OWNER

Utah State University
6605 Old Main Hill
Logan, UT 84322-6605

OWNER

Utah DFCM
4110 State Office Building
Salt Lake City, UT 84114
(801) 533-3018

ARCHITECT

Method Studio, Inc.
925 S West Temple
Salt Lake City, UT 84101
(801) 532-4422

Contact: Joe Smith
joe@method-studio.com

CIVIL

Johansen & Tuttle Engineering, Inc.
90 S 100 E
Castledale, Utah 84513
(435) 381-2523

Jonathan Johansen

STRUCTURAL

Reaveley Engineers + Associates
675 E 500 S, Suite 500
Salt Lake City, UT
(801) 486-3883
(801) 486-0911
Contact: Mark Harris

MECHANICAL

Van Boerum & Frank Associates, Inc.
330 S 300 E
Salt Lake City, UT
(801) 530-3148

Contact: Neil Spencer

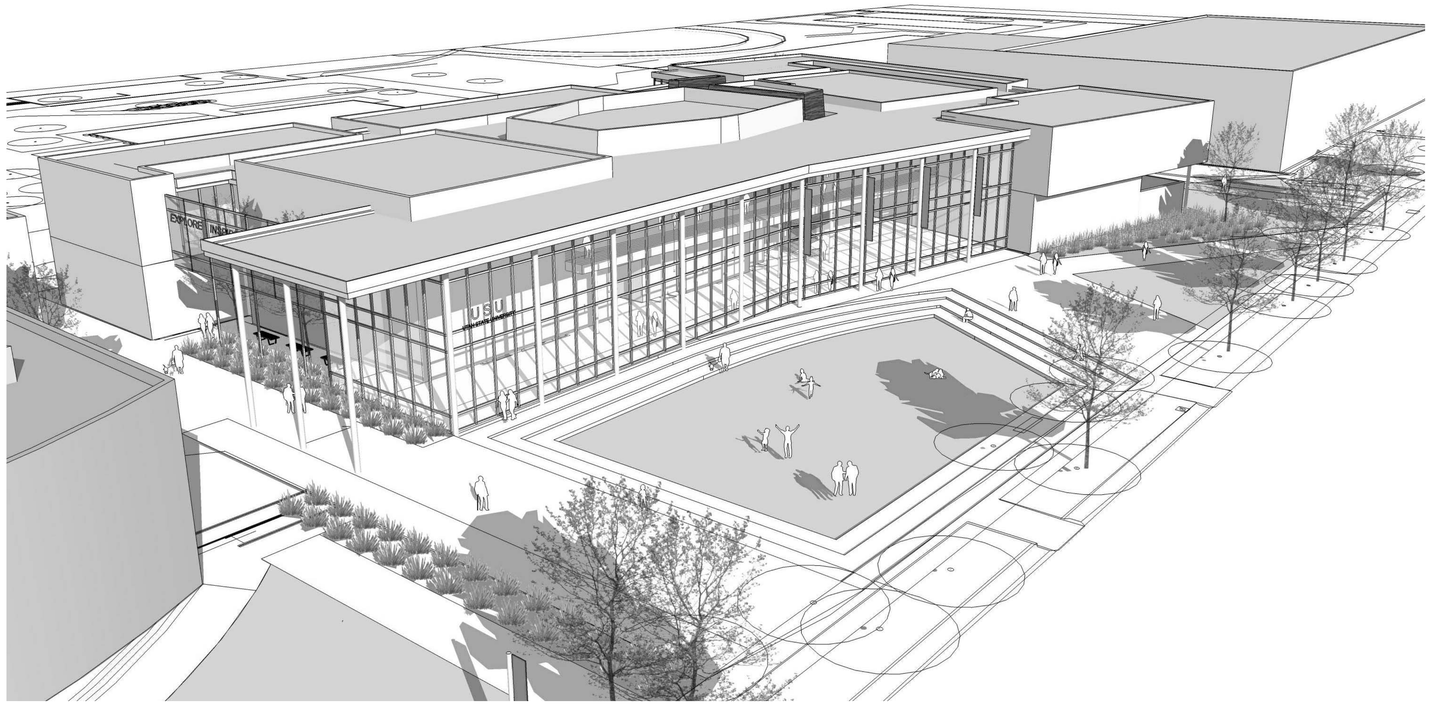
ELECTRICAL

Specrum Engineers
324 S State Street, Suite 400
Salt Lake City, UT
(801) 328-5151
(801) 328-5155
Chris Kobayashi

LANDSCAPE

Loft Six Four

(801) 580-3325
Contact: Brandon Reed



USU Eastern CIB, Schematic Design

12/02/2013

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:

Cover Sheet

sheet:

GI001

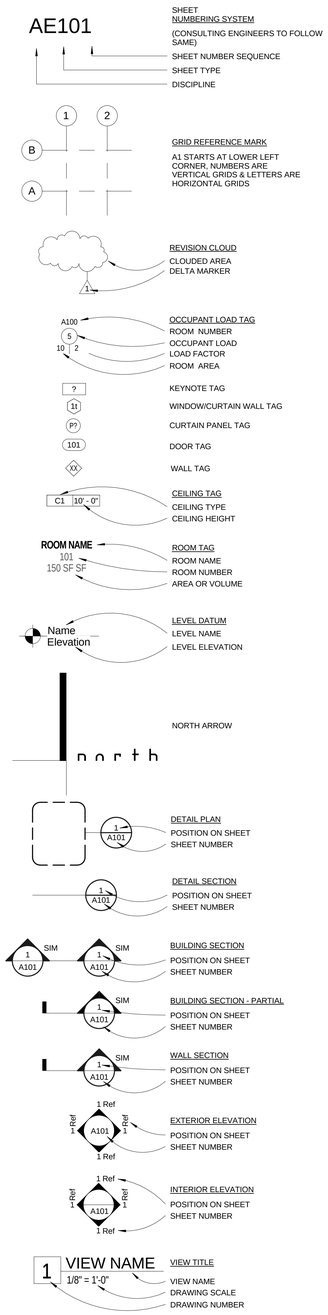
ABBREVIATIONS

AB	ANCHOR BOLT
A/C	ASPHALTIC CONCRETE
ACST	ACOUSTIC
AD	AREA DRAIN
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AL	ALUMINUM
ARCH	ARCHITECTURAL
ASPH	ASPHALT
ATS	AUTOMATIC TRANSFER SWITCH
B	BASELINE
BO	BOARD
BEJ	BRICK EXPANSION JOINT
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
B	BOTTOM
BRG	BEARING
BSMT	BASEMENT
CAP	CAPACITY
CEM	CEMENT
CG	CORNER GUARD
C&G	CURB AND GUTTER
CIP	CAST IRON PIPE, CAST IN PLACE
CIR	CIRCULATING
CJ	CONTROL JOINT
CLG	CEILING
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNITS
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CSK	COUNTERSUNK
CT	CERAMIC TILE
CTR	CENTER
CPT	CARPET
D	DEPTH
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DS	DOWNSPOUT
DWG	DRAWING
DF	DRINKING FOUNTAIN
E	EAST
EA	EACH
EL	ELEVATION
ELECT	ELECTRICAL
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
EMER	EMERGENCY
E/P	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPANSION, EXPOSED
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FR	FRAME
FTG	FOOTING
FXTR	FIXTURE
G	GROUND
GA	GAGE
GALV	GALVANIZED
GFI	GROUND FAULT INTERRUPT
GL	GLASS
GR	GRADE
GRD	GROUND
GWB	GYPSUM WALL BOARD
HGT	
HB	HOSE BIBB
HC	HANDICAPPED
HDW	HARDWARE
HORIZ	HORIZONTAL
HR	HOUR
HW	HOT WATER
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERIOR
INSUL	INSULATION, INSULATED
INV	INVERT
INTX	INTERSECTION
JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
JST	JOIST

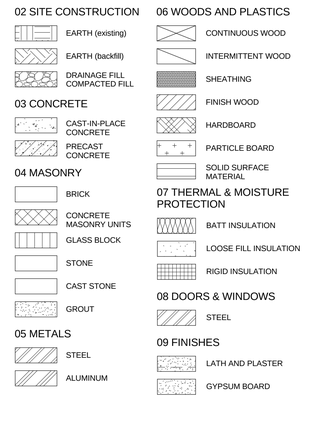
L	LENGTH
LC	LENGTH OF CURVE
LDC	LEAD COVERED
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LT	LIGHT
M/S	METERS PER SECOND
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MET	METAL
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTG	MOUNTING
MWP	MEMBRANE WATERPROOFING
MULL	MULLION
N	NORTH
NA	NOT APPLICABLE
NE	NORTHEAST
NEC	NATIONAL ELECTRIC CODE
NEUT	NEUTRAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORTHWEST
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
OVHD	OVERHEAD
PI	POINT OF INTERSECTION
PL	PLATE
PLAS	PLASTER
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT
PRELIM	PRELIMINARY
PRESS	PRESSURE
PRIM	PRIMARY
PT	POINT, POINT OF TANGENT
PRTN	PARTITION
QT	QUARRY TILE
R	RADIUS
RA	RETURN AIR
RAD	RADIUS
RB	RESILIENT VINYL BASE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RECP	RECEPTACLE
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVISION
RFLCP	REFLECTIVE CEILING PLAN
RF	ROOF
RM	ROOM
RVT	RESILIENT VINYL TILE
S	SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SE	SOUTHEAST
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SPEC	SPECIFICATION
SQ	SQUARE
STL	STEEL
SUSP	SUSPENDED
T	TOP
T&B	TOP AND BOTTOM
TEL	TELEPHONE
TEMP	TEMPORARY
TERM	TERMINAL
THRSLD	THRESHOLD
TO	TOP OF
TOS	TOP OF STEEL, TOP OF SLAB
TOW	TOP OF WALL
TYP	TYPICAL
VCT	VINYL COMPOSITION TILE
VENT	VENTILATING
VERT	VERTICAL
VEST	VESTIBULE
VWC	VINYL WALL COVERING
W	WIDTH, WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WIDTH
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER
2:1 SL	2 HORIZONTAL TO 1 VERTICAL SLOPE

ARCHITECTURAL SYMBOLS

(SEE RESPECTIVE DISCIPLINES FOR SYMBOLS)



MATERIAL LEGEND



MISCELLANEOUS GENERAL NOTES

1. THE PROJECT MANUAL, UNDER SEPARATE COVER, IS AN INTEGRAL PART OF THESE CONSTRUCTION DRAWINGS.
2. PLANS, SECTIONS, ELEVATIONS, DETAILS AND DIMENSIONS LABELED "TYPICAL" SHALL APPLY TO ALL SITUATION OCCURRING THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY KEYED ON THE DRAWINGS.
3. ALL WORK, MATERIALS, AND METHODS SHALL BE IN CONFORMANCE WITH THE CODES, ORDINANCES AND REGULATIONS OF ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION AT THE PROJECT LOCATION.
4. UNLESS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS AS BEING NOT IN CONTRACT (N.I.C.) OR EXISTING, ALL ITEMS, MATERIALS AND INSTALLATION OF SAME ARE PART OF THE CONTRACT AS DEFINED BY THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL ACCESSORIES, COMPONENTS AND ASSEMBLIES REQUIRED FOR THE WORK DEPICTED OR SPECIFIED.
5. CONTRACTORS ARE RESPONSIBLE FOR ALL WORK REGARDLESS OF THE LOCATION OF THE INFORMATION ON THE DOCUMENTS.
6. KEEP SITE CLEAN AND CLEAR OF DEBRIS AND IN ORDERLY CONDITION THAT DOES NOT DETRACT FROM THE SURROUNDING SITE AND REPAIR ANY DAMAGE CAUSED BY WORK OF THE CONTRACT.
7. ALL DIMENSIONS ARE TO THE FACE OF METAL OR WOOD STUD FRAMED WALLS AND TO THE FACE OF CONCRETE AND MASONRY WALLS AS SHOWN, UNLESS NOTED OTHERWISE.
8. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH WOULD ALLOW WATER OR AIR INFILTRATION EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ADJACENT SURFACE. COLOR REQUIRES ARCHITECTS APPROVAL.
9. DOOR OPENINGS IN FRAME CONSTRUCTION WHICH ARE NOT DIMENSIONED ARE EITHER CENTERED IN THE WALL, FACE OF JAMB OR LOCATED 4" FROM THE FACE OF STUD TO THE FINISHED JAMB.
10. ALL SPECIAL ACCESSIBLE FACILITIES SHALL BE IDENTIFIED WITH APPROVED SIGNAGE.
11. THE CONTRACTOR IS RESPONSIBLE FOR PRODUCING A WEATHER TIGHT BUILDING, DETAILS AND OMISSIONS TO DRAWINGS NOTWITHSTANDING. ALL DRAWING CONFLICTS WHICH MAY NOT ALLOW A WEATHERTIGHT CONDITION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
12. DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CONTRACTOR SHALL SUBMIT SPECIFIC DISCREPANCIES FOR ARCHITECT REVIEW.
13. PROVIDE FULL METAL BACKING PLATE (16 GAUGE X 6" HIGH SECURED TO 3 STUDS MIN.) OR WOOD BLOCKING AS REQUIRED TO SECURELY ANCHOR ALL WALL MOUNTED EQUIPMENT (CABINETS, TOILET ROOM ACCESSORIES, HARDWARE, ETC.). BLOCKING SHALL PROVIDE A RIGID CONNECTION CAPABLE OF SUPPORTING DESIGN LOADS. PROVIDE A 16 GAUGE X 6" STL. STUD/TRACK SECURED TO 2 STUDS TO SECURELY SUPPORT ALL WALL STOPS (DOOR BUMPER).
14. COORDINATE WITH ALL TRADES, SIZES AND LOCATIONS OF ALL OPENINGS FOR MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT, EQUIPMENT PADS OR BASES, AS WELL AS ELECTRIC POWER, WATER, AND DRAIN INSTALLATIONS, BEFORE PROCEEDING WITH WORK. CONTRACTOR SHALL PROVIDE COORDINATION DRAWINGS FOR PROPER PLACEMENT OF ALL TRADES' WORK. ANY CONCERNS, SPACE LIMITATIONS OR STRUCTURAL CONFLICTS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. A REASONABLE RESPONSE TIME SHALL BE ALLOWED AS NOTED IN THE SPECIFICATIONS.
15. ALL FLOOR OR WALL OPENINGS REQUIRED FOR PIPES, DUCTS, CONDUITS,ETC. SHALL BE SEALED IN AN APPROVED MANNER.
16. FIRE SPRINKLER DESIGN TO BE DONE BY A CERTIFIED SUB-CONTRACTOR AND WILL REQUIRE APPROVALS BY THE CITY AND STATE FIRE MARSHAL. APPROVALS BY THE FIRE MARSHAL ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO ARCHITECT. SUBMITTAL TO THE ARCHITECT ALSO INDICATES THAT THE CONTRACTOR HAS REVIEWED AND COORDINATED FIRE-SPRINKLER PIPING LOCATIONS WITH ALL TRADES.
17. ROOMS ENCLOSED WITH RATED WALLS REQUIRE RATED DOORS. ANY DUCTS PASSING THROUGH WALLS REQUIRE FIRE DAMPERS AND OR FIRE/SMOKE DAMPERS. ANY CONDUIT OR PIPING REQUIRES RATED SEALANT AT JOINTS.
18. GENERAL STRUCTURAL NOTES GOVERN TYPICAL CONDITIONS WHETHER OR NOT SPECIFICALLY DETAILED OR NOTED.
19. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND LOCATE ELECTRICAL, DATA AND PHONE RECEPTACLES, SWITCHES, ETC. TO AVOID CASEWORK, DOORS, ETC.
20. THE DRAWINGS AND SPECIFICATIONS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF THE ARCHITECTURAL AND STRUCTURAL DESIGN CONCEPT. THE DIMENSIONS OF THE BUILDING, THE TYPE OF STRUCTURAL, MECHANICAL, ELECTICAL AND UTILITY SYSTEMS AND MAJOR ARCHITECTURAL ELEMENTS OF CONSTRUCTION AS "SCOPE" DOCUMENTS.
21. THE DRAWINGS AND SPECIFICATIONS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE WORK. CONTRACTS SHALL BE LET ON THE BASIS OF SUCH DOCUMENTS, WITH THE UNDERSTANDING THAT THE CONTRACTOR IS TO FURNISH ALL ITEMS REQUIRED FOR PROPER COMPLETION OF THE WORK WITH OUT ADJUSTMENT TO CONTRACT PRICE. IT IS INTENDED THAT THE WORK TO BE OF SOUND AND QUALITY CONSTRUCTION AND THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE INCLUSION OF ADEQUATE AMOUNTS TO COVER INSTALLATION OF ALL ITEMS INDICATED, DESCRIBED OR REASONABLY IMPLIED.

DRAWING INDEX

GI001	Cover Sheet
GI002	General Information
GI100	Code Analysis & Schedules
GI101	Code Analysis Site Plan
GI111	Occupant Load Plan
GI112	Occupant Load Plan
C-0001	General Notes
C-0002	Demolition Plan
C-0003	Horizontal Control
C-0004	Utility Plan
C-0005	Sewer Plan and Profile
C-0006	Erosion Control Plan
C-0007	Erosion Control Details
C-0008	Details
C-0009	Tunnel Details
AE101.A	Main Level Floor Plan - Area "A"
AE101.B	Main Level Floor Plan - Area "B"
AE102.A	Second Level Floor Plan - Area "A"
AE102.B	Second Level Floor Plan - Area "B"
AE141.A	Roof Plan - Area "A"
AE141.B	Roof Plan - Area "B"
AE201	Exterior Elevations
AE202	Exterior Elevations
AE301	Building Sections
AE302	Building Sections
AE303	Building Sections
SE001	General Structural Notes
SE002	General Structural Notes
SB101	Footing & Foundation Plan
SF101	Floor Framing Plan
SF102	Roof Framing Plan
M101.A	Level 1 Mechanical Plan - Area "A"
M101.B	Level 1 Mechanical Plan - Area "B"
M102.A	Level 2 Mechanical Plan - Area "A"
M102.B	Level 2 Mechanical PLan - Area "B"
MS101	Partial Mechanical Site Plan
M601	Mechanical Schedules
M602	Mechanical Schedules
M603	Mechanical Basis of Design
EE001	Sheet Index, Abbreviations & General Notes
EE002	Symbols Legend
ES100	Electrical Site Demolition Plan
ES101	Electrical Site Plan
EP101	Level 1 Power Plan
EP102	Level 2 Power Plan
EP601	One Line Diagram
ET601	Telecomm Riser
FA001	Fire Alarm Riser

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:

General Information

sheet:

GI002

OCCUPANCY USE CLASSIFICATION

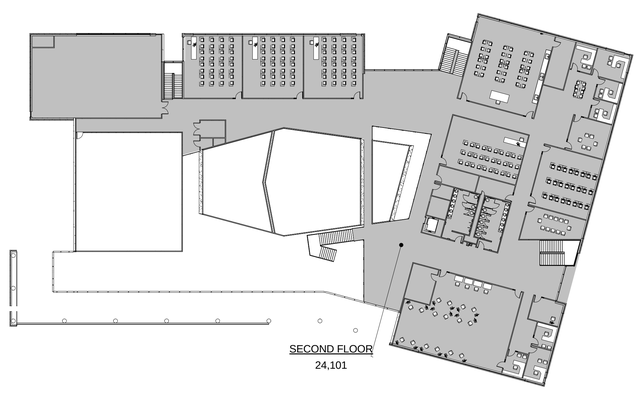
#	Room Name	Occupancy Classification	Area (SF)
01 - MAIN LEVEL			
E109A	Crime Scene Staging		649
G100A	Elevator		73
G101	Vestibule		197
G102	Vestibule		208
G103	Vestibule		86
G104	Vestibule		177
G105	Vestibule		169
G106	Sound Lock		60
G107	Sound Lock		77
G108	Sound Lock		42
G109	Sound Lock		42
G110	Sound Lock		87
G111	Sound Lock		76
G112	Sound Lock		72
G113	Hallway		488
G114	Restroom		301
G115	Restroom		301
G116	Hallway		9,632
S110	Equipment		88
S111	Janitor		52
S125	Outdoor Kiln Area		306
			13,182
A107	Black Box Theater	Group A-1	2,599
Group A-1			2,599
A102	Band Room	Group A-3	2,088
A104	Choral Room	Group A-3	1,289
A109	Rehearsal Room	Group A-3	1,241
A113	Exhibition Gallery	Group A-3	1,078
E101	Classroom	Group A-3	1,969
Group A-3			7,665
A110	Costume Shop	Group B	801
A118	Piano Lab	Group B	190
B101	Ticketing/Concessions	Group B	243
B102	Office	Group B	140
B103	Office	Group B	141
B104	Piano Instruction & Office	Group B	151
B105	Faculty Office	Group B	154
B106	Office	Group B	121
B107	Office	Group B	120
B108	Office	Group B	119
E102	Practice Room	Group B	118
E103	PracticeRoom	Group B	104
E104	Practice Room	Group B	104
E105	Practice Room	Group B	96
E107	Ceramics	Group B	1,277
E108	2-D Studio	Group B	953
E109	Crime Scene Room	Group B	351
E110	Gallery Workroom	Group B	247
E111	Photo Lab	Group B	307
Group B			5,737
E106	Wood & Metals	Group H-2	988
Group H-2			988
S101	General Storage	Group S-1	136
S102	Room	Group S-1	32
S103	Electrical Room	Group S-1	199
S104	Storage	Group S-1	139
S105	Fire Riser/Mech. Chase	Group S-1	52
S106	Elec.	Group S-1	35
S107	Comm.	Group S-1	61
S108	Choir Robe Storage	Group S-1	148
S109	Instrument Storage	Group S-1	390
S112	Tools	Group S-1	101
S113	Supplies	Group S-1	51
S114	Storage	Group S-1	174
S115	Storage	Group S-1	125
S116	Supplies	Group S-1	156
S117	Drying/Cooling	Group S-1	107
S118	Storage	Group S-1	44
S119	Storage	Group S-1	57
S120	Storage	Group S-1	61
S121	Art Supply Storage	Group S-1	114
S122	Finished Art Storage	Group S-1	182
S123	Electrical Room	Group S-1	124
S124	Comm.	Group S-1	95
Group S-1			2,582
01 - MAIN LEVEL			32,753
02 - SECOND LEVEL			
G100B	Elevator		79
G201	Restroom		301
G202	Restroom		301
G203	Vending		90
G204	Janitor		60
			831
E204	Teaching Lab	Group A-3	1,579
E207	Computer Work Space	Group A-3	1,996
Group A-3			3,575
B201	Office	Group B	139
B202	Office	Group B	217
B203	Office	Group B	120
B204	Office	Group B	120
B205	Conference/Library	Group B	326
B206	Conference	Group B	390
B207	Faculty Workroom	Group B	170
B208	Office	Group B	116
B209	Office	Group B	167
B210	Office	Group B	117
E201	Classroom	Group B	872
E202	Classroom	Group B	894
E203	Classroom	Group B	870
E205	Graphics/MAC Lab	Group B	884
E206	Classroom	Group B	956
Group B			6,356
S201	Elec.	Group S-1	29
S202	Comm.	Group S-1	100
S203	Mechanical Room	Group S-1	2,470
S204	Storage	Group S-1	241
S205	Roof Access/Elec.	Group S-1	149
S206	Elec./Comm	Group S-1	165
S209	Storage	Group S-1	223
Group S-1			3,376
02 - SECOND LEVEL			14,138
Grand total			46,891

OCCUPANCY SCHEDULE

Room #	Room Name	Area	Non Calculated Room Area	Net Room Area	Area Per Occupant	Function of Space	# of Occ.
01 - MAIN LEVEL							
A102	Band Room	2,088 SF	0 SF	2,088 SF	7 SF	Assembly without fixed seats - Concentrated (chairs only-not fixed)	299
A104	Choral Room	1,289 SF	0 SF	1,289 SF	7 SF	Assembly without fixed seats - Concentrated (chairs only-not fixed)	185
A107	Black Box Theater	2,599 SF	0 SF	2,599 SF	7 SF	Assembly without fixed seats - Concentrated (chairs only-not fixed)	372
A109	Rehearsal Room	1,241 SF	0 SF	1,241 SF	7 SF	Assembly without fixed seats - Concentrated (chairs only-not fixed)	178
A110	Costume Shop	801 SF	0 SF	801 SF	50 SF	Educational - Shops and other Vocational room areas	17
A113	Exhibition Gallery	1,078 SF	0 SF	1,078 SF	30 SF	Assembly - Exhibit Gallery & Museum	36
A118	Piano Lab	190 SF	0 SF	190 SF	20 SF	Educational - Classroom Area	10
B101	Ticketing/Concessions	243 SF	0 SF	243 SF	100 SF	Business Areas	3
B102	Office	140 SF	0 SF	140 SF	100 SF	Business Areas	2
B103	Office	141 SF	0 SF	141 SF	100 SF	Business Areas	2
B104	Piano Instruction & Office	151 SF	0 SF	151 SF	100 SF	Business Areas	2
B105	Faculty Office	154 SF	0 SF	154 SF	100 SF	Business Areas	2
B106	Office	121 SF	0 SF	121 SF	100 SF	Business Areas	2
B107	Office	120 SF	0 SF	120 SF	100 SF	Business Areas	2
B108	Office	119 SF	0 SF	119 SF	100 SF	Business Areas	2
E101	Classroom	1,969 SF	0 SF	1,969 SF	20 SF	Educational - Classroom Area	99
E102	Practice Room	118 SF	0 SF	118 SF	100 SF	Business Areas	2
E103	PracticeRoom	104 SF	0 SF	104 SF	100 SF	Business Areas	2
E104	Practice Room	104 SF	0 SF	104 SF	100 SF	Business Areas	2
E105	Practice Room	96 SF	0 SF	96 SF	100 SF	Business Areas	1
E106	Wood & Metals	988 SF	0 SF	988 SF	50 SF	Educational - Shops and other Vocational room areas	20
E107	Ceramics	1,277 SF	0 SF	1,277 SF	50 SF	Educational - Shops and other Vocational room areas	26
E108	2-D Studio	953 SF	0 SF	953 SF	50 SF	Educational - Shops and other Vocational room areas	20
E109	Crime Scene Room	351 SF	0 SF	351 SF	50 SF	Educational - Shops and other Vocational room areas	8
E109A	Crime Scene Staging	649 SF	0 SF	649 SF	50 SF	Educational - Shops and other Vocational room areas	13
E110	Gallery Workroom	247 SF	0 SF	247 SF	50 SF	Educational - Shops and other Vocational room areas	5
E111	Photo Lab	307 SF	0 SF	307 SF	50 SF	Educational - Shops and other Vocational room areas	7
G100A	Elevator	73 SF	0 SF	73 SF		(none)	
G101	Vestibule	197 SF	0 SF	197 SF		(none)	
G102	Vestibule	208 SF	0 SF	208 SF		(none)	
G103	Vestibule	86 SF	0 SF	86 SF		(none)	
G104	Vestibule	177 SF	0 SF	177 SF		(none)	
G105	Vestibule	169 SF	0 SF	169 SF		(none)	
G106	Sound Lock	60 SF	0 SF	60 SF		(none)	
G107	Sound Lock	77 SF	0 SF	77 SF		(none)	
G108	Sound Lock	42 SF	0 SF	42 SF		(none)	
G109	Sound Lock	42 SF	0 SF	42 SF		(none)	
G110	Sound Lock	87 SF	0 SF	87 SF		(none)	
G111	Sound Lock	76 SF	0 SF	76 SF		(none)	
G112	Sound Lock	72 SF	0 SF	72 SF		(none)	
G113	Hallway	488 SF	0 SF	488 SF		(none)	
G114	Restroom	301 SF	0 SF	301 SF		(none)	
G115	Restroom	301 SF	0 SF	301 SF		(none)	
G116	Hallway	9,632 SF	0 SF	9,632 SF		(none)	
S101	General Storage	136 SF	0 SF	136 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S102	Room	32 SF	0 SF	32 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S103	Electrical Room	199 SF	0 SF	199 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S104	Storage	139 SF	0 SF	139 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S105	Fire Riser/Mech. Chase	52 SF	0 SF	52 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S106	Elec.	35 SF	0 SF	35 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S107	Comm.	61 SF	0 SF	61 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S108	Choir Robe Storage	148 SF	0 SF	148 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S109	Instrument Storage	390 SF	0 SF	390 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	2
S110	Equipment	88 SF	0 SF	88 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S111	Janitor	52 SF	0 SF	52 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S112	Tools	101 SF	0 SF	101 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S113	Supplies	51 SF	0 SF	51 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S114	Storage	174 SF	0 SF	174 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S115	Storage	125 SF	0 SF	125 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S116	Supplies	156 SF	0 SF	156 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S117	Drying/Cooling	107 SF	0 SF	107 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S118	Storage	44 SF	0 SF	44 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S119	Storage	57 SF	0 SF	57 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S120	Storage	61 SF	0 SF	61 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S121	Art Supply Storage	114 SF	0 SF	114 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S122	Finished Art Storage	182 SF	0 SF	182 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S123	Electrical Room	124 SF	0 SF	124 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S124	Comm.	95 SF	0 SF	95 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S125	Outdoor Kiln Area	306 SF	0 SF	306 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	2
01 - MAIN LEVEL							1346
02 - SECOND LEVEL							
B201	Office	139 SF	0 SF	139 SF	100 SF	Business Areas	2
B202	Office	217 SF	0 SF	217 SF	100 SF	Business Areas	3
B203	Office	120 SF	0 SF	120 SF	100 SF	Business Areas	2
B204	Office	120 SF	0 SF	120 SF	100 SF	Business Areas	2
B205	Conference/Library	326 SF	0 SF	326 SF	100 SF	Business Areas	4
B206	Conference	390 SF	0 SF	390 SF	100 SF	Business Areas	4
B207	Faculty Workroom	170 SF	0 SF	170 SF	100 SF	Business Areas	2
B208	Office	116 SF	0 SF	116 SF	100 SF	Business Areas	2
B209	Office	167 SF	0 SF	167 SF	100 SF	Business Areas	2
B210	Office	117 SF	0 SF	117 SF	100 SF	Business Areas	2
E201	Classroom	872 SF	0 SF	872 SF	20 SF	Educational - Classroom Area	44
E202	Classroom	894 SF	0 SF	894 SF	20 SF	Educational - Classroom Area	45
E203	Classroom	870 SF	0 SF	870 SF	20 SF	Educational - Classroom Area	44
E204	Teaching Lab	1,579 SF	0 SF	1,579 SF	50 SF	Educational - Shops and other Vocational room areas	32
E205	Graphics/MAC Lab	884 SF	0 SF	884 SF	50 SF	Educational - Shops and other Vocational room areas	18
E206	Classroom	956 SF	0 SF	956 SF	20 SF	Educational - Classroom Area	48
E207	Computer Work Space	1,996 SF	0 SF	1,996 SF	50 SF	Educational - Shops and other Vocational room areas	40
G100B	Elevator	79 SF	0 SF	79 SF		(none)	
G201	Restroom	301 SF	0 SF	301 SF		(none)	
G202	Restroom	301 SF	0 SF	301 SF		(none)	
G203	Vending	90 SF	0 SF	90 SF		(none)	
G204	Janitor	60 SF	0 SF	60 SF		(none)	
S201	Elec.	29 SF	0 SF	29 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S202	Comm.	100 SF	0 SF	100 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S203	Mechanical Room	2,470 SF	0 SF	2,470 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	9
S204	Storage	241 SF	0 SF	241 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S205	Roof Access/Elec.	149 SF	0 SF	149 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S206	Elec./Comm	165 SF	0 SF	165 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
S209	Storage	223 SF	0 SF	223 SF	300 SF	Accessory Storage areas, Mechanical Equipment Rooms	1
02 - SECOND LEVEL							311
Grand total							1657

GROSS AREA

Level	Area (SF)	Perimeter
01 - MAIN LEVEL	33,929	964' - 7 5/8"
02 - SECOND LEVEL	24,101	962' - 5"
Grand total: 2	58,030	



2 SECOND LEVEL CODE PLAN
1" = 30'-0"

1 MAIN LEVEL SF PLAN
1" = 30'-0"

CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2012	National Electrical Code	2011
International Mechanical Code	2012	Uniform Code for	
International Plumbing Code	2012	Building Conservation	n/a
International Fire Code	2009	ADA Accessibility	
International Energy		Guildelines	2009 ANSI
Conservation Code	2009		

A. Occupancy and Group: A-1

Change in Use: Yes ___ No x Mixed Occupancy: Yes ___ No x
Special Use and Occupancy (e.g. High Rise, Covered Mall): No

B. Seismic Design Category: D Design Wind Speed: 120 mph

C. Type of Construction (circle one):

I A I B II A II B III A III B IV HT V A V B

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

North: 0 (60') South: 0 (200') East: 0 (50') West: 0 (30')

E. Mixed Occupancies: None Nonseparated Uses: None

F: Sprinklers:

Required: Yes Provided: Yes Type of Sprinkler System: NFPA 13

G: Number of Stories: 2 Building Height: 36'

H: Actual Area per Floor (square feet): 1st: 33,825 sf 2nd: 23,146 sf

I: Tabular Area: 56,971 sf

J: Area Modifications:

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

b) Sum of the Ratio Calculations for Mixed Occupancies:

$\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$

c) Total Allowable Area for:
1) One Story: 58,125 sf
2) Two Story: $A_a(2)$ 116,250 sf
3) Three Story: $A_a(3)$ 174,375 sf

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	1		Floors - Ceiling Floors	1	
Interior Bearing Walls	1		Roofs - Ceiling Roofs	0/1	
Exterior Non-Bearing Walls	0		Exterior Doors and Windows	1	
Structural Frame	1		Shaft Enclosures	1	
Partitions - Permanent	0		Fire Walls	1	
Fire Barriers	1		Fire Partitions	1	
			Smoke Partitions	1	

L. Design Occupant Load: 2,378
Exit Width Required: 356.7" Exit Width Provided: 364"

M. Minimum Number of Required Plumbing Facilities:
a) Water Closets - Required (m) ___ (f) ___ Provided (m) ___ (f) ___
b) Lavatories - Required (m) ___ (f) ___ Provided (m) ___ (f) ___
c) Bath Tubs or Showers: ___
d) Drinking Fountains: ___ Service Sinks: ___

FOOTNOTES:

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

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

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

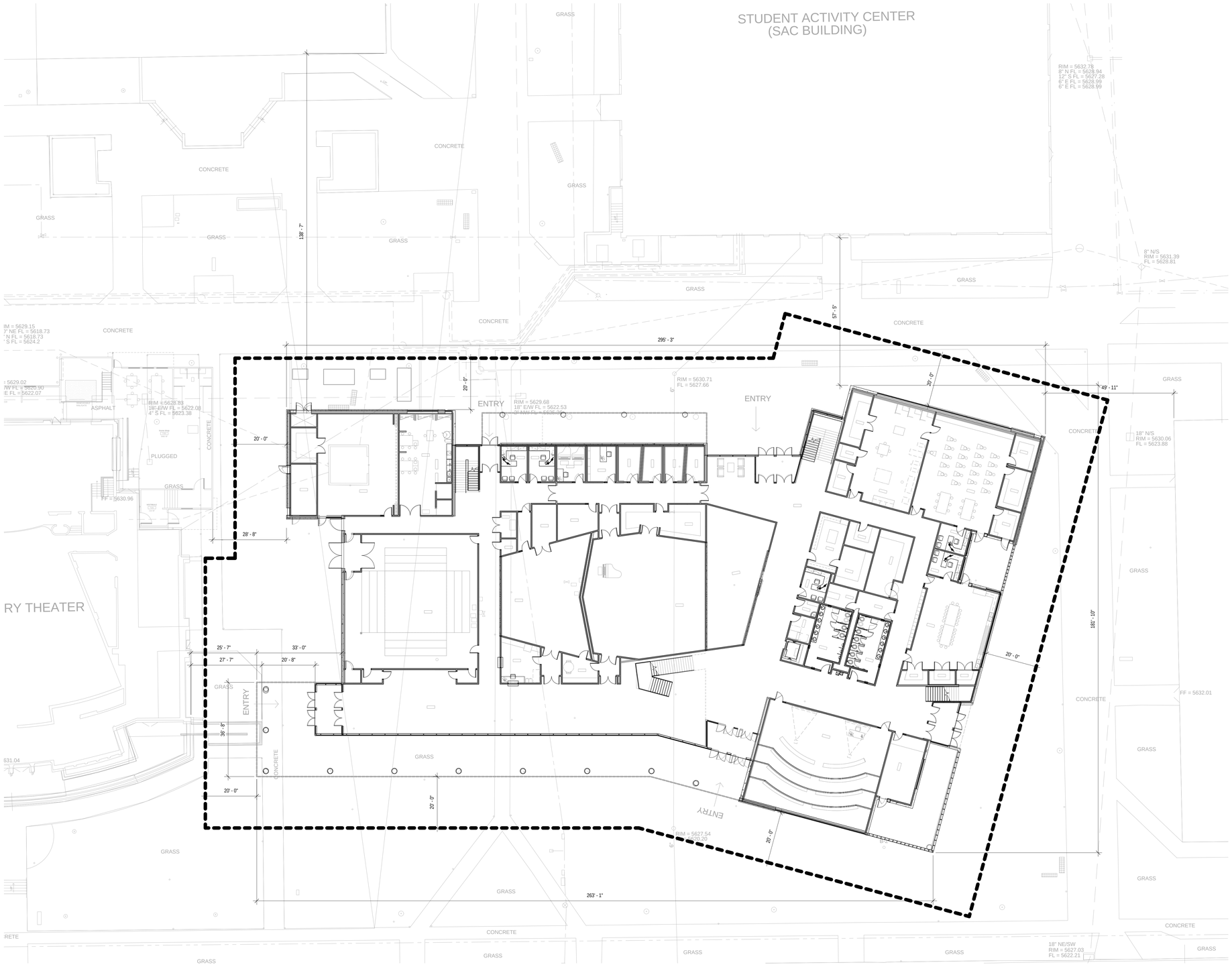
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:
Code Analysis & Schedules

sheet:
GI100



1 MAIN LEVEL FLOOR PLAN
1/16" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

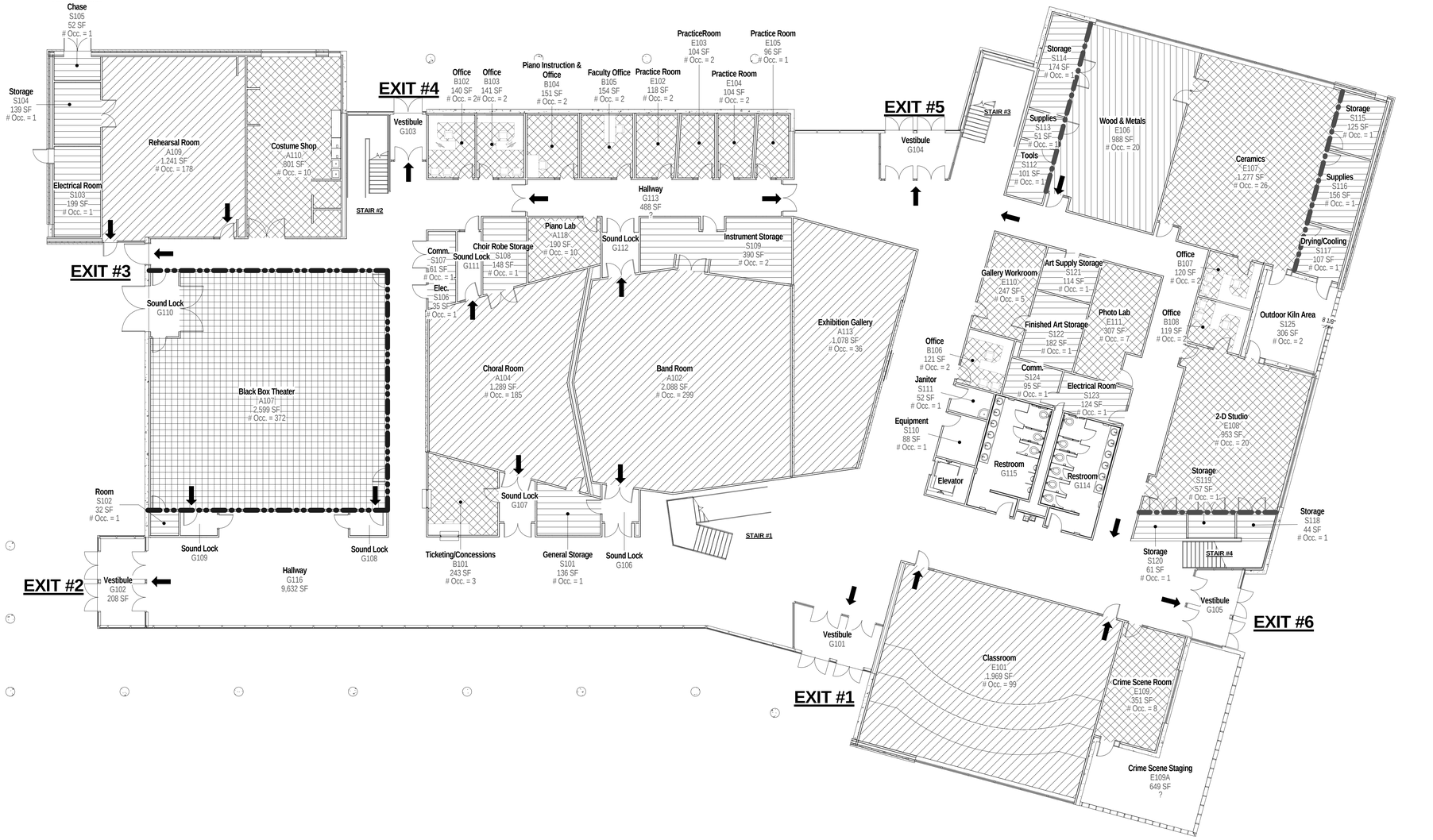
revisions :

title:
Code Analysis Site Plan

sheet:
GI101

Occupancy Use & Classification

- Group A-1
- Group A-3
- Group B
- Group H-2
- Group S-1



1 MAIN LEVEL FLOOR PLAN
3/32" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

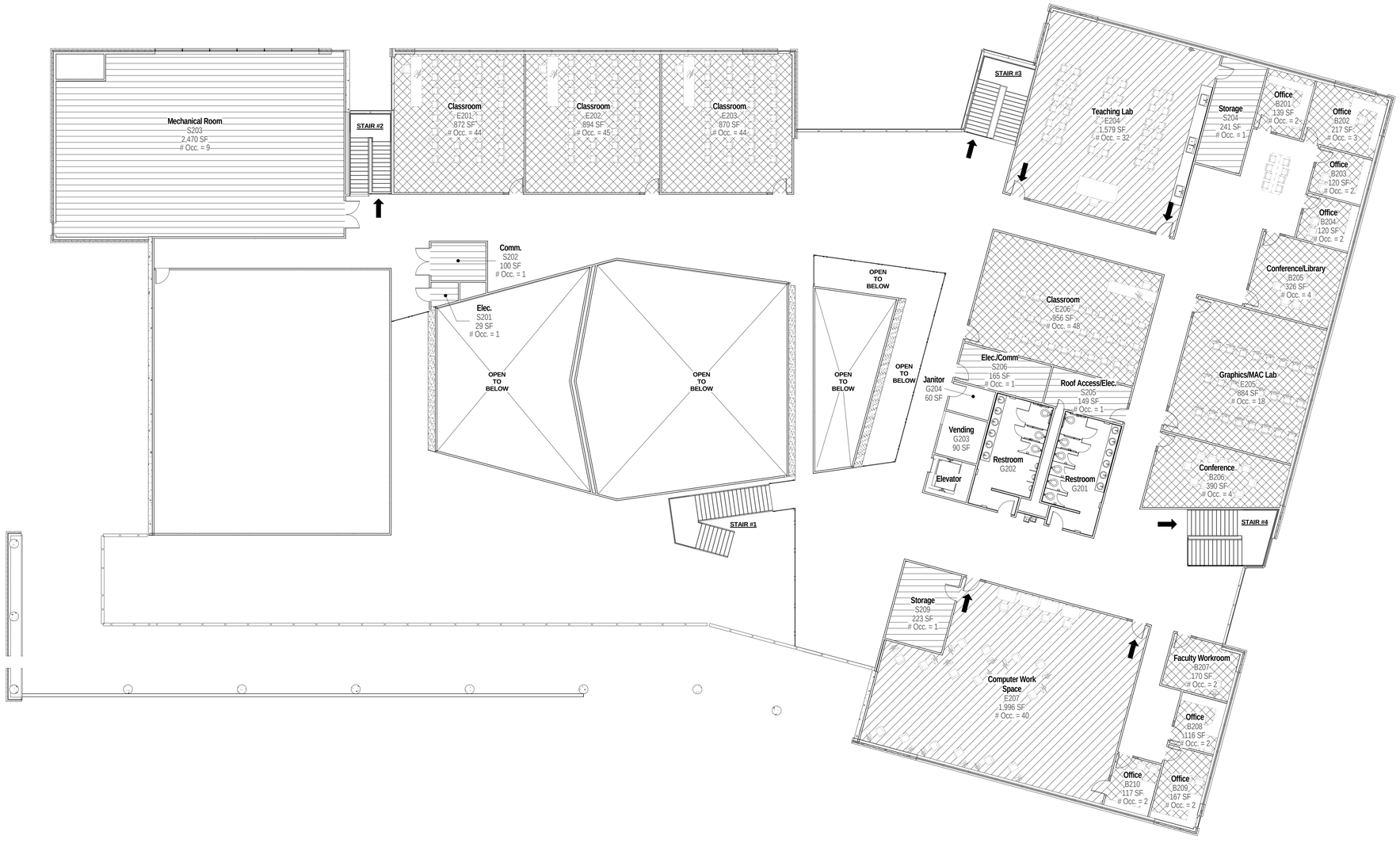
revisions :

title:
Occupant Load Plan

sheet:
GI111

Occupancy Use & Classification

- Group A-1
- Group A-3
- Group B
- Group H-2
- Group S-1



1 SECOND LEVEL CODE PLAN
3/32" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:
Occupant Load Plan

sheet:
GI112

GENERAL NOTES

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE UTAH STATE UNIVERSITY PLANS AND SPECIFICATIONS. AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS."

