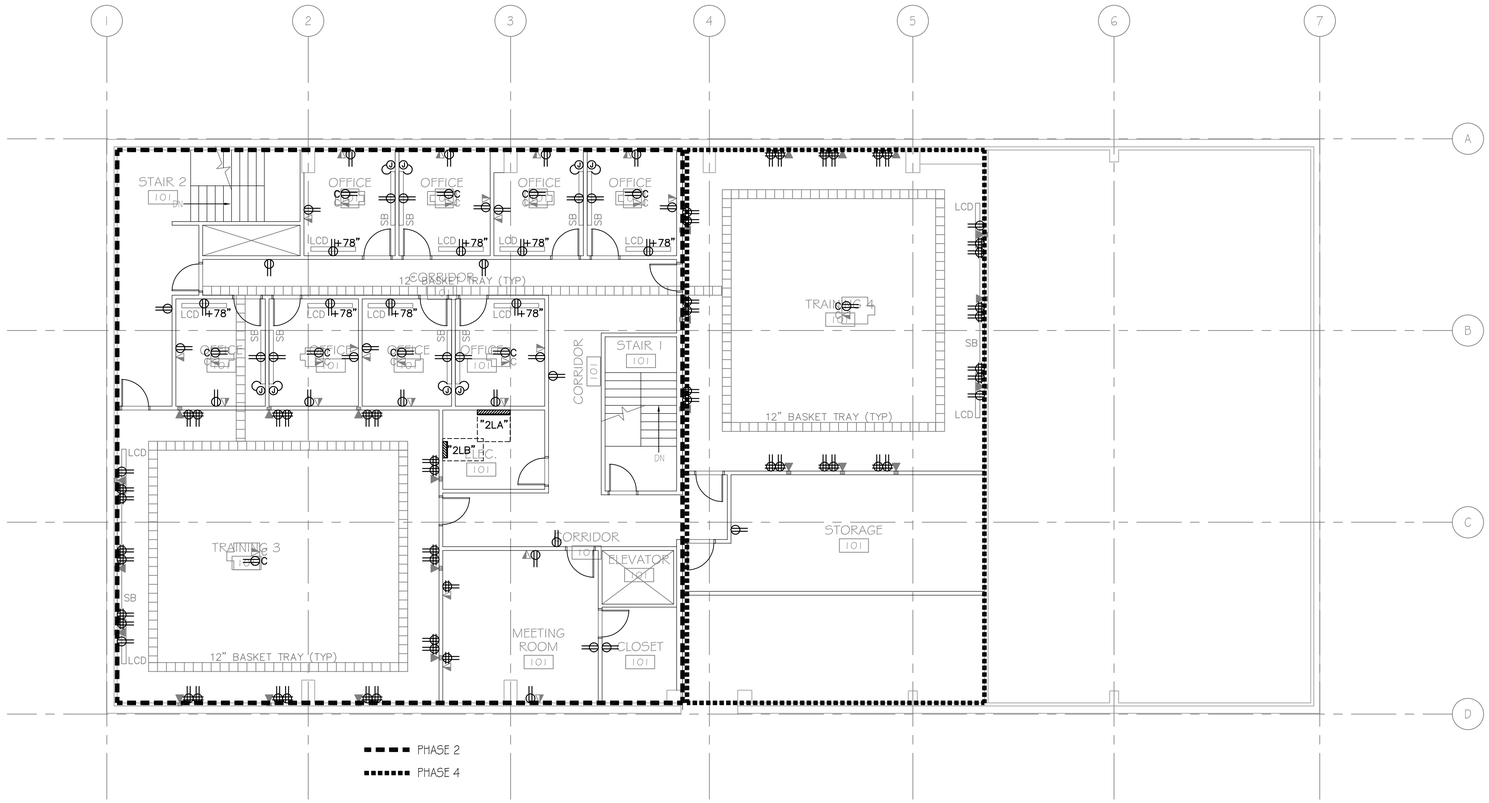

B1 2ND FLOOR POWER PLAN

1/8" = 1'-0"

0 4' 8' 16'

COOPER
ROBERTS
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BID	9/2/08	BID DOCUMENTS	

PROJECT NO:	
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2ND FLOOR
POWER PLAN

EP102

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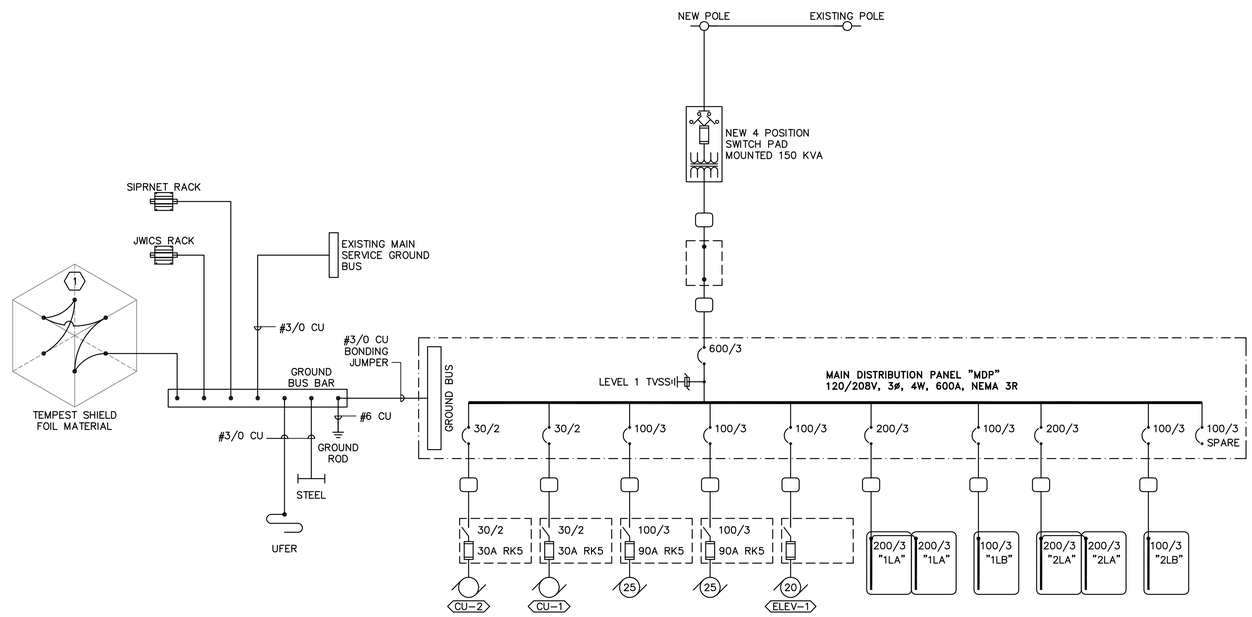
SHEET KEYNOTES

1. PROVIDE GROUND BOND TO EACH SHEET OF TEMPEST SHIELD FOIL MATERIAL LOCATED IN EACH WALL. PROVIDE MINIMUM OF 2 BONDING JUMPERS (#6 CU EQUIVALENT) BETWEEN ADJACENT PIECES OF TEMPEST SHIELD FOIL MATERIAL.

