

Utah Division of Wildlife Resources

Kamas Fish Hatchery Solids Disposal Project

Issued for Bid
July 12, 2010



Salt Lake City
Utah

A	AIR / AMPERE
A/C	AIR CONDITIONING
A/R	AIR RELEASE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN	ABANDON
ABND	ABANDONED
ABBR	ABBREVIATION
ABS	ABSOLUTE TEMPERATURE
AC	ACTIVATED CARBON / ASPHALTIC CONCRETE / ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INTERNATIONAL
ACOUS	ACOUSTIC / ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE / ASPHALTIC CONCRETE PAVEMENT
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM / ALUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
APPURT	APPURTENANCES
ARCH	ARCHITECTURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	ACOUSTICAL TILE
ATM	ATMOSPHERE
AV/AR	AIR VACUUM AND AIR RELEASE VALVE
AVE	AVENUE
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL AND SPIGOT
B/W	BACK OF WALL / BACK OF WALK
BC	BEGIN CURVE / BOLT CIRCLE / BETWEEN CENTERS / BACK OF CURVE
BCR	BEGIN CURB RETURN
BD	BOARD
BDRY	BOUNDARY
BF	BLIND FLANGE / BOTTOM OF FOOTING
BFP	BACK FLOW PREVENTER
BFF	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK / BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM / BENCH MARK
BO	BLOW-OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRK	BRICK / BREAK
BSMT	BASEMENT
BT	BOLT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BVV	BACK WATER VALVE
C	CENTIGRADE / CHANNEL / CEMENT
C&G	CURB AND GUTTER
CAB	CABINET / CRUSHED AGGREGATE BASE
CAP	CAPACITY
CATS	CASING TEST STATION
CATV	CABLE TELEVISION
CB	CATCH BASIN / CHALKBOARD / CURB
CC	CLOSED CIRCUIT TV / CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMENT
CF	CURB FACE / CUBIC FOOT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHG	CHANGE
CHKD	CHECKED
CI	CAST IRON
CIP	CAST IRON PIPE / CAST IN PLACE
CIPP	CAST IN PLACE PIPE
CJ	CONSTRUCTION JOINT
CL	CHLORINE GAS / CHLORINATOR / CENTERLINE
CLF	CHAIN LINK FENCE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR / CLEARANCE
CMB	CRUSHED MISCELLANEOUS BASE
CMC	CEMENT MORTAR-COATED
CML	CEMENT MORTAR-LINED
CML&C	CEMENT MORTAR-LINED AND COATED
CMP	CORRUGATED METAL PIPE
CNU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATIONS CABLE
COMP	COMPRESSOR
CONC	CONCRETE / CONCENTRIC
COND	CONDENSER / CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCT / CONSTRUCTION
CONT	CONTINUED / CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
COTC	CLEANOUT TO GRADE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAUSTIC SODA / CAST STEEL
CSP	CORRUGATED STEEL PIPE
CSTS	CURRENT SPAN TEST STATION
CT	CERAMIC TILE
CEN	CENTER
CTS	CORROSION TEST STATION
CTSK	COUNTERSUNK
CU	COPPER / CUBIC

CULV	CULVERT
CV	CHECK VALVE
CY	CUBIC YARD
CYL	CYLINDER
d	PENNY
DAD	DOUBLE ACTING DOOR
DAFT	DISSOLVED AIR FLotation THICKENER
DB	DIRECT BURY
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DG	DOOR GRILL
DH	DOUBLE HUNG
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER / DIFFERENTIAL
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DISP	DISPENSER
DL	DEAD LOAD
DMH	DROP MANHOLE
DN	DOWN
DO	DISSOLVED OXYGEN / DITTO
DR	DOOR / DRAIN
DS	DRENCH SHOWER AND EYE WASH
DT	DRAIN TILE
DWG	DRAWING
DWLS	DOWELS
DWY	DRIVEWAY
E	EAST
E/O	EAST OF
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE / EXHAUST FAN
EFF	EFFECT
EG	EXISTING GRADE / EDGE OF GUTTER / EXHAUST GRILLE
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRICAL / ELECTRONIC
EN	EDGE NAILING
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EP	EDGE OF PAVEMENT
EPT	ETHYLENE PROPYLENE
EQ	EQUAL
EQUIP	EQUIPMENT
ESMT	EASEMENT
ETB	EMULSION TREATED BASE
ETC	ET CETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY / EYE WASH
EX	EXISTING
EXC	EXCAVATION
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR / EXTENSION
EXTR	EXTRUDED
F	FAHRENHEIT / FINISH
F TO F	FACE TO FACE
F&C	FRAME AND COVER
F&I	FURNISH AND INSTALL
FAB	FABRICATE / FABRICATION / FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR / FLOOR BEAM / FIELD BOOK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDR	FEDER
FE	FIRE EXTINGUISHER / FINAL EFFLUENT
FEM	FEMALE (PIPE THREAD)
FF	FLAT FACE / FAR FACE / FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT / FLAT HEAD
FIG	FIGURE
FIN	FINISHED
FL	FIXTURE
FL	FLOWLINE / FLOOR
FLEX	FLEXIBLE
FLG	FLANGE / FLOORING
FLGD	FLANGED
FLOCC	FLOCCULATOR / FLOCCULATION
FLR	FLOOR
FLSG	FLASHING
FM	FACTORY MUTUAL (LAB APPROVED) / FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE / FIBER OPTIC CABLE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTS	FOREIGN PIPE TEST STATION
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHED SURFACE / FAR SIDE / FLOOR SINK / FORGED STEEL / FROTH SPRAY
FT	FEET / FOOT
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
FWD	FORWARD

G	GAS
GA	GAGE / GAUGE
GAL	GALLON
GALV	GALVANIZED
GANC	GUY ANCHOR
GB	GRADE BREAK
GEN	GENERAL / GENERATOR
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GLASS / GROUND LINE / GRADE LINE
GLB	GLUE LAMINATED BEAM / GLULAM
GLV	GLOBE VALVE
GM	GAS METER
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRV	GRADE / GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSONUM
H	HIGH / HEIGHT
H&V	HEATING AND VENTILATING
H/B	HOSE BIBB
HC	HOUSE CONNECTION
HDR	HEADER
HDW	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
Hg	MERCURY
HGL	HYDRAULIC GRADE LINE
HGR	HANGER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT / HORSE POWER / HIGH PRESSURE
HPG	HIGH PRESSURE GAS
HR	HEAT RETURN / HOUR
HSL	HORIZONTALLY SLOTTED
HSS	HOLLOW STRUCTURAL SECTION
HTR	HEATING
HTG	HEATER
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER / HEADWORK
HWL	HARDWOOD
HWO	HIGH WATER LEVEL
HYD	HANDWHEEL OPERATED HYDRAULIC / HYDRANT
I/O	INPUT/OUTPUT
I&O	INSIDE AND OUTSIDE
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN	INCH
INCL	INCLUDE / INCLUDING
INFL	INFLUENT
INSL	INSULATION / INSULATING / INSULATED
INSP	INSPECTION
INT	INSTRUMENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION
JAN	JANITOR
JC	JUNCTION CHAMBER
JCT	JUNCTION
JS	JUNCTION STRUCTURE
JSTS	JOISTS
JT	JOINT
k	KILO
K	KELVIN / KARAT
kg	KILOGRAM
km	KILOMETER
kV	KILOVOLT
kVA	KILOVOLT AMPHERE
kW	KILOWATT
kWh	KILOWATT HOUR
L	LITER / LENGTH / ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LOCAL DEPRESSION
LDG	LANDING
LEV	LEVEL
LF	LINEAR FOOT
LG	LENGTH / LONG
LH	LAMP HOLE / LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDINAL
LP	LOW POINT / LOW PRESSURE / LAMP POST
LPG	LIQUID PETROLEUM GAS
LT	LEFT LIGHT
LTS	LIME TREATED SOIL
LW	LOW WATER
LWL	LOW WATER LEVEL
LWR	LOWER
m	METER
M	MALE (PIPE THREAD)
mA	MILLIAMPS
MACH	MACHINE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY

MAT	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX / MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MCR	MIDDLE OF CURB RETURN
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBER
MFR	MANUFACTURER
MFRD	MANUFACTURED
MGD	MILLION GALLONS PER DAY
MH	MANHOLE / MAINTENANCE HOLE
MHT	MEAN HIGH TIDE
MHW	MEAN HIGH WATER
MI	MALLEABLE IRON / MILE
MICRON	1/1,000,000 METER
MIL	MILITARY / 1/1,000TH INCH
MIN	MINIMUM / MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MK	MARK
MLW	MEAN LOW WATER
mm	MILLIMETER
MO	MOTOR OPERATED / MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MOR	MORTAR
MS	MOP SINK
MSL	MEAN SEA LEVEL
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MTR	MOTOR
N	NORTH
NaOCL	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE (CAUSTIC SODA)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GRADE / NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER / NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRCPC	NON-REINFORCED CONCRETE PIPE
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
OBJ	OBJECT
OC	ON CENTER / OVER-CROSSING
OD	OUTSIDE DIAMETER / OVERALL DIMENSION
OE	OUTER EDGE
OF	OVERFLOW / OUTSIDE FACE
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVER HEAD
OHW	OVERHEAD WIRES
OPR	OPERATOR / OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OWG	OIL WATER GAS
OZ	OUNCE
P	POLE / PAGE / PIPE
P/S	POLE AND SHELF
PA	PLANTING AREA
PART	PARTITION
PAVMT	PAVEMENT
PB	POLYBUTYLENE / PULL BOX
PC	POINT OF CURVATURE / PRIMARY CLARIFIER / PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE / POINT OF CURVATURE
PCOTG	PRESSURE CLEANOUT TO GRADE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PE	PLANT EFFLUENT / POLYETHYLENE / POLYELECTROLYTE POLYMER
PG	PRESSURE GAGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT / POINT OF INTERSECTION
PK	PARKING
PL	PLATE / PROPERTY LINE / PLACE
PLAS	PLASTER / PLASTIC
PLT	PLANT
PLWD	PLYWOOD
PM	PRESSED METAL
PNEU	PNEUMATIC
PNL	PANEL
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POT	POINT OF TANGENT
PP	POWER POLE / POLYPROPYLENE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	POUNDS PER MINUTE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCT	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROF	PROFILE
PRV	PRESSURE REGULATING, RELIEF OR REDUCING VALVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY / PAINT / PRESSURE
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PV	POLY VALVE

PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
PW	POTABLE WATER
QT	QUARRY TILE
QTY	QUANTITY
QUAD	QUADRANGLE / QUADRANT
R	RADIUS / RISER / RATE OF SLOPE
R&O	ROCK AND OIL
R/W	RIGHT OF WAY
RAC	RECYCLED ASPHALT CONCRETE
RAG	RETURN AIR GRILLE
RAP	RECLAIMED ASPHALT PAVEMENT
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCPC	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN / ROUND
RED	REDUCER / REDUCING
REF	REFERENCE / REFER / REFRIGERATOR
REG	REGULATING
REINF	REINFORCE / REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING / RETURN
REV	REVISION
REW	RECLAIMED WATER
RF	ROOF / RAISED FOUNDATION / ROUGH FACE
RFG	ROOFING
RGE	REGISTERED GEOTECHNICAL ENGINEER
RH	REDHEAD / RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RISING STEM
RSL	RAW SLUDGE
RTH	RIGHT
RTP	REINFORCED THERMOSETTING PLASTIC
RTU	REMOTE TERMINAL UNIT
RW	REDWOOD
RWL	RAINWATER LEADER
S	SOUTH / SCUM / SINK / SECOND / SLOPE / SOUTH OF
S/O	SOUTH OF
SA	SAMPLE
SAN	SANITARY
SBR	STYRENE BUTADIENE (RUBBER)
SC	SPARE CHEMICAL / SECONDARY CLARIFIER
SCCP	STEEL CYLINDER CONCRETE PIPE
SCWD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	SANITARY DRAIN & VENT / SMOKE DETECTOR
SDR	STANDARD THERMOPLASTIC PIPE DIMENSION RATIO / STORM DRAIN
SEC	SECONDARY / SECTION
SE	SERIES
SETT	SETTING
SF	SQUARE FOOT
SH	SHOWER
SHLV	SHELVE
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SL	SLUDGE
SLDG	SLIDING
SLG	SLUICE GATE
SOG	SLAB ON GRADE
SOLN	SOLUTION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPK	SPIKE
SQ	SQUARE
SS	STAINLESS STEEL / SANITARY SEWER / SERVICE SINK
SSB	SELECT SUB-BASE
SSPWC	STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION
SSU	SECONDS SAYBOLT UNIVERSAL
ST	STREET / STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STEAM
STR	STRAIGHT / STRUCTURAL
SU	STEAM LINE
SUCT	SUCTION
SV	SOLENOID VALVE
SW	SIDEWALK
SWD	SIDEWALK DRAIN
SWGR	SWITCHGEAR
SWR	SIDEWALL REGISTER
SY	SQUARE YARD
SYM	SYMMETRICAL / SYMBOL
SYS	SYSTEM
T	THERMOSTAT / TREAD OF STAIR / TANGENT / TOP AND BOTTOM
T&B	TONGUE AND GROOVE
T&G	TANGENT
TAN	TANGENT
TB	TACK BOARD
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TEL	TELEPHONE
TEMP	TEMPERATURE / TEMPORARY
TF	TOP OF FOOTING

File: K-G004.DGN Model: Model_DesignScript: MWH_Mstrn_Pentable_V85.tbl PlotScale: 2.0000 1/4" = 1'-0" Plot Date: 7/8/2010 6:57:24 AM User: Owner

GENERAL SYMBOLOGY	
	NEW CONSTRUCTION
	EXISTING (SCREENED OR DOTTED)
	FUTURE (PHANTOM)
	EXISTING TO BE REMOVED OR DEMOLISHED

MATERIAL SYMBOLOGY	
	CONCRETE (PLAN AND SECTION)
	GROUT OR SAND (PLAN AND SECTION)
	BRICK (PLAN AND SECTION)
	CMU (PLAN AND SECTION)
	STEEL/METAL/FRP (SMALL SCALE SECTION)
	CHECKERPLATE OR SOLID FRP GRATING (PLAN)
	CHECKERPLATE (SECTION)
	GRATING (PLAN)
	GRATING OR SOLID FRP GRATING (SECTION)
	SAFETY GRATING (PLAN)
	SAFETY GRATING (SECTION)
	RAILING (PLAN)
	WOOD (PLAN OR ELEVATION)
	LUMBER/FRAMING - NOMINAL
	LUMBER - TRIMMED (BLOCKING OR SHIMS)
	GLULAM (SECTION)
	GLULAM (ELEVATION)
	PLYWOOD (SMALL SCALE)
	FINISHED GRADE
	GRAVEL/RAINROCK/AGGREGATE BASE

VALVE AND GATE ACTUATORS	
	DIAPHRAGM OPERATOR
	D = DIGITAL E/H = ELECTROHYDRAULIC P = PNEUMATIC S = SOLENOID T = TEMPERATURE
	HAND / MANUAL OPERATOR (ALSO SHOWN AS NO OPERATOR)
	MOTOR OPERATOR
	PISTON ACTUATOR
	PRESSURE BALANCED DIAPHRAGM ACTUATOR
	PRESSURE REGULATOR WITH EXTERIOR TAP
	PRESSURE REGULATOR (SELF CONTAINED)
	PRESSURE RELIEF OR SAFETY ACTUATOR
	WEIGHT BALANCED OPERATOR

VALVES	
	3 WAY MULTI-PORT VALVE
	4 WAY MULTI-PORT VALVE
	AIR VACUUM, AIR RELEASE, OR AIR VACUUM AND AIR RELEASE ASSEMBLY
	ANGLE VALVE
	BACK-PRESSURE VALVE
	BACKFLOW PREVENTER VALVE
	BACKWATER VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	CHECK VALVE - ANGLE
	CHECK VALVE - BALL
	CHECK VALVE - SILENT
	CHECK VALVE - STOP
	CONE VALVE
	DIAPHRAGM VALVE
	FLAP VALVE
	GATE VALVE
	GLOBE VALVE
	HOSE BIBB VALVE FROM TOP, FRONT AND SIDE VIEW
	NEEDLE VALVE
	PINCH VALVE
	PLUG VALVE - ECCENTRIC
	PLUG VALVE - LUBRICATED
	PRESSURE REGULATING VALVE
	PRESSURE RELIEF VALVE
	SLEEVE VALVE
	TELESCOPING VALVE

GATES	
	SLIDE GATE (CAST IRON, ALUMINUM OR STAINLESS STEEL)
	STOP GATE OR SHEAR GATE

PUMPS & COMPRESSORS	
	AIR DRIVEN DIAPHRAGM PUMP
	HORIZONTAL ANSI END SUCTION PUMP
	CENTRIFUGAL PUMP
	CENTRIFUGAL WET PIT PUMP OR TURBINE PUMP
	CHEMICAL METERING PUMP
	CIRCULATING PUMP
	DRUM PUMP
	GEAR PUMP OR ROTARY POSITIVE DISPLACEMENT BLOWER
	HORIZONTAL SPLIT CASD PUMP
	HOSE PUMP
	PISTON PUMP
	PROGRESSIVE CAVITY PUMP
	ROTARY LOBE PUMP
	SAMPLE PUMP
	SUBMERSIBLE PUMP
	SUBMERSIBLE TURBINE PUMP
	VERTICAL TURBINE PUMP
	PISTON DRIVEN COMPRESSOR
	COMPRESSOR

FLOW MEASUREMENT INSTRUMENTS	
	DENSITY FLOWMETER
	DISPLACEMENT FLOWMETER
	FLOW ORIFACE
	FLOW ORIFACE WITH QUICK CHANGE FITTINGS
	FLOW TUBE
	FLOW TURBINE
	FLOW VANE
	FLUME

FLOW MEASUREMENT INSTRUMENTS (CONTINUED)	
	MAGNETIC FLOWMETER
	PADDLE WHEEL METER
	PITOT TUBE METER (DOUBLE)
	PITOT TUBE METER (SINGLE)
	ROTAMETER / VARIABLE AREA FLOWMETER
	ULTRASONIC FLOWMETER
	VENTURI FLOWMETER
	VORTEX SHEDDING FLOWMETER
	WEIR METER

PIPING ENDS (SINGLE-LINE)	
	BLIND FLANGE
	CAP - BREATHER
	CAP - SCREW / THREADED
	CAP - WELDED
	CAP - QUICK DISCONNECT
	EXPANSION JOINT
	FLANGED
	FLANGED COUPLING ADAPTER
	FLANGED COUPLING ADAPTER - RESTRAINED
	FLEXIBLE CONNECTION - BELLOWS TYPE
	GROOVED END COUPLING
	MECHANICAL JOINT
	PUSH-ON JOINT - BELL AND SPIGOT
	PUSH-ON JOINT - RESTRAINED
	REDUCER - CONCENTRIC
	REDUCER - ECCENTRIC
	REMOVABLE SPOOL PIECE
	SLEEVE TYPE COUPLING
	SLEEVE TYPE COUPLING - RESTRAINED
	UNION
	WELDED

REFERENCE SYMBOLS	
SECTION IDENTIFICATION	
	SECTION LETTER: A SECTION: A SHEET ON WHICH SECTION IS SHOWN: 3S-5 SHEET ON WHICH SECTION IS CUT: 3S-1
DETAIL IDENTIFICATION	
	DETAIL NUMBER: 3 DETAIL: 3 SHEET ON WHICH DETAIL IS SHOWN: 2M-3 SHEET ON WHICH DETAIL IS CALLED-OUT: 2M-2
STANDARD DETAIL IDENTIFICATION	
	DETAIL NUMBER: C-302 DETAIL: C-302 STANDARD DETAILS ARE LOCATED ON DISCIPLINE GENERAL SHEETS, IN NUMERICAL ORDER
EXTERIOR ELEVATION IDENTIFICATION	
	ELEVATION NUMBER: 1 ELEVATION: 1 SHEET ON WHICH ELEVATION IS SHOWN: 1A-3 SHEET ON WHICH ELEVATION IS CALLED-OUT: 1A-1
INTERIOR ELEVATION IDENTIFICATION	
	ELEVATION NUMBER: 6 ELEVATION: 6A SHEET ON WHICH ELEVATION IS SHOWN: 1A-3 SHEET ON WHICH ELEVATION IS CALLED-OUT: 1A-1
PIPING IDENTIFICATION	
	SEE PIPING SCHEDULE FLUID ABBREVIATION PIPE DIAMETER MATERIAL GROUP NUMBER
EQUIPMENT IDENTIFICATION	
	SEE EQUIPMENT SCHEDULE/SPECIFICATIONS EQUIPMENT DESIGNATOR EQUIPMENT NUMBER AREA NUMBER
MISCELLANEOUS	
	4-12 ROOM NUMBER
	2-16 DOOR NUMBER
	1-8 WINDOW NUMBER
	13 ACCESSORY NUMBER
	4 WALL TYPE NUMBER
	COORDINATE POINT
	ROUND OR DIAMETER
	AT
	ANGLE
	CENTERLINE
	SHEET KEY NOTES
DISCIPLINE SPECIFIC SYMBOLS ARE SHOWN ON THE DISCIPLINE GENERAL DRAWINGS.	
FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS.	

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID

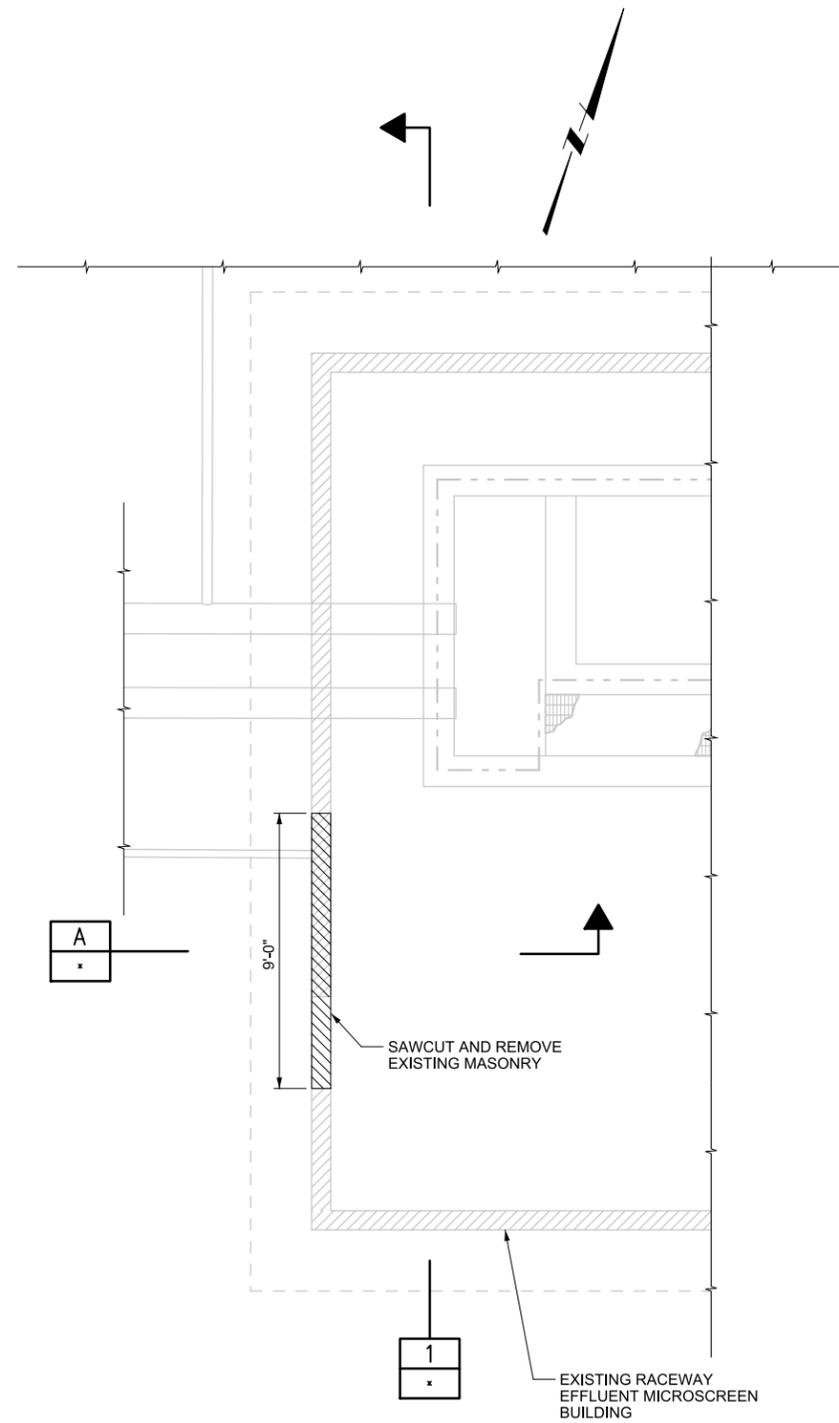
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NONE	DRAWN MWH STANDARD	(PROJECT MANAGER'S NAME) LICENSE NO. DATE
	CHECKED MWH STANDARD	(COMPANY OFFICER'S NAME) LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

SHEET	G-4
SYMBOLS	

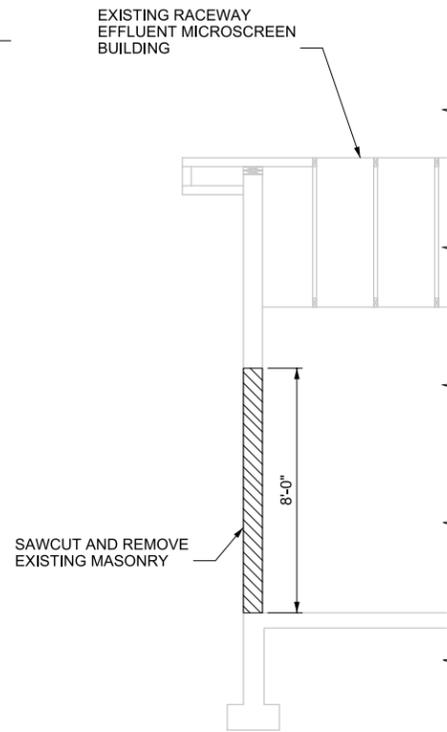
REV 040407



PLAN

*
*

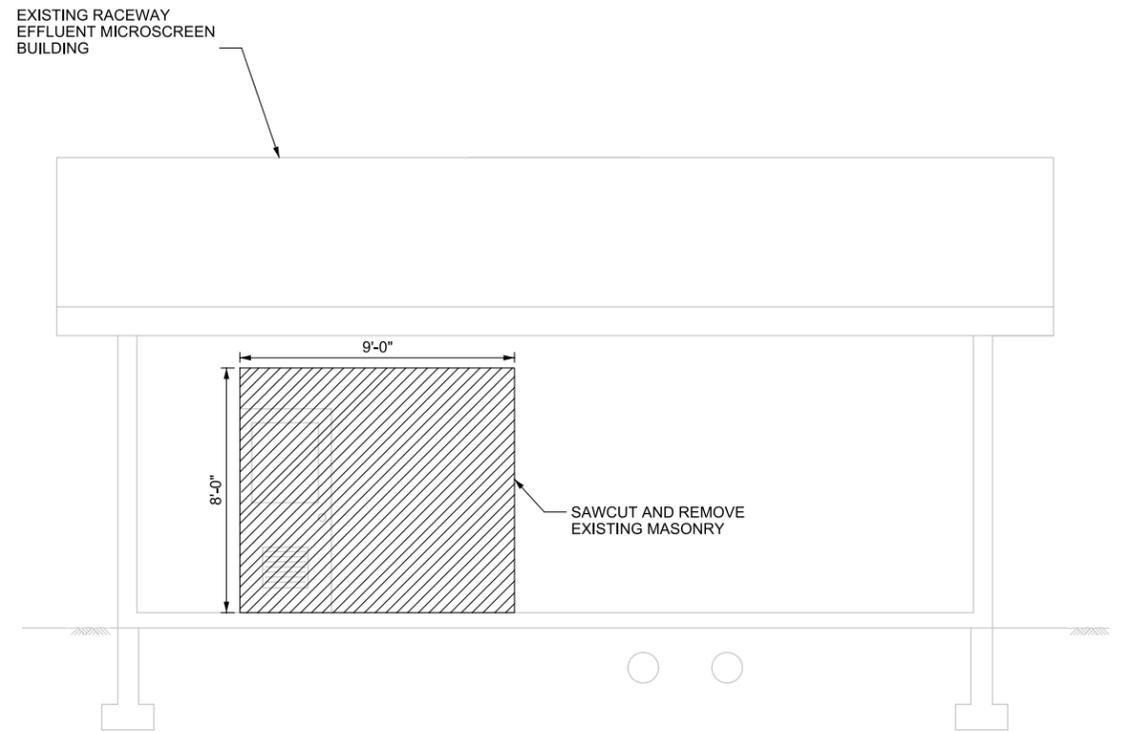
SCALE: 3/8"=1'



SECTION A

*
*

SCALE: 3/8"=1'



ELEVATION 1

*
*

SCALE: 3/8"=1'

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR CONSTRUCTION

SCALE
AS SHOWN

DESIGNED G. CLARK
DRAWN M. PERKINS
CHECKED MWH

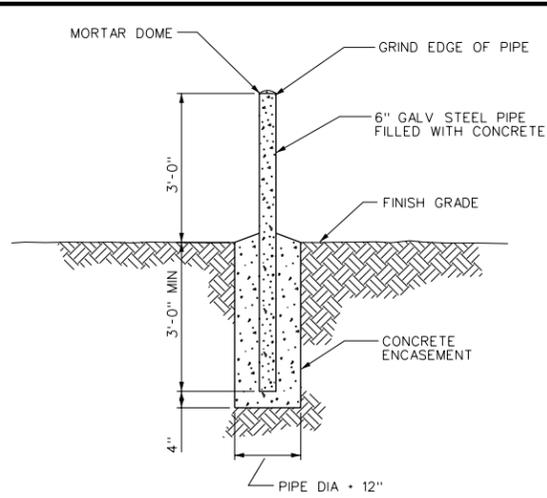
SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE



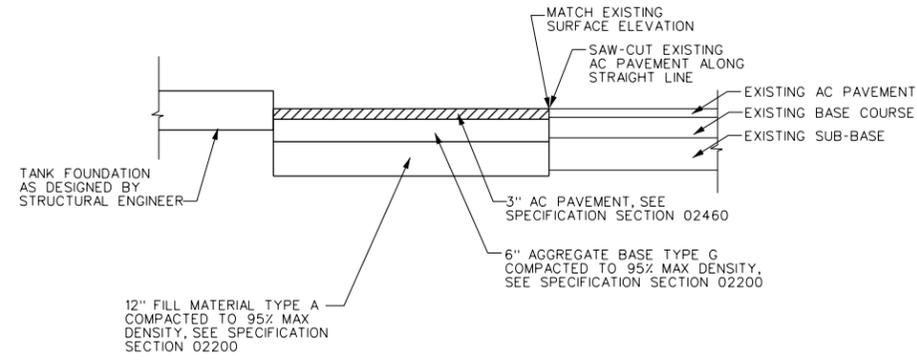
Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

DEMOLITION
SOLIDS DISPOSAL PROJECT

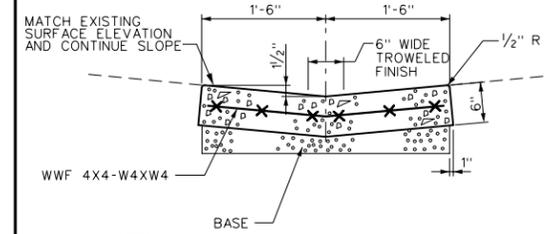
SHEET
D-001



GUARD POST 1
VAR



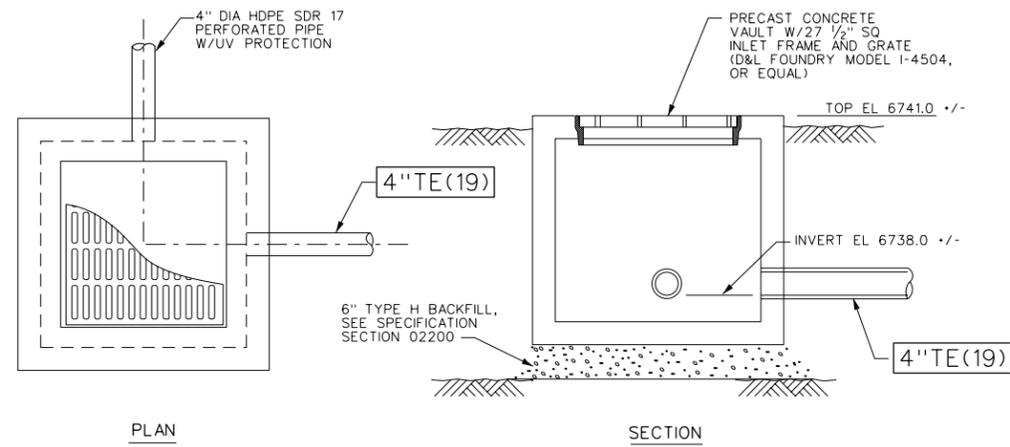
AC PAVEMENT 2
VAR



NOTES:

1. EXPANSION JOINTS OF 1/2" PREMOLDED JOINT FILLER SHALL BE PLACED 50 FOOT SPACING AND WHERE GUTTER BUTTS OTHER CONCRETE STRUCTURES
2. BASE AND SUBGRADE PREPARATION SHALL MATCH ADJACENT PAVING

CONCRETE CROSS GUTTER 3
VAR



DRAINFIELD DISTRIBUTION BOX 4
NO SCALE

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID

SCALE
NONE

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

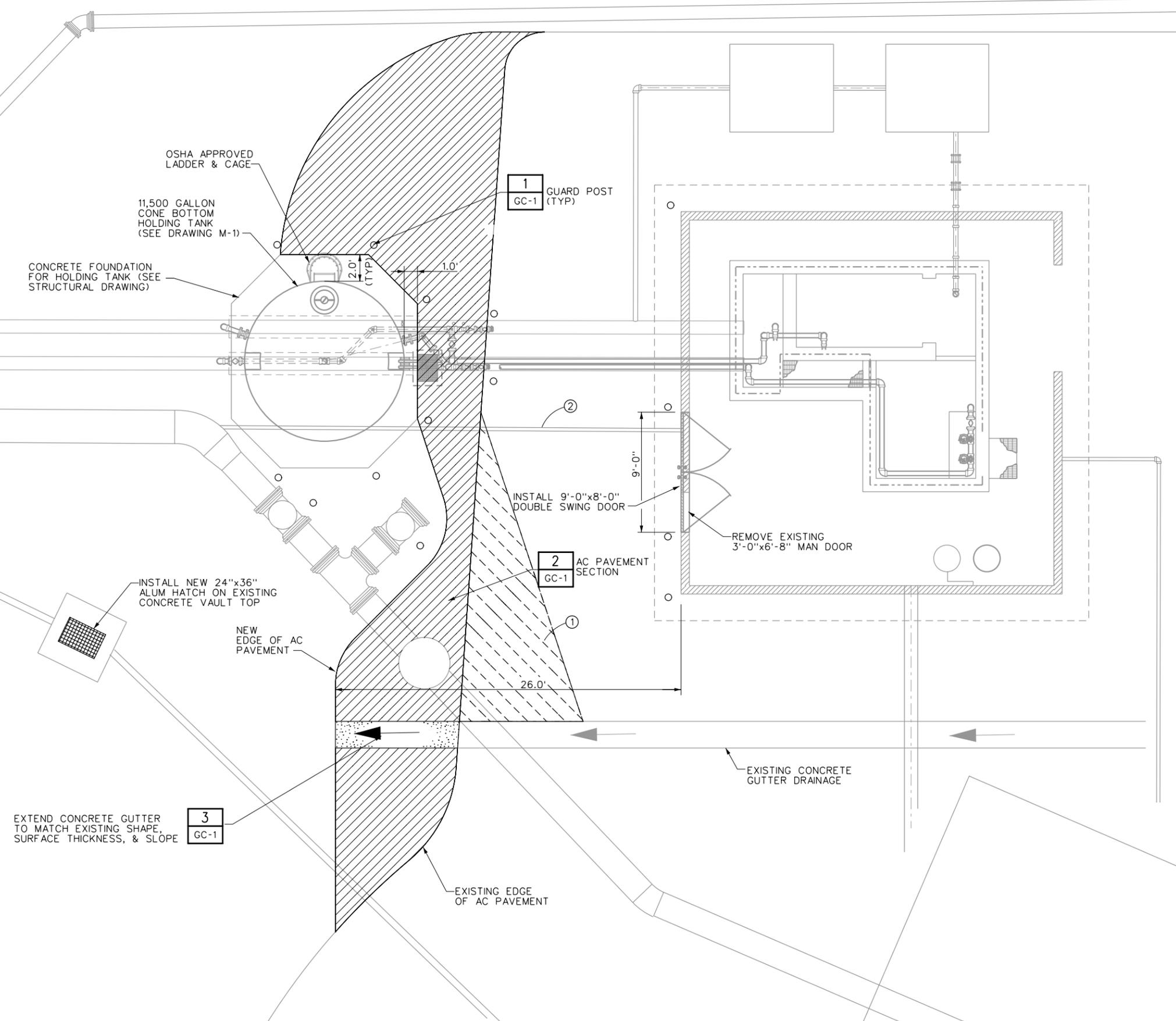
SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE



Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

CIVIL DETAILS

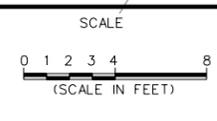
SHEET
GC-1



- NOTES:**
- ① CONTRACTOR SHALL ADD/REGRADE EXISTING ASPHALT TO PROVIDE A UNIFORM SLOPE DRAINING WEST.
 - ② PIPE SHOWN MAY RUN SOUTH-WEST, CONNECTING AFTER EXISTING MANHOLE. CONTRACTOR TO FIELD VERIFY.



REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED R. DIAZ
 DRAWN S. SOLLIE
 CHECKED N. ZAUGG

SUBMITTED BY
 (PROJECT MANAGER'S NAME) LICENSE NO. DATE
 (COMPANY OFFICER'S NAME) LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

CIVIL LAYOUT
 MICROSCREEN BUILDING AREA

SHEET
C-1

Plot Date: 7/8/2010 9:21:17 AM

User: Owner

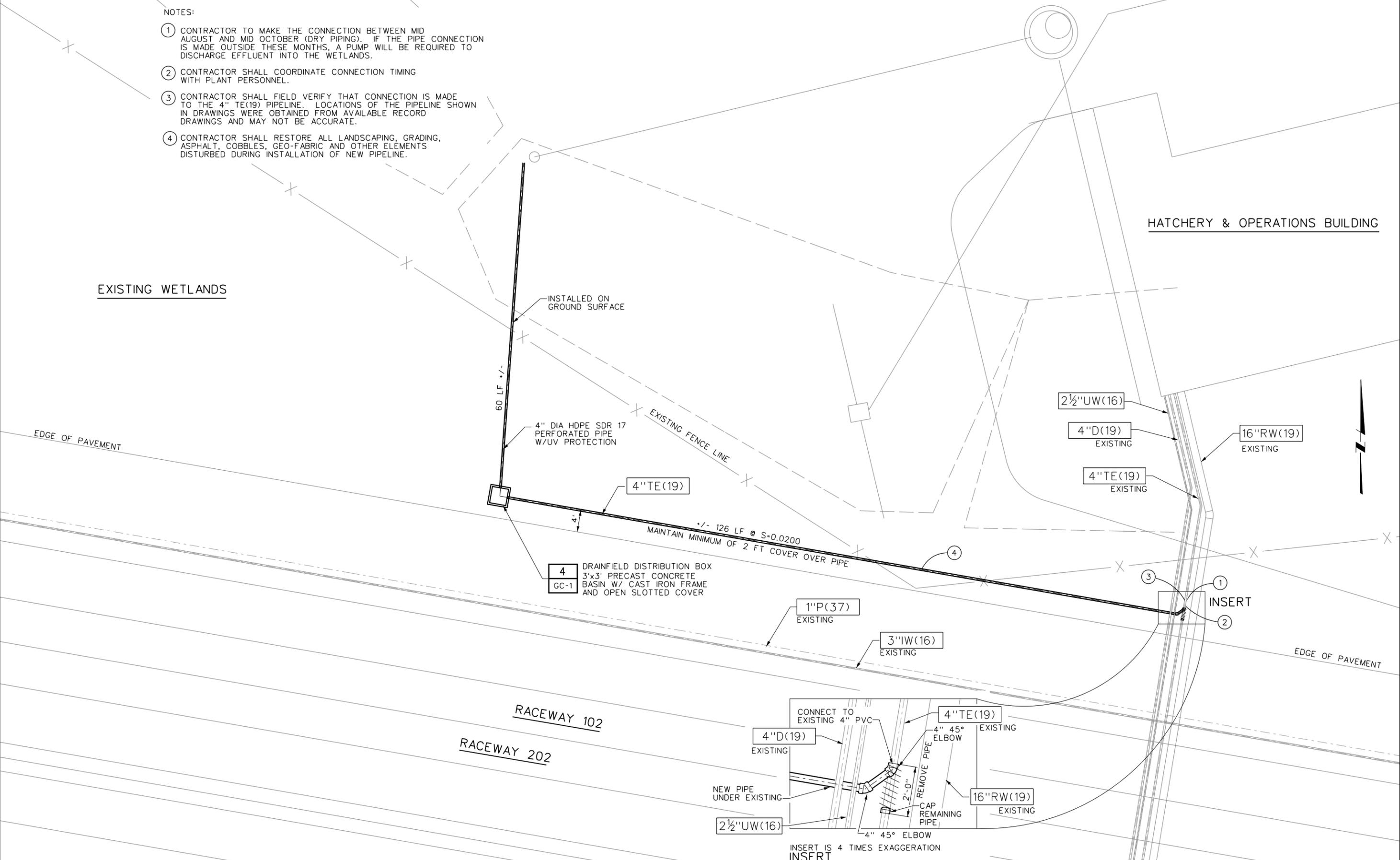
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NOTES:

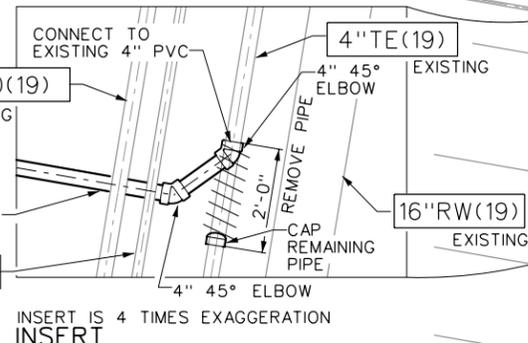
- ① CONTRACTOR TO MAKE THE CONNECTION BETWEEN MID AUGUST AND MID OCTOBER (DRY PIPING). IF THE PIPE CONNECTION IS MADE OUTSIDE THESE MONTHS, A PUMP WILL BE REQUIRED TO DISCHARGE EFFLUENT INTO THE WETLANDS.
- ② CONTRACTOR SHALL COORDINATE CONNECTION TIMING WITH PLANT PERSONNEL.
- ③ CONTRACTOR SHALL FIELD VERIFY THAT CONNECTION IS MADE TO THE 4" TE(19) PIPELINE. LOCATIONS OF THE PIPELINE SHOWN IN DRAWINGS WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND MAY NOT BE ACCURATE.
- ④ CONTRACTOR SHALL RESTORE ALL LANDSCAPING, GRADING, ASPHALT, COBBLES, GEO-FABRIC AND OTHER ELEMENTS DISTURBED DURING INSTALLATION OF NEW PIPELINE.

EXISTING WETLANDS

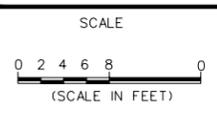
HATCHERY & OPERATIONS BUILDING



4 DRAINFIELD DISTRIBUTION BOX
 3'x3' PRECAST CONCRETE
 BASIN W/ CAST IRON FRAME
 AND OPEN SLOTTED COVER
 GC-1



REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED R. DIAZ
 DRAWN S. SOLLIE
 CHECKED N. ZAUGG

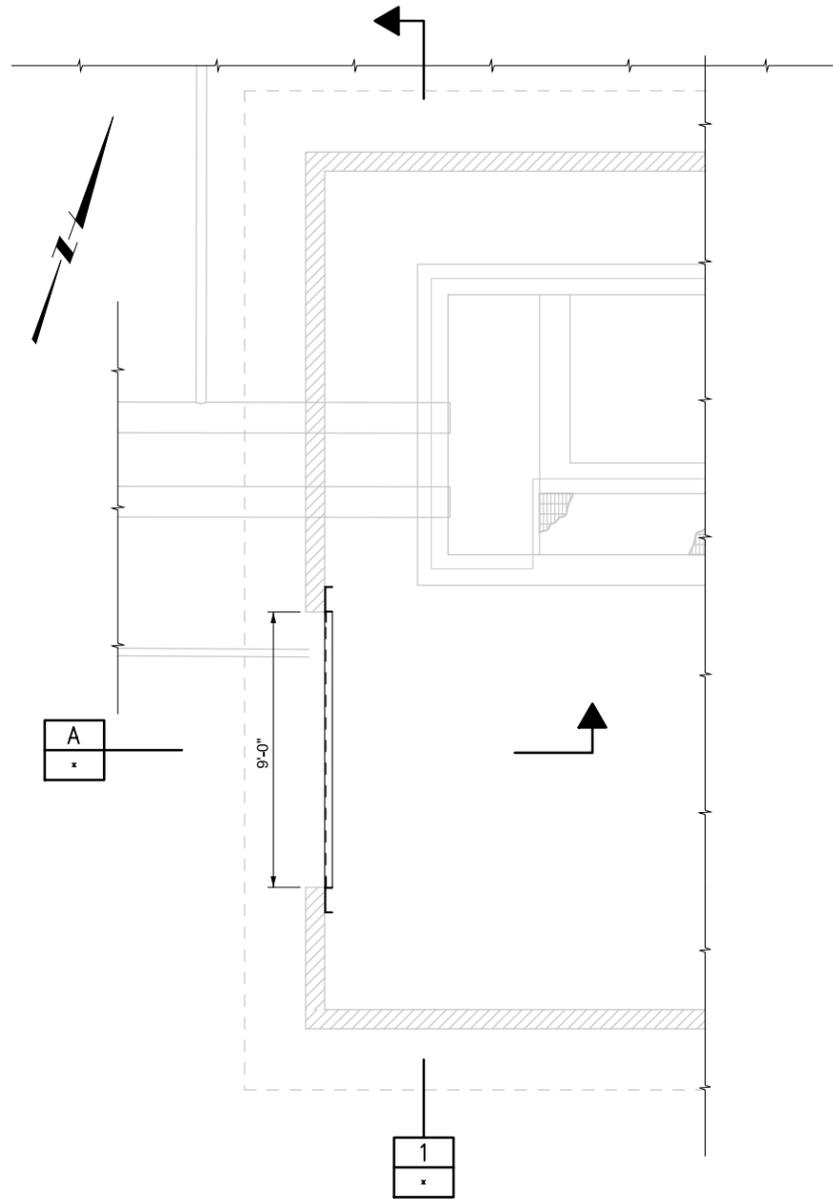
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 (PROJECT MANAGER'S NAME) LICENSE NO. DATE
 (COMPANY OFFICER'S NAME) LICENSE NO. DATE



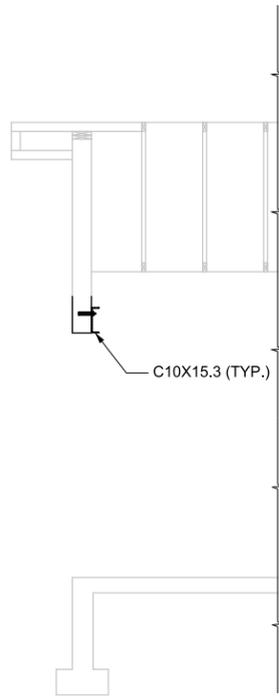
Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

WETLANDS FEED PIPE

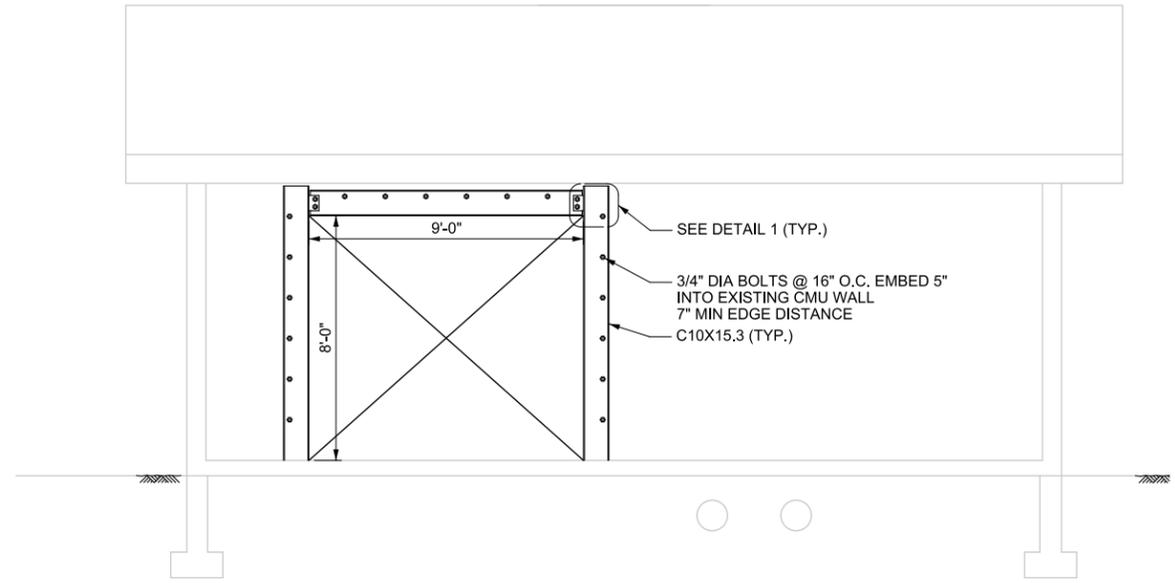
SHEET
 C-2



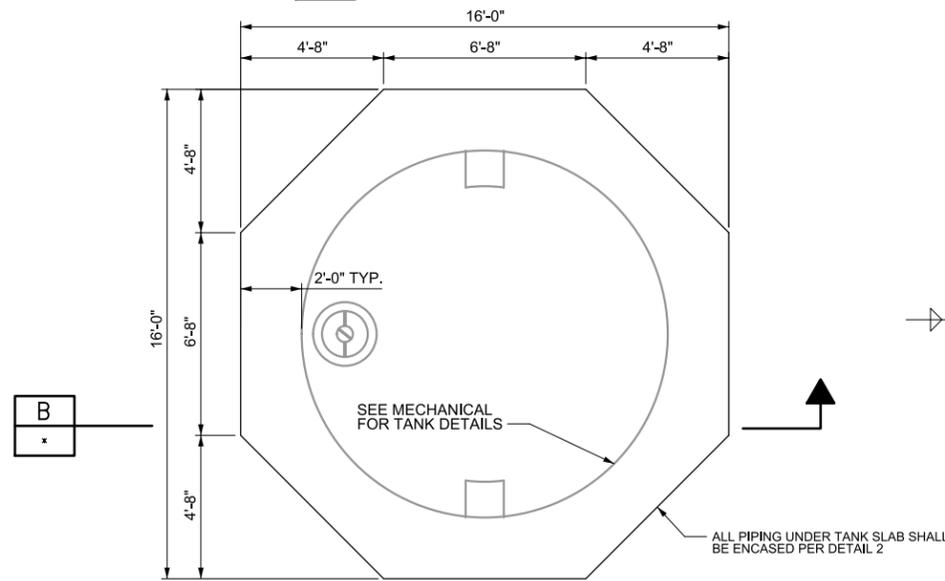
PLAN
SCALE: 3/8"=1'



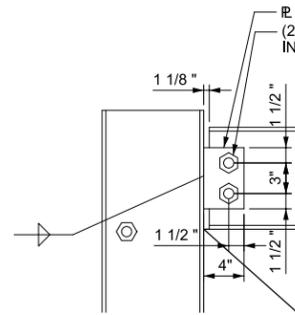
SECTION A
SCALE: 3/8"=1'



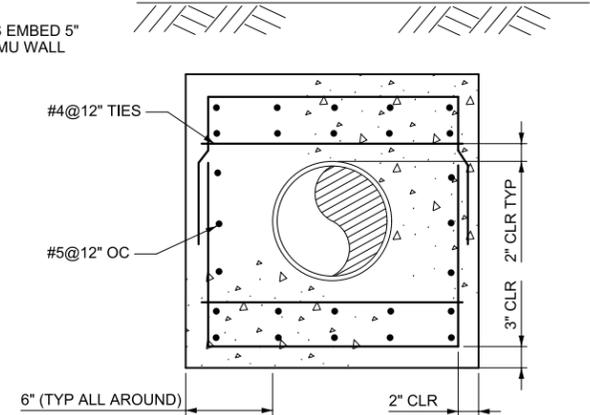
ELEVATION 1
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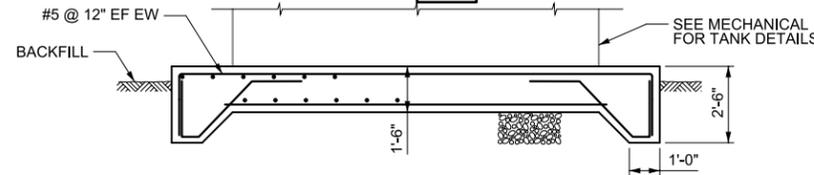
TANK PLAN
SCALE: 3/8"=1'



DETAIL 1
SCALE: 1 1/2"=1'



DETAIL 2
SCALE: NTS



SECTION B
SCALE: 3/8"=1'

REV	DATE	BY	DESCRIPTION
A	7-12-10	NZ	ISSUED FOR CONSTRUCTION

SCALE	DESIGNED	SUBMITTED BY
AS SHOWN	G. CLARK	
	DRAWN	(PROJECT MANAGER'S NAME) LICENSE NO. DATE
	M. PERKINS	
	CHECKED	(COMPANY OFFICER'S NAME) LICENSE NO. DATE
	MWH	

DESIGNED	SUBMITTED BY
G. CLARK	
DRAWN	(PROJECT MANAGER'S NAME) LICENSE NO. DATE
M. PERKINS	
CHECKED	(COMPANY OFFICER'S NAME) LICENSE NO. DATE
MWH	



Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

STRUCTURAL
HOLDING TANK FOUNDATION
PLANS, SECTIONS AND DETAILS

SHEET
S-001

PIPING MATERIAL SCHEDULE (SEE NOTE 4 AND GENERAL NOTE)		
GROUP NO	PIPE (SEE NOTE 3)	FITTINGS
2	STEEL, ASTM A53, SCH 40, GALVANIZED STEEL WELDED,	2 1/2" AND SMALLER, MALLEABLE IRON, ASME B16.3, THREADED, BANDED, GALVANIZED 150 PSI. 3" AND LARGER, CAST IRON, ASME B16.1, 125 PSI FLANGED OR MECHANICAL COUPLING.
16	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT. ASTM D1785.	POLYVINYL CHLORIDE, SCH 80, NORMAL IMPACT, SOCKET SOLVENT WELD JOINTS, ASTM D2467. SOLVENT SHALL BE COMPATIBLE WITH FLUID SERVICE
19	POLYVINYL CHLORIDE PRESSURE PIPE AWWA C900 (4"-12") OR AWWA C905 (14"-48") WITH BELL AND SPIGOT JOINTS.	DUCTILE IRON FITTINGS, 150 PSI, FOR POLYVINYL CHLORIDE PIPE, AWWA C110 CEMENT MORTAR LINED, AWWA C104.

(* SEE NOTE 5)

GENERAL NOTE

ALTHOUGH SEVERAL PIPE MATERIAL GROUPS MAY BE LISTED ON THIS SHEET FOR A GIVEN FLUID SERVICE, CONTRACTOR SHALL PROVIDE ONLY THE PIPE MATERIAL GROUP SHOWN ON THE DRAWINGS AND SPECIFIED FOR THAT FLUID SERVICE.

NOTE 3

FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.

NOTE 4

NO SUBSTITUTIONS UNLESS ACCEPTED BY THE ENGINEER PER THE SPECIFICATIONS.

NOTE 5

PIPING GROUP NO SHOWN THUS * SHALL BE HEAT TRACED AND INSULATED. SEE PIPING SECTION OF SPECIFICATIONS FOR INSULATING MATERIALS.

PUMP SCHEDULE					
EQUIPMENT NO	LOCATION	SERVICE	TYPE	FLOW @ TDH	Hp
P-SB-101	SOLIDS BUILDING	TANK TRANSFER	SUBMERSIBLE	190 gpm @ 30ft	2
P-SB-101	SOLIDS BUILDING	TANK TRANSFER	SUBMERSIBLE	190 gpm @ 30ft	2

MISCELLANEOUS EQUIPMENT SCHEDULE					
EQUIPMENT NO	LOCATION	SERVICE	TYPE	CAPACITY	Hp
T-SB-101	WEST OF SOLIDS BUILDING	DECANTATION TANK	CONE BOTTOM POLYETHYLENE TANK	11,500 gal	N/A
ME-SB-101	SOLIDS BUILDING	DIATOMACEOUS EARTH CONVEYANCE	FLEXIBLE SCREW CONVEYOR	375 lb/hr	
ME-SB-102	SOLIDS BUILDING	SLUDGE THICKENING	PRECOAT VACUUM FILTER		

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID

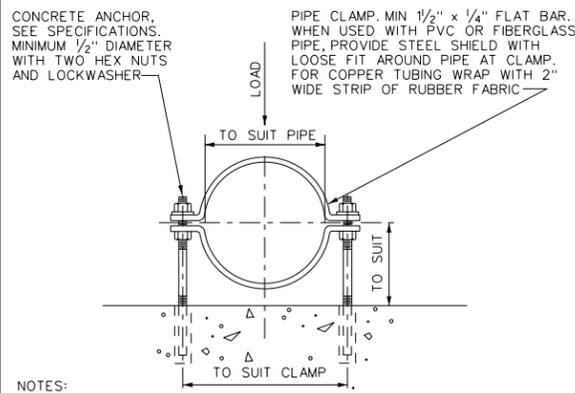
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NONE	DRAWN <u>S. SOLLIE</u>
	CHECKED <u>N. ZAUGG</u>

SUBMITTED BY	(PROJECT MANAGER'S NAME) _____ LICENSE NO. _____ DATE _____
	(COMPANY OFFICER'S NAME) _____ LICENSE NO. _____ DATE _____



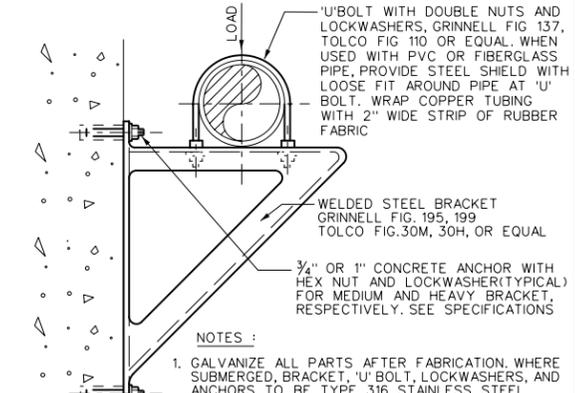
Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

MECHANICAL SCHEDULES



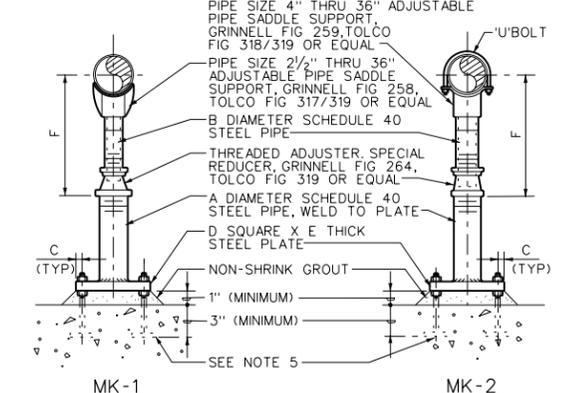
- NOTES:
1. GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED, PIPE CLAMP, NUTS, LOCKWASHERS, ANCHORS AND SHIELDS TO BE TYPE 316 STAINLESS STEEL
 2. THIS PIPE CLAMP IS LIMITED TO PIPES UP TO 4" DIAMETER INCLUSIVE
 3. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATIONS SECTION 'PIPE SUPPORTS'

PIPE CLAMP
(FOR PIPE 4" DIAMETER AND SMALLER)
REV 042202 M-101



- NOTES:
1. GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED, BRACKET, 'U' BOLT, LOCKWASHERS, AND ANCHORS TO BE TYPE 316 STAINLESS STEEL
 2. THIS PIPE BRACKET IS LIMITED TO PIPES UP TO 24" DIAMETER, INCLUSIVE
 3. THIS PIPE BRACKET SHALL ONLY BE USED ON CONIC WALLS WITH A MIN THICKNESS OF 12 INCHES.
 4. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.

PIPE BRACKET
(FOR PIPE 24" DIAMETER AND SMALLER)
REV 072501 M-104



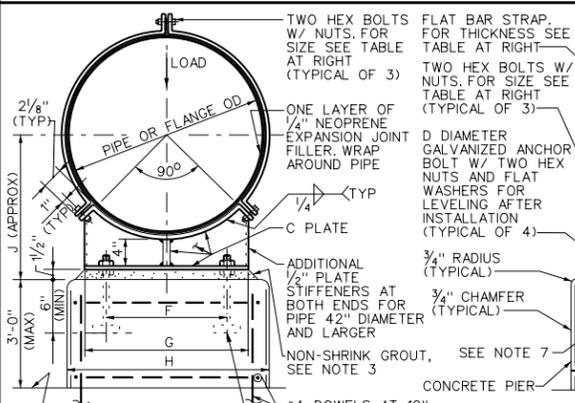
- NOTES:
1. FOR ADDITIONAL REQUIREMENTS SEE SPEC SECTION 'PIPE SUPPORTS'.
 2. GALVANIZE ALL PARTS AFTER FABRICATION.
 3. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
 4. THIS PIPE SUPPORT IS LIMITED TO PIPE FROM 2 1/2" DIAMETER TO 36" DIAMETER INCLUSIVE.
 5. GALVANIZED ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER, PROVIDE BAR 4 X 1/2 X 4" WELDED TO BOLT. (TYP OF 4) SEE SPECIFICATIONS.

ADJUSTABLE PIPE SUPPORT WITH OR WITHOUT 'U' BOLT
(FOR PIPE 36" DIAMETER AND SMALLER)
REV 011402 M-108

DIMENSIONS IN INCHES

NOMINAL PIPE SIZE	A	B	C	D	E	F (APPROX)	
						(MINIMUM)	(MAXIMUM)
2 1/2	2	1 1/2	1	6	3/8	7	11 1/2
3	2	1 1/2	1	6	3/8	7 5/16	11 3/16
3 1/2	2	1 1/2	1	6	3/8	7 9/16	12 1/16
4	3	2 1/2	1 1/8	7 1/2	1/2	10 1/4	14 3/4
6	3	2 1/2	1 1/8	7 1/2	1/2	11 9/16	16 1/16
8	3	2 1/2	1 1/8	7 1/2	1/2	13 9/16	18 1/16
10	3	2 1/2	1 1/8	7 1/2	1/2	14 3/8	19 1/8
12	3	2 1/2	1 1/8	7 1/2	1/2	15 3/8	20 1/8
14	4	3	1 1/4	9	5/8	18 3/8	23 3/8
16	4	3	1 1/4	9	5/8	19 3/8	24 3/8
18	6	4	1 1/2	11	3/4	22 1/4	26 3/4
20	6	4	1 1/2	11	3/4	23 1/4	27 3/4
24	6	4	1 1/2	11	3/4	26 1/2	31
30	6	4	1 1/2	11	3/4	29 3/8	34 1/8
32	6	4	1 1/2	11	3/4	30 3/8	35 1/8
36	6	4	1 1/2	11	3/4	32 3/8	37 1/8

SEE MANUFACTURER

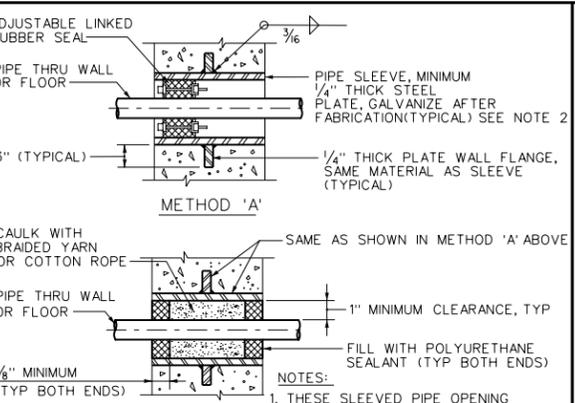


- NOTES:
1. WHEN SUPPORTING PIPE AND FLANGE ALTERNATELY ON THE SAME LINE, CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION 'H' FOR FLANGE SUPPORT
 2. PIPE SUPPORTS SHALL BE LOCATED IN PLAN AT POINTS MARKED THUS: (X)
 3. WHERE DIFFERENTIAL SETTLEMENT IS LIKELY TO OCCUR, OMIT GROUT AS DIRECTED BY THE ENGINEER
 4. GALVANIZE ALL PARTS AFTER FABRICATION
 5. WHERE DIRECTED BY THE STRUCTURAL ENGINEER, BOTTOM OF PIERS SHALL EXTEND BELOW BOTTOM OF SLAB
 6. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS
 7. GALVANIZED ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER, PROVIDE BAR 4 X 1/2 X 4" WELDED TO BOLT. (TYP OF 4) SEE SPECIFICATIONS

PIPE SUPPORT WITH STRAP
(FOR PIPE 72" DIAMETER AND SMALLER)
REV 011402 M-110

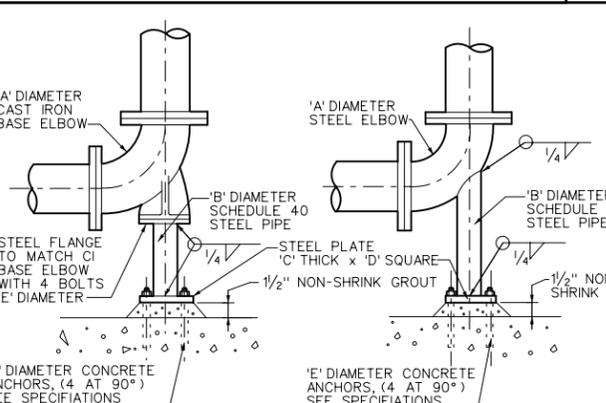
DIMENSIONS IN INCHES

NOMINAL PIPE SIZE	STRAP					SUPPORTING PIPE					FLANGE				
	A	B	C	D	E	F	G	H	J	J	F	G	H	J	
6	4	12	3/8	5/8	6	1/2	1/4	4 1/2	8	14	10	6 1/2	11	16	13
8	4	12	3/8	5/8	6	1/2	1/4	5	9 1/2	14	11	7 1/2	13	18	14
10	4	12	3/8	5/8	6	1/2	1/4	6	11	16	12	9	15	20	15
12	4	12	3/8	5/8	6	1/2	1/4	7	13	18	13	10	17	22	16
14	4	12	3/8	5/8	6	1/2	1/4	8	13	18	14	11	18	23	17
16	4	12	3/8	5/8	6	1/2	1/4	9	15	21	15	12	20	26	18
18	4	12	3/8	5/8	6	1/2	1/4	10	16	22	16	13	21	26	19
20	5	12	3/8	5/8	6	3/8	3/8	10	18	24	17	15	23	28	21
22	5	12	3/8	5/8	6	3/8	3/8	12	19	24	18	16	25	30	22
24	5	12	3/8	5/8	6	3/8	3/8	13	21	26	19	16	26	32	23
26	5	12	3/8	5/8	6	3/8	3/8	14	22	28	20	18	28	34	24
30	5	12	3/8	5/8	6	3/8	3/8	16	25	30	22	20	31	36	26
34	5	15	3/8	5/8	6	3/8	3/8	18	28	33	24	22	35	41	29
36	6	15	3/8	5/8	6	3/8	3/8	19	29	34	25	24	36	42	30
42	6	18	1/2	1	8	3/4	3/8	21	33	39	28	27	41	47	33
48	6	18	1/2	1	8	3/4	3/8	24	38	44	31	30	46	52	37
54	6	18	1/2	1	8	3/4	3/8	28	42	48	34	34	50	56	40
60	6	18	1/2	1	8	3/4	3/8	32	46	52	37	36	56	62	44
66	6	18	1/2	1	8	3/4	3/8	33	51	58	40	40	61	68	47
72	6	18	1/2	1	8	3/4	3/8	36	55	62	43	44	65	72	50



- NOTES:
1. THESE SLEEVED PIPE OPENING DETAILS ARE TO BE USED IN DRY WALLS ONLY AND SHALL NOT BE USED FOR WALLS WITH WATER ON ONE OR BOTH SIDES.
 2. SLEEVES ARE NOT REQUIRED IN CORE DRILLED WALLS, PENETRATIONS THROUGH EXISTING WALLS, OR FLOORS

SLEEVED PIPE OPENING
REV 011402 M-111

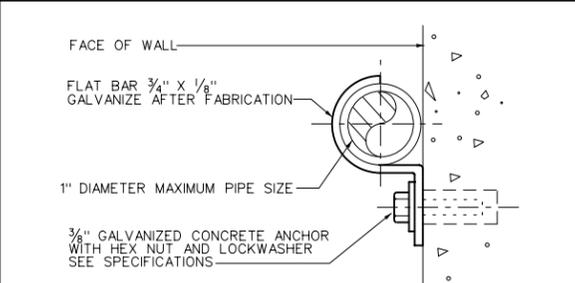


- NOTE:
- FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.

ELBOW SUPPORT
(FOR PIPE 48" DIAMETER AND SMALLER)
REV 062702 M-140

DIMENSIONS IN INCHES

ELBOW 'A' DIAMETER	'B' DIAMETER	'C' THICK	'D' SQUARE	'E' DIAMETER
4	2	3/8	6	5/8
6	2 1/2	3/8	7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8



- NOTES:
1. WHERE SUBMERGED, FLAT BAR, BOLT, WASHER, SHIELD AND CONCRETE ANCHOR TO BE TYPE 316 STAINLESS STEEL
 2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD WITH LOOSE FIT AROUND PIPE AT CLAMP. WRAP COPPER TUBING WITH 2" WIDE STRIP OF RUBBER FABRIC AT CLAMP.
 3. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'

PIPE CLAMP FOR INDIVIDUAL PIPES
(FOR PIPE 1" DIAMETER AND SMALLER)
REV 072501 M-142

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID

SCALE	DESIGNED MWH STANDARD	SUBMITTED BY
NONE	DRAWN MWH STANDARD	(PROJECT MANAGER'S NAME) LICENSE NO. DATE
	CHECKED N. ZAUGG	(COMPANY OFFICER'S NAME) LICENSE NO. DATE

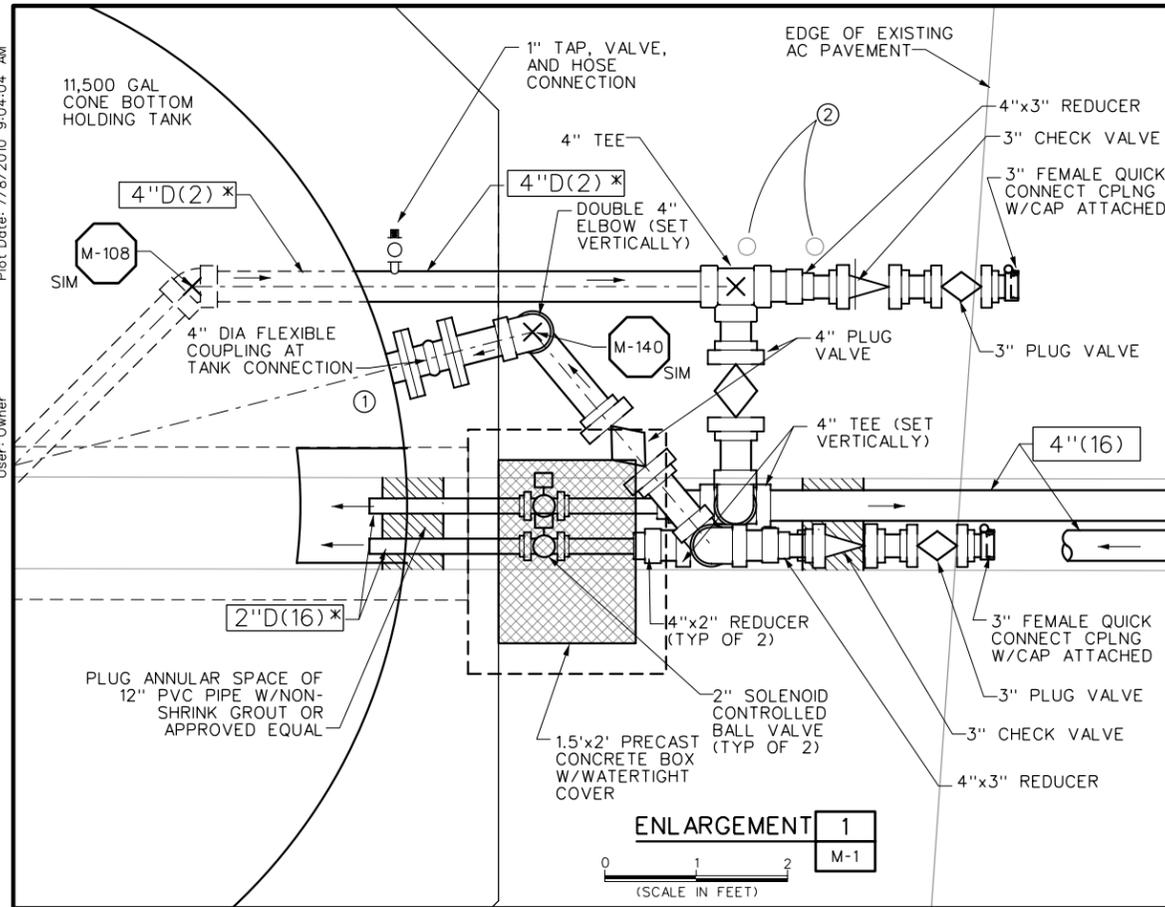


Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

MECHANICAL
STANDARD DETAILS
SHEET
GM-2

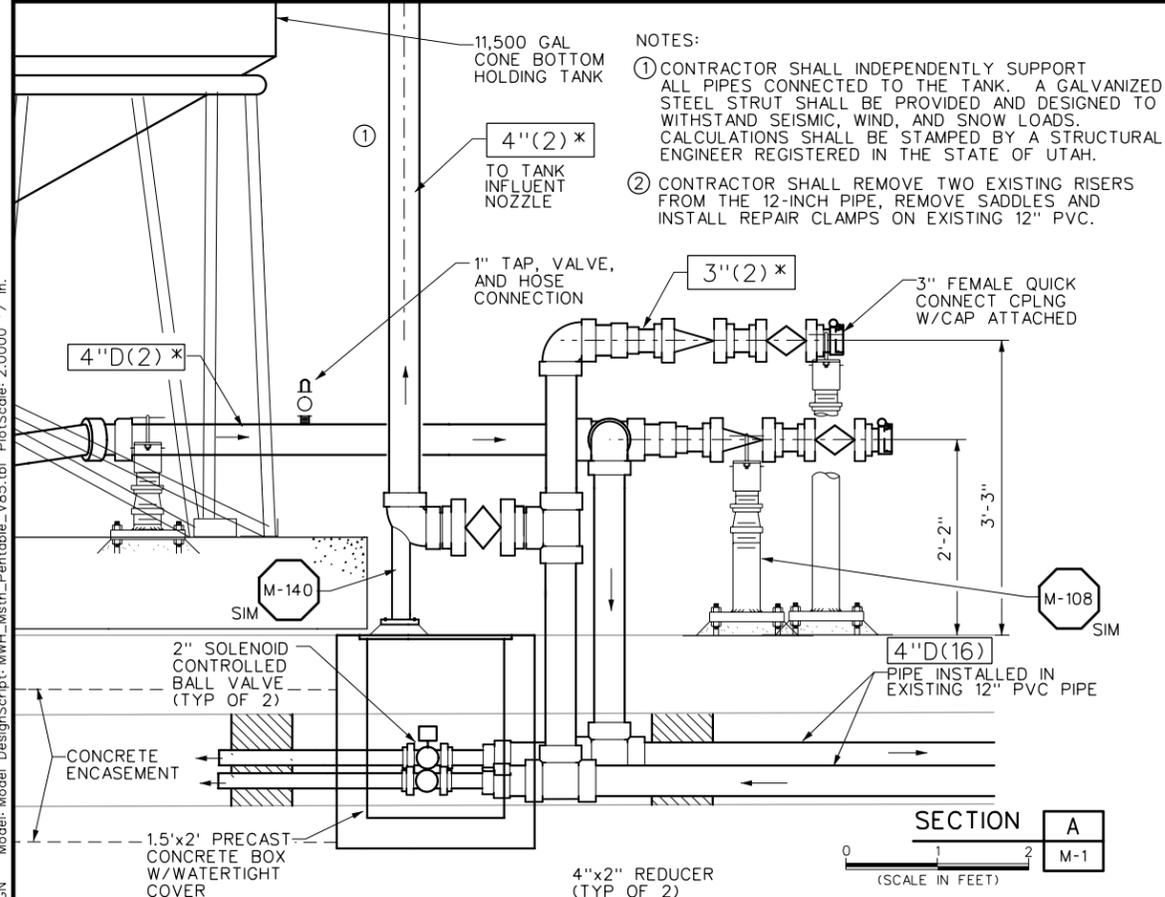
Plot Date: 7/8/2010 9:04:04 AM

User: Owner



ENLARGEMENT 1
M-1
0 1 2
(SCALE IN FEET)

NOTES:
 ① CONTRACTOR SHALL INDEPENDENTLY SUPPORT ALL PIPES CONNECTED TO THE TANK. A GALVANIZED STEEL STRUT SHALL BE PROVIDED AND DESIGNED TO WITHSTAND SEISMIC, WIND, AND SNOW LOADS. CALCULATIONS SHALL BE STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF UTAH.
 ② CONTRACTOR SHALL REMOVE TWO EXISTING RISERS FROM THE 12-INCH PIPE, REMOVE SADDLES AND INSTALL REPAIR CLAMPS ON EXISTING 12\"/>



SECTION A
M-1
0 1 2
(SCALE IN FEET)

File: K-GMD3.DGN Model: Model DesignScript: MWH_Mstrn_Pentable_V85.tbl PlotScale: 2.0000 1/ in.

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID

SCALE	DESIGNED	SUBMITTED BY
AS SHOWN	R. DIAZ	(PROJECT MANAGER'S NAME)
	S. SOLLIE	LICENSE NO. DATE
	N. ZAUGG	(COMPANY OFFICER'S NAME) LICENSE NO. DATE

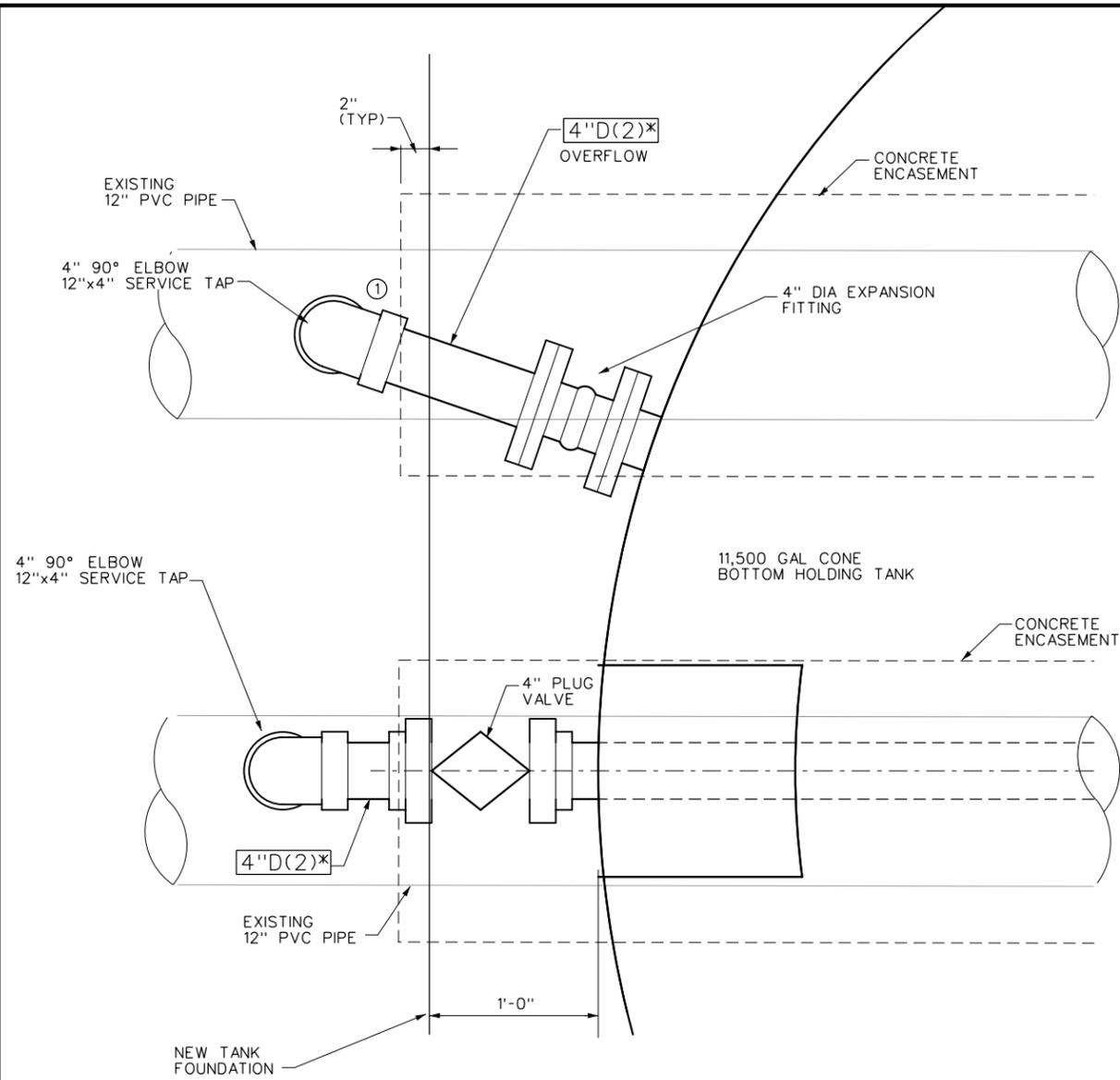
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AS SHOWN	R. DIAZ	(PROJECT MANAGER'S NAME)
	S. SOLLIE	LICENSE NO. DATE
	N. ZAUGG	(COMPANY OFFICER'S NAME) LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

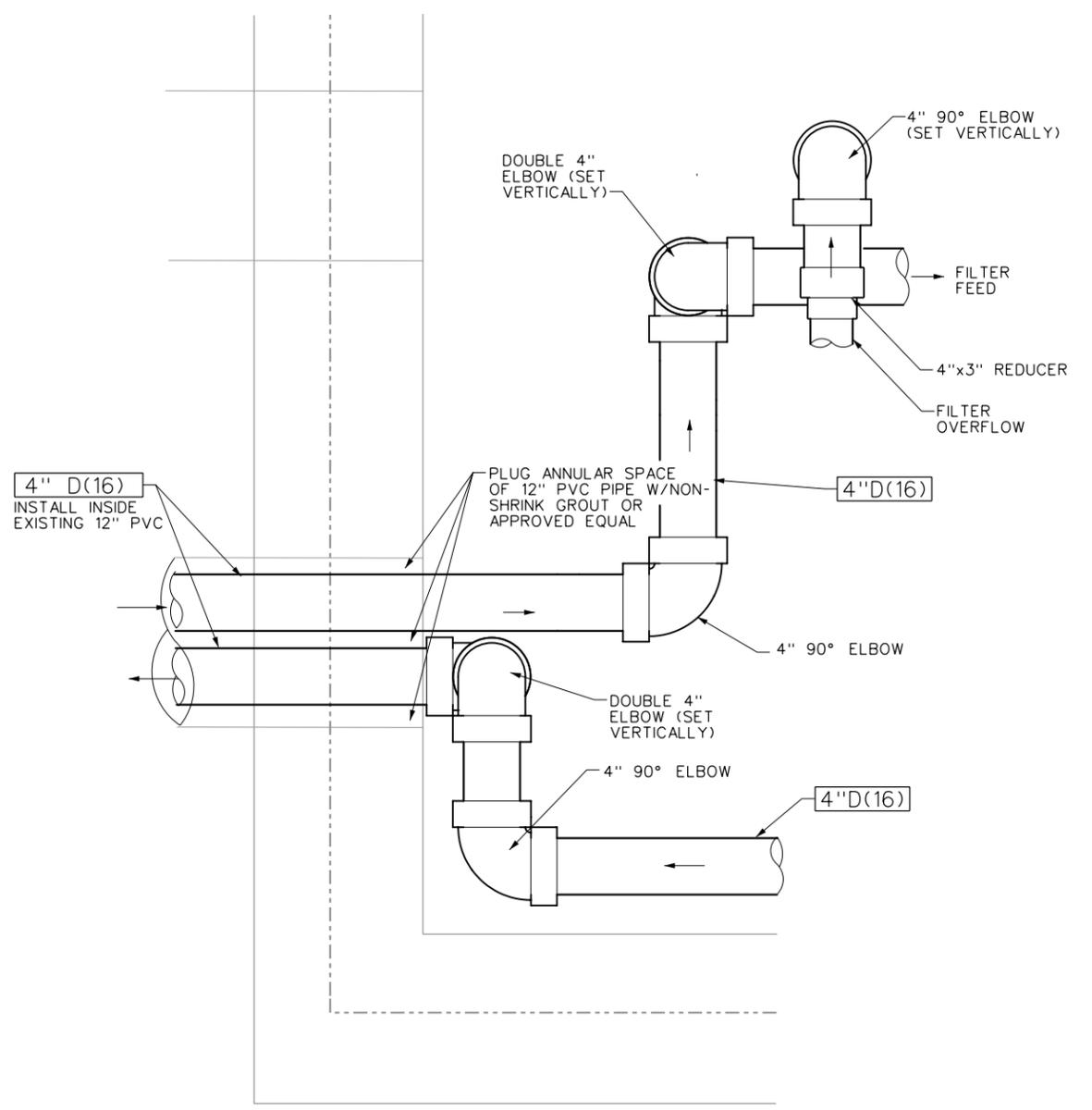
MECHANICAL DETAILS
 GM-3

SHEET
 GM-3



ENLARGEMENT 2
M-1

NOTES:
 ① CONTRACTