

CODE ANALYSIS

APPLICABLE CODES

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

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

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

C. Type of Construction (circle one): V-B
 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): N/A
 North: _____ South: _____ East: _____ West: _____

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

F. Sprinklers: N/A
 Required: _____ Provided: _____ Type of Sprinkler System: _____

G. Number of Stories: N/A Building Height: N/A

H. Actual Area per Floor (square feet): N/A

I. Tabular Area: N/A

J. Area Modifications: N/A

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

b) Sum of the Ratio Calculations for Mixed Occupancies: N/A

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

c) Total Allowable Area for: N/A

- 1) One Story: _____
- 2) Two Story: $A_a(2)$ _____
- 3) Three Story: $A_a(3)$ _____

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

K. Fire Resistance Rating Requirements for Building Elements (hours): N/A

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: N/A

Exit Width Required: N/A Exit Width Provided: N/A

M. Minimum Number of Required Plumbing Facilities: N/A

- 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.

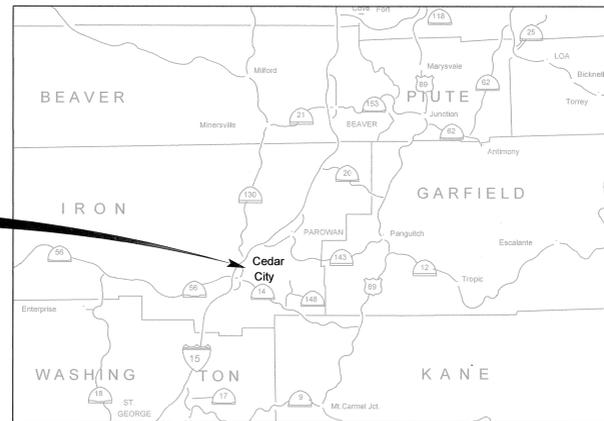
SOUTHERN UTAH UNIVERSITY

Utility Tunnel Entry / Exit Hatchway Upgrade

SEPTEMBER 22, 2009

DFCM PROJECT NO.: 09116730

PROJECT LOCATION



PROJECT VICINITY MAP
 SCALE: N.T.S.

SHEET NO.	DESCRIPTION
GG1	TITLE SHEET & SHEET INDEX
GG2	OVERALL PARTIAL SITE PLAN - VAULT LOCATIONS
SG1	GENERAL STRUCTURAL NOTES SHEET 1
SG2	GENERAL STRUCTURAL NOTES SHEET 2
SP1	MANHOLE LID AND VAULT INFORMATION SHEET 1
SP2	MANHOLE LID AND VAULT INFORMATION SHEET 2
SP3	MANHOLE LID AND VAULT INFORMATION SHEET 3
SD1	STRUCTURAL DETAILS



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

SPECIAL INSPECTION AND TESTING (IBC 1704)

Indicate required Special inspections for project by checking the appropriate boxes:

STEEL (IBC1704.3)

Item	Reference/Comments	Continuous	Periodic
WELDING (1704.3.1)			
Details (1704.3.2)			
Single-pass fillet welds ≤ 5/16"		Continuous	X Periodic

CONCRETE CONSTRUCTION (IBC1704.4)

Item	Reference/Comments	Continuous	Periodic
Materials (1704.4.1)		Continuous	X Periodic
Steel placement		Continuous	X Periodic
Steel welding		Continuous	X Periodic
Bolts prior & during placement		Continuous	X Periodic
Use of required design mix		Continuous	X Periodic
Concrete sampling for strength test, slump, air content, and temperature of concrete	X	Continuous	Periodic
Concrete & shotcrete placement	X	Continuous	Periodic
Curing temperature and techniques		Continuous	X Periodic
Form work		Continuous	X Periodic

SPECIAL INSPECTORS SHALL:

- BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO PERFORMING ANY DUTIES;
- BE REQUIRED FOR STEEL FABRICATION AND BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO PERFORMING ANY DUTIES. STEEL FABRICATORS SHALL BE SELECTED FROM DFCM APPROVED STEEL FABRICATOR LIST;
- PROVIDE PROOF OF LICENSURE AS A SPECIAL INSPECTOR BY THE STATE OF UTAH FOR EACH TYPE OF INSPECTION;
- INSPECTION REPORTS ARE TO MEET THE REQUIREMENTS OF IBC 1704.1.2 AND DFCM STANDARDS.
- INSPECTION REPORTS ARE TO BE SUBMITTED TO THE CODE CONSULTANTS, ARCHITECT, DFCM PROJECT MANAGER, AND THE STATE OF UTAH BUILDING OFFICIAL WITHIN 48 HRS. OF INSPECTIONS;
- A FINAL INSPECTION REPORT SHALL BE SUBMITTED FOLLOWING COMPLETION OF THE PROJECT DOCUMENTING THE TYPES OF SPECIAL INSPECTIONS PERFORMED AND A STATEMENT INDICATING THAT THE STRUCTURE IS IN COMPLIANCE WITH THE DRAWINGS, SPECIFICATIONS, AND APPLICABLE CODES IBC 1704.1.2;

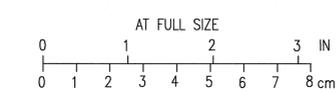
NO.	REVISIONS	DWN	APVD	APVD	DATE
1	MODIFICATIONS	JK	BB	PB	10/06/09
0	ISSUE FOR CONSTRUCTION	JK	BB	PB	09/22/09

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 VAULT MANHOLE UPGRADE
 CEDAR CITY, UTAH

DESIGNED	BY	DATE	SCALE	REV.
B. BAGGALEY			AS NOTED	
DRAWN	J. KIM			
CHECKED	B. BAGGALEY			
APPROVED	B. BAGGALEY			
APPROVED	P. BLACKHAM			
DATE	09/22/09			



GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND CONDITIONS ONSITE AS ADDRESSED IN THE STRUCTURAL DOCUMENTS.
2. ANY CONFLICTS OR OMISSIONS OF THE EXISTING STRUCTURE AND THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD BEFORE WORK IS TO CONTINUE FORWARD.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF ALL PERSONS WITHIN AND ADJACENT TO THE JOBSITE.
4. ANY AND ALL SITE VISITS/OBSERVATIONS BY THE ENGINEER OF RECORD OR HIS/HER REPRESENTATIVES ARE NOT TO BE INTERPRETED AS SPECIAL INSPECTION OR APPROVAL ON ANY WORK PERFORMED ON THE JOBSITE.
5. THE CONTRACTOR IS TO PROVIDE SHOP DRAWINGS SUBMITTALS PRIOR TO THE FABRICATION OR ERECTION OF ANY STRUCTURAL COMPONENTS.

STRUCTURAL DESIGN CRITERIA

1. BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC) 2006; PUBLISHED BY INTERNATIONAL CODE COUNCIL, INC.
2. AMERICAN NATIONAL STANDARDS INSTITUTE CODE, ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES; PUBLISHED BY AMERICAN NATIONAL STANDARDS INSTITUTE, INC.
3. STEEL DESIGN CODE: SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LOAD AND RESISTANCE FACTOR DESIGN (LRFD) 2005; PUBLISHED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
4. CONCRETE DESIGN CODE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-05; PUBLISHED BY AMERICAN CONCRETE INSTITUTE.
5. STRUCTURAL WELDING CODE: AWS D-1.1, PUBLISHED BY AMERICAN WELDING SOCIETY
6. STRUCTURAL STEEL: SEE SPECIFICATION.
7. SPECIAL LOADS:
SEE PLANS AND DETAILS FOR SPECIFIED INPLACE PERMANENT EQUIPMENT LOADS WHERE APPLICABLE.

FIELD MEASUREMENT NOTES

1. ALL DIMENSIONS OF EXISTING CONSTRUCTION ARE APPROXIMATE; CONTRACTOR SHALL MAKE ALL NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURES, BREECING, AND EQUIPMENT TO VERIFY DIMENSIONS SHOWN ON DRAWINGS AND TO PROVIDE DIMENSIONS NOT SHOWN, PRIOR TO FABRICATION. COSTS FOR MODIFICATIONS OF NEW CONSTRUCTION, DUE TO LACK OF CONFIRMATION OF DIMENSIONS BY FIELD MEASUREMENTS SHALL BE BORNE BY CONTRACTOR.
2. CONTRACTOR'S STRUCTURAL STEEL DETAILER SHALL MAKE NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURAL STEEL CONNECTIONS TO ENSURE NEW CONNECTION DETAILS SHOWN ON SHOP DRAWINGS ARE COMPATIBLE WITH EXISTING CONNECTIONS AND ARE CONSTRUCTABLE AS DETAILED.