GENERAL SHEET NOTES

1. PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.
2. REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
3. ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO SPECIFICATIONS SECTION 16071 FOR REQUIREMENTS.



CONDUCTOR AND CONDUIT SCHEDULE

(**) SCHEDULE NUMBER
SUBSCRIPT (NOTE 5)
(E.G.) (5)IG

SYM	AMP	CONDUIT SIZE	CONDUCTOR(NOTE 1) QTY	SIZE	G	IG	SE	NOTES
1	20	.75	2	12	12	12	8	2
2	20	.75	3	12	12	12	8	2,3
3	20	.75	4	12	12	12	8	2,3
4	30	.75	2	10	10	10	8	2
5	30	.75	3	10	10	10	8	2
6	30	.75	4	10	10	10	8	2
7	40	1	2	8	10	8	6	2
8	40	1	3	8	10	8	6	2
9	40	1	4	8	10	8	6	2
10	55	1	2	6	10	8	4	2
11	55	1	3	6	10	8	4	2
12	55	1.25	4	6	10	8	4	2
13	70	1	2	4	8	4	2	2
14	70	1.25	3	4	8	4	2	2
15	70	1.25	4	4	8	4	2	2
16	85	1.25	2	3	8	3	2	2
17	85	1.25	3	3	8	3	2	2
18	85	1.25	4	3	8	3	2	2
19	95	1.25	3	2	8	2	2	2
20	95	1.50	4	2	8	2	2	2
21	130	1.50	3	1	6	2	2	2
22	130	1.50	4	1	6	2	2	2
23	150	2	3	1/0	6	2	1/0	2
24	150	2	4	1/0	6	2	1/0	2
25	175	2	3	2/0	6	2	2/0	2
26	175	2	4	2/0	6	2	2/0	2
27	200	2	3	3/0	6	2	2/0	2
28	200	2.50	4	3/0	6	2	2/0	2
29	230	2.50	3	4/0	4	2	2/0	2
30	230	2.50	4	4/0	4	2	2/0	2
31	255	2.50	3	250	4	1	2/0	2
32	255	2.50	4	250	4	1	2/0	2
33	310	3	3	350	3	1/0	3/0	2
34	310	3	4	350	3	1/0	3/0	2
35	380	3.50	3	500	3	3/0	3/0	2
36	380	4	4	500	3	3/0	3/0	2
37	400	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	2 EA 3	4	250	1	4/0	3/0	2
41	620	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	5 EA 3.50	4	400	4/0	4/0	4/0	4
54	2010	6 EA 3.50	4	400	250	250	250	4
55	2660	7 EA 4	4	500	350	350	350	4
56	3040	8 EA 4	4	500	500	500	500	4
57	4180	11 EA 4	4	500	500	500	500	4
58		5 EA 4						6
59		5						6
60		10 EA 4						6

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1. CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
4. GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
5. WHEN SYMBOL SUBSCRIPT INDICATES "IG", INCLUDE "IG" OR INSULATED GROUND CONDUCTOR SCHEDULED ALONG WITH GROUND OR EQUIPMENT GROUND CONDUCTOR. WHEN SYMBOL SUBSCRIPT INDICATES "SE", SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEMS.
6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

A1 ONE-LINE DIAGRAM
NO SCALE

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PROJECT:
BUILDING 3030
UTAH NATIONAL GUARD
CAMP W.G. WILLIAMS

OWNER:
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12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020-1776

35% PRELIM DESIGN
17 SEPT. 2008

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BID	9/2/08	BID DOCUMENTS

PROJECT NO:	
CAD DWG FILE:	82EP601.dwg
DRAWN BY:	PSS
CHECKED BY:	DLA

ONE-LINE DIAGRAM

EP601
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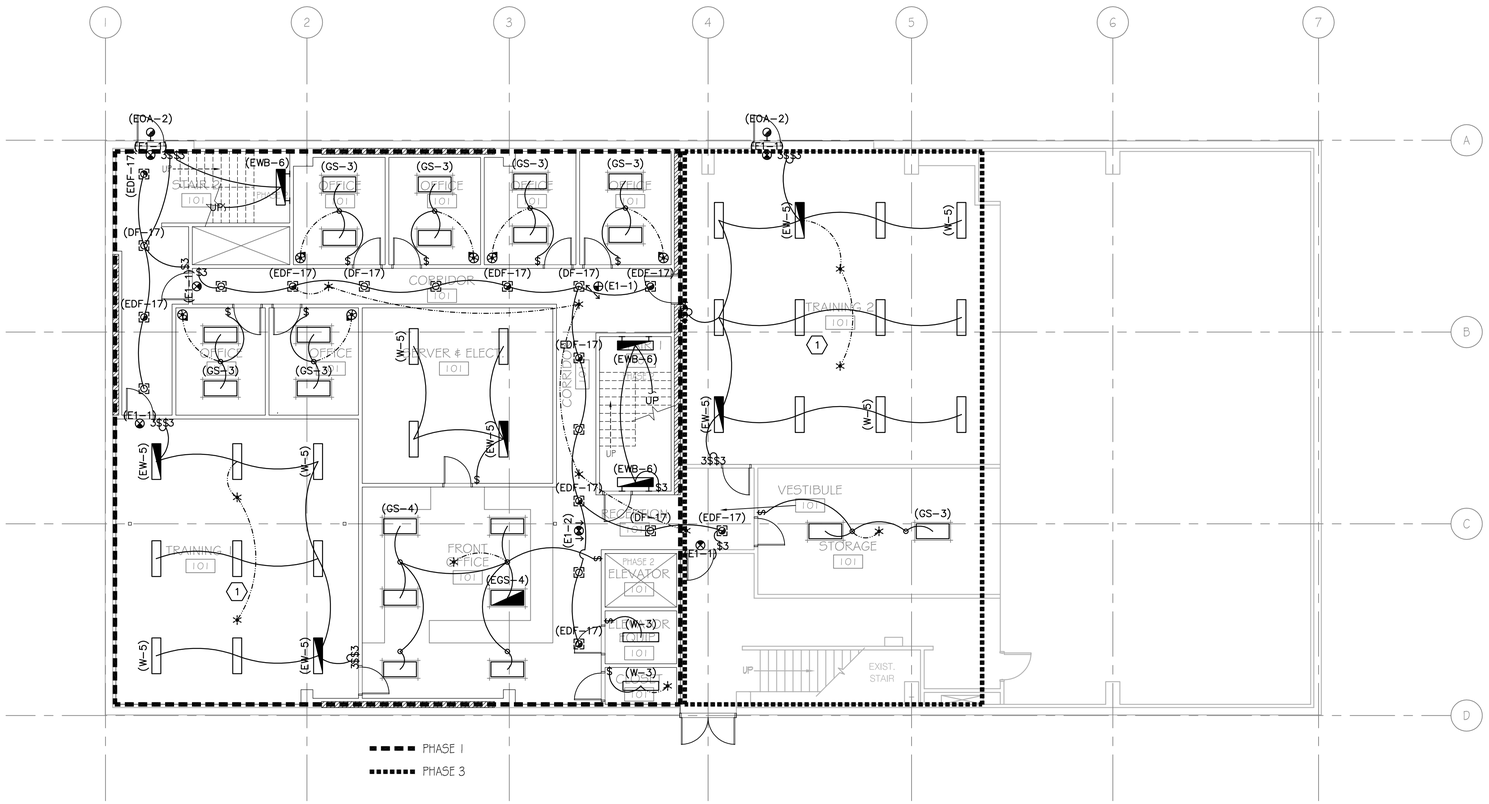

