

UNG CAMP WILLIAMS NEW H.E.A.T. TRAINER BUILDING

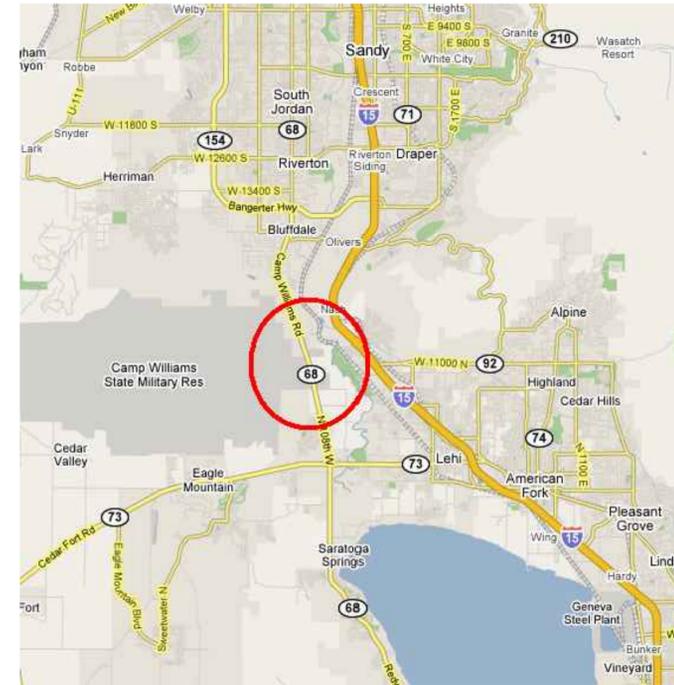
UTAH NATIONAL GUARD - CAMP WILLIAMS
17800 SOUTH CAMP WILLIAMS ROAD
RIVERTON, UTAH 84065

PROJECT NO. 10243480

SEPTEMBER 8, 2010



REGIONAL MAP



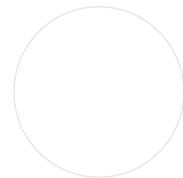
VICINITY

APPROVALS:

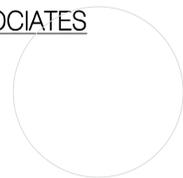
PRIME AGENCY _____ DATE _____

DFCM _____ DATE _____
APPROVAL DOES NOT RELIEVE A/E OF DESIGN LIABILITY

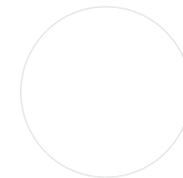
ARCHITECT
EFT
ARCHITECTS ■ ■ ■ ■ ■
265 EAST 100 SOUTH, SUITE 350
SALT LAKE CITY, UTAH 84111
PH: 801.521.8564
FAX: 801.355.2938



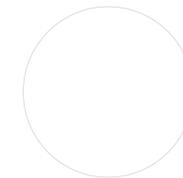
STRUCTURAL ENGINEER
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Ken Garner
Engineering, Inc.
102 WEST 500 SOUTH, SUITE 225
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FAX: 801.328.8802



MECHANICAL ENGINEER
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Division of Facilities
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4110 State Office Building
Salt Lake City, Utah 84114
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Internet: <http://dfcm.utah.gov>



CODE ANALYSIS

APPLICABLE CODES

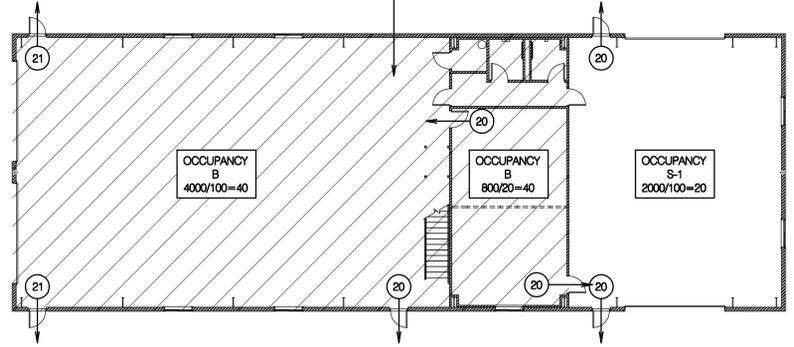
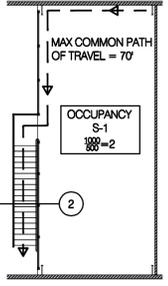
YEAR	YEAR
INTERNATIONAL BUILDING CODE 2009	NATIONAL ELECTRICAL CODE 2008
INTERNATIONAL MECHANICAL CODE 2009	ADA ACCESSIBILITY GUIDELINES 1994
INTERNATIONAL FUEL GAS CODE 2009	
INTERNATIONAL PLUMBING CODE 2009	
INTERNATIONAL FIRE CODE 2009	
INTERNATIONAL ENERGY CONSERVATION CODE 2009	

- A. OCCUPANCY AND GROUP: B S-1
 CHANGE IN USE: YES NO X MIXED OCCUPANCY: YES X NO
 SPECIAL USE AND OCCUPANCY (E.G. HIGH RISE, COVERED MALL): YES
 (SECTION 404.6 REPAIR GARAGE)
- B. SEISMIC DESIGN CATEGORY: D DESIGN WIND SPEED: 100 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: >30 SOUTH: >30 EAST: 30 WEST: >30
- E. MIXED OCCUPANCIES: YES NONSEPARATED USES: YES
- F. SPRINKLERS:
 REQUIRED: NO PROVIDED: NO
 TYPE OF SPRINKLER SYSTEM (IBC 903.3.1) N/A
- G. NUMBER OF STORIES: 1 BUILDING HEIGHT: 27 FT
- H. ACTUAL AREA PER FLOOR (SQUARE FEET): 7000
- I. TABULAR AREA: (TABLE 503): 17,500 (S-1 MOST STRINGENT)
- J. AREA MODIFICATIONS:
 A) $A_2 = (A_1 + [A_1 \times I_1] + [A_2 \times I_2])$ $I_1 = [F/P - 0.25] W/80$
 17,500 + 13,125 (75%) = 30,625
 B) SUM OF THE RATIO CALCULATIONS FOR MIXED OCCUPANCIES:
 ACTUAL AREA / ALLOWABLE ≤ 1 N/A (NON-SEPARATED OCCUPANCIES)
 C) TOTAL ALLOWABLE AREA FOR:
 1) ONE STORY: 30,625
 2) TWO STORY: $A_2(2)$ N/A
 3) THREE STORY: $A_2(3)$ N/A
 D) UNLIMITED AREA BUILDING: YES NO X CODE SECTION:
- K. FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS).

ELEMENT	HOURS	ASSEMBLY LISTING	ELEMENT	HOURS	ASSEMBLY LISTING
EXTERIOR BEARING WALLS	0	N/A	FLOORS - CEILING FLOORS	0	N/A
INTERIOR BEARING WALLS	0	N/A	ROOFS - CEILING ROOFS	0	N/A
EXTERIOR NON-BEARING WALLS	0	N/A	SHAFT ENCLOSURES	0	N/A
STRUCTURAL FRAME	0	N/A	FIRE WALLS	0	N/A
PARTITIONS - PERMANENT	0	N/A	FIRE BARRIERS	0	N/A
FIRE BARRIERS	0	N/A	SMOKE PARTITIONS	0	N/A
EXTERIOR DOORS AND WINDOWS	0	N/A			

- L. DESIGN OCCUPANT LOAD: 103
 EXIT WIDTH REQUIRED: 20.6
 EXIT WIDTH PROVIDED: 165
 103 X 0.2 = 20.6
- M. MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES: * (SEE FOOTNOTES)
 A) WATER CLOSETS - REQUIRED (M) 1 (F) 1 PROVIDED (M) 1 (F) 1
 B) URINALS - REQUIRED (M) 1 (F) 1 PROVIDED (M) 1 (F) 1
 C) LAVATORIES - REQUIRED (M) 1 (F) 1 PROVIDED (M) 1 (F) 1
 D) BATH TUBS OR SHOWERS: (M) 0 (F) 0 PROVIDED (M) 0 (F) 0
 E) DRINKING FOUNTAINS: 1 SERVICE SINKS: 1
- * 1. DUE TO THE REMOTE LOCATION OF THE BUILDING FROM WATER AND SEWER SERVICE, PORTABLE PLUMBING FACILITIES WILL BE ALLOWED TO BE PROVIDED BY THE UTAH NATIONAL GUARD WHEN THE BUILDING IS OCCUPIED AS AN ALTERNATIVE DESIGN (PURSUANT TO IBC SECTION 104.11) IN LIEU OF PERMANENT PLUMBING FIXTURES.
 2. IF THE BUILDING BECOMES CONDITIONED (HEATED/COOLED), THE NEW ADDITION AS WELL AS THE EXISTING BUILDING WILL BE REQUIRED TO COMPLY WITH THE 2009 INTERNATIONAL ENERGY CONSERVATION CODE INCLUDING COMPLIANCE WITH THE BUILDING ENVELOPE REQUIREMENTS. THIS WILL BE REQUIRED EVEN IF THE BUILDING HAS ONLY OCCASIONAL USE.

- FOOTNOTES:
- IN CASE OF CONFLICT WITH THE U.S. DEPARTMENT OF JUSTICE FEDERAL REGISTERS PARTS 1 THROUGH 36, ADA GUIDELINES AND SPECIFIC REFERENCE TO THE INTERNATIONAL BUILDING CODE ACCESSIBILITY CHAPTERS, THE MORE RESTRICTIVE REQUIREMENT SHALL GOVERN.
 - ADDITIONAL CODE INFORMATION SHALL BE PROVIDED AT THE DISCRETION OF THE BUILDING OFFICIAL FOR COMPLEX BUILDINGS, INCLUDING, BUT NOT LIMITED TO:
 - HIGH RISE REQUIREMENTS.
 - TRIUMS.
 - PERFORMANCE BASED CRITERIA.
 - MEANS OR EGRESS ANALYSIS.
 - FIRE ASSEMBLY LOCATOR SHEET.
 - EXTERIOR AND INTERIOR ACCESSIBILITY ROUTE.
 - FIRE STOPPING, INCLUDING TESTED DESIGN NUMBER.
 - FOR PURPOSES OF DETERMINING THE MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES FOR THIS BUILDING (TABLE 2902.1), A-3 WAS USED FOR THE TOTAL DESIGN OCCUPANT LOAD. JUSTIFICATION: AN INCREASE OF OCCUPANTS IN THE B CLASSROOM/TRAINING AREAS TO 50 OR MORE WOULD ALLOW THEM TO BE CLASSIFIED AS A-3, ALLOWING A SUBSTANTIAL REDUCTION IN REQUIRED PLUMBING FIXTURES THAN IF CLASSIFIED AS B WITH LESS THAN 50. ADDITIONAL TOILET FACILITIES ARE ALSO LOCATED WITHIN 600 FT OF THE FACILITY.



ALL EXIT ACCESS AND EXIT DOORS ARE ACCESSIBLE

C4 OCCUPANCY AND MEANS OF EGRESS PLAN

DEFERRED SUBMITTALS	ESTIMATED SUBMITTAL DATE
MECHANICAL & ELECTRICAL SEISMIC BRACING	SEPTEMBER 2010
METAL BUILDING	SEPTEMBER 2010

SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS

DESIGN AND INSTALLATION OF SEISMIC RESTRAINTS SYSTEMS FOR NONSTRUCTURAL COMPONENTS (E.G. ARCHITECTURAL, MECHANICAL, AND ELECTRICAL) IS TO COMPLY WITH THE 2009 INTERNATIONAL BUILDING CODE (IBC), ASCE 7-05 AS REFERENCED IN THE IBC, SEISMIC CONTROL SPECIFICATIONS, DETAILS ON THE DRAWINGS. CALCULATIONS ARE TO BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN STATE OF UTAH.

FINISH SCHEDULE

DOOR #	ROOM NAME	BASE FLOOR		WALLS				CEILING		MISC. NOTES
		NORTH MATERIAL & FINISH	EAST MATERIAL & FINISH	SOUTH MATERIAL & FINISH	WEST MATERIAL & FINISH	MATERIAL & FINISH	HEIGHT			
101	PALADIN TRAINING	RB	SH	EX	EX	EX	EX	EX	OPEN	RESILIENT BASE ON WEST WALL
102	HEAT & MRAP SIMULATOR TRAINING	RB	SH	EX	P	EX	EX	EX	OPEN	RESILIENT BASE ON EAST WALL
103	UTILITY	RB	SV	P	P / FRP	P / FRP	P	L	L	9'-0"
104	WOMEN	RB	SV	P / FRP	P / FRP	P / FRP	P	L	L	9'-0"
105	MEN	RB	SV	P / FRP	P	P / FRP	P / FRP	L	L	9'-0"
106	CLASSROOM	RB	CT	P	P	P	P	L	L	9'-0"
107	CLASSROOM	RB	CT	P	P	P	P	L	L	9'-0"
108	HALL	RB	SH	P	P	P	P	L	L	9'-0"
201	STORAGE	RB	SH	EX	P	EX	EX	EX	OPEN	RESILIENT BASE ON EAST WALL

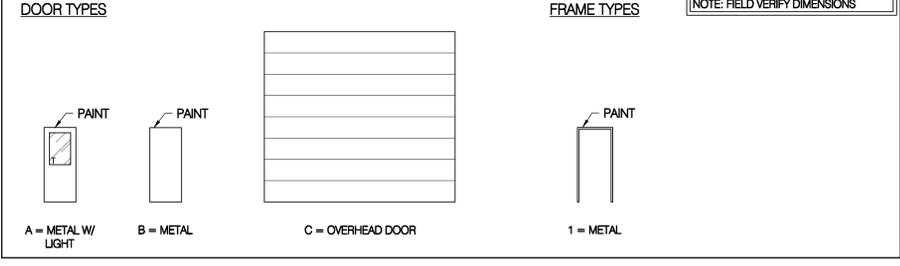
WALLS: P = PAINTED GYP BOARD, FRP = FIBERGLASS REINFORCED PANEL, EX = EXPOSED TO STRUCTURE
 FLOOR: SV = SHEET VINYL, CT = CARPET TILES, SH = SEALER / HARDENER
 BASE: RB = RESILIENT BASE
 CEILING: EX = EXPOSED TO STRUCTURE, L = LAY IN CEILING

DOOR SCHEDULE

DOOR #	ROOM NAME	DOOR			HARDWARE GROUP	FIRE RATING	REMARKS
		TYPE	SIZE	FRAME TYPE			
101A	PALADIN TRAINING	A	S1 1		HW-6		
101B	PALADIN TRAINING	A	S1 1		HW-6		
101C	PALADIN TRAINING	C	S2 N/A				
101D	PALADIN TRAINING	C	S2 N/A				
102A	HEAT & MRAP SIMULATOR TRAINING	A	S1 1		HW-6		
102B	HEAT & MRAP SIMULATOR TRAINING	A	S1 1		HW-6		
102C	HEAT & MRAP SIMULATOR TRAINING	A	S1 1		HW-6		
102D	HEAT & MRAP SIMULATOR TRAINING	C	S2 N/A				
102E	HEAT & MRAP SIMULATOR TRAINING	C	S2 N/A				
103	UTILITY	B	S1 1		HW-4		
104	WOMEN	B	S1 1		HW-5		
105	MEN	B	S1 1		HW-5		
106A	CLASSROOM	B	S1 1		HW-2		
106B	CLASSROOM				HW-1	ACCORDION DOOR - FIELD MEASURE FOR SIZE	
107	CLASSROOM	B	S1 1		HW-2		
108A	CORRIDOR	B	S1 1		HW-3		
108B	CORRIDOR	B	S1 1		HW-3		

DOOR SIZE:
 S1: 3'-0" X 7'-0" X 1 3/4"
 S2: 18'-0" X 18'-0"

GENERAL NOTES:
 1. DOORS TO BE SET TO CLEAR FINISHED FLOOR SURFACE BY 1/2"
 2. FIELD VERIFY SIZE OF DOORS TO BE INSTALLED IN EXISTING FRAMES.



DRAWING INDEX

ARCHITECTURAL	ELECTRICAL
G001 CODE, SHEET INDEX & SCHEDULES	EG001 SYMBOLS, ABBREVIATIONS AND DRAWING INDEX
G002 SPECIAL INSPECTION	ES101 ELECTRICAL SITE PLAN
AS101 SITE PLAN	EL101 ELECTRICAL LIGHTING PLAN
AE101 FLOOR, RCP PLAN & ALTERNATE PLANS	EL601 LIGHTING DETAILS
AE201 EXTERIOR ELEVATIONS	EL602 LIGHTING DETAILS AND LUMINAIRE SCHEDULE
AE211 INTERIOR ELEVATIONS	EP101 ELECTRICAL POWER PLAN
AE301 SECTIONS & DETAILS	EP601 ONE LINE DIAGRAM AND SCHEDULES
	EX601 ELECTRICAL DETAILS
	EX602 TELECOM RISER DIAGRAM
STRUCTURAL	MECHANICAL
SE001 GENERAL STRUCTURAL NOTES	M-001 SYMBOLS & LEGENDS
SE002 GENERAL STRUCTURAL NOTES	M-101 MECHANICAL FLOOR PLAN
SB101 STRUCTURAL PLANS	M-501 MECHANICAL DETAILS
SB501 FOOTING AND FOUNDATION DETAILS	M-601 MECHANICAL SCHEDULES
SB502 FOOTING AND FOUNDATION DETAILS	P-101 PLUMBING FLOOR PLAN
SB601 STRUCTURAL SCHEDULES	P-501 PLUMBING DETAILS
SF201 BRACED FRAME ELEVATIONS & DETAILS	P-601 PLUMBING SCHEDULES
SF202 BRACED FRAME DETAILS	
SF501 FLOOR FRAMING DETAILS	
SF502 FLOOR FRAMING DETAILS	
SF601 STRUCTURAL NOTES	

EFT ARCHITECTS
 265 EAST 100 SOUTH SUITE 350
 SALT LAKE CITY, UTAH 84111-1604
 801.521.8564 WWW.EFTARCH.COM

CONSULTANT INFORMATION

9-8-10

UTAH NATIONAL GUARD
 NEW H.E.A.T. TRAINER BUILDING
 CAMP WILLIAMS,
 UTAH 84302-1540

SHEET TITLE

CODE, SHEET INDEX & SCHEDULES

DATE	BY	DESCRIPTION
△	-	-
△	-	-
△	-	-
△	-	-

DRAWN BY: **CRO** CHECKED BY: **ERT**
 PROJECT NO. **10243480** DRAWING NO. **G001**
 DATE: **8-Sep-10**

UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

SPECIAL INSPECTION AND TESTING UNDER THE PROVISIONS OF 2009 IBC Section 1704 AND FOR MISCELLANEOUS AREAS

Indicate required Special inspections for project by checking the appropriate boxes and provide specific instructions as to the inspection requirements and the expectations of the architect, engineer and owner:

FABRICATORS (IBC 1704.2)

Approved Fabricator Yes No Unapproved Fabricator Yes No

Fabricators Name: _____
 Fabricators plant location _____
 Required In-plant Inspections Steel Construction Welding Details

STEEL (IBC 1704.3)

Item	Detailed Instructions and Frequencies		
High Strength Bolting (1704.3.3)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visual check that proper materials are used, components were fabricated properly, and the bolted joint is brought into firm contact. See AISC 360 Section A3.3 and M2.5, RCSC Specification for Structural Joints Using ASTM A325 Section 9.1.
WELDING (1704.3.1)			
Details (1704.3.2)			
Complete & partial penetration groove welds	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Multipass fillet welds	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	AWS D1.1, AISC 341 Appendix Q and Appendix W.
Single-pass fillet welds > 5/16"	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	AWS D1.1, AISC 341 Appendix Q and Appendix W.
Single-pass fillet welds ≤ 5/16"	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	AWS D1.1
Floor & roof deck welds	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	AWS D1.3
REINFORCEMENT STEEL			
Verification of weldability	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	Welding Reinforcing Steel Not Allowed
Shear wall and shear reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Other reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Steel frame joint details	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	IBC 1704.3.2

CONCRETE CONSTRUCTION (IBC 1704.4)

Item	Detailed Instructions and Frequencies		
Materials (1704.4.1)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	IBC 1704.4.1
Steel placement	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visually verify conformance to ACI 318: 3.5, 7.1-7.7 and IBC 1913.4 At new tunnel lid.
Steel welding	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	Welding Reinforcing Steel Not Allowed.
Bolts prior & during placement	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Use of required design mix	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Check mix and strength testing documents to ACI 318: 4, 5.2-5.4 and IBC 1904.2.2, 1913.2, 1913.3
Concrete sampling for strength test, slump, air content, and temperature of concrete	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	1 set of cylinders per day of placement. ASTM C 172, ASTM C31, ACI 318: 5.6, 5.8 and IBC 1913.10
Concrete & shotcrete placement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Curing temperature and techniques	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Maintain at 50°F and in a moist condition for the first 7 days after placement. For cold or hot weather curing, see ACI 318: 5.11-5.13 and IBC 1913.9.
Pre-stressed concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Pre-cast concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A

Posttensioned concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Form work	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	ACI 318: 6.1.1

MASONRY CONSTRUCTION (IBC 1704.5)

Item	Detailed Instructions and Frequencies		
As masonry construction begins:			
Indicate Category	I	II	N/A
Site prepared mortar	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Construction of mortar joints	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Location of reinforcement, connectors, pre-stressing tendons and anchorages	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Pre-stressing technique	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grade and size of pre-stressing tendons and anchorages	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Inspection program verify:			
Size and location of structural elements	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Type, size and location of anchors	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Size, grade and type of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Welding of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Cold and hot weather protection	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Application and measurement of pre-stressing force	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Prior to grouting verify			
Clean grout space	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Placement of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout mix	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Mortar joints	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout placement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout and mortar specimens and prisms	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Construction and submittal compliance verification	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Empirical masonry – Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Empirical masonry – Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineered masonry – Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineered masonry – Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineering & pre-stressing steel (1708.3)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Structural steel (1708.4)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Qualification of mechanical & electrical equipment (1708.5)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Seismically isolated structures (1708.6)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Testing for seismic resistance is	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A

Posttensioned concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Form work	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	ACI 318: 6.1.1

MASONRY CONSTRUCTION (IBC 1704.5)

Item	Detailed Instructions and Frequencies		
As masonry construction begins:			
Indicate Category	I	II	N/A
Site prepared mortar	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Construction of mortar joints	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Location of reinforcement, connectors, pre-stressing tendons and anchorages	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Pre-stressing technique	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grade and size of pre-stressing tendons and anchorages	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Inspection program verify:			
Size and location of structural elements	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Type, size and location of anchors	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Size, grade and type of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Welding of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Cold and hot weather protection	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Application and measurement of pre-stressing force	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Prior to grouting verify			
Clean grout space	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Placement of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout mix	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Mortar joints	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout placement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout and mortar specimens and prisms	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Construction and submittal compliance verification	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Empirical masonry – Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Empirical masonry – Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineered masonry – Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineered masonry – Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineering & pre-stressing steel (1708.3)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Structural steel (1708.4)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Qualification of mechanical & electrical equipment (1708.5)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Seismically isolated structures (1708.6)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Testing for seismic resistance is	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A

Posttensioned concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Form work	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	ACI 318: 6.1.1

MASONRY CONSTRUCTION (IBC 1704.5)