EXISTING CONDITIONS

1. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MEANS AND METHODS REQUIRED FOR SUFFICIENT SHORING OF THE EXISTING STRUCTURE AS REQUIRED FOR INDIVIDUAL MEMBER MODIFICATIONS OR REPLACEMENT.
2. CONTRACTOR IS TO NOTIFY THE ENGINEER OF RECORD CONCERNING ANY DISCREPENCIES BETWEEN THE STRUCTURAL DOCUMENTS & EXISTING CONDITIONS AT OR ADJACENT TO ANY LOCATION ADDRESSED FOR MODIFICATION WITHIN THESE DOCUMENTS.

STEEL NOTES

1. PROVIDE ALL STEEL SECTIONS SPECIFIED WITHIN THE STRUCTURAL DOCUMENTS PER SECTION SPECIFICATIONS OF AISC AS FOLLOWS UNLESS NOTED OTHERWISE:

ANGLES & MISC	ASTM A36
RECTANGULAR/SQUARE HSS	ASTM 500 GRADE B
CHANNELS	ASTM A36
BASE PLATE	ASTM A36
STIFFENER PLATE	ASTM A36
ANCHOR BOLTS	ASTM A307 GRADE A
BEAM TO BEAM/COLUMN CONNECTION	ASTM A325
2. MISCELLANEOUS ANCHOR BOLTS, EXPANSION ANCHORS, ANCHOR RODS, AND FASTENERS NOT INDICATED, BUT REQUIRED FOR ANCHORAGE OF EQUIPMENT AND MATERIALS, SHALL BE PROVIDED (AS RECOMMENDED BY MANUFACTURER OF ITEMS). ANCHORAGE WILL BE SUBJECT TO REVIEW BY ENGINEER.
3. CONTRACTOR SHALL FURNISH AND INSTALL MISCELLANEOUS STEEL ITEMS NOT SHOWN BUT NECESSARY FOR COMPLETE CONSTRUCTION OF PROJECT.
4. WELD SYMBOLS SHOWN MAY NOT DISTINGUISH BETWEEN FIELD AND SHOP WELDING. CONTRACTOR SHALL PROVIDE AS MUCH WELDING AS PRACTICAL IN THE SHOP. CONTRACTOR'S SHOP DRAWINGS SHALL SHOW ALL WELDING AND DISTINGUISH BETWEEN FIELD AND SHOP WELDING.
5. WHERE FILLET WELD SIZES ARE NOT NOTED ON DRAWINGS, PROVIDE MINIMUM SIZE IN ACCORDANCE WITH AWS D1.1, 5.14. ALL OTHER TYPE WELDS NOT SIZED ON DRAWINGS SHALL DEVELOP FULL STRENGTH OF MEMBERS ATTACHED.
6. WELDING WILL BE ALLOWED ONLY AT SCHEDULED TIMES AND IN LOCATIONS CONSISTENT WITH OWNER'S PLANT OPERATIONS.
7. PROVIDE ALL CONNECTIONS WITHIN THESE STRUCTURAL DOCUMENTS WITH E70XX ELECTRODES. PERFORM WELDS AS REQUIRED BY AWS SPECIFICATIONS FOR "SMW" PROCESS.
8. MINIMUM REQUIRED FILLET WELD THICKNESS AS REQUIRED PER BASE MATERIAL THICKNESS (AISC LRFD THIRTEENTH ED):

MATERIAL THICKNESS (IN.)	MIN FILLET WELD (IN.)
UPTO 1/4	1/8
OVER 1/4 TO 1/2	3/16
OVER 1/2 TO 3/4	1/4
OVER 3/4	5/16

 DO NOT WELD ANCHORS UNLESS NOTED OTHERWISE.
DO NOT WELD DEFORMED BAR REINFORCING
9. CONNECTIONS
 - A. SHOP CONNECTIONS: EITHER WELD OR USE HIGH-STRENGTH BOLTS, UNLESS TYPE IS SPECIFICALLY SHOWN.
 - B. FIELD CONNECTIONS: PROVIDE BOLTS FOR ALL FIELD CONNECTIONS EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.
 NONSHRINK GROUT:
 - A. USE "MASTER BUILDERS" MASTERFLOW 928 GROUT, OR EQUAL. MINIMUM STRENGTH 5000 PSI AT 28 DAYS.

MISCELLANEOUS METAL FABRICATION NOTES:

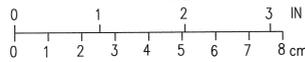
1. FURNISH AND INSTALL HATCHES AND LADDERS FOR LOCATION SHOWN INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
2. ACCESS HATCH
 - A. MANUFACTURER BILCO OR USF FABRICATION INC.
 - B. FLOOR DOOR TYPE ACCESS HATCH, TYPE "J-3AL H20", SINGLE LEAF ALUMINUM
 - C. DOOR
 1. SIZE 2'-6" X 3'-0", HINGED ON ONE OF THE SHORT SIDES
 2. 1/4" DIAMOND PATTERN DECK PLATE.
 3. REINFORCED WITH ALUMINUM STIFFENERS AS REQUIRED FOR LIVE LOAD.
 4. OPEN TO 90° AND LOCK AUTOMATICALLY IN THAT POSITION.
 5. PROVIDE OPENING MECHANISM TO ALLOW FOR ONE PERSON OPERATION.
 6. PROVIDE INSIDE PANIC BAR OPENING DEVICE.
 7. LIVE LOAD CAPACITY AASHTO H-20 WHEEL LOAD.
 - D. FRAME 1/4" ALUMINUM CHANNEL WITH INTEGRAL ANCHOR FLANGES AND CONTINUOUS EPDM DEBRIS GASKET AND NEOPRENE BUMPER. APPLY BITUMINOUS COATING TO EXTERIOR OF FRAME IN CONTACT WITH CONCRETE.
 - E. PROVIDE TYPE 316 STAINLESS STEEL HARDWARE THROUGHOUT INCLUDING LOCK STRIKE HINGES AND SPRING LIFTING MECHANISM.
 - F. PROVIDE 1/2" DIA WEEP HOLES (2) ON EACH SIDE ON THE INSIDE OF THE CHANNEL FRAME AT AREA #2.
 - G. DELIVER AND HOLD HATCHES AT STAGING AREA FOR LOCK CYLINDER INSTALLATION WHEN DIRECTED BY OWNER.
3. STEEL LADDERS
 - A. CONFORM TO DETAILS SHOWN ON DRAWINGS
 - B. VERIFY DIMENSIONS OF EXISTING STRUCTURES PRIOR TO FABRICATION
 - C. RUNG TYPE STEEL, 4-ROW, 13 GAGE TREAD-GRIP BY MORTON MANUFACTURING CO, OR EQUAL
 - D. FINISH GALVANIZED

ABBREVIATIONS

AB	ANCHOR BOLT(S)	MAT	MATERIAL
ALT	ALTERNATE	MAX	MAXIMUM
APPROX	APPROXIMATE	MECH	MECHANICAL
B-B	BACK TO BACK	MFR	MANUFACTURER
BL	BASELINE	MIN	MINIMUM
BLDG	BUILDING	NIC	NOT IN CONTRACT
BOT	BOTTOM	NTS	NOT TO SCALE
BRG	BEARING	OPNG	OPENING
C	CHANNEL	OPP	OPPOSITE
CL	CENTER LINE	PL	PLATE
CLR	CLEAR	PSF	POUNDS PER SQUARE FOOT
CNTRL	CONTROL	PSI	POUNDS PER SQUARE INCH
COL	COLUMN	R	RADIUS
CONC	CONCRETE	RECT	RECTANGLE
CONT	CONTINUOUS	REF	REFERENCE
CONTR	CONTRACTOR	REINF	REINFORCING
CONST	CONSTRUCTION	REQD	REQUIRED
CTR	CENTER	RT	RIGHT
DET	DETAIL	SC	SLIP-CRITICAL
DIA	DIAMETER	SHT	SHEET
DIST	DISTANCE	SIM	SIMILAR
DN	DOWN	SPEC	SPECIFICATION(S)
DWG	DRAWING	SQ	SQUARE
EA	EACH	STD	STANDARD
E-E	EDGE TO EDGE	STIFF	STIFFENER
EF	EACH FACE	STL	STEEL
EJ	EXPANSION JOINT	STRL	STRUCTURAL
EL	ELEVATION	T&B	TOP AND BOTTOM
EMBED	EMBEDMENT	THK	THICK(NESS)
EQL	EQUAL	TOB	TOP OF BOLT, BEAM
EQPT	EQUIPMENT	TOC	TOP OF CONCRETE
EST	ESTIMATE	TOS	TOP OF STEEL
EW	EACH WAY	TOW	TOP OF WALL
EXT	EXTERIOR	TYP	TYPICAL
EXST	EXISTING	UNO	UNLESS NOTED OTHERWISE
FD	FLOOR DRAIN	VERT	VERTICAL
FLR	FLOOR	W/	WITH
FT	FOOT, FEET	WF	WIDE FLANGE
GA	GAUGE	WT	WEIGHT
HORIZ	HORIZONTAL		
HSS	HOLLOW STRUCTURAL SECTION		
IN	INCH(ES)		
JT	JOINT		
LB	POUND		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
LT	LEFT		



