ASSOCIATE ARCHITECT, LANDSCAPE, LEED CRSA 649 E. SOUTH TEMPLE SALT LAKE CITY, UT 84102 (801) 355-5915

**EQUIPMENT** MAINTENANCE DESIGN GROUP (MDG) 1600 STOUT STREET, SUITE 940 DENVER, CO 80202 (720) 473-5900

CIVIL JACOBS ENGINEERING 155 NORTH 400 WEST, SUITE 550 SALT LAKE CITY, UT 84103 (801) 335-1112

STRUCTURAL REAVELEY AND ASSOCIATES 655 EAST 500 SOUTH, SUITE 400 SALT LAKE CITY, UT 84102 (801) 486-3883

MECHANICAL, PLUMBIING COLVIN ENGINEERING 244 WEST 300 NORTH, SUITE 200 SALT LAKE CITY, UT 84103 (801) 322-2400

ELECTRICAL SPECTRUM ENGINEERING 324 SOUTH STATE STREET, SUITE 400 SALT LAKE CITY, UT 84111 (801) 328-5151

CNG / FUELING FUEL SOLUTIONS 12340 SANTA MONICA BLVD. SUITE 133 SANTA MONICA, CA 90025 (310) 207-8548

**FUNDING** 310 PINE AVENUE, SUITE 200 COLORADO SPRINGS, CO 80906 (719) 577-4253

SURVEYING REDCON 90 N. MAIN STREET BOUNTIFUL, UT 84010 (801) 298-2401

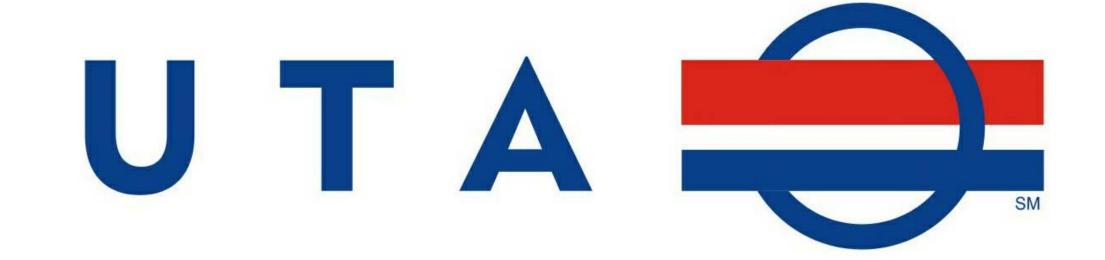
GEOTECHNICAL GEOSTRATA 14425 SOUTH CENTER POINT WAY BLUFFDALE, UT 84065 (801) 501-0583

**ENVIRONMENTAL** IHI ENVIRONMENTAL 640 E. WILMINGTON AVENUE SALT LAKE CITY, UT 84106 (801) 466-2223

COST ESTIMATING PARAMETRIX, INC. 7186 SOUTH HIGHLAND DRIVE SALT LAKE CITY, UT 84211 (801) 733-5900 CONSTRUCTION CONTROL CORPORATION 307 WEST 200 SOUTH, SUITE 4006 SALT LAKE CITY, UT 84101 (801) 5781201

WASH **BUILDING 4** 669 WEST 200 SOUTH SALT LAKE CITY, UT 84101





**BUILDING 4** WASH

NOT FOR CONSTRUCTION

**UTAH TRANSIT** AUTHORITY DEPOT DISTRICT TECHNOLOGY CENTER

CONSTRUCTION DOCUMENTS 03/31/2015

### ADDDE\/IATIONS

	ABBREVIATIO	ONS	
	ABBREVIATIONS		ABBREVIATIONS
AB	ANCHOR BOLT	FHC	FIRE HOSE CABINET
ACT ADJ	ACOUSTICAL TILE ADJACENT/ADJUSTABLE	FIN FIN GR	FINISH FINISHED GRADE
AFF	ABOVE FINISH FLOOR	FIXT	FIXTURE
AFG AHU	ABOVE FINISH GRADE AIR HANDLING UNIT	FL   FLR	FLOW LINE / FLOOR LINE FLOOR / FLOORING
ALT	ALTERNATE NO.	FLUOR	FLUORESCENT
ALUM ANOD	ALUMINUM ANODIZED	FR FT	FRAME / FIRE RATED / FIRE RETARTANT FOOT / FEET / FIRE TREATED / FULLY TEMPERED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FTG	FOOTING
APPD APPROX	APPROVED APPROXIMATELY	FURG FURN	FURRING FURNISH / FURNITURE
ARCH ASSY	ARCHITECT ASSEMBLY	FUT FVC	FUTURE FIRE VAI VE CABINET
AUTO	AUTOMATIC/AUTOMATION	GA GA	GAGE
AVG AWI	AVERAGE AMERICAN WOODWORKING INSTITUTE	GAL GALV	GALLONS GALVANIZED
AWT	ACCOUSTICAL WALL TREATMENT	GC	GENERAL CONTRACTOR
B/B BD	BACK TO BACK BOARD	GEN GI	GENERAL / GENERATOR GALVANIZED IRON
BLDG	BUILDING	GL	GLASS / GROUND LEVEL
BLKG BLST	BLOCKING BALLAST	GLZ GND	GLAZING GROUND
BM BOS	BEAM/BENCH MARK BOTTOM OF STEEL	GYP BD GYP SHTG	GYPSUM BOARD GYPSUM SHEATHING BOARD.
BOT	BOTTOM OF STEEL	HC	HANDICAPPED ACCESSIBLE / HOLLOW CORE
BRG BSMT	BEARING BASEMENT	HD HDW	HEAD / HEAVY DUTY HARDWARE
BTWN	BETWEEN	HDWD	HARDWOOD
BUR C/C	BUILT UP ROOFING CENTER TO CENTER	HM HORIZ	HOLLOW METAL HORIZONTAL
CAB	CABINET	HP	HIGH POINT / HORSEPOWER / HIGH PRESSURE
CB CBB	CATCH BASIN CEMEMTITOUS BACKER BOARD	HT HVAC	HEIGHT HEATING VENTILATION AND AIR CONDITIONING
CEM DI AC	CEMENT	HW	HOT WATER
CEM PLAS CER	CEMENT PLASTER CERAMIC	HWH ID	HOT WATER HEATER INSIDE DIAMETER / INTERIOR DESIGN
CF CF/CI	CUBIC FOOT / FEET CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	IF IN	INSIDE FACE / INTAKE FAN INCHES
CF/OI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	INCAND	INCANDESCENT
CFLG CFMF	COUNTER FLASHING COLD FORMED METAL FRAMING	INCL INSTL	INCLUDING INSTALL
CG	CORNER GUARD	INSUL	INSULATE / INSULATION
CIP CJ	CAST IN PLACE CONTROL JOINT / CONSTRUCTION JOINT	INT INV	INTERIOR / INTERNAL INVERT
CL	CENTERLINE	INV EL	INVERT ELEVATION
CLG CLO	CEILING CLOSET	J BOX JAN	JUNCTION BOX JANITOR
CLR	CLEAR	JAN CLO	JANITOR CLOSET
CLT CMU	CLEAT CONCRETE MASONRY UNIT	JT KIT	JOINT KITCHEN
CO COL	CLEAN OUT COLUMN	LAB LAM	LABORATORY LAMINATE
CONC	CONCRETE	LAV	LAVATORY
COND CONST	CONDITION CONSTRUCTION	LBS LF	POUNDS LINEAR FEET
CONT	CONTINUE / CONTINUATION / CONTINUOUS	LH	LEFT HAND
CONTR COORD	CONTRACTOR COORDINATE	LLH LLV	LONG LEG HORIZONTAL LONG LEG VERTICAL
COP	COPING	LPT	LOW POINT
CORR CPT	CORRIDOR CARPET	LT LTG	LIGHT LIGHTING
CSK CT	COUNTER SUNK CERAMIC TILE	LVR MAINT	LOUVER MAINTENANCE
CTR	CENTER	MAS	MASONRY
CU FT CU YD	CUBIC FOOT / CUBIC FEET CUBIC YARDS	MATL MAX	MATERIAL MAXIMUM
CW	COLD WATER	MECH	MECHANICAL
D DBL	DEPTH / DEEP DOUBLE	MED MEMB	MEDIUM MEMBRANE
DEG	DEGREE	MFG	MANUFACTURED
DEL DEMO	DELETE DEMOLITION	MFR MIN	MANUFACTURER MINIMUM
DET DETN	DETAIL DETENTION	MISC ML	MISCELLANEOUS METAL LATH
DF	DRINKING FOUNTAIN	МО	MASONRY OPENING
DIA DIAG	DIAMETER DIAGONAL	MOD BIT MR	MODIFIED BITUMEN MOISTURE RESISTANT
DIM	DIMENSION	MS	MOP SINK
DISP DMPF	DISPENSER DAMPPROOFING	MTD MTL	MOUNTED METAL
DN	DOWN	MULL	MULLION
DR DS	DOOR / DRAIN DOWNSPOUT	N N/A	NORTH NOT APPLICABLE
DTL DWG	DETAIL DRAWING	NCOMBL NEG	NONCOMBUSTIBLE NEGATIVE
E	EAST	NIC	NOT IN CONTACT
EA EIFS	EACH EXTERIOR INSULATION FINISH SYSTEM	NO NOM	NUMBER NOMINAL
EJ	EXPANSION JOINT	NTS	NOT TO SCALE
EL EL	REFERENCE ELEVATION EASEMENT LINE	O/O OA	OUT TO OUT OVERALL / OUTSIDE AIR
ELEC	ELECTRIC / ELECTRICAL	OC OD	ON CENTER
ELEV EMER	ELEVATOR / ELEVATION EMERGENCY	OD OF	OUTSIDE DIAMETER / OUTSIDE DIMENSION OUTSIDE FACE
ENCL ENGR	ENCLOSURE ENGINEER / ENGINEERING	OF/CI OF/OI	OWNER FURNISHED/CONTRACTOR INSTALLED OWNER FURNISHED/OWNER INSTALLED
EOS	EDGE OF SLAB	OFF	OFFICE
EPDM EQ	ETHYLENE PROPYLENE DIENE MONOMOR EQUAL	OH OPNG	OPPOSITE HAND / OVERHEAD / OVERHANG OPENING
EQL SP	EQUALLY SPACED	OPP	OPPOSITE
EQUIP EST	EQUIPMENT ESTIMATE	ORD ORIG	OVERFLOW ROOF DRAIN ORIGINAL
ETC	ET CETERA	ORN	ORNAMENTAL
EWC	EACH WAY ELECTRIC WATER COOLER	ORS PAT	OVERFLOW ROOF SCUPPER PATTERN
EXIST	EXISTING	PBD	PARTICLE BOARD
EXP EXT	EXPOSED / EXPAND / EXPANSION EXTERIOR / EXTERNAL / EXTINGUISHER	PCC PERF	PRECAST CONCRETE PERFORATED
F/F FFEL	FACE TO FACE FINISHED FLOOR ELEVATION	PERM PL	PERMANENT PLATE / PROPERTY LINE
FA	FIRE ALARM / FACE AREA / FRESH AREA	PLAM	PLASTIC LAMINATE
FACP FD	FIRE ALARM CONTROL PANEL FLOOR DRAIN	PLAS PLBG	PLASTER / PLASTIC PLUMBING
FDTN	FOUNDATION	PLYWD	PLYWOOD
FDV FE	FIRE DEPARTMENT VALVE CABINET FIRE EXTINGUISHER	PNL POL	PANEL POLISHED
FEC	FIRE EXTINGUISHER CABINET	PR	PAIR / PIPE RAIL
FF INSUL FH	FOIL BACKED INSULATION FIRE HYDRANT / FIRE HOSE	PREFAB PREFIN	PREFABRICATED PREFINISHED
		<del></del>	

	6		7	8
			ABBREVIATION	NS
		PRELIM	PRELIMINARY	
		PREP PROJ	PREPARATION PROJECT	
		PT PT CONC	PAINT / PRESSURE TREATED POST TENSION CONCRETE	)
		PTD	PAINTED / PAPER TOWEL DIS	SPENSER
		PTN PVC	PARTITION POLYVINYL CHLORIDE	
		PVMT	PAVEMENT	
		QT QTY	QUARRY TILE QUANTITY	
		R RA	RADIUS / RISER RETURN AIR	
		RB	RUBBER BASE / RESILIENT B	ASE
		RBR RCP	RUBBER REFLECTED CEILING PLAN	
		RD	ROOF DRAIN	
		REBAR REC	REINFORCED STEEL BAR RECESSED	
		REF REINF	REFERENCE / REFRIGERATOR REINFORCED / REINFORCED	
		REM	REMOVE	
		REQD REV	REQUIRED REVISION	
		RGD INS	RIGID INSULATION	
		RH RL	RIGHT HAND ROOF LEADER	
		RLG RM	RAILING ROOM	
		RO	ROUGH OPENING	
		ROW RP	RIGHT OF WAY REFERENCE POINT	
		RTG	RATING	
		RTU RVL	ROOF TOP UNIT REVEAL	
		S SALV	SOUTH SALVAGE	
		SAN	SANITARY	
		SB SCHED	SPLASH BLOCK SCHEDULE / SCHEDULED	
		SCHEM	SCHEMATIC	
		SCP SCWD	SCUPPER SOLID CORE WOOD DOOR	
		SEC SECT	SECOND SECTION	
		SF	SQUARE FOOT / SQUARE FE	ET / SUPPLY FAN
		SGL SHT	SINGLE SHEET	
		SHT MTL FLASH	SHEET METAL FLASHING	
		SHTHG SIM	SHEATHING SIMILAR	
		SLNT	SEALANT	
		SM SMACNA	SHEET METAL / SMALL / SUR SHEET METAL AIR CONDITIO	
		SPEC	NATIONAL ASSOCIATION SPECIFICATION(S)	
		SPLY	SUPPLY	
		SPRT SQ	SUPPORT SQUARE	
		SST STC	STAINLESS STEEL SOUND TRANSMISSION CLAS	29
		STD	STANDARD	50
		STL STL JST	STEEL STEEL JOIST	
		STOR	STORAGE	
		STRUCT SURF	STRUCTURAL SURFACE	
		SUSP SYMM	SUSPENDED SYMMETRICAL	
		T	TREAD	
		T&B T&G	TOP AND BOTTOM TONGUE AND GROOVE	
		TBD	TO BE DETERMINED	
		TEL TEMP	TELEPHONE TEMPERATURE / TEMPORAR	Υ
		TERR THK	TERRAZZO THICK / THICKNESS	
		THRES	THRESHOLD	
		THRU TMPD GL	THROUGH TEMPERED GLASS	
		то	TOP OF	
		TOC TOJ	TOP OF CONCRETE / TOP OF TOP OF JOIST	CURB
		TOM	TOP OF MASONRY TOP OF PARAPET / TOP OF F	
		TOP TOS	TOP OF PARAPET / TOP OF FLA	
		TOW TRTD	TOP OF WALL TREATED	
		TS	TUBE STEEL	
		TYP UBC	TYPICAL UNIFORM BUILDING CODE	
		UC	UNDERCUT	
		UL UNFIN	UNDERWRITER'S LABORATO UNFINISHED	PRIES
		UNO	UNLESS NOTED OTHERWISE	<u> </u>
		UR UTIL	URINAL UTILITY	
		VAR VCT	VARIES VINYL COMPOSITION TILE	
		VERT	VERTICAL	
		VEST VIF	VESTIBULE VERIFY IN FIELD	
		VNR	VENEER	
		VTR VWC	VENT THROUGH ROOF VINYL WALL COVERING	
		W W/	WEST / WIDTH / WIDE WITH	
		W/O	WITHOUT	
		WBL WC	WOOD BLOCKING WATER CLOSET / WALL COV	ERING
		WD	WOOD / WOOD DOOR	
		WDW WF	WINDOW WIDE FLANGE	
		WGL WH	WIRED GLASS WATER HEATER / WEEP HOL	E
1		Ī		

WELDED WIRE FABRIC YARD / YARDS

WATERPROOFING / WORKING POINT WATER RESISTANT / WEATHER RESISTANT

# **AREA MAP**



04-EL601 04-FA601

EQUIPMENT

FIRE ALARM RISER

LEVEL 1 PLAN - WASH EQUIPMENT BASE BID

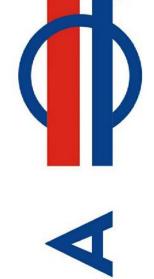
LEVEL 1 PLAN - WASH EQUIPMENT ALTERNATE BID
LEVEL 1 PLAN - WASH EQUIPMENT DETAILS AND ELEVATION



**VICINITY MAP** 



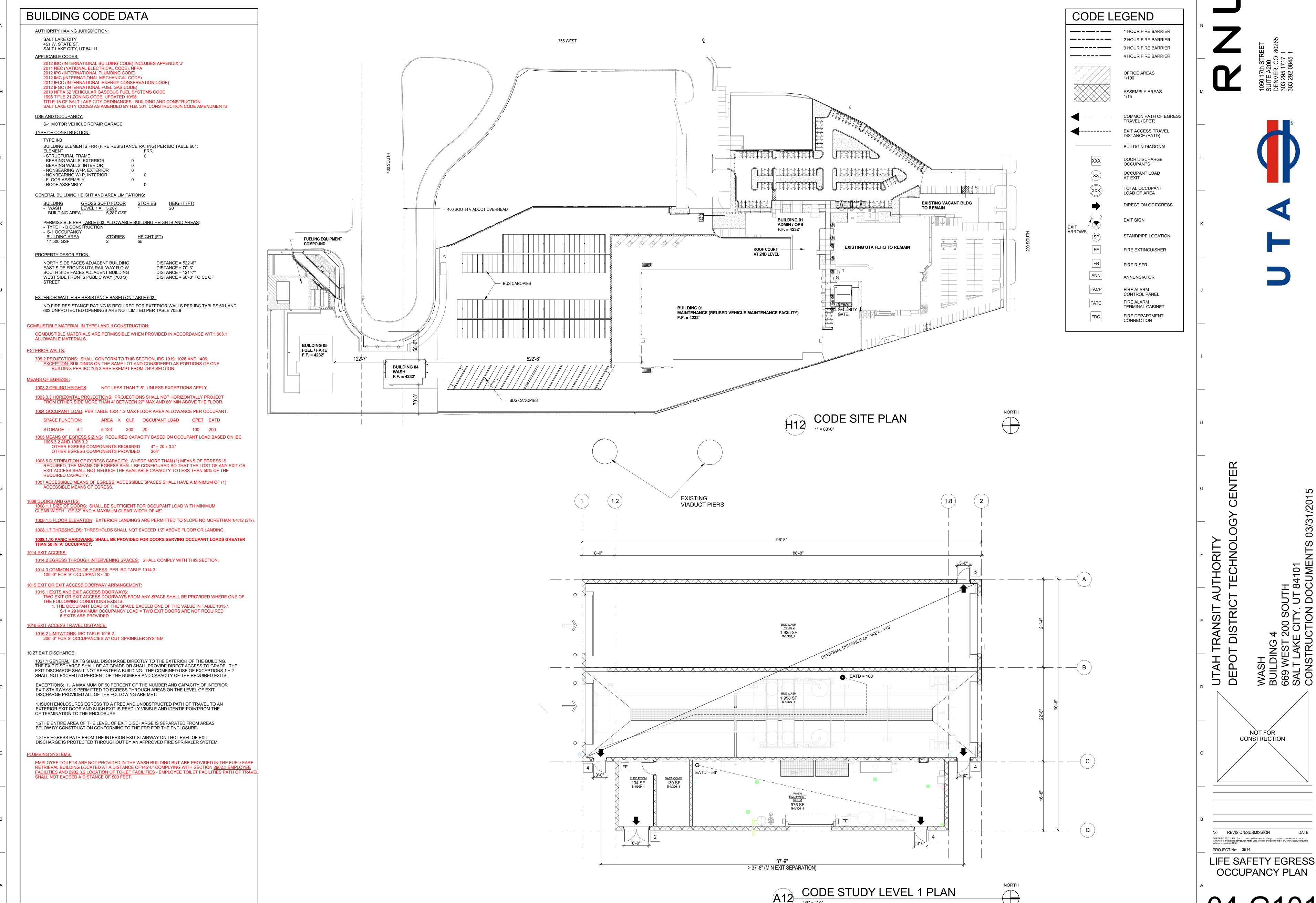
#### **INDEX OF DRAWINGS** SHEET NO. SHEET NAME GENERAL INFORMATION SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES LIFE SAFETY EGRESS OCCUPANCY PLAN ENVELOPE COMPLIANCE CERTIFICATE MASTER SITE PLAN & GENERAL NOTES SITE UTILITIES & DRAINAGE PLANS (BASE BID) SITE UTILITIES & DRAINAGE PLANS (ALTERNATE BID) STRUCTURAL GENERAL STRUCTURAL NOTES 04-S002 GENERAL STRUCTURAL NOTES FOOTING AND FOUNDATION PLANS ROOF FRAMING PLANS TYPICAL FOOTING & FOUNDATION DETAILS TYPICAL FOOTING & FOUNDATION DETAILS 04-S502 ROOF FRAMING DETAILS STRUCTURAL SCHEDULES STRUCTURAL SCHEDULES ARCHITECTURE ARCHITECTURAL SITE PLAN 00-AS101 GENERAL NOTES TYPICAL FIXTURE MOUNTING HEIGHTS 04-A002 TYPICAL ACCESSIBILITY DETAILS 04-A003 LEVEL 1 FLOOR PLAN ROOF PLAN REFLECTED CEILING PLAN BUILDING ELEVATIONS 04-A301 BUILDING SECTIONS WALL SECTIONS DETAILS 04-A501 04-A601 DOOR & FINISH SCHEDULE, FINISH LEGEND PLUMBING PLUMBING - MECHANICAL LEGEND, SYMBOLS & ABBREVIATIONS LEVEL 1 PLUMBING FLOOR PLAN PLUMBING DETAILS PLUMBING SCHEDULES MECHANICAL LEVEL 1 MECHANICAL HVAC FLOOR PLAN MECHANICAL ROOF PLAN LEVEL 1 MECHANICAL PIPING FLOOR PLAN SCHEMATIC AND SEQUENCE OF OPERATIONS MECHANICAL DETAILS MECHANICAL SCHEDULES MECHANICAL ENERGY CODE COMPLIANCE DOCUMENTATION MECHANICAL ENERGY CODE COMPLIANCE DOCUMENTATION 04-M902 ELECTRICAL SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES 04-EE001 04-EE101 LEVEL 1 ELECTRICAL PLANS - BASE BID LEVEL 1 ELECTRICAL PLANS - ALTERNATE BID ELCTRICAL DETAILS AND POWER PLANS 04-EE601 ELECTRICAL ENERGY CODE COMPLIANCE FORMS TYPICAL MOUNTING HEIGHT DETAILS 04-EE701 ELECTRICAL SITE PLAN 04-ES101 POWER ONE-LINE DIAGRAM 04-EP601 PANEL & EQUIPMENT SCHEDULES 04-EP602 LIGHTING FIXTURE SCHEDULE AND DETAILS



NÒT FÓR CONSTRUCTION

No REVISION/SUBMISSION

PROJECT No: 3514 SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES



04-G101

**2012 IECC** 

#### Section 1: Project Information

Project Type: New Construction Project Title: UTA DDTC - Wash Building 04

Construction Site: 669 West 200 South Salt Lake City, UT 84101

Designer/Contractor: Merlin Maley 1050 17th Street, Suite A200 80265 303-295-1717

Merlin.Maley@rnldesign.com Additional Efficiency Package: Reduced interior lighting power. Requirements are implicitly enforced within interior lighting

#### **Section 2: General Information**

Building Location (for weather data): Salt Lake City, Utah Climate Zone: Building Space Conditioning Type(s): **Nonresidential Building Type** Floor Area Wash Building (Automotive facility) 5123

Section 3: Envelope Assemblies

#### Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor <sub>(a)</sub>
Roof 1: Insulation Entirely Above Deck	5287		25.0	0.039	0.039
Exterior Wall - North: Concrete Block:12", Unreinforced, Cells Insulated, Medium Density, Furring: None	1104		10.5	0.057	0.078
Coiling Fabric Door: Other Door, Swinging	392	-		0.140	0.370
Exterior Wall - East: Concrete Block:12", Unreinforced, Cells Insulated, Medium Density, Furring: None	1700		10.5	0.057	0.078
Steel Sectional Doors: Insulated Metal, Swinging	100			0.083	0.370
Hollow Metal Doors: Insulated Metal, Swinging	120			0.079	0.370
Exterior Wall - South: Concrete Block:12", Unreinforced, Cells Insulated, Medium Density, Furring: None	1104		10.5	0.057	0.078
Coiling Fabric Door: Other Door, Swinging	392			0.140	0.370
Exterior Wall - West: Concrete Block:12", Unreinforced, Cells Insulated, Medium Density, Furring: None	1866		10.5	0.057	0.078
Hollow Metal Doors: Insulated Metal, Swinging	25			0.079	0.370
Floor 1: Slab-On-Grade:Heated	307				T

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements. (b) 'Other' components require supporting documentation for proposed U-factors.

#### Section 4: Compliance Statement

Project Title: UTA DDTC - Wash Building 04 Data filename: K:\3514 UTA Combined Central Bus Facility\02 PROGRAMMING\Code-Regulations\COMcheck\COMCheck Wash Building

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2012 IECC requirements in COMcheck Version 3.9.3 and to comply with the mandatory requirements in the Requirements Checklist.

Name - Title

# COMcheck Software Version 3.9.3 Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COMcheck software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

2012 IECC	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR1] <sup>1</sup>	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 1. Information for applicable codes can be found on sheet G100. Overall the building was designed to be in compliance with the 2012 IECC requirements. As previously reviewed and approved by Salt Lake City's Chief Plans Examiner Don Davies the continuous foundation wall insulation has been suspended at overhead door thresholds to provide a drivable surface for vehicles entering/exiting the facility. All other envelope requirements have meet or gone above the minimum requirements set by the IECC 2012, which a results in a +6 126485504n envelope performance.
C406 [PR9] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C402.3.1 [PR10] <sup>1</sup>	Vertical fenestration area <= 30 percent of the gross above-grade wall area.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> 2. Total wall area = 5,774sf. / Total fenestration area = 1,029 sf = 17.8
C402.3.1 [PR11] <sup>1</sup>	Skylight area <= 3 percent of the gross roof area.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: There are No Skylight in this building
C402.3.2 [PR14] <sup>1</sup>	In enclosed spaces > 10,000 ft2 directly under a roof with ceiling heights >15 ft. and used as an office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail store, distribution/sorting area, transportation, or workshop, the following requirements apply: (a) the daylight zone under skylights is >= half the floor area; (b) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40; or a minimum skylight effective aperture >= 1 percent.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.  Location on plans/spec: Less than 10,000 sqft
C402.3.2. 2 [PR15] <sup>1</sup>	Areas with obstructions that block direct beam sunlight on >= 1/2 of the roof over the enclosed area for more than 1,500 daytime hours per year between 8 am and 4 pm.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 08 63 00 Metal-Framed Skylights

**Additional Comments/Assumptions:** 

Additional Comments/Assumptions:

	1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier	3)		
roject	UTA DDTC - Wash Building 04	Report da	ite: 02/2	23/1
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Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
C402.2.6 [FO3] <sup>2</sup>	Slab edge insulation R-value.	R Unheated Heated	R Unheated  Heated	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
C303.2 [FO4] <sup>2</sup>	Slab edge insulation installed per manufacturer's instructions.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 1. Reference specification Section 07 21 00 for Thermal Insulation installation instructions, as well as wall assemblies shown on 04- A501 and associated details throughout the 04-A501
C402.2.6 [FO5] <sup>2</sup>	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or >= 10 inches of soil.	ft	ft	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
C403.2.7, C408.2.8, C404.5 [FO6] <sup>1</sup>	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C402.2.8 [FO12] <sup>3</sup>	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.			□Complies □Does Not □Not Observable □Not Applicable	<b>Exception:</b> Requirement does not apply.  See the Envelope Assemblies table for values.

	1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact	t (Tier 3)
Project	UTA DDTC - Wash Building 04	Report date: 02/23/1
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U-\_\_\_\_ Swinging

Swinging

Nonswinging Nonswinging Not Observable

# Framing / Rough-In Inspection Plans Verified Field Verified

& Req.ID

C402.3.4

C402.4.1, The building envelope contains a

an approved manner.

C402.4.3, Factory-built fenestration and

C402.4.7 Vestibules are installed on all

[FR17]<sup>3</sup> building entrances. Doors have

self-closing devices.

C402.3.3, Vertical fenestration U-Factor.

C303.1.3 Fenestration products rated in

[FR12]<sup>2</sup> accordance with NFRC.

C303.1.3 Fenestration products are

C402.2.7 U-factor of opaque doors

requirements.

[FR13]<sup>1</sup> certified as to performance labels

or certificates provided.

associated with the building

thermal envelope meets

Additional Comments/Assumptions:

C402.3.3 Vertical fenestration SHGC value. SHGC:\_\_\_\_

[FR18]<sup>3</sup> leakage requirements.

C402.4.4 doors are labeled as meeting air

and either constructed or tested

in an approved manner. Air barrier penetrations are sealed in

C402.4.2 continuous air barrier that is

[FR16]<sup>1</sup> sealed in an approved manner

2012 IECC	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.4.5. 1 [ME3] <sup>3</sup>	Stair and elevator shaft vents have motorized dampers that automatically close.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Exception: Requirement does not apply.
C402.4.5. 2 [ME58] <sup>3</sup>	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.		Requirement will be met.  Location on plans/spec: Refer to Mechanical plan sheets and specifications for motorized dampers that automatically shut when not in use.

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: Water/Air Barrier installation instructions for sealing around penetrations are provide in Specifications Section 07 26 00 Vapor Retarders Section 07 27 00 Air Barriers. Vapor Retarders and Air Barriers are shown on the Exterior Shell Assemblies on 04-A501
C402.4.2. 1 [IN2] <sup>1</sup>	Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.	R Above deck Metal Attic	R Above deck Metal Attic	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
C303.2 [IN3] <sup>1</sup>	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is <=3 in 12.			Complies Does Not Not Observable Not Applicable	Requirement will be met.
C303.2 [IN7] <sup>1</sup>	Above-grade wall insulation installed per manufacturer's instructions.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C402.2.5 [IN8] <sup>2</sup>	Floor insulation R-value.	R Mass Steel Wood	R Mass Steel Wood	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
C303.1 [IN10] <sup>2</sup>	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C303.2.1 [IN14] <sup>2</sup>	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 6. This project will be using a mill finished stainless steel sheet metal product - see products listed in Division 07 of the Specifications
C402.2.1 [IN17] <sup>3</sup>	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

	<u>,                                      </u>	ev-	-	DV.	n.		
	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)		
Project	UTA DDTC - Wash Building 04					Report date: 02/2	3/1
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**Additional Comments/Assumptions:** 

2012 IECC	Final Inspection	Complies?	Comments/Assumptions
C402.4.6 [FI37] <sup>1</sup>	Weatherseals installed on all loading dock cargo doors.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: Weather strips are included as part of the Specifications Section 08 36 13 for Sectional Doors
C402.4.8 [FI26] <sup>3</sup>	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: The project does not contain recessed luminaires/lighting within the thermal envelope.
C406 [FI34] <sup>1</sup>	Efficient HVAC performance, efficient lighting system, or on-site supply of renewable energy consistent with what is shown the approved plans.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: Efficient Lighting Systems: See Electrical

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) UTA DDTC - Wash Building 04

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1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) UTA DDTC - Wash Building 04 K:\3514 UTA Combined Central Bus Facility\02 PROGRAMMING\Code-

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Comments/Assumptions

Requirement will be met.

Location on plans/spec:

around penetrations are provide in Specifications

Section 07 26 00 Vapor Retarders Section 07 27 00 Air Barriers. Vapor Retarders

and Air Barriers are shown on the Exterior Shell Assemblies on 04-A501

Requirement will be met.

Exception: Requirement

See the Envelope Assemblies

See the Envelope Assemblies

Requirement will be met.

of the Specifications. Requirement will be met.

of the Specifications.

See the Envelope Assemblies

Location on plans/spec: 1.

Location on plans/spec: 1.

does not apply.

table for values.

table for values.

□Not Observable Refer to fenestration

Not Observable Refer to fenestration

Not Applicable products listed in Division 08

□Not Applicable products listed in Division 08

table for values.

Not Observable Water/Air Barrier installation

□Not Applicable instructions for sealing

Complies?

□Complies

Does Not

oxdot Complies

Does Not

■Complies

Does Not

\_\_Complies

□Does Not □Not Observable

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Complies

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CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

**ENVELOPE** COMPLIANCE CERTIFICATE

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project UTA DDTC - Wash Building 04 K:\3514 UTA Combined Central Bus Facility\02 PROGRAMMING\Code-Regulations\COMcheck\COMCheck Wash Building 04\_P1.cck

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#### SALT LAKE CITY NOTES:

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS AND THE MOST RECENT EDITIONS OF THE FOLLOWING: THE INTERNATIONAL PLUMBING CODE, UTAH DRINKING WATER REGULATIONS, APWA MANUAL OF STANDARD PLANS AND SPECIFICATIONS, AND SLC PUBLIC UTILITIES MODIFICATIONS TO APWA STANDARD PLANS AND APPROVED MATERIALS AND SLC PUBLIC UTILITIES APWA SPECIFICATIONS MODIFICATIONS. THE CONTRACTOR IS REQUIRED TO ADHERE TO ALL OF THE ABOVE-MENTIONED DOCUMENTS UNLESS OTHERWISE NOTED AND APPROVED IN WRITING BY THE SALT LAKE CITY DIRECTOR OF PUBLIC UTILITIES.

THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL APPROPRIATE GOVERNMENT AND PRIVATE ENTITIES ASSOCIATED WITH THE PROJECT. THE FOLLOWING MUST BE CONTACTED 48-HOURS PRIOR TO CONSTRUCTION AS APPLICABLE TO THE PROJECT:

BACKFLOW PREVENTION - 801-483-6795 DEVELOPMENT REVIEW ENGINEERING - 801-483-6781 INSPECTIONS, PERMITS, CONTRACTS & AGREEMENTS - 801-483-6727

STORM WATER - 801-483-6751 SLC DEPARTMENTS: ENGINEERING - PUBLIC WAY PERMITS AND ISSUES - 801-535-6248

PRETREATMENT - 801-799-4002

- COUNTY FIRE DEPARTMENT - 801-743-7231

PUBLIC WAY.

ENGINEERING - SUBDIVISIONS - 801-535-6159 FIRE DEPARTMENT - 801-535-6636 PERMITS AND LICENSING (BLDG SERVICES) -801-535-7752 PLANNING AND ZONING - 801-535-7700 TRANSPORTATION - 801-535-6630

- ALL OTHER POTENTIALLY IMPACTED GOVERNING AGENCIES OR ENTITIES - ALL WATER USERS INVOLVED IN WATER MAIN SHUTDOWNS - APPLICABLE SEWER, WATER AND DRAINAGE DISTRICTS - BLUESTAKES LOCATING SERVICES - 801-532-5000

- COUNTY FLOOD CONTROL - 801-468-2779 - COUNTY HEALTH DEPARTMENT - 385-468-3913 - COUNTY PUBLIC WAY PERMITS - 801-468-2241 - SALT LAKE COUNTY HIGHWAY DEPARTMENT - 801-468-3705 OR 801-468-2156 - THE UTAH TRANSIT AUTHORITY FOR RE-ROUTING SERVICE - 801-262-5626 - UNION PACIFIC RAILROAD CO., SUPERINTENDENTS OFFICE - 801-595-3405 - UTAH DEPARTMENT OF TRANSPORTATION, REGION #2 - 801-975-4800 - UTAH STATE ENGINEER - 801-538-7240

- UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) - 801-536-4400

- UTAH DIVISION OF AIR QUALITY (DAQ) - 801-536-4000

PRIOR TO CONSTRUCTION THE CONTRACTOR WILL PROVIDE, AND WILL UPDATE AS CHANGES OCCUR, A CONSTRUCTION SCHEDULE IN ACCORDANCE WITH THE SPECIFICATIONS AND SALT LAKE CITY ENGINEERING OR SALT LAKE COUNTY REGULATIONS AS APPLICABLE FOR WORKING WITHIN THE

4. PERMITS, FEES AND AGREEMENTS CONTRACTOR MUST OBTAIN ALL THE NECESSARY PERMITS AND AGREEMENTS AND PAY ALL APPLICABLE FEES PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTACT SALT LAKE CITY ENGINEERING (801-535-6248) FOR PERMITS AND INSPECTIONS REQUIRED FOR ANY WORK CONDUCTED WITHIN SALT LAKE CITY'S PUBLIC RIGHT-OF-WAY. APPLICABLE UTILITY PERMITS MAY INCLUDE MAINLINE EXTENSION AGREEMENTS AND SERVICE CONNECTION PERMITS. ALL UTILITY WORK MUST

BE BONDED. ALL CONTRACTORS MUST BE LICENSED TO WORK ON CITY UTILITY MAINS.

CONSTRUCTION SITES MUST BE IN COMPLIANCE WITH THE UTAH POLLUTION DISCHARGE ELIMINATION SYSTEM (UPDES) STORM WATER PERMIT FOR CONSTRUCTION ACTIVITIES (801-538-6923). A COPY OF THE PERMIT'S STORM WATER POLLUTION PREVENTION PLAN MUST BE SUBMITTED TO PUBLIC UTILITIES FOR REVIEW AND APPROVAL. ADDITIONAL WATER QUALITY AND EROSION CONTROL MEASURES MAY BE REQUIRED. THE CONTRACTOR MUST ALSO COMPLY WITH SALT LAKE CITY'S CLEAN WHEEL ORDINANCE.

THE CONTRACTOR IS TO PROVIDE MARSHALL AND PROCTOR TEST DATA 24-HOURS PRIOR TO USE. CONTRACTOR IS TO PROVIDE COMPACTION AND DENSITY TESTING FROM AN INDEPENDENT TESTING LABORATORY AS REQUIRED BY SALT LAKE CITY ENGINEERING, UDOT, SALT LAKE COUNTY OR OTHER GOVERNING ENTITY. TRENCH BACKFILL MATERIAL AND COMPACTION TESTS WITHIN THE PUBLIC ROW ARE TO BE TAKEN PER APWA STANDARD SPECIFICATIONS, SECTION 330520 - BACKFILLING TRENCHES,

OR AS REQUIRED BY THE SLC PROJECT ENGINEER IF NATIVE MATERIALS ARE USED. NO NATIVE MATERIALS ARE ALLOWED WITHIN THE PIPE ZONE. THE MAXIMUM LIFTS FOR BACKFILLING EXCAVATIONS IS 8-INCHES. ALL MATERIALS AND COMPACTION TESTING IS TO BE PERFORMED BY A LAB RECOGNIZED AND ACCEPTED BY SALT LAKE COUNTY PUBLIC WORKS AND/OR SALT LAKE CITY ENGINEERING. ALL OTHER TESTING WITHIN THE PROJECT LIMITS TO BE TAKEN PER CONSTRUCTION

6. TRAFFIC CONTROL AND HAUL ROUTES TRAFFIC CONTROL MUST CONFORM TO THE MOST CURRENT EDITION OF SALT LAKE CITY TRAFFIC CONTROL MANUAL - PART 6 OF "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR SALT LAKE COUNTY AND STATE ROADS. SLC TRANSPORTATION MUST APPROVE ALL PROJECT HAUL ROUTES (535-7129). THE CONTRACTOR MUST ALSO CONFORM TO UDOT, SALT LAKE COUNTY OR OTHER APPLICABLE GOVERNING ENTITIES REQUIREMENTS FOR TRAFFIC CONTROL.

CONTRACTOR MUST PROVIDE A REGISTERED LAND SURVEYOR OR PERSONS UNDER SUPERVISION OF A REGISTERED LAND SURVEYOR TO SET STAKES FOR ALIGNMENT AND GRADE OF EACH MAIN AND/OR FACILITY AS APPROVED. THE STAKES SHALL BE MARKED WITH THE HORIZONTAL LOCATION (STATION) AND VERTICAL LOCATION (GRADE) WITH CUTS AND/OR FILLS TO THE GRADE OF THE MAIN AND/OR FACILITY AS APPROVED. IN ADDITION, THE CONTRACTOR AND/OR SURVEYOR SHALL PROVIDE TO SALT LAKE CITY PUBLIC UTILITIES CUT SHEETS FILLED OUT COMPLETELY AND CLEARLY SHOWING THE PERTINENT GRADES, ELEVATIONS AND CUT/FILLS ASSOCIATED WITH THE FIELD STAKING OF THE MAIN AND/OR FACILITY. THE CUT SHEET FORM IS AVAILABLE AT THE CONTRACTS AND AGREEMENTS OFFICE AT PUBLIC UTILITIES. ALL MAINS AND LATERALS NOT MEETING MINIMUM GRADE REQUIREMENTS AS SPECIFIED BY ORDINANCE OR AS REQUIRED TO MEET THE MINIMUM REQUIRED FLOWS OR AS APPROVED MUST BE REMOVED AND RECONSTRUCTED TO MEET DESIGN GRADE. THE CONTRACTOR SHALL PROTECT ALL STAKES AND MARKERS UNTIL PUBLIC UTILITY SURVEYORS COMPLETE FINAL MEASUREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR FURNISHING, MAINTAINING, OR RESTORING ALL MONUMENTS AND REFERENCE MARKS WITHIN THE PROJECT SITE. CONTACT THE COUNTY SURVEYOR (801-468-2028) FOR MONUMENT LOCATIONS AND CONSTRUCTION REQUIREMENTS. ALL ELEVATIONS SHALL BE REFERENCED TO SALT LAKE CITY DATUM UNLESS NOTED

8. ASPHALT GUARANTEE THE CONTRACTOR SHALL REMOVE, DISPOSE OF, FURNISH AND PLACE PERMANENT ASPHALT PER SALT LAKE CITY ENGINEERING, UDOT, COUNTY, OR OTHER GOVERNMENT STANDARDS AS APPLICABLE TO THE PROJECT. THE CONTRACTOR SHALL GUARANTEE THE ASPHALT RESTORATION FOR A PERIOD AS REQUIRED BY THE GOVERNING ENTITY.

OTHERWISE ON THE PLANS.

IF THE CONTRACTOR CHOOSES TO WORK WITHIN THE PUBLIC WAY WHEN HOT MIX ASPHALT IS NOT AVAILABLE, THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE APPROPRIATE GOVERNING ENTITY PRIOR TO INSTALLING TEMPORARY ASPHALT SURFACING MATERIAL. WITHIN SALT LAKE CITY, WHEN PERMANENT ASPHALT BECOMES AVAILABLE, THE CONTRACTOR SHALL REMOVE THE TEMPORARY ASPHALT, FURNISH AND INSTALL THE PERMANENT ASPHALT. THE CONTRACTOR SHALL GUARANTEE THE ASPHALT RESTORATION FOR A PERIOD AS REQUIRED BY THE GOVERNING ENTITY FROM THE DATE OF COMPLETION.

THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF SAFETY OF THE PROJECT AND SHALL MEET ALL OSHA, STATE, COUNTY, UTA, AND OTHER GOVERNING ENTITY REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMING TO LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES, AND FOR THE PROTECTION OF WORKERS.

11. DUST CONTROL THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL ACCORDING TO THE GOVERNING ENTITY STANDARDS. USE OF HYDRANT WATER OR PUMPING FROM CITY-OWNED CANALS OR STORM DRAINAGE FACILITIES IS NOT ALLOWED FOR DUST CONTROL ACTIVITIES WITHOUT WRITTEN APPROVAL OF THE PUBLIC UTILITIES DIRECTOR.

ALL ON-SITE DEWATERING ACTIVITIES MUST BE APPROVED IN WRITING BY PUBLIC UTILITIES & UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ). PROPOSED OUTFALL LOCATIONS AND ESTIMATED FLOW VOLUME CALCULATIONS MUST BE SUBMITTED TO PUBLIC UTILITIES & DEQ FOR REVIEW AND APPROVAL. ADEQUATE MEASURES MUST BE TAKEN TO REMOVE ALL SEDIMENT PRIOR TO DISCHARGE. PUBLIC UTILITIES & DEQ MAY REQUIRE ADDITIONAL MEASURES FOR SEDIMENT CONTROL AND REMOVAL.

13. PROJECT LIMITS THE CONTRACTOR IS REQUIRED TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE APPROVED PROJECT LIMITS. THIS INCLUDES, BUT IS NOT LIMITED TO, VEHICLE AND EQUIPMENT STAGING, MATERIAL STORAGE AND LIMITS OF TRENCH EXCAVATION. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN PERMISSION AND/OR EASEMENTS FROM THE APPROPRIATE GOVERNING ENTITY AND/OR INDIVIDUAL PROPERTY OWNER(S) FOR WORK OR STAGING OUTSIDE OF THE PROJECT LIMITS.

14. WATER, FIRE, SANITARY SEWER AND STORM DRAINAGE UTILITIES A. INSPECTIONS -IT IS THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE ANY WATER, SEWER, BACKFLOW AND DRAINAGE INSPECTION 48-HOURS IN ADVANCE TO WHEN NEEDED. CONTACT 801-483-6727 TO

SCHEDULE INSPECTIONS. B. DAMAGE TO EXISTING UTILITIES -

THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE, CAUSED BY ANY CONDITION INCLUDING SETTLEMENT, TO EXISTING UTILITIES FROM WORK PERFORMED AT OR NEAR EXISTING UTILITIES. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT ALL EXISTING PUBLIC AND PRIVATE ROADWAY AND UTILITY FACILITIES. DAMAGE TO EXISTING FACILITIES CAUSED BY THE CONTRACTOR, MUST BE REPAIRED BY THE CONTRACTOR AT HIS/HER EXPENSE, TO THE SATISFACTION OF THE OWNER OF SAID FACILITIES.

C. UTILITY LOCATIONS -CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING AND AVOIDING ALL UTILITIES AND SERVICE LATERALS, AND FOR REPAIRING ALL DAMAGE THAT OCCURS TO THE UTILITIES DUE TO THE CONTRACTOR'S ACTIVITIES. CONTRACTOR IS TO VERIFY LOCATION. DEPTH. SIZE. MATERIAL AND OUTSIDE DIAMETERS OF UTILITIES IN THE FIELD BY POTHOLING A MINIMUM OF 300-FEET AHEAD OF SCHEDULED CONSTRUCTION IN ORDER TO IDENTIFY POTENTIAL CONFLICTS AND PROBLEMS WITH FUTURE CONSTRUCTION ACTIVITIES. EXISTING UTILITY INFORMATION OBTAINED FROM SLC PUBLIC UTILITIES' MAPS MUST BE ASSUMED AS APPROXIMATE AND REQUIRING FIELD VERIFICATION. CONTACT BLUE STAKES OR APPROPRIATE OWNER FOR COMMUNICATION LINE LOCATIONS.

FOR UTILITY CONFLICTS REQUIRING MAINLINE RELOCATIONS, THE CONTRACTOR MUST NOTIFY THE APPLICABLE UTILITY COMPANY OR USER A MINIMUM OF 2-WEEKS IN ADVANCE. A ONE-WEEK MINIMUM NOTIFICATION IS REQUIRED FOR CONFLICTS REQUIRING THE RELOCATION OF SERVICE LATERALS. ALL RELOCATIONS ARE SUBJECT TO APPROVAL FROM THE APPLICABLE UTILITY COMPANY AND/OR

E. FIELD CHANGES -NO ROADWAY, UTILITY ALIGNMENT OR GRADE CHANGES ARE ALLOWED FROM THE APPROVED CONSTRUCTION PLANS/DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE SLC PUBLIC UTILITIES DIRECTOR. CHANGES TO HYDRANT LOCATIONS AND/OR FIRE LINES MUST BE REVIEWED AND APPROVED BY THE SALT LAKE CITY OR SALT LAKE COUNTY FIRE DEPARTMENT (AS APPLICABLE TO THE PROJECT) AND PUBLIC UTILITIES.

F. PUBLIC NOTICE TO PROJECTS IN THE PUBLIC WAY-FOR APPROVED PROJECTS THE CONTRACTOR IS RESPONSIBLE TO PROVIDE AND DISTRIBUTE WRITTEN NOTICE TO ALL RESIDENTS LOCATED WITHIN THE PROJECT AREA AT LEAST 72-HOURS PRIOR TO CONSTRUCTION. WORK TO BE CONDUCTED WITHIN COMMERCIAL OR INDUSTRIAL AREAS MAY REQUIRE A LONGER NOTIFICATION PERIOD AND ADDITIONAL CONTRACTOR COORDINATION WITH PROPERTY OWNERS. THE WRITTEN NOTICE IS TO BE APPROVED BY THE SLC PUBLIC UTILITIES PROJECT ENGINEER.

G. PUBLIC NOTICE FOR WATER MAIN SHUT DOWNS -THROUGH THE SLC PUBLIC UTILITIES INSPECTOR AND WITH THE PUBLIC UTILITIES PROJECT ENGINEER APPROVAL, SLC PUBLIC UTILITIES MUST BE CONTACTED AND APPROVE ALL WATER MAIN SHUTDOWNS. ONCE APPROVED THE CONTRACTOR MUST NOTIFY ALL EFFECTED USERS BY WRITTEN NOTICE A MINIMUM OF 48-HOURS (RESIDENTIAL) AND 72-HOURS (COMMERCIAL/INDUSTRIAL) PRIOR TO THE WATER MAIN SHUT DOWN. PUBLIC UTILITIES MAY REQUIRE LONGER NOTICE PERIODS.

H. WATER AND SEWER SEPARATION -IN ACCORDANCE WITH UTAH'S DEPARTMENT OF HEALTH REGULATIONS, A MINIMUM TEN-FOOT HORIZONTAL AND 1.5-FOOT VERTICAL (WITH WATER ON TOP) SEPARATION IS REQUIRED. IF THESE CONDITIONS CANNOT BE MET, STATE AND SLC PUBLIC UTILITIES APPROVAL IS REQUIRED. ADDITIONAL CONSTRUCTION MEASURES WILL BE REQUIRED FOR THESE CONDITIONS.

ALL METERS MUST BE RETURNED TO PUBLIC UTILITIES, AND AT PUBLIC UTILITIES REQUEST ALL SALVAGED PIPE AND/OR FITTINGS MUST BE RETURNED TO SLC PUBLIC UTILITIES (801-483-6727) LOCATED AT 1530 SOUTH WEST TEMPLE.

J. SEWER MAIN AND LATERAL CONSTRUCTION REQUIREMENTS -SLC PUBLIC UTILITIES MUST APPROVE ALL SEWER CONNECTIONS. ALL SEWER LATERALS 6-INCHES AND SMALLER MUST WYE INTO THE MAINS PER SLC PUBLIC UTILITIES REQUIREMENTS. ALL 8-INCH AND LARGER SEWER CONNECTIONS MUST BE PETITIONED FOR AT PUBLIC UTILITIES (801-483-6762) AND CONNECTED AT A MANHOLE. INSIDE DROPS IN MANHOLES ARE NOT ALLOWED. A MINIMUM 4-FOOT BURY DEPTH IS REQUIRED ON ALL SEWER MAINS AND LATERALS. CONTRACTOR SHALL INSTALL INVERT COVERS IN ALL SEWER MANHOLES WITHIN THE PROJECT AREA.

CONTRACTOR TO PROVIDE AIR PRESSURE TESTING OF SEWER MAINS IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS AND SALT LAKE CITY PUBLIC UTILITIES REQUIREMENTS. ALL PVC SEWER MAIN AND LATERAL TESTING SHALL BE IN ACCORDANCE WITH UNI-BELL UN-B-6-98 RECOMMENDED PRACTICE FOR LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE. CONTRACTOR SHALL PROVIDE SEWER LATERAL WATER TESTING AS REQUIRED BY THE SALT LAKE CITY PUBLIC UTILITIES PROJECT ENGINEER OR INSPECTOR. A MINIMUM OF 9-FEET OF HEAD PRESSURE IS REQUIRED AS MEASURED VERTICALLY FROM THE HIGH POINT OF THE PIPELINE AND AT OTHER LOCATIONS ALONG THE PIPELINE AS DETERMINED BY THE SLC PUBLIC UTILITIES PROJECT ENGINEER OR INSPECTOR. TESTING TIME WILL BE NO LESS THAN AS SPECIFIED FOR THE AIR TEST DURATION IN TABLE I ON PAGE 12 OF UNI-B-6-98. ALL PIPES SUBJECT TO WATER TESTING SHALL BE FULLY VISIBLE TO THE INSPECTOR DURING TESTING. TESTING MUST BE PERFORMED IN THE PRESENCE OF A SLC PUBLIC UTILITIES REPRESENTATIVE. ALL VISIBLE LEAKAGE MUST BE REPAIRED

TO THE SATISFACTION OF THE SLC PUBLIC UTILITIES ENGINEER OR INSPECTOR.

K. WATER AND FIRE MAIN AND SERVICE CONSTRUCTION REQUIREMENTS -SLC PUBLIC UTILITIES MUST APPROVE ALL FIRE AND WATER SERVICE CONNECTIONS. A MINIMUM 3-FOOT SEPARATION IS REQUIRED BETWEEN ALL WATER AND FIRE SERVICE TAPS INTO THE MAIN. ALL CONNECTIONS MUST BE MADE MEETING SLC PUBLIC UTILITIES REQUIREMENTS. A 5-FOOT MINIMUM BURY DEPTH (FINAL GRADE TO TOP OF PIPE) IS REQUIRED ON ALL WATER/FIRE LINES UNLESS OTHERWISE APPROVED BY PUBLIC UTILITIES. WATER LINE THRUST BLOCK AND RESTRAINTS ARE AS PER SLC APPROVED DETAIL DRAWINGS AND SPECIFICATIONS. ALL EXPOSED NUTS AND BOLTS WILL BE COATED WITH CHEVRON FM1 GREASE PLUS MINIMUM 8 MIL THICKNESS PLASTIC. PROVIDE STAINLESS STEEL NUTS, BOLTS AND WASHERS FOR HIGH GROUNDWATER/ SATURATED CONDITIONS AT FLANGE FITTINGS, ETC.

ALL WATERLINES INSTALLATIONS AND TESTING TO BE IN ACCORDANCE WITH AWWA SECTIONS C600, C601, C651, C206, C200, C900, C303 AWWA MANUAL M11 AND ALL OTHER APPLICABLE AWWA, UPWS, ASTM AND ANSI SPECIFICATIONS RELEVANT TO THE INSTALLATION AND COMPLETION OF THE PROJECT. AMENDMENT TO SECTION C600 SECTION 4.1.1; DOCUMENT TO READ MINIMUM TEST PRESSURE SHALL NOT BE LESS THAN 200 P.S.I. GAUGED TO A HIGH POINT OF THE PIPELINE BEING TESTED. ALL MATERIALS USED FOR WATERWORKS PROJECTS TO BE RATED FOR 150 P.S.I. MINIMUM OPERATING PRESSURE.

CONTRACTOR IS TO INSTALL WATER SERVICE LINES, METER YOKES AND/OR ASSEMBLIES AND METER BOXES WITH LIDS LOCATED AS APPROVED ON THE PLANS PER APPLICABLE PUBLIC UTILITIES DETAIL DRAWINGS. METER BOXES ARE TO BE PLACED IN THE PARK STRIPS PERPENDICULAR TO THE WATERMAIN SERVICE TAP CONNECTION. ALL WATER METERS, CATCH BASINS, CLEANOUT BOXES, MANHOLES, DOUBLE CHECK VALVE DETECTOR ASSEMBLIES, REDUCED PRESSURE DETECTOR ASSEMBLIES AND BACKFLOW PREVENTION DEVICES MUST BE LOCATED OUTSIDE OF ALL APPROACHES, DRIVEWAYS, PEDESTRIAN WALKWAYS AND OTHER TRAVELED WAYS UNLESS OTHERWISE APPROVED ON PLANS.