Item	Detailed Instructions and Frequencies		
As masonry construction begins:			
Indicate Category	I	II	N/A
Site prepared mortar	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Construction of mortar joints	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Location of reinforcement, connectors, pre-stressing tendons and anchorages	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Pre-stressing technique	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grade and size of pre-stressing tendons and anchorages	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Inspection program verify:			
Size and location of structural elements	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Type, size and location of anchors	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Size, grade and type of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Welding of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Cold and hot weather protection	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Application and measurement of pre-stressing force	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Prior to grouting verify			
Clean grout space	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Placement of reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout mix	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Mortar joints	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout placement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Grout and mortar specimens and prisms	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Construction and submittal compliance verification	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Empirical masonry – Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Empirical masonry – Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineered masonry – Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineered masonry – Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Engineering & pre-stressing steel (1708.3)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Structural steel (1708.4)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Qualification of mechanical & electrical equipment (1708.5)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Seismically isolated structures (1708.6)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Testing for seismic resistance is	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A

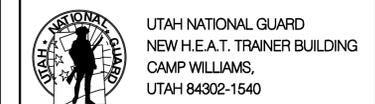
(specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	N/A
Steam and water line welding (specify locations and frequency)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	
Seismic supports for duct work and sealing of joints for duct work	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	
Seismic supports for electrical raceways, cable trays and lights	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	
Seismic supports for plumbing lines including gas, water and steam and condensation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	
Seismic bracing for mechanical units both on slab and suspended	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	

Special Inspectors Shall:

- Be approved by the Building Official prior to performing any duties;
- Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;
- Inspection reports are to meet the requirements of IBC 1704.1.2 and DFCM standards;
- Inspection reports are to be submitted to the code consultant, architect, DFCM project manager, and the State of Utah Building Official within 48 hrs. of inspections;
- A final inspection report shall be submitted following completion of the project documenting the types of special inspections performed and a statement indicating that the structure is in compliance with the drawings, specifications and applicable codes. IBC 1704.1.2

Updated July 29, 2010

CONSULTANT INFORMATION



SHEET TITLE		
SPECIAL INSPECTION		
DATE	BY	DESCRIPTION
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△	-	-
△	-	-
△	-	-
DRAWN BY		CHECKED BY
PROJECT NO. CRO		ERT
DATE 10243480		DRAWING NO. G002
DATE 8-Sep-10		

CONSULTANT INFORMATION

KEY NOTES:

1. CONCRETE SLAB
2. EXISTING FIRE HYDRANT
3. GRADE SITE TO PROVIDE 20' MINIMUM ROADWAY TO BUILDING APPROACH SLABS.

GENERAL NOTES:

1. SLOPE GRADE AWAY FROM BUILDING MINIMUM OF 5% FOR 10'-0", IMPERVIOUS MATERIALS MAY BE 2%



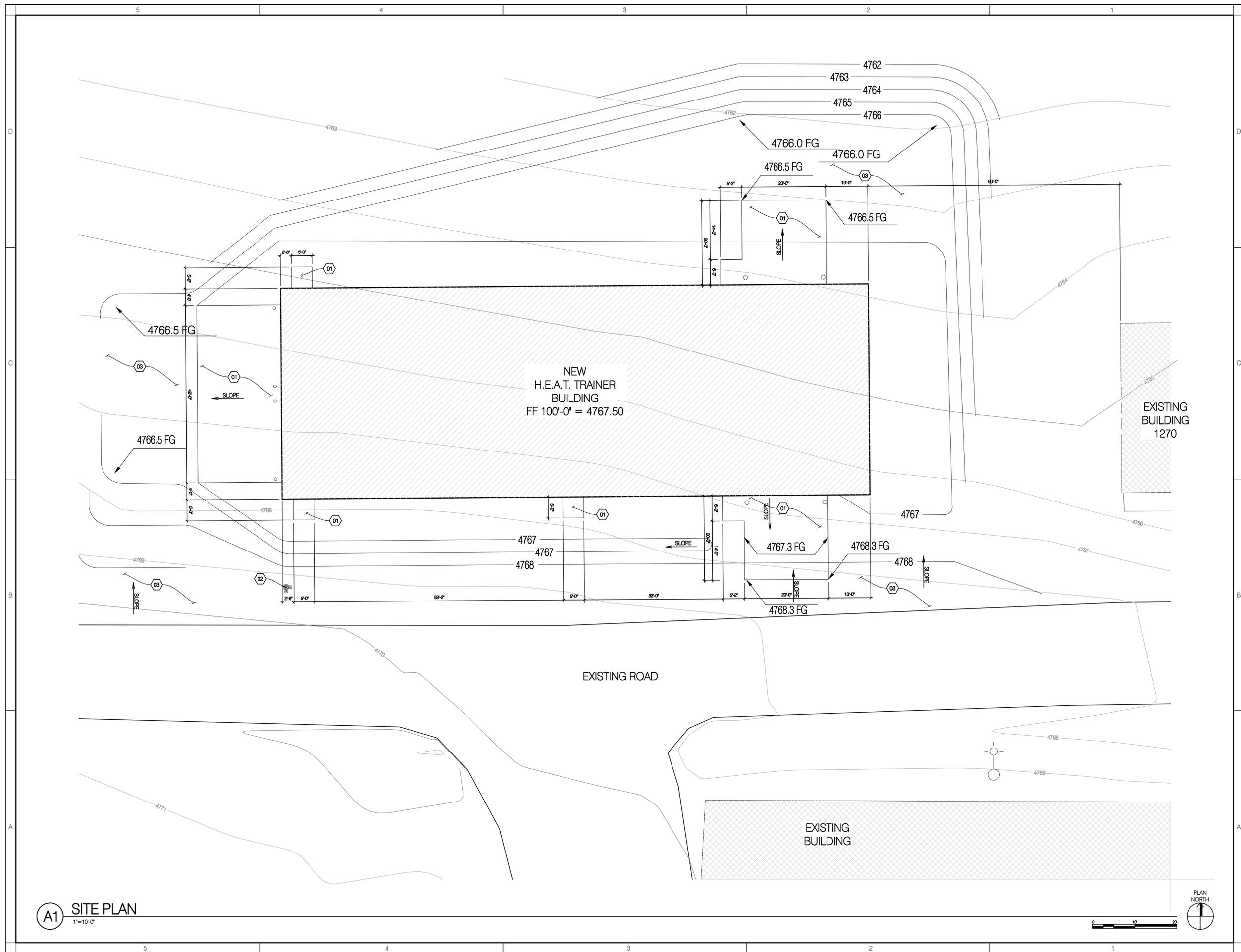
UTAH NATIONAL GUARD
 NEW H.E.A.T. TRAINER BUILDING
 CAMP WILLIAMS,
 UTAH 84302-1540

SITE PLAN

DATE	BY	DESCRIPTION
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DRAWN BY: CRO
 PROJECT NO.: 10243480
 DATE: 8-Sep-10

CHECKED BY: ERT
 DRAWING NO.: AS101



A1 SITE PLAN
 1"=10'-0"



UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

CONSULTANT INFORMATION

KEY NOTES:

1. PREFABRICATED METAL BUILDING
2. PAINTED GALVANIZED 12" STEEL BOLLARD, SEE STRUCTURAL
3. PAINTED GALVANIZED 8" STEEL BOLLARD, SEE STRUCTURAL
4. CONCRETE SLAB
5. CONCRETE SLAB OVER STEEL DECKING
6. FIRE EXTINGUISHER
7. WALL HUNG ACCESSIBLE TOILET
8. GRAB BAR
9. TOILET PAPER DISPENSER
10. SANITARY NAPKIN DISPOSAL
11. WALL HUNG SINK - PROVIDE PIPE INSULATION ON EXPOSED PIPES
12. UTILITY SINK
13. WATER HEATER
14. ACCORDION DOOR
15. WATER FOUNTAIN
16. CONCRETE FILLED PAN STAIR
17. 5/8" GYPSUM BOARD (PAINT) ON 20 GA. STEEL STUDS @ 16" O.C. W/ SOUND ATTENUATION BATTS.
18. H.E.A.T. SIMULATOR OWNER PROVIDED
19. M.R.A.P. SIMULATOR OWNER PROVIDED.
20. PAINTED AND GALVANIZED 1 1/2" PIPE RAILING
21. MOP AND BROOM HOLDER - TBA #8
22. MARKER BOARD 48 X 96
23. EMBED FOR GUARD RAIL - SEE STRUCTURAL
24. OVERHEAD DOOR MOTOR
25. LAY-IN CEILING 9'-0" A.F.F. - SEE D3/AE301
26. 60" X 48" ALUMINUM WINDOW

GENERAL NOTES:



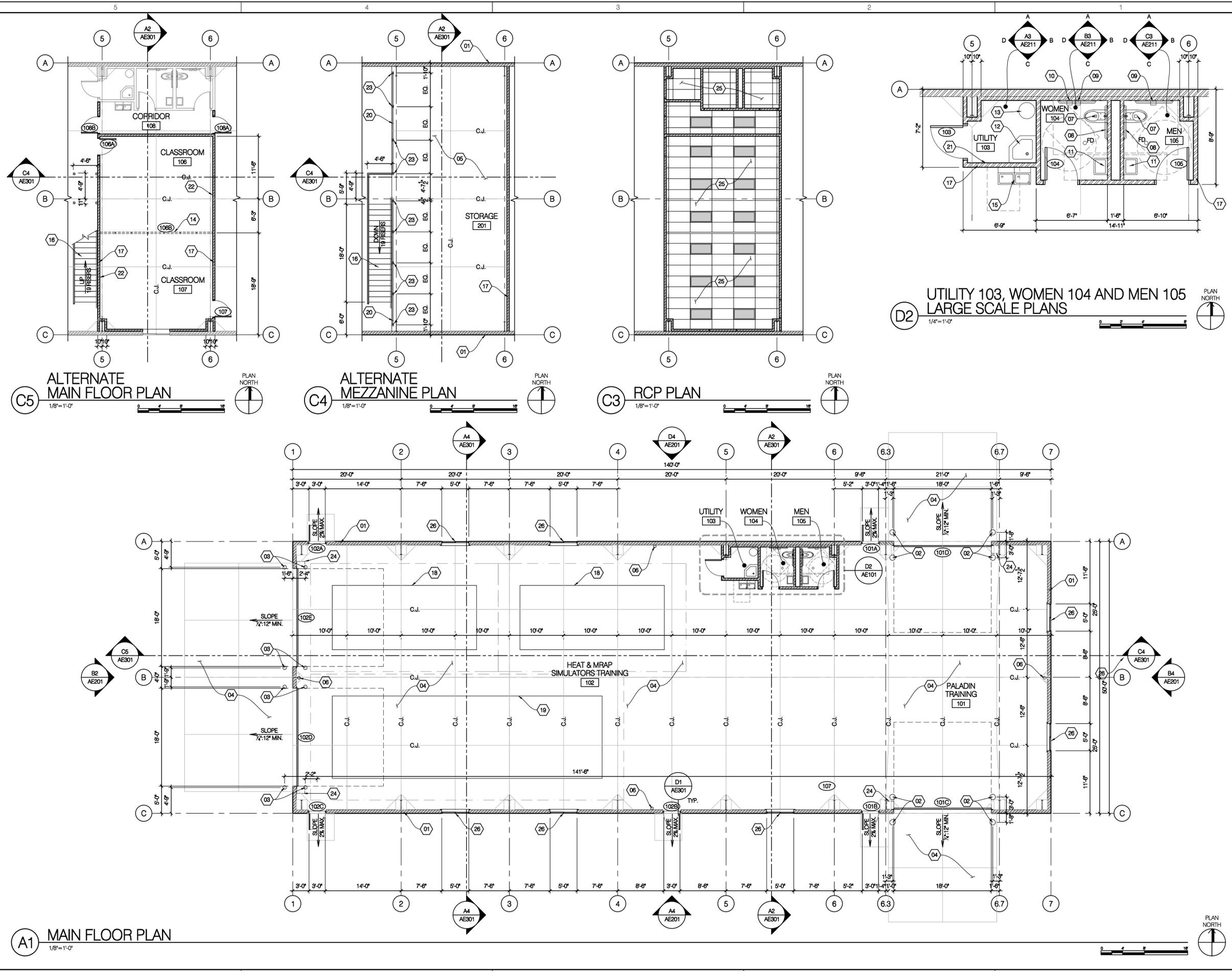
9-8-10

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 CAMP WILLIAMS,
 UTAH 84302-1540

FLOOR, RCP PLAN & ALTERNATE PLANS

DATE	BY	DESCRIPTION
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DRAWN BY: **CRO** CHECKED BY: **EFT**
 PROJECT NO. **10243480** DRAWING NO. **AE101**
 DATE **8-Sep-10**



UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

CONSULTANT INFORMATION

KEY NOTES:

1. FINISH GRADE - SLOPE AWAY FROM BUILDING 1/8" PER FOOT FOR A MINIMUM OF 10'-0".
2. PREFABRICATED METAL BUILDING
3. EXTERIOR LIGHT FIXTURE
4. PAINTED GALVANIZED STEEL BOLLARD, SEE D2/A201
5. PREFINISHED METAL GUTTER.
6. PREFINISHED METAL DOWNSPOUT WITH SPLASH BLOCK
7. SCHEDULED DOOR: SEE DOOR SCHEDULE
8. CONCRETE FOOTING AND FOUNDATION, SEE STRUCTURAL.
9. 60" X 48" ALUMINUM WINDOW
10. 60" X 60" INSULATED TRANSLUCENT PANEL.

GENERAL NOTES:

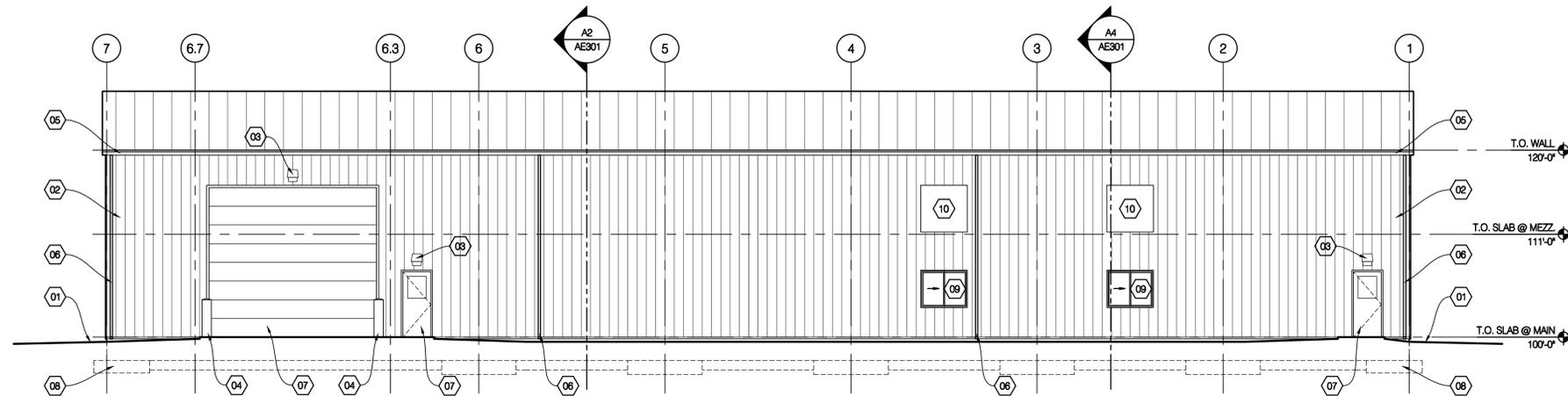


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 NEW H.E.A.T. TRAINER BUILDING
 CAMP WILLIAMS,
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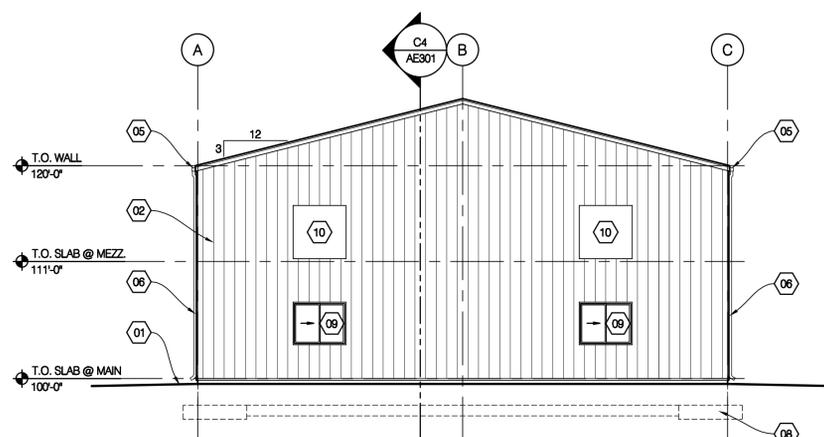
SHEET TITLE
 EXTERIOR ELEVATIONS

DATE	BY	DESCRIPTION
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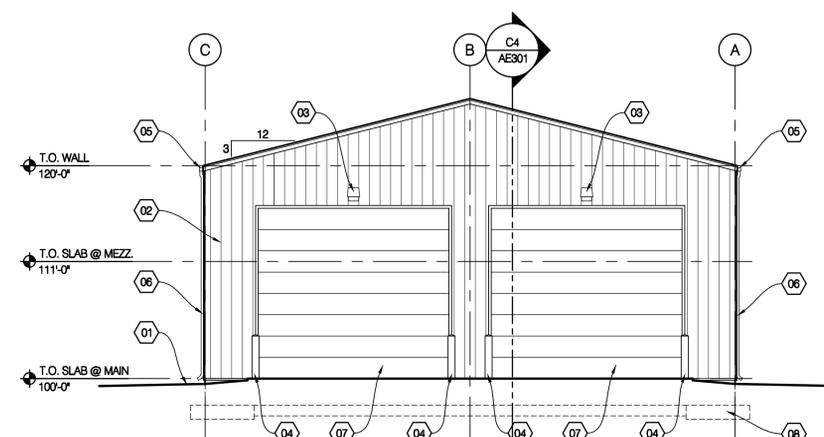
DRAWN BY: **CRO**
 PROJECT NO.: **10243480**
 DATE: **8-Sep-10**
 CHECKED BY: **ERT**
 DRAWING NO.: **AE201**



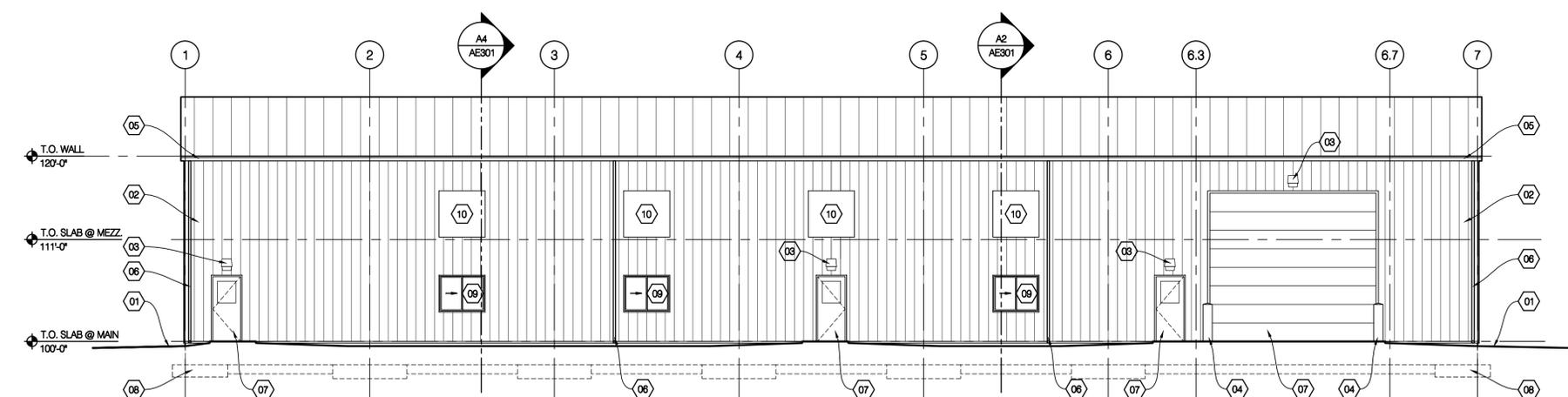
D4 NORTH ELEVATION
 1/8"=1'-0"



B4 EAST ELEVATION
 1/8"=1'-0"

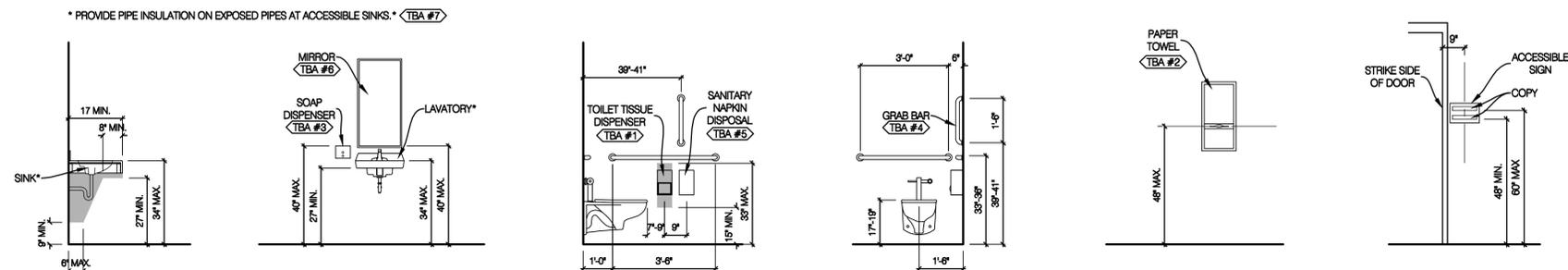


B2 WEST ELEVATION
 1/8"=1'-0"

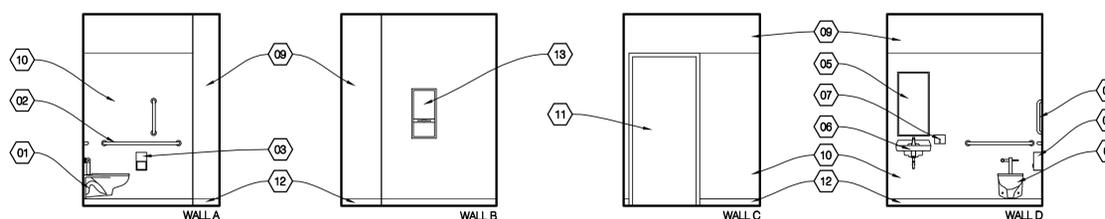


A4 SOUTH ELEVATION
 1/8"=1'-0"

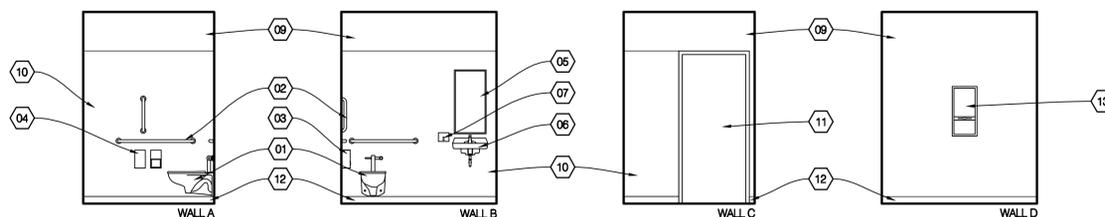
UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING



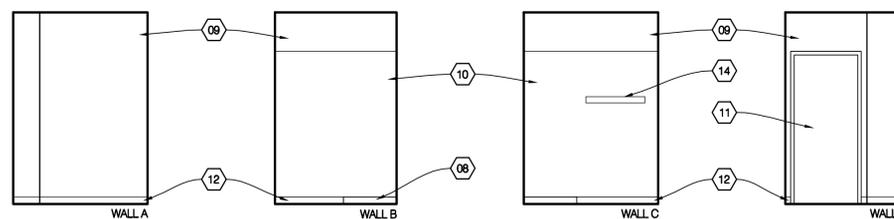
D4 TYPICAL ACCESSIBLE FIXTURE MOUNTING



C3 MEN - 105
 1/4" = 1'-0"