AT FULL SIZE



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DRAWN	J. KIM	NO.	22180.01
CHECKED	B. BAGGALEY	REV.	0
APPROVED	B. BAGGALEY		
APPROVED	P. BLACKHAM		
DATE	09/22/09		

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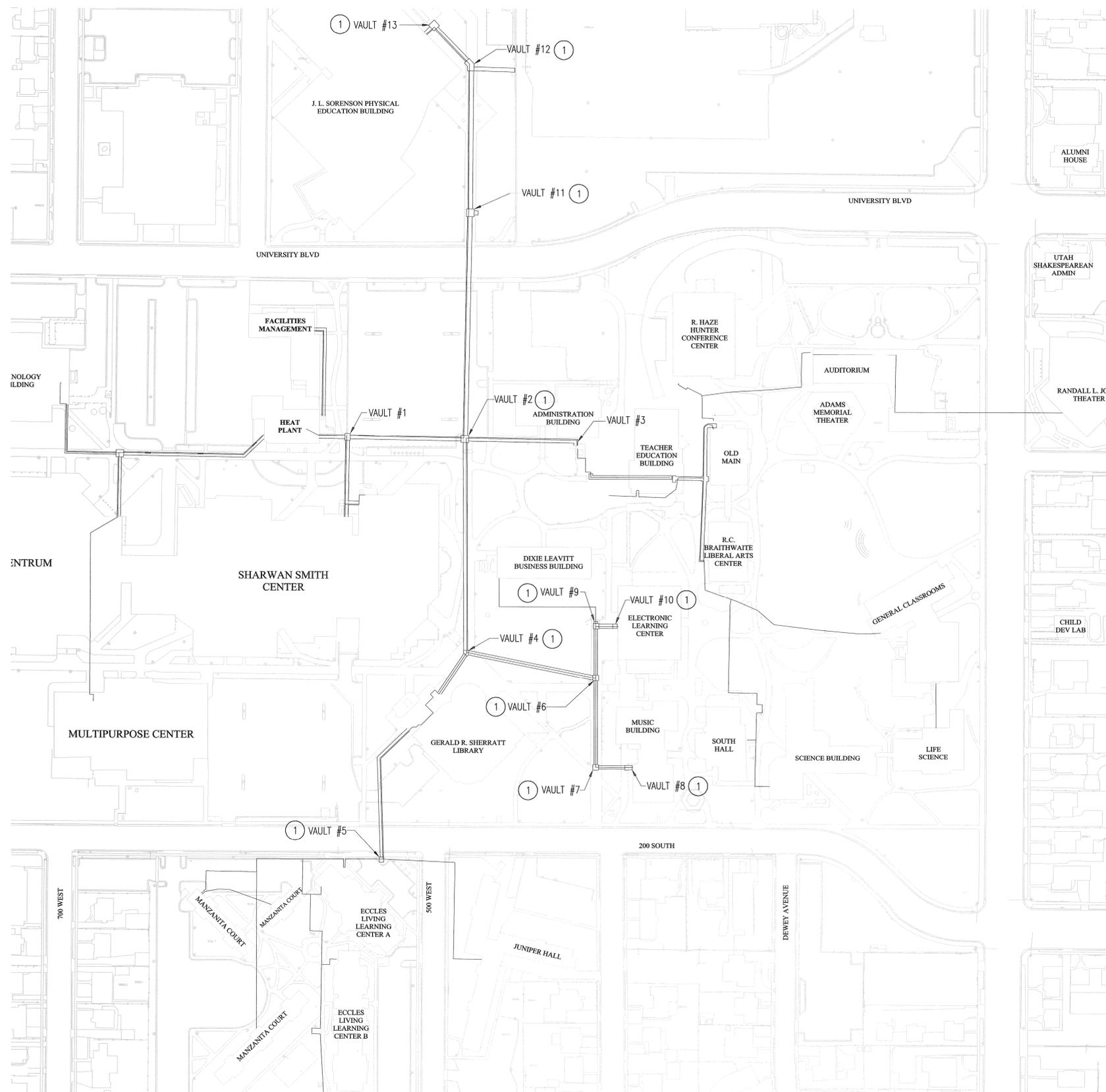
SOUTHERN UTAH UNIVERSITY
VAULT MANHOLE UPGRADE
CEDAR CITY, UTAH

GENERAL STRUCTURAL NOTES SHEET 1

12-ADD D1-#3

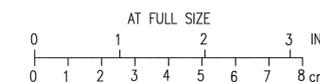
KEY NOTES: ○

- SEE VAULT LID PLANS ON SHEETS SP1, SP2, AND SP3 FOR MORE INFORMATION ON UPGRADES TO VAULT MANHOLE.



OVERALL SITE - MANHOLE LOCATIONS

SCALE: 1:100



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 Stanley Consultants INC. <small>A Stanley Group Company Engineering, Environmental and Construction Services - Worldwide</small> 383 West Vine Street Suite 400 Murray, Utah 84123 www.stanleygroup.com					
SOUTHERN UTAH UNIVERSITY VAULT MANHOLE UPGRADE CEDAR CITY, UTAH					
OVERALL SITE VAULT LOCATIONS					
DESIGNED	B. BAGGALEY				
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CHECKED	B. BAGGALEY				
APPROVED	B. BAGGALEY				
APPROVED	P. BLACKHAM				
DATE	09/22/09				
SCALE: AS NOTED		NO. 22180.01		REV.	
GG2		0			

REINFORCING STEEL NOTES:

- CONFORM WITH ACI 318 AND ACI STANDARD FOR "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
- REINFORCING SHALL BE CONTINUOUS AROUND ALL CORNERS UNLESS SHOWN OTHERWISE.
- SHIFT REINFORCING BARS TO CLEAR ANCHOR BOLTS AND EMBEDDED ITEMS; OBTAIN ENGINEER'S APPROVAL AND ADD EXTRA REINFORCING BAR IF REQUESTED BY ENGINEER. CUTTING OF REINFORCING BARS NOT PERMITTED.
- TACK WELDING TO REINFORCING BARS IS NOT PERMITTED.
- LAP ALL #11 AND SMALLER BAR SPLICES UNLESS APPROVED OTHERWISE BY ENGINEER.
- MINIMUM BAR SPLICE LAP LENGTH SHALL BE AS SHOWN. WHERE LAP LENGTH IS NOT SHOWN ON DRAWINGS, USE MINIMUM LENGTH SHOWN IN THE FOLLOWING TABLE.