BACKFLOW PREVENTORS ARE REQUIRED ON ALL IRRIGATION AND FIRE SPRINKLING TAPS PER PUBLIC UTILITIES AND SLC FIRE DEPARTMENT REQUIREMENTS. CONTRACTORS SHALL INSTALL BACKFLOW PREVENTION DEVICES ON FIRE SPRINKLER CONNECTIONS. DOUBLE CHECK VALVE ASSEMBLIES SHALL BE INSTALLED ON CLASS 1, 2 AND 3 SYSTEMS. REDUCED PRESSURE PRINCIPLE VALVES SHALL BE INSTALLED ON CLASS 4 SYSTEMS. ALL FIRE SPRINKLING BACKFLOW ASSEMBLIES SHALL CONFORM TO ASSE STANDARD 1048, 1013, 1047 AND 1015. THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM BACKFLOW PREVENTION TESTS PER SALT LAKE CITY STANDARDS AND SUBMIT RESULTS TO PUBLIC UTILITIES. ALL TESTS MUST BE PERFORMED AND SUBMITTED TO PUBLIC UTILITIES WITHIN 10 DAYS OF INSTALLATION OR WATER TURN-ON. BACKFLOW TEST FORMS ARE AVAILABLE AT PUBLIC UTILITIES' CONTRACTS AND AGREEMENTS OFFICE.

L. GENERAL WATER, SEWER AND STORM DRAIN REQUIREMENTS -ALL WATER, FIRE AND SEWER SERVICES STUBBED TO A PROPERTY MUST BE USED OR WATER AND FIRE SERVICES MUST BE KILLED AT THE MAIN AND SEWER LATERALS CAPPED AT PROPERTY LINE PER PUBLIC UTILITIES REQUIREMENTS. ALLOWABLE SERVICES TO BE KEPT WILL BE AS DETERMINED BY THE PUBLIC UTILITIES PROJECT ENGINEER. ALL WATER AND FIRE SERVICE KILLS AND SEWER LATERAL CAPS ARE TO BE KILLED AND CAPPED AS DETERMINED AND VISUALLY VERIFIED BY THE ON-SITE PUBLIC UTILITIES INSPECTOR.

ALL MANHOLES, HYDRANTS, VALVES, CLEAN-OUT BOXES, CATCH BASINS, METERS, ETC. MUST BE RAISED OR LOWERED TO FINAL GRADE PER PUBLIC UTILITIES STANDARDS AND INSPECTOR REQUIREMENTS. CONCRETE COLLARS MUST BE CONSTRUCTED ON ALL MANHOLES, CLEANOUT BOXES, CATCH BASINS AND VALVES PER PUBLIC UTILITIES STANDARDS. ALL MANHOLE, CATCH BASIN, OR CLEANOUT BOX CONNECTIONS MUST BE MADE WITH THE PIPE CUT FLUSH WITH THE INSIDE OF THE BOX AND GROUTED OR SEALED AS REQUIRED BY THE PUBLIC UTILITIES INSPECTOR. ALL MANHOLE, CLEANOUT BOX OR CATCH BASIN DISCONNECTIONS MUST BE REPAIRED AND GROUTED AS REQUIRED BY THE ON-SITE PUBLIC UTILITIES INSPECTOR.

CONTRACTOR SHALL NOT ALLOW ANY GROUNDWATER OR DEBRIS TO ENTER THE NEW OR EXISTING PIPE DURING CONSTRUCTION. UTILITY TRENCHING, BACKFILL, AND PIPE ZONE AS PER SLC PUBLIC UTILITIES, "UTILITY INSTALLATION DETAIL."

VICINITY MAP

CITY

# GENERAL NOTES

1. BENCHMARK: REFERENCE REDCON SURVEY FOR PROJECT

2. ALL IMPROVEMENTS SHALL COMPLY WITH THE STANDARDS AND REGULATIONS OF SALT LAKE CITY. CONTACT THE SLC PUBLIC UTILITIES OFFICE BEFORE BEGINNING WORK.

3. ALL STORM DRAIN PIPE SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS AND SALT

4. ALL WATER AND SANITARY SEWER LINES AND APPURTENANCES SHALL COMPLY WITH THE STANDARDS AND REQUIREMENTS OF SALT LAKE CITY BEFORE BEGINNING LINE

5. REFERENCE SITE UTILITY PLAN AND GRADING AND

6. UTILITY INFORMATION INDICATED ON DRAWINGS IS BASED UPON VISUAL OBSERVATION OR INFORMATION FURNISHED

7. ANY CONSTRUCTION WITHIN UDOTS RIGHT OF WAY WILL MEET UDOTS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. SEE REDCON

8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CHECK CONDITIONS AT THE SITE BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY

9. ANY OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF

10. BRACING AND SHORING - CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY AND SHALL PROVIDE AND MAINTAIN ADEQUATE BRACING AND SHORING AT ALL

11. ALL ON SITE CONCRETE WORK SHALL BE DONE ACCORDING CONSTRUCTION DOCUMENT STANDARD

CONCRETE: 03 30 04 CONCRETE TESTING: 03 30 05 CONCRETE PLACEMENT: 03 30 10 CONCRETE FINISHING: SECTION 03 35 00

12. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING PERMIT PRIOR TO PERFORMING ANY

PERMITS OFFICE, AND MAY NEED A TRAFFIC CONTROL PERMIT FROM SLC TRANSPORTION.

APWA 2012 STANDARD PLANS & SPECIFICATIONS. 15. ALL TRIP HAZARDS ON THE PUBLIC SIDEWALK SHALL BE REMOVED PRIOR TO AN OCCUPANCY PERMIT IS ISSUED.

16. REFERENCE 00-G SERIES SHEETS FOR TEMPORARY BUS ACCESS DURING CONSTRUCTION

BENCHMARK & HORIZONTAL CONTROL

LAKE CITY STANDARDS AND SPECIFICATIONS.

DRAINAGE PLAN FOR PIPE SIZES. TYPES AND LOCATIONS.

BY MUNICIPAL AUTHORITIES WHICH MAY NOT BE VALID.

SURVEY FOR UDOT ROW LIMITS.

DISCREPANCIES.

THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

TIMES DURING CONSTRUCTION.

SPECIFICATIONS:

CONCRETE CURING: SECTION 03 39 00

DEWATERING OPERATIONS. 13. PRIOR TO BEGINNING ANY WORK IN THE PUBLIC WAY, A LICENSED, BONDED AND INSURED CONTRACTOR MUST FIRST OBTAIN A PUBLIC WAY PERMIT FROM THE SLC ENGINEERING

14. ALL WORK IN THE PUBLIC ROW SHALL CONFORM TO

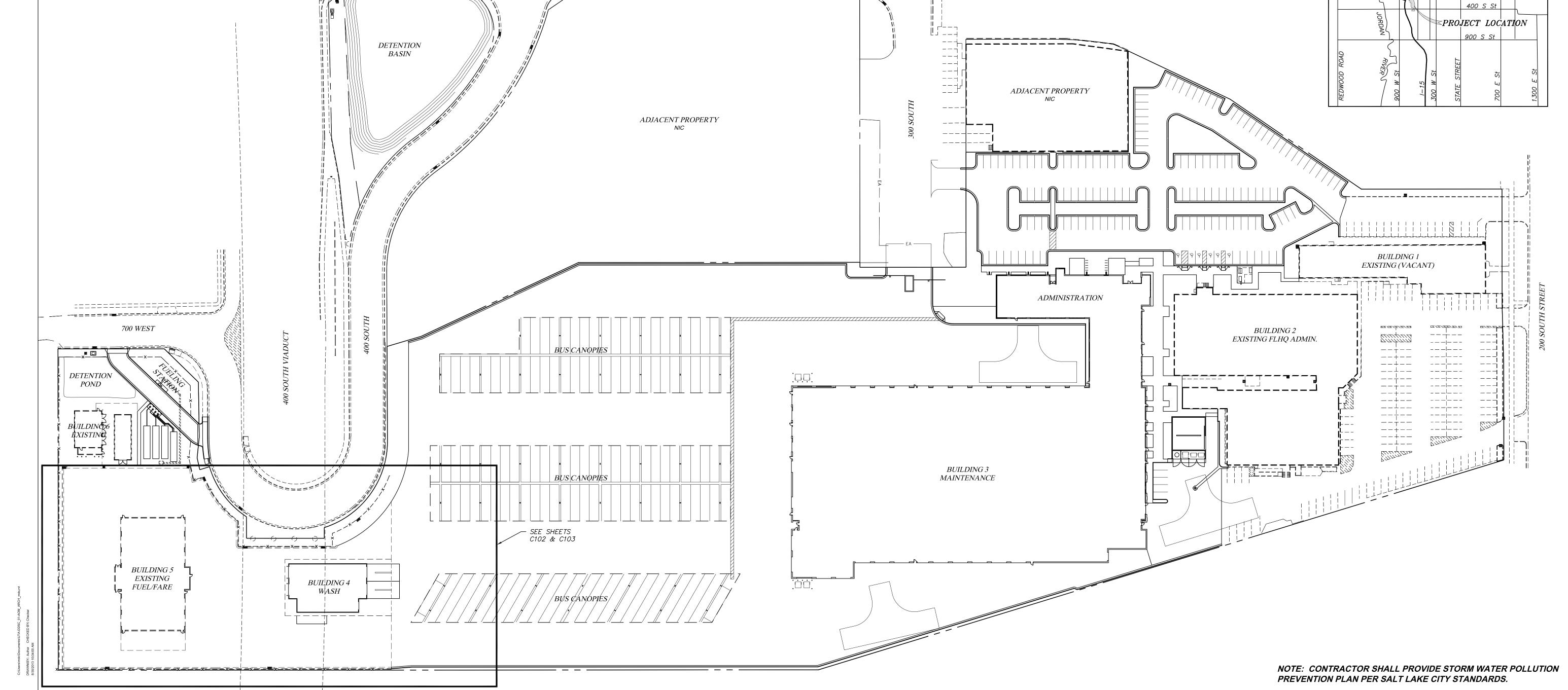
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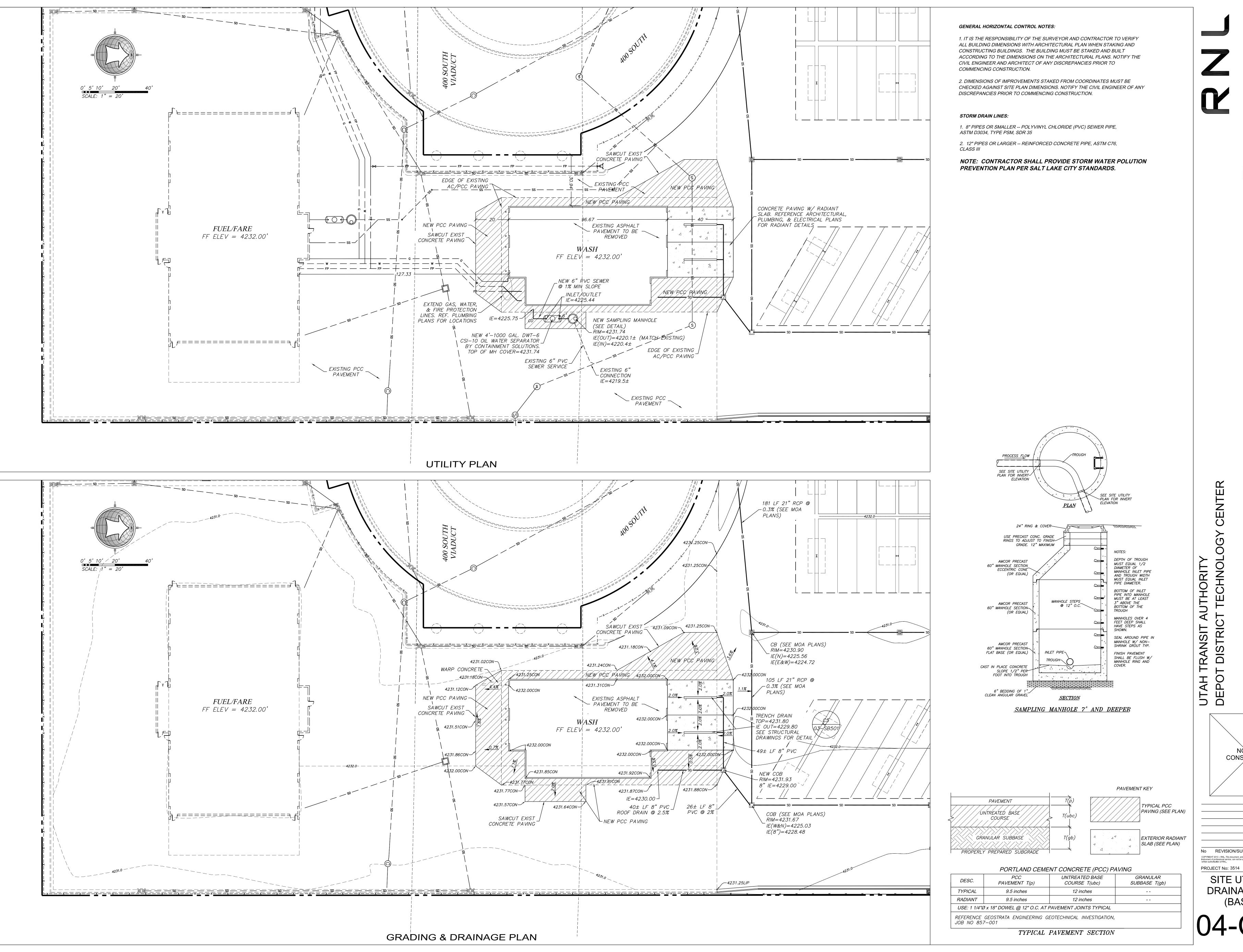
CONSTRUCTION

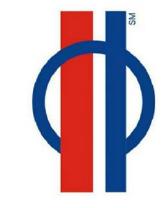
MASTER SITE PLAN & GENERAL NOTES

PROJECT No: 3514

04-C101



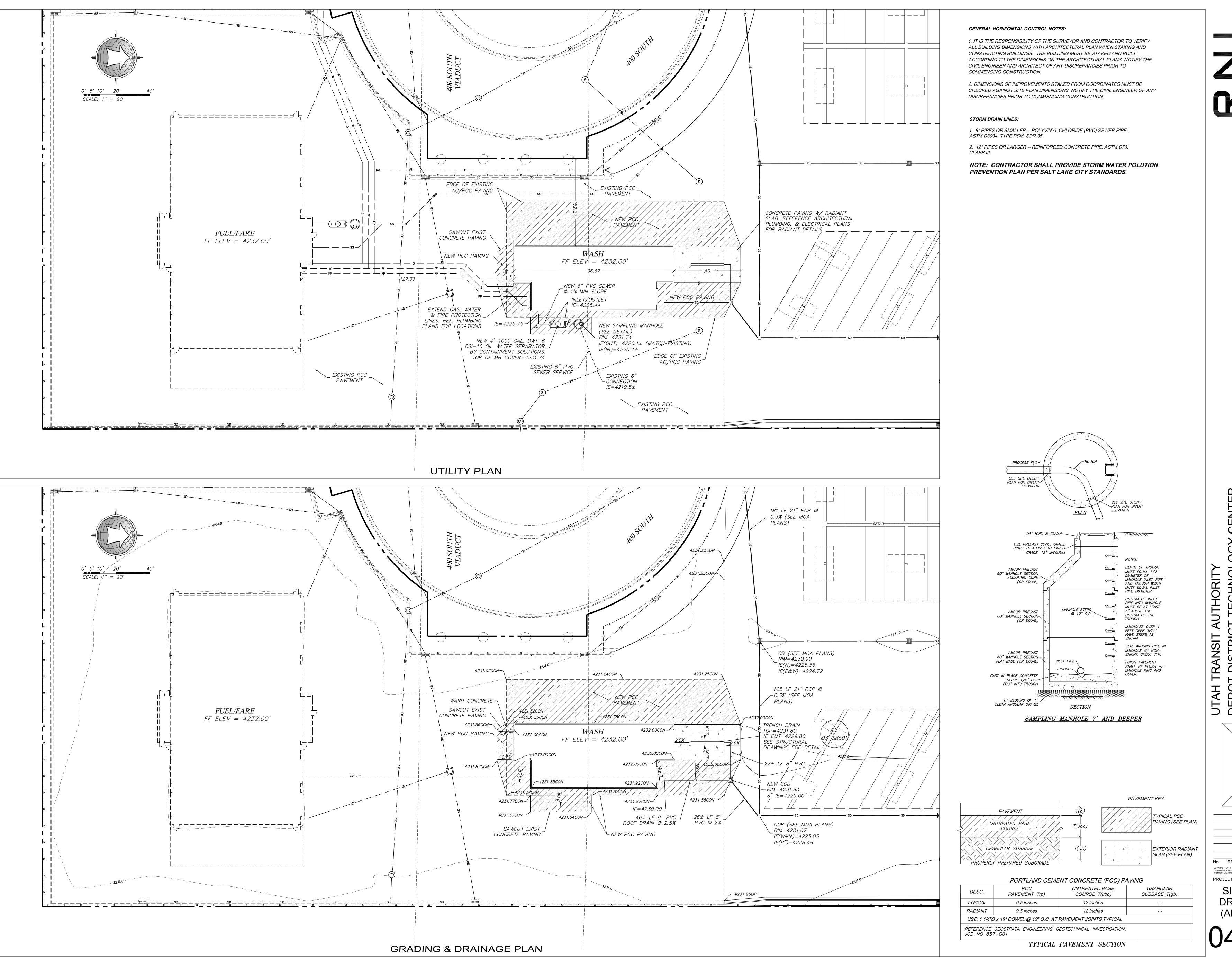




CONSTRUCTION

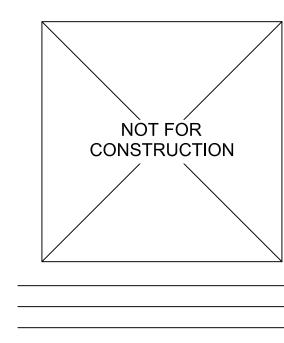
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SITE UTILITIES & DRAINAGE PLANS (BASE BID)









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SITE UTILITIES & DRAINAGE PLANS (ALTERNATE BID)

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

1.2. Floor Live Loading: A. Exit Facilities & Corridors: . 100 psf Live Load B. Mechanical Rooms: . 125 psf Live Load or actual weights, if larger 1.3. Roof Live Loading: A. Roof Live Load:

B. Roof Snow Load: .30 psf + Drift per IBC 1. Ground Snow Load, Pg: 2. Snow Exposure Factor, Ce: 3. Importance Factor, Is: . 4. Thermal Factor, Ct:

1.4. Earthquake: A. Risk Category: B. Seismic Design Category. C. Spectral Response Accelerations:

F. Importance Factor, IE:

D. Topographic Factor, K<sub>ht</sub>:

 $S_S = 1.72 g$   $S_{DS} = 1.15 g$ 

 $S_1 = 0.70 g$  $S_{D1} = 0.70 g$ D. Soil Site Class:  $F_v = 1.50$  $F_a = 1.00$ E. Basic Seismic-Force-Resisting System: . Intermediate Precast Shear Walls R = 4.0  $C_d = 4.0$   $\Omega_0 = 2.5$ 

197 kips G. Design Base Shear: H. Analysis Procedure: . Equivalent Lateral Force (Static)

1.5. Wind: 115 mph A. Basic Wind Speed (3-second gust): B. Exposure: C. Internal Pressure Coefficient, GCpi: . 0.18

E. Components and Cladding Design Pressure: Design Wind Pressure (psf)

Tributary Area (ft<sup>2</sup>) Location < 10 | 50 | 100 | > 500 Within 16.5 ft of building corner 29 25 23 19 All other areas 24 | 22 | 21 | 19 Within 16.5 ft of building corner | 60 | 37 | 26 | 26 Within 16.5 ft of building edge 40 30 26 26 24 | 23 | 22 | 22 All other areas

1.6. 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 own risk.

B. Soils Report by Geo Strata, dated October 25, 2013. C. Soil Bearing Pressure: . 1,700 psf, on Compacted Fill, or 3,000 psf to 4,000psf on Rammed Aggregate Piers.

D. Lateral Soil Pressure Fluid Equivalent Density. Active: .35 pcf (retaining walls) 2. At Rest: . 55 pcf (rigid foundation walls) Passive: . . 300 pcf 4. Increase for Seismic: . 20 pcf . 0.35 E. Coefficient of Friction:

1.7. Classification for Fire Rated Construction: A. For the purpose of determining fire-resistive assemblies, precast concrete roof framing members shall be considered restrained.

#### 2. Earthwork

- 2.1. Clearing: The entire building area shall be scraped to remove the top 4 inches of soil, including all vegetation and debris.
- 2.2. Stabilize all soft or pumping soils encountered during excavation and during proofrolling. Use methods outlined in the Geotechnical Report for soil stabilization.
- 2.3. Proof rolling: The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete. Remove all soft spots and replace with compacted structural fill.
- 2.4. Compacted structural fill: All fill material shall be a well-graded granular material with a maximum size less than 4 inches, a maximum of 50 percent passing a No. 4 sieve, and with not more than 25 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) 318-08, "Building Code Requirements for Structural Concrete."

Concrete mix design requirements shal	l be as fo	llows:					
	f'c at	Max	Air	Max	Ex	posu	re
Location	28 days	W/C	Content	Aggregate	C	lasse	s*
	(psi)	Ratio	(%)	Size	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	3/4"	F1	S0	C1
Walls	4000	0.45	-	3/4"	F0	S0	C0
Precast Wall Panels	5000	0.45	5	3/4"	F1	S0	C1
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):
  - 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.

b. Retest shall not exceed 81,000 psi.

- 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. D. Reinforcement steel:
- 1. ASTM A615 Grade 60, fy = 60,000 psi min. unless noted otherwise. 2. Reinforcement at 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.

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

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

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 H. Shrinkage Limit: Interior slabs on grade shall have a drying shrinkage limit of 0.040 percent tested in accordance with ASTM C157. Drying shrinkage test results shall be submitted with mix

Only one grade or type of concrete shall be poured on the site at any given time. Plastic coated tie wires and chairs shall be used to support reinforcing bars, tie bars and tendons in reinforced concrete structures that will be exposed to moisture.

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 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

3.3. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building

require formwork to be pre-cambered.

requirements.

Code Requirements for Structural Concrete". **Specified Cover** A. Cast-in-place Concrete: 1. Cast against and permanently exposed to earth: 2. Formed concrete exposed to earth or weather: #6 thru #18 bars .. #5 and smaller bars... . 1.1/2" Concrete not exposed to weather or in contact with ground: Slabs, Walls, Joists; #11 bars and smaller. Beams, Columns: primary reinforcement, ties, stirrups, spirals............ 1.1/2" 4. Concrete Tilt-Up Panels: #8 and smaller bars... #9 thru #18 bars .. B. Pre-cast Concrete (manufactured under plant controlled conditions): 1. Wall Panels #11 bars and smaller. 2. Other members #6 thru #11 bars . 3. Other members #5 bars and smaller... C. Prestressed Concrete (Provide the following specified cover for prestressed and non

prestressed reinforcements, ducts, and end fittings.): 1. Cast against and permanently exposed to earth 2. Formed concrete exposed to earth or weather: Wall Panels, Slabs, Joists... . 1.1/2" Other members .. Concrete not exposed to weather or in contact with ground: Slabs, Walls, Joists... Beams, Columns: primary reinforcement. . 1.1/2" Beams, Columns: ties, stirrups, spirals...

3.4. Construction Joints and Control Joints: A. Provide a surface intentionally roughened to 1/2" 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

B. All horizontal and vertical construction joints shall have a surface intentionally roughened to 1/4" 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. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction. E. 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. F. Control joints shall be installed in suspended slabs over steel decking by saw-cutting along girders and purlins at interior grid lines.

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. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts,

inserts and other embedded items prior to concrete placement. G. 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

footing) and at each floor level, at the roof level and at the top of wall.

Wall Thickness	Horizontal Reinforcing	Vertical Reinforcing
6"	#4 @ 13" o.c.	#4 @ 18" o.c.
8"	#5 @ 15" o.c.	#4 @ 16" o.c.
10"	#5 @ 12" o.c.	#4 @ 13" o.c.
12"	#4 @ 13" o.c. Each Face	#4 @ 18" o.c. Each Face
041	0.000/ -514/-11 4	0.450/ -514/-11 4

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 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 8" thick.

3.9. Prestressed (precast) concrete shall be designed to conform to the current editions and supplements of the IBC, ACI 318 and PCI design handbook A. The prestressed (precast) concrete supplier shall provide members designed for all loads as

shown on the contract documents. B. Bolts, angles, plate inserts and other embed items which are to be cast in the precast element shall be provided by the precast supplier.

C. Lifting inserts shall be located and placed by the supplier with additional reinforcing provided as

D. See mechanical and electrical drawings for sleeves and inserts required for those trades. E. See architectural drawings for locations of prestressed (precast) elements, rib placements, finish conditions, and locations of feature strips.

F. The prestressed (precast) supplier shall submit calculations, by a registered professional engineer. Calculations shall bear the seal of a professional engineer licensed in the State of Utah and shall be submitted with the shop drawings for review. Calculations shall include (but not be limited to) the following items. 1. Design of the elements for flexural, compression, tension, and shear stress imposed by the

loads as indicated on the structural drawings and by loads specified in the International Building Code. Thermal loads may be included. 2. Panel connections as required by the International Building Code. 3. When double tee wall panels are used in construction, the design of the panels is the

responsibility of the manufacturer. G. Field verify locations of connections and coordinate with the prime contractor all requirements for attachment of prestressed or precast elements. H. Field verify dimensions.

#### 4. Masonry

4.1. Materials, unless noted otherwise:

A. Concrete Masonry Units: ASTM C 90, Lightweight.

B. Material Strength: The Prism Test Method or the Unit Strength Method according to IBC Section 2105.2 may be used to determine the compressive strength of masonry assemblies. The contractor shall select the desired method and meet the required material strengths as follows:

1. Prism Test Method, IBC 2105.2.2.1: a. Concrete Masonry Unit Assembly, f'm = 1500 psi. b. Hollow Clay Unit Assembly, f'm = 2500 psi.

c. Solid Clay Unit Assembly f'm = 1500 psi. 2. Unit Strength Method, IBC 2105.2.2.2: a. Concrete Masonry Units, minimum unit strength of 1900 psi average or better. (f'm =

b. Hollow Clay Units, minimum unit strength of 6600 psi average or better. (f'm = 2500 psi) c. Solid Clay Units, minimum unit strength of 3350 psi average or better. (f'm = 1500 psi) C. Mortar: Use Type "S" according to ASTM C270, proportion specification. Admixtures shall not be added to the mortar mix.

D. Grout: For masonry assemblies with f'm = 2,000 psi or less conform to ASTM C476, proportion specification. Grout that does not meet the requirements of ASTM C476 proportion specification or that is used in masonry assemblies with f'm > 2,000 psi shall meet the following requirements: Meet the material requirements of ASTM C476, obtain a minimum compressive strength of f'm or 2,000 psi, whichever is larger, at 28 days tested according to ASTM C1019, and a slump of 8 in. to 11 in. as determined by ASTM C143.

1. Self Consolidating Grout: Conform to the material requirements of ASTM C476, obtain a minimum compressive strength of f'm or 2,000 psi, whichever is larger, at 28 days tested according to ASTM C1019, obtain a slump flow of 24 in. to 30 in. as determined by ASTM C1611, and shall have a Visual Stability Index less than or equal to 1 as determined in accordance with ASTM C1611 Appendix X.1. Field addition of admixtures is not permitted. E. Reinforcing: Grade 60 reinforcing steel shall comply with ASTM A615. Wire joint reinforcing shall

comply with ASTM A951. F. Deformed Bar Anchors (DBA): All DBAs shall comply with ASTM A496.

G. Anchor Bolts (AB): ASTM A307 with ASTM A563 heavy hex nuts and hardened washers, Grade A, unless noted otherwise. H. Headed Stud Anchors (HSA): Manufacture all HSAs in conformance with ASTM A108 with dimensions complying with AISC specifications.

4.2. Construction Requirements:

A. Mortar Joints: Joints shall be "concave", "V-joint" or "weathered raked" for structural members unless noted otherwise on architectural drawings. B. Masonry walls, beams and columns shall be constructed with running bond, unless noted

C. Grouting Requirements: Comply with IBC Section 2104 and ACI 530.1/ASCE 6/TMS 602 Section 3.5. Grout shall be mechanically consolidated and mechanically reconsolidated according to TMS 602/ACI 530.1/ASCE 6 Section 3.5 E. 1. Grout Pour Heights that exceed 4 feet shall meet the following requirements:

a. Provide cleanouts in the bottom course of masonry for each grout pour in accordance with ACI530.1/ASCE 6/TMS 602 Section 3.2 F. b. For grout other than Self Consolidating Grout a demonstration panel representative of the proposed wall construction and construction procedures shall be provided and approved

by the Architect. The demonstration panel may be a part of the completed construction as approved by the Architect. c. For Self Consolidating Grout placed in masonry that has cured for at least 4 hours, place in lifts not exceeding the Maximum Grout Pour Height in listed in ACI 530.1/ASCE 6/TMS

2. When grouting, form grout keys between grout pours. Form grout keys between grout lifts when the first lift is permitted to set prior to placement of the subsequent lift. a. Form a grout key by terminating the grout a minimum of 1.1/2 in. below a mortar joint.

b. Do not form grout keys within beams. c. At beams or lintels laid with closed bottom units, terminate the grout pour at the bottom of the beam or lintel without forming a grout key. D. Reinforcing Bars shall not be welded unless specifically shown on drawings. In such cases, use

only AWS standards. Do not substitute reinforcing bars for DBAs or HSAs E. Control Joints: Spacing shall not exceed 40'-0" or 2.5 times the wall height, whichever is less. Joints shall not be located over masonry openings, and shall be a minimum of the schedule masonry column width away from masonry openings. See architectural drawings for locations.

F. Grout all beam and joist pockets solid after installation of beams and joists. 4.3. Detailing Requirements:

A. Standards: Reinforcing detailing shall comply with American Concrete Institute (ACI) Standard 315, "Details and Detailing of Concrete Reinforcement." B. Reinforcement Protection (cover): 1. Joint reinforcement shall have not less than 5/8" mortar coverage from the exposed face.

2. Other reinforcement shall have a minimum coverage of one bar diameter over all the bars, but not less than 3/4". When masonry is exposed to soil, minimum coverage shall be 1.5". C. Vertical steel reinforcement shall be placed and secured against displacement prior to grouting by wire positioners or other suitable devices: at intervals not exceeding 112 bar diameters, at the grout lift heights, or at bar splice locations, whichever is less. Vertical reinforcing shall be located at the center of the wall, unless noted otherwise.

D. Lap Splice Lengths: Lap all masonry reinforcing bars per the "Masonry Reinforcing Bar Lap Splice Schedule." Joint reinforcement shall lap a minimum of 6". E. Corner Bars: Horizontal reinforcement shall be continuous at all corners and at intersecting walls. Provide corner bars with the required lap splice length.

F. Dowels: All vertical reinforcing shall be doweled to the foundation wall, footing (structure below)

vertical wall reinforcing unless noted otherwise.

and to the structure above with the same size dowel, spacing (and in the same core) as the

G. Wall Openings 24" wide and wider: Provide reinforced masonry lintels per Masonry Lintel Schedule over the top of, and 2 - #5 bars, in grouted spaces, on all sides and adjacent to every unscheduled opening, unless noted otherwise. Bars for all openings shall extend a minimum of 48 bar diameters beyond the corners of the opening. Vertical bars shall extend from floor level below to the floor, or roof, level above. Where a 48 bar diameter extension is not possible, extend bars as far beyond the opening as possible and terminate them with a 90 degree

standard ACI hook. H. Horizontal wall reinforcing shall be continuous through joining concrete walls, masonry walls, columns, and pilasters. Provide a key between the wall and the column or pilaster. Horizontal wall reinforcing shall be placed inside the column vertical reinforcing. Anchor bolts and headed stud anchors shall be set in a grouted cell. Anchor bolts and headed stud anchors shall have 1" grout surrounding the shank at its penetration. Grout shall be flush

J. All masonry column ties shall terminate with 135 degree hooks plus a 6 bar diameter extension K. The exposed face of all embed plates shall be set flush with the face of masonry wall or column.

4.4. Minimum Reinforcing: All masonry walls shall be reinforced as follows, unless shown otherwise on the drawings. Reinforcing shall be placed in grouted cells.

Wall Thickness <u>Horizontal Reinf.</u> Vertical Reinf. #4 @ 48" o.c. #5 @ 32" o.c. #5 @ 48" o.c. #5 @ 32" o.c. #6 @ 48" o.c. #6 @ 32" o.c. 2 - #5 @ 48" o.c. #6 @ 32" o.c.

with the face or top of the masonry.

#### 5. Structural Steel

5.1. Material: A. All Shapes and Plates; ASTM A36 (Fy = 36 ksi), except as noted otherwise.

B. Deformed Bar Anchors (DBA): ASTM A496. C. Headed Stud Anchors (HSA): ASTM A108, with dimensions complying with AISC specifications.

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

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 the Special Instructions section of the general notes, below. D. American Welding Society (AWS) D1.1:2010, "Structural Welding Code - Steel" (specific items

do not apply when they conflict with the AISC requirements). E. American Welding Society (AWS) D1.8:2009, "Structural Welding Code – Seismic Supplement" (specific items do not apply when they conflict with the AISC requirements).

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

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

C. Electrodes: E-70 XX or as noted otherwise. E60 XX may be used for welding steel floor and 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

H. Special Provisions for Welds in the SLRS (Seismic Load Resisting Systems): Welding methods, procedures and quality control shall comply with AISC 341, AWS D1.1, AWS D1.8 and the 1. Demand Critical Welds: The following CJP groove welds are demand critical and shall comply with the special requirements for Demand Critical Welds.

a. 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

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. 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. 6. 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. 7. 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.

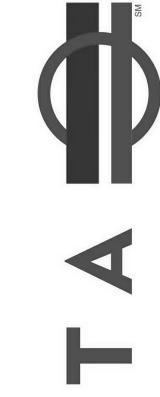
8. Additional welding provisions applicable to demand critical welds only are as follows:

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. 9. 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.

> STRUCTURAL DRAWING LIST SHEET NO. SHEET NAME GENERAL STRUCTURAL NOTES GENERAL STRUCTURAL NOTES FOOTING & FOUNDATION PLANS ROOF FRAMING PLANS TYPICAL FOOTING & FOUNDATION DETAILS TYPICAL FOOTING & FOUNDATION DETAILS **ROOF FRAMING DETAILS**

> > STRUCTURAL SCHEDULES STRUCTURAL SCHEDULES



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**GENERAL** STRUCTURAL NOTES

10.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.

#### 5.5. Metal Bar Grating:

A. Metal bar grating shall comply with the most recent requirements of the National Association of Architectural Metals Manufacturers, Metal Bar Grating Division (NAAMM MBG). Products shall conform to the latest edition of the Metal Bar Grating Manual, ANSI/NAAMM MBG 531, or the Heavy Duty Metal Bar Grating Manual, ANSI/NAAMM MBG 532, as appropriate.

B. Materials: Unless noted otherwise, metal bar grating of the following types shall conform with the 1. Steel: ASTM A569 (allowable fiber unit stress F = 18,000 psi)

2. Stainless Steel: ASTM A167, alloys 304/316 (allowable fiber unit stress F = 20,000 psi) 3. Aluminum: ASTM B221, alloys 6063-T6/6061-T6 (allowable fiber unit stress F = 12,000 psi)

Metal bar grating shall be provided with mill finish, unless otherwise noted. D. All metal bar grating shall be firmly and positively anchored to supporting members. Unless noted otherwise, weld grating to supporting members with 3/16" fillet welds, 3/4" long. Locate welds at each end of bearing bars approximately 6 in from each side of grating panel. At intermediate supports in panel, locate one weld at middle of panel.

#### 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
- 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
  - 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.

place and all final connections are completed, including all roof and floor attachments. The

- 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.

### 7. Quality Assurance

- 7.1. Quality Assurance Agency Requirements:
- A. A qualified Quality Assurance Agency (QAA) shall 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
- confirm objectivity. 2. The QAA shall have adequate equipment to perform required tests.
- 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:

3. The QAA shall employ experienced personnel educated in conducting, supervising and

the work being inspected. The agency shall also disclose possible conflicts of interest to

- 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
- 7.2. Contractor Responsibilities:

the project.

- 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
  - 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, mat footing, deep foundation, grade beam, or pier. 2. Closing any wall forms.
- Grouting any masonry. 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.
- 7.3. 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 B. Observation visits to the site by the Engineer's field representatives shall not be construed as
- inspection or approval of construction.

#### 8. Statement of Special Inspections

- 8.1. The following materials, systems and components require special inspection or testing per Chapter 17 of the International Building Code (IBC).
- 8.2. 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.

#### Concrete Construction per IBC Sections 1705.3 &1705.12.1

Item	Frequency	Detailed Instructions
Reinforcing steel, including prestressing tendons	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.
Item	Frequency	Detailed Instructions
Welding of reinforcing steel	Periodic	Verify weldability of reinforcing steel other than A706. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.
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.
Curing temperature and techniques  Erection of precast concrete	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.  Verify that all precast elements are lifted, assembled and braced in accordance with the approved construction documents.
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.

Velding of Reinforcing	Steel (IBC	Table	1705.2.2):

Item	Frequency	Detailed Instructions
Verification of weldability	Periodic	Verify weldability of reinforcing steel other th A706 based upon carbon equivalent and in accordance with AWS D1.4. Continuous inspection is required for welding of reinforci steel used in intermediate or special concret moment frames, boundary elements of special control structural walls or shear reinforcement.
Shear reinforcement	Continuous	
Other reinforcing steel	Periodic	Visually inspect all welds in accordance with AWS D1.4.

d Instructions

nform to the designs, test results and requirements of the approved construction construction procedures documents. Mix design, test results, material certificates, and construction procedures should be submitted for review. Mortar mix designs shall conform to ASTM C 270 while grout shall comply with the proportion or strength requirements of ASTM C 476 or be based upon compressive strength tests in accordance with ASTM C1019. Material certificates shall be provided for the following: reinforcement; anchors, ties, fasteners, and metal accessories; masonry units; mortar and grout materials. Construction procedures for cold-weather or hot-weather construction shall be reviewed. Verify f'm and f'AAC prior to Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Section 1.4B of ACI 530.1-11 prior to construction.

Verify that mortar is of the type and color Proportions of site-prepared specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602/ACI 530.1-11. Construction of mortar joints Verify that mortar joints comply with Article 3.3

B of TMS-602/ACI 530.1-11. Verify that mortar complies with Article 2.1 C of Properties of thin-bed mortar for Periodic TMS-602/ACI 530.1-11. AAC masonry Preparation of required grout If the prism test method is used a minimum of

three prisms shall be constructed in specimens, mortar specimens and/or prisms shall be observed accordance with ASTM C1314. If the unit strength method is selected the compressive strength of the grout shall be determined per ASTM C1019 (not required if grout complies with ASTM C476).

Prior to Grouting (Table 1.19.2, TMS-402/ACI 530-11): Detailed Instructions Verify that grout space is free of mortar Grout space Periodic droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are 602/ACI 530.1-11.

provided per Article 3.2 D and 3.2 F of TMS-Grade, type, and size of Verify that reinforcement, joint reinforcement, reinforcement and anchor bolts wall ties, anchor bolts and veneer anchors comply with the approved construction 530-11.

documents and Section 1.6 of TMS 402/ACI Verify that reinforcement, joint reinforcement, Placement of reinforcement and Periodic connectors wall ties, anchor bolts and veneer anchors are installed in accordance with the approved and 3.6 A of TMS 602/ACI 530.1-11. Verify that grout is proportioned per ASTM C Proportions of site-prepared grout | Periodic 476 and has a slump between 8-11 inches

construction documents and Articles 3.2 E, 3.4, Self-consolidated grout shall not be proportioned onsite. (see Articles 2.6 B and 2.4 G.1.b of TMS 602/ACI 530.1-11. Placement of masonry units and Periodic Verify that face shells and head joints are fully construction of mortar joints mortared and that vertical cells are aligned and unobstructed openings for grout are provided. All units are to be clean and placed while

mortar is soft and plastic. Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602/ACI 530.1-11. During Masonry Construction: Size and location of structural Periodic Verify that structural elements are placed in locations specified on the approved elements construction documents and to the tolerances noted in Section 3.3F of ACI 530.1-08. Verify that correct anchorages and connections Type, size, and location of anchors, including other details of are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402/ACI anchorage of masonry to structural members, frames, or 530-11. Verify that structural elements are

other construction placed in locations specified on the approved construction documents. Headed or bent bar anchor bolts shall be embedded in grout. Welding of reinforcement Continuous Preparation, construction, and Periodic Verify that cold-weather construction is protection of masonry during cold performed in accordance with Article 1.8 C of weather (<40°F) or hot weather TMS 602/ACI 530.1-11 and hot weather construction per Article 1.8 D of TMS 602/ACI (>90°F) 530.1-11. Placement of grout Continuous Self-consolidating grout Continuous

Placement of AAC masonry units Periodic Verify that mortar is placed in accordance with Article 3.3 B.8 of TMS-602/ACI 530.1-11. and construction of thin-bed mortar joints Confirm that specimens/prisms are performed Observation of grout specimens, Periodic as required by Article 1.4 of TMS-602/ACI mortar specimens, and/or prisms Frequency Detailed Instructions

Verification of Slump Flow and Periodic Compressive strength tests should be performed in accordance with ASTM C 1019 Visual Stability Index (VSI) for self-consolidating grout for slump flow and ASTM C 1611 for VSI. Verification of f'm and f'AAC Periodic Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602/ACI 530.1-11 prior to construction. All post-installed anchors/dowels shall be Post-installed anchors or dowels specially inspected as required by the approved

ICC-ES report.

### Soils per IBC Section 1705.6

Minimum Testing:

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	Continuous	

PLAN MARKS	PLANM
BRACED FRAME	
CONCRETE BEAM	

CONCRETE COLUMN CDP-# CONC DRILLED PIER CFW-# CONC FDTN. WALL CONC GRADE BEAM CGB-# CONCRETE JOIST **CONCRETE LINTEL** CONCRETE PIER CRW-# CONC RETAINING WALL

CONC SUSPENDED SLAB CSS-# CSW-# CONC SHEAR WALL CW-# CONCRETE WALL **CONTINUOUS FOOTING** MAT FOOTING

CONC SLAB ON GRADE

RECTANGULAR FOOTING

CSG-#

SQUARE FOOTING THICKEND SLAB FOOTING MASONRY COLUMN MOMENT FRAME MASONRY LINTEL

MASONRY PIER MASONRY WALL PLYWOOD DIAPHRAGM

PLYWOOD SHEAR WALI PSW-# STEEL BASE PLATE STEEL COLUMN

SCP-# STEEL CAP PLATE SD-# STEEL DECK

**ABBREVIATIONS** 

CONSTRUCTION JOINT OR CONTROL JOINT

COMPLETE JOINT PENETRATION

CONC MASONRY UNIT

ANCHOR BOLT (S)

ABOVE

BEAM

BELOW

BEARING

**BETWEEN** 

BUILDING

BOTTOM

COLUMN

CENTER

DOUBLE

DIAMETER

DIMENSION

DETAIL

DOWN

**DOWEL** 

EACH

ELEVATION

ELECTRICAL

**EQUAL** 

**EXISTING** 

**EXTERIOR** 

**EACH FACE** 

**EACH WAY** 

FLOOR DRAIN

FINISH FLOOR

**FOUNDATION** 

FINISH

**FLOOR** 

FOOT

**FOOTING** 

GAUGE

HEIGHT

INCH

JOINT

JOIST

INSULATION

INSIDE FACE

LINEAL FOOT

POUNDS

MASONRY

MAXIMUM

MINIMUM

**OPENING** 

PLATE

PANEL

POINT

OPPOSITE

ON CENTER OUTSIDE FACE

MASONRY C.J.

MECHANICAL

MANUFACTURER

**MISCELLANEOUS** 

NOT TO SCALE

NOT IN CONTRACT

OPEN WEB STEEL JOIST

POUNDS/CUBIC FOOT

POUNDS/LINEAL FOOT

POUNDS/SQ FOOT

POUNDS/SQ INCH

SPECIAL INSPECTION SLAB ON GRADE

REINFORCING

**ROOF DRAIN** 

REQUIRED

STANDARD

STIFFENER

STEEL SQUARE

SIMILAR

STRUCTURAL STAGGERED

TOP AND BOTTOM

TOP OF CONCRETE

**UNLESS NOTED OTHERWISE** 

WELDED WIRE FABRIC

TOP OF FOOTING

TOP OF SLAB

TOP OF WALL

TYPICAL

VERTICAL

TEMPERATURE THREADS

TOP OF

SHEET

INTERIOR

HORIZONTAL

FIELD VERIFY

GALVANIZED

GLU-LAMINATED BEAM

HORIZONTAL BRIDGING

HEADED STUD ANCHORS

BUILDING OFFICIALS

KIPS PER LINEAL FOOT

KIPS PER SQUARE FOOT

KIPS PER SQUARE INCH

LONG LEG HORIZONTAL

LONG LEG VERTICAL

KIPS - 1,000 POUNDS

GENERAL STRUCTURAL NOTES

INTERNATIONAL BUILDING CODE

INTERNATIONAL CONFERENCE OF

INTERNATIONAL CODE COUNCIL

**EQUIPMENT** 

**EXPANSION JOINT** 

(SEISMIC SEPARATION JOINT)

EXPANSION / EXPOSED

DRAWING

CONCRETE

CONSTRUCTION

CONTINUOUS

CONTRACTOR

DECK BEARING

DEFORMED BAR ANCHORS

APPROX

ARCH

BLW

BRG

BTWN

BLDG BOT

CJP

COL

CONC

CONST

CONT

CTR

DBA DBL

DET

DIM `

DN

DWG

DWL

E.J.

**ELEC** 

EQUIP EQ

**EXIST** 

EXP

EXT

E.W.

**FDTN** 

FIN

GALV

GLB

GSN

HORIZ

HSA

**ICBO** 

ICC

INSUL

INT

KSF

KSI

LLV

MAS

MAX

MCJ

MFR

MISC

NIC

NTS

OPNG

OPP

OWSJ

PSF

REQ'D

STD

STIFF

MECH

DIA (OR [

CONTR

CMU

ALTERNATE

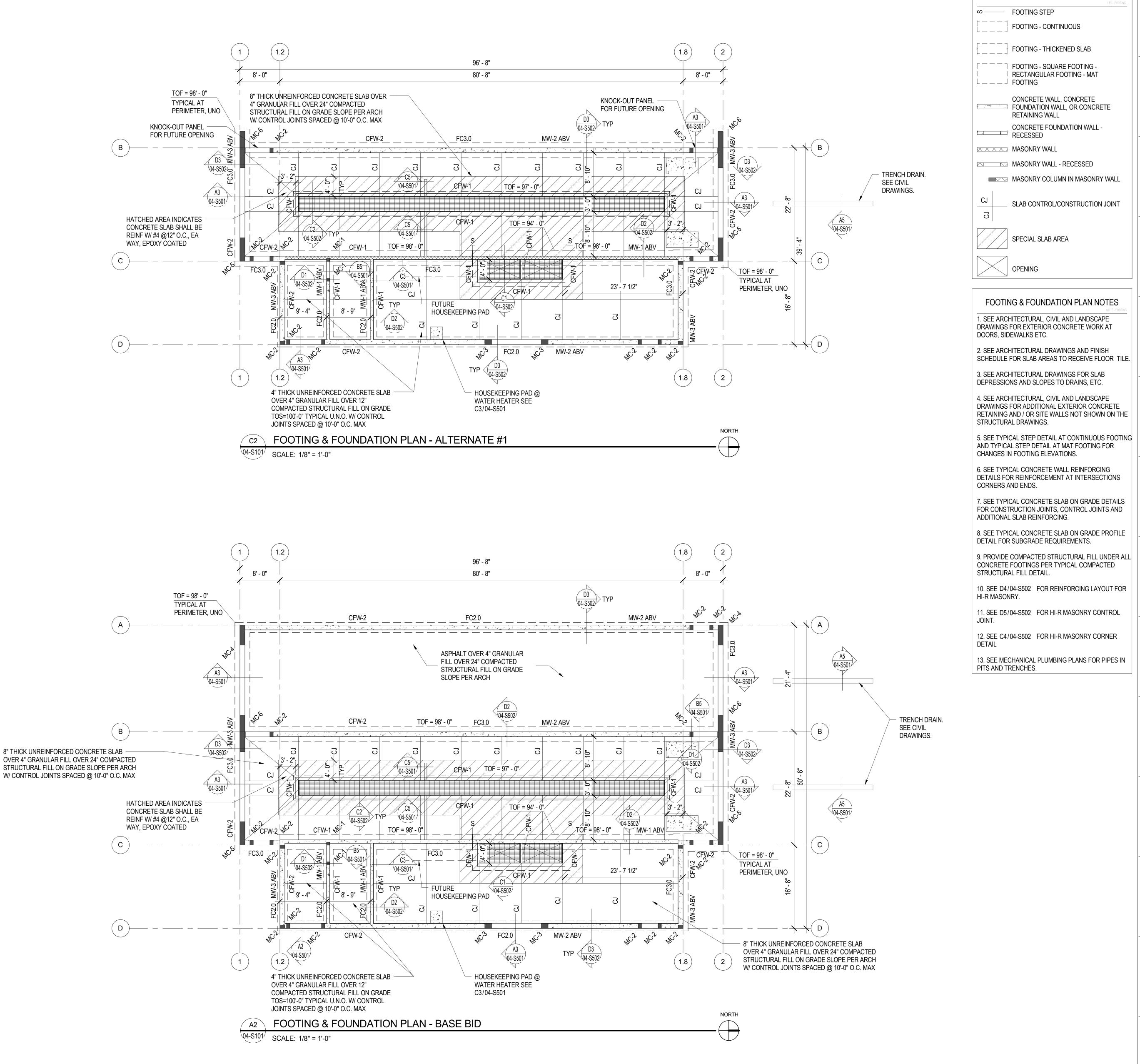
APPROXIMATE

ARCHITECT(URAL)

AVELI 

No REVISION/SUBMISSION

PROJECT No: 3514 **GENERAL** STRUCTURAL NOTES



FOOTING & FOUNDATION PLAN LEGEND

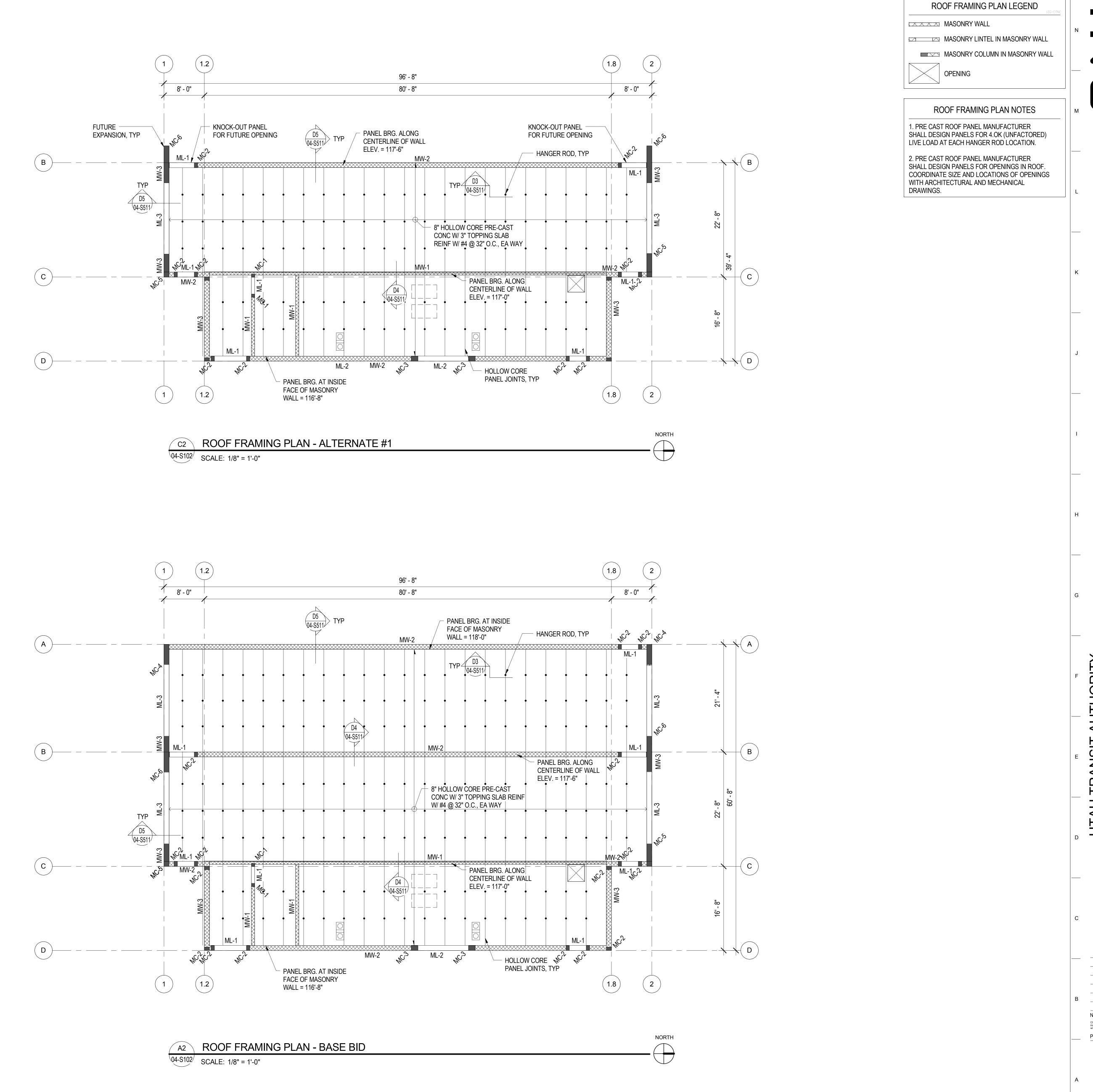




REAVELEY ENGINEERS + ASS 

No REVISION/SUBMISSION PROJECT No: 3514

FOOTING & FOUNDATION PLANS



Journal STREET

1050 17th STREET SUITE A200 DENVER, CO 8026 303 295 1717 t



■ REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

DEPOT DISTRICT TECHNOLOGY CENTER

WASH BUILDING 4 669 WEST 200 S SALT LAKE CITY

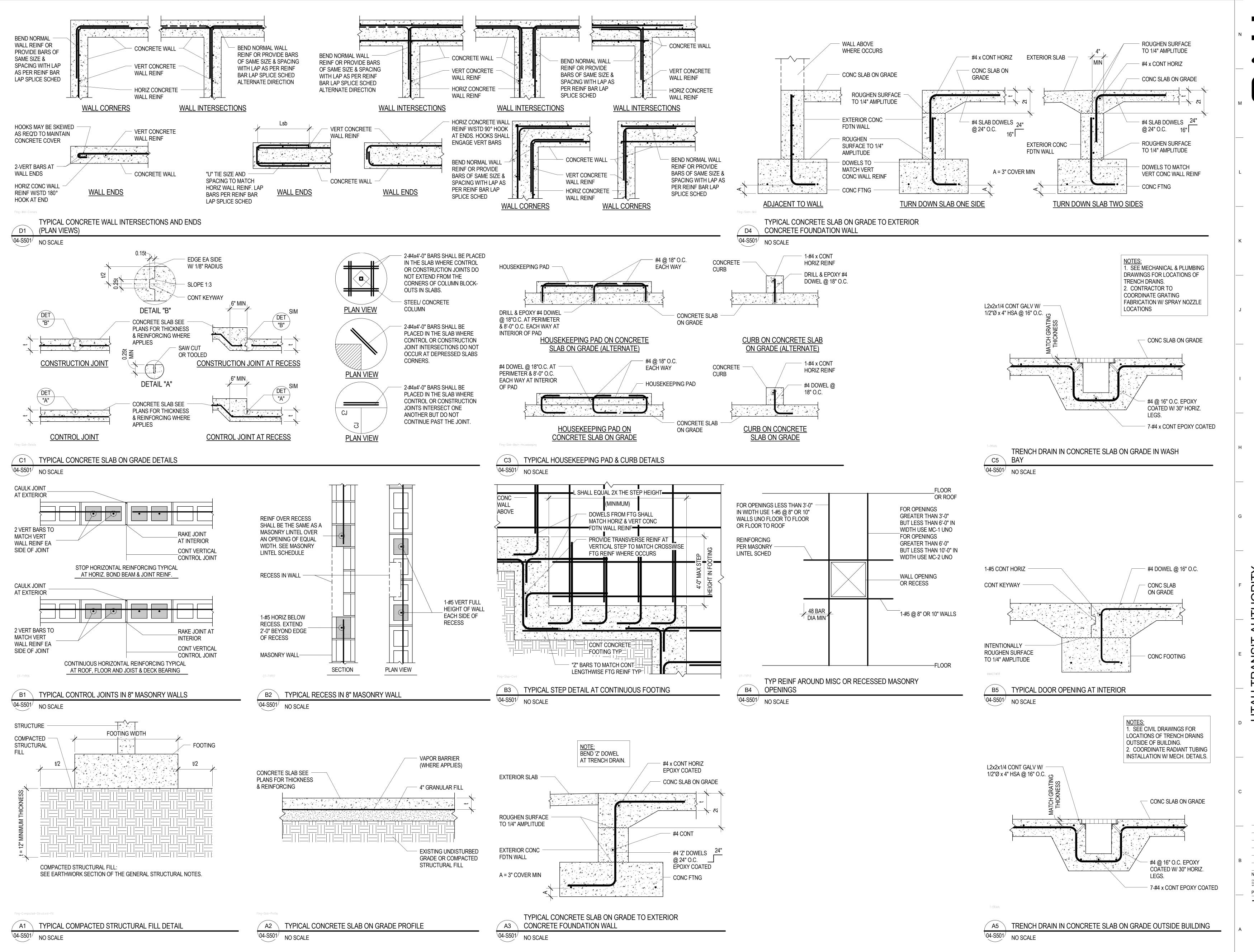
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PROJECT No: 3514