B3 WOMEN - 104
 1/4" = 1'-0"



A3 UTILITY - 103
 1/4" = 1'-0"

CONSULTANT INFORMATION

KEY NOTES:

1. WALL HUNG ACCESSIBLE TOILET - SEE D4/AE211
2. GRAB BAR - SEE D4/AE211
3. TOILET PAPER DISPENSER - SEE D4/AE211
4. SANITARY NAPKIN DISPOSAL - SEE D4/AE211
5. MIRROR 24" W X 32" H - SEE D4/AE211
6. WALL HUNG LAVATORY - SEE D4/AE211
7. SOAP DISPENSER - SEE D4/AE211
8. UTILITY SINK
9. GYPSUM BOARD - PAINT
10. FRP
11. SCHEDULED DOOR
12. RESILIENT BASE
13. PAPER TOWEL DISPENSER - SEE D4/AE211
14. MOP AND BROOM HOLDER - TBA #8

GENERAL NOTES:



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 NEW H.E.A.T. TRAINER BUILDING
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SHEET TITLE
INTERIOR ELEVATIONS

DATE	BY	DESCRIPTION
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DRAWN BY: CRO
 PROJECT NO.: 10243480
 DATE: 8-Sep-10
 CHECKED BY: ERT
 DRAWING NO.: AE211

CONSULTANT INFORMATION

KEY NOTES:

1. FINISH GRADE - SLOPE AWAY FROM BUILDING 1/8" PER FOOT FOR A MINIMUM OF 10'-0".
2. PREFABRICATED METAL BUILDING
3. PAINTED GALVANIZED STEEL BOLLARD, SEE D2/A201
4. SCHEDULED DOOR: SEE DOOR SCHEDULE
5. R-20 BATT INSULATION ON WALLS, W/ B THERMAL BLOCK APPLIED TO THE FULL LENGTH OF EACH PURLIN BETWEEN THE METAL WALL PANELS AND PURLIN.
6. R-32 ON CEILING W/ THERMAL BLOCK APPLIED TO THE FULL LENGTH OF EACH PURLIN BETWEEN THE METAL ROOF PANEL AND PURLIN.
7. CONCRETE SLAB
8. CONCRETE FOOTING AND FOUNDATION, SEE STRUCTURAL
9. THRESHOLD SET IN SEALANT
10. GRAVEL DRAINAGE COURSE
11. THERMAL BLOCK
12. COMPACTED SUBGRADE
13. VAPOR RETARDER
14. PAINTED AND GALVANIZED 1 1/2" PIPE RAILING
15. LAY-IN CEILING
16. STEEL STUD WALL W/ GYPSUM BOARD - PAINTED
17. STEEL EMBED FOR GUARD RAIL INSTALLATION
18. TOE BOARD - PAINT
19. CONCRETE SLAB OVER STEEL DECK
20. WELD PIPE GUARD RAIL TO EMBED
21. 12 GA. HANGER WIRES SPACED @ 4'-0"
22. CEILING RUNNER
23. SEISMIC CLIP @ RUNNER
24. WALL ANGLE
25. SCREW TIGHTENED THROUGH MAIN RUNNER WEB RESTRICTING SEPARATION FROM WALL MOLDING
26. ACCORDION DOOR
27. STEEL JOIST
28. ATTACH ACCORDION DOOR TRACK TO STEEL JOIST AS PER MANUFACTURERS RECOMMENDATIONS.
29. HAT CHANNEL
30. THRESHOLD

GENERAL NOTES:



9-8-10

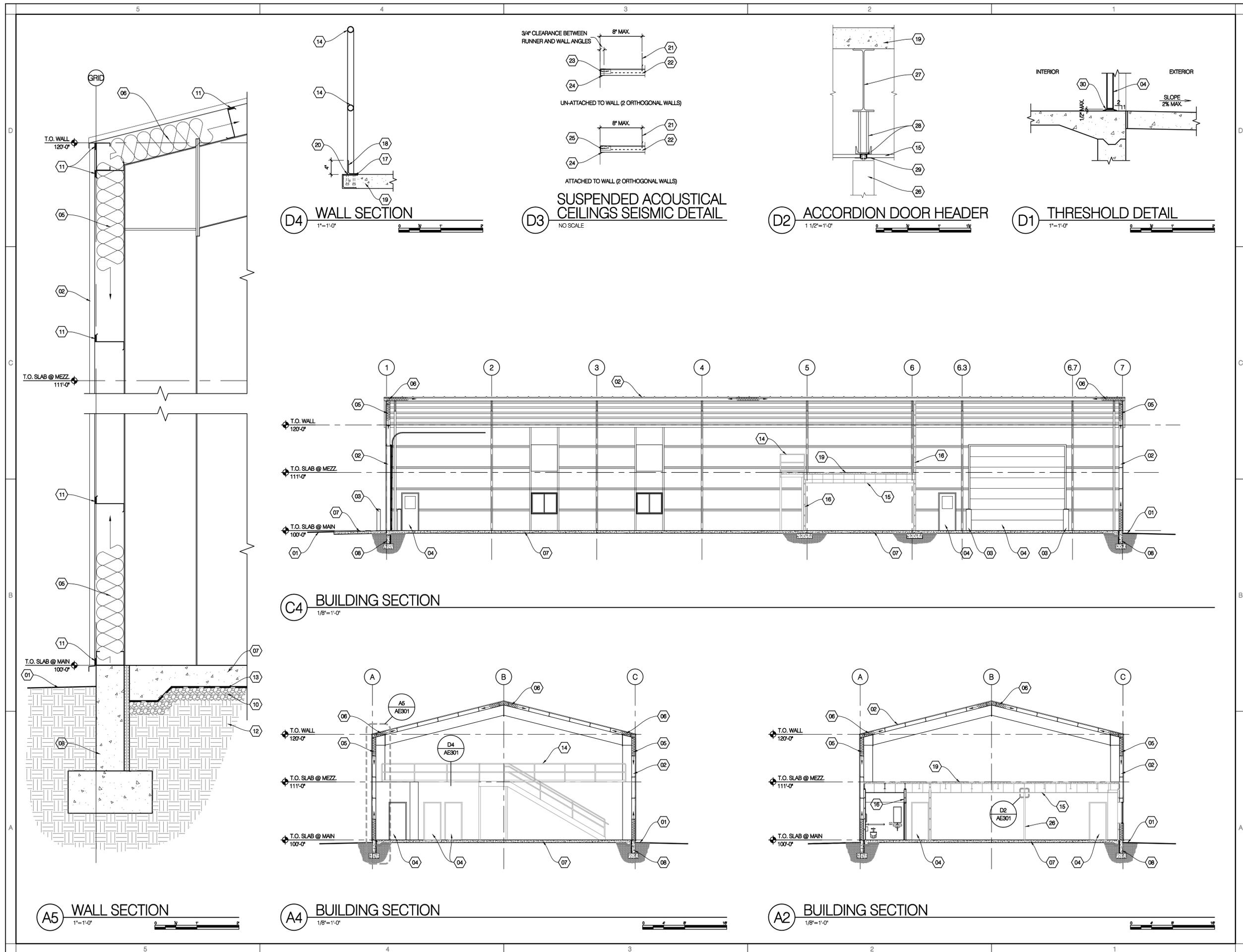
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 NEW H.E.A.T. TRAINER BUILDING
 CAMP WILLIAMS,
 UTAH 84302-1540

SHEET TITLE

SECTIONS & DETAILS

DATE	BY	DESCRIPTION
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DRAWN BY	CRO	CHECKED BY	EFT
PROJECT NO.	10243480	DRAWING NO.	AE301
DATE	8-Sep-10		



UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING



I. Design Criteria

- A. Governing Building Code: 2009 International Building Code (IBC)
- B. Floor Live Loading:
 1. Mezzanine: 250 psf Live Load
- C. Roof Live Loading:
 1. Roof Live Load: 20 psf
 2. Roof Snow Load: 30 psf + Drift per IBC
 a. Ground Snow Load, P_g : 43 psf
 b. Snow Exposure Factor, C_e : 1.0
 c. Importance Factor, I_s : 1.0
 d. Thermal Factor, C_t : 1.0
- D. Earthquake:
 1. Occupancy Category: II
 2. Seismic Design Category: D
 3. Spectral Response Accelerations:
 $S_s = 1.129 g$ $S_{0.5} = 0.789 g$
 $S_1 = 0.462 g$ $S_{0.1} = 0.473 g$
 4. Soil Site Class: D
 $F_a = 1.048$ $F_v = 1.538$
 5. Basic Seismic-Force-Resisting System (Mezzanine): Ordinary Steel Concentric Braced Frame
 $R = 3.25$ $C_u = 3.25$ $\Omega_0 = 2.0$
 6. Importance Factor, I_e : 1.0
 7. Design Base Shear: 26 kips
 8. Design Story Drift, Δ : 0.49 in
 9. Analysis Procedure: Equivalent Lateral Force (Static)
- E. Wind:
 1. Basic Wind Speed (3-second gust): 90 mph
 2. Importance Factor, I_w : 1.0
 3. Exposure: C
 4. Internal Pressure Coefficient, GC_{pi} : 0.18
 5. Topographic Factor, K_{zt} : 1.0
- F. Foundation:
 1. Subsurface Conditions:
 Soils report and log of borings was obtained by the Owner for the Engineer's use in the design of the foundation, and is not a part of the Contract Documents. This report and log of borings is available for the Contractor's information, but is not a warranty of the subsurface conditions. The Contractor may use the report at his own risk.
 2. Soils Report by IGES, dated July 1, 2009.
 3. Soil Bearing Pressure: 2,500 psf, on Compacted Fill.
 4. Coefficient of Friction: 0.40

II. Earthwork

- A. Clearing: The entire building area shall be scraped to remove the top 4 inches of soil, including all vegetation and debris.
- B. Near surface Undocumented Fill: The depth of this material is approximately 2.5 feet. Do not place any footing on this material. Remove all Undocumented Fill material from below footings and replace it with compacted structural fill. Remove a width that extends laterally 1 foot for every foot of depth or over-excavation.
- C. Proof rolling: The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete. Remove all soft spots and replace with compacted structural fill.
- D. Compacted structural fill: All fill material shall be a well-graded granular material with a maximum size less than 4 inches and with not more than 10 percent passing a No. 200 sieve. It shall be compacted to 95 percent of the maximum laboratory density as determined by ASTM D1557. All fill shall be tested (See Specifications and the Quality Assurance section of the CSI).

III. Concrete

- A. Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-08, "Building Code Requirements for Structural Concrete."
1. Compressive strengths of concrete at 28 days shall be as follows:
 a. Footings (Exposure C2 - ACI): 5000 psi
 b. Slabs on Grade: 3000 psi
 c. Exterior Walls (Exposure C2 - ACI): 5000 psi
 d. Walls: 4000 psi
 e. Columns: 4000 psi
 f. Joists, Beams and Suspended Slabs: 4000 psi
 g. Tilt Up Wall Panels: 3500 psi
 h. Lightweight concrete over Steel Deck: 3000 psi
 i. All other Site Cast Concrete: 4500 psi
2. Concrete Density (Maximum Air Dry Weight):
 a. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot.
 b. Lightweight concrete shall not exceed 110 pounds per cubic foot and shall be made of lightweight coarse aggregates and a blend of lightweight and normal weight fines.
3. Reinforcement steel:
 a. ASTM A615 Grade 60, $f_y = 60,000$ psi min. unless noted otherwise.
4. Admixtures:
 a. Air-entraining admixtures, comply with ASTM C 260 (when used).
 (1) When air content of a trowel finished floor slab exceeds 3%, there is an increased risk for delaminations and blistering to occur. When this situation is present, the contractor shall pay special attention to the finishing procedures to help minimize such risks. Refer to ACI 302.1R-96 "Guide for Concrete Floor and Slab Construction" for proper finishing guidelines.
 b. Calcium chloride shall not be added to the concrete mix.
 5. Only one grade or type of concrete shall be poured on the site at any given time.
 6. Plastic coated tie wires and chairs shall be used to support reinforcing bars and tie bars.
- B. Formwork shall comply with ACI Standards Publication 347 and the project specifications. The contractor shall be responsible for the design, detailing, care, placement and removal of the formwork and shores.
 1. Precamber forms and screeds with a camber of 1/4" per every 10'-0" of span to compensate for dead load deflection, unless noted otherwise. Post tensioned concrete slabs and beams do not require formwork to be pre-cambered.
- C. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".
 1. Cast-in-place Concrete: Specified Cover
 a. Cast against and permanently exposed to earth: 3"
 b. Formed concrete exposed to earth or weather:
 #5 thru #18 bars: 2 1/2"
 #5 and smaller bars: 2"
 c. Concrete not exposed to weather or in contact with ground:
 Slabs, Walls, Joists, #11 bars and smaller: 3/4"
- D. Construction Joints and Control Joints:
 1. Provide a continuous 2 X 4 keyway or a surface intentionally roughened to an amplitude of approximately 1/4" in all wall footings. Adjust the keyway as necessary to provide for proper bar placement. A continuous keyway shall not be used for concrete shear wall to footing connections, unless specifically indicated. Refer to project plans, schedules and details for the shear wall to footing connection requirements.
 2. All horizontal and vertical construction joints shall have a continuous 2 X 4 keyway along the joint or joints shall be intentionally roughened to an amplitude of approximately 1/4", unless noted otherwise.

3. Provide reinforcement dowels to match the member reinforcement across the joint, unless noted otherwise. For dowels across construction joints, refer to specific project plans, schedules, and details.
4. Construction joints in suspended concrete pours shall be made at the center of spans.
5. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction. All discontinuous control or construction joints shall be reinforced with 2 - #4 x 48". See structural details. Construction joints shall not exceed a distance of 125'-0" o.c. in any direction.
6. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints shall be completed within 12 hours of concrete placement. Control joints may be installed by:
 a. Saw cut a depth of 1/4 the thickness of the slab
 b. Tooled joints a depth of 1/4 the thickness of the slab
7. Control joints shall be installed in suspended slabs over steel decking by sawcutting along all interior grid lines. Joints centered above the purlins shall be 3/4" deep and shall have #4 X 5'-0" at 16" o.c. reinforcing, placed perpendicular (and centered) to the purlin. Joints centered above the girders shall be 3/4" deep and shall have #4 X 10'-0" at 16" o.c. reinforcing placed perpendicular (and centered) to the girder. The #4 bar reinforcing centered above the grid lines is in addition to the specified WWF continuous throughout the suspended slabs over steel decking. Reinforcing shall be placed 1" below the top of the slab.

- E. Detailing: All reinforcing, including WWF, shall be detailed, bolstered & supported to comply with ACI 315, "Details and Detailing of Concrete Reinforcement" and the Concrete Reinforcing Steel Institute (CRSI) recommendations. Reinforcing bars shall not be welded unless specifically shown on drawings.

1. Lap splice lengths shall be detailed to comply with the "Reinforcing Bar Lap Splice Schedule" contained within the contract drawings. Splices may be made with mechanical splices capable of 125% tension capacity of the bar being spliced. Mechanical splices shall be the positive connecting type coupler. They shall be covered by a current ICC Code Evaluation Report. Use "Cadmold" splice sleeves with ferrous filler, "Lenton" taper threaded rebar splices, "Bar-Lock" lockshear bolt coupling sleeves, or approved equivalent. If mechanical splices are used, splices or couplers on adjacent bars shall be staggered a minimum of 24" apart along the longitudinal axis of the reinforcing bars.
2. All embedments and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
3. Use chairs or other support devices recommended by the CRSI to support and tie reinforcement bars and WWF prior to placing concrete. WWF shall be continuously supported at 36" o.c. maximum.
4. Provide corner bars at intersecting wall corners using the same bar size and spacing as the horizontal wall reinforcing. Unless noted otherwise, corner bar lap lengths shall conform with reinforcing bar lap splice lengths as noted above.
5. All vertical reinforcing shall be doweled to footings, or to the structure below. Dowels shall be the same size and at the same spacing as the vertical reinforcing scheduled (or detailed) for the element above. Lap splice lengths shall comply as noted above or as shown in the drawings. Dowels extending into footings shall terminate with a 90 degree standard ACI hook and shall extend to within 4" of the bottom of the footing. Footing dowels (#8 bars and smaller) with hooks need not extend more than 20" into footings.
6. Horizontal wall reinforcing shall terminate at ends of walls and openings into the far end of the jamb column with a 90-degree standard ACI hook, unless shown otherwise. Lap horizontal bar splices as noted above or as shown in the drawings. Horizontal wall reinforcing shall be continuous through construction and control joints. Splices in horizontal reinforcement shall be staggered, so the splice laps will not overlap. Splices in two curtains where used shall not occur in the same location, splice laps shall not overlap.
7. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
8. Column cross-ties shall have a 135 degree hook at one end and a 90 degree hook at the other. The hooks shall engage the vertical column reinforcement. The 135 degree hooks of consecutive cross-ties engaging the same vertical bars shall engage alternate vertical bars.
9. All reinforcement shall be bent cold, and shall be bent only once at the same location. All reinforcement shall be shop bent, unless otherwise permitted by the engineer.

- F. Minimum Reinforcing: Wall reinforcing shall be as follows, unless noted otherwise:

Wall Thickness	Horizontal Reinf.	Vertical Reinf.
6"	#4 @ 13" o.c.	#4 @ 18" o.c.
8"	#5 @ 15" o.c.	#4 @ 18" o.c.
10"	#5 @ 12" o.c.	#4 @ 13" o.c.
12"	#4 @ 13" o.c. Each Face	#4 @ 18" o.c. Each Face
Others	0.25% of Wall Area	0.15% of Wall Area

Place steel in the center of the wall (except in walls thicker than 10" and where shown otherwise). Walls thicker than 10" shall have two curtains of reinforcing (placed near each face of the wall), unless otherwise shown on the structural drawings. Spacing shall not exceed three times the wall thickness nor 18". In addition to the above reinforcing, 2 - #5 (or 1 - #7 in 10" walls and thinner) x continuous horizontal bars shall be placed at the bottom of the wall (near the footing) and at each floor level, at the roof level and at the top of wall.

- G. No aluminum conduit or product containing aluminum or any other material injurious to concrete shall be embedded in concrete.

- H. Unless otherwise noted, all slabs on grade shall be 4" thick.

IV. Structural Steel

- A. Material:
 1. W-Shapes: ASTM A992, ($F_y = 50$ ksi), except as noted otherwise.
 2. All Other Shapes and Plates: ASTM A36 ($F_y = 36$ ksi), except as noted otherwise.
 3. Rectangular and Square Hollow Structural Sections (HSS): ASTM A500, Grade B ($F_y = 46$ ksi).
 4. Round HSS: ASTM A500, Grade B ($F_y = 42$ ksi).
 5. Steel Pipe: ASTM A53, Grade B ($F_y = 35$ ksi).
 6. Deformed Bar Anchors (DBA): ASTM A496.
 7. Headed Stud Anchors (HSA): ASTM A108, with dimensions complying with AISC specifications.
 8. Anchor Rods: ASTM F1554, Grade 36 with ASTM A563 heavy hex nuts and ASTM F436 hardened washers, unless noted otherwise.

- B. Fabrication and construction shall comply with the following Codes and Standards:
 1. American Institute of Steel Construction (AISC) 360-05, "Specification for Structural Steel Buildings," dated March 9, 2005.
 2. AISC 341-05, "Seismic Provisions for Structural Steel Buildings" dated March 9, 2005, including Supplement No. 1, dated November 16, 2005.
 3. AISC 303-05, "Code of Standard Practice for Steel Buildings and Bridges" excluding the following: Section 3.3 (last sentence of first paragraph), Section 4.4, Section 4.4.1, Section 4.4.2, Section 4.5, and Section 7.13.3.
 a. The architectural drawings are the prime contract drawings. Consultants' drawings by other disciplines are supplementary to the architectural drawings. The structural drawings shall be used in conjunction with the architectural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in architectural, structural, and/or other consultants' drawings. Refer to VII. Special Instructions, notes VII.B and VII.C on this sheet.
 4. AISC/RCS 2004, "Specification for Structural Joints Using ASTM A325 or A490 Bolts"
 5. American Welding Society (AWS) D1.1-04, "Structural Welding Code - Steel" (specific items do not apply when they conflict with the AISC requirements).
 6. American Iron and Steel Institute (AISI) 2001, "North American Specification for the Design of Cold-Formed Steel Structural Members."

- C. Structural shapes and plates shall be fabricated from newly rolled (milled) one-piece sections without splices, unless specifically noted otherwise on the structural drawings. Connections for structural steel shall comply with the structural drawings, unless written approval is given by the structural engineer.

- D. Welding:
 1. Certification of Welders: All shop and field welding shall be executed by AWS certified welders who have been specifically certified for the type of work to be performed. Certification shall be considered current if dated within the past 12 months. Welders will be considered certified if they have been certified under AWS and their work records are current within every six-month period thereafter as required by AWS. Certification and records must comply with AWS Standards. Certification and appropriate records must be provided to the architect prior to beginning work.
 2. Electrodes: E-70 XX or as noted otherwise. E60 XX may be used for welding steel floor and roof decks.

3. Minimum Welds: All intersecting steel shapes that are not bolted shall be connected by a fillet weld all around, unless noted otherwise. Fillet weld sizes that are not shown shall be 1/16" less than the thinnest of the connected parts for thicknesses 1/4" and larger. Fillet welds on plates less than 1/4" shall be of the same size as the thinnest of the connected parts.
4. Reinforcing Bars: Do not weld rebar except as specifically detailed in the drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for deformed bar anchors (DBAs), machine bolts, or headed stud anchors (HSAs).
5. Bolts: Do not apply any welds, including "back" welds to bolts, including anchor bolts, except as specifically detailed in the drawings.
6. It is recommended the steel erection contractor and steel fabricator contact the Quality Assurance Agency prior to beginning any of the above welds. A program of joint preparation and welding procedures should be worked out between the two parties before the welding is started so that correct welds will be made from the beginning.
7. Headed Stud Anchor (HSA) welding and Deformed Bar Anchor (DBA) welding shall conform to the manufacturer's specifications. Welding shall comply with AWS D1.1 Section 7.6 through 7.8 and Annex IX.
8. Braced Frame welding: lengths shown for fillet welds for brace-to-gusset, gusset-to-baseplate, and column-to-gusset connections are minimums, intended for establishing gusset plate dimensions. Weld entire contact length at these joints, typical.

- E. Bolted Connections:

1. Use ASTM A325N bolts for steel to steel connections, as noted herein or as noted on the drawings. A325N bolts shall be used in connections for simple span framing and beam (or girder) to bearing plate connections. Tighten bolts to a snug tight condition. A snug tight condition is usually attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench. Bolts shall be tightened until all piles of the joint are in firm contact.
2. Provide hardened washers beneath the turned element of all bolts or nuts. Provide hardened beveled washers, to compensate for the lack of parallelism, where the outer face of the bolted parts has a slope greater than one in twenty with respect to the plane normal to the bolt axis. Hardened washers or plates installed over oversized holes or slotted holes shall be at least 5/16" thick and shall conform to ASTM F436. Plates or bars installed at slotted holes shall have a size sufficient to completely cover the slot after installation.
3. Where a steel to steel beam connection is not detailed in the drawings, provide a standard AISC framed connection with the capacity to support one half of the total uniform load capacity of the given shape for the span and for the steel specified.
4. Bolts, nuts and washers shall not be reused.

- F. Beam Web Stiffener Plates:

Provide full-height web stiffener plates to each side of all beams above all bearing points. Stiffener plates shall be the thickness noted below unless noted otherwise and shall be welded on both sides of the stiffener plate with fillet welds (noted below) all around.