A PRE–CONSTRUCTION MEETING IS REQUIRED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. SUCH MEETINGS SHALL COMPLY WITH ADOPTED ENGINEERING STANDARDS.

ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING COMPLETION OF WORK.

CONTRACTOR SHALL COMPLY WITH SAFETY REQUIREMENTS CONTAINED IN THE GENERAL CONDITIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LAND OF PUBLIC AND PRIVATE OWNERSHIP TO BE RESTORED TO ITS ORIGINAL STATE.

CONTRACTOR SHALL RETAIN AND PROTECT WHERE POSSIBLE ALL LANDSCAPING, TREES, EXISTING UTILITIES, DITCHES, CULVERTS, PAVEMENT, FENCING, etc. EXCEPT WHERE REMOVAL OF SUCH ITEMS IS SPECIFICALLY CALLED FOR ON DRAWINGS. ANY DAMAGE CAUSED BY CONTRACTOR SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

ALL ABANDONED UTILITIES DAMAGED OR EXPOSED DURING CONSTRUCTION SHALL BE REMOVED CAPPED AND PLUGGED. ENGINEER SHALL DETERMINE WHICH UTILITIES ARE ABANDONED.

THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH. BLUE STAKES (800) 662–4111.

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CAMPUS UTILITY DIRECTOR AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.

ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT–OF–WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.

EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED–TYPE CURB.

CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE ENGINEER SHALL BE REMOVED AND REPLACED SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A ENGINEER. TAKE PHOTOS OF JOB SITE PRIOR TO PROJECT BEGINNING.

CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF TRANSITIONS TO BE AS SHOWN ON PLANS.

ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY RB&G ENGINEERING, INC. CONSULTANTS DATED SEPTEMBER 2013 AS SHOWN ON THESE PLANS.

EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATION.

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS.

CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.

PROPER SIGNS, BARRIERS, BARRICADES AND LIGHTS SHALL BE PLACED AND MAINTAINED

THIS PLAN DOES NOT AUTHORIZE CLOSURE OF ANY ROAD OR STREET.

CONTRACTOR SHALL PROTECT CONSTRUCT STAGING AREA WITH FENCING.

CONTRACTOR SHALL MAINTAIN DUST FREE WORK AND STORAGE AREAS.

GRADING NOTES

IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF–SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.

CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.

MATERIAL LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR AND BE DISPOSED OF IN A LEGAL OFF–SITE LOCATION APPROVED BY THE ENGINEER AND/OR UNIVERSITY REPRESENTATIVES. BURNED MATERIAL SHALL BE DISPOSED OF 2 BLOCKS NORTH OF 400 NORTH AND 660 WEST. 12" MINUS MATERIAL SHALL BE PUSHED INTO EXISTING DRAWS TO THE EAST OF THE PROJECT SITE. EXISTING AND FUTURE DRAINAGE CONSIDERATIONS SHALL BE EXAMINED BEFORE 12" MINUS MATERIAL SHALL BE PLACED. ROCK LARGER THAN 12" SHALL BE REMOVED AND PLACED IN WESTWATER CANYON (ON COLLEGE PROPERTY, 1 BLOCK NORTH OF THE PROJECT SITE). PLEASE COORDINATE WITH EUGENE PEHRSON (USU FACILITIES) FOR EXACT DISPOSAL LOCATIONS.

THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.

ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.

THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT–OF–WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION. CONTRACTOR SHALL REMOVE ALL MUD TRACKED FROM THE PROJECT SITE ONTO PUBLIC DRIVES AND ROADWAYS.

DEVIATIONS FROM STANDARDS

THERE ARE NO DEVIATIONS, UNLESS STATED IN THE SPECIFICATIONS.

ABBREVIATIONS

ADD.	ADDITION or ADDENDUM
ALT.	ALTERNATE
ASPH.	ASPHALT
AVG	AVERAGE
B.M.	BENCH MARK
BOW	BOTTOM OF WALL
C.D.	CONSTRUCTION DOCUMENTS
CL or ℄	CENTERLINE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
D.G.	DECOMPOSED GRANITE
DBL.	DOUBLE
DEMO	DEMOLITION
DIA. or Ø	DIAMETER
EA.	EACH
EQ.	EQUAL
EQUIP.	EQUIPMENT
EST.	ESTIMATE
EXIST. or EX	EXISTING
FIN.	FINISH
FG	FINISH GRADE
FL	FLOOR
GB	GRADE BREAK
HOR.	HORIZONTAL
HP	HIGH POINT
HYD.	HYDRAULIC
L.F.	LINEAR FEET
LP	LOW POINT
M.H.	MANHOLE
MAT'L	MATERIAL
MAX.	MAXIMUM
MFG.	MANUFACTURING
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NFC	NOT FOR CONSTRUCTION
NOM.	NOMINAL
P.L. or ℙ	PROPERTY LINE
QTY.	QUANTITY
R.O.W. or R/W	RIGHT OF WAY
REF.	REFERENCE
REQ'D.	REQUIRED
REV.	REVISION
RMV.	REMOVE
SH	SHEET
SIM.	SIMILAR
SPECS	SPECIFICATIONS
STD.	STANDARD
SYS.	SYSTEM
THRU	THROUGH
TBC	TOP BACK OF CURB
TOC	TOP OF CONCRETE
TOG	TOP OF GRATE
TOW	TOP OF WALL
TYP.	TYPICAL
V.I.F.	VERIFY IN FIELD
WT.	WEIGHT
W/	WITH
W/O	WITHOUT
YD.	YARD

INDEX

C-0001	GENERAL NOTES
C-0002	DEMOLITION PLAN
C-0003	HORIZONTAL CONTROL PLAN
C-0004	UTILITY PLAN
C-0005	SEWER PLAN AND PROFILE
C-0006	EROSION CONTROL PLAN
C-0007	EROSION CONTROL DETAILS
C-0008	DETAILS
C-0009	TUNNEL DETAILS

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.

P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381–2523
FAX (435) 381–2522 email jt @ etv.net

METHOD STUDIO INC.

925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

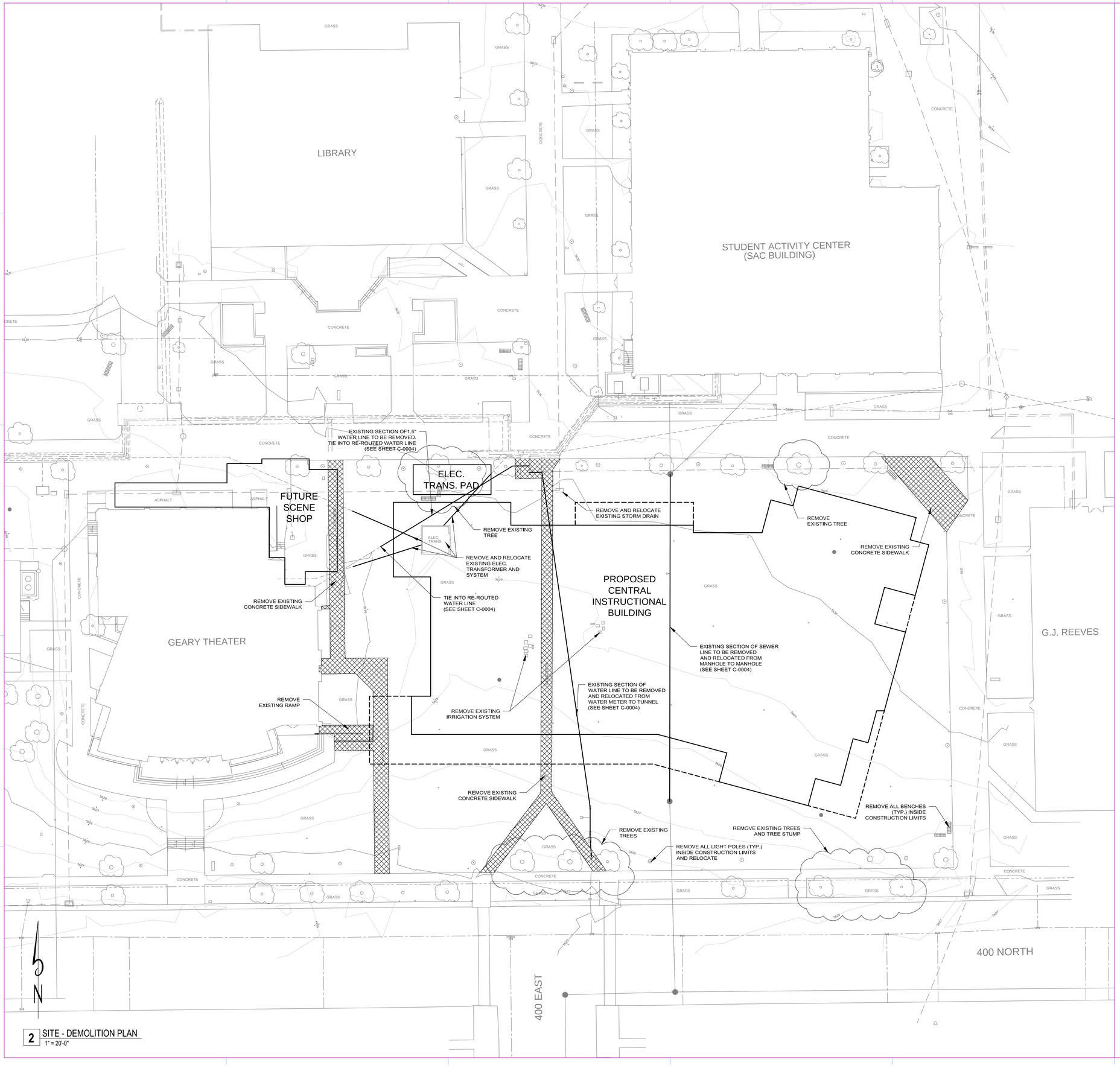
revisions :

title:

GENERAL NOTES

sheet:

C-0001



2 SITE - DEMOLITION PLAN
1" = 20'-0"

LEGEND

- STORM DRAIN MANHOLE
- WATER MANHOLE
- ELECTRICAL MANHOLE
- TUNNEL ENTRANCE MANHOLE
- SEWER MANHOLE
- COMMUNICATION BOX
- WATER VALVE
- WATER METER
- IRRIGATION BOX
- CATCH BASIN/CLEANOUT
- SPRINKLER
- FIRE HYDRANT
- POWER POLE
- POWER BOX
- LIGHT POLE
- DRILL HOLE
- BENCH

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

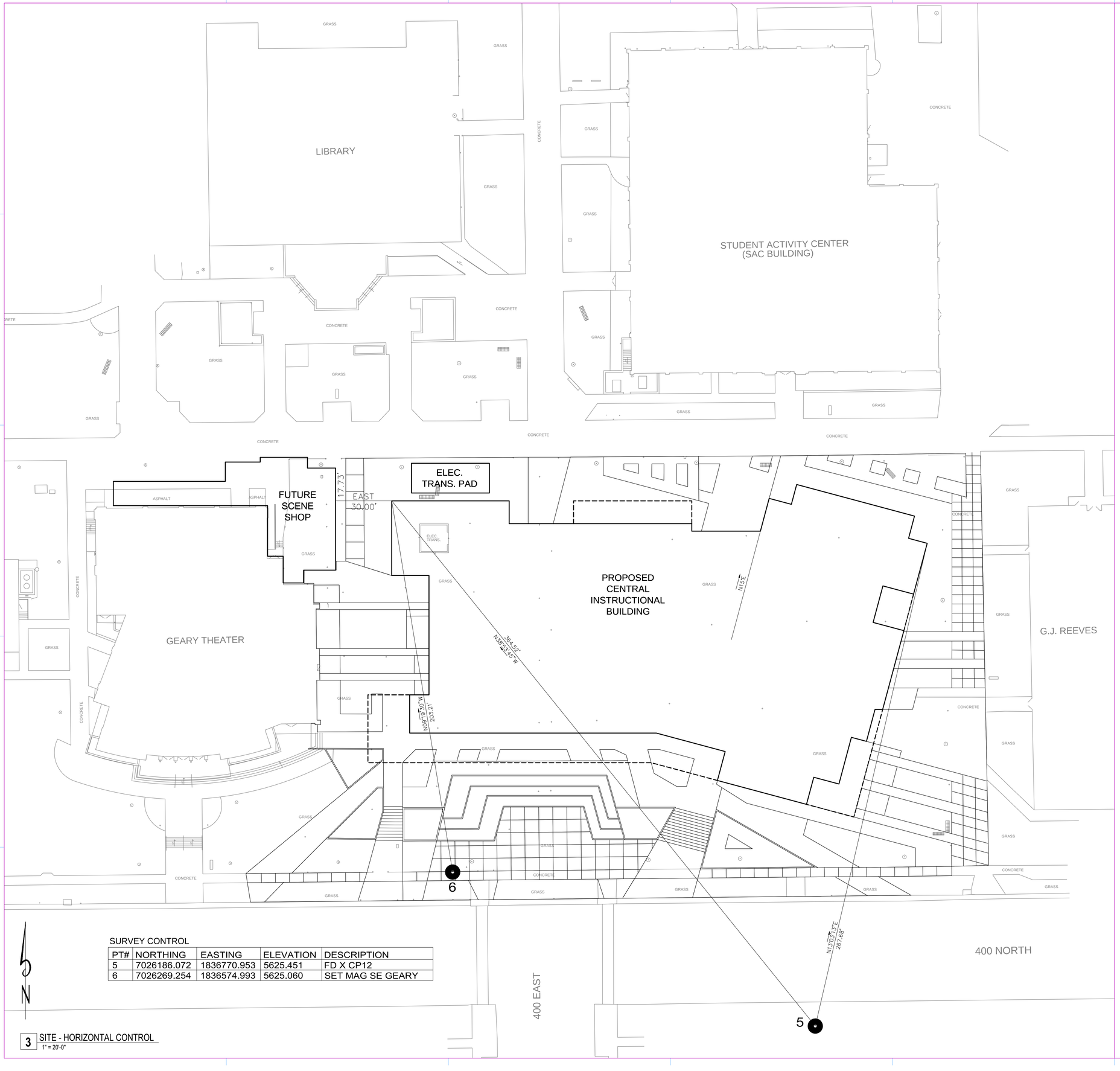
451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

revisions :

title:
DEMOLITION PLAN

sheet:
C-0002



SURVEY CONTROL

PT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
5	7026186.072	1836770.953	5625.451	FD X CP12
6	7026269.254	1836574.993	5625.060	SET MAG SE GEARY

3 SITE - HORIZONTAL CONTROL
1" = 20'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

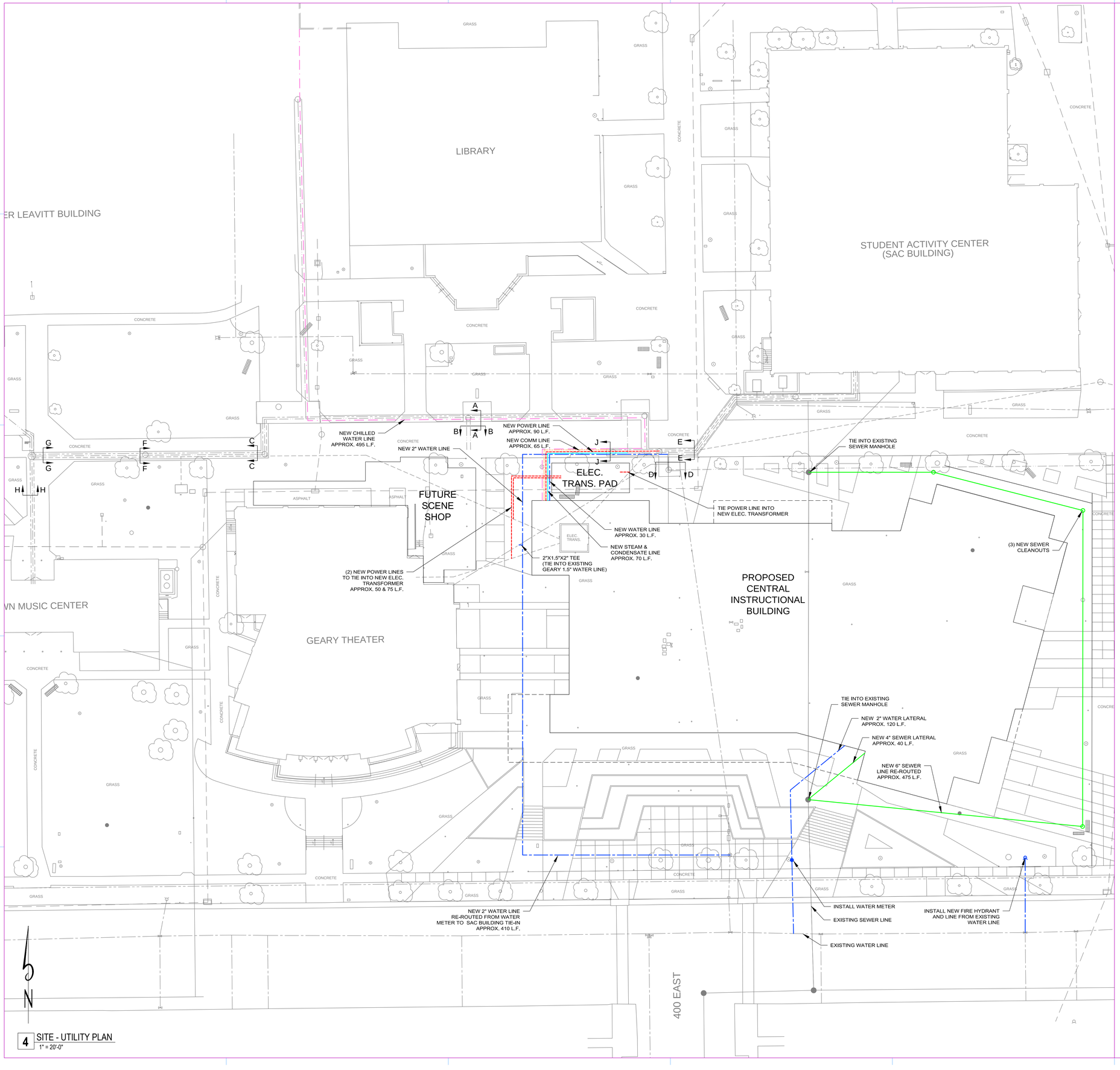
451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

revisions :

title:
HORIZONTAL CONTROL

sheet:
C-0003



4 SITE - UTILITY PLAN
1" = 20'-0"

UTILITY LEGEND

- GAS LINE
- SEWER LINE
- COMMUNICATION LINE
- STORM DRAIN LINE
- WATER LINE
- STEAM & CONDENSATE LINE
- POWER LINE
- CHILLED WATER LINE

NOTES:
1. PLAN/PROFILE SHEET OF SAC BUILDING SEWER LATERAL FOUND ON SHEET C-0005.

2. DETAILED CROSS SECTIONS A-A THROUGH J-J ARE LOCATED ON SHEET C-0009.

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

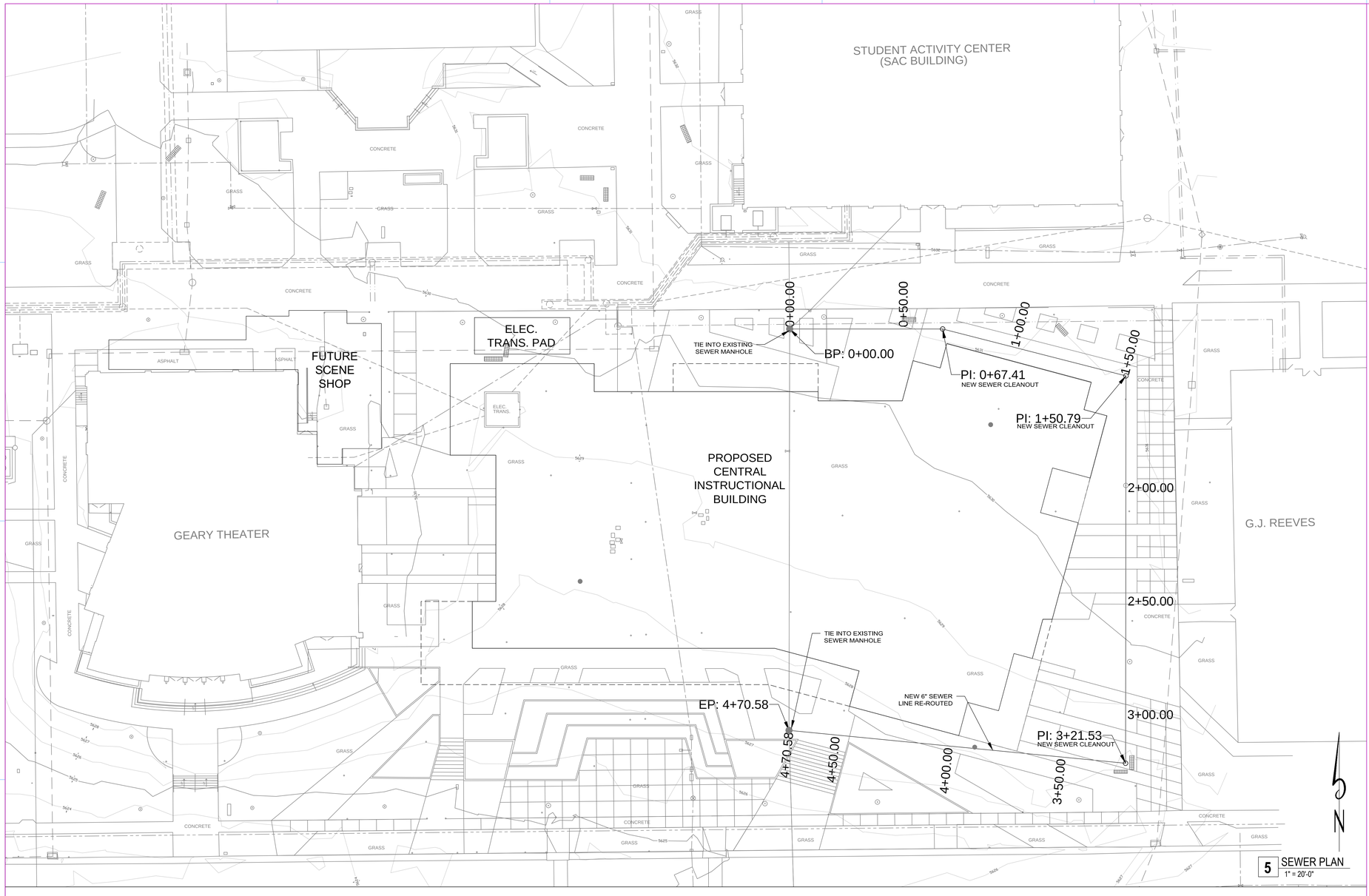
451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

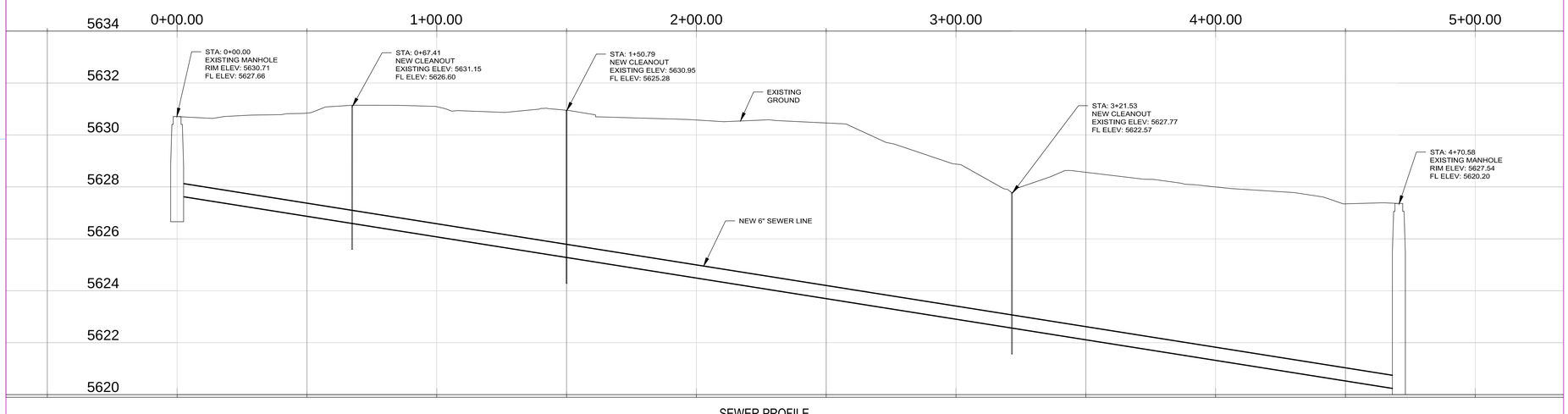
revisions :

title:
UTILITY PLAN

sheet:
C-0004



5 SEWER PLAN
1" = 20'-0"



SEWER PROFILE

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

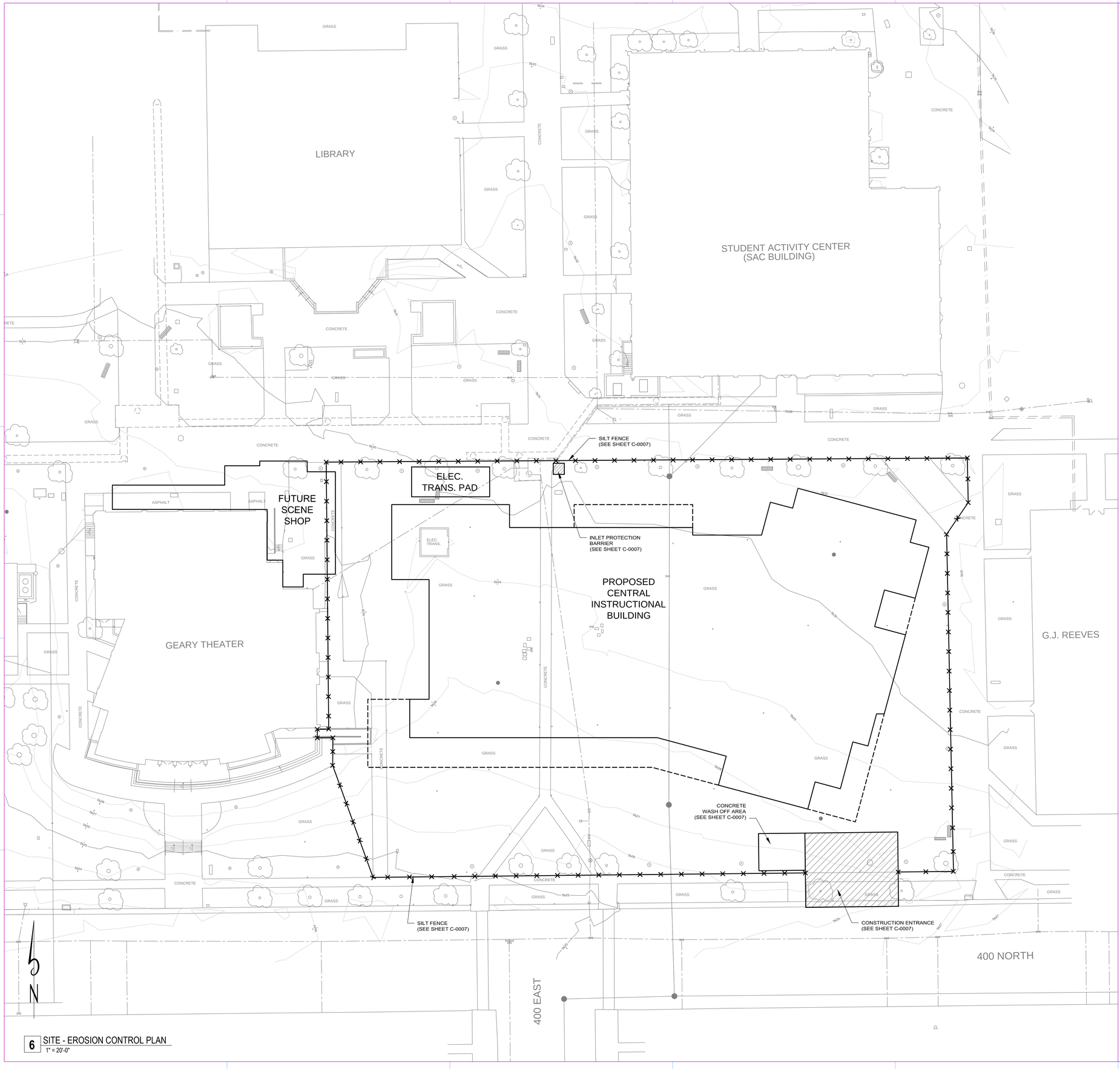
451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

revisions :

title:
SEWER PLAN AND PROFILE

sheet:
C-0005



6 SITE - EROSION CONTROL PLAN
1" = 20'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

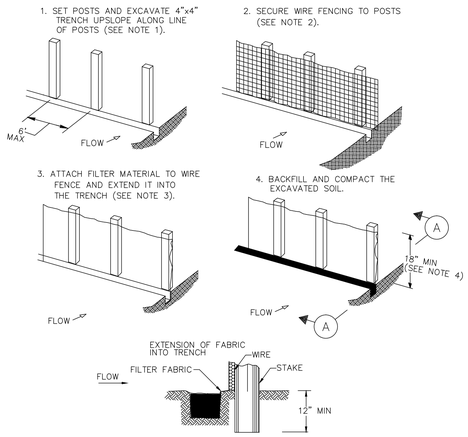
451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

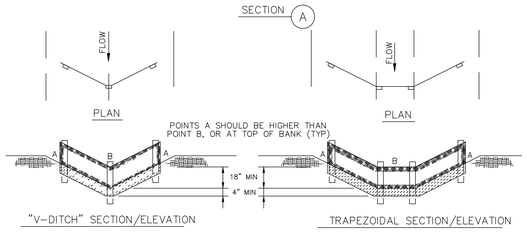
revisions :

title:
EROSION CONTROL PLAN

sheet:
C-0006



SECTION A



CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

SYMBOL

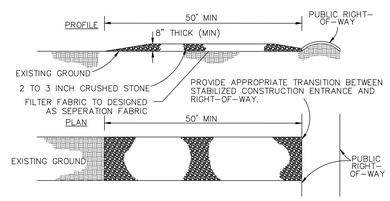
REINFORCED FILTER FABRIC BARRIER

SILT FNCE

SCALE: N.T.S.

STABILIZED CONSTRUCTION ENTRANCE

(NOT TO SCALE)



NOTES:

1. CONTRACTOR TO INSTALL AND MAINTAIN ALL SELECTED CONTROL MEASURES IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND GOOD ENGINEERING PRACTICES.

2. CONTRACTOR TO REMOVE OFF-SITE ACCUMULATIONS OF SEDIMENT AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS IF SEDIMENT ESCAPES.

3.CONTRACTOR TO REMOVE SEDIMENT FROM SEDIMENT TRAPS WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

4. PRIOR TO ANTICIPATED STORM EVENTS, THE CONTRACTOR SHALL REMOVE OR OTHERWISE PREVENT FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGES: LITTER, CONSTRUCTION DEBRIS AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER.

5. CONTRACTOR SHALL INITIATE STABILIZING MEASURES AS SOON AS PRACTICABLE AND NO LATER THAN 5 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

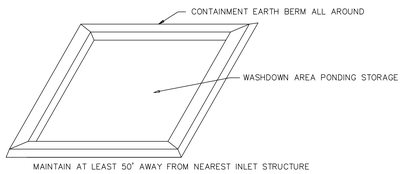
6. CONTRACTOR SHALL MINIMIZE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST.

7. SLOPES OVER 3:1 SHALL BE TREATED WITH EROSION CONTROL/REVEGITATIVE MATTING. SLOPES FLATTER THAN 3:1 MAY BE SPRAYED WITH TACKIFIER.

8. GEOTEXTILE FABRIC SHALL BE USED FOR ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE

SCALE: N.T.S.

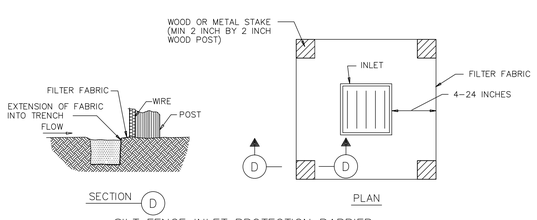


NOTES:

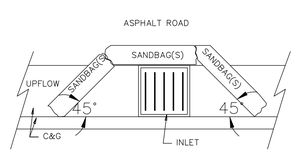
1. MINIMIZE EXCESS MIXING OF FRESH CONCRETE, MORTAR OR CEMENT ON-SITE.
2. PERFORM WASHOUT OF CONCRETE TRUCKS OFF-SITE OR IN DESIGNATED AREAS ONLY.
3. DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS OR STREAMS.
4. WHEN WASHING CONCRETE TO REMOVE FINE PARTICLES AND EXPOSE THE AGGREGATE, AVOID CREATING RUNOFF BY DRAINING THE WATER WITHIN A BERMED AREA.
5. DISPOSE OF HARDENED CONCRETE ON A REGULAR BASIS.
6. CONTRACTOR MAY INSTALL CONCRETE WASH OUT EQUIVILANT AS LONG AS NOTES 1-5 (ABOVE) AND CONTSTRUCTION NOTE 5 ARE SATISFIED
7. PROVIDE CONCRETE WASHOUT PANS/CONTAINERS
8. GRAVEL/COBBLE AREA WITH WATER HOSE TO WASH DOWN TIRES. COBBLE TO BE 6'-8" DEEP WITH GEOTECH FABRIC BASIN ON THE BOTTOM.

CONCRETE WASH - OFF AREA

SCALE: N.T.S.



SILT FENCE INLET PROTECTION BARRIER



INLET CONTROL ON PAVED SURFACE

(SEE CONSTRUCTION NOTE BELOW)

NOTES: INLET CONTROL ON PAVED SURFACE

INLET CONTROL SHALL BE MAINTAINED WITH SAND OR GRAVEL BAGS (OR EQUIVALENT) UPFLOW OF STORM DRAIN INLETS ALONG ROADS AT A 45 DEGREE ANGLE FROM THE CURB & GUTTER. INLET CONTROL SHALL BE MAINTAINED THROUGH THE DEVELOPMENT OF ALL LOTS AND ALL LOTS ARE STABILIZED WITH VEGETATION OR BY OTHER MEANS.

INLET PROTECTION

SCALE: N.T.S.

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

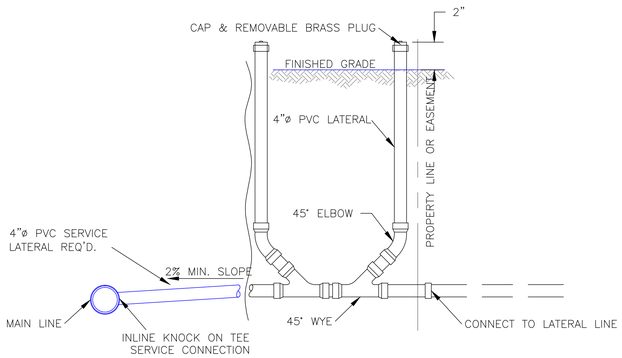
revisions :

title:

EROSION CONTROL DETAILS

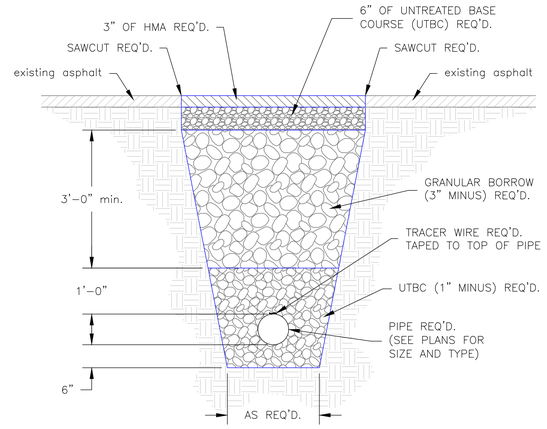
sheet:

C-0007



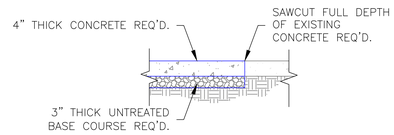
TYPICAL CLEANOUT

SCALE: N.T.S.



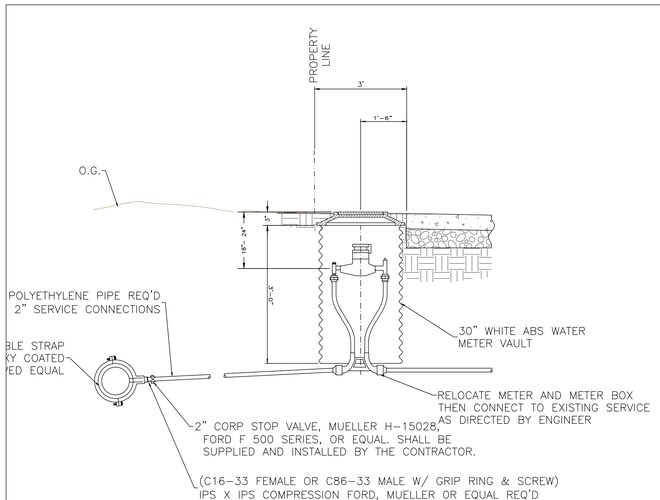
TYPICAL WATER LINE TRENCH

SCALE: N.T.S.



TYPICAL CONCRETE FLATWORK

SCALE: N.T.S.

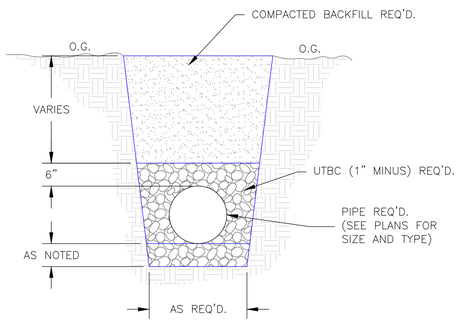


NOTE:
1. ALL SERVICES SHALL BE 2-INCH UNLESS OTHERWISE SHOWNN IN PLAN DRAWINGS
2. CONNECTION SHALL BE MADE ON MAIN LINE ON THE SAME SIDE AS THE SERVICE OUTLET.
3. BLANDING CITY SHALL INSTALL MAINLINE PRIOR TO TO BUILDING WATER LATERAL . COORDINATION WITH THE CITY SHALL BE DONE BEFORE INSTALLATION OF LATERALS, ECT..

TYPICAL METER CONNECTION

SCALE: N.T.S.

NOTE: 6" OF 1" MINUS UNTREATED BASE REQ'D. UNDER SEWER PIPE IN DRY CONDITIONS AND 12" OF 2" DRAIN ROCK REQ'D. UNDER SEWER PIPE IN WET CONDITIONS.



TYPICAL SEWER & DRAIN LINE TRENCH

SCALE: N.T.S.

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

revisions :

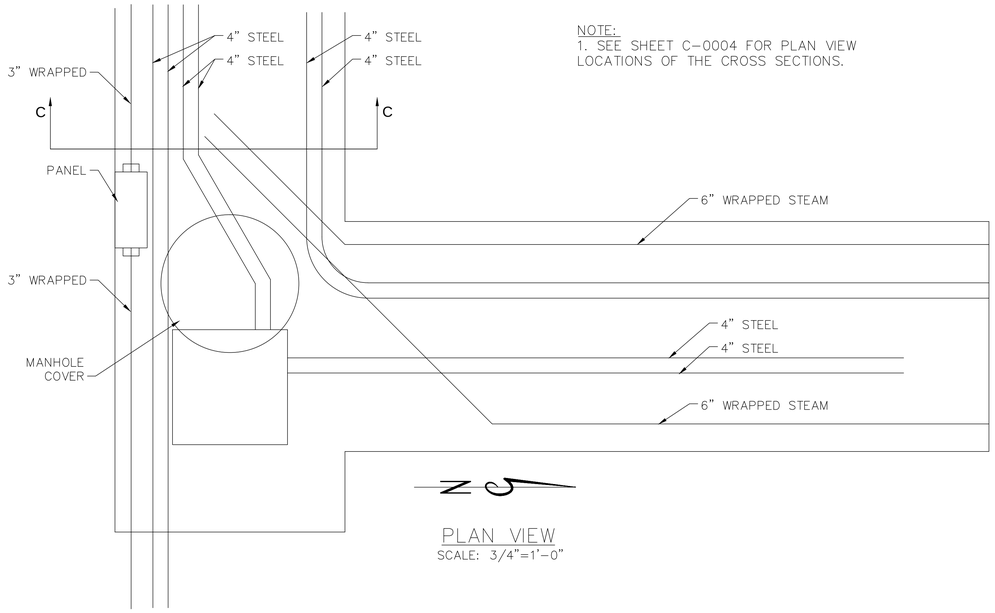
title:

DETAILS

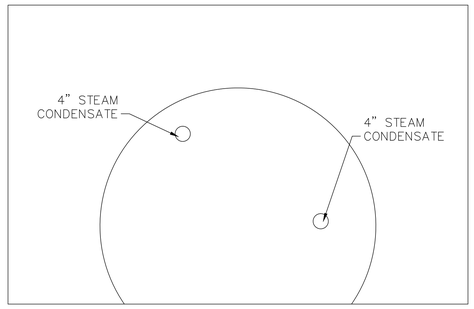
sheet:

C-0008

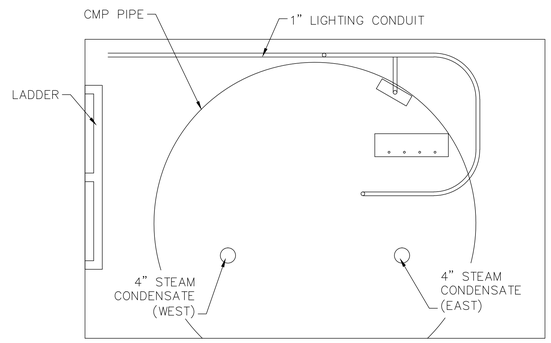
NOTE:
1. SEE SHEET C-0004 FOR PLAN VIEW LOCATIONS OF THE CROSS SECTIONS.



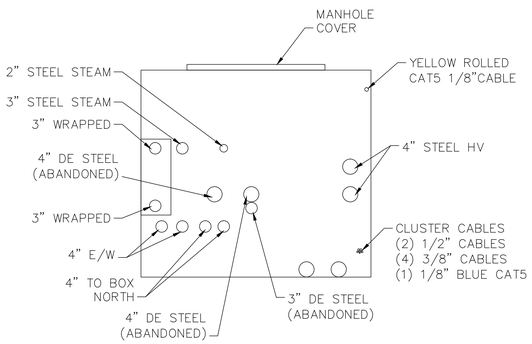
PLAN VIEW
SCALE: 3/4"=1'-0"



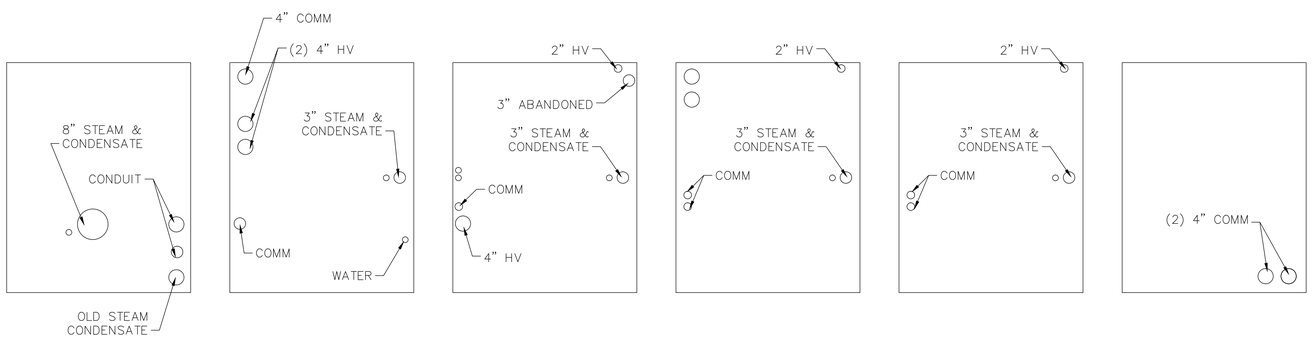
SECTION A-A
SCALE: 3/4"=1'-0"



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



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



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

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

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

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

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

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

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

johansen & tuttle ENGINEERING INC.
P.O. BOX 487, CASTLE DALE, UTAH 84513 (435) 381-2523
FAX (435) 381-2522 email jt @ etv.net

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

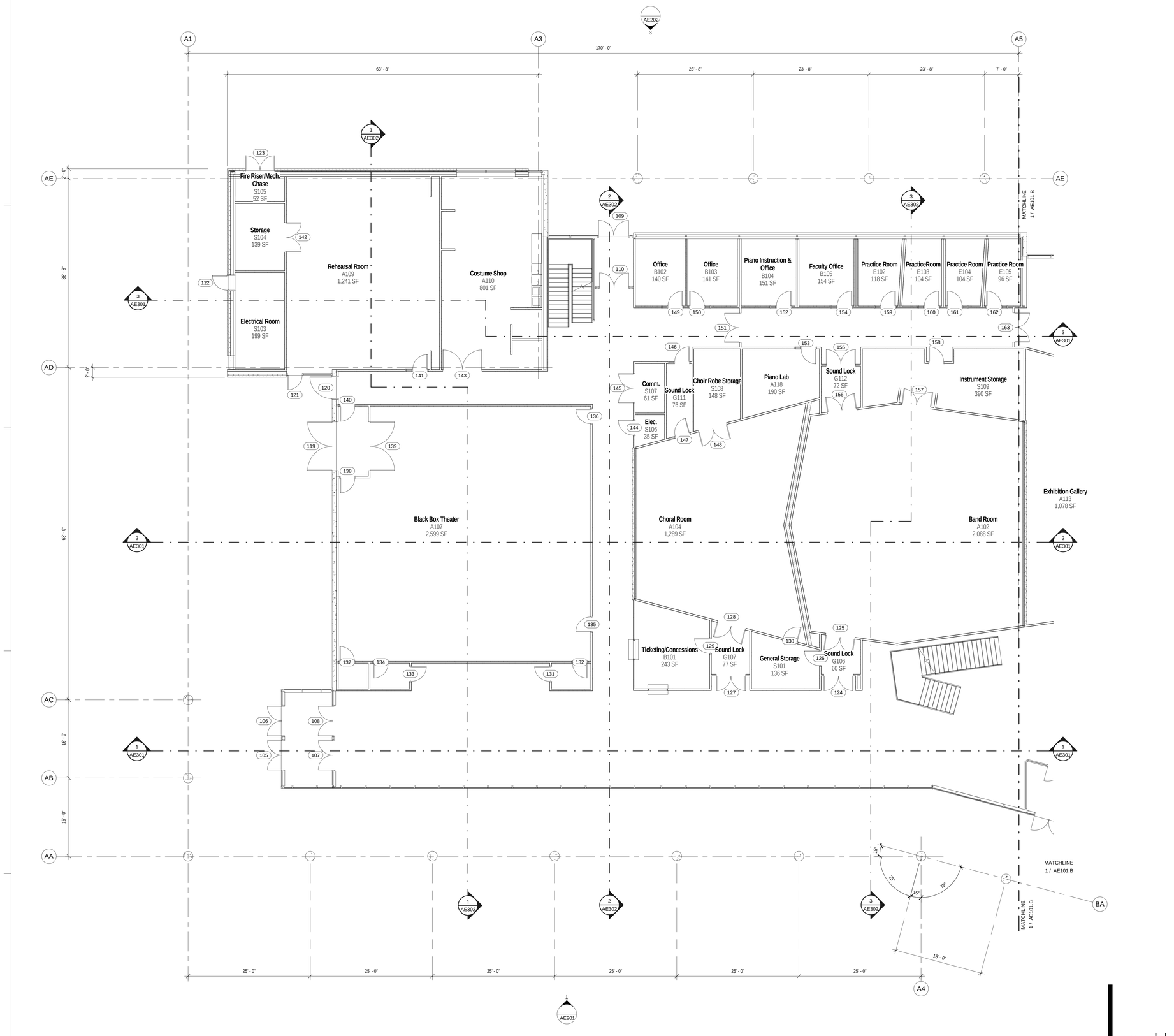
451 E 400 N
Price, UT 84501

project#: 13.0170 / 1USU13CIB00001
date: 11/2013

revisions :

title:
TUNNEL DETAILS

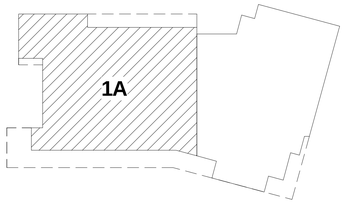
sheet:
C-0009



1 MAIN LEVEL FLOOR PLAN - AREA "A"
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:
Main Level Floor Plan - Area "A"

sheet:
AE101.A

1 MAIN LEVEL FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION.

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

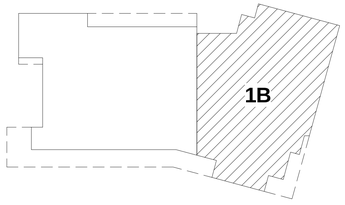
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

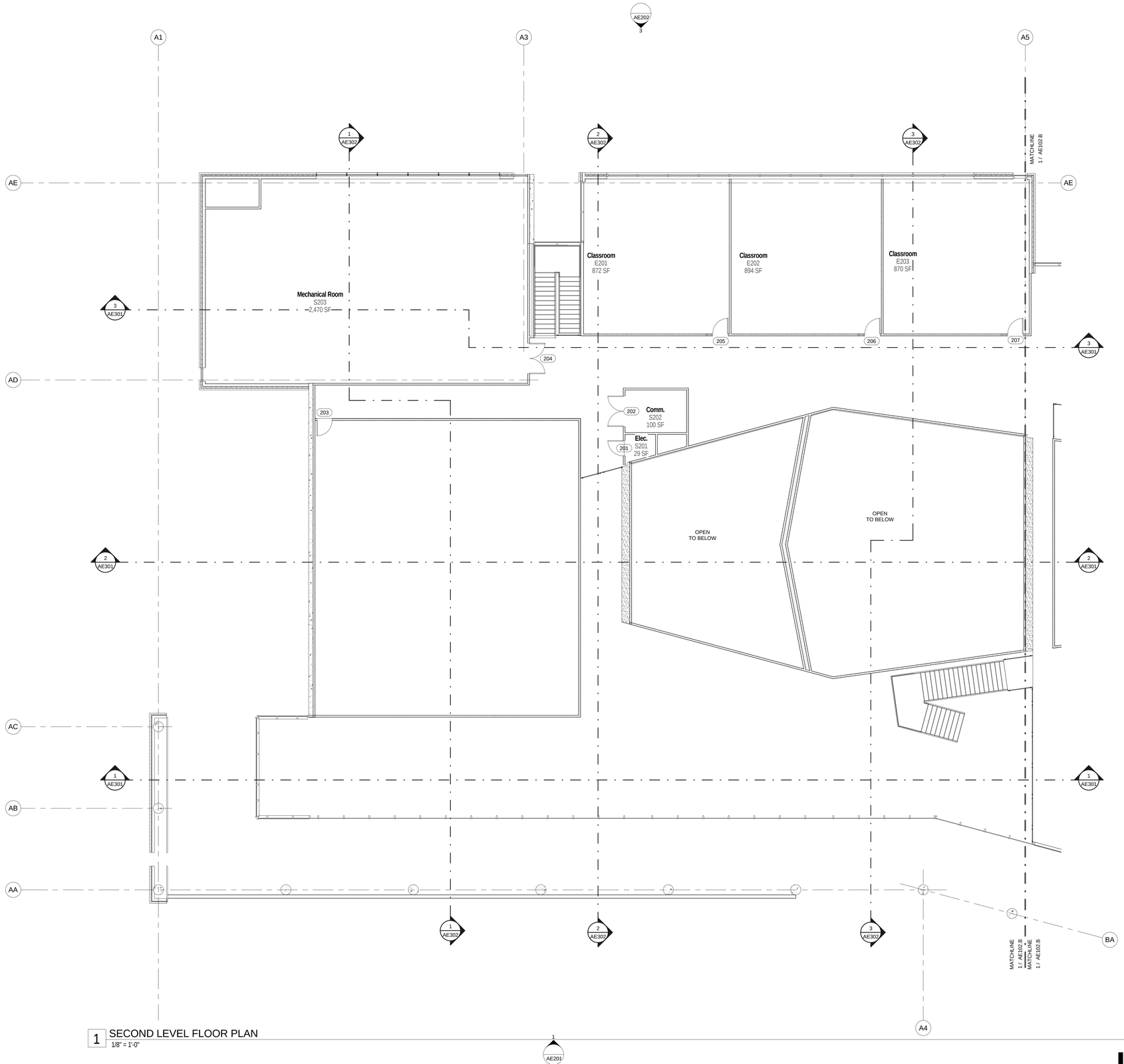
revisions :

title:
Main Level Floor Plan - Area "B"

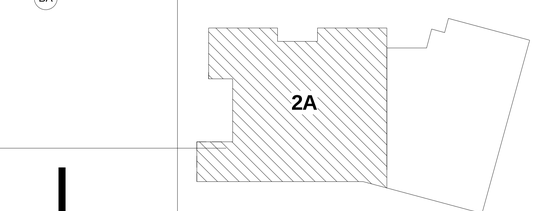
sheet:
AE101.B



KEY PLAN



1 SECOND LEVEL FLOOR PLAN
1/8" = 1'-0"



KEY PLAN

north

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:

Second Level Floor Plan - Area "A"

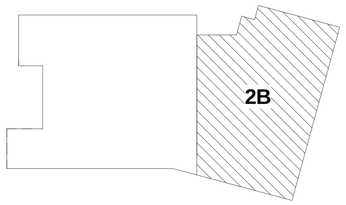
sheet:

AE102.A

1 SECOND LEVEL FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

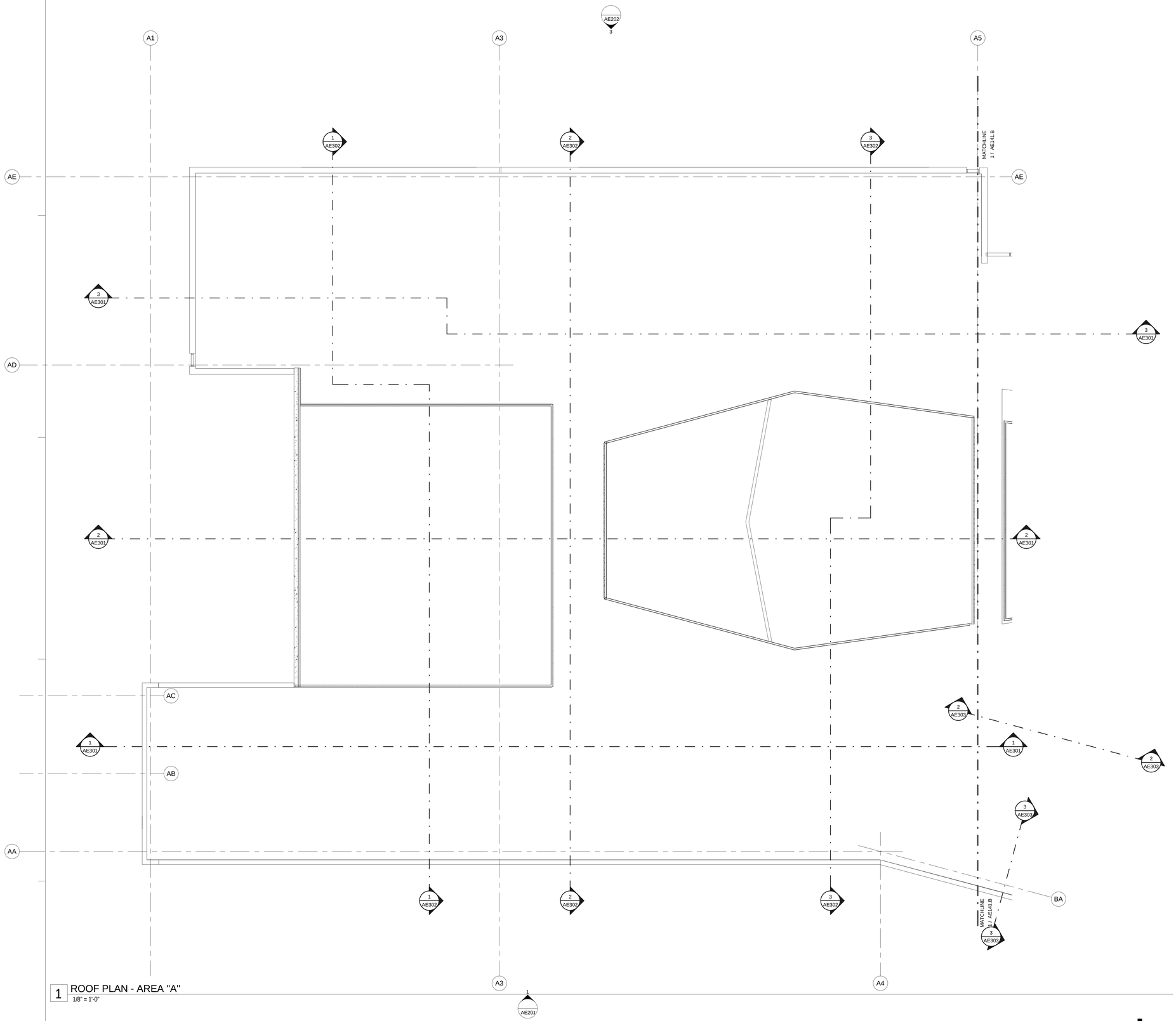
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:
Second Level Floor Plan - Area "B"

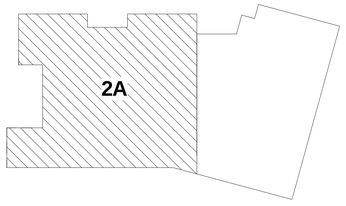
sheet:
AE102.B



1 ROOF PLAN - AREA "A"
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

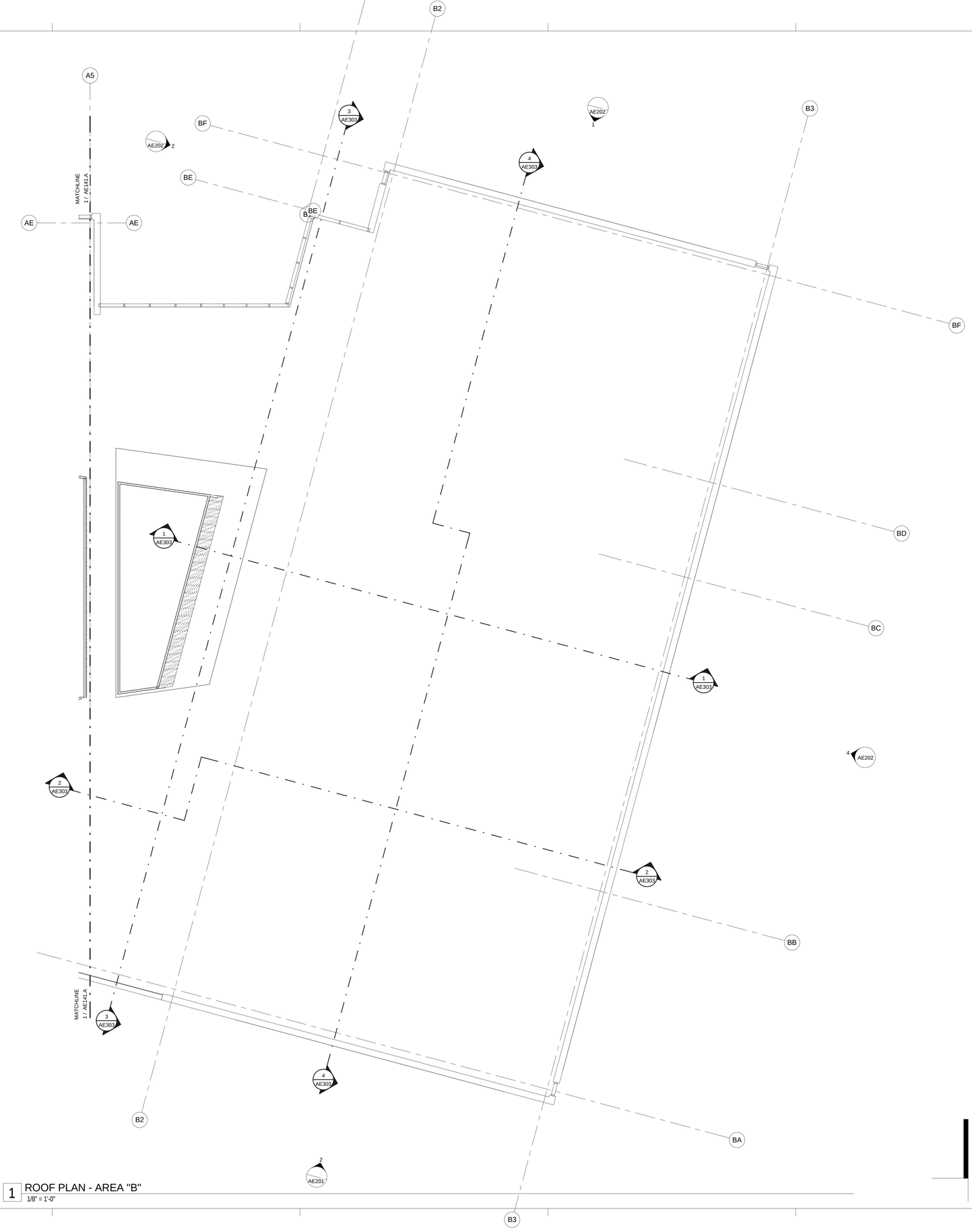
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:
Roof Plan - Area "A"

sheet:
AE141.A

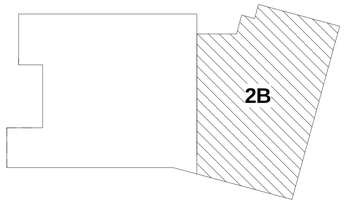


1 ROOF PLAN - AREA "B"
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	

north



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

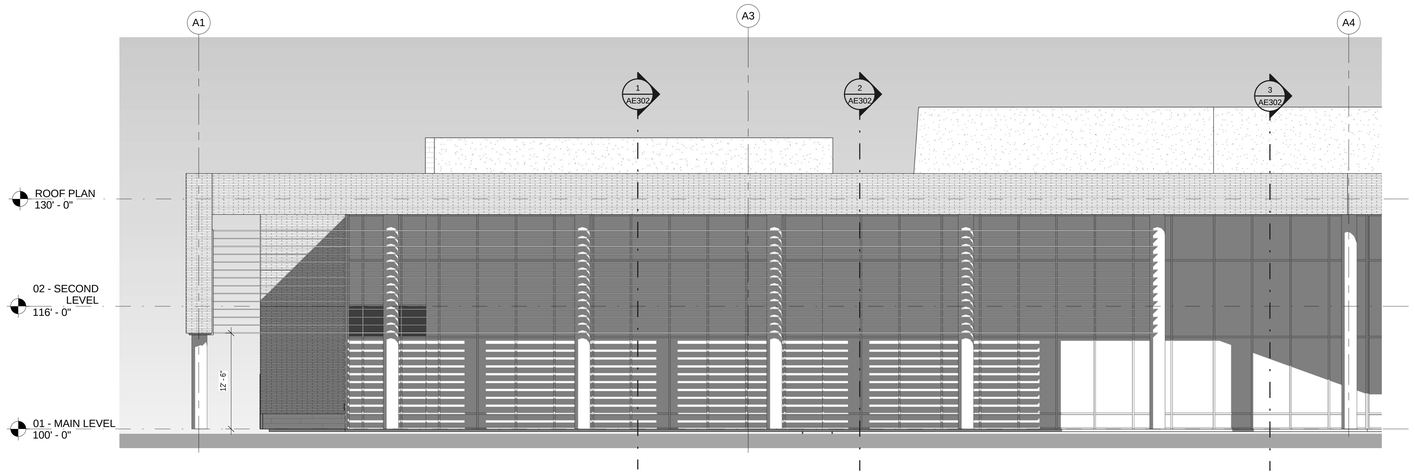
revisions :

title:

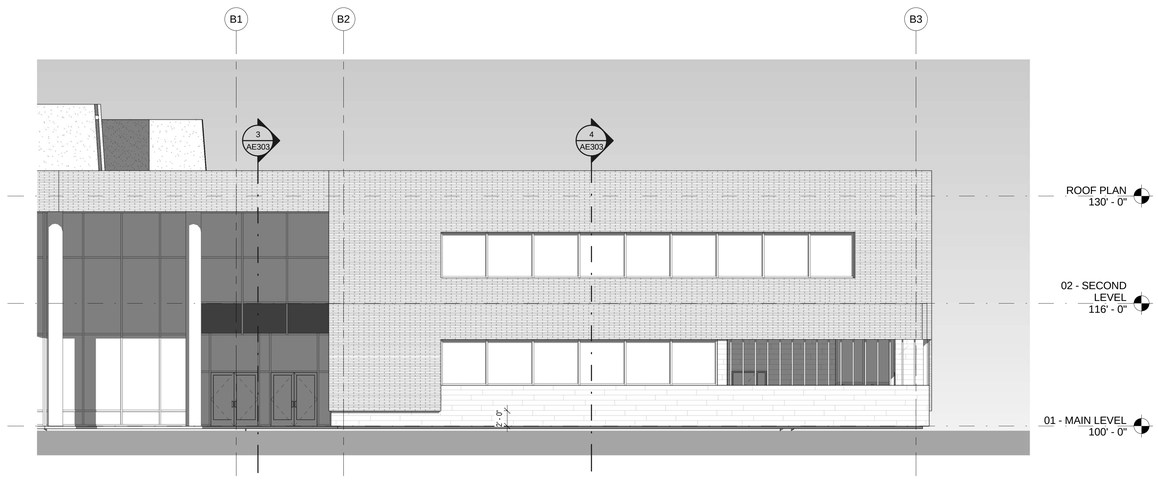
Roof Plan - Area "B"

sheet:

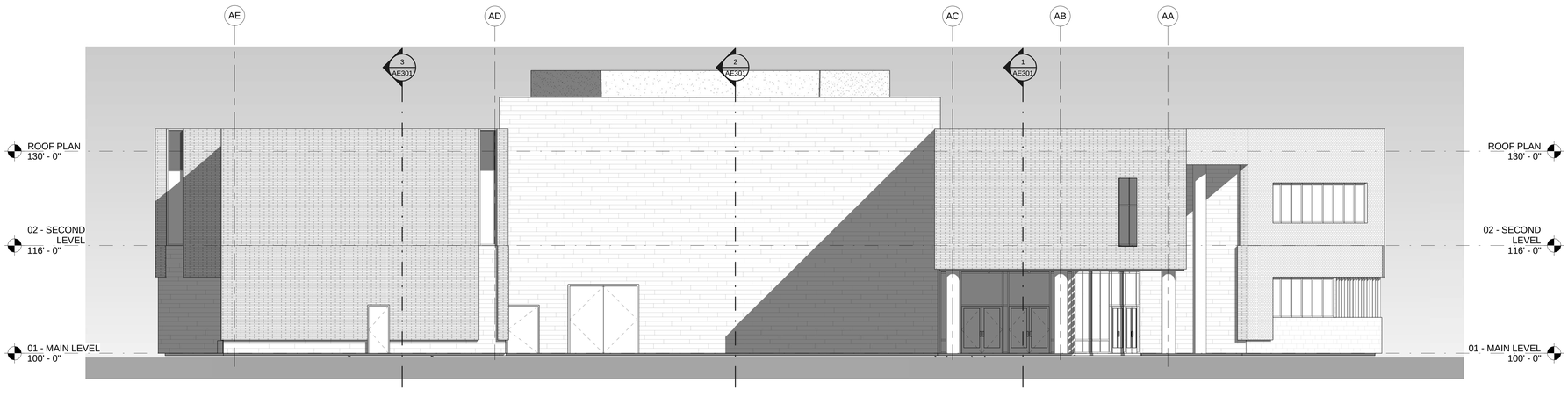
AE141.B



1 South Exterior Elevation
1/8" = 1'-0"



2 ExtElev-01 southB
1/8" = 1'-0"



3 West Exterior Elevation
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

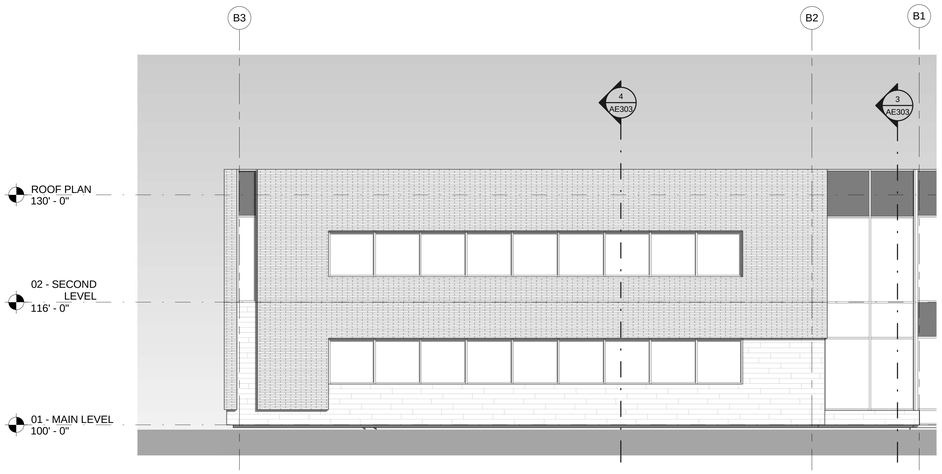
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

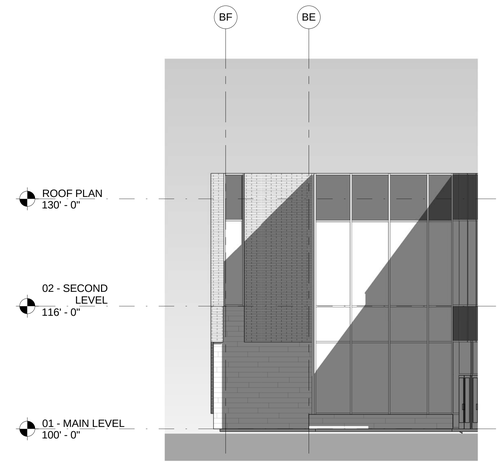
revisions :

title:
Exterior Elevations

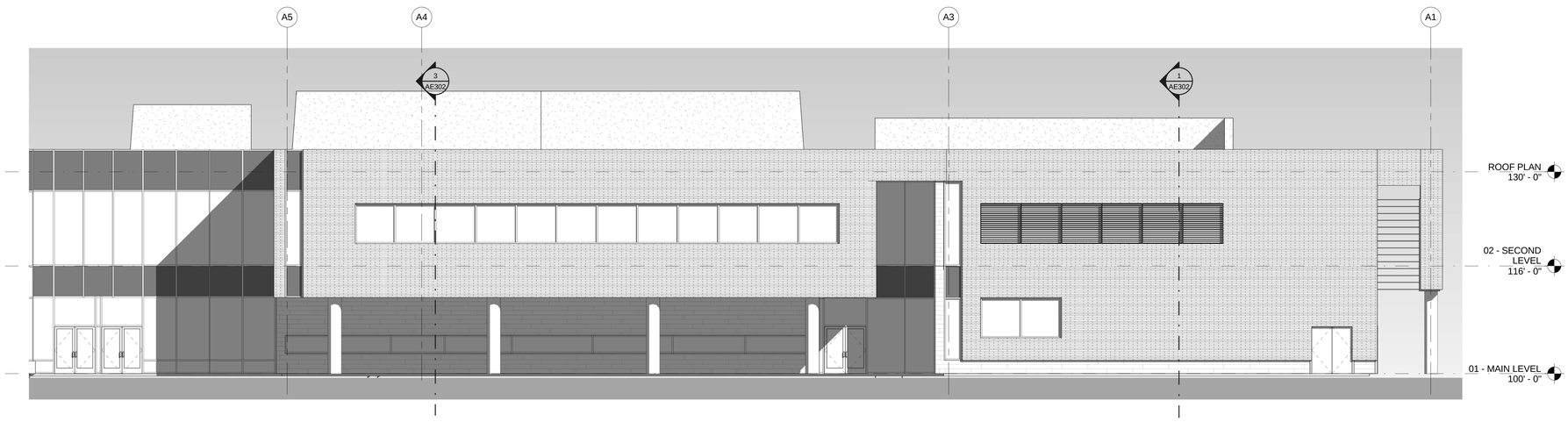
sheet:
AE201



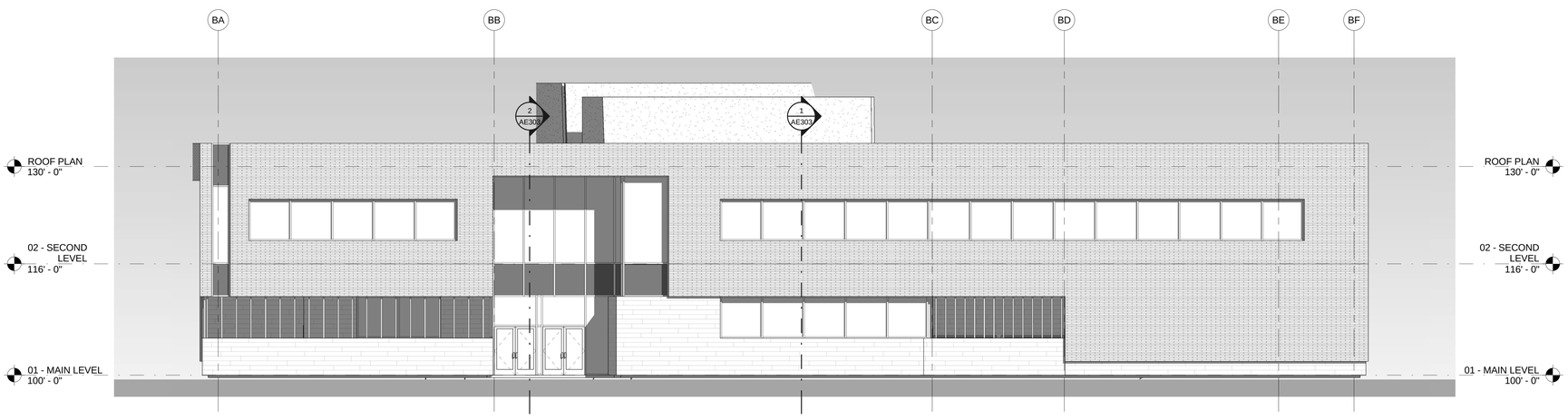
1 AREA "B" - NORTH EXTERIOR ELEVATION
1/8" = 1'-0"



2 ExtElev-05 westB
1/8" = 1'-0"



3 AREA "A" - NORTH EXTERIOR ELEVATION
1/8" = 1'-0"



4 AREA "B" EAST EXTERIOR ELEVATION
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1	SEE SHEET AE210 FOR TYPICAL MOUNTING HEIGHTS
2	

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

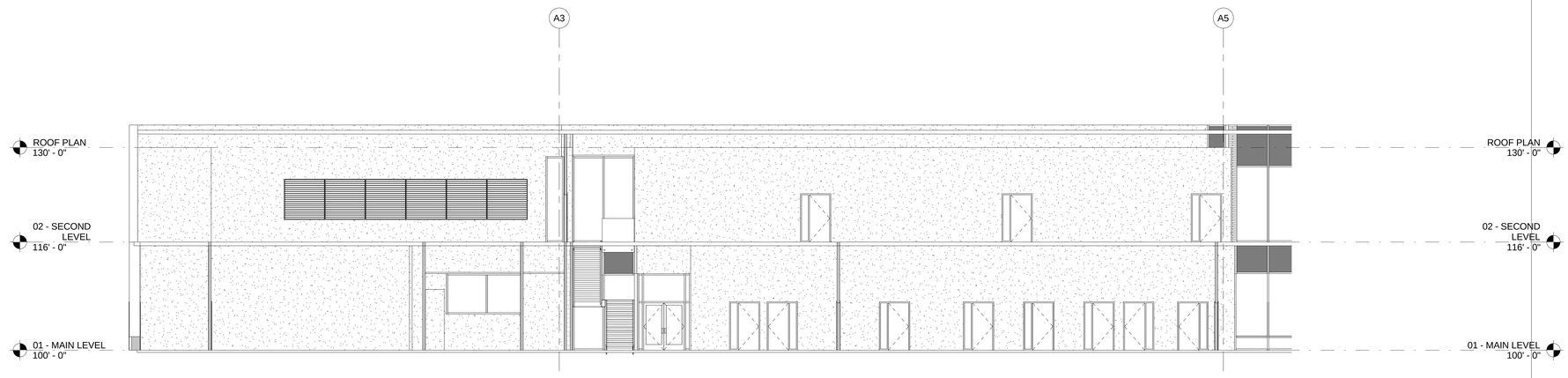
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

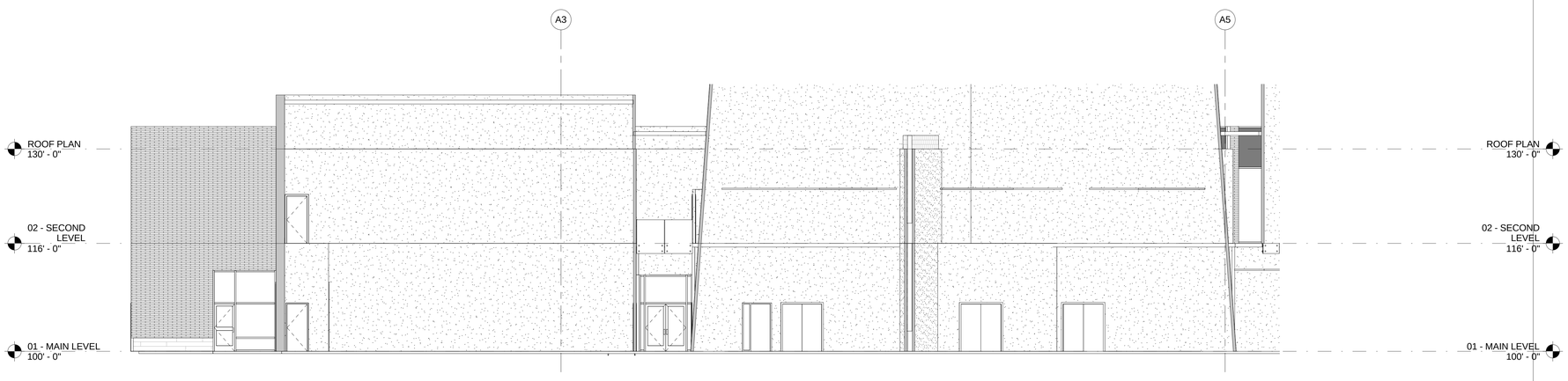
revisions :

title:
Exterior Elevations

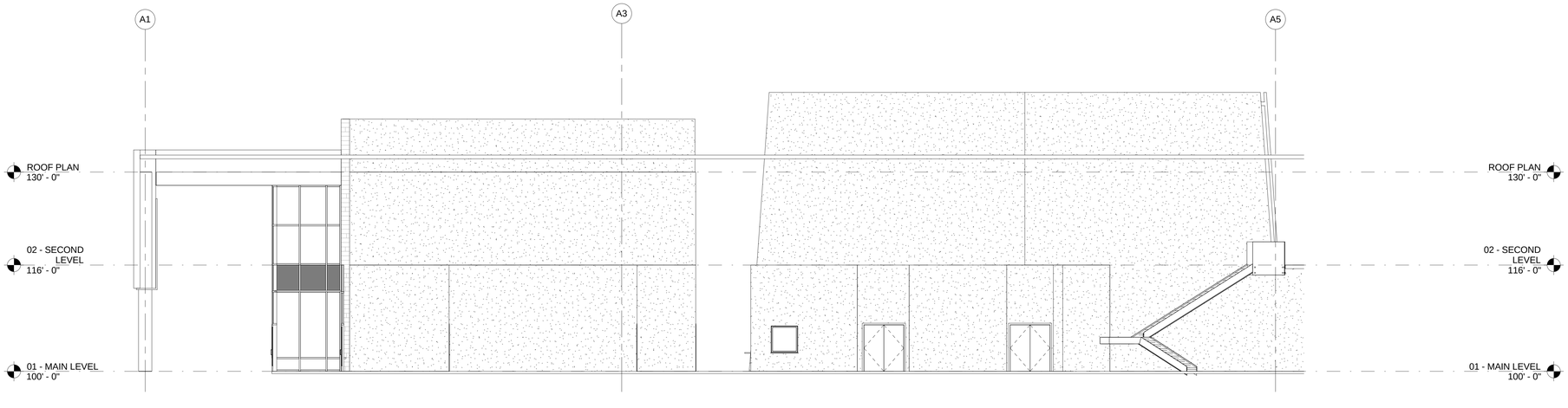
sheet:
AE202



3 BUILDING SECTION
1/8" = 1'-0"



2 BUILDING SECTION
1/8" = 1'-0"



1 BUILDING SECTION
1/8" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

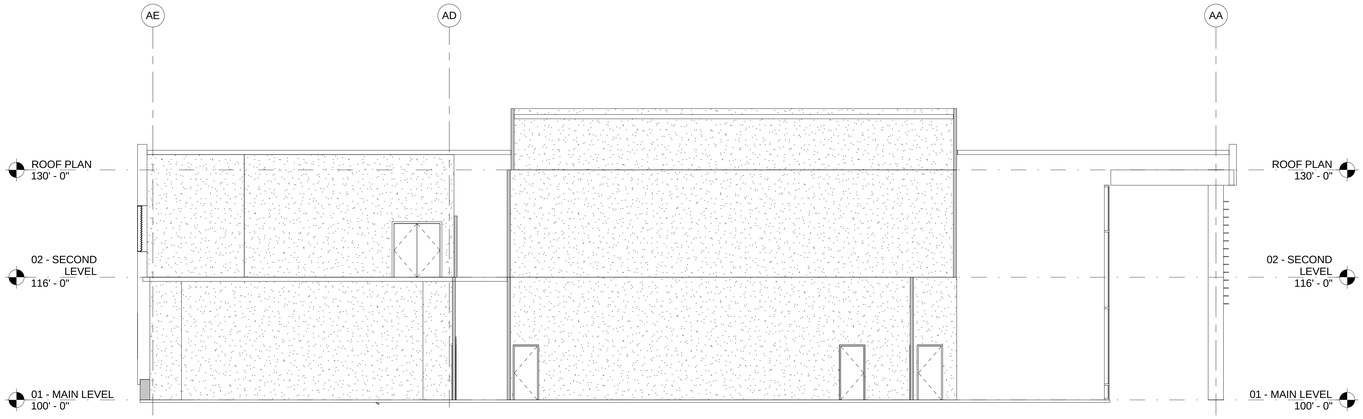
451 E 400 N
Price, UT 84501

project#: 13:0170
date: 12/02/2013

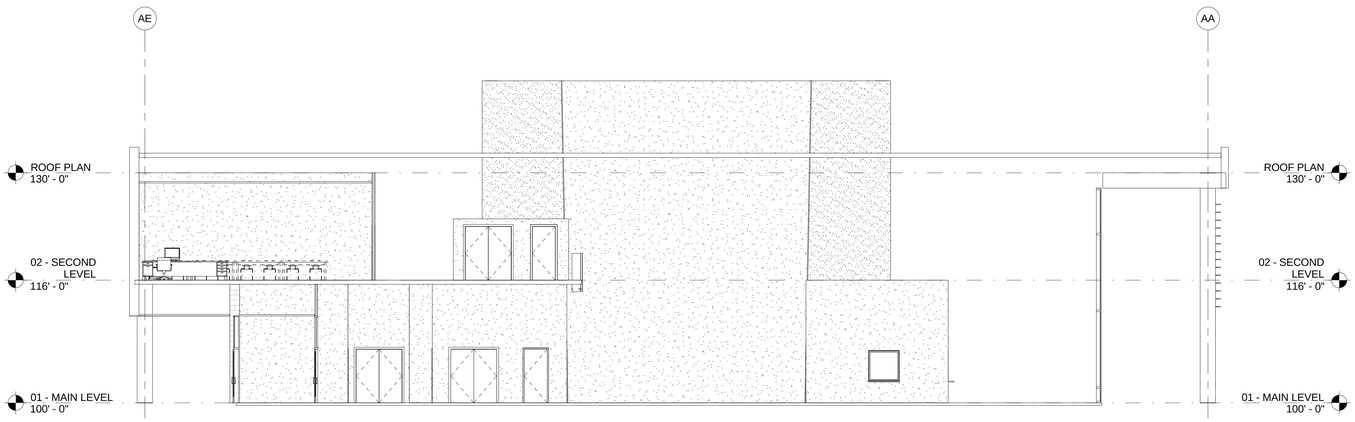
revisions :

title:
Building Sections

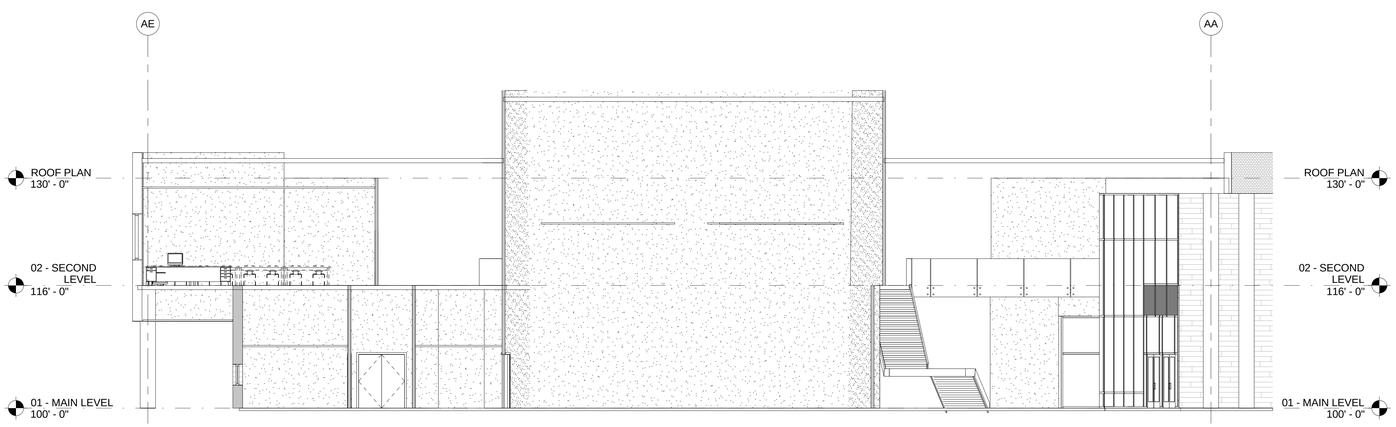
sheet:
AE301



1 Building Section
1/8" = 1'-0"



2 Building Section
1/8" = 1'-0"



3 Building Section
1/8" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

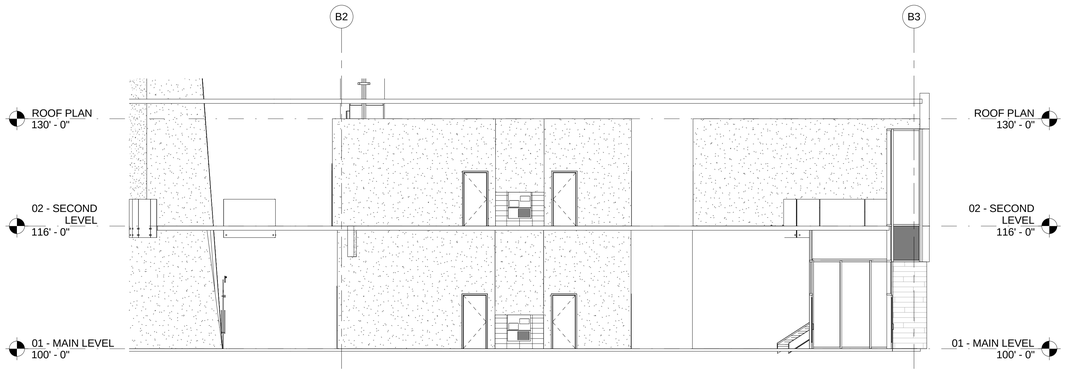
451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

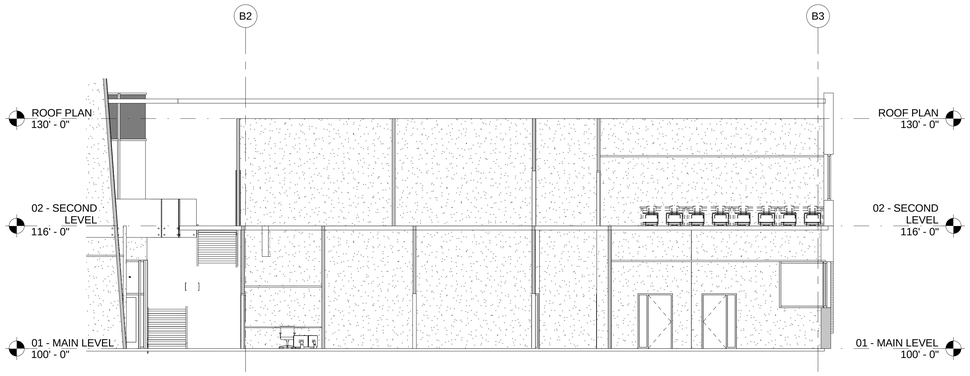
revisions :

title:
Building Sections

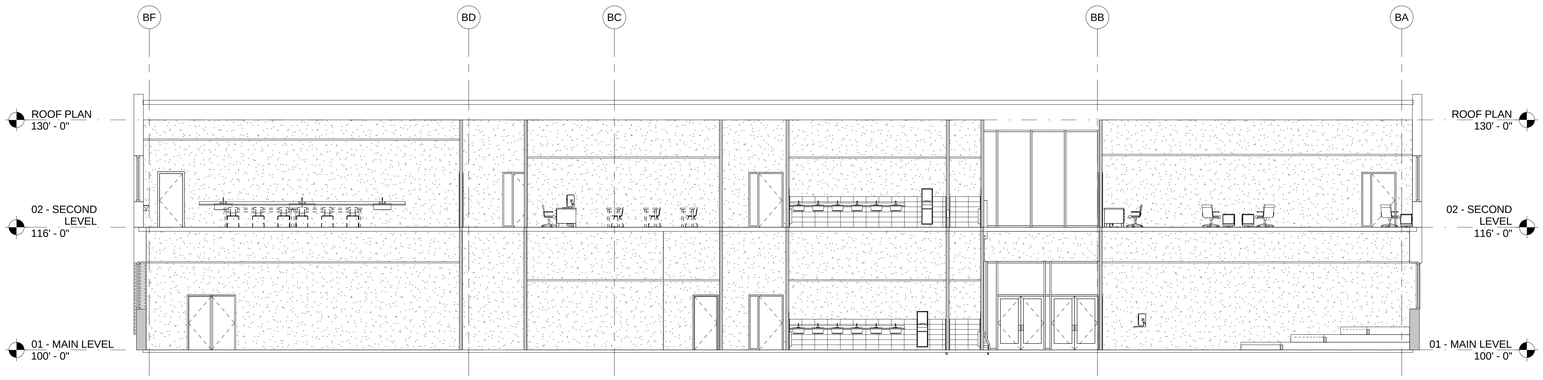
sheet:
AE302



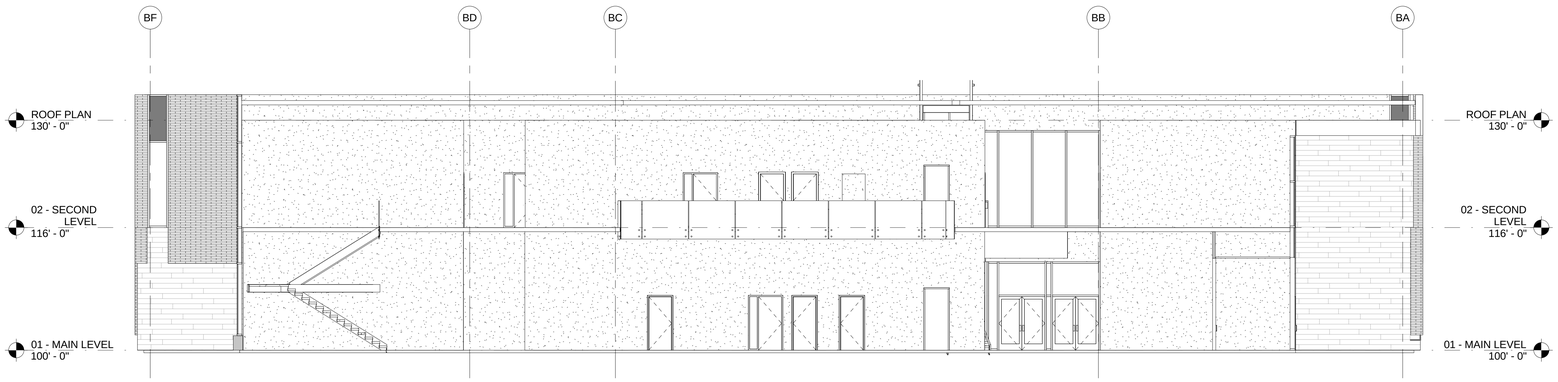
2 BUIULDING SECTION
1/8" = 1'-0"



1 BUIULDING SECTION
1/8" = 1'-0"



4 BUIULDING SECTION
1/8" = 1'-0"



3 BUILDING SECTION
1/8" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB,
Schematic Design

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 12/02/2013

revisions :

title:
Building Sections

sheet:
AE303

1. Design Criteria

1.1. Governing Building Code: 2012 International Building Code (IBC)

1.2. Live Loading:
- A. Roof Live Load: .... 20 psf
- B. Roof Snow Load: .... 30 psf + Drift per IBC
  1. Ground Snow Load, P_g: .... 43 psf
  2. Snow Exposure Factor, C_e: 1.0
  3. Importance Factor, I_S: 1.1
  4. Thermal Factor, C_t: 1.0
- C. Floor Live Load: .... 80 psf + 15 psf (partitions)
- D. Floor Live Load: .... 100 psf (Lobbies & Stairs)

1.3. Earthquake:
- A. Risk Category: III
- B. Seismic Design Category C
- C. Spectral Response Accelerations:
  - S_S = 0.43 g S_{DS} = 0.31 g
  - S_1 = 0.13 g S_{D1} = 0.14 g
- D. Soil Site Class: C
  - F_a = 1.20 F_v = 1.67
- E. Basic Seismic-Force-Resisting System: .... Special SCBF / Special RCSW
  - R = 6.0 C_d = 5.0 Ω_0 = 2.5
- F. Importance Factor, I_E: 1.25
- G. Design Base Shear: .... (see analysis)
- H. Design Story Drift, Δ: .... 0.54 in (max. elastic displacement)
- I. Analysis Procedure: .... Equivalent Lateral Force (Static)

1.4. Wind:
- A. Basic Wind Speed (3-second gust): .... 120 mph
- B. Importance Factor, I_W: 1.0
- C. Exposure: C
- D. Internal Pressure Coefficient, GC_{pi}: 0.18
- E. Topographic Factor, K_{ht}: 1.0
- F. Components and Cladding Design Pressure:

Design Wind Pressure (psf)					
Location		Tributary Area (ft^2)			
		< 10	50	100	> 500
Walls	Within 10 ft of building corner	-	-	-	-
	All other areas	-	-	-	-
Roof	Within 10 ft of building corner	-	-	-	-
	Within 10 ft of building edge	-	-	-	-
	All other areas	-	-	-	-

1.5. Foundation:
- A. 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/her own risk.
- B. Soils Report by RB&G Engineering, dated September 24, 2013.
- C. Soil Bearing Pressure: .... 4000 psf, on 15 feet of compacted fill.
- D. Lateral Soil Pressure Fluid Equivalent Density.
  1. Active: .... 35 pcf (retaining walls)
  2. At Rest: .... 55 pcf (rigid foundation walls)
  3. Passive: .... 300 pcf
  4. Increase for Seismic: .... 20 pcf
- E. Coefficient of Friction: 0.35

1.6. Classification for Fire Rated Construction:
- A. For the purpose of determining fire-resistive assemblies, open-web steel framing members shall be considered unrestrained. All other steel floor and roof framing members shall be considered restrained.
- B. Diagonal members in vertical braced frames shall be considered as secondary members for fire proofing protection

2. Earthwork

2.1. Clearing: The entire building area shall be scraped to remove the top 6 - 12 inches of soil, including all vegetation and debris.

2.2. Topsoil, organics, debris, unsuitable fill and other deleterious materials should be removed from below proposed foundation areas Remove and replace it with compacted structural fill that extends at least 6 feet beyond the perimeter of the building.

2.3. 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 GSN).

3. Concrete

3.1. Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-11, "Building Code Requirements for Structural Concrete."
- A. Concrete mix design requirements shall be as follows:

Location	f'c at 28 days (psi)	Max W/C Ratio	Air Content (%)	Max Aggregate Size	Exposure Classes*		
					F	S	C
Footings	3000	0.45	4.5	1"	F1	S0	C1
Interior Slabs on Grade	3000	0.45	-	1"	F0	S0	C0
Exterior Walls	4500	0.45	5	¾"	F1	S0	C1
Walls	4000	0.45	-	¾"	F0	S0	C0
Exterior Columns	4500	0.45	5	¾"	F1	S0	C1
Columns	4000	0.45	-	¾"	F0	S0	C0
Joist, Beams and Suspended Slabs	4000	0.45	-	¾"	F0	S0	C0
Tilt-Up Wall Panels	4500	0.45	5	¾"	F1	S0	C1
Concrete over Steel Deck	3000	0.45	-	¾"	F0	S0	C0
All other site cast concrete	4500	0.45	4.5	1"	F1	S0	C1

* Exposure Classes are per ACI 318, Section 4.2.1, where F, S and C are exposure categories for freezing and thawing, sulfate, and corrosion protection of reinforcement, respectively.

- B. Cementitious Materials:
  1. Portland Cement (ASTM C150):
     - a. Type I or II for exposure class S0.
     - b. Type II or V for exposure class S1.
     - c. Type V for exposure class S2 and S3.
  2. Fly Ash (ASTM C618, Class C or F): maximum fly ash content as a percentage of total weight of cementitious materials shall be 25 percent.
- C. Concrete Density (Maximum Air Dry Weight):
  1. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot. Aggregate shall be ASTM C33.
  2. Lightweight concrete shall not exceed 110 pounds per cubic foot and shall be made of lightweight coarse aggregates and either lightweight and/or normal weight fines meeting ASTM C330.
- D. Reinforcement steel:
  1. ASTM A615 Grade 60, fy = 60,000 psi min. unless noted otherwise.
  2. Reinforcement at concrete moment frames and shear wall jambs shall be ASTM A706 or ASTM A615 Grade 60, with the following properties:
     - a. Actual yield strength based on mill tests shall not exceed 78,000 psi.
     - b. Retest shall not exceed 81,000 psi.
     - c. Ratio of actual ultimate tensile stress to actual yield strength shall not be less than 1.25.
     - d. Mill tests shall be submitted to the Engineer.
- E. Admixtures:
  1. Air-entraining admixtures, comply with ASTM C 260 (when used).
     - a. Tolerance on air content as delivered shall be +/- 1.5%.
     - b. 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.
  2. The use of super plasticizers and water reducers is allowed, but not required.
  3. Calcium chloride or admixtures containing calcium chloride shall not be added to the concrete mix.
  4. Shrinkage-reducing admixtures in the interior slab on grade, complying with the project specifications.
- F. Chloride Ion: Maximum water soluble chloride ion concentrations in hardened concrete at age between 28 and 42 days contributed from the ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed a maximum, by weight of cement, of 1.00% for concrete with exposure class C0, 0.30% for concrete with exposure class C1, 0.15% for concrete with exposure class C2, and 0.06% for all prestressed concrete.
- G. Slump Limit: 4 inches, maximum for all concrete prior to the addition of plasticizers and water reducing admixtures. The concrete supplier shall indicate the final slump of each concrete mix in the submitted mix design.
- H. Shrinkage Limit: Interior slabs on grade shall have a drying shrinkage limit of 0.04 percent tested in accordance with ASTM C157. Drying shrinkage test results shall be submitted with mix designs.
- I. Only one grade or type of concrete shall be poured on the site at any given time.

3.2. 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.
- A. Pre-camber 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.

3.3. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".
- A. Cast-in-place Concrete: Specified Cover
  1. Cast against and permanently exposed to earth: .... 3"
  2. Formed concrete exposed to earth or weather:
     - #6 thru #18 bars .... 2"
     - #5 and smaller bars .... 1.1/2"
  3. Concrete not exposed to weather or in contact with ground:
     - Slabs, Walls, Joists; #11 bars and smaller .... 3/4"
     - Beams, Columns: primary reinforcement, ties, stirrups, spirals .... 1.1/2"
  4. Concrete Tilt-Up Panels:
     - #8 and smaller bars .... 1"
     - #9 thru #18 bars .... 2"

3.4. Construction Joints and Control Joints:
- A. Provide a surface intentionally roughened to ¼" amplitude in all wall footings. 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.
- B. All horizontal and vertical construction joints shall have a surface intentionally roughened to ¼" amplitude. A continuous 2 X 4 keyway may be used on elements other than shear walls.
- C. Provide reinforcement dowels to match the member reinforcement across the joint, unless noted otherwise. For dowels across construction joints and wall to footing connections of concrete shear walls, refer to specific project plans, schedules, and details.
- D. Construction joints in suspended concrete pours shall be made at the center of spans.
- E. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction.
- F. 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. See typical details for joint configuration.
- G. Control joints in visually exposed walls, unless noted otherwise: (Joints shall line up with masonry and architectural joints, see drawings.)
  1. Vertical control joints at 10'-0" on center.
  2. Reinforcing shall be continuous through control and construction joints, unless noted otherwise.
  3. Control joints in concrete foundation walls shall line up with masonry control joints.
- H. Control joints shall be installed in concrete slabs over steel deck by saw-cutting along girders and purlins at interior grid lines. See typical details for joint size and reinforcement. Reinforcement required shall be in addition to any slab reinforcement.

3.5. Detailing: All reinforcing, including welded wire fabric, 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.
- A. Lap splice lengths shall be detailed to comply with the CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE SCHEDULE.
- B. All mechanical splices shall have the capacity to develop at least 1.25fy of the bar in tension or compression. Type 2 couplers have the capacity to develop the full tension capacity of the bar. Type 1 couplers shall not be used in moment frames and shear wall jamb columns. Mechanical splices shall have a current ICC Code Evaluation Report; "Lenton" (ER-3967), "Taper-Lock" (ESR-2481) or "SAS Stressteel" (ESR-1163) tapered threaded rebar splices, "Bar-Lock" (ESR-2495) bolt coupling sleeves or approved equivalent may be used. Mechanical couplers on adjacent bars shall be staggered a minimum of 24" apart along the longitudinal axis of the reinforcing bars.
- C. All embedded elements and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
- D. Use chairs or other support devices recommended by CRSI to support and tie reinforcement bars and welded wire fabric prior to placing concrete. Welded wire fabric shall be continuously supported at 36" o.c. maximum.
- E. See typical details for reinforcing at wall intersections and ends, reinforcing around wall openings and suspended slab openings, vertical wall dowels, concrete column ties and splices in vertical column reinforcing.
- F. See typical details for column cross-ties. The 90-degree hooks of two successive crossties engaging the same longitudinal bars shall be alternated end for end.
- G. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
- H. 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.

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

Wall Thickness	Horizontal Reinforcing	Vertical Reinforcing
6"	#4 @ 12" o.c.	#4 @ 18" o.c.
8"	#4 @ 12" o.c.	#4 @ 16" o.c.
10"	#5 @ 12" o.c.	#4 @ 12" o.c.
12"	#4 @ 12" o.c. Each Face	#4 @ 18" o.c. Each Face
Others	0.25% of Wall Area	0.15% of Wall Area

Spacing shall exceed neither three times the wall thickness nor 18". In addition to the above reinforcing, 2 - #5 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.

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

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

4. Masonry

4.1. Construction Requirements:
- A. Masonry Veneer Attachment and Reinforcing:
  1. To steel stud and wood stud walls: Veneer shall be attached to the studs Dur-O-Wal DA 213S seismic veneer anchors or Hohmann & Barnard DW-10HS seismic veneer anchors (or equal) spaced at 16" o.c. Veneer anchors shall be attached to studs with #10 corrosion resistant self drilling screws. Attach the veneer to the anchors with Dur-O-Wal Seismic Steel Pintles or Hohmann & Barnard Seismiclip Interlock System (or equal) spaced at a maximum of 16" o.c. in both directions. Anchor ties shall engage to a galvanized No. 9 gauge horizontal joint reinforcement wire in the veneer which shall be continuous and shall be placed at 16" o.c. maximum at the center of the veneer.
  2. Other methods of attachment may be used after written acceptance by the architect and structural engineer.
  3. Steel Lintels: Provide steel angle lintels at all openings through the masonry veneer. Provide one inch of bearing for each foot of width of opening, with a minimum bearing of six inches. See the Steel Angle Lintel Schedule for size.

5. Structural Steel

5.1. Material:
- A. W-Shapes: ASTM A992, (F_y = 50 ksi), except as noted otherwise.
- B. All Other Shapes and Plates: ASTM A36 (Fy = 36 ksi), except as noted otherwise.
- C. Rectangular and Square Hollow Structural Sections (HSS): ASTM A500, Grade B (Fy = 46 ksi).
- D. Round HSS: ASTM A500, Grade B (Fy = 42 ksi).
- E. Steel Pipe: ASTM A53, Grade B (Fy = 35 ksi).
- F. Deformed Bar Anchors (DBA): ASTM A496.
- G. Headed Stud Anchors (HSA): ASTM A108, with dimensions complying with AISC specifications.
- H. Anchor Rods: ASTM F1554, Grade 36 with ASTM A563 heavy hex nuts and ASTM F436 hardened washers, unless noted otherwise.
- I. Structural steel that is part of the seismic force resisting system shall be supplied with minimum Charpy V-Notch impact test results of 20 ft-lbs. absorbed energy at 70 degrees Fahrenheit, indicated below:
  1. Hot rolled shapes with flanges 1.1/2" thick and thicker tested in the alternate core location as described in ASTM A6 Supplementary requirement S30.
  2. Plates 2" and thicker measured at any location permitted by ASTM A673.
  3. Test Frequency: Each heat.

5.2. Fabrication and construction shall comply with the following Codes and Standards:
- A. American Institute of Steel Construction (AISC) 360-10, "Specification for Structural Steel Buildings".
- B. AISC 341-10, "Seismic Provisions for Structural Steel Buildings".
- C. AISC 303-10, "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.
  1. 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.
- D. AISC 2004, "Specification for Structural Joints Using ASTM A325 or A490 Bolts"
- E. American Welding Society (AWS) D1.1-04, "Structural Welding Code – Steel" (specific items do not apply when they conflict with the AISC requirements).
- F. American Welding Society (AWS) D1.8-05, "Structural Welding Code – Seismic Supplement" (specific items do not apply when they conflict with the AISC requirements).
- G. Steel Joist Institute (SJI) 2005, "Standard Specification, Load Tables and Weight Tables for Steel Joists and Joist Girders," and "Recommended Code of Standard Practice."
- H. Steel Deck Institute (SDI) 2005.
- I. American Iron and Steel Institute (AISI) 2007, "North American Specification for the Design of Cold-Formed Steel Structural Members."

5.3. 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.

5.4. Welding:
- A. It is recommended the steel erection contractor and steel fabricator contact the Quality Assurance Agency prior to beginning any 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.
- B. Certification of Welders: All shop and field welding shall be executed by AWS certified welders who have been specifically certified for the process of welding being performed. The welder's certification will be considered as being current unless the welder is not engaged in the process of welding being performed for a period exceeding six months or there is a specific reason to question a welder's ability 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.
- C. Electrodes: E-70 XX or as noted otherwise. E60 XX may be used for welding steel floor and roof decks.
- D. 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.
- E. 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).
- F. Bolts: Do not apply any welds, including "tack" welds to bolts, including anchor bolts, except as specifically detailed in the drawings.
- G. 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.
- H. Special Provisions for Welds in the SLRS (Seismic Load Resisting Systems): Welds used in members and connections of moment frames, braced frames, and collector elements shall comply with these requirements. Welding methods, procedures and quality control shall comply with AISC 341, AWS D1.1, AWS D1.8 and the following:
  1. Demand Critical Welds: The following CJP groove welds are demand critical and shall comply with the special requirements for Demand Critical Welds.
     - a. Beam flanges to columns, single plate shear connections to columns, and beam webs to columns in moment frames.
     - b. Column splice welds including column bases in moment frames and braced frames.
     - c. Link beams to columns in Eccentrically Braced Frames.
     - d. Web plate to flange plate welds in built-up Eccentrically Braced Frame link beams.
     - e. Other welds designated as demand critical in the drawings.
  2. Welding shall be performed in accordance with AISC 341 Appendix W and a welding procedure specification (WPS) as required in AWS D1.1. WPS variables shall be within the parameters established by the filler metal manufacturer. WPS for demand critical welds shall also comply with AWS D1.8 Section 6.1.
  3. All welds except for demand critical welds shall be made with a filler metal that can produce welds that have a minimum Charpy V-Notch toughness of 20 ft-lb at 0 degrees Fahrenheit, as determined by the appropriate AWS A5 classification test method or manufacturer certification.
  4. Demand critical welds shall be made with a filler metal that can produce welds that have a minimum Charpy V-Notch toughness of 20 ft-lb at -20 degrees Fahrenheit, as determined by the appropriate AWS A5 classification test method or manufacturer certification and 40 ft-lb at 70 degrees Fahrenheit as determined by AISC 341 Appendix X.
  5. Backer bars shall be removed from the beam bottom flange to columns. The root of the weld shall be back gouged to sound metal to remove all slag and cracks. Weld the back gouged region and finish welding using a reinforcing fillet weld. Comply with AWS D1.8 sections 6.7 and 6.8. This requirement also applies to all non-fusible backing used at beam to column CJP welds.
  6. Steel backer bars need not be removed from the beam top flange connections to columns or at continuity plate connections to columns provided that the backer bars are welded to the column flange with a continuous 5/16 inch fillet weld on the edge below the CJP groove weld for the entire length of the backer bar.
  7. Backing at beam flange to column flange joints shall not be welded to the underside of the beam flange, nor tack welded at this location. If fillet welds or tack welds are placed between the backing and the beam flange in error, they shall be repaired per AWS D1.8 Section 6.12.3.
  8. Details and treatment of weld tabs shall be per AWS D1.8 Section 6.10. Use weld tabs as specified in AWS D1.1 Section 5.31 except at the end of CJP welds adjacent to the column web/flange juncture at continuity plates. Remove weld tabs to within 1/8 inch of the base metal surface after welding. Where weld tabs are used at continuity plates, remove them to within 1/4 inch of the base metal surface after welding. Finish the edge where weld tabs are removed to a surface roughness of 500 microinches.
  9. CJP joints in members with different thickness or widths (such as column splices) shall be transitioned in a manner that the slope in the transition does not exceed 1 in 2.1/2. The transition shall be accomplished by chamfering the thicker part, tapering the wider part, sloping the weld metal, or by a combination of these.
  10. Quality requirements for weld access holes for all demand critical welds shall comply with AWS D1.8 Section 6.9.2. Weld access hole shape shall be per AWS D1.8 Figure 6.2.
  11. Beam bottom flange welding sequence shall comply with AWS D1.1 Section 6.14.
  12. Filler and weld metal shall comply with AWS D1.8 Section 6.3 in addition to the following:
      - a. Intermixed filler metals shall comply with AISC 341 Appendix W5.1.
      - b. Filler metal diffusible hydrogen shall comply with AISC 341 Appendix W.5.2.
  13. Preheat, and interpass temperatures shall comply with AWS D1.1 Section 3.5, AWS D1.8 Section 6.5 and AISC 341 Appendix W5.4.
  14. Additional welding provisions applicable to demand critical welds only are as follows:
      - a. Welding processes shall comply with AWS D1.8 Section 6.2.
      - b. Filler metal packaging and exposure limitations shall comply with AISC 341 Appendix W6.2 and W6.3 and AWS D1.8 Section 6.4.
  15. Tack welds shall comply with AWS D1.1 Section 5.18 and AWS D1.8 Section 6.16. Tack welds attaching backing bars and weld tabs at demand critical welds shall be placed where they are incorporated into a final weld.
  16. Unrepaired cracks, gouges, grooves and notches will not be permitted in the joint area. Arc strikes, gouges and other imperfections within or adjacent to the joint, shall be repaired or removed in accordance with AWS D1.8 Section 6.15.4.
  17. Braced Frame Welding: Lengths shown for fillet welds at 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.

5.5. Bolted Connections:
- A. Provide snug tightened joints with ASTM A325N Type 1 bolts for steel to steel connections, as noted herein or as noted on the drawings. Snug tightened joints shall be used in connections for simple span framing and beam (or girder) to bearing plate connections. The snug tightened 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 plies of the joint are in firm contact.
- B. 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.
- C. 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.
- D. Bolts, nuts and washers shall not be reused.

5.6. Steel Lintels
- A. Provide steel angle lintels at all openings through the masonry veneer. Provide one inch of bearing for each foot of width of opening, with a minimum bearing of six inches. See the Steel Angle Lintel Schedule for size.

5.7. Beam Web Stiffener Plates:
- A. 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"

5.8. Composite Beams
- A. Composite beams are indicated on the framing plans with the suffix ( ). The number inside the brackets indicates number of studs for this beam. Beams shall have the studs spaced uniformly over the entire beam length.
- B. Beams which have more than one number inside the symbol (, ,), such as (W, X, Y, Z), shall have "W" number of studs spaced evenly over the first "section of beam", "X" number of studs spaced evenly over the second "section of beam", "Y" number of studs spaced evenly over the third "section of beam", and "Z" number of studs spaced evenly over the fourth "section of beam". A "section of beam" is defined as that portion of beam located between the column and the nearest intersecting framing member or that portion of beam located between two adjacent intersecting framing members.
- C. All headed stud type shear connectors shall be in conformance with ASTM A108. Dimensions shall comply with AWS. Use 3/4" diameter studs. Headed studs shall extend 2" minimum above the top of the steel deck after welding. Headed studs shall be applied through the metal deck to the top flange of the steel section, or welded directly to the steel section.
- D. The minimum center-to-center spacing of stud connectors shall be six (6) diameters along the longitudinal axis of the supporting composite beam and four (4) diameters transverse to the longitudinal axis of the supporting composite beam. The maximum center to center spacing shall not exceed 32".
- E. C= 0.00" on the plans denotes precamber dimension (upward) in inches.

5.9. Open Web Steel Joists and Girders:
- A. The steel joist supplier shall be responsible for the design of all open web steel joists and girders. Joists or girders with slopes greater than 1/2 inch per foot shall be designed to meet or exceed the load capacities, listed in the SJI load tables, of the joist or girder sizes indicated on the framing plan, as if the joists or girders were installed level.
- B. Open web joists and girders shall be designed with deflection limits of L/240 for total load and L/360 for live load, where L is the joist span.
- C. Where uplift loads due to wind are indicated, rows of bottom chord bridging shall be provided at the first bottom chord panel points per SJI Specifications. This is in addition to the bridging shown on the framing plans.
- D. Provide special bearing ends to accommodate slopes from sloped joists, sloped girders or sloped bearing conditions.
- E. Camber: All joists shall be cambered as specified in the SJI specifications, unless noted otherwise.
- F. Field Modifications: Do not modify any joist or girder, including holes through the top and bottom chords, without the written consent and direction from the manufacturer.
- G. Shop Drawings and Design Calculations: Shop drawings for all joists and girders used in the project shall be submitted for review. Prior to the fabrication of joists and girders, the open web steel joist and girder manufacturer shall prepare complete joist and girder calculations under the direct supervision of a professional engineer licensed in the State of Utah. Calculations shall be submitted for review for joists and girders designated as SPECIAL or SP and for all joists or girders with axial loads or additional concentrated loads (as noted on the drawings). Submitted calculations shall bear the seal of a professional engineer licensed in the State of Utah.
- H. Stabilizer Plates: Provide steel joist and joist girder stabilizer plates as indicated. Stabilizer plates shall be 6" x 6" with a 13/16" diameter hole with 1.1/2" minimum edge distance, and shall

ABBREVIATIONS

@	AT
AB	ANCHOR BOLT (S)
ABV	ABOVE
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
BLDG	BUILDING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
CJ	CONSTRUCTION JOINT OR CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
D.B.	DECK BEARING
DBA	DEFORMED BAR ANCHORS
DBL	DOUBLE
DET	DETAIL
DIA (OR Ø)	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DK	DECK
DN	DOWN
DWG	DRAWING
DWL	DOWEL
E.F.	EACH FACE
E.J.	EXPANSION JOINT (SEISMIC SEPARATION JOINT)
E.W.	EACH WAY
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION / EXPOSED
EXT	EXTERIOR
F.D.	FLOOR DRAIN
F.F.	FINISH FLOOR
FDTN	FOUNDATION
FIN	FINISH
FL	FLOOR
FP	FULL PENETRATION
FT	FOOT
FTG	FOOTING
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GLB	GLU-LAMINATED BEAM
GR	GRADE
GSN	GENERAL STRUCTURAL NOTES
HB	HORIZONTAL BRIDGING
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHORS
HT	HEIGHT
I.F.	INSIDE FACE
IBC	INTERNATIONAL BUILDING CODE
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ICC	INTERNATIONAL CODE COUNCIL
IN	INCH
INSUL	INSULATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIPS - 1,000 POUNDS
KLF	KIPS PER LINEAL FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LF	LINEAL FOOT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
MAS	MASONRY
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O.C.	ON CENTER
O.F.	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OWSJ	OPEN WEB STEEL JOIST
PCF	POUNDS/CUBIC FOOT
PL	PLATE
PLF	POUNDS/LINEAL FOOT
PNL	PANEL
PP	PARTIAL PENETRATION
PSF	POUNDS/SQ FOOT
PSI	POUNDS/SQ INCH
PT	POINT
R.D.	ROOF DRAIN
REINF	REINFORCING
REQ'D	REQUIRED
SHT	SHEET
SI	SPECIAL INSPECTION

ABBREVIATIONS

SIM	SIMILAR
SOG	SLAB ON GRADE
SQ	SQUARE
STAG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STR	STRUCTURAL
T & B	TOP AND BOTTOM
T.O.	TOP OF
TEMP	TEMPERATURE
THDS	THREADS
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF SLAB
TOST	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W.P.	WORK POINT
W/	WITH
WWF	WELDED WIRE FABRIC
YD	YARD

PLAN MARKS

BF-#	BRACED FRAME
CB-#	CONCRETE BEAM
CC-#	CONCRETE COLUMN
CCSS-#	CANTILEVERED CONCRETE SUSPENDED SLAB
CDP-#	CONCRETE DRILLED PIER
CFW-#	CONCRETE FOUNDATION WALL
CGB-#	CONCRETE GRADE BEAM
CJ-#	CONCRETE JOIST
CJC-#	CONCRETE JAMB COLUMN
CL-#	CONCRETE LINTEL
CP-#	CONCRETE PIER
CRW-#	CONCRETE RETAINING WALL
CSG-#	CONCRETE SLAB ON GRADE
CSH-#	CONCRETE SHEAR HEAD
CSS-#	CONCRETE SUSPENDED SLAB
CSW-#	CONCRETE SHEAR WALL
CW-#	CONCRETE WALL
FC#	CONTINUOUS FOOTING
FM#	MAT FOOTING
FR#	RECTANGULAR FOOTING
FS#	SQUARE FOOTING
FTS#	THICKENED SLAB FOOTING
HD-#	HOLD DOWN ANCHOR
MC-#	MASONRY COLUMN
MF-#	MOMENT FRAME
ML-#	MASONRY LINTEL
MP-#	MASONRY PIER
MW-#	MASONRY WALL
PTB-#	POST-TENSIONED CONCRETE BEAM
SBP-#	STEEL BASE PLATE
SC-#	STEEL COLUMN
SCP-#	STEEL CAP PLATE
SD-#	STEEL DECK
SDA-#	STEEL DECK ATTACHMENT
SG-#	STEEL GIRDER
SJ-#	STEEL JOIST
WB-#	WOOD BEAM
WBW-#	WOOD BEARING WALL
WC-#	WOOD COLUMN
WD-#	WOOD DIAPHRAGM
WJ-#	WOOD JOIST
WSW-#	WOOD SHEAR WALL

STRUCTURAL DRAWING LIST

SHEET NO.	SHEET NAME
SE001	GENERAL STRUCTURAL NOTES
SE002	GENERAL STRUCTURAL NOTES
SB101	FOOTING & FOUNDATION PLAN
SF101	FLOOR FRAMING PLAN
SF102	ROOF FRAMING PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers
P: 801.486.3883
F: 801.485.0911
675 E. 500 S. Suite 400
Salt Lake City, Utah 84102
www.reaveley.com

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone: (801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU EASTERN CIB

451 E 400 N Price, Utah 84501

project#: 2013.235
date: 11/27/13

revisions :

title:
GENERAL STRUCTURAL NOTES

sheet:
SE001

SCHEMATIC DESIGN

extend 3" minimum below the bottom chord of the joist or girder. Plate thickness shall be equal to the chord gap minus 1/4", or 3/4", whichever is less.

I. Verify size, weight, location and configuration of all roof top equipment with architect and mechanical engineer. Provide steel frames for support of roof top equipment as indicated on structural details in the structural drawings. Coordinate openings with the mechanical and general contractor.

J. All concentrated loads greater than 100 pounds supported by open web steel joists and girders shall be located within 6 inches of joist or girder panel points or the joist or girder shall be reinforced with an additional web member. Refer to the "TYPICAL DETAIL AT ADDITIONAL CONCENTRATED POINT LOAD" in the structural drawings.

K. Concentrated point loads, single or multiple, totaling 100 pounds or less can be located at any point along the top or bottom chord of an open web steel joist or girder between adjacent panel points without meeting the requirements above. A limit of four concentrated 100# maximum point loads per joist or girder will be permitted on spans of 12' or greater; one concentrated 100# max. load on spans less than 12', unless specifically noted otherwise on the structural drawings.

L. Joist bridging shall never be used to support hanging loads.

M. Bracing of miscellaneous items (mechanical, electrical, plumbing, etc.) to the bottom chord of joists or girders will not be allowed in any instance. All lateral braces must connect to the top flange/top chord of the framing member above unless noted otherwise on the structural drawings.

5.10. Steel Floor Deck:

A. 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.

B. Steel floor deck shall be 3" 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 (in³/ft) =	0.534	0.767
Minimum I (in⁴/ft) =	0.896	1.203

Painted deck shall be coated with special paint to receive sprayed-on fire proofing, where required.

C. A 3" thick (6" overall) 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 - W2.0 x W2.0 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.

D. 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.):
1. 12" o.c. to supports perpendicular to deck corrugations (4 welds per 36" wide sheet).
2. 12" o.c. to all supports parallel to deck corrugations.
3. Stud welds may take the place of puddle welds where studs are welded through the deck to the top flange of beams.
4. All welded surfaces shall be dry before welding deck or studs to supports.

E. Attach interlocking seams with 3/16" button punch at 12" o.c. or 1 1/2" top seam weld at 12" 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.

F. 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.

G. Deck shall have a minimum bearing length of 2".

5.11. Steel Roof Deck:

A. Steel roof 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.

B. Steel roof deck shall be 1 ½" deep X 20 Gauge minimum galvanized (G60), type "B" wide rib deck with interlocking side seams with the following properties:

	20 Gauge	18 Gauge
Minimum S (in³/ft)=	0.234	0.322
Minimum I (in⁴/ft)=	0.213	0.296

Painted roof deck shall be coated with special paint to receive sprayed-on fire proofing, where required.

C. Weld steel roof deck to supporting framing members with 3/4" diameter puddle welds at the following spacings (Closer spacings may be used to develop minimum shear requirements.):
1. 12" o.c. to all supports perpendicular to deck corrugations (4 welds per 36" sheet).
2. 12" o.c. to the following supports parallel to deck corrugations: All perimeter supports, all concrete or masonry walls, all joists or joist girders with a "T/C" designation, and all steel beams which are on a grid line with braced frames or moment frames.
3. 12" o.c. to all other supports parallel to deck corrugations.
4. All welded surfaces shall be dry before welding deck to supports.

D. Attach interlocking seams with 1 1/2" long top seam welds at 12" o.c. minimum between adjacent pieces of decking. Crimp side seams before welding. Closer spacings may be used to develop minimum shear requirements.

E. Alternate means of deck attachment and fastening using screws, pins or other mechanical fastening methods are permitted with approval of the engineer. The contractor shall submit the proposed attachment system and the code evaluation report demonstrating the system has the strength to meet the required deck shears specified above (in item 3) and on the plans. The flexibility factor of the proposed deck attachment system shall be equal to or less than the flexibility factor for the specified welded deck attachment system. If the alternate attachment method is approved, it is the responsibility of the contractor to ensure that the deck type and profile is compatible with the fastening system being used.

F. Provide a 2" minimum bearing and a 4-inch lap at the splice points of all pieces of deck.

G. All deck shall be 3-span continuous minimum where possible. The contractor shall provide heavier gauge deck as required for one or two span conditions to meet equivalent loading of the above deck under a three span condition.

H. Steel roof deck shall not be used to support loads from plumbing, HVAC ducts, light fixtures, architectural elements or equipment of any kind, unless specifically noted otherwise. Lightweight suspended acoustical ceilings with a total weight per wire not exceeding 50# may be hung from the steel roof deck. The hangers should be staggered to distribute the load over multiple deck flutes.

5.12. Cold-Formed Steel

A. Light Gauge Steel Framing:
1. Where steel framing size designators are used in the drawings, they follow the convention established by the Steel Stud Manufacturers' Association (SSMA) and the North American Steel Framing Alliance (NASFA). Framing members provided shall comply with the designations according to this convention.
2. All load bearing stud (and/or) joist framing members along with all runner, bridging, and end track shall be of the designation shown on the plans. All studs with base metal thickness of 54 mil and 68 mil, and joists with base metal thickness of 54 mil, 68 mil and 97 mil, shall be formed from steel meeting the requirements of ASTM A570 except that the steel shall have a 50,000 psi yield stress. All track and end closures with base metal thickness of 54 mil and 68 mil, bridging with base metal thickness of 54 mil, and studs and track with base metal thickness of 43 mil and 33 mil, shall be formed from steel with a minimum yield of 33,000 psi. All components shall be galvanized.
3. Follow all manufacturers' recommendations for the use of these products.
4. Unless noted otherwise, all welded connections shall be done using 1/8" AWS type 6013 or 7014 rod with a welding heat of 60-110 amperes depending on the gauge of material and the fit of the parts. Wire tying of framing components shall not be permitted.
5. All interior non-bearing steel stud walls that extend above the ceiling but do not attach to the floor or roof diaphragm (above) shall have diagonal braces at 45 degrees (+/-). The KL/r ratio of the brace shall not exceed 200 and shall not be spaced further apart than 10'-0". Connect diagonal braces to the top of the steel stud walls and to the underside of the top flange of the steel beams, open web joists or girders, etc. with 1/8" fillet welds all around. Diagonal angle braces may be connected to 8" x 8" x 1/4" steel plates which shall be anchored to the floor or roof decks which have concrete fill above with 2- 3/8" dia. expansion anchors for each plate. Connect angle to plate with a 1/4" fillet weld all around. Connect diagonal braces to roof decking which does not have concrete fill above per the non-bearing wall brace connection details shown on the structural drawings. Diagonal braces may be constructed from cold-formed light gauge steel studs but must conform to the kl/r ratio of less than 200 requirement. When diagonal brace lengths exceed 10'-0" (+/-), cold-formed box sections made from two 600S137-54 steel studs will likely be required.

B. Prefabricated Systems: Submit complete shop drawings and calculations of all elements for review. Submittals shall bear the stamp of a Professional Engineer registered in the State of Utah.

6. Special Instructions

6.1. 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.

6.2. 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.

6.3. 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.

6.4. Shoring and Bracing Requirements:

A. 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.

B. 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.

C. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self supporting.

6.5. All expansion joints (E.J.) shown in the structural drawings shall be considered seismic separation joints, unless noted otherwise.

6.6. 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.

6.7. 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.

6.8. 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.

6.9. 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 and 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.

1. Quality Assurance

1.1. Quality Assurance Agency Requirements:

A. The Owner shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. The QAA shall provide all information necessary for the building official to determine that the agency meets the applicable requirements
1. The QAA shall be objective, competent and independent from the contractor responsible for the work being inspected. The agency shall also disclose possible conflicts of interest to confirm objectivity.
2. The QAA shall have adequate equipment to perform required tests.
3. The QAA shall employ experienced personnel educated in conducting, supervising and evaluating tests and/or inspections. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material qualities.
4. Prior to the start of construction, the QAA shall submit to the building official, the owner architect and engineer copies of the following:
a. Current calibration records for all equipment to be used for the work being inspected and/or tested.
b. Current certification and training records for each individual performing the inspections and/or testing.
c. Sample inspection and testing reports and the distribution list for the records.
d. Proposed inspection procedures and frequency for each inspection required by the work.
e. Proposed testing methods and frequency of testing required by the work.
5. The QAA shall send copies of all inspection and testing reports to the building official, owner, architect, engineer and contractor. Reports shall indicate that the work inspected was or was not completed in conformance to the approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the building official, architect and engineer.
6. The QAA shall submit a final report documenting required special inspections and correction of any discrepancies noted in the inspections. The final report shall be distributed to the building official, owner, architect and engineer in a timely manner prior to the completion of the project.

1.2. Contractor Responsibilities:

A. Each contractor responsible for the construction of a system or component requiring special inspections or testing shall submit a written statement of responsibility to the building official, owner, architect and engineer prior to the commencement of the work. The contractor's statement of responsibility shall contain the following:
1. Acknowledgement of awareness of the special requirements defined in the statement of special inspections.
2. Acknowledgement that control will be exercised in order to obtain conformance to the approved construction documents.
3. Contractor's internal quality control procedures, methods and measures to be used in order to obtain conformance to the approved construction documents. Include copies of quality control reports, frequency of reporting and distribution of reports.
4. Identification and qualifications of the person(s) responsible for quality control and their position(s) within the organization.

B. Notification of Engineer: The contractor shall notify the engineer twenty-four hours prior to:
1. Placing concrete in any footing.
2. Closing any wall forms.
3. Placing concrete in any column, beam or suspended slab.
4. Grouting any masonry.
5. Completing the welding of major sections of steel decking.
6. Completing the nailing of any plywood wall or deck.

C. Notification of QAA: The contractor shall notify the QAA in a timely manner so that inspection and testing may be performed as outlined in the statement of special inspections.

1.3. Structural Observations by the Engineer of Record.

A. The Engineer of Record will perform structural observations at critical phases of the project. Copies of the engineer's report will be distributed to the architect, contractor, owner, and building official.

B. Observation visits to the site by the Engineer's field representatives shall not be construed as inspection or approval of construction.

2. Statement of Special Inspections

2.1. The following materials, systems and components require special inspection or testing per Chapter 17 of the International Building Code (IBC).

2.2. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases, periodic inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task.

Soils per IBC Section 1704.7

Item	Frequency	Detailed Instructions
Verify subgrade is adequate to achieve design bearing capacity	Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	Periodic	Prior to placement of compacted fill or concrete.
Verify that subgrade has been appropriately prepared prior to placing compacted fill	Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft² of surface area.
Verify proper materials, densities and lift thicknesses during placement and compaction.	Continuous	

Steel Construction per IBC Sections 1704.3, 1707.2 & 1708.3

Item	Frequency	Detailed Instructions
Material Verification (IBC Table 1704.3)		
Material verification of structural steel and cold-formed steel deck	Periodic	Verify identification markings of steel conform to ASTM standards noted in General Structural Notes. Verify manufacturer's certified test reports.
Material verification of high-strength bolts, nuts and washers	Periodic	Verify identification markings to conform to ASTM standards noted in General Structural Notes. Manufacturer's certificate of compliance is required.
Material verification of weld filler materials	Periodic	Verify identification markings to conform to AWS specification. Manufacturer's certificate of compliance is required.
Welding (IBC 1704.3.1)		
Complete & partial penetration groove welds	Continuous	Pre-welding inspections are to be performed to ensure that proper materials, welding procedures, and welding personnel qualifications are appropriate and comply with AWS D1.1. A visual inspection of all welds must be provided with periodic inspections made of work in progress.
Multi-pass fillet welds	Continuous	
Single-pass fillet welds > 5/16"	Continuous	
Plug, slot, seam or flange welds	Continuous	
Single-pass fillet welds ≤ 5/16"	Periodic	
Floor & roof deck welds	Periodic	
Shear connector (i.e. stud) welds	Periodic	
Cold-formed steel welds	Periodic	
Welds of stairs & railing systems	Periodic	
Details of Steel Frame (IBC 1704.3.2)		
Member locations, bracing, gusset plates, stiffeners and other connection components	Periodic	All steel frames shall be inspected to verify compliance with the approved construction documents, such as bracing, stiffening, member size and location, and proper application of joint details at each connection.
High-Strength Bolting (IBC 1704.3.3)		
Pretensioned & slip-critical joints	Periodic	See steel section of the General Structural Notes and Section 9.2 and 9.3 of the RCSC Specification.
Snug-tightened joints	Periodic	Verify that all joints use proper fastener components, connected elements are fabricated properly, the bolted joint is drawn into firm contact, and that the nuts cannot be removed without the use of a wrench. (See Section 9.1 of RCSC Specification).
Structural Steel in Seismic-Force-Resisting Systems (IBC 1707.2 & 1708.3 and AISC 341 Appendix Q)		
Visual inspection prior to welding	Continuous	Verify materials, fit-up of groove welds, configuration and finish of access holes and fit-up of fillet welds.
Visual inspection during welding	Continuous	Verify: WPS followed, use of qualified welders, control and handling of welding consumables, environmental conditions, welding techniques and no welding over cracked tacks.
Visual inspection after welding	Periodic	Verify: welds are cleaned; welder identification is legible; size, length and location of welds; verify that welds meet acceptance criteria; placement of reinforcement fillets; removal of backing bars and weld tabs as required; and repair activities.
Nondestructive testing of welds Ultrasonic testing		(1) All complete joint penetration (CJP) groove welds in materials 5/16" thick or greater. (2) For base metal thickness greater than 1-1/2" and connected material greater than 3/4" thick containing CJP groove welds loaded in tension in the through thickness direction in tee and corner joints. (3) Where approved by the Engineer and the Building Official, the amount of required ultrasonic testing may be reduced to 25% provided the demonstrated reject rate of a welder or welding operator is 5% or less and at least 40 completed welds have been used to calculate reject rate.
Item	Frequency	Detailed Instructions
Nondestructive testing of welds Magnetic particle testing (MT)		(1) When welding of doubler plates, continuity plates or stiffeners has been done in the k-area, the web shall be tested for cracks using magnetic particle testing (MT). Inspection area shall include the k-area base metal within 3 in. of the weld. (2) 25 percent of all beam-to-column CJP groove welds. (3) At welded splices and connections, thermally cut surfaces of beam copes and access holes shall be tested when the flange thickness exceeds 1½" for rolled shapes or when the web thickness exceeds 1½" for built-up shapes. (4) Any weld and adjacent area of the RBS plastic hinge region that has been repaired by welding, or on the base metal of the RBS plastic hinge region if a sharp notch has been removed by grinding. (5) The ends of welds from which the weld tabs have been removed, except for continuity plate weld tabs. (6) Where approved by the Engineer and the Building Official, the amount of required MT on CJP groove welds may be reduced to 10% provided the demonstrated reject rate of a welder or welding operator is 5% or less and at least 20 completed welds have been used to calculate reject rate. This reduction only applies to welds in item (2) above, and is not permitted on other welds requiring MT.
Inspection prior to bolting	Periodic	Verify: proper bolts and bolting procedure are selected for joint details; connecting elements are fabricated properly, including faying surface and hole preparation; pre-installation verification testing of fastener assemblies and methods; and proper storage is provided for bolts, nuts, washers and fastener components.
Inspection during bolting	Periodic	Verify: fastener assemblies placed in all holes and washers are properly positioned, joint brought to snug-tight condition prior to pretensioning, fastener components not turned by the wrench are prevented from rotating, bolts are progressing systematically from most rigid point toward free edges.
Inspection after bolting	Continuous	Document accepted and rejected connections.
Reduced beam sections (RBS)	Continuous	Verify contour and finish as well as dimensional tolerances.
Protected zones	Continuous	Verify that no holes or unapproved attachments are made within the protected zone.

Concrete Construction per IBC Sections 1704.4 & 1708.2

Item	Frequency	Detailed Instructions
Reinforcing steel	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Cast-in bolts & embeds	Continuous	
Post-installed anchors or dowels		All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report.
Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 4, 5.2-5.4; and IBC 1904.3, 1913.2, 1913.3.
Concrete sampling for strength tests, slump, air content, and temperature	Continuous	Samples for strength tests shall be taken in accordance with ASTM C172; cured per ASTM C31 and tested in accordance with ASTM C39. Acceptance criteria for strength tests shall be per ACI 318 Section 5.6.3.3. For each mix placed, samples shall be taken not less than once a day, nor less than once for each 150 yd³ of concrete, nor less than once for each 5000 ft² of surface area for slabs or walls. At the time fresh concrete is is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.
Concrete placement	Continuous	
Curing temperature and techniques	Periodic	Verify that the ambient temperature for concrete is kept at > 50°F for at least 7 days after placement. High-early-strength concrete shall be kept at > 50°F for at least 3 days. Accelerated curing methods may be used (see ACI 318: 5.11.3). The ambient temperature for shotcrete shall be > 40°F for the same period of time as noted for concrete. Shotcrete shall be kept continuously moist for at least 24 hours after shotcreting. All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
In-situ strength verification	Periodic	Verify that adequate strength has been achieved prior to the removal of shores and forms or the stressing of post-tensioned tendons.
Formwork	Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers
P: 801.486.3883
F: 801.485.0911
6775 S 500 S, Suite 400
Salt Lake City, Utah 84102
www.reaveley.com

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU EASTERN CIB

451 E 400 N Price, Utah 84501

project#: 2013-235
date: 11/27/13

revisions :

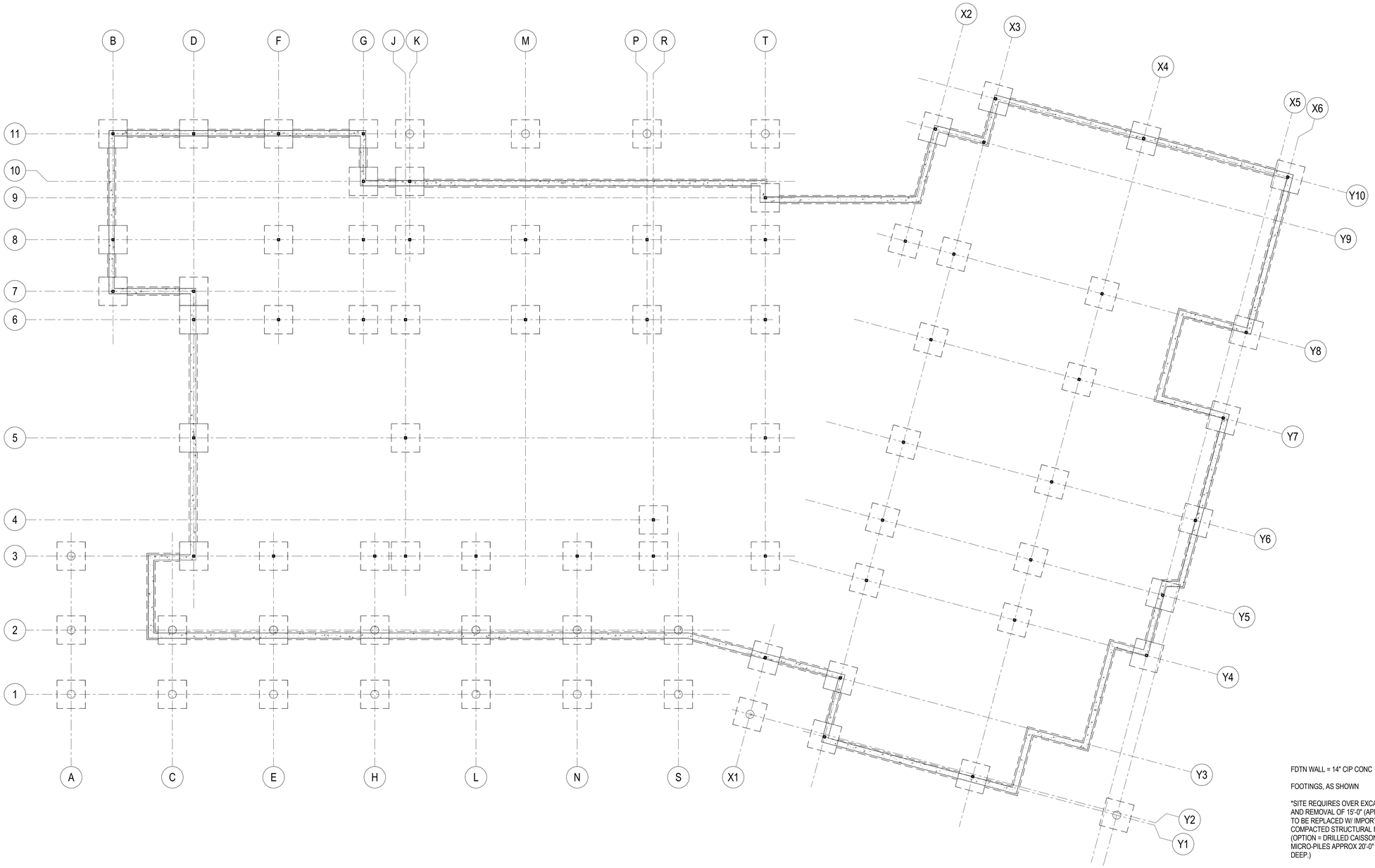
title:

GENERAL STRUCTURAL NOTES

sheet:

SE002

SCHEMATIC DESIGN



FDTN WALL = 14" CIP CONC

FOOTINGS, AS SHOWN

*SITE REQUIRES OVER EXCATION AND REMOVAL OF 15'-0" (APPROX.) TO BE REPLACED W/ IMPORTED & COMPACTED STRUCTURAL FILL. (OPTION = DRILLED CAISSONS OR MICRO-PILES APPROX 20'-0" - 25'-0" DEEP.)

A1 / SB101 Level 1

SCALE: 3/32" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

P: 801.486.3883
F: 801.485.0911

675 E 500 S, Suite 400
Salt Lake City, Utah 84102
www.reaveley.com

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU EASTERN CIB

451 E 400 N Price, Utah 84501

project#: 2013.235
date: 11/27/13

revisions :

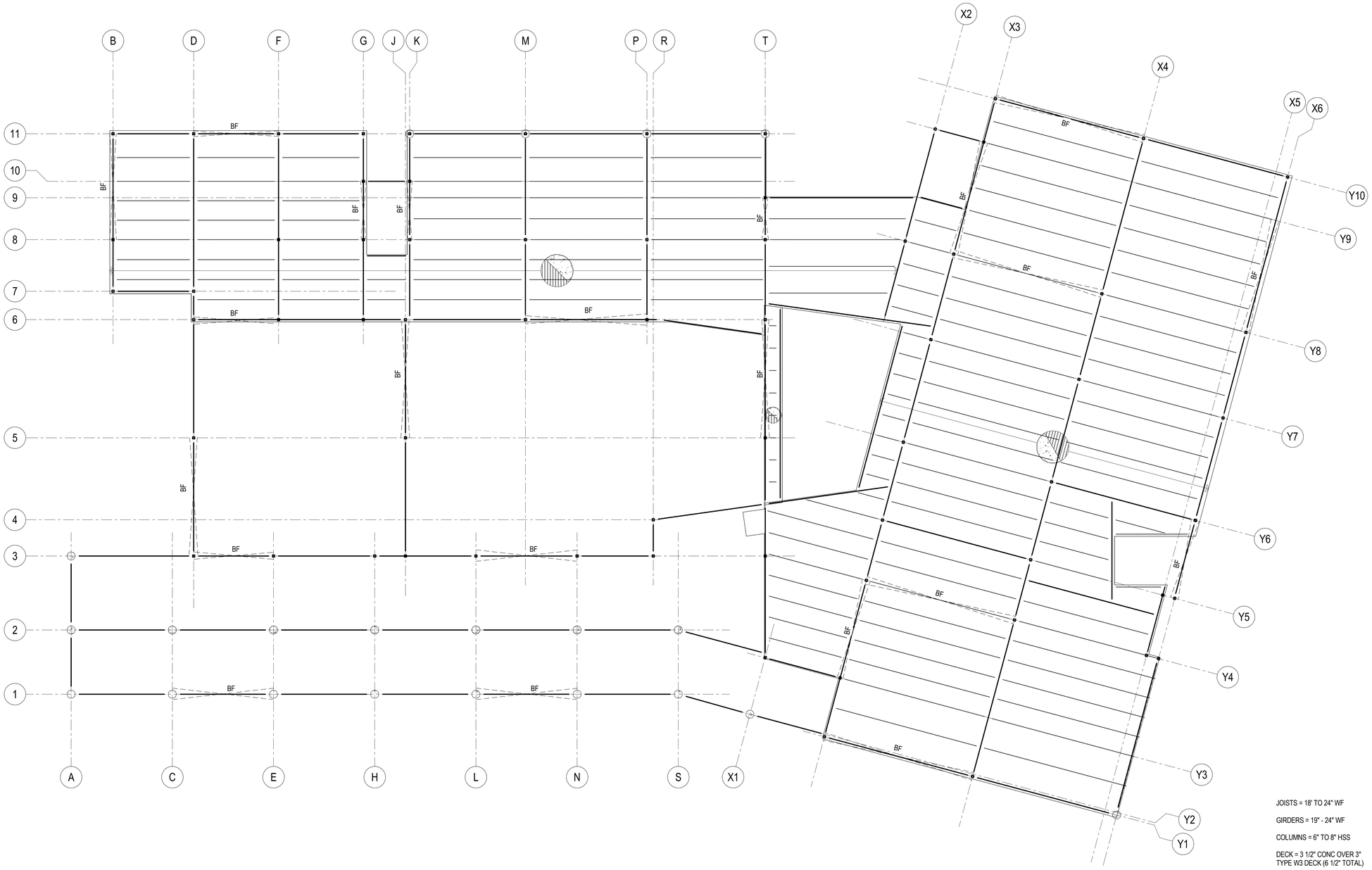
title:

FOOTING & FOUNDATION PLAN

sheet:

SB101

SCHEMATIC DESIGN



JOISTS = 18" TO 24" WF

GIRDERS = 19" - 24" WF

COLUMNS = 6" TO 8" HSS

DECK = 3 1/2" CONC OVER 3"
TYPE W3 DECK (6 1/2" TOTAL)

X = BRACED FRAMES

A1
SF101

FLOOR FRAMING PLAN

SCALE: 3/32" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

P: 801.486.3883
F: 801.485.0911

675 E 500 S, Suite 400
Salt Lake City, Utah 84102
www.reaveley.com

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU EASTERN CIB

451 E 400 N Price, Utah 84501

project#: 2013.235
date: 11/27/13

revisions :

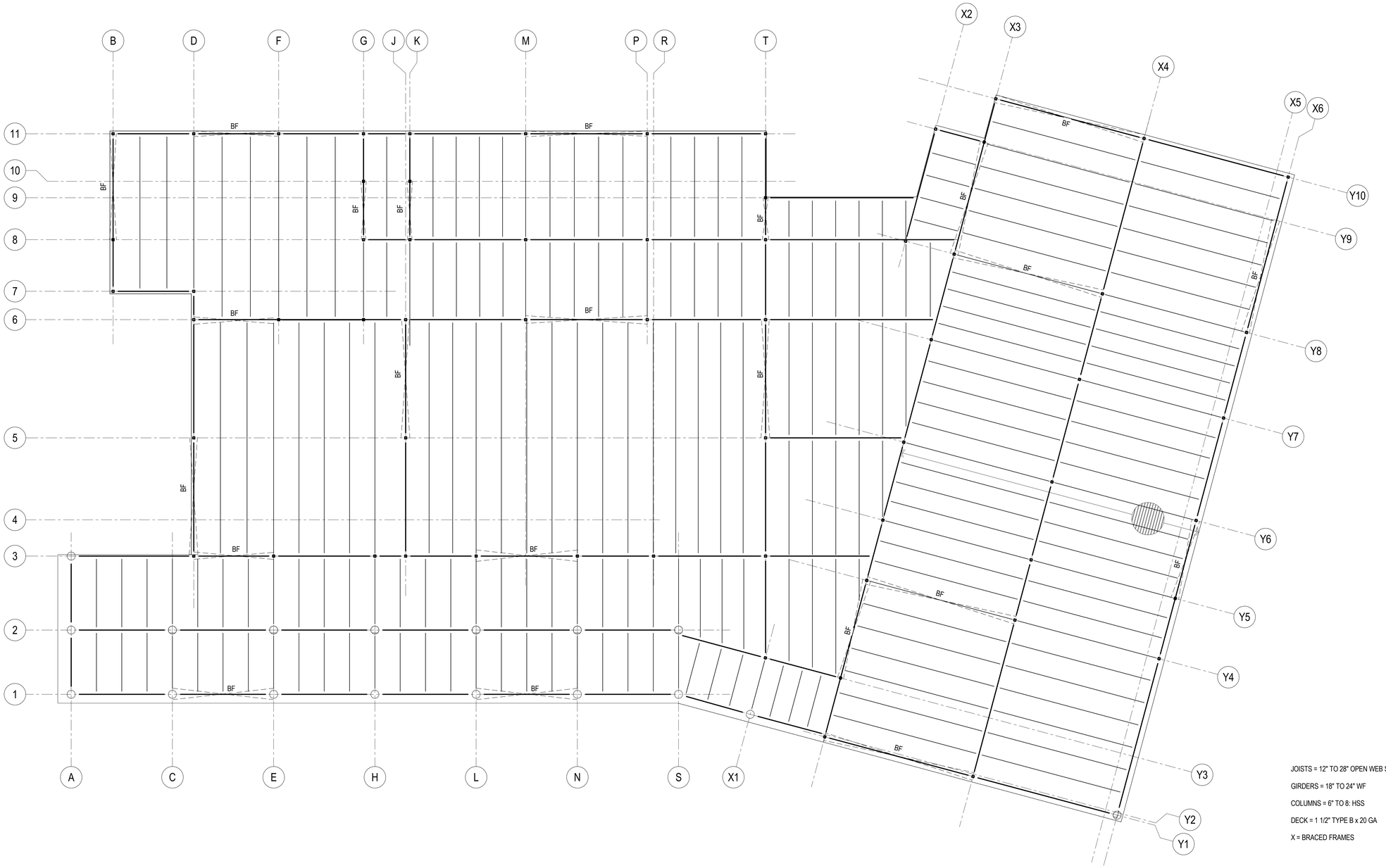
title:

FLOOR FRAMING PLAN

sheet:

SF101

SCHEMATIC DESIGN



JOISTS = 12" TO 28" OPEN WEB STEEL JOISTS

GIRDERS = 18" TO 24" WF

COLUMNS = 6" TO 8: HSS

DECK = 1 1/2" TYPE B x 20 GA

X = BRACED FRAMES

A1 / SF102 ROOF FRAMING PLAN

SCALE: 3/32" = 1'-0"

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

P: 801.486.3883
F: 801.485.0911

675 E 500 S, Suite 400
Salt Lake City, Utah 84102
www.reaveley.com

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU EASTERN CIB

451 E 400 N Price, Utah 84501

project#: 2013-235
date: 11/27/13

revisions :

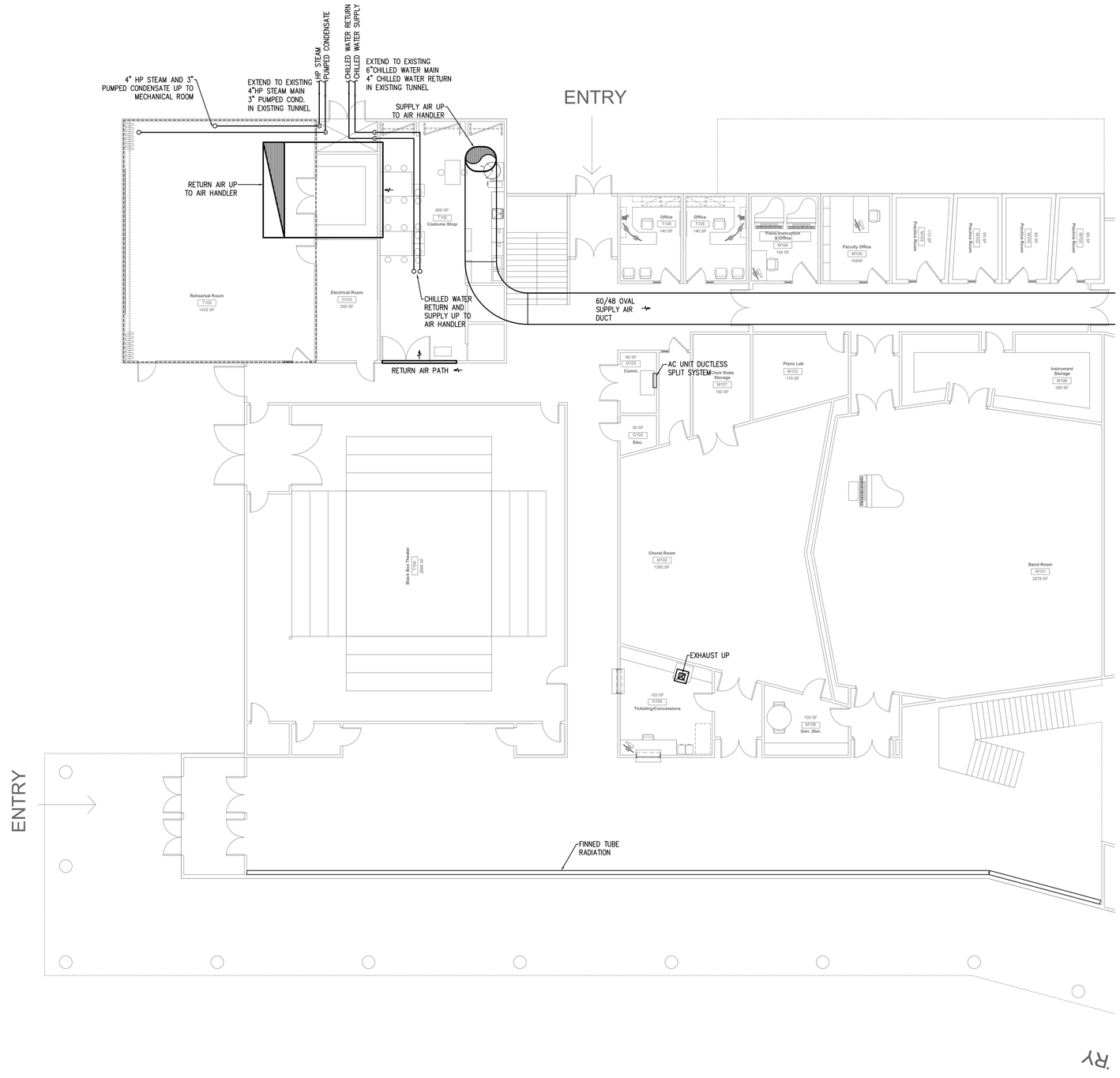
title:

ROOF FRAMING PLAN

sheet:

SF102

SCHEMATIC DESIGN

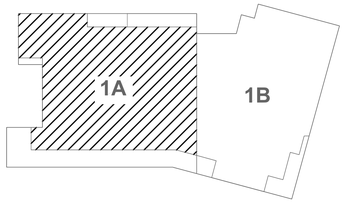


N

M101.A LEVEL 01 MECHANICAL PLAN - AREA 'A'

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

0' 8' 16'



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date:

revisions :

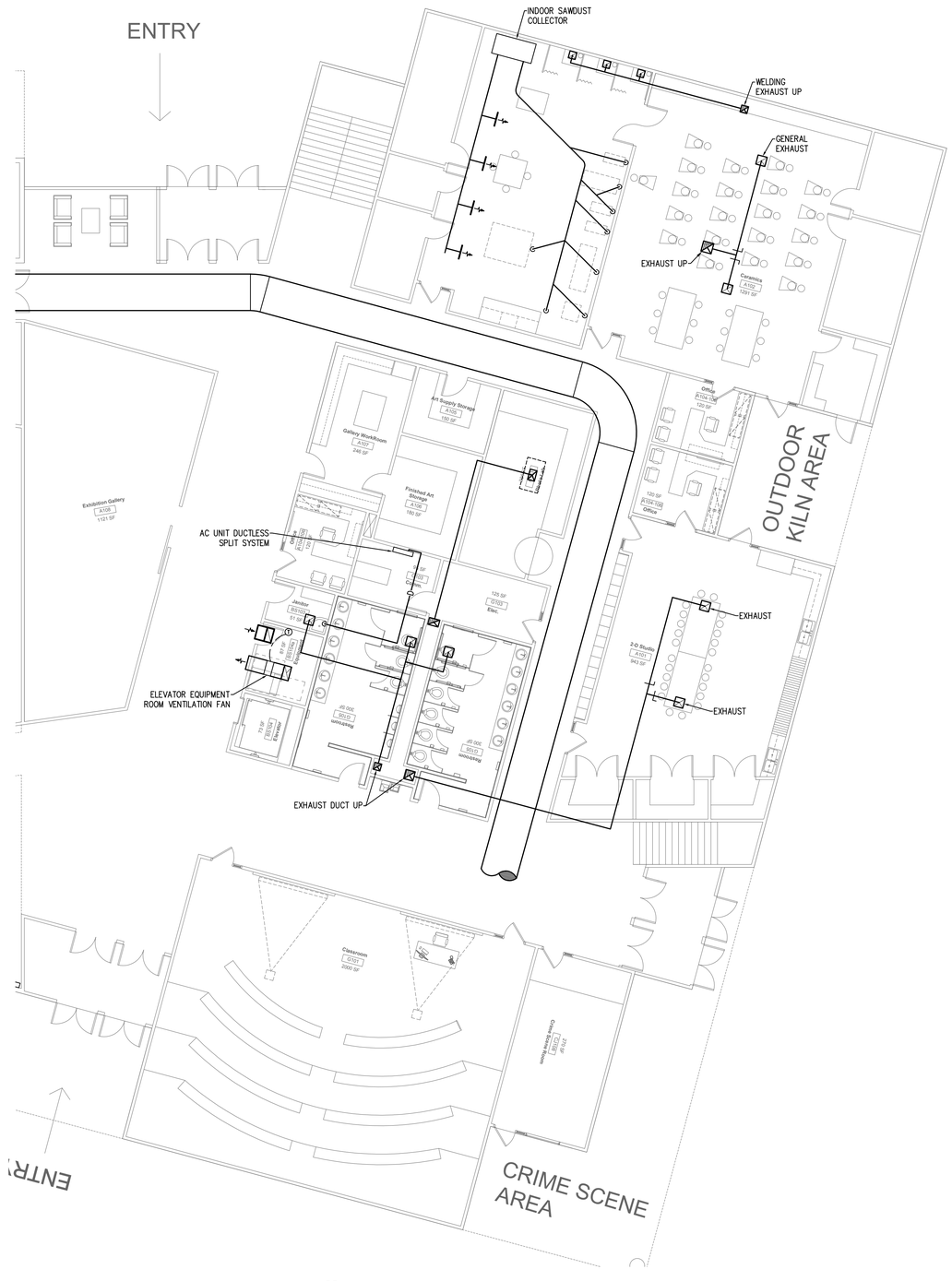
VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
WWW.VBFA.COM
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

title:

LEVEL 01 MECH. PLAN - AREA 'A'

sheet:

M101.A

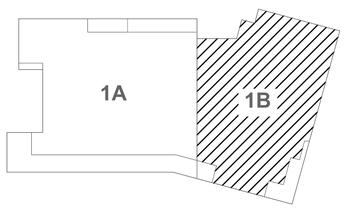


N

M101.B LEVEL 01 MECHANICAL PLAN - AREA 'B'

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

0' 8' 16'



KEY PLAN

VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
WWW.VBFA.COM
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS, THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date:

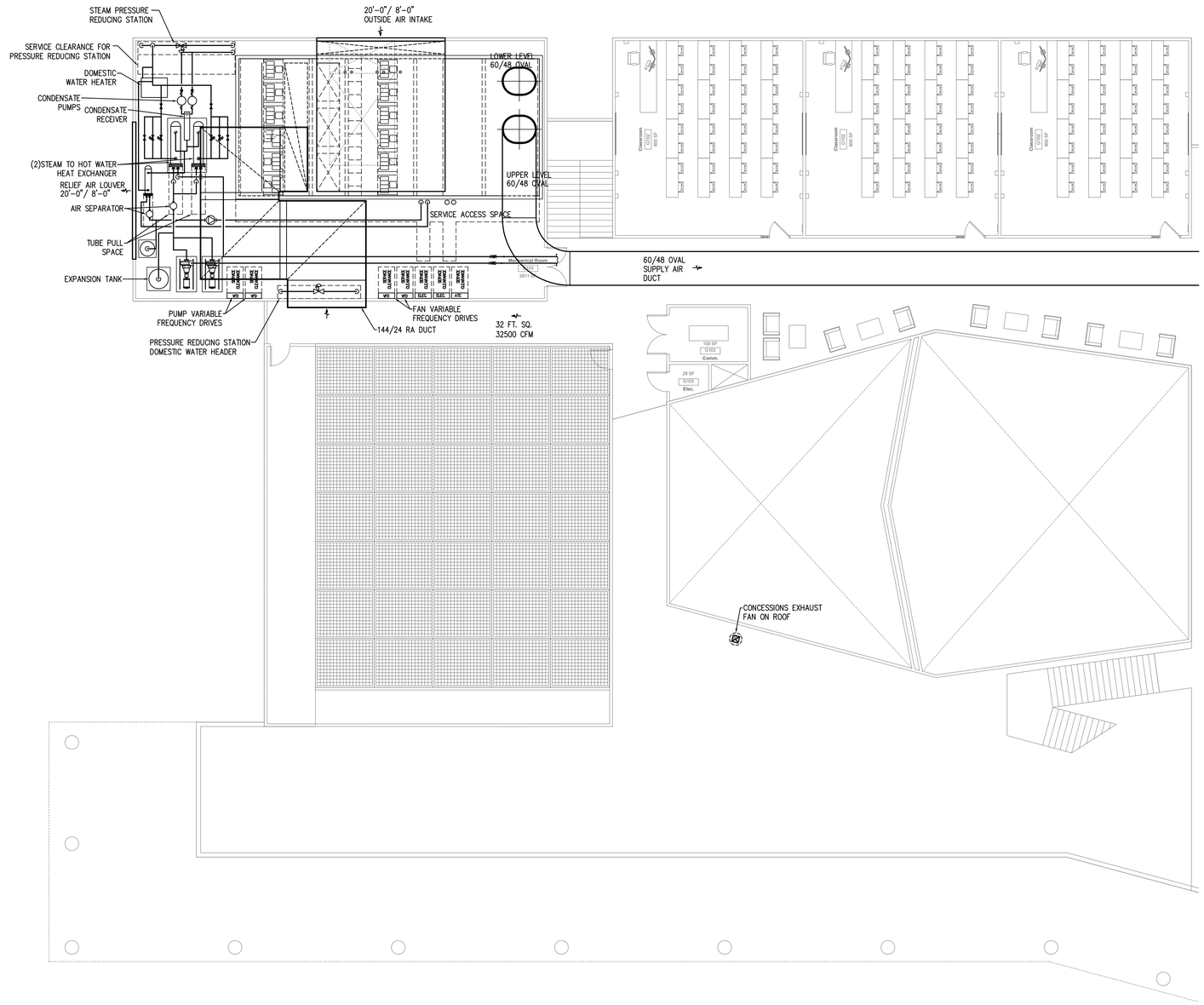
revisions :

title:

LEVEL 01 MECH. PLAN - AREA 'B'

sheet:

M101.B

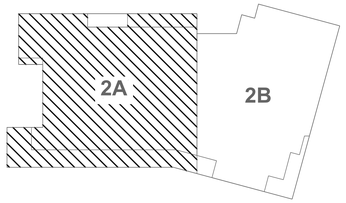


N

M102.A LEVEL 02 MECHANICAL PLAN - AREA 'A'

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

0' 8' 16'



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 23.0170
date:

revisions :

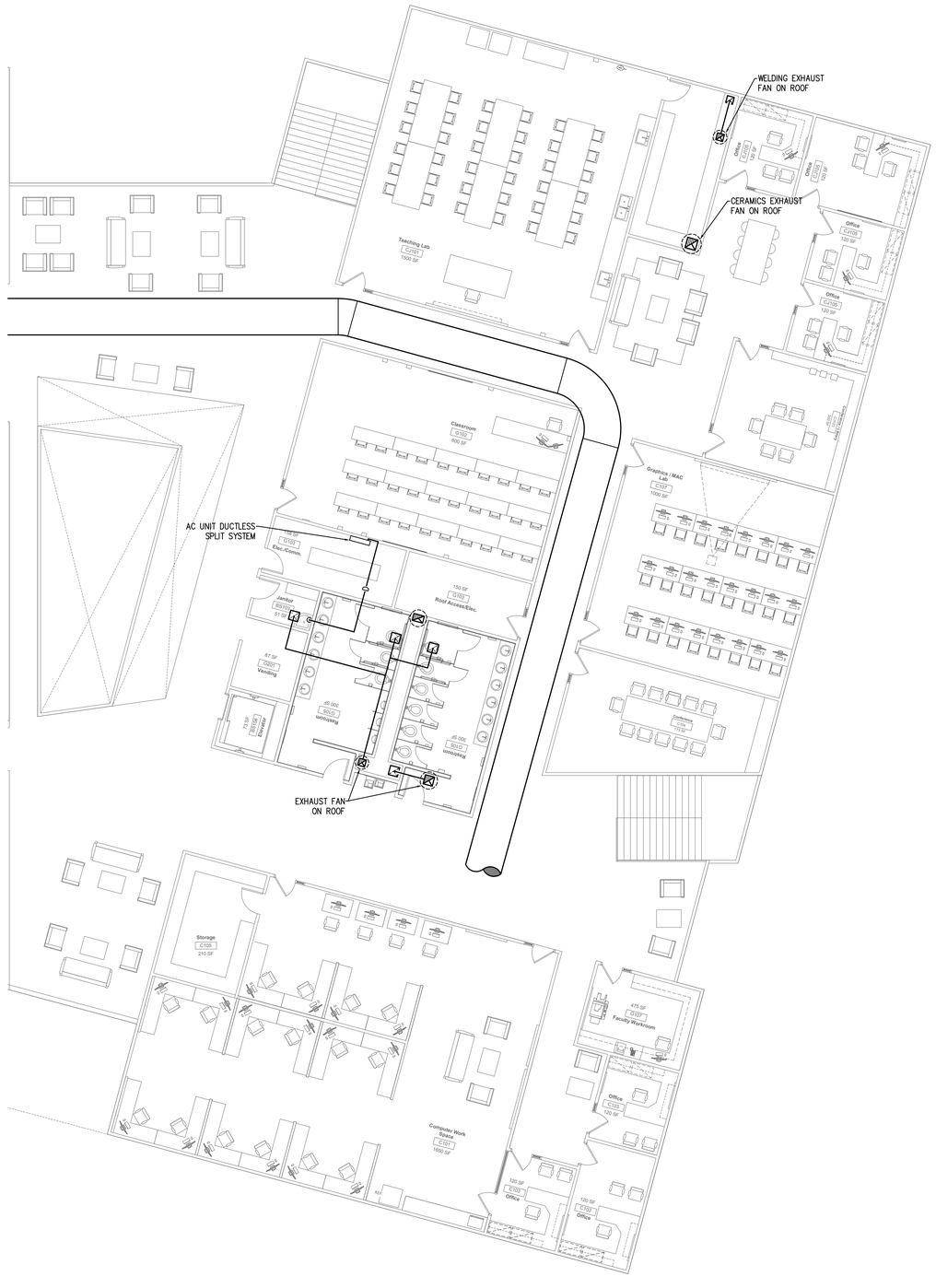
VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
www.vbfa.com
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

title:

LEVEL 02 MECH. PLAN - AREA 'A'

sheet:

M102.A

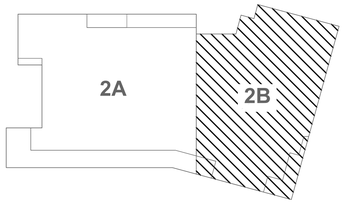


N

M102.A LEVEL 02 MECHANICAL PLAN - AREA 'B'

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

0' 8' 16'



KEY PLAN

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 23.0170
date:

revisions :

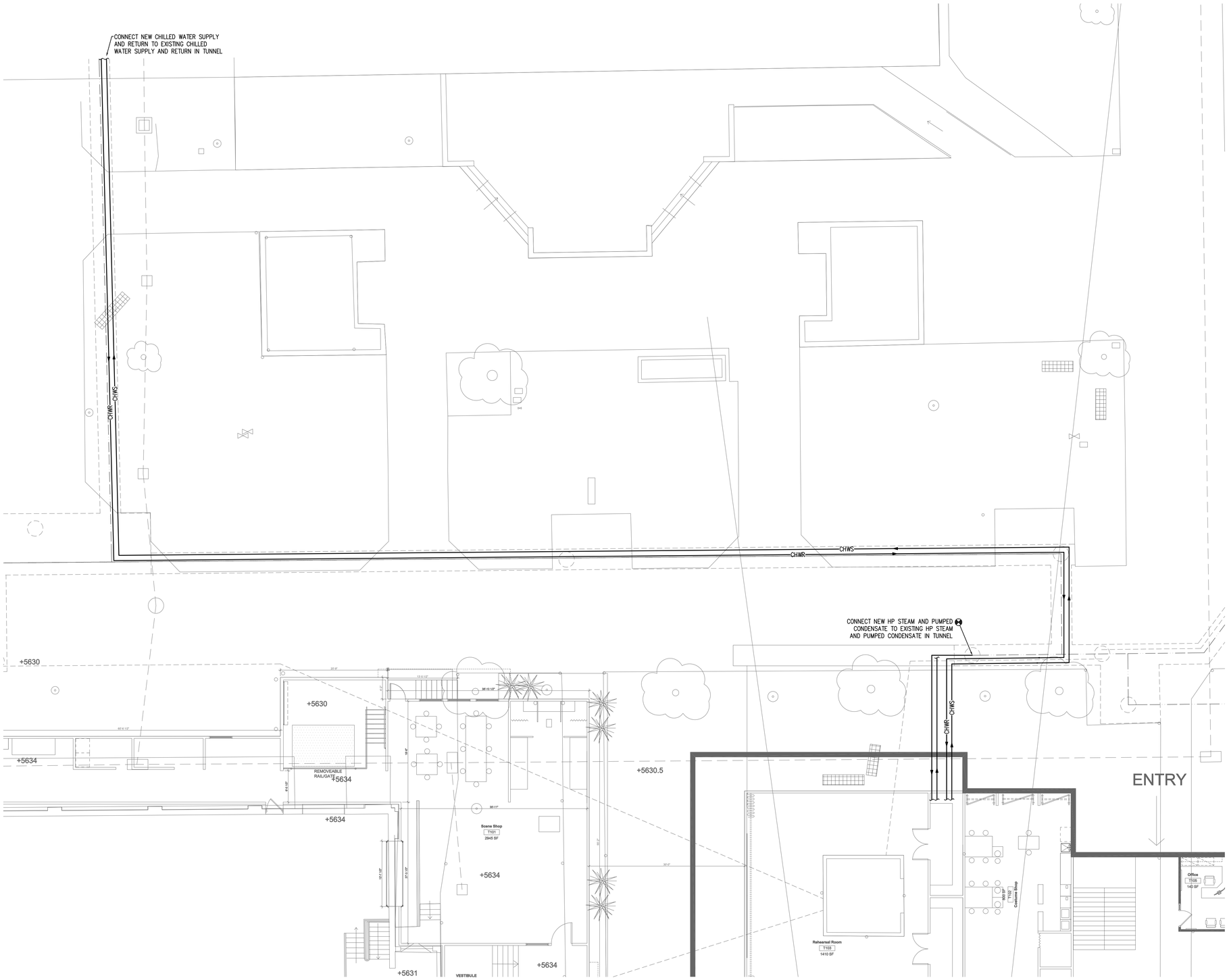
VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
www.vbfa.com
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

title:

LEVEL 02 MECH. PLAN - AREA 'B'

sheet:

M102.A



N

PARTIAL MECHANICAL SITE PLAN

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

0' 8' 16'

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS APPIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS, THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date:

revisions :

VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
WWW.VBFA.COM
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

title:

PARTIAL MECHANICAL SITE PLAN

sheet:

MS101

AIR HANDLER SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	AIR SUPPLY AIRFLOW (CFM)	COMPONENTS FANS	COILS	FILTERS	OTHER	ELECTRICAL SINGLE POINT VOLT/PH/HZ	PHYSICAL CABINET LENGTH/ WIDTH/HEIGHT (IN)	WEIGHT (LB)	NOTES
AH-1	TEMTROL	MECHANICAL ROOM	65000	SF01, THRU SF-18	HC-1, CC-1	ANGLE	EC	480/3/60	552/254/120	55,151	

FAN SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR TYPE	AIR MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE (IN. WATER)	FAN OUTLET VELOCITY (FPM)	FAN SPEED (RPM)	FAN WHEEL DIAMETER (IN)	STATIC EFFICIENCY (%)	ELECTRICAL MOTOR SIZE (HP)	MOTOR BHP (HP)	MOTOR SPEED (RPM)	VOLT/PH/HZ	PHYSICAL LENGTH/ WIDTH/ HEIGHT (IN)	NOTES
SF-1.01	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.02	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.03	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.04	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.05	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.06	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.07	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.08	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.09	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.10	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.11	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.12	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.13	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.14	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.15	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.16	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.17	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
SF-1.18	TEMTROL	AH-1	PLENUM	SUPPLY	3611	4.5	458	3335	16	60.1	4.0	3.8	3475	460/3/60	23 / 40 / 35	
											72.0					
RF-1.01	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.02	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.03	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.04	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.05	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.06	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.07	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.08	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.09	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.10	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.11	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.12	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.13	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.14	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.15	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.16	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.17	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
RF-1.18	TEMTROL	AH-1	PLENUM	RELIEF	3222	2.0	409	2355	16	61.7	2.5	2.1	1750	460/3/60	24 / 40 / 35	
											45					
EF-1	COOK	TOILET ROOMS	DOME	EXHAUST	2200	0.5	1037	866	18	55	1/2	0.334	1750	120 / 1 / 60	38 / 38 / 34	
EF-2	COOK	PHOTO LAB	DOME	EXHAUST	1000	0.5	1053	1321	12	59	1/6	0.167	1750	120 / 1 / 60	28 / 28 / 26	
EF-3	COOK	ART 2-D	DOME	EXHAUST	700	0.375	737	1071	12	60	1/6	0.08	1750	120 / 1 / 60	28 / 28 / 26	
EF-4	COOK	CERAMIC 3-D	DOME	EXHAUST	700	0.375	737	1071	12	60	1/6	0.08	1750	120 / 1 / 60	28 / 28 / 26	
EF-5	COOK	WELDING BOOTHS	UPBLAST	EXHAUST	1500	0.5	427	788	19.5	57	1/4	0.24	1750	120 / 1 / 60	39 / 39 / 33	
EF-6	COOK	CONCESSIONS	DOME	EXHAUST	200	0.25	305	1325	7	13	1/6	0.07	1750	120 / 1 / 60	24 / 24 / 22	

1. CAPACITIES AT 5902 FEET ELEVATION.
2. ROOF MOUNTED EXHAUST FAN COMPLETE WITH PRE-FABRICATED ROOF CURB, MOTORIZED BACKDRAFT DAMPER, BIRD SCREEN, THERMAL OVERLOAD PROTECTION AND DISCONNECT SWITCH.

COIL SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	USAGE	AIR AIRFLOW RATE (CFM)	MINIMUM O.A. RATE (CFM)	LOAD (BTU/H)	SENSIBLE LOAD (BTU/H)	ENTERING TEMP. DB/WB (°F)	LEAVING TEMP. DB/WB (°F)	STATIC PRESSURE (IN. WATER)	FLUID FLOW RATE (GPM)	ENTERING/ LEAVING TEMP. (°F)	WORKING FLUID	HEAD LOSS (FT)	PHYSICAL NO. COILS	EACH COIL FIN WIDTH/ HEIGHT (IN)	MINIMUM FACE AREA (FT²)	MINIMUM NO. ROWS/ FINS PER INCH	NOTES
HC-1	TEMTROL	AH-1	HEATING	20000	10000	284,700	284,700	37.7 / 37.7	55 / 45	0.05	80	180 / 140	WATER	6	4	115 / 48	160	1 / 7	
CC-1	TEMTROL	AH-1	COOLING	65000	10000	1,602,315	1,515,140	80 / 61	52.7 / 51.1	0.24	319	45 / 55	WATER	9.67	4	115 / 48	160	6 / 6	

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 23.0170
date:

revisions :

VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
WWW.VBFA.COM
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

title:
MECHANICAL SCHEDULES

sheet:
M601

HEAT EXCHANGER SCHEDULE

						SOURCE MEDIUM (HYDRONIC)					TRANSFER MEDIUM (HYDRONIC)				PHYSICAL		
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	USAGE	LOAD (BTU/H)	FLOW RATE (GPM)	ENTERING/ LEAVING TEMP. (°F)	WORKING FLUID	HEAD LOSS (FT)	IN TUBE	FLOW RATE (GPM)	ENTERING/ LEAVING TEMP. (°F)	WORKING FLUID	HEAD LOSS (FT)	DIA./ LENGTH / NO. PLATES (IN/IN)	SURFACE AREA (FT²)	NOTES
HX-3	BELL & GOSSETT SU	Mechanical Room	U-TUBE	HEATING	300000	30	180 / 160	WATER	5.0		15	100 / 140	40% P.G.	5.0	8 / 48		

STEAM-TO-HYDRONIC HEAT EXCHANGER SCHEDULE

						SOURCE MEDIUM (STEAM)			TRANSFER MEDIUM (HYDRONIC)				PHYSICAL		
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	USAGE	LOAD (BTU/H)	FLOW RATE (LB/H)	ENTERING PRESSURE (PSIG)	IN TUBE	FLOW RATE (GPM)	ENTERING/ LEAVING TEMP. (°F)	WORKING FLUID	HEAD LOSS (FT)	DIA./ LENGTH/ (IN/IN)	SURFACE AREA (FT²)	NOTES
HX-1	BELL & GOSSETT SU	MECHANICAL ROOM	SHELL & TUBE	HEATING WATER	1,710,000	1710	15	15	171	160 / 180	WATER	5	12 / 72	78	
HX-2	BELL & GOSSETT SU	MECHANICAL ROOM	SHELL & TUBE	HEATING WATER	1,710,000	1710	15	15	171	160 / 180	WATER	5	12 / 72	78	

AIR FLOW MEASURING STATION

			AIR		PHYSICAL	
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	MAXIMUM AIRFLOW RATE (CFM)	MINIMUM AIRFLOW RATE (CFM)	WIDTH/ HEIGHT (IN)	NOTES
AFM-1	EBTRON	AH-1 OUTSIDE AIR INTAKE	65,000	20,000		
AFM-2						
AFM-3						
AFM-4						
AFM-5						

MECHANICAL CONDENSATE PUMP SCHEDULE

				STEAM					PHYSICAL	
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	FLOW RATE (LB/H)	MAXIMUM OPERATING PRESSURE (PSIG)	MOTIVE PRESSURE (PSIG)	BACK PRESSURE (PSIG)	MINIMUM FILLING HEAD (IN)	LENGTH/ WIDTH/ HEIGHT (IN)	NOTES
MCP-1	SPIRAX SARCO APT14	MECHANICAL ROOM	STEAM	1710	15	55		12	15 / 14 / 12	
MCP-1	SPIRAX SARCO APT14	MECHANICAL ROOM	STEAM	1710	15	55		12	15 / 14 / 12	

EXPANSION TANK SCHEDULE

				FLUID		PHYSICAL			
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	WORKING FLUID	MIN. TANK/ ACCEPTANCE (GAL)	TANK SIZE (GAL)	RELIEF VALVE (PSIG)	DIA./ HEIGHT (IN)	NPT FITTING (IN)	NOTES
ET-1	BELL & GOSSETT B - 400	MECHANICAL ROOM	BLADDER	HEATING WATER	105	105	60	24 / 66	1"	
ET-2	BELL & GOSSETT B - 200	MECHANICAL ROOM	BLADDER	PROPYLENE GLYCOL	53	53	60	24 / 40	1"	

SAW DUST COLLECTOR SCHEDULE

				AIR		FILTER	ELECTRICAL		PHYSICAL		
ID	MFG	MODEL	LOCATION	MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE (IN. WATER)	EFFICIENCY %	MOTOR SIZE (HP)	VOLT/ PHASE/ HZ	LENGTH/ WIDTH/ HEIGHT (IN)	WEIGHT (LBS)	NOTES
SDC-1	UNITED AIR SPECIALIST	SFC8-2	SHOP	2500	10	99.9	15	480/3/60	61 / 34 / 92	1726	1,2,3,4,5

1. PROVIDE 1 SET EXTRA FILTERS.
2. PROVIDE EXPLOSION VENTS.
3. FUNNEL BOTTOM WITH STAND FOR 55 GALLON DRUMS.
4. PROVIDE FLEXIBLE CONNECTION ADAPT TO 55 GALLON DRUMS.
5. NOISE REDUCTION DESIGN FOR INDOOT INSTALLATION.

AIR SEPARATOR SCHEDULE

				FLUID		PHYSICAL	
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	FLOW RATE (GPM)	WORKING FLUID	HEAD LOSS (FT)	DIA./ HEIGHT (IN)	NOTES
AS-1	BELL & GOSSETT R-4F	MECHANICAL ROOM	HEATING WATER	170	WATER	2	12 / 31	
AS-2	BELL & GOSSETT R-3F	MECHANICAL ROOM	HEATING WATER	80	PROPYLENE GLYCOL	2	10 / 27	

CONDENSATE RECEIVER SCHEDULE

				STEAM	PHYSICAL	
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	FLOW RATE (LB/H)	LENGTH/ DIAMETER (IN)	NOTES
REC-1						

STEAM TRAP SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	CAPACITY (LB/HR)	PRESSURE DROP (PSI)	SYSTEM PRESSURE (PSI)	SIZE (IN)	NOTES
ST-1	SPIRAX SARCO FT-200	MECH. ROOM	FLOAT & THERMOSTATIC	100		15	3/4	
ST-2	SPIRAX SARCO FT-200	MECH. ROOM	FLOAT & THERMOSTATIC	100		15	3/4	
ST-3	SPIRAX SARCO FT-200	MECH. ROOM	FLOAT & THERMOSTATIC	100		15	3/4	
ST-4	SPIRAX SARCO FT-200	MECH. ROOM	FLOAT & THERMOSTATIC	100		15	3/4	

LOUVER SCHEDULE

					AIR		PHYSICAL	
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR TYPE	MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE (IN. WATER)	WIDTH/ HEIGHT/ THICKNESS (IN)	NOTES
L-1	AIROLITE K6776	MECH. ROOM	WALL	INTAKE/RELIEF	65,000	0.15	144 / 96 / 6	

PUMP SCHEDULE

				FLUID			PUMP		ELECTRICAL				
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	FLOW RATE (GPM)	WORKING FLUID	HEAD LOSS (FT)	EFFICIENCY (%)	CONSTRUCTION	MOTOR SIZE (HP)	MOTOR BHP (HP)	MOTOR SPEED (RPM)	VOLT/PH/HZ	NOTES
P-1	BELL & GOSSETT	MECHANICAL ROOM	BASE MOUNTED	171	HEATING WATER	93	67.01	BRONZE	10	5.99	1750	480 / 3 / 60	
P-2	BELL & GOSSETT	MECHANICAL ROOM	BASE MOUNTED	171	HEATING WATER	93	67.01	BRONZE	10	5.99	1750	480 / 3 / 60	
P-3	BELL & GOSSETT	MECHANICAL ROOM	INLINE	80	P.G. PRE-HEAT	45	63.9	BRONZE	3	1.46	1750	480 / 3 / 60	
P-4	BELL & GOSSETT	MECHANICAL ROOM	INLINE	80	P.G. PRE-HEAT	45	63.9	BRONZE	3	1.46	1750	480 / 3 / 60	
P-5	BELL & GOSSETT	MECHANICAL ROOM	INLINE	100	CHILLED WATER	15	61.36	BRONZE	0.75	0.62	1750	120 / 1 / 60	

EXPANSION TANK SCHEDULE

				FLUID		PHYSICAL			
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	WORKING FLUID	MIN. TANK/ ACCEPTANCE (GAL)	TANK SIZE (GAL)	RELIEF VALVE (PSIG)	DIA./ HEIGHT (IN)	NPT FITTING (IN)	NOTES
ET-1	BELL & GOSSETT B - 400	MECHANICAL ROOM	BLADDER	HEATING WATER	105	105	60	24 / 66	1"	
ET-2	BELL & GOSSETT B - 200	MECHANICAL ROOM	BLADDER	PROPYLENE GLYCOL	53	53	60	24 / 40	1"	

VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
www.vbfa.com
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 23.0370
date:

revisions :

title:

MECHANICAL SCHEDULES

sheet:

M602

USU EASTERN CLASSROOM INSTRUCTIONAL BUILDING

MECHANICAL BASIS OF DESIGN

GENERAL

THE MECHANICAL SYSTEM WILL TO PROVIDE HEATING, VENTILATION AND AIR CONDITIONING REQUIRED FOR THE NEW BUILDING FUNCTIONS.

THE MECHANICAL SYSTEM WILL BE DESIGNED TO PROVIDE A SAFE, ECONOMICAL, ENERGY EFFICIENT, LOW MAINTENANCE TYPE SYSTEM THAT IS BALANCED WITH THE PROJECTS SUSTAINABILITY GOALS. ALL MECHANICAL SYSTEMS WILL HAVE A PROVEN TRACK RECORD OF HIGH QUALITY, ENERGY EFFICIENCY AND ENVIRONMENTAL CONTROL.

DESIGN WILL COMPLY WITH THE DFCM DESIGN GUIDELINES AND THE USU DESIGN GUIDELINES.

MECHANICAL DESIGN CRITERIA

COMPLY WITH THE 2012 EDITION OF THE INTERNATIONAL CODES:
INTERNATIONAL BUILDING CODE (IBC),
INTERNATIONAL MECHANICAL CODE (IMC)
INTERNATIONAL PLUMBING CODE (IPC)
INTERNATIONAL FUEL GAS CODE (IFGC)
INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
INTERNATIONAL FIRE CODE (IFC)
NATIONAL ELECTRIC CODE (NEC)
ALL STATE AMENDMENTS.

COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REGULATIONS.

HVAC SYSTEM TO COMPLY WITH THE FOLLOWING STANDARDS, MOST CURRENT EDITION:

ANSI/ASHRAE STANDARD 62-2010: VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY
ANSI/ASHRAE STANDARD 55-2010: THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY
ANSI/ASHRAE 90.1-2010: ENERGY STANDARD FOR BUILDINGS
SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION STANDARDS
INDUSTRIAL VENTILATION: A MANUAL OF RECOMMENDED PRACTICE

HEATING AND COOLING LOAD CALCULATIONS: SIZE THE BUILDING HEATING AND COOLING SYSTEMS BASED ON UNDIVERSIFIED CALCULATED LOADS FOR SPACE AND PROCESS EQUIPMENT. INCLUDE 10% SAFETY FACTOR FOR THE HEATING LOAD CALCULATIONS AND NO SAFETY FACTOR FOR THE COOLING LOAD CALCULATIONS.

INFILTRATION: DESIGN FOR 30 MPH WIND WHEN CALCULATING INFILTRATION LOADS AND BUILDING PRESSURIZATION CONTROLS. DESIGN AT THE DFCM STANDARD OF 0.10 CFM/SQUARE FOOT OF WALL AREA.

DESIGN FOR ENERGY CONSERVATION AND SUSTAINABILITY. PROJECT REQUIREMENT IS LEED SILVER.

DESIGN CONDITIONS
OUTSIDE DESIGN CONDITIONS: USE THE FOLLOWING CLIMATE DATA FROM ASHRAE FUNDAMENTAL HANDBOOK FOR PRICE, UTAH

ELEVATION 5902 FT

SUMMER DESIGN DRY BULB TEMP. (ASHRAE 1.0%)	90 DEG. F
SUMMER MEAN COINCIDENT WEB BULB (ASHRAE 1.0%)	59 DEG. F
COOLING TOWER WEB BULB TEMP. (ASHRAE 1.0%)	61 DEG. F
WINTER DESIGN DRY BULB TEMP. (ASHRAE 99%)	8 DEG. F
WINTER DESIGN DRY BULB TEMP. (VBFA STANDARD)	-10 DEG. F

INDOOR DESIGN CONDITIONS: USE THE FOLLOWING INDOOR DESIGN CONDITIONS FROM AHSRAE STANDARD 55:

1. CLASSROOMS, AUDITORIUMS, COMPUTER LABS, AND STUDENT SPACES:
   - SUMMER 72 F +/- 4 F
   - WINTER 68 F +/- 4 F
2. LABORATORY AND LABORATORY SUPPORT:
   - SUMMER 72 F +/- 2 F
   - WINTER 70 F +/- 2 F
   - RELATIVE HUMIDITY (CONTROLLED) 30%-59%
3. MECHANICAL ROOMS, ELECTRICAL ROOMS, AND ELEV. EQUIP. ROOMS:
   - SUMMER 85 F VENTILATION ONLY
   - WINTER 60 F MIN
4. TELEPHONE/DATA/COMMUNICATION/SERVER ROOMS:
   - YEAR ROUND 75 F (USU STANDARD)
5. UNOCCUPIED SPACES:
   - SUMMER 95 F

NOISE CRITERIA: DESIGN THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS TO MEET THE FOLLOWING:

1. LABORATORY AREAS WITH FUME HOODS OR BSCS:	NC = 50 - 55
2. LABORATORY AREAS WITHOUT FUME HOODS OR BSCS:	NC = 45 - 50
3. LABORATORY SUPPORT AREAS:	NC = 50 - 55
4. OPEN OFFICES:	NC = 40 - 45
5. PRIVATE OFFICES:	NC = 30 - 35
6. CONFERENCE ROOMS:	NC = 25 - 30
7. CLASSROOMS:	NC = 25 - 30
8. CIRCULATION SPACES, LOBBIES:	NC = 35 - 40

PRESSURE RELATIONSHIPS: DESIGN THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS TO MEET THE FOLLOWING:

1. BUILDING:	POSITIVE TO OUTSIDE
2. LABORATORIES:	NEGATIVE TO ADJACENT SPACES
3. TOILET ROOMS:	NEGATIVE TO ADJACENT SPACES

VENTILATION REQUIREMENTS

VENTILATION WILL COMPLY WITH THE IMC AND ASHRAE STANDARD 62.

PROVIDE A BUILDING RELIEF AIR SYSTEM TO MAINTAIN THE BUILDING TO BE +0.03-0.05 IN. W.G. BUILDING STATIC PRESSURE.

HEAT SOURCE

THE HEAT SOURCE WILL BE THE CAMPUS CENTRAL HIGH PRESSURE STEAM SYSTEM. A NEW BRANCH STEAM TUNNEL WILL BE EXTENDED FROM THE EXISTING STEAM TUNNEL INTO THE BASEMENT OF THE NEW BUILDING. A STEAM PRESSURE REDUCING STATION WILL REDUCE THE PRESSURE TO 15 PSI. THERE IS SOME STANDING WATER IN THE EXISTING STEAM TUNNEL. THE STEAM TUNNEL APPARENTLY SLOPES DOWNWARD TOWARDS THE PROPOSED BUILDING. THERE IS CONCERN IF THE TUNNEL IS EXTENDED TO THE NEW BUILDING THAT WATER MAY FLOW FORM THE TUNNEL INTO THE NEW BUILDING. THE DISTANCE IS SHORT FROM THE EXISTING TUNNEL TO THE NEW BUILDING. FOR NOW, THE PLAN IS TO DO DIRECT BURIED STEAM AND CONDENSATE PIPING FROM THE EXISTING TUNNEL INTO THE NEW BUILDING.

STEAM CONDENSATE SYSTEM

THE STEAM CONDENSATE WILL BE STEAM PRESSURE POWERED TYPE. TWO MAIN CONDENSATE PUMPS WILL BE PROVIDED IN THE MECHANICAL ROOM.

COOLING SOURCE

THE COOLING SOURCE WILL BE A TWO STAGE COOLING SYSTEM. THERE WILL BE DIRECT EVAPORATIVE COOLING, AND CHILLED WATER COOLING. CHILLED WATER WILL BE PROVIDED FROM THE CENTRAL CHILLED WATER PLANT. CHILLED WATER LINES WILL BE EXTENDED FROM THE EXISTING TUNNEL TO THE NEW BUILDING. AN INDIRECT EVAPORATIVE SYSTEM WAS CONSIDERED, IN ADDITION TO DIRECT EVAPORATIVE COOLING. THERE ARE CURRENTLY NO COOLING TOWERS ON CAMPUS. SINCE THERE ARE NO EXISTING TOWERS AND THE MAINTENANCE PERSONNEL ARE NOT FAMILIAR WITH COOLING TOWERS, INDIRECT EVAPORATIVE WILL NOT BE INCORPORATED IN THE NEW BUILDING.

AIR HANDLER

THE AIR HANDLER WILL BE LOCATED INDOORS IN THE MAIN MECHANICAL ROOM. THE AIR HANDLER WILL HAVE OUTSIDE AIR AND RETURN AIR MIXING DAMPERS, PRE-FILTERS, FINAL FILTERS, PLENUM SUPPLY AND RETURN FAN(S), GLYCOL PREHEAT COIL, CHILLED WATER COOLING COIL, AND DIRECT EVAPORATIVE COOLING SECTION. THE AIR HANDLER WILL BE SIZED FOR 400 FEET PER MINUTE VELOCITY TO REDUCE THE FAN ENERGY. LOW STATIC PRESSURE DROP AIR FILTERS WILL BE USED. THE SUPPLY AND RETURN/RELIEF FANS WILL BE ON VFD'S.

AIR DISTRIBUTION SYSTEM

THE SYSTEM WILL BE A VARIABLE AIR VOLUME (VAV) SYSTEM WITH TERMINAL VAV BOXES WITH HOT WATER REHEAT COILS. CONSIDERATION WAS GIVEN TO A THERMAL DISPLACEMENT VENTILATION (TDV) SYSTEM. WITH A TDV SYSTEM, AIR WOULD BE SUPPLIED AT THE FLOOR AND RETURNED AT THE CEILING. A TDV SYSTEM WOULD SAVE COOLING ENERGY AND HEATING ENERGY. THE INDOOR AIR QUALITY IS ALSO IMPROVED. A TDV SYSTEM WOULD HAVE A HIGHER INITIAL COST THAN AN OVERHEAD SUPPLY SYSTEM. THE TDV SYSTEM WOULD REQUIRE TWO LARGE SUPPLY AIR DIFFUSERS AND DUCT DROPS IN EACH ROOM (LOCATED DIAGONALLY IN THE CLASSROOMS). DUE TO THE HIGHER COSTS AND THE LIMITED BUDGET AND THE ARCHITECTURAL CONCERNS OF LARGE EXPOSED AIR DROPS, A TDV SYSTEM WILL NOT BE USED. IN CLASSROOM SPACES, THE AIR WILL BE SUPPLIED AT THE CEILING. CONSIDERATION WILL BE GIVEN TO RETURN AIR AT THE FLOOR IN ORDER TO REDUCE THE AMOUNT OF VENTILATION AIR REQUIRED. THE CEILING SPACES WILL BE USED FOR RETURN AIR PLENUMS.

HEATING HOT WATER SYSTEM

THE HEATING HOT WATER SYSTEM WILL INCLUDE THE TWO STEAM TO WATER HEAT EXCHANGERS. EACH HEAT EXCHANGER WILL BE SIZED FOR 60% OF THE LOAD, FOR REDUNDANCY. THE HOT WATER SYSTEM WILL BE VARIABLE FLOW SERVED BY TWO PARALLEL PUMPS, WITH VFD'S.

THERE WILL BE A GLYCOL HEAT EXCHANGER AND VARIABLE FLOW PUMPS FOR THE PREHEAT COILS.

THERE WILL BE PERIMETER HOT WATER RADIATION IN AREAS WITH FLOOR TO CEILING GLASS, IN ORDER TO PICK UP THE DOWNDRAFT OFF OF THE GLASS AND PROVIDE A COMFORTABLE SPACE.

CHILLED WATER SYSTEM

THE CHILLED WATER SYSTEM WILL BE VARIABLE FLOW. THE CHILLED WATER PUMPS LOCATED IN THE CENTRAL PLANT HAVE SUFFICIENT HEAD TO DELIVER CHILLED WATER TO THE NEW BUILDING.

EXHAUST AIR SYSTEM.

A GENERAL EXHAUST SYSTEM WILL SERVE THE TOILET ROOMS, JANITORS CLOSETS AND OTHER GENERAL EXHAUST. THE WELDING ROOM WILL HAVE A DEDICATED GENERAL EXHAUST SYSTEM. THE WOOD SHOP WILL HAVE A DEDICATED EXHAUST SYSTEM WITH A SAWDUST COLLECTOR LOCATED INDOORS. WOOD SHOP AIR WILL BE RECIRCULATED THROUGH THE SAWDUST COLLECTOR FILTRATION SYSTEM AND RETURNED TO THE SPACE. THERE WILL ALSO BE GENERAL EXHAUST IN THE WOOD SHOP.

AUTOMATIC TEMPERATURE CONTROLS

THERE WILL BE A DDC SYSTEM. THE SYSTEM WILL BE AS APPROVED FOR THE CAMPUS. IT WILL HAVE DDC CONTROLLERS AND ELECTRIC ACTUATORS. THE EXISTING CAMPUS CONTROL SYSTEM IS INET BY UTAH YAMAS CONTROLS. THE CAMPUS IS OPEN TO THE IDEA OF ALLOWING ANOTHER CONTROL COMPANY ON THE CAMPUS. THIS WILL BE FURTHER ANALYZED.

FIRE SPRINKLING SYSTEM

AUTOMATIC WET-PIPE FIRE SPRINKLER SYSTEM. CONNECT TO THE WATER MAIN NORTH OF THE NEW BUILDING.

PLUMBING SYSTEMS

LOW FLOW FIXTURES WILL BE USED. THE WATER CLOSETS WILL BE 1.28 GALLONS PER FLUSH. THE URINALS WILL BE 1/8 GALLONS PER FLUSH. THE LAVATORIES WILL BE 0.5 GPM.

THE WATER HEATER WILL BE A AN INSTANTANEOUS STEAM-TO-WATER HEAT EXCHANGER. STEAM IS AVAILABLE FROM THE CENTRAL PLANT YEAR AROUND.

THE DOMESTIC WATER SERVICE WILL COME FROM THE WATER MAIN LOCATED NORTH OF THE NEW BUILDING.

THE BUILDING SANITARY SEWER LINE WILL CONNECT TO THE SEWER MAIN IN 400 NORTH.

ENERGY SAVING FEATURES

THE 2012 IECC REQUIRES "ADDITIONAL" ENERGY SAVINGS IN EITHER THE LIGHTING SYSTEM, THE MECHANICAL SYSTEM (BOILERS AND CHILLERS) OR RENEWABLE ENERGY. SINCE THE CENTRAL HEATING PLANT AND CENTRAL COOLING PLANT ARE EXISTING AND DO NOT COMPLY WITH THE 2012 IECC ADDITIONAL ENERGY SAVING REQUIREMENTS, IT WAS RESOLVED AS A DESIGN TEAM TO PURSUE THE LIGHTING SYSTEM OPTION. THIS SEEMS MORE PRACTICAL AND LESS EXPENSIVE THAN THE RENEWABLE ENERGY OPTION.

THE BUILDING WILL INCORPORATE THE FOLLOWING ENERGY SAVING FEATURES:

- DIRECT EVAPORATIVE COOLING.
- REDUCED AIR VELOCITY IN THE AIR HANDLER TO REDUCE FAN ENERGY.
- VARIABLE FLOW HEATING HOT WATER SYSTEM.
- HIGH DELTA TEMPERATURE ON THE HEATING HOT WATER AND CHILLED WATER SYSTEMS TO REDUCE PUMP ENERGY.
- ELIMINATE THE AUTOMATIC CHILLED WATER VALVE ON THE COOLING COIL. CONTROL THE DISCHARGE AIR TEMPERATURE FROM THE PUMP SPEED.
- ELIMINATE THE AUTOMATIC GLYCOL VALVE ON THE PREHEAT COIL. CONTROL THE DISCHARGE AIR TEMPERATURE FROM THE PUMP SPEED.
- VARIABLE FLOW CHILLED WATER SYSTEM.
- LOW RETURN AIR IN THE CLASSROOMS, BLACK BOX, AND LOBBY SPACE TO REDUCE THE AMOUNT OF VENTILATION AIR REQUIRED.
- PERIMETER HOT WATER RADIATION WILL REDUCE THE UNOCCUPIED MODE FAN ENERGY USAGE.
- DEMAND CONTROLLED VENTILATION SYSTEM.
- OCCUPANCY SENSORS IN SPACES TO TURN OFF THE LIGHTS AND TO PUT THE VAV BOXES IN THE UNOCCUPIED MODE TO SAVE FAN, HEATING AND COOLING ENERGY.
- RESET THE HOT WATER DIFFERENTIAL PRESSURE SETPOINT FROM THE ZONE REQUIRING MOST FLOW.
- RESET THE SUPPLY AIR DIFFERENTIAL PRESSURE SETPOINT FROM THE ZONE REQUIRING MOST FLOW.
- IMPROVED BUILDING ENVELOPE WILL BE CONSIDERED, INCLUDING WALLS, GLASS AND ROOF.
- THE WALLS WILL HAVE SPRAY-ON INSULATION TO REDUCE INFILTRATION AND IMPROVE THERMAL PERFORMANCE.

THE FOLLOWING ENERGY SAVING FEATURES WERE CONSIDERED BUT ARE NOT CURRENTLY INCORPORATED INTO THE PROJECT:

- INDIRECT EVAPORATIVE COOLING.
- THERMAL DISPLACEMENT VENTILATION SYSTEM.

VAN BOERUM & FRANK ASSOCIATES, INC.
CONSULTING ENGINEERS
WWW.VBFA.COM
Salt Lake City · Logan · St. George · Tempe
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number:13380

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801)532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date:

revisions :

title:
MECHANICAL BASIS OF DESIGN

sheet:
M603

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**REFERENCE AND LINE SYMBOLS**
01 A5 E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
02 A5 E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
03 A5 E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
04 ROOM NAME 100	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
05 1	KEYNOTE INDICATOR.
06 1	REVISION INDICATOR.
07 CU-1	EQUIPMENT INDICATOR.
08	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
09	BREAK, ROUND
10 MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
11	NEW LINE: MEDIUM LINE.
12	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
13	EXISTING TO REMAIN LINE: THIN LINE.
14	DEMOLITION LINE: DASHED, MEDIUM LINE
15	PROPERTY LINE: DASHED, WIDE LINE.
16	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
00	**WIRING METHODS**
01	WIRING.
02	WIRING TURNED UP OR TOWARDS OBSERVER.
03	WIRING TURNED DOWN OR AWAY FROM OBSERVER.
04 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
05 1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE. FOR BRANCH WIRING USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
06 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. SMALL CROSS LINES INDICATE NUMBER OF CONDUCTORS OR CABLES. LARGER CROSS LINE INDICATES EQUIPMENT GROUND. WAVY CROSS LINE INDICATES INSULATED/ ISOLATED GROUND. FOR BRANCH WIRING, CROSS LINES INDICATE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
07	FLEXIBLE WIRING.
08 — X —	WIRING AND/OR RACEWAY: THIN LINE. WHERE "X" = : CATV = CABLE TELEVISION; NC = NURSE CALL CCTV = CLOSED CIRCUIT TELEVISION; P = POWER RC = RIGID CONDUIT FA = FIRE ALARM; S = SOUND FO = FIBER OPTICS; T = TELEPHONE I = INTERCOM; TV = TELEVISION OTHERS AS NOTED IN OTHER SCHEDULES. RACEWAYS AND WIRING SHALL BE SIZED AS SHOWN AND/OR SPECIFIED.
09	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
10	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
11 1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
12 1	CONDUCTOR RUN IDENTIFICATION.
13	JUNCTION BOX.
14 SC	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
15 SP	JUNCTION BOX, SYSTEMS FURNITURE POWER CONNECTION.
16	JUNCTION BOX, DUCT, UNDERFLOOR. TRIPLE, DOUBLE OR SINGLE DUCT SYSTEM AS INDICATED BY THE NUMBER OF PARALLEL LINES. DESIGNATIONS AS SHOWN FOR WIRING AND/OR RACEWAY SYMBOLS.
17	DUCT CELL FLOOR HEADER.
18 PB	PULL BOX.
19 C C	CABLE TRAY ABOVE ACCESSIBLE CEILING.
20 W W	WIREWAY.
21	EARTH GROUND (ONE-LINE DIAGRAM).
22 C	JUNCTION BOX, CEILING.
23	LADDER RACK.
24 A A	CABLE TRAY BELOW ACCESSIBLE FLOOR.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**WIRING DEVICES**
01	RECEPTACLE, SINGLE: NEMA 5-20R.
02	RECEPTACLE, DUPLEX: NEMA 5-20R.
03 A	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
04 C	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
05 D	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
06 DF	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
07 IG	RECEPTACLE, DUPLEX, ISOLATED GROUND: NEMA 5-20R.
08 S	RECEPTACLE, DUPLEX, SWITCHED: NEMA 5-20R.
09 UC	RECEPTACLE, DUPLEX, FLOOR, UNDER CARPET: NEMA 5-20R.
10 W	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
11 WP	RECEPTACLE, DUPLEX, WEATHERPROOF: NEMA 5-20R.
12	RECEPTACLE, DUPLEX, HOSPITAL GRADE: NEMA 5-20R.
13	RECEPTACLE, DUPLEX ON EMERGENCY POWER: NEMA 5-20R.
14	RECEPTACLE, DUPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
15	RECEPTACLE, DUPLEX, CONNECTED TO UPS: NEMA 5-20R.
16	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
17	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
18	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
19 WP	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
20	RECEPTACLE, DUPLEX, RECESSED: NEMA 5-20R.
21 S	RECEPTACLE, DUPLEX, SWITCHED, RECESSED: NEMA 5-20R.
22	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
23	RECEPTACLE, QUADRAPLEX ON EMERGENCY POWER: NEMA 5-20R.
24	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE: NEMA 5-20R.
25	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
26	RECEPTACLE, QUADRAPLEX, CONNECTED TO UPS: NEMA 5-20R.
27	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
28	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
29	RECEPTACLE, SPECIAL PURPOSE ON EMERGENCY POWER. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
30 D	RECEPTACLE, DRYER: NEMA 10-30R.
31 R	RECEPTACLE, RANGE: NEMA 10-50R.
32 C	RECEPTACLE, CLOCK HANGER: NEMA 5-15R.
33	MULTI-OUTLET ASSEMBLY: NEMA 5-20R.
34 D	DROP CORD. SEE DETAIL.
35 T	THERMOSTAT.
36 FB#	FLUSH FLOOR BOX. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
37 PP#	POWER POLE. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
38 PT#	FLUSH FIRE RATED POKE THRU. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
39	SWITCH, DIMMER.
40 X $	SWITCH, SINGLE POLE ("x" INDICATES FIXTURES CONTROLLED).
41 X $2	SWITCH, DOUBLE POLE ("x" INDICATES FIXTURES CONTROLLED).
42 X $3	SWITCH, THREE-WAY ("x" INDICATES FIXTURES CONTROLLED).
43 X $4	SWITCH, FOUR-WAY ("x" INDICATES FIXTURES CONTROLLED).
44 $DS	SWITCH, DOOR.
45 $K	SWITCH, KEY OPERATED.
46 $LM	SWITCH, LOW VOLTAGE MASTER.
47 $M	SWITCH, MOMENTARY.
48 $OS	SWITCH, OCCUPANCY SENSOR.
49 $P	SWITCH, PILOT LIGHT.
50 $T	SWITCH, TIMER OPERATED.
51 $WP	SWITCH, WEATHERPROOF.
52 T	RECEPTACLE, DUPLEX, TAMPER RESISTANT: NEMA 5-20R.
53	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
54	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
55	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, CONNECTED TO UPS: NEMA 5-20R.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**SITE ELECTRICAL AND COMMUNICATIONS UTILITIES**
01 —3ØUP—	ELECTRIC LINE: THIN LINE. 1Ø = SINGLE PHASE, 2Ø = 2-PHASE, 3Ø = 3-PHASE, O = OVERHEAD, U = UNDERGROUND, P = PRIMARY, S = SECONDARY
02	LIGHTNING ARRESTOR.
03	UTILITY POLE.
04	UTILITY, DISTRIBUTION SWITCH OR SWITCHING STATION.
05 E	UTILITY, PRIMARY ELECTRICAL HAND HOLE.
06 M	UTILITY SERVICES, MANHOLE.
07 C	UTILITY, COMMUNICATIONS MANHOLE.
08 E	UTILITY, ELECTRICAL MANHOLE.
09 T	UTILITY, TELEPHONE MANHOLE.
10 C	PRECAST CONCRETE, COMMUNICATION VAULT.
11 E	PRECAST CONCRETE, ELECTRICAL VAULT.
12 T	PRECAST CONCRETE, TELEPHONE VAULT.
13 TM	PRECAST CONCRETE, MANHOLE, TRANSFORMER VAULT.
14 TP	PRECAST CONCRETE, TRANSFORMER PAD.
15 H	HAND HOLE.
16 S	SUBSTATION.
17 T	TRANSFORMER.
00	**ELECTRICAL POWER AND DISTRIBUTION**
01	FUSE WITH RATING (ONE-LINE DIAGRAM).
02	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
03	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
04	DISCONNECT WITH FUSE AND MOTOR STARTER COMBINATION (ONE-LINE DIAGRAM).
05	OVERLOAD RELAY (ONE-LINE DIAGRAM).
06	STARTER (ONE-LINE DIAGRAM).
07	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
08	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
09 MCP	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
10	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
11 GFP	CIRCUIT BREAKER, SOLID STATE WITH GROUND FAULT PROTECTION (ONE-LINE DIAGRAM).
12	MOTOR.
13 L	COMBINATION RESIDENTIAL EXHAUST FAN/LIGHT.
14 F	EXHAUST FAN OUTLET.
15	HEATER, ELECTRIC RESISTANCE.
16	TRANSFORMER (ONE-LINE DIAGRAM).
17	TRANSFORMER, CURRENT (ONE-LINE DIAGRAM).
18	BATTERY (ONE-LINE DIAGRAM).
19	CAPACITOR (ONE-LINE DIAGRAM).
20	DELTA CONNECTION (ONE-LINE DIAGRAM).
21	WYE CONNECTION (ONE-LINE DIAGRAM).
22 "1H"	PANELBOARD (ONE-LINE DIAGRAM).
23 225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
24 225/3 "1H"	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
25 225/3 "1H" 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
26 225/3 "1H" 25/3	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)**
01 (W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
02 (W-3)	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
03 EM	EMERGENCY.
04 NL	NIGHT LIGHT: DO NOT SWITCH.
05 ↑	EGRESS DIRECTION ARROW (EXIT SIGNS).
06 LV	LOW VOLTAGE LIGHTING TRANSFORMER.
07	EXIT SIGN: SINGLE FACE; CEILING MOUNTED
08	EXIT SIGN: SINGLE FACE; WALL MOUNTED
09	EXIT SIGN: DOUBLE FACE; CEILING MOUNTED
10	EXIT SIGN: DOUBLE FACE; WALL MOUNTED
00	**LIGHTING CONTROL**
01	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
02	OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL.
03	OCCUPANCY SENSOR, DUAL TECHNOLOGY, DIRECTIONAL.
04 U	OCCUPANCY SENSOR, ULTRASONIC, OMNI-DIRECTIONAL, CEILING.
05 R	OCCUPANCY SENSOR CONTROL RELAY.
06 P	PHOTOCELL.
07 TC	TIME CLOCK.
08 HR 1	HOUSE RELAY SCHEDULE INDICATOR.
09 101 1-1-1	LITE TOUCH STATION INDICATOR.
10	CEILING FAN.
11 SP	OCCUPANCY SENSOR, SWITCH PACK.
00	**STRUCTURED CABLING**
01 X	TELEPHONE, WALL MOUNTED ("X" INDICATES QUANTITY OF CABLES).
02 P	TELEPHONE, WALL MOUNTED: PAY PHONE.
03 W	TELEPHONE, WALL MOUNTED: WALL PHONE.
04 X	OUTLET, DATA COMMUNICATION ("X" INDICATES QUANTITY OF CABLES).
05	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
06	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
07	LAN RACK, FLOOR STANDING.
08 —D—	DATA CABLE, CATEGORY 5 (ONE-LINE DIAGRAM).
09 —V—	VOICE CABLE, CATEGORY 3 (ONE-LINE DIAGRAM).

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

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

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

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

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

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

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

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

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

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

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

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.
2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.
   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.
   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.
   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.
4. SUBMITTALS: PROVIDE SUBMITTALS IN THREE RING BINDERS WITH JOB NAME, SUBCONTRACTOR, AND VOLUME ON THE BINDING. PREPARE TABS FOR EACH SPECIFICATION SECTION REQUIRING SUBMITTALS. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.

SITE COORDINATION

THE LOCATION, CAPACITY, AND VOLTAGE OF THE LINES ARE ALL IN ACCORDANCE WITH DATA GIVEN THIS OFFICE BY THE UTILITY COMPANY. COORDINATE WITH THE LOCAL UTILITY COMPANY FOR THE INSTALLATION OF THE ELECTRICAL SERVICE. COMPLY WITH UTILITY REGULATIONS. REPORT DISCREPANCIES TO THE ENGINEER.

ELECTRIC UTILITY

USU EASTERN
PERSON CONTACTED: SHEILA BURGHARDT
DATE: OCTOBER 2013
PHONE NUMBER: 1-435-613-550

TELEPHONE UTILITY

QWEST COMMUNICATIONS
ADDRESS
CITY, STATE, ZIP
PERSON CONTACTED: ERIC MANTZ
DATE: OCTOBER 2013
PHONE NUMBER: 1-435-613-5649

ELECTRICAL SHEET INDEX

EE001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES
EE002	SYMBOLS LEGEND
ES100	ELECTRICAL SITE DEMOLITION PLAN
ES101	ELECTRICAL SITE PLAN
EP101	LEVEL 1 POWER PLAN
EP102	LEVEL 2 POWER PLAN
EP601	ONE-LINE DIAGRAM
ET601	TELECOMM RISER
FA601	FIRE ALARM RISER

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

revisions :

title:
SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES

sheet:
EE001

SD

11/14/2013 10:16:13 AM C:\Users\bxw\Documents\Revit Local 2014\20130533 Elec Central_bxw.rvt

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00 ELECTRICAL POWER AND DISTRIBUTION	
30	CT CABINET PER UTILITY'S REQUIREMENTS (ONE-LINE DIAGRAM).
31	TRANSFER SWITCH (ONE-LINE DIAGRAM).
32 DMM	DIGITAL MULTIMETER (ONE-LINE DIAGRAM).
33	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
34 G	GENERATOR, ANNUNCIATOR (ONE-LINE DIAGRAM).
35 G	GENERATOR, POWER (ONE-LINE DIAGRAM).
36 M	METER.
37 BBF	BROAD BAND FILTER (ONE-LINE DIAGRAM).
38 VFC VFD	VARIABLE FREQUENCY MOTOR CONTROLLER (ONE-LINE DIAGRAM).
39	DIODE (ONE-LINE DIAGRAM).
40	AERIAL SERVICE WEATHER HEAD (ONE-LINE DIAGRAM).
41	DISCONNECT SWITCH, FUSED.
42	DISCONNECT SWITCH, UNFUSED.
43	STARTER, COMBINATION WITH DISCONNECT SWITCH.
44	STARTER OR MOTOR CONTROLLER.
45	PUSHBUTTON.
46	PUSHBUTTONS, MOTOR CONTROL.
47	PANELBOARD CABINET, FLUSH MOUNTED.
48	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
49	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
50 DP#	DISTRIBUTION PANEL OR SWITCHBOARD.
51 LP	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
52	LIGHTING CONTROL STATION.
53	DIMMING ENTRY STATION OR CONTROL STATION, FLUSH MOUNTED.
54	CENTRAL PROCESSOR UNIT.
55 $ST	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
56 75	TRANSFORMER: NUMBER INDICATES kVA.
57 B B	BUSWAY.
58 T T	DUCT, TROLLEY.
59	RELAY CONTACT, NORMALLY CLOSED (ONE-LINE DIAGRAM).
60	RELAY CONTACT, NORMALLY OPEN (ONE-LINE DIAGRAM).
61	PUSHBUTTON, NORMALLY CLOSED (ONE-LINE DIAGRAM).
62	PUSHBUTTON, NORMALLY OPEN (ONE-LINE DIAGRAM).
63	PRESSURE SWITCH, CLOSE ON INCREASE (ONE-LINE DIAGRAM).
64	PRESSURE SWITCH, OPEN ON INCREASE (ONE-LINE DIAGRAM).
65	SWITCH, NORMALLY CLOSED FLOAT (ONE-LINE DIAGRAM).
66	SWITCH, NORMALLY OPEN FLOAT (ONE-LINE DIAGRAM).
67	SWITCH, NORMALLY CLOSED LIMIT (ONE-LINE DIAGRAM).
68	SWITCH, NORMALLY OPEN LIMIT (ONE-LINE DIAGRAM).
69	SWITCH, NORMALLY CLOSED TEMPERATURE ACTIVATED (ONE-LINE DIAGRAM).
70	SWITCH, NORMALLY OPEN TEMPERATURE ACTIVATED (ONE-LINE DIAGRAM).
71	SWITCH, NORMALLY CLOSED TIME DELAY (ONE-LINE DIAGRAM).
72	SWITCH, NORMALLY OPEN TIME DELAY (ONE-LINE DIAGRAM).
73	SWITCH, NORMALLY CLOSED FOOT OPERATED (ONE-LINE DIAGRAM).
74	SWITCH, MULTIPOSITION (ONE-LINE DIAGRAM).
75	SWITCH, SINGLE BREAK (ONE-LINE DIAGRAM).
76 N N	SPECIALIZED TRANSFER SWITCH (ONE-LINE DIAGRAM).
77 HC	ACCESSIBLE DOOR ENTRY PUSH PLATE OPERATOR.
78	CIRCUIT BREAKER, DRAW OUT (ONE-LINE DIAGRAM).

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00 FIRE ALARM	
01 FSA	FIRE SYSTEM ANNUNCIATOR.
02 FCP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
03 FPS	FIRE ALARM NOTIFICATION POWER SUPPLY.
04 FTR	FIRE ALARM TRANSPONDER OR TRANSMITTER.
05 HVA	SMOKE CONTROL PANEL.
06 C	AUTOMATIC DOOR CLOSERS: DOOR CLOSERS SHALL BE FURNISHED WITH DOOR HARDWARE AND CONNECTED TO BY FIRE ALARM INSTALLERS.
07 CM	CONTROL MODULE.
08 MM	MONITOR MODULE.
09 P	FIRE ALARM MANUAL PULL STATION.
10 R	SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
11	MAGNETIC DOOR HOLDER.
12 A	FIRE SERVICE OR EMERGENCY TELEPHONE STATION, ACCESSIBLE.
13 H	FIRE SERVICE OR EMERGENCY TELEPHONE STATION, HANDSET.
14 J	FIRE SERVICE OR EMERGENCY TELEPHONE STATION, JACK.
15	DETECTOR, SMOKE.
16 A	DETECTOR, SMOKE WITH AUXILIARY CONTACT.
17 BR	DETECTOR, SMOKE, BEAM RECEIVER.
18 BT	DETECTOR, SMOKE, BEAM TRANSMITTER.
19 E	DETECTOR, SMOKE, ELEVATOR RECALL DESIGNATION.
20 G	DETECTOR, SMOKE WITH GUARD.
21 R	DETECTOR, SMOKE, RESIDENTIAL.
22	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
23	DETECTOR, HEAT.
24	INDICATOR LAMP.
25	STROBE.
26 75	STROBE. SUBSCRIPT INDICATES CANDELA RATING.
27 WP	ALARM, HORN/SPEAKER, WEATHERPROOF.
28	ALARM, HORN/STROBE, ONE ASSEMBLY.
29 75	ALARM, HORN/STROBE, ONE ASSEMBLY. SUBSCRIPT INDICATES CANDELA RATING.
30 C	ALARM, CHIME/STROBE, ONE ASSEMBLY.
31 G	ALARM, HORN/STROBE WITH GUARD, ONE ASSEMBLY.
32 M	ALARM, MINI HORN/STROBE, ONE ASSEMBLY.
33 E	SPEAKER, EVACUATION.
34 E	SPEAKER, EVACUATION, COMBINATION STROBE.
35	DETECTOR, FLOW SWITCH: FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
36	DETECTOR, TAMPER SWITCH WITH VALVE: TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
37 SD	SMOKE DAMPER.
38 FSD	FIRE AND SMOKE DAMPER.
39	BELL (GONG).
40 CO	DETECTOR, CARBON MONOXIDE.
41	DETECTOR, SMOKE/STROBE, RESIDENTIAL.
42 75	ALARM, HORN/STROBE, ONE ASSEMBLY, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
43 75	ALARM, HORN, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
44 75	ALARM, STROBE, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00 TECHNOLOGY SYSTEMS	
01 X	TECHNOLOGY SYSTEM CABLE. SEE SPECIFIC JOB EQUIPMENT LIST FOR APPLICABLE DESIGNATIONS. EXAMPLES: C = CONTROL CABLE G = GROUND CABLE, 10 AWG, 1 CONDUCTOR, GREEN INSULATED M = MICROPHONE CABLE S = SPEAKER CABLE, 70 VOLT SYSTEM Z = SPEAKER CABLE, 8 OHM SYSTEM
02 S #	SPEAKER, CEILING MOUNTED.
03 S #	SPEAKER, WALL MOUNTED.
04 S 4	SPEAKER, 4".
05 S 6	SPEAKER, 6".
06 S 8	SPEAKER, 8".
07 S 12	SPEAKER, 12".
08 S B	SPEAKER, BLIND MOUNT.
09 S E	SPEAKER, EXISTING.
10 S H	HORN.
11 S HW	HORN, WEATHER RESISTANT.
12 S M	SPEAKER, MASKING.
13 S R	SPEAKER, RECESSED.
14 S S	SPEAKER, SURFACE.
15 XX	SPEAKER, USER DEFINED.
16	SPEAKER, HIGH FREQUENCY.
17	SPEAKER, LOW FREQUENCY.
18	SPEAKER ENCLOSURE (CLUSTER).
19	CALL SWITCH, INTERCOM.
20	MICROPHONE, TABLE OR LECTERN MOUNTED.
21	EQUIPMENT CABINET.
22	MEDIA CONNECTION PLATE.
23	AUDIO/VISUAL OUTLET.
24	SCREEN, PROJECTION, CEILING MOUNTED.
25	PROJECTOR, CEILING MOUNTED.
26 V	VIDEO CONFERENCING CAMERA.
27 CP	CONTROL PANEL.
28 M	MICROPHONE INPUT.
29 M	MICROPHONE INPUT, FLOOR MOUNTED.
30 R	REMOTE CONTROL INPUT.
31 $	POWER SWITCH.
32 S	SPEAKER SWITCH OR INPUT.
33 SV	SOURCE SWITCH/VOLUME CONTROL.
34 T	TAPE RECORD OUTPUT.
35 V	VOLUME CONTROL.
36 HC	HUB CABINET.
37 M	VIDEO MONITOR.
38 ADA	AUDIO DISTRIBUTION AMPLIFIER.
39 APP	AUDIO PATCH PANEL.
40 CP#	CONNECTION PANEL.
41 DVD	DIGITAL VERSATILE DISC (DVD) PLAYER.
42 EP	ASSISTED LISTENING EMITTER PANEL.
43 K	SIGNAL RELAY DPDT WITH SOCKET.
44 LD	LINE DRIVER (VARIZONE DIGITAL PAGING SYSTEM).
45 PAM	POWER AMP MODULE (VARIZONE DIGITAL PAGING SYSTEM).
46 RDA	RGBHV DISTRIBUTION AMPLIFIER.
47 RM	REMOTE CONTROL PANEL.
48 RMS	RGBHV MATRIX SWITCHER.
49 TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER, AC LINE CONDITIONER.
50 VCR	VIDEO CASSETTE RECORDER.
51 VDA	COMPOSITE VIDEO DISTRIBUTION AMPLIFIER.
52 VMS	COMPOSITE VIDEO MATRIX SWITCHER.
53 VPP	VIDEO PATCH PANEL.
54 YMS	S-VIDEO MATRIX SWITCHER.
55 PA	AMPLIFIER (ONE-LINE DIAGRAM).
56 PB	POWER BRIDGE (VARIZONE DIGITAL PAGING SYSTEM).
57	TERMINATOR (VARIZONE DIGITAL PAGING SYSTEM).
58	DIODE (ONE-LINE DIAGRAM).
59 I/M	TRANSFORMER, ISOLATION/MATCHING (ONE-LINE DIAGRAM).
60 #W	TRANSFORMER, # WATT (ONE-LINE DIAGRAM).
61	MICROPHONE, HANDHELD (ONE-LINE DIAGRAM).
62 A	AUXILIARY INPUT.
63 IR	INFRARED SENSOR.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00 CLOCK	
01 C	CLOCK.
02 C G	CLOCK, SURFACE WITH WIRE GUARD.
00 CCTV	
01 P	CCTV CABLE, POWER.
02 V	CCTV CABLE, VIDEO SIGNAL.
03 CCTV	CCTV HEADEND EQUIPMENT.
04 M	CCTV MONITOR.
05	CCTV CAMERA/ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE.
06 PTZ	CCTV CAMERA WITH PAN, TILT AND ZOOM.
07 360°	PANNING CAMERA TRANSVERSE ANGLE.
00 SECURITY	
01 X	SECURITY CABLE. SEE EQUIPMENT SCHEDULE FOR CABLE TYPE.
02 ACC	ACCESS CONTROL HEADEND EQUIPMENT.
03 CTR	SECURITY CONTROL PANEL.
04 SEC	INTRUSION DETECTION HEADEND EQUIPMENT.
05 #1	CARD ACCESS DOOR TYPE #1 OR AS NOTED. SEE SCHEDULE.
06 CR	CARD READER.
07 KCR	KEYPAD/CARD READER COMBINATION.
08	DOOR SWITCH, BALANCED MAGNETIC CONTROL.
09 ER	EXIT REQUEST.
10 RL	REMOTE DOOR RELEASE BUTTON.
11	BELL.
12	BUZZER.
13	BUZZER, COMBINATION BELL.
14	SENSOR, BURIED VEHICULAR.
15	SENSOR, GLASS BREAK.
16	SENSOR, VOLUMETRIC.
17 CA	CONTROLLED ACCESS POINT.
18 IC	INTERCOM STATION.
19 IRU	DUAL TECHNOLOGY PASSIVE INFRARED SENSOR AND ULTRASONIC MOTION DETECTOR.
20 IR	PASSIVE INFRARED SENSOR.
21 P	PANIC DURESS SWITCH.
22 U	ULTRASONIC MOTION DETECTOR.
23 AP	ANNUNCIATOR PANEL.
24 MSI	MASTER STATION, INTERCOM.
00 TV DISTRIBUTION	
01 T	TV DISTRIBUTION CABLE, INDIVIDUAL DROPS.
02 TR	TV DISTRIBUTION CABLE, TRUNK.
03 CMB	COMBINER.
04 DC	DIRECTIONAL COUPLER.
05 DA	DISTRIBUTION AMPLIFIER (ONE-LINE DIAGRAM).
06 SPL	SPLITTER (ONE-LINE DIAGRAM).
07	TV OUTLET.
08	SATELLITE ANTENNA.
09	TV ANTENNA (ONE-LINE DIAGRAM).
10	TERMINATOR, 75 OHM (TV DISTRIBUTION).

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

revisions :

title:

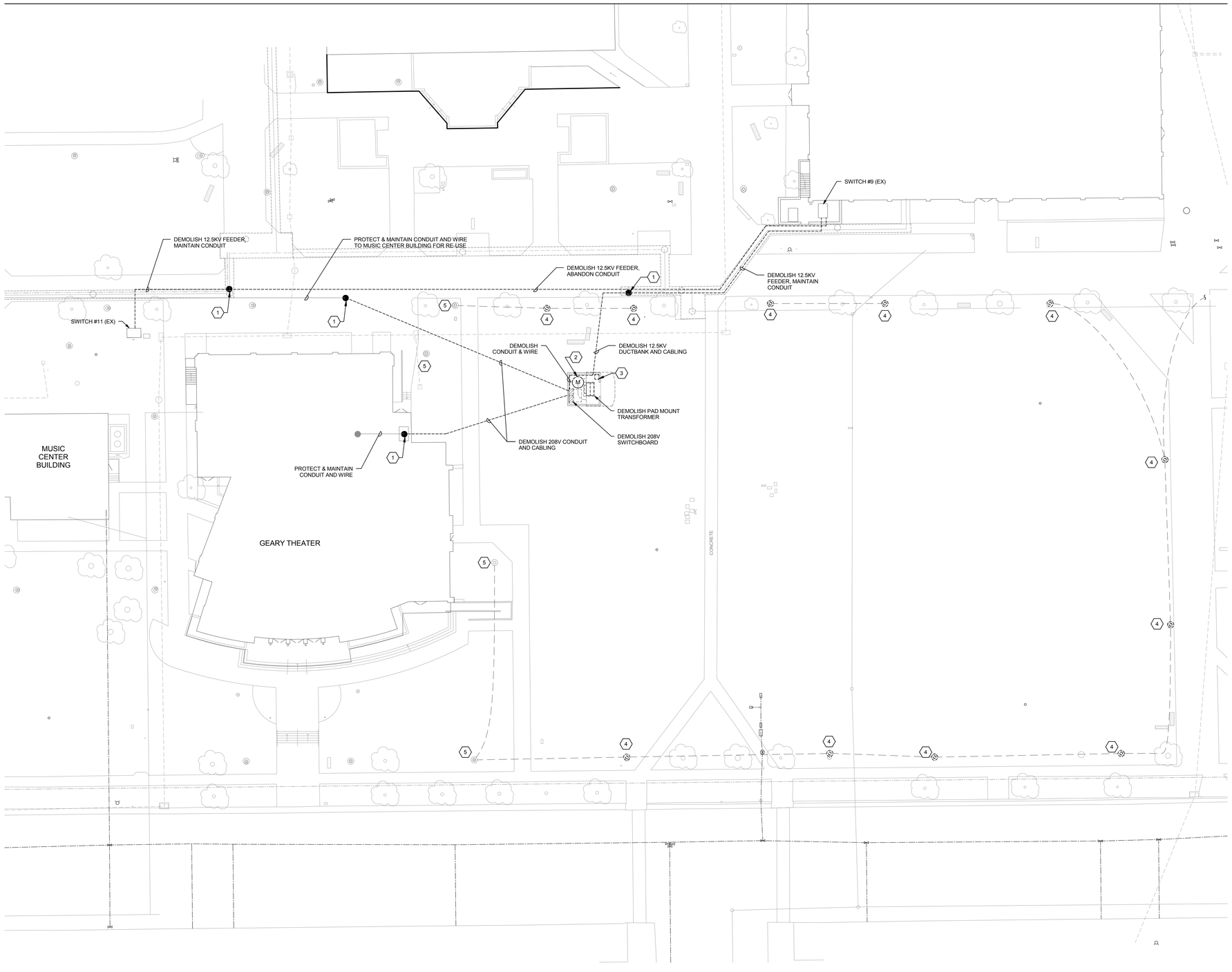
SYMBOLS LEGEND

sheet:

EE002

SD

11/14/2013 10:16:10 AM C:\Users\bxw\Documents\Revit Local 2014\2013\0533 Elec Central_bxw.rvt



A1 ELECTRICAL SITE DEMOLITION PLAN
SCALE: 1" = 20'-0"

GENERAL SHEET NOTES

1 SITE LIGHTING CIRCUITING IS SHOWN FOR CONCEPTUAL REFERENCE ONLY AND IS BASED ON AS-BUILT DRAWIGNS PROVIDED BY OWNER. THIS CIRCUITING HAS NOT BEEN FEILD VERIFIED, CONTRACTOR SHALL BE RESPONSIBLE TO FIELD TRACE AND MAKE ADJUSTMENTS AS NECCESSARY TO MAINTAIN ALL SITE LIGHTING AND CONTROL FOR LIGHTS THAT REMAIN. INCLUDING TRENCHING, BACKFILL, REPIAR, CONDUIT, WIRE, ETC.

2 COORDINATE DEMOLITION WORK SCHEDULING WITH USU. DO NOT DISRUPT NORMAL OPERATIONS OF THE CAMPUS. DEMOLITION WORK IS TO BE DONE AFTER NEW WORK IS INSTALLED IN ORDER TO MINIMIZE CUT-OVER TIME. PERFORM DEMOLITION WORK AFTER HOURS OR ON WEEKENDS AS NECESSARY TO AVOID DISTURBANCES AND DISRUPTIONS TO THE UNIVERSITY.

3 PHASE DEMOLITION AND NEW WORK SUCH THAT OUTAGES TO FACILITES ARE ELIMINATED OR KEPT TO AN ABSOLUTE MINIMUM. PROVIDE A MINUMIM 2-WEEK NOTICE PRIOR TO ANY INTENTDED OUTAGE.

4 SALVAGE AND DELIVER REMOVED LIGHTS AND POLES TO OWNER. DEMOLISH FIXTURES AND POLES UPON REQUEST OF USU IF THEY DO NOT WANT TO TAKE OWNERSHIP OF REMOVED LIGHTS/POLES.

SHEET KEYNOTES

1 APPROXIMATE CONDUIT INTERCEPTION LOCATION, CONTRACTOR TO FIELD COORDINATE EXACT LOCATION.

2 POWER METER TO BE DEMOLISHED.

3 DEMOLISH POWER CONDUIT AND WIRE TO AND FROM IRRIGATION CONTROLLER.

4 REMOVE AND DELIVER EXISTING LIGHT AND POLE TO OWNER. PROVIDE NEW CONDUIT AND WIRE AS REQUIRED TO MAINTAIN EXISTING LIGHTING CIRCUIT TO LIGHTS THAT REMAIN.

5 EXISTING LIGHT TO REMAIN; PROVIDE NEW CONDUIT AND WIRE AS REQUIRED TO MAINTAIN POWER AND CONTROL TO LIGHT POLE.

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

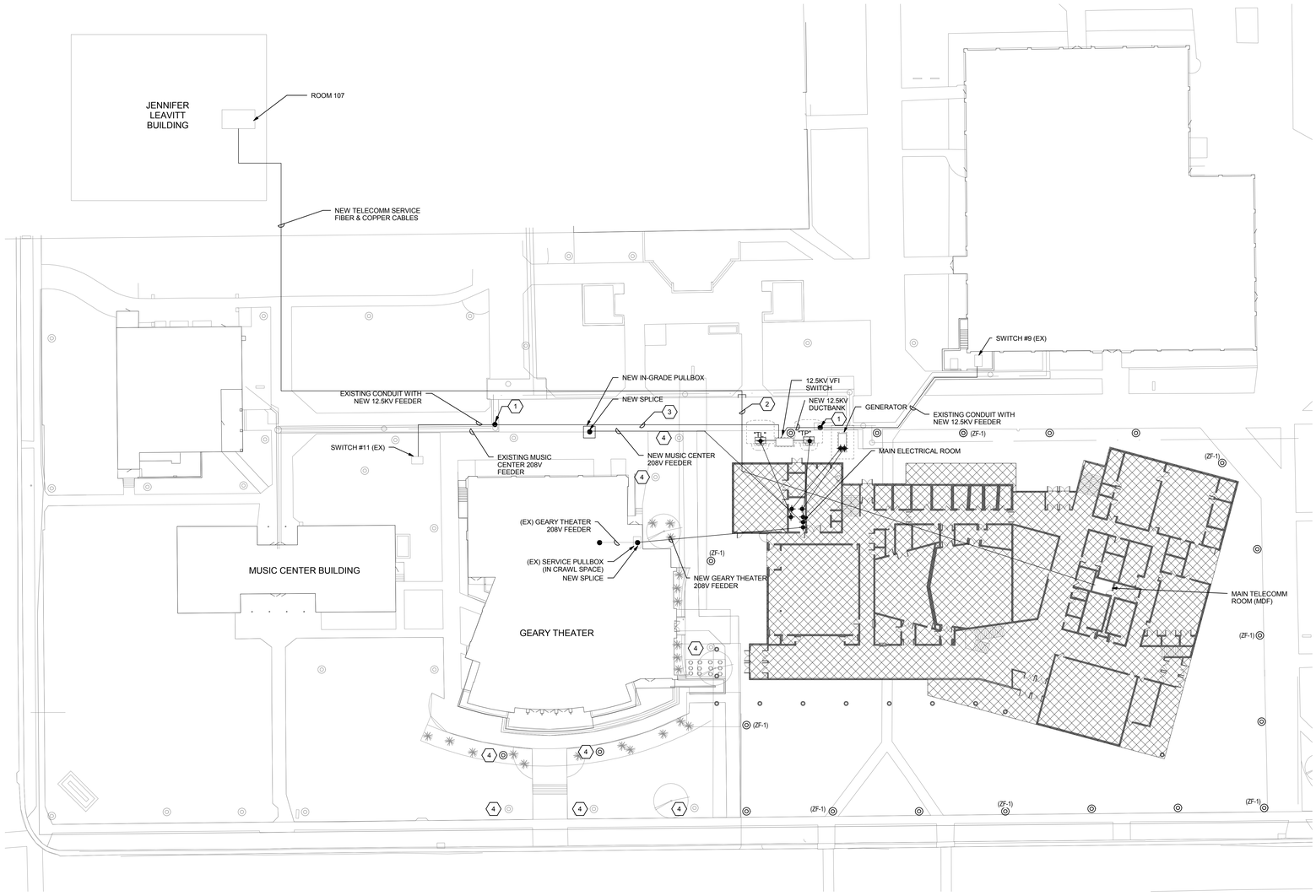
revisions :

title:
ELECTRICAL SITE DEMOLITION PLAN

sheet:
ES100

SD

11/14/2013 10:16:09 AM C:\Users\bxw\Documents\Revit Local 2014\20130533 Elec Central_bxw.rvt



A1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

1 APPROXIMATE CONDUIT NTERCPETION LOACTION, CONTRACTOR TO FIELD COORDINATE EXACT LOCATION AND ADJUST AS NECESSARY.

2 PROVIDE NEW CONCRETE ENCASED TELECOMMUNICATIONS DUCTBANK.

3 PROVIDE NEW CONCRETE ENCASED MEDIUM VOLTAGE DUCTBANK AND INSTALL CABLES PER 1-LINE.

4 EXISTING SITE LIGHT TO REMAIN. PROTECT AND REFEED AS NECCESSARY.

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

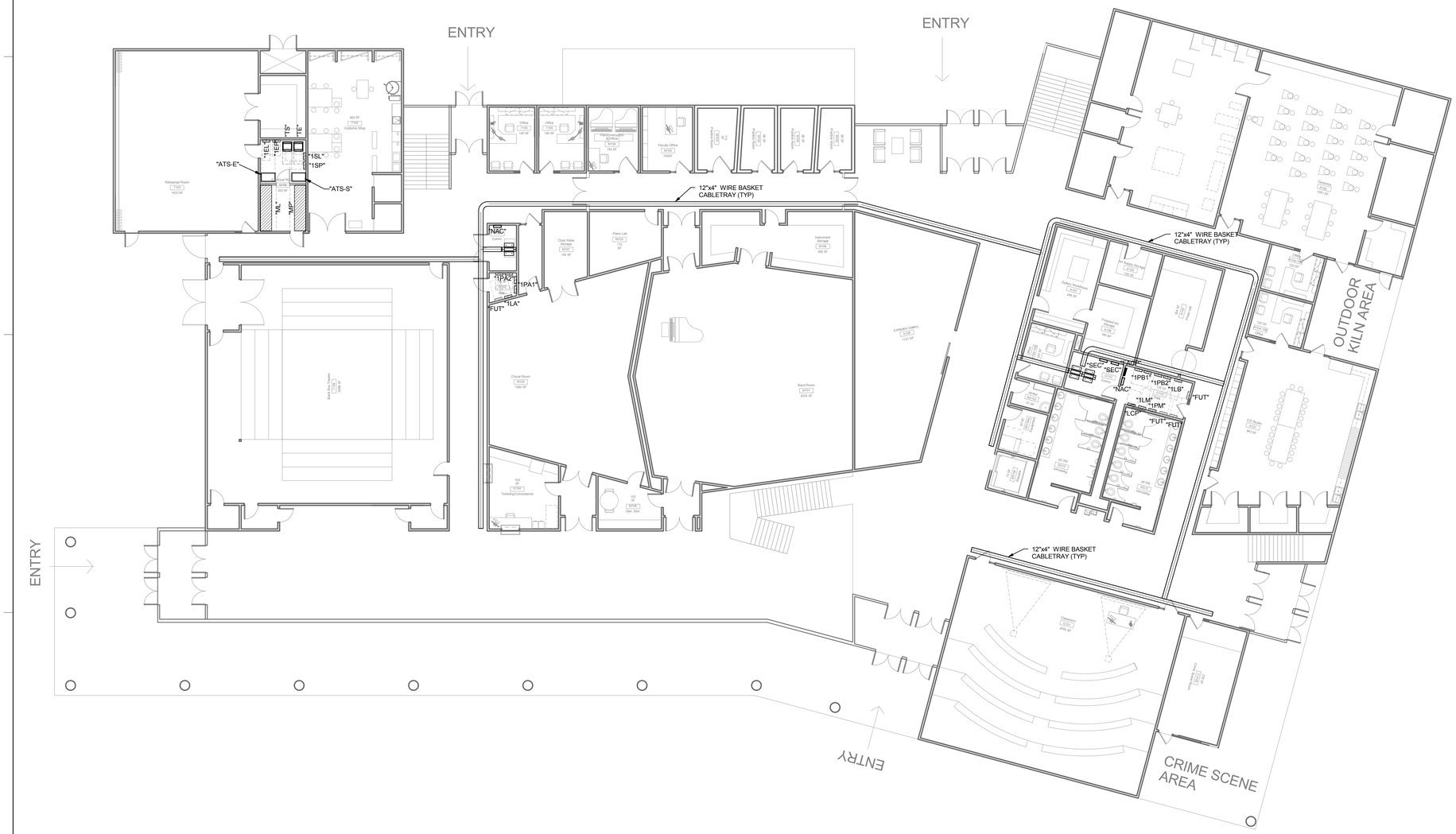
revisions :

title:
ELECTRICAL SITE PLAN

sheet:
ES101

SD

11/14/2013 10:16:07 AM C:\Users\bxw\Documents\Revit Local 2014\2130533 Elec Central_bxw.rvt



A1 LEVEL 1 POWER PLAN
SCALE: 3/32" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

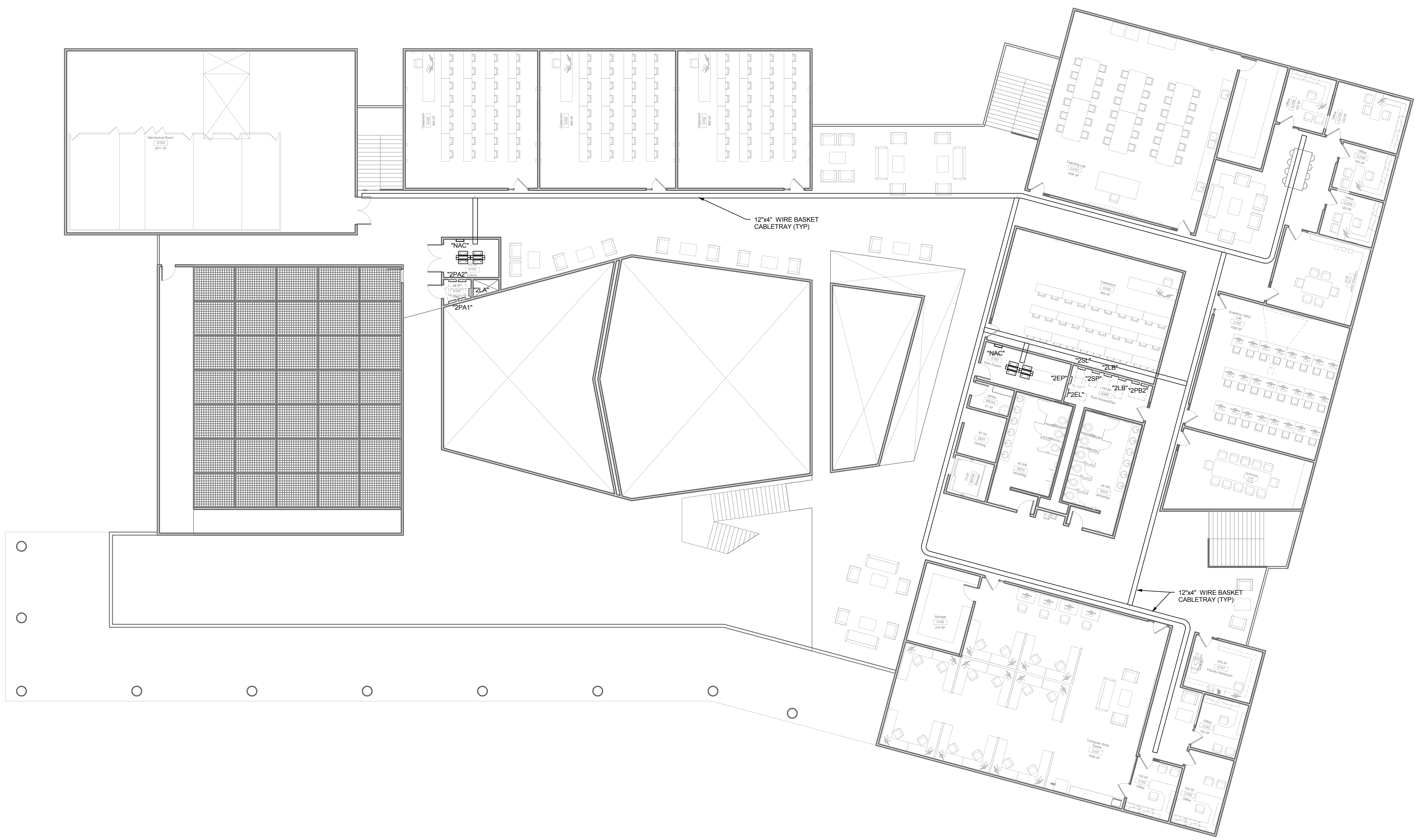
revisions :

title:
LEVEL 1 POWER PLAN

sheet:
EP101

SD

11/14/2013 10:16:05 AM C:\Users\lawi\Documents\Revit Local 2014\20130533 Elec Central_lawi.rvt



A1 LEVEL 2 POWER PLAN
SCALE: 3/32" = 1'-0"

11/14/2013 10:16:04 AM C:\Users\bxw\Documents\Revit Local 2014\20130533 Elec Central_bxw.rvt

GENERAL SHEET NOTES

SHEET KEYNOTES

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM
ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone: (801) 532-4422

PROGRESS SET
NOT FOR
CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

revisions :

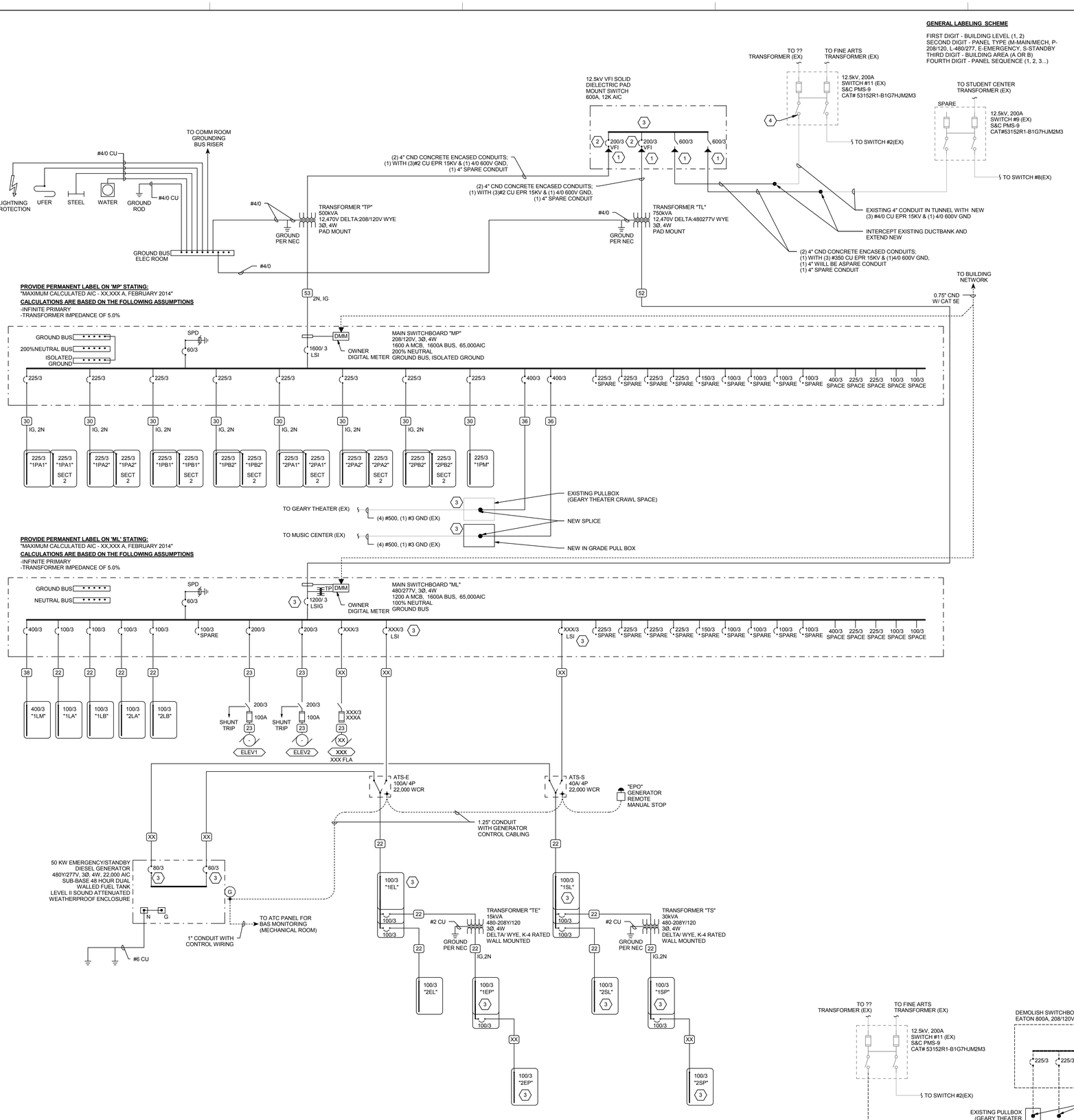
title:

LEVEL 2 POWER PLAN

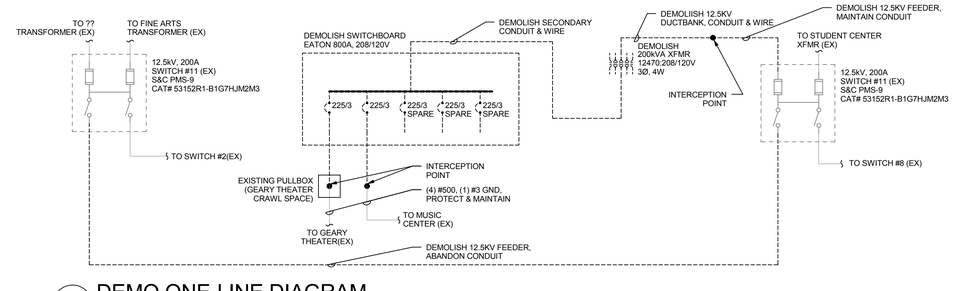
sheet:

EP102

SD



A1 ONE-LINE DIAGRAM
SCALE: NTS



A4 DEMO ONE-LINE DIAGRAM
SCALE: NTS

GENERAL SHEET NOTES

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

SHEET KEYNOTES

1. PROVIDE 200A LOADBREAK MOLDED RUBBER PRODUCT TERMINATIONS.
2. ADJUST VFI SETTING PER SELECTIVE COORDINATION STUDY RECOMMENDATIONS.
3. PROVIDE FULL COORDINATION OF OVERCURRENT DEVICES IN THIS DISTRIBUTION BRANCH. MODIFY BREAKER AND / OR PROVIDE FUSING AS REQUIRED FOR FULL COORDINATION.
4. PROVIDE NEW 200A CABLE TERMINATIONS COMPATIBLE WITH EXISTING SWITCH. CONTRACTOR TO FIELD COORDINATE TERMINATIONS PRIOR TO ORDERING.

CONDUCTOR AND CONDUIT SCHEDULE

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

SYM	AMP	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	SIZE	G	IG	SE	NOTES
1	20	.75	2	12	12	12	8	2
2	20	.75	3	12	12	12	8	2,3
3	20	.75	4	12	12	12	8	2,3
4	30	.75	2	10	10	10	8	2
5	30	.75	3	10	10	10	8	2
6	30	.75	4	10	10	10	8	2
7	40	1	2	8	10	8	6	2
8	40	1	3	8	10	8	6	2
9	40	1	4	8	10	8	6	2
10	55	1	2	6	10	8	4	2
11	55	1	3	6	10	8	4	2
12	55	1.25	4	6	10	8	4	2
13	70	1	2	4	8	4	2	2
14	70	1.25	3	4	8	4	2	2
15	70	1.25	4	4	8	4	2	2
16	85	1.25	2	3	8	3	2	2
17	85	1.25	3	3	8	3	2	2
18	85	1.25	4	3	8	3	2	2
19	95	1.25	3	2	8	2	2	2
20	95	1.50	4	2	8	2	2	2
21	130	1.50	3	1	6	2	2	2
22	130	1.50	4	1	6	2	2	2
23	150	2	3	1/0	6	2	1/0	2
24	150	2	4	1/0	6	2	1/0	2
25	175	2	3	2/0	6	2	2/0	2
26	175	2	4	2/0	6	2	2/0	2
27	200	2	3	3/0	6	2	2/0	2
28	200	2.50	4	3/0	6	2	2/0	2
29	230	2.50	3	4/0	4	2	2/0	2
30	230	2.50	4	4/0	4	2	2/0	2
31	255	2.50	3	250	4	1	2/0	2
32	255	2.50	4	250	4	1	2/0	2
33	310	3	3	350	3	1/0	3/0	2
34	310	3	4	350	3	1/0	3/0	2
35	380	3.50	3	500	3	3/0	3/0	2
36	380	4	4	500	3	3/0	3/0	2
37	400	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	2 EA 3	4	250	1	4/0	3/0	2
41	620	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	780	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	780	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	5 EA 4	4	400	4/0	4/0	4/0	4
54	2010	6 EA 4	4	400	250	250	250	4
55	2660	7 EA 4	4	500	350	350	350	4
56	3040	8 EA 4	4	500	500	500	500	4
57	4180	11 EA 4	4	500	500	500	500	4
58		5 EA 4						6
59		6						6
60		10 EA 4						6

CONDUIT AND CONDUCTOR SCHEDULE NOTES

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

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS
METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

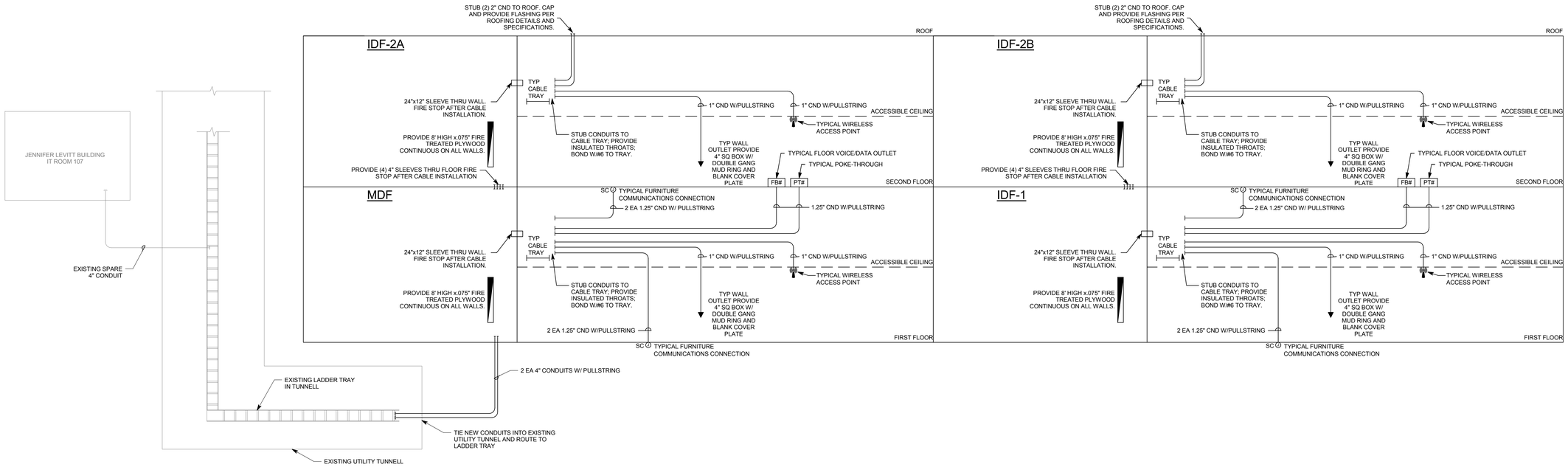
revisions :

title:
ONE-LINE DIAGRAM

sheet:
EP601

SD

11/14/2013 10:18:01 AM C:\Users\bxw\Documents\Revit Local 2014\2013\0533 Elec Central_bxw.rvt



A1 TELECOM RISER DIAGRAM

SCALE: NTS

11/14/2013 10:15:58 AM C:\Users\bxw\Documents\Revit Local 2014\20130533 Elec Central_bxw.rvt

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:

USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

revisions :

title:

TELECOMM RISER

sheet:

ET601

SD

WIRING SCHEDULE

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

NOTIFICATION SCHEDULE

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

ADDRESSABLE LOOP LEGEND

INITIATING LOOP	DESCRIPTION
FA-1	-

INDICATING LOOP LEGEND

INDICATING LOOP	DESCRIPTION
FI-1	-

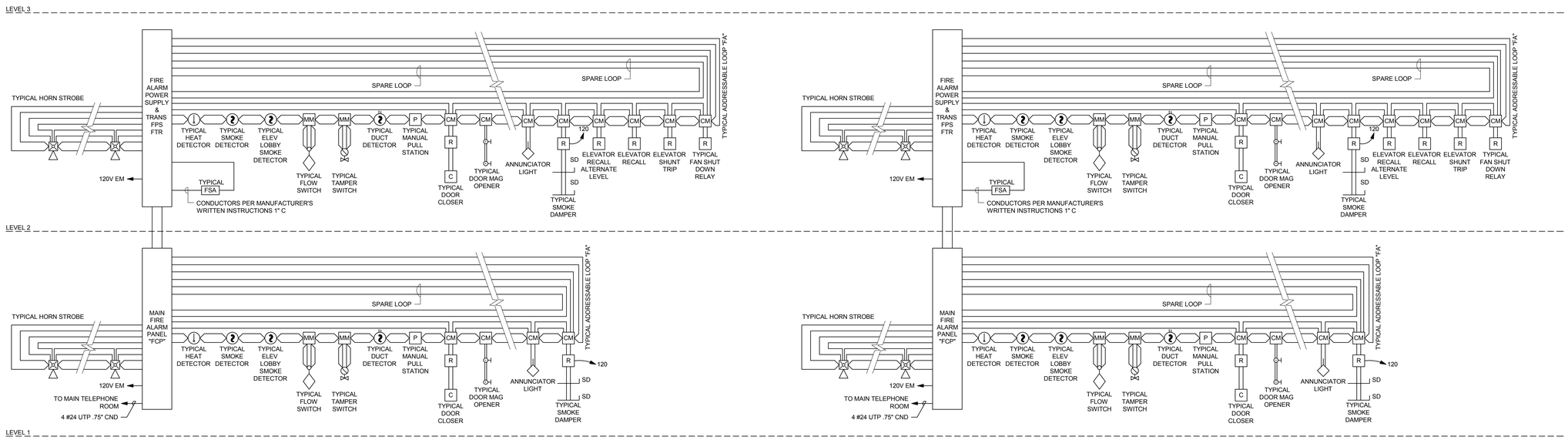
FIRE ALARM INPUT/OUTPUT MATRIX

OUTPUT DEVICES

INITIATING DEVICES — ZONE	GENERAL ALARM	DOOR HOLDER/CLOSERS	ELEVATOR RECALL MAIN LEVEL	ELEVATOR RECALL ALTERNATE LEVEL	FAN SHUTDOWN	FIRE DAMPER	MAIN LEVEL ELEVATOR DOORS HOLD OPENS	2ND LEVEL ELEVATOR DOORS HOLD OPENS	3RD LEVEL ELEVATOR DOORS HOLD OPENS	4TH LEVEL ELEVATOR DOORS HOLD OPENS	5TH LEVEL ELEVATOR DOORS HOLD OPENS	ELEVATOR SHUNT TRIP				NOTES
1 MAIN FLOW	o															
2 MAIN TAMPER																
3 MAIN LEVEL FLOW																
4 MAIN LEVEL TAMPER																
5 2ND LEVEL FLOW																
6 2ND LEVEL TAMPER																
7 PENTHOUSE FLOW																
8 PENTHOUSE TAMPER																
9 MAIN LEVEL INITIATING LOOP																
10 MAIN LEVEL ELEVATOR DETECTOR																
11 MAIN LEVEL DUCT DETECTOR																
12 2ND LEVEL INITIATING LOOP																
13 2ND LEVEL ELEVATOR DETECTOR																
14 2ND LEVEL DUCT DETECTOR																
15 PENTHOUSE LEVEL INITIATING LOOP																
16 PENTHOUSE LEVEL ELEVATOR DETECTOR																
17 PENTHOUSE LEVEL DUCT DETECTOR																
18 FIRE PUMP PUMP RUNNING																
19 FIRE PUMP LOSS OF POWER																
20 FIRE PUMP PHASE REVERSAL																
21 ELEVATOR SPRINKLER HEAT DETECTORS																
22																
23																
24																
25																

GENERAL SHEET NOTES

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



A1 FIRE ALARM RISER
SCALE: NTS

UNLESS A PROFESSIONAL SEAL WITH SIGNATURE AND DATE IS AFFIXED, THIS DOCUMENT IS PRELIMINARY AND IS NOT INTENDED FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

SPECTRUM ENGINEERS

METHOD STUDIO INC.
925 south west temple
salt lake city, utah 84101
phone:(801) 532-4422

PROGRESS SET NOT FOR CONSTRUCTION

DFCM APPROVAL STAMP

THE DESIGNS SHOWN AND DESCRIBED HEREIN INCLUDING ALL TECHNICAL DRAWINGS, GRAPHIC REPRESENTATIONS & MODELS THEREOF, ARE PROPRIETARY & CAN NOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED IN WHOLE OR IN PART WITHOUT THE SOLE AND EXPRESS WRITTEN PERMISSION FROM METHOD STUDIO INC.

project:
USU Eastern CIB

451 E 400 N
Price, UT 84501

project#: 13.0170
date: 11-14-2013

revisions :

title:
FIRE ALARM RISER

sheet:
FA601

SD

11/14/2013 10:15:57 AM C:\Users\bxw\Documents\Revit Local 2014\20130533 Elec Central_bxw.rvt

USU EASTERN

CENTRAL INSTRUCTION BUILDING

USU EASTERN

CENTRAL INSTRUCTION BUILDING

FINAL SCHEMATIC DESIGN SUBMITTAL

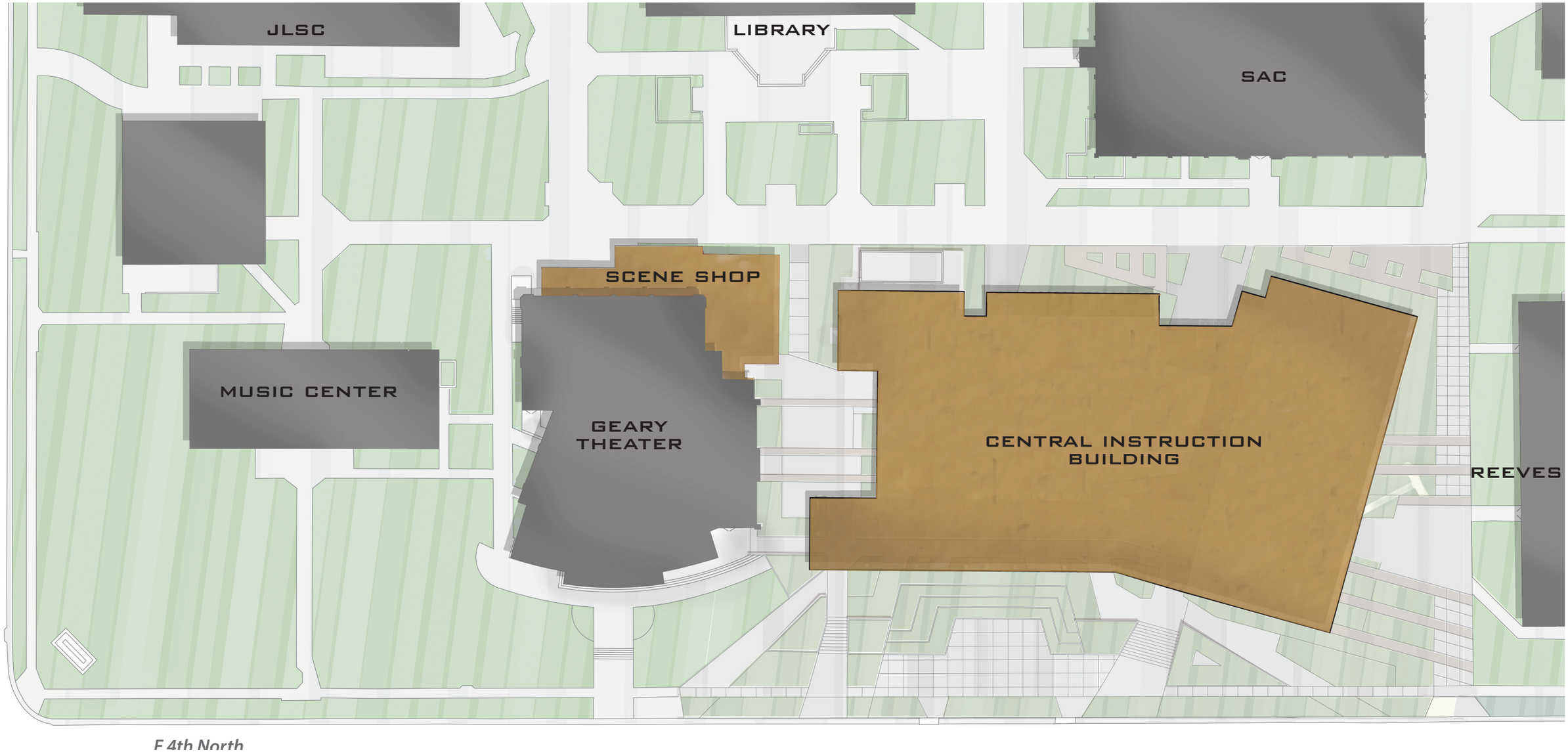
METHODSTUDIO INC.

DFCM #13180610

DECEMBER 2, 2013

TABLE OF CONTENTS

CAMPUS PLAN	01
SITE PLAN	02
LANDSCAPE DESIGN PLAN	03
FLOOR PLANS	04
ELEVATIONS	06
SECTIONS & PROCESS	08
MATERIAL RENDERINGS	11



CAMPUS PLAN

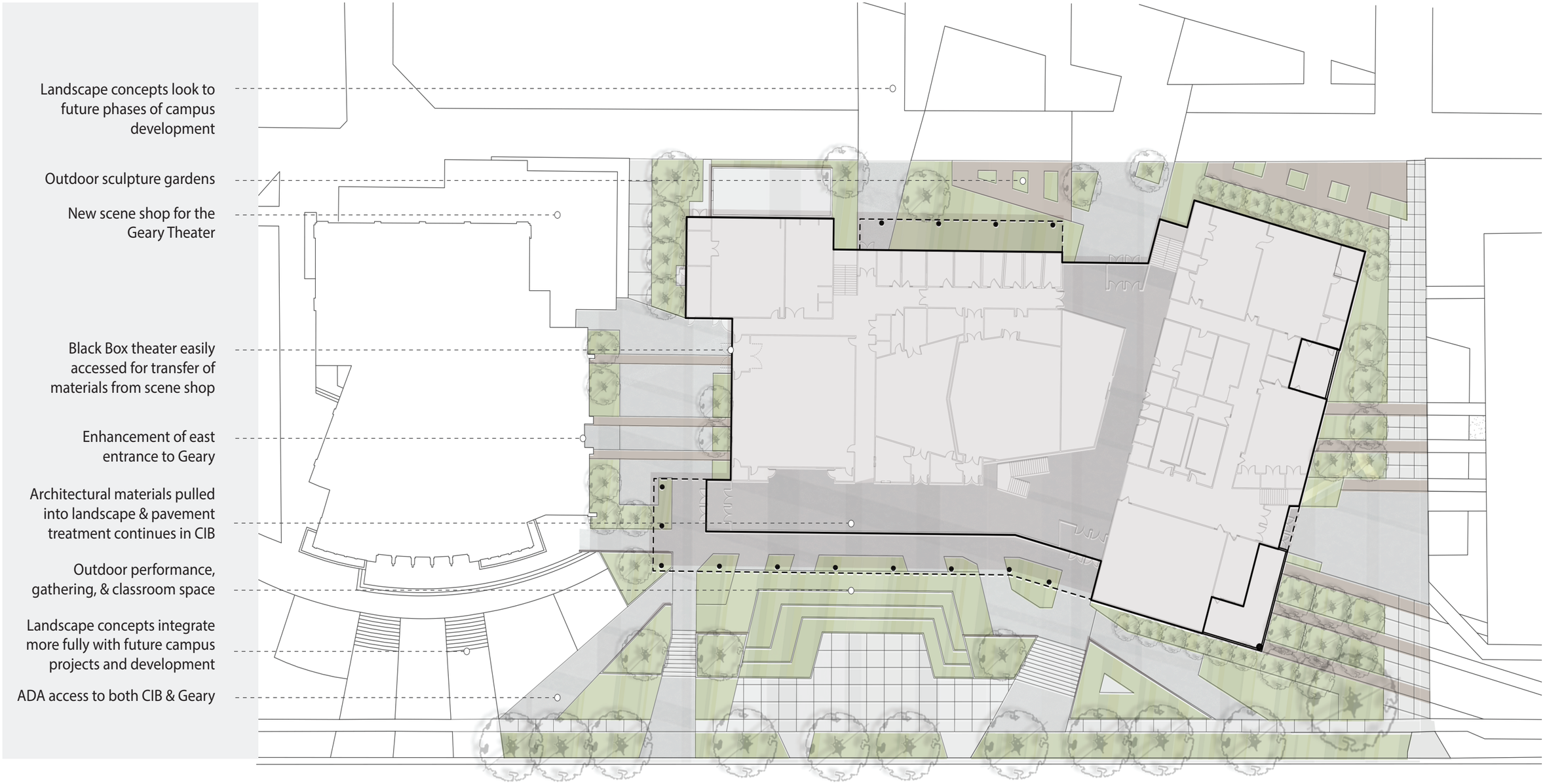
USU EASTERN

CENTRAL INSTRUCTION BUILDING

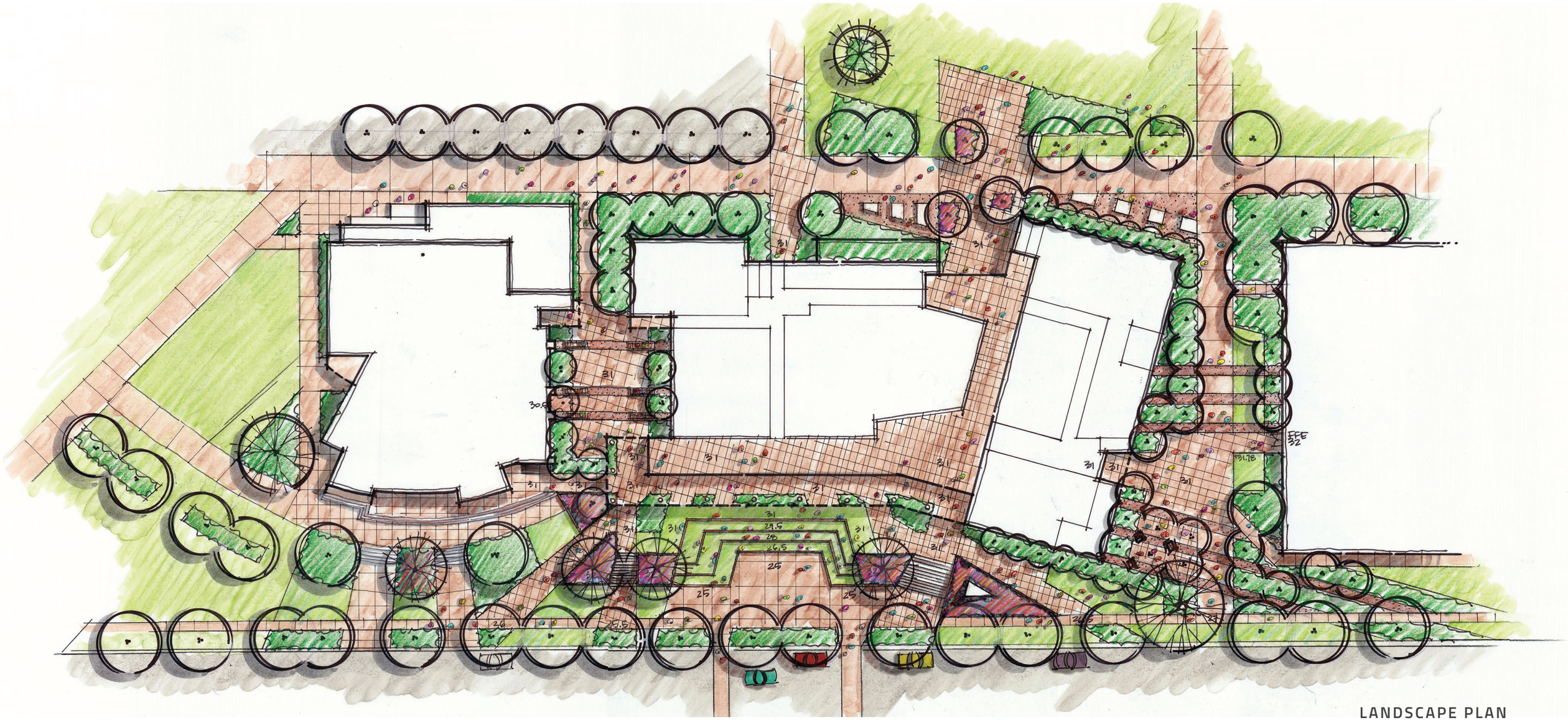
FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.
DFCM #13180610
DECEMBER 2, 2013

SHEET 01


Landscape concepts look to future phases of campus development
Outdoor sculpture gardens
New scene shop for the Geary Theater
Black Box theater easily accessed for transfer of materials from scene shop
Enhancement of east entrance to Geary
Architectural materials pulled into landscape & pavement treatment continues in CIB
Outdoor performance, gathering, & classroom space
Landscape concepts integrate more fully with future campus projects and development
ADA access to both CIB & Geary

SITE PLAN



LANDSCAPE PLAN

USU EASTERN

CENTRAL INSTRUCTION BUILDING

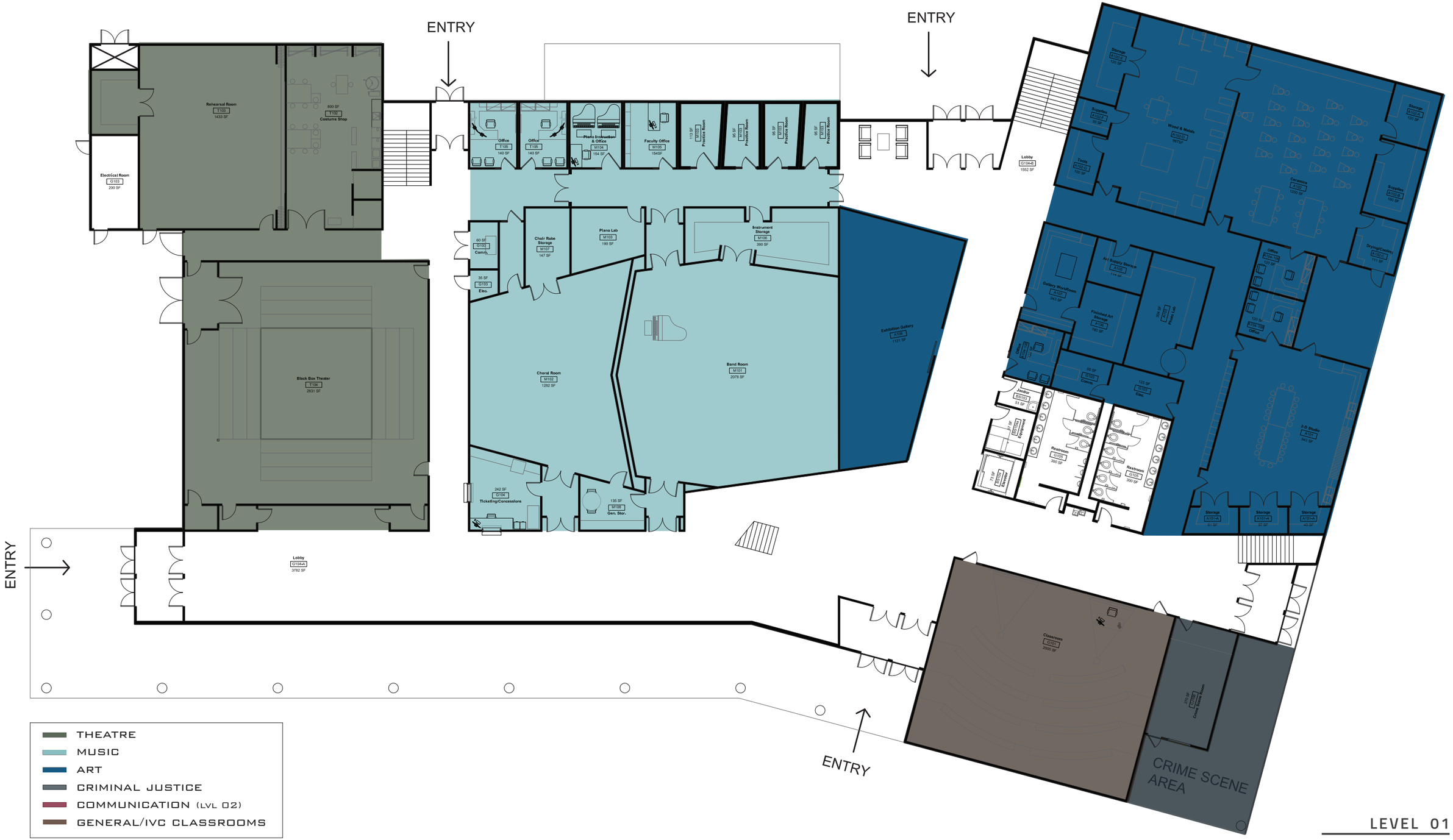
FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.

DFCM #13180610

DECEMBER 2, 2013

SHEET 03



LEVEL 01

USU EASTERN

CENTRAL INSTRUCTION BUILDING

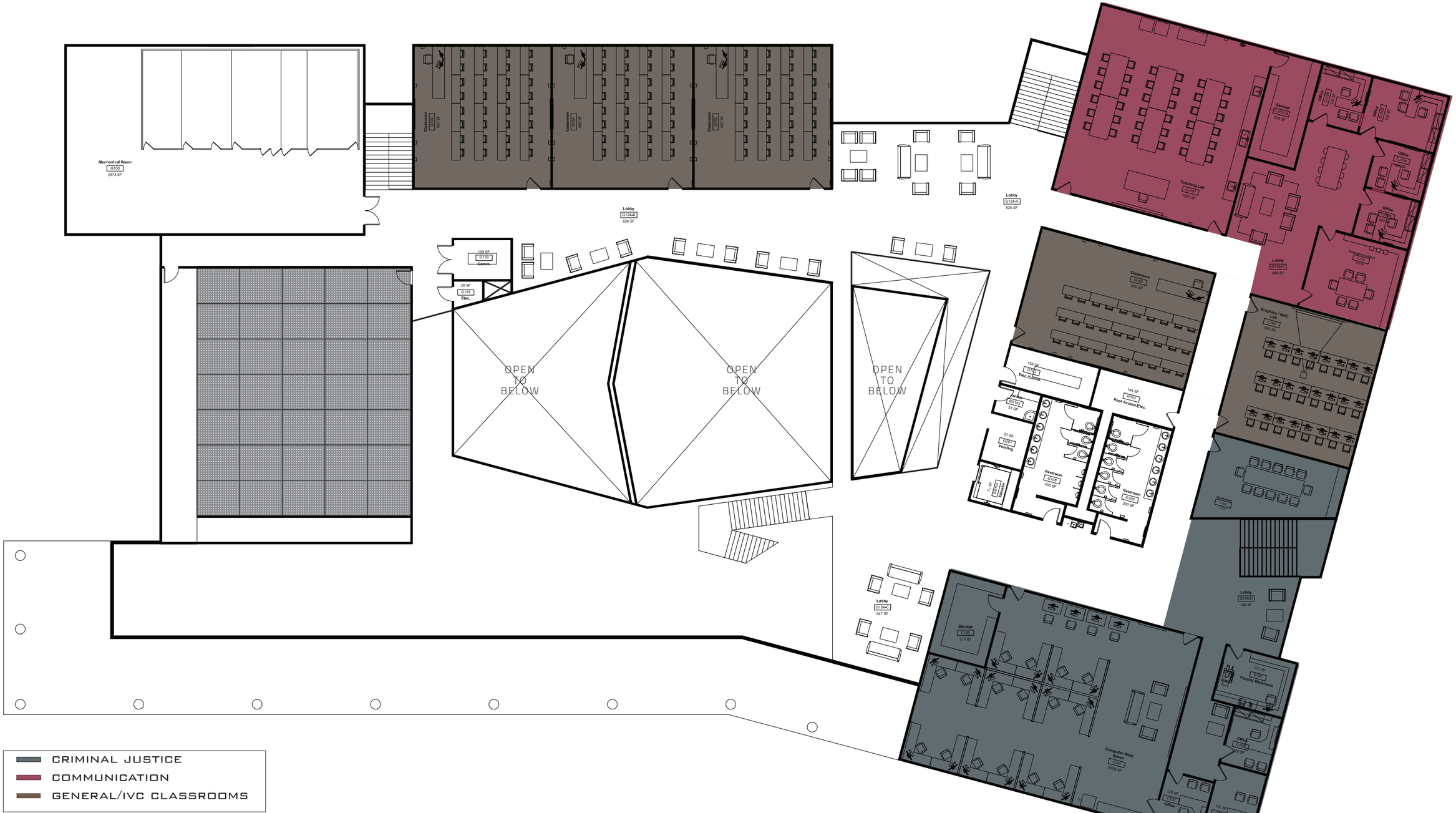
FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.

DFCM #13180610

DECEMBER 2, 2013

SHEET 04



LEVEL 02

USU EASTERN

CENTRAL INSTRUCTION BUILDING

FINAL SCHEMATIC DESIGN SUBMITTAL

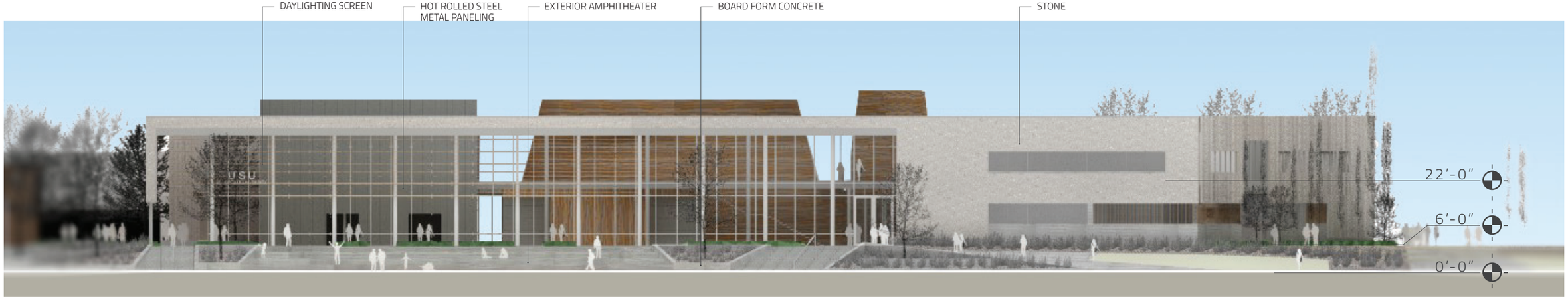
METHODSTUDIO INC.

DFCM #13180610

DECEMBER 2, 2013

SHEET 05

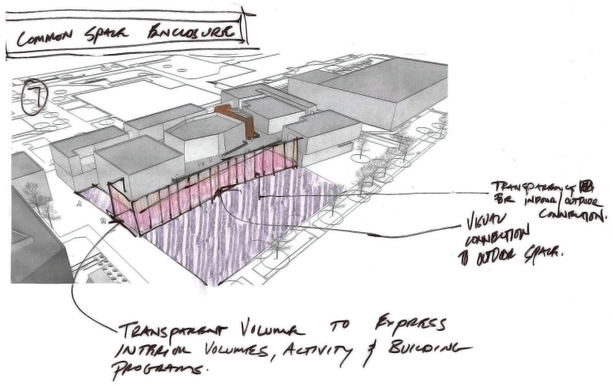
WEST ELEVATION

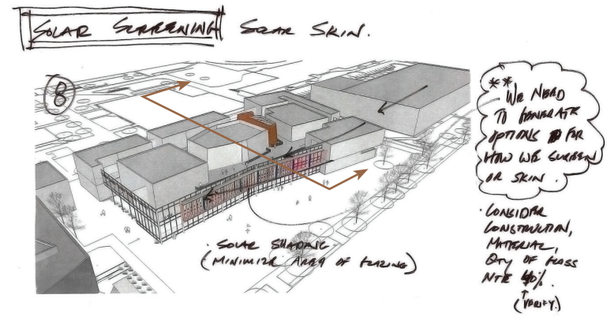


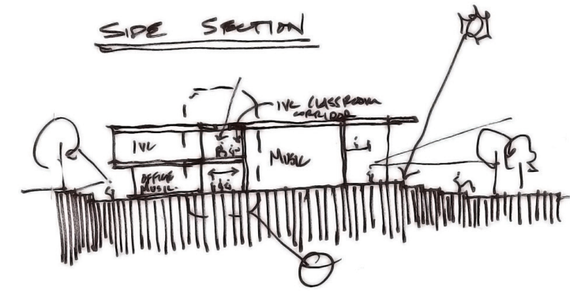
SOUTH ELEVATION

EAST ELEVATION

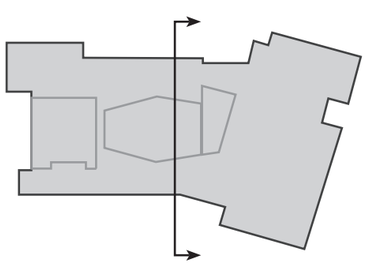
NORTH ELEVATION



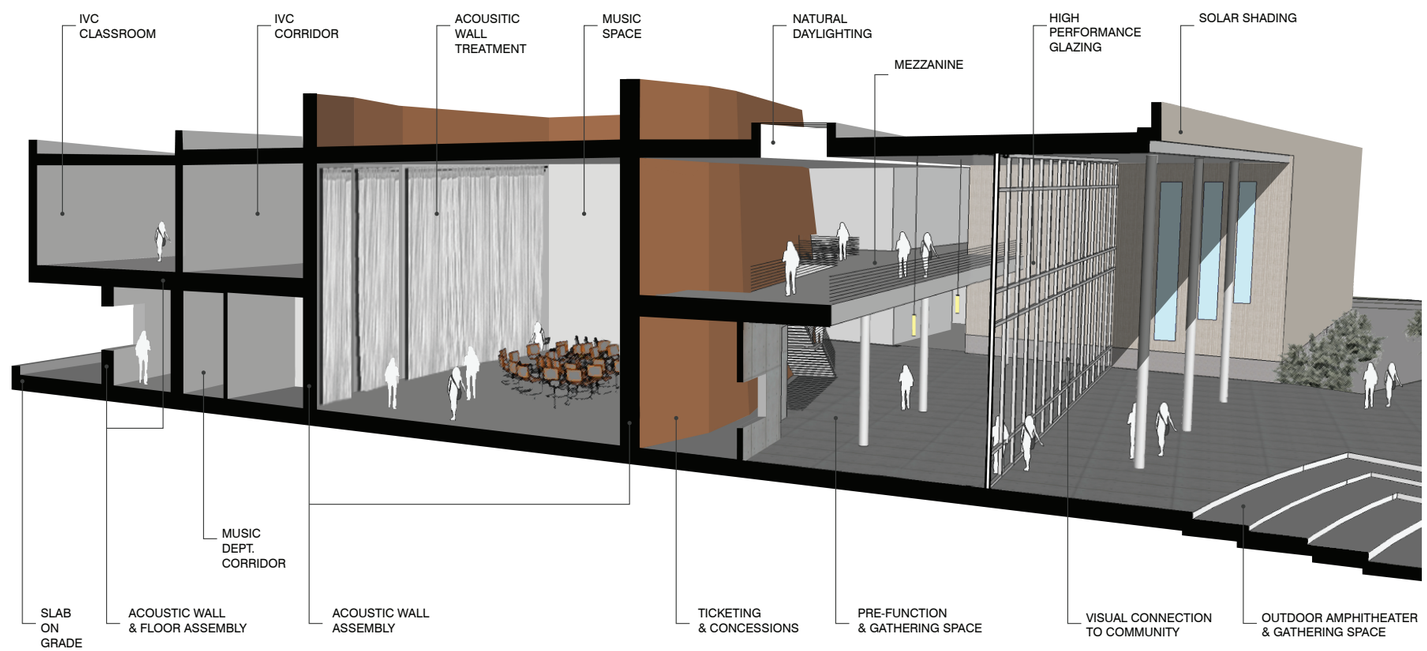




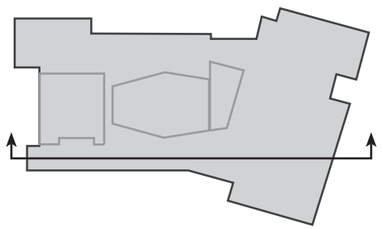
PROCESS



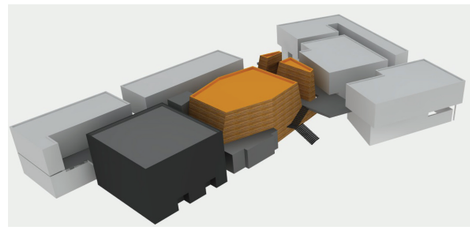
REFERENCE

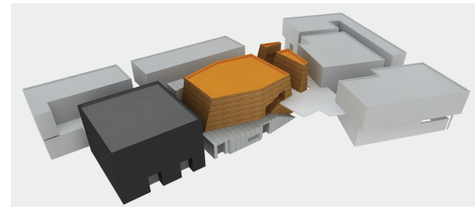


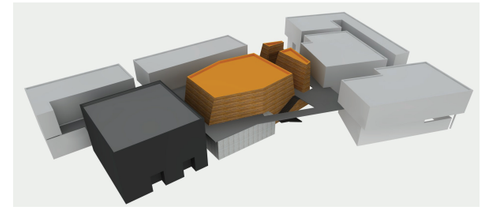
SECTION 01

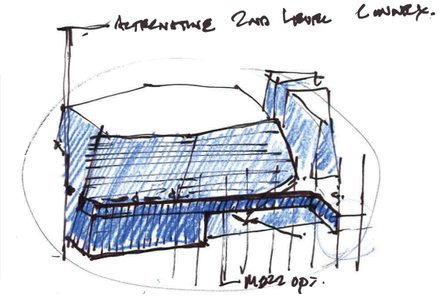


REFERENCE

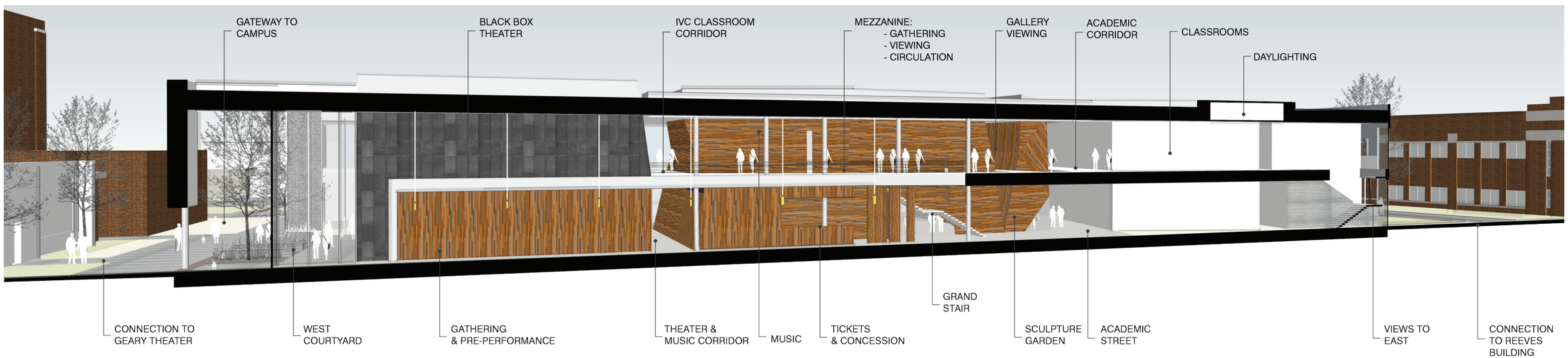




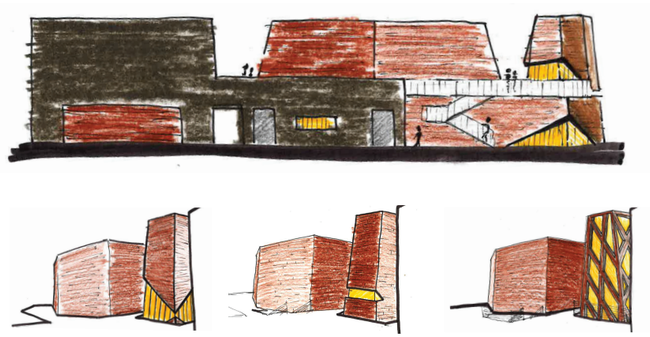


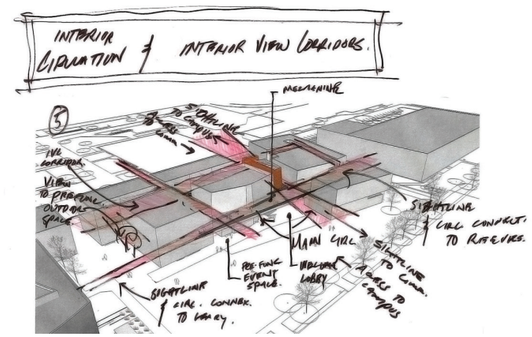


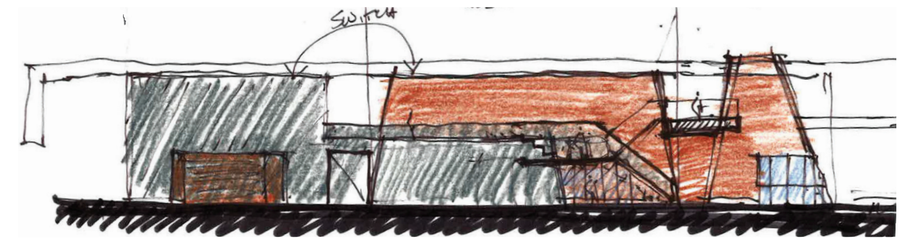
PROCESS



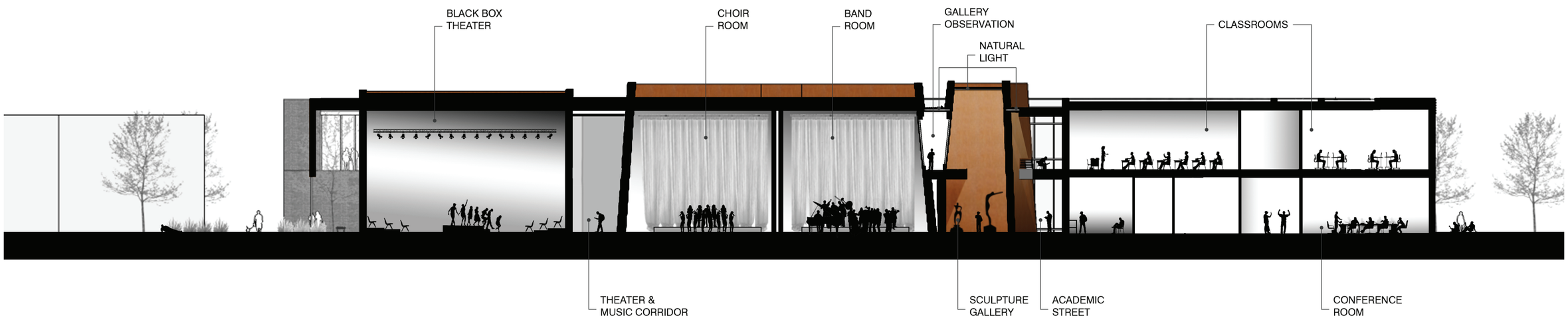
SECTION 02







PROCESS



SECTION 03

VIEW 01 - DAY

USU EASTERN

CENTRAL INSTRUCTION BUILDING
FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.
DFCM #13180610
DECEMBER 2, 2013

SHEET
11

VIEW 01 - NIGHT

VIEW 02 - DAY

USU EASTERN

CENTRAL INSTRUCTION BUILDING

FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.
DFCM #13180610
DECEMBER 2, 2013

VIEW 02 - NIGHT

VIEW 03 - DAY

USU EASTERN

CENTRAL INSTRUCTION BUILDING
FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.
DFCM #13180610
DECEMBER 2, 2013

VIEW 03 - NIGHT

VIEW 04 - DAY

USU EASTERN

CENTRAL INSTRUCTION BUILDING

FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.

DFCM #13180610

DECEMBER 2, 2013

VIEW 04 - DAY

USU EASTERN

CENTRAL INSTRUCTION BUILDING
FINAL SCHEMATIC DESIGN SUBMITTAL

METHODSTUDIO INC.
DFCM #13180610
DECEMBER 2, 2013