REINFORCING BAR MINIMUM SPLICE LAP LENGTH IN INCHES										
BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11	
TOP BARS	24	32	40	48	70	80	90	102	113	
OTHER BARS	19	25	31	37	54	62	70	78	87	

- CLASS B SPLICE FOR $f_y = 60,000$ PSI, $f'_c = 4000$ PSI, NORMAL WEIGHT CONCRETE, UNCOATED BARS AND FOLLOWING:
 - CLEAR SPACING OF BARS ≥ 2 BAR DIA AND COVER \geq BAR DIA, OR
 - CLEAR SPACING OF BARS \geq DIA BAR AND COVER \geq DIA BAR, AND STIRRUPS OR TIES THROUGHOUT LAP NOT LESS THAN ACI CODE MINIMUM.
 - TOP BARS ARE DEFINED AS HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
- ALL BARS SHALL BE SECURELY PLACED IN FINAL POSITION PRIOR TO PLACING CONCRETE. PLACING BARS (WET STABBING) INTO WET CONCRETE IS PROHIBITED.
- REINFORCING CONCRETE COVER UNLESS OTHERWISE SHOWN: 2" MINIMUM WITH FOLLOWING EXCEPTIONS: 3" WHEN DEPOSITED AGAINST EARTH; 3/4" FOR WALLS AND SLABS NOT EXPOSED TO EARTH OR WEATHER.
- CONCRETE REINFORCEMENT SHALL BE PLACED WITHIN FOLLOWING TOLERANCE RELATIVE TO FORMED OR UNFORMED CONCRETE SURFACE:

SPECIFIED COVER	TOLERANCE	
	D \leq 12"	D > 12"
3/4"	-1/8", +1/4"	-1/8", +3/8"
1"	$\pm 1/4"$	-1/4", +3/8"
1 1/2" OR GREATER	$\pm 3/8"$	-3/8", +1/2"

NOTE:
TOLERANCES APPLY ONLY AT LOCAL ANOMALIES.
SIZE CHAIRS AND SPACERS FOR SPECIFIED COVER.

CONCRETE NOTES

- ALL CONCRETE SHALL BE 4000 PSI CONCRETE WITH 1-1/2" LB OF FIBERMESH REINFORCING PER CUBIC YARD.
- EXPOSED CONCRETE CORNER CHAMFER: 1" UNLESS SHOWN OTHERWISE.
- KEYWAY DIMENSIONS: DEPTH 1-1/2"; WIDTH ONE-THIRD THAT OF MEMBER UNLESS SHOWN OTHERWISE.
- ALL CONSTRUCTION JOINTS SHALL HAVE KEYWAYS UNLESS SHOWN OTHERWISE.
- REINFORCING SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE.
- CONSTRUCTION JOINTS AS SHOWN MAY BE VARIED TO SUIT PLACING SEQUENCE PROVIDED THE RELOCATION, ADDITION, OR DELETION OF CONSTRUCTION JOINTS IS APPROVED BY THE ENGINEER PRIOR TO PREPARATION OF REINFORCING STEEL SHOP DRAWINGS.
- PROVIDE SETTING TEMPLATES TO POSITION ANCHOR BOLTS PRIOR TO PLACING CONCRETE. ACCURATELY POSITION BOLTS TO ASSURE CORRECT VERTICAL AND HORIZONTAL LOCATION TO MATCH STEEL OR EQUIPMENT BOLT PATTERN.
- ALL METAL FABRICATIONS EMBEDDED IN CONCRETE, OTHER THAN REINFORCING AND ANCHOR BOLTS, SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND ASTM A386 AS APPLICABLE.
- CONCRETE SHALL NOT BE LOADED UNTIL IT HAS ATTAINED SUFFICIENT STRENGTH TO SAFELY WITHSTAND LOADING AND 28 DAY STRENGTH HAS BEEN ACHIEVED.
- CONSTRUCTION CRANE OR OTHER HEAVY ERECTION EQUIPMENT WILL NOT BE PERMITTED ON SLABS.

STATEMENT OF SPECIAL INSPECTIONS

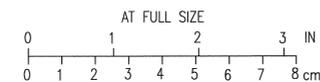
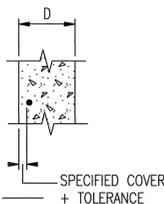
- SPECIAL INSPECTION AS PER IBC SECTION 1704 SHALL BE PROVIDED UNLESS WAIVED BY THE BUILDING OFFICIAL. AN INDEPENDENT AGENCY IS TO BE EMPLOYED BY THE OWNER TO PROVIDE REQUIRED INSPECTIONS LISTED BELOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE WITH THE SPECIAL INSPECTOR THROUGH THE CONSTRUCTION PROCESS THE APPROPRIATE TIMES FOR THESE INSPECTIONS TO OCCUR. THE FOLLOWING ARE REQUIRED INSPECTIONS TO BE PROVIDED:
 - STRUCTURAL STEEL** - PER SECTION 1704.3
 - IDENTIFICATION OF STEEL WITH MILL REPORTS - (PERIODIC)
 - SAMPLING AND TESTING - (PERIODIC)
 - WELDING** - PER SECTION 1704.3.1
 - ALL FIELD WELDING - (PERIODIC)
 - SHOP WELDING MUST BE PERFORMED BY A SHOP WITH AWS CERTIFICATION
 - VERIFICATION OF WELDER CERTIFICATION FOR TYPE OF WELD BEING PERFORMED.
 - STEEL FABRICATION**
 - FABRICATOR MUST SUBMIT CERTIFICATE OF COMPLIANCE
 - CONCRETE**
 - REINFORCING STEEL (PERIODIC)
 - BOLTS AND EMBEDMENTS (PERIODIC)
 - REQUIRED DESIGN MIX (PERIODIC)
 - CONCRETE PLACEMENT (CONTINUOUS)
 - CONCRETE TESTING (EVERY 50 YARDS WITH A MINIMUM OF 1 PER DAY, PER TYPE OF CONCRETE PLACED.)
 - ERECTION OF PRECAST (PERIODIC)
 - FORMWORK (PERIODIC)
 - STRUCTURAL OBSERVATIONS:**

THE CONTRACTOR IS TO NOTIFY THE ENGINEER A MINIMUM OF 3 DAYS PRIOR TO THE PHASES OF CONSTRUCTION LISTED BELOW TO ALLOW FOR SCHEDULING OF SITE OBSERVATION BY THE ENGINEER OF RECORD.

 - FINAL PLACEMENT OF STRUCTURAL STEEL MEMBERS
 - INITIAL PLACEMENT OF CONCRETE IN ANY SITE FORMWORK.

GENERAL NOTES

- DIMENSIONS AND/OR ELEVATIONS MARKED THUS (+) ARE ASSUMED AND SHALL BE VARIED BY THE CONTRACTOR TO SUIT EQUIPMENT FURNISHED. FINAL DIMENSIONS ARE SUBJECT TO THE REVIEW OF THE ENGINEER AND/OR OWNER.
- DIMENSIONS AND/OR ELEVATIONS MARKED THUS (\pm) MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.



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NO.	REVISIONS	DWN	APVD	APVD	DATE

383 West Vine Street
Suite 400
Murray, Utah
84123
www.stanleygroup.com

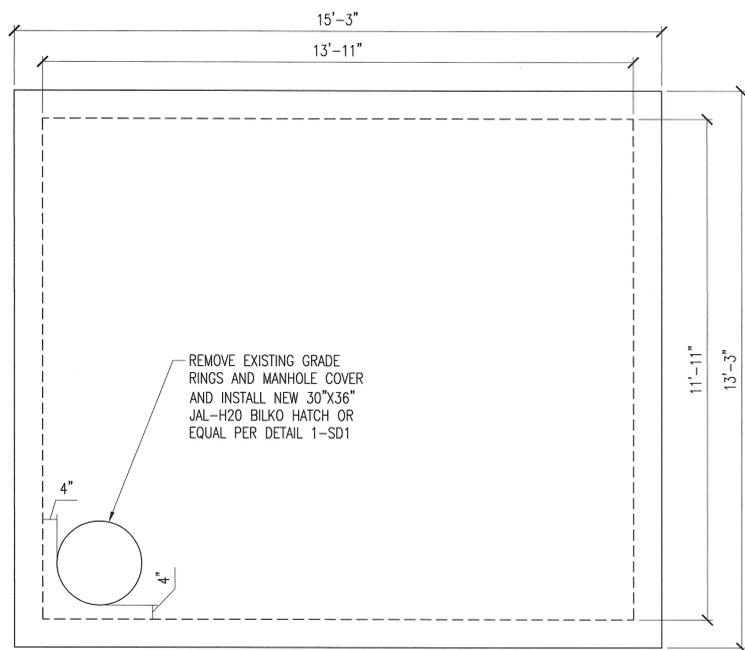
Stanley Consultants INC.
A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

SOUTHERN UTAH UNIVERSITY
VAULT MANHOLE UPGRADE
CEDAR CITY, UTAH

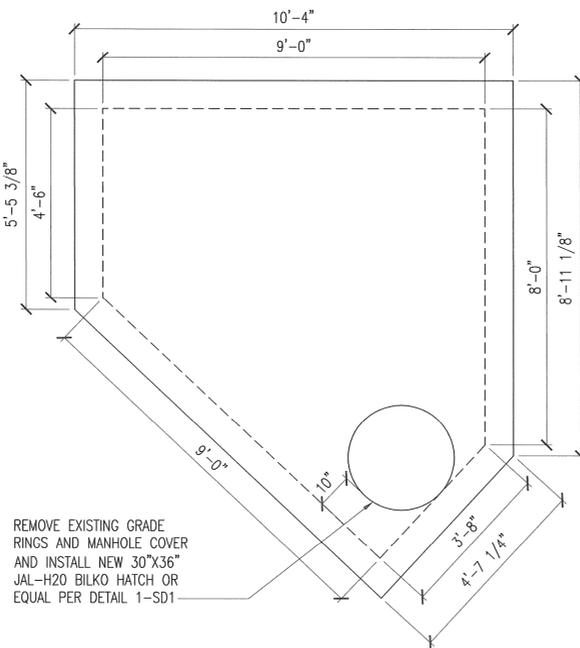
**GENERAL
STRUCTURAL NOTES
SHEET 2**

DESIGNED	B. BAGGALEY	SCALE:	AS NOTED
DRAWN	J. KIM	NO.	22180.01
CHECKED	B. BAGGALEY	REV.	
APPROVED	B. BAGGALEY		
APPROVED	P. BLACKHAM		
DATE	09/22/09		

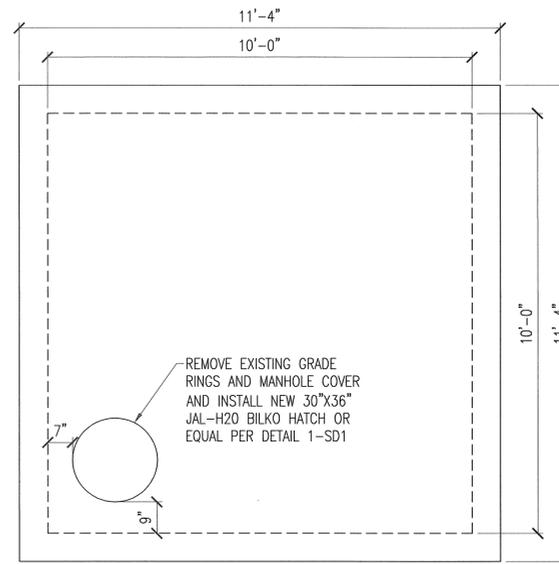
SG2 **0**



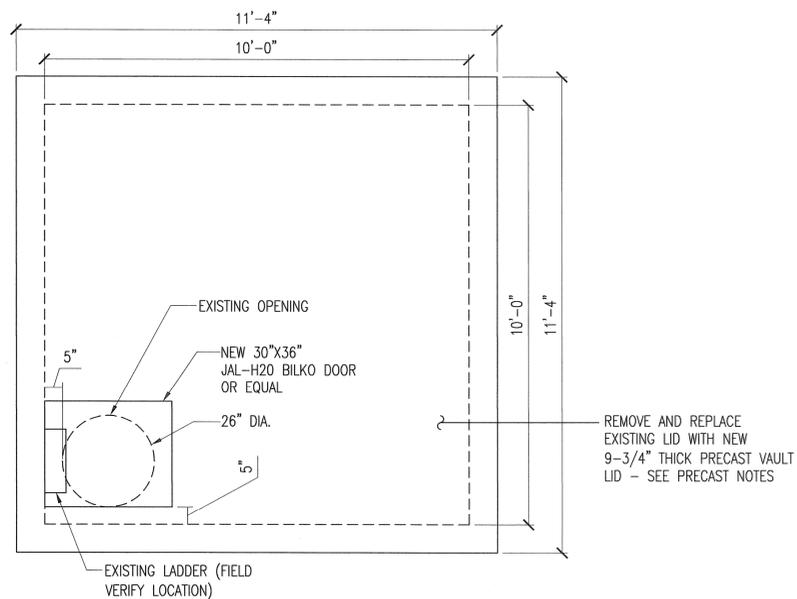
VAULT #2
SCALE: 1/2" = 1'-0" NORTH ↑



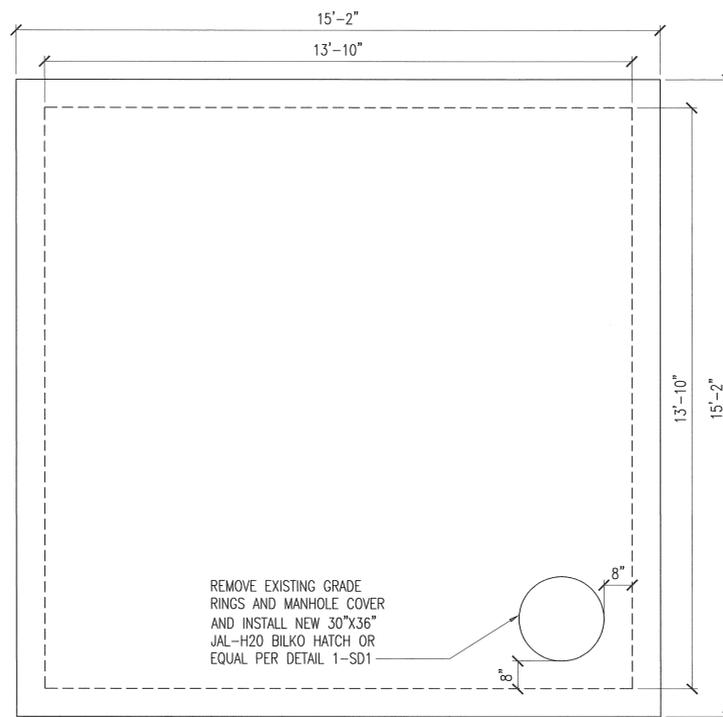
VAULT #4
SCALE: 1/2" = 1'-0" NORTH ↑



VAULT #7
SCALE: 1/2" = 1'-0" NORTH ↑



VAULT #9 (ALTERNATE #4)
SCALE: 1/2" = 1'-0" NORTH ↑



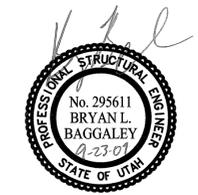
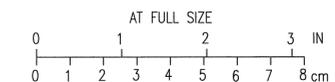
VAULT #11
SCALE: 1/2" = 1'-0" NORTH ↑

PRECAST NOTES:

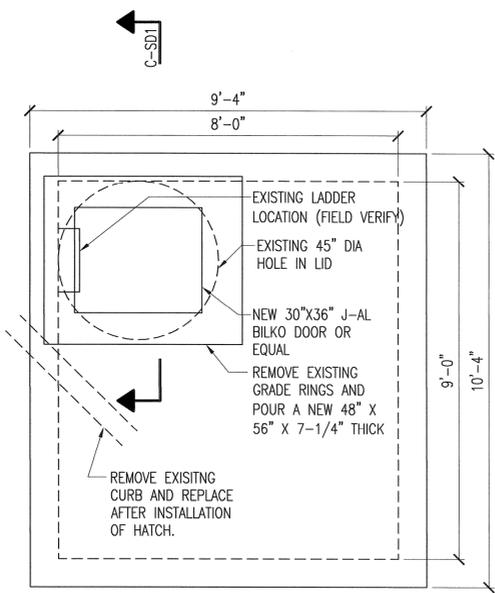
1. CONTRACTOR TO REMOVE EXISTING PRECAST LID.
2. LID THICKNESS SHOWN IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY AND MATCH EXISTING.
3. NEW PRECAST VAULT LIDS SHALL BE ENGINEERED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF UTAH. SUBMIT CALCULATIONS AND SHOP DRAWINGS FOR REVIEW.
4. PRECAST LIDS SHALL BE ENGINEERED TO SUPPORT 250 PSF LL OR AASHTO H-20 TRUCK LOAD WHICHEVER IS GREATER.

GENERAL NOTES:

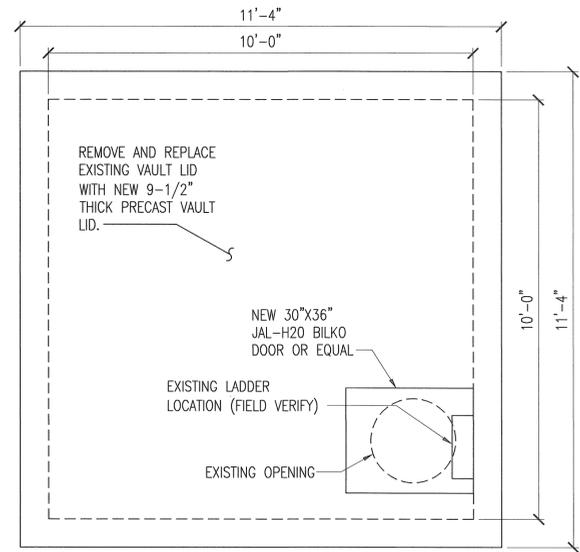
1. CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS, THICKNESSES, AND FIELD CONDITIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO REMOVE AND REPLACE SIDEWALKS AND CURBS SURROUNDING VAULT LIDS TO MATCH EXISTING AS REQUIRED TO INSTALL NEW PRECAST OR CAST IN PLACE LIDS AND PROVIDE UNIFORM WALKING SURFACE.
3. FINISH CONCRETE SURFACES TO MATCH EXISTING SURFACES SURROUNDING LIDS.
4. REMOVE, STORE, AND REINSTALL, OR SHORE AND PROTECT IN PLACE AT CONTRACTORS OPTION ALL EXISTING LIGHT FIXTURES, CONDUIT, PIPES, AND OTHER EXISTING ITEMS SUPPORTED FROM TUNNEL LIDS.
5. WHERE EXISTING LIDS ARE TO BE DEMOLISHED, CONTRACTOR SHALL PROTECT THE CONTENTS OF THE VAULTS FROM DEMOLITION AND CONSTRUCTION DEBRIS.
6. SHORE TUNNEL WALLS AS REQUIRED PRIOR TO DEMOLISHING OR REMOVING TUNNEL LIDS.
7. WHERE EXISTING LADDERS DO NOT MEET MIN. OSHA REQUIREMENTS LADDER SHALL BE MODIFIED OR REPLACED PER DETAIL 2-SD1.
8. CONTRACTOR TO FIELD VERIFY THAT SURFACE SLOPES OF NEW LIDS SHALL BE SUFFICIENT TO PREVENT PONDING, NOTIFY ENGINEER AND OWNER PRIOR TO FABRICATION IF ANY NEW SURFACE SLOPE IS TO BE LESS THAN 1/4" IN 12".
9. HATCHES IN SIDEWALK OR DRIVEWAY AREA SHALL BE RATED TO SUPPORT H-20 TRUCKLOADING. HATCHES IN LANDSCAPE AREAS SHALL BE DESIGNED FOR 250 PSF MINIMUM LIVE LOAD.



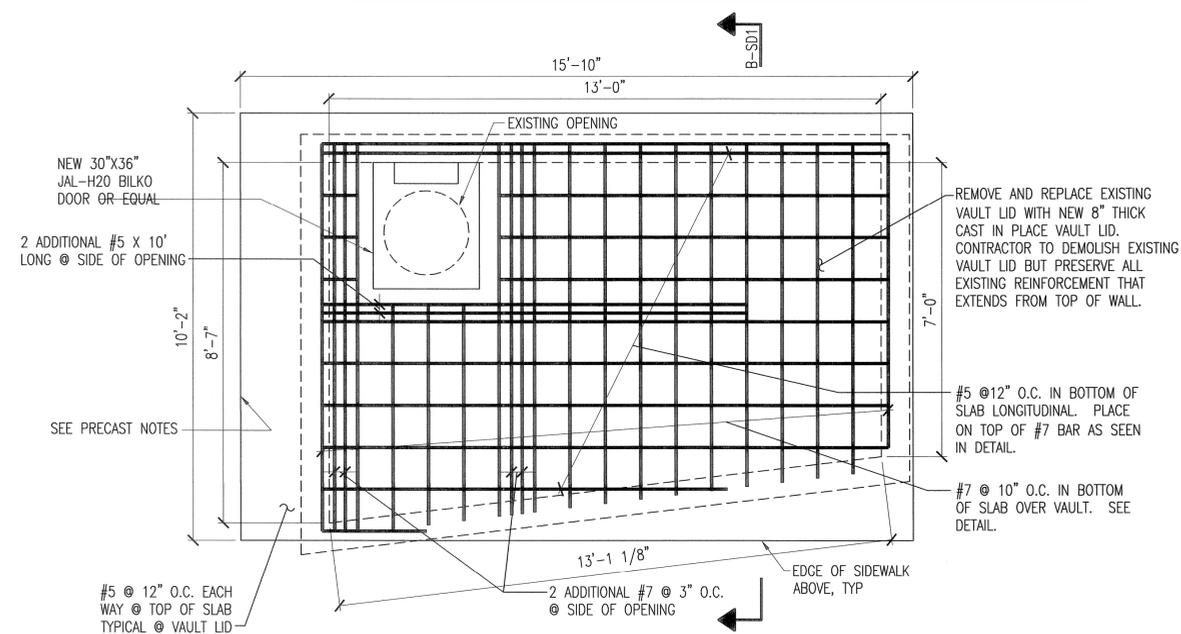
0	ISSUE FOR CONSTRUCTION	JK	BB	PB	09/22/09
NO.	REVISIONS	DWN	APVD	APVD	DATE
 Stanley Consultants INC. A Stanley Group Company Engineering, Environmental and Construction Services - Worldwide		383 West Vine Street Suite 400 Murray, Utah 84123 www.stanleygroup.com			
		SOUTHERN UTAH UNIVERSITY VAULT MANHOLE UPGRADE CEDAR CITY, UTAH			
MANHOLE LID & VAULT INFORMATION SHEET 1					
DESIGNED	B. BAGGALEY	SCALE:	AS NOTED		
DRAWN	J. KIM	NO.	22180.01	REV.	
CHECKED	B. BAGGALEY	SP1			
APPROVED	B. BAGGALEY	0			
APPROVED	P. BLACKHAM				
DATE	09/22/09				



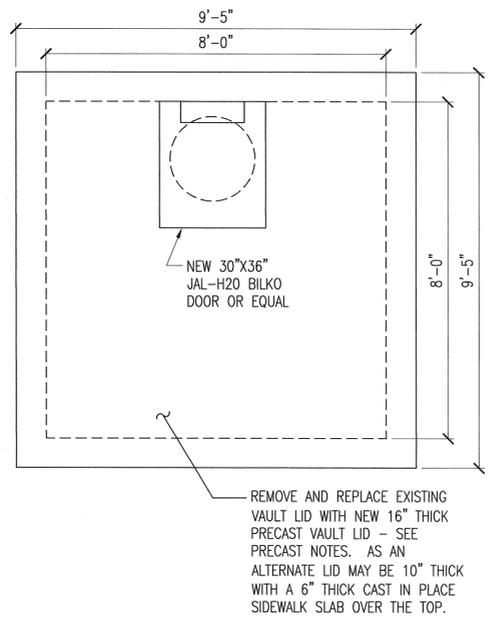
VAULT #5 (ALTERNATE #1) NORTH
SCALE: 1/2" = 1'-0"



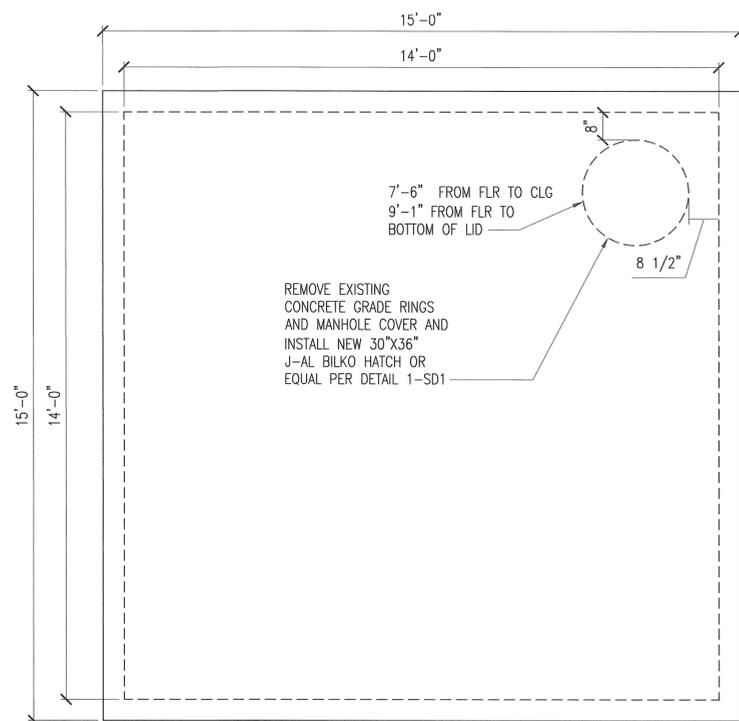
VAULT #6 (ALTERNATE #2) NORTH
SCALE: 1/2" = 1'-0"



VAULT #8 (ALTERNATE #3) NORTH
SCALE: 1/2" = 1'-0"



VAULT #10 ALTERNATE #5 NORTH
SCALE: 1/2" = 1'-0"



VAULT #13 NORTH
SCALE: 1/2" = 1'-0"

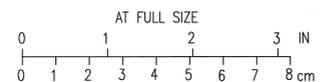
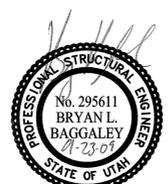
NOTE: TOP OF BILKO HATCH MAY BE RAISED UP TO 6" HIGHER THAN EXISTING MANHOLE COVER @ VAULT #13 TO ACCOMMODATE HATCH INSTALLATION.

PRECAST NOTES:

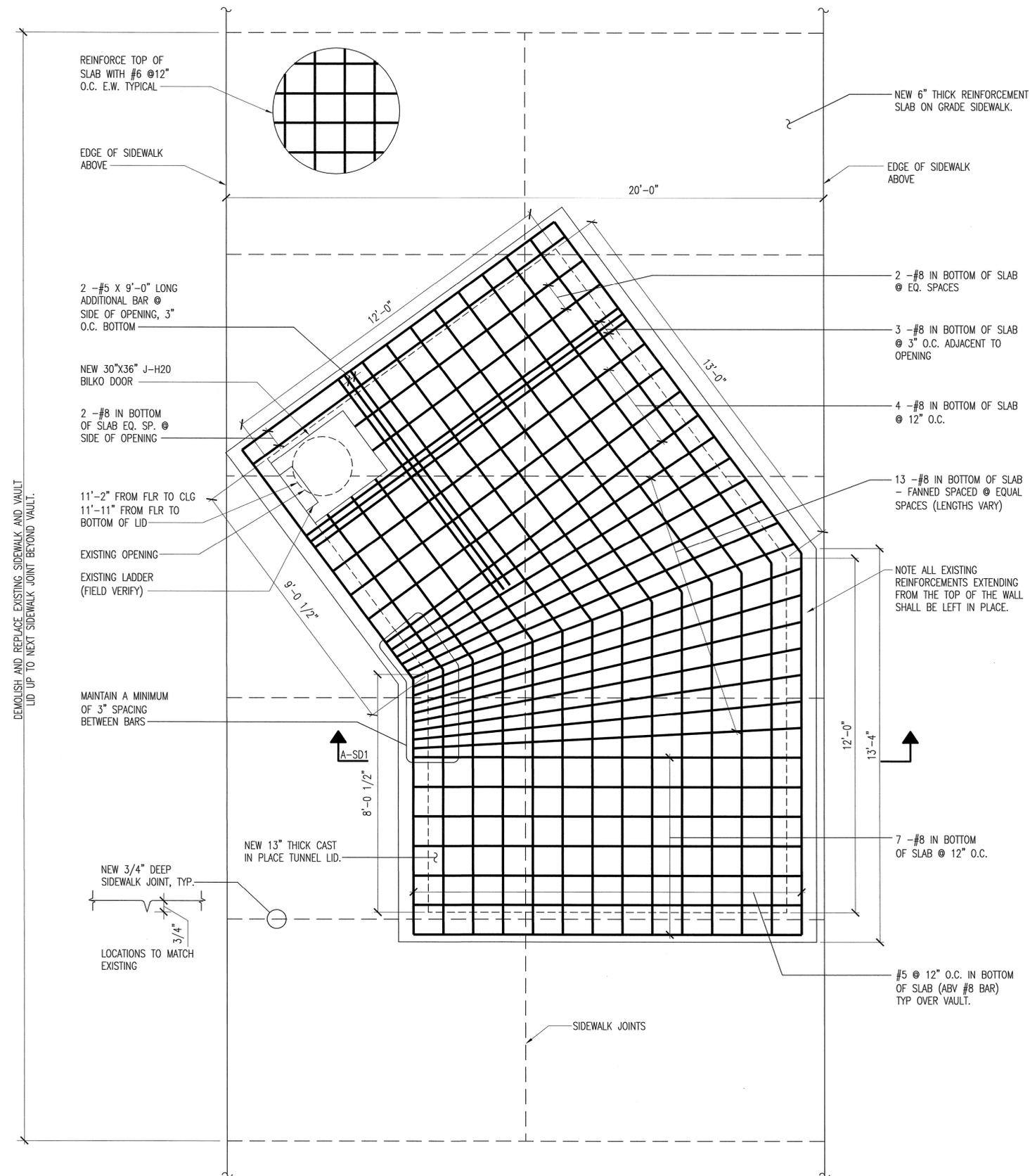
- CONTRACTOR TO REMOVE EXISTING PRECAST LID.
- LID THICKNESS SHOWN IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY AND MATCH EXISTING.
- NEW PRECAST VAULT LIDS SHALL BE ENGINEERED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF UTAH. SUBMIT CALCULATIONS AND SHOP DRAWINGS FOR REVIEW.
- PRECAST LIDS SHALL BE ENGINEERED TO SUPPORT 250 PSF LL OR AASHTO H-20 TRUCK LOAD WHICHEVER IS GREATER.

GENERAL NOTES:

- CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS, THICKNESSES, AND FIELD CONDITIONS PRIOR TO COMMENCING WORK.
- CONTRACTOR TO REMOVE AND REPLACE SIDEWALKS AND CURBS SURROUNDING VAULT LIDS TO MATCH EXISTING AS REQUIRED TO INSTALL NEW PRECAST OR CAST IN PLACE LIDS AND PROVIDE UNIFORM WALKING SURFACE.
- FINISH CONCRETE SURFACES TO MATCH EXISTING SURFACES SURROUNDING LIDS.
- REMOVE, STORE, AND REINSTALL, OR SHORE AND PROTECT IN PLACE AT CONTRACTORS OPTION ALL EXISTING LIGHT FIXTURES, CONDUIT, PIPES, AND OTHER EXISTING ITEMS SUPPORTED FROM TUNNEL LIDS.
- WHERE EXISTING LIDS ARE TO BE DEMOLISHED, CONTRACTOR SHALL PROTECT THE CONTENTS OF THE VAULTS FROM DEMOLITION AND CONSTRUCTION DEBRIS.
- SHORE TUNNEL WALLS AS REQUIRED PRIOR TO DEMOLISHING OR REMOVING TUNNEL LIDS.
- WHERE EXISTING LADDERS DO NOT MEET MIN. OSHA REQUIREMENTS LADDER SHALL BE MODIFIED OR REPLACED PER DETAIL 2-SD1.
- CONTRACTOR TO FIELD VERIFY THAT SURFACE SLOPES OF NEW LIDS SHALL BE SUFFICIENT TO PREVENT PONDING, NOTIFY ENGINEER AND OWNER PRIOR TO FABRICATION IF ANY NEW SURFACE SLOPE IS TO BE LESS THAN 1/4" IN 12".
- HATCHES IN SIDEWALK OR DRIVEWAY AREA SHALL BE RATED TO SUPPORT H-20 TRUCKLOADING. HATCHES IN LANDSCAPE AREAS SHALL BE DESIGNED FOR 250 PSF MINIMUM LIVE LOAD.



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SOUTHERN UTAH UNIVERSITY VAULT MANHOLE UPGRADE CEDAR CITY, UTAH					
MANHOLE LID & VAULT INFORMATION SHEET 2					
DESIGNED	B. BAGGALEY	SCALE: AS NOTED			
DRAWN	J. KIM	NO.	22180.01	REV.	
CHECKED	B. BAGGALEY	SP2			
APPROVED	B. BAGGALEY				
APPROVED	P. BLACKHAM				
DATE	09/22/09				



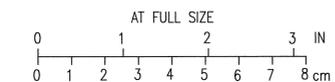
PRECAST NOTES:

1. CONTRACTOR TO REMOVE EXISTING PRECAST LID.
2. LID THICKNESS SHOWN IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY AND MATCH EXISTING.
3. NEW PRECAST VAULT LIDS SHALL BE ENGINEERED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF UTAH. SUBMIT STAMPED CALCULATIONS AND SHOP DRAWINGS FOR REVIEW.
4. PRECAST LIDS SHALL BE ENGINEERED TO SUPPORT 250 PSF LL OR AASHTO H-20 TRUCK LOAD WHICHEVER IS GREATER.

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS, THICKNESSES, AND FIELD CONDITIONS PRIOR TO COMMENCING WORK.
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VAULT #12 (ALTERNATE #6)
SCALE: 1/2" = 1'-0"



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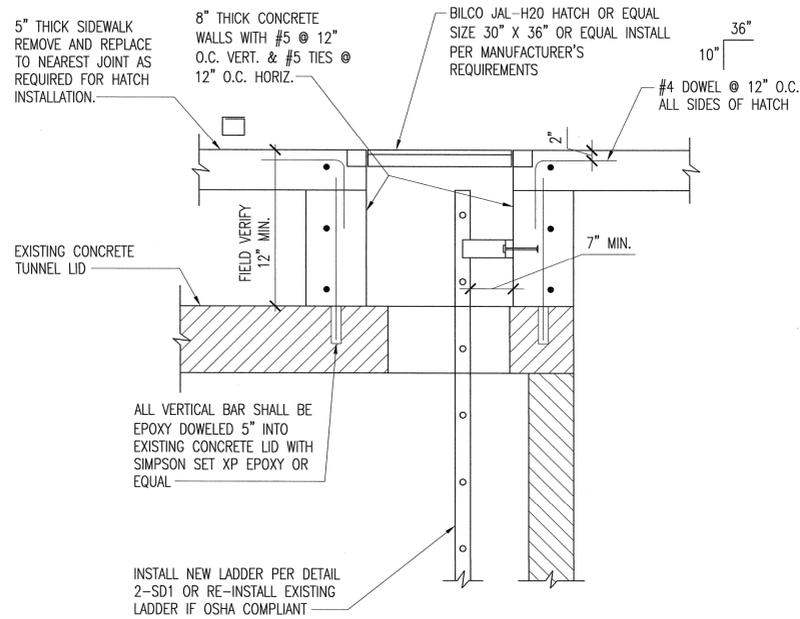
Stanley Consultants INC.
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SOUTHERN UTAH UNIVERSITY
VAULT MANHOLE UPGRADE
CEDAR CITY, UTAH

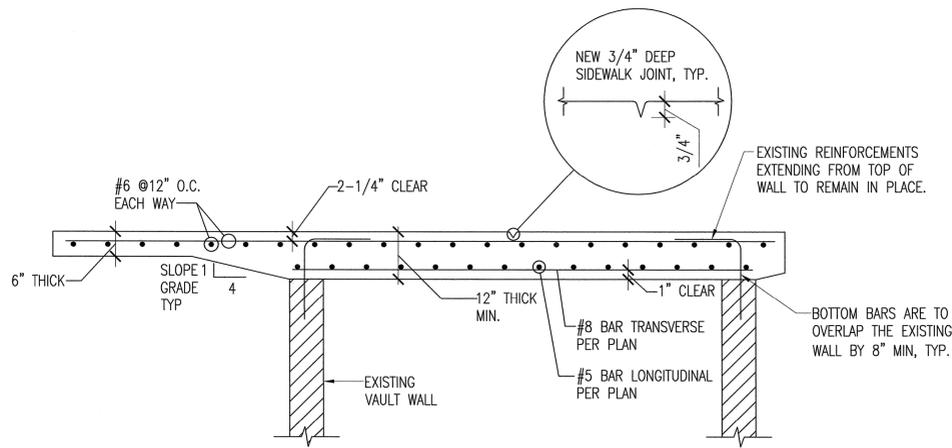
**MANHOLE
LID & VAULT INFORMATION
SHEET 3**

DESIGNED	B. BAGGALEY	SCALE:	AS NOTED
DRAWN	J. KIM	NO.	22180.01
CHECKED	B. BAGGALEY	REV.	
APPROVED	B. BAGGALEY		
APPROVED	P. BLACKHAM		
DATE	09/22/09		

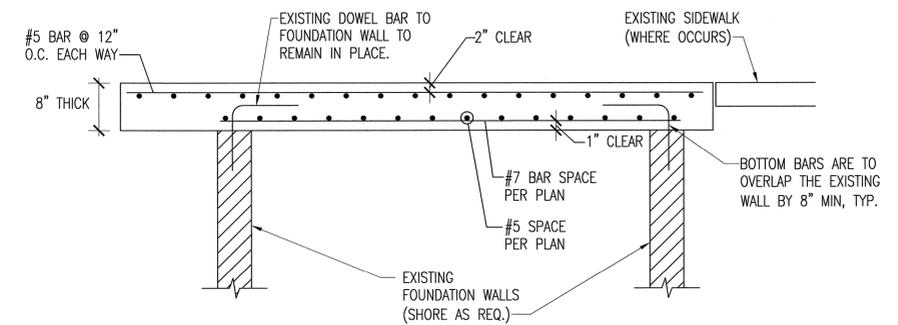
SP3 **0**



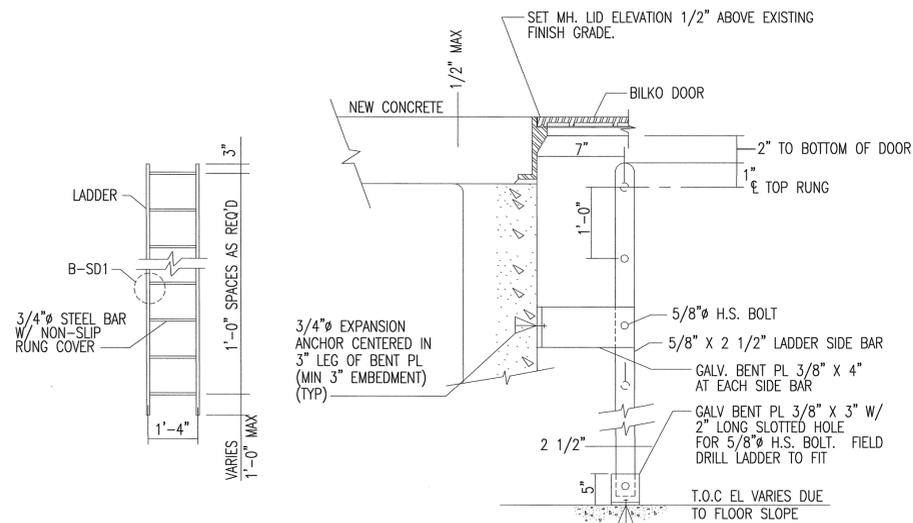
DETAIL 1-SD1
SP1, SP2, SP3
SCALE: N.T.S.



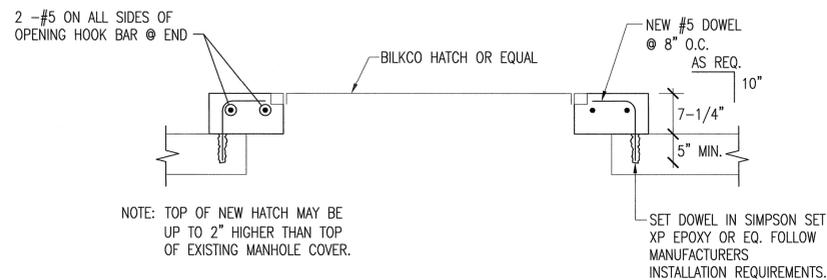
SECTION (ALTERNATE #6) A-SD1
SP3
SCALE: N.T.S.



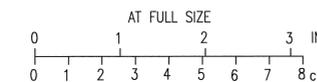
SECTION (ALTERNATE #3) B-SD1
SP3
SCALE: N.T.S.



DETAIL 2-SD1
SP1, SP2, SP3, SD1
SCALE: N.T.S.



SECTION (ALTERNATE #1) C-SD1
SP3
SCALE: N.T.S.



NO.	ISSUE FOR CONSTRUCTION	JK	BB	PB	09/22/09
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 SOUTHERN UTAH UNIVERSITY
 VAULT MANHOLE UPGRADE
 CEDAR CITY, UTAH
STRUCTURAL DETAILS
 DESIGNED: B. BAGGLEY
 DRAWN: J. KIM
 CHECKED: B. BAGGLEY
 APPROVED: B. BAGGLEY
 APPROVED: P. BLACKHAM
 DATE: 09/22/09
 SCALE: AS NOTED
 NO. 22180.01
 REV. 0
SD1