B1 1ST FLOOR LIGHTING PLAN

1/8" = 1'-0"

0 4' 8' 16'

SHEET KEYNOTES

1. PROVIDE 2 BALLASTS PER FIXTURE FOR DUAL LEVEL SWITCHING. SWITCH INNER LAMP(S) SEPARATE FROM OTHER LAMPS.

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1ST FLOOR
LIGHTING PLAN

EL101

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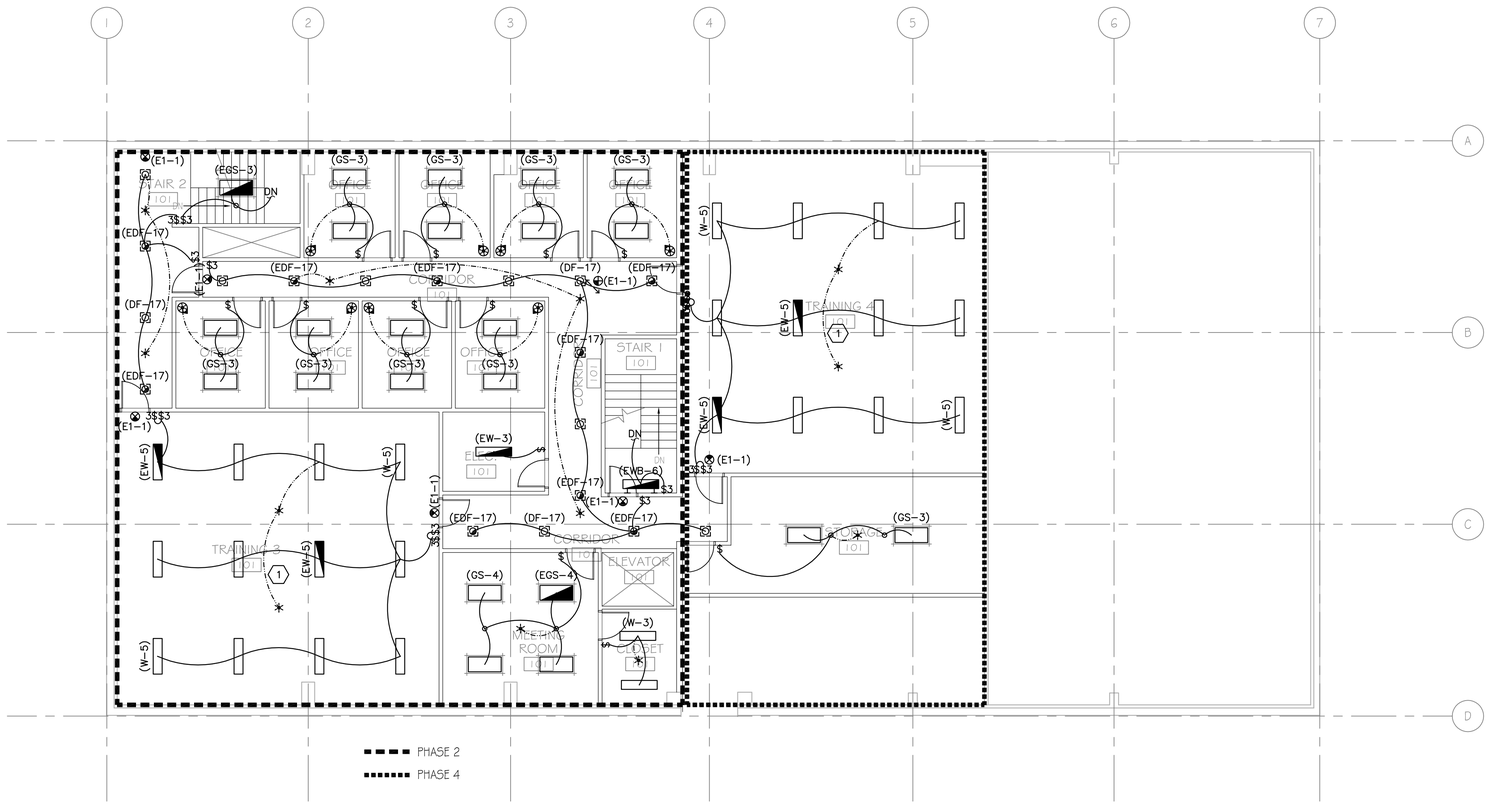

B1 2ND FLOOR LIGHTING PLAN

1/8" = 1'-0"

0 4' 8' 16'

SHEET KEYNOTES

1. PROVIDE 2 BALLASTS PER FIXTURE FOR DUAL LEVEL SWITCHING. SWITCH INNER LAMP(S) SEPARATE FROM OTHER LAMPS.

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2ND FLOOR
LIGHTING PLAN

EL102

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LIGHTING FIXTURE SCHEDULE

NOTE TO BIDDERS: COMPLY WITH SECTIONS 16511, 16521, AND 16570 OF THE SPECIFICATIONS.
REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT, HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPARE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF PENDANTS, OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277) BALLASTS REQUIRED UNLESS NOTED OTHERWISE. DIMENSION SEQUENCE = (LENGTH X WIDTH X DEPTH) IN INCHES.