Beam Web stiffener thickness	For beams with flange widths between	Weld Size
1/4 inch thick	Greater than 0" and less than 8 1/4"	3/16"
3/8 inch thick	Greater than 8 1/4" and less than 12 1/4"	1/4"
1/2 inch thick	Greater than 12 1/4" and less than 16 1/2"	5/16"
5/8 inch thick	Greater than 16 1/2" and less than 20 3/4"	3/8"

- G. Steel Floor Deck:

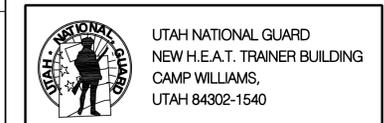
1. Steel floor deck shall comply with the latest requirements of the Steel Deck Institute (SDI). Submit ICC Code Evaluation Report with load and lateral shear capacities with shop drawings.
2. Steel floor deck shall be 2" deep X 20 gauge minimum phosphatized/painted composite (deck shall be galvanized (G60) when used above or below mechanical equipment rooms), type "W" deck with interlocking side seams with the following properties:

	20 Gauge	18 Gauge
Minimum S (in ² /ft)	0.370	0.511
Minimum I (in ⁴ /ft)	0.423	0.555

 Painted deck shall be coated with special paint to receive sprayed-on fire proofing, where required.
3. A 2" thick (4" overall) lightweight concrete ($f_c = 3,000$ psi @ 28 days unless noted otherwise) slab shall be poured over the steel deck. Reinforce slab with 6" x 6" - W2.1/W2.1 welded wire fabric (minimum) or reinforce slab with 2 pounds per cubic yard minimum polypropylene fibrillated fiber reinforcement, as per specifications. Welded Wire Fabric shall be placed 1" to 1 1/2" below the top of the slab.
4. Steel deck with 2" thick (4" overall) lightweight concrete slab shall have a minimum diaphragm shear capacity of 730 lbs/ft. for a 7'-0" deck span.
5. Weld deck to supporting framing members with 3/4" diameter puddle welds at the following spacing (Closer spacings may be used to develop minimum shear requirements).
 a. 12" o.c. to supports perpendicular to deck corrugations (4 welds per 36" wide sheet).
 b. 12" o.c. to all supports parallel to deck corrugations.
 c. Stud welds may take the place of puddle welds where studs are welded through the deck to the top flange of beams.
 d. All welded surfaces shall be dry before welding deck or studs to supports.
6. Attach interlocking seams with 3/16" button punch at 18" o.c. or 1 1/2" top seam weld at 36" o.c. between adjacent pieces of deck. Crimp seams before button punching or welding interlocking seams. Closer spacings may be used to develop minimum shear requirements.
7. All deck shall be 3-span continuous minimum where possible. In areas where 3-span conditions are not possible, the deck shall meet the above loading criteria for the span condition. The contractor shall provide heavier gauge deck or provide shoring as required for one or two span conditions to meet the equivalent loading of the above deck under a three span condition.
8. Deck shall have a minimum bearing length of 2'.

- H. Prefabricated Metal Buildings:

1. Design, Fabrication and Erection: All prefabricated elements with their associated hardware shall comply with the latest requirements of the IBC, AISC, SDI and AISI.
2. Design Calculations: Prior to fabrication, and installation of anchor bolts, the metal building supplier shall submit complete shop drawings and calculations including reactions bearing the stamp of a Registered Professional Engineer, licensed in the State of Utah. Complete calculations shall be submitted with the shop drawings.
3. Field Modifications: Do not modify any structural element of the prefabricated metal building without the written consent and direction from the manufacturer. Send copies of the consent and modifications to the Architect-Engineer.



GENERAL STRUCTURAL NOTES

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 DATE: 8 Sep-10

CHECKED BY: APB
 DRAWING NO: SE001

UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING



V. Special Instructions

- A. The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specifications for additional requirements in each section. Notes and specific details on the drawings shall take precedence over General Structural Notes and typical details.
- B. The architectural drawings are the prime contract drawings. Consultant drawings by other disciplines are supplementary to the architectural drawings. All omissions or conflicts, including dimensions, between the various elements of the consultants' drawings and/or specifications shall be brought to the attention of the Architect before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Architect without additional cost to the owner. Any work done by the contractor after discovery of such discrepancy shall be done at the contractor's risk.
- C. The structural drawings shall be used in conjunction with the architectural drawings. Primary structural elements and overall structural layout are indicated within the structural plans and details. Some secondary elements, architectural layouts, alcoves, elevations, slopes, depressions, curbs, mechanical equipment and electrical equipment, are not indicated within the structural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in the architectural, structural and/or other consultants' drawings.
- D. Shoring and Bracing Requirements:
 1. Floor and Roof Structures - The General Contractor is responsible for the method and sequence of all structural erection. He shall provide temporary shoring and bracing as his method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof and floor attachments. The building shall not be considered stable until all connections are complete.
 2. Foundation walls must be braced until the complete floor or roof systems is completed. Do not backfill until floor or roof systems are in place.
 3. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self supporting.
- E. All expansion joints (E.J.) shown in the structural drawings shall be considered seismic separation joints, unless noted otherwise.
- F. Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the contractor of the responsibility of completing the project according to the contract documents. The general contractor shall review and mark all shop drawings prior to submitting them to the Architect for his review. Shop Drawings made from reproductions of (these) contract drawings will be rejected.
- G. Project Coordination: It shall be the responsibility of the general contractor to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the general contractor and shall be coordinated with the Architect/Engineers. The order of construction is the responsibility of the general contractor. It is the contractor's obligation to provide all items necessary for his chosen procedure.
- H. Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, contractor shall notify architect/engineer prior to fabrication or construction within that area.
- I. Notice of Copyright: The structural drawings, plans, schedules, notes and details are hereby copyrighted by Reaveley Engineers and Associates, Inc., All Rights reserved. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the project is not to be construed as publication in derogation of Reaveley Engineers & Associates, Inc.'s reserved rights. The documents defining the structure are instruments of service prepared by Reaveley Engineers and Associates, Inc. for one use only. Furthermore, these documents shall not be reproduced, or copied, in whole or in part by the contractor or his subcontractors for preparation of shop drawings or other submittals.

VI. Quality Assurance

- A. Quality Assurance Agency Requirements:
 1. The owner shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. All quality assurance personnel assigned to the project shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection.
 2. Prior to construction, the QAA shall prepare a written Quality Assurance Implementation Plan (QAIP) for the project. The QAIP shall include a list of personnel assigned to the project including management personnel, inspection procedures and frequency, proposed testing methods and frequency of testing, and reporting procedures. The QAIP shall also outline methods of documenting deficiencies and reporting corrections. A copy of the QAIP shall be given to the contractor for review and coordination with subcontractors.
 3. Prior to construction, the QAA shall submit the following information to the Architect and Engineer of Record for approval:
 - a. A copy of the Quality Assurance Implementation Plan for the project.
 - b. A copy of the appropriate certification and training records for each individual performing inspections or testing.
 - c. A list of the testing equipment designated for the project and recent calibration records for the equipment.
 - d. Sample inspection and testing reports and the distribution list for the reports.
 4. The special inspector shall inspect the work per Chapter 17 of the IBC for conformance with the contract documents. The special inspector shall send reports to the owner, building official, architect, engineer, and contractor. All discrepancies shall be brought to the immediate attention of the contractor for correction. The QAA shall submit a final signed report stating that the special inspection work was, to the best of their knowledge, in conformance with the plans, specifications and applicable workmanship provisions of the IBC.
- B. Seismic Force Resisting Systems
 1. Elements that are a part of the Main Seismic Force Resisting System for the structure may require increased quality assurance inspection and testing. The Main Seismic Force Resisting system for the structure includes the following elements:
 - a. Steel braces, columns and beams that are part of a steel braced frame.
 - b. Footings and foundation systems that directly support walls, columns and braces referenced above.
 - c. Floor decking and/or slab systems.
 - d. All elements labeled as "drag struts" or "chords."
 - e. Connections between the elements referenced above.
- C. Special Inspection: Special Inspection shall be provided for the following elements per IBC sections 1704 and 1707:
 1. Concrete and elements embedded in concrete shall be special inspected prior to and during placement of concrete. Special inspection of concrete shall include the following:
 - a. Reinforcing steel size and placement.
 - b. Surface preparation at cold joints including placement of keyways.
 - c. Bolt and embed size, configuration and placement.
 - d. Concrete shall receive continuous special inspection during placement, and periodic inspection after placement to ensure proper curing and weather protection procedures.
 2. Structural steel fabrication and erection shall be special inspected, including the following:
 - a. High strength bolts per IBC 1704.3.3 and IBC section 2209.
 - b. Fillet welds smaller than 5/16" per AWS D1.1.
 - c. Fillet welds larger than 5/16", multiple pass welds, and all groove welds shall receive continuous special inspection during weld placement per AWS D1.1.

- d. Welding of reinforcing steel shall receive continuous special inspection during weld placement per AWS D1.1.
 - e. Welding of Headed Stud Anchors (HSA) and Deformed Bar Anchors (DBA) shall be inspected to comply with AWS D1.1 Section 7.6 through 7.8 and Annex IX.
 - f. Welding or fastening of floor deck per AWS D1.3, or per the code evaluation report for the fastening method.
3. Post-installed anchors, including but not limited to expansion anchors, adhesive anchors and rebar dowels, and low velocity fasteners, shall receive special inspection per the code evaluation reports for the anchors.
 - a. Continuous special inspection is required during the installation of all adhesive anchors and rebar dowels. Special inspector shall verify the following:
 - (1) Anchor size and steel grade.
 - (2) Hole diameter, location, and type of drill bit.
 - (3) Cleanliness of hole and anchor.
 - (4) Adhesive application.
 - (5) Anchor embedment.
- D. Structural Testing: The following materials shall be tested per IBC sections 1704 and 1708. The owner reserves the right to test any and all materials using any appropriate non-destructive procedure. Any items found to be deficient shall be corrected and retested at no additional cost to the owner.
 1. Earthwork: All compacted structural fill shall be tested to verify soil gradation, lift thickness, and compaction requirements. See the specifications and earthwork section of the GSN for testing frequency and acceptability criteria.
 2. Concrete Strength Verification and Testing: All concrete shall be tested to verify strength, slump, unit weight, air content, and temperature. See the specifications for testing criteria, testing frequency and acceptability criteria.
 3. Welded connections shall be tested for compliance according to IBC Table 1704.3, AWS D1.1 and the contract specifications and plans. As a minimum, the testing shall include the following:
 - a. All complete penetration groove welds shall be tested 100 percent either by ultrasonic testing or by radiography.
 - b. Partial penetration groove welds shall be tested either by ultrasonic testing or radiography. A minimum of 50% of these welds shall be tested.
 - c. Base metal thicker than 1 1/2", when subjected to through thickness weld shrinkage strains, shall be ultrasonically inspected for discontinuities directly behind such welds and three inches above and below the weld after joint assembly completion.
 - d. Any material discontinuities shall be accepted or rejected on the basis of the defect rating in accordance with the testing in AWS D1.1 Chapter 6, excluding Sections 6.1 through and including 6.6. All deficient welds shall be corrected and retested at no additional cost to the owner.
 4. Post-installed anchors, including but not limited to expansion anchors, adhesive anchors, and low velocity fasteners, shall be tested per the code evaluation reports for the anchors.

- E. Structural Observations by the Engineer of Record.
 1. The Engineer of Record may perform structural observations at critical phases of the project. Copies of the engineer's report will be distributed to the architect, contractor, owner, and QAA.
 2. Observation visits to the site by the Engineer's field representatives shall not be construed as inspection or approval of construction.
 3. Notification of Engineer: The contractor shall notify the engineer twenty-four hours prior to:
 - a. Placing concrete in any footing.
 - b. Closing any wall forms.
 - c. Placing concrete in any column, beam or suspended slab.
 - d. Completing the welding of major sections of steel decking.
- F. Contractor Responsibility: The contractor shall prepare and submit a written statement of responsibility to the building official and the owner prior to commencement of work on the project. As a minimum the statement shall contain the following information:
 1. Acknowledgement of the quality assurance requirements for the structure.
 2. Acknowledgement of receipt of the Quality Assurance Implementation Plan (QAIP) from the testing agency.
 3. Acknowledgement that control will be exercised to obtain conformance to the Contract Documents and the QAIP.
 4. Quality control procedures within the contractor's organization, methods and frequency of reporting, and distribution of the reports.
 5. Identification and qualifications of the person(s) responsible for quality control and their position(s) in the organization.

ABBREVIATIONS

AB	ANCHOR BOLT(S)	F.D.	FLOOR DRAIN	OPNG	OPENING
ABV	ABOVE	FDIN	FOUNDATION	OPP	OPPOSITE
ACI	AMERICAN CONCRETE INSTITUTE	F.F.	FINISH FLOOR	O.C.	ON CENTER
⊙	AT	FIN	FINISH	O.F.	OUTSIDE FACE
ALT	ALTERNATE	FL	FINISH	OWSJ	OPEN WEB STEEL JOIST
APPROX	APPROXIMATE	FT	FOOT		
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS	FTG	FOOTING	PCF	POUNDS/CUBIC FOOT
AWS	AMERICAN WELDING SOCIETY	FV	FIELD VERIFY	PL	PLATE
		GA	GAUGE	PLF	POUNDS/LINEAR FOOT
BM	BEAM	GALV	GALVANIZED	PNL	PANEL
BLW	BELOW	GLB	GLUE LAMINATED BEAM	PSF	POUNDS/SQUARE FOOT
BLOG	BUILDING	GR	GRADE	PSI	POUNDS/SQUARE INCH
BOT	BOTTOM	GSN	GENERAL STRUCTURAL NOTES	PT	POINT
BRG	BEARING	HB	HORIZONTAL BRIDGING	P.T.	POST TENSION
BWN	BETWEEN	HT	HEIGHT	QAA	QUALITY ASSURANCE
		HORIZ	HORIZONTAL HEADED STUD ANCHOR	QAIP	QUALITY ASSURANCE IMPLEMENTATION PLAN
C.J.	CONSTRUCTION JOINT OR CONTROL JOINT	IBC	INTERNATIONAL BUILDING CODE	REINF	REINFORCING
CJP	COMPLETE JOINT	ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	REQ'D	REQUIRED
CMU	CONCRETE MASONRY UNIT	ICC	INTERNATIONAL CODE COUNCIL	SHT	SHEET
COL	COLUMN	IN	INCH	S.I.	SPECIAL INSPECTION
CONC	CONCRETE	INSUL	INSULATION	SJI	STEEL DECK INSITUTE
CONST	CONSTRUCTION	INT	INTERIOR	SOG	SLAB ON GRADE
CONT	CONTINUOUS	I.F.	INSIDE FACE	STD	STANDARD
CONTR	CONTRACTOR	JT	JOINT	STIFF	STIFFENER
CTR	CENTER	JST	JOIST	STL	STEEL
DB	DECK BEARING	KLF	KIPS PER LINEAR FOOT	SQ	SQUARE
DBA	DEFORMED BAR ANCHOR	KSF	KIPS PER SQUARE FOOT	SM	SIMILAR
DBL	DOUBLE	KSI	KIPS PER SQUARE INCH	STR	STRUCTURAL
DET	DETAIL	K	KIPS - 1000 POUNDS	STAG	STAGGERED
DIA (ø)	DIAMETER	LF	LINEAL FOOT	T&B	TOP AND BOOTOM
DIM	DIMENSION	LBS	POUNDS	TEMP	TEMPERATURE
DN	DOWN	LLH	LONG LEG HORIZONTAL	THDS	THREADS
DWG	DRAWING	LLV	LONG LEG VERTICAL	THRU	THROUGH
DWL	DOWEL	MAS	MASONRY	T.O.	TOP OF
EA	EACH	MAX	MAXIMUM	TOC	TOP OF CONCRETE
E.J.	EXPANSION JOINT (SEISMIC SEPARATION JOINT)	MCH	MASONRY C.J.	TOF	TOP OF FOOTING
		MECH	MECHANICAL	TOS	TOP OF SLAB
ELEC	ELECTRICAL	MFR	MANUFACTURER	TOW	TOP OF WALL
ELEV	ELEVATION	MIN	MINIMUM	TYP	TYPICAL
EQUIP	EQUIPMENT	MISC	MISCELLANEOUS	UNO	UNLESS NOTED OTHERWISE
EQ	EQUAL	MPH	MILES PER HOUR	VERT	VERTICAL
EXIST	EXISTING	NTS	NOT IN CONTRACT NOT TO SCALE	W/	WITH
EXP	EXPANSION / EXPOSED			WWF	WELDED WIRE FABRIC
EXT	EXTERIOR				
E.F.	EACH FACE				
E.W.	EACH WAY				

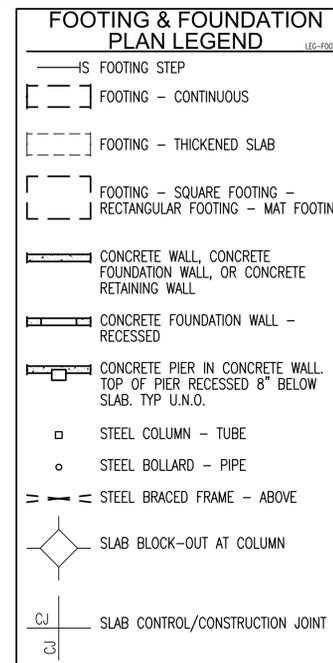
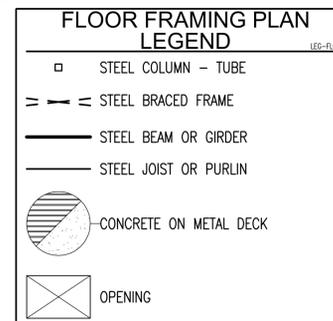
PLAN MARKS

BF-#	BRACED FRAME	CSS-#	CONC SUSPENDED SLAB	ML-#	MASONRY LINTEL
CB-#	CONCRETE BEAM	CSW-#	CONC SHEAR WALL	MP-#	MASONRY PIER
CC-#	CONCRETE COLUMN	CW-#	CONCRETE WALL	MW-#	MASONRY WALL
CDP-#	CONC DRILLED PIER	FC#	CONTINUOUS FOOTING	PD-#	PLYWOOD DIAPHRAGM
CFW-#	CONC FDTN. WALL	FM#	MAT FOOTING	PSW-#	PLYWOOD SHEAR WALL
CGB-#	CONC GRADE BEAM	FR#	RECTANGULAR FOOTING		
CJ-#	CONCRETE JOIST	FS#	SQUARE FOOTING	SBP-#	STEEL BASE PLATE
CL-#	CONCRETE LINTEL	FTS#	THICKEND SLAB FOOTING	SC-#	STEEL COLUMN
CP-#	CONCRETE PIER	MC-#	MASONRY COLUMN	SCP-#	STEEL CAP PLATE
CRW-#	CONC RETAINING WALL	MF-#	MOMENT FRAME	SD-#	STEEL DECK
CSC-#	CONC SLAB ON GRADE				

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 GENERAL STRUCTURAL NOTES

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PROJECT NO.	10243480	DRAWING NO.	SE002
DATE	8 Sep-10		



FLOOR FRAMING PLAN NOTES

- SEE GENERAL STRUCTURAL NOTE (II.D.8) AND DETAILS C1/SF501 FOR CONTROL JOINTS IN SUSPENDED SLABS OVER STEEL DECK.
- SEE DETAILS C4 & C2/SF501 FOR MISCELLANEOUS FLOOR OPENINGS.
- SEE GENERAL STRUCTURAL NOTE (V.J.7) FOR STEEL DECK REQUIREMENTS WHERE 3-SPAN CONDITIONS ARE NOT POSSIBLE.

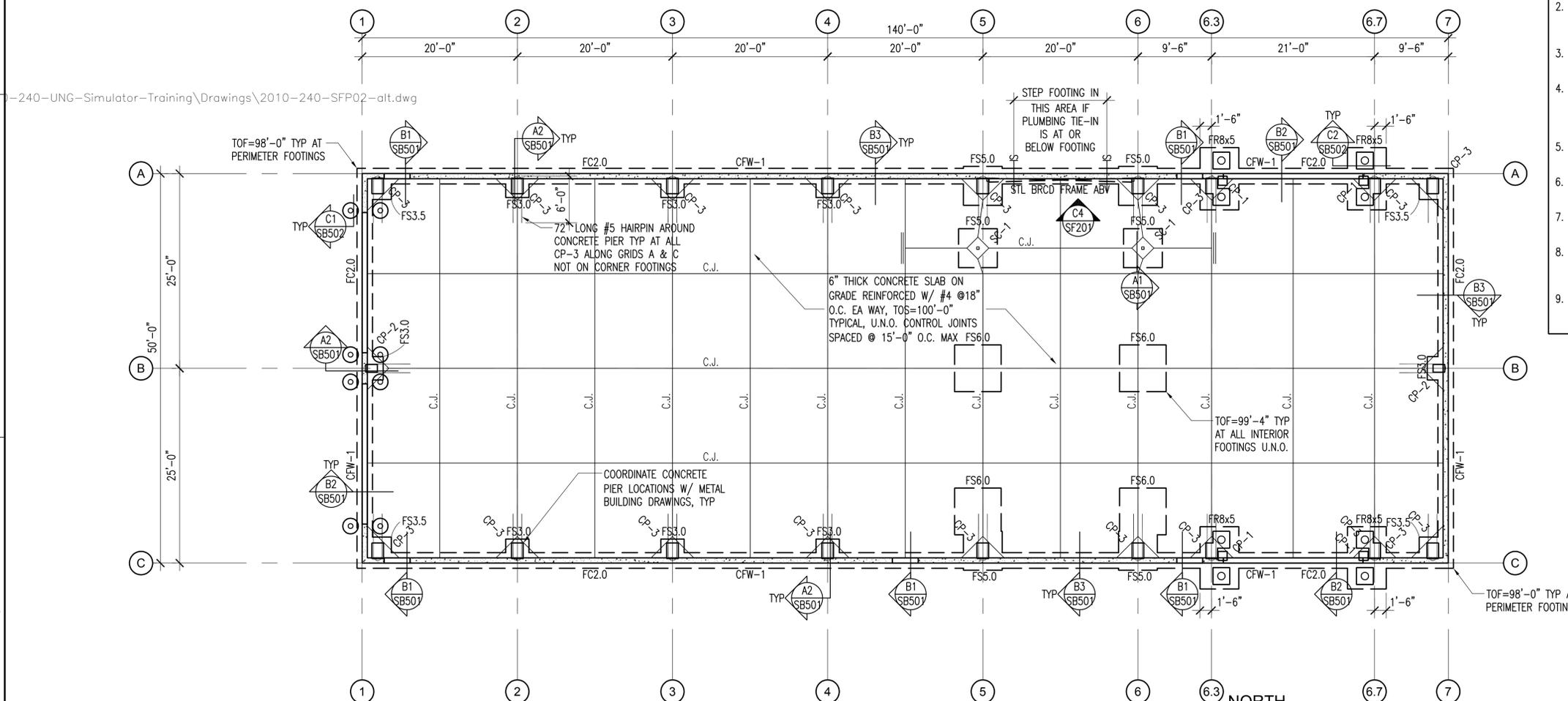
FOOTING & FOUNDATION PLAN NOTES

- SEE ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE WORK AT DOORS, SIDEWALKS ETC.
- SEE ARCHITECTURAL DRAWINGS AND FINISH SCHEDULE FOR SLAB AREAS TO RECEIVE FLOOR TILE.
- SEE ARCHITECTURAL DRAWINGS FOR SLAB DEPRESSIONS AND SLOPES TO DRAINS, ETC.
- SEE ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR ADDITIONAL EXTERIOR CONCRETE RETAINING AND / OR SITE WALLS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- SEE C4/SB501 FOR TYPICAL FOOTING STEP DETAIL. DETAIL.
- SEE C3/SB501 FOR TYPICAL REINFORCEMENT AT WALL CORNERS AND INTERSECTIONS.
- SEE C3/SB501 FOR TYPICAL SLAB JOINTS AT CONCRETE SLABS ON GRADE.
- SEE C1/SB501 FOR TYPICAL REINFORCEMENT AT DISCONTINUOUS CONTROL / CONSTRUCTION JOINTS IN SLABS.
- REFER TO GENERAL STRUCTURAL NOTES AND SEE B4/SB501 FOR TYPICAL COMPACTED STRUCTURAL FILL BELOW FOOTINGS.

C4 FOOTING & FOUNDATION PLAN - MEZZANINE
 SB101 SCALE: 1/8"=1'-0"

C3 MEZZANINE FLOOR FRAMING PLAN - ALTERNATE
 SB101 SCALE: 1/8"=1'-0"

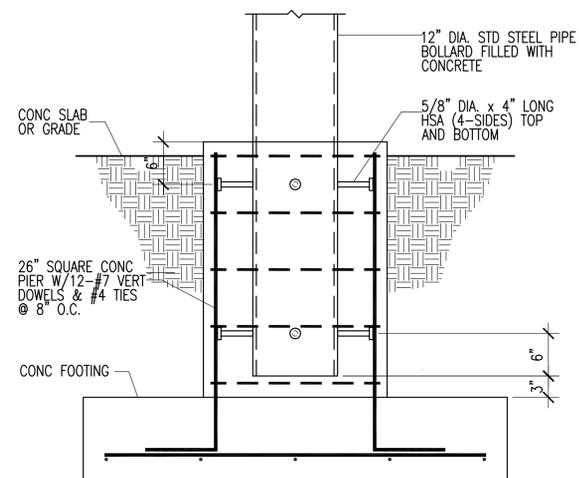
A3 FOOTING & FOUNDATION PLAN
 SB101 SCALE: 1/8"=1'-0"



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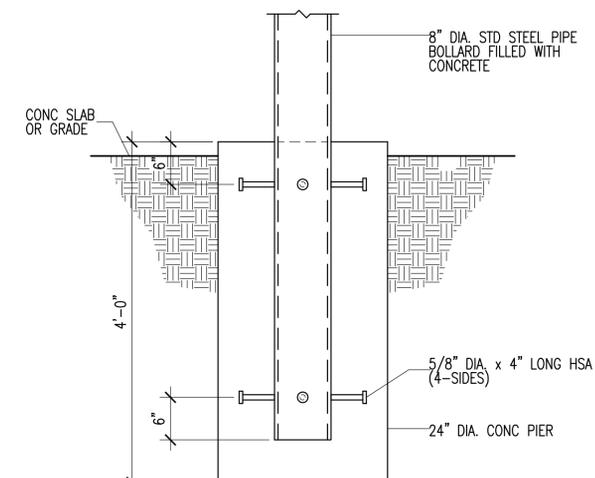
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C2 12" DIA BOLLARD DETAIL
 SB502 NO SCALE

2010-240-SB502/C2



C1 8" DIA BOLLARD DETAIL
 SB502 NO SCALE

2010-240-SB502/C1



UTAH NATIONAL GUARD
 NEW H.E.A.T. TRAINER BUILDING
 CAMP WILLIAMS,
 UTAH 84302-1540

FOOTING & FOUNDATION DETAILS

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CONCRETE REINFORCING BAR LAP SPLICE SCHEDULE RBL5-1

BAR SIZE Fy = 60 KSI	TENSION BARS																COMP. BARS f'c = ALL
	f'c = 3000 PSI				f'c = 4000 PSI				f'c = 5000 PSI				f'c = 6000 PSI				
	REGULAR		TOP		REGULAR		TOP		REGULAR		TOP		REGULAR		TOP		
	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS		
#3	17"	22"	22"	28"	15"	19"	19"	25"	13"	17"	17"	22"	12"	16"	16"	20"	12"
#4	22"	29"	29"	38"	19"	25"	25"	33"	17"	23"	23"	29"	16"	21"	21"	27"	15"
#5	28"	36"	36"	47"	24"	31"	31"	41"	22"	28"	28"	36"	20"	26"	26"	33"	19"
#6	33"	43"	43"	56"	29"	37"	37"	49"	26"	34"	34"	44"	24"	31"	31"	40"	23"
#7	48"	63"	63"	81"	42"	54"	54"	71"	38"	49"	49"	63"	34"	45"	45"	58"	27"
#8	55"	72"	72"	93"	48"	62"	62"	81"	43"	56"	56"	72"	39"	51"	51"	66"	30"
#9	62"	81"	81"	105"	54"	70"	70"	91"	48"	63"	63"	81"	44"	57"	57"	74"	34"
#10	70"	91"	91"	118"	61"	79"	79"	102"	54"	71"	71"	92"	50"	64"	64"	84"	39"
#11	78"	101"	101"	131"	67"	87"	87"	114"	60"	78"	78"	102"	55"	71"	71"	93"	43"

- NOTES: THESE NOTES SHALL BE USED FOR ALL SPLICES, UNLESS NOTED OTHERWISE ON DRAWINGS.
- TOP BARS ARE HORIZONTAL BARS, SPLICED SO THAT 12" OR MORE OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCING BAR.
 - CLASS A SPLICES MAY BE USED ONLY WHEN 50% OR LESS OF THE BARS ARE SPLICED WITHIN THE LAP SPLICE LENGTH.
 - CLASS B SPLICES SHALL BE USED FOR ALL SPLICES IN SLABS, BEAMS, JOISTS, WALLS, MOMENT RESISTING COLUMNS, AND JAMB COLUMNS, UNLESS THEY MEET THE REQUIREMENTS OF NOTE #2 ABOVE.
 - TIES AND STIRRUPS SHALL NOT BE SPLICED.
 - A. FOR BUNDLED BARS OF THREE OR LESS, LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.2.
 B. FOR BUNDLED BARS OF FOUR OR MORE, LAP LENGTHS SHALL BE MULTIPLIED BY 1.33.
 C. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.
 - FOR ALL LIGHTWEIGHT CONCRETE, LAP LENGTHS SHALL BE MULTIPLIED BY 1.3.
 - FOR ALL EPOXY COATED BARS WITH COVER LESS THAN 3 BAR DIAMETERS OF CLEAR SPACING LESS THAN 6 BAR DIAMETERS THE LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.5. FOR ALL OTHER EPOXY BARS THE SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.2.
 - THE BAR LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.5 WHEN EITHER OF THE FOLLOWING IS TRUE:
 A. CLEAR SPACING OF BARS BEING DEVELOPED IS LESS THAN ONE BAR DIAMETER, CLEAR COVER IS LESS THAN ONE BAR DIAMETER AND STIRRUPS OR TIES ALONG THE LENGTH OF THE SPLICE ARE LESS THAN THE CODE MINIMUM.
 B. CLEAR SPACING OF BARS BEING DEVELOPED IS LESS THAN 2 BAR DIAMETERS AND CLEAR COVER IS LESS THAN ONE BAR DIAMETER.

AS PER ACI 318-05

CONCRETE FOOTING SCHEDULE CF-2500

MARK	WIDTH	LENGTH	THICK	CROSSWISE REINFORCING				LENGTHWISE REINFORCING				REMARKS
				NO.	SIZE	LENGTH	SPACE	NO.	SIZE	LENGTH	SPACE	
FC2.0	2'-0"	CONT.	12"	--	NONE	REQ'D	--	3	#4	CONT.	9"	
FS3.0	3'-0"	3'-0"	12"	4	#4	2'-6"	10"	4	#4	2'-6"	10"	
FS3.5	3'-6"	3'-6"	12"	5	#4	3'-0"	9"	5	#4	3'-0"	9"	
FS4.0	4'-0"	4'-0"	12"	6	#4	3'-6"	8.4"	6	#4	3'-6"	8.4"	
FS4.5	4'-6"	4'-6"	12"	6	#4	4'-0"	9.6"	6	#4	4'-0"	9.6"	
FSS.0	5'-0"	5'-0"	12"	7	#4	4'-6"	9"	7	#4	4'-6"	9"	
FSS.5	5'-6"	5'-6"	13"	9	#4	5'-0"	7.5"	9	#4	5'-0"	7.5"	
FS6.0	6'-0"	6'-0"	14"	7	#5	5'-6"	11"	7	#5	5'-6"	11"	
FS6.5	6'-6"	6'-6"	15"	8	#5	6'-0"	10.3"	8	#5	6'-0"	10.3"	
FR8x5	5'-0"	8'-0"	15"	9	#4	4'-6"	11.4"	7	#4	7'-6"	9.3"	TOP
				7	#5	4'-6"	15.2"	5	#5	7'-6"	13.8"	BOTTOM

- NOTES:
- PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER UNLESS NOTED OTHERWISE.
 - TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING WITH 2" CLEAR CONCRETE COVER.
 - SPOT FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS, UNLESS NOTED OTHERWISE.
 - ALL FOOTINGS SHALL BE FORMED. FOOTINGS SHALL NOT BE EARTH FORMED OR OVERSIZED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.

CONCRETE PIER SCHEDULE CP-1

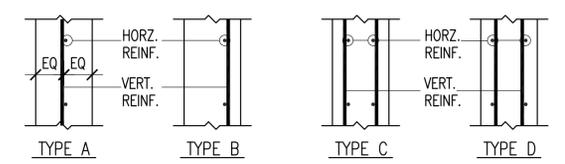
MARK	SIZE	REINFORCING		REMARKS
		VERTICAL	TIES	
CP-1	1'-2" x 1'-2"	8-#5	#4 @ 6" O.C.	
CP-2	1'-0" x 1'-6"	8-#5	#4 @ 8" O.C.	
CP-3	1'-6" x 2'-0"	10-#5	#4 @ 6" O.C.	

NOTE:
TIES TO BE SPACED AT 3" O.C. AROUND ALL ANCHOR BOLTS.

CONCRETE FOUNDATION WALL SCHEDULE CFW-1

MARK	THICK	HORIZONTAL REINFORCING	VERTICAL REINFORCING	TOP & BOTTOM HORIZONTAL BARS	PLACEMENT
CFW-1	8"	#5 @ 15" O.C.	#4 @ 16" O.C.	1-#7	TYPE A

PLACEMENT TYPE



E.F. = EACH FACE
 O.F. = OUTSIDE FACE (AGAINST SOIL)
 I.F. = INSIDE FACE
 3L = THREE LAYERS

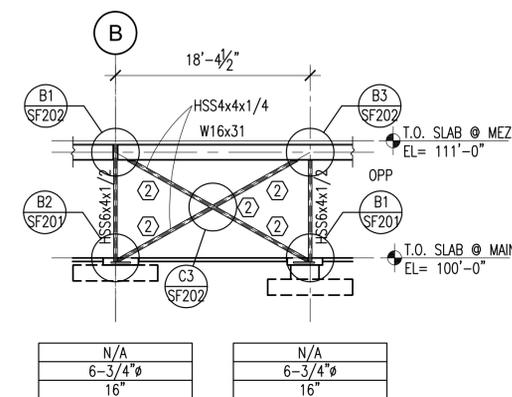
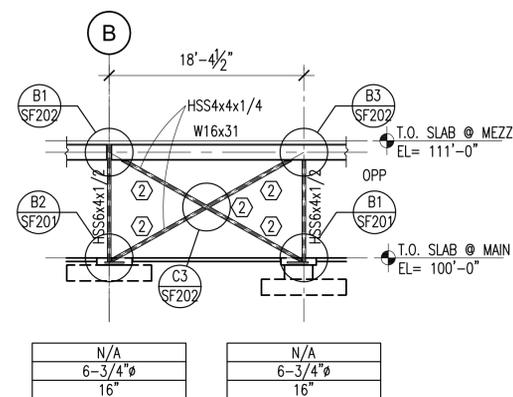
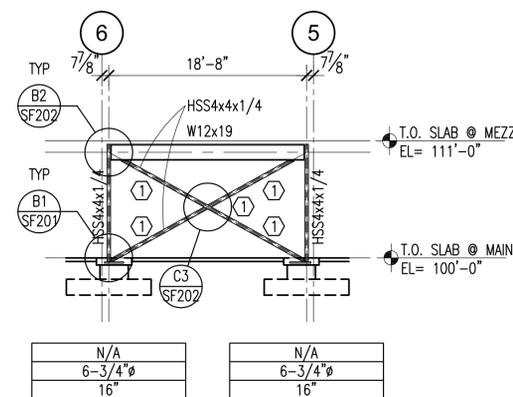
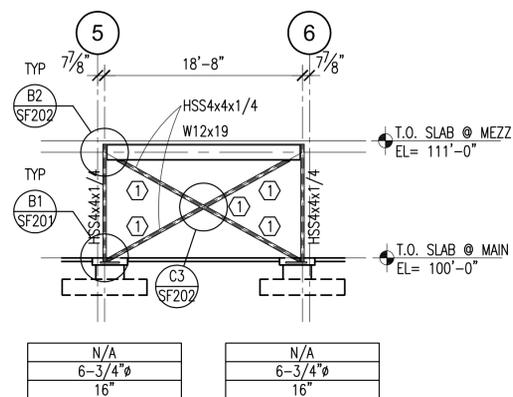
REAVELEY ENGINEERS + ASSOCIATES
 Consulting Structural Engineers



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 CAMP WILLIAMS,
 UTAH 84302-1540

SHEET TITLE		
STRUCTURAL SCHEDULES		
DATE	BY	DESCRIPTION
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DRAWN BY	YV	CHECKED BY APB
PROJECT NO.	10243480	DRAWING NO.
DATE	8 Sep-10	SB601

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C4 BRACE FRAME ELEV. AT GRID A
 SF201 SCALE: 1/8"=1'-0"

C3 BRACE FRAME ELEV. AT GRID C
 SF201 SCALE: 1/8"=1'-0"

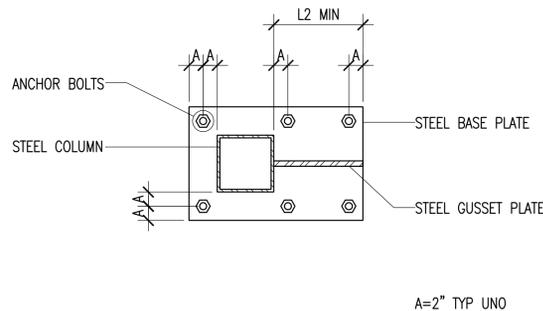
C2 BRACE FRAME ELEV. AT GRID 5
 SF201 SCALE: 1/8"=1'-0"

C1 BRACE FRAME ELEV. AT GRID 6
 SF201 SCALE: 1/8"=1'-0"

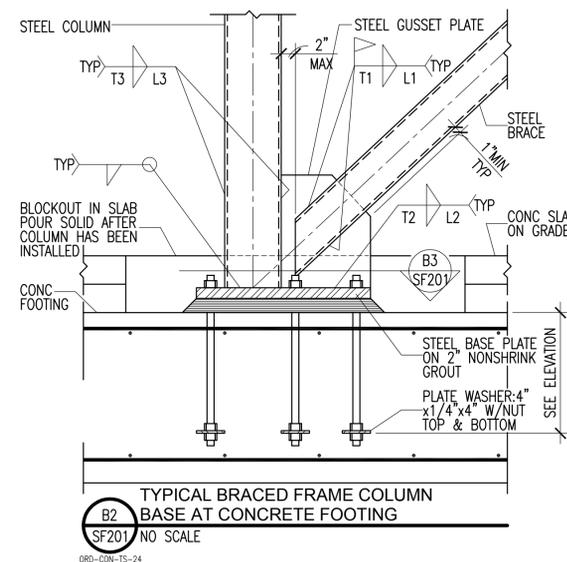
BRACED FRAME ELEVATION NOTES AND LEGEND

- ALL W-SHAPED BRACED FRAME MEMBERS SHALL BE ASTM A992 (Fy = 50KSI) STEEL, U.N.O.
- ALL HSS-SHAPED BRACED FRAME MEMBERS SHALL BE ASTM A500 GRADE B (Fy = 46KSI) STEEL, U.N.O.
- INDICATES BRACED FRAME CONNECTION MARK. SEE A3/SF201 FOR BRACED FRAME CONNECTION SCHEDULE.
- | |
|----|
| BP |
| AR |
| EB |

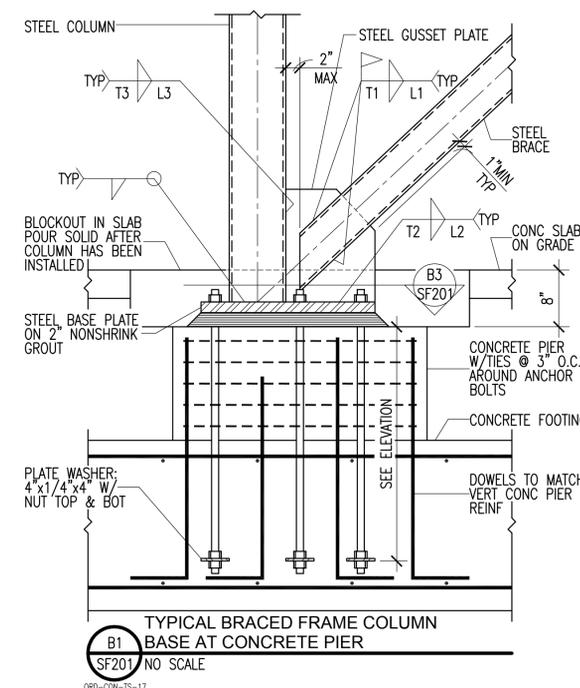
BP = BASE PLATE SIZE. (ASTM A572 GRADE 50)
 AR = ANCHOR RODS. (ASTM F1554 GRADE 36)
 EB = ANCHOR ROD EMBEDMENT LENGTH
- VERIFY ALL DATUM ELEVATIONS W/ ARCHITECTURAL DRAWINGS.



B3 TYPICAL BRACED FRAME COLUMN
 BASE PLATE (PLAN VIEW)
 SF201 NO SCALE
 ORD-COR-15-22



B2 TYPICAL BRACED FRAME COLUMN
 BASE AT CONCRETE FOOTING
 SF201 NO SCALE
 ORD-COR-15-24



B1 TYPICAL BRACED FRAME COLUMN
 BASE AT CONCRETE PIER
 SF201 NO SCALE
 ORD-COR-15-17

BRACED FRAME CONNECTION SCHEDULE

MARK	WELDING CRITERIA								GUSSET PLATE THICKNESS	NOTES
	T1 WELD THICKNESS	T2 WELD THICKNESS	T3 WELD THICKNESS	T4 WELD THICKNESS	L1 WELD LENGTH	L2 WELD LENGTH	L3 WELD LENGTH	L4 WELD LENGTH		
①	3/16"	3/16"	3/16"	N/A	4"	19"	9"	N/A	1/2"	
②	3/16"	3/16"	3/16"	N/A	4"	21"	9"	N/A	1/2"	

NOTES:
 1. ALL WELD LENGTHS SHOWN FOR FILLET WELDS FROM BRACE-TO-GUSSET, GUSSET-TO-BASEPLATE, GUSSET-TO-BEAM AND GUSSET-TO-COLUMN CONNECTIONS ARE MINIMUMS, INTENDED FOR ESTABLISHING GUSSET PLATE DIMENSIONS. WELD ENTIRE CONTACT LENGTH AT ALL THESE JOINTS.
 2. ALL GUSSET PLATES SHALL BE A36 GRADE STEEL.

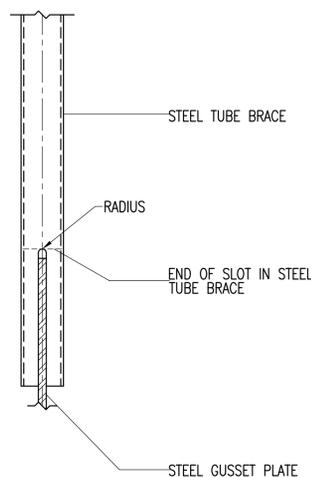
A3 BRACED FRAME CONNECTION SCHEDULE
 SF201 NO SCALE
 ORD-COR-15-01

BRACED FRAME ELEVATIONS & DETAILS

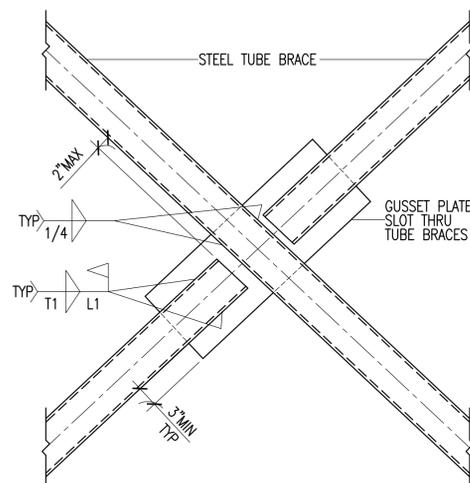
DATE	BY	DESCRIPTION

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 PROJECT NO.: 10243480
 DATE: 8 Sep-10

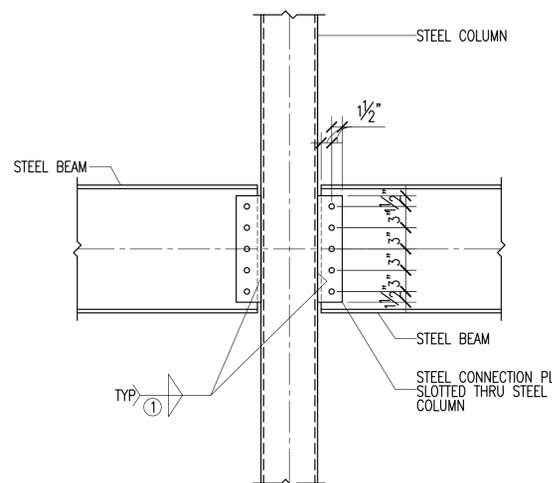
CHECKED BY: APB
 DRAWING NO.: SF201



C4 TYPICAL STEEL TUBE BRACE COVER PLATE
 SF202 NO SCALE
 ORD-COIN-15-09



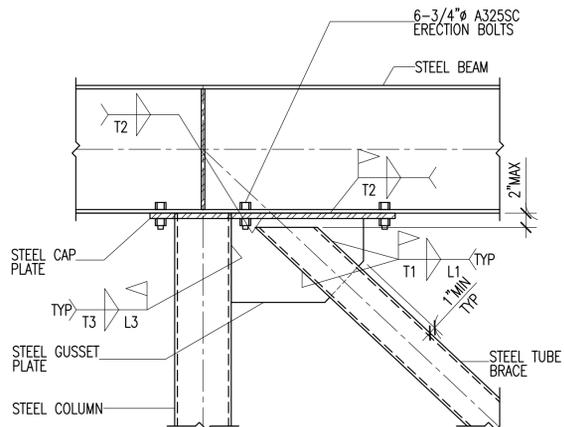
C3 TYPICAL BRACED FRAME DETAIL
 SF202 NO SCALE
 ORD-COIN-15-08



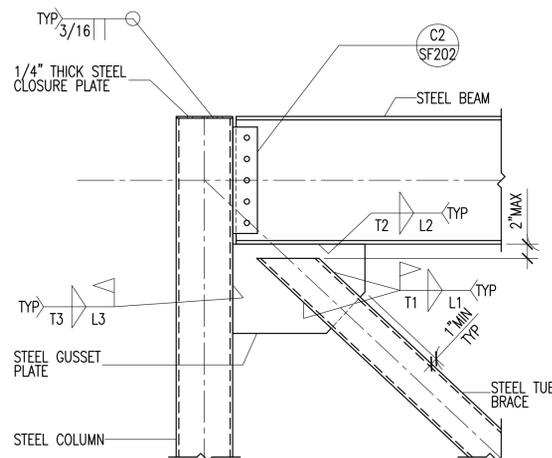
C2 TYPICAL DRAG STRUT CONNECTION DETAIL AND SCHEDULE
 SF202 NO SCALE
 ORD-COIN-15-13

A325 BOLT SCHEDULE			
MAXIMUM BEAM SIZE IN EACH BEAM DEPTH GROUP	CONNECTION PL THICKNESS	A325SC BOLTS NUMBER	A325SC BOLTS SIZE
W12	3/8"	3	3/4"
W16	3/8"	4	3/4"

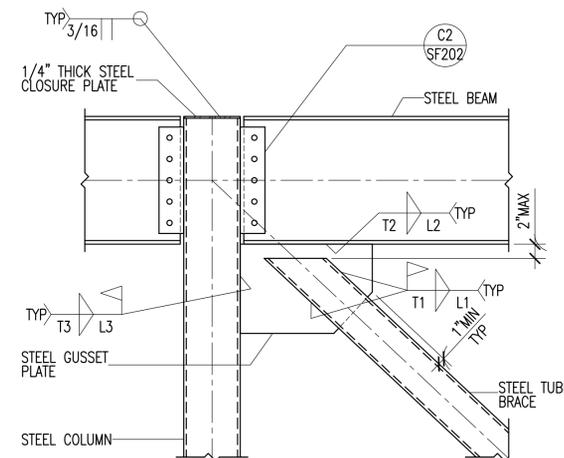
NOTES:
 ① FILLET WELDS TWO SIDES SHALL BE 3/4 OF THE PLATE THICKNESS (1/4" MIN.) EACH SIDE
 ② BOLT EDGE DISTANCE SHALL BE 1 1/2" MIN. AT ALL EDGES. BOLT SPACING SHALL BE 3" MIN.



