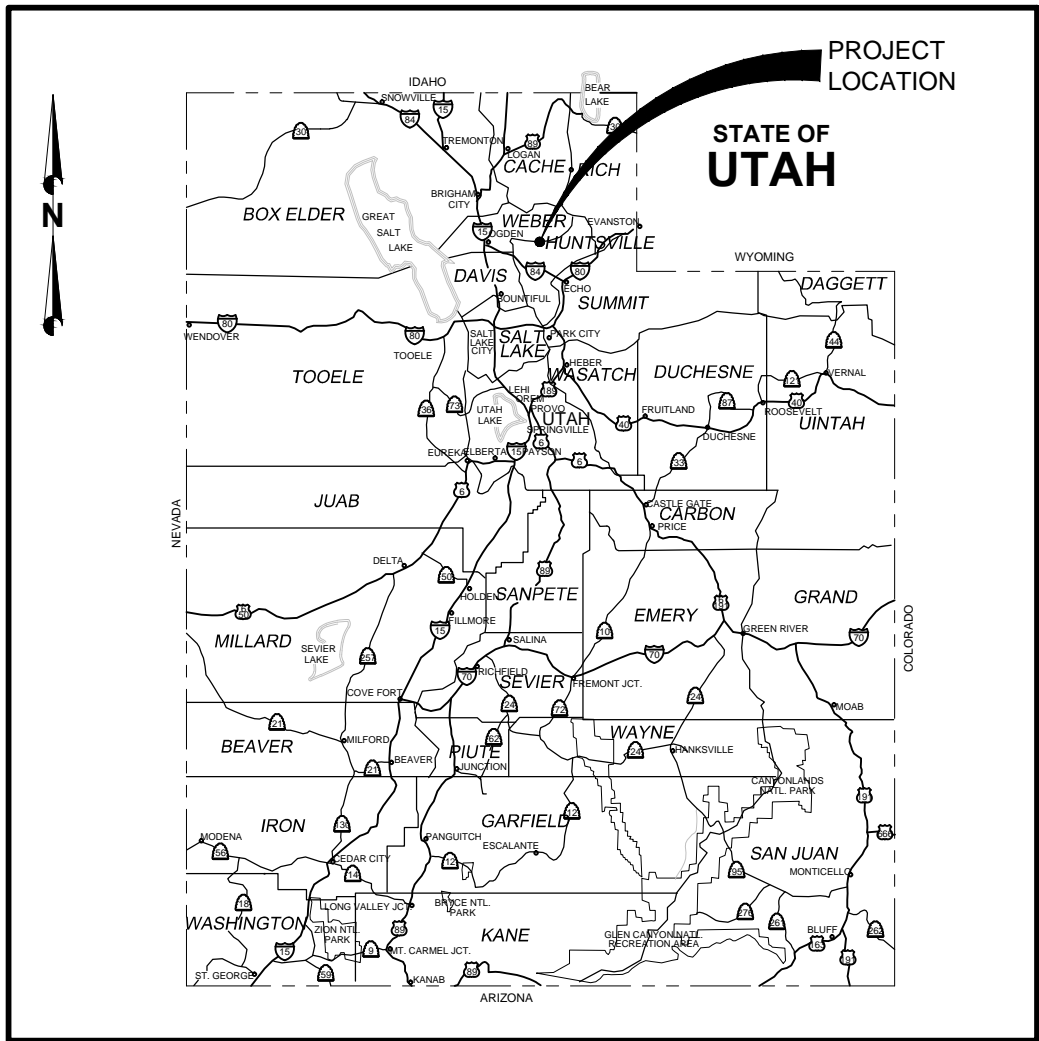


# COBBLE CREEK RCMP

## WATER SYSTEM IMPROVEMENTS WEBER COUNTY, UTAH



PROJECT LOCATION MAP  
N.T.S.

Project for:  
**THE CHURCH OF  
JESUS CHRIST  
OF LATTER-DAY SAINTS**  
  
PROPERTY NUMBER:  
5176182-14-02-01-01

SHEET INDEX

NO.	TITLE
G-01	COVER SHEET
G-02	SURVEY CONTROL AND SITE KEY PLAN
G-03	ELEVATION AND HYDRAULIC PROFILE
C-01	CIVIL SYMBOLS, LEGENDS, & ABBREVIATIONS
C-02	CIVIL DETAILS
C-03	CIVIL DETAILS
C-100	SPRING AND TANK AREA PLAN
C-101	ENLARGED PLAN AND PROFILES
C-102	SPRING COLLECTION AREA DETAILS
C-103	MAIN CAMP AREA SITE PLAN
E-001	ELECTRICAL SYMBOL LEGEND
E-100	ELECTRICAL SITE PLAN
E-101	DISINFECTION BUILDING ELECTRICAL PLANS
E-201	ELECTRICAL TANK ELEVATION
E-501	ELECTRICAL DETAILS
E-601	ELECTRICAL DIAGRAMS



VICINITY MAP  
N.T.S.

FA PROJECT NO. 05-14-0086  
MAR. 2015

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**FORSGREN**  
*Associates Inc.*  
370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
PH: 801.364.4785 FAX: 801.364.4802

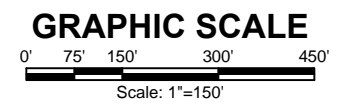
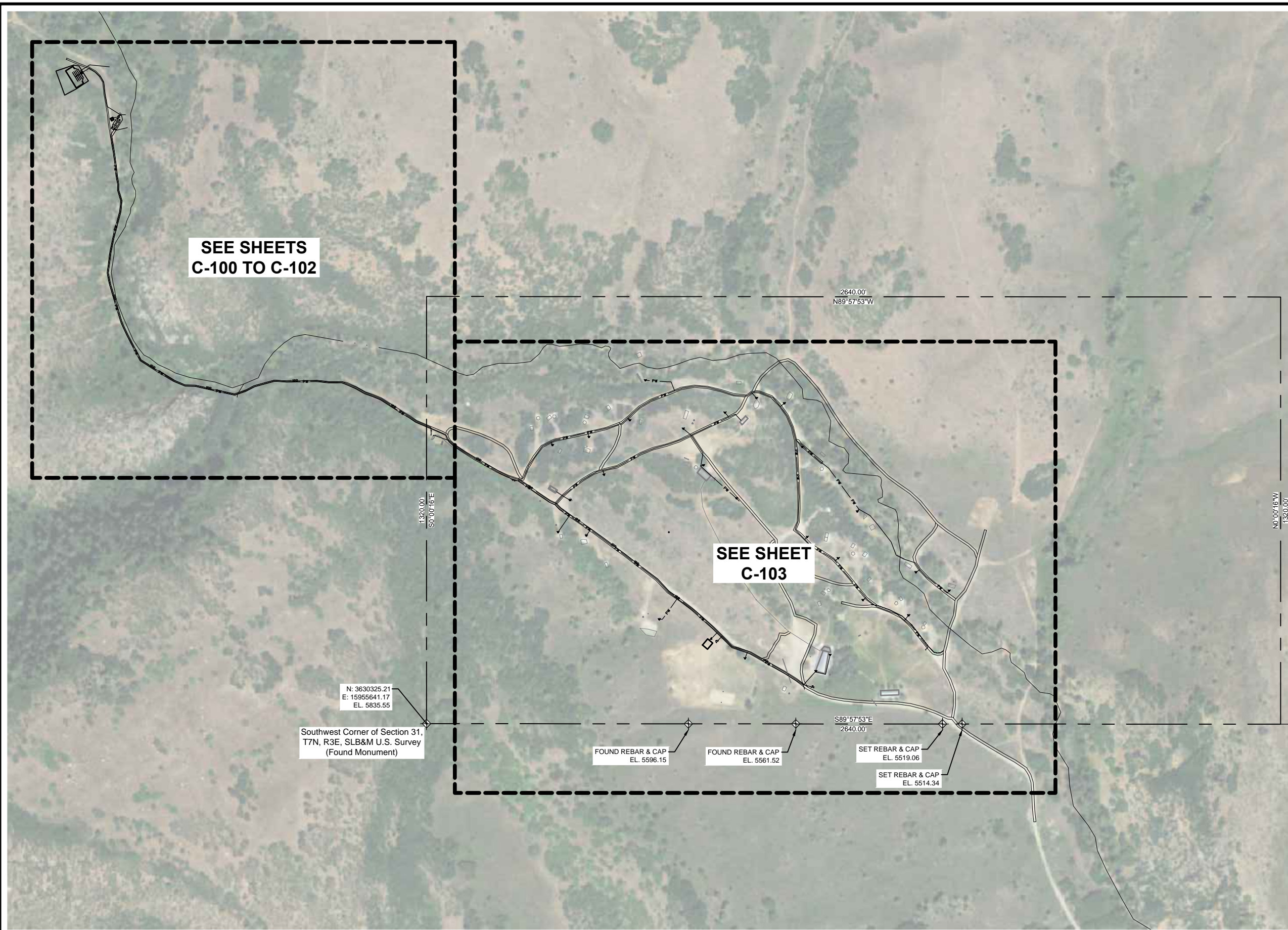


**SURVEY NARRATIVE:**

This Record of Survey was requested by Mr. Jason Broome of Forsgren Associates Inc., for design purposes.

Weber County Brass Cap Monuments were found at the Southwest and the South Quarter of Section 33 Section 31, T7N, R3W, SLB&M, U.S. Survey.

A line bearing S 89°57'53" E between the Southwest Corner and South Quarter Corner of Section 33 was used as the Basis of Bearing.



**BID DRAWINGS**

NO.	REVISIONS	BY	DATE

DRAWN	N. PATTERSON
DESIGNED	N. PATTERSON
APPROVED	J. BROOME
QA	J. BROOME

**ATTENTION**  
LINE IS 2 INCHES  
AT FULL SIZE  
(IF NOT 2" SCALE ACCORDINGLY)



Project for:  
**THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS**

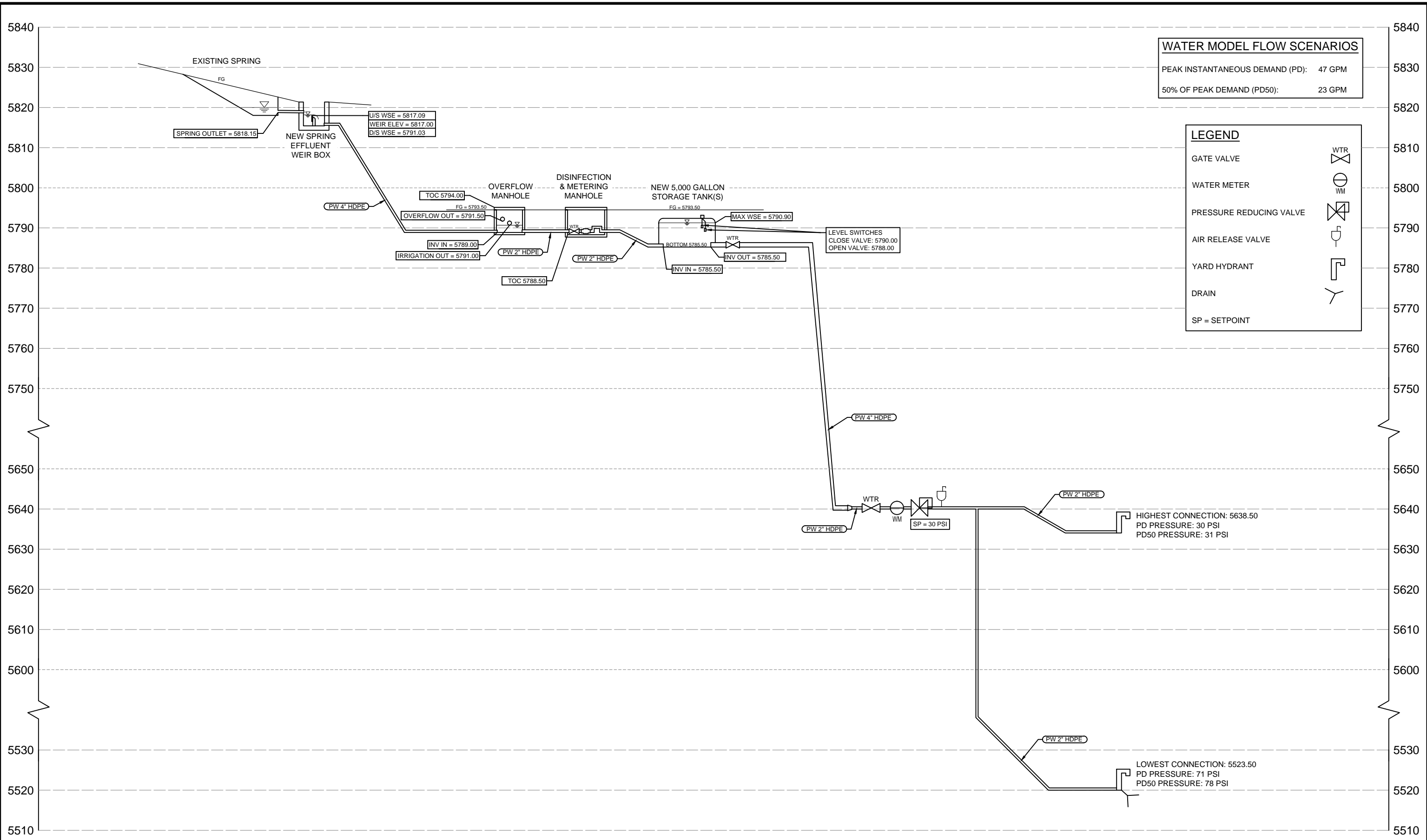
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**811**  
Know what's below.  
Call before you dig.

**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - SURVEY CONTROL AND SITE KEY PLAN**

PROJECT NO:	05-14-0086
SHEET NO:	G-02
DATE:	MAR. 2015
PAGE NO:	02 OF 16

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WATER MODEL FLOW SCENARIOS	
PEAK INSTANTANEOUS DEMAND (PD):	47 GPM
50% OF PEAK DEMAND (PD50):	23 GPM

LEGEND	
GATE VALVE	
WATER METER	
PRESSURE REDUCING VALVE	
AIR RELEASE VALVE	
YARD HYDRANT	
DRAIN	
SP = SETPOINT	

HIGHEST CONNECTION: 5638.50  
 PD PRESSURE: 30 PSI  
 PD50 PRESSURE: 31 PSI

LOWEST CONNECTION: 5523.50  
 PD PRESSURE: 71 PSI  
 PD50 PRESSURE: 78 PSI

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NO.	REVISIONS	BY	DATE

DRAWN	N. PATTERSON
DESIGNED	N. PATTERSON
APPROVED	J. BROOME
QA	J. BROOME

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**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - ELEVATION & HYDRAULIC PROFILE**

PROJECT NO:	<b>05-14-0086</b>
SHEET NO:	<b>G-03</b>
DATE:	MAR. 2015
PAGE NO:	03 OF 16

**BID DRAWINGS**

# LEGEND

	EXISTING	PROPOSED
MATCH LINE		
CENTER LINE		
CONTROL LINE		
PROPERTY OR R/W LINE		
EASEMENT LINE		
STREET MONUMENT LINE		
WIRE FENCE		
CHAIN LINK FENCE		
BARBED WIRE FENCE		
CONTOUR LINE		
SPOT ELEVATION		
BANK SLOPES		
CANAL		
OPEN DITCH		
UNDERGROUND ELECTRIC		
OVERHEAD ELECTRIC		
ELECTRIC BOX		
ELECTRIC MANHOLE		
ELECTRIC METER		
GAS LINE		
GAS VALVE		
GAS METER		
IRRIGATION LINE		
SANITARY SEWER LINE		
SANITARY SEWER CLEANOUT		
SANITARY SEWER MANHOLE		
SECONDARY WATER LINE		
SECONDARY WATER VALVE		
SECONDARY WATER VAULT		
STORM DRAIN LINE		
STORM DRAIN CATCH BASIN		
STORM DRAIN INLET(S)		
STORM DRAIN COMBO BOX		
STORM DRAIN MANHOLE		
STORM DRAIN CLEANOUT BOX		
STORM DRAIN VAULT		
CULVERT		
TELEPHONE CABLE		
TELEPHONE BOX		
TELEPHONE MANHOLE		
TELEPHONE POST		
WATER LINE		
YARD HYDRANT		
FIRE RISER		
WATER VALVE		
WATER AIR RELEASE VALVE		
WATER METER		
UTILITY POLE & ANCHOR		
POWER POLE		
STREET LIGHT		
LIGHT		
ASPHALT PAVING		
CURB & GUTTER		
SIDEWALK		
RAILROAD TRACKS		
GUARD RAIL		
SIGN		
STRUCTURE		
LANDSCAPING (TREES ETC.)		
SECTION CORNER		
MONUMENT		
BENCH MARK		
TESTING BOREHOLE		