ROOF FRAMING PLANS

04-S102



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1050 17th STREE SUITE A200 DENVER, CO 802

WS NS

EXEAVELEY
ENGINEERS + ASSOCIATES

OT DISTRICT TECHNOLOGY CENTER

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WASH BUILDING 4 669 WEST 200 SOUTH SALT LAKE CITY. UT 84

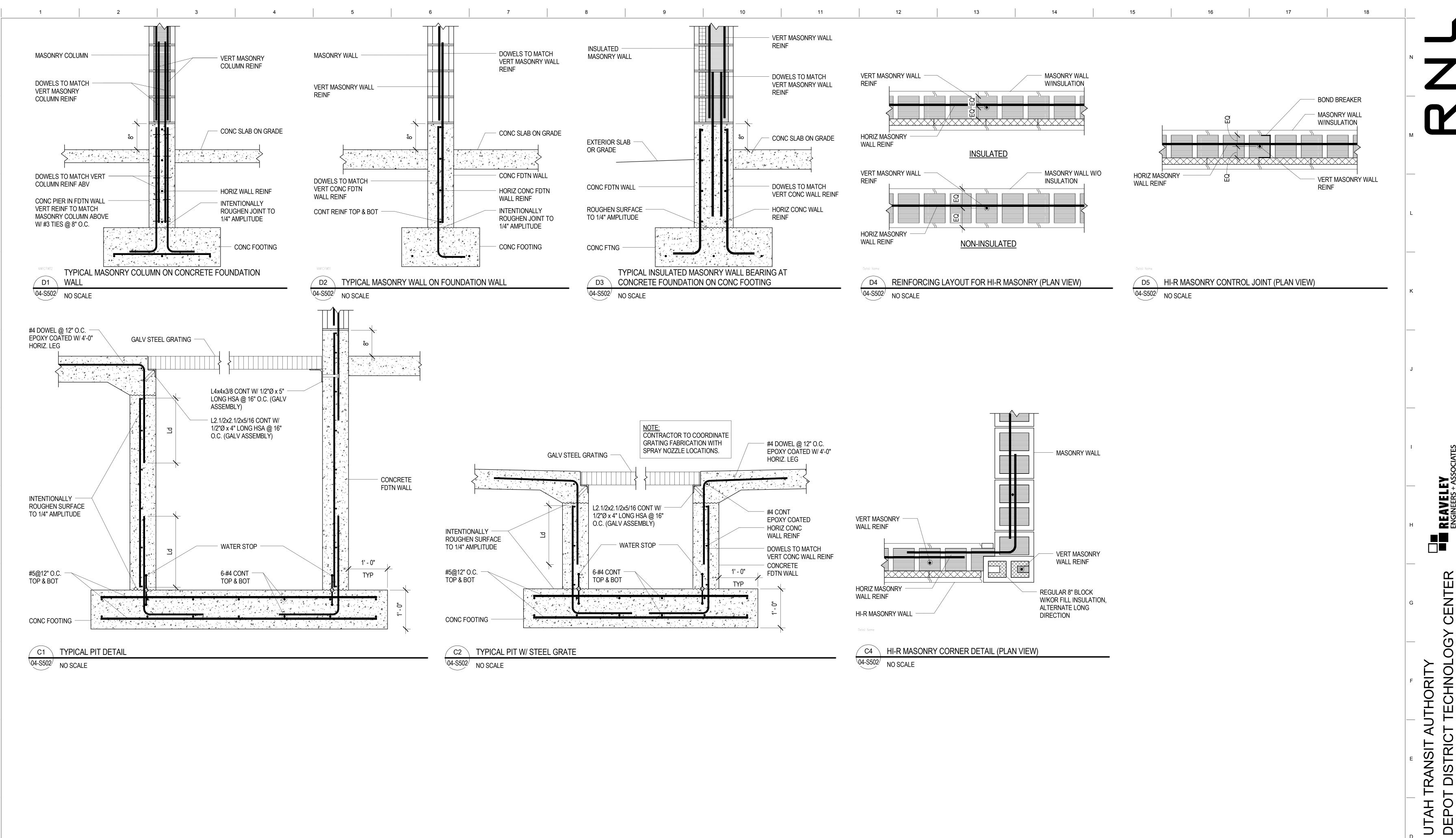
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PROJECT No: 3514

TYPICAL FOOTING & FOUNDATION DETAILS

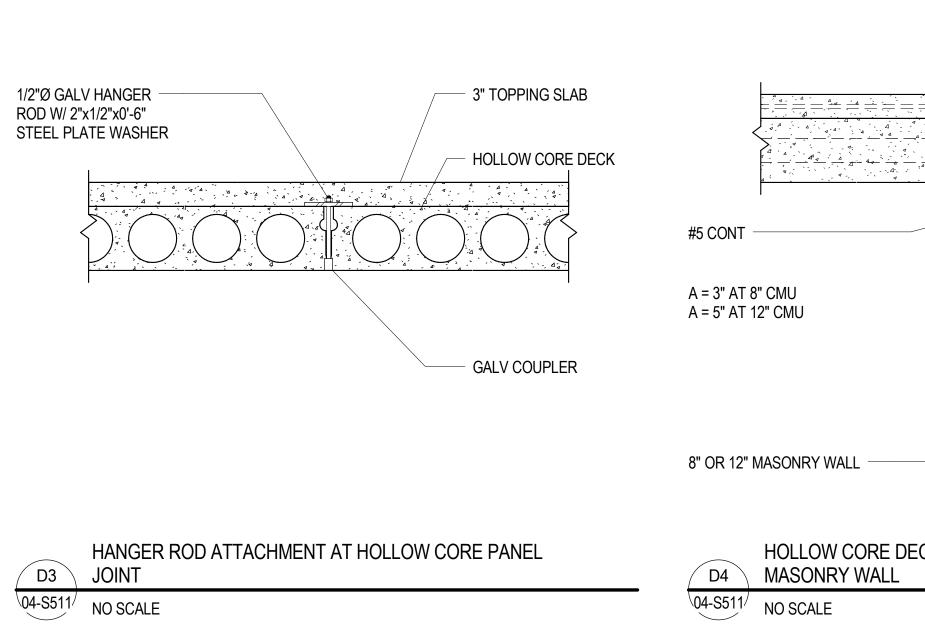
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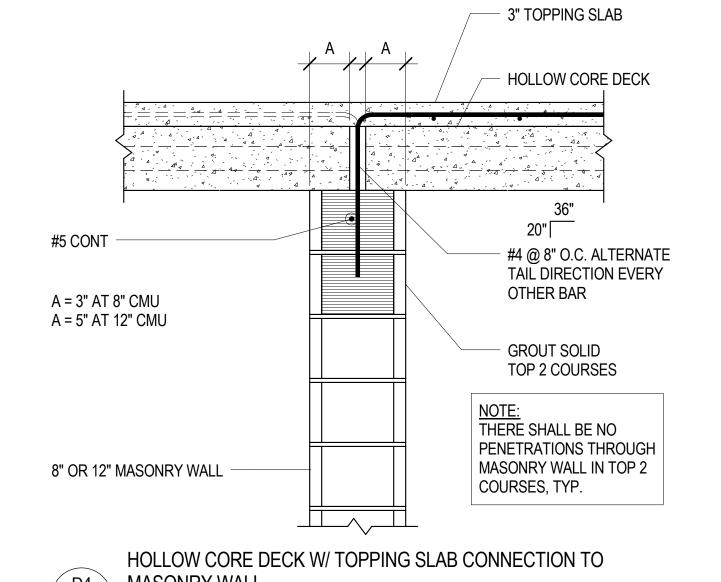


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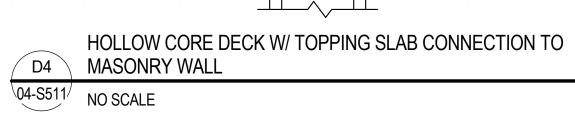
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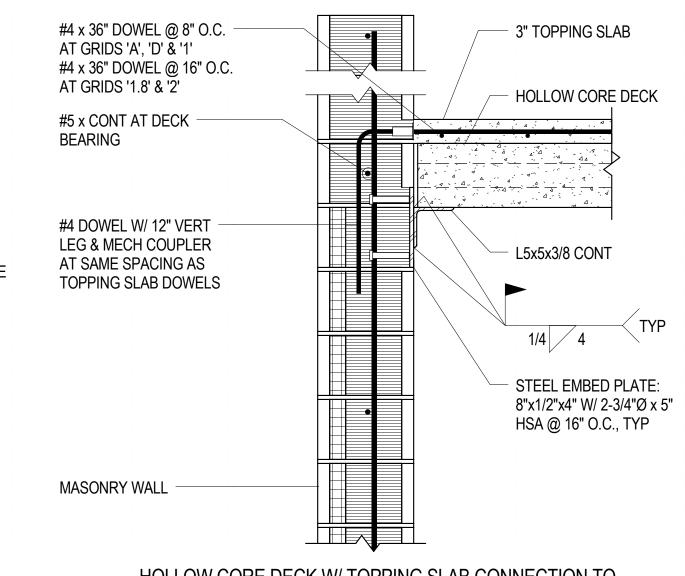
TYPICAL FOOTING & FOUNDATION **DETAILS** 





13





15

HOLLOW CORE DECK W/ TOPPING SLAB CONNECTION TO D5 MASONRY WALL 04-S511 NO SCALE

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UTAH TRANSIT AUTHORITY DEPOT DISTRICT TECHNOLOGY

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> **ROOF FRAMING DETAILS**

_													
						CONCF	RETE FOO	TING SCH	HEDULE				
					CRO	SSWISE	REINFOR	CING	LENG	GTHWISE	REINFOR	CING	
	MARK	WIDTH	LENGTH	THICK	NO.	SIZE	LENGTH	SPACE	NO.	SIZE	LENGTH	SPACE	REMARKS
	FC2.0	2' - 0"	CONT.	1' - 0"		NONE	REQ'D		3	#4	CONT	6"	
	FC3.0	3' - 0"	CONT.	1' - 0"		#5	2'-6"	14"	3	#5	CONT	15"	
	FC3.5	3' - 6"	CONT.	1' - 0"		#5	3'-0"	14"	3	#5	CONT	18"	
											_		

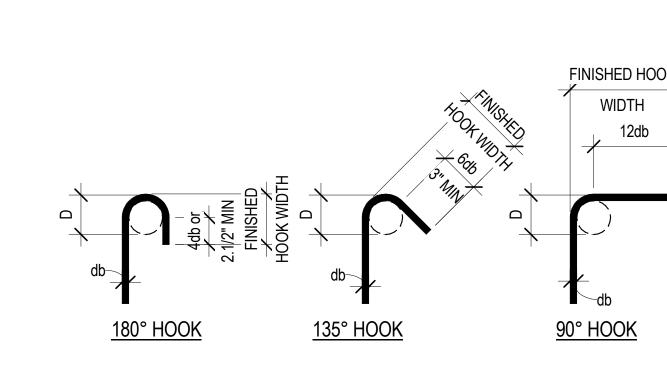
PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER UNLESS NOTED OTHERWISE. TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING WITH 2" CLEAR CONCRETE COVER. SPOT FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS, UNLESS NOTED

ALL FOOTINGS SHALL BE FORMED. FOOTINGS SHALL NOT BE EARTH FORMED OR OVERSIZED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.

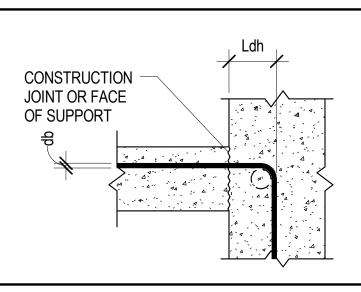
				CONC	KEIE	KEINF	ORG	NG BA	IK DE	/ELUP	'IVIEIN I	AND	LAP 5	PLICE	LENG	пп 20	HEDU	JLE				
BAR		f'c = 30	000 PSI			f'c = 40	00 PSI			f'c = 45	00 PSI			f'c = 50	00 PSI			f'c = 60	000 PSI		f'c =	ALL
SIZE	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ldc	Lse
#3	17"	22"	22"	28"	15"	19"	19"	25"	14"	18"	18"	23"	13"	17"	17"	22"	12"	16"	16"	20"	8"	12
#4	22"	29"	29"	38"	19"	25"	25"	33"	18"	24"	24"	31"	17"	23"	23"	29"	16"	21"	21"	27"	10"	15
#5	28"	36"	36"	47"	24"	31"	31"	41"	23"	30"	30"	38"	22"	28"	28"	36"	20"	26"	26"	33"	12"	19
#6	33"	43"	43"	56"	29"	37"	37"	49"	27"	35"	35"	46"	26"	34"	34"	44"	24"	31"	31"	40"	15"	23
#7	48"	63"	63"	81"	42"	54"	54"	71"	40"	51"	51"	67"	38"	49"	49"	63"	34"	45"	45"	58"	17"	27
#8	55"	72"	72"	93"	48"	62"	62"	81"	45"	59"	59"	76"	43"	56"	56"	72"	39"	51"	51"	66"	19"	30
#9	62"	81"	81"	105"	54"	70"	70"	91"	51"	66"	66"	86"	48"	63"	63"	81"	44"	57"	57"	74"	22"	34
#10	70"	91"	91"	118"	61"	79"	79"	102"	57"	74"	74"	96"	54"	71"	71"	92"	50"	64"	64"	84"	24"	39
#11	78"	101"	101"	131"	67"	87"	87"	114"	64"	82"	82"	107"	60"	78"	78"	102"	55"	71"	71"	93"	27"	43
#14	93"	121"	NA	NA	81"	105"	NA	NA	76"	99"	NA	NA	72"	94"	NA	NA	66"	86"	NA	NA	33"	N
#18	124"	161"	NA	NA	108"	140"	NA	NA	101"	132"	NA	NA	96"	125"	NA	NA	88"	114"	NA	NA	43"	N

#### 1. DEFINITIONS:

- Ld: TENSION DEVELOPMENT LENGTH FOR REINFORCEMENT SATISFYING THE FOLLOWING CONDITIONS:
- SLABS AND WALLS: CLEAR SPACING > 2db AND CONCRETE CLEAR COVER > db BEAMS AND COLUMNS: CLEAR COVER SPACING > db AND CONCRETE CLEAR COVER > db
- Lt: DEVELOPMENT LENGTH FOR TOP BARS IN TENSION
- Lsb: TENSION LAP SPLICE LENGTH FOR OTHER THAN TOP BARS (CLASS B)
- Lsbt: TENSION LAP SPLICE LENGTH OF TOP BARS.
- Ldc: DEVELOPMENT LENGTH FOR BARS IN COMPRESSION
- Lsc: TIED COLUMN LAP SPLICE IN COMPRESSION db: NOMINAL BAR DIAMETER (INCHES)
- TOP BARS: HORIZONTAL REINFORCEMENT WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW
- 2. MULTIPLY VALUES IN SCHEDULE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET REQUIREMENTS FOR Ld IN NOTE 1.
- 3. MULTIPLY VALUES IN SCHEDULE BY 1.3 FOR USE IN LIGHTWEIGHT AGGREGATE CONCRETE.
- 4. FOR EPOXY COATED BAR: MULTIPLY VALUES IN SCHEDULE BY 1.5 FOR BARS WITH CLEAR COVER < 3db OR CLEAR SPACING < 6db. OTHERWISE MULTIPLY VALUES BY 1.2.
- 5. a. FOR BUNDLED BARS OF THREE OR LESS MULTIPLY LENGTHS BY 1.2. b. FOR BUNDLED BARS OF FOUR OR MORE MULTIPLY LENGTHS BY 1.33.
  - c. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.
- 6. SCHEDULE LENGTHS ARE FOR fy=60ksi REINFORCING, MULTIPLY LENGTHS BY 1.25 FOR fy=75ksi REINFORCING.
- 7. LAP SPLICES ARE NOT PERMITTED FOR #14 & #18 BARS. USE BAR COUPLERS PER G.S.N.



	END	HOOK SCHE	DULE		
BAR	D	FINIS	SHED HOOK W	IDTH	
SIZE		180° HOOK	135° HOOK	90° HOOK	
#3	2.1/4"	3"	3"	6"	
#4	3"	4"	3"	8"	
#5	3.1/4"	5"	3.3/4"	10"	
#6	4.1/2"	6"	4.1/2"	12"	
#7	5.1/4"	7"	5.1/4"	14"	
#8	6"	8"	6"	16"	
#9	9.1/2"	11.3/4"		19"	
#10	10.3/4"	13.1/4"		22"	
#11	12"	14.3/4"		24"	
#14	18.1/4"	21.3/4"		31"	
#18	24"	28.1/2"		41"	



BAR	NORM	1AL WEIG	HT CON	CRETE, fo	c = PS
SIZE	3,000	4,000	4,500	5,000	6,0
#3	6"	6"	6"	6"	6"
#4	8"	7"	7"	7"	7'
#5	10"	9"	8"	8"	7'
#6	12"	10"	10"	9"	8'
#7	14"	12"	11"	11"	10
#8	16"	14"	13"	12"	11
#9	18"	15"	14"	14"	13
#10	20"	17"	16"	15"	14
#11	22"	19"	18"	17"	16
#14	37"	32"	31"	29"	27
#18	50"	43"	41"	39"	35

1. VALUES HERE VALID FOR ALL CASES IF: SIDE COVER > 2.1/2" END COVER ≥ 2"

2. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR LIGHTWEIGHT CONCRETE

3. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR USE WITH EPOXY COATED REBAR

				_
		APPROVED AD	HESIVES	
_		ADHESIVE	ICC CODE EVALU REPORT	ATION
		HILTI HIT - HY 200	ESR-3187	
		HILTI HIT - RE 500 SD	ESR-2322	
		SIMPSON STRONG-TIE SET-XP	ESR-2508	
		POWERS PE 1000+	ESR-2583	
-	\N	EW THREADED ROD	<	<u> </u> 
	\\ N	EW REBAR DOWEL		
-	H M E	NCHOR REBAR OR THREADED FOLE. USE APPROVED ADHESIVE ANUFACTURERS RECOMMENDATE OF THE PARATION REPORT, INCLUDING FORILL BIT, AND PREPARATION RILLED HOLE	E AND FOLLOW AL ATIONS PER THE I G: HOLE DIAMETE	L CC CO R, TYP

	ADHESIVE	ICC CODE EVALU REPORT	ATION
	HILTI HIT - HY 200	ESR-3187	
	HILTI HIT - RE 500 SD	ESR-2322	
	SIMPSON STRONG-TIE SET-XP	ESR-2508	
	POWERS PE 1000+	ESR-2583	
N	EW THREADED ROD	<	<u> </u> 
N	EW REBAR DOWEL		
H M E	NCHOR REBAR OR THREADED F OLE. USE APPROVED ADHESIVI IANUFACTURERS RECOMMENDA VALUATION REPORT, INCLUDING IE DRILL BIT, AND REEDABATION	E AND FOLLOW AL ATIONS PER THE I G: HOLE DIAMETE	.L CC COI R, TYP!

EXISTING CONCRETE

ADHESIVE ANCHORING TO CONCRETE SCHEDULE

THIS SCHEDULE SHALL BE USED ONLY WHERE SPECIFICALLY REFERENCED ON THE DRAWINGS AND AT OTHER LOCATIONS WITH APPROVAL OF THE ENGINEER. 2. EMBEDMENT LENGTHS SPECIFIED ON PLANS OR DETAILS TAKE PRECEDENCE

WHERE THE THICKNESS OF THE EXISTING CONCRETE MEMBER IS NOT SUFFICIENT TO ACHIEVE SCHEDULED EMBEDMENT AND SPECIFIED CLEAR COVER FOR THE

USE PROCEDURES AND PRODUCTS RECOMMENDED BY ADHESIVE MANUFACTURER

SPECIAL INSPECTION IS REQUIRED DURING INSTALLATION OF ALL ADHESIVE

ANCHORS PER THE CODE EVALUATION REPORT FOR THE ANCHOR AND THE

QUALITY ASSURANCE SECTION OF THE GENERAL STRUCTURAL NOTES.

SIZE (DIA)

3/8"

1/2"

5/8"

3/4"

1 1/4"

THREADED ROD

EMBEDMENT LENGTH

(SEE NOTE #2)

4 1/2"

6"

7 1/2"

10 1/2"

12"

15"

REINFORCING BAR

DOWEL SIZE

#3 #4

#5

#6

#7

#8

#9 #10 #11 EMBEDMENT LENGTH

(SEE NOTE #2)

14"

18"

OVER EMBEDMENT LENGTHS IN THIS SCHEDULE.

ANCHOR, CONTACT THE ENGINEER.

FOR OVERHEAD INSTALLATION.

A1 ADHESIVE ANCHORING SCHEDULE 04-S601 NO SCALE

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STRUCTURAL

SCHEDULES

No REVISION/SUBMISSION

PROJECT No: 3514

REAVELEY ENGINEERS + ASS

NOTES.

REMARKS

SEE A5/04-S602

SEE A4/04-S602

SEE A3/04-S602

1. PROVIDE SCHEDULED VERTICAL REINFORCING BARS AT ALL CORNERS, ENDS OF WALLS, AND SPACED AS SCHEDULED, UNLESS NOTED OTHERWISE.

JOINTS

- 2. HORIZONTAL REINFORCING BARS SHALL BE CONTINUOUS AT ALL CORNERS AND AT INTERSECTING WALLS. PROVIDE CORNER BARS WITH THE REQUIRED LAP SPLICE LENGTH.
- 3. TERMINATE ALL HORIZONTAL REINFORCING BARS AT ENDS OF WALLS AND EDGES OF OPENINGS WITH A STANDARD HOOK AROUND VERTICAL REINFORCING BARS.
- 4. SEE PLANS, DETAILS AND GENERAL STRUCTURAL NOTES FOR ADDITIONAL REINFORCING REQUIREMENTS.
- 5. GROUT SOLID ALL CELLS BELOW GRADE, CELLS CONTAINING EMBEDS (HSA'S, DBA'S, ANCHOR BOLTS, ETC.), AND CELLS CONTAINING REINFORCING. CONSOLIDATE GROUT AS PER THE GENERAL STRUCTURAL
- 6. HORIZONTAL WALL REINFORCING SHALL BE PLACED INSIDE THE VERTICALS OF MASONRY COLUMNS.
- 7. HORIZONTAL WALL REINFORCING SHALL CONTINUE THROUGH MASONRY LINTELS. WHERE BOTH HORIZONTAL WALL REINFORCING AND LINTEL REINFORCING OCCUR IN THE SAME COURSE, THE LARGER BARS ARE TO REPLACE THE SMALLER BARS.

			f'm :	= 1500 psi				f'm = 2500 psi				
BAR	6" CMU	i			CMU	12" (	CMU	6" ATLAS	8" ATLAS CLASS			
SIZE	CLASS CLASS		ASS	CLA	ASS	CLASS		CLASS				
	А	А	В	Α	В	Α	В	А	А	В		
#3	19"	19"	19"	19"	19"	19"	19"	15"	15"	15"		
#4	25"	25"	30"	25"	28"	25"	28"	20"	20"	24"		
#5	35"	31"	49"	31"	45"	31"	45"	31"	24"	40"		
#6	81"	57"	**	53"	92"	53"	92"	64"	45"	87"		
#7	-	79"	**	61"	**	61"	**	-	63"	**		
#8	-	**	**	87"	**	75"	**	-	89"	**		
#9	-	-	-	**	**	90"	**	-	-	-		

MASONRY COLUMN SCHEDULE

VERTICAL

2-#5

4-#5

5-#5

5-#5

7-#5

1. THE CENTERLINE OF VERTICAL BARS SHALL BE LOCATED 2.1/2" FROM THE FACE OF

2. UNLESS NOTED OTHERWISE, VERTICAL REINFORCING AND TIES SHALL EXTEND FULL

3. MASONRY COLUMN VERTICAL BARS OR DOWELS IN CONCRETE FOUNDATION WALLS

THE MASONRY. HORIZONTAL BARS SHALL BE LOCATED TO THE INSIDE OF THE

REINFORCING

TIES

#4 @ 16" O.C.

#4 @ 16" O.C.

2-#4 @ 16" O.C.

MARK

MC-1

MC-2

MC-3

MC-4

MC-5

MC-6

8" x 8"

12" x 8"

12" x 1'-4"

12" x 4'-0"

12" x 4'-8"

12" x 7'-4"

VERTICAL BARS, UNO ON DETAILS.

SHALL BE TIED WITH #3 TIES @ 8" O.C.

HEIGHT OF THE WALL.

- CLASS A SPLICES MAY BE USED WHEN ONLY ONE BAR IS CONTINUOUS IN THE MASONRY CELL OR COURSE.
- 2. CLASS B SPLICES SHALL BE USED WHEN TWO BARS ARE CONTINUOUS IN THE MASONRY CELL OR COURSE. \*\* INDICATES THAT A LAP SPLICE IS NOT ALLOWED AND MECHANICAL BAR COUPLERS ARE REQUIRED FOR THE BAR SPLICES.

POUR EXCEEDS 60 INCHES, HIGH LIFT GROUTING PROCEDURES SHALL BE FOLLOWED.

- . WHERE VERTICAL BARS HAVE A REQUIRED LAP SPLICE GREATER THAN THE HEIGHT OF THE GROUT POUR. THE BAR SPLICE SHALL BE MADE WITH A MECHANICAL BAR COUPLER. WHERE THE HEIGHT OF THE GROUT
- WHERE MECHANICAL BAR COUPLERS ARE USED, THE CONNECTOR SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR IN TENSION AND COMPRESSION.

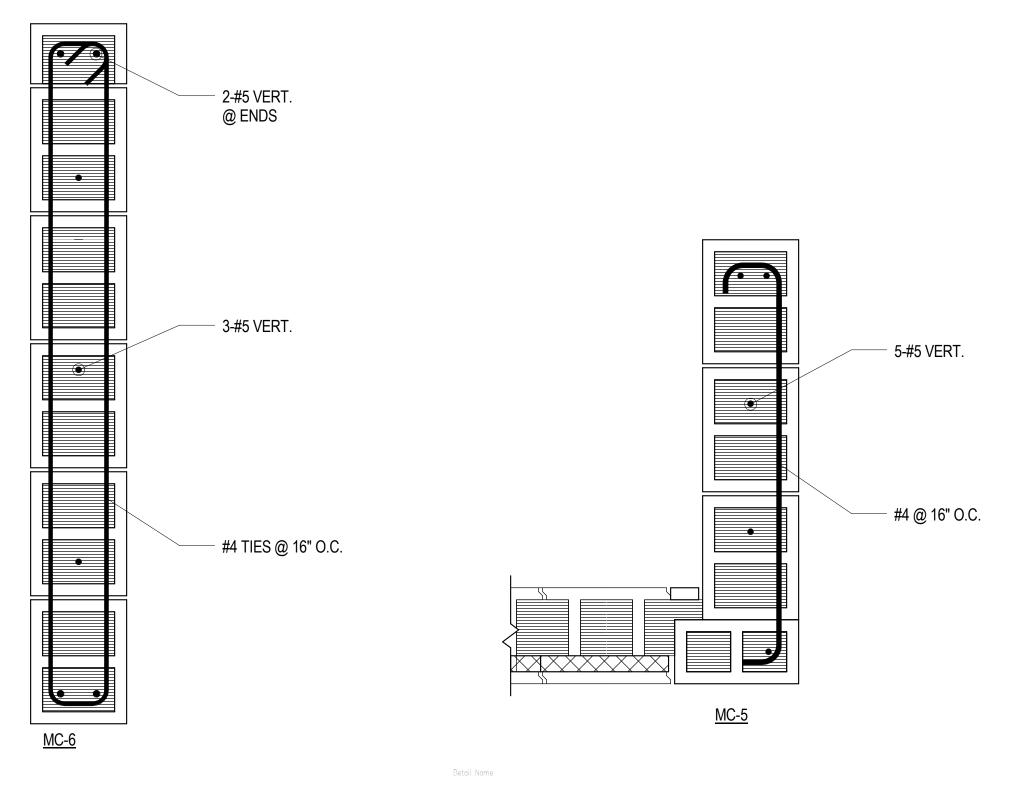
LINTEL WIDTH 6",8",10" OR 12"	MASONRY TYPE BRICK OR CMU	HORIZONTAL  1- #7 CONT.	TEL STIRRUPS	MAXIMUM SPAN	REMARKS
6",8",10"	BRICK		STIRROFS		+
OR 12"		1 1-#/ CON1.		3'-4"	
6",8",10"	BRICK	1- #7 CONT.		3-4	
0 ,8 ,10 OR 12"	OR CMU	TOP & BOT.	#3 @ 8" O.C.	5'-4"	
12"	HI-R CMU	HI-R CMU 1- #7 CONT. TOP & BOT.			
	1		12" HLR CMII 1- #7 CONT.	OR 12" OR CMU TOP & BOT.  12" HLR CMU 1-#7 CONT. #3 @ 8" O C	OR 12" OR CMU TOP & BOT.

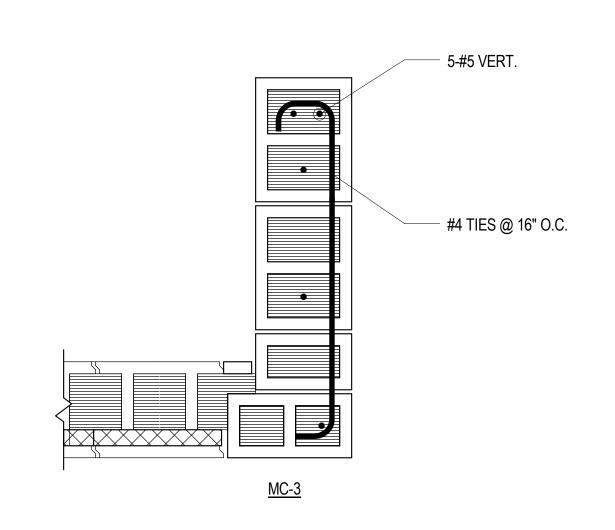
1. MASONRY LINTELS ML-1 AND ML-2 SHALL BE USED OVER OPENINGS IN MASONRY WALLS WHEN A SPECIFIC MASONRY LINTEL IS NOT OTHERWISE SPECIFIED. THE MASONRY LINTEL TO BE USED SHALL BE DETERMINED BY THE MAXIMUM SPAN AS SPECIFIED IN THIS SCHEDULE. WHEN A SPECIFIC MASONRY LINTEL IS CALLED OUT ON THE PLAN, THE MAXIMUM SPAN AS NOTED IN THIS SCHEDULE SHALL NOT APPLY

2. MASONRY LINTELS ML-1 AND ML-2 SHALL NOT BE LOCATED BELOW ANY FLOOR, OR ROOF BEAM, OR GIRDER, OR ANY OTHER CONCENTRATED LOAD UNLESS SHOWN SPECIFICALLY ON THE PLAN SHEET.

3. FOR MASONRY LINTELS NOT SHOWN ON THE DRAWINGS THAT CARRY ANY FLOOR, OR ROOF BEAM, OR GIRDER, OR ANY OTHER CONCENTRATED LOAD, OR THAT SPAN GREATER THAN 10'-0" CONSULT THE STRUCTURAL ENGINEER.

- 4. EXTEND ALL HORIZONTAL REINFORCING 48 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING. IF HORIZONTAL REINFORCING CANNOT BE EXTENDED 48 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING, PROVIDE 90 DEGREE STANDARD HOOK.
- 5. GROUT MASONRY LINTELS MONOLITHICALLY WITH THE SUPPORT WALL OR COLUMN AT EACH END.
- 6. SPLICE TOP BARS AT MIDSPAN OF LINTEL ONLY.
- 7. SPLICE BOTTOM BARS OVER SUPPORTS ONLY.
- 8. FOR WALL ABOVE LINTEL, DOWEL VERTICAL REINFORCING INTO FULL DEPTH OF THE LINTEL OR 48 BAR DIAMETERS, WHICHEVER IS LESS.
- 9. HORIZONTAL WALL REINFORCING SHALL CONTINUE THROUGH MASONRY LINTELS. WHERE BOTH HORIZONTAL WALL REINFORCING AND LINTEL REINFORCING WOULD OCCUR IN THE SAME COURSE, THE LARGER BARS ARE TO REPLACE THE SMALLER BARS.





A3 MASONRY COLUMN MC-6 - PLAN VIEW 04-S602 NO SCALE

A4 MASONRY COLUMN MC-5 - PLAN VIEW 04-S602 NO SCALE

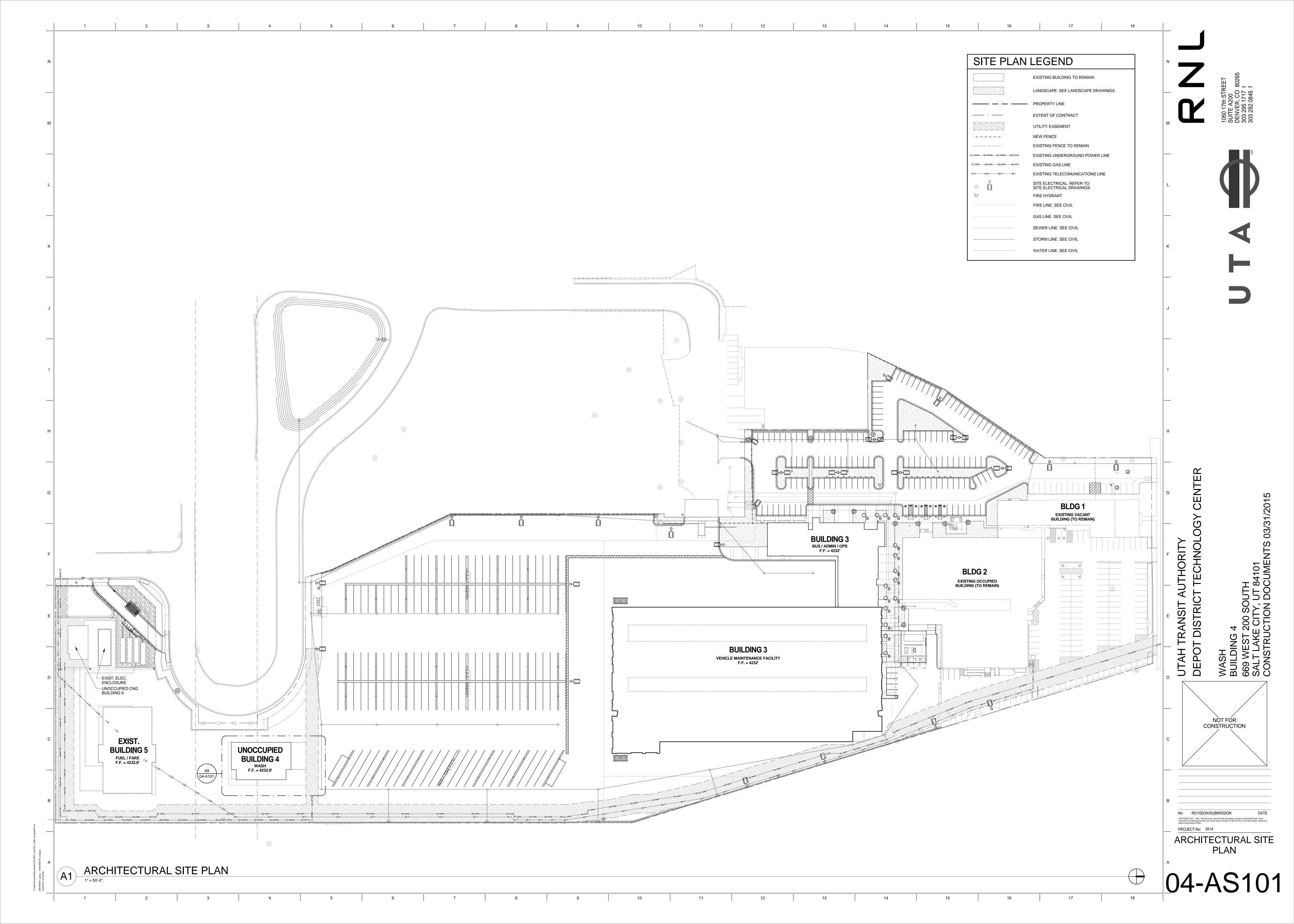
MASONRY COLUMN MC-4 - PLAN VIEW

04-S602 NO SCALE

REAVELEY ENGINEERS + ASS 

No REVISION/SUBMISSION PROJECT No: 3514

> STRUCTURAL SCHEDULES



**ABBREVIATIONS** ANCHOR BOLT ACOUSTICAL TILE ADJACENT/ADJUSTABLE ABOVE FINISH FLOOR ABOVE FINISH GRADE AIR HANDLING UNIT ALTERNATE NO. ALUMINUM ANODIZED AMERICAN NATIONAL STANDARDS INSTITUTE APPROVED **APPROXIMATELY** ARCHITECT ASSEMBLY AUTOMATIC/AUTOMATION AVERAGE AMERICAN WOODWORKING INSTITUTE ACCOUSTICAL WALL TREATMENT BACK TO BACK BOARD BUILDING BLOCKING BALLAST BEAM/BENCH MARK **BOTTOM OF STEEL** BOTTOM BEARING BASEMENT BETWEEN **BUILT UP ROOFING** CENTER TO CENTER CABINET CATCH BASIN CEMEMTITOUS BACKER BOARD CEMENT CEM PLAS CEMENT PLASTER CER CERAMIC CUBIC FOOT / FEET CONTRACTOR FURNISHED/CONTRACTOR INSTALLED CONTRACTOR FURNISHED/OWNER INSTALLED CF/OI COUNTER FLASHING CFMF **COLD FORMED METAL FRAMING** CORNER GUARD CAST IN PLACE CONTROL JOINT / CONSTRUCTION JOINT CENTERLINE CEILING CLOSET CLEAR CLEAT **CONCRETE MASONRY UNIT CLEAN OUT** COLUMN CONCRETE CONDITION CONST CONSTRUCTION CONTINUE / CONTINUATION / CONTINUOUS CONTR CONTRACTOR COORD COORDINATE COPING CORR CORRIDOR CARPET COUNTER SUNK CERAMIC TILE CENTER CUBIC FOOT / CUBIC FEET **CUBIC YARDS** COLD WATER DEPTH / DEEP DOUBLE DEGREE DELETE DEMOLITION DETAIL DETENTION DRINKING FOUNTAIN DIAMETER DIAGONAL DIMENSION DISPENSER DAMPPROOFING DOWN DOOR / DRAIN **DOWNSPOUT DETAIL** DRAWING EAST EXTERIOR INSULATION FINISH SYSTEM **EXPANSION JOINT** REFERENCE ELEVATION EASEMENT LINE ELECTRIC / ELECTRICAL ELEVATOR / ELEVATION EMER **EMERGENCY** ENCLOSURE ENGR ENGINEER / ENGINEERING EOS EDGE OF SLAB EPDM ETHYLENE PROPYLENE DIENE MONOMOR EQL SP **EQUALLY SPACED** EQUIP **EQUIPMENT ESTIMATE** ET CETERA EACH WAY **ELECTRIC WATER COOLER** EXISTING EXPOSED / EXPAND / EXPANSION EXTERIOR / EXTERNAL / EXTINGUISHER FACE TO FACE FINISHED FLOOR ELEVATION FIRE ALARM / FACE AREA / FRESH AREA FIRE ALARM CONTROL PANEL FLOOR DRAIN FOUNDATION FIRE DEPARTMENT VALVE CABINET FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET FF INSUL FOIL BACKED INSULATION FIRE HYDRANT / FIRE HOSE

**ABBREVIATIONS ABBREVIATIONS** FIRE HOSE CABINET PRELIM PRELIMINARY PREP PREPARATION FINISHED GRADE FIN GR PROJECT PAINT / PRESSURE TREATED FIXTURE FLOW LINE / FLOOR LINE PT CONC POST TENSION CONCRETE FLOOR / FLOORING PAINTED / PAPER TOWEL DISPENSER FLUORESCENT PARTITION FRAME / FIRE RATED / FIRE RETARTANT POLYVINYL CHLORIDE FOOT / FEET / FIRE TREATED / FULLY TEMPERED PAVEMENT FOOTING QUARRY TILE **FURRING** QUANTITY FURNISH / FURNITURE RADIUS / RISER **FUTURE** RETURN AIR FIRE VALVE CABINET RUBBER BASE / RESILIENT BASE RUBBER GAGE GALLONS REFLECTED CEILING PLAN GALVANIZED ROOF DRAIN REINFORCED STEEL BAR GENERAL CONTRACTOR REBAR GENERAL / GENERATOR RECESSED REFERENCE / REFRIGERATOR GALVANIZED IRON GLASS / GROUND LEVEL REINF REINFORCED / REINFORCEMENT REMOVE GLAZING REQD REQUIRED GROUND GYP BD GYPSUM BOARD REVISION RGD INS **GYP SHTG** GYPSUM SHEATHING BOARD. RIGID INSULATION HANDICAPPED ACCESSIBLE / HOLLOW CORE RIGHT HAND HEAD / HEAVY DUTY **ROOF LEADER** HARDWARE RAILING HARDWOOD ROOM **ROUGH OPENING HOLLOW METAL** HORIZONTAL RIGHT OF WAY HIGH POINT / HORSEPOWER / HIGH PRESSURE REFERENCE POINT HEIGHT RATING HEATING VENTILATION AND AIR CONDITIONING **ROOF TOP UNIT** HOT WATER REVEAL HOT WATER HEATER SOUTH SALVAGE INSIDE DIAMETER / INTERIOR DESIGN SALV INSIDE FACE / INTAKE FAN SANITARY INCHES SPLASH BLOCK **INCANDESCENT** SCHED SCHEDULE / SCHEDULED INCAND INCLUDING SCHEM SCHEMATIC INSTALL SCUPPER INSULATE / INSULATION SCWD SOLID CORE WOOD DOOR INTERIOR / INTERNAL SECOND SECTION INVERT INVERT ELEVATION J BOX JUNCTION BOX SINGLE **JANITOR** JAN CLO JANITOR CLOSET SHT MTL FLASH SHEET METAL FLASHING SHEATHING KITCHEN SIMILAR LABORATORY SEALANT LAMINATE LAVATORY SMACNA NATIONAL ASSOCIATION POUNDS SPECIFICATION(S) LINEAR FEET SPLY SUPPLY LEFT HAND SPRT SUPPORT LONG LEG HORIZONTAL SQUARE LONG LEG VERTICAL STAINLESS STEEL LOW POINT SOUND TRANSMISSION CLASS LIGHT STANDARD LIGHTING STEEL LOUVER STEEL JOIST STL JST MAINTENANCE STOR STORAGE MASONRY STRUCT STRUCTURAL MATERIAL SURFACE MAXIMUM SUSPENDED MECHANICAL SYMM SYMMETRICAL MEDIUM MEMBRANE TOP AND BOTTOM MANUFACTURING TONGUE AND GROOVE MANUFACTURER TO BE DETERMINED MINIMUM TELEPHONE MISCELLANEOUS TEMPERATURE / TEMPORARY METAL LATH TERRAZZO MASONRY OPENING THICK / THICKNESS MOD BIT MODIFIED BITUMEN THRESHOLD MOISTURE RESISTANT THROUGH TMPD GL TEMPERED GLASS MOUNTED TOP OF \_\_\_\_ METAL TOP OF CONCRETE / TOP OF CURB MULLION TOP OF JOIST NORTH TOP OF MASONRY NOT APPLICABLE TOP OF PARAPET / TOP OF PAVEMENT NONCOMBUSTIBLE NCOMBL TOP OF STEEL / TOP OF SLAB NEGATIVE TOP OF WALL NOT IN CONTACT TREATED **TUBE STEEL** NOMINAL TYPICAL NOT TO SCALE UNIFORM BUILDING CODE OUT TO OUT UNDERCUT OVERALL / OUTSIDE AIR UNDERWRITER'S LABORATORIES ON CENTER UNFINISHED OUTSIDE DIAMETER / OUTSIDE DIMENSION UNLESS NOTED OTHERWISE OUTSIDE FACE URINAL OWNER FURNISHED/CONTRACTOR INSTALLED UTIL UTILITY OWNER FURNISHED/OWNER INSTALLED VARIES VINYL COMPOSITION TILE OPPOSITE HAND / OVERHEAD / OVERHANG VERTICAL OPENING VEST VESTIBULE OPPOSITE VERIFY IN FIELD OVERFLOW ROOF DRAIN VENEER ORIGINAL VENT THROUGH ROOF ORNAMENTAL VINYL WALL COVERING OVERFLOW ROOF SCUPPER WEST / WIDTH / WIDE PATTERN PARTICLE BOARD WITHOUT PRECAST CONCRETE WOOD BLOCKING PERFORATED WATER CLOSET / WALL COVERING PERMANENT WOOD / WOOD DOOR PLATE / PROPERTY LINE WINDOW PLASTIC LAMINATE WIDE FLANGE PLASTER / PLASTIC WIRED GLASS PLUMBING WATER HEATER / WEEP HOLE PLYWD PLYWOOD WATERPROOFING / WORKING POINT WATER RESISTANT / WEATHER RESISTANT POLISHED PAIR / PIPE RAIL WELDED WIRE FABRIC PREFABRICATED PREFINISHED

SQUARE FOOT / SQUARE FEET / SUPPLY FAN SHEET METAL / SMALL / SURFACE MOUNTED SHEET METAL AIR CONDITIONING CONTRACTOR'S

GENERAL NOTES 1 THE FOLLOWING GENERAL NOTES APPLY TO THE ENTIRE SET OF DRAWINGS AND ARE NOT SPECIFIC TO ANY ONE 2 IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW AND COORDINATE THE WORK OF ALL SUB-CONTRACTORS,

TRADES AND SUPPLIERS WITH REQUIREMENTS OF THE CONTRACT BEFORE COMMENCING CONSTRUCTION, AND TO ASSURE THAT ALL PARTIES ARE AWARE OF ALL REQUIREMENTS. REGARDLESS OF WHERE THE REQUIREMENTS OCCUR IN THE CONTRACT DOCUMENTS. WHICH MIGHT AFFECT THE WORK OF THAT PARTY. 3 THE WORK DESCRIBED BY THE DRAWINGS OF ANY ONE DISCIPLINE MAY BE AFFECTED BY THE WORK DESCRIBED ON

DRAWINGS OF ANOTHER DISCIPLINE AND MAY REQUIRE REFERENCE TO THE DRAWINGS OF ANOTHER DISCIPLINE. PARTIAL SETS OF DRAWINGS ARE INCOMPLETE AND SHOULD NOT BE DISTRIBUTED OR UTILIZED BY THE CONTRACTOR. 4 THE DRAWINGS AND SPECIFICATIONS ESTABLISH DETAILED MINIMUM REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT.

5 THE CONTRACTOR SHALL ENDEAVOR TO IDENTIFY AND NOTIFY IN WRITING TO THE ARCHITECT CONFLICTS BETWEEN THE WORK OF DIFFERENT PARTIES, AND DISCREPANCIES BETWEEN THE DOCUMENTS AND THE ACTUAL CONDITIONS AT THE EARLIEST POSSIBLE DATE SO AS TO ALLOW REASONABLE AND ADEQUATE TIME FOR THE CONFLICT TO BE RESOLVED WITHOUT DELAYING THE WORK. ALL DEVIATIONS FROM THAT WHICH IS REQUIRED BY THE CONTRACT DOCUMENTS MUST BE APPROVED IN ADVANCE BY THE ARCHITECT AND OWNER PRIOR TO PROCEEDING. 6 THE GENERAL NOTES, SYMBOLS AND DEFINITIONS APPLICABLE TO EACH DISCIPLINE CAN BE FOUND AT THE

LISTED AS PART OF THE OVERALL PROJECT INDEX OF DRAWINGS. 7 BASIC FIRE PROTECTION AND EXITING CONCEPTS ARE ILLUSTRATED BY THE LIFE SAFETY AND CODE PLANS ON THE "G" SERIES SHEETS. THE CONTRACTOR SHALL BE FAMILIAR WITH REQUIREMENTS AND CONSTRUCTION SHALL BE IN COMPLIANCE WITH REFERENCED FIRE RATED ASSEMBLY TESTS AND STANDARDS. SEE ALSO A500 SERIES SHEETS FOR PARTITION TYPES.

FRONT OF EACH DISCIPLINE'S SET OF DRAWINGS AND IS

8 THE ARCHITECTURAL DRAWINGS ESTABLISH, COORDINATE AS WELL AS TAKE PRECEDENCE FOR THE FINISHED APPEARANCE AND EXACT LOCATION OF ALL EXPOSED ELEMENTS OF THE WORK OF ALL TRADES, INCLUDING THAT WORK WHICH IS ILLUSTRATED PRIMARILY ON DRAWINGS OF OTHER DISCIPLINES.

9 THE DRAWINGS MAY MAKE REFERENCE TO AND/OR ILLUSTRATE ITEMS WHICH ARE NOT PART OF THE WORK OF THE CONTRACT. THESE "NOT IN CONTRACT" ITEMS AS INDICATED ARE REFERENCED AND/OR ILLUSTRATED FOR THE CONTRACTORS REFERENCE, INFORMATION AND COORDINATION ONLY.

10 THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL APPLICABLE LAWS, CODES, REGULATIONS AND ORDINANCES OF THE PLACE (CITY, COUNTY, DISTRICT AND STATE) WHERE THE PROJECT IS LOCATED - ALTHOUGH SUCH REQUIREMENTS MAY NOT BE REFLECTED BY THESE DRAWINGS AND SPECIFICATIONS.

11 THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND SIMILAR RELEASES REQUIRED FOR THE CONSTRUCTION AND OCCUPANCY OF THE PROJECT. THE CONTRACTOR SHALL FURNISH COPIES OF ALL SUCH ITEMS TO THE OWNER AND ARCHITECT WITHIN 10 DAYS OF RECEIPT OF SUCH ITEMS. IF PERMITS ARE ISSUED SUBJECT TO CERTAIN CONDITIONS OR REVISIONS TO THE WORK OR IF PERMITS

ARE DELAYED FOR ANY REASON, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ARCHITECT. 12 THE CONTRACTOR SHALL COORDINATE AND OBTAIN ALL REQUIRED INSPECTIONS OF WORK, INCLUDING THAT PERFORMED BY OWNER. CONTRACTOR SHALL REGULARLY UPDATE OWNER AND ARCHITECT REGARDING THE STATUS OF INSPECTIONS. 3 THE CONTRACTOR SHALL TAKE PRECAUTIONS TO MAINTAIN

AND PROTECT NEW WORK AS WELL AS EXISTING SYSTEMS AND ELEMENTS WHICH ARE TO REMAIN. ANY DAMAGE TO SUCH SYSTEMS AND ELEMENTS SHALL BE IMMEDIATELY REPAIRED IN A MANNER ACCEPTABLE TO THE ARCHITECT. II SATISFACTORY REPAIRS CANNOT BE MADE, THE CONTRACTOR SHALL REPLACE SYSTEMS AND ELEMENTS WITH "NEW" PRODUCTS ACCEPTABLE TO THE ARCHITECT ALL REPAIRS AND REPLACEMENT COSTS SHALL BE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.

14 THE CONTRACTOR SHALL COORDINATE ALL WORK WITH APPLICABLE UTILITY PROVIDERS. 15 SOME DRAWINGS ARE TYPICALLY SCHEMATIC IN NATURE MODIFICATIONS IN ELEMENTS (SUCH AS DUCTS, PIPING, CONDUIT, WIRING, ETC) MAY BE REQUIRED TO ACCOMMODATE ACTUAL FIELD CONDITIONS. 16 THE CONTRACTOR SHALL COORDINATE ALL MECHANICAL

CHASE SIZES WITH MECHANICAL SUB-CONTRACTOR. 17 THE DRAWINGS SHALL NOT BE REPRODUCED FOR SUBMITTALS. DRAWINGS OR PORTIONS THEREOF USED FOR SUBMITTALS WILL BE REJECTED AND RETURNED TO THE CONTRACTOR WITHOUT THE APPROVAL OF THE ARCHITECT.

18 THE CONTRACTOR SHALL PROVIDE AND COORDINATE ALL BLOCK-OUTS, SLEEVES, INSERTS, BOLTS, PLATES, ETC. FOR ALL TRADES PRIOR TO PLACING CONCRETE OR MASONRY. 19 THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS, METHODS AND SEQUENCES OF CONSTRUCTION. 20 THE CONTRACTOR SHALL PROMPTLY REMOVE AND PROPERLY DISPOSE OF ALL CONSTRUCTION AND DEMOLITION DEBRIS. THE CONTRACTOR SHALL OBTAIN

APPROVAL OF OWNER FOR DETAILS RELATED TO ALL SITE ACCESS AND REMOVAL PLANS. 21 THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND COMPLY WITH OWNER'S PROCEDURES FOR MAINTAINING A SECURE SITE AND BUILDING.

22 EACH INSTALLER SHALL EXAMINE THE SUBSTRATE CONDITION AND/OR SITE CONDITIONS WHICH AFFECT THE QUALITY OF EACH PRODUCT TO BE INSTALLED. IF ANY CONDITIONS EXIST WHICH WILL HAVE A DETRIMENTAL EFFECT ON THE QUALITY OF THE INSTALLATION, THE INSTALLER SHALL IMMEDIATELY ADVISE THE CONTRACTOR. INSTALLATION SHALL NOT PROCEED UNTIL THE UNSATISFACTORY CONDITIONS ARE CORRECTED. INSTALLATION OF PRODUCTS SHALL SIGNIFY ACCEPTANCE

BY THE INSTALLER OF THE SUBSTRATE CONDITIONS. 23 THE CONTRACTOR SHALL MAINTAIN CURRENT/UPDATED RECORD DRAWINGS ON SITE AT ALL TIMES. 24 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL COORDINATION EFFORTS AND ASSIGNMENT OF RESPONSIBILITY OF WORK OF ALL SUBCONTRACTORS FOR ALL PORTIONS OF WORK RELATED TO THE ENTIRETY OF THE CONTRACT DOCUMENTS.

25 FOR THE PURPOSE OF PRICING/ESTIMATES, WHEN THERE IS A CONFLICT/DISCREPANCY IN THE DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR IS TO PRICE THE HIGHER COST ITEM. 26 DO NOT SCALE DRAWINGS.

27 ALL FINISH MATERIALS SHALL CONFORM TO I.B.C. FOR FLAME SPREAD AND SMOKE DEVELOPMENT, REFER TO SPECIFIC MATERIAL SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS. SEE SHEET G\_\_\_\_ FOR ADDITIONAL CODE REQUIREMENTS. 28 EXISTING CONDITIONS SHOWN ARE FROM AVAILABLE RECORD DRAWINGS AND/OR VISUAL FIELD SURVEYS. THE CONTRACTOR SHALL VERIFY ACTUAL EXISTING CONDITIONS AT THE SITE PRIOR TO SUBMITTING A BID. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES. 29 THE CONTRACTOR SHALL COORDINATE INFORMATION THAT IS PART OF ONE OR MORE SEPARATE BID PACKAGES WITH ADDITIONAL INFORMATION ISSUED IN THIS BID PACKAGE. THE MULTIPLE BID PACKAGES, AS OCCURS, SHALL

CONSTITUTE A COMPLETE PROJECT. 30 THE CONTRACTOR SHALL COORDINATE ALL LOCATIONS AND SIZES OF HOUSEKEEPING PADS WITH MECHANICAL AND ELECTRICAL SUB-CONTRACTORS. 31 THE GENERAL CONTRACTOR SHALL FURNISH AND INSTALL

**GRAPHIC LEGEND** COLUMN GRID LINE \_\_\_\_\_\_ **EXISTING COLUMN GRID ELEVATION ELEVATION NUMBER** SHEET WHERE IT IS A101 SHOWN INTERIOR BUILDING SECTION SECTION NUMBER SHEET WHERE IT IS A101 / SHOWN WALL SECTION SECTION NUMBER SHEET WHERE IT IS

DETAIL INDICATOR FOR

SMALL CONDITIONS

DETAIL NUMBER SHEET WHERE IT IS

DETAIL CALLOUT

DETAIL NUMBER

NORTH ARROW

PARTITION TYPE

SEE 03-A600

DOOR NUMBER

WINDOW & LOUVER TYPE

FURNITURE, MILLWORK,

FIXTURE OR ACCESSORY

SEE 03-A610

SEE 03-A611

KEYNOTE

SHEET WHERE IT IS

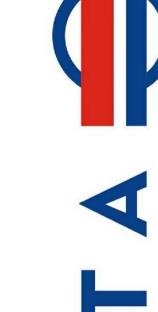
SHOWN

SHOWN

SHOWN

REVISION

EXTERIOR





LINETYPE LEGEND

CENTER LINE P---- PROPERTY LINE ----- LIMIT OF CONTRACT ---- DEMOLITION ---- HIDDEN MATCHLINE - MATCHLINE SEE XX/X-XXX

PLAN NORTH

OAX-X

# MATERIAL LEGEND

CONCRETE CONCRETE MASONRY UNIT 030303030303030303

INSULATION - RGID / SEMI RIGID

CONSTRUCTION

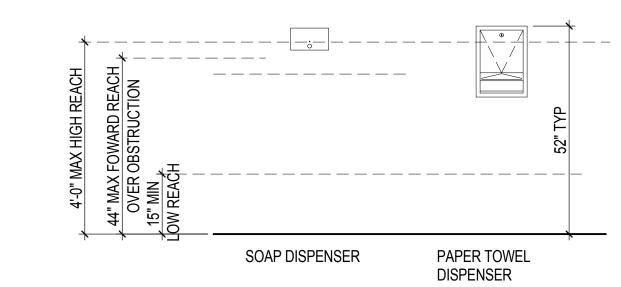
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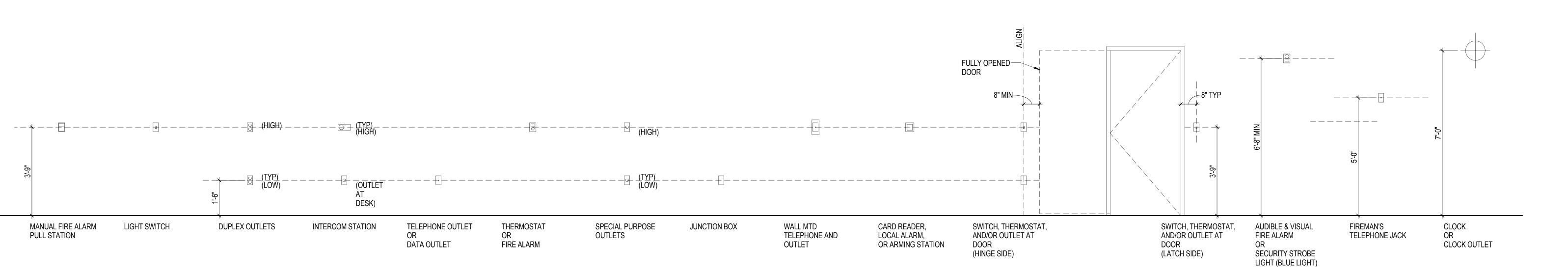
**GENERAL NOTES** 

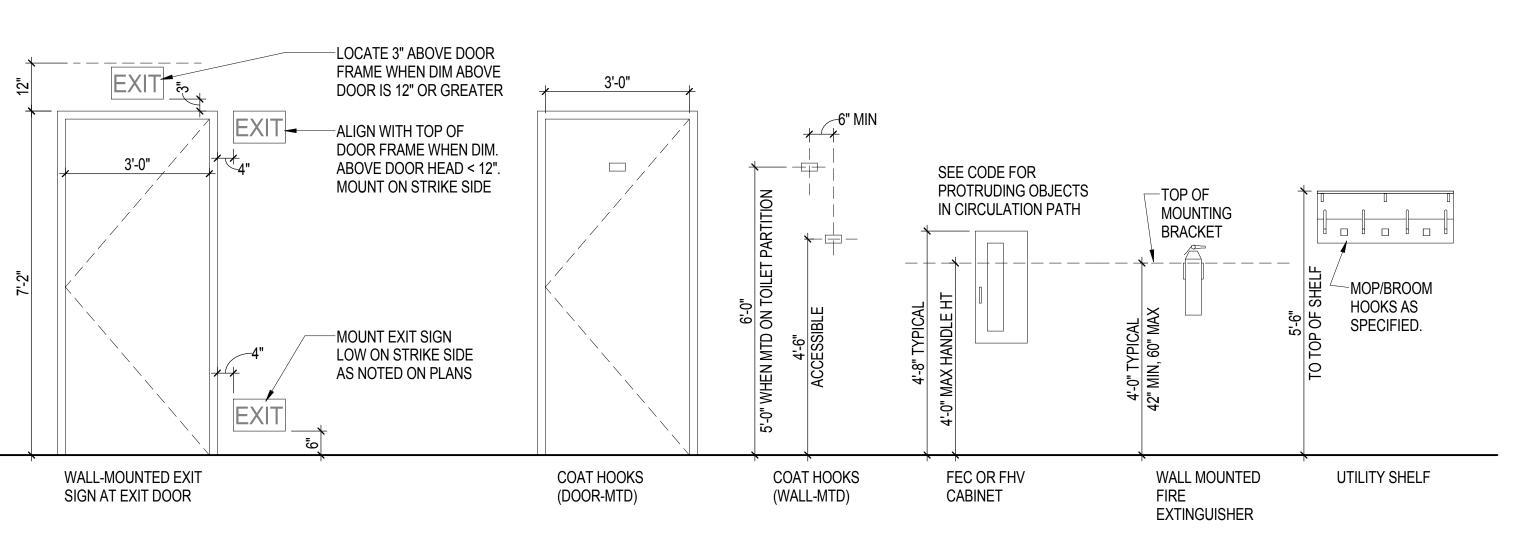
ABBREVIATIONS AND SYMBOLS

- A THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE TYPICAL MOUNTING HEIGHTS AND THE MINIMUMN AND MAXIMUM CLEARANCES OF A VARIETY OF ITEMS AND SHALL APPLY UNLESS SPECIFICALLY NOTED OR DIMENSIONED OTHERWISE ON THE ARCHITECTURAL SET OF DRAWINGS.
- B IT IS THE INTENT OF THIS DESIGN TO PROVIDE ALL ITEMS SHOWN TO BE ACCESSIBLE TO MEET ALL APPLICABLE BUILDING AND ACCESSIBILITY CODES. IF A CONFLICT IS DISCOVERED, THE APPROVED CODE REQUIREMENTS TAKE PRECEDENCE. INFORM THE ARCHITECT OF ANY CONFLICTS BEFORE INSTALLATION.
- C THIS SHEET MAY ILLUSTRATE ITEMS THAT DO NOT OCCUR IN THE SCOPE OF WORK OF THIS PROJECT.
- D MOUNTING HEIGHTS OR CONFIGURATIONS FOR ITEMS NOT SHOWN ON THIS DRAWING MAY BE ILLUSTRATED ON OTHER DRAWINGS WITHIN THIS DRAWING SET OR NOTED IN THE PROJECT SPECIFICATIONS.
- E THE TYPICAL DIMENSIONS AND CONFIGURATIONS OF PLUMBING FIXTURE MOUNTING HEIGHTS AND PLAN CONFIGURATIONS FOUND ON THIS SHEET TAKE PRECEDENCE OVER DIMENSIONS FOUND ON PLUMBING DRAWINGS.
- F FIXTURES AND ACCESSORIES SHOWN ON THIS SHEET ARE TYPICAL AND NOT INTENDED TO BE SPECIFIC TO ANY ONE MANUFACTURER. REFER TO PROJECT SPECIFICATIONS FOR A LIST OF APPROVED MANUFACTURERS. FIXTURES AND ACCESSORIES THAT ARE SPECIFIED MAY HAVE DIFERENT SIZE AND CONFIGURATION REQUIREMENTS, IT IS THE CONTRACTORS RESPONSIBILITY TO MEET THE AESTHETIC AND FUNCTIONAL DESIGN INTENT OF THIS DRAWING SET.

DRINKING FOUNTAIN OR WATER COOLER







**Z** 

1050 17th STREET SUITE A200 DENVER, CO 8026 303 295 1717 t



A

JTAH TRANSIT AUTHORITY JEPOT DISTRICT TECHNOLOGY CENTER

WASH BUILDING 4 669 WEST 200 S SALT LAKE CITY

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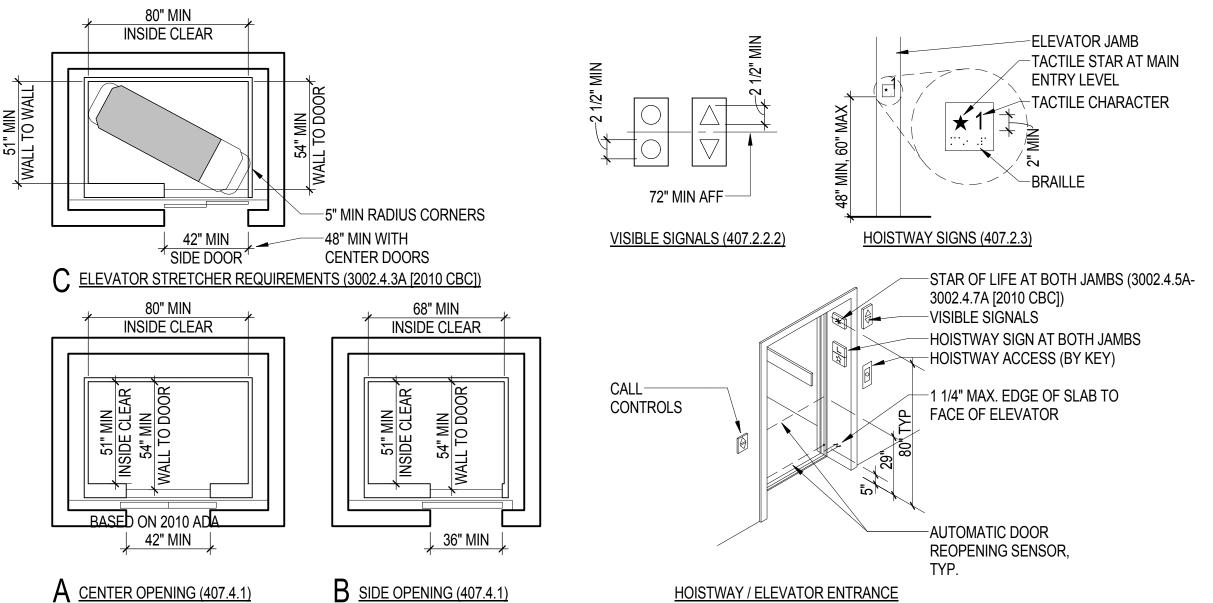
PROJECT No: 3514

TYPICAL FIXTURE MOUNTING HEIGHTS

IT IS THE INTENT OF THIS DESIGN TO PROIVE ALL ITEMS SHOWN TO BE ACCESSIBLE TO MEET ALL APPLICABLE BUILDING AND ACCESSIBILITY CODES. IF A CONFLICT IS DISCOVERED, THE APPROVED CODE REQUIREMENTS TAKE PRECEDENCE. INFORM THE ARCHITECT OF ANY CONFLICTS BEFORE INSTALLATION.

THIS SHEET MAY ILLUSTRATE ITEMS THAT DO NOT OCCUR IN THE SCOPE OF WORK OF THIS PROEJCT.

MOUNTING HEIGHTS OR CONFIGURATIONS FOR ITEMS NOT SHOWN ON THIS DRAWING MAY BE ILLUSTRATED ON OTHER DRAWINGS WITHIN THIS DRAWING SET OR NOTED IN THE PROJECT SPECIFICATIONS.



**407 ELEVATORS 407.1 GENERAL**. ELEVATORS SHALL COMPLY WITH 407 AND WITH ASME

407.2.1 CALL CONTROLS. WHERE ELEVATOR CALL BUTTONS OR KEYPADS ARE PROVIDED, THEY SHALL COMPLY WITH 407.2.1 AND 309.4. CALL BUTTONS SHALL BE RAISED OR FLUSH. 407.2.1.1 HEIGHT. CALL BUTTONS AND KEYPADS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN 308, MEASURED TO THE CENTERLINE OF THE HIGHEST OPERABLE PART. 407.2.1.2 SIZE. CALL BUTTONS SHALL BE 3/4 INCH (19 MM) MINIMUM IN THE SMALLEST DIMENSION. 407.2.1.3 CLEAR FLOOR OR GROUND SPACE. A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE PROVIDED AT CALL CONTROLS.

407.2.2.1 VISIBLE AND AUDIBLE SIGNALS. A VISIBLE AND AUDIBLE SIGNAL SHALL BE PROVIDED AT EACH HOISTWAY ENTRANCE TO INDICATE WHICH CAR IS ANSWERING A CALL AND THE DIRECTION OF TRAVEL

**ELEVATOR** 

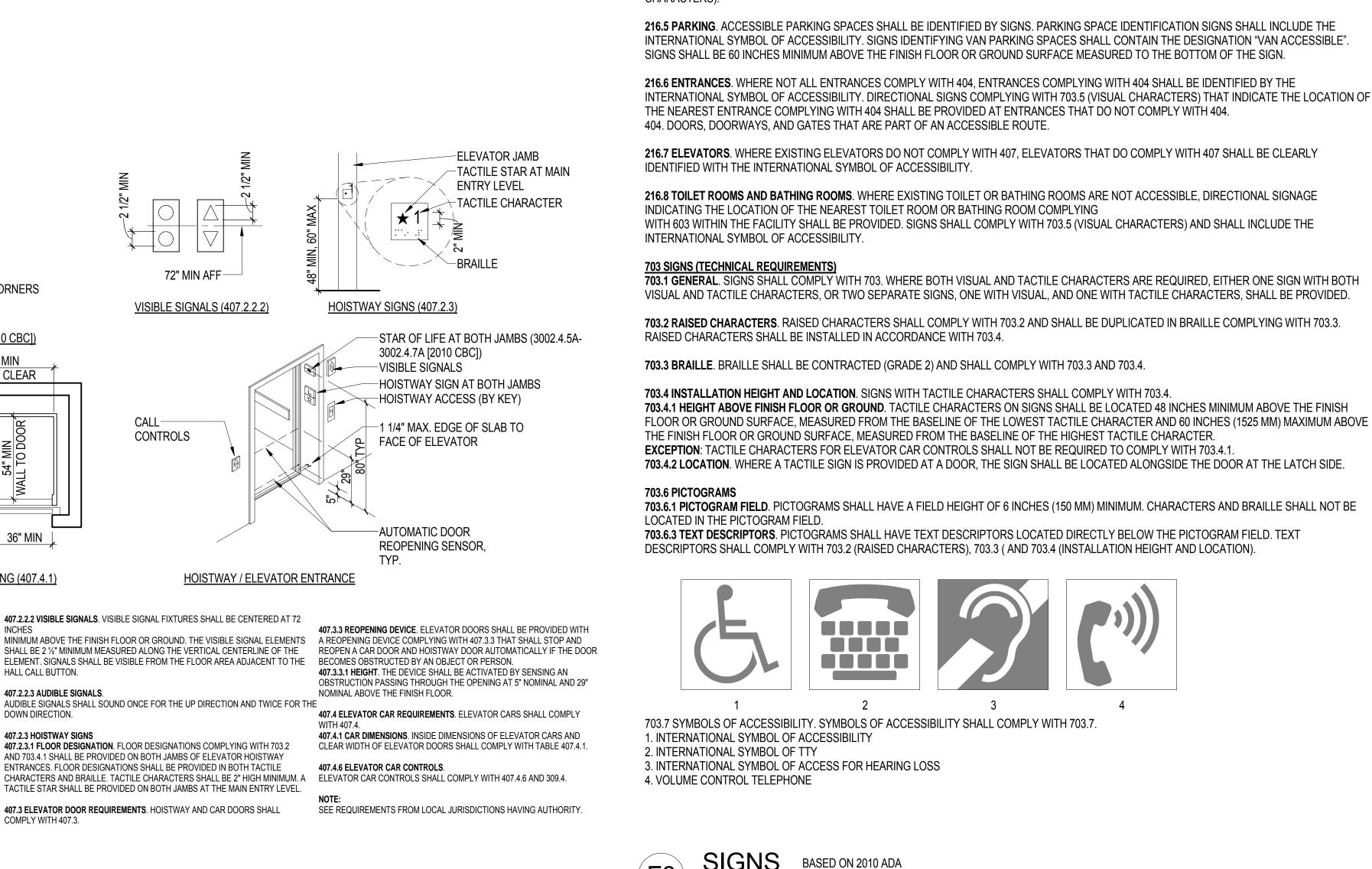
**407.2.2.2 VISIBLE SIGNALS**. VISIBLE SIGNAL FIXTURES SHALL BE CENTERED AT 72

AUDIBLE SIGNALS SHALL SOUND ONCE FOR THE UP DIRECTION AND TWICE FOR THI DOWN DIRECTION. **407.2.3.1 FLOOR DESIGNATION**. FLOOR DESIGNATIONS COMPLYING WITH 703.2

AND 703.4.1 SHALL BE PROVIDED ON BOTH JAMBS OF ELEVATOR HOISTWAY ENTRANCES. FLOOR DESIGNATIONS SHALL BE PROVIDED IN BOTH TACTILE CHARACTERS AND BRAILLE. TACTILE CHARACTERS SHALL BE 2" HIGH MINIMUM. A TACTILE STAR SHALL BE PROVIDED ON BOTH JAMBS AT THE MAIN ENTRY LEVEL. 407.3 ELEVATOR DOOR REQUIREMENTS. HOISTWAY AND CAR DOORS SHALL

1 1/4" MIN - 1 1/2" MAX NOMINAL

TOP LANDING



**216 SIGNS (SCOPING REQUIREMENTS** 

LETTERS, AND ROOM NAMES.]

ROUTES.]

216.4 MEANS OF EGRESS

CHARACTERS) AND 703.5 (VISUAL CHARACTERS)

THE SITE SHALL COMPLY WITH 703.5 (VISUAL CHARACTERS).

WITH 703.1 (GENERAL), 703.2 (RAISED CHARACTERS), AND 703.5 (VISUAL CHARACTERS).

216.2 DESIGNATIONS. INTERIOR AND EXTERIOR SIGNS IDENTIFYING PERMANENT ROOMS AND SPACES SHALL COMPLY WITH 703.1 (GENERAL), 703.2

**EXCEPTION:** EXTERIOR SIGNS THAT ARE NOT LOCATED AT THE DOOR TO THE SPACE THEY SERVE SHALL NOT BE REQUIRED TO COMPLY WITH 703.2.

JADVISORY 216.2 SECTION 216.2 APPLIES TO SIGNS THAT PROVIDE DESIGNATIONS, LABELS, OR NAMES FOR INTERIOR ROOMS OR SPACES WHERE THE SIGN IS NOT LIKELY TO CHANGE OVER TIME. EXAMPLES INCLUDE INTERIOR SIGNS LABELING RESTROOMS, ROOM AND FLOOR NUMBERS OR

216.3 DIRECTIONAL AND INFORMATIONAL SIGNS. SIGNS THAT PROVIDE DIRECTION TO OR INFORMATION ABOUT INTERIOR SPACES AND FACILITIES OF

CONDUCT, OCCUPANT LOAD, AND SIMILAR SIGNS. SIGNS PROVIDING DIRECTION TO ROOMS OR SPACES INCLUDE THOSE THAT IDENTIFY EGRESS

216.4.1 EXIT DOORS. DOORS AT EXIT PASSAGEWAYS, EXIT DISCHARGE, AND EXIT STAIRWAYS SHALL BE IDENTIFIED BY TACTILE SIGNS COMPLYING

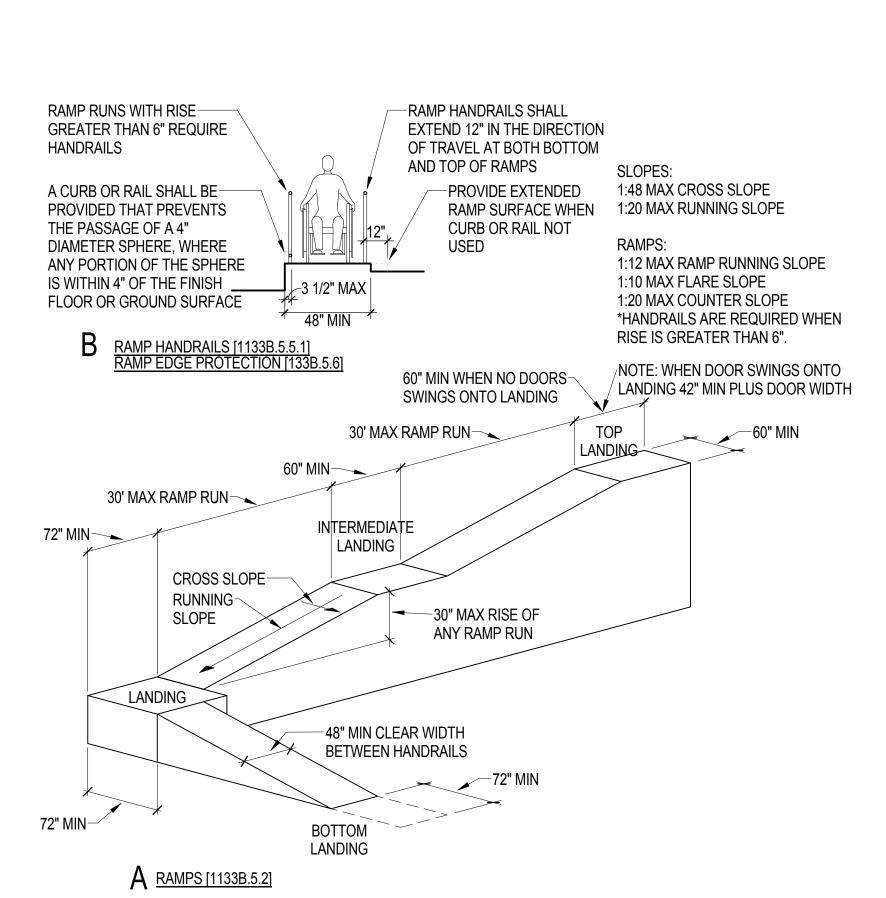
[ADVISORY 216.3 DIRECTIONAL AND INFORMATIONAL SIGNS. INFORMATION ABOUT INTERIOR SPACES AND FACILITIES INCLUDES RULES OF

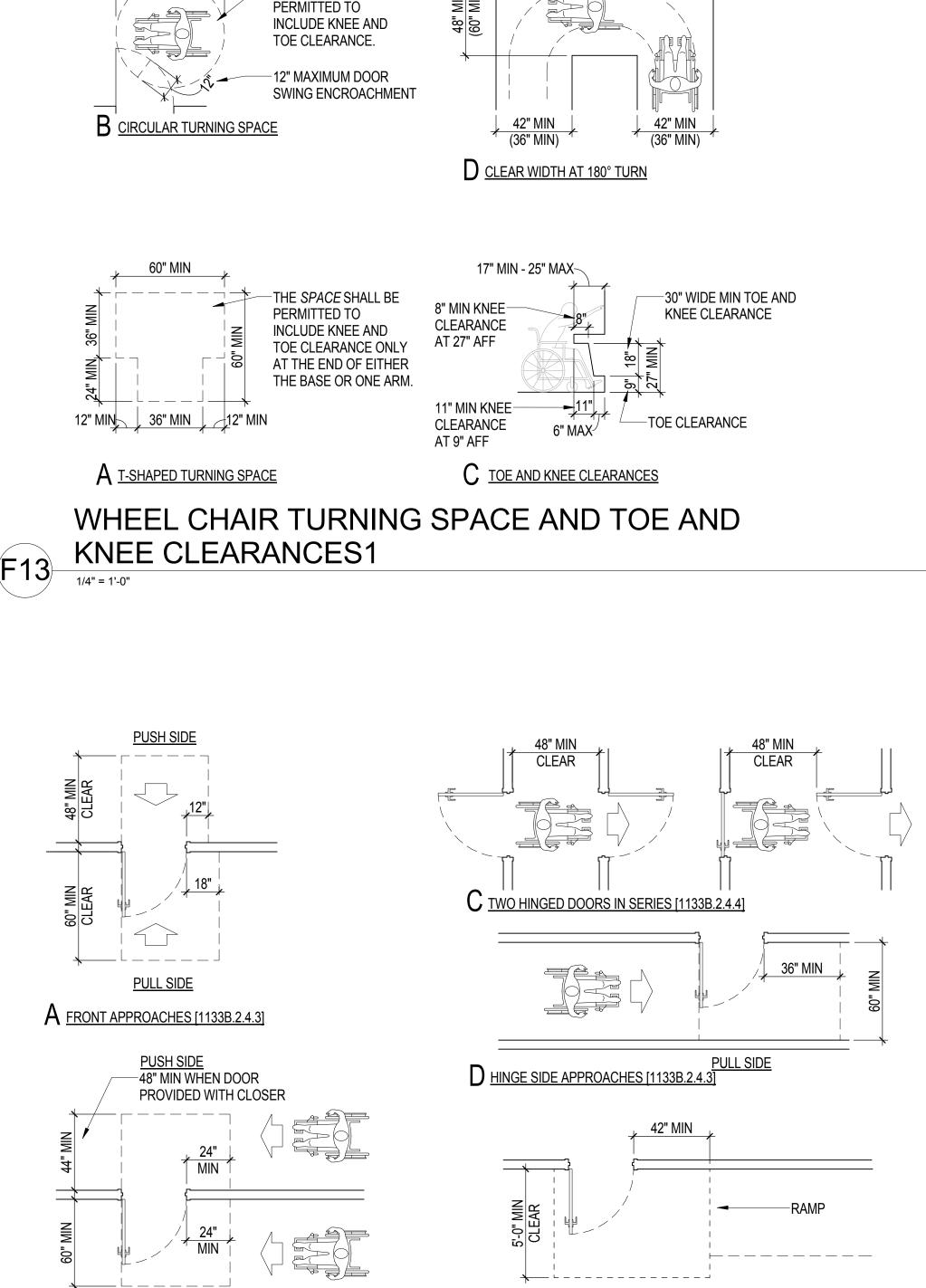
216.4.2 AREAS OF REFUGE. SIGNS TO PROVIDE INSTRUCTIONS IN AREAS OF REFUGE SHALL COMPLY WITH 703.5 (VISUAL CHARACTERS).

216.4.3 DIRECTIONAL SIGNS. SIGNS TO PROVIDE DIRECTIONS TO ACCESSIBLE MEANS OF EGRESS SHALL COMPLY WITH 703.5 (VISUAL

(RAISED CHARACTERS), AND 703.5 (VISUAL CHARACTERS). WHERE PICTOGRAMS ARE PROVIDED AS DESIGNATIONS OF PERMANENT INTERIOR

ROOMS AND SPACES, THE PICTOGRAMS SHALL COMPLY WITH 703.6 AND SHALL HAVE TEXT DESCRIPTORS COMPLYING WITH 703.2 (RAISED





-STANDARD L - - -2'-6" 2'-6" 2'-6" ACCESSIBLE LOCKER **ACCESSIBLE** ACCESSIBLE DRINKING **ACCESSIBLE** FOUNTAIN PLAN SIDE APPROACH SINK PLAN **URINAL PLAN** CLEAR FLOOR SPACE REQUIREMENTS OPERABLE PART NOTES: 1. Z NOT LESS THAN X. WHEN X < 20",</li> THEN Y = 48" MAX WHEN X IS 20-25", THEN Y = 44" MAX. MAX COUNTER HEIGHT MIN MIN H = 34" MAX AT WORKSURFACE, H = 36" MAX AT TRANSACTION COUNTER. (X) FOWARD REACH, 25" MAX (Z) CLEAR FLOOR SPACE FRONT APPROACH **APPROACH** A REACH RANGES [1118B] OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE OF THE REACH RANGES SPECIFIED IN 308.

-ACCESSIBLE

\_\_4" MAX B PROTRUDING OBJECTS [1133B.8.6]

BENCH, PARALLEL

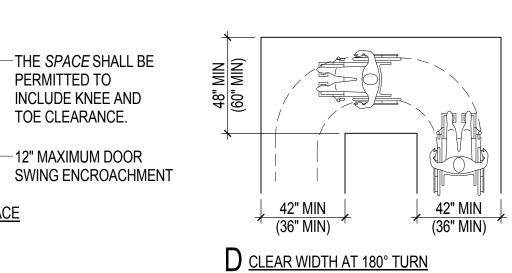
TRANSFER

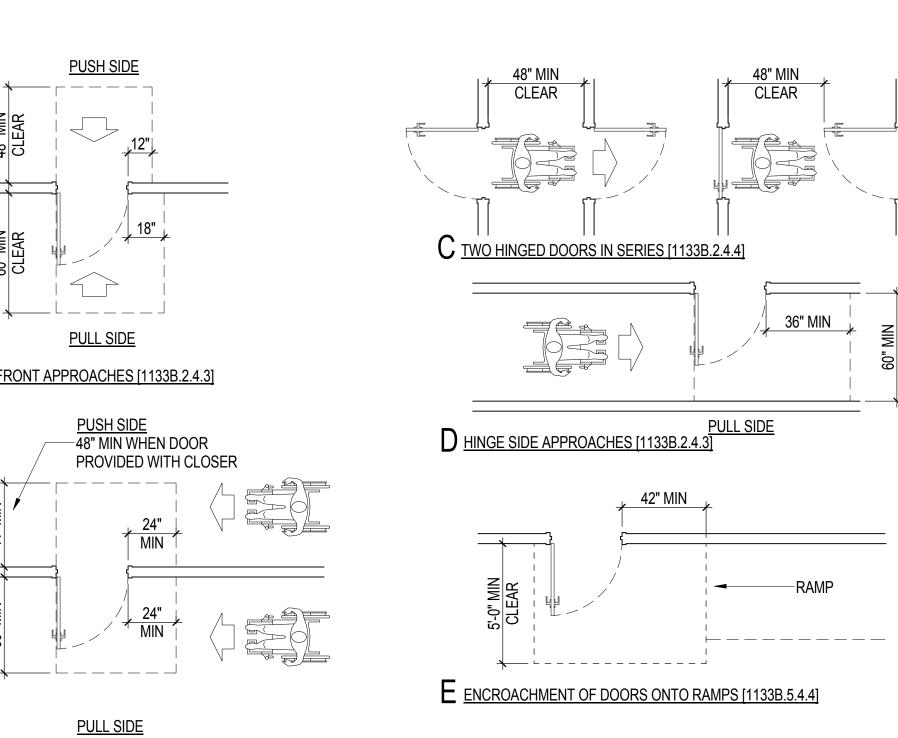
4'-0"

FIXED TO WALL

BENCH 18" HEIGHT,

REACH RANGES AND PROTRUDING OBJECTS1





PROJECT No: 3514 **TYPICAL ACCESSIBILITY DETAILS** 

CONSTRUCTION

**CODE - THRESHOLD** ON ACCESSIBLE PATH

STAIR AND HANDRAILS

B HANDRAIL PROFILES [505]

1'-0" HANDRAIL TOP EXTENSION

PER 505.10.2

**RADIUS** 

A STAIR SECTION

NOSING

3" MAX

REFER TO LOCAL CODE FOR ADDITIONAL HANDRAIL **EXTENSION REQUIREMENTS** 

EXTENSION, ONE TREAD WIDTH MIN AT SAME SLOPE.

**BOTTOM HANDRAIL** 

(IN CALIFORNIA)

EXTERIOR STAIRS.

BOTTOM LANDING

PROVIDE VISUAL WARNING STRIPS

FROM EDGE OF THE TOP AND

BOTTOM TREADS OF INTERIOR

STAIRS, AND ON ALL TREADS OF

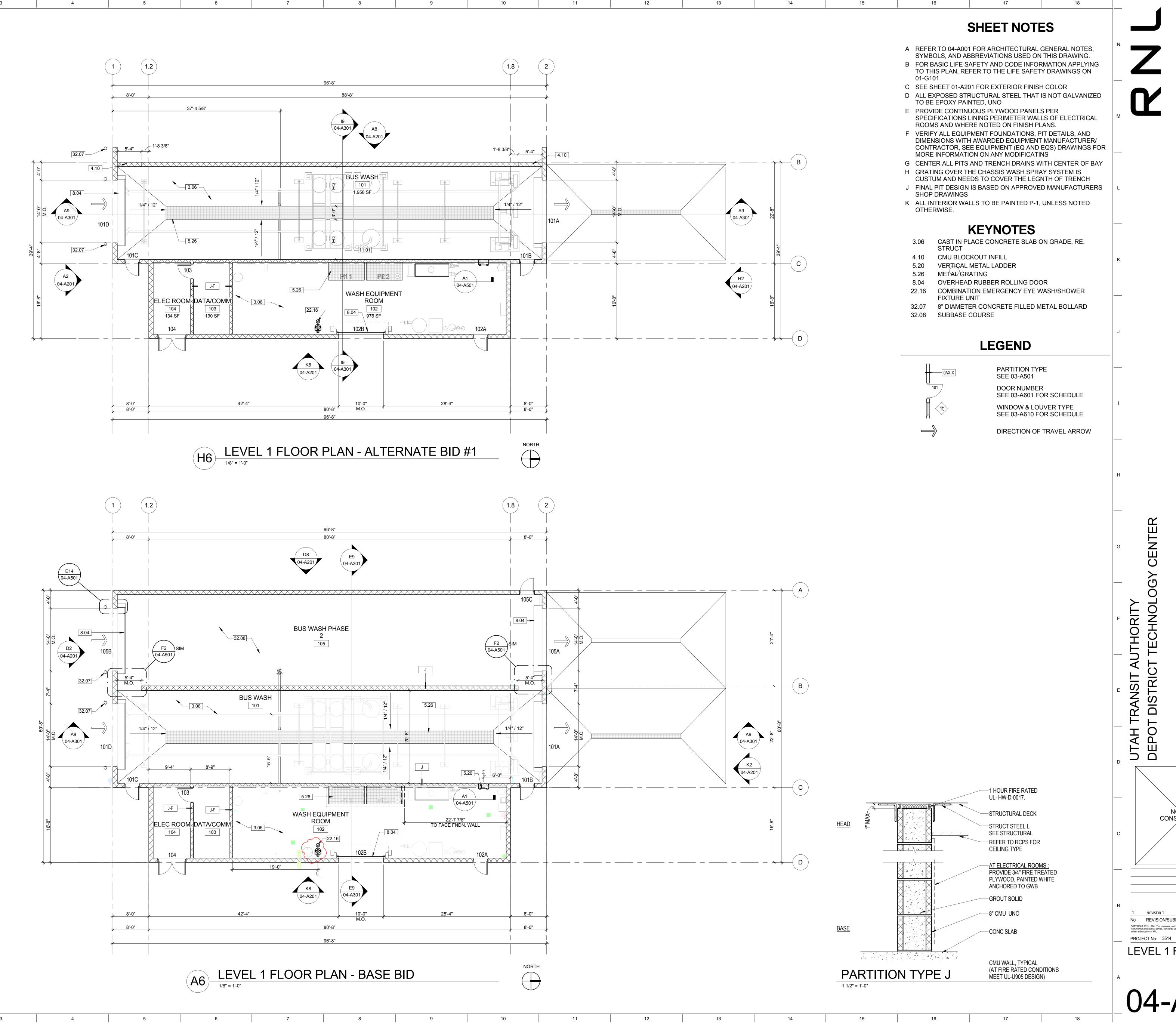
2" MIN WIDTH AND INSTALLED 1" MAX

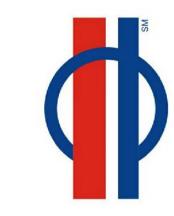
RAMP1

FLOOR CLEARANCE1

B LATCH SIDE APPROACHES [1133B.2.4.3]

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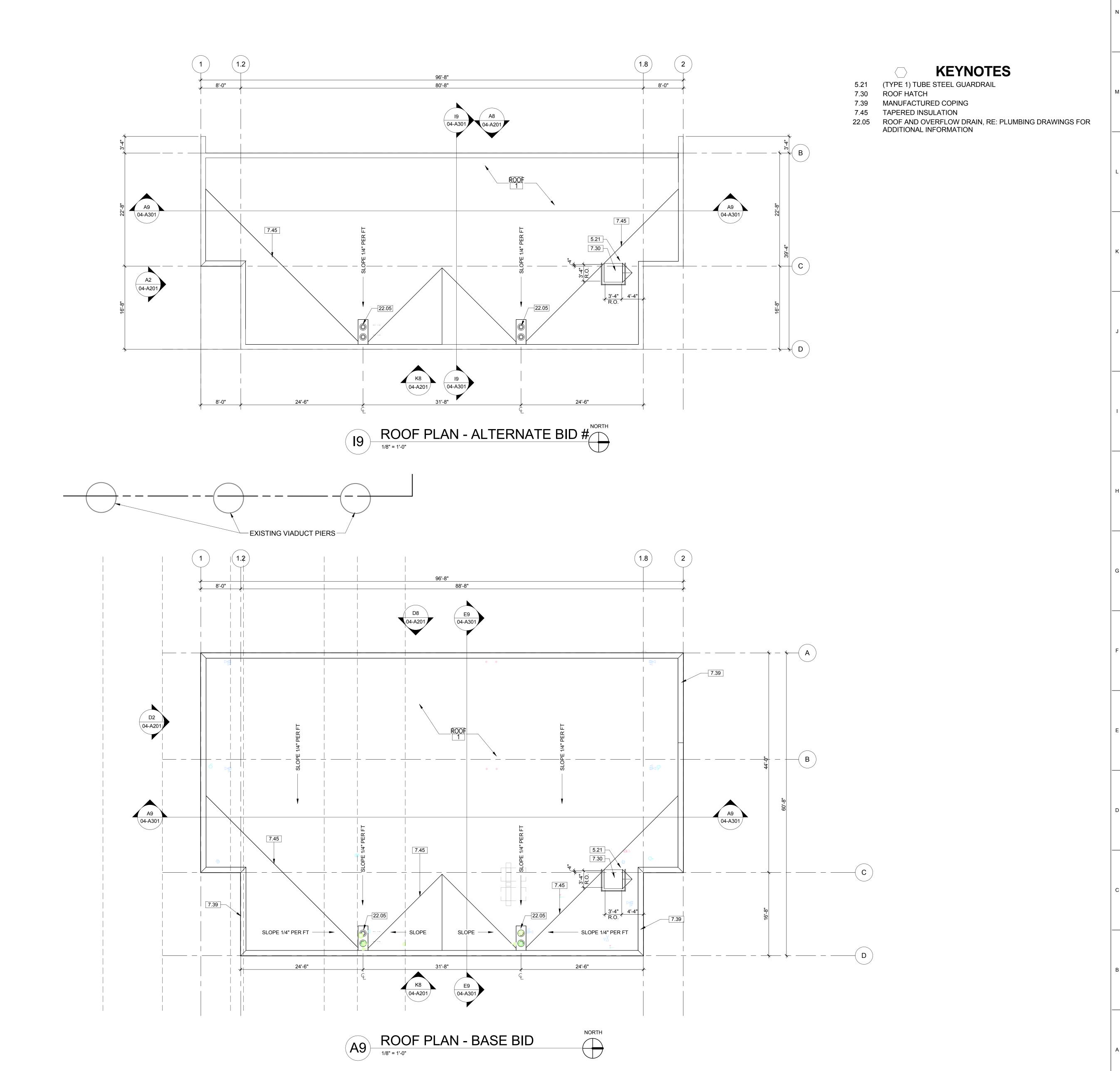


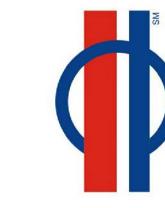


CONSTRUCTION

Revision 1 No REVISION/SUBMISSION

LEVEL 1 FLOOR PLAN

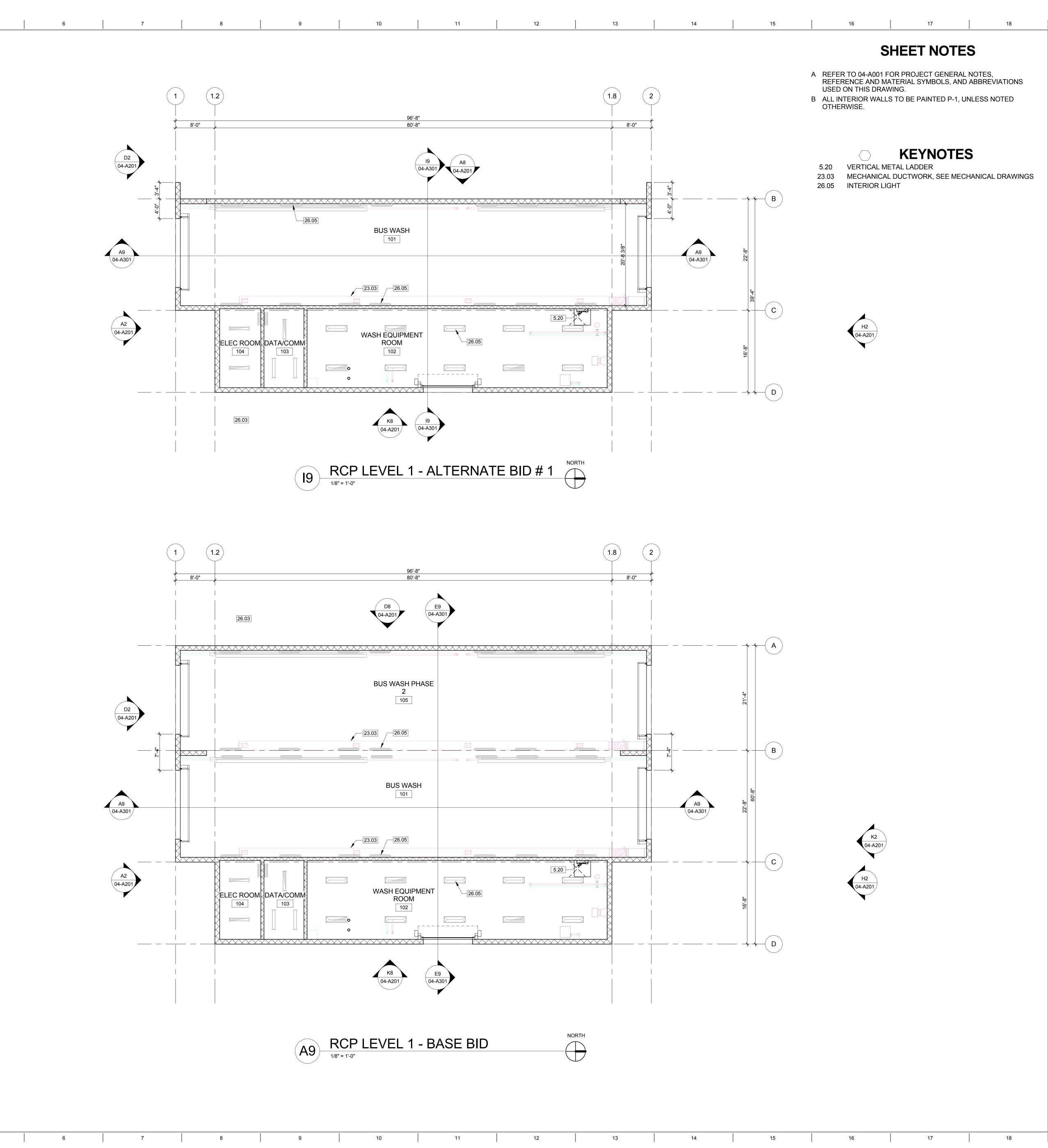




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PROJECT No: 3514 **ROOF PLAN** 



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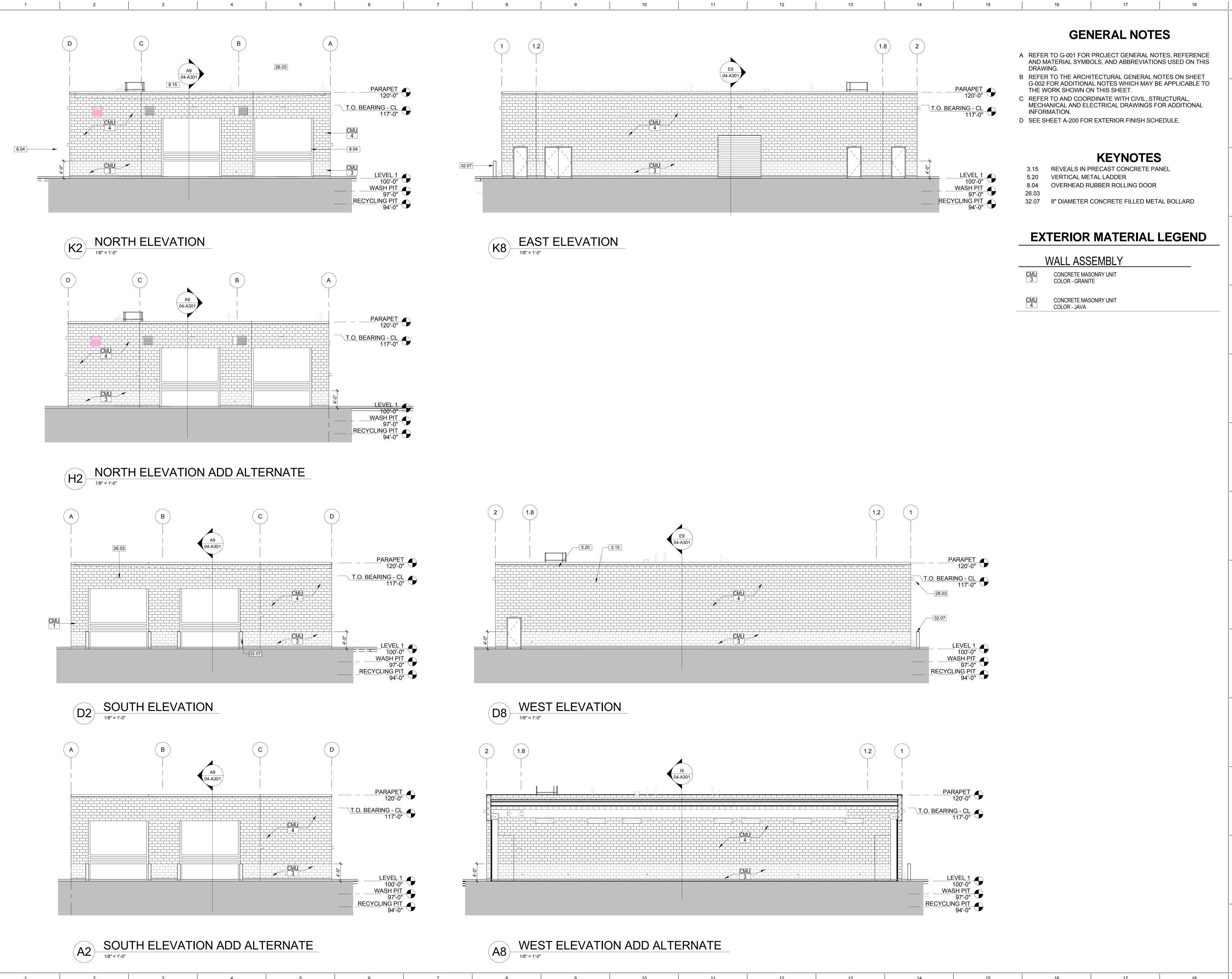
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PROJECT No: 3514

REFLECTED CEILING PLAN

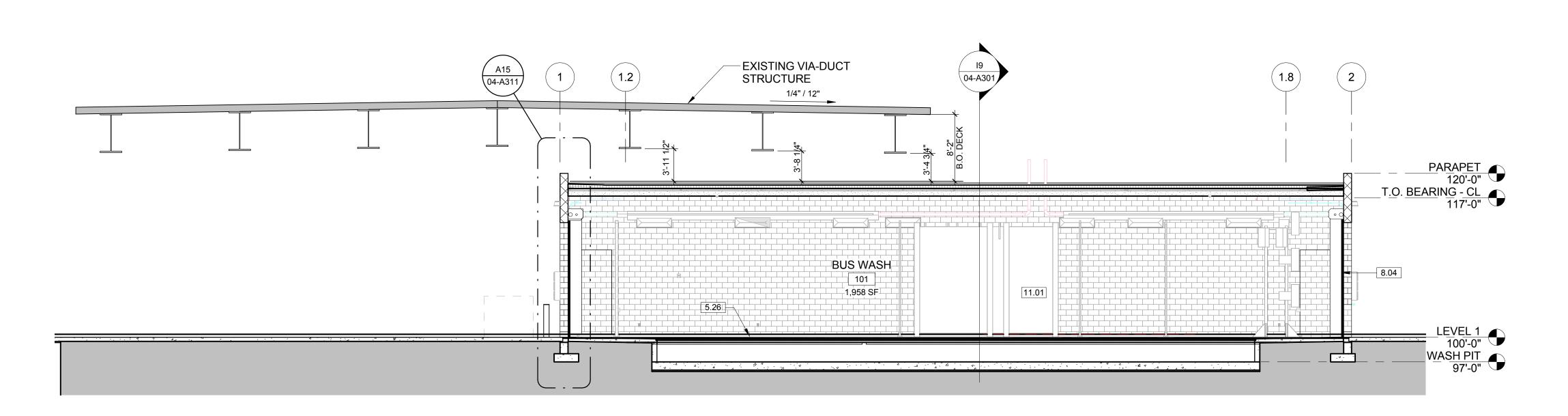


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> BUILDING **ELEVATIONS**

BUILDING SECTION - TRANSVERSE



A9 BUILDING SECTION -BUS WASH

1/8" = 1'-0"

## **GENERAL NOTES**

- A REFER TO G-001 FOR PROJECT GENERAL NOTES, REFERENCE AND MATERIAL SYMBOLS, AND ABBREVIATIONS USED ON THIS DRAWING.
- B REFER TO THE ARCHITECTURAL GENERAL NOTES ON SHEET G-002 FOR ADDITIONAL NOTES WHICH MAY BE APPLICABLE TO THE WORK SHOWN ON THIS SHEET.
- C REFER TO AND COORDINATE WITH CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- D SEE SHEET A-200 FOR EXTERIOR FINISH SCHEDULE.

# **KEYNOTES**

- 5.20 VERTICAL METAL LADDER
- 5.26 METAL GRATING
- 8.04 OVERHEAD RUBBER ROLLING DOOR
- 32.07 8" DIAMETER CONCRETE FILLED METAL BOLLARD
- 2.08 SUBBASE COURSE

# BUILDING ASSEMBLIES LEGEND BASIS OF DESIGN

## WALL ASSEMBLY

Exterior Wall Assembly
12" Insulated Concrete Masonry Unit

## ROOF ASSEMBLY

Typical Roof Construction
Fully adhered 60 mil. TPO membrane with integrated ribs
Over 1/4" Protection Board
Over 6" Thick R30 Rigid Insulation Board with staggered joints
Over 3" Concrete topping slab and 8" hollow core planks

# FLOOR ASSEMBLY

Structural Slab on Grade
Over gravel subgrade

WASH PIT 97'-0"

RECYCLING PIT 94'-0"

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SAM

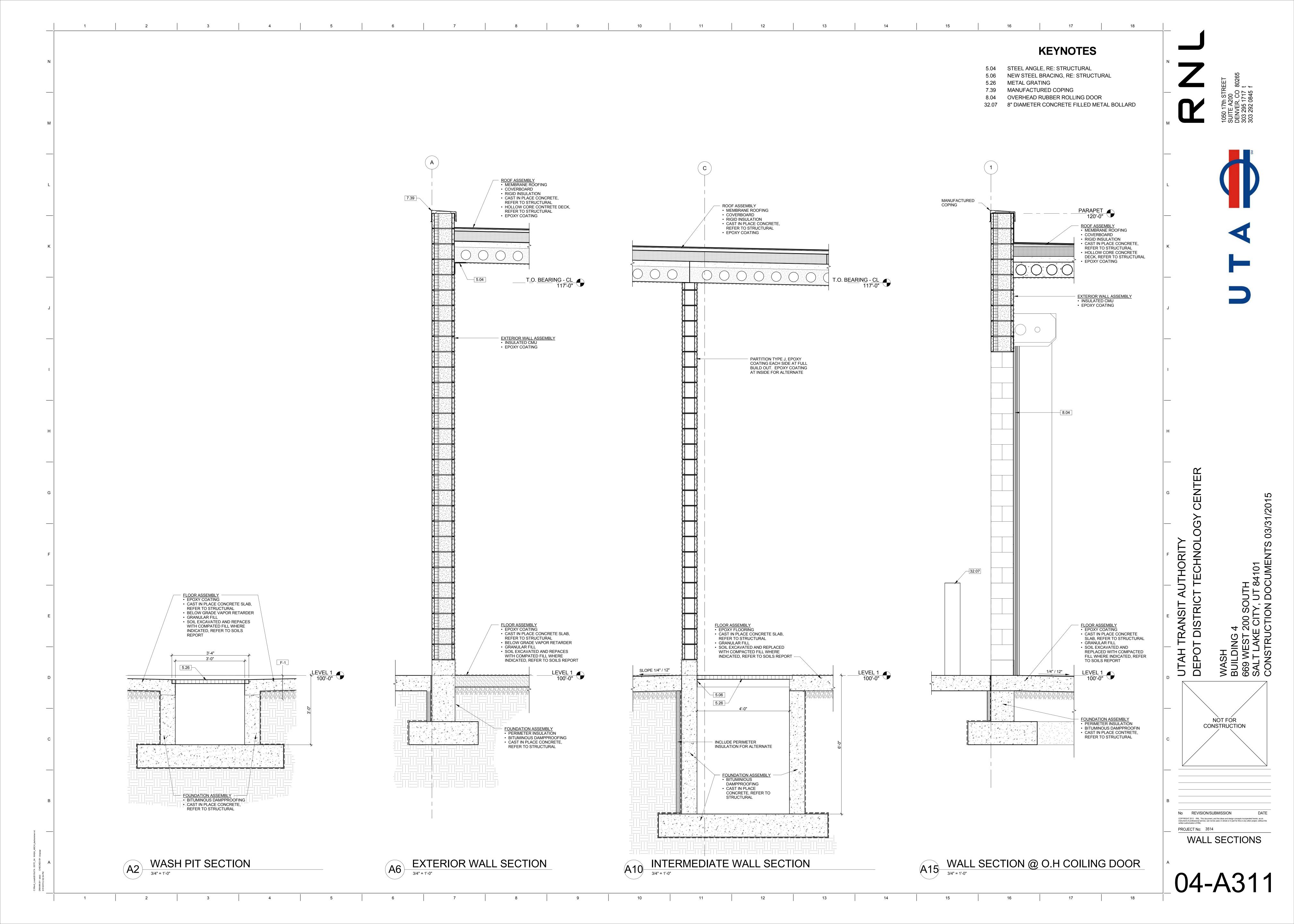
SAM

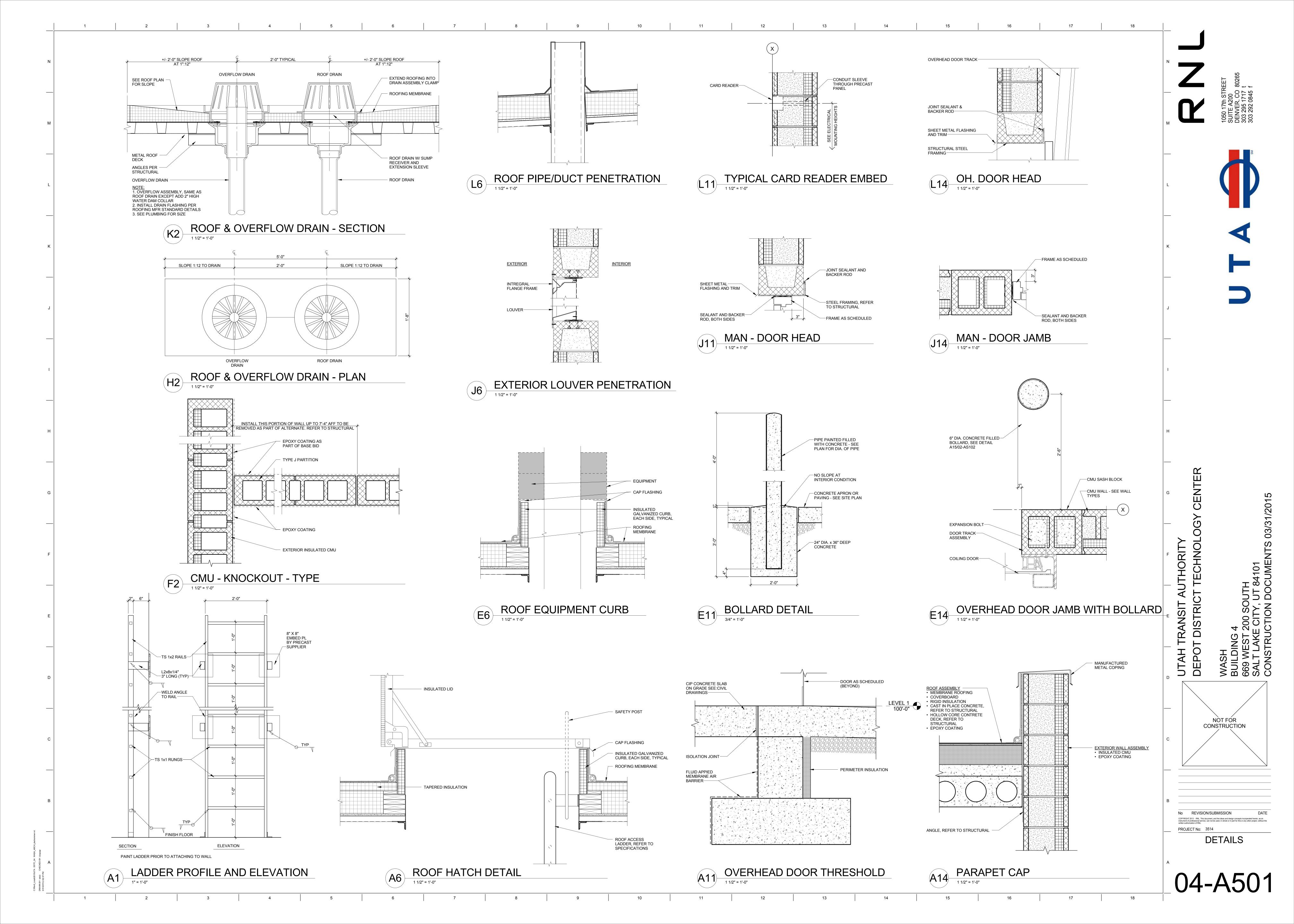
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PROJECT No: 3514

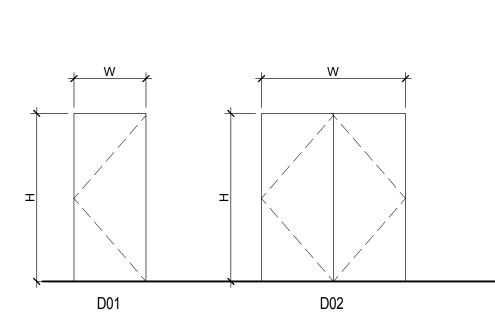
BUILDING SECTIONS





	DOOR AND FRAME SCHEDULE																	
		DOOR	DOOR	DOOR	DOOR	DOOR	DOOR	DOOR	FRAME	FRAME	FRAME	FRAME	DETAILS	DETAILS	DETAILS			
		SIZE	SIZE	SIZE												FIRE		
NO	HW	W	Н	Т	TYPE	MATL	FINISH	GLASS	TYPE	MATL	FINISH	GLASS	HEAD	JAMB	SILL	RATING	REMARKS	NOTES
101A		14'-0"	14'-0"	1/8"	D03	FABRIC	INTEGRAL		MANF	STL	PNT						1,2,3a,3b	HIGH SPEED COILING
101B		3'-0"	7'-2"	1 3/4"	D01	FG	PNT		F01	FG	PNT						6,10	FIBERGLASS DOOR + FRAME
101C		3'-0"	7'-2"	1 3/4"	D01	FG	PNT		F01	FG	PNT						6,10	FIBERGLASS DOOR + FRAME
101D		14'-0"	14'-0"	1/8"	D03	FABRIC	INTEGRAL		MANF	STL	PNT						1,2,3b	HIGH SPEED COILING
102A		3'-0"	7'-2"	1 3/4"	D01	STL	PNT		F01	HM	PNT						6,10	FIBERGLASS DOOR + FRAME
102B		10'-0"	10'-0"	3/4"	D04	STL	PNT		MANF	HM	PNT						1,2	STANDARD
103		3'-0"	7'-2"	1 3/4"	D01	STL	PNT		F01	HM	PNT						10	FIBERGLASS DOOR + FRAME
104		3'-0"	7'-2"	1 3/4"	D02	STL	PNT		F02	HM	PNT						6,10	FIBERGLASS DOOR + FRAME
105A		14'-0"	14'-0"	1/8"	D03	FABRIC	INTEGRAL		MANF	FG	PNT						1,2,3a,3b	HIGH SPEED COILING
105B		14'-0"	14'-0"	1/8"	D03	FABRIC	INTEGRAL		MANF	FG	PNT						1,2,3b	HIGH SPEED COILING
105C		3'-0"	7'-2"	1 3/4"	D01	FG	PNT		F01	FG	PNT						6,10,14	FIBERGLASS DOOR + FRAME
•	· ·	•	•	•														

Ξ	" W 2	- 2 - 2 - 2 - 2	W 2	2,"2
<u> </u>	F01		F02	



DOOR AND FRAME LEGEND

		<del>_</del>	
H			
+	D03 FLEXIBLE OVERHEAD COILING	D04 OVERHEAD COILING SERVICE	

# CONCRETE FLOOR

CON SEALED CONCRETE FINISH: CLEAR

## STATIC DISSIPATIVE TILE

SDT COLOR:
SIZE:
DESCRIPTION:

## **BASES**

RBB RUBBER WALL BASE MFR:
STYLE:
COLOR:
SIZE:

# PAINT

PNT PAINT - EPOXY
MANUFACTURER:
TYPE: COLOR: FINISH: SEMI-GLOSS

PAINT PAINT MANUFACTURER: TYPE: COLOR: FINISH: SEMI-GLOSS

# WALL PANELS/PROTECTION

PLY PLYWOOD - TELE COMM ROOMS THICKNESS: 3/4" PATTERN: BOND PATTERN APPLICATION: MECHANICALLY ATTACHED TO WALLS

## FINISH LEGEND

1/4" = 1'-0"

#### ROOM FINISH SCHEDULE WALLS FLOOR FINISH SOUTH **CEILING FINISH ROOM NAME** PT-1 CEILINGS **BUS WASH** PT-1 CON-1 PT-1 CEILINGS 976 SF WASH EQUIPMENT ROOM DATA/COMM SDT PLY / PNT-2 PLY / PNT-2 PLY / PNT-2 PLY / PNT-2 ELEC ROOM 1,925 SF CON-1 PT-1 PT-1 PT-1 CEILINGS PT-1 BUS WASH PHASE 2

### SHEET NOTES

A. PROVIDE ALL OVERHEAD BUS DOORS WITH 3" TRACKS AND ROLLERS AND HEAVY DUTY SPRINGS.

B. WASH CONTROLS: 1. OVERHEAD DOORS ON OVERRIDE SWITCH 2. WASH EQUIPMENT NEED OVERRIDE ON/OFF SWITCH (EACH BAY WILL REQUIRE THERE OWN SWITCHS)

# DOOR/FRAME FINISH LEGEND

PREFINISHED ALUMINUM TRANSPARENT FINISH

PAINT, SEE FINISH LEGEND ON SHEET A-700 COLOR CHOSEN BY ARCHITECT FROM MANUFACTURES STANDARD COLORS

PREFINISHED GALVANIZED

ALL GLASS LOBBY DOORS POLYCARBONATE **FIBERGLASS** 

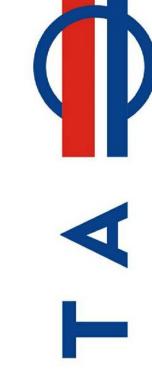
## **ABBREVIATIONS**

**GLAZING TYPE HOLLOW METAL** SOLID CORE WOOD DOOR STL WWM STEEL WWF2x2 W2.9/2.9 WELDED WIRE FABRIC,GALV

STAINLESS STEEL SCREEN

### **REMARKS LEGEND**

- PUSH BUTTONS INSIDE
- PUSH BUTTONS OUTSIDE
- GROUND LOOP WITH MANUAL OVERIDE INTERIOR -CLASS 1 DIVISION 2
- GROUND LOOP WITH MANUAL OVERIDE EXTERIOR
- ADA PUSH BUTTON INTERIOR
- ADA PUSH BUTTON EXTERIOR
- ADA PUSH BUTTON PEDESTAL
- HOOK TO OVERIDE FOR EMERGENCY EXHAUST INTAKE
- PANIC HARDWARE
- COLOR TO BE SELECTED FROM MFGR STANDARD
- DOOR LOUVER, SEE MECHANICAL
- MAGNETIC HOLD CLOSED 10 CARD READER
- 11 PNEUMATIC OPERATOR
- 12 KEY LOCK
- 13 OPENING SENSOR
- 14 ALTERNATE OPTION SEE 01-A114A



UTAH DEPO

CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

DOOR & FINISH SCHEDULE, FINISH LEGEND

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#	SHEET NAME							
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04-M902	MECHANICAL ENERGY CODE COMPLIANCE DOCUMENTATION							

# ABBREVIATIONS

Ø	ROUND OR DIAMETER	LWT	LEAVING WATER TEMPERATURE
AD	ACCESS DOOR	MAX	MAXIMUM
AF	AIRFOIL	MBH	THOUSAND BRITISH THERMAL UNITS/HOUR
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICAL
ALT	ALTERNATE	MIN	MINIMUM
BI	BACKWARD INCLINED	NC	NOISE CRITERIA OR NORMALLY CLOSED
BOD	BOTTOM OF DUCT	NIC	NOT IN CONTRACT
ВОР	BOTTOM OF PIPE	NO	NUMBER
BTU/H	BRITISH THERMAL UNITS PER HOUR	NOM	NOMINAL
CAP	CAPACITY	NTS	NOT TO SCALE
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
CV	CONSTANT VOLUME	OBD	OPPOSED BLADE DAMPER
DB	DRY BULB	OD	OVERFLOW DRAIN
DN	DOWN	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
DIA	DIAMETER	OFOI	OWNER FURNISHED, OWNER INSTALLED
DCW	DOMESTIC COLD WATER	PD	PRESSURE DROP
DHW	DOMESTIC HOT WATER	POC	POINT OF CONNECTION
DHWC	DOMESTIC HOT WATER CIRC.	PRV	PRESSURE REDUCING VALVE
DSN	DOWN SPOUT NOZZLE	PSI	POUNDS PER SQUARE INCH
DW	DISHWASHER	PSIG	POUNDS PER SQUARE INCH GAUGE
(E)	EXISTING	RA	RETURN AIR
EA	EXHAUST AIR	RAD	RADIUS
EAT	ENTERING AIR TEMPERATURE	RD	ROOF DRAIN
EFF	EFFICIENCY	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
ELEV	ELEVATION	SA	SUPPLY AIR OR SHOCK ARRESTOR
ENCL	ENCLOSURE	SEN	SENSIBLE
ESP	EXTERNAL STATIC PRESSURE	SIM	SIMILAR
ET	EXPANSION TANK	SL	SEA LEVEL
EWC	ELECTRIC WATER COOLER	SP	STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE	SF	SQUARE FEET
FCO	FLOOR CLEANOUT	SS	SERVICE SINK OR STAINLESS STEEL
FD	FLOOR DRAIN	TOD	TOP OF DUCT
FO	FLAT OVAL	TSP	TOTAL STATIC PRESSURE
FPM	FEET PER MINUTE	TYP.	TYPICAL
FS	FLOOR SINK	U	URINAL
FT	FEET	V	VENT
FV	FACE VELOCITY	VAV	VARIABLE AIR VOLUME
GA	GAUGE	VD	VOLUME DAMPER
GAL	GALLON	VFD	VARIABLE FREQUENCY DRIVE
GD	GARAGE DRAIN	VOL	VOLUME
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
HP	HORSEPOWER	W/	WITH
HR	HOUR	W/O	WITHOUT
HT	HEIGHT	WB	WET BULB
IN	INCH	WC	WATER CLOSET
INWC	INCHES OF WATER COLUMN	MVD	MANUAL VOLUME DAMPER
INWG	INCHES OF WATER GAUGE	WCO	WALL CLEANOUT
L	LAVATORY OR LOUVER	WPD	WATER PRESSURE DROP
LAT	LEAVING AIR TEMPERATURE	WT	WEIGHT
LBS	POUNDS	W	SANITARY WASTE

# MECHANICAL LEGEND

NOTE: ALL ITEMS MAY NOT APPEAR ON DRAWINGS

GATE VALVE	$\longrightarrow\!$	CHILLED WATER SUPPLY	——————————————————————————————————————
OS & Y PATTERN GATE VALVE	<b>──</b> ▼	CHILLED WATER RETURN	
BALL VALVE	——б—	CONDENSER WATER SUPPLY	—— CS ——
BUTTERFLY VALVE	——Ф——	CONDENSER WATER RETURN	——————————————————————————————————————
MOTORIZED VALVE OPERATOR	M	GROUND LOOP SUPPLY	—— GLS ——
GAS COCK	$\longrightarrow$	GROUND LOOP RETURN	—— GLR ——
PLUG VALVE	<b>—</b>	HEATING WATER SUPPLY	HWS
CHECK VALVE (SWING OR LIFT AS REQ'D)	——————————————————————————————————————	HEATING WATER RETURN	——HWR——
SOLENOID VALVE	<b>─</b> ₩	RADIANT FLOOR SUPPLY	——RFS——
AUTOMATIC CONTROL VALVE (2-WAY)	— <del> </del>	RADIANT FLOOR RETURN	——RFR——
AUTOMATIC CONTROL VALVE (3-WAY)	<b>—</b>	SNOW MELT SUPPLY	——————————————————————————————————————
PRESSURE REDUCING VALVE	<b>√</b>	SNOW MELT RETURN	——————————————————————————————————————
P & T RELIEF VALVE	—————————————————————————————————————	STEAM	s
AIR VENT (AUTOMATIC)	<del>_</del> <del>7</del>	STEAM CONDENSATE RETURN	SCR
CURB COCK	\\&	WATER TREATMENT	—— WT——
THERMAL EXPANSION VALVE	——⊗——	FUEL OIL SUPPLY	—— FOS ——
STRAINER	9	FUEL OIL RETURN	—— FOR ——
CALIBRATED BALANCE VALVE	<del></del>		—— RL ——
		REFRIGERANT LIQUID	
VENTURI FLOW METER		REFRIGERANT SUCTION	—— RS ——
REDUCER	<u>_</u>	HOT GAS DYDAGO	—— HG ——
PET COCK OR GAUGE COCK	<u> </u>	HOT GAS BYPASS	—— HGBP ——
PRESSURE GAUGE W/GAUGE COCK	<u>+</u>	VACUUM	—— VAC ——
THERMOMETER		MEDICAL AIR	—— MA——
TEMPERATURE & PRESSURE TEST PLUG	T	OXYGEN	<del></del> 02- <del></del>
IN-LINE PUMP		NITROUS OXIDE	—— N2O ——
FLOW SWITCH	<u></u>	NITROGEN	—— N ——
AQUASTAT		HYDROGEN	—— н ——
TEMPERATURE SENSING WELL	<u></u>	HELIUM	——— HE ———
HOSE BIBB OR SILLCOCK	<del>&gt;+</del>	CARBON DIOXIDE	—— CO2 ——
YARD HYDRANT	——— <b>(</b>	ARGON	——— AR ———
FLOOR DRAIN		DUCT SIZE (IN), FIRST FIGURE IS SIDE SHOWN	18/12
FLOOR SINK		BURIED OR UNDERFLOOR DUCT	£====3
MANHOLE	(O)	FLEXIBLE DUCT (HELICAL)	സസ്പ
WALL CLEANOUT -	—GII	SPIN-IN FITTING W/ MVD	\ <del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>
FLOOR OR GRADE CLEANOUT	ф	FLEXIBLE DUCT CONNECTION	<del></del>
GRADE CLEANOUT W/ CONCRETE PAD	<u>——Ф</u> —	SUPPLY SLOT DIFFUSER	
VENT THROUGH ROOF	<u>_/</u> _	SUPPLY DIFFUSER	$\left[\times\right]$
POST TYPE FDC CONNECTION	.Q.	RETURN GRILLE	
WALL TYPE FDC CONNECTION		RADIAL SUPPLY DIFFUSERS	
FIRE HOSE CABINET	<u> </u>	RETURN AIR DUCT SECTION	$\overline{\square}$ $\overline{\lozenge}$
FIRE DEPT. HORN & LIGHT	->-	RETURN AIR DUCT UP	$\Box$ $\Diamond$
EXPANSION JOINT	<del></del>	RETURN AIR DUCT DOWN	Ŭ Ŏ
FLEXIBLE PIPE CONNECTION		SUPPLY AIR DUCT SECTION	$\overline{\boxtimes} \ \widecheck{\otimes}$
REDUCED PRESSURE BACKFLOW PREVENTER	RPBP	SUPPLY AIR DUCT UP	$oxed{oxtimes} oxtimes oxtimes$
DIRECTION OF FLOW		SUPPLY AIR DUCT DOWN	$\boxtimes$ $\otimes$
ELBOW DOWN	<del></del>	EXHAUST AIR DUCT SECTION	$\square$ $\otimes$
ELBOW UP		EXHAUST AIR DUCT UP	
PIPE CAP		EXHAUST AIR DUCT DOWN	
TEE DOWN		ACCESS PANEL	
UNION		MANUAL VOLUME DAMPER	<b>▶</b>
DOMESTIC COLD WATER		GRAVITY BACKDRAFT DAMPER	<u> </u>
DOMESTIC GOLD WATER  DOMESTIC HOT WATER		MOTORIZED DAMPER	
DOMESTIC HOT WATER  DOMESTIC HOT WATER CIRC.		AIR FLOW STATION	
TEMPERED WATER CIRC.			T T T
	<u> </u>	FIRE DAMPER	
SANITARY (PLBG) VENT		SMOKE DAMPER	
SANITARY WASTE ABOVE GRADE		COMBINATION FIRE/SMOKE DAMPER	<u> </u>
CANITADY MACTE DELONGO DADE		DUOT TO ANOITION	
		DUCT TRANSITION	<b>→</b> = <b>→</b>
GREASE WASTE ABOVE GRADE	GW	ELBOW W/ TURNING VANES	\$ = {
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE	GW	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY	
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN	GW	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY	
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR	
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR	(H)
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR	_
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR	(H)
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR	(1)
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE FIRE SERVICE	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR	(H) (C) (G)
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE FIRE SERVICE NATURAL GAS	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR NITROGEN DIOXIDE SENSOR	(E) (C) (N) (N) (N) (N) (N) (N) (N) (N) (N) (N
SANITARY WASTE BELOW GRADE GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE FIRE SERVICE NATURAL GAS PROPANE COMPRESSED AIR	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR NITROGEN DIOXIDE SENSOR POINT OF REMOVAL FROM EXISTING	
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE FIRE SERVICE NATURAL GAS PROPANE	GW D	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR NITROGEN DIOXIDE SENSOR POINT OF REMOVAL FROM EXISTING POINT OF CONNECTION TO EXISTING	⊕ © © 0 0 0 0 0 0
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE FIRE SERVICE NATURAL GAS PROPANE COMPRESSED AIR	GW D RD SD F G CA	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR NITROGEN DIOXIDE SENSOR POINT OF REMOVAL FROM EXISTING POINT OF CONNECTION TO EXISTING DETAIL TAG  DETAIL T	(H) (C) (C) (N) (N)
GREASE WASTE ABOVE GRADE GREASE WASTE BELOW GRADE DRAIN ROOF DRAIN OVERFLOW DRAIN STORM DRAIN ABOVE GRADE STORM DRAIN BELOW GRADE FIRE SERVICE NATURAL GAS PROPANE COMPRESSED AIR INDUSTRIAL WATER (NON-POTABLE)	GW RD SD SD F G P CA IW	ELBOW W/ TURNING VANES TEE W/ 45° ENTRY WYE W/ 45° ENTRY THERMOSTAT OR TEMP SENSOR HUMIDISTAT OR HUMIDITY SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR NITROGEN DIOXIDE SENSOR POINT OF REMOVAL FROM EXISTING POINT OF CONNECTION TO EXISTING DETAIL TAG  DETAIL N DRAWING N	H © © NO.



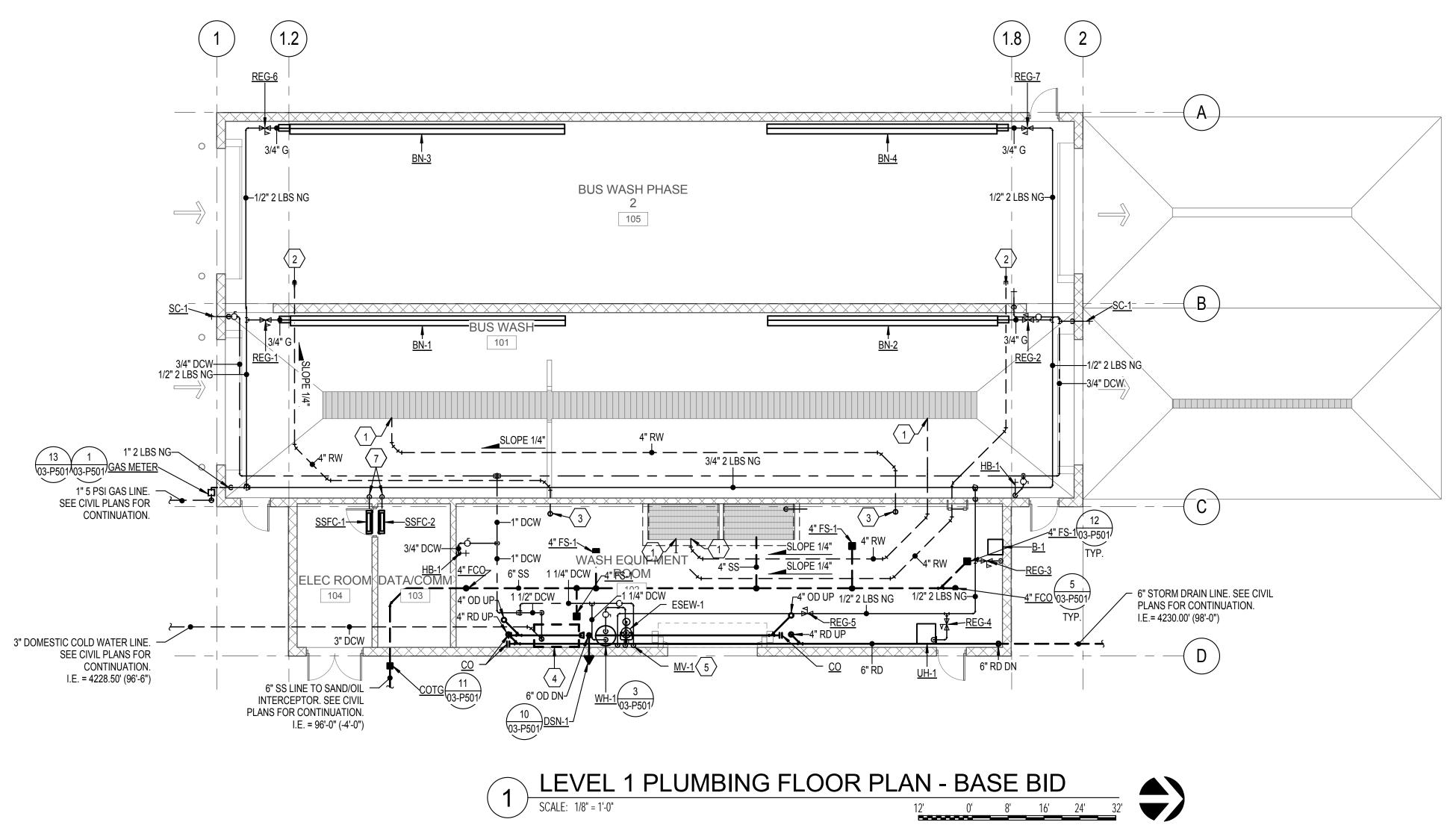




No REVISION/SUBMISSION DATE

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PLUMBING - MECHANICAL LEGEND, SYMBOLS & ABBREVIATIONS



1 COORDINATE EXACT RECYCLED WATER PLUMBING CONNECTION WITH STRUCTURAL, EQUIPMENT AND ARCHITECT.

2 CAP 4" RECYCLED WATER CONNECTION TO FUTURE PHASE 2 AT 12" BEYONE NEW SLAB.

3 CONNECT TO OVERFLOW FROM WASH EQUIPMENT BUFFER TANK. PLUMBING CONTRACTOR TO TERMINATE PIPE AT 6" ABOVE FINISHED FLOOR WITH A BLIND FLANGE. COORDINATE EXACT LOCATION WITH EQUIPMENT AND ARCHITECT.

4 60" X 30" AREA RESERVED FOR WATER ENTRY EQUIPMENT. SEE DETAIL 2/03-P501 FOR MORE INFORMATION.

5 ROUTE 1-1/4" DOMESTIC COLD WATER AND DOMESTIC HOT WATER TO MV-1. ROUTE 1-1/4" TEMPERED WATER TO EMERGENCY SHOWER.

PHASE 2 UNIT HEATERS. 7 ROUDE 3/4" CONDENSATE DRAIN THROUGH WALL AND TERMINATE AT 6" ABOVE FINISHED FLOOR IN WASH BAY.

6 CAP GAS PIPING FOR CONNECTION TO FUTURE

GENERAL NOTES

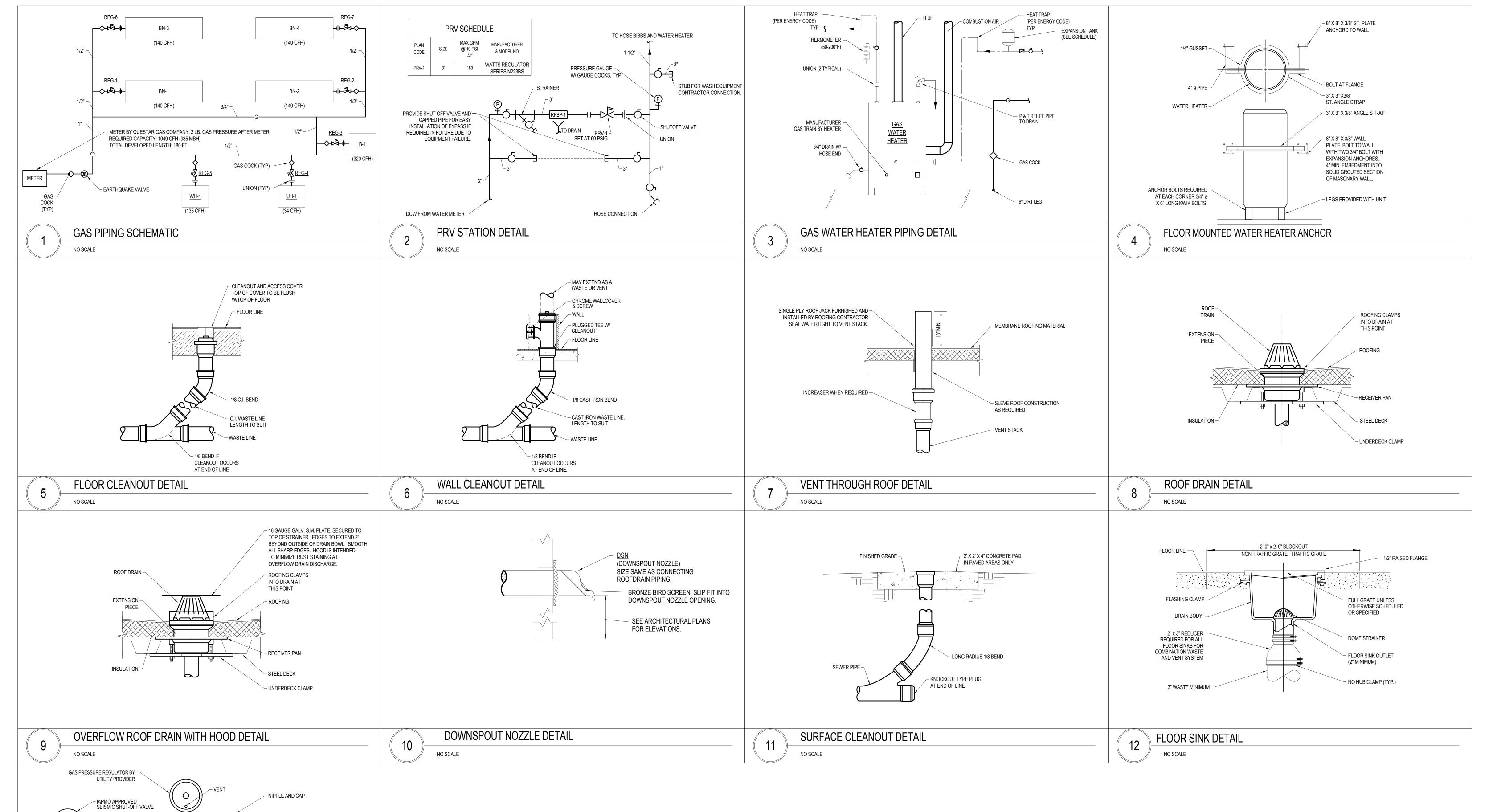
A. ALL FIXTURES ROUTING TO SAND / OIL INTERCEPTOR SHALL BE UN-TRAPPED. SAND / OIL INTERCEPTOR WILL ACT AS THE TRAP FOR THE ENTIRE SYSTEM.



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LEVEL 1 PLUMBING FLOOR PLAN

PLUMBING DETAILS



TO BUILDING -

GAS METER —

NO SCALE

INSULATING UNION (TYPICAL)

GAS LINE SHALL HAVE WRAPPING UP — TO 6" ABOVE GRADE. (SEE SPECS)

GAS METER SERVICE CONNECTION DETAIL

- FINISHED GRADE

REDUCED PRESSURE BACKFLOW PREVENTER SCHEDULE (RPBP)											
PLAN CODE	QUANITY	CHANGE IN PRESSURE, ΔP (PSI)	MANUFACTURER	MODEL	REMARKS						
RPBP-1	1	13	WATTS	LF009	SEE PLAN FOR LINE SIZE						

	GAS FIRED WATER HEATER SCHEDULE (WH)													
PLAN CODE	INPUT (MBH)	OUTPUT @ ALT (MBH)	EFFICIENY %	FUEL	CAP (GAL)	RECOVERY RATE (GPH)	TEMP RISE (°F)	FLUE / AIR INTAKE DIA.	FLUE TYPE	MAX DIM DIAMETER (IN)	ENSIONS HEIGHT (IN)	VOLT/ PH	MANUFACTURER & MODEL NO	REMARKS
WH-1	120	102	95	NG	60	276	50	3" / 3"	ULC S636	27	55	120/1	AO SMITH BTH 120	PROVIDE WITH AMTROL ST-12C EXPANSION TANK

	NATURAL GAS PRESSURE REGULATOR VENT LIMITING SCHEDULE (REG)								
PLAN CODE	SERVES	SIZE	INLET PRESSURE (PSIG)	OUTLET PRESSURE (OZ/SQ IN)	LOAD (MBH)	GAS DELIVERY (CFH)	REMARKS		
REG-1	BN-1	3/4"	2 PSI	4 OZ	125	140	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		
REG-2	BN-2	3/4"	2 PSI	4 OZ	125	140	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		
REG-3	B-1	1"	2 PSI	4 OZ	285	320	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		
REG-4	UH-1	1/2"	2 PSI	4 OZ	30	34	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		
REG-5	WH-1	3/4"	2 PSI	4 OZ	120	135	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		
REG-6	BN-3	3/4"	2 PSI	4 OZ	125	140	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		
REG-7	BN-4	3/4"	2 PSI	4 OZ	125	140	VENT LIMITER, POSITIVE DEAD-END LOCKUP INLET AND OUTLET TEST PORTS		

				MIXING VAL	VE SCHEDUL	_E (IVIV)	
PLAN CODE	AREA SERVED	INLET SIZE	OUTLET SIZE	MINIMUM FLOW GPM	MAXIMUM FLOW GPM	MANUFACTURER & MODEL NO.	REMARKS
MV-1	EMERGENCY SHOWER	1 1/4"	1 1/4"	3	58	LEONARD TM-600-LF	1

_			
Ρ	LUMBING	FIXTURE	SCHEDULE

	PLAN	DESCRIPTION	ROUGH-IN SIZE			E		MANUFACTURER & MODEL NO
	CODE	DESCRIPTION	CW	HW	WASTE	VENT	STORM	WANDFACTURER & WODEL NO
	ESEW-1	EMERGENCY SHOWER EYE WASH	-	1-1/4"	-	-	-	BRADLEY S19314DCBF BARRIER FREE EXPOSED SHOWER AND EYE/FACE WASH SYSTEM. PROVIDE GALVANIZED STEEL WITH BRADTECT SAFETY YELLOW COATING, CHROME PLATED BRASS BALL VALVES, TYPE 304 CORROSION-RESISTANE S.S. ACTIVATION HANDLE, PLASTIC SHOWER HEAD WITH PLASTIC SHROUD, HALO EYE/FACE WASH, MODEL S19-2250 THERMOSTATIC MIXING VALVE (ASSE 1071). OR EQUAL
	FD-1	FLOOR DRAIN (INDOOR FINISHED AREA USE)	-	-	SEE PLANS	1 1/2"	-	J.R. SMITH MANUFACTURING COMPANY FIG. 2005Y-B-P050-NB DUCO CAST IRON FLOOR DRAIN. DRAIN TO BE PROVIDED WITH 2" OUTLET, SQUARE NICKEL BRONZE STRAINER HEAD, DEEP SEAL P-TRAP AND VANDAL PROOF SCREWS. TRAP PRIMER CONNECTION CAPPED IF NOT USED, STRAINER HEAD MUST BE HEEL PROOF, DEEP SEAL TRAP. OR EQUAL.
	FD-2	FLOOR DRAIN (OUTDOOR AREA USE)	-	-	SEE PLANS	-	-	J.R. SMITH MANUFACTURING COMPANY FIG. 2142 DUCO CAST IRON FLOOR DRAIN. DRAIN TO BE PROVIDED WITH 4" OUTLET, TRACTOR GATE STRAINER HEAD, DEEP SEAL P-TRAP, AND VANDAL PROOF SCREWS. STRAINER HEAD MUST BE HEAVY DUTY. OR EQUAL.
-	FS-1	FLOOR SINK	-	-	SEE PLANS	1 1/2"	-	J.R. SMITH MANUFACTURING COMPANY FIG. 3150-Y-ASB SQUARE FLOOR SINK. FLOOR SINK SHALL BE OF CAST IRON CONSTRUCTION WITH ENAMEL INTERIOR FINISH, MINIMUM INTERIOR DIMENSIONS OF 12"x12"x8"D. PROVIDE WITH NICKEL BRONZE GRATE AND DEEP SEAL P-TRAP. SEE FOOD SERVICE EQUIPMENT PLANS FOR GRATE REQUIRED IN KITCHEN. OR EQUAL. PROVIDE HEAVY DUTY GRATE IN MECHANICAL ROOMS.
	WCO	WALL CLEANOUT	-	-	SEE PLANS	SEE PLANS	-	J.R. SMITH MANUFACTURING COMPANY SERIES 4530, CAST IRON CLEANOUT TEE, ABS PLUG, STAINLESS STEEL COVER WITH VANDAL PROOF SECURITY SCREWS. OR EQUAL.
	FCO	FLOOR CLEANOUT	-	-	SEE PLANS	SEE PLANS	-	J.R. SMITH MANUFACTURING COMPANY SERIES 4020, CAST IRON ADJUSTABLE BODY, ABS PLUG, VANDAL PROOF SECURITY SCREWS. OR EQUAL.
	RD-1	ROOF DRAIN - PRIMARY	-	-	-	-	SEE PLANS	J.R. SMITH MODEL 1015-C-CID LARGE GENERAL PURPOSE ROOF DRAIN. ROOF DRAIN SHALL BE PROVIDED WITH DUCO CAST IRON BODY, REVERSIBLE COLLAR, COMBINED FLASHING CLAMP AND GRAVEL STOP WITH NEOPRENE GASKET, CAST IRON DOME, SUMP RECEIVER, UNDERDECK CLAMP AND VANDAL PROOF SECURITY SCREWS, OR EQUAL.
-	OD-1	ROOF DRAIN - SECONDARY	-	-	-	-	SEE PLANS	J.R. SMITH MODEL 1015-C-CID GENERAL PURPOSE OVERFLOW DRAIN. OVERFLOW DRAIN SHALL BE PROVIDED WITH DUCO CAST IRON BODY, REVERSIBLE COLLAR, COMBINED FLASHING CLAMP AND GRAVEL STOP WITH NEOPRENE GASKET, CAST IRON DOME, SUMP RECEIVER, UNDERDECK CLAMP, VANDAL PROOF SECURITY SCREWS. MOUNT 2" HIGHER THAN RD-1. OR EQUAL
	DSN-1	DOWN SPOUT NOZZLE	-	-	-	-	SEE PLANS	J.R. SMITH SERIES 1770 WITH WALL FLANGE. PROVIDE WITH BIRD SCREEN.
	HB-1	HOSE BIBB - WALL MOUNTED (INDOOR UNFINISHED AREA)	3/4"	-	-	-	-	WOODFORD MANUFACTURING CO. MODEL 26 WALL MOUNTED BACKFLOW PROTECTED WALL FAUCET. HOSE BIBB TO BE PROVIDED WITH MTEAL WHEEL HANDLE AND LOOSE KEY SHUTOFF, 3/4" INLET (C INLET) AND 3/4" MALE HOSE THREAD OUTLET. EXTERIOR FINISH TO BE BRASS. OR EQUAL.
	SC-1	SILLCOCK (OUTDOOR FREEZE PROOF USE)	3/4"	-	-	-	-	WOODFORD MANUFACTURING CO. MODEL B65 (OR EQUAL) WALL MOUNTED ANTI-SIPHON AUTOMATIC DRAINING FREEZELESS WALL HYDRANT. WALL HYDRANT SHALL BE PROVIDED WITH LOOSE KEY SHUTOFF, 3/4" INLET AND 3/4" MALE HOSE THREAD OUTLET. PROVIDE BOX/DOOR ASSEMBLY. EXTERIOR FINISH SHALL BE CHROME PLATED OR EQUAL.

1050 17th STREE'SUITE A200 DENVER, CO 802 303 295 1717 t



SOLVIN ENGINEERING ASSOCIATES 1 West 300 North, Sulte 200 / Salt Lake City, Utah 8410 Phone 801,322,2400 / colvinengineering.com

UTAH TRANSIT AUTHORITY

DEPOT DISTRICT TECHNOLOGY CENTER

WASH

BUILDING 4

669 WEST 200 SOUTH

SALT LAKE CITY, UT 84101

CONSTRUCTION DOCUMENTS 03/31/2015

EVISION/SUBMISSION DA

No REVISION/SUBMISSION DATE

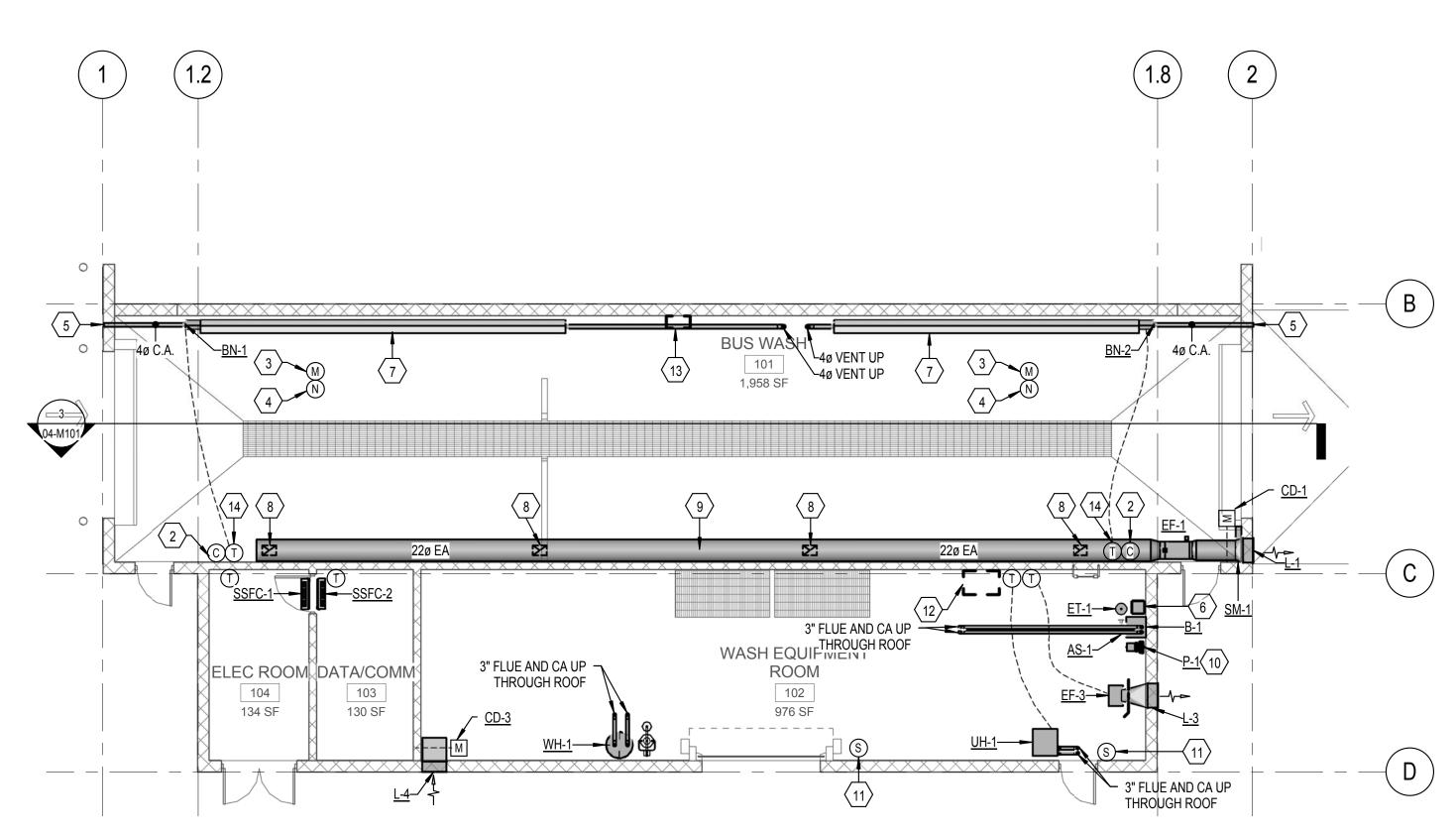
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PROJECT No: 3514

PLUMBING SCHEDULES

04-P601

BUS WASH MECHANICAL SECTION



LEVEL 1 MECHANICAL HVAC FLOOR PLAN -ALTERNATE BID

<u>2' 0' 8' 16' 24' 32</u>'

1 MOUNT UNIT ON 4" CONCRETE HOUSEKEEPING

2 PROVIDE CO DETECTION AT APPROXIMATELY 4'-0" ABOVE FINISHED FLOOR (CONFIRM SENSOR LOCATION WITH SENSOR MANUFACTURER)... EMERGENCY EXHAUST FANS SHALL ENERGIZE AND GARAGE DOORS SHALL OPEN UPON DETECTION OF ELEVATED LEVELS (50 PPM, ADJ.). SEE SEQUENCE OF OPERATION FOR MORE INFORMATION. EXACT INSTALLATION ELEVATION TO BE COORDINATED WITH SENSOR

MANUFACTURER.

3 PROVIDE A CONTINUOUSLY OPERATING METHANE (NATURAL GAS) DETECTION SYSTEM PER IMC 502.16.1. LOCATE METHANE SENSORS AT HIGH POINTS OF CEILING BASED ON SMOKE TEST RESULTS. EMERGENCY EXHAUST FANS SHALL ENERGIZE AND GARAGE DOORS SHALL OPEN (SEE SEQUENCE OF OPERATION FOR MORE INFORMATION) UPON DETECTION OF CONCENTRATION OF 20% OF THE LOWER FLAMMABILITY LIMIT (1.25% BY VOLUME, 12,500 PPM MAXIMUM, ADJ.). FIELD ROUTE TUBING FROM SENSORS TO CONTROL BOX AS REQUIRED BY SUCCESSFUL MANUFACTURER'S INSTALLATION INSTRUCTIONS. EXACT INSTALLATION ELEVATION TO BE COORDINATED WITH SENSOR MANUFACTURER. EXACT INSTALLATION ELEVATION TO BE COORDINATED WITH SENSOR MANUFACTURER.

4 PROVIDE NOX DETECTION HIGH IN SPACE. EMERGENCY EXHAUST FANS SHALL ENERGIZE AND GARAGE DOORS SHALL OPEN UPON DETECTION OF ELEVATED LEVELS (50 PPM, ADJ.). SEE SEQUENCE OF OPERATION FOR MORE INFORMATION. EXACT INSTALLATION ELEVATION TO BE COORDINATED WITH SENSOR MANUFACTURER.

5 4" COMBUSTION AIR INTAKE. PROVIDE WALL CAP AND INSECT SCREEN.

6 PROVIDE AUTOMATIC GLYCOL SYSTEM FEEDER. AXIOM INDUSTRIES MF200 OR EQUAL. 7 PROVIDE WALL MOUNT SYSTEM FROM RADIANT TUBE HEATER MANUFACTURER.

8 14/10 EXHAUST AIR OPENING OFF BOTTOM OF DUCT. COVER OPENING WITH BIRD SCREEN. 9 ALL DUCTWORK IN WASH BAYS SHALL BE ALUMINUM.

10 MOUNT PUMP AT APPROXIMATELY 4' ABOVE FINISHED FLOOR.

11 PROVIDE BOILER EMERGENCY SHUT-DOWN SWITCH. SWITCH TO CUT POWER TO ALL BOILER CONTROLS PER ASME AND STATE OF UTAH BOILER CODES. PROVIDE AND ENGRAVED SIGN THAT READS "EMERGENCY BOILER SHUT DOWN".

12 APPROXIMATE LOCATION OF GAS DETECTION SYSTEM CONTROLLER. COORDINATE EXACT LOCATION WITH OWNER AND OTHER DISCIPLINES.

13 APPROXIMATE LOCATION OF GAS DETECTION SYSTEM HORN AND INDICATOR LIGHT. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT.

14 THERMOSTAT IN NEMA 4X ENCLOSURE TO BE PROVIDED BY RADIANT TUBE HEATER MANUFACTURER.

**GENERAL NOTES** 

A. THE LOCATIONS OF THE METHANE SENSORS ARE PRELIMINARY. THE CONTRACTOT SHALL CONDUCT A SMOKE TEST APON COMPLETION OF THE VENTILATION SYSTEM TO STUDY AIR MOVEMENT PATTERNS TO CONFIRM THE VALIDITY OF SENSOR LOCATIONS. FINAL METHANE SENSOR LOCATIONS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS BASED ON THE RESULTS OF THE SMOKE TEST.

B. PROVIDE THE REQUIRED SUPPORT AND ADDITIONAL HOURS NECESSARY TO PARTICIPATE IN THE COMMISSIONING PROCESS, REFER TO SPECIFICATION REQUIREMENTS.COORDINATE DIRECTLY WITH THE COMMISSIONING AGENT.

**BUS WASH PHASE** L\_4ø VENT UP 22ø EA WASH EQUIPMENT 3" FLUE AND CA UP ROOM ELEC ROOM DATA/COMM THROUGH ROOF 3" FLUE AND CA UP — 102

LEVEL 1 MECHANICAL HVAC FLOOR PLAN -

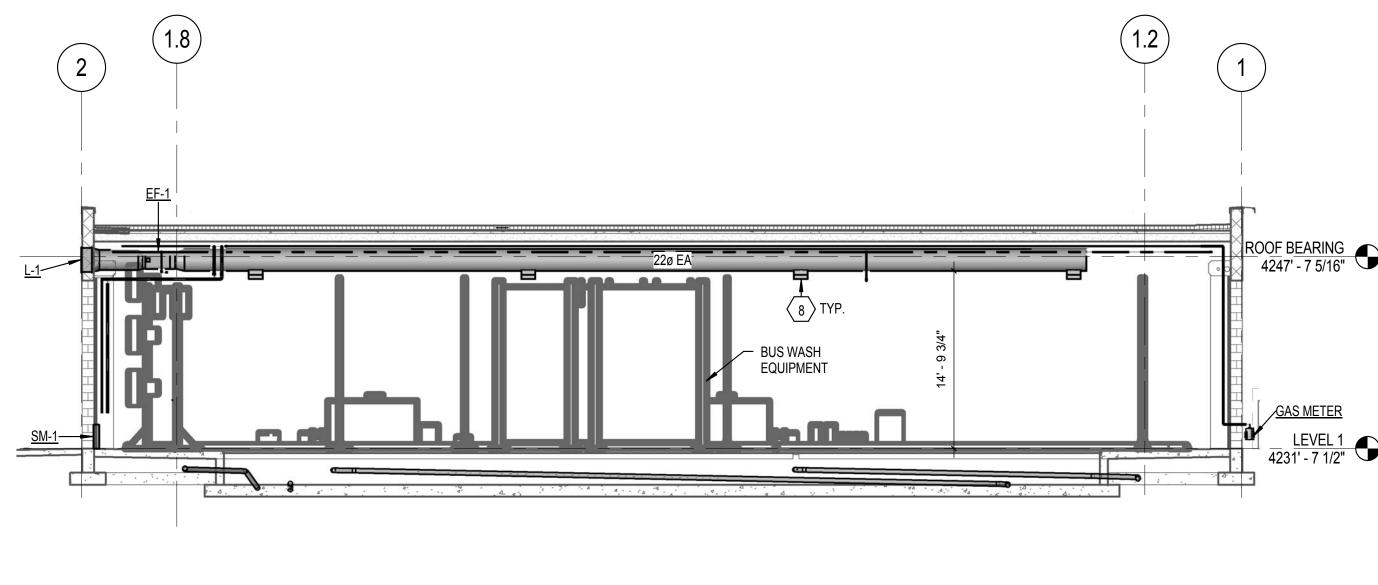
1 BASE BID

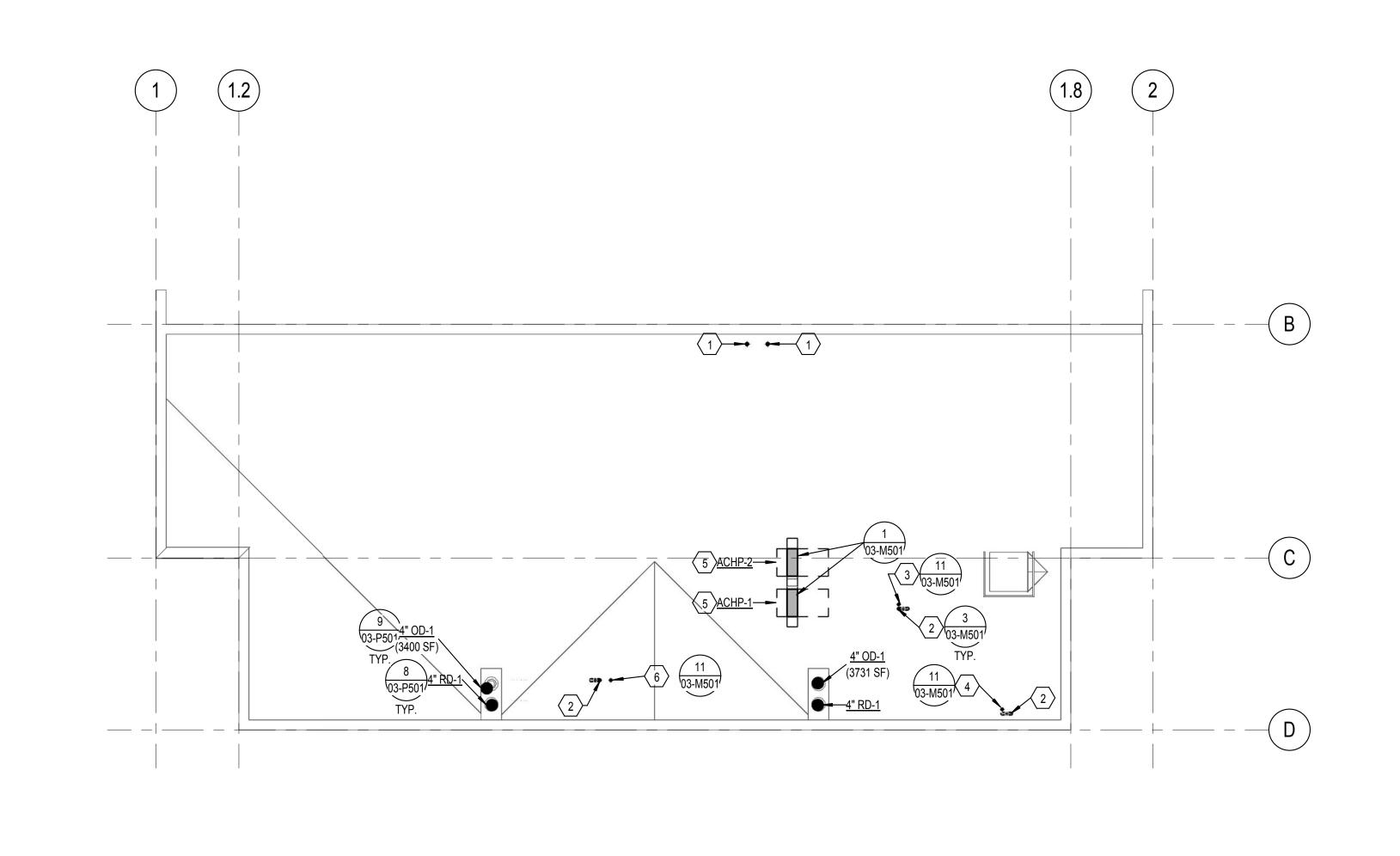
SCALE: 1/8" = 1'-0"

No REVISION/SUBMISSION PROJECT No: 3514

LEVEL 1 MECHANICAL HVAC FLOOR PLAN

04-M101

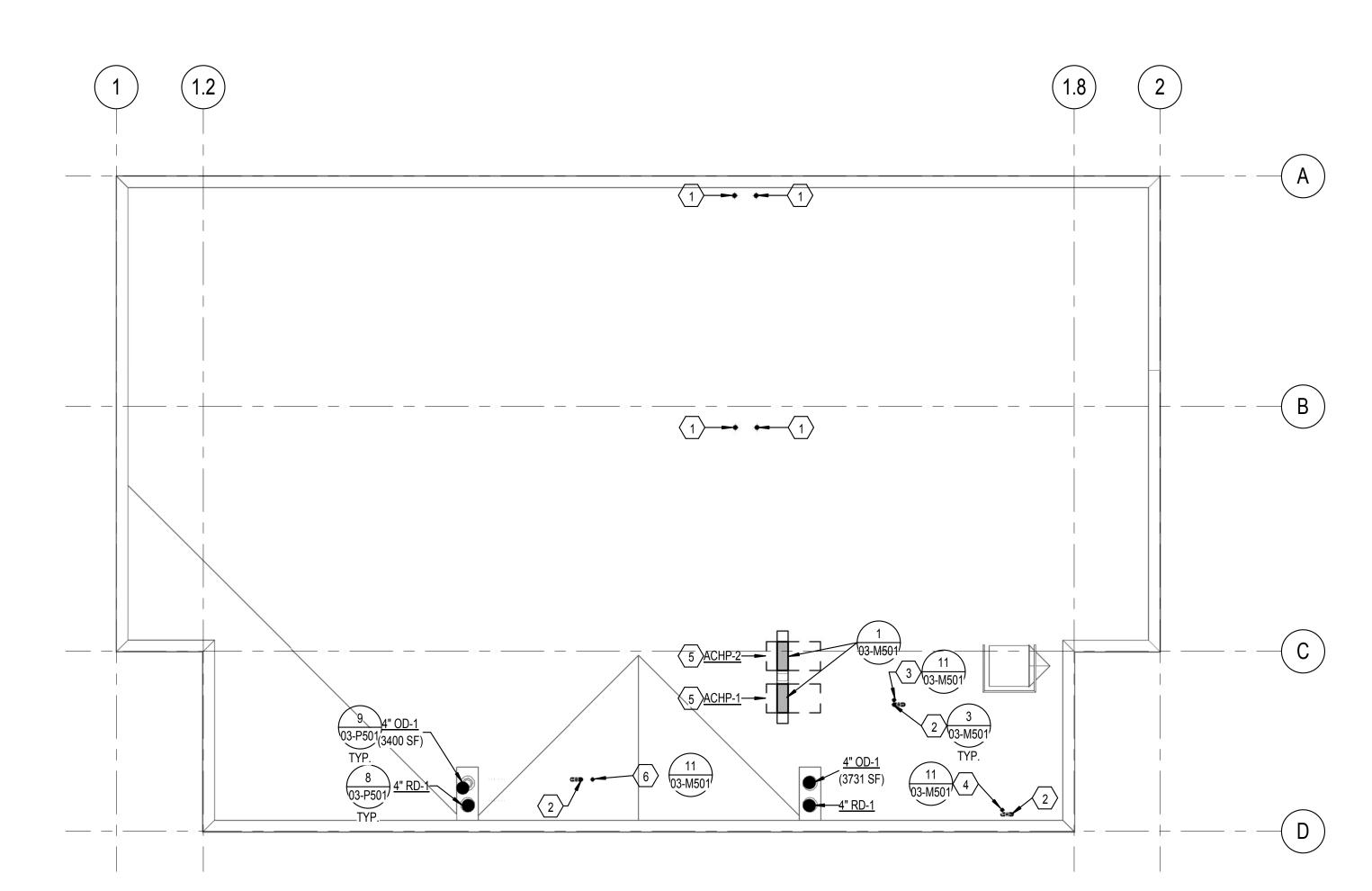




MECHANICAL ROOF PLAN - ALTERNATE BID

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

12' 0' 8' 16' 24' 32'



MECHANICAL ROOF PLAN - BASE BID

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

12'
0'
8

1 4" RADIANT TUBE HEATER FLUE. TERMINATE AT 36" ABOVE ROOF. PROVIDE ROOF CAP.

2 3" COMBUSTION AIR INTAKE. TERMINATE WITH GOOSENECK AT 24" ABOVE ROOF.

3 3" BOILER FLUE. TERMINATE AT 36" ABOVE

4 3" UNIT HEATER FLUE. TERMINATE AT 36" ABOVE ROOF. PROVIDE RAIN CAP. 5 MOUNT ON 14" SEISMIC ROOF CURB.

6 3" WATER HEATER FLUE. TERMINATE AT 36" ABOVE ROOF.

**GENERAL NOTES** 

A. THE LOCATIONS OF THE METHANE SENSORS ARE PRELIMINARY. THE CONTRACTOT SHALL CONDUCT A SMOKE TEST APON COMPLETION OF THE VENTILATION SYSTEM TO STUDY AIR MOVEMENT PATTERNS TO CONFIRM THE VALIDITY OF SENSOR LOCATIONS. FINAL METHANE SENSOR LOCATIONS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS BASED ON THE RESULTS OF THE SMOKE TEST.

B. PROVIDE THE REQUIRED SUPPORT AND ADDITIONAL HOURS NECESSARY TO PARTICIPATE IN THE COMMISSIONING PROCESS, REFER TO SPECIFICATION REQUIREMENTS.COORDINATE DIRECTLY WITH THE COMMISSIONING AGENT.



No REVISION/SUBMISSION

PROJECT No: 3514 MECHANICAL ROOF PLAN

04-M102

LEVEL 1 MECHANICAL PIPING FLOOR PLAN -

2 ALTERNATE BID

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

12' 0' 8' 16' 24' 32'

1 APPROXIMATE LOCATION OF MOISTURE AND TEMPERATURE SENSOR. COORDINATE EXACT

LOCATION IN FIELD. 2 CAP HEATING WATER SUPPLY AND RETURN PIPING FOR FUTURE CONNECTION TO PHASE

TWO SNOWMELT MANIFOLD. 3 SNOWMELT AREA-1A. EXTEND SNOWMELT AREA TO 3'-6" INSIDE OF BUILDING. PROVIDE A DEDICATED SNOWMELT LOOP FOR THIS AREA. COORDINATE WITH ALL FLOOR MOUNTED

EQUIPMENT. 4 SNOWMELT AREA-2A (FUTURE). EXTEND SNOWMELT AREA TO 3'-6" INSIDE OF BUILDING. PROVIDE A DEDICATED SNOWMELT LOOP FOR THIS AREA.COORDINATE WITH ALL FLOOR MOUNTED EQUIPMENT.

5 PROVIDE AUTOMATIC GLYCOL SYSTEM FEEDER. AXIOM INDUSTRIES MF200 OR EQUAL.

6 PROVIDE SECONDARY (BACKUP) MOISTURE AND TEMPERATURE SENSOR IN CASÉ OF PRIMARY SENSOR FAILURE. WIRE BACK TO CONNECTION POINT AND LABEL WIRES ACCORDINGLY. COORDINATE EXACT LOCATION IN FIELD.

7 COORDINATE TUBING LAYOUT WITH TRENCH DRAIN TO BE LOCATED IN SNOWMELT AREA. COORDINATE EXACT LOCATION WITH ARCHITECT AND CIVIL. PROVIDE TUBING IN BOTTOM OF CAST-IN-PLACE TRENCH DRAIN TO PREVENT ICE BUILD-UP.

8 STRUCTRUAL PENETRATION REQUIRED. COORDINATE EXACT LOCATION WITH ARCHITECT AND STRUCTURAL ENGINEER.

#### **GENERAL NOTES**

A. ALL BRANCH PIPING TO INDIVIDUAL VAV BOXES NOT SHOWN FOR CLARITY BUT MUST BE INSTALLED PER SIZING SCHEDULE AND DETAILS. REFER TO THE HEATING WATER RUNOUT PIPE SIZES SCHEDULE FOR SIZING OF THE BRANCH

HEATING WATER RUNOU
PIPE SIZES

1 11 2	OIZEO
GPM RANGE	RUNOUT PIPE SIZE
0 - 3	3/4"
3.1 - 6	1"

**BUS WASH PHASE** SNOWMELT AREA-2 (SERVED BY SM-2) (FUTURE) (SERVED BY SM-1) 7 1 1/2" HWS/R -DOWN TO <u>SM</u>-1 WASH EQUIPMENT ROOM ELEC ROOM DATA/COMM

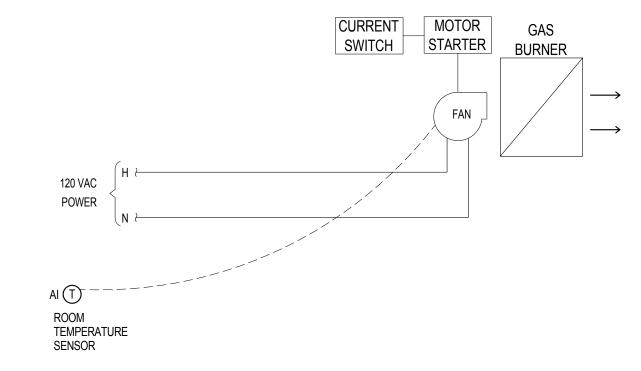
LEVEL 1 MECHANICAL PIPING FLOOR PLAN -

1 BASE BID | SCALE: 1/8" = 1'-0"

No REVISION/SUBMISSION PROJECT No: 3514

LEVEL 1 MECHANICAL PIPING FLOOR PLAN

# DX SPLIT SYSTEM CONTROL SCHEMATIC / SEQUENCE

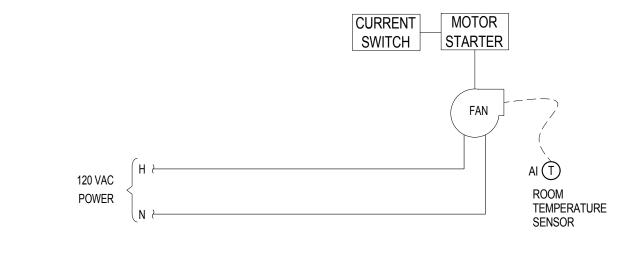


#### GAS FIRED UNIT HEATER (UH-1) SEQUENCE:

1. INTERNAL BLOWER SHALL START AND GAS BURNER SHALL FIRE UPON A CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT. (SETPOINT INITIALLY 50°F, ADJUSTABLE, WITH 5°F DEAD BAND, ON AT 50°F AND OFF AT 55°F).

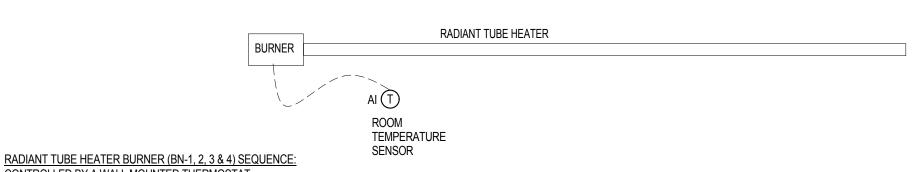
2. GENERATE AN ALARM WHEN SPACE TEMPERATURE DROPS BELOW 40°F FOR 15 MINUTES.

# GAS FIRED UNIT HEATER CONTROL SCHEMATIC / SEQUENCE



EXHAUST FAN (EF-3) SEQUENCE:
FAN SHALL RUN WHENEVER THERE IS A CALL FOR COOLING FROM SPACE MOUNTED COOLING THERMOSTAT. SETPOINT SHALL INITIALLY BE SET AT 80°F (ADJUSTABLE).

# EXHAUST FAN (EF-3) CONTROL SCHEMATIC / SEQUENCE



1. INTERNAL BLOWER SHALL START AND GAS BURNER SHALL FIRE UPON A CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT. (SETPOINT INITIALLY 50°F, ADJUSTABLE, WITH 5°F DEAD BAND, ON AT 50°F AND OFF AT 55°F). 2. GENERATE AN ALARM WHEN SPACE TEMPERATURE DROPS BELOW 40°F FOR 15 MINUTES.

RADIANT TUBE HEATER BURNER (BN-1, 2, 3 & 4) CONTROL SCHEMATIC / SEQUENCE

**SEQUENCE OF OPERATION:** 

SNOWMELT SYSTEM:
UPON A CALL FOR HEATING FROM SNOWMELT MOISTURE AND TEMPERATURE SENSOR:

1. PUMP P-1 SHALL START. 2. BOILER B-1 SHALL FIRE AND MODULATE TO MAINTAIN SNOWMELT SUPPLY SETPOINT, INITIALLY SET AT 90°F (ADJUSTABLE).

1. INDICATE ALARM CONDITION UPON FAILURE BOILER BURNER AND/OR WHENEVER THE SMS TEMPERATURE FALLS BELOW THE ALARM SETPOINT (80°F, ADJUSTABLE) FOR MORE THAN 60 MINUTES WHILE THE BOILER IS RUNNING. MONITOR THE SNOWMELT PUMP WITH AN ADJUSTABLE ANALOG CURRENT SENSOR AND GENERATE AN ALARM UPON PUMP FAILURE.

3. MONITOR THE SUMMARY ALARM CONTACT ON EACH BOILER, AND GENERATE AN ALARM UPON BOILER FAILURE.

1. PROVIDE AN EMERGENCY SHUT-DOWN SWITCH AT EACH BOILER ROOM EXIT, (AS REQUIRED BY THE ASME CODE) TO DISCONNECT THE POWER TO ALL CONTROLS ON THE BOILER. SWITCHES SHALL BE MUSHROOM TYPE. PROVIDE PLASTIC NAMEPLATE TO READ "BOILER

**GENERAL NOTES** 

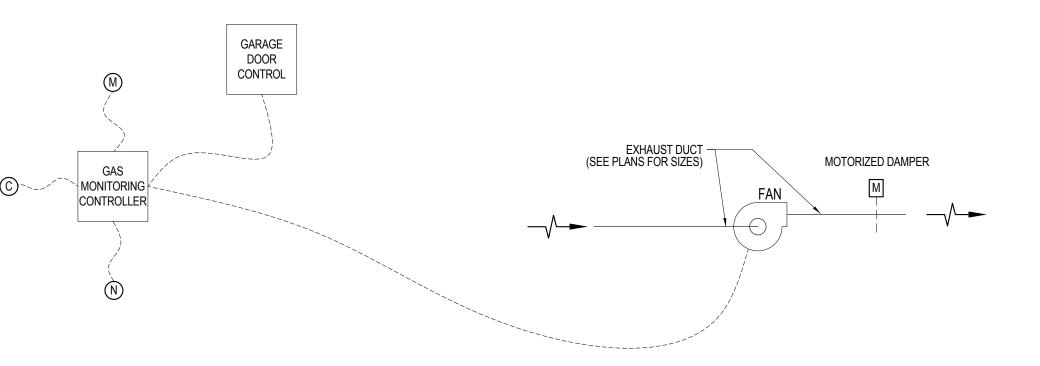
- (A) ALL POINTS SPECIFIED IN SCHEMATICS OR SEQUENCES MUST BY SHOWN ON DDC PAGE AND BE ADJUSTABLE.
- (B) TRENDING MUST BE SET UP FOR ALL POINTS SHOWN WITH ADJUSTABLE INTERVALS.
- D ) BOILERS TO BE PROVIDED WITH COMMUNICATION GATEWAYS BY THE MANUFACTURER, TO BE MONITORED BY THE DDC SYSTEM.

) SEE DETAILS FOR ADDITIONAL VALVING AND ACCESSORIES.

SET TO 80 PSI (TYP.)	BOILER CONTROLLER			
	BOILER			
	<u>B-1</u>			
ROUTE TO DRAIN (TYP.)	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
<u></u>	27 GPM	HEATING WATE TEMPERATURE	ER SUPPLY E SENSOR	
ROUTE THROUGH CONDENSATE		90°F	SMS	
	■—SMR——	70°F	—————————————————————————————————————	90°F TO SNOWMELT MANIFOLDS
	2"		<i>j</i> - 1 0 1	MATCH ET-1
		SYSTEM FILL FITTING AN	ID CAP	CONNECTION SIZE
		SET AT 12:	3/4" - 5/4 <u>ET-1</u>	SET RELIEF AT 125 PSI
		GLYCOL FILL ~ STATION		PIPE TO DRAIN

	LEGEND	
SYMBOLS	DESCRIPTION	
VFD	VARIABLE FREQUENCY DRIVE	DI: STATUS DO: START / STOP AO: SPEED (HZ) AI: SPEED
dP	VENTURI FLOW METER WITH DIFFERENTIAL PRESSURE SENSOR	AI: PRESSURE
<u>М</u>	BUTTERFLY VALVE WITH MODULATING ACTUATOR AND END SWITCHES	AO: POSITION AI: POSITION DI: POSITION
	LINKED BUTTERFLY VALVE WITH MODULATING ACTUATOR AND END SWITCH	AO: POSITION AI: POSITION DI: POSITION DI: POSITION
\$	MODULATING THREE WAY CONTROL VALVE	AO: POSITION AI: POSITION
×	MODULATING TWO WAY CONTROL VALVE	AO: POSITION AI: POSITION
T	TEMPERATURE SENSOR	Al: °F
dP	DIFFERENTIAL PRESSURE SENSOR	AI: PSI
BTU	BTU METER	AI: FLOW (GPM) AI: TEMP (°F) AI: ENERGY (BTU)
H	RELATIVE HUMIDITY SENSOR	Al: RH (%)
T	AIR TEMPERATURE SENSOR	Al: °F
P	PRESSURE SENSOR	Al: PSI
	PUMP	DI: STATUS (CT) DO: START / STOP

# SNOWMELT BOILER SYSTEM CONTROL SCHEMATIC / SEQUENCE



GAS MONITORING SYSTEM CONTROL SCHEMATIC: SPACE AS SHOWN ON THE PLANS. METHANE SENSORS SHALL BE LOCATED HIGH IN THE SPACE BASED ON THE RESULTS OF A SMOKE TEST TO BE PERFORMED AFTER THE COMPLETION OF THE VENTILATION SYSTEM. LOCATIONS SHOWN ON PLANS ARE PRELIMINARY ESTIMATES ONLY. PROVIDE A STATUS LIGHT, STROBE AND HORN AT EACH LOCATION SHOWN ON THE PLANS.

INITIATE THE EMERGENCY GAS PURGE EXHAUST FAN (EF-1 & 2) SEQUENCE UPON DETECTION OF ELEVATED LEVELS OF ANY OF THE MONITORED GASSES.

SEQUENCE OF OPERATION FOR EMERGENCY GAS PURGE SYSTEM

OPERATE EMERGENCY	PERATE EMERGENCY EXHAUST FANS UPON DETECTION OF ELEVATED LEVELS (BY THE GAS MONITORING SYSTEM) OF CO, NOX OR NATURAL GAS (METHANE). THERE SHALL BE THREE								
EVELS OF ALARM. EACH LEVEL WILL TRIGGER A DIFFERENT READING OF THE STATUS LIGHT, OPERATION OF THE EXHAUST PURGE SYSTEM AND FIRE ALARM SIGNAL BASED ON THE MATRIX									
BELOW. ALL FUNCTIONS BELOW SHALL DISPLAY ON THE BUILDING AUTOMATION SYSTEM GRAPHICS. ALL VALUES ARE ADJUSTABLE.									
ALARM LEVEL	METHANE CONCENTRATION (PPM) [% OF LFL]	NOx CONCENTRATION (PPM)	CO CONCENTRATION (PPM)	STATUS LIGHT	HORN & STROBE	PURGE FAN OPERATION (EF-1, 2)	GARAGE DOOR CONTROL (ALL DOORS)	PURGE FAN & GARAGE DOOR RESET	
NO ALARM	<7,500 PPM [<15%]	<2.5 PPM	<25 PPM	GREEN	OFF	OFF	NONE	N/A	
LEVEL 1	7,500 PPM [15%]	2.5 PPM	25 PPM	FLASHING GREEN	OFF	OFF	NONE	N/A	
LEVEL 2	12,500 PPM [25%]	5 PPM	50 PPM	YELLOW	OFF	ON	OPEN	MANUAL	
LEVEL 3	20,000 PPM [40%]			RED	ON	ON	OPEN	MANUAL	

EMERGENCY GAS PURGE SYSTEM SCHEMATICS AND SEQUENCE OF OPERATION

No REVISION/SUBMISSION

SCHEMATICS AND SEQUENCE OF **OPERATIONS** 

PROJECT No: 3514

NO SCALE

NO SCALE

NO SCALE



NO SCALE

No REVISION/SUBMISSION PROJECT No: 3514

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MECHANICAL DETAILS

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OJECT No:	3514		

MECHANICAL SCHEDULES

												CONDE	ENSING	<b>BOILER</b>	SCHED	JLE (B)								
		мвн с	APACITY (2)		ASME	OPERATING								FLOW	PRESS.	. ,	M	AX. SIZE			BURNEF	₹		
PLAN CODE	SERVES	OUTPUT @ SITE (MBH)	INPUT @ SL (MBH)	SYSTEM FLUID	PRESS. RATING (PSI)	PRESSURE (PSI)	EFFICIENCY % 5	EWT (°F)	LWT (°F)	AIR INLET	FLUE SIZE	FLUE TYPE	FLOW (GPM)	RANGE (GPM)	DROP (FT.HD.)	DEPTH (IN)	WIDTH (IN)	HEIGHT (IN)	OPERATING WT.(LBS)	FLA	VOLTAGE & PHASE	GAS PRESSURE	- MANUFACTURER & MODEL NO	REMARKS
B-1	SNOWMELT	238	285	40% PG	80	25	94	70	90	3"	3"	S636	27	CONSTANT	5	21	20	33	300	5	120/1	14" W.C.	HTP ELITE FT 285	1 3 4
1 CONI	ENSATE NEUTR	RALIZATION KI	Γ ② GA	S VALUE: 890 B	TU/CF 3	FURNISH WITH	MULTIPLE UNIT	CONTROLL	ER, BACN	ET COMMUNIC	CATION GATE	EWAY (	4 STAINL	ESS STEEL F	TIRE TBUE HI	EAT EXCHANG	SER 5	LISTED EFF	FICIENCY IS AT DE	SIGN COI	NDITION.			

							SPLIT S	YSTEM F	AN COIL	(SSFC)		
PLAN	AREA		NOM. CLG	NOM. HEATING		E	ELECTRICAL	3		WEIGHT	MANUFACTURER	
CODE	SERVED	CFM	CAPACITY 1 (MBH)	CAPACITY (MBH)	MCA	WATTS	VOLTS	PH	HZ	LBS	& MODEL NO	REMARKS
SSFC-1	ELEC. ROOM	520	18	18.9	14	30	208/230	1	60	50	2 ENVIROAIR ZWH 18	PAIRED WITH ACHP-1
SSFC-2	DATA/COMM ROOM	520	18	18.9	14	30	208/230	1	60	50	2 ENVIROAIR ZWH 18	PAIRED WITH ACHP-1
1) RATIN	NG AT 97° F DB / 63° F W	B ENTE	RING CONDENS	SING UNIT	(3)	POWERED	BY ASSOCIA	TED ACHP			1	

2 ROUTE AND SIZE REFRIGERANT LINES FROM CONDENSING UNIT TO SPLIT SYSTEM FAN COIL PER MANUFACTURERS REQUIREMENTS.

								AIR CC	OLED H	EAT PUM	P SCHEE	DULE (AC	CHP)			
PLAN CODE	SYSTEM SERVED	NOM. COOLING MBH	AMBIENT TEMP (°F)	NOM. HEATING MBH	AMBIENT TEMP (°F)	REFRIGERANT TYPE	VOLTAGE/ PHASE	LECTRICAL MCA	MOCP	LENGTH	DIME	HEIGHT	OPERATING WEIGHT (LBS)	SEER	MANUFACTURER & MODEL NO	REMARKS
ACHP-1	SSFC-1	18	95	18.9	9	R410A	208/230 / 1	14	20	34	14	28	100	16	ENVIROAIR ZHB 18	2 3 PAIRED WITH SSFC-1
ACHP-2	SSFC-2	18	95	18.9	9	R410A	208/230 / 1	14	20	34	14	28	100	16	ENVIROAIR ZHB 18	2 3 PAIRED WITH SSFC-1
1 MOUN	T UNIT ON MINIMUM 14" S	SEISMIC ROOF	CURB.	3	) PROVIDE	WITH LOW AMBIE	NT KIT DOWN	TO 0°F.								

2 ROUTE AND SIZE REFRIGERANT LINES FROM CONDENSING UNIT TO SPLIT SYSTEM FAN COIL PER MANUFACTURERS REQUIREMENTS.

			CONTR	OL DAMPI	ER SCHEE	OULE (CD)			
PLAN	SERVICE	TYPE 1	AIR FLOW VOLUME	DIMEN	ISIONS	MAX FACE	METHOD OF	BLADE	MANUFACTURER
CODE	SERVICE		(CFM)	WIDTH (IN)	HEIGHT (IN)	VELOCITY (FPM)	CONTROL	ORIENTATION	& MODEL NO
CD-1	EF-1 NG PURGE	MOTORIZED 2-POSITION	2,700	24	24	1500	INTERLOCKED WITH EXHAUST FAN	HORIZONTAL PARALLEL BLADE	RUSKIN CD36
CD-2	EF-2 NG PURGE	MOTORIZED 2-POSITION	2,700	24	24	1500	INTERLOCKED WITH EXHAUST FAN	HORIZONTAL PARALLEL BLADE	RUSKIN CD36
CD-3	EQUIPMENT ROOM MAKE-UP AIR	MOTORIZED 2-POSITION	1,100	24	24	1500	INTERLOCKED WITH EXHAUST FAN	HORIZONTAL PARALLEL BLADE	RUSKIN CD36
1 PROVIDE E	END SWITCHES ON DAMPI	ER.		1	1	1		1	

								EXHA	UST FAN S	SCHEDUL	LE (EF)					
							MO	ΓOR			DAMPER			MAX		
PLAN CODE	AREA SERVED	TYPE	CFM @ ELEV	ESP @ ELEV	FAN RPM	BHP (W)	HP	KW / CFM	VOLT/ PH	SONES	(GRAVITY OR MOTOR)	METHOD OF CONTROL	OPENING SIZE	OPERATING WT (LBS)	MANUFACTURER & MODEL NO	REMARKS
EF-1	EMERGENCY NG PURGE	INLINE	2,700	0.75	2,113	1.24	1.5	0.000308	460/3	23	MOTOR CD-1	NAT. GAS DETECTION	18" ø	400	M.K. PLASTICS AXCL 1500	12
EF-2	EMERGENCY NG PURGE	INLINE	2,700	0.75	2,113	1.24	1.5	0.000308	460/3	23	MOTOR CD-2	NAT. GAS DETECTION	18" ø	400	M.K. PLASTICS AXCL 1500	1)(2)
EF-3	EQUIPMENT ROOM	INLINE	1,100	0.50	925	0.19	1/2	0.000128	120/1	7	GRAVITY	COOLING THERMOSTAT	24" x 6"	100	COOK GC-920	123

							PUMP S	SCHED	ULE (P)				
PLAN CODE	DUTY	GPM	FEET OF HEAD	% PROPYLENE - GLYCOL	BHP (W)	HP	MOTOR EFFICIENCY %	W/GPM	VOLTAGE/ PHASE	METHOD OF CONTROL	MAX WEIGHT (LBS)	MANUFACTURER & MODEL NO	REMARKS
P-1	SNOWMELT SYSTEM	27	25	40	0.4	0.5	PREM.	11.1	230 / 1	ATC	50	GRUNDFOS MAGNA 40-120F	

						G	AS FIRED	UNIT HEA	TER SCH	EDULE (U	H)			
	UNIT CAPA	ACITY (MBH)		THROW AT	ELECT	RICAL		MAX DIM	ENSIONS					
PLAN CODE	INPUT (MBH)	OUTPUT AT ALT. (MBH)	CFM (STD)	12' MOUNTING (FT)	VOLT/ PH	FAN HP	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)	FLUE DIA.	CA DIA.	MANUFACTURER & MODEL NO	REMARKS
UH-1	30	21.3	505	25	115/1	1/12	22	27	13	55	3"	3"	MODINE HDS-30	-

PLAN CODE

SNOWMELT SYSTEM

				3110	VVIVILLI A	REA AND	IVIAIVII OLI	JOULLDO	JLL (OIVI)				
PLAN CODE	EFFECTIVE AREA (SF)	LOAD (MBH)	BTUH/SF	FLOW (GPM)	TUBING SIZE	TUBE CENTERS	NUMBER OF LOOPS	LOOP LENGTHS (FT)	GPM/ LOOP	PRESSURE DROP (FT.)	HEADER SIZE	TOTAL # OF MANIFOLD LOOPS	REMARKS
SM-1	900	112.5	125	12.5	5/8"	9	6	210	2.1	14.8	4.4/01	7	
5 SM-1A	75	9.5	125	1.0	5/8"	9	1	110	1.0	2.2	1-1/2"	7	12346
SM-2 (FUTURE)	900	112.5	125	12.5	5/8"	9	6	210	2.1	14.8		_	
5 SM-2A FUTURE)	75	9.5	125	1.0	5/8"	9	1	110	1.0	2.2	1-1/2"	7	12346

					Alk	RSEPAR	RATOR (AS	5)		
PLAN	SYSTEM	CONNECTION	REC.	PD	N	MAX DIMENS	IONS	DRY	MAX OPERATING	MANUFACTURER (1
CODE	SERVED	SIZE (in)	GPM	(FT)	DIA (IN)	HEIGHT (IN)	FLANGE TO FLANGE (IN)	WT (LBS)	WEIGHT (LBS)	& MODEL NO
AS-1	SNOWMELT SYSTEM	2"	35	.5	6.3	18.5	15.3	31	45	SPIROVENT SENIOR

90 | 40 | 4.0 | 0.9 | 30 | 10 | 11 | 35

EXPANSION TANK SCHEDULE (ET)

WATER TEMP (°F) 

TANK VOL (GAL) 

WOL (GAL) 

WAX DIMENSIONS

MAX DIMENSIONS

CHARGE (PSI) 

DIA HEIGHT OPERATING (IN) WT (LBS)

MANUFACTURER & MODEL NO

REMARKS

AMTROL ST-5-C

		L	OUVER SC	HEDULE (L)		
PLAN CODE	SERVICE	CFM	MAXIMUM VELOCITY (FPM)	MINIMUM FREE AREA (FT²)	MAXIMUM DIMENSIONS (W x H) (IN)	MANUFACTURER 2
L-1	NG PURGE EXHAUST	2,700	1000	3.17	24 X 24	RUSKIN ELF6375DX
L-2	NG PURGE EXHAUST	2,700	1000	3.17	24 X 24	RUSKIN ELF6375DX
L-3	EQUIPMENT ROOM EXHAUST	1,100	1000	1.28	24 X 24	RUSKIN ELF6375DX
L-4	EQUIPMENT ROOM MAKE UP AIR	1,100	1000	1.28	24 X 24	RUSKIN ELF6375DX
1 TYPE	AND COLOR TO BE REVIEW	/ED AND CONFI	RMED BY ARCHIT	ECT. 2	PROVIDE WITH BIRDSCRE	EN.

(5) SM-XA REPRESENTS A DEDICATED LOOP OFF OF THE SM-X MANIFOLD THAT IS DIFFERENT FROM THE REST OF THE LOOPS SERVED BY THE MANIFOLD.

(6) PROVIDE A CUSTOM 36" STAINLESS STEEL MANIFOLD ENCLOSURE CABINET.

		EFFECTIVE	MOUNTING	MOUNTING	ELECT	RICAL		MANIFOLD /			
PLAN CODE	INPUT (MBH)	LENGTH (FT)	HEIGHT (FT)	ANGLE (DEG)	VOLT/ PH	AMPS	WEIGHT (LBS)	TAIL PIPE SIZE (IN)	CA DIA.	MANUFACTURER & MODEL NO	REMARKS
BN-1	125	30	15	45	120 / 1	1.2	300	4"	4"	AMBIRAD ER	123
BN-2	125	25	15	45	120 / 1	1.2	300	4"	4"	AMBIRAD ER	123
BN-3 (FUTURE)	125	30	15	45	120 / 1	1.2	300	4"	4"	AMBIRAD ER	123
BN-4 (FUTURE)	125	25	15	45	120 / 1	1.2	300	4"	4"	AMBIRAD ER	1 2 3

JOB SITE ELEVATION = 4,300 FT JOB SITE PRESSURE = 12.31 PSI SELECT ALL EQUIPMENT FOR OPERATION AT JOB SITE ELEVATION

ALL MOTORS TO BE PREMIUM EFFICIENCY

#### 2012 IECC

669 W 200 S

#### Section 1: Project Information

Project Type: Alteration Project Title: Utah Transit Authority - DDSC - WASH

Construction Site: Owner/Agent: Salt Lake City, UT 84101

Designer/Contractor:

244 W 300 N

801-322-2400

Colvin Engineering Associates

Salt Lake City, UT 84103

#### Section 2: General Information

Salt Lake City, Utah Building Location (for weather data):

## Section 3: Mechanical Systems List

#### Quantity System Type & Description

2 Split System Fan Coil 1 & 2 (Single Zone) : Split System Heat Pump Heating Mode: Capacity = 18 kBtu/h, Proposed Efficiency = 9.00 HSPF, Required Efficiency = 7.70 HSPF

Cooling Mode: Capacity = 19 kBtu/h, Proposed Efficiency = 16.00 SEER, Required Efficiency = 13.00 SEER
Fan System: Split System | Elec., Data/Comm - Compliance (Motor nameplate HP method): Passes

Elec. Room Supply, Single-Zone VAV, 520 CFM, 0.1 motor nameplate hp Data/Comm Room Supply, Single-Zone VAV, 520 CFM, 0.1 motor nameplate hp

2 Radiant Tube Heaters (Single Zone): Heating: 2 each - Radiant Heater, Gas, Capacity = 125 kBtu/h No minimum efficiency requirement applies

Fan System: None 1 Gas Fired Unit Heater (Unknown) :

Heating: 1 each - Unit Heater, Gas, Capacity = 21 kBtu/h Proposed Efficiency = 80.00% Ec, Required Efficiency = 80.00% Ec
Fan System: GF Unit Heater - Compliance (Motor nameplate HP method): Passes

Fans: UH1 Supply, Constant Volume, 505 CFM, 0.1 motor nameplate hp

1 SnowMelt SM-1 (Cond. Boiler) (Single Zone) : Heating: 1 each - Radiant Heater, Gas, Capacity = 113 kBtu/h No minimum efficiency requirement applies

Fan System: None SnowMelt SM-1A (Cond. Boiler) (Single Zone): Heating: 1 each - Radiant Heater, Gas, Capacity = 10 kBtu/h

No minimum efficiency requirement applies

#### Section 5: Compliance Statement

Fan System: None

Project Title: Utah Transit Authority - DDSC - WASH
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HVAC record drawings of the actual installation and performance data for each equipment provided to the owner within 90 days after system acceptance. HVAC O&M documents for all mechanical equipment and system provided to the owner within 90 days after system acceptance. Written HVAC balancing report provided to the owner. The above post construction requirements have been completed. Principal Mechanical Designer-Name Signature

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical alteration project has been designed

to meet the 2012 IECC, Chapter 8, requirements in COMcheck Version 3.9.4 and to comply with the mandatory requirements in the

Section 6: Post Construction Compliance Statement

Requirements Checklist.

Name - Title

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Utah Transit Authority - DDSC - WASH Report date: 02/11/1 I:\PROJECTS\2013 Projects\2013-064.14 UTA-DDSC CD Phase\Energy\Energy Code- Page 1 of 8

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↑ COMcheck Software Version 3.9.4

Requirements: 100.0% were addressed directly in the COMcheck software

Energy Code: 2012 IECC

**Inspection Checklist** 

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each

requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

2012 IECC	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)	
Project	Utah Transit Authority - DDSC - W	VASH			Re	eport date: 02/11/1

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	Freeze protection and snow/ice melting system sensors for future	Complies	Requirement will be met.
	connection to controls.	□Does Not	
		□Not Observable □Not Applicable	
Additiona	I Comments/Assumntions		
Additiona	Comments/Assumptions:		
Additiona	l Comments/Assumptions:		

Data filename: I:\PROJECTS\2013 Projects\2013-064.14 UTA-DDSC CD Phase\Energy\Energy Code-COMCheck-Models\WASH\WASH

Report date: 02/11/15

Project Title: Utah Transit Authority - DDSC - WASH

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Utah Transit Authority - DDSC - WASH Report date: 02/11/1 I:\PROJECTS\2013 Projects\2013-064.14 UTA-DDSC CD Phase\Energy\Energy Code- Page 3 of 8

COMCheck-Models\WASH\WASH ComCheck.cck

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
C403.2.3 [ME55] <sup>2</sup>	HVAC equipment efficiency verified.	Efficiency:	Efficiency:	□Complies □Does Not □Not Observable □Not Applicable	See the Mechanical Systems lis for values.
C403.2.5. 1 [ME59] <sup>1</sup>	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			□Complies □Does Not □Not Observable □Not Applicable	Requirement wi <b>ll</b> be met.
C403.2.7 [ME60] <sup>2</sup>	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	R	R	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_33_00
C403.2.8 [ME61] <sup>2</sup>	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	in.	in.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_21_13  See the Mechanical Systems list for values for Split System Fan Coil 1 & 2.
C403.2.8 [ME61] <sup>2</sup>	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	in.	in.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_07_00  See the Mechanical Systems lis for values for Radiant Tube Heaters.
C403.2.8 [ME61] <sup>2</sup>	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	in.	in.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_07_00  See the Mechanical Systems lis for values for Gas Fired Unit Heater.
C403.2.8 [ME61] <sup>2</sup>	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	in.	in.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_21_13  See the Mechanical Systems listor values for SnowMelt SM-1 (Cond. Boiler).
C403.2.8 [ME61] <sup>2</sup>	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	in.	in.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_21_13  See the Mechanical Systems lis for values for SnowMelt SM-1A (Cond. Boiler).
C403 <b>.</b> 2.8 [ME41] <sup>3</sup>	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Utah Transit Authority - DDSC - WASH Report date: 02/11/1 I:\PROJECTS\2013 Projects\2013-064.14 UTA-DDSC CD Phase\Energy\Energy Code- Page 4 of 8 COMCheck-Models\WASH\WASH ComCheck.cck



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MECHANICAL ENERGY CODE COMPLIANCE DOCUMENTATION

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)			
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Depth Ideals on Francis	Final Inspection	Complies?	Comments/Assumptions
C303.3,C4 08.2.5.2	Furnished O&M manuals for HVAC systems within 90 days of system	□Complies □Does Not	Requirement will be met.
[FI8] <sup>3</sup>	acceptance.	□Not Observable	
		□Not Applicable	
3	An air and/or hydronic system balancing report is provided for HVAC	□Complies □Does Not	Requirement will be met.
[FI43] <sup>1</sup>	systems.	□Not Observable	
	HVAC control systems have been	□Not Applicable □Complies	Requirement will be met.
2 [FI10] <sup>1</sup>	tested to ensure proper operation, calibration and adjustment of controls.	□Does Not □Not Observable	201
200	26	□Not Applicable	
C403.2.2 [FI27] <sup>3</sup>	capacity does not exceed calculated	□Complies □Does Not	Requirement will be met.
	loads.	□Not Observable	
C408.2.1	Commissioning plan developed by	□Not Applicable □Complies	Requirement will be met.
[FI28] <sup>1</sup>	registered design professional or approved agency.	□Does Not □Not Observable	
		□Not Applicable	
C408.2.4 [FI29] <sup>1</sup>	Preliminary commissioning report completed and certified by registered	□Complies □Does Not	Requirement will be met.
	design professional or approved agency.	□Not Observable	
C408.2.5.		□Not Applicable □Complies	Requirement will be met.
4 [FI30] <sup>1</sup>	building owner within 90 days of receipt of certificate of occupancy.	□Does Not □Not Observable	
	1 As 2001 CH20	☐Not Applicable	
1	HVAC equipment has been tested to ensure proper operation.	□Complies □Does Not	Requirement will be met.
[FI31] <sup>1</sup>	1	□Not Observable □Not Applicable	
C406 [FI34] <sup>1</sup>	Efficient HVAC performance, efficient lighting system, or on-site supply of	□Complies □Does Not	Requirement will be met.
	renewable energy consistent with what is shown the approved plans.	□Not Observable	
V 역 역:F;	al Commonte/Accessticate	□Not Applicable	
Additiona	al Comments/Assumptions:		
	1 High Impact (Tier 1)	2 Medium Impa	act (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
C403.4.2 [ME66] <sup>2</sup>	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	☐ VSD☐ Vane axial fan☐ Other	☐ VSD☐ Vane axial fan☐ Other	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_08_10  See the Mechanical Systems list for values for Radiant Tube Heaters.
C403.4.2 [ME66] <sup>2</sup>	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	☐ VSD☐ Vane axial fan☐ Other	☐ VSD☐ Vane axial fan☐ Other	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met,  Location on plans/spec: 23_34_00  See the Mechanical Systems list for values for Gas Fired Unit Heater.
C403.4.2 [ME66] <sup>2</sup>	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	│ VSD │ Vane axial fan │ Other	☐ VSD☐ Vane axial fan☐ Other	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_34_00  See the Mechanical Systems list for values for SnowMelt SM-1 (Cond. Boiler).
C403.4.2 [ME66] <sup>2</sup>	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	☐ VSD☐ Vane axial fan☐ Other	☐ VSD☐ Vane axial fan☐ Other	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_34_00  See the Mechanical Systems list for values for SnowMelt SM-1A (Cond. Boiler).
C403 <b>.</b> 2.6 [ME57] <sup>1</sup>	Exhaust air energy recovery on systems meeting Table C403.2.6			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403 <b>.2.11</b> [ME71] <sup>2</sup>	Unenclosed spaces that are heated use only radiant heat.			□Complies □Does Not □Not Observable □Not Applicable	Requirement wi <b>ll</b> be met.

	1 High Impact (Tier 1) 2 Medium	1 Impact (Tier 2) 3	Low Impact (Tier 3)	
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2012 IEC	Final Inspection	Complies?	Comments/Assumptions
C403.2.4, 2 [FI47] <sup>3</sup>	Heating and cooling to each zone is controlled by a thermostat control.  Minimum one humidity control device per installed humidification/dehumidification system.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00  See the Mechanical Systems list for values for Split System Fan Coil 1 2.
C403 <b>.2.4.</b> 2 [Fl47] <sup>3</sup>		□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00  See the Mechanical Systems list for values for Radiant Tube Heaters.
C403.2.4. 2 [FI47] <sup>3</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00  See the Mechanical Systems list for values for Gas Fired Unit Heater.
C403.2.4. 2 [FI47] <sup>3</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00  See the Mechanical Systems list for values for SnowMelt SM-1 (Cond. Boller).
C403.2.4. 2 [Fl47] <sup>3</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00  See the Mechanical Systems list for values for SnowMelt SM-1A (Cond Boiler).
C403.2.4. 2 [FI38] <sup>3</sup>	Thermostatic controls have a 5 °F deadband.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00
C403.2.4. 2 [FI20] <sup>3</sup>	Temperature controls have setpoint overlap restrictions.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00
C403.2.4. 3 [FI39] <sup>3</sup>	Each zone equipped with setback controls using automatic time clock or programmable control system.	□Complies	Requirement will be met.  Location on plans/spec: 23_09_00
C403.2.4. 3 [FI40] <sup>3</sup>	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  Location on plans/spec: 23_09_00
C403.2.4. 3.3 [FI41] <sup>3</sup>	Systems include optimum start controls.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  See the Mechanical Systems list for values for Split System Fan Coil 1 2.
C403.2.4. 3.3 [FI41] <sup>3</sup>	Systems include optimum start controls.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.  See the Mechanical Systems list for values for Gas Fired Unit Heater.
C408.2.5. 1 [FI7] <sup>3</sup>	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

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1050 17th STRE

SOLVIN BASOCIATES

ASSOCIATES

West 300 North, Suite 200 / Saft Lake City, Utan 841

WASH BUILDING 4 669 WEST 200 SOU SALT LAKE CITY, U

No REVISION/SUBMISSION DATE

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PROJECT No: 3514

MECHANICAL ENERGY CODE COMPLIANCE DOCUMENTATION

04-M902

	SYMBOLS LEGEND
SYMBOL	DESCRIPTION
REFERENC	E AND LINE SYMBOLS
A5 E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
A5 E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
ROOM NAME	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
1	KEYNOTE INDICATOR.
1	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
$\sim$	BREAK, ROUND
MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
	NEW LINE: MEDIUM LINE.
	EXISTING TO REMAIN LINE: THIN LINE.
	DEMOLITION LINE: DASHED, MEDIUM LINE
	PROPERTY LINE: DASHED, WIDE LINE.
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
WIRING ME	THODS
	WIRING.
0	WIRING TURNED UP OR TOWARDS OBSERVER.
	WIRING TURNED DOWN OR AWAY FROM OBSERVER.
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.
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.
	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
<b>+</b>	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
0	JUNCTION BOX.
РВ	PULL BOX.
	EARTH GROUND (ONE-LINE DIAGRAM).
<del>-</del>	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.
WIRING DE	
<b>b</b>	RECEPTACLE, DUPLEX: NEMA 5-20R.
₩w	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
<b>—</b>	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
₩ <sub>WP</sub>	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
₩P	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
<b>b</b>	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
	1

SYMBOL	DESCRIPTION
WIRING DE	VICES
* \$	SWITCH, SINGLE POLE ("x" INDICATES FIXTURES CONTROLLED).
X \$3	SWITCH, THREE-WAY ("x" INDICATES FIXTURES CONTROLLED).
X \$4	SWITCH, FOUR-WAY ("x" INDICATES FIXTURES CONTROLLED).
 \$Т	SWITCH, TIMER OPERATED.
**************************************	SWITCH, WEATHERPROOF.
•	I FRICAL AND COMMUNICATIONS UTILITIES
—3ØUP—	ELECTRIC LINE: THIN LINE. 1Ø = SINGLE PHASE, 2Ø = 2-PHASE, 3Ø = 3-PHASE, O = OVERHEAD, U = UNDERGROUND, P = PRIMARY, S = SECONDARY
-0-	UTILITY POLE.
(C)	UTILITY, COMMUNICATIONS MANHOLE.
(E)	UTILITY, ELECTRICAL MANHOLE.
	UTILITY, TELEPHONE MANHOLE.
T	TRANSFORMER.
 ELECTRIC <i>A</i>	L POWER AND DISTRIBUTION
	FUSE WITH RATING (ONE-LINE DIAGRAM).
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
<u>S</u>	OVERLOAD RELAY (ONE-LINE DIAGRAM).
<u> </u>	STARTER (ONE-LINE DIAGRAM).
(I	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
(I	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
( MCP	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
1	CIRCUIT BREAKER, SOLID STATE WITH GROUND FAULT
┌ - ( └── GFP	PROTECTION (ONE-LINE DIAGRAM).
GFP	PROTECTION (ONE-LINE DIAGRAM).  MOTOR.
GFP  GFP	PROTECTION (ONE-LINE DIAGRAM).
GFP  GFP  "1H"	PROTECTION (ONE-LINE DIAGRAM).  MOTOR.

PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS

SHOWN (ONE-LINE DIAGRAM).

	SYMBOLS LEGEND
SYMBOL	DESCRIPTION
ELECTRICA	AL POWER AND DISTRIBUTION
)225/3 "1H" 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 25/3	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
LIGHTING (	REFER TO FIXTURE SCHEDULE FOR SYMBOLS)
(W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
(W-3)	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
EM	EMERGENCY.
LIGHTING C	CONTROL
>=	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL.
P	PHOTOCELL.
SP	OCCUPANCY SENSOR, SWITCH PACK.
STRUCTUR	RED CABLING
Δx	TELEPHONE, WALL MOUNTED ("X" INDICATES QUANTITY OF CABLES).
$\Delta_{M}$	TELEPHONE, WALL MOUNTED: WALL PHONE.
▼X	OUTLET, DATA COMMUNICATION ("X" INDICATES QUANTITY OF CABLES).
<b>V</b>	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.  TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
	LAN RACK, FLOOR STANDING.
FIRE ALARI	<u> </u>
FSA	FIRE SYSTEM ANNUNCIATOR.
FCP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
FCP FPS	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.  FIRE ALARM NOTIFICATION POWER SUPPLY.
FPS	FIRE ALARM NOTIFICATION POWER SUPPLY.
FPS CM	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.
FPS CM MM	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.
FPS CM MM P	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A
FPS CM MM P	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
FPS CM MM P	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.  DETECTOR, SMOKE.
FPS CM MM P	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.  DETECTOR, SMOKE.  DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
FPS CM MM P	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.  DETECTOR, SMOKE.  DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.  DETECTOR, HEAT.
FPS CM MM P R R 2	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.  DETECTOR, SMOKE.  DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.  DETECTOR, HEAT.  STROBE. SUBSCRIPT INDICATES CANDELA RATING.
FPS CM MM P R R 2 2 3 75 WP	FIRE ALARM NOTIFICATION POWER SUPPLY.  CONTROL MODULE.  MONITOR MODULE.  FIRE ALARM MANUAL PULL STATION.  SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.  DETECTOR, SMOKE.  DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.  DETECTOR, HEAT.  STROBE. SUBSCRIPT INDICATES CANDELA RATING.  ALARM, HORN/SPEAKER, WEATHERPROOF.  ALARM, HORN/STROBE, ONE ASSEMBLY. SUBSCRIPT

THE FIRE SPRINKLER SHOP DRAWINGS.

SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON

4 5 6 7 8 9

# SYMBOLS LEGEND SYMBOL DESCRIPTION TECHNOLOGY SYSTEMS TECHNOLOGY SYSTEM CABLE. SEE SPECIFIC JOB EQUIPMENT LIST FOR APPLICABLE DESIGNATIONS. CONTROL CABLE GROUND CABLE, 10 AWG, 1 CONDUCTOR, GREEN INSULATED MICROPHONE CABLE SPEAKER CABLE, 70 VOLT SYSTEM = SPEAKER CABLE, 8 OHM SYSTEM SPEAKER, CEILING MOUNTED. SPEAKER, WALL MOUNTED. EQUIPMENT CABINET. SCREEN, PROJECTION, CEILING MOUNTED. PROJECTOR, CEILING MOUNTED. CCTV CABLE, POWER. CCTV CABLE, VIDEO SIGNAL. CCTV HEADEND EQUIPMENT. CCTV MONITOR. CCTV CAMERA/ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE. CCTV CAMERA WITH PAN, TILT AND ZOOM. 360° PANNING CAMERA TRANSVERSE ANGLE. SECURITY SECURITY CABLE. SEE EQUIPMENT SCHEDULE FOR CABLE ACCESS CONTROL HEADEND EQUIPMENT. SECURITY CONTROL PANEL. INTRUSION DETECTION HEADEND EQUIPMENT. CARD ACCESS DOOR TYPE #1 OR AS NOTED. SEE SCHEDULE. CARD READER. KEYPAD/CARD READER COMBINATION. EXIT REQUEST. ⊚ ER • RL REMOTE DOOR RELEASE BUTTON. SENSOR, BURIED VEHICULAR. INTERCOM STATION. PANIC DURESS SWITCH.

## 

ABBREVIATIONS						
NOTE: ALL ABBREVIATIONS MAY NOT BE USED.						
1P	SINGLE POLE	LRA	LOCKED ROTOR AMPS			
1PH	SINGLE-PHASE	LTG	LIGHTING			
3/C	THREE-CONDUCTOR	LV	LOW VOLTAGE			
4W	FOUR-WIRE	MATV	MASTER ANTENNA TELEVISION			
Α	ABOVE COUNTER		SYSTEM			
ADJ	ADJACENT	MAX	MAXIMUM			
AFF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMPS			
AFG	ABOVE FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER			
AIC	AMPERE INTERRUPTING	MCC	MOTOR CONTROL CENTER			
	CAPACITY	MCP	MOTOR CIRCUIT PROTECTION			
ALUM	ALUMINUM	MDP	MAIN DISTRIBUTION PANEL			
AMP	AMPERE	MG	MOTOR GENERATOR			
ANN	ANNUNCIATOR	MH	MANHOLE			
AP	ACCESS POINT (WIRELESS DATA)	MIN	MINIMUM			
AR	AS REQUIRED	MLO	MAIN LUGS ONLY			
AR ASC	AS REQUIRED AMPS SHORT CIRCUIT	MOCP	MAXIMUM OVERCURRENT PROTECTION			
ASC ATS	AUTOMATIC TRANSFER SWITCH	NA	NOT APPLICABLE			
ATS AV	AUDIO VISUAL	NC NC	NORMALLY CLOSED			
AV AWG	AMERICAN WIRE GAGE	NEC	NATIONAL ELECTRICAL CODE			
AWG C	CEILING MOUNTED	NEMA	NATIONAL ELECTRICAL CODE			
CATV	COMMUNITY ANTENNA	NEIVIA	MANUFACTURERS			
CATV	TELEVISION		ASSOCIATION			
СВ	CIRCUIT BREAKER	NFC	NATIONAL FIRE CODE			
CCBA	CUSTOM COLOR AS SELECTED	NFPA	NATIONAL FIRE PROTECTION			
OODI	BY ARCHITECT		ASSOCIATION			
CCTV	CLOSED CIRCUIT TELEVISION	NIC	NOT IN CONTRACT			
CF/CI	CONTRACTOR FURNISHED/	NL	NIGHT LIGHT			
	CONTRACTOR INSTALLED	NO	NORMALLY OPEN			
CF/OI	CONTRACTOR FURNISHED/	NTS	NOT TO SCALE			
	OWNER INSTALLED	OC	ON CENTER			
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT	OCP OF/CI	OVER CURRENT PROTECTION OWNER FURNISHED/			
CKT	CIRCUIT		CONTRACTOR INSTALLED			
CM CND	CONSTRUCTION MANAGER CONDUIT	OF/OI	OWNER FURNISHED/ OWNER INSTALLED			
CO	CONVENIENCE OUTLET	OFP	OBTAIN FROM PLANS			
CP	CONTROL PANEL	OH DR	OVERHEAD (COILING) DOOR			
CT	CURRENT TRANSFORMER	OL	OVERLOAD			
CTV	CABLE TELEVISION	PB	PUSHBUTTON			
CU	COPPER	PF	POWER FACTOR			
DPDT	DOUBLE THROW DOUBLE THROW	PH	PHASE			
_^		PNL	PANEL			
EA EM	EACH EMERGENCY	PT	POTENTIAL TRANSFORMER			
⊏ivi EMT	ELECTRICAL METALLIC TUBING	PTZ	PAN/TILT/ZOOM			
EPO	EMERGENCY POWER OFF	QTY	QUANTITY			
EQUIP	EQUIPMENT	RCP	REFLECTED CEILING PLAN			
EQUIP		RMC	RIGID METAL CONDUIT			
EA F	EXISTING FURNITURE MOUNTED	RMP	ROCKY MOUNTAIN POWER			
r FA	FIRE ALARM	RNC	RIGID NONMETAL CONDUIT			
FCP	FIRE ALARM CONTROL PANEL	RPM	REVOLUTIONS PER MINUTE			
FLA	FULL LOAD AMPS	S/S	START/STOP			
FLA FMC	FLEXIBLE METAL CONDUIT	SCA	SHORT CIRCUIT AMPS			
FOB	FREIGHT ON BOARD	SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT			
FUB FVNR		SF				
I VINT	FULL VOLTAGE NON-REVERSING	SF SFBA	SQUARE FOOT (FEET) STANDARD FINISH AS			
FVR	FULL VOLTAGE REVERSING	SEBA	SELECTED BY ARCHITECT			
G	GROUND	SPDT	SINGLE POLE, DOUBLE THROW			
G GEN	GENERATOR	SPEC	SPECIFICATION			
GEN	GROUND FAULT INTERRUPTER	SPST	SINGLE POLE, SINGLE THROW			
GFP	GROUND FAULT PROTECTION	ST	SINGLE FOLE, SINGLE THROW			
HD	HEAVY DUTY	SWBD	SWITCHBOARD			
HID	HIGH INTENSITY DISCHARGE	SWGR	SWITCHBOARD			
HOA	HAND-OFF-AUTOMATIC	TL	TWIST LOCK			
HD	HORSE POWER	TP	TELEPHONE DOLE			

BASE BID: INSTALL ALL EQUIPMENT, DEVICES, AND FIXTURES AS INDICATED, AND DISREGARD ALL REFERENCES TO DEDUCTIVE ALTERNATE WORK. PROVIDE SPARES

# GENERAL ELECTRICAL NOTES

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.

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.

E	ELECTRICAL SHEET INDEX						
04-EE001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES						
04-EE101	LEVEL 1 ELECTRICAL PLANS - BASE BID						
04-EE101A	LEVEL 1 ELECTRICAL PLANS - ALTERNATE BID						
04-EE102	ELECTRICAL DETAILS AND POWER PLANS						
04-EE601	ELECTRICAL ENERGY CODE COMPLIANCE FORMS						
04-EE701	TYPICAL MOUNTING HEIGHT DETAILS						
04-ES101	ELECTRICAL SITE PLAN						
04-EP601	POWER ONE-LINE DIAGRAM						
04-EP602	PANEL & EQUIPMENT SCHEDULES						
04-EL601	LIGHTING FIXTURE SCHEDULE AND DETAILS						
04-FA601	FIRE ALARM RISER						

# BASE /ALTERNATE BID NOTES

CONDUITS AND PROVISIONS TO FUTURE BUS WASH EQUIPMENT AS INDICATED. DEDUCTIVE ALTERNATE: DO NOT INSTALL EQUIPMENT, DEVICES, AND FIXTURES ASSOCIATED WITH ROOM "BUS WASH PHASE 2 #105". PROVIDE SPARE CONDUITS AND PROVISIONS FOR PHASE 2 BUILDOUT AS INDICATED. USE SHEET 03-EE101 FOR REFERENCE ONLY.

ENGINEERS 324 S. State St., Suite 400 Salt Lake City, UT 84111 800-678-7077 801-328-5151 fax: 801-328-5155

www.spectrum-engineers.com

# **DEFINITIONS**

TELEPHONE POLE

TVSS TRANSIENT VOLTAGE SURGE

UPS UNINTERRUPTIBLE POWER

VFC/VFD VARIABLE FREQUENCY MOTOR

CONTROLLER

TWISTED PAIR TTB TELEPHONE TERMINAL BOARD

SUPPRESSER

TV TELEVISION

UF UNDERFLOOR

UGND UNDERGROUND

SUPPLY

VA VOLT AMPERE

WP WEATHERPROOF

XFMR TRANSFORMER

TYP TYPICAL

V VOLTS

W/ WITH

W/O WITHOUT

HORSE POWER

HIGH VOLTAGE

INPUT/ OUTPUT

IN/IS INSULATED/ ISOLATED

INFRARED

KILOVOLT

KILOWATT

J-BOX JUNCTION BOX

ISOLATED GROUND

KILOVOLT AMPERE

KILOWATT HOUR

LIGHT EMITTING DIODE

LFMC LIQUID TIGHT FLEXIBLE METAL

KILOVOLT AMPERE REACTIVE

INTERMEDIATE METAL

HERTZ

HZ

kVAR

LED

HIGH POWER FACTOR

HIGH PRESSURE SODIUM

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

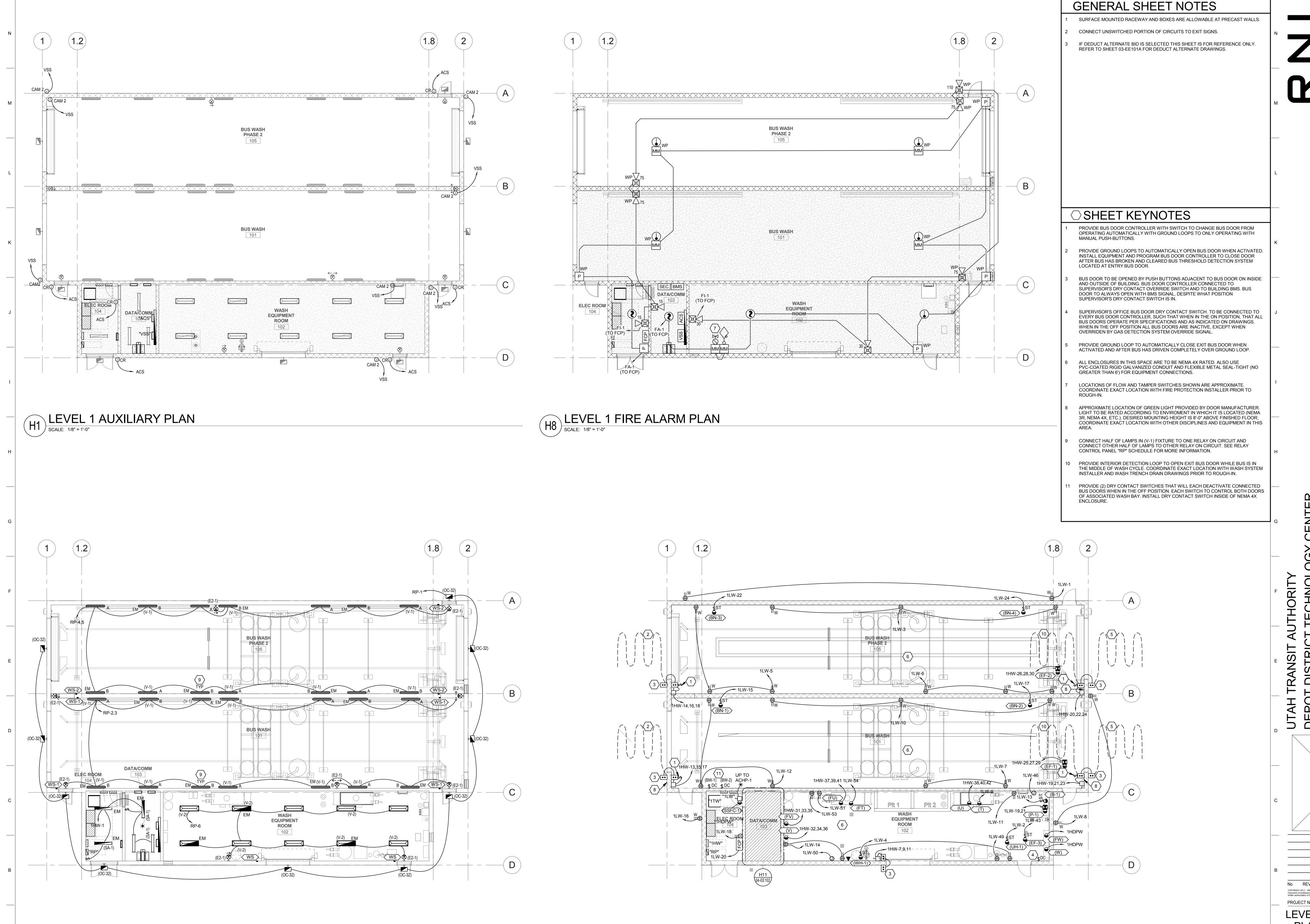
TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS,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

OPERATIONS THEY ARE ENGAGED TO PERFORM.

CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

SHEET INDEX, ABBREVIATIONS, AND **GENERAL NOTES** 



A9 LEVEL 1 POWER PLAN

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

LEVEL 1 LIGHTING PLAN

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



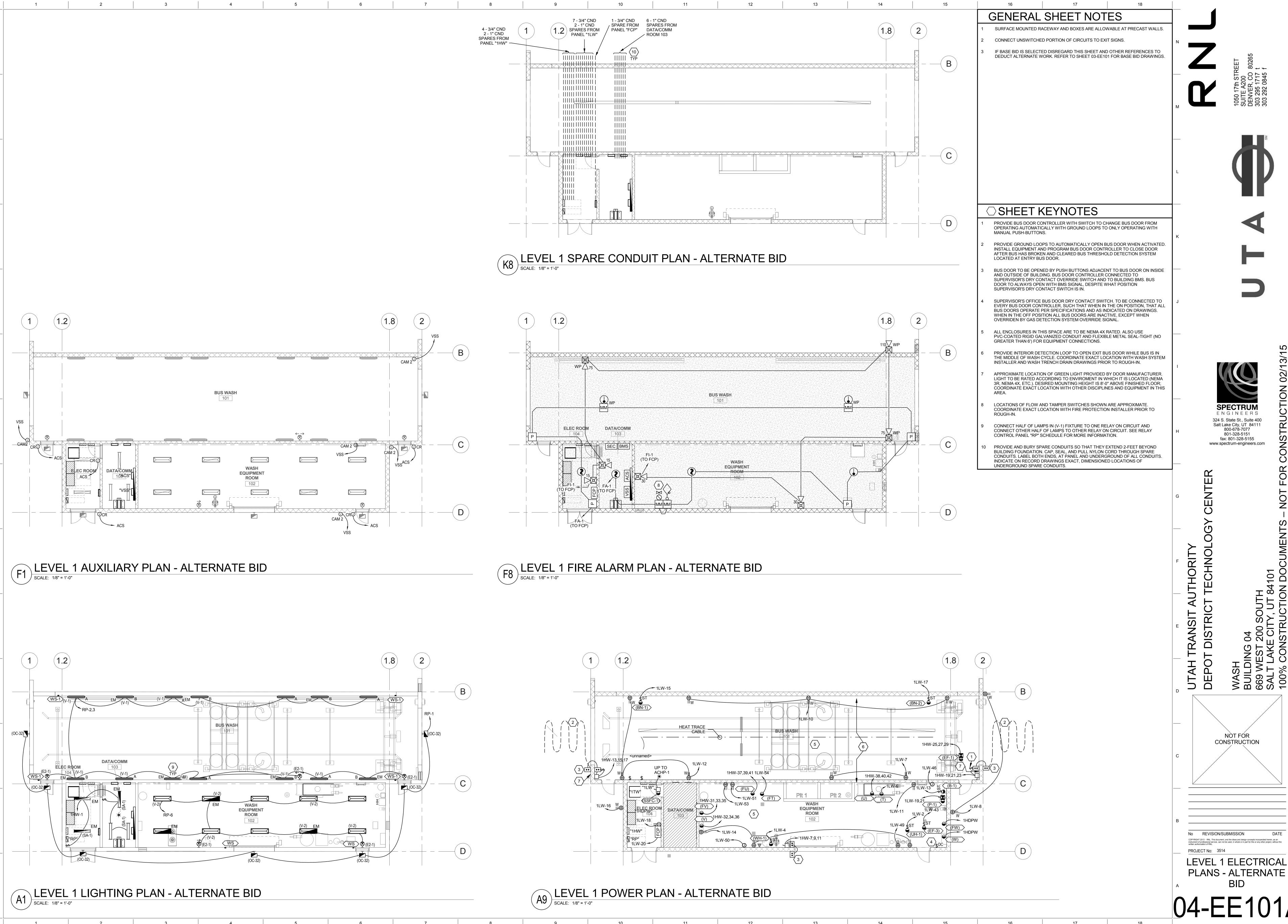
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CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

LEVEL 1 ELECTRICAL PLANS - BASE BID

04-EE101



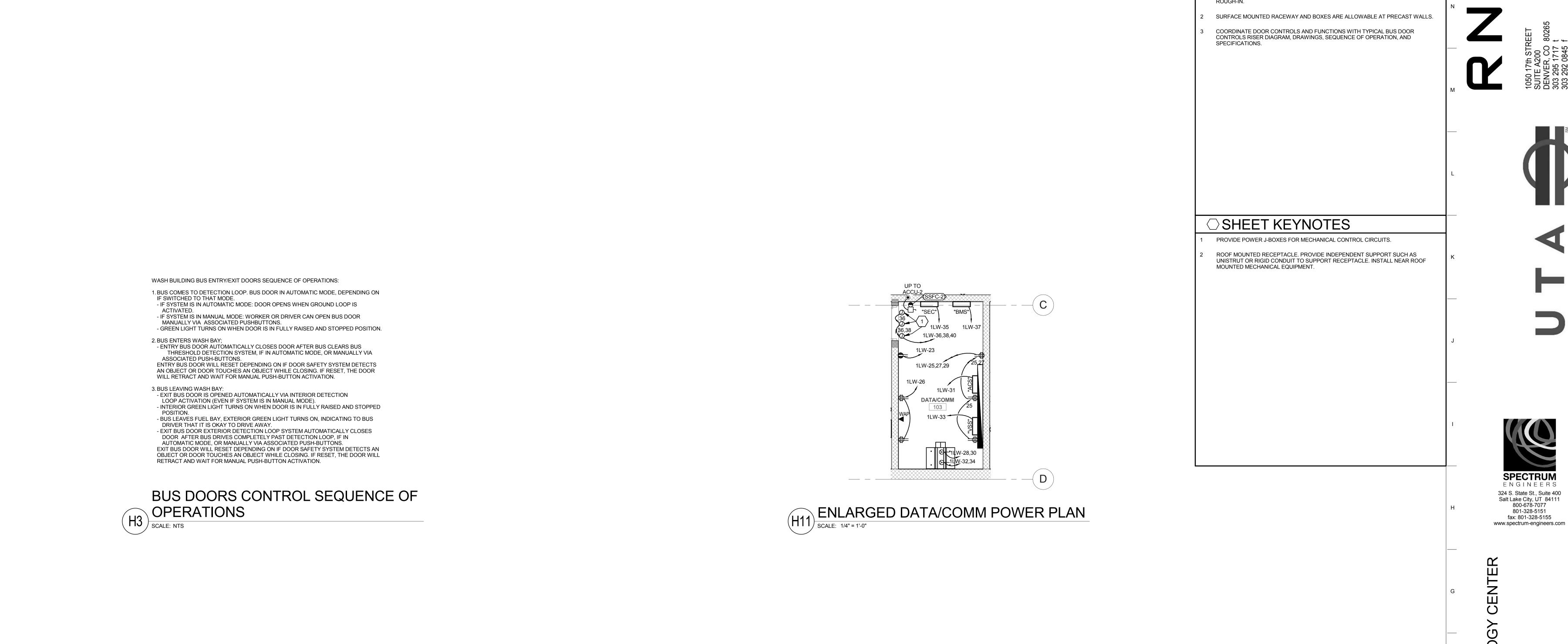


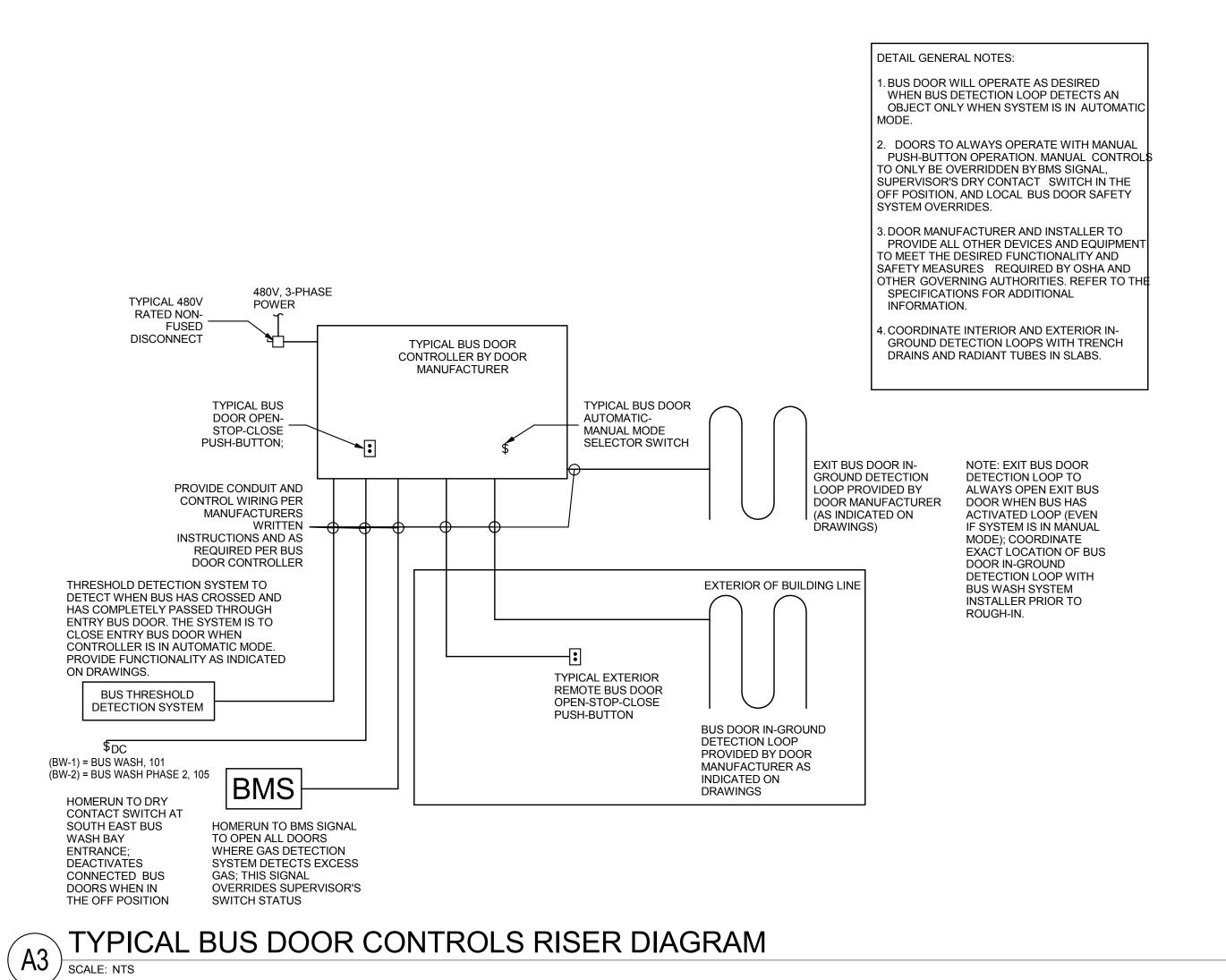
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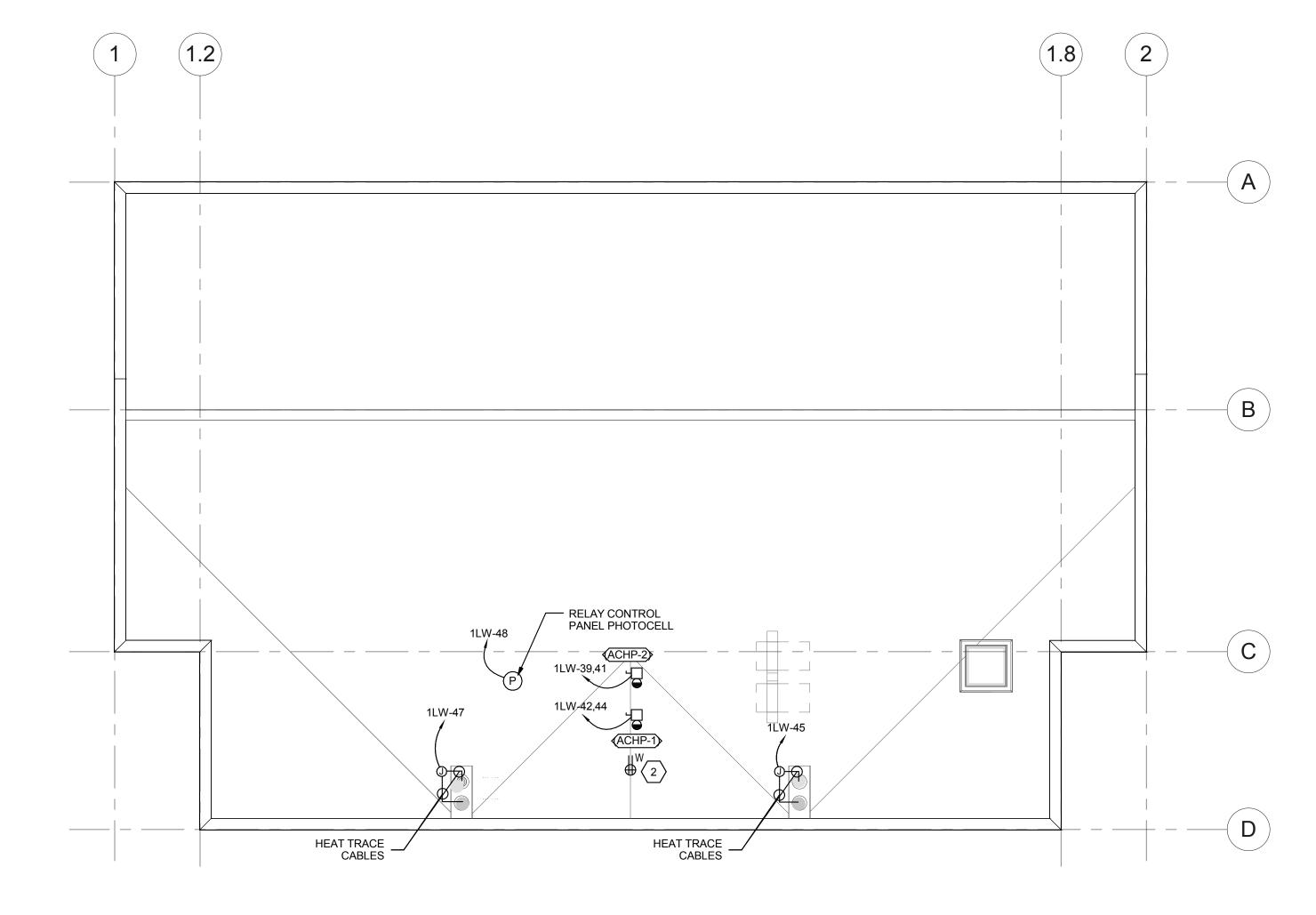
CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514 LEVEL 1 ELECTRICAL

BID 04-EE101A







ROOF POWER PLAN

(A11) ROOF P SCALE: 1/8" = 1'-0" GENERAL SHEET NOTES

LOCATIONS OF MAINTENANCE AND MECHANICAL EQUIPMENT SHOWN IS

APPROXIMATE. FIELD COORDINATE EXACT LOCATIONS OF EQUIPMENT PRIOR TO

04-EE102

**ELECTRICAL DETAILS** 

AND POWER PLANS

No REVISION/SUBMISSION

PROJECT No: 3514

CONSTRUCTION

COMcheck Software Version 3.9.3

#### **2012 IECC**

#### Section 1: Project Information

Project Type: New Construction Project Title: UTA DDTC Wash Building

Construction Site: 669 W 200 S #X

Greg Thorpe Jim Morris Salt Lake City, UT 84111 Utah Transit Authority Spectrum Engineers 324 S State St. Salt Lake City, UT 84111 Suite 400 Salt Lake City, UT 84111

Designer/Contractor:

Additional Efficiency Package: Reduced interior lighting power. Requirements are implicitly enforced within interior lighting allowance calculations.

Section 2: Interior Lighting and Power Calculation

Wash Building (Automotive facility) Total Allowed Watts = 4603

#### Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	(C X I
Wash Building ( Automotive facility 5614 sq.ft.)				
Linear Fluorescent 1: V-1: Spray Down Rated 6-Lamp Fixture: 48" T8 32W: Electronic:	6	28	138	386
Linear Fluorescent 2: SA-1: 48" Industrial Strip Light: 48" T8 32W: Electronic:	2	5	47	23
Linear Fluorescent 3: V-2: Spray Down Rated 2-Lamp Fixture: 48" T8 32W: Electronic:	2	10	47	47
	To	tal Propose	ed Watts =	456
nterior Lighting PASSES: Design 1% better than code.				

#### Section 4: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2012 IECC requirements in COMcheck Version 3.9.3 and to comply with the mandatory requirements in the Requirements Checklist. Jim Morris - EIT

#### Section 5: Post Construction Compliance Statement

Record Drawings and Operating and Maintenance Manuals: ☐ 1. Construction documents with record drawings and operating and maintenance manuals provided to the owner.

Lighting Designer or Contractor Name

Project Title: UTA DDTC Wash Building  Data filename: P:\2013\20130237\0Quality Control\Design and Calculations\16Electrical\Lighting\COMcheck\UTA WASI	Report date: 12/23/14 H
COMCHECK.cck	Page 1 of 2

2012 IECC	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
1	Automatic controls to shut off all building lighting installed in all	□Complies □Does Not	Exception: Lighting controlled by occupancy sensors.
[EL22] <sup>2</sup>	buildings.	□Not Observable □Not Applicable	1 1 5 1 1
C405.2.1. 1 [EL23] <sup>2</sup>	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and	□Complies □Does Not	Requirement will be met.
	visible to occupants.	□Not Observable □Not Applicable	
C405.2.1. 2 EL151 <sup>1</sup>	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	□Complies □Does Not	<b>Exception:</b> Corridors, equipment rooms, storerooms, restrooms, public lobbies, electrical or mechanical rooms.
		□Not Observable □Not Applicable	
C405.2.2. 3 [EL16] <sup>2</sup>	Daylight zones provided with individual controls that control the lights independent of general area	□Complies □Does Not	<b>Exception:</b> Requirement does not apply.
LLIO	lighting.	□Not Observable □Not Applicable	
C405.2.3 [EL17] <sup>3</sup>	Sleeping units have at least one master switch at the main entry door that controls wired luminaires and	□Complies □Does Not	Exception: Requirement does not apply.
	switched receptacles.	□Not Observable □Not Applicable	
C405.2.2. 2	05.2.2. Occupancy sensors installed in required spaces.  18]1	□Complies □Does Not	Requirement will be met.
[ELIO].		□Not Observable □Not Applicable	
3	5.2.2. Primary sidelighted areas are equipped with required lighting controls.	□Complies □Does Not	Exception: Requirement does not apply.
[EL20] <sup>1</sup>		□Not Observable □Not Applicable	
C405.2.2.	Enclosed spaces with daylight area under skylights and rooftop monitors	□Complies □Does Not	Exception: Requirement does not apply.
[EL21] <sup>1</sup>	are equipped with required lighting controls.	□Not Observable □Not Applicable	1 2 3 4 4 1
C405.2.4 [EL25] <sup>2</sup>	Automatic lighting controls for exterior lighting installed.	□Complies □Does Not	Requirement will be met.
		□Not Observable □Not Applicable	1 2 5 6 7
C405.2.3 [EL4] <sup>1</sup>	Separate lighting control devices for specific uses installed per approved	□Complies □Does Not	Requirement will be met.
	lighting plans.	□Not Observable □Not Applicable	
C405.3 [EL19] <sup>3</sup>	Fluorescent luminaires with odd numbered lamp configurations that	□Complies □Does Not	Requirement will be met.
are with 10 feet center to center (if recess mounted) or are within 1 foot edge to edge (if pendant or surface mounted) shall be tandem wired.		□Not Observable □Not Applicable	
C405.4 [EL6] <sup>1</sup>	Exit signs do not exceed 5 watts per face.	□Complies □Does Not	Requirement will be met.
		□Not Observable □Not Applicable	1 1 1 1 1
C405.6 [EL24] <sup>1</sup>	Exterior grounds lighting over 100 W provides >60 lm/W unless on motion sensor or fixture is exempt from scope	□Complies □Does Not	Requirement will be met.
E de la companya de l	of code or from external LPD.	□Not Observable □Not Applicable	

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)		
Project	UTA DDTC Wash Building				Repo	ort date: 12/2:	3/1
Data	P:\2013\20130237\0Quality_Coleck\UTA WASH COMCHECK.cck		Design_and_Calculation	s\16	Electrical\Lighting\COMc	h Page 3 of	5



#### **2012 IECC**

#### Section 1: Project Information

Project Type: New Construction Project Title: UTA DDTC Wash Building
Exterior Lighting Zone: 2 (Light industrial area with limited nighttime use)

Construction Site: Owner/Agent: Designer/Contractor: Greg Thorpe Utah Transit Authority 669 W 200 S #X Jim Morris Salt Lake City, UT 84111 Spectrum Engineers 669 W 200 S 324 S State St. Salt Lake City, UT 84111 Suite 400

## allowance calculations.

Section 2: Exterior Lighting Area	/Surface Power	Calculation	on		
A Exterior Area/Surface	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B x C)	F Proposed Watts
Driveway	3758 ft2	0.06	Yes	225	495
JS 199		Total Trac	lable Watts* =	225	495
		Total All	lowed Watts =	225	
	Total Allo	wed Suppleme	ntal Watts** =	600	

Additional Efficiency Package: Reduced interior lighting power. Requirements are implicitly enforced within interior lighting

Salt Lake City, UT 84111

\* Wattage tradeoffs are only allowed between tradable areas/surfaces. \*\* A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

#### Section 3: Exterior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	(C X D)
Driveway (3758 ft2): Tradable Wattage				
LED 1: OC-32: Surface Mounted Over Door: LED Panel 55W:	1	9	55	495
	Total Tradab	le Propose	ed Watts =	495

#### Section 4: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2012 IECC requirements in COMcheck Version 3.9.3 and to comply with the mandatory requirements in the Requirements Checklist. Sim Momi 12-22-2014 Jim Morris - EIT

Name - Title	Signature	Date

Project Title: UTA DDTC Wash Building	Report date: 12/23/14
Data filename: P:\2013\20130237\0Quality Control\Design and Calculations'	\16Electrical\Lighting\COMcheck\UTA WASH
COMCHECK.cck	Page 2 of

2012 IECC	Rough-In Electrical Inspection	Complies?	Comments/Assumptions	
[EL8]1	Additional interior lighting power allowed for special functions per the	□Complies □Does Not	Requirement will be met.	
	approved lighting plans and is automatically controlled and separated from general lighting.	□Not Observable □Not Applicable		

[EL8] <sup>1</sup>	allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	□Does Not □Not Observable □Not Applicable	
Addition	al Comments/Assumptions:		

	1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project	UTA DDTC Wash Building Report date: 12/23/1
Data	P:\2013\20130237\0Quality_Control\Design_and_Calculations\16Electrical\Lighting\COMch Page 4 of

eck\UTA WASH COMCHECK.cck

ect	UTA DDTC Wash Building Repo	ort	12/23/	/14
a	P:\2013\20130237\0Quality_Control\Design_and_Calculations\16Electrical\Lighting\COMch	Page	e 5 of	5

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

#### COMcheck Software Version 3.9.3 **Inspection Checklist** Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COMcheck software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Complies?

☐Not Observable □Not Applicable

□Does Not

C405.6.2 Exterior lighting power is consistent [FI19]<sup>1</sup> Exterior lighting power is consistent with what is shown on the approved Does Not

□Not Observable □Not Applicable

□Not Observable □Not Applicable

☐Not Observable

□Not Applicable

P:\2013\20130237\0Quality\_Control\Design\_and\_Calculations\16Electrical\Lighting\COMch Page 1 of 5

Complies Requirement will be met.

Requirement will be met.

Comments/Assumptions

UTA DDTC Wash Building

eck\UTA WASH COMCHECK.cck

Final Inspection

[FI18]¹ lighting power is consistent with what □Does Not

is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed

lighting plans, demonstrating proposed watts are less than or equal Not Observable Not Applicable

C408.3 Lighting systems have been tested to ensure proper calibration, adjustment, Does Not

electric power systems within 30 days Does Not

C408.2.5. Furnished as-built drawings for

C303.3,C4 Furnished O&M instructions for

08.2.5.2 systems and equipment to the

[FI17]<sup>3</sup> building owner or designated

to allowed watts.

programming, and operation.

programming, and operation.

Additional Comments/Assumptions:

C408.3 Lighting systems have been tested to Complies

renewable energy consistent with

[FI48]¹ ensure proper calibration, adjustment, □Does Not

[FI34]¹ lighting system, or on-site supply of □Does Not

eck\UTA WASH COMCHECK.cck

what is shown the approved plans.

[FI16]<sup>3</sup> of system acceptance.

representative.

2012 IECC	Plan Review	Complies?	Comments/Assumptions		
C103.2 [PR4] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.		
C103.2 [PR8] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.		
C406 [PR9] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.		

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

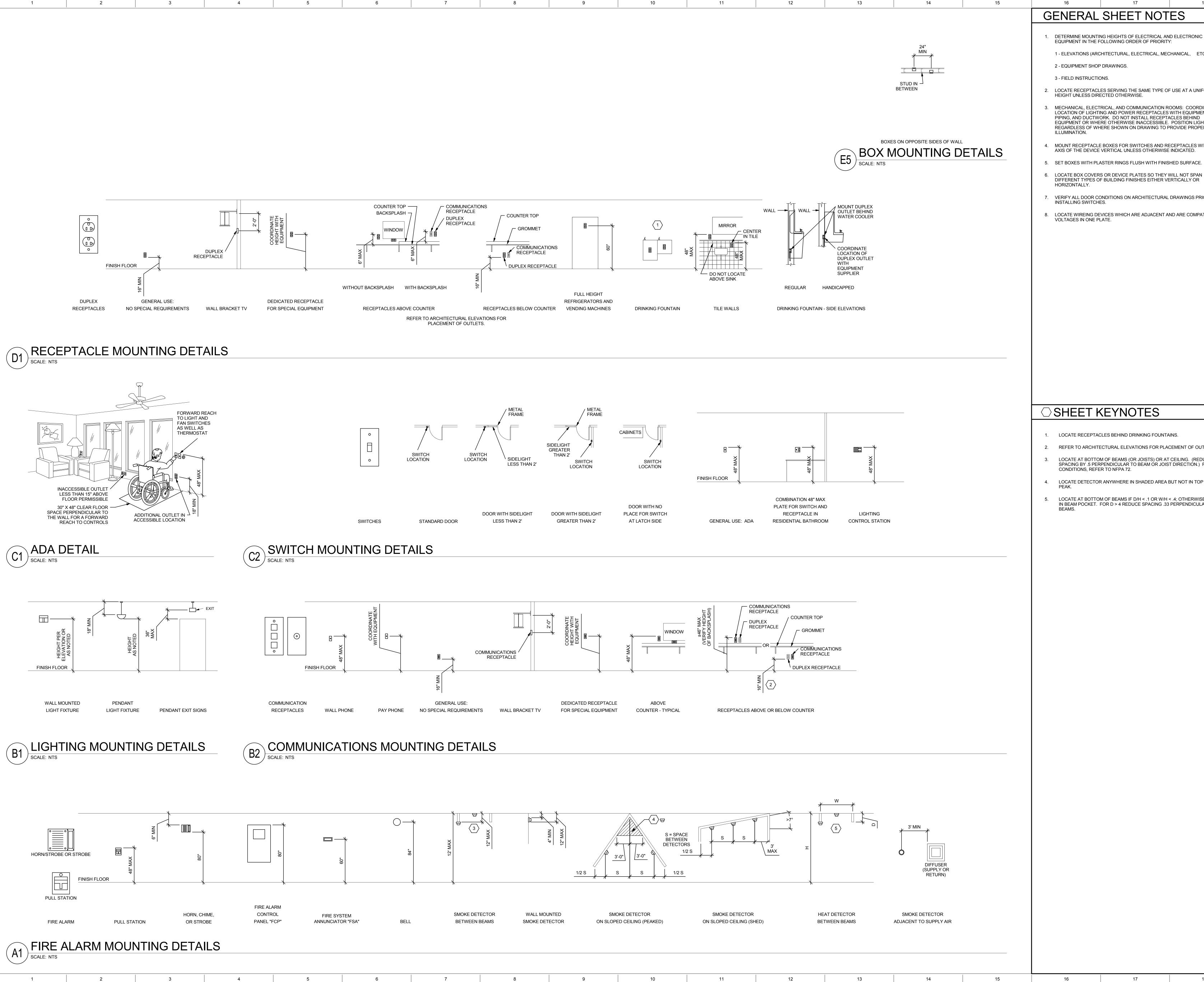
Project UTA DDTC Wash Building P:\2013\20130237\0Quality\_Control\Design\_and\_Calculations\16Electrical\Lighting\COMch Page 2 of 5 eck\UTA WASH COMCHECK.cck

ENGINEERS 324 S. State St., Suite 400 Salt Lake City, UT 84111 800-678-7077 801-328-5151 fax: 801-328-5155 www.spectrum-engineers.com

CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

**ELECTRICAL ENERGY** CODE COMPLIANCE **FORMS** 



# GENERAL SHEET NOTES

1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY: 1 - ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC).

2 - EQUIPMENT SHOP DRAWINGS.

3 - FIELD INSTRUCTIONS.

2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM

- MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER
- 4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
- 5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
- DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
- 7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
- 8. LOCATE WIREING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE

# SHEET KEYNOTES

- LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
- REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
- LOCATE AT BOTTOM OF BEAMS (OR JOISTS) OR AT CEILING. (REDUCE SPACING BY .5 PERPENDICULAR TO BEAM OR JOIST DIRECTION.) FOR OTHER CONDITIONS, REFER TO NFPA 72.
- 4. LOCATE DETECTOR ANYWHERE IN SHADED AREA BUT NOT IN TOP 4" OF
- 5. LOCATE AT BOTTOM OF BEAMS IF D/H < .1 OR W/H < .4; OTHERWISE, LOCATE IN BEAM POCKET. FOR D > 4 REDUCE SPACING .33 PERPENDICULAR TO

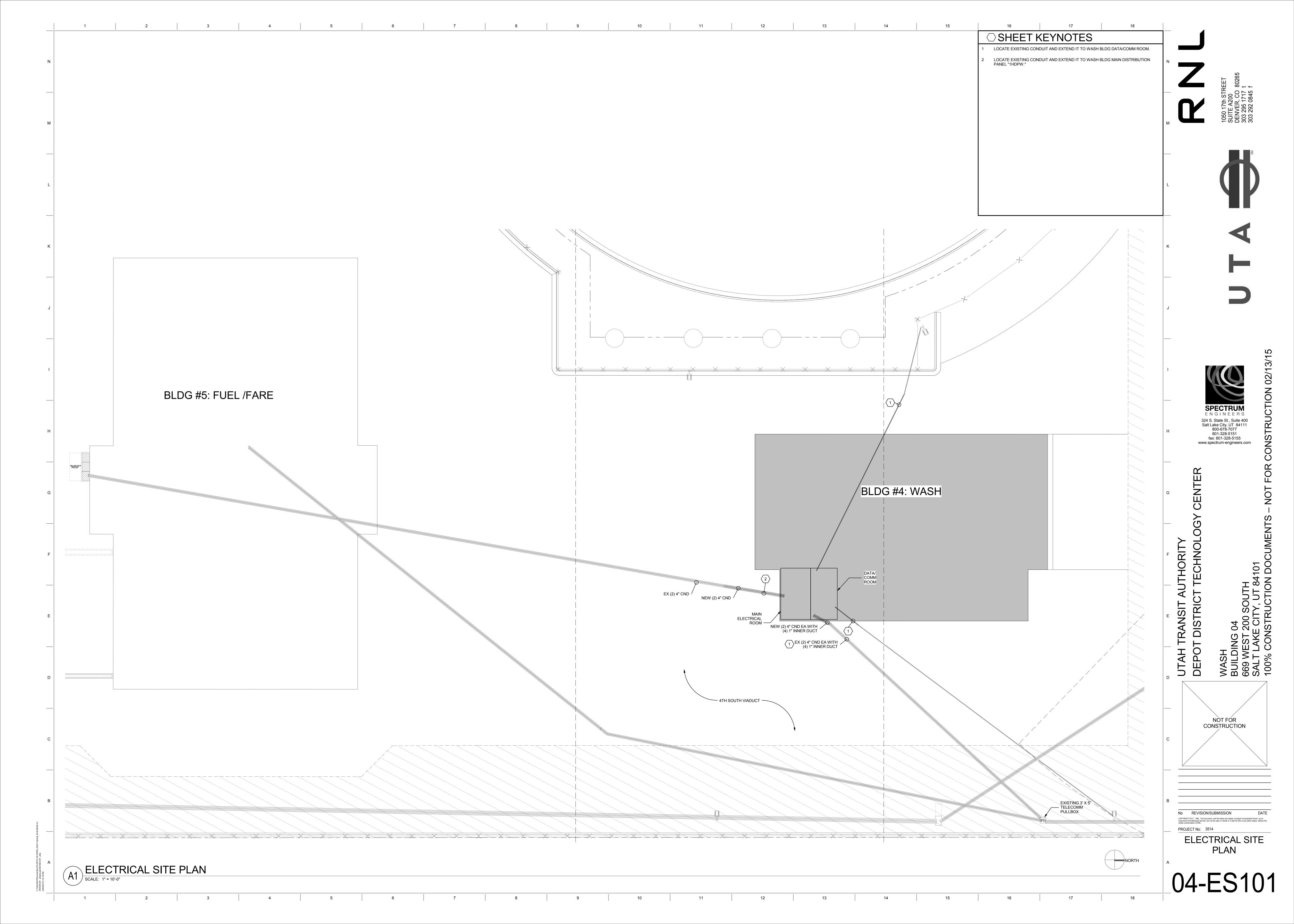
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CONSTRUCTION

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TYPICAL MOUNTING HEIGHT DETAILS

04-EE701

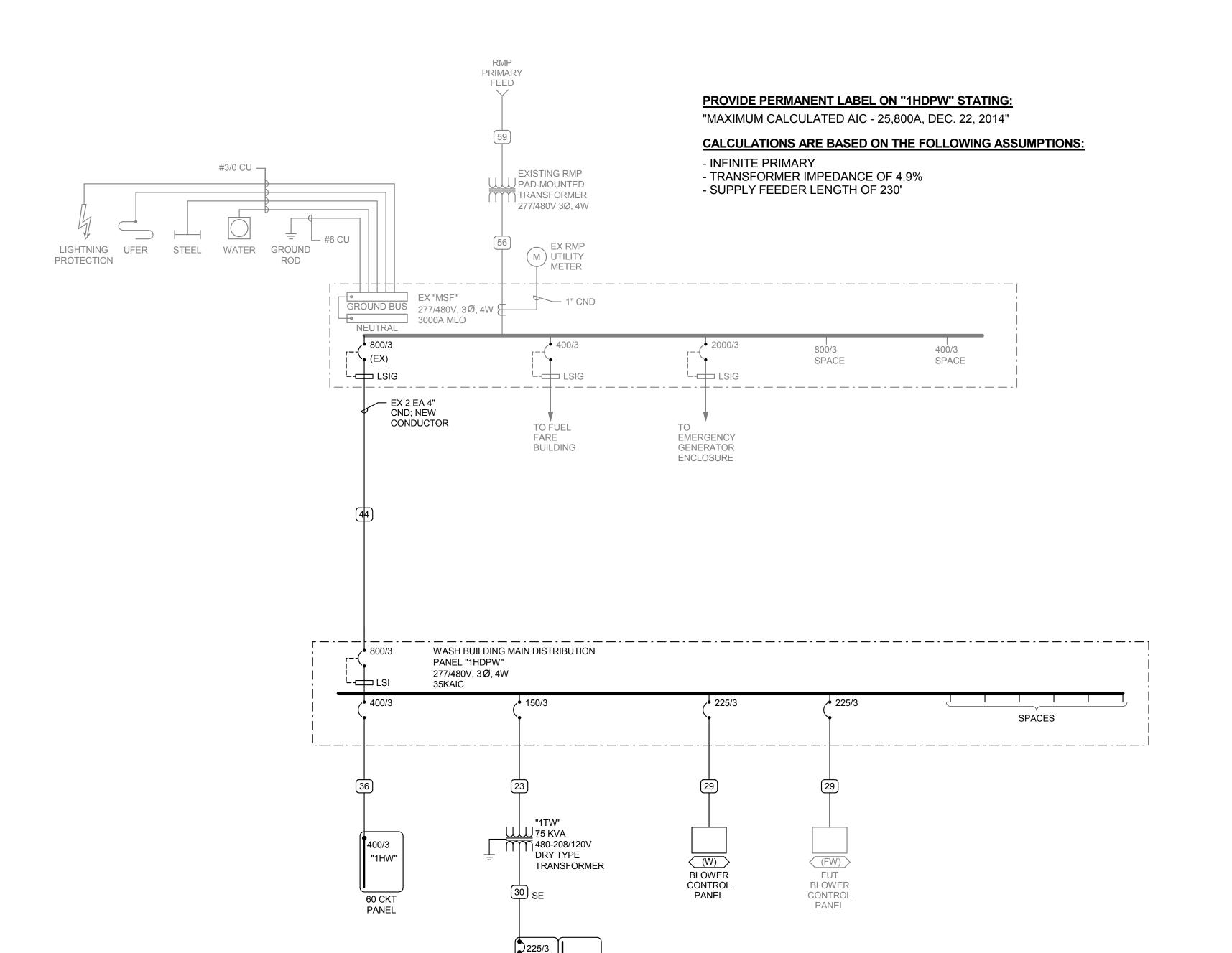


RENT TABLE
FAULT CURRENT
25,800 SCA
25,100 SCA
5,825 SCA

PROVIDE FULLY RATED CIRCUIT BREAKERS IN PANELBOARDS FOR THE OVERCURRENT PROTECTIVE DEVICES ARE PERMITTED SUBJECT TO IF DEVICE OR EQUIPMENT FAULT CURRENT RATING IS NOT SHOWN, ASSUME 100,000 AIC.

FAULT CUR	RENT TABLE
BUS	FAULT CURRENT
1HDPW	25,800 SCA
1HW	25,100 SCA
1LW	5,825 SCA

FAULT CURRENT SHOWN. SERIES RATINGS WITH NEXT LEVEL UPSTREAM FACTORY UL DOCUMENTATION OF SERIES RATING SUBMITTED TO ENGINEER.



"1LW"

# GENERAL SHEET NOTES

SCHEDULE NUMBER

| CONDUIT | CONDUCTOR (NOTE 1) | SYM AMP SIZE QTY SIZE G IG

 1
 20
 .75
 2
 12
 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

70 1 2 4 8 4 2

<u>14</u>] 70 | 1.25 | 3 | 4 | 8 | 4 | 2 70 | 1.25 | 4 | 4 | 8 | 4 | 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

 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
 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

(40) 510 2 EA 3 4 250 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 3.50
 3
 500
 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
 4
 500
 3/0
 4/0
 <

CONDUIT AND CONDUCTOR SCHEDULE NOTES

PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN

AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS

PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING

GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE

CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF

GROUNDING OF THE SECONDARY OF THE SEPARATELY

"2N": INCLUDE TWO NEUTRAL CONDUCTORS, SIZED AS SCHEDULED FOR PHASED AND NEUTRAL CONDUCTORS.

"IG": INCLUDE IG (INSULATED/ISOLATED GROUND

"SE": SUBSTITUTE "SE" CONDUCTOR FOR "G"

RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

CONDUCTOR SHOWN, WHICH IS SIZED FOR THE

EQUIPMENT GROUND CONDUCTOR.

CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS

60 10 EA 4

OTHERWISE NOTED.

COMPUTERS.

CONDUCTORS.

SYMBOL SUBSCRIPTS:

DERIVED SYSTEM.

SUBSCRIPT (NOTE 5)

PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.

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.

ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO SPECIFICATIONS SECTION 16071 FOR REQUIREMENTS.

PROVIDE PERFORMANCE TESTING FOR GROUND-FAULT PROTECTION SYSTEMS ON SITE WITH A WRITTEN RECORD OF THIS TEST SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PER 2011 NEC 230.95(C).

CONDUCTOR AND

CONDUIT SCHEDULE

NOTES





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-JORITY CHNOL

DE CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

POWER ONE-LINE DIAGRAM

ONE-LINE DIAGRAM - WASH BUILDING
SCALE: NTS

E ELECTRICAL CONTRACTOR

Q FURNISHED WITH THE EQUIPMENT

\* COORDINATE WITH MECHANICAL CONTROL INSTALLER

\*\* AUTOMATIC CONTROL WIRING BY MECHANICAL CONTRACTOR

NOTES:

PROVIDE CONDUIT AND CONDUCTORS TO INTERLOCK POWER AND CONTROLS OF INSIDE UNIT WITH OUTSIDE UNIT.

 COORDINATE EXACT POWER CONNECTION AND MEANS OF DISCONNECT WITH MECHANICAL INSTALLER PRIOR TO ORDERING EQUIPMENT.

3. IF ALTERNATE #1 SELECTED, PROVIDE EMPTY RACEWAY TO FUTURE/PHASE 2 EQUIPMENT LOCATION OR STUB CONDUIT OUTSIDE OF BUILDING EXTERIOR. CAP, SEAL, AND LABEL ALL CONDUITS AT BOTH ENDS OF RACEWAY. IF EMPTY RACEWAY IS RUN UNDERGROUND, RECORD, REDLINE, AND LABEL CONDUIT PATH IN RECORD DRAWINGS SET.

4. PROVIDE 1" SPARE CND FROM DATA/COMM ROOM 103 TO J-BOX ADJACENT TO THIS PIECE OF EQUIPMENT. COORDINATE EXACT LOCATION OF J-BOX WITH EQUIPMENT INSTALLER PRIOR TO ROUGH-IN. DATA WIRES TO BE PULLED AND TERMINATED BY OTHERS.

											E	QUIPN	JENT S	SCH	<del>I</del> EDUL	E									UTA DDTC	WASH BUILDING
					LO	AD DAT	Ά				OVERO	CURRENT P	ROTECTION		DISCONN	ECT				5	STARTER	₹				
										14/17-11-1										051 50505	DII 07					
MARK	QTY	ITEM DESCRIPTION	НР	kW	MCA	FLA	VOLT	РН	Hz	WIRE AND CONDUIT SIZE	FURN BY	DEVICE	LOCATION	FURN BY		LOCATION	FURN BY		SIZES	SELECTOR SWITCH	LAMP	OPEN CONTACT	CLOSED CONTACT	FAILURE RELAY	NOTES	MARK
(FT)	1	FUTURE OZONE CONTROL PANEL	-	-	-	15	120	1	60	2 #12, #12 GR 0.75" CND	Е	20/1 CB	1LW	Q		ADJ TO EQUIP	Q								3,4	(FT)
(FU)	1	FUTURE PUMP CONTROL PANEL	-	-	-	60	480	3	60	3 #1, #6 GR 1.5" CND	Е	125/3 CB	1HW	Q		ADJ TO EQUIP	Q								3,4	(FU)
(FV)	1	FUTURE WASH CONTROL PANEL	-	-	-	20	480	3	60	3 #10, #10 GR 0.75" CND	Е	30/3 CB	1HW	Q		ADJ TO EQUIP	Q								3,4	(FV)
(FW)	1	FUTURE BLOWER CONTROL PANEL	(5) 15	-	-	125	480	3	60	3 #4/0, #4 GR 2.5" CND	Е	225/3 CB	1HDPW	Q		ADJ TO EQUIP	Q								3,4	(FW)
(T)	1	OZONE CONTROL PANEL	-	-	-	15	120	1	60	2 #12, #12 GR 0.75" CND	E	20/1 CB	1LW	Q		ADJ TO EQUIP	Q								4	(T)
(U)	1	PUMP CONTROL PANEL	-	-	-	60	480	3	60	3 #1, #6 GR 1.5" CND	E	125/3 CB	1HW	Q		ADJ TO EQUIP	Q								4	(U)
(V)	1	WASH CONTROL PANEL	-	-	-		480	3	60	3 #10, #10 GR 0.75" CND	E	30/3 CB	1HW	Q		ADJ TO EQUIP	Q								4	(V)
(W)	1	BLOWER CONTROL PANEL	(5) 15	-	-		480	3	60	3 #4/0, #4 GR 2.5" CND	E	225/3 CB	1HDPW	Q		ADJ TO EQUIP	Q								4	(W)
(ACHP-1)		ROOF-TOP CONDENSING UNIT	-	-	-		208	1	60	2 #10, 10 GR 0.75" CND	E	30/2 CB	1LW	E	30A/2P NF	1LW	Q								1	(ACHP-1)
(ACHP-2)	1	ROOF-TOP CONDENSING UNIT	-	-	-	14	208	1	60	2 #10, 10 GR 0.75" CND	E	30/2 CB	1LW	E	30A/2P NF	1LW	Q								1	(ACHP-2)
(B-1)	1	BOILER	-	-	-	5	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q									(B-1)
(BN-1)	1	RADIANT TUBE HEATER BURNER	-	-	-	1.2	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q									(BN-1)
(BN-2)	1	RADIANT TUBE HEATER BURNER	-	-	-		120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q									(BN-2)
(BN-3)	1	RADIANT TUBE HEATER BURNER (PHASE 2)	-	-	-		120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q								3	(BN-3)
(BN-4)	1	RADIANT TUBE HEATER BURNER (PHASE 2)	-	-	-		120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q								3	(BN-4)
(EF-1)	1	EXHAUST FAN	1.5	-	-	3	480	3	60	3 #12, #12GR 0.75" CND	E	20/3 CB	1HW	E	30A/3P NF	1HW	E	FVNR		НОА	R,G	2	2	YES		(EF-1)
(EF-2)	1	EXHAUST FAN (PHASE 2)	1.5	-	-		480	3	60	3 #12, #12GR 0.75" CND	E	20/3 CB	1HW	E	30A/3P NF	1HW	E	FVNR	0	НОА	R,G	2	2	YES	3	(EF-2)
(EF-3)	1	EXHAUST FAN	1/2	-	-	9.8	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q									(EF-3)
(P-1)	1	PUMP	1/2	-	-		208	1	60	2 #12, 12 GR 0.75" CND	E	20/2 CB	1LW	E	30A/2P NF	1LW	E	FVNR	0	НОА	R,G	2	2	YES		(P-1)
(SSFC-1)		INDOOR FAN COIL UNIT	-	-	-		208	1	60	2 #12, 12 GR 0.75" CND	E	20/2 CB	1LW	E	30A/2P NF	1LW	Q									(SSFC-1)
(SSFC-2)	1	INDOOR FAN COIL UNIT	-	-	-		208	1	60	2 #12, 12 GR 0.75" CND	E	20/2 CB	1LW	Е	30A/2P NF	1LW	Q									(SSFC-2)
(UH-1)	1	GAS FIRED UNIT HEATER	1/12	-	-	2.5	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q									(UH-1)
(WH-1)	1	GAS FIRED WATER HEATER	1/12	-	-	2.5	120	1	60	2 #12, 12 GR 0.75" CND	Е	20/1 CB	1LW	E	THERMAL SWITCH	1LW	Q								2	(WH-1)

OLT:	S/PHAS	SE/WIR	E: F	PANEL	SIZE	& TYPE: MAIN SIZE AND	TYPE	:		LOC	ATIOI	N:	CABINET:		N	OTES	<b>:</b> :		
80/27	77 V, 3	PH 4 W	IRE 2	22" W x	6" D,	BOLT-ON 400 AMPERE LU	JG			ELEC	ROC	OM 10	04 SURFACE						
CCE	SSORI	ES:	F	PANEL	DIRE	CTORY, IDENTIFICATION, GROUNDI	NG BA	ιR					AIC	RAT	ING: 2	5,100	SCA		
СКТ	0	СР	LC	AD (k	/A)			Р	HASE	LOA	D			LC	OAD (k\	/A)	00	CP CP	СК
NO	AMP	POLE	LTG	PWR	СО	DESCRIPTION		A	E	3	(	•	DESCRIPTION	СО	PWR	LTG	POLE	AMP	NC
1	20	1	0.3	0	0	LTG: ELEC, DATA/COMM RM 104,	. 0.3	0.6					LTG: EXTERIOR ABOVE DOORS (RP-1)	0	0	0.6	1	20	2
3	20	1				SPARE			0.0	2.0			LTG: BUS WASH 101 (RP-2,3)	0	0	2	1	20	4
5	20	1				SPARE					0.0	2.0	LTG: BUS WASH 105 (RP-4,5) (NOTE 1)	0	0	2	1	20	6
7	20	3	0	4.2	0	PWR: E GAR DOOR WASH EQUIP	. 1.4	0.5					LTG: WASH EQUIP ROOM 102 (RP-6)	0	0	0.5	1	20	8
9									1.4	0.0			SPARE				1	0	10
11											1.4	0.0	SPARE				1	0	12
13	20	3	0	4.2	0	PWR: SE BUS DOOR WASH 101	1.4	1.4					PWR: SW BUS DR WASH 105 (NOTE 1)	0	4.2	0	3	20	14
15									1.4	1.4			-						16
17											1.4	1.4							18
19	20	3	0	4.2	0	PWR: NE BUS DOOR WASH 101	1.4	1.4					PWR: NW BUS DR WASH 105 (NOTE 1)	0	4.2	0	3	20	20
21									1.4	1.4									22
23											1.4	1.4							24
25	20	3	0	2.5	0	MTR: (EF-1) BUS WASH 101	0.8	0.8					MTR: (EF-2) BUS WASH 105 (NOTE 1)	0	2.5	0	3	20	26
27									0.8	0.8									28
29											0.8	8.0							30
31	40	3	0	16.6	0	MTR: (FV) WASH CNTRL - WASH	5.5	5.5					MTR: (V) WASH CNTRL - WASH EQUIP	0	16.6	0	3	40	32
33									5.5	5.5									34
35											5.5	5.5							36
37	100	3	0	49.9	0	MTR: (FU) FUT PUMP CNTRL - WA.	.  16.6	16.6					MTR: (U) PUMP CNTRL PNL - WASH	0	49.9	0	3	100	38
39									16.6	16.6									40
41											16.6	16.6							42
43	20	1				SPARE	0.0	0.0					SPARE				1	20	44
45	20	1				SPARE			0.0	0.0			SPARE				1	20	46
47	20	1				SPARE					0.0	0.0	SPARE				1	20	48
49	20	1				SPARE	0.0	0.0					SPARE				1	20	50
51	20	1				SPARE			0.0	0.0			SPARE				1	20	52
53	20	1				SPARE					0.0	0.0	SPARE				1	20	54
55	20	1				SPARE	0.0	0.0	0.0	0.0			SPARE				1	20	56
57	20	1				SPARE			0.0	0.0	0.0	0.0	SPARE				1	20	58
59	20	1				SPARE						0.0	SPARE				1	20	60
OTA		SIFIED L	_OAD	CALC	ULAT	CONNECTED KVA PER PHAS CONNECTED AMPS PER PHAS IONS		54 96		5 99	5 19		CONNECT AVERAGE CONNECTED AME						
LIGH			REC	EPTAC	CLES:	- FII		)kVA (	@ 100	)%, RI	EMAI	NDER	% DIVERSIFI R @ 50% AVERAGE AMF OTHER LOADS WITH						

. CIRCUIT NOT INSTALLED IF ALTERNATE #1 SELECTED. PROVIDE CIRCUIT BREAKER AND SPARE CONDUIT ONLY, SEE SHEET 03-EE101A.

OLT	S/PHA	SE/WIRE	≣:  F	PANEL	SIZE	& TYPE: MAIN SIZE AND	TYPE	:		LOC	ATIOI	N:	CABINET:		N	OTES	<b>S</b> :		
20/20	)8V, 3 F	PH 4 WII	RE 2	22" W x	6" D,	BOLT-ON 225 AMPERE CIR	CUIT	BRE	AKER	ELEC	CRO	OM 10	94 SURFACE						
CCE	SSORI	ES:	F	PANEL	DIRE	CTORY, IDENTIFICATION, GROUNDIN	G BA	.R					AIC	RATI	<b>NG</b> : 5	,825 S	SCA .		
KT	0	СР	LC	OAD (k\	/A)			Р	HASE	LOA	'D			LO	AD (k\	Ð	СКТ		
NO	AMP	POLE	LTG	PWR	СО	DESCRIPTION	1	A	E	3	(	;	DESCRIPTION	СО	PWR	LTG	POLE	AMP	NO
1	20	1	0	0	0.4	CO: EXTERIOR (NOTE 2)	0.4	0.4					PWR: (UH-1) WASH EQUIP RM 102	0	0.4	0	1	20	2
3	20	1	0	0	0.5	CO BUS WASH 105 (NOTE 2)			0.5	0.4			PWR: (WH-1) WASH EQUIP RM 102	0	0.4	0	1	20	4
5	20	1	0	0	0.5	CO: BUS WASH 105 (NOTE 2)					0.5	0.5	CO: BUS WASH 105 (NOTE 2)	0.5	0	0	1	20	6
7	20	1	0	0	0.4	CO: BUS WASH 101	0.4	0.4					CO: EXTERIOR	0.4	0	0	1	20	8
9	20	1	0	1.8	0	MTR: (T) OZONE GEN WASH EQUI			1.8	0.5	4.0		CO: BUS WASH 101	0.5	0	0	1	20	10
11	20	1	0	1.8	0	PWR: (X) COMP WASH EQUI RM 102		0.5			1.8	0.5	CO: BUS WASH 101	0.5	0	0	1	20	12
13 15	20 20	1	0	0.6	0	PWR: (B-1) WASH EQUIP RM 102 PWR: (BN-1) BUS WASH 101	0.6	0.5	0.2	0.2			CO: WASH EQUIPMENT RM 102 CO: EXTERIOR	0.5	0	0	1	20	14 16
17	20	1	0	0.2	0	PWR: (BN-2) BUS WASH 101			0.2	0.2	0.2	0.2	CO: EXTERIOR  CO: ELEC ROOM 104	0.2	0	0	1	20	18
19	20	2	0	1.1	0	MTR: (P-1) WASH EQUIP RM 102	0.6	0.5			0.2	0.2	PWR: FPS PANEL	0.2	0.5	0	1	20	20
21							0.0	0.5	0.6	0.2			PWR: (BN-3) BUS WASH 105 (NOTE 2)	0	0.3	0	1	20	22
23	20	1	0	0	0.2	CO: DATA/COMM 103			3.0	٥.٢	0.2	0.2	PWR: (BN-4) BUS WASH 105 (NOTE 2)	0	0.2	0	1	20	24
25	20	1	0	0	0.4	CO: DATA/COMM 103	0.4	0.7			0.2	0.2	CO: DATA/COMM 103	0.7	0	0	1	20	26
27	20	1	0	0	0.4	CO: DATA/COMM 103			0.4	0.3			PWR: RACK DATA/COMM 103	0	0.5	0	2	20	28
29	20	1	0	0	0.4	CO: DATA/COMM 103					0.4	0.3							30
31	20	1	0	1	0	PWR: ACS PANEL	1.0	0.3					PWR: RACK DATA/COMM 103	0	0.5	0	2	20	32
33	20	1	0	1	0	PWR: VSS PANEL			1.0	0.3									34
35	20	1	0	1	0	PWR: SEC PANEL					1.0	0.5	PWR: MECH CKT DATA/COMM 103	0	0.5	0	1	20	36
37	20	1	0	1	0	PWR: BMS PANEL	1.0	0.5					PWR: MECH CKT DATA/COMM 103	0	0.5	0	1	20	38
39	20	2	0	3.2	0	MTR: (ACCU-2) ROOF/ DATA/COM			1.6	0.5			PWR: MECH CKT DATA/COMM 103	0	0.5	0	1	20	40
41											1.6	1.6	MTR: (ACCU-1) ROOF/ELEC 104	0	3.2	0	2	20	42
43	20	1	0	1.2	0	PWR: (EF-3) WASH EQUIP RM 102	1.2	1.6											44
45	20	1	0	0.9	0	PWR: HEAT TRC ROOF 1 (NOTE 1)			0.9	1.5			PWR: GAS DTCN SYS - WASH EQUIP	0	1.5	0	1	20	46
47	20	1	0	0.9	0	PWR: HEAT TRC ROOF 2 (NOTE 1)	4.0	4.0			0.9	0.0	PWR: RP PNL PHOTOCELL - ROOF	0	0	0	1	20	48
49	20	1	0	1.8	0	PWR: (R) WATER SOFTENER WAS	1.8	1.0	1.0	0.0			PWR: SAND OIL CNTRL PNL WASH EQ SPARE	0	1	0	1	20	50
51 53	20 20	1	0	1.9	0	PWR: (I) DET MIXING SYSTEM PWR: (FI) FUT DET MIXING SYSTEM			1.9	0.0	1.9	1 0	MTR: (FT) FUT OZNE GEN WASH EQUI	0	 1.8	0	1	20	52 54
55	20	1		1.9		SPARE	0.0	0.0			1.9	1.0	SPARE		1.0	0	1	20	56
57	20	1				SPARE	0.0	0.0	0.0	0.0			SPARE				1	20	58
59	20	1				SPARE			0.0	0.0	0.0	0.0	SPARE				1	20	60
61	20	1				SPARE	0.0	0.0			0.0	0.0	SPARE				1	20	62
63	20	1				SPARE			0.0	0.0			SPARE				1	20	64
65	20	1				SPARE					0.0	0.0	SPARE				1	20	66
67	20	1				SPARE	0.0	0.0					SPARE				1	20	68
69	20	1				SPARE			0.0	0.0			SPARE				1	20	70
71	20	1				SPARE					0.0	0.0	SPARE				1	20	72
73	20	1				SPARE	0.0	0.0					SPARE				1	20	74
75	20	1				SPARE			0.0	0.0			SPARE	-			1	20	76
77						SPACE					0.0	0.0	SPACE						78
79						SPACE	0.0	0.0					SPACE						80
81						SPACE			0.0	0.0	0.0	0.0	SPACE						82
83						SPACE SPACE				2	0.0		SPACE	 			 25		84
ОТА	LS:					CONNECTED AMPS DEP PHASE		13		3	1		CONNECTED AME						
IFO !	אוויריי	SIFIED L		CALC	A T	CONNECTED AMPS PER PHASE	1	10	10	)5	1′	ΙŎ	AVERAGE CONNECTED AMP	-2 PE	K PHA	%E =	90		

MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

. PROVIDE 30 MILLIAMP GFCI CIRCUIT BREAKER. .. CIRCUIT NOT INSTALLED IF ALTERNATE #1 SELECTED. PROVIDE CIRCUIT BREAKER AND SPARE CONDUIT ONLY, SEE SHEET 03-EE101A.

ALL OTHER LOADS @ 100% : 29.3 kVA

**Z** 

1050 17th STREE SUITE A200 DENVER, CO 80 303 295 1717 t





OT DISTRICT TECHNOLOGY CENTER

JING 04

WASH SALT LA SALT LA SALT LA

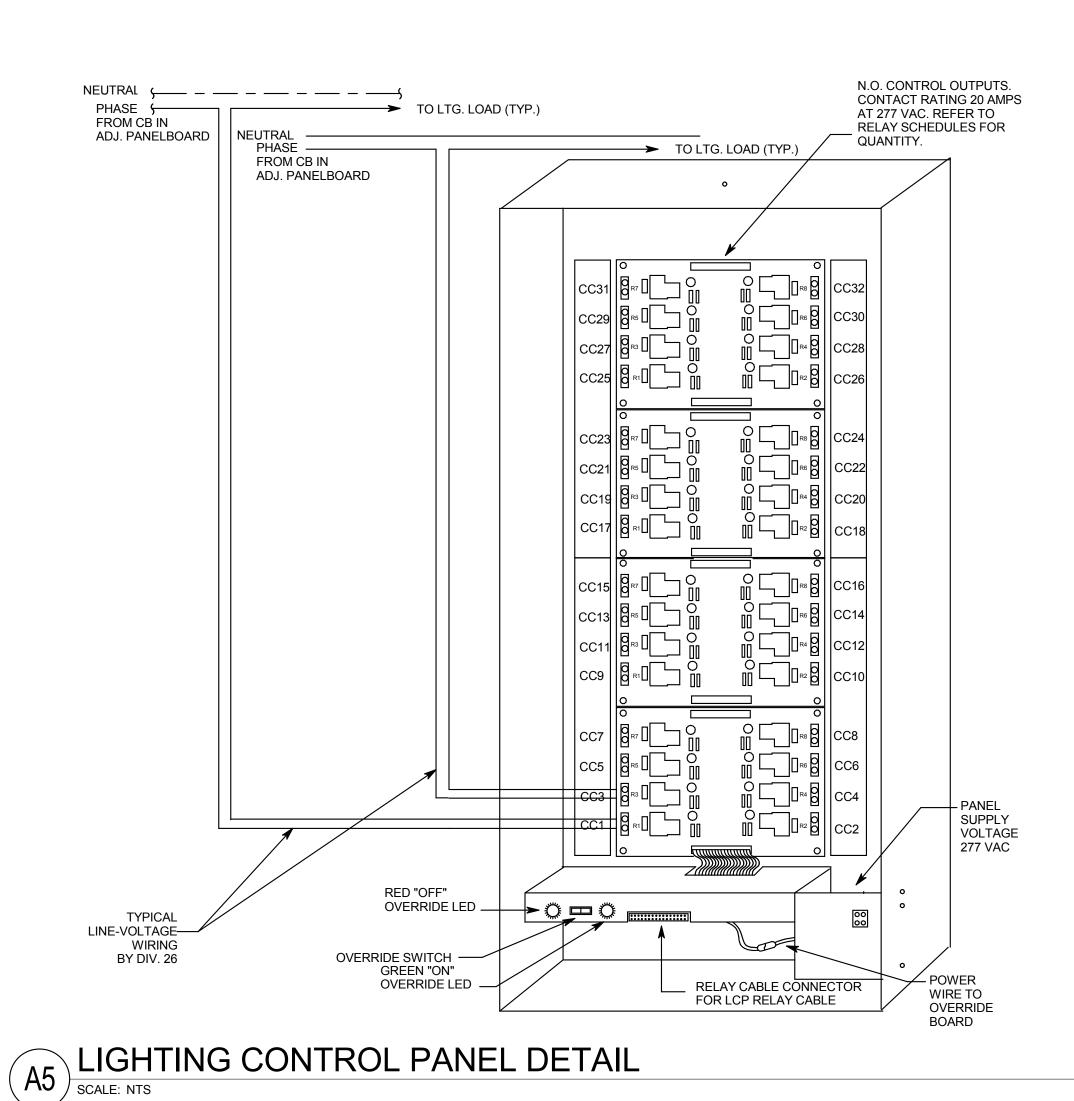
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PROJECT No: 3514

PANEL & EQUIPMENT SCHEDULES

04-EP602

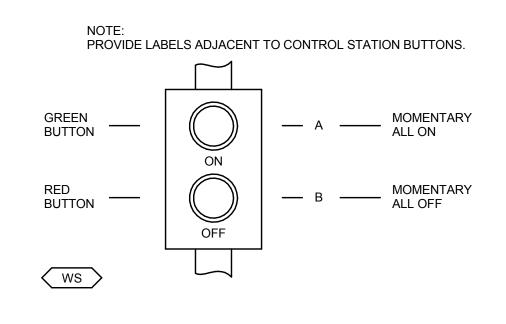


#### LIGHTING FIXTURE SCHEDULE NOTE TO BIDDERS: COMPLY WITH ALL OF THE SPECIFICATIONS. REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT, HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPARE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF PENDANTS, OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277) BALLASTS REQUIRED UNLESS NOTED OTHERWISE. DIMENSION SEQUENCE = (LENGTH X WIDTH X DEPTH) IN INCHES. FIXTURE CHARACTERISTICS BODY / AIR / MOUNTING / DOOR SYMBOL MARK LENS/LOUVER/REFLECTOR/OTHER WATTS VOLTS MANUFACTURER CATALOG NUMBER E OR EM PREFIX INDICATES THAT FIXTURE IS PROVIDED WITH AN EMERGENCY BATTERY PACK TO PROVIDE POWER TO ANY 2, 3, 4 OR 8 FOOT FLOURESCENT LAMP COMPATIBLE WITH ALL STANDARD AND ELECTRONIC BALLASTS; COMPLETELY SELF-CONTAINED TO PROVIDE 90 MINUTES OF EMERGENCY POWER TO FIXTURE BALLAST; MINIMUM LIGHT OUTPUT FOR TYPICAL 4' LAMP SHALL BE 1100 LUMENS OR HIGHER; UNIVERSAL TRANSFORMER FOR 120 OR 277 VOLTS; LOW VOLTAGE PROTECTION, COMBINATION TEST SWITCH AND AC "ON" INDICATOR; 10 YEAR PRO-RATA WARRANTY; INSTALL TEST SWITCH IN A MANNER THAT REQUIRES NO DISASSEMBLY FOR TESTING. EMERGENCY BATTERY PACK. BODINE 1400 LUMENS LITHONIA PS-1400 PRESCOLITI HUBBELL CHLORIDE LIGHTOLIER **EXITRONIX EVENLITE** UFO-6W DUAL LITE SIDELITE S60F EXIT SIGN: METAL HOUSING; UNIVERSAL MOUNT, SEE DRAWINGS; ARROWS PER PLANS; LED LAMPS;

GREEN LETTERS. INTERNAL EM BATTERY POWER. MUST MEET NFPA ILLUMINATION STANDARDS. CONTRACTOR TO PROVIDE WALL MOUNTED OR END MOUNTED MODELS AND ALL CHEVRONS WHERE REQUIRED. E2-1 SINGLE FACE: WET LOCATION SELF TESTING, N4X-BX-1-G-0-SD INTEGRAL BATTERY PACK EX4X-1-G-W-X-EM-SD WALL PACK: ADJUSTABLE CUT OFF; FULL PERIMETER GASKETING: WET LOCATION; STAINLESS STEEL HINGES AND LATCHES; PROJECTING LENS; HPF DRIVER; SEE ELEVATION FOR MOUNTING HEIGHT, COLOR AS SPECIFIED BY ARCHITECT. CGBWM3WT-LED-48350NWUECBA-BB OC-32 RECESSED J BOX. , DECORATIVE LED 4K 55W WST LED 2 10A700/40K SR3 MVOLT CBA ELCW MEDIUM THROW, SQUARE, 4158 LUMENS LITHONIA TYPICAL MOUNT AT 10' ABOVE FINISHED GRADE **MCGRAW** IST-B02-LED-E1-BL3-AP-51LWS UNV BL3 GREY-BBB COORDINATE WITH ARCHITECT INTEGRAL BATTERY PACK GENERAL PURPOSE INDUSTRIAL: WHITE ENAMEL, APERTURED REFLECTOR; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE; UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS; STEM MOUNTED BACK OF HOUSE STRIP LIGHT EJA232-MVOLT-.71BFPS-THUN .71 BF PROGRAM START BALLAST F23-232-SSOR.71-UE CSR4 232 ST EPU CSTH .71BF DCIF232UNVHR81L.71BF-U METALUX DAYBRITE IA232-UNV-EB10R/.71BF VANDAL RESISTANT SURFACE MOUNTED LIGHTING: .125" INJECTION MOLDED POLYCARBONATE LENS; IMPACT RESISTANT; UV STABILIZED; ALL METAL PARTS ARE ENCLOSED; GASKETED; VANDAL RESISTANT STAINLESS STEEL SCREWS; SECURED MOUNTING; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS. WALL SURFACE MOUNTED FLUORESCENT VT4-632-M-DR-UNV-XX-WL / VT4-SS-SM SPRAY DOWN (IP67), PROVIDE SURFACE MOUNT BRACKET LITHONIA FHE-632L-SD-2/3-GEB10PS(.71 BF)-SMB APX-632-UNV-A-2/3-EB10R-.71BF .71 BF PROGRAM START BALLAST PHILIPS WALL SURFACE MOUNTED FLUORESCENT VT3-232DR-UNV-GL-ED8-1-WL-GT4 .71BF

PROVIDE LABELS ADJACENT TO CONTROL STATION BUTTONS.

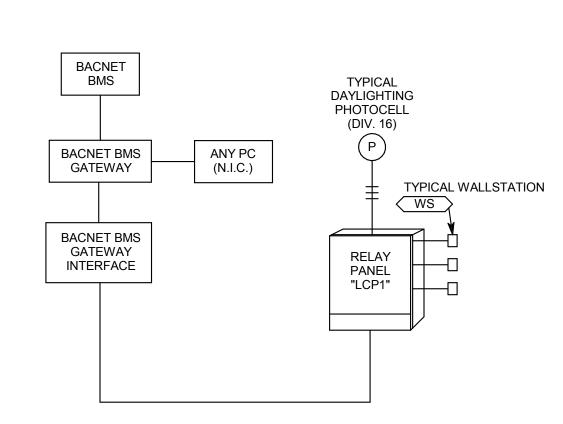
FHE-232L-SD-GEB10PS(.71 BF)-SMB



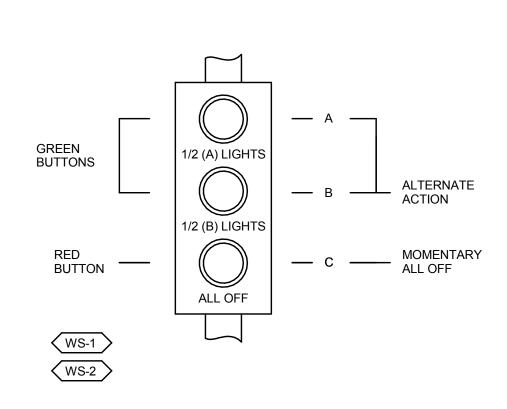
WET LOCATION (IP67), PROVIDE SURFACE MOUNT BRACKET

.71 BF PROGRAM START BALLAST



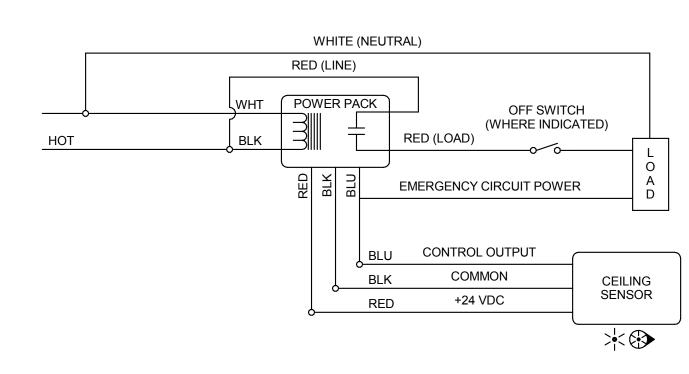


LIGHTING CONTROL PANEL RISER A11 DIAGRAM
SCALE: NTS



NEMA 4X 3-BUTTON CONTROL STATION (D15) SCALE: NTS

LITHONIA



TYPICAL ROOM WITH ONE CEILING SENSOR, WITH OR WITHOUT WALL

SWITCH SCALE: NTS

NOTES



ENGINEERS 324 S. State St., Suite 400 Salt Lake City, UT 84111 800-678-7077 801-328-5151 fax: 801-328-5155 www.spectrum-engineers.com

CONSTRUCTION

No REVISION/SUBMISSION PROJECT No: 3514

LIGHTING FIXTURE SCHEDULE AND **DETAILS** 

04-EL601

			Ol	JTPUT	DEVIC	ES	
IN		FIRE ALARM UT/OUTPUT MATRIX	GENERAL ALARM	TROUBLE SIGNAL	SUPERVISORY SIGNAL		NOTES
(0	1	MAIN FLOW	•	<b>-</b>	<i>S</i>		
INITIATING DEVICES	2	MAIN TAMPER			•		
IG DE	3	SMOKE DETECTOR	•				
IATIN	4	HEAT DETECTOR	•				
Z	5	PULL STATION	•				
	6	LOW BATTERY VOLTAGE		•			
	7	CIRCUIT FAULT FAILURE		•			
	8	GENERAL TROUBLE		•			
	9	AC POWER FAILURE		•			

INDICA	ATING LOOP LEGEND
INDICATING LOOP	DESCRIPTION
FI-1	-

# ADDRESSABLE LOOP LEGEND INITIATING LOOP DESCRIPTION FA-1 WASH BUILDING ADDRESSABLE LOOP

NO	TIFICA	TION S	CHED	ULE
SYMBOL	STROBE SIZE	COVERAGE	AVERAGE CURRENT	MAXIMUM PER CIRCUIT ALONE
∑ 15	15 CD	20'x20'x 10'H	.095A	15
⊠ 30	30 CD	30'x30'x 10'H	.120A	12

.180A

.225A

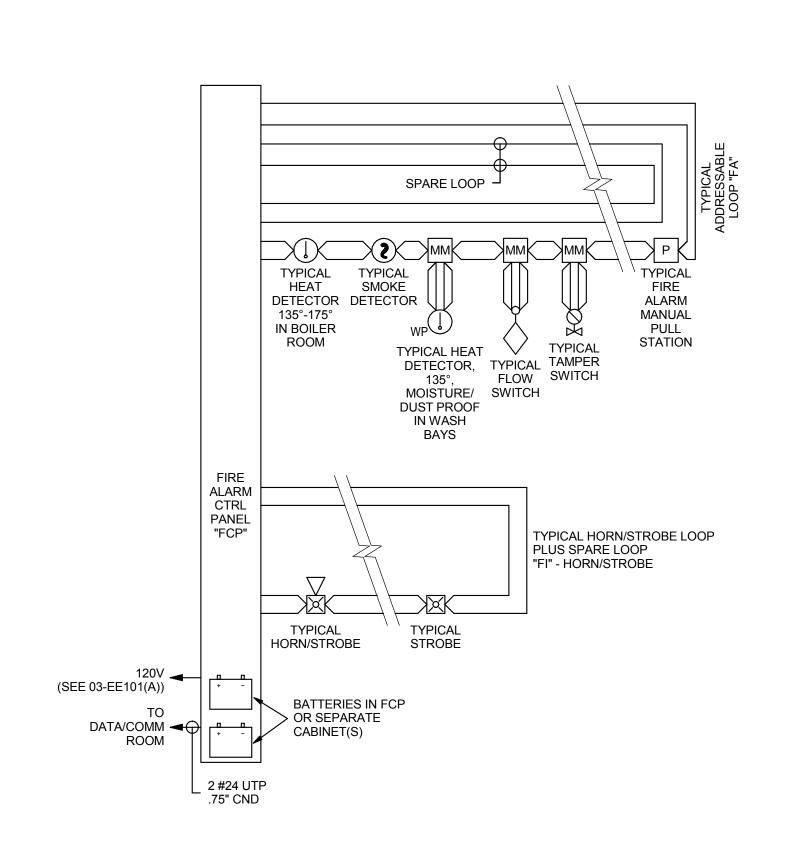
	WIRIN	G SCH	EDULI	=
FUNCTION	< 500'	< 1000'	1000'-3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN

40'x40'x 10'H

50'x50'x 10'H

75 CD

110 CD



FIRE ALARM RISER DIAGRAM

SCALE: NTS

# GENERAL SHEET NOT

NOT EXCEED 75% MAXIMUM ALLOWABLE.

FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.

2 BATTERY CAPACITY TO BE ADEQUATE TO OPERATE FULL ALARM MODE LOAD FOR 15 MINUTES AFTER 24 HOURS WITHOUT POWER, PLUS 25% SPARE CAPACITY.

RUN SPARE LOOPS IN SAME CONDUIT. DO NOT EXCEED 40% AREA FILL OF CONDUITS.

PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.

LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY AND RETURN LOUVERS.

PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE ADDITIONAL WIRING, IF REQUIRED.

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

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.

SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL

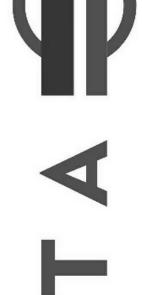
PLANS ARE BASED UPON 2 AMPS AT 24 VDC, NOT TO EXCEED 75% (1.50 AMPS AVAILABLE), POWER SUPPLY CAPACITY PER NOTIFICATION CIRCUIT. NOTIFICATION DEVICE LOADS ARE BASED UPON NOTIFICATION DEVICE SCHEDULE SHOWN. INCLUDE ADDITIONAL ASSOCIATED COSTS FOR INCREASED WIRING AND POWER SUPPLY CAPACITY IF LOADS OF ACTUAL DEVICES PROVIDED EXCEED CIRCUIT CAPACITY, OR IF LOAD OUTPUT OF ACTUAL POWER SUPPLIES PROVIDED IS SIZED DIFFERENTLY. PROVIDE SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION.

10 PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.

11 ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.

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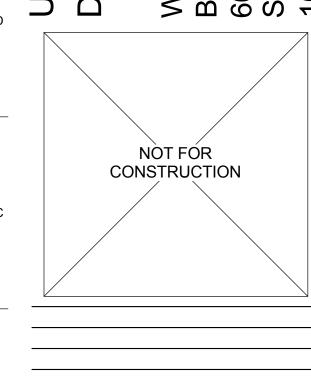




SPECTRUM
ENGINEERS

324 S. State St., Suite 400
Salt Lake City, UT 84111
800-678-7077
801-328-5151
fax: 801-328-5155
www.spectrum-engineers.com

WASH
BUILDING 04
669 WEST 200 SOUTH
SALT LAKE CITY, UT 84101
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PROJECT No: 3514

FIRE ALARM RISER

04-FA601

# GENERAL EQUIPMENT NOTES

- 1 ALL CONTRACTOR FURNISHED (CF) EQUIPMENT SHOWN ON THESE DRAWINGS WITH A FOUR DIGIT IDENTIFICATION NUMBER IS BASED ON A SPECIFIED MANUFACTURER. ANY MODIFICATION AND/OR SUBSTITUTION OF SAID EQUIPMENT IS SUBJECT TO COMPLETE COORDINATION BY THE CONTRACTOR OF ALL CONNECTIONS SERVICES, OPENING SIZE AND ANY OTHER CONSTRUCTION RELATED REQUIREMENTS.
- 2 CONTRACTOR TO VERIFY AND COORDINATE ALL STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS OF EQUIPMENT WITH MANUFACTURER'S APPROVED SHOP DRAWINGS PRIOR TO INSTALLATION.
- 3 THIS LAYOUT IS PROVIDED FOR GENERAL LOCATION OF EQUIPMENT. UNLESS SPECIFICALLY LOCATED BY DIMENSIONS ON THE DRAWINGS, THE EQUIPMENT SHALL BE PLACED NEAR THE THE LOCATION ON THE DRAWINGS BUT IN THE MOST OPERATIONALLY EFFICIENT POSITION AND
- 5 SEISMICALLY BRACE ALL FIXED EQUIPMENT AND STORAGE EQUIPMENT PER LOCAL AND STATE SEISMIC RESTRAINT GUIDELINES.
- 7 COORDINATE WORK WITH ARCHITECTURAL FEATURES SO THE INTERFERENCE BETWEEN PIPING, EQUIPMENT, MECHANICAL WORK AND BUILDING STRUCTURE IS AVOIDED.

# **EQUIPMENT LINE TYPE LEGEND**

OF/OI -----

# CF/CI EQUIPMENT SCHEDULE

EQ ID # DESCRIPTION FURNISH INSTALL SIX BRUSH MACHINE CF/CI

# EQUIPMENT KEYNOTE BY SYMBOL ○

- 3 UTILITIES AND CONCRETE SUMP DESIGN FOR THE 6 BRUSH BUS WASH EQUIPMENT ARE BASED ON A SPECIFIED MANUFACTURER. REFERENCE SPECIFICATION SECTION 111126 AND APPROVED SHOP DRAWINGS FOR DETAILS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND CHANGING AND UNDERGROUND PIPING AND CONDUIT FOR UTILITIES AND DESIGN OF THE WASH EQUIPMENT BASED ON THE SUBMITTED AND APPROVED EQUIPMENT. CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER ALL INTERCONNECTING PIPING, AND ELECTRICAL WORK BETWEEN THE PANELS, PUMPS, AND WASH TANK EQUIPMENT IN THE WASH BAY.
- 5 START TRENCH OPENING AS CLOSE TO WALL AS POSSIBLE FOR PIPING

## **ABBREVIATIONS**

WATER

AFF ABOVE FINISH FLOOR COMPRESSED AIR

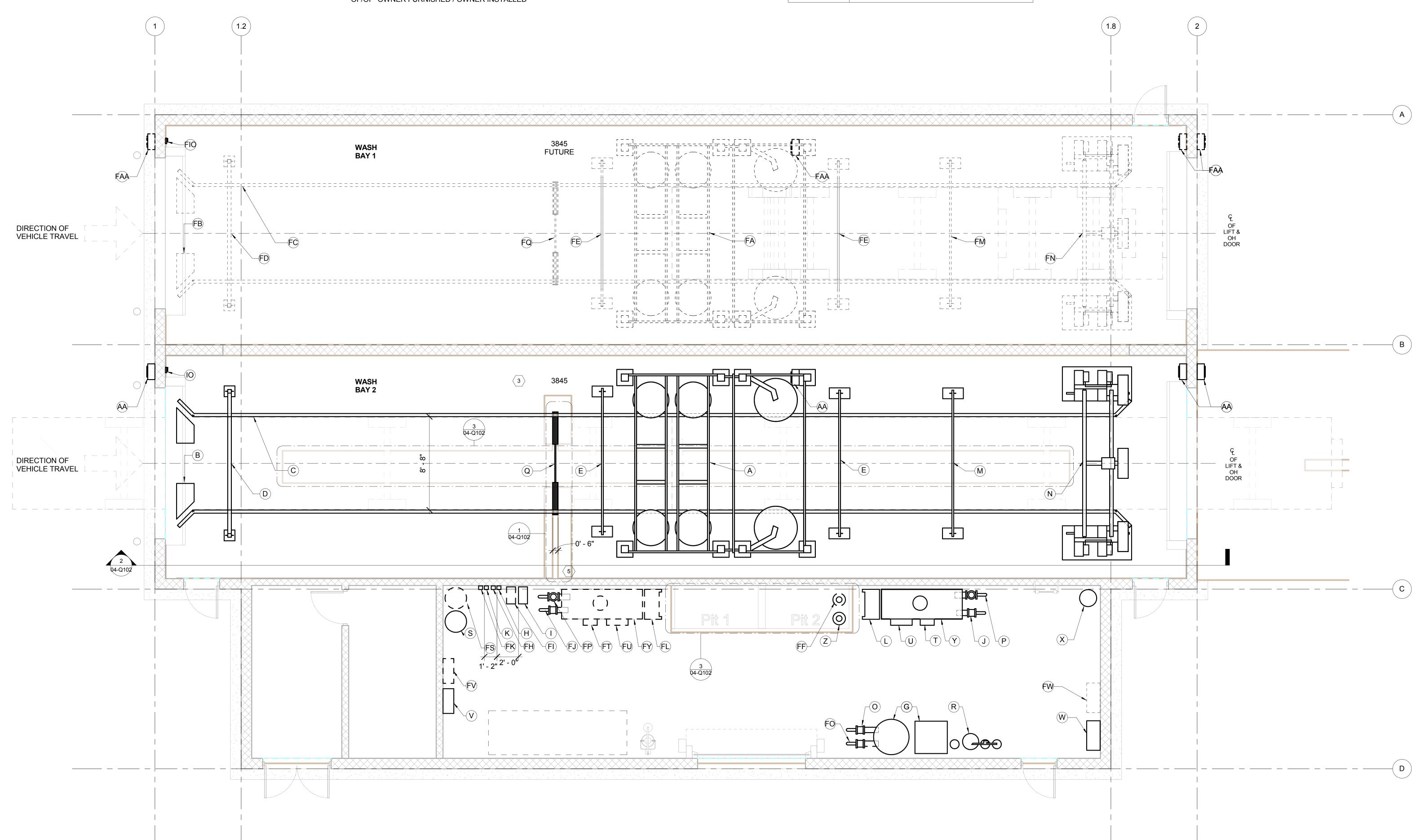
FD FLOOR DRAIN OH OVERHEAD

CF/CI CONTRACTOR FURNISHED / CONTRACTOR INSTALLED OF/CI OWNER FURNISHED / CONTRACTOR INSTALLED

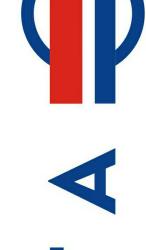
OF/OI OWNER FURNISHED / OWNER INSTALLED

#### WASH COMPONENT SCHEDULE DESCRIPTION EQ ID# SIX BRUSH MACHINE AA TRAFFIC SIGNAL SKID PLATES TIRE GUIDE PRE-SOAK ARCH **ROOF MOP** SPOT-FREE RINSE SYSTEM WITH BUFFER TANK BRUSH DETERGENT PUMP DETERGENT MIXING/METERING SYSTEM ON/OFF SWITCH WASH WATER PUMP RINSE AID PUMP WATER RECYCLING SYSTEM WITH OZONE SPOT-FREE RINSE ARCH **BLOWERS ARCH** RO WATER PUMP HP CHASSIS WASH PUMP CHASSIS/WHEEL WASH WATER SOFTENER DETERGENT STORAGE OZONE GENERATOR PUMP CONTROL PANEL WASH CONTROL PANEL BLOWERS CONTROL PANEL COMPRESSOR **BUFFER TANK** SUBMERSIBLE PUMP FOR WATER RECYCLING

FUTURE WASH COMPONENT SCHEDULE	
EQ ID#	DESCRIPTION
FA	SIX BRUSH MACHINE
FAA	TRAFFIC SIGNAL
FB	SKID PLATES
FC	TIRE GUIDE
FD	PRE-SOAK ARCH
FE	ROOF MOP
FF	SUBMERSIBLE PUMP FOR WATER RECYCLING
FH	BRUSH DETERGENT PUMP
FI	DETERGENT MIXING/METERING SYSTEM
FIO	ON/OFF SWITCH
FJ	WASH WATER PUMP
FK	RINSE AID PUMP
FL	WATER RECYCLING SYSTEM WITH OZONE
FM	SPOT-FREE RINSE ARCH
FN	BLOWERS ARCH
FO	RO WATER PUMP
FP	HP CHASSIS WASH PUMP
FQ	CHASSIS/WHEEL WASH
FS	DETERGENT STORAGE
FT	OZONE GENERATOR
FU	PUMP CONTROL PANEL
FV	WASH CONTROL PANEL
FW	BLOWERS CONTROL PANEL
FY	BUFFER TANK





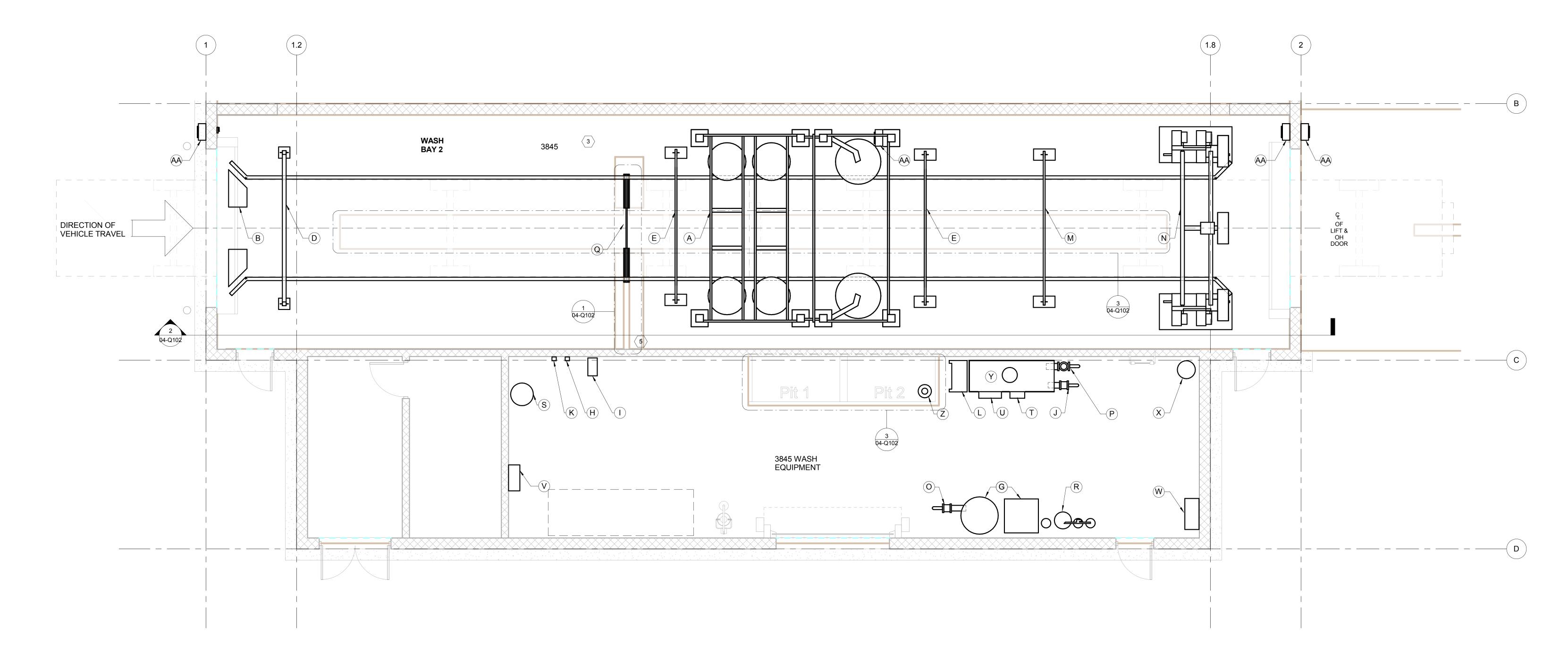




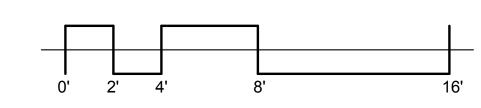
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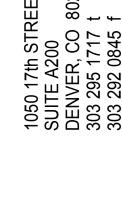
EQUIPMENT BASE BID

- 1 REFERENCE SHEET 03-Q101 FOR ALL EQUIPMENT DESCRIPTIONS
- 2 REFERENCE SHEET 03-Q101 FOR ALL GENERAL EQUIPMENT NOTES
- 3 REFERENCE SHEET 03-Q101 FOR ALL ABBREVIATIONS
- 4 REFERENCE SHEET 03-Q101 FOR ALL EQUIPMENT KEYNOTES

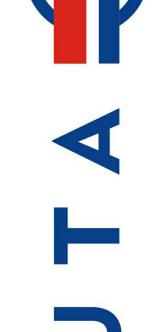


1 04 - LEVEL 1 WASH EQUIPMENT LAYOUT - ALTERNATE BID 1/4" = 1'-0"











No REVISION/SUBMISSION DATE

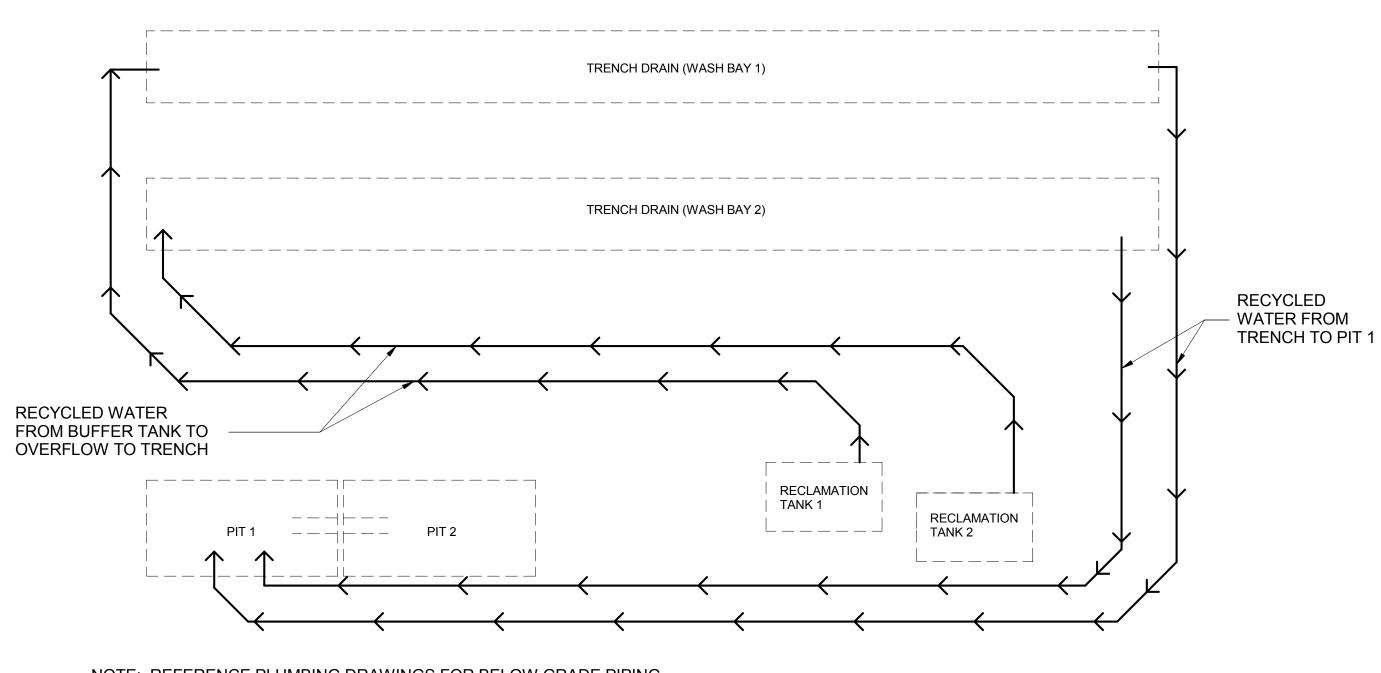
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LEVEL 1 PLAN - WASH **EQUIPMENT DETAILS** AND ELEVATION

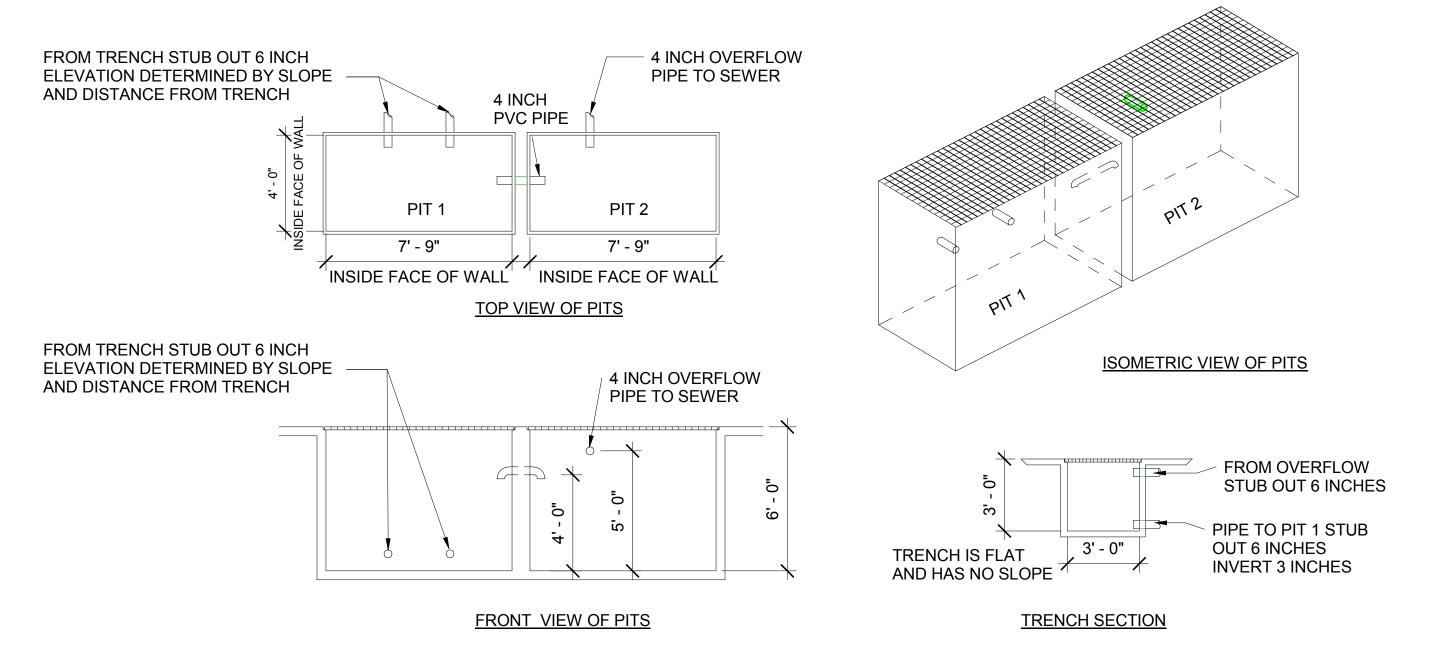
# **DRAWING SHEET NOTES**

- 1 REFERENCE SHEET 03-Q101 FOR ALL EQUIPMENT DESCRIPTIONS
- 2 REFERENCE SHEET 03-Q101 FOR ALL GENERAL EQUIPMENT
- 3 REFERENCE SHEET 03-Q101 FOR ALL ABBREVIATIONS 4 REFERENCE SHEET 03-Q101 FOR ALL EQUIPMENT KEYNOTES



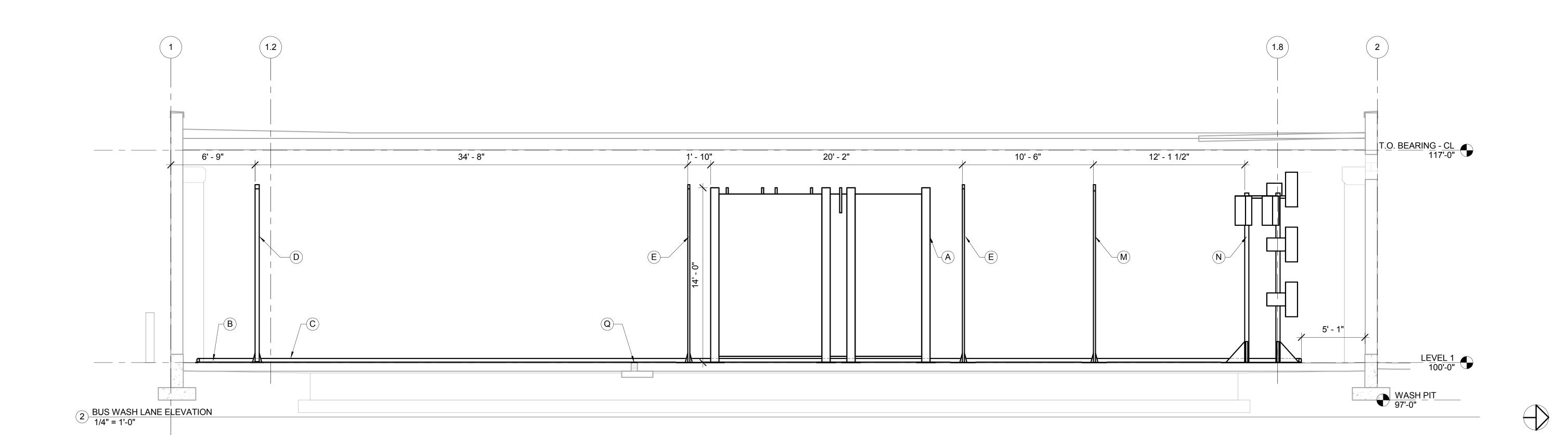
NOTE: REFERENCE PLUMBING DRAWINGS FOR BELOW GRADE PIPING

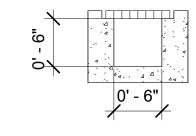
4 UNDERGROUND PIPING SCHEMATIC NTS



NOTE: REFERENCE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR PIT, GRATING, AND TRENCH CONSTRUCTION

3 BUS WASH WATER RECYCLING PITS AND TRENCHES DETAIL NTS





FRONT VIEW

1 CHASSIS/WHEEL WASH TRENCH 1" = 1'-0"