B3 BRACED FRAME DETAIL
 SF202 NO SCALE
 ORD-COIN-15-06

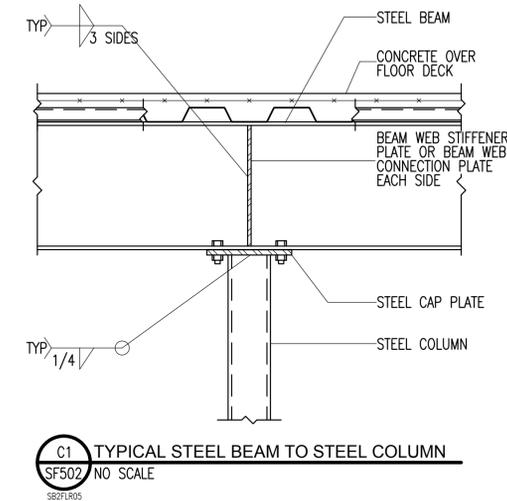
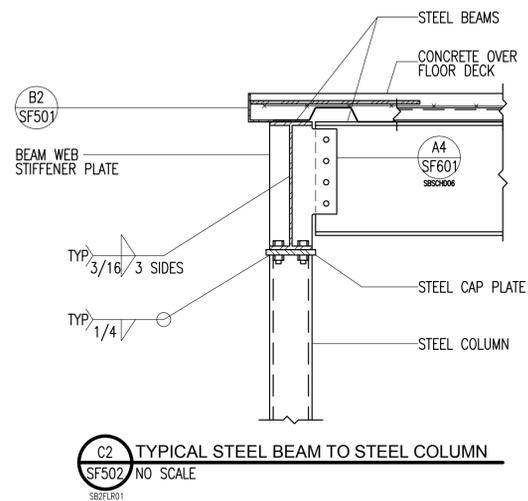


B2 TYPICAL BRACED FRAME DETAIL
 SF202 NO SCALE
 ORD-COIN-15-05



B1 TYPICAL BRACED FRAME DETAIL
 SF202 NO SCALE
 ORD-COIN-15-06

SHEET TITLE		
BRACED FRAME DETAILS		
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PROJECT NO. YW	DRAWING NO. APB	
10243480	SF202	
DATE		
8 Sep-10		



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SHEET TITLE
FLOOR FRAMING DETAILS

DATE	BY	DESCRIPTION
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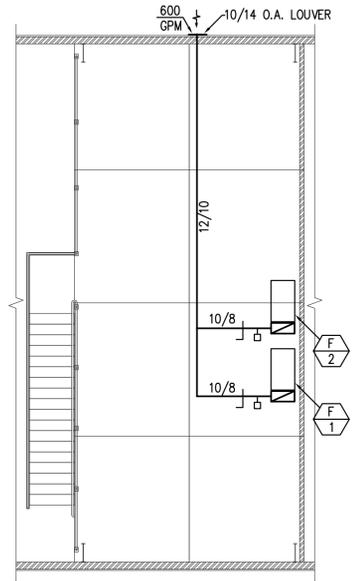
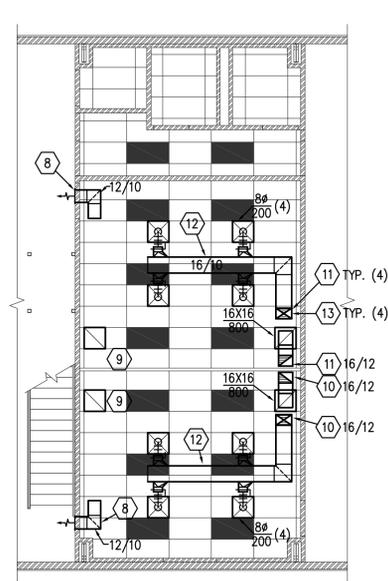
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 PROJECT NO.: 10243480
 DATE: 8 Sep-10
 CHECKED BY: APB
 DRAWING NO.: SF502

UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

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 www.vbfa.com
 Salt Lake City - Logan - St. George - Temple - Provo
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 Salt Lake City, UT 84111 801.530.3100 F
 VBFA Project Number: 10372

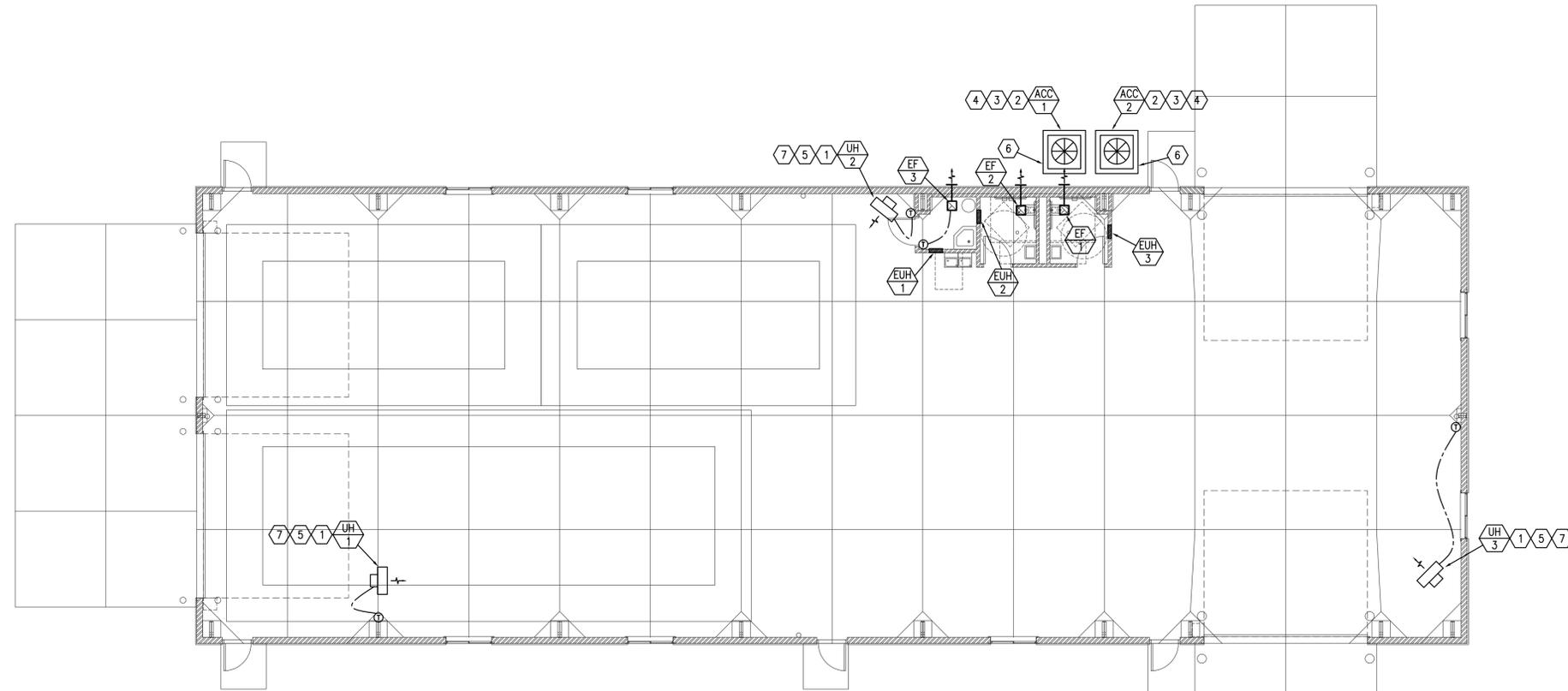


- # KEYED NOTES
1. FLUE THROUGH ROOF FOR UNIT HEATER.
 2. COORDINATE EXACT LOCATION WITH ARCHITECT.
 3. ROUTE REFRIGERANT LINES FROM ACC-1 TO F-1.
 4. SEE ARCHITECTURAL PLANS FOR BOLLARDS AROUND EQUIPMENT.
 5. COORDINATE EXACT EQUIPMENT LOCATION WITH STRUCTURAL AND ELECTRICAL TYPICAL.
 6. MOUNTING PAD.
 7. UNIT HEATER SUSPENDED FROM STRUCTURE. NOT TO HANG BELOW 9'-0" AFF.
 8. SOUND BOOT WITH SIDE WALL GRILLE FOR PRESSURE RELIEF.
 9. RETURN GRILLE FOR PRESSURE RELIEF.
 10. RETURN/SUPPLY UP TO F-1.
 11. RETURN SUPPLY UP TO F-2.
 12. COORDINATE DUCT WITH ARCHITECTURAL STRUCTURE.
 13. COORDINATE DUCT PENETRATION WITH STRUCTURAL.



MECHANICAL PLAN - (ALT 1#)
 M101 SCALE: 1/8" = 1'-0"
 0' 8' 16'

MECHANICAL PLAN - (ALT 1#) MEZZANINE
 M101 SCALE: 1/8" = 1'-0"
 0' 8' 16'



MECHANICAL PLAN - FIRST LEVEL
 M101 SCALE: 1/8" = 1'-0"
 0' 8' 16'

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SHEET TITLE
MECHANICAL FLOOR PLAN

DATE	BY	DESCRIPTION

DRAWN BY: **GR** CHECKED BY: **JH**
 PROJECT NO. **10243480** DRAWING NO. **M-101**
 DATE **09.08.10**

N:\10\10372\10372 LINQ Simulator Building - Camp Williams\01_Coord\Mechanical\10372_M101.dwg, 9/8/2010 4:09:42 PM, GRich, Bluebeam PDF10 Printer, HighRes.pc3

UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING



AIR COOLED CONDENSING UNIT SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	REFRIGERANT	TOTAL CAPACITY (BTUH)	NOMINAL TONS	COMPRESSOR RATED LOAD AMPS (RLA)	CONDENSER FAN FULL LOAD AMPS (FLA)	MINIMUM CIRCUIT AMPACITY (MCA)	EER	VOLT / PH	EVAPORATOR COIL				NOTES
										EVAPORATOR COIL ID	MANUFACTURER AND MODEL NUMBER	NOMINAL TONS	CONFIGURATION	
ACC-1	CARRIER 24ABB334-31	R-410A	22,000	2	13.5	0.77	17.6	11.0	208/1	EC-1	CARRIER CNPVP2417ACA	2	UPFLOW	--
ACC-2	CARRIER 24ABB334-31	R-410A	22,000	2	13.5	0.77	17.6	11.0	208/1	EC-1	CARRIER CNPVP2417ACA	2	UPFLOW	--

AIR COOLED CONDENSING UNIT SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	REFRIGERANT	TOTAL CAPACITY (BTUH)	NOMINAL TONS	COMPRESSOR RATED LOAD AMPS (RLA)	CONDENSER FAN FULL LOAD AMPS (FLA)	MINIMUM CIRCUIT AMPACITY (MCA)	EER	VOLT / PH	EVAPORATOR COIL				NOTES
										EVAPORATOR COIL ID	MANUFACTURER AND MODEL NUMBER	NOMINAL TONS	CONFIGURATION	
ACC-1	CARRIER 24ABB334-31	R-410A	22,000	2	13.5	0.77	17.6	11.0	208/1	EC-1	CARRIER CNPVP2417ACA	2	UPFLOW	--
ACC-2	CARRIER 24ABB334-31	R-410A	22,000	2	13.5	0.77	17.6	11.0	208/1	EC-1	CARRIER CNPVP2417ACA	2	UPFLOW	--

FAN SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	SERVICE	TYPE	AIR TYPE	FAN				ELECTRICAL			NOTES
					AIRFLOW RATE (CFM)	STATIC PRESSURE (IN. WATER)	OUTLET VELOCITY (FPM)	FAN SPEED (RPM)	STATIC EFFICIENCY (%)	MOTOR SIZE (HP)	VOLT/PH	
EF-1	COOK GC-160	JANITOR CLOSET	CEILING	EXHAUST	125	0.5	781	1500	11%	0.009	120/1	1,2
EF-2	COOK GC-140	RESTROOM	CEILING	EXHAUST	70	0.5	467	1500	12%	0.009	120/1	1
EF-3	COOK GC-140	RESTROOM	CEILING	EXHAUST	70	0.5	467	1500	12%	0.009	120/1	1

1. CONTROLL WITH LIGHT SWITCH

GAS FIRED FURNACE SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	HIGH STAGE		LOW STAGE		AIRFLOW RATE (CFM)	EXTERNAL STATIC PRESSURE (IN H2O)	FLUE SIZE (IN)	COMBUSTION AIR SIZE (IN)	GAS CONNECTION (NPT)	ELECTRICAL			PHYSICAL WIDTH/DEPTH/HEIGHT (IN)	NOTES	
		INPUT LOAD (BTUH)	OUTPUT LOAD (BTUH)	INPUT LOAD (BTUH)	OUTPUT LOAD (BTUH)						MOTOR (HP)	MOTOR FLA	MAX UNIT AMPS			
F-1	CARRIER 58MVB 040-14	40,000	38,000	26,000	25,000	700	0.5	3	3	1/2	0.5	7.7	13.8	120/1	24.5/28.5/40	--
F-2	CARRIER 58MVB 040-14	40,000	38,000	26,000	25,000	700	0.5	3	3	1/2	0.5	7.7	13.8	120/1	24.5/28.5/40	--

UNIT HEATER SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	USE TYPE	AIR				ELECTRICAL				NOTES
					AIRFLOW RATE (CFM)	INPUT LOAD (BTUH)	AIR TEMP. RISE (°F)	MAX. MOUNTING HEIGHT (FT)	FLUE SIZE (IN)	MOTOR SIZE (HP)	TOTAL AMPS	VOLT/PH	
UH-1	REZNOR UDAS-45	H.E.A.T	SEALED COMBUSTION	HEATING	629	45,000	-	19	4	-	2.5	120/1	1
UH-2	REZNOR UDAS-45	H.E.A.T	SEALED COMBUSTION	HEATING	629	45,000	-	19	4	-	2.5	120/1	1
UH-3	REZNOR UDAS-45	PALIDAN	SEALED COMBUSTION	HEATING	629	45,000	-	19	4	-	2.5	120/1	1

GRILLES, REGISTERS AND DIFFUSERS

MANUFACTURER	MODEL	MAX NC	DESCRIPTION
EH PRICE	PDC	30	PERFORATED FACE CEILING DIFFUSERS. REMOVABLE FACE & CORE INDIVIDUALLY ADJUSTABLE CURVED BLADES, WITH OBD. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. PROVIDE ROUND NECK ADAPTER.
EH PRICE	PDDR	30	PERFORATED FACE RETURN AIR UNIT, REMOVABLE FACE & CORE. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES HSLL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. AIR QUANTITY SHALL MATCH ROOM SUPPLY OR EXHAUST AIR QUANTITY.
EH PRICE	535	30	SIDEWALL RETURN AIR GRILLE. HORIZONTAL STATIONARY 45 DEG DEFLECTION VANES SET ON 1/2 INCH CENTER. COMPLETE WITH OBD ADJUSTABLE THROUGH FACE.

ELECTRIC UNIT HEATER SCHEDULE

ID	MANUFACTURER	LOCATION	MOUNTING ARRANGEMENT	HTG. CAPACITY		CFM @		VOLTS/ PHASE/ CYCLE	NOTES
				K.W.	MBH	HIGH SPEED	FLA		
EUH-1	QMARK CWH1101DS	-	WALL RECESSED	0.5	1.7	100	4.2	120/1/60	1
EUH-2	QMARK CWH1101DS	-	WALL RECESSED	0.5	1.7	100	4.2	120/1/60	1
EUH-3	QMARK CWH1101DS	-	WALL RECESSED	0.5	1.7	100	4.2	120/1/60	1

1. COMPLETE WITH TAMPER PROOF THERMOSTAT



SHEET TITLE
MECHANICAL SCHEDULES

DATE	BY	DESCRIPTION
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PROJECT NO. **10243480** DRAWING NO. **M-601**

DATE **09.08.10**

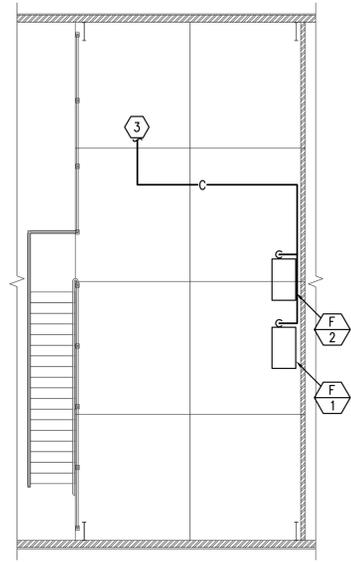
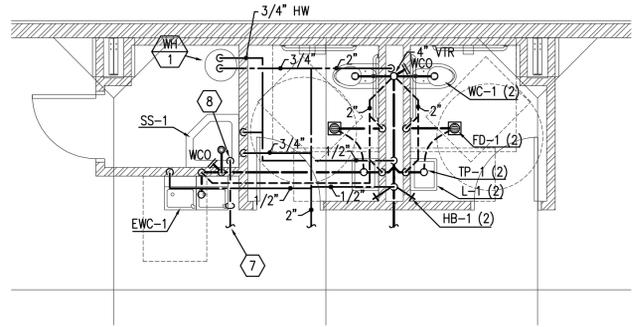
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UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

CONSULTANT INFORMATION
FRANK VAN BOERUM & FRANK ASSOCIATES, INC.
 CONSULTING ENGINEERS
 www.vbfr.com
 Salt Lake City - Logan - St. George - Temple - Provo
 330 South 300 East 801.530.3148 T
 Salt Lake City, UT 84111 801.530.3100 F
 VBFA Project Number: 10272

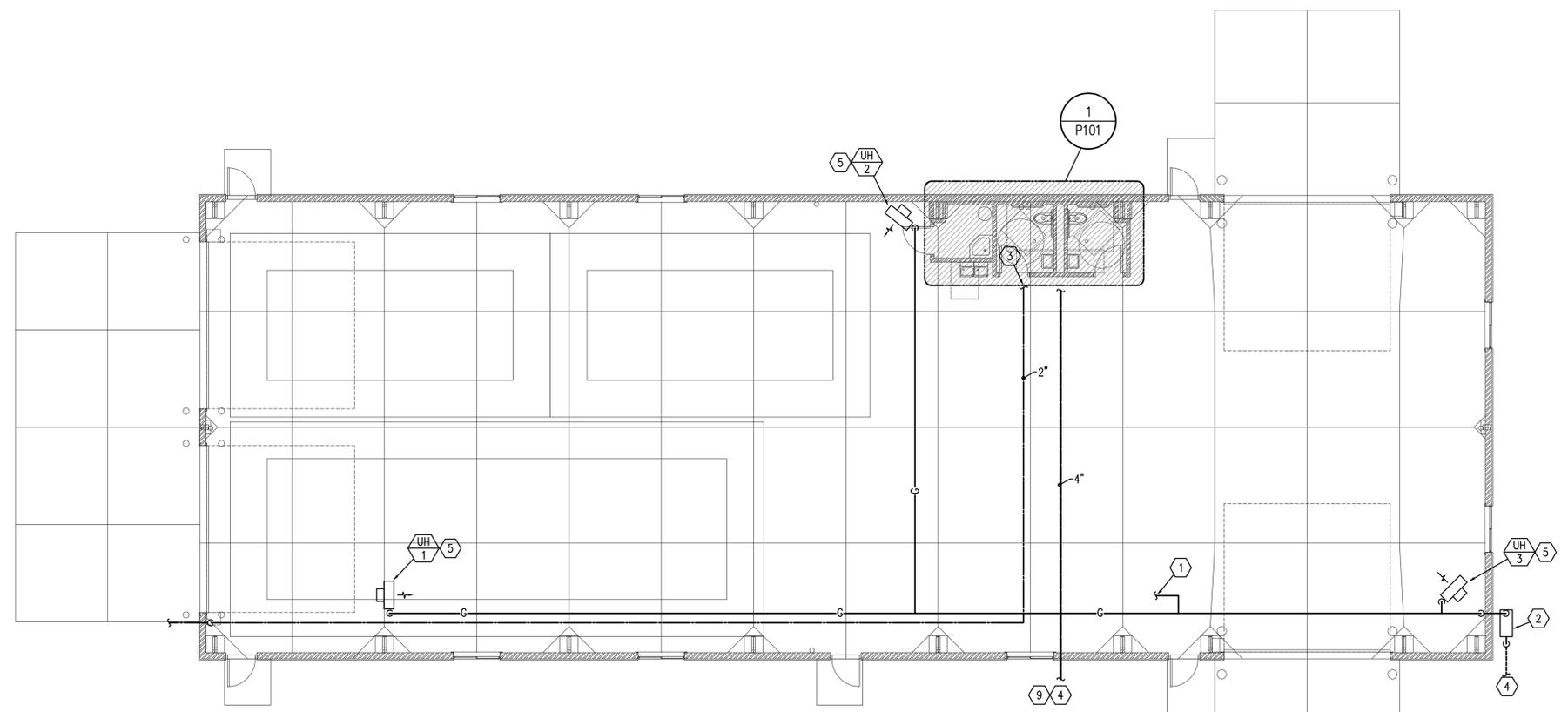


- # KEYED NOTES
- SEE ALTERNATE MEZZANINE PLAN FOR GAS PIPING TO F-1 & F-2.
 - GAS METER, SEE DETAIL. COORDINATE EXACT LOCATION WITH GAS COMPANY. METER TO BE AT LEAST 3'-0" FROM ANY DOORWAY OR WINDOW.
 - SEE ENLARGED PLUMBING PLAN FOR CONTINUATION.
 - SEE CIVIL PLANS FOR CONTINUATION.
 - COORDINATE EQUIPMENT LOCATION WITH MECHANICAL PLAN. COORDINATE GAS CONNECTION WITH EQUIPMENT.
 - CONDENSATE DRAIN LINE FOR BID ALTERNATE #1.
 - SEE ALTERNATE MEZZANINE PLAN FOR CONTINUATION.
 - CONDENSATE FROM FURNACES. ROUTE TO MOP SINK.
 - INVERT ELEVATION 3'-0" BELOW FF. COORDINATE WITH CIVIL PRIOR TO BEGINNING WORK. IF SEWER LINE WILL NOT MAKE SEWER CONNECTION CONTACT ENGINEER.