## ANNOTATION

<b>REVISION TRIANGLE</b> 	<b>KEYNOTE CALLOUT</b> 
<b>PIPE CALLOUT</b> 	<b>EQUIPMENT CALLOUT</b> 
<b>DETAIL NAME</b> 	<b>DETAIL CALLOUT</b> 
<b>SECTION NAME</b> 	<b>SECTION CALLOUT</b> 
<b>VIEW NAME</b> 	<b>ISOMETRIC VIEW CALLOUT</b> 
<b>GENERAL CALLOUT</b> 	<b>PROPOSED CALLOUT</b> 

## HATCHING/PATTERNS

CONCRETE	
ASPHALT PAVEMENT	
SAND	
UNDISTURBED SOIL	
GROUTED RIP RAP	
LOOSE RIP RAP	
UNTREATED BASE COURSE	
STRUCTURAL FILL	
WETLANDS	
WATER	
DEMOLITION AREA	
BACKFILL	
STEEL	
CONCRETE MASONRY UNIT (CMU)	

# CIVIL ABBREVIATIONS

ABUT	ABUTMENT	G	GAS	S	SOUTH
AC	ASPHALT CEMENT	GALV	GALVANIZED	SAN	SANITARY
ALT	ALTERNATE	GM	GAS METER	SCHED	SCHEDULE
APPROX	APPROXIMATELY	GRD	GROUND	SD	STORM DRAIN
ARV	AIR RELEASE VALVE	GV	GAS VALVE	SEC	SECTION
ASP	ASPHALT	HDWL	HEADWALL	SHT	SHEET
BCR	BEGIN CURB RETURN	HDPE	HIGH DENSITY POLYETHYLENE	SLB&M	SALT LAKE BASE & MERIDIAN
BEG	BEGINNING/BEGIN	HORIZ	HORIZONTAL	SPECS	SPECIFICATIONS
BDRY	BOUNDARY	HWSE	HIGH WATER SURFACE ELEVATION	SQ	SQUARE
BK	BACK	HWY	HIGHWAY	SS	SANITARY SEWER
BKFL	BACKFILL	HYD	HYDRANT	ST	STREET
BLDG	BUILDING	ID	INSIDE DIAMETER	STL	STEEL
BLM	BUREAU OF LAND MANAGEMENT	IE	INVERT ELEVATION	STA	STATION
BM	BENCH MARK	IRR	IRRIGATION	STD	STANDARD
BOT	BOTTOM	INV	INVERT	STRUCT	STRUCTURE
BRG	BEARING	JCT	JUNCTION	T	TOWNSHIP, TELEPHONE
BSMT	BASEMENT	JB	JUNCTION BOX	TAN	TANGENT
BTWN	BETWEEN	km	KILOMETER	TBC	TOP BACK CURB
BOF	BOTTOM OF FOOTING	L	LENGTH	TEMP	TEMPORARY
BW	BACK OF WALK	LB	POUND	TEL	TELEPHONE/TELEGRAM
CALC	CALCULATED	LF	LINEAR FEET	TH	TEST HOLE
CB	CATCH BASIN	LIN	LINEAR/LINEAL	TOC	TOP OF CONCRETE
CCW	COUNTERCLOCKWISE	LT	LEFT	TOF	TOP OF FOOTING
C-C	CENTER TO CENTER	LWSE	LOW WATER SURFACE ELEVATION	TOS	TOP OF SLAB
C&G	CURB AND GUTTER	m	METER	TP	TELEPHONE POLE
CFS	CUBIC FEET PER SECOND	MATL	MATERIAL	TYP	TYPICAL
CLS	CLASS	MAX	MAXIMUM	UBC	UNIFORM BUILDING CODES
CL or CL	CENTERLINE/CONTROL LINE	MKR	MARKER	UG	UNDERGROUND
CIP	CAST IRON PIPE	MH	MANHOLE	UT	UNDERGROUND TELEPHONE
cm	CENTIMETER	MI	MILE	VB	VALVE BOX
CMP	CORRUGATED METAL PIPE	MISC	MISCELLANEOUS	VC	VERTICAL CURVE
CMPA	CORRUGATED METAL PIPE-ARCH	MON	MONUMENT	VERT	VERTICAL
COB	CLEAN OUT BOX	MPH	MILES PER HOUR	VOL	VOLUME
COL	COLUMN	N	NORTH	VPI	VERTICAL POINT OF INTERSECTION
CONC	CONCRETE	NC	NORMALLY CLOSED	VPC	VERTICAL POINT OF CURVE
CONST	CONSTRUCT	NIC	NOT IN CONTRACT	VPT	VERTICAL POINT OF TANGENCY
COR	CORNER	NRCP	NON-REINFORCED CONCRETE PIPE	W	WEST/WATER
CORR	CORRUGATED	NTS	NOT TO SCALE	WM	WATER METER
CEN	CENTER	NO	NORMALLY OPEN	WP	WORK POINT
CU	CUBIC	OBLIT	OBLITERATE	WV	WATER VALVE
CULV	CULVERT	OD	OUTSIDE DIAMETER	XING	CROSSING
CW	CLOCKWISE	O-O	OUTSIDE TO OUTSIDE	XSEC	CROSSING SECTION
°	DEGREE	OFF REV	OFFICE REVISION	Yd	YARD
DET	DETAIL	ORIG	ORIGINAL	@	AT
DIA	DIAMETER	PVMT	PAVEMENT	&	AND
DIP	DUCTILE IRON PIPE	PC	POINT OF CURVATURE	<	ANGLE
DIST	DISTANCE	PCC	POINT OF COMPOUND CURVATURE	Ø	ROUND or DIAMETER
DN	DOWN	PE	POLYETHYLENE	W/	WITH
DWG	DRAWING	PERF	PERFORATED	W/O	WITHOUT
DRWY	DRIVEWAY	PI	POINT OF INTERSECTION	Δ	DELTA
E	EAST	PL or P L	PROPERTY LINE	%	PERCENT
EA	EACH	POB	POINT OF BEGINNING		
ECR	END CURB RETURN	POC	POINT ON CURVE		
ELEV	ELEVATION	PP	POWER POLE		
ELEC	ELECTRIC/ELECTRICAL	PRV	PRESSURE REDUCING VALVE		
EMB	EMBANKMENT	PROJ	PROJECT		
EO	EDGE OF OIL	PROP	PROPERTY		
EXC	EXCAVATION	PSC	POINT OF SPIRAL CURVE		
EQUIP	EQUIPMENT	PSI	POUNDS PER SQUARE INCH		
EST	ESTIMATE	PT	POINT OF TANGENCY		
EXIST	EXISTING	PVC	POLYVINYL CHLORIDE		
FEN	FENCE	QTY	QUANTITY		
FD	FOUND	R	RANGE/RADIUS		
FDN	FOUNDATION	RCP	REINFORCED CONCRETE PIPE		
FG	FINISH GRADE	RD	ROAD		
FIN	FINISH	REF	REFERENCE		
FL OR FL	FLOW LINE	REINF	REINFORCED		
FLR	FLOOR	REQD	REQUIRED		
FLG	FLANGE	REV	REVISION		
FPS	FEET PER SECOND	RP	REFERENCE POINT/RADIUS POINT		
FS	FINISH SURFACE	RR	RAILROAD		
FT	FEET	RT	RIGHT/ROUTE		
FTG	FOOTING	R/W	RIGHT OF WAY		

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NO.	REVISIONS	BY	DATE

DRAWN N. PATTERSON  
 DESIGNED N. PATTERSON  
 APPROVED J. BROOME  
 QA J. BROOME

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 LINE IS 2 INCHES  
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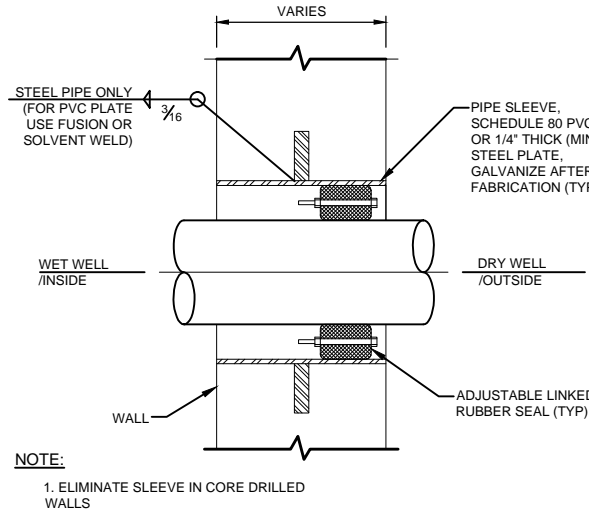
**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - CIVIL**  
**SYMBOLS, LEGENDS, & ABBREVIATIONS**

PROJECT NO: <b>05-14-0086</b>	PAGE NO: 04 OF 16
SHEET NO: <b>C-01</b>	DATE: MAR. 2015

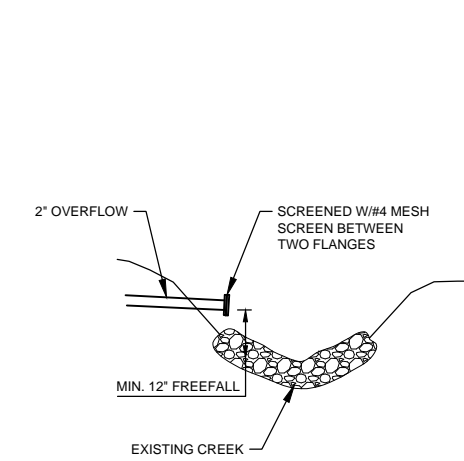
## BID DRAWINGS

# GENERAL NOTES

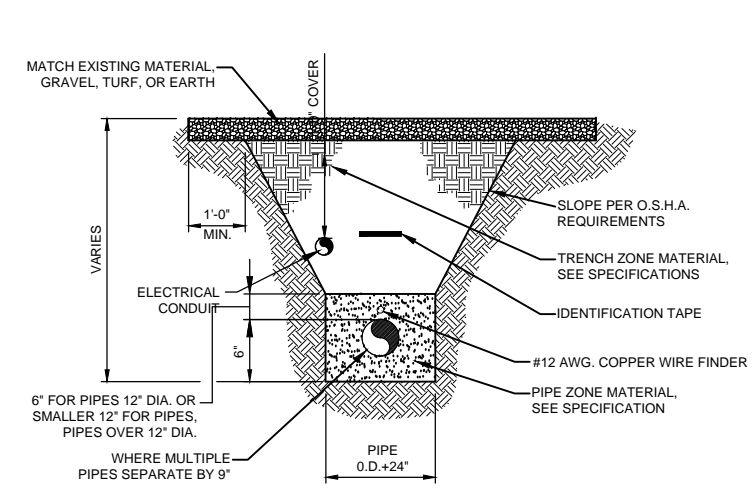
1. ANY MODIFICATION TO THE ORIGINAL CONSTRUCTION PACKAGE SHALL BE APPROVED BY THE ENGINEER OF RECORD.
2. CONTRACTOR SHALL NOTIFY BLUE STAKES OF UTAH (800-662-4111) 48 HOURS IN ADVANCE OF ANY CONSTRUCTION.
3. ALL EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL UTILITY CONFLICTS UPON DISCOVERY.
4. CONTRACTOR SHALL LOCATE, RETAIN, AND PROTECT ALL EXISTING UTILITIES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF OR DAMAGE TO EXISTING UTILITIES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT SURFACE IMPROVEMENTS IMPACTED BY CONSTRUCTION.
7. ALL PARTS, FITTINGS, SEALS, SOLVENTS, ETC. SHALL BE NSF APPROVED FOR USE IN DRINKING WATER APPLICATIONS.
8. CONTRACTOR SHALL PROVIDE ALL FITTINGS, BOLTS, FLANGES, ETC. THAT ARE INTEGRAL TO A COMPLETE OPERATIONAL PROJECT.
9. CONTRACTOR SHALL PROVIDE ALL WIRING, CONDUITS, JUNCTIONS, EQUIPMENT, ETC. THAT ARE INTEGRAL TO A COMPLETE OPERATIONAL PROJECT.



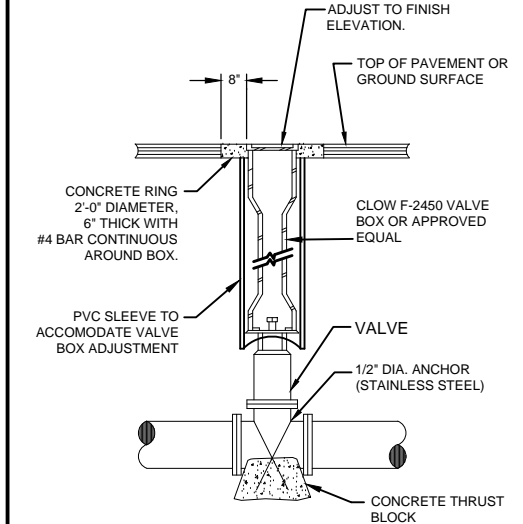
**PIPE PENETRATION TYPE 2**  
SCALE: N.T.S. SPEC # 33 02 01 1



**OVERFLOW OUTLET**  
SCALE: 1\"/>

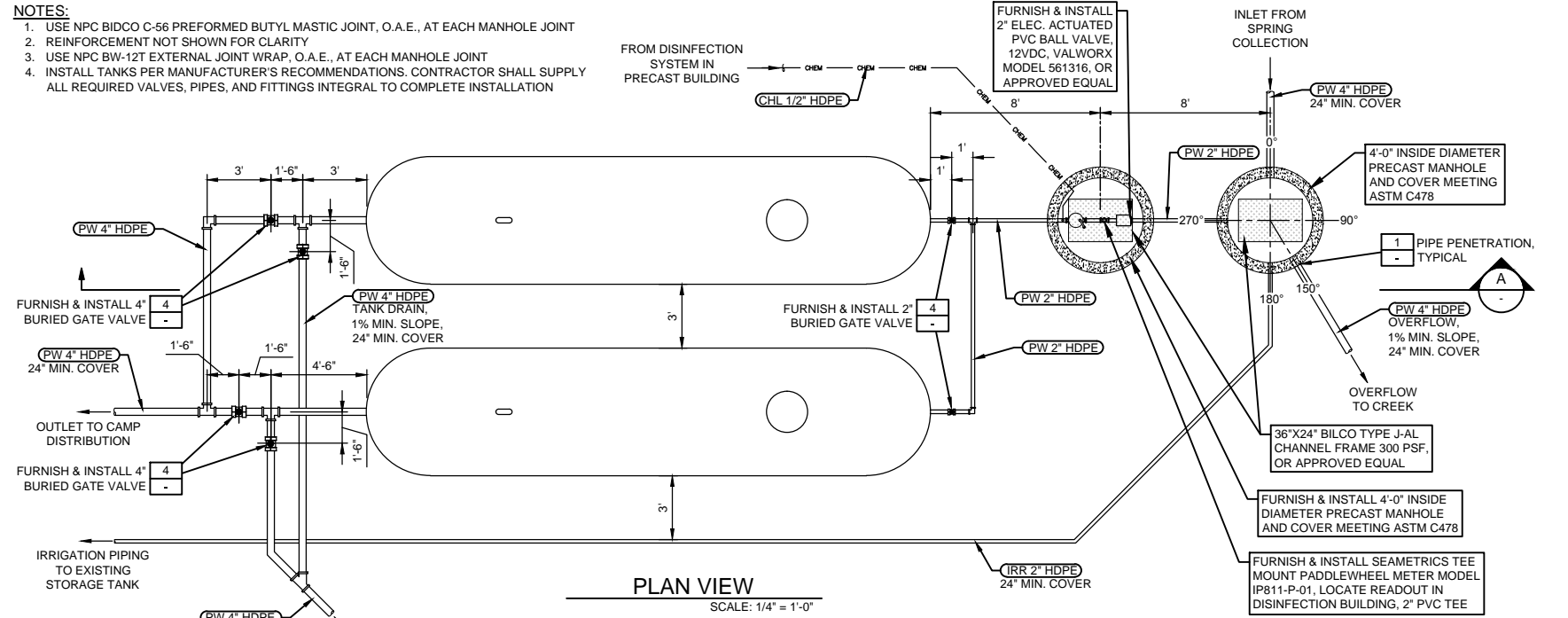


**TYPICAL PIPE TRENCH**  
SCALE: N.T.S. SPEC # 31 22 22 3

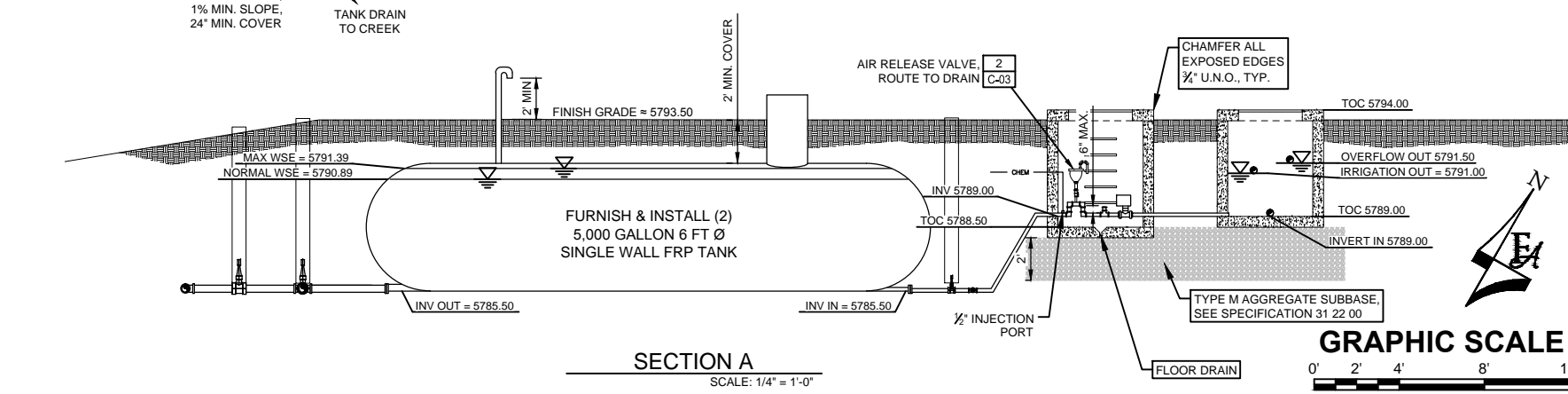


**BURIED VALVE TYPE 1**  
SCALE: N.T.S. SPEC # 33 04 01 4

- NOTES:**
1. USE NPC BIDCO C-56 PREFORMED BUTYL MASTIC JOINT, O.A.E., AT EACH MANHOLE JOINT
  2. REINFORCEMENT NOT SHOWN FOR CLARITY
  3. USE NPC BW-12T EXTERNAL JOINT WRAP, O.A.E., AT EACH MANHOLE JOINT
  4. INSTALL TANKS PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL SUPPLY ALL REQUIRED VALVES, PIPES, AND FITTINGS INTEGRAL TO COMPLETE INSTALLATION

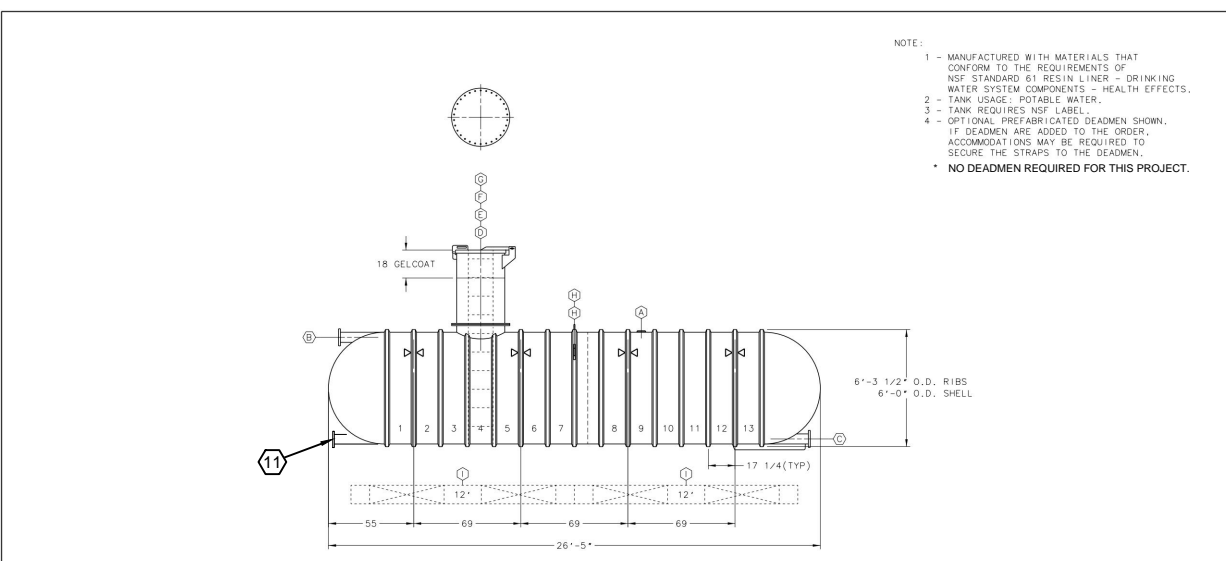
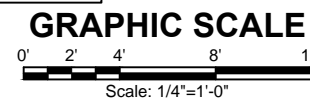


**PLAN VIEW**  
SCALE: 1/4\"/>



**SECTION A**  
SCALE: 1/4\"/>

**WATER STORAGE TANK & INFLUENT MANHOLES**  
SCALE: 1/4\"/>



- NOTE:**
- 1 - MANUFACTURED WITH MATERIALS THAT CONFORM TO THE REQUIREMENTS OF NSF STANDARD 61 RESIN LINER - DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS.
  - 2 - TANK USAGE: POTABLE WATER.
  - 3 - TANK REQUIRES NSF LABEL.
  - 4 - OPTIONAL PREFABRICATED DEADMEN SHOWN. IF DEADMEN ARE ADDED TO THE ORDER, ACCOMMODATIONS MAY BE REQUIRED TO SECURE THE STRAPS TO THE DEADMEN.
  - NO DEADMEN REQUIRED FOR THIS PROJECT.

ITEM	QTY	DESCRIPTION
(A)	1	4\"/>



- NOTES:**
1. ITEM 10 (AUXILIARY FILL) IS NOT REQUIRED FOR THIS PROJECT.
  2. VENT OPENING (ITEM 9) SHALL HAVE 24\"/>

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(IF NOT 2\"/>



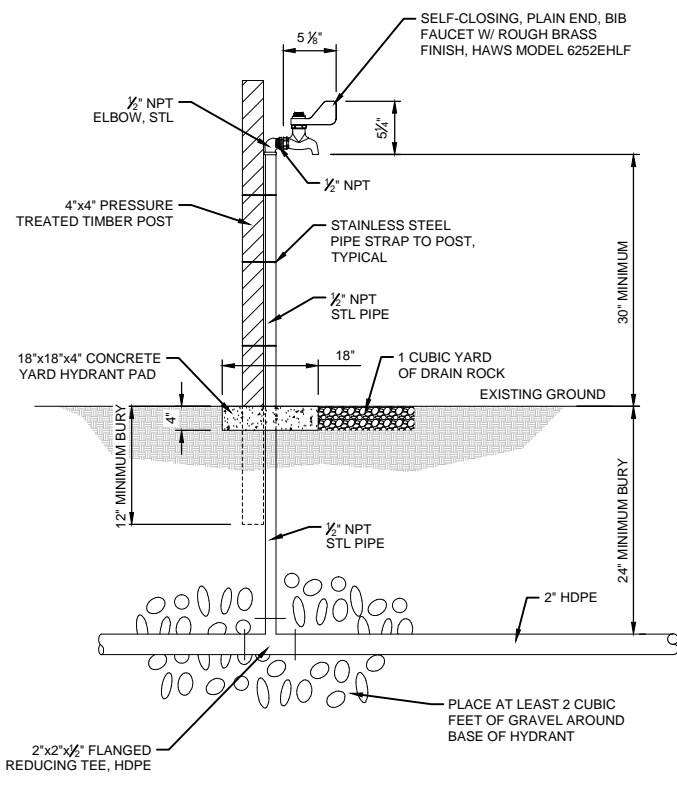
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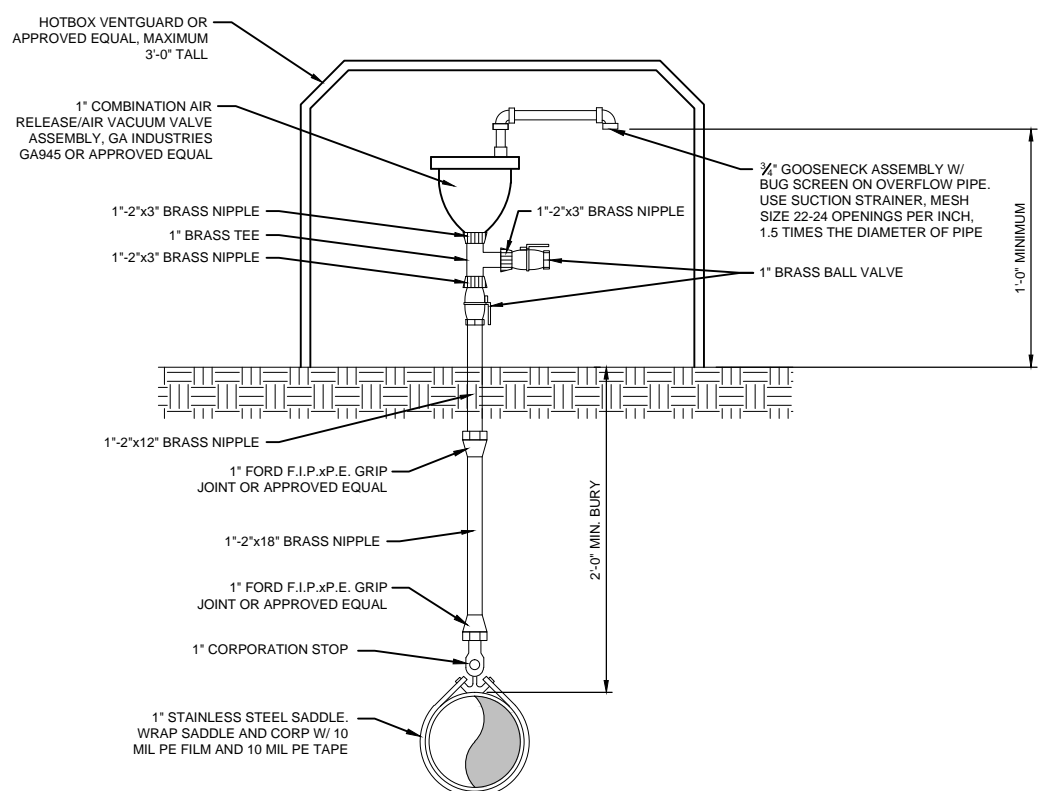


**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - CIVIL NOTES & DETAILS**

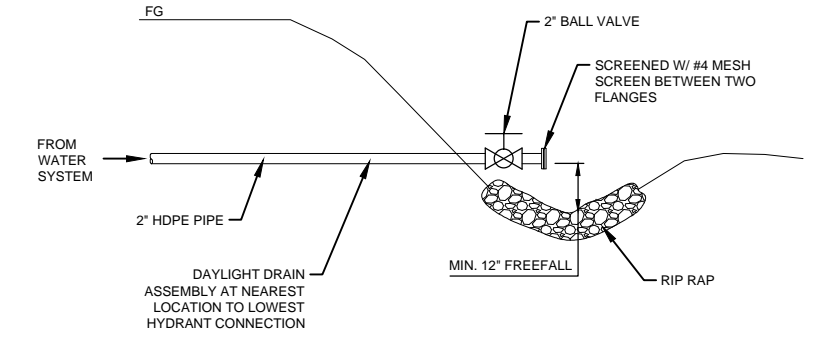
PROJECT NO: <b>05-14-0086</b>	PAGE NO: <b>05 OF 16</b>
SHEET NO: <b>C-02</b>	DATE: <b>MAR. 2015</b>



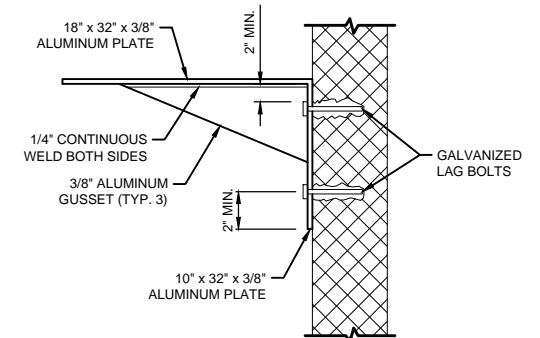
**YARD HYDRANT**  
SCALE: N.T.S. SPEC # 33 04 08 **1**



**AIR RELEASE VACUUM VALVE ASSEMBLY**  
SCALE: N.T.S. SPEC # 33 04 09 **2**

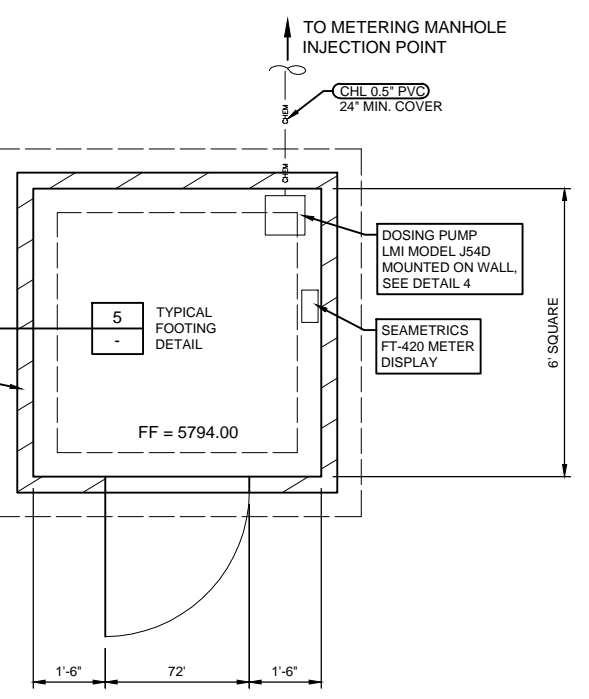


**DRAIN ASSEMBLY**  
SCALE: N.T.S. **3**



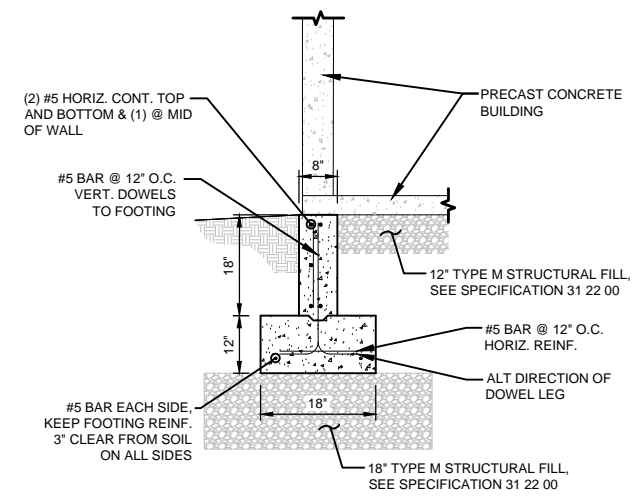
**DOSING PUMP WALL MOUNT**  
SCALE: N.T.S. **4**

- NOTES:**
1. REFERENCE ELECTRICAL DRAWINGS FOR LOCATION OF SOLAR EQUIPMENT AND PANELS.
  2. PROVIDE VENT TUBING TO EXTERIOR OF BUILDING W/ ADAPTERS AS NECESSARY FOR CHLORINE JUGS.
  3. SEAL ALL WALL PENETRATIONS
  4. PROVIDE ALL FITTINGS, PIPING, AND ADAPTERS FOR CHLORINE PUMPING SYSTEM.

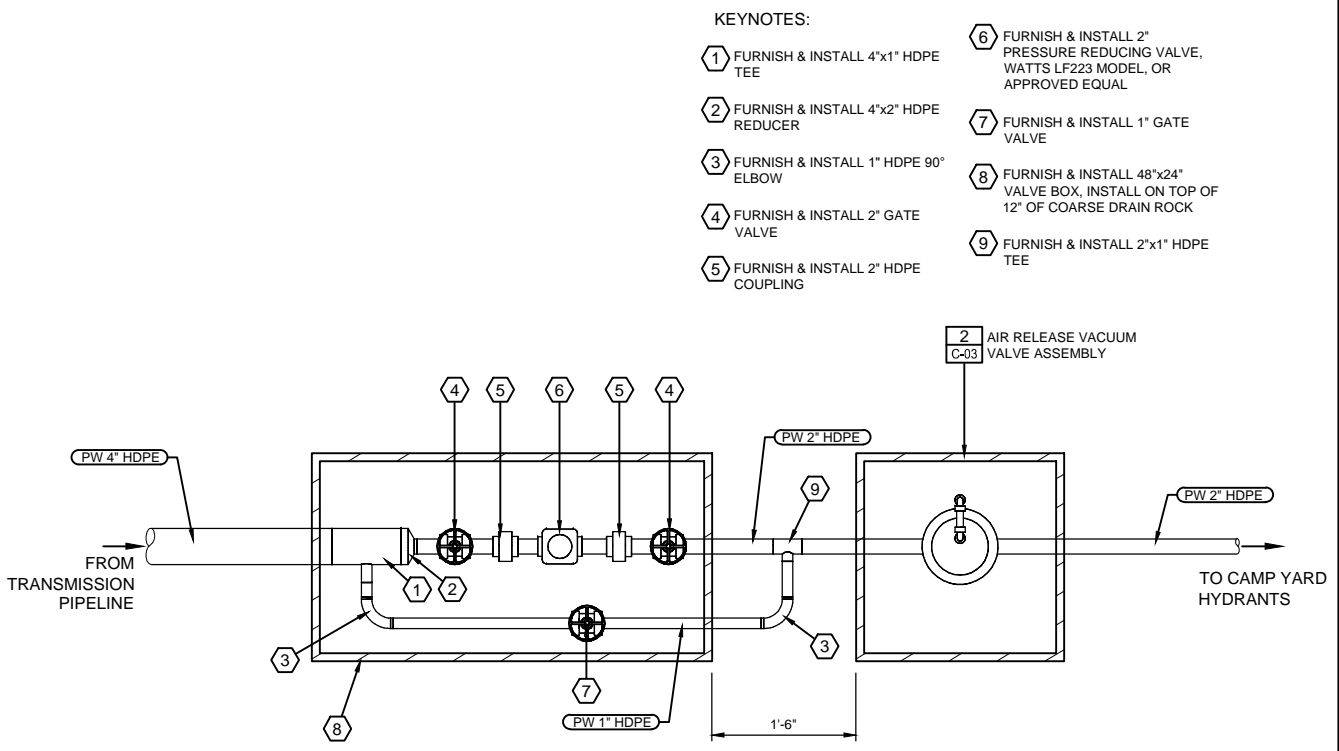


**GRAPHIC SCALE**  
0' 1' 2' 4' 6'  
Scale: 1/2" = 1'-0"

**DISINFECTION BUILDING**  
SCALE: 1/2" = 1'-0" **5**



**EXTERIOR CONCRETE WALL FOOTING**  
SCALE: N.T.S. SPEC # 03 30 00 **6**



**2" PRV ASSEMBLY W/ ARV**  
SCALE: N.T.S. **7**

- KEYNOTES:**
- 1 FURNISH & INSTALL 4"x1" HDPE TEE
  - 2 FURNISH & INSTALL 4"x2" HDPE REDUCER
  - 3 FURNISH & INSTALL 1" HDPE 90° ELBOW
  - 4 FURNISH & INSTALL 2" GATE VALVE
  - 5 FURNISH & INSTALL 2" HDPE COUPLING
  - 6 FURNISH & INSTALL 2" PRESSURE REDUCING VALVE, WATTS LF223 MODEL, OR APPROVED EQUAL
  - 7 FURNISH & INSTALL 1" GATE VALVE
  - 8 FURNISH & INSTALL 48"x24" VALVE BOX, INSTALL ON TOP OF 12" OF COARSE DRAIN ROCK
  - 9 FURNISH & INSTALL 2"x1" HDPE TEE

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DRAWN N. PATTERSON  
 DESIGNED N. PATTERSON  
 APPROVED J. BROOME  
 QA J. BROOME

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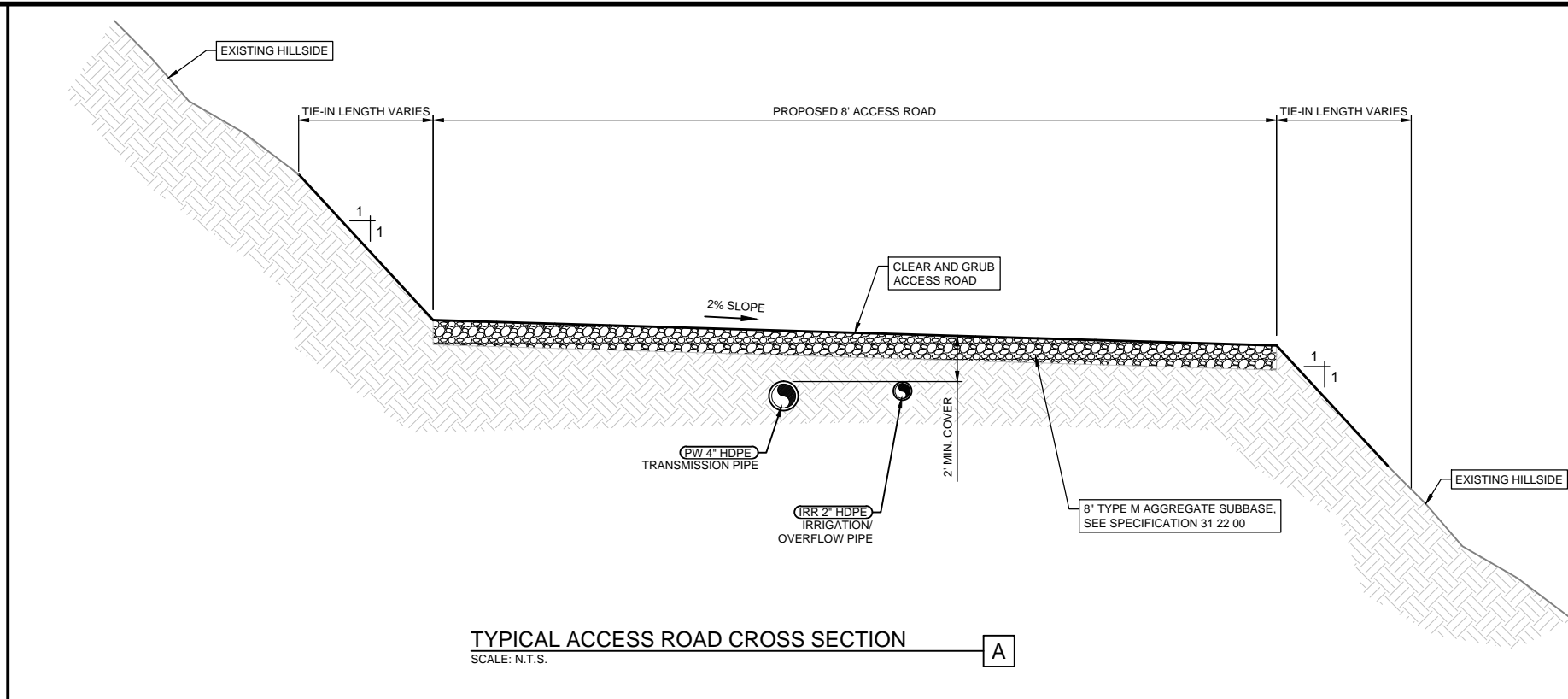
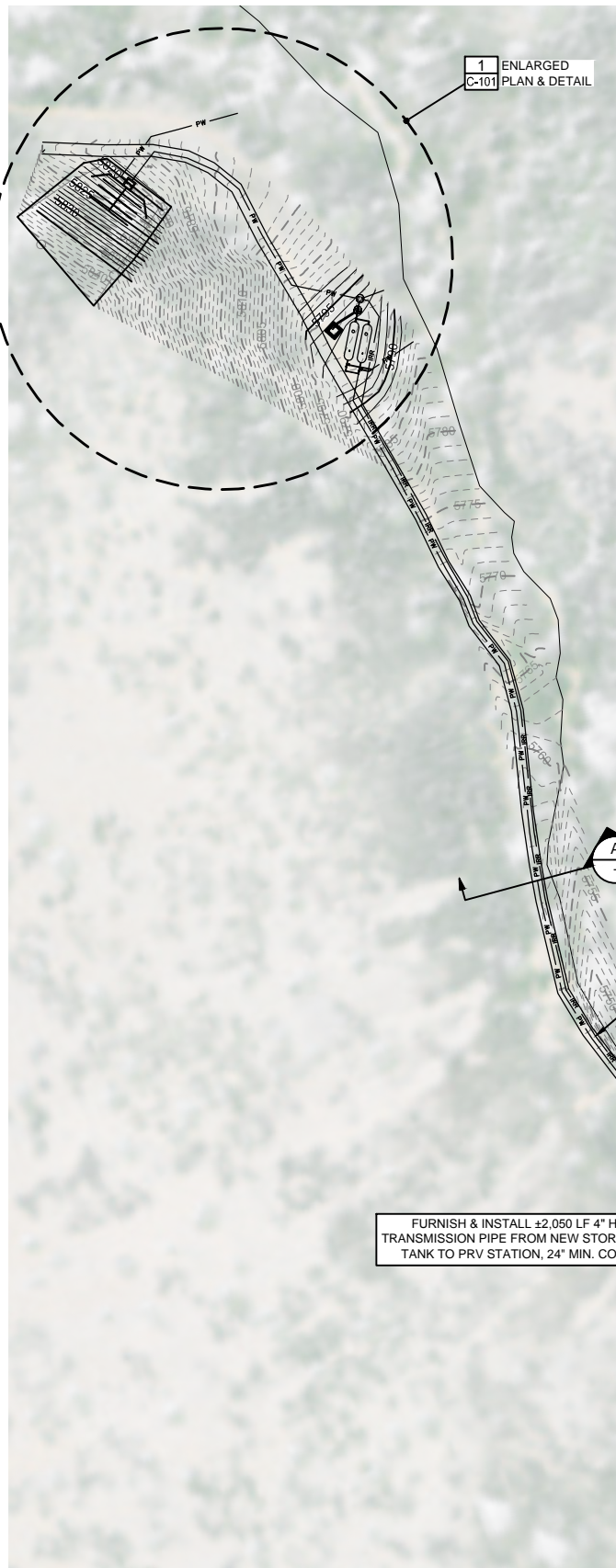
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**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - CIVIL DETAILS**

PROJECT NO: **05-14-0086**  
SHEET NO: **C-03**  
DATE: MAR. 2015 PAGE NO: 06 OF 16

**BID DRAWINGS**

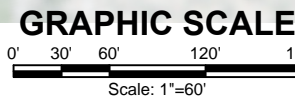


- CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL RE-VEGETATE ALL AREAS DISTURBED BY CONSTRUCTION. SEED MIX SHALL CONTAIN AREA NATIVE GRASSES. SUBMIT PLAN AND DETAILS FOR APPROVAL BY ENGINEER.
  2. EXISTING WATER LINES SHALL BE ABANDONED IN PLACE. REMOVE AND DISPOSE OF EXISTING YARD HYDRANTS. FURNISH AND INSTALL PIPE CAP AT LOCATIONS OF EXISTING YARD HYDRANTS ±33.
  3. HDPE PROPOSED WATER LINES SHALL FOLLOW CENTERLINE OF ACCESS ROADS @ 24" MIN. BURY. FIELD LOCATE ALL YARD HYDRANTS, ±33. FURNISH AND INSTALL ACCORDING TO DETAIL 1/C-03.
  5. FURNISH & INSTALL HDPE PIPE FITTINGS AS NEEDED.
  6. RETURN EXISTING GRAVEL ACCESS ROADS TO PRE-EXISTING GRADE AND CONDITION.
  7. CONTRACTOR SHALL LOCATE HIGH POINTS IN WATER LINES FOR INSTALLATION OF AIR RELEASE VALVES, PER DETAIL 2/C-03.
  8. CONTRACTOR SHALL LOCATE LOW SPOTS IN WATER LINES FOR INSTALLATION OF DRAIN VALVES, PER DETAIL 3/C-03.

FURNISH & INSTALL ±1780 LF 2" HDPE IRRIGATION PIPE FROM OVERFLOW MANHOLE TO EXISTING TANK, 24" MIN. COVER

FURNISH & INSTALL ±2,050 LF 4" HDPE TRANSMISSION PIPE FROM NEW STORAGE TANK TO PRV STATION, 24" MIN. COVER

OVERALL PLAN VIEW  
SCALE: 1" = 60'



MATCHLINE - SEE SHEET C-103

P:\2014\05-14-0886 Cobble Creek Camp Design\CAD\Sheets\Civil\05140886\_C-100.dwg - 3/11/2015 10:25 AM

NO.	REVISIONS	BY	DATE

DRAWN	N. PATTERSON
DESIGNED	N. PATTERSON
APPROVED	J. BROOME
QA	J. BROOME

**ATTENTION**  
LINE IS 2 INCHES  
AT FULL SIZE  
(IF NOT 2" SCALE ACCORDINGLY)



Project for:  
**THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS**

**FORSGREN Associates Inc.**  
370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
PH: 801.364.4785 FAX: 801.364.4802

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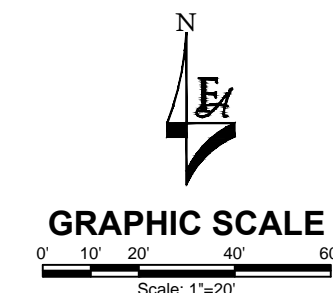
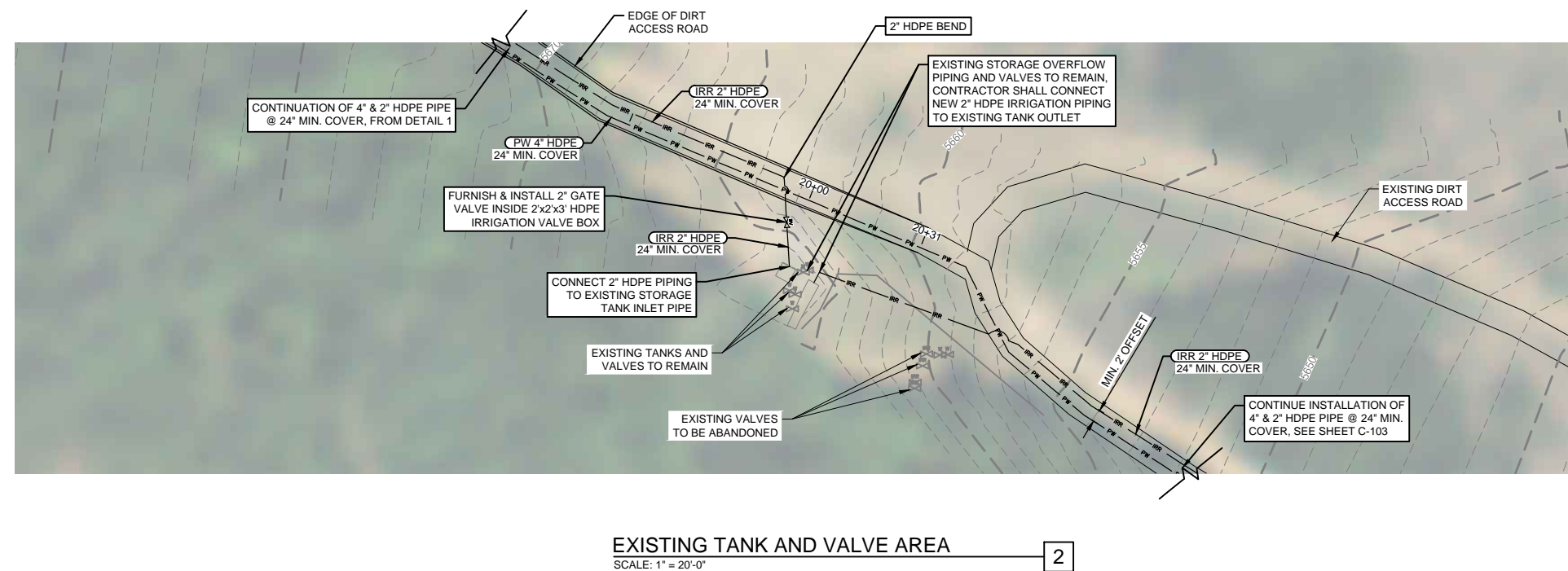
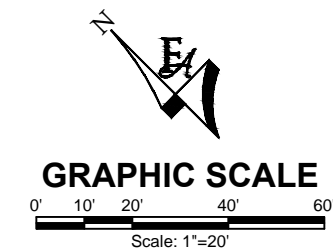
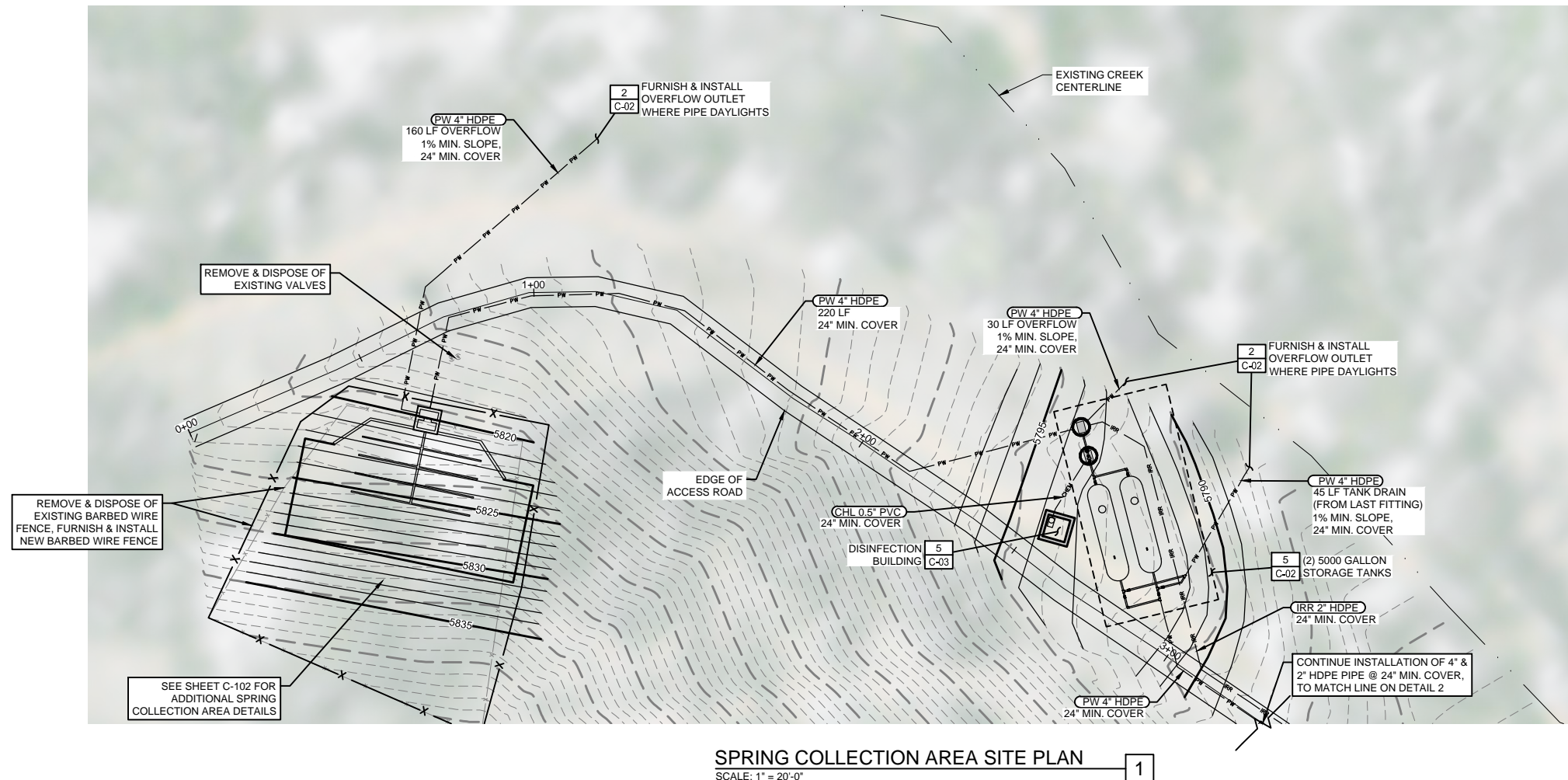
**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - SPRING AND TANK AREA PLAN**

PROJECT NO:	05-14-0086
SHEET NO:	C-100
DATE:	MAR. 2015
PAGE NO:	07 OF 16

**BID DRAWINGS**

**CONSTRUCTION NOTES:**

1. CONTRACTOR SHALL RE-VEGETATE ALL AREAS DISTURBED BY CONSTRUCTION. SEED MIX SHALL CONTAIN AREA NATIVE GRASSES. SUBMIT PLAN AND DETAILS FOR APPROVAL BY ENGINEER.
2. EXISTING WATER LINES SHALL BE ABANDONED IN PLACE. REMOVE AND DISPOSE OF EXISTING YARD HYDRANTS. FURNISH AND INSTALL PIPE CAP AT LOCATIONS OF EXISTING YARD HYDRANTS ±33.
3. 2" HDPE PROPOSED WATER LINES SHALL FOLLOW CENTERLINE OF ACCESS ROADS @ 24" MIN. BURY. FIELD LOCATE ALL YARD HYDRANTS, ±33. FURNISH AND INSTALL ACCORDING TO DETAIL 1/C-03.
4. RETURN EXISTING GRAVEL ACCESS ROADS TO PRE-EXISTING GRADE AND CONDITION.
5. FURNISH & INSTALL HDPE PIPE FITTINGS AS NEEDED.



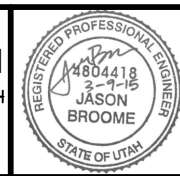
**BID DRAWINGS**

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NO.	REVISIONS	BY	DATE

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DESIGNED	N. PATTERSON
APPROVED	J. BROOME
QA	J. BROOME

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Project for:  
**THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS**

**FORSGREN Associates Inc.**  
370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
PH: 801.364.4785 FAX: 801.364.4802

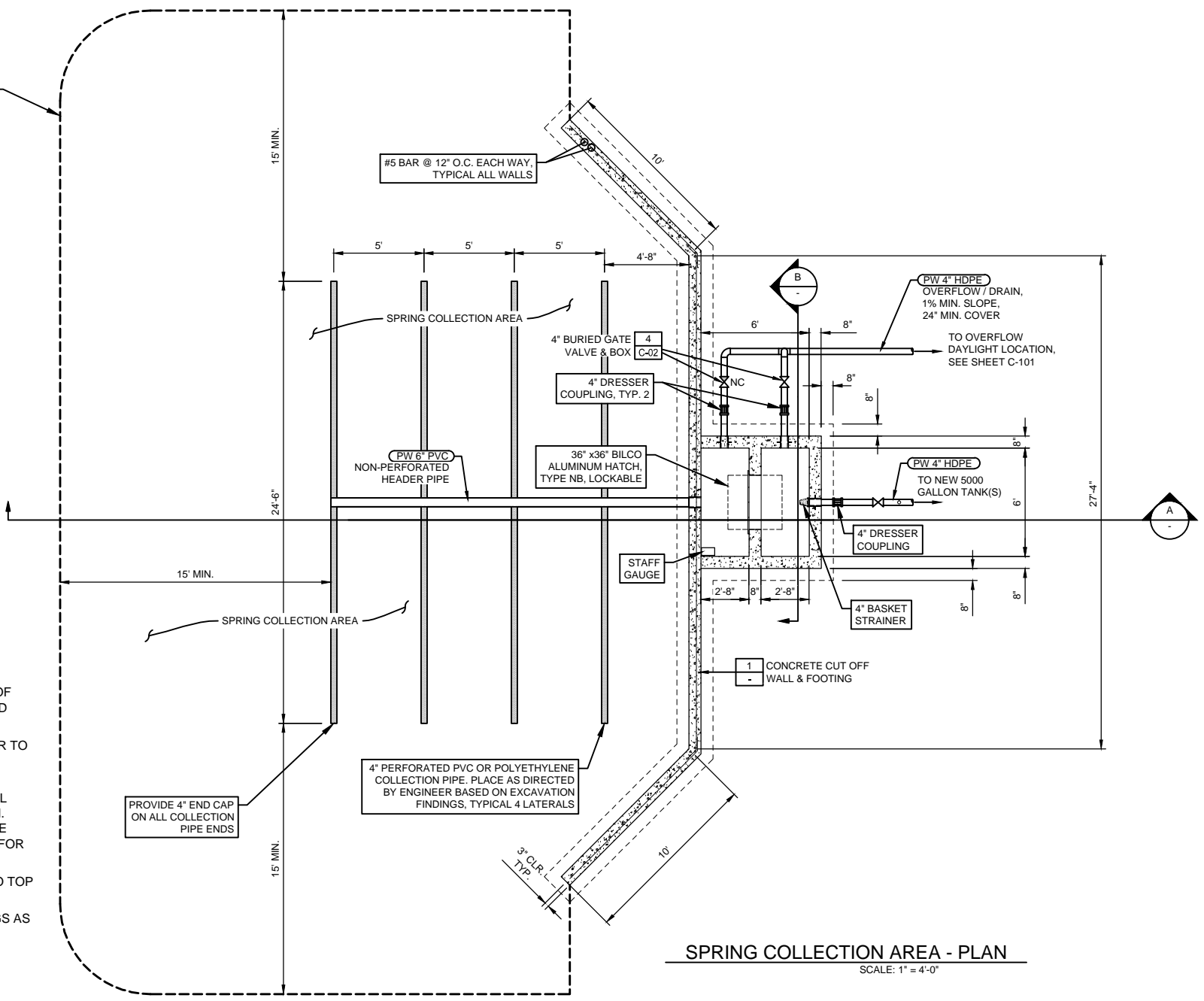


**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - ENLARGED PLANS**

PROJECT NO:	05-14-0086
SHEET NO:	C-101
DATE:	MAR. 2015
PAGE NO:	08 OF 16



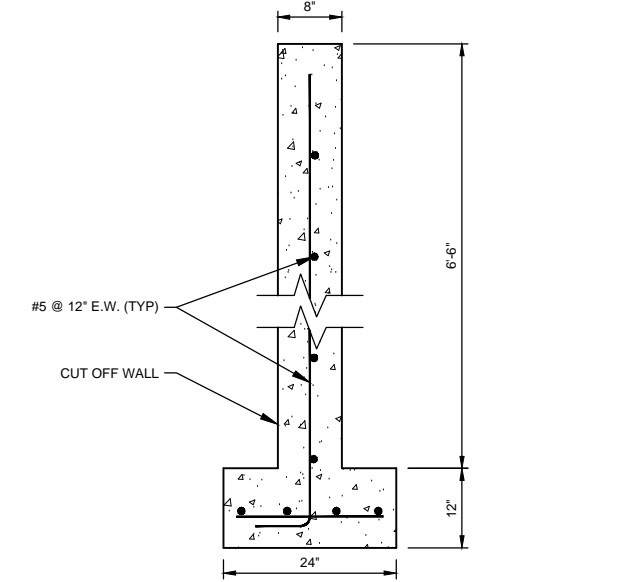
40 MIL HYPALON LINER, NSF61 APPROVED. SEE SHEET C-102 FOR LINER EXTENTS.



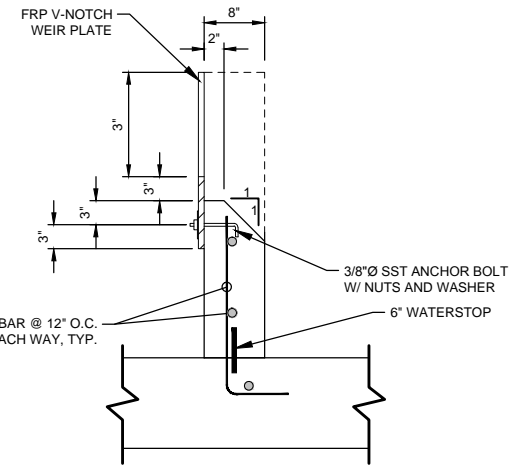
SPRING COLLECTION AREA - PLAN  
SCALE: 1" = 4'-0"

**CONSTRUCTION NOTES:**

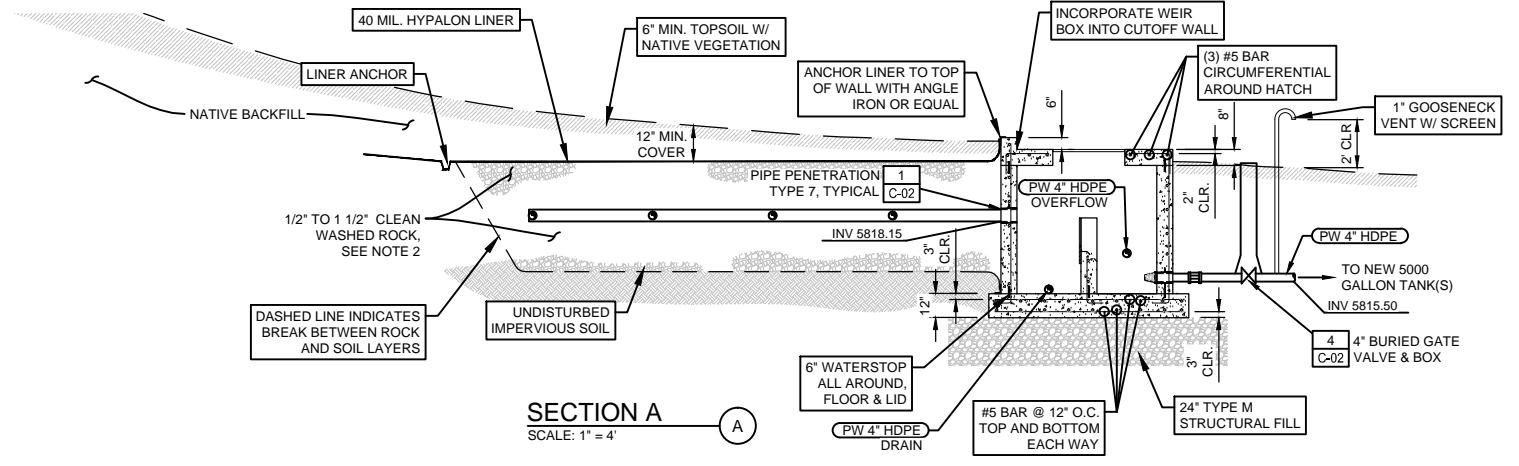
1. DIMENSIONS WILL BE MODIFIED AS REQUIRED BASED ON ACTUAL DEPTH OF PIPE AND HYDRAULIC GRADES AS FIELD VERIFIED BY CONTRACTOR.
2. ADD CALCIUM HYPOCHLORITE POWDER TO ROCK DURING PLACEMENT FOR DISINFECTION.
3. CONTRACTOR SHALL RE-VEGETATE ALL AREAS DISTURBED BY CONSTRUCTION. SEED MIX SHALL CONTAIN AREA NATIVE GRASSES. SUBMIT PLAN AND DETAILS FOR APPROVAL BY ENGINEER.
4. MAINTAIN 24" MINIMUM BURY DEPTH TO TOP OF PIPE.
5. FURNISH & INSTALL HDPE PIPE FITTINGS AS NEEDED.



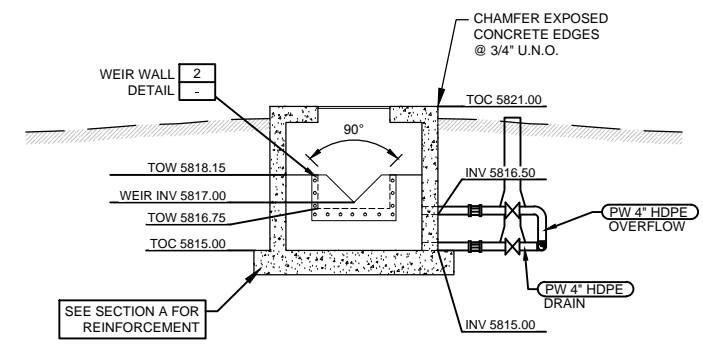
CONCRETE CUTOFF WALL & FOOTING DETAIL  
SCALE: N.T.S.



WEIR WALL DETAIL  
SCALE: N.T.S.



SECTION A  
SCALE: 1" = 4'



SECTION B  
SCALE: 1" = 4'

**BID DRAWINGS**

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 DESIGNED N. PATTERSON  
 APPROVED J. BROOME  
 QA J. BROOME

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Project for:  
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**FORSGREN Associates Inc.**  
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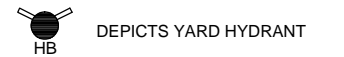


**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - SPRING COLLECTION AREA DETAILS**

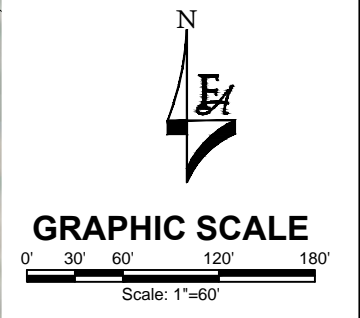
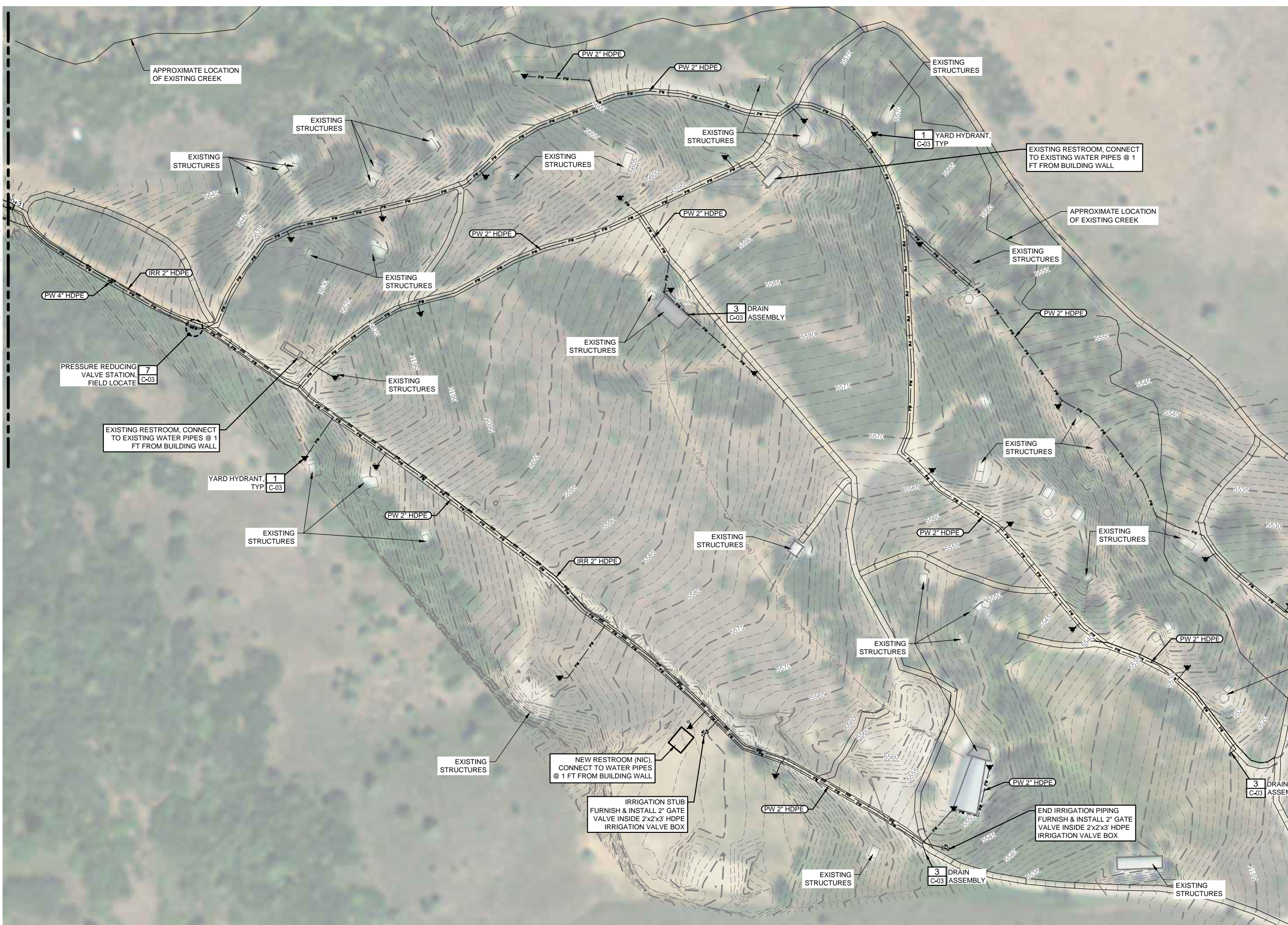
PROJECT NO: **05-14-0086**  
 SHEET NO: **C-102**  
 DATE: **MAR. 2015** PAGE NO: **09 OF 16**

**CONSTRUCTION NOTES:**

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2. EXISTING WATER LINES SHALL BE ABANDONED IN PLACE. REMOVE AND DISPOSE OF EXISTING YARD HYDRANTS. FURNISH AND INSTALL PIPE CAP AT LOCATIONS OF EXISTING YARD HYDRANTS ±33.
3. HDPE PROPOSED WATER LINES SHALL FOLLOW CENTERLINE OF ACCESS ROADS @ 24" MIN. COVER. FIELD LOCATE ALL YARD HYDRANTS, ±33. FURNISH AND INSTALL ACCORDING TO DETAIL 1/C-03.
4. RETURN EXISTING GRAVEL ACCESS ROADS TO PRE-EXISTING GRADE AND CONDITION.
5. FURNISH & INSTALL HDPE PIPE FITTINGS AS NEEDED.
6. CONTRACTOR SHALL LOCATE HIGH POINTS IN PROPOSED WATER LINES FOR INSTALLATION OF AIR RELEASE VALVES, PER DETAIL 2/C-03. LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD LOCATED.
7. CONTRACTOR SHALL LOCATE LOW SPOTS IN PROPOSED WATER LINES FOR INSTALLATION OF DRAIN VALVES, PER DETAIL 3/C-03. LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD LOCATED.
8. REFER TO SPECIFICATIONS FOR TABLE OF PIPING QUANTITIES.



MATCHLINE - SEE SHEET C-100



**BID DRAWINGS**

NO.	REVISIONS	BY	DATE

DRAWN N. PATTERSON  
 DESIGNED N. PATTERSON  
 APPROVED J. BROOME  
 QA J. BROOME

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Project for:  
**THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS**

**FORSGREN Associates Inc.**  
 370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
 PH: 801.364.4785 FAX: 801.364.4802

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**COBBLE CREEK RCMP**  
**WATER SYSTEM IMPROVEMENTS - MAIN CAMP AREA SITE PLAN**

PROJECT NO:  
**05-14-0086**  
 SHEET NO:  
**C-103**  
 DATE: MAR. 2015 PAGE NO: 10 OF 16

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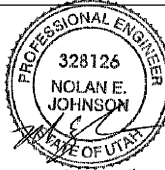
## ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE		TELEPHONE OUTLET, RECESSED CEILING MOUNTED		TEMPERATURE ELEMENT		MC CONNECTION
	DUPLEX RECEPTACLE, RECESSED FLOOR MOUNTED		ETHERNET / TELEPHONE JACK # INDICATES NUMBER OF DATA AND VOICE JACKS RESPECTIVELY		TEMPERATURE INDICATING TRANSMITTER		MOTOR
	DUPLEX RECEPTACLE, RECESSED CEILING MOUNTED		ETHERNET / TELEPHONE JACK, RECESSED FLOOR MOUNTED		TEMPERATURE SWITCH		DEVICE LOCATED AT REMOTE LOCATION.
	QUADRAPLEX RECEPTACLE		ETHERNET / TELEPHONE JACK, RECESSED CEILING MOUNTED		TEMPERATURE TRANSMITTER		FUSE
	QUADRAPLEX RECEPTACLE, RECESSED FLOOR MOUNTED		TELEPHONE TERMINAL BOARD		LIMIT OR POSITION SWITCH		NODE OR CONNECTION
	QUADRAPLEX RECEPTACLE, RECESSED CEILING MOUNTED		SECURITY CAMERA		EMERGENCY STOP PUSH BUTTON (MAINTAINED)		TERMINAL LUG, STRIP, OR POWER DISTRIBUTION BLOCK
	ISOLATED GROUND TYPE DUPLEX RECEPTACLE		SPEAKER		NORMALLY CLOSED PUSH BUTTON		TRANSFORMER
	SPECIAL PURPOSE OR WELDING OUTLET.		ANTENNA MAST		LOCKOUT STOP PUSH BUTTON		HEATING ELEMENT
	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE.		CABLE TV OUTLET		NORMALLY OPEN PUSH BUTTON		LINE REACTOR
	WEATHERPROOF CONVENIENCE OUTLET		HORN		CONTACT - TIME DELAY T.C. = NORMALLY OPEN W/TIME DELAY CLOSING. I.C. - T.O. = NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING. T.C.-T.O. = NORMALLY OPEN W/TIME DELAY CLOSING AND TIME DELAY OPENING AFTER DEENERGIZATION.		GROUND CONNECTION
	WIREMOLD		HORNSTROBE W/ MINI HORN		NORMALLY CLOSED CONTACT		BOND TO METALLIC WATER PIPE
	FLUSH FLOOR DEVICE BOX		STROBE ONLY		LIMIT SWITCH		BOND TO BUILDING STEEL
	HOME RUN TO PANEL - INDICATING 2 #12, #12 GND, 3/4\"/>		HORNSTROBE		PRESSURE SWITCH LOW		GENERATOR
	HOME RUN TO PANEL - INDICATING NUMBER OF CONDUCTORS - #12 OR AS SHOWN.		BELL		PRESSURE SWITCH HIGH		SCADA NETWORK DATA DROP 4-1 1/16\"/>
	HOME RUN TO PANEL SHOWING BRANCH CIRCUIT NUMBERS.		SMOKE DETECTOR		FLOW SWITCH		OFFICE NETWORK DATA DROP. 4-1 1/16\"/>
	HATCH MARKS IN CONDUIT RUN DENOTES NUMBER OF CONDUCTORS IN CONDUIT. LONG HATCH MARK DENOTES GROUND CONDUCTOR. SIZE OF CONDUCTORS TO BE #12 AWG CONDUCTORS IN CONDUIT UNLESS NOTED OTHERWISE. UNMARKED CONDUITS SHALL BE 3/4\"/>		HEAT DETECTOR		LEVEL FLOAT SWITCH		VOICE DROP. 4-1 1/16\"/>
	CONDUIT SEALOFF		DUCT SMOKE DETECTOR		TEMPERATURE SWITCH		
	DENOTES EXISTING EQUIPMENT OR DEVICES		AUXILIARY RELAY		DISCONNECT SWITCH SHOWN WITH RATING AND NUMBER OF POLES.	<b>ELECTRICAL LINETYPES</b>	
	THERMOSTAT		AUXILIARY RELAY CONNECT TO FAN STOP CIRCUIT/DOOR HOLDERS/DAMPER MOTOR AS APPLICABLE.		CIRCUIT BREAKER OR MOTOR CIRCUIT PROTECTOR, SHOWN WITH TRIP RATING AND NUMBER OF POLES.		EXPOSED CONDUIT
	MOTOR, X = HORSE POWER		VOICE COMMUNICATION PANEL		FUSEHOLDER OR FUSEBLOCK		UNDERGROUND CONDUIT
	CEILING EXHAUST FAN		ELECTRIC SHUTOFF		3 POSITION SELECTOR SWITCH HAND - OFF - AUTO, POSITION LEGEND: X=CLOSED O=OPEN		BARE COPPER GROUND CONDUCTOR
	ROOFTOP EXHAUST FAN		SMOKE/PRESSURIZATION CONTROL		2 POSITION SELECTOR SWITCH, POSITION LEGEND: X=CLOSED O=OPEN		EXISTING EXPOSED CONDUIT
	JUNCTION BOX		CONTROL PANEL		TIMER RELAY CONTACT INSTANTANEOUS CLOSE TIME DELAY OPEN.		EXISTING UNDERGROUND CONDUIT
	GROUND ROD WITH TEST WELL AS INDICATED		DOOR HOLD-OPEN DEVICE		TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE.		CAPPED UNDERGROUND CONDUIT OR STUBUP
	ELECTRICAL PANEL, POWER OR LIGHTING		ADDRESSABLE RELAY MONITORING MODULE		FULL VOLTAGE NONREVERSING (FVNR) MOTOR STARTER OR CONTACTOR NUMBER DESIGNATES NEMA SIZE.		NEW ELECTRICAL EQUIPMENT
	METER BASE		SPRINKLER FLOW SWITCH		RTU, PLC, OR RIO CONTACT		DETAIL VIEW, MATCHING, OR PACKAGED EQUIPMENT.
	COMBINATION MOTOR STARTER, SEE SPECS		SPRINKLER TAMPER SWITCH		UTILITY METER		FUTURE
	DISCONNECT SWITCH. 		COMMUNICATOR		BEACON ALARM LIGHT. LETTER INDICATES COLOR: R=RED, A=AMBER, B=BLUE, G=GREEN		CONDUIT DROP
	THIS NOTATION ADJACENT TO WALL OUTLET SYMBOL DENOTES MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTER OF OUTLET DEVICE. IF NOT NOTED, THE MOUNTING HEIGHT TO CENTER SHALL BE AS DETAILED OR SPECIFIED.		TRANSPONDER OR TRANSMITTER		PILOT LIGHT. LETTER INDICATES COLOR: R=RED, A=AMBER, B=BLUE, G=GREEN		CONDUIT RISE
	MANUAL MOTOR STARTER		FIRE SYSTEM ANNUNCIATOR		RELAY		DEMOLITION
	MANUAL MOTOR STARTER WITH OVERLOADS		ANALYZER ELEMENT		TIME DELAY RELAY	<b>CONDUIT CALLOUT</b>	
	HEAT TRACING		ANALYZING INDICATING TRANSMITTER		ALARM RELAY		DESCRIPTION
	RELAY		CONDUCTIVITY ELEMENT		ELAPSED TIME METER		GROUPED CONDUIT AND CIRCUIT IDENTIFICATION TAGS. REFER TO THE ONE-LINE DIAGRAM, POWER AND CONTROL CONDUIT SCHEDULES FOR CONDUIT SIZES AND CONTENTS: C-CONTROL/INSTRUMENTATION P-POWER
	KIRK KEY INTERLOCK		COMBUSTIBLE GAS DETECTOR		MOTOR STARTER OR CONTACTOR COIL		
	DAMPER MOTOR		CONDUCTIVITY INDICATING TRANSMITTER		ELECTRONIC OVERLOAD RELAY		
	LIGHTING FIXTURE TYPE - SEE FIXTURE SCHEDULE.		FLOW ELEMENT		SOLID STATE REDUCED VOLTAGE STARTER		
	SINGLE POLE SWITCH		FLOW INDICATING TRANSMITTER		VARIABLE FREQUENCY DRIVE		
	3 WAY SWITCH		FLOW SWITCH		HARMONIC FILTER		
	4 WAY SWITCH		LEVEL ELEMENT		CURRENT TRANSFORMER		
	WALL MOUNTED MOTION SENSOR		LEVEL INDICATING TRANSMITTER		THERMAL OVERLOAD RELAY		
	CEILING MOUNTED MOTION SENSOR		LEVEL SWITCH		LTC CONNECTION		
	PHOTOCELL		LEVEL TRANSMITTER				
	ETHERNET OUTLET, NUMBER INDICATES NUMBER OF JACKS.		MOISTURE ELEMENT				
	ETHERNET OUTLET, RECESSED FLOOR MOUNTED		MOTOR OPERATED VALVE OR GATE				
	ETHERNET OUTLET, RECESSED CEILING MOUNTED		OVER TORQUE SWITCH				
	TELEPHONE OUTLET, NUMBER INDICATES NUMBER OF JACKS.		PUSH BUTTON				
	TELEPHONE OUTLET, RECESSED FLOOR MOUNTED		PRESSURE INDICATING TRANSMITTER				
	TELEPHONE OUTLET, RECESSED CEILING MOUNTED		PRESSURE SWITCH				
	TELEPHONE OUTLET, NUMBER INDICATES NUMBER OF JACKS.		PRESSURE TRANSMITTER				
	TELEPHONE OUTLET, RECESSED FLOOR MOUNTED		SPEED SWITCH				
	TELEPHONE OUTLET, RECESSED FLOOR MOUNTED		SOLENOID OPERATED VALVE				

DC SYSTEM SIZING CRITERIA		
VOLTAGE: 12 VDC		
BATTERY BACKUP TIME: 24 HOURS		
RE-CHARGE TIME: 12 HOURS WHILE RUNNING UNDER LOAD		
LOCATION: LATITUDE: 41.297534 LONGITUDE: 111.666678		
OPERATION: YEARLY MAY 31 TO SEPTEMBER 1		
	LOAD	WATTS
	HOURS RUN/24 HOURS	
FLOW METER/DISPLAY	0.25	24
VALVE ACTUATOR	25	0.5
DOSING PUMP	19	8
LED'S	4	24

NO.	REVISIONS	BY	DATE
DRAWN N.D. JOHNSON DESIGNED N.E. JOHNSON APPROVED N.E. JOHNSON QA R. CLARK			

**ATTENTION**  
LINE IS 2 INCHES  
AT FULL SIZE  
(IF NOT 2" SCALE ACCORDINGLY)



Project for:  
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370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
PH: 801.364.4785 FAX: 801.364.4802

**HEATH**  
Engineering Company  
Mechanical/Electrical/Plumbing Consultants  
27 West 200 South, Salt Lake City, Utah 84101 Tel: (801) 225-0407 Fax: (801) 225-0408

## COBBLE CREEK RCMP ELECTRICAL SYMBOL LEGEND

PROJECT NO: <b>05-14-0086</b>	
SHEET NO: <b>E-001</b>	
DATE: MAR. 2015	PAGE NO: 11 OF 16

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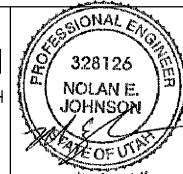


**ELECTRICAL SITE PLAN**  
 SCALE: 1/8" = 1'-0"  
 10 5 0 10 20

NO.	REVISIONS	BY	DATE

DRAWN **N.D. JOHNSON**  
 DESIGNED **N.E. JOHNSON**  
 APPROVED **N.E. JOHNSON**  
 QA **R. CLARK**

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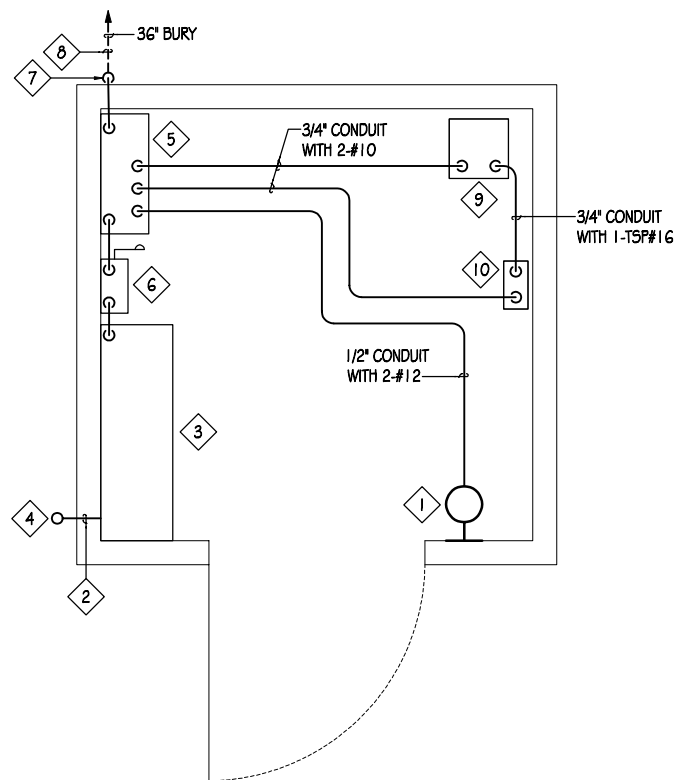


**COBBLE CREEK RCMP**  
**ELECTRICAL SITE PLAN**

PROJECT NO: **05-14-0086**  
 SHEET NO: **E-100**  
 DATE: **MAR. 2015** PAGE NO: **12 OF 16**

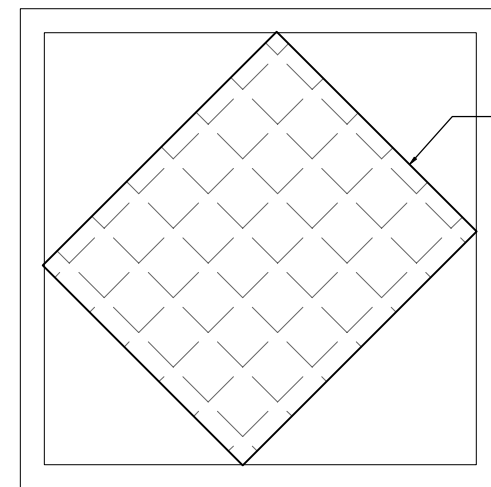
**DRAWING NOTES**

- 1 WALL MOUNTED LIGHT. MOUNT OVER SINGLE GANG BOX.
- 2 SOLAR PANEL FEED. SEE CONTROL CABINET DIAGRAM.
- 3 NEW SOLAR CABINET.
- 4 CORE DRILL WALL. RISE TO ROOF WITH L.B. TERMINATE WITH WEATHERHEAD. WHIP TO SOLAR PANEL.
- 5 D.C. DISCONNECT.
- 6 NEW CONTROL CABINET.
- 7 CORE DRILL WALL. SILICONE SEAL AROUND CONDUIT. DROP TO GROUND WITH L.B.
- 8 2" CONDUIT WITH 8-#10, 1-FLOW METER CABLE, TO VALVE ACTUATOR, SEE SITE PLAN.
- 9 DOSING PUMP LMI MODEL J54D MOUNTED ON WALL.
- 10 SEAMETRICS FT-420 METER DISPLAY.



**DISINFECTION BUILDING POWER PLAN**

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



MOUNT SOLAR ARRAY TO ROOF ON ROOF STAND. SEE SPECIFICATIONS.

**DISINFECTION BUILDING ROOF POWER PLAN**

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

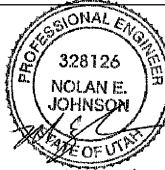


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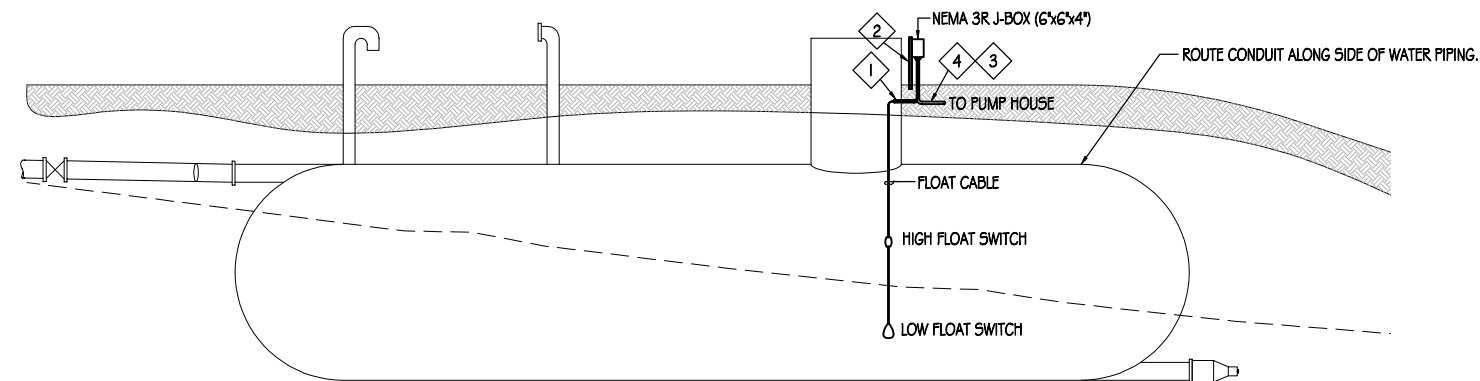


**COBBLE CREEK RCMP**  
**DISINFECTION BUILDING ELECTRICAL PLANS**

PROJECT NO: **05-14-0086**  
 SHEET NO: **E-101**  
 DATE: **MAR. 2015** PAGE NO: **13 OF 16**

**DRAWING NOTES**

- 1 1-1/4" STUBBED INTO TANK HATCH. SEAL AROUND CABLES W/ SILICONE.
- 2 UNISTRUT SUPPORT RACK SET IN 1 8" OF CONCRETE.
- 3 ELECTRICAL CONDUIT TO FOLLOW PIPELINE ROUTE TO PUMP HOUSE.
- 4 SEE SITE PLAN FOR CONDUIT CALLOUT



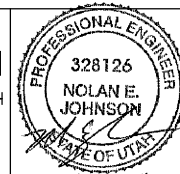
**TANK ELEVATION**



NO.	REVISIONS	BY	DATE

DRAWN N.D. JOHNSON  
 DESIGNED N.E. JOHNSON  
 APPROVED N.E. JOHNSON  
 QA R. CLARK

**ATTENTION**  
 LINE IS 2 INCHES  
 AT FULL SIZE  
 (IF NOT 2" SCALE ACCORDINGLY)



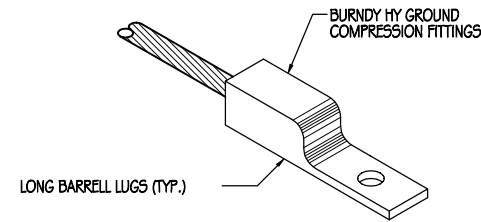
Project for:  
**THE CHURCH OF  
 JESUS CHRIST  
 OF LATTER-DAY SAINTS**

**FORSGREN**  
*Associates Inc.*  
 370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
 PH: 801.364.4785 FAX: 801.364.4802



**COBBLE CREEK RCMP**  
**ELECTRICAL TANK ELEVATION**

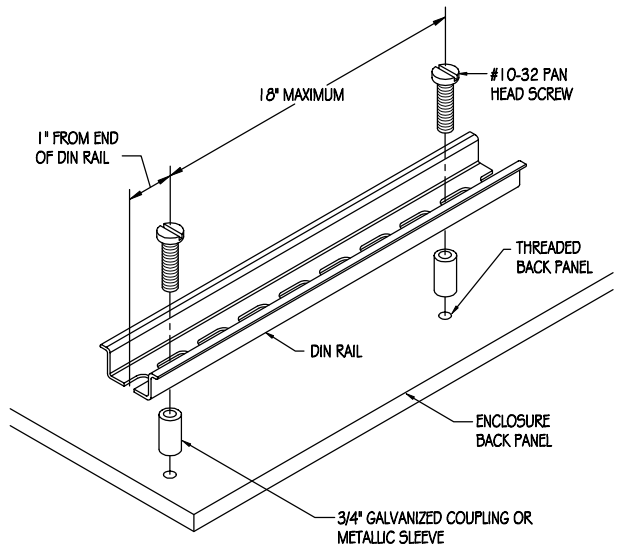
PROJECT NO:  
**05-14-0086**  
 SHEET NO:  
**E-201**  
 DATE: MAR. 2015 PAGE NO: 14 OF 16



**BONDING LUG DETAIL**

SCALE: NONE

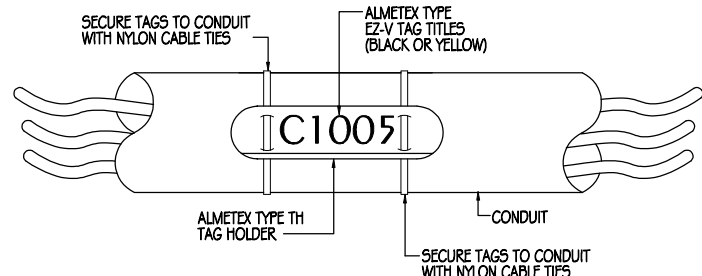
9  
E-501



**DIN RAIL MOUNTING DETAIL**

SCALE: NONE

6  
E-501

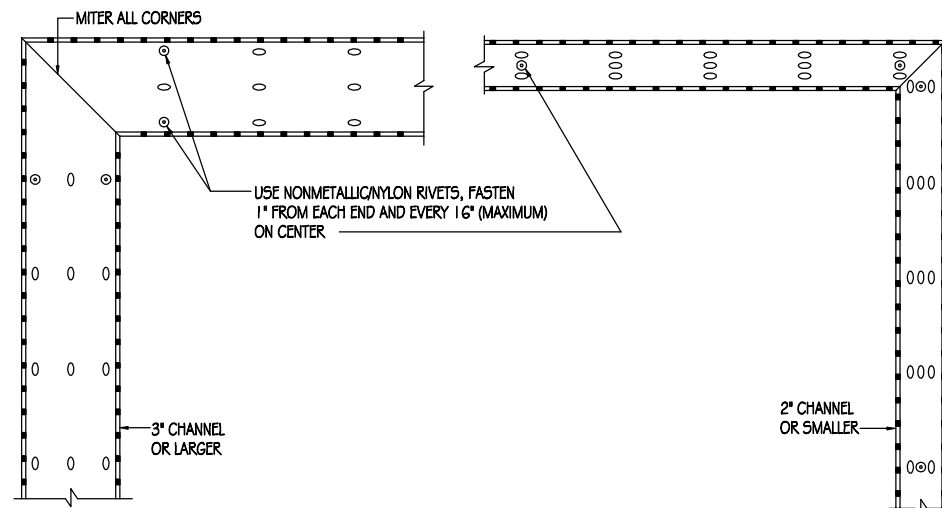


**CONDUIT MARKING SYSTEM DETAIL**

SCALE: NONE

TYPICAL OF ALL ALL CONDUITS

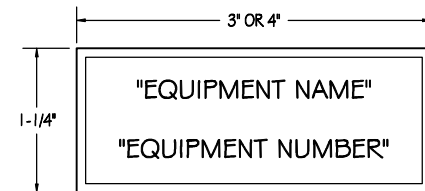
7  
E-501



**PANEL WIRING DUCT DETAIL**

SCALE: NONE

8  
E-501

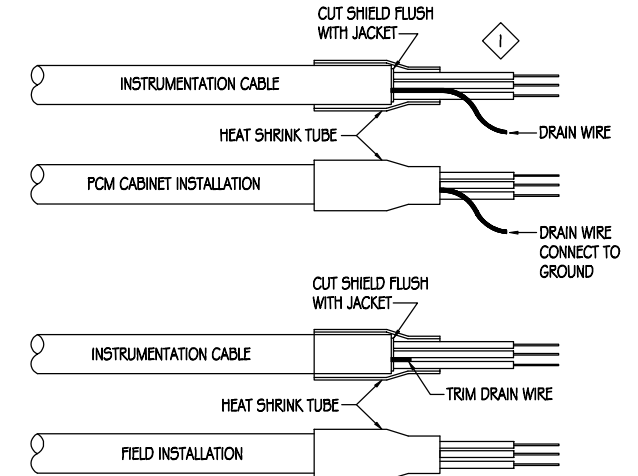


**NAME PLATE DETAIL**

SCALE: NONE

3  
E-501

- NOTES:
1. ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
  2. ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE EQUIPMENT OR DEVICE.
  3. ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS OR OTHER METHODS TO MAINTAIN ENCLOSURE RATING.
  4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.

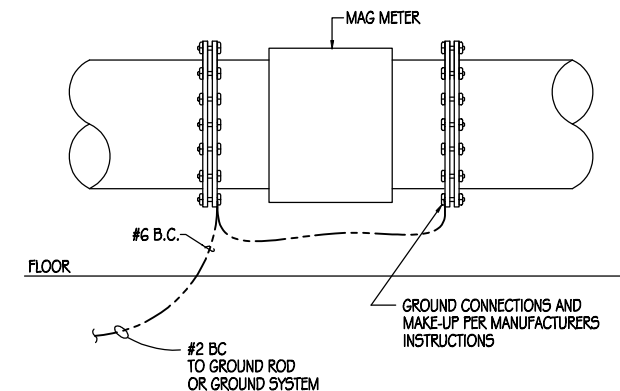


- NOTES:
1. SIMILAR FOR 2-CONDUCTOR SHIELDED CABLE.

**INSTRUMENTATION SHIELDED CABLE TERMINATION DETAILS**

SCALE: NONE

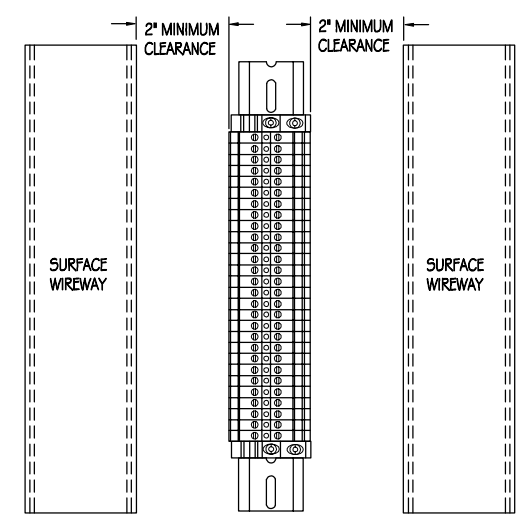
1  
E-501



**FLOW METER GROUND RING CONNECTION DETAIL**

SCALE: NONE

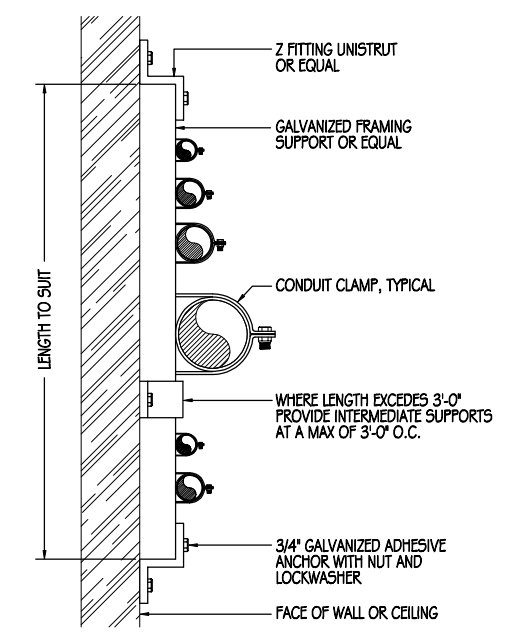
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E-501



**TERMINAL BLOCK CLEARANCE DETAIL**

SCALE: NONE

5  
E-501



**CONDUIT SUPPORT DETAIL**

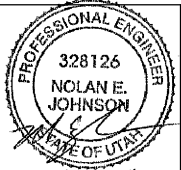
SCALE: NONE

2  
E-501

NO.	REVISIONS	BY	DATE

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 DESIGNED N.E. JOHNSON  
 APPROVED N.E. JOHNSON  
 QA R. CLARK

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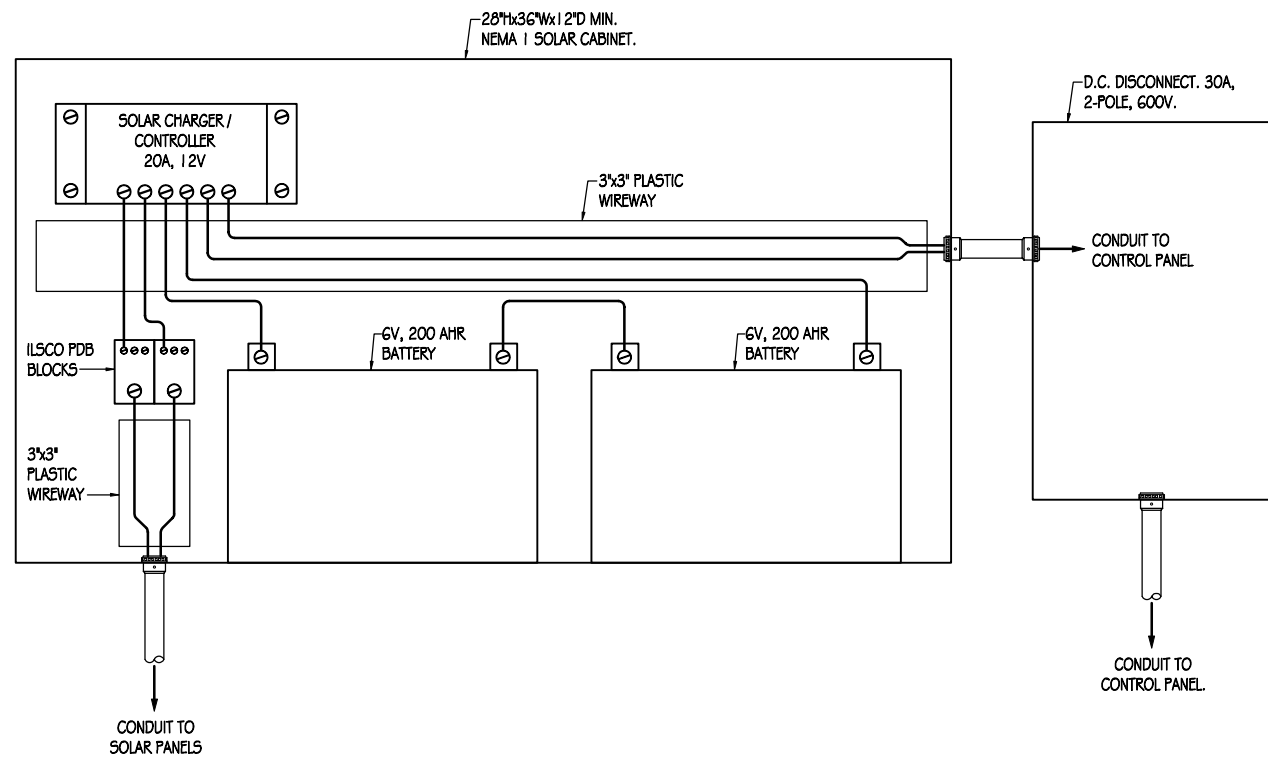
**FORSGREN Associates Inc.**  
 370 EAST 500 SOUTH, STE 200, SALT LAKE CITY, UT 84111  
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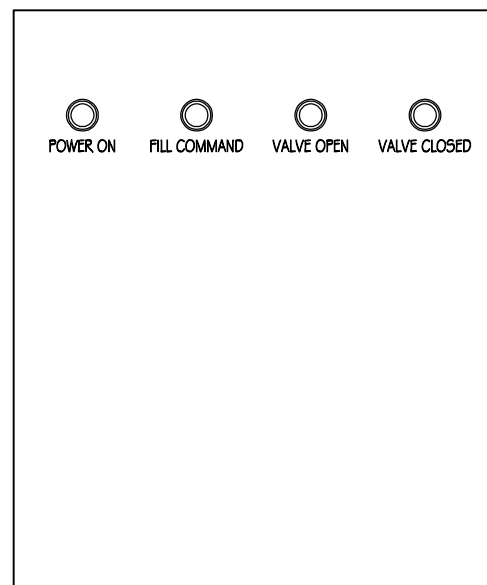
**COBBLE CREEK RCMP**  
**ELECTRICAL DETAILS**

PROJECT NO:  
**05-14-0086**  
 SHEET NO:  
**E-501**  
 DATE: MAR. 2015  
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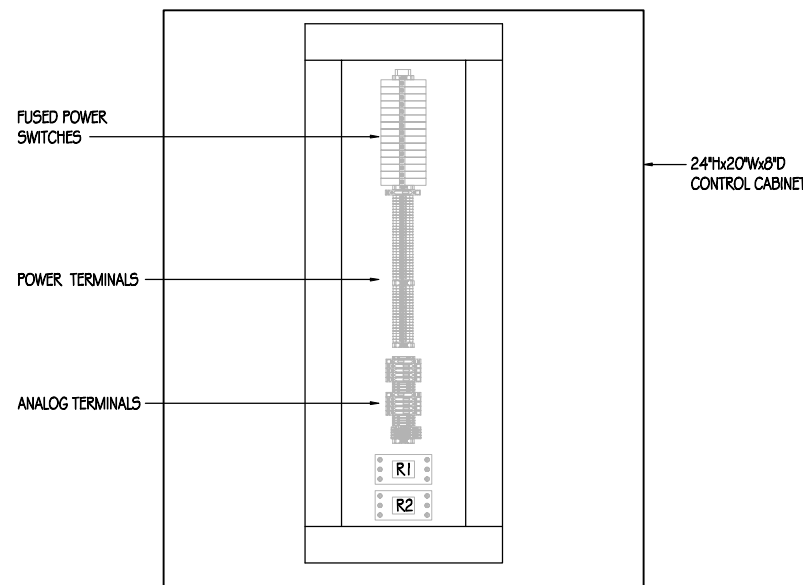
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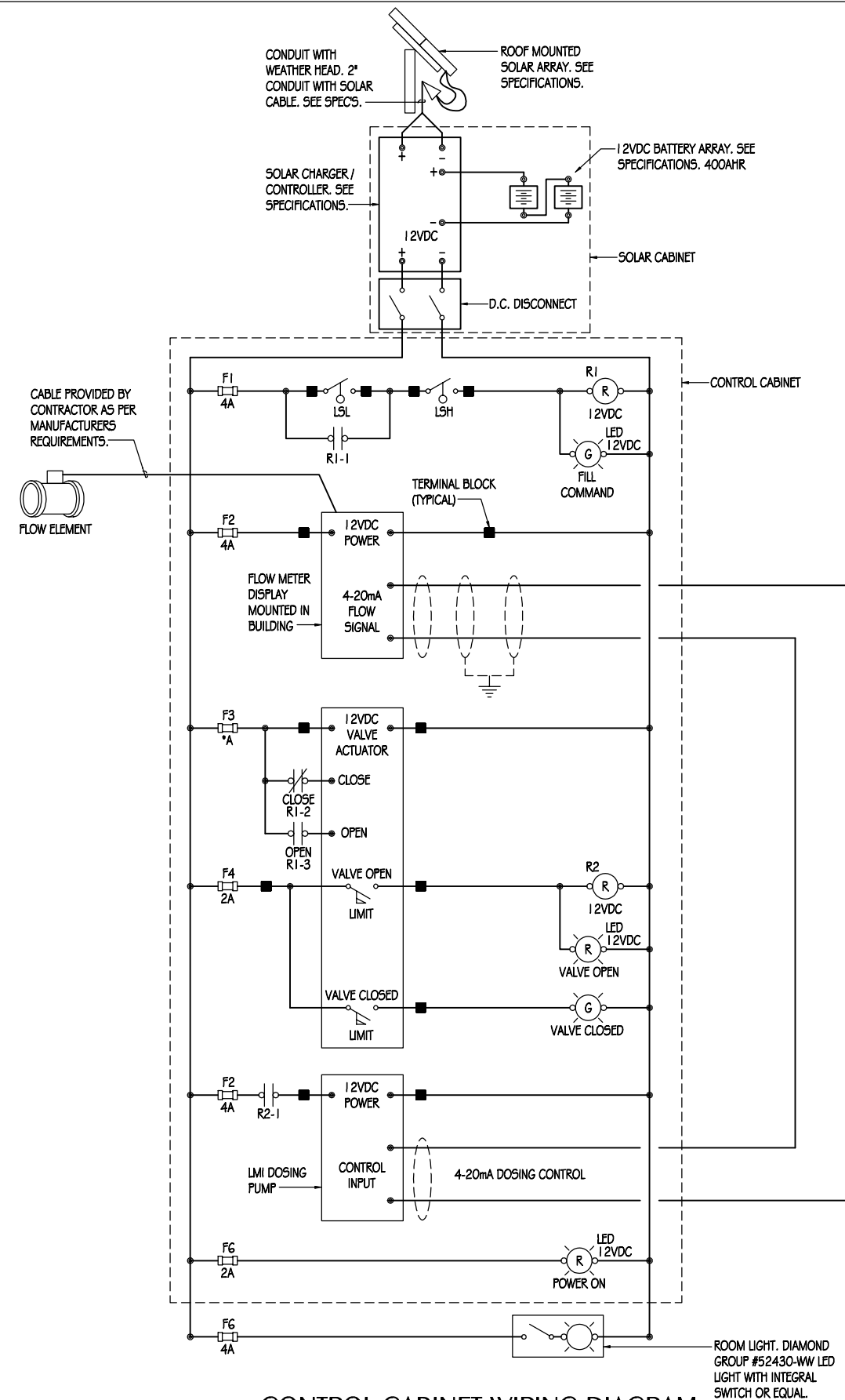
**SOLAR PANEL CABINET DIAGRAM**  
SCALE: NONE



**CONTROL CABINET FRONT ELEVATION**  
SCALE: NONE



**CONTROL CABINET BACK PANEL LAYOUT**  
SCALE: NONE

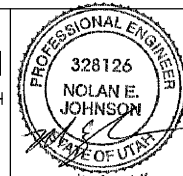


**CONTROL CABINET WIRING DIAGRAM**  
SCALE: NONE

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**COBBLE CREEK RCMP**  
**ELECTRICAL DIAGRAMS**

PROJECT NO:	<b>05-14-0086</b>
SHEET NO:	<b>E-601</b>
DATE:	MAR. 2015
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