SYMBOL	MARK	FIXTURE CHARACTERISTICS BODY / AIR / MOUNTING / DOOR LENS/LOUVER/REFLECTOR/OTHER	LAMP	WATTS	VOLTS	MANUFACTURER	CATALOG NUMBER	NOTES
	DF	FLUORESCENT DOWNLIGHT; THERMALLY PROTECTED HOUSING: TO ACCOMMODATE MULTIPLE TRIMS AND REFLECTOR ASSEMBLIES FOR LAMPS AS LISTED BELOW; ELECTRONIC BALLASTS; LOW IRIDESCENT REFLECTOR FINISH (EVEN IF NOT SHOWN IN CATALOG #); SELF FLANGING TRIM UNLESS NOTED.						
	DF-17	RECESSED DOWNLIGHT; VERTICAL, 6" APERTURE, 32W CF-AMALGAM LAMP, CLEAR.	1-CF-A32 50W RE835		277/120V	LIGHTOLIER	8021CCLW/6132BU (12-3/4 X 10 X 9-3/8)	
						LITHONIA	AFV 32TRT 6AR MVOLT (15-13/16 X 12-15/16 X 10-7/8)	
						OMEGA	S632PLT-U-T6-CS (11-11/16 X 11-7/16 X 11-3/8)	
						PRESCOLITE	CFT632EB-STF602 (16-1/4 X 14-7/16 X 10-9/16)	
						PORTFOLIO	C6032E-6051LI (12 X 11-1/2 X 9-1/2)	
						INFINITY	PV60 132T-EB (GX24Q-3) 277 BH (16-1/4 X 12 X 9-5/8)	
	EDF-17	RECESSED DOWNLIGHT; VERTICAL, 6" APERTURE, 32W CF-AMALGAM LAMP, CLEAR. (EMERGENCY)	1-CF-A32 50W RE835		277/120V	PORTFOLIO	C6032EEM-6051LI	
						INFINITY	PV60 132T-EB (GX24Q-3) EM 277 BH	
						LIGHTOLIER	8021CCLW/6132BU EM	
						LITHONIA	AFV 32TRT 6AR MVOLT EL	
						OMEGA	S632PLT-IE-U-T6-CS-IE	
						PRESCOLITE	CFT632EBEM-STF602	
	E	E PREFIX INDICATES THAT FIXTURE IS PROVIDED WITH AN EMERGENCY BATTERY PACK TO PROVIDE POWER TO ANY 2, 3, 4 OR 8 FOOT FLOURESCENT LAMP COMPATIBLE WITH ALL STANDARD AND ELECTRONIC BALLASTS; COMPLETELY SELF-CONTAINED TO PROVIDE 90 MINUTES OF EMERGENCY POWER TO FIXTURE BALLAST; MINIMUM LIGHT OUTPUT FOR TYPICAL 4' LAMP SHALL BE 1100 LUMENS OR HIGHER;UNIVERSAL TRANSFORMER FOR 120 OR 277 VOLTS; LOW VOLTAGE PROTECTION, COMBINATION TEST SWITCH AND AC "ON" INDICATOR; 10 YEAR PRO-RATA WARRANTY; INSTALL TEST SWITCH IN A MANNER THAT REQUIRES NO DISASSEMBLY FOR TESTING.						
	E	EMERGENCY BATTERY PACK.			120/277V3W	IOTA	I-80	
						BODINE	B50	
						LITHONIA	PS-1400	
						PRESCOLITE	EFPS-5	
						EELP	EB1400 (CONTRACTOR INSTALLED)	
						CHLORIDE	CFP841	
						LIGHTOLIER	FBP50	
						SIDELITE	S60F	
	E1	EXIT SIGN: THERMOPLASTIC HOUSING; UNIVERSAL MOUNTING; UNIVERSAL ARROWS PER PLANS; EMERGENCY BATTERY PACK WITH 10 YEAR PRO-RATA WARRANTY; LED, DIFFUSE LENS PANEL; GREEN LETTERS ON WHITE BACKGROUND. MUST MEET NFPA ILLUMINATION STANDARDS.						
	E1-1	SINGLE FACE:	LED	1W	120/277V	MCPHILBEN	CXXL-1-GW	
						DUAL-LITE	LXSGWE	
						EELP	XE 1 GW EM	
						LITHONIA	LQM S W 1 G 120/277 ELN	
						SURE-LITES	LPX70DGW	
						DAY-BRITE	CXL-1-GW-EM	
						CHLORIDE	SLN1GW	
						LIGHTOLIER	LTN1GW	
	E1-2	DUAL FACE:	LED	2W	120/277V	DUAL-LITE	LXUGWE	
						EELP	XE 2 GW EM	
						LITHONIA	LQM S W 3 G 120/277 ELN	
						SURE-LITES	LPX70DGW	
						DAY-BRITE	CXL-3-GW-EM	
						CHLORIDE	SLN2GW	
						LIGHTOLIER	LTN2GW	
						MCPHILBEN	CXXL-3-GW	
	GS	TROFFERS: RECESSED FOR LAY-IN GRID; STATIC; HINGED AND LATCHED STEEL DOOR; .125 ACRYLIC PRISMATIC LENS, MINIMUN 1/8"; EARTHQUAKE CLIPS; MAX 5" DEEP; SPECIFICATION GRADE; PROGRAM START ELECTRONIC BALLASTS, T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE, UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS.						
	GS-3	2X4, 2 LAMP.	2-F32T8 RE835	65W	277/120V	LITHONIA	2 SP8G 232 A12125 MVOLT TUBRHP (4-1/2" DEPTH)	
						METALUX	2GP-232A125-UNV-EB81-PROGRAM START (3-3/4" DEPTH)	
						DAYBRITE	2DPG232-FS21-UNV-1/2EB-SPEC (4-3/8" DEPTH)	
						LSI	LA125 232 SD SSO10PS UE (4" DEPTH)	
						LIGHTOLIER	XT2GVI232-UNV-SOP (3-5/8" DEPTH)	
						COLUMBIA	ST824-232G-FSA12.125-EB8LHPRUNV (3-3/4" DEPTH)	
	GS-4	2X4, 3 LAMP.	3-F32T8 RE835	95W	277/120V	LITHONIA	2 SP8G 332 A12125 1/3 MVOLT TUBRHP (4-1/2" DEPTH)	
						METALUX	2GP-332A125-UNV-EB81-PROGRAM START (3-3/4" DEPTH)	
						DAYBRITE	2DPG332-FS21-UNV-1/3EB-SPEC (4-3/8" DEPTH)	
						COLUMBIA	ST824-332G-FSA12.125-3EB8LHPRUNV (3-3/4" DEPTH)	
						LIGHTOLIER	XT2GVI332-UNV-03P (3-5/8" DEPTH)	
						LSI	LA125 332 SD SSO10PS UE (4" DEPTH)	
	OA	SMALL RECTANGULAR WALL PACK: POLYCARBONATE HOUSING WITH POLYCARBONATE PRISMATIC DIFFUSER, RECESSED BOX MOUNTING; BRONZE.						
	OA-2	RECTANGULAR WALL PACK: APPROX 6" X 6" X 12"; WALL MOUNTED SEE ELEVATION.	1-42PLT RE741	50W	120V	HUBBELL	NRG-304 (277 AVAILABLE)	
						TERON	CA42TBXE	
						LITHONIA	TWL-42TRT-120	
						LUMARK	N/A	
						LUMINAIRE	DWL512-1PLT42	
						DESIGN PLAN	207-8-H5-1-XX-0-9-P-0	

LIGHTING FIXTURE SCHEDULE

NOTE TO BIDDERS: COMPLY WITH SECTIONS 16511, 16521, AND 16570 OF THE SPECIFICATIONS.
REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT, HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPARE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF PENDANTS, OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277) BALLASTS REQUIRED UNLESS NOTED OTHERWISE. DIMENSION SEQUENCE = (LENGTH X WIDTH X DEPTH) IN INCHES.

SYMBOL	MARK	FIXTURE CHARACTERISTICS BODY / AIR / MOUNTING / DOOR LENS/LOUVER/REFLECTOR/OTHER	LAMP	WATTS	VOLTS	MANUFACTURER	CATALOG NUMBER	NOTES
	W	LOW PROFILE WRAPAROUND: SURFACE MOUNTED SUITABLE FOR MOUNTING ON LOW DENSITY CEILINGS WRAPAROUND ACRYLIC PRISMATIC DIFFUSER; WHITE ENAMEL ENDPLATES; MINIMUM CU OF 70 @ 80/50/20 AND RCR=1; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE, UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS.						
	W-3	NARROW BODY WRAPAROUND; 2-LAMP, APPROX; 3" X 10" X 48".	2-F32T8 RE835	65W	277/120V	LITHONIA	LB232-MVOLT-TUBPHP	
						DAYBRITE	CAN232-UNV-1/2-EB-SPEC	
						METALUX	WS-232A-UNV-PROGRAM START	
						LIGHTOLIER	WA232-U-SOP	
						LSI	PR 232 SSO10PRS UE	
						COLUMBIA	WC4-232-EBPS120/277	
	W-5	WIDE BODY WRAPAROUND; 3-LAMP, APPROX; 3" X 16" X 48".	3-F32T8 RE835	95W	277/120V	LITHONIA	LB332-1/3MVOLT-TUBPHP	
						DAYBRITE	CAW332-UNV-1/3-EB-SPEC	
						METALUX	WSA-332A-UNV-PROGRAM START	
						LIGHTOLIER	WB332-U-03P	
						LSI	PR 332 SSO10PRS UE	
						COLUMBIA	WCW4-332-3EBPS120/277	
	WB	WALL MOUNTED FLUORESCENT LOCATED ABOVE WALL ELEMENT (MIRROR/WHITEBOARD, ETC.): AS INDICATED ON DRAWINGS; WITH ACRYLIC INJECTION MOLDED; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE, UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS.						
	WB-6	2-LAMP, WALL MOUNT, 48", WRAPAROUND; ACRYLIC INJECTION MOLDED PRISMATIC DIFFUSER.	2-F32T8 RE835	65W	277/120V	DAYBRITE	WB232-CP-UNV-EB-SPEC	
						LITHONIA	WC 232 A12 MVOLT-TUBPHP	
						WELLMADE	182-P-248T8-U-P	
						METALUX	BC-232-UNV-PROGRAM START	
						LIGHTWAY	VL232NL-120/277-PS	
						DURAY	WQ-6232-A-EBPS120/277	
						LSI	BR 232 SSO10PRS UE	

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PROJECT:
BUILDING 3030
UTAH NATIONAL GUARD
CAMP W.G. WILLIAMS

OWNER:
UTAH NATIONAL GUARD
12953 SOUTH
MINUTEMAN DRIVE.
DRAPER UTAH 84020-1776

35% PRELIM DESIGN
17 SEPT. 2008

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PROJECT NO:	
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LIGHTING FIXTURE SCHEDULE

EL601
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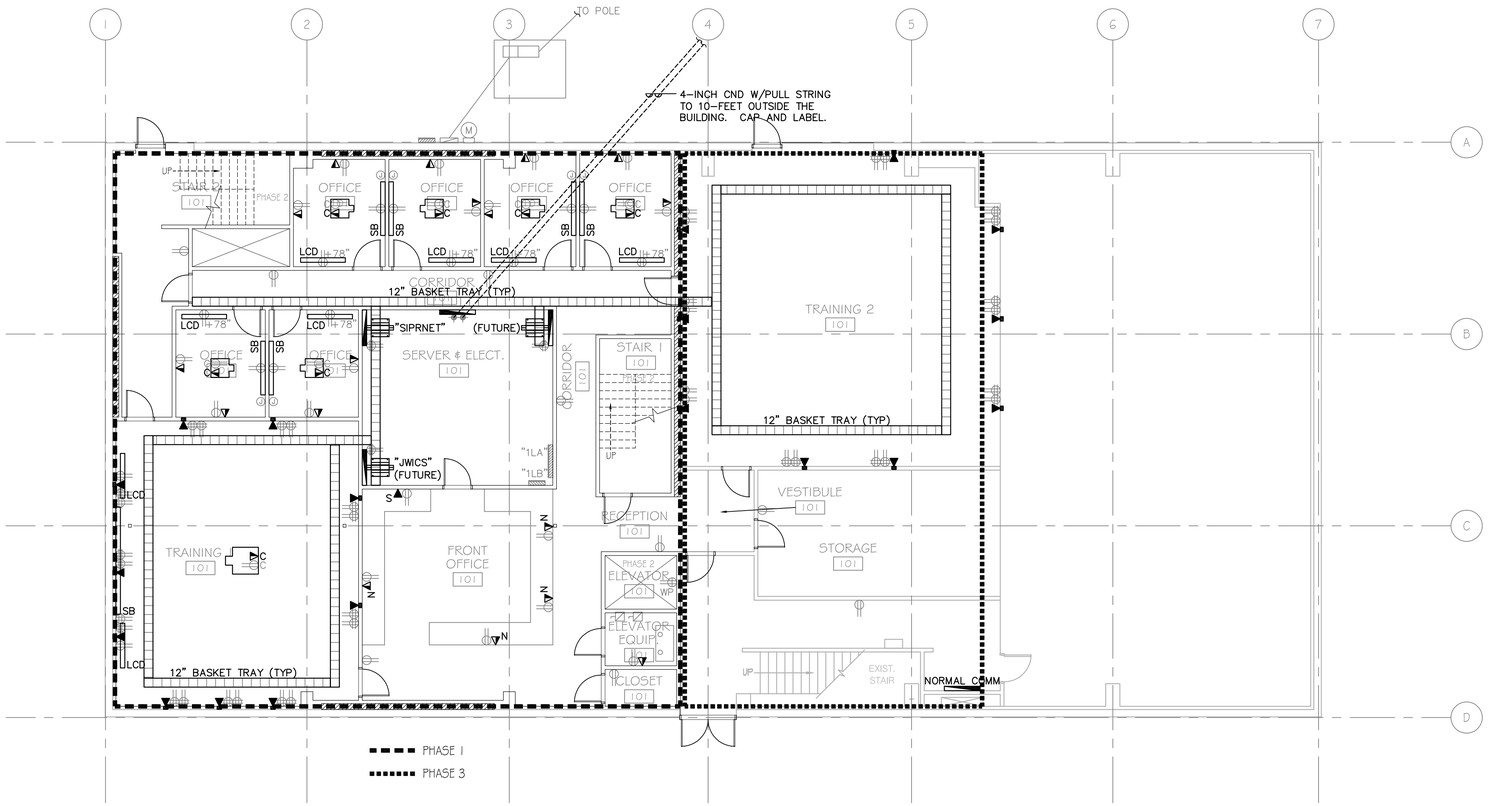

B1 1ST FLOOR TECHNOLOGY PLAN

1/8" = 1'-0"

0 4' 8' 16'

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1ST FLOOR
TECHNOLOGY PLAN

ET101

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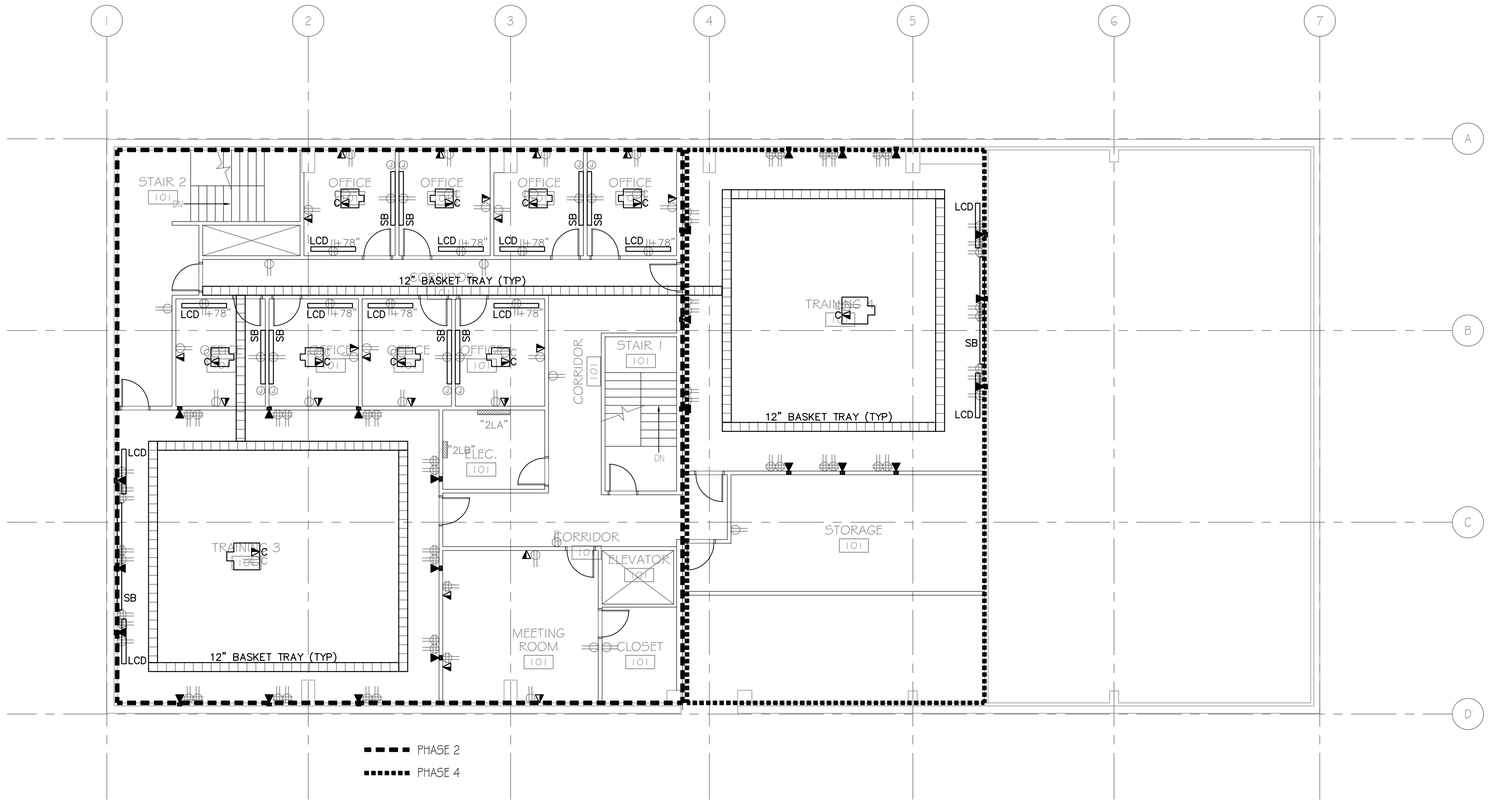

B1 2ND FLOOR TECHNOLOGY PLAN

1/8" = 1'-0"

0 4' 8' 16'

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2ND FLOOR
TECHNOLOGY PLAN

ET102

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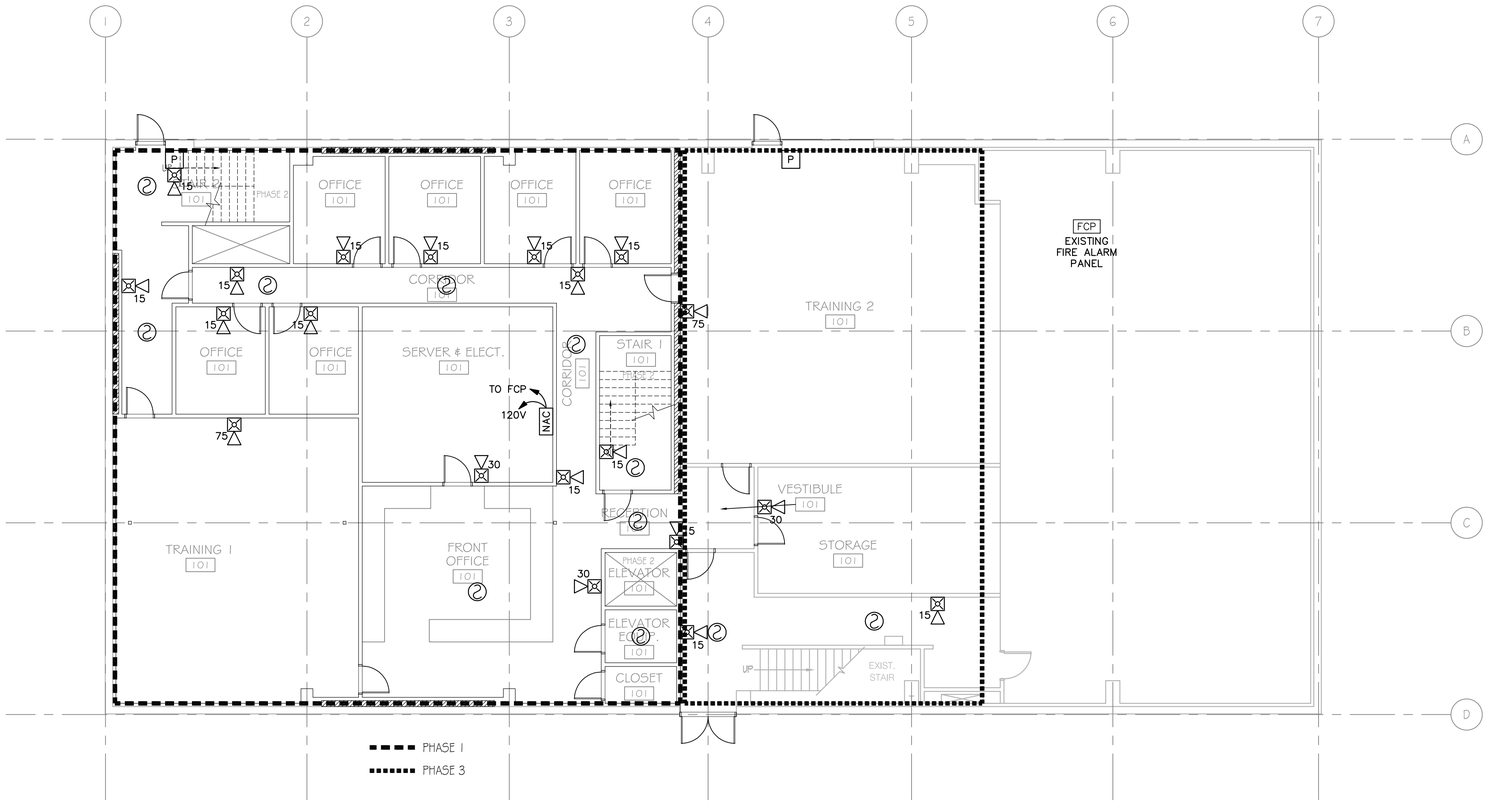

B1 1ST FLOOR FIRE ALARM PLAN

1/8" = 1'-0"

0 4' 8' 16'

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1ST FLOOR
FIRE ALARM PLAN

FA101

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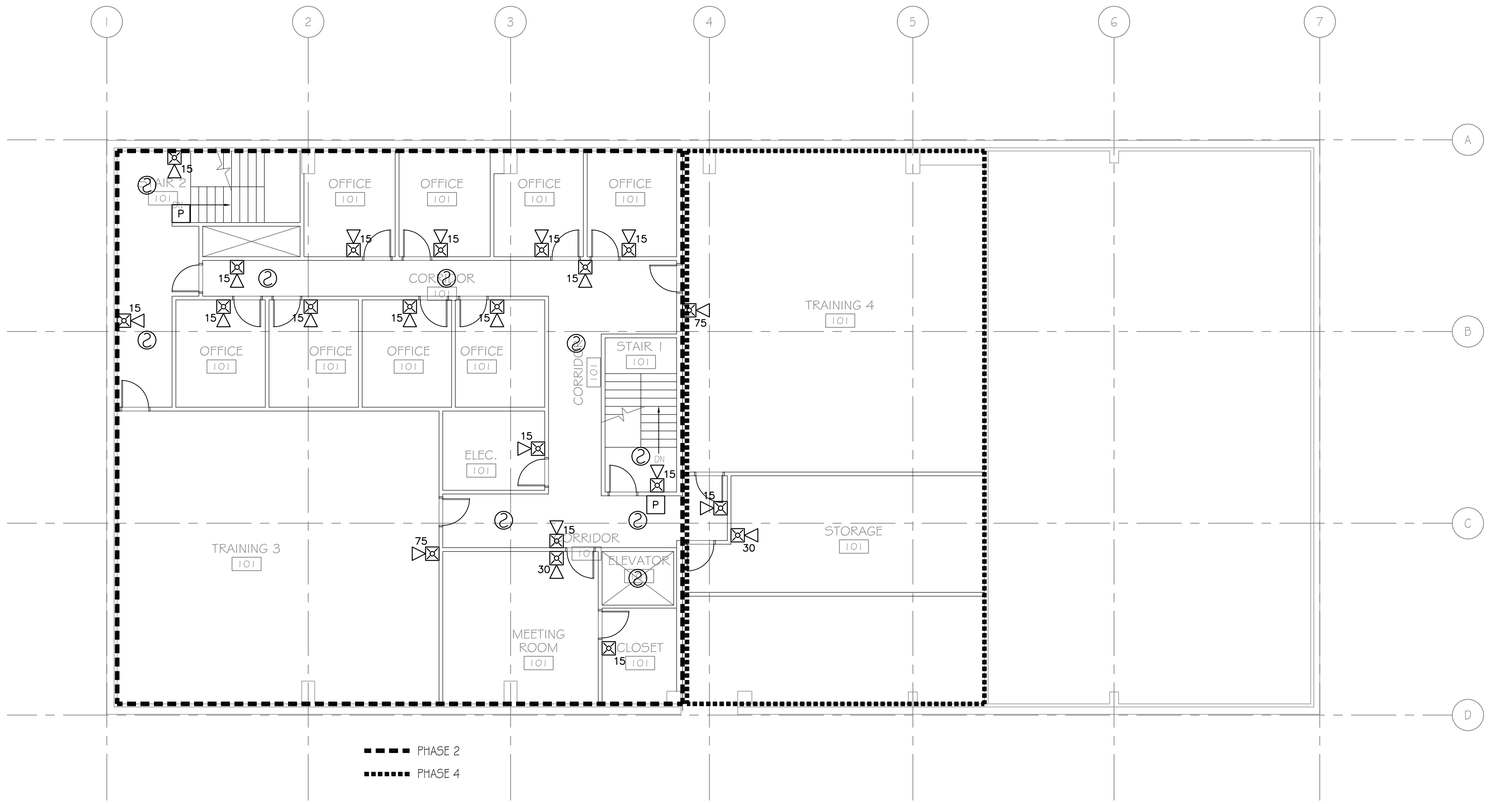

B1 2ND FLOOR FIRE ALARM PLAN
1/8" = 1'-0"

0 4' 8' 16'

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2ND FLOOR
FIRE ALARM PLAN

FA102
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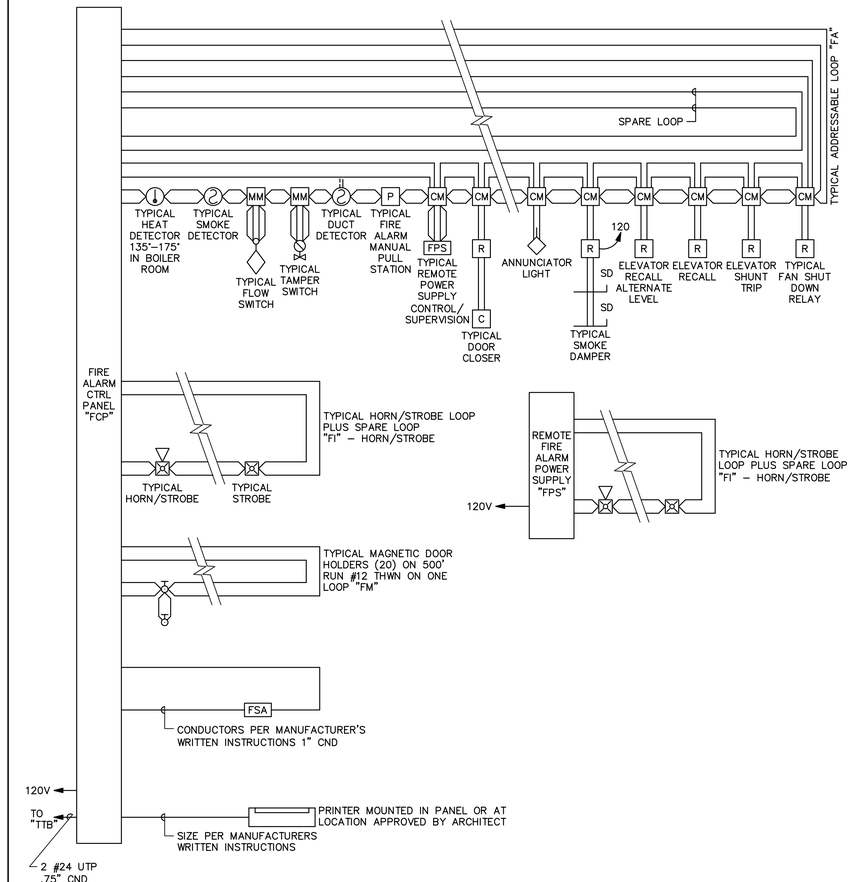
WIRING SCHEDULE

FUNCTION	< 500'	< 1000'	1000'–3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
POWER LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN
MAGNETIC DOOR HOLDER	#12 THWN	#10 THWN		
SPEAKERS	#16 TSP	#16 TSP	#14 TSP	#14 TSP

NOTIFICATION SCHEDULE

SYMBOL	STROBE SIZE	COVERAGE	AVERAGE CURRENT	MAXIMUM PER CIRCUIT ALONE
15	15 CD	20'x20'	.085A	17
30	30 CD	30'x30'	.135A	11
75	75 CD	40'x40'	.200A	7
110	110 CD	50'x50'	.225A	6



A3 ADDRESSABLE FIRE ALARM RISER

NO SCALE

GENERAL SHEET NOTES

1. PLANS ARE BASED UPON 99 MONITOR AND CONTROL DEVICES PER ADDRESSABLE LOOP. OTHER CONFIGURATIONS ARE ACCEPTABLE SUBJECT TO CONTRACTOR ALLOWING FOR INCREASED WIRING REQUIREMENTS AND SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL NOT EXCEED 75% MAXIMUM ALLOWABLE.
2. PLANS ARE BASED UPON THE WIRING SCHEDULE SHOWN. WHERE MANUFACTURER'S REQUIREMENTS EXCEED REQUIREMENTS SHOWN, INCLUDE ADDITIONAL ASSOCIATED COSTS AND SUBMITTAL DRAWINGS INDICATING NEW WIRING CONFIGURATION.
3. PLANS ARE BASED UPON 2 AMPS AT 24 VDC, NOT TO EXCEED 75% (1.50 AMPS AVAILABLE), POWER SUPPLY CAPACITY PER NOTIFICATION CIRCUIT. NOTIFICATION DEVICE LOADS ARE BASED UPON NOTIFICATION DEVICE SCHEDULE SHOWN. INCLUDE ADDITIONAL ASSOCIATED COSTS FOR INCREASED WIRING AND POWER SUPPLY CAPACITY IF LOADS OF ACTUAL DEVICES PROVIDED EXCEED CIRCUIT CAPACITY, OR IF LOAD OUTPUT OF ACTUAL POWER SUPPLIES PROVIDED IS SIZED DIFFERENTLY. PROVIDE SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION.
4. FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.
5. HEAT DETECTORS WHEN INSTALLED IN ELEVATOR SHAFTS OR MECHANICAL ROOMS FOR ELEVATOR SHUT DOWN SHALL HAVE HEAT DETECTOR WITH LOWER RESPONSE TIME INDEX THAN SPRINKLER HEAD.
6. PROVIDE POWER SUPPLY CAPACITY AS REQUIRED FOR DOOR HOLD OPENS SHOWN.
7. BATTERY CAPACITY TO BE ADEQUATE TO OPERATE 15 MINUTES AFTER 24 HOURS PLUS 25% SPARE CAPACITY.
8. VFD REQUIRES TWO RELAYS, ONE FOR SMOKE CONTROL, ONE SPARE.
9. RUN SPARE LOOPS IN SAME CONDUIT. DO NOT EXCEED 40% AREA FILL OF CONDUITS.
10. PROVIDE DUCT DETECTORS FOR SUPPLY AND RETURN AIR SYSTEMS OVER 2000 CFM. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.
11. PROVIDE DUCT DETECTOR AT EACH FLOOR, PRIOR TO CONNECTION TO A COMMON RETURN AND PRIOR TO RECIRCULATING OR FRESH AIR INLET IN AIR RETURN SYSTEMS OVER 15,000 CFM CAPACITY AND SERVING MORE THAN ONE STORY.
12. PROVIDE MANUAL PULL STATIONS IN BOILER ROOMS AND KITCHENS.
13. PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.
14. LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY AND RETURN LOUVERS.
15. PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE ADDITIONAL WIRING, IF REQUIRED.
16. INITIATING AND INDICATING LOOPS SHALL NOT SERVE AN AREA OF GREATER THAN 22,500 SQUARE FEET. PROVIDE ADDITIONAL LOOPS FOR AREAS LARGER THAN THIS.
17. ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.
18. HORN/STROBE BASED ON 120 MILLIAMPS, DOOR HOLDERS BASED ON 70 MILLIAMPS.
19. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.

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FIRE ALARM RISER

FA601

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