1 ENLGRD PLUMBING PLAN
 P101 SCALE: 1/4" = 1'-0"
 0' 4' 8'

ALTERNATE ENLGRD PLUMBING PLAN
 P101 SCALE: 1/8" = 1'-0"
 0' 8' 16'



PLUMBING PLAN - FIRST LEVEL
 P101 SCALE: 1/8" = 1'-0"
 0' 8' 16'

UTAH NATIONAL GUARD
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SHEET TITLE
PLUMBING FLOOR PLAN

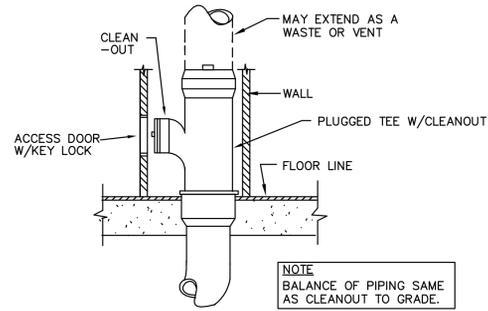
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 PROJECT NO. **10243480** DRAWING NO. **P-101**
 DATE **09.08.10**

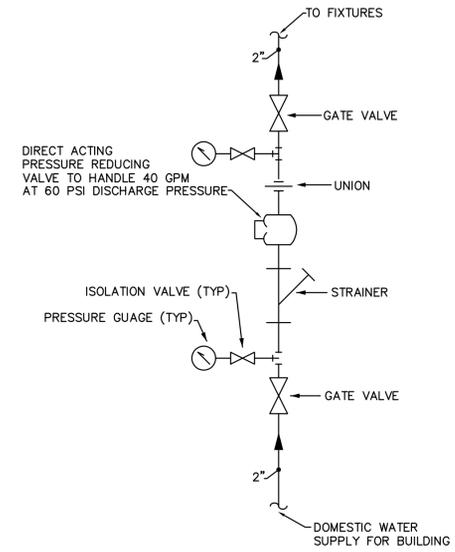
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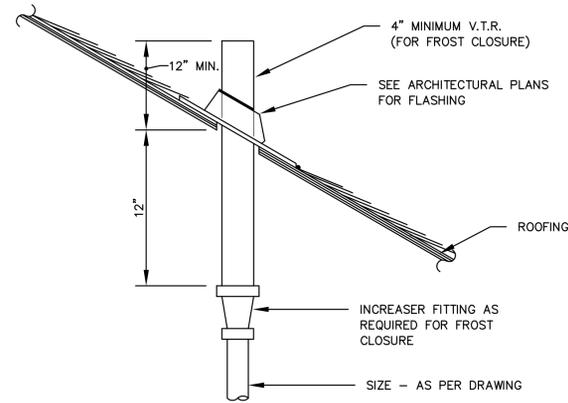
CONSULTANT INFORMATION
FRANK VAN BOERUM & FRANK ASSOCIATES, INC.
 CONSULTING ENGINEERS
 www.vbf.com
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 VBA Project Number: 10372



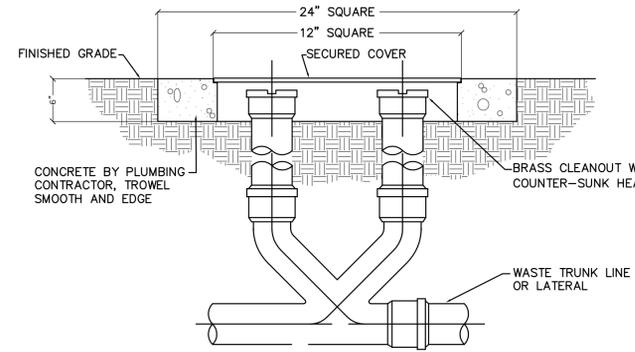
4 WALL CLEANOUT DETAIL
 P501 NO SCALE



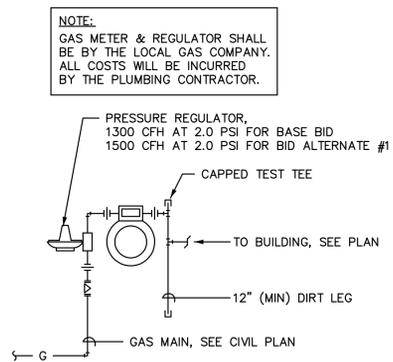
1 PRESSURE REDUCING STATION DETAIL
 P501 NO SCALE



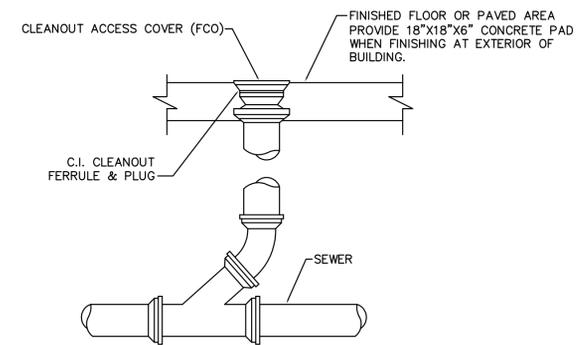
5 PLUMBING VENT THROUGH PITCHED ROOF DETAIL
 P501 NO SCALE



2 CLEANOUT TO GRADE DETAIL
 P501 NO SCALE



6 GAS METER DETAIL
 P501 NO SCALE



3 FLOOR CLEANOUT DETAIL
 P501 NO SCALE

UTAH NATIONAL GUARD
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 CAMP WILLIAMS,
 UTAH 84302-1540

SHEET TITLE
PLUMBING DETAILS

DATE	BY	DESCRIPTION
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 PROJECT NO. **10243480** DRAWING NO. **P-501**
 DATE **09.08.10**

UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

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CONSULTANT INFORMATION
 VAN BOERUM & FRANK ASSOCIATES, INC.
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 Salt Lake City, UT 84111 801.530.3100 F
 VBEA Project Number:10372



PLUMBING FIXTURE SCHEDULE

ID	FIXTURE	CW (IN)	HW (IN)	W (IN)	V (IN)	NOTES	SPECIFICATION
EWC-1	ELECTRIC WATER COOLER	1/2	--	1 1/2	1 1/2	DUAL STATION	ELECTRIC WATER COOLER: ELKAY EZTLR8C DUAL STATION, WALL MOUNTED, BARRIER FREE, ADA ELECTRIC WATER COOLER WITH FLEXIBLE BUBBLER GUARD AND STAINLESS STEEL BOWLS. COMPRESSOR TO BE 115V, 60 HZ WITH CAPACITY TO DELIVER AT LEAST 8.0 GPH OF 50F WATER. 1 1/2" CAST BRASS CHROME-PLATED P-TRAPS. COORDINATE ADA SIDE WITH THE ARCHITECT.
FD-1	FLOOR DRAIN	--	--	2	2	RESTROOM	FLOOR DRAIN (RESTROOM): SMITH 2005Y-A-NB-P050 WITH 6" NICKEL BRONZE STRAINER, CAST-IRON BODY, 2" OUTLET, NO-HUB CONNECTION. PROVIDE P-TRAP WITH TRAP PRIMER CONNECTION P050.
HB-1	HOSE BIB	3/4	--	--	--	--	HOSE BIBB: ACORN 8126 HOSE VALVE WITH VACUUM BREAKER, 1/2" MALE HOSE THREAD AND LOOSE KEY HANDLE.
L-1	LAVATORY	1/2	1/2	1 1/2	1 1/2	WALL HUNG	LAVATORY (WALL HUNG, WRISTBLADE HANDLES): KOHLER K-2032 GREENWICH 20" X 18", "D" SHAPED BOWL, VITREOUS CHINA, WALL-MOUNT LAVATORY WITH DUAL FRONT OVERFLOW, 4" FAUCET CENTERS. KOHLER CORALAIS FAUCET, 2.0 GPM FLOW, VANDAL RESISTANT, WATT'S MMV THERMOSTATIC MIXING VALVE. KOHLER K-7715 GRID DRAIN AND TRAP PRIMING P-TRAP ASSEMBLY, SEE TP-2, WITH CLEAN-OUT PLUG. FLEXIBLE STAINLESS STEEL SUPPLIES WITH LOOSE KEY ANGLE STOPS. COVER ALL EXPOSED PIPING WITH WHITE "HAND-LAV GUARD" PROTECTOR TO MEET ADA REQUIREMENTS.
SS-1	SERVICE SINK	3/4	3/4	3	2	--	SERVICE SINK (FLOOR MOUNTED, CORNER): KOHLER K-6710 WHITBY 28" X 28" ENAMELED CAST IRON FLOOR MOUNTED CORNER MODEL SERVICE SINK WITH K-8940 REMOVABLE VINYL-COATED RIM GUARD. P-TRAP WITH K-9146 3" TAPPED SERVICE SINK STRAINER. KOHLER K-9828 FAUCET WITH VACUUM BREAKER, LEVER HANDLES, 5" RUBBER HOSE, WALL HOOK AND LOOSE KEY STOPS.
TP-1	TRAP PRIMER	1/2	--	--	--	--	PRECISION PLUMBING PRODUCTS, INC. (PPP) LTP-1500 TAIL PIECE TRAP PRIMING ASSEMBLY WITH 1-1/2" TAIL PIECE AND 1/2" STAINLESS STEEL FLEXIBLE MAKE UP WATER LINE AND 1/2" COPPER TUBE CONNECTION TO FLOOR DRAIN P-TRAP. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
WC-1	WATER CLOSET	1	--	4	2	WALL HUNG FLUSH VALVE	ACCESSIBLE WATER CLOSET: KOHLER K-4330 KINGSTON LITE VITREOUS CHINA SIPHON JET, ELONGATED BOWL, WALL HUNG WITH 1-1/2" TOP SPUD. ZURN Z6000 FLUSH VALVE. INSTALL OPERATOR ON WIDE SIDE OF STALL.

ELECTRIC WATER HEATER SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	SERVICE	INPUT LOAD kw	EFFICIENCY (%)	TYPE	RECOVERY RATE @ 90 F DELTA T	TANK SIZE (GAL)	V/PH	NOTES
WH-1	A.O. SMITH DEL-6	JANITOR CLOSET	DOMESTIC HOT WATER	2.5 kw	100	TANK	11	6	208/1/60	--

ELECTRIC WATER HEATER SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	SERVICE	INPUT LOAD kw	EFFICIENCY (%)	TYPE	RECOVERY RATE @ 90 F DELTA T	TANK SIZE (GAL)	V/PH	NOTES
WH-1	A.O. SMITH DEL-6	JANITOR CLOSET	DOMESTIC HOT WATER	2.5 kw	100	TANK	11	6	208/1/60	--

DOMESTIC EXPANSION TANK SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	FLUID		PHYSICAL				NOTES
				WORKING FLUID	MIN. TANK/ ACCEPTANCE (GAL)	TANK SIZE (GAL)	RELIEF VALVE (PSIG)	DIA/ HEIGHT (IN)	NPT FITTING (IN)	
DET-1	THERM-X-TROL ST-8	MECHANICAL ROOM	BUTYL DIAPHRAGM	WATER	1.1	3.2	150	9/15	3/4	1

1. TANK LINER SUITABLE FOR POTABLE WATER

 UTAH NATIONAL GUARD
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 UTAH 84302-1540

SHEET TITLE
PLUMBING SCHEDULES

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PROJECT NO. **10243480** DRAWING NO. **P-601**

DATE **09.08.10**

UTAH NATIONAL GUARD - CAMP WILLIAMS - SIMULATOR TRAINING BUILDING

SYMBOL LIST

-  REMOTE EMERGENCY BATTERY PACK
-  SURFACE/PENDANT LIGHT FIXTURE
-  RECESSED LIGHT FIXTURE
-  WALL MOUNTED LIGHT FIXTURE
-  EXIT LIGHT
-  WALL MOUNTED EXIT LIGHT
-  POLE MOUNTED LIGHT FIXTURE
-  DUAL POLE MOUNTED LIGHT FIXTURE
-  POLE TOP MOUNTED LIGHT FIXTURE
-  FLORESCENT LIGHT FIXTURE
-  FLORESCENT LIGHT FIXTURE ON EMERGENCY BATTERY
-  FLUORESCENT STRIP LIGHT FIXTURE
-  WALL MOUNTED FLUORESCENT LIGHT FIXTURE
-  WALL MOUNTED LIGHT FIXTURE (EMERGENCY BATTERY)
-  FLUORESCENT LIGHT FIXTURE
-  FLUORESCENT LIGHT FIXTURE ON EMERGENCY
-  SINGLE POLE SWITCH
-  4 - WAY SWITCH
-  TIME SWITCH
-  OCCUPANCY SENSOR, CEILING MOUNT
-  OCCUPANCY SENSOR, WALL MOUNT
-  DUPLEX RECEPTACLE
-  DUPLEX RECEPTACLE SAFETY TYPE
-  DUPLEX RECEPTACLE ABOVE COUNTER
-  HALF SWITCHED DUPLEX RECEPTACLE
-  FOUR PLEX RECEPTACLE
-  FLOOR BOX WITH FOUR PLEX RECEPTACLE
-  FOUR PLEX RECEPTACLE ABOVE COUNTER
-  DUPLEX RECEPTACLE, FLUSH CEILING
-  DUPLEX RECEPTACLE, FLUSH IN FLOOR
-  FLOOR BOX WITH DUP. RECEPT. AND DATA
-  SPECIAL OUTLET WITH NEMA CONFIGURATION
-  JUNCTION BOX, FLUSH FLOOR MOUNTED
-  JUNCTION BOX, FLUSH FLOOR MOUNTED
-  SURFACE ELECTRICAL PANELBOARD
-  RELAY
-  PHOTO CONTROL
-  TRANSFORMER
-  PAD MOUNT MEDIUM VOLTAGE SWITCH
-  POWER PACK
-  METER BASE
-  NON-FUSED DISCONNECT SWITCH
-  THERMAL SWITCH
-  FUSED DISCONNECT SWITCH
-  COMBINATION STARTER
-  MOTOR CONNECTION
-  PUSH BUTTON
-  DATA OUTLET:
INDICATES QTY.; NO DESIGNATION =(2) DATA OUTLET
-  TELEPHONE OUTLET:
INDICATES QTY.; NO DESIGNATION =(1) TELEPHONE OUTLET
-  COMMUNICATIONS OUTLET:
D=DATA, P=TELEPHONE, F=FIBER, # INDICATES QTY.
NO DESIGNATION=(2) DATA OUTLET, (1) TELEPHONE OUTLET

-  FIRE ALARM CONTROL PANEL
-  FIRE ALARM HORN
-  FIRE ALARM VISUAL SIGNAL WITH HORN
-  FIRE ALARM VOICE EVACUATION SPEAKER
-  FIRE ALARM CALL STATION
-  FIRE ALARM VISUAL SIGNAL
-  FIRE SMOKE DAMPER
-  IONIZATION DETECTOR
-  HEAT DETECTOR
-  DRAWING NOTE DESIGNATION
-  LIGHT FIXTURE DESIGNATION
-  FLEXIBLE CONDUIT
-  CONDUIT CONCEALED IN WALLS, CEILING OR FLOOR
-  CONDUIT CONCEALED IN SLAB, UNDERGROUND OR UNDERFLOOR
-  EXISTING CONDUIT
-  GROUND WIRE
-  STUB UP
-  STUB DOWN
-  STUB OUT
-  ISOLATED GROUND CONDUCTOR
EQUIPMENT GROUND CONDUCTOR
-  PHASE CONDUCTOR
NEUTRAL CONDUCTOR
-  PHASE CONDUCTOR
NEUTRAL CONDUCTOR
PROVIDE GREEN GROUND WIRE
SIZED PER NEC IN ALL RACEWAYS
-  MECHANICAL EQUIPMENT DESIGNATION
-  OVERHEAD POWER
-  UNDERGROUND POWER
-  NATURAL GAS
-  COMMUNICATION
-  SEWER / DRAINAGE
-  WATER NONPOTABLE
-  WATER POTABLE

ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
- AIC AMP INTERRUPTING CURRENT (SYMMETRICAL)
- AL ALUMINUM
- BG BELOW GRADE
- BKR BREAKER
- C CONDUIT
- CKT CIRCUIT
- CLG CEILING MOUNTED
- CU COPPER
- D DEDICATED
- EM EMERGENCY
- (E) EXISTING
- EWV ELECTRIC WATER COOLER
- EWV ELECTRIC WATER COOLER
- EAH ELECTRIC WATER HEATER
- FA FIRE ALARM
- FACP FIRE ALARM CONTROL PANEL
- FLA FULL LOAD AMPS
- GFI GROUND FAULT INTERRUPTER
- GFP GROUND FAULT PROTECTOR
- GND GROUND
- GRC GALVANIZED RIGID CONDUIT
- IG ISOLATED GROUND
- LTG LIGHTING
- MCC MOTOR CONTROL CENTER
- MCB MAIN CIRCUIT BREAKER
- MLO MAIN LUGS ONLY
- (N) NEW
- NL NIGHT LIGHT
- NTS NOT TO SCALE
- PNL PANEL
- ST SHUNT TRIP
- SPD SURGE PROTECTIVE DEVICE
- TYP TYPICAL
- W/ WITH
- WG WIRE GUARD
- WP WEATHER PROOF
- XFMR TRANSFORMER

ALTERNATE 1

-CLASSROOM AND MEZZANINE LEVEL
 SOUTH OF THE RESTROOM AREA.

DRAWING INDEX

EG001	SYMBOLS, ABBREVIATIONS AND DRAWING INDEX
ES101	ELECTRICAL SITE PLAN
EL101	ELECTRICAL LIGHTING PLAN
EL601	LIGHTING DETAILS
EL602	LIGHTING DETAILS AND LUMINAIRE SCHEDULE
EP101	ELECTRICAL POWER PLAN
EP601	ONE LINE DIAGRAM AND SCHEDULES
EX601	ELECTRICAL DETAILS
EX602	ELECTRICAL DETAILS



SHEET TITLE
 SYMBOLS, ABBREVIATIONS
 AND DRAWINGS INDEX

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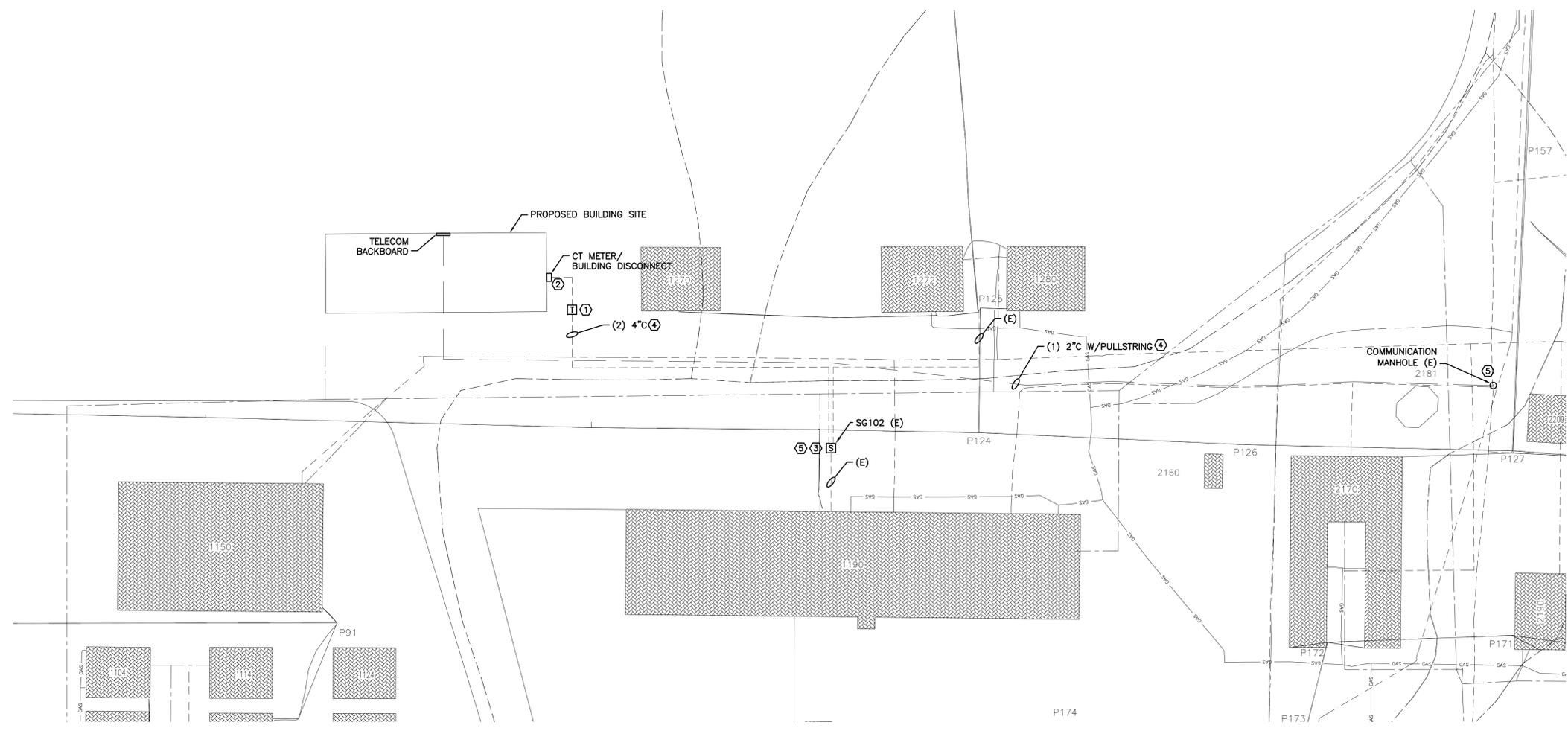
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PROJECT NO.	10243480	DRAWING NO.	EG001
DATE	09-08-10		

KEYED NOTES - SHEET ES101

1. PLACE (3) PROTECTIVE BOLLARDS, AROUND TRANSFORMER.
2. PLACE (2) PROTECTIVE BOLLARDS AROUND CT SECTION.
3. CONNECT INTO EXISTING PADMOUNT SWITCH.
4. REPAIR GRAVEL ROAD.
5. CORE DRILL INTO VAULT AND PROVIDE BELL ENDS.

GENERAL NOTES - SHEET ES101

- A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION
- B. CONTRACTOR TO ENSURE THAT ALL CORRIDORS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
- C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.



1 ELECTRICAL SITE PLAN
 ES101 SCALE: 1" = 40'-0"

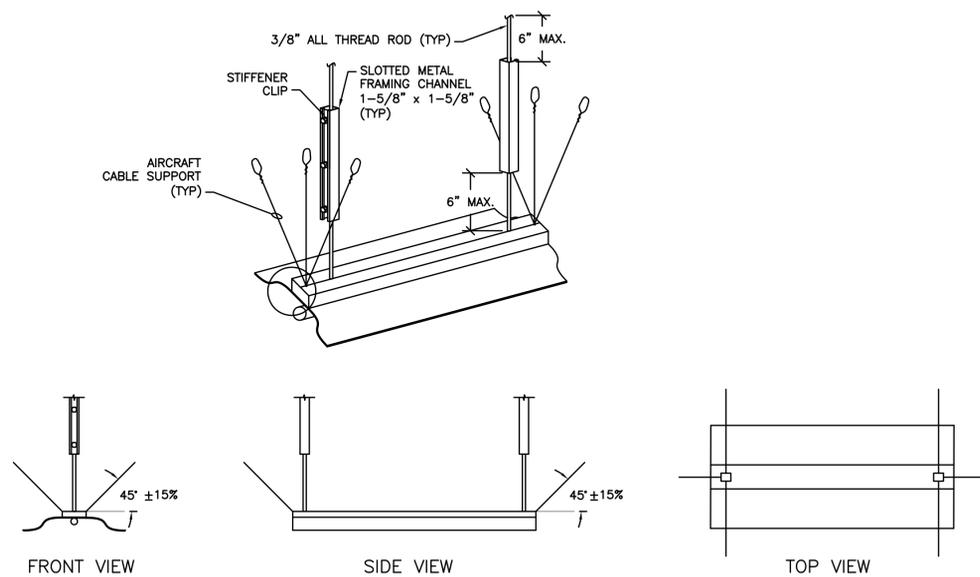



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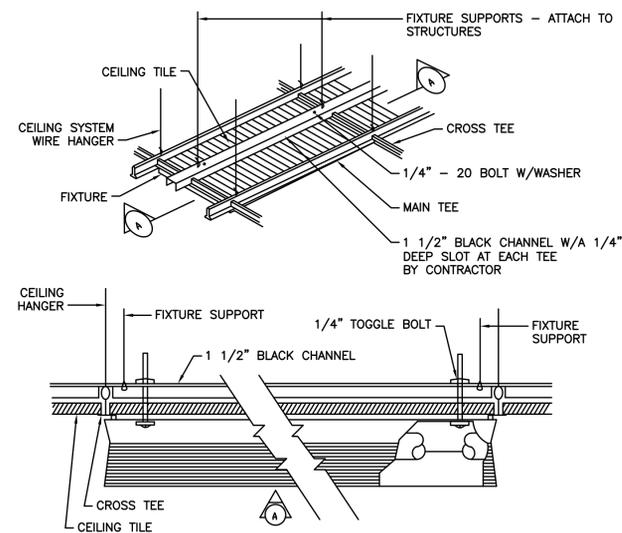
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ELECTRICAL SITE PLAN		
DATE	BY	DESCRIPTION
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PROJECT NO.	10243480	DRAWING NO.
DATE	09-08-10	ES101

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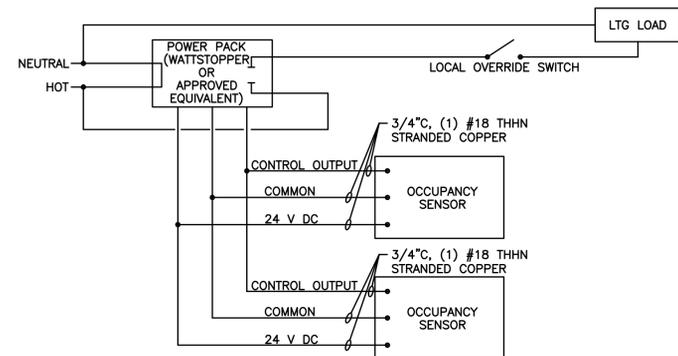
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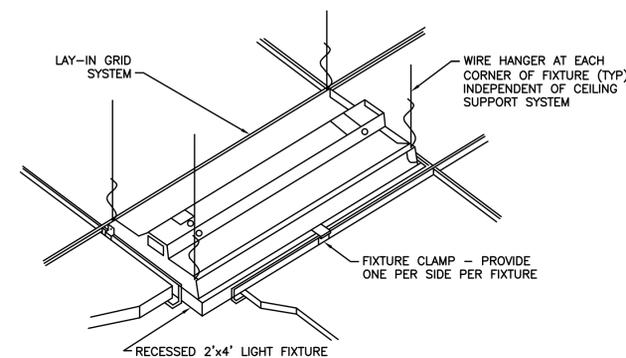
1 SUSPENDED LIGHT FIXTURE SEISMIC BRACING DETAIL
 EL601 SCALE: NTS



2 TYPICAL SURFACE FIXTURE MOUNTING DETAIL
 EL601 SCALE: NTS



3 MULTIPLE OCCUPANCY SENSORS W/ ONE POWER PACK DETAIL
 EL601 SCALE: NTS



4 TYPICAL RECESSED FIXTURE MOUNTING DETAIL
 EL601 SCALE: NTS

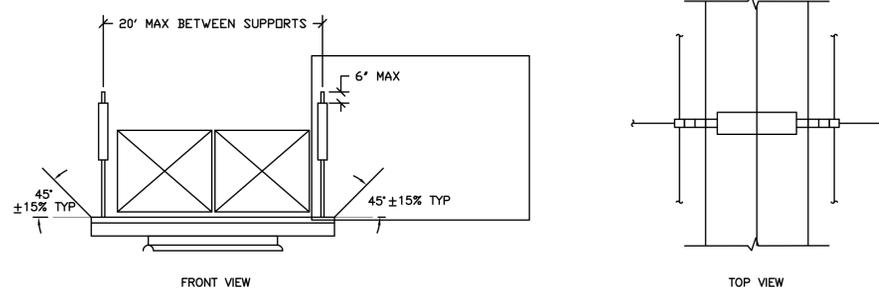


SHEET TITLE
LIGHTING DETAILS

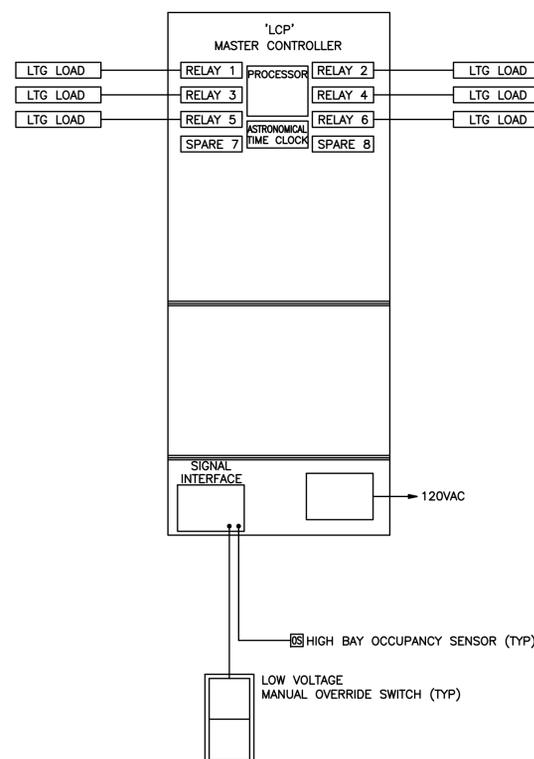
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 PROJECT NO. **10243480** DRAWING NO. **EL601**
 DATE **09-08-10**

LUMINAIRE SCHEDULE - SHEET EL602				
TYPE	DESCRIPTION	LAMP(S) AND BALLASTS	INPUT (VA)	MANUFACTURER(S)
A	DESCRIPTION: HIGH EFFICIENT FLUORECENT HIGH BAY SIZE: 2' X 4' X 4.5" HOUSING: STEEL FINISH: WHITE MOUNTING: SUSPENDED 18' AFF WITH SAFETY CABLE OTHER:	(4) F54T5HO (1) 4-LAMP ADVANCE IOP-4PSP54-2LS-G PREMIUM ELECTRONIC 120 VOLT	224	COLUMBIA LIGHTING LHRF4-454-G2U-ADVANCE-LHHB-GLR LITHONIA METALUX LIGHTOLIER OR PRIOR APPROVED EQUAL
AE	SAME AS TYPE A, EXCEPT WITH (2) 1-LAMP, 1400 LUMEN EMERGENCY BATTERY BALLAST			
B	DESCRIPTION: LAY-IN GRID TROFFER SIZE: 2'X4' HOUSING: STATIC FINISH: WHITE LENS: .187, A12 LENS DOOR: FLUSH STEEL OTHER: FUSED	(2) F32T8/ADV835/ALTO (1) 2-LAMP ADVANCE IOP-2S32-LW-SC PREMIUM ELECTRONIC 120 VOLT	48	LITHONIA 2SP8-G232-A12.187-UNV ADVANCE GEB PREM-GLR COLUMBIA LIGHTING METALUX LIGHTOLIER OR PRIOR APPROVED EQUAL
BE	SAME AS TYPE B, EXCEPT WITH 1-LAMP, 1400 LUMEN EMERGENCY BATTERY BALLAST			
C	DESCRIPTION: WALL MOUNTED LINEAR FLUORESCENT SIZE: 4' X 4.5" X 7.5" HOUSING: HEAVY GAGE STEEL FINISH: WHITE LENS: CLEAR PRISMATIC ACRYLIC DIFFUSER OTHER: 1-LAMP, 1400 LUMEN EMERGENCY BATTERY BALLAST MOUNTING: WALL MOUNTED 8' - 0" AFF	(2) F32T8/ADV835/ALTO (1) 2-LAMP ADVANCE IOP-2P32-LW-SC PREMIUM ELECTRONIC 120 VOLT	48	COLUMBIA SA 4 232 EU ADVANCE GLR LITHONIA LIGHTOLIER METALUX OR PRIOR APPROVED EQUAL
E1	DESCRIPTION: LED EXIT SIGN SINGLE SIDED SIZE: 8" X 12" HOUSING: DIE CAST ALUMINUM FINISH: BRUSHED ALUMINUM ACCESSORIES: BATTERY BACKUP MOUNTING: AS SHOWN ON PLANS	GREEN L.E.D. 120/277 VOLT	8	LIGHTOLIER DX1GCAN DUAL LITE EVENLITE OR PRIOR APPROVED EQUAL
S1	DESCRIPTION: SUSPENDED FLUORESCENT STRIP W/ REFLECTOR SIZE: 48" LENGTH FINISH: BAKED WHITE ENAMEL ACCESSORIES: WIRE GUARD MOUNTING: SUSPENDED AT 9' FROM UNFINISHED CEILING OTHER: FUSED, PROVIDE REFLECTOR	(2) F32T8/ADV835/ALTO (1) 2-LAMP ADVANCE IOP-2P32-LW-SC PREMIUM ELECTRONIC 120 VOLT	48	COLUMBIA LIGHTING CSR4-232-ST-EU-ADVIOP-GLRCSRW4 LITHONIA METALUX LIGHTOLIER OR PRIOR APPROVED EQUAL
SE	SAME AS TYPE S, EXCEPT WITH 1-LAMP, 1400 LUMEN EMERGENCY BATTERY BALLAST			
F	DESCRIPTION: COMPACT FLUORESCENT WALL PACK SIZE: 9" X 9.5" X 7.2" HOUSING: DIE CAST ALUMINUM FINISH: DARK BRONZE LENS: POLYCARBONATE OTHER: PHOTO CELL PROVIDE INTERIOR 1400 LUMIN REMOTE BATTERY PACK AS SHOWN ON PLANS	(1) 42W TRT ELECTRONIC 120 VOLT	46	HUBBELL LCC-42F8-1-PC1 OR APPROVED EQUAL



1 TYPICAL SUSPENDED LUMINAIRE SUPPORT BELOW DUCT WORK
 EL602 SCALE: NTS



2 LIGHTING CONTROL PANEL SYSTEM RISER
 EL602 SCALE: NTS



SHEET TITLE
LIGHTING DETAILS AND LUMINAIRE SCHEDULE

DATE	BY	DESCRIPTION
△		
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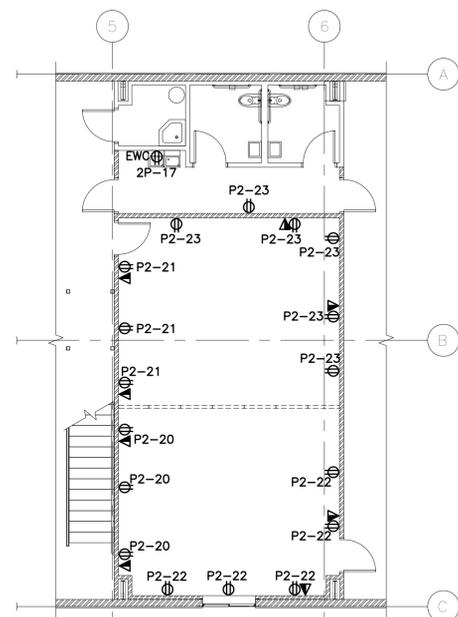
DRAWN BY **KGE** CHECKED BY **KGE**
 PROJECT NO. **10243480** DRAWING NO.
 DATE **09-08-10** **EL602**

KEYED NOTES - SHEET EP101

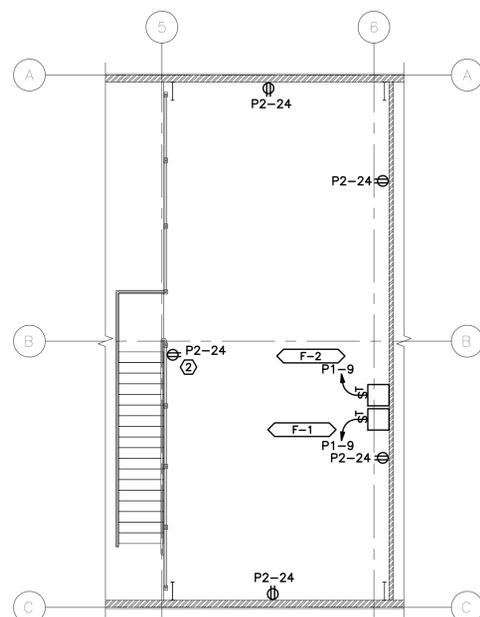
- POWER FOR OVERHEAD DOOR OPENER. CONTROLS BY DOOR SUPPLIER 3/4" CONDUIT, WIRE, AND FINAL CONNECTION BY DIV 26.
- RECEPTACLE ON SURFACE MOUNTED BOX ON RAILS.
- DEDICATED OUTLET FOR SIMULATOR CHARGER.
- 3/4" FIRE TREATED PLYWOOD BACKBOARD FOR PHONE/DATA. STUB UP CONDUIT FOR TELECOM FEED BELOW PATCH PANEL.
- PROVIDE MINIMUM OF 3' WORKING CLEARANCE IN FRONT OF PANELS.
- 2-POLE THERMAL SWITCH.

GENERAL NOTES - SHEET EP101

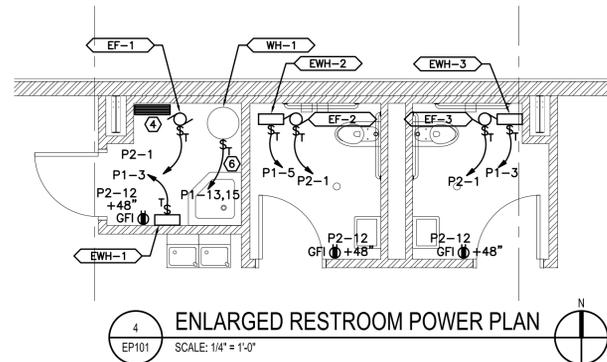
- CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS
- CONTRACTOR TO ENSURE THAT ALL CORRIDORS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
- PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.

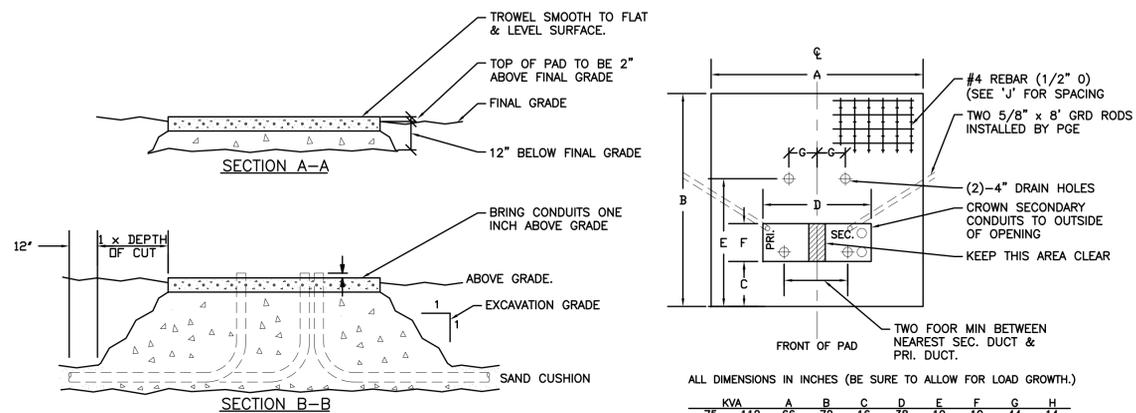


2 ALTERNATE 1 CLASSROOM POWER PLAN
 EP101 SCALE: 1/8" = 1'-0"



3 ALTERNATE 1 MEZZANINE POWER PLAN
 EP101 SCALE: 1/8" = 1'-0"



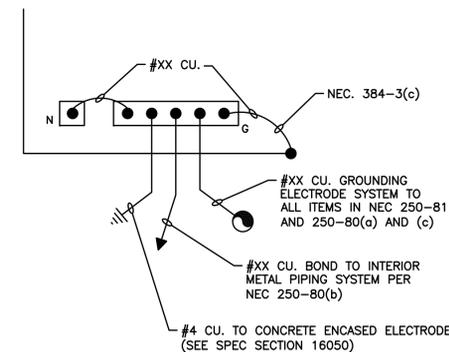


ALL DIMENSIONS IN INCHES (BE SURE TO ALLOW FOR LOAD GROWTH.)

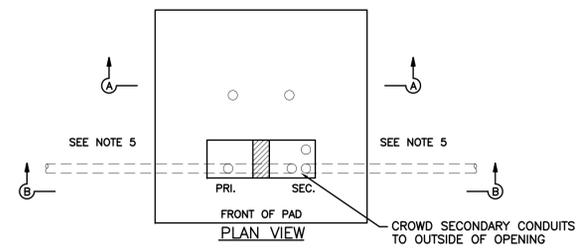
KVA	A	B	C	D	E	F	G	H
75 - 112	66	72	16	38	10	10	44	14
150 - 225	66	72	16	42	10	10	44	10
300 - 500	72	72	16	42	12	10	44	8
750 - 1000	96	96	14	46	12	12	51	8
1500	96	96	14	56	14	12	51	6
2000 - 2500	108	96	14	60	14	12	51	6

- 1.) CONCRETE SLAB TO BE 6" THICK UP TO AND INCLUDING 500 KVA UNITS. THE 750 KVA AND 2500 KVA UNITS TO HAVE SLABS WITH 8" THICKNESS.
- 2.) EXCAVATE ENTIRE AREA TO A DEPTH OF 12" BELOW FINAL GRADE. INSTALL CONDUITS IN TRENCH TO PROJECT 12" BEYOND FINAL GRADE. BACKFILL TO WITHIN 4" OF FINAL GRADE WITH 3/4" MINUS GRAVEL. TOP OF PAD TO PROJECT 2" ABOVE FINAL GRADE.
- 3.) ONLY ONE CONDUIT REQUIRED FOR PRIMARY CABLE ENTRANCE. (PAD PLAN VIEW SHOWS TYPICAL ARRANGEMENT WHICH MAY BE CHANGED AT DISCRETION OF UTILITY CO. ENGINEER).

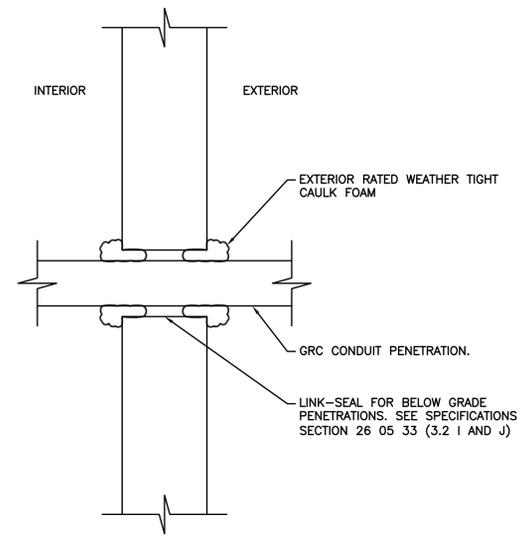
THREE PHASE TRANSFORMER PAD
 SLAB CONSTRUCTION AND DETAILS
 TRANSFORMERS



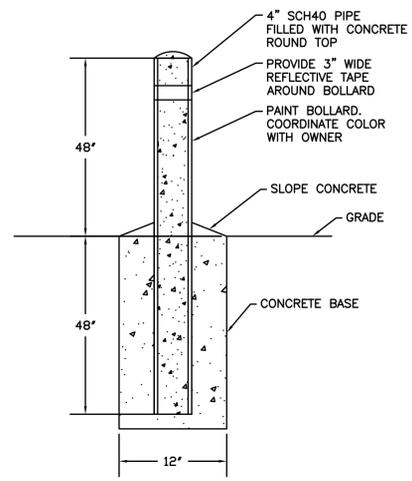
1 BONDING AND GROUNDING AT MAIN DISTRIBUTION PANEL
 EX601 SCALE: NTS



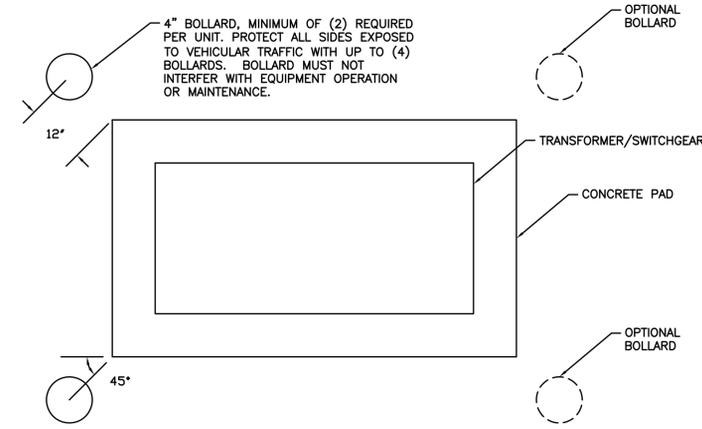
3 TRANSFORMER PAD DETAILS
 EX601 SCALE: NTS



2 BUILDING PENETRATION SEALING DETAIL (TYP)
 EX601 SCALE: NTS



4 4" PROTECTIVE BOLLARD DETAIL
 EX601 SCALE: NTS



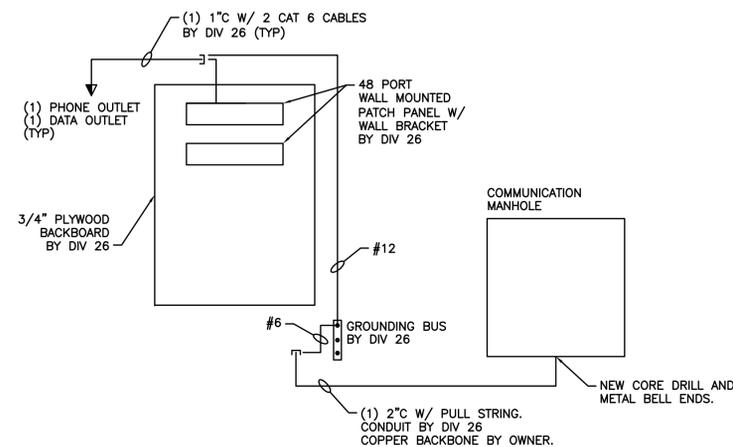
5 EQUIPMENT PROTECTION
 EX601 SCALE: NTS



SHEET TITLE
ELECTRICAL DETAILS

DATE	BY	DESCRIPTION
△		
△		
△		

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 PROJECT NO. **10243480** DRAWING NO. **EX601**
 DATE **09-08-10**



1 TELECOM RISER DIAGRAM
 EP601 SCALE: NTS



SHEET TITLE
ELECTRICAL DETAILS

DATE	BY	DESCRIPTION
△		
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 PROJECT NO. **10243480** DRAWING NO. **EX602**
 DATE **09-08-10**