PROJECT:

CAPITOL PRESERVATION BOARD
STATE OFFICE BUILDING TUNNEL IMPROVEMENTS

350 NORTH STATE STREET
SALT LAKE CITY, UT 84114

State of Utah–Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
4110 State Office Building/Salt Lake City, Utah 84114/538-3018

ENGINEERS:
REAVELEY ENGINEERS & ASSOCIATES

675 East 500 South, Suite 400
Salt Lake City, Utah 84102
PH#: (801) 486-3883
FAX: (801) 485-0911
CONTACT: Jerod Johnson

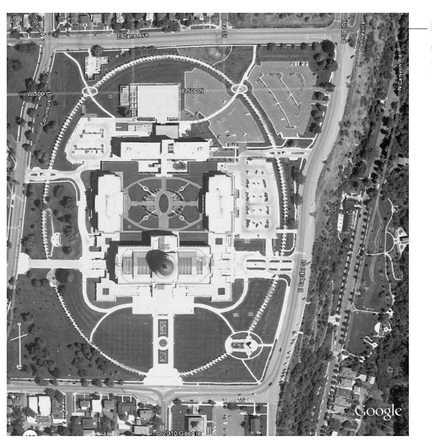
HEATH ENGINEERING COMPANY

377 West, 800 North
Salt Lake City, Utah 84103
PH#: (801) 322-0487
FAX: (801) 322-0490
CONTACT: Larry Veigel

Ken Garner Engineering, Inc.

102 West, 500 South, Suite 225
Salt Lake City, Utah 84101
PH#: (801) 328-8800
CONTACT: Trevor Spencer

VICINITY MAP



UTAH STATE CAPITOL, SEE SITE PLAN

N

APPROVALS

PRIME AGENCY — Date

DFCM — Date

PRIME AGENCY — Date

DFCM — Date

DRAWING INDEX

Sheet Title	Page
COVER SHEET	G0.01
CODE ANALYSIS & ABBREVIATIONS, GENERAL STRUCTURAL NOTES	S0.01
SITE PLAN	S1.01
OVERHEAD DAMAGE LAYOUT	S1.02
REPAIR DETAILS	S5.01
REPAIR DETAILS	S5.02
MECHANICAL SITE PLAN	MS1.01
TUNNEL PLAN (DEMOLITION)	MD1.01
TUNNEL SECTIONS (DEMOLITION)	MD3.01
TUNNEL PLAN (REMODEL)	MP1.01
TUNNEL SECTIONS (REMODEL)	MP3.01
SYMBOLS, ABBREVIATIONS, & DRAWING INDEX	EG 100
ELECTRICAL SITE PLAN	ES 100
ELECTRICAL DEMOLITION PLAN	ED 100
ELECTRICAL DEMOLITION PLAN	ED 101
ELECTRICAL PLAN	EP 100
ELECTRICAL PLAN	EP 101

REAVELEY ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CAPITOL PRESERVATION BOARD
STATE OFFICE BUILDING
TUNNEL IMPROVEMENTS

DFCM
4110 STATE OFFICE BLDG

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	CAT/RE&A
CHECKED BY:	JGJ
DESIGNED BY:	JM
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
COVER SHEET

DRAWING NUMBER:
G0.01

SHEET X OF X

CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2006	National Electrical Code	
International Mechanical Code		Uniform Code for	
International Plumbing Code		Building Conservation	
International Fire Code		ADA Accessibility	
International Energy		Guidelines	
Conservation Code			

A. Occupancy and Group: ASSEMBLY A-3

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

B. Seismic Design Category: X Design Wind Speed: 90 mph

C. Type of Construction (circle one):

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

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

North: _____ South: _____ East: _____ West: _____

E. Mixed Occupancies: _____ Nonseparated Uses: _____

F: Sprinklers:

Required: _____ Provided: _____ Type of Sprinkler System: _____

G: Number of Stories: _____ Building Height: _____

H: Actual Area per Floor (square feet): _____

I: Tabular Area: _____

J: Area Modifications:

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

b) Sum of the Ratio Calculations for Mixed Occupancies:

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

c) Total Allowable Area for:
1) One Story: _____
2) Two Story: $A_a(2)$_____
3) Three Story: $A_a(3)$_____

d) Unlimited Area Building: Yes _____ No _____ Code Section: _____

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

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

L. Design Occupant Load: _____

Exit Width Required: _____ Exit Width Provided: _____

M. Minimum Number of Required Plumbing Facilities:

a) Water Closets - Required (m) _____ (f) _____ Provided (m) _____ (f) _____
b) Lavatories - Required (m) _____ (f) _____ Provided (m) _____ (f) _____
c) Bath Tubs or Showers: _____
d) Drinking Fountains: _____ Service Sinks: _____

FOOTNOTES:

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

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

I. Design Criteria

A. Governing Building Code: 2006 International Building Code (IBC)

II. Concrete

A. Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-05, "Building Code Requirements for Structural Concrete."
1. Compressive strengths of concrete at 28 days shall be as follows:
   a. Walls: ..... 4000 psi
   b. Joists, Beams and Suspended Slabs: ..... 4000 psi
   c. All other Site Cast Concrete: ..... 4000 psi
2. Concrete Density (Maximum Air Dry Weight):
   a. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot.
   b. Lightweight concrete shall not exceed 110 pounds per cubic foot and shall be made of lightweight coarse aggregates and a blend of lightweight and normal weight fines.
3. Reinforcement steel:
   a. ASTM A615 Grade 60, fy = 60,000 psi min. unless noted otherwise.
   b. Reinforcement at concrete moment frames and shear wall jambs shall be ASTM A706 or ASTM A615 Grade 60, with the following properties:
      (1) Actual yield strength based on mill tests shall not exceed 78,000 psi.
      (2) Retest shall not exceed 81,000 psi.
      (3) Ratio of actual ultimate tensile stress to the actual yield strength shall not be less than 1.25.
      (4) Mill tests shall be submitted to the Engineer.
4. Admixtures:
   a. Air-entraining admixtures, comply with ASTM C 260 (when used).
      (1) When air content of a trowel finished floor slab exceeds 3%, there is an increased risk for delaminations and blistering to occur. When this situation is present, the contractor shall pay special attention to the finishing procedures to help minimize such risks. Refer to ACI 302.1R-96 "Guide for Concrete Floor and Slab Construction" for proper finishing guidelines.
   b. Calcium chloride shall not be added to the concrete mix.
5. Only one grade or type of concrete shall be poured on the site at any given time.
6. Plastic coated tie wires and chairs shall be used to support reinforcing bars, tie bars and tendons.

B. Formwork shall comply with ACI Standards Publication 347 and the project specifications. The contractor shall be responsible for the design, detailing, care, placement and removal of the formwork and shores.

C. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".
1. Cast-in-place Concrete: Clear Cover
   a. Unless noted otherwise: ..... 2"

D. Construction Joints and Control Joints:
1. Match existing joint layout.
2. Construction joints in suspended concrete pours shall be made at the center of spans.
3. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction. All discontinuous control or construction joints shall be reinforced with 2 - #4 x 48". See structural details. Construction joints shall not exceed a distance of 125'-0" o.c. in any direction.
4. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints shall be completed within 12 hours of concrete placement. Control joints may be installed by:
   a. Saw cut a depth of 1/4 the thickness of the slab
   b. Tooled joints a depth of 1/4 the thickness of the slab

E. Detailing: All reinforcing, including WWF, shall be detailed, bolstered & supported to comply with ACI 315, "Details and Detailing of Concrete Reinforcement" and the Concrete Reinforcing Steel Institute (CRSI) recommendations. Reinforcing bars shall not be welded unless specifically shown on drawings.
1. Lap splice lengths shall be detailed to comply with the "Reinforcing Bar Lap Splice Schedule" contained within the contract drawings. Splices may be made with mechanical splices capable of 125% tension capacity of the bar being spliced. Mechanical splices shall be the positive connecting type coupler. They shall be covered by a current ICC Code Evaluation Report. Use "Cadweld" splice sleeves with ferrous filler, "Lenton" taper threaded rebar splices, "Bar-Lock" lockshear bolt coupling sleeves, or approved equivalent. If mechanical splices are used, splices or couplers on adjacent bars shall be staggered a minimum of 24" apart along the longitudinal axis of the reinforcing bars.
2. All embedments and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
3. Use chairs or other support devices recommended by the CRSI to support and tie reinforcement bars and WWF prior to placing concrete. WWF shall be continuously supported at 36" o.c. maximum.
4. Provide corner bars at intersecting wall corners using the same bar size and spacing as the horizontal wall reinforcing. Unless noted otherwise, corner bar lap lengths shall conform with reinforcing bar lap splice lengths as noted above.
5. All vertical reinforcing shall be doweled to footings, or to the structure below. Dowels shall be the same size and at the same spacing as the vertical reinforcing scheduled (or detailed) for the element above. Lap splice lengths shall comply as noted above or as shown in the drawings. Dowels extending into footings shall terminate with a 90 degree standard ACI hook and shall extend to within 4" of the bottom of the footing. Footing dowels (#8 bars and smaller) with hooks need not extend more than 20" into footings.
6. Horizontal wall reinforcing shall terminate at ends of walls and openings into the far end of the jamb column with a 90-degree standard ACI hook, unless shown otherwise. Lap horizontal bar splices as noted above or as shown in the drawings. Horizontal wall reinforcing shall be continuous through construction and control joints. Splices in horizontal reinforcement shall be staggered, so the splice laps will not overlap. Splices in two curtains where used shall not occur in the same location, splice laps shall not overlap.
7. Provide 2-#5 X 4'-0" diagonal bars (or 1 - #7 x 4'-0" bar in 10" walls and thinner) at the corners of all openings. Diagonal bars shall be centered on the corner of the opening. All recesses in concrete walls that interrupt reinforcing steel shall be reinforced the same as an opening.
8. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embeddded items prior to concrete placement.
9. All reinforcement shall be bent cold, and shall be bent only once at the same location. All reinforcement shall be shop bent, unless otherwise permitted by the engineer.

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

III. Special Instructions

A. The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specifications for additional requirements in each section. Notes and specific details on the drawings shall take precedence over General Structural Notes and typical details.

B. Shoring and Bracing Requirements:
1. Floor and Roof Structures -- The General Contractor is responsible for the method and sequence of all structural erection. He shall provide temporary shoring and bracing as his method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof and floor attachments. The building shall not be considered stable until all connections are complete.

C. 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 Engineer for his review. Shop Drawings made from reproductions of (these) contract drawings will be rejected.

D. 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 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.

E. Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, contractor shall notify engineer prior to fabrication or construction within that area.

F. Notice of Copyright: The structural drawings, plans, schedules, notes and details are hereby copyrighted by Reaveley Engineers and Associates, Inc., All Rights reserved. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the project is not to be construed as publication in derogation of Reaveley Engineers & Associates, Inc.'s reserved rights. The documents defining the structure are instruments of service prepared by Reaveley Engineers and Associates, Inc. for one use only. Furthermore, these documents shall not be reproduced, or copied, in whole or in part by the contractor or his subcontractors for preparation of shop drawings or other submittals.

IV. Quality Assurance

A. Quality Assurance Agency Requirements:
1. The owner shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. All quality assurance personnel assigned to the project shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection.
2. Prior to construction, the QAA shall prepare a written Quality Assurance Implementation Plan (QAIP) for the project. The QAIP shall include a list of personnel assigned to the project including management personnel, inspection procedures and frequency, proposed testing methods and frequency of testing, and reporting procedures. The QAIP shall also outline methods of documenting deficiencies and reporting corrections. A copy of the QAIP shall be given to the contractor for review and coordination with subcontractors.
3. Prior to construction, the QAA shall submit the following information to the Engineer of Record for approval:
   a. A copy of the Quality Assurance Implementation Plan for the project.
   b. A copy of the appropriate certification and training records for each individual performing inspections or testing.
   c. A list of the testing equipment designated for the project and recent calibration records for the equipment.
   d. Sample inspection and testing reports and the distribution list for the reports.
4. The special inspector shall inspect the work per Chapter 17 of the IBC for conformance with the contract documents. The special inspector shall send reports to the owner, building official, engineer, and contractor. All discrepancies shall be brought to the immediate attention of the contractor for correction. The QAA shall submit a final signed report stating that the special inspection work was, to the best of their knowledge, in conformance with the plans, specifications and applicable workmanship provisions of the IBC.

B. Special Inspection: Special Inspection shall be provided for the following elements per IBC sections 1704 and 1707:
1. Concrete and elements embedded in concrete shall be special inspected prior to and during placement of concrete. Special inspection of concrete shall include the following:
   a. Reinforcing steel size and placement.
   b. Concrete shall receive continuous special inspection during placement, and periodic inspection after placement to ensure proper curing and weather protection procedures.
2. Post-installed anchors, including but not limited to expansion anchors, adhesive anchors and rebar dowels, and low velocity fasteners, shall receive special inspection per the code evaluation reports for the anchors.
   a. Continuous special inspection is required during the installation of all adhesive anchors and rebar dowels. Special inspector shall verify the following:
      (1) Anchor size and steel grade.
      (2) Hole diameter, location, and type of drill bit.
      (3) Cleanliness of hole and anchor.
      (4) Adhesive application.
      (5) Anchor embedment.

C. Structural Testing: The following materials shall be tested per IBC sections 1704 and 1708. The owner reserves the right to test any and all materials using any appropriate non-destructive procedure. Any items found to be deficient shall be corrected and retested at no additional cost to the owner.
1. Concrete Strength Verification and Testing. All concrete shall be tested to verify strength, slump, unit weight, air content, and temperature. See the specifications for testing criteria, testing frequency and acceptability criteria.
2. Post-installed anchors, including but not limited to expansion anchors, adhesive anchors, and low velocity fasteners, shall be tested per the code evaluation reports for the anchors.

D. Structural Observations by the Engineer of Record.
1. The Engineer of Record may perform structural observations at critical phases of the project. Copies of the engineer's report will be distributed to the contractor, owner, and QAA.
2. Observation visits to the site by the Engineer's field representatives shall not be construed as inspection or approval of construction.
3. Notification of Engineer: The contractor shall notify the engineer twenty-four hours prior to:
   a. Placing concrete in any footing.
   b. Closing any wall forms.
   c. Placing concrete in any column, beam or suspended slab.
   d. Grouting any masonry.
   e. Completing the welding of major sections of steel decking.
   f. Completing the nailing of any plywood wall or deck.

E. Contractor Responsibility: The contractor shall prepare and submit a written statement of responsibility to the building official and the owner prior to commencement of work on the project. As a minimum the statement shall contain the following information:
1. Acknowledgement of the quality assurance requirements for the structure.
2. Acknowledgement of receipt of the Quality Assurance Implementation Plan (QAIP) from the testing agency.
3. Acknowledgement that control will be exercised to obtain conformance to the Contract Documents and the QAIP.
4. Quality control procedures within the contractors organization, methods and frequency of reporting, and distribution of the reports.
5. Identification and qualifications of the person(s) responsible for quality control and their position(s) in the organization.

ABBREVIATIONS

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

PLAN MARKS

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

ADDITIONAL BID ALTERNATES

1. REPLACE EXISTING 12" AND 18" HEATING SUPPLY PIPING WITH 10" HEATING WATER SUPPLY PIPING (SEE MECHANICAL DRAWINGS).
2. EXCAVATE TO EXPOSE EXTERIOR SIDE OF WALL AT CRACK. FILL CRACK AND APPLY WATERPROOFING (SEE XX/S5.02).
3. RAISE CABLE TRAY FROM BOILER PLANT TO SOUTHERN END OF PROJECT BOUNDARY (SEE ELECTRICAL DRAWINGS).

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CAPITOL PRESERVATION BOARD

STATE OFFICE BUILDING

TUNNEL IMPROVEMENTS

DFCM

4110 STATE OFFICE BLDG

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	RE&A
CHECKED BY:	RE&A
DESIGNED BY:	RE&A
RECORD DRAWING DATE:	
SIGNATURE:	

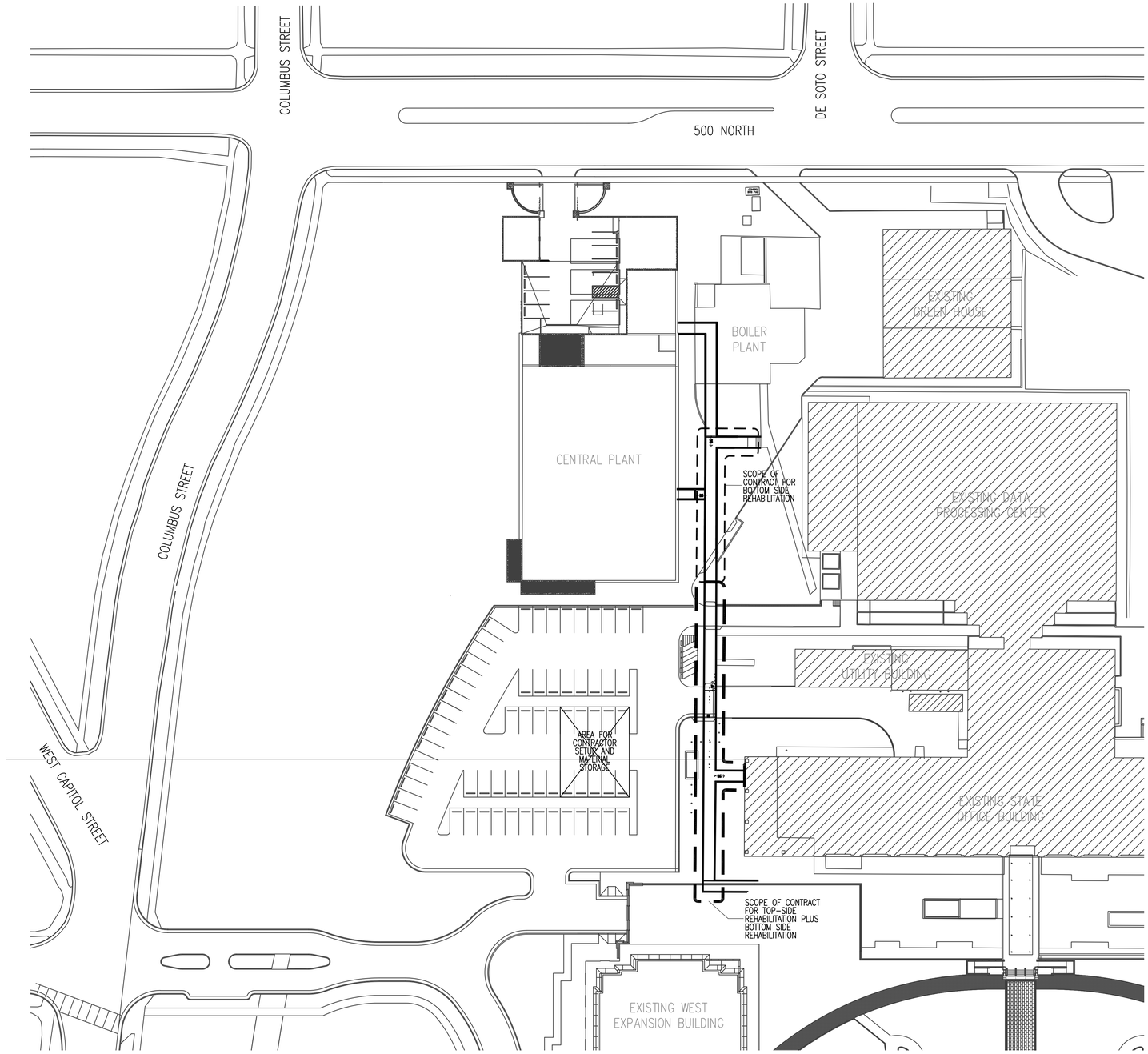
DRAWING TITLE:

GENERAL STRUCTURAL NOTES

DRAWING NUMBER:

S0.01

SHEET X OF X



SITE PLAN

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

NORTH

NOTES & GENERAL REQUIREMENTS

NOTE-REQUIREMENT

1. TUNNEL LID SHALL BE EXPOSED FOR TOP SIDE REHABILITATION AT THE REGION SHOWN. EXISTING SITE FEATURES INCLUDING (BUT NOT LIMITED TO) SLABS ON GRADE, PLANTERS, LANDSCAPING, SITE UTILITIES, ELECTRICAL LINES AND CONDUITS, IRRIGATION SYSTEMS SHALL BE REMOVED FOR THE PURPOSES OF EFFECTIVE TOP-SIDE TUNNEL REPAIRS AS SHOWN ON THESE DOCUMENTS.
2. CONTRACTOR SHALL RESTORE ALL FEATURES REMOVED FOR TUNNEL LID ACCESS TO A CONDITION EQUAL OR BETTER THAN THE PRE-CONSTRUCTION CONDITION. DEPARTURES FROM THIS SHALL BE PERMITTED PENDING APPROVAL FROM THE OWNER AND STRUCTURAL ENGINEER. AS BUILT CONDITION OF REGION IN QUESTION SHALL BE DOCUMENTED BY CONTRACTOR PRIOR TO CONSTRUCTION AND CONTRACTOR SHALL MAINTAIN AND UPDATE AS-BUILT DRAWING THROUGHOUT THE ENTIRE TOP-SIDE DEMOLITION PROCESS. THE AS-BUILT DRAWING SHALL BE THE BASIS FOR RESTORING FEATURES AT THE TUNNEL TOP-SIDE TO THE PRE-CONSTRUCTION CONDITION.
3. CONTRACTOR SHALL INCLUDE PROVISIONS FOR TEMPORARY DISTRIBUTION OF SITE UTILITIES (I.E. SPRINKLER SYSTEM) TO ENABLE THEIR USE THROUGH CONSTRUCTION. SUCH MEASURES SHALL INCLUDE (BUT SHALL NOT BE LIMITED TO): TEMPORARY CAPPING IRRIGATION LINES AND TEMPORARY RE-ROUTING POWER TO SITE LIGHTING OR IRRIGATION CONTROL BOXES. SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR MORE INFORMATION.
4. DISRUPTION OF UTILITIES PASSING THROUGH TUNNEL SHALL BE PERMITTED ONLY BETWEEN THE HOURS FROM THURSDAY 6:00 PM TO MONDAY 5:00 AM. ALL DISRUPTED UTILITIES SHALL BE ON-LINE AND FULLY FUNCTIONAL BY 5:00 AM. DEPARTURES FROM THIS PROVISION SHALL BE PERMITTED ONLY AS PERMITTED BY THE OWNER. CONTRACTOR SHALL SOLICIT AUTHORIZATION FOR UTILITY DISRUPTION NO LESS THAN 48 HOURS PRIOR TO THE DISRUPTION. IF THE DISRUPTION FALLS WITHIN THE TIME FRAME OUTLINED ABOVE, CONTRACTOR SHALL SOLICIT AUTHORIZATION NO LATER THAN THE PRECEDING TUESDAY AT 6:00 PM. SEE PROJECT SPECIFICATIONS FOR UTILITIES DISRUPTION AUTHORIZATION FORM.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY, CODE COMPLIANT ACCESS ACROSS CONSTRUCTION ZONE BETWEEN PARKING LOT AND ADJACENT BUILDINGS. TEMPORARY ACCESS PLAN SHALL BE DEVELOPED AND SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO THE BEGINNING OF CONSTRUCTION. ANY DEVIATIONS OR DEPARTURES FROM APPROVED TEMPORARY ACCESS PLAN SHALL BE DOCUMENTS AND SUBMITTED FOR APPROVAL BEFORE PROCEEDING.
6. STOCKPILING OF EXCAVATION MATERIALS ON SITE SHALL BE PERMITTED AT AREAS DESIGNATED BY THE OWNER THROUGH THE DURATION OF CONSTRUCTION. SUCH AREAS SHALL BE RESTORED TO THE PRE-CONSTRUCTION CONDITION BY THE CONTRACTOR AT THE CLOSEOUT OF WORK SHOWN HEREIN.
7. FILL MATERIAL PLACED AGAINST TUNNEL SHALL CONSIST OF NATURALLY CONSOLIDATING FLOWABLE MATERIALS OR PROPERLY COMPACTED MATERIALS REMOVED AS PART OF DEMOLITION. MATERIALS REQUIRING MECHANICAL COMPACTION SHALL BE PLACED AS CONSOLIDATED IN LIFTS NOT EXCEEDING 12 INCHES. CONSOLIDATION OF FILLS SHALL BE INSPECTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

PROFESSIONAL STRUCTURAL ENGINEER
No. 295733
JEROD G. JOHNSON
STATE OF UTAH

CAPITOL PRESERVATION BOARD

STATE OFFICE BUILDING

TUNNEL IMPROVEMENTS

DFCM

4110 STATE OFFICE BLDG

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	RE&A
CHECKED BY:	RE&A
DESIGNED BY:	RE&A
RECORD DRAWING DATE:	
SIGNATURE:	

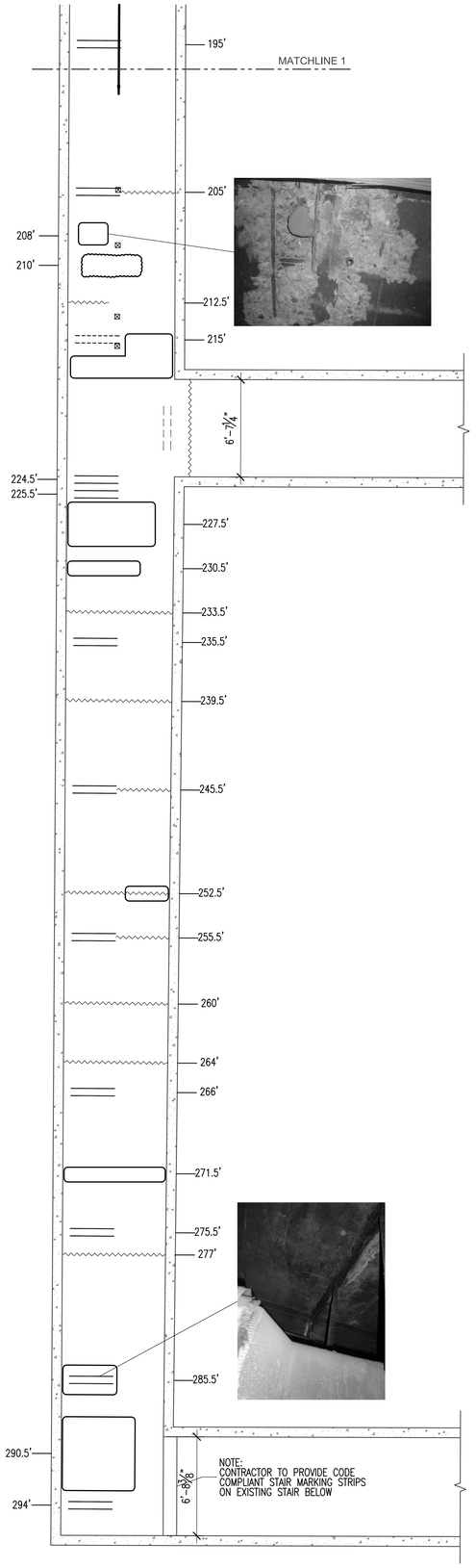
DRAWING TITLE:

SITE PLAN

DRAWING NUMBER:

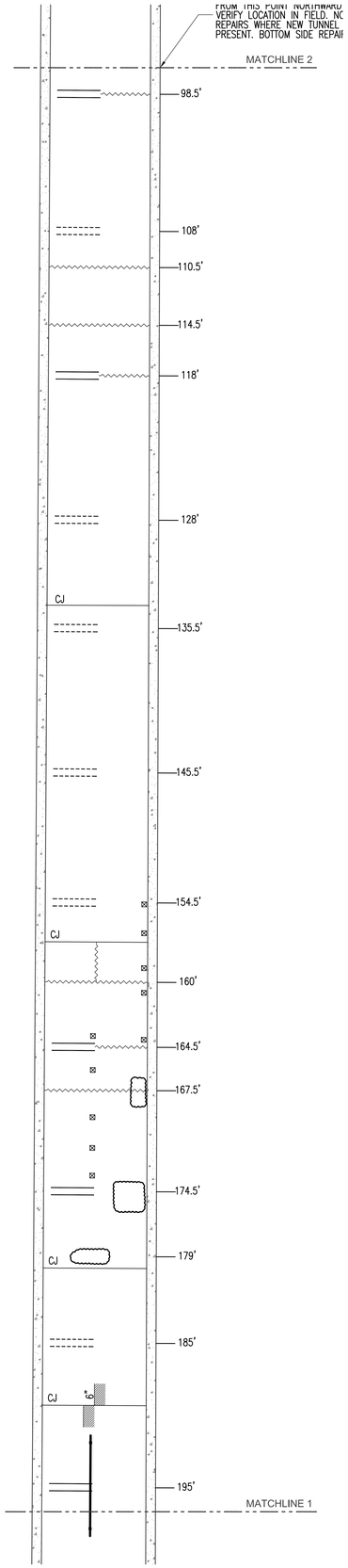
S1.01

SHEET X OF X



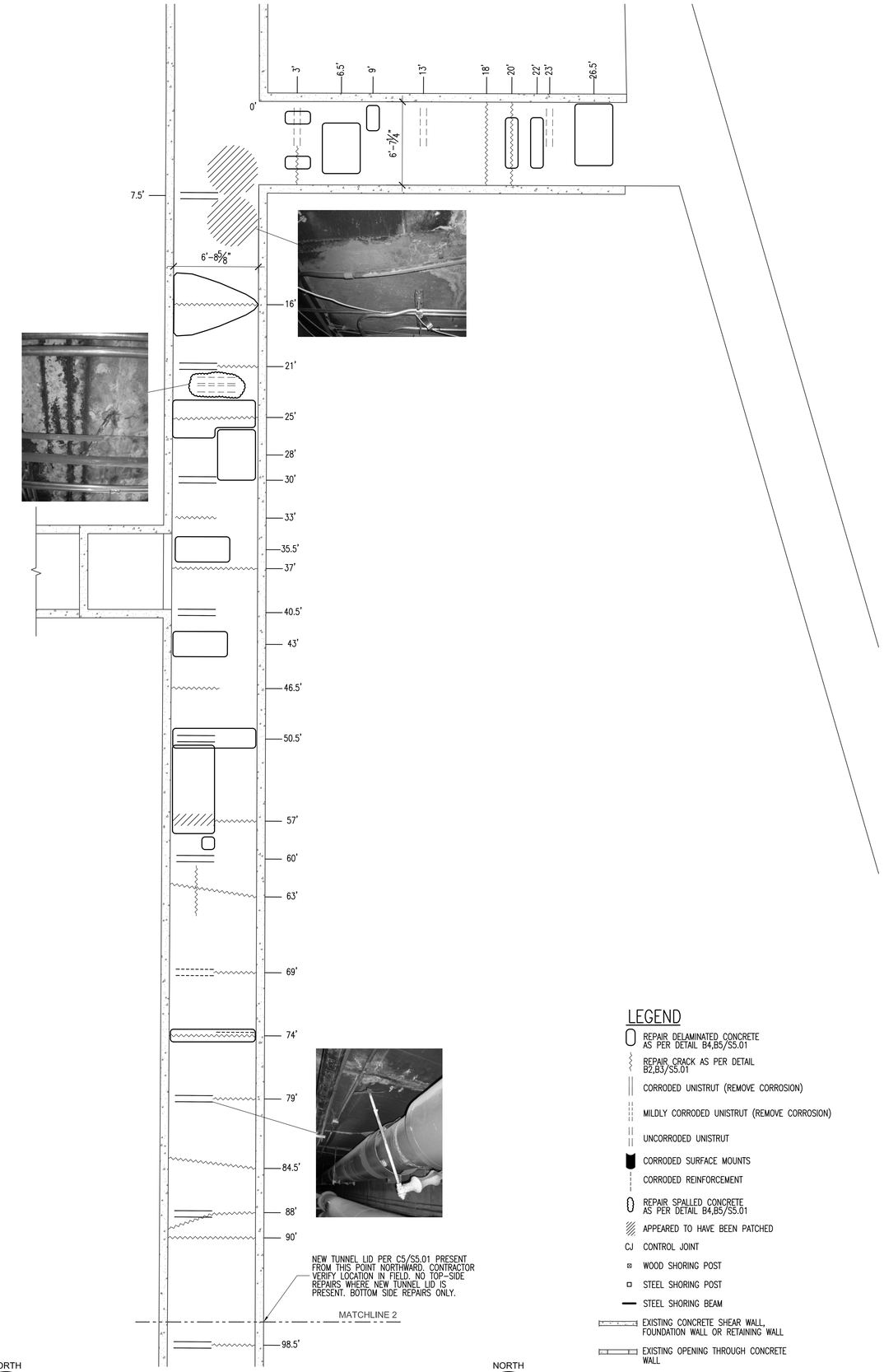
A1 S1.02 PARTIAL REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"

NORTH



A2 S1.02 PARTIAL REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"

NORTH



A4 S1.02 PARTIAL REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"

NORTH

LEGEND

- REPAIR DELAMINATED CONCRETE AS PER DETAIL B4,B5/S5.01
- REPAIR CRACK AS PER DETAIL B2,B3/S5.01
- CORRODED UNISTRUT (REMOVE CORROSION)
- MILDLY CORRODED UNISTRUT (REMOVE CORROSION)
- UNCORRODED UNISTRUT
- CORRODED SURFACE MOUNTS
- CORRODED REINFORCEMENT
- REPAIR SPALLED CONCRETE AS PER DETAIL B4,B5/S5.01
- APPEARED TO HAVE BEEN PATCHED
- CJ CONTROL JOINT
- WOOD SHORING POST
- STEEL SHORING POST
- STEEL SHORING BEAM
- EXISTING CONCRETE SHEAR WALL, FOUNDATION WALL OR RETAINING WALL
- EXISTING OPENING THROUGH CONCRETE WALL

REAVELEY ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CAPITOL PRESERVATION BOARD
STATE OFFICE BUILDING
TUNNEL IMPROVEMENTS

DFCM
4110 STATE OFFICE BLDG

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

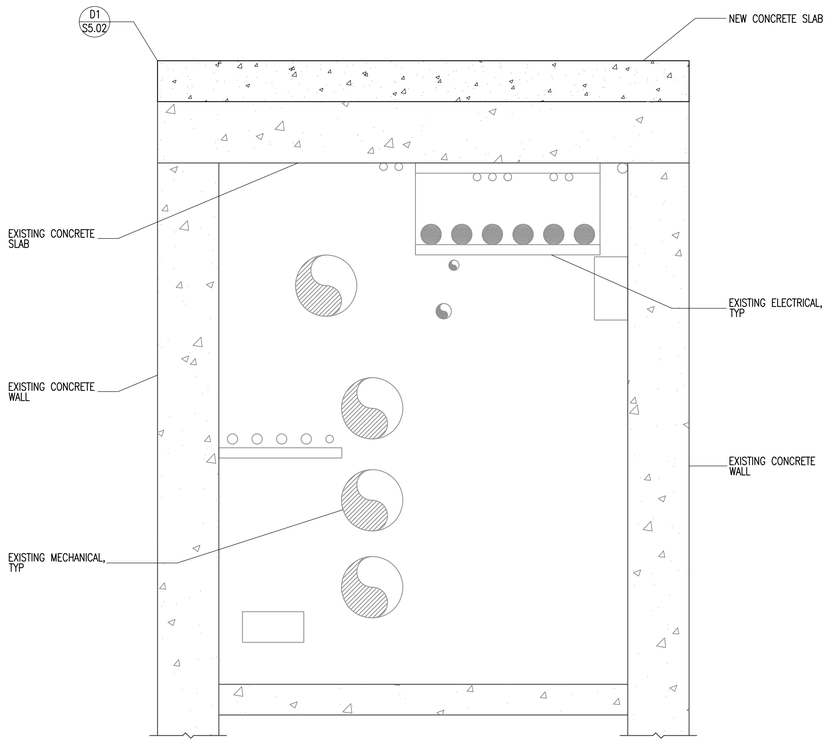
NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	RE&A
CHECKED BY:	RE&A
DESIGNED BY:	RE&A
RECORD DRAWING DATE:	
SIGNATURE:	

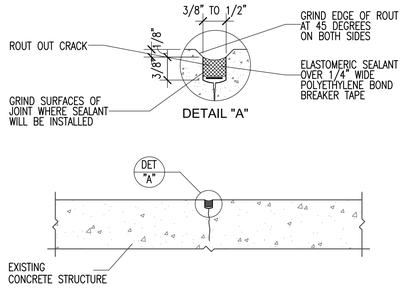
DRAWING TITLE:
OVERHEAD DAMAGE LAYOUT

DRAWING NUMBER:
S1.02

SHEET X OF X



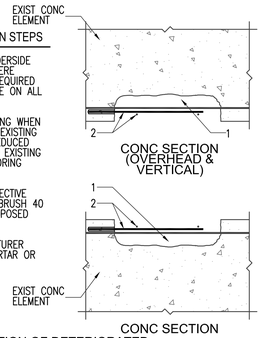
C1 S5.01 TYPICAL EXISTING TUNNEL SECTION
NO SCALE



D4 S5.01 TYPICAL ROUT AND SEAL CRACKS & JOINTS
NO SCALE
CONCREP-07

REINFORCING PREPARATION STEPS

1. REMOVE CONCRETE FROM UNDERSIDE OF EXISTING REINFORCING WHERE CORROSION IS PRESENT AS REQUIRED FOR 3/4" MINIMUM CLEARANCE ON ALL SIDES.
2. INSTALL ADDITIONAL REINFORCING WHEN THE CROSS SECTION OF THE EXISTING REINFORCEMENT HAS BEEN REDUCED BY 20% OR MORE. DOWEL TO EXISTING CONCRETE WITH EPOXY ANCHORING SYSTEM.
3. APPLY ANTI-CORROSION PROTECTIVE COATING WITH STIFF BRISTLE BRUSH 40 MILS. THICK COVERING ALL EXPOSED STEEL.
4. CURE AS REQ'D BY MANUFACTURER BEFORE APPLYING REPAIR MORTAR OR CONCRETE.

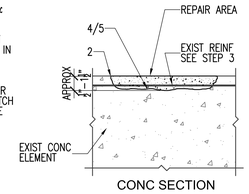


D5 S5.01 PREPARATION OF DETERIORATED EXISTING REINFORCING
NO SCALE
CONCREP-REINF-01

CONCRETE REPAIR STEPS

1. REPAIR AREA SHALL BE NO LESS THAN 3/8" IN DEPTH.
2. SAW CUT 1/2" AT EDGE OF REPAIR AREA IN STRAIGHT VERTICAL AND HORIZONTAL LINES.
3. WHEN REINFORCING IS ENCOUNTERED AND CORROSION IS PRESENT REFER TO DETAIL D5/S5.01 FOR PREPARATION OF REINFORCING.
4. SUBSTRATE SHALL BE CLEAN & SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER.
5. APPLY SCRUB COAT AND/OR BONDING AGENT (AS REQ'D BY MFR.) TO SUBSTRATE FILLING ALL POURS & VOIDS.
6. WHILE SCRUB COAT IS STILL WET APPLY POLYMER REPAIR MORTAR IN LIFTS AS RECOMMENDED BY THE MANUFACTURER.

FOR PARKING STRUCTURES: COVER PATCH AND 10" MIN BEYOND PATCH WITH TRAFFIC BEARING MEMBRANE SYSTEM



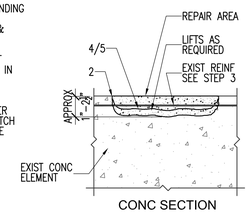
C3 S5.01 TYPE C-1 CONCRETE REPAIR (1/2"-1.1/2" DEEP)
NO SCALE
CONCREP-C1

CONCRETE REPAIR STEPS

1. REPAIR AREA SHALL BE NO LESS THAN 3/8" IN DEPTH.
2. SAW CUT 1/2" AT EDGE OF REPAIR AREA IN STRAIGHT VERTICAL AND HORIZONTAL LINES.
3. WHEN REINFORCING IS ENCOUNTERED AND CORROSION IS PRESENT REFER TO DETAIL D5/S5.01 FOR PREPARATION OF REINFORCING.
4. SUBSTRATE SHALL BE CLEAN & SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER.
5. APPLY SCRUB COAT AND/OR BONDING AGENT (AS REQ'D BY MFR.) TO SUBSTRATE FILLING ALL POURS & VOIDS.
6. WHILE SCRUB COAT IS STILL WET APPLY POLYMER REPAIR MORTAR IN LIFTS AS RECOMMENDED BY THE MANUFACTURER.
7. FOR PARKING STRUCTURES: COVER PATCH AND 10" MIN BEYOND PATCH WITH TRAFFIC BEARING MEMBRANE SYSTEM

CONCRETE REPAIR NOTES

1. FOR APPLICATIONS GREATER THAN 1.1/2" IN DEPTH, APPLY POLYMER REPAIR MORTAR IN LIFTS. SCORE/SCARIFY THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH ITS FINAL SET. REPEAT FROM STEP 4.



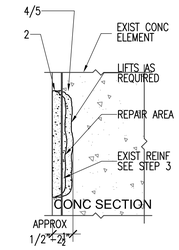
C4 S5.01 TYPE C-2 CONCRETE REPAIR (1"-2.1/2" DEEP)
NO SCALE
CONCREP-C2

CONCRETE REPAIR STEPS

1. REPAIR AREA SHALL BE NO LESS THAN 3/8" IN DEPTH.
2. SAW CUT 1/2" AT EDGE OF REPAIR AREA IN STRAIGHT VERTICAL AND HORIZONTAL LINES.
3. WHEN REINFORCING IS ENCOUNTERED AND CORROSION IS PRESENT REFER TO DETAIL D5/S5.01 FOR PREPARATION OF REINFORCING.
4. SUBSTRATE SHALL BE CLEAN & SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER.
5. APPLY SCRUB COAT AND/OR BONDING AGENT (AS REQ'D BY MFR.) TO SUBSTRATE FILLING ALL POURS & VOIDS.
6. WHILE SCRUB COAT IS STILL WET APPLY POLYMER REPAIR MORTAR IN LIFTS AS RECOMMENDED BY THE MANUFACTURER.
7. FOR PARKING STRUCTURES: COVER PATCH AND 10" MIN BEYOND PATCH WITH TRAFFIC BEARING MEMBRANE SYSTEM

CONCRETE REPAIR NOTES

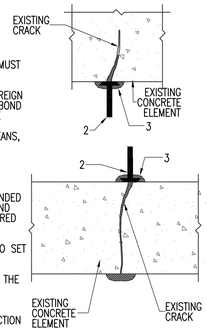
1. FOR APPLICATIONS GREATER THAN 1.1/2" IN DEPTH, APPLY POLYMER REPAIR MORTAR IN LIFTS. SCORE/SCARIFY THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH ITS FINAL SET. REPEAT FROM STEP 4.



C5 S5.01 TYPE D-1 CONCRETE REPAIR (1/2"-2.1/2" DEEP)
NO SCALE
CONCREP-C3

CONCRETE REPAIR STEPS

1. SURFACE PREPARATION: THE CRACKS AND ADJACENT SUBSTRATE MUST BE CLEAN, SOUND AND FREE OF FROST. REMOVE DUST, LAITANCE, GREASE CURING COMPOUNDS, WAXES, IMPREGNATIONS, FOREIGN PARTICLES, EFFLORESCENCE AND OTHER BOND INHIBITING MATERIALS FROM THE SURFACE INSIDE LARGE CRACKS AND FROM THE ADJACENT SUBSTRATE BY MECHANICAL MEANS, I.E. ABRASIVE BLASTING, HIGH PRESSURE WATER-BLASTING, ETC.
2. SET PORTING DEVICES OVER CRACKS.
3. PLACE CAP SEAL MATERIAL, AS RECOMMENDED BY THE MANUFACTURER, OVER CRACKS AND AROUND EACH INJECTION PORT AS REQUIRED TO SUCCESSFULLY INJECT THE CRACK.
4. ALLOW SUFFICIENT TIME FOR CAP SEAL TO SET BEFORE INJECTING THE CRACK.
5. WHEN THE CAP SEAL HAS CURED INJECT THE EPOXY RESIN AS RECOMMENDED BY THE MANUFACTURER.
6. REMOVE CAP SEAL AFTER FINISHING INJECTION OF CRACKS AND RESTORE SURFACE TO ORIGINAL FINISH.



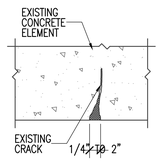
B2 S5.01 TYPE A-1 CONCRETE REPAIR 0.01"-0.25" (EPOXY INJECTION)
NO SCALE
CONCREP-A1

CONCRETE REPAIR STEPS

1. REPAIR AREA SHALL BE NO LESS THAN 1/2" IN DEPTH.
2. SAW CUT 1/2" AT EDGE OF REPAIR AREA IN STRAIGHT VERTICAL AND HORIZONTAL LINES.
3. SUBSTRATE SHALL BE CLEAN & SATURATED SURFACE DRAY (SSD) WITH NO STANDING WATER.
4. APPLY SCRUB COAT AND/OR BONDING AGENT (AS REQ'D BY MFR.) TO SUBSTRATE FILLING ALL POURS & VOIDS.
5. WHILE SCRUB COAT IS STILL WET, PLACE POLYMER REPAIR MORTAR FILLING ENTIRE CAVITY.
6. STRIKE OFF AND LEVEL AS REQUIRED.
7. WASH AND/OR BRUSH SURFACE AS REQUIRED TO MATCH EXISTING.

CONCRETE REPAIR NOTES

1. FOR APPLICATIONS GREATER THAN 1.1/2" IN DEPTH, APPLY POLYMER REPAIR MORTAR IN LIFTS. SCORE/SCARIFY THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH ITS FINAL SET. REPEAT FROM STEP 3.

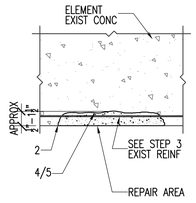


B3 S5.01 TYPE A-3 CONCRETE REPAIR 1/4"-2"
NO SCALE
CONCREP-A3

CONCRETE REPAIR STEPS

1. REPAIR AREA SHALL BE NO LESS THAN 1/2" IN DEPTH.
2. SAW CUT 1/2" AT EDGE OF REPAIR AREA IN STRAIGHT VERTICAL AND HORIZONTAL LINES.
3. WHEN REINFORCING IS ENCOUNTERED AND CORROSION IS PRESENT REFER TO DETAIL D5/S5.01 FOR PREPARATION OF REINFORCING.
4. SUBSTRATE SHALL BE CLEAN & SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER.
5. APPLY SCRUB COAT AND/OR BONDING AGENT (AS REQ'D BY MFR.) TO SUBSTRATE FILLING ALL POURS & VOIDS.
6. WHILE SCRUB COAT IS STILL WET APPLY POLYMER REPAIR MORTAR IN LIFTS AS RECOMMENDED BY THE MANUFACTURER.

CONCRETE REPAIR NOTES



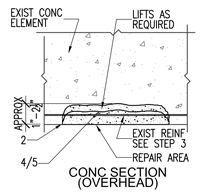
B4 S5.01 TYPE E-1 CONCRETE REPAIR (1/2"-1.1/2" DEEP)
NO SCALE
CONCREP-C3

CONCRETE REPAIR STEPS

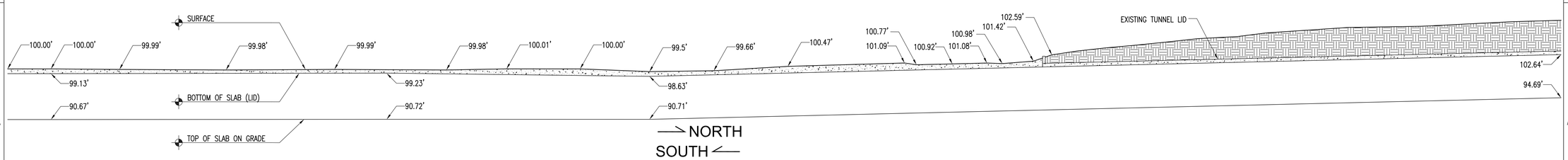
1. REPAIR AREA SHALL BE NO LESS THAN 1/2" IN DEPTH.
2. SAW CUT 1/2" AT EDGE OF REPAIR AREA IN STRAIGHT VERTICAL AND HORIZONTAL LINES.
3. WHEN REINFORCING IS ENCOUNTERED AND CORROSION IS PRESENT REFER TO DETAIL D5/S5.01 FOR PREPARATION OF REINFORCING.
4. SUBSTRATE SHALL BE CLEAN & SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER.
5. APPLY SCRUB COAT AND/OR BONDING AGENT (AS REQ'D BY MFR.) TO SUBSTRATE FILLING ALL POURS & VOIDS.
6. WHILE SCRUB COAT IS STILL WET APPLY POLYMER REPAIR MORTAR IN LIFTS AS RECOMMENDED BY THE MANUFACTURER.

CONCRETE REPAIR NOTES

1. FOR APPLICATIONS GREATER THAN 1.1/2" IN DEPTH, APPLY POLYMER REPAIR MORTAR IN LIFTS. SCORE/SCARIFY THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH ITS FINAL SET. REPEAT FROM STEP 4.



B5 S5.01 TYPE E-2 CONCRETE REPAIR (1"-2.1/2" DEEP)
NO SCALE
CONCREP-E



A1 S5.01 TYPICAL EXISTING TUNNEL LONGITUDINAL SECTION
NO SCALE

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

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CAPITOL PRESERVATION BOARD
STATE OFFICE BUILDING
TUNNEL IMPROVEMENTS

DFCM
4110 STATE OFFICE BLDG

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

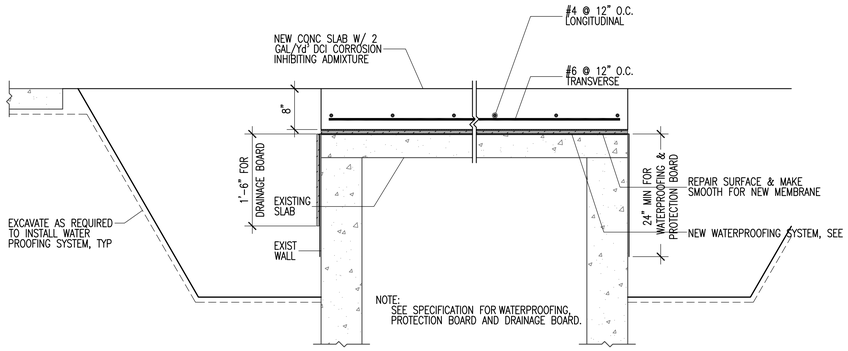
NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	RE&A
CHECKED BY:	RE&A
DESIGNED BY:	RE&A
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
REPAIR DETAILS

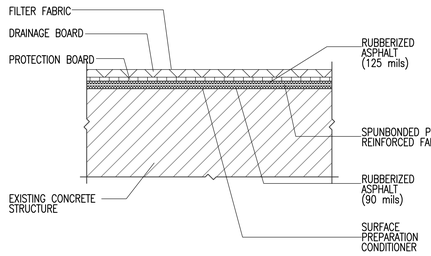
DRAWING NUMBER:
S5.01

SHEET X OF X

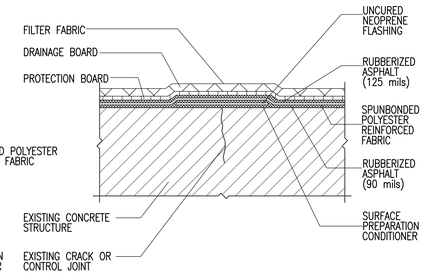


D1 S5.02 CUP TUNNEL SLAB OVERLAY
NO SCALE
2010-172-S502/D1

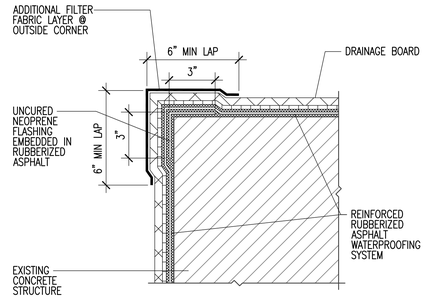
NOTE:
1. SEE DETAILS B1 & B3/W501 FOR CORNER FLASHING REQUIREMENTS.
2. SEE DETAIL D2/W501 FOR WATERPROOFING OVER CRACKS.



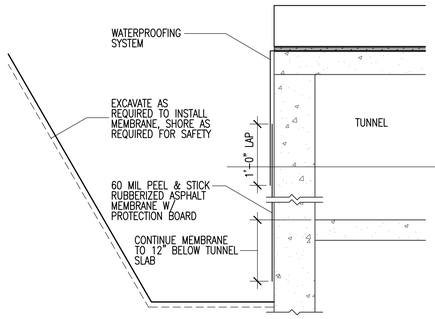
D3 S5.02 TYPICAL REINFORCED RUBBERIZED ASPHALT MEMBRANE SYSTEM
NO SCALE
2010-172-S502/D3



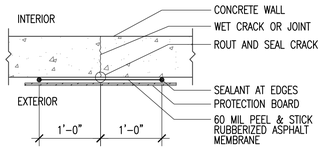
D4 S5.02 TYPICAL REINFORCED RUBBERIZED ASPHALT MEMBRANE SYSTEM OVER CRACK OR JOINT
NO SCALE
2010-172-S502/D4



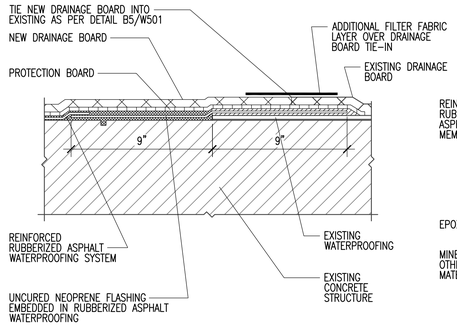
D5 S5.02 OUTSIDE CORNER WATERPROOFING
NO SCALE
2010-172-S502/D5



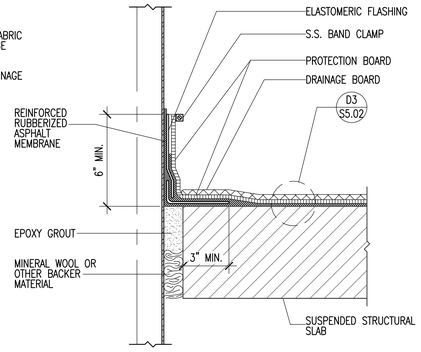
C1 S5.02 ALTERNATE NO. 2 SECTION
NO SCALE
2010-172-S502/C1

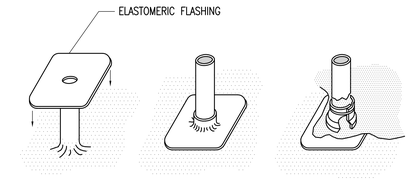


ALTERNATE No.2 PLAN DETAIL



C3 S5.02 NEW WATERPROOFING TO EXISTING WATERPROOFING TIE-IN DETAIL
NO SCALE
2010-172-S502/C3

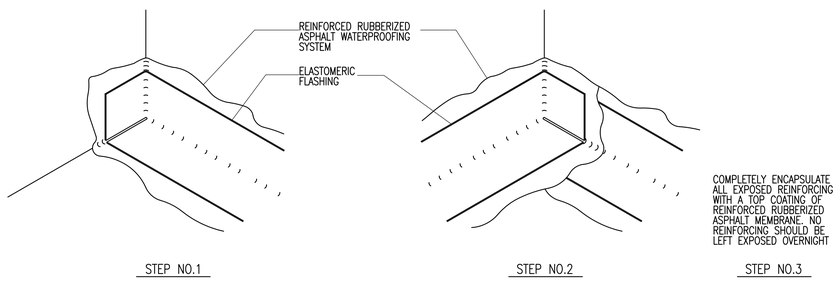




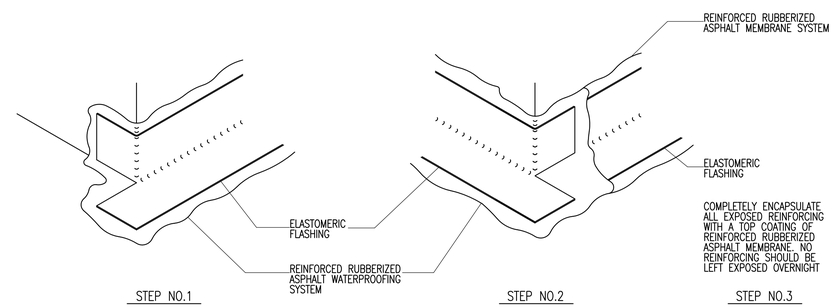
NOTES:

1. PENETRATION SHALL BE PROPERLY SECURED TO STRUCTURE TO PREVENT VERTICAL OR LATERAL MOVEMENT.
2. SOME PIPE MATERIALS (PVC, COPPER, BRASS) MAY REQUIRE ROUGHENING/ SANDING, IN ADDITION TO PRIMING W/SURFACE CONDITIONER, FOR PROPER ADHESION OF MEMBRANE.
3. METAL PIPES MUST BE FREE OF ALL OIL AND RUST.

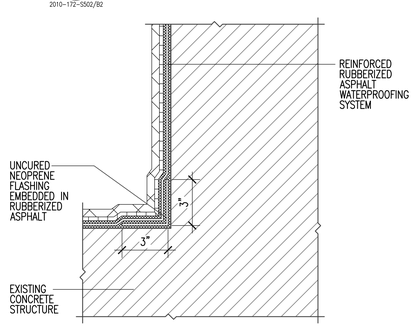
C4 S5.02 TYPICAL NON CAST-IN-PLACE PENETRATIONS (PIPE, VENT, ETC.)
NO SCALE
2010-172-S502/C4



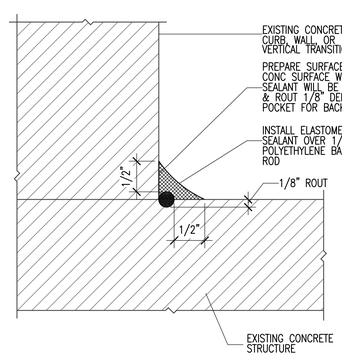
B2 S5.02 TYPICAL INSIDE CORNER & JOINT REINFORCEMENT
NO SCALE
2010-172-S502/B2



B4 S5.02 TYPICAL OUTSIDE CORNER & JOINT REINFORCEMENT
NO SCALE
2010-172-S502/B4

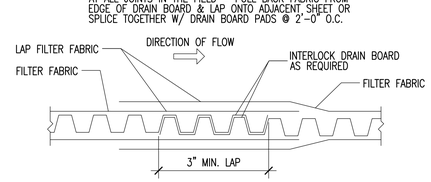


A2 S5.02 INSIDE CORNER WATERPROOFING
NO SCALE
2010-172-S502/A2



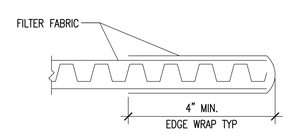
A3 S5.02 COVE SEALANT JOINT DETAIL
FULL SCALE
2010-172-S502/A3

NOTE:
AT ALL JOINTS IN THE FIELD – PULL BACK FABRIC FROM EDGE OF DRAIN BOARD & LAP ONTO ADJACENT SHEET OR SPLICE TOGETHER W/ DRAIN BOARD PADS @ 2'-0" O.C.



A4 S5.02 DRAIN BOARD TIE-IN DETAIL TYP
NO SCALE
2010-172-S502/A4

NOTE:
WRAP ALL RAW EDGES OF DRAINAGE BOARD W/ FILTER FABRIC AS SHOWN.



A5 S5.02 DRAIN BOARD EDGE WRAP DETAIL TYP
NO SCALE
2010-172-S502/A5

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

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CAPITOL PRESERVATION BOARD
STATE OFFICE BUILDING
TUNNEL IMPROVEMENTS

DFCM
4110 STATE OFFICE BLDG

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

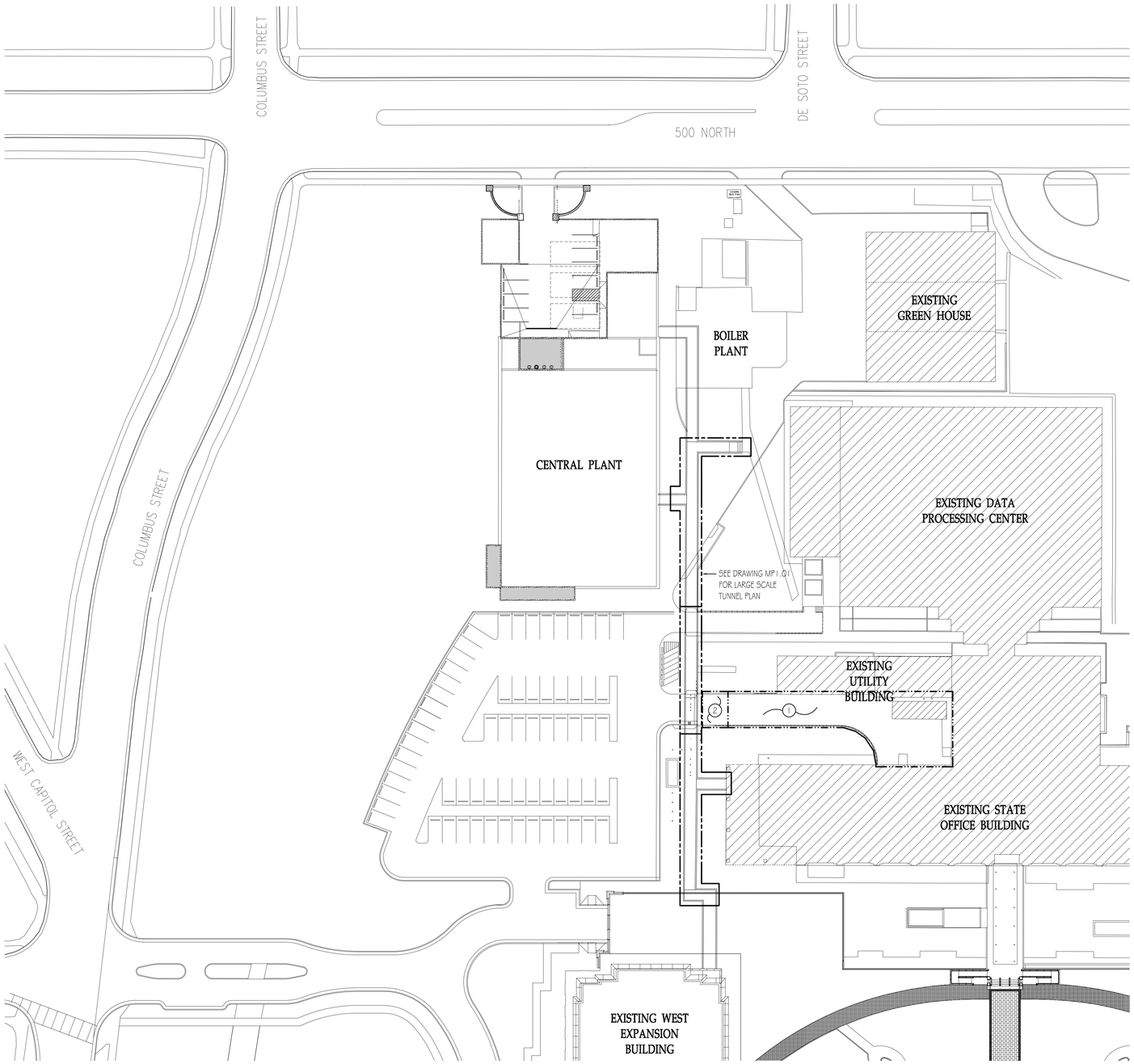
NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	RE&A
CHECKED BY:	RE&A
DESIGNED BY:	RE&A
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
REPAIR DETAILS

DRAWING NUMBER:
S5.02

SHEET X OF X



MECHANICAL SITE PLAN

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

40 20 0 40 80

CONSTRUCTION NOTES

GENERAL

1. THE PURPOSE OF THE PROJECT IS TO REMOVE ALL PIPING HANGING OR ATTACHED TO THE CEILING TO CLEAR A WAY FOR STRUCTURAL MODIFICATIONS TO THE TUNNEL CEILING. THE PIPING INCLUDES THE HEATING WATER SUPPLY, 5 lb. NATURAL GAS LINE, COMPRESSED AIR LINES, DRAIN LINES AND MAKE-UP WATER LINES.
2. THE WORK SHALL BE DONE IN PHASES TO INSURE DOWN-TIME OF EACH SYSTEM IS KEPT TO A MINIMUM.
3. ALL SHUT-DOWN MUST BE SCHEDULED 72 HOURS IN ADVANCE AND MUST HAVE WRITTEN AUTHORIZATION.
4. THE DOWN-TIME, WHEN AUTHORIZED, CAN ONLY OCCUR BETWEEN 6:00 P.M. THURSDAY AND 5:00 A.M. MONDAY WITH ALL SYSTEMS OPERATIONAL BY 5:00 A.M. MONDAY.
5. THE NEW CHANNEL STRUT SUPPORT SYSTEM WORK SHALL BE INSTALLED AT 10'-0" O.C. THE ENTIRE LENGTH OF THE NOTED WORK AREA TO SUPPORT THE PIPE BEING RELOCATED OR REPLACED.
6. THE CHANNEL STRUT SUPPORT SYSTEM SHALL BE CONSTRUCTED TO ALLOW FOR THE MAXIMUM WALKWAY POSSIBLE AND FOR THE MAXIMUM CLEARANCE ABOVE PIPING.

BASE BID

1. THE HEATING WATER SUPPLY LINE WILL BE RELOCATED TO BE CARRIED ON THE NEW CHANNEL SUPPORT SYSTEM. PROVIDE ALL NEW FITTINGS TO MAKE THE NECESSARY OFFSETS AND TEMPORARY CONNECTIONS.
2. THE 3" GAS LINE WILL BE RELOCATED TO BE CARRIED BY THE NEW CHANNEL SUPPORT SYSTEM. PROVIDE ALL NEW FITTINGS TO MAKE THE NECESSARY OFFSETS AND TEMPORARY CONNECTIONS.
3. THE COMPRESSED AIR LINE WILL BE RELOCATED AND CARRIED BY THE UNISTRUT FRAME. PROVIDE ALL NEW FITTINGS TO MAKE THE NECESSARY OFFSETS AND CONNECT IT TO THE EXISTING PIPING. ONCE THE NEW CONNECTIONS ARE MADE THE REMAINING EXISTING COMPRESSED AIR PIPING SHALL BE REMOVED IN 10'-0" LENGTH AND RETURNED TO THE OWNER.
4. REMOVE THE ENTIRE SECTION OF THE HEATING WATER SUPPLY LINE INSULATION. REPLACE WITH NEW, INCLUDING PVC JACKET. PROTECT THE OTHER INSULATED PIPING FROM DAMAGE AND REPLACE ANY DAMAGED INSULATION THAT OCCURS DURING THIS PROJECT.
5. THE COOLING TOWER MAKE-UP WATER LINE SHALL BE REHUNG FROM NEW CHANNEL STRUT THAT SPANS WALL TO WALL IN TUNNEL.
6. THE COOLING TOWER MAKE-UP WINTER DRAIN LINES SHALL BE REHUNG FROM CHANNEL STRUT THAT SPANS WALL TO WALL IN TUNNEL.

ALTERNATE NO. 1

1. WILL BE THE SAME AS THE BASE BID EXCEPT THE 12" SECTION AND 8' SECTION OF HEATING WATER SUPPLY WILL BE REPLACED WITH NEW 10" HEATING WATER SUPPLY TO CREATE A 10" HEATING WATER SUPPLY LINE FROM THE CENTRAL PLANT TO THE WEST OFFICE BUILDING.

DRAWING NOTES

1. THIS AREA HAS GLYCOL SNOW MELT.
2. THE END SECTION OF THE GLYCOL SNOW MELT SYSTEM WILL NEED TO BE EXPOSED TO ALLOW STRUCTURAL REPAIRS OF TUNNEL. PATCH AND REPAIR ANY DAMAGED PIPING. FILL WITH 50% GLYCOL SOLUTION TO MATCH EXISTING GLYCOL AND PLACE IN FULL WORKING ORDER.

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

LICENSED PROFESSIONAL ENGINEER
No. 157941
LARRY D. VEIGEL
STATE OF UTAH
7-26-10

CENTRAL UTILITY
PLANT TUNNEL REPAIR
UTAH STATE CAPITOL

DFCM
4110 STATE OFFICE BLDG
PROPERTY ID #

ISSUED:

NO.	DESCRIPTION	DATE
1	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	GWM
CHECKED BY:	LDV
DESIGNED BY:	LDV

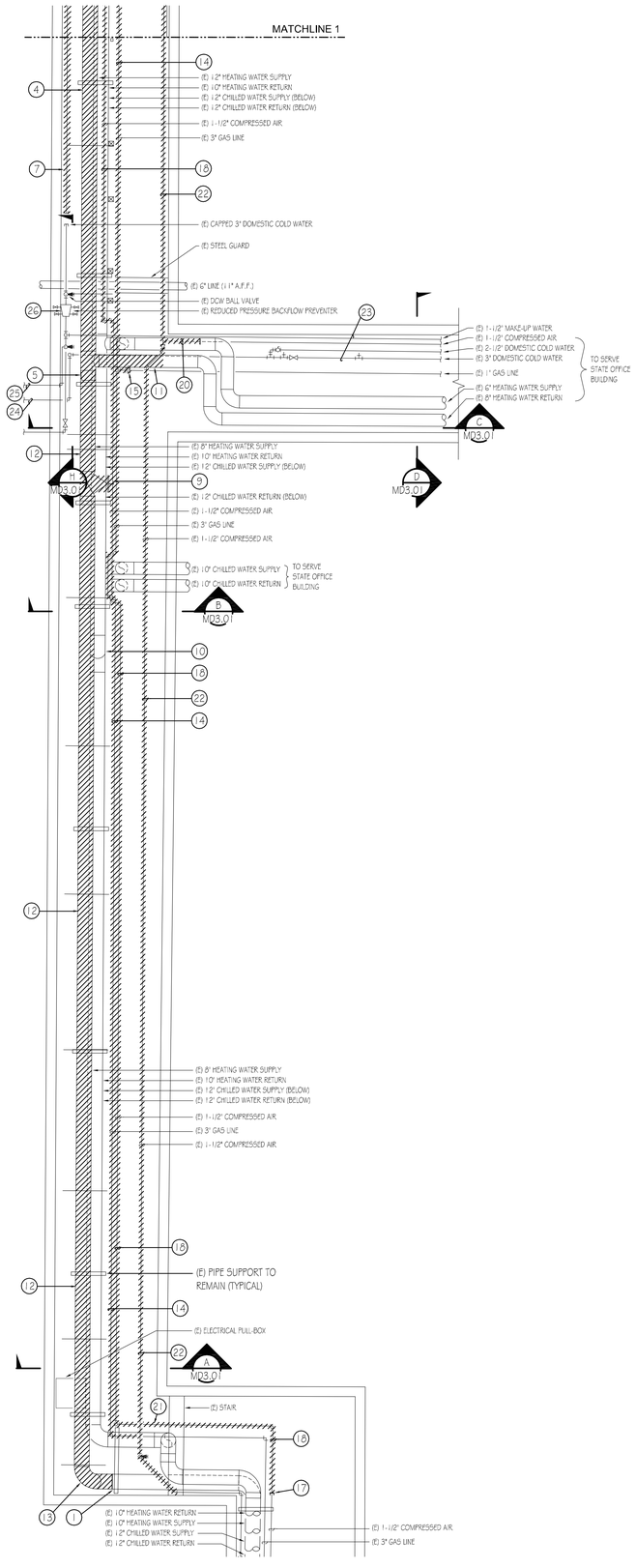
RECORD DRAWING DATE:
SIGNATURE:

DRAWING TITLE:
MECHANICAL SITE PLAN

DRAWING NUMBER:
MS1.01

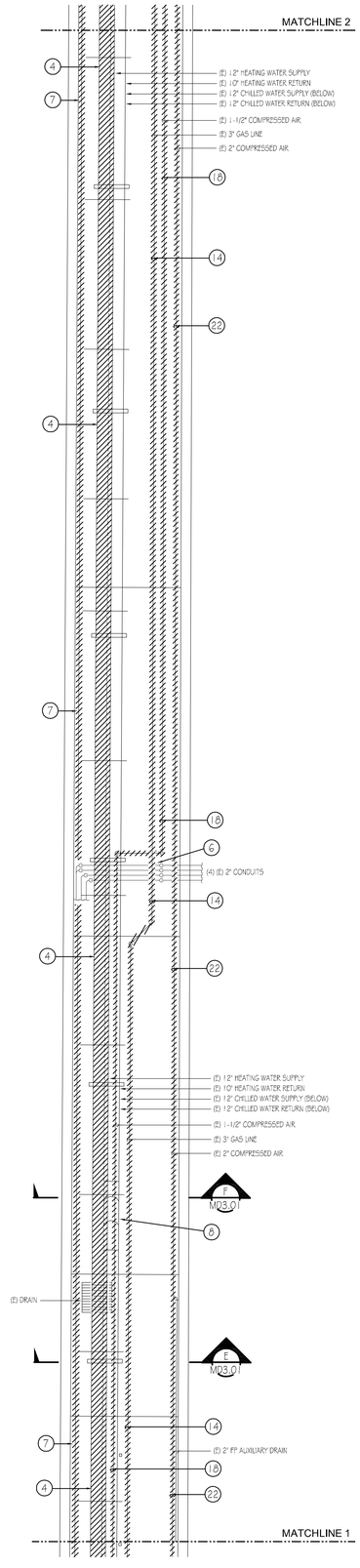
SHEET X OF X

HEATH
Engineering Company
Mechanical/Electrical/Plumbing Consultants
377 West 800 North Salt Lake City, Utah 84103 Tel: (801) 322-0487 Fax: (801) 322-0490



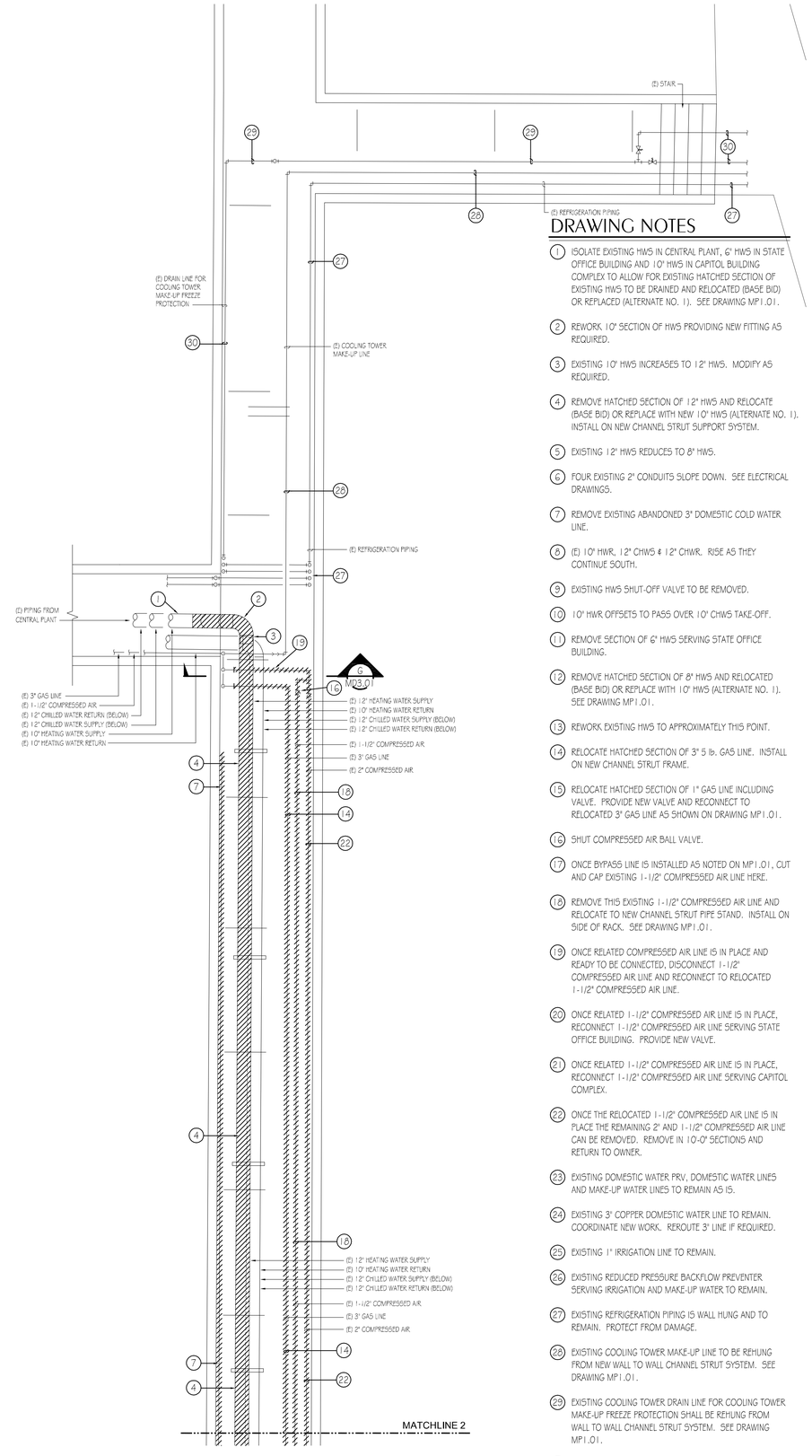
PARTIAL TUNNEL PLAN (DEMOLITION)

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



PARTIAL TUNNEL PLAN (DEMOLITION)

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



PARTIAL TUNNEL PLAN (DEMOLITION)

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

DRAWING NOTES

1. ISOLATE EXISTING HWS IN CENTRAL PLANT, 6" HWS IN STATE OFFICE BUILDING AND 10" HWS IN CAPITOL BUILDING COMPLEX TO ALLOW FOR EXISTING HATCHED SECTION OF EXISTING HWS TO BE DRAINED AND RELOCATED (BASE BID) OR REPLACED (ALTERNATE NO. 1). SEE DRAWING MP1.01.
2. REWORK 10" SECTION OF HWS PROVIDING NEW FITTING AS REQUIRED.
3. EXISTING 10" HWS INCREASES TO 12" HWS. MODIFY AS REQUIRED.
4. REMOVE HATCHED SECTION OF 12" HWS AND RELOCATE (BASE BID) OR REPLACE WITH NEW 10" HWS (ALTERNATE NO. 1). INSTALL ON NEW CHANNEL STRUT SUPPORT SYSTEM.
5. EXISTING 12" HWS REDUCES TO 8" HWS.
6. FOUR EXISTING 2" CONDUITS SLOPE DOWN. SEE ELECTRICAL DRAWINGS.
7. REMOVE EXISTING ABANDONED 3" DOMESTIC COLD WATER LINE.
8. (E) 10" HWR, 12" CHWS & 12" CHWR. RISE AS THEY CONTINUE SOUTH.
9. EXISTING HWS SHUT-OFF VALVE TO BE REMOVED.
10. 10" HWR OFFSETS TO PASS OVER 10" CHWS TAKE-OFF.
11. REMOVE SECTION OF 6" HWS SERVING STATE OFFICE BUILDING.
12. REMOVE HATCHED SECTION OF 8" HWS AND RELOCATED (BASE BID) OR REPLACE WITH 10" HWS (ALTERNATE NO. 1). SEE DRAWING MP1.01.
13. REWORK EXISTING HWS TO APPROXIMATELY THIS POINT.
14. RELOCATE HATCHED SECTION OF 3" 5 lb. GAS LINE. INSTALL ON NEW CHANNEL STRUT FRAME.
15. RELOCATE HATCHED SECTION OF 1" GAS LINE INCLUDING VALVE. PROVIDE NEW VALVE AND RECONNECT TO RELOCATED 3" GAS LINE AS SHOWN ON DRAWING MP1.01.
16. SHUT COMPRESSED AIR BALL VALVE.
17. ONCE BYPASS LINE IS INSTALLED AS NOTED ON MP1.01, CUT AND CAP EXISTING 1-1/2" COMPRESSED AIR LINE HERE.
18. REMOVE THIS EXISTING 1-1/2" COMPRESSED AIR LINE AND RELOCATE TO NEW CHANNEL STRUT PIPE STAND. INSTALL ON SIDE OF RACK. SEE DRAWING MP1.01.
19. ONCE RELATED COMPRESSED AIR LINE IS IN PLACE AND READY TO BE CONNECTED, DISCONNECT 1-1/2" COMPRESSED AIR LINE AND RECONNECT TO RELOCATED 1-1/2" COMPRESSED AIR LINE.
20. ONCE RELATED 1-1/2" COMPRESSED AIR LINE IS IN PLACE, RECONNECT 1-1/2" COMPRESSED AIR LINE SERVING STATE OFFICE BUILDING. PROVIDE NEW VALVE.
21. ONCE RELATED 1-1/2" COMPRESSED AIR LINE IS IN PLACE, RECONNECT 1-1/2" COMPRESSED AIR LINE SERVING CAPITOL COMPLEX.
22. ONCE THE RELOCATED 1-1/2" COMPRESSED AIR LINE IS IN PLACE THE REMAINING 2" AND 1-1/2" COMPRESSED AIR LINE CAN BE REMOVED. REMOVE IN 10-0" SECTIONS AND RETURN TO OWNER.
23. EXISTING DOMESTIC WATER PRV, DOMESTIC WATER LINES AND MAKE-UP WATER LINES TO REMAIN AS IS.
24. EXISTING 3" COPPER DOMESTIC WATER LINE TO REMAIN. COORDINATE NEW WORK. REROUTE 3" LINE IF REQUIRED.
25. EXISTING 1" IRRIGATION LINE TO REMAIN.
26. EXISTING REDUCED PRESSURE BACKFLOW PREVENTER SERVING IRRIGATION AND MAKE-UP WATER TO REMAIN.
27. EXISTING REFRIGERATION PIPING IS WALL HUNG AND TO REMAIN. PROTECT FROM DAMAGE.
28. EXISTING COOLING TOWER MAKE-UP LINE TO BE REHUNG FROM NEW WALL TO WALL CHANNEL STRUT SYSTEM. SEE DRAWING MP1.01.
29. EXISTING COOLING TOWER DRAIN LINE FOR COOLING TOWER MAKE-UP FREEZE PROTECTION SHALL BE REHUNG FROM WALL TO WALL CHANNEL STRUT SYSTEM. SEE DRAWING MP1.01.
30. EXISTING COOLING TOWER MAKE-UP WATER DRAIN LINE TO REMAIN.

HEATH
Engineering Company
Mechanical/Electrical/Plumbing Consultants
377 West 800 North Salt Lake City, Utah 84103 Tel: (801) 322-0487 Fax: (801) 322-0490

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

LICENSED PROFESSIONAL ENGINEER No. 157941 LARRY D. VEIGEL STATE OF UTAH
7-26-10

CENTRAL UTILITY PLANT TUNNEL REPAIR

UTAH STATE CAPITOL

DFCM

4110 STATE OFFICE BLDG

PROPERTY ID #

ISSUED:

NO.	DESCRIPTION	DATE
1	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	GWM
CHECKED BY:	LDV
DESIGNED BY:	LDV
RECORD DRAWING DATE:	
SIGNATURE:	

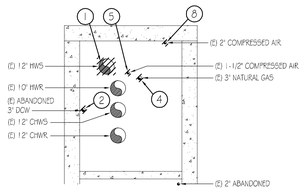
DRAWING TITLE:

TUNNEL PLAN (DEMOLITION)

DRAWING NUMBER:

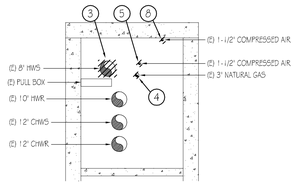
MD1.01

SHEET X OF X



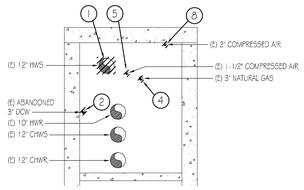
TUNNEL SECTION (DEMOLITION) E MD3.01

SCALE: 1/4"=1'-0" 5 0 10



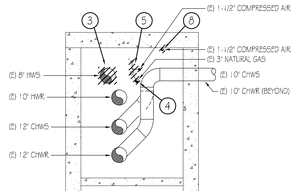
TUNNEL SECTION (DEMOLITION) A MD3.01

SCALE: 1/4"=1'-0" 5 0 10



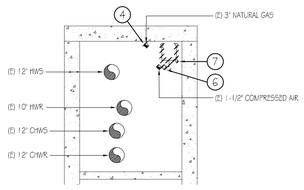
TUNNEL SECTION (DEMOLITION) F MD3.01

SCALE: 1/4"=1'-0" 5 0 10



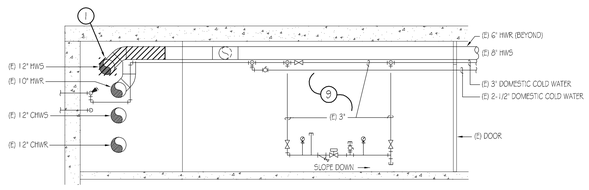
TUNNEL SECTION (DEMOLITION) B MD3.01

SCALE: 1/4"=1'-0" 5 0 10



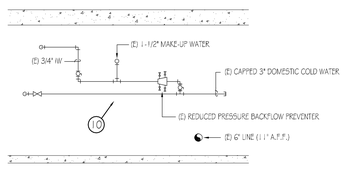
TUNNEL SECTION (DEMOLITION) G MD3.01

SCALE: 1/4"=1'-0" 5 0 10



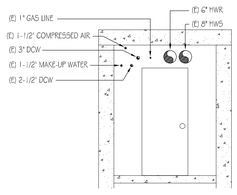
TUNNEL SECTION (DEMOLITION) C MD3.01

SCALE: 1/4"=1'-0" 5 0 10



TUNNEL SECTION (DEMOLITION) H MD3.01

SCALE: 1/4"=1'-0" 5 0 10



TUNNEL SECTION (DEMOLITION) D MD3.01

SCALE: 1/4"=1'-0" 5 0 10

DRAWING NOTES

1. REMOVE HATCHED SECTION OF 12" HWS AND RELOCATE (BASE BID) OR REPLACE WITH NEW 10" HWS (ALTERNATE NO. 1). INSTALL ON NEW CHANNEL STRUT SUPPORT SYSTEM.
2. REMOVE EXISTING ABANDONED 3" DOMESTIC COLD WATER LINES.
3. REMOVE HATCHED SECTION OF 8" HWS AND RELOCATED (BASE BID) OR REPLACE WITH 10" HWS (ALTERNATE NO. 1). SEE DRAWING MP1.01.
4. RELOCATE HATCHED SECTION OF 3" 5 lb. GAS LINE. INSTALL ON NEW CHANNEL STRUT FRAME.
5. REMOVE THIS EXISTING 1-1/2" COMPRESSED AIR LINE AND RELOCATE TO NEW CHANNEL STRUT PIPE STAND. INSTALL ON SIDE OF RACK. SEE DRAWING MP1.01.
6. SHUT COMPRESSED AIR BALL VALVE.
7. ONCE RELATED COMPRESSED AIR LINE IS IN PLACE AND READY TO BE CONNECTED, DISCONNECT 1-1/2" COMPRESSED AIR LINE AND RECONNECT TO RELOCATED 1-1/2" COMPRESSED AIR LINE.
8. ONCE THE RELOCATED 1-1/2" COMPRESSED AIR LINE IS IN PLACE THE REMAINING 2" AND 1-1/2" COMPRESSED AIR LINE CAN BE REMOVED. REMOVE IN 10'-0" SECTIONS AND RETURN TO OWNER.
9. EXISTING COLD WATER SYSTEM TO REMAIN. PROTECT FROM DAMAGE.
10. EXISTING COLD WATER SYSTEM WITH REDUCED PRESSURE BACKFLOW PREVENTER TO REMAIN. PROTECT FROM DAMAGE.

REAVELEY
ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

LICENSED PROFESSIONAL ENGINEER
No. 157941
LARRY D. VEIGEL
STATE OF UTAH
7-26-10

CENTRAL UTILITY
PLANT TUNNEL REPAIR
UTAH STATE CAPITOL

DFCM
4110 STATE OFFICE BLDG
PROPERTY ID #

ISSUED:

NO.	DESCRIPTION	DATE
1	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

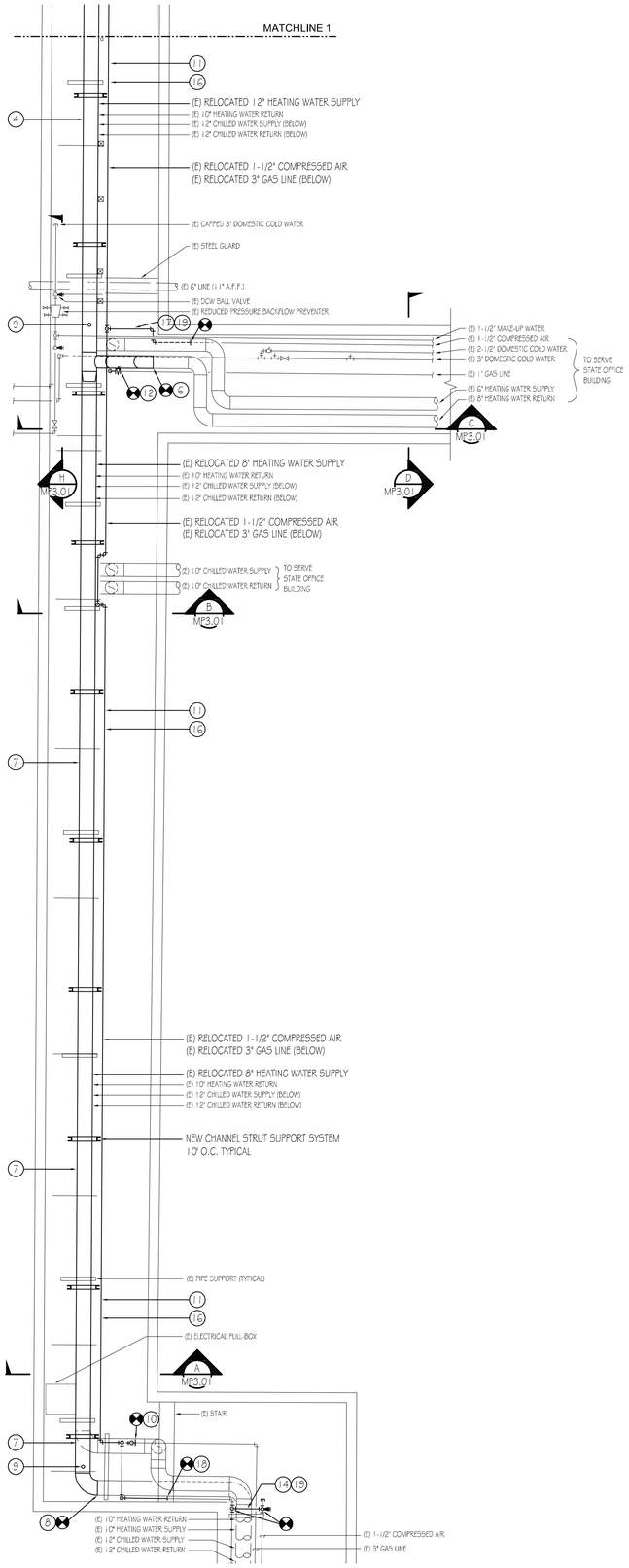
DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	GWM
CHECKED BY:	LDV
DESIGNED BY:	LDV
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
TUNNEL SECTIONS (DEMOLITION)

DRAWING NUMBER:
MD3.01

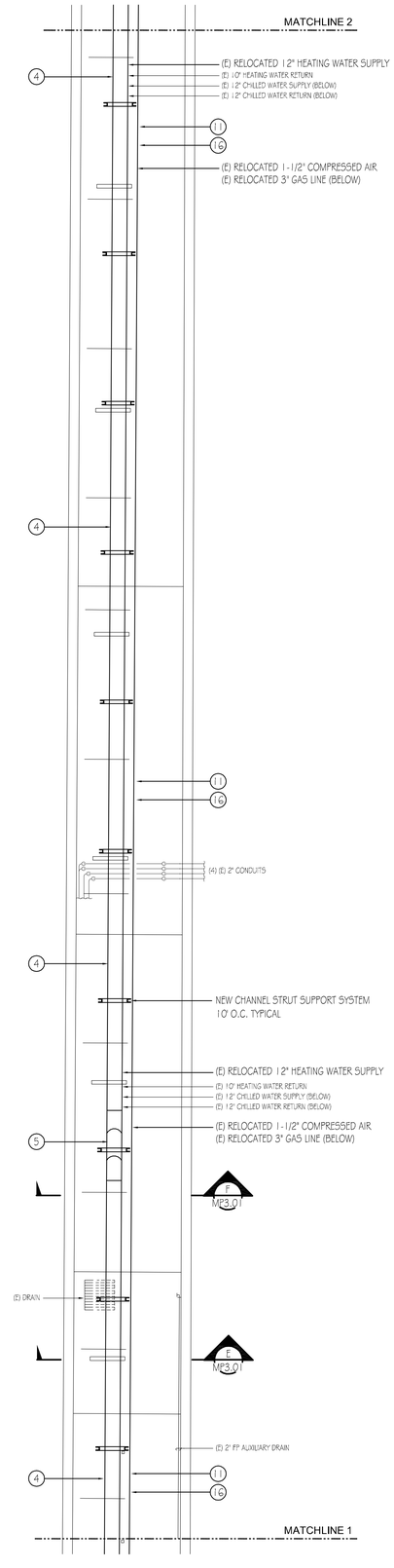
SHEET X OF X

HEATH
Engineering Company
Mechanical/Electrical/Plumbing Consultants
377 West 800 North Salt Lake City, Utah 84103 Tel: (801) 322-0487 Fax: (801) 322-0490



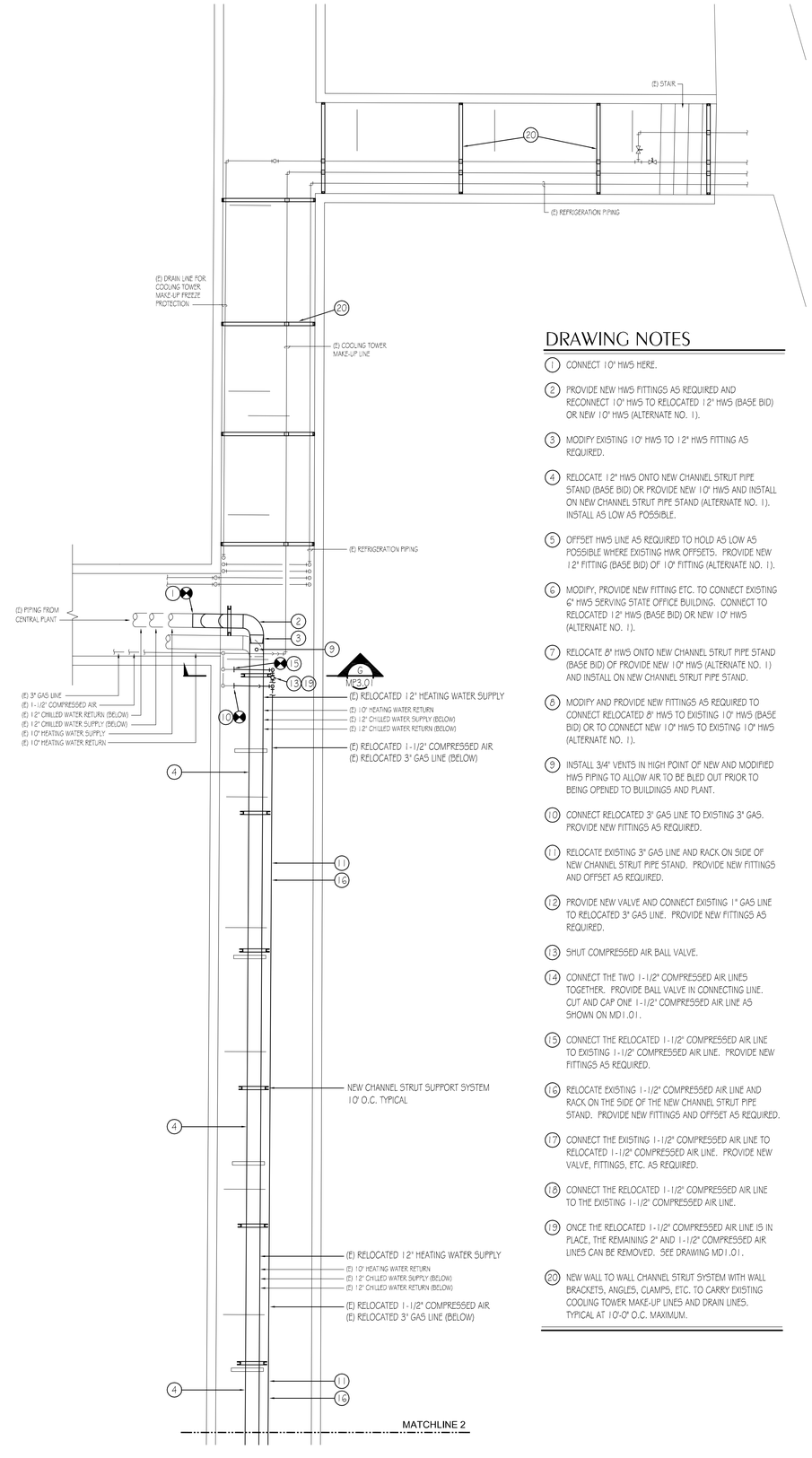
PARTIAL TUNNEL PLAN (REMODEL)

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



PARTIAL TUNNEL PLAN (REMODEL)

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



PARTIAL TUNNEL PLAN (REMODEL)

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

DRAWING NOTES

1. CONNECT 10" HWS HERE.
2. PROVIDE NEW HWS FITTINGS AS REQUIRED AND RECONNECT 10" HWS TO RELOCATED 12" HWS (BASE BID) OR NEW 10" HWS (ALTERNATE NO. 1).
3. MODIFY EXISTING 10" HWS TO 12" HWS FITTING AS REQUIRED.
4. RELOCATE 12" HWS ONTO NEW CHANNEL STRUT PIPE STAND (BASE BID) OR PROVIDE NEW 10" HWS AND INSTALL ON NEW CHANNEL STRUT PIPE STAND (ALTERNATE NO. 1). INSTALL AS LOW AS POSSIBLE.
5. OFFSET HWS LINE AS REQUIRED TO HOLD AS LOW AS POSSIBLE WHERE EXISTING HWR OFFSETS. PROVIDE NEW 12" FITTING (BASE BID) OF 10" FITTING (ALTERNATE NO. 1).
6. MODIFY, PROVIDE NEW FITTING ETC. TO CONNECT EXISTING 6" HWS SERVING STATE OFFICE BUILDING. CONNECT TO RELOCATED 12" HWS (BASE BID) OR NEW 10" HWS (ALTERNATE NO. 1).
7. RELOCATE 8" HWS ONTO NEW CHANNEL STRUT PIPE STAND (BASE BID) OF PROVIDE NEW 10" HWS (ALTERNATE NO. 1) AND INSTALL ON NEW CHANNEL STRUT PIPE STAND.
8. MODIFY AND PROVIDE NEW FITTINGS AS REQUIRED TO CONNECT RELOCATED 8" HWS TO EXISTING 10" HWS (BASE BID) OR TO CONNECT NEW 10" HWS TO EXISTING 10" HWS (ALTERNATE NO. 1).
9. INSTALL 3/4" VENTS IN HIGH POINT OF NEW AND MODIFIED HWS PIPING TO ALLOW AIR TO BE BLED OUT PRIOR TO BEING OPENED TO BUILDINGS AND PLANT.
10. CONNECT RELOCATED 3" GAS LINE TO EXISTING 3" GAS. PROVIDE NEW FITTINGS AS REQUIRED.
11. RELOCATE EXISTING 3" GAS LINE AND RACK ON SIDE OF NEW CHANNEL STRUT PIPE STAND. PROVIDE NEW FITTINGS AND OFFSET AS REQUIRED.
12. PROVIDE NEW VALVE AND CONNECT EXISTING 1" GAS LINE TO RELOCATED 3" GAS LINE. PROVIDE NEW FITTINGS AS REQUIRED.
13. SHUT COMPRESSED AIR BALL VALVE.
14. CONNECT THE TWO 1-1/2" COMPRESSED AIR LINES TOGETHER. PROVIDE BALL VALVE IN CONNECTING LINE. CUT AND CAP ONE 1-1/2" COMPRESSED AIR LINE AS SHOWN ON MD1.01.
15. CONNECT THE RELOCATED 1-1/2" COMPRESSED AIR LINE TO EXISTING 1-1/2" COMPRESSED AIR LINE. PROVIDE NEW FITTINGS AS REQUIRED.
16. RELOCATE EXISTING 1-1/2" COMPRESSED AIR LINE AND RACK ON THE SIDE OF THE NEW CHANNEL STRUT PIPE STAND. PROVIDE NEW FITTINGS AND OFFSET AS REQUIRED.
17. CONNECT THE EXISTING 1-1/2" COMPRESSED AIR LINE TO RELOCATED 1-1/2" COMPRESSED AIR LINE. PROVIDE NEW VALVE, FITTINGS, ETC. AS REQUIRED.
18. CONNECT THE RELOCATED 1-1/2" COMPRESSED AIR LINE TO THE EXISTING 1-1/2" COMPRESSED AIR LINE.
19. ONCE THE RELOCATED 1-1/2" COMPRESSED AIR LINE IS IN PLACE, THE REMAINING 2" AND 1-1/2" COMPRESSED AIR LINES CAN BE REMOVED. SEE DRAWING MD1.01.
20. NEW WALL TO WALL CHANNEL STRUT SYSTEM WITH WALL BRACKETS, ANGLES, CLAMPS, ETC. TO CARRY EXISTING COOLING TOWER MAKE-UP LINES AND DRAIN LINES. TYPICAL AT 10'-0" O.C. MAXIMUM.

REAVELEY ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

LICENSED PROFESSIONAL ENGINEER No. 157941 LARRY D. VEIGEL STATE OF UTAH
7-26-10

CENTRAL UTILITY PLANT TUNNEL REPAIR

UTAH STATE CAPITOL

DFCM

4110 STATE OFFICE BLDG

PROPERTY ID #

ISSUED:

NO.	DESCRIPTION	DATE
1	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	GWM
CHECKED BY:	LDV
DESIGNED BY:	LDV

RECORD DRAWING DATE:

SIGNATURE:

DRAWING TITLE:

TUNNEL PLAN (REMODEL)

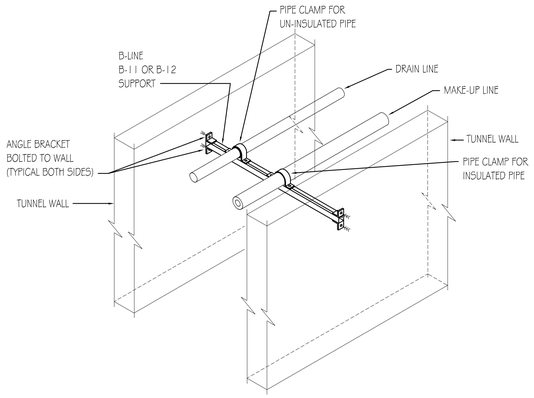
DRAWING NUMBER:

MP1.01

SHEET X OF X

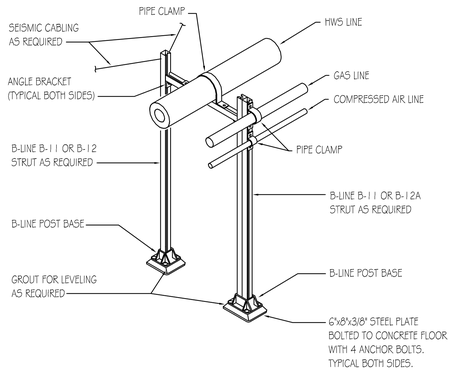
HEATH Engineering Company
Mechanical/Electrical/Plumbing Consultants
377 West 800 North Salt Lake City, Utah 84103 Tel: (801) 322-0487 Fax: (801) 322-0490

I:\LDV\SYNCHS\REELEY\LDV\05-PIP-001.dwg, 7/27/2010 10:17:09 PM, J Heath Engineering Co., jpenn



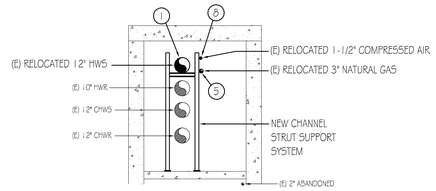
TUNNEL WALL TO WALL CHANNEL STRUT SUPPORT DETAIL

SCALE: NONE — INSTALL AT 10'-0" O.C. MAX. IN TUNNEL — 1 / MP3.01



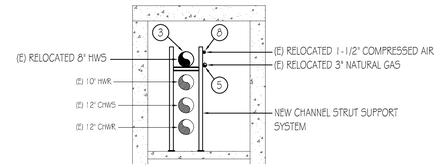
TUNNEL CHANNEL STRUT SUPPORT DETAIL

SCALE: NONE — INSTALL AT 10'-0" O.C. MAX. IN TUNNEL — 2 / MP3.01



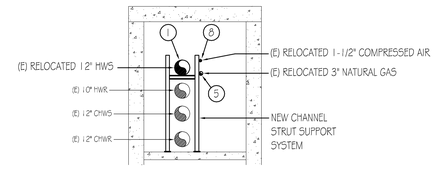
TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — E / MP3.01



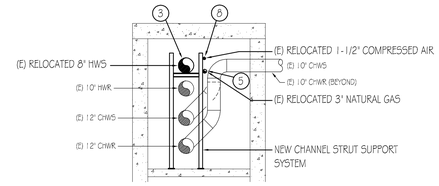
TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — A / MP3.01



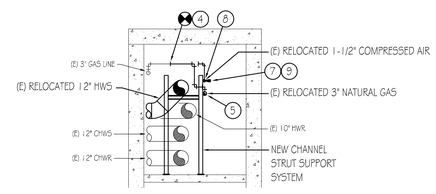
TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — F / MP3.01



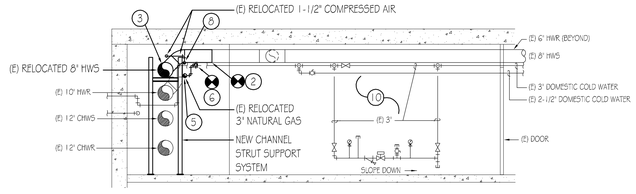
TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — B / MP3.01



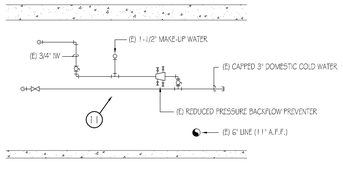
TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — G / MP3.01



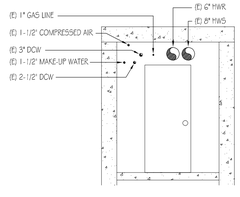
TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — C / MP3.01



TUNNEL SECTION (DEMOLITION)

SCALE: 1/4"=1'-0" — H / MP3.01



TUNNEL SECTION (REMODEL)

SCALE: 1/4"=1'-0" — D / MP3.01

DRAWING NOTES

1. RELOCATE 12" HWS ONTO NEW CHANNEL STRUT PIPE STAND (BASE BID) OR PROVIDE NEW 10" HWS AND INSTALL ON NEW CHANNEL STRUT PIPE STAND (ALTERNATE NO. 1). INSTALL AS LOW AS POSSIBLE.
2. MODIFY, PROVIDE NEW FITTING ETC. TO CONNECT EXISTING 6" HWS SERVING STATE OFFICE BUILDING. CONNECT TO RELOCATED 12" HWS (BASE BID) OR NEW 10" HWS (ALTERNATE NO. 1).
3. RELOCATE 8" HWS ONTO NEW CHANNEL STRUT PIPE STAND (BASE BID) OF PROVIDE NEW 10" HWS (ALTERNATE NO. 1) AND INSTALL ON NEW CHANNEL STRUT PIPE STAND.
4. CONNECT RELOCATED 3" GAS LINE TO EXISTING 3" GAS. PROVIDE NEW FITTINGS AS REQUIRED.
5. RELOCATE EXISTING 3" GAS LINE AND RACK ON SIDE OF NEW CHANNEL STRUT PIPE STAND. PROVIDE NEW FITTINGS AND OFFSET AS REQUIRED.
6. PROVIDE NEW VALVE AND CONNECT EXISTING 1" GAS LINE TO RELOCATED 3" GAS LINE. PROVIDE NEW FITTINGS AS REQUIRED.
7. SHUT COMPRESSED AIR BALL VALVE.
8. RELOCATE EXISTING 1-1/2" COMPRESSED AIR LINE AND RACK ON THE SIDE OF THE NEW CHANNEL STRUT PIPE STAND. PROVIDE NEW FITTINGS AND OFFSET AS REQUIRED.
9. ONCE THE RELOCATED 1-1/2" COMPRESSED AIR LINE IS IN PLACE, THE REMAINING 2" AND 1-1/2" COMPRESSED AIR LINES CAN BE REMOVED. SEE DRAWING MD1.01.
10. EXISTING COLD WATER SYSTEM TO REMAIN. PROTECT FROM DAMAGE.
11. EXISTING COLD WATER SYSTEM WITH REDUCED PRESSURE BACKFLOW PREVENTER TO REMAIN. PROTECT FROM DAMAGE.

REAVELEY ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

LICENSED PROFESSIONAL ENGINEER No. 157941 LARRY D. VEIGEL STATE OF UTAH — 7-26-10

CENTRAL UTILITY PLANT TUNNEL REPAIR

UTAH STATE CAPITOL

DFCM

4110 STATE OFFICE BLDG

PROPERTY ID #

ISSUED:

NO.	DESCRIPTION	DATE
1	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	GWM
CHECKED BY:	LDV
DESIGNED BY:	LDV
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:

TUNNEL SECTIONS (REMODEL)

DRAWING NUMBER:

MP3.01

SHEET X OF X

HEATH Engineering Company
Mechanical/Electrical/Plumbing Consultants
377 West 800 North Salt Lake City, Utah 84103 Tel: (801) 322-0487 Fax: (801) 322-0490

K:\10-10\Drawing\08-BLETU\10-10-MP3.30.dwg, 7/27/2010 10:07:07 PM, Heath Engineering Co., gwm

SYMBOL LIST

- POLE TOP MOUNTED LIGHT FIXTURE
- SURFACE/WALL MOUNTED FLUORESCENT LIGHT FIXTURE
- EMERGENCY BATTERY LIGHT FIXTURE
- $ SINGLE POLE SWITCH
- DUPLEX RECEPTACLE
- MAGNETIC DOOR HOLDER (WALL OR FLOOR MOUNTED)
- DRAWING N
- LIGHT FIXTURE DESIGNATION

ISOLATED GROUND CONDUCTOR
EQUIPMENT GROUND CONDUCTOR

PHASE CONDUCTOR
NEUTRAL CONDUCTOR
PROVIDE GREEN GROUND WIRE
SIZED PER NEC IN ALL RACEWAYS

AHU-1 MECHANICAL EQUIPMENT DESIGNATION

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AIC	AMP INTERRUPTING CURRENT (SYMMETRICAL)
AL	ALUMINUM
BG	BELOW GRADE
C	CONDUIT
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CKT	CIRCUIT
CO	CONDUIT ONLY
CU	COPPER
EM	EMERGENCY
(E)	EXISTING
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
(F)	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
GFI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTOR
GRD	GROUND
GRC	GALVANIZED RIGID CONDUIT
IG	ISOLATED GROUND
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
(N)	NEW
NAC	NOTIFICATION APPLIANCE CIRCUIT
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
PNL	PANEL
(R)	RELOCATE
ST	SHUNT TRIP
TYP	TYPICAL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UNO	UNLESS NOTED OTHERWISE
WG	WIRE GUARD
WP	WEATHER PROOF
(X)	DEMOLISH/DELETE
XFMR	TRANSFORMER

ELECTRICAL SPECIAL INSPECTIONS AND DEFERRED SUBMITTALS		
ITEM	DEFERRED SUBMITTAL REQUIRED	SPECIAL INSPECTION REQUIRED
CABLE TRAYS	X	X
CONDUIT SUPPORT RACKS	X	X

GENERAL NOTES - SHEET EG100

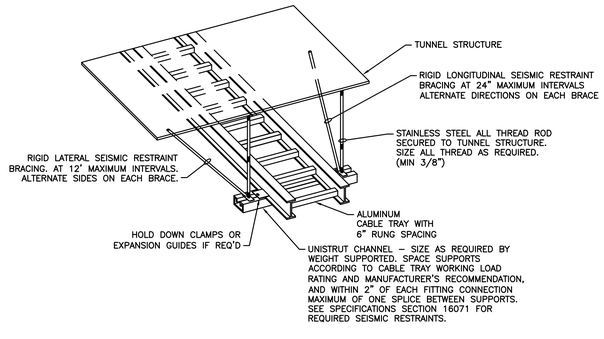
A. RELOCATION AND RESUPPORTING OF EXISTING CABLE TRAY TO BE INCLUDED IN THE BID AS ADD. ALTERNATE #3. THIS RELOCATION WILL BEGIN AT THE TUNNEL CONNECTION TO THE BOILER PLANT AND CONTINUE SOUTH TO THE SOUTHERN END OF THE TUNNEL REPAIRS, WHERE THE MAIL TUNNEL TURNS EAST.

B. ELECTRICAL CONTRACTOR TO MEET ALL REQUIREMENTS OF SPECIFICATION SECTION 16071 FOR SEISMIC RESTRAINT OF ELECTRICAL COMPONENTS INCLUDING THE REQUIREMENT FOR A DEFERRED SUBMITTAL INCLUDING CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF UTAH.

LUMINAIRE SCHEDULE - SHEET EG100

TYPE	DESCRIPTION		LAMP(S) AND	INPUT	MANUFACTURER(S)
E	DESCRIPTION:	COMMERCIAL EMERGENCY LIGHT	(2) 5.4W INCANDESCENT 120V	10	DUAL LITE
	SIZE:	14" X 5" X 5"			EZ-2
	HOUSING:	HIGH IMPACT THERMOPLASTIC			* LITHONIA
	FINISH:	WHITE			* LIGHTOLIER
	MOUNTING:	SURFACE MOUNTED			
	BATTERY:	MAINTENANCE FREE LEAD CALCIUM			
	OTHER:	FULLY AUTOMATIC BATTERY CHARGER			
T	DESCRIPTION:	LENSED INDUSTRIAL	(2) F32T8/ADV835/ALTO	48	COLUMBIA
	SIZE:	5.5" X 50" X 5"	(1) 2-LAMP ADVANCE		FDPS4-232-PP-EHLU-GLR-PTBS
	HOUSING:	DIE CAST ALUMINUM	IOP-2P32-LW-SC		* LITHONIA
	FINISH:	BAKED POWDER GREY	PREMIUM ELECTRONIC		* LIGHTOLIER
	LENS:	PRISMATIC, IMPACT RESISTANT POLYCARBONATE	MULTI-VOLT		
	MOUNTING:	SURFACE MOUNTED			
	OTHER:	WET LOCATION LISTED			

* ADDITIONAL APPROVED MANUFACTURERS



A3 / EG100 LADDER RACK CABLE TRAY SUPPORT DETAIL
SCALE: NTS

DRAWING INDEX

EG100	SYMBOLS, ABBREVIATIONS & DRAWING INDEX
ES100	ELECTRICAL SITE PLAN
ED100	ELECTRICAL DEMOLITION TUNNEL PLAN
ED101	ELECTRICAL DEMOLITION TUNNEL PLAN
EP100	ELECTRICAL PLAN
EP101	ELECTRICAL PLAN

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

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CENTRAL UTILITY
PLANT TUNNEL REPAIR
UTAH STATE CAPITOL

DFCM
4110 STATE OFFICE BLDG

LICENSED PROFESSIONAL ENGINEER No. 271808 KENNETH D. GARNER STATE

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
102 West 500 South, Suite 225
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: Trevor Spencer
Project #: 10049

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	KGE
CHECKED BY:	KG
DESIGNED BY:	TS
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
SYMBOLS, ABBREVIATIONS & DRAWING INDEX

DRAWING NUMBER:
EG100

SHEET OF

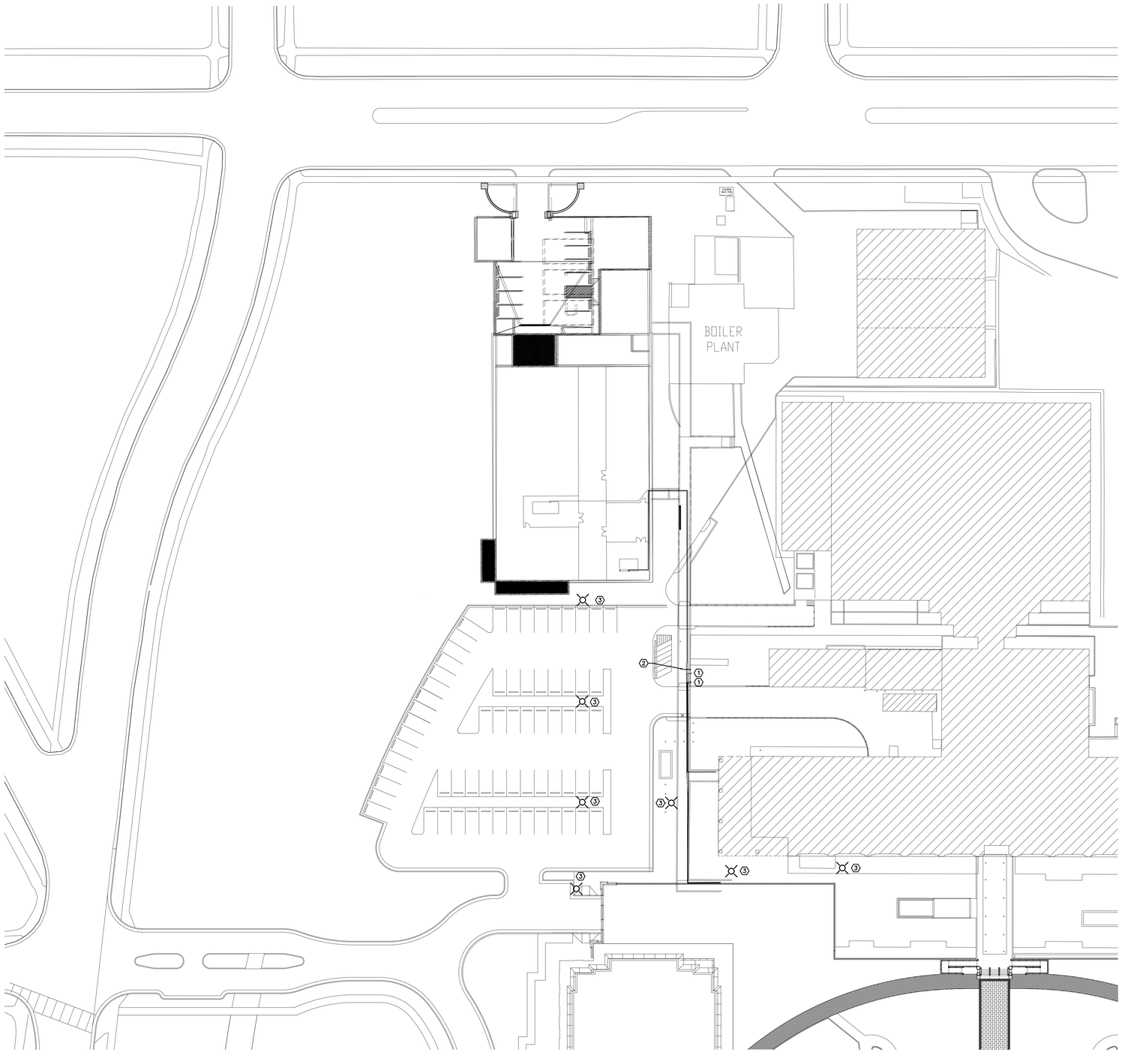
By: tstyler, Jul 26, 2010 — 11:47am
H:\2010\Utah State Capitol- Northwest Tunnel Rehabilitation 10049\Cad\EG100.dwg

KEYED NOTES - SHEET ES100

1. MEDIUM VOLTAGE FEEDERS EXIT TUNNEL IN THIS LOCATION. CONTRACTOR TO PROTECT AND MAINTAIN THROUGHOUT ALL DEMOLITION AND RECONSTRUCTION.
2. TELECOMMUNICATION FEEDERS EXIT TUNNEL IN THIS LOCATION. CONTRACTOR TO PROTECT AND MAINTAIN THROUGHOUT ALL DEMOLITION AND RECONSTRUCTION.
3. PROTECT AND MAINTAIN LIGHT POLE ALONG WITH ALL ASSOCIATED CONDUIT AND WIRE THROUGHOUT ALL DEMOLITION AND RECONSTRUCTION.

GENERAL NOTES - SHEET ES100

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



A3 ES100 ELECTRICAL SITE PLAN
SCALE: 1"=30'-0"

NORTH

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

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CENTRAL UTILITY PLANT TUNNEL REPAIR

UTAH STATE CAPITOL

DFCM

4110 STATE OFFICE BLDG

LICENSED PROFESSIONAL ENGINEER No. 271884 KENNETH D. GARNER STATE OF UTAH

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
102 West 500 South, Suite 225
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: Trevor Spencer
Project #: 10049

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	KGE
CHECKED BY:	KG
DESIGNED BY:	TS
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:

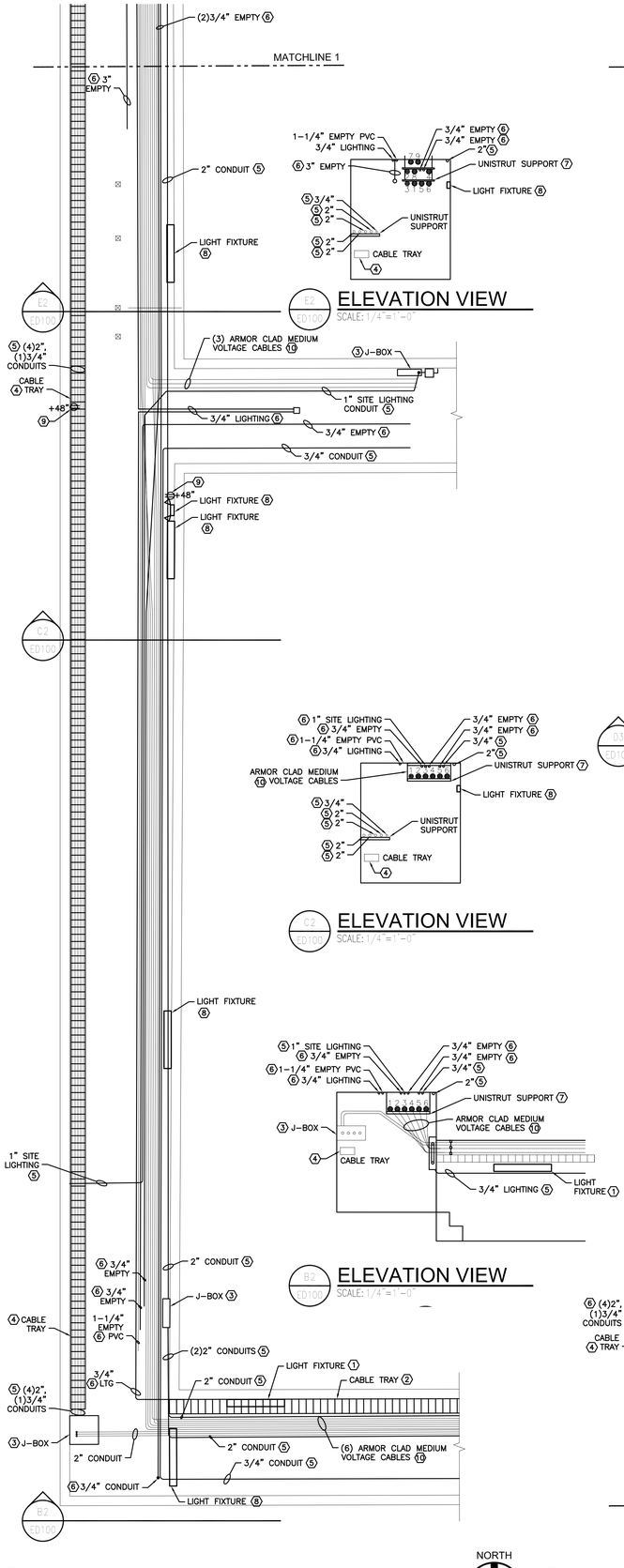
ELECTRICAL SITE PLAN

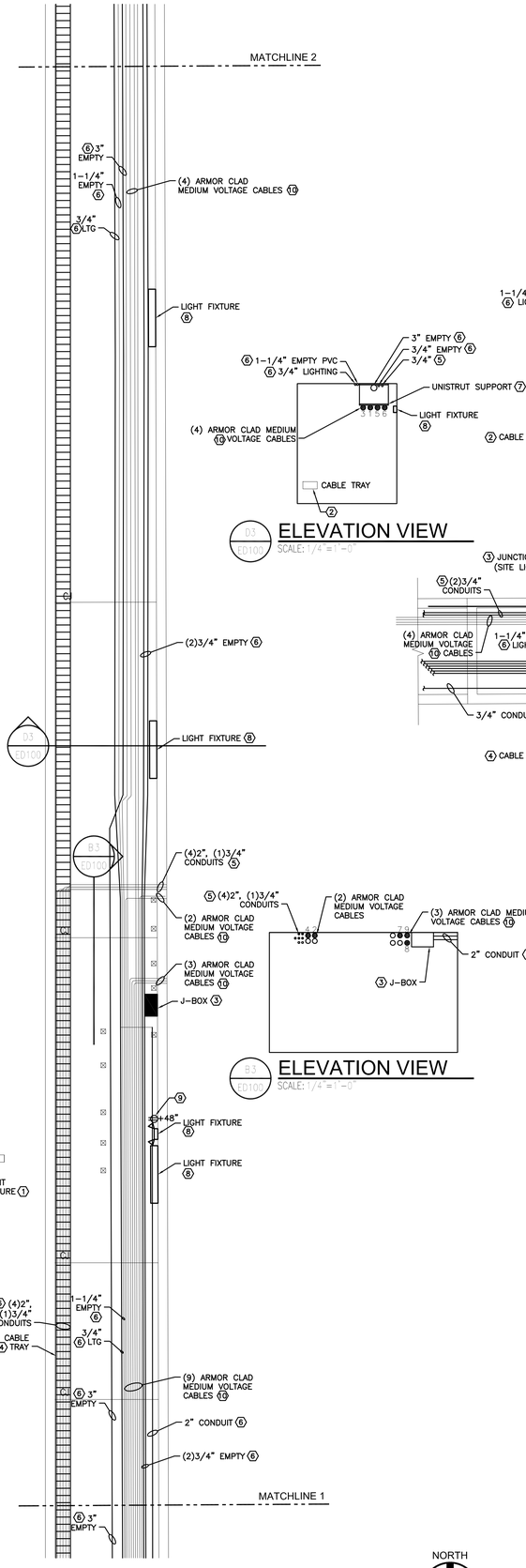
DRAWING NUMBER:

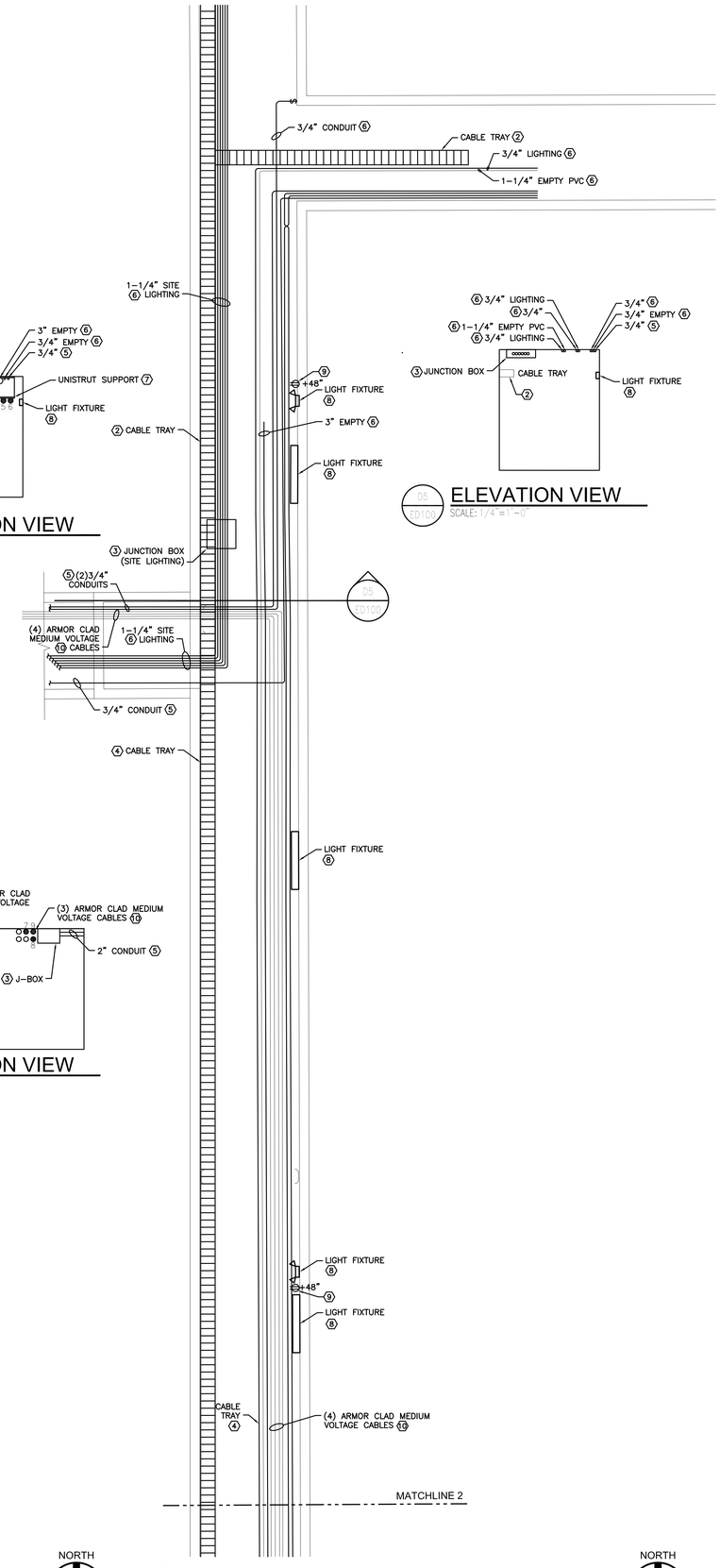
ES100

SHEET OF

By: kdoy Jul 26, 2010 – 11:46am
H:\2010\Utah State Capitol - Northwest Tunnel Rehabilitation 10049\Cad\ES100.dwg







KEYED NOTES - SHEET ED100

1. PROTECT AND MAINTAIN EXISTING LIGHT FIXTURE ALONG WITH ALL ASSOCIATED CONDUIT AND WIRE.
2. PROTECT AND MAINTAIN EXISTING CABLE TRAY.
3. PROTECT AND MAINTAIN EXISTING J-BOX ALONG WITH ALL ASSOCIATED CONDUIT AND WIRE.
4. PROTECT AND MAINTAIN EXISTING CABLE TRAY. AS PART OF ADD. ALTERNATE #3, CABLE TRAY IS TO BE RAISED AND LOCATED SUCH THAT THE TOP OF THE TRAY IS 6" FROM THE TOP OF THE TUNNEL. OTHER THAN BEING RAISED, CABLE TRAY TO RETAIN ITS CURRENT LOCATION IN THE TUNNEL. PROVIDE ALL NECESSARY SUPPORTS AND ACCESSORIES.
5. PROTECT AND MAINTAIN EXISTING CONDUIT(S) ALONG WITH ALL ASSOCIATED WIRING. PROVIDE TEMPORARY RELOCATION AS NECESSARY TO ACCOMMODATE TUNNEL REPAIRS. PROVIDE ALL ADDITIONAL CONDUIT, CABLE AND SUPPORTS AS NECESSARY. REINSTALL AND RESUPPORT AT COMPLETION OF TUNNEL REPAIRS.
6. DEMOLISH EXISTING CONDUIT ALONG WITH ALL WIRING AND SUPPORTS.
7. DEMOLISH EXISTING CABLE/CONDUIT SUPPORT RACK TO ACCOMMODATE TUNNEL REPAIRS. PROVIDE ALL NECESSARY TEMPORARY SUPPORTS FOR CABLES AND CONDUITS TO REMAIN THROUGH CONSTRUCTION.
8. DEMOLISH EXISTING LIGHT FIXTURE ALONG WITH ALL ASSOCIATED CONDUIT AND WIRE.
9. DEMOLISH EXISTING RECEPTACLE ALONG WITH ALL ASSOCIATED CONDUIT AND WIRE.
10. PROTECT AND MAINTAIN EXISTING ARMOR CLAD MEDIUM VOLTAGE CABLES. CABLES ARE TO BE MAINTAINED IN EXISTING LOCATION WHILE REPAIRS OF THE WESTERN PORTION OF THE TUNNEL ARE COMPLETED. AFTER REPAIRS ARE COMPLETE IN WESTERN PORTION OF TUNNEL, CABLES ARE TO BE TEMPORARILY RELOCATED AND SUPPORTED SO THAT REPAIRS CAN BE COMPLETED IN THE EASTERN PORTION OF THE TUNNEL. AFTER ALL TUNNEL REPAIRS ARE COMPLETE, CABLES ARE TO BE MOVED BACK TO THEIR ORIGINAL LOCATION AND NEW PERMANENT SUPPORTS PROVIDED.

GENERAL NOTES - SHEET ED100

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION
B. CONTRACTOR TO ENSURE THAT ALL CORRIDORS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
D. CONTRACTOR TO PROVIDE ALL NECESSARY MATERIALS FOR TEMPORARY RELOCATION AND SUPPORT OF ALL EXISTING CONDUITS AND CABLES TO REMAIN.
E. CONTRACTOR TO PROVIDE TEMPORARY LIGHTING IN TUNNEL THROUGHOUT ALL DEMOLITION AND RECONSTRUCTION.

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

PROFESSIONAL STRUCTURAL ENGINEER No. 285733 TERRY A. JOHNSON STATE OF UTAH

CENTRAL UTILITY
PLANT TUNNEL REPAIR
UTAH STATE CAPITOL

DFCM
4110 STATE OFFICE BLDG

LICENSED PROFESSIONAL ENGINEER No. 321884 KENNETH D. GARNER STATE OF UTAH

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
102 West 500 South, Suite 225
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: Trevor Spencer
Project #: 10049

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	KGE
CHECKED BY:	KG
DESIGNED BY:	TS
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
ELECTRICAL DEMOLITION TUNNEL PLAN

DRAWING NUMBER:
ED100

SHEET OF

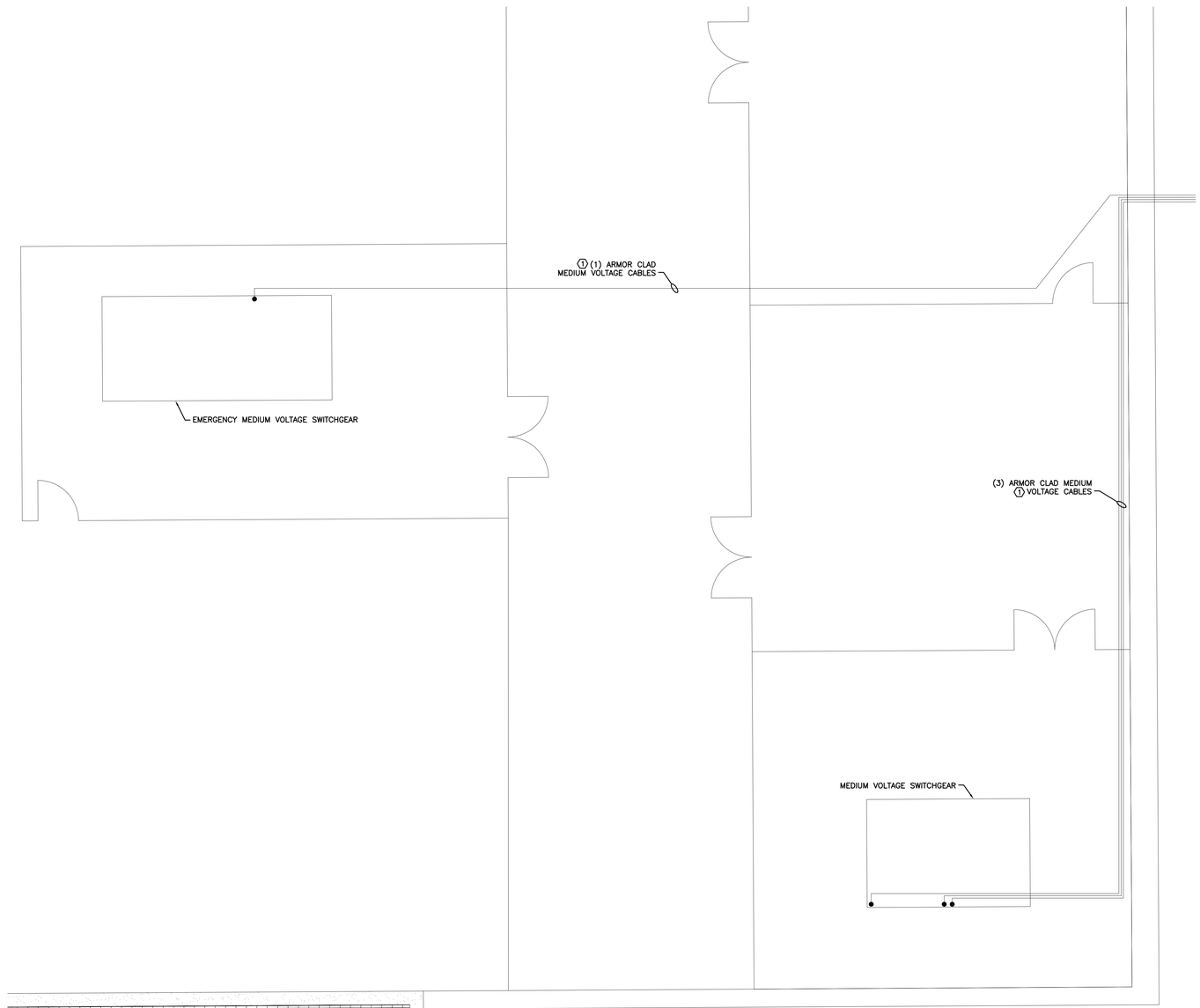
By: kgey Jul 26, 2010 – 11:51am
P:\10049\Utah State Capitol- Northwest Tunnel Rehabilitation 10049\Cad\ED100.DWG

KEYED NOTES - SHEET ED101

1. PROTECT AND MAINTAIN EXISTING ARMOR CLAD MEDUM VOLTAGE CABLES. CABLES IN THIS LOCATION ARE SUPPORTED DIRECTLY TO STRUCTURE. IF ADDITIONAL CABLE LENGTH IS REQUIRED TO RELOCATE CABLE IN TUNNEL, IT MAY BE GAINED IN THIS LOCATION BY REROUTING AND RESUPPORTING CABLE. THIS IS SHOWN FOR INFORMATIONAL PURPOSES ONLY.

GENERAL NOTES - SHEET ED101

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION
B. CONTRACTOR TO ENSURE THAT ALL CORRIDORS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
D. CONTRACTOR TO PROVIDE ALL NECESSARY MATERIALS FOR TEMPORARY RELOCATION AND SUPPORT OF ALL EXISTING CONDUITS AND CABLES TO REMAIN.
E. CONTRACTOR TO PROVIDE TEMPORARY LIGHTING IN TUNNEL THROUGHOUT ALL DEMOLITION AND RECONSTRUCTION.



A3 / ED101 PARTIAL ELECTRICAL TUNNEL DEMO PLAN
SCALE: 1/4"=1'-0"

NORTH

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

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CENTRAL UTILITY
PLANT TUNNEL REPAIR
UTAH STATE CAPITOL

DFCM
4110 STATE OFFICE BLDG

LICENSED PROFESSIONAL ENGINEER No. 3218802 KENNETH D. GARNER STATE OF UTAH

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
102 West 500 South, Suite 225
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: Trevor Spencer
Project #: 10049

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		

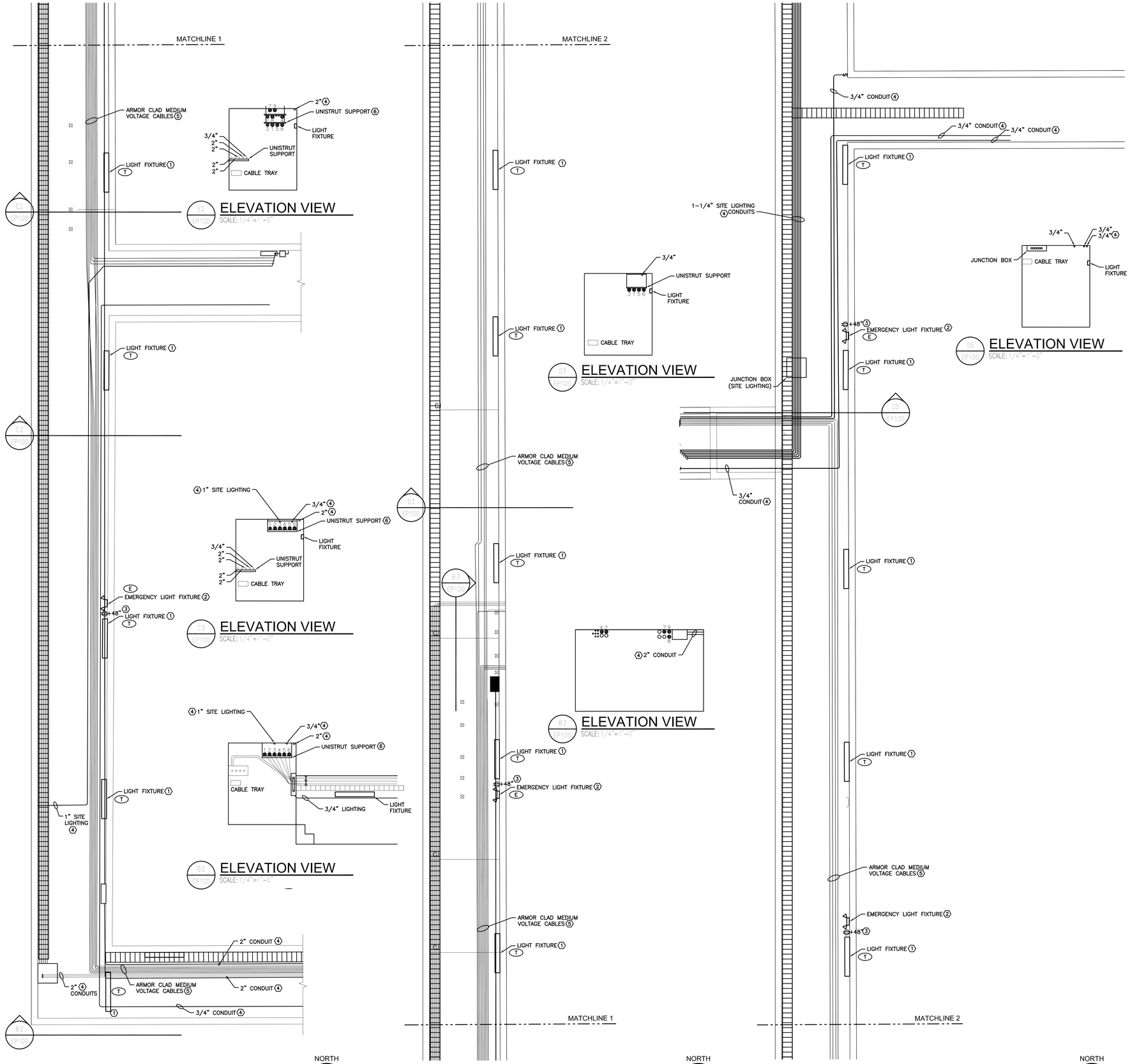
DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	KGE
CHECKED BY:	KG
DESIGNED BY:	TS
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
ELECTRICAL DEMOLITION TUNNEL PLAN

DRAWING NUMBER:
ED101

SHEET OF

By: kdgr, Jul 26, 2010 – 11:51am
H:\2010\Utah State Capitol– Northwest Tunnel Rehabilitation 10049\Cad\ED100.DWG



KEYED NOTES - SHEET EP100

1. PROVIDE AND INSTALL NEW LIGHT FIXTURE IN THIS LOCATION. CONNECT TO EXISTING LIGHTING CIRCUIT USED IN THIS LOCATION PRIOR TO DEMOLITION. PROVIDE ALL NECESSARY CONDUIT AND WIRE.
2. PROVIDE AND INSTALL NEW EMERGENCY LIGHT FIXTURE IN THIS LOCATION. CONNECT TO EXISTING LIGHTING CIRCUIT USED IN THIS LOCATION PRIOR TO DEMOLITION. PROVIDE ALL NECESSARY CONDUIT AND WIRE. TIE FIXTURE TO UNSWITCHED HOT.
3. PROVIDE AND INSTALL NEW RECEPTACLE IN THIS LOCATION. CONNECT TO UNSWITCHED HOT USED FOR EMERGENCY LIGHTING IN THIS LOCATION PRIOR TO DEMOLITION.
4. RESUPPORT EXISTING CONDUIT AFTER TUNNEL REPAIRS ARE COMPLETE.
5. RESUPPORT EXISTING ARMOR CLAD MEDIUM VOLTAGE CABLES AFTER TUNNEL REPAIRS ARE COMPLETE. REUSE CABLE CLAMPS AS POSSIBLE TO CONNECT TO NEW ALL ALL THREAD AND UNISTRUT SUPPORT RACKS.
6. PROVIDE AND INSTALL NEW ALL THREAD AND UNISTRUT SUPPORT RACK FOR MEDIUM VOLTAGE CABLES AND ADDITIONAL CONDUIT(S). SIZE UNISTRUT AND ALL THREAD AS REQUIRED TO ADEQUATELY SUPPORT LOAD.

GENERAL NOTES - SHEET EP100

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION
B. CONTRACTOR TO ENSURE THAT ALL CORRIDORS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
D. UNLESS NOTED OTHERWISE, ALL ITEMS SHOWN ARE EXISTING.
E. CONTRACTOR IS TO PROVIDE AND INSTALL NEW SUPPORTS FOR ALL EXISTING CONDUITS AND CABLES.

REAVELEY ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CENTRAL UTILITY PLANT TUNNEL REPAIR

UTAH STATE CAPITOL

DFCM

4110 STATE OFFICE BLDG

LICENSED PROFESSIONAL ENGINEER No. 271880 KENNETH D. GARNER STATE OF UTAH

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
102 West 500 South, Suite 225
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: Trevor Spencer
Project #: 10049

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	KKGE
CHECKED BY:	KKGE
DESIGNED BY:	KKGE
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:

ELECTRICAL PLAN

DRAWING NUMBER:

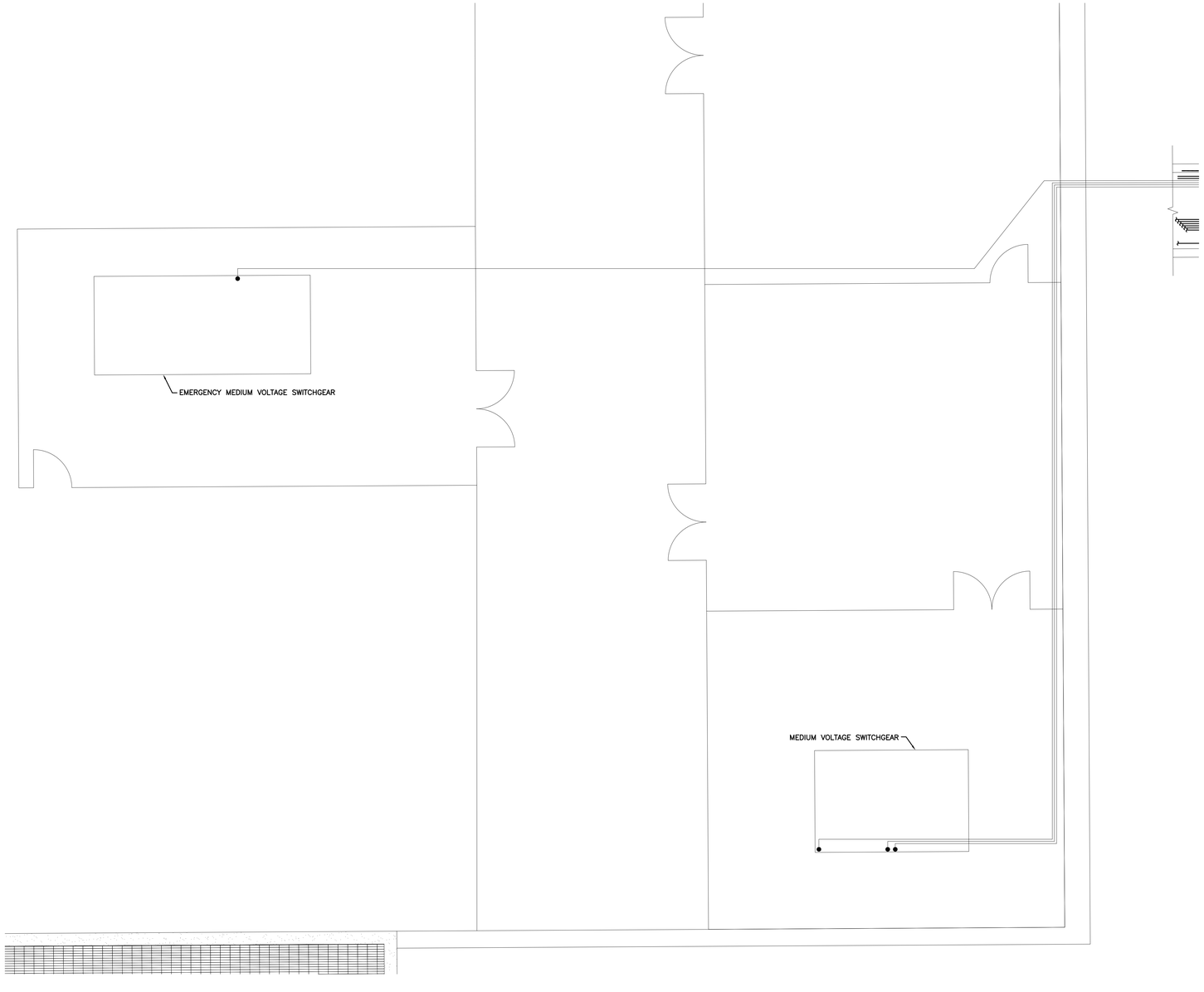
EP100

SHEET X OF X

By: kdey, Jul 26, 2010 - 11:55am
H:\2010\Utah State Capitol- Northwest Tunnel Rehabilitation 10049\Cad\EP100.dwg

GENERAL NOTES - SHEET EP101

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION
B. CONTRACTOR TO ENSURE THAT ALL CORRIDORS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
D. UNLESS NOTED OTHERWISE, ALL ITEMS SHOWN ARE EXISTING.
E. CONTRACTOR IS TO PROVIDE AND INSTALL NEW SUPPORTS FOR ALL EXISTING CONDUITS AND CABLES.



A3 / EP101 PARTIAL ELECTRICAL TUNNEL PLAN
SCALE: 1/4"=1'-0"

NORTH

SHEET INCLUDED FOR REFERENCE ONLY

REAVELEY ENGINEERS + ASSOCIATES
Consulting Structural Engineers

675 E. 500 S. Suite 400
Salt Lake City, UT 84102
P:801.486.3883
F:801.485.0911
www.reaveley.com

PROFESSIONAL STRUCTURAL ENGINEER No. 295733 JEROD G. JOHNSON STATE OF UTAH

CENTRAL UTILITY
PLANT TUNNEL REPAIR
UTAH STATE CAPITOL

DFCM
4110 STATE OFFICE BLDG

LICENSED PROFESSIONAL ENGINEER No. 271898 KENNETH D. GARNER STATE OF UTAH

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
102 West 500 South, Suite 225
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: Trevor Spencer
Project #: 10049

ISSUED:

NO.	DESCRIPTION	DATE
	PERMIT SET	7/26/10

REVISIONS:

NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		

DFCM PROJECT NO.	08234050
DFCM PHASE NO.	
RE&A PROJECT NO.	2010.172
DRAWING FILE:	
SCALE:	AS NOTED
DRAWN BY:	MKGE
CHECKED BY:	MKG
DESIGNED BY:	KDE
RECORD DRAWING DATE:	
SIGNATURE:	

DRAWING TITLE:
ELECTRICAL PLAN

DRAWING NUMBER:
EP101

SHEET X OF X

By: tyler, Jul 26, 2010 - 11:56am
H:\2010\Utah State Capitol- Northwest Tunnel Rehabilitation 10049\Cad\EP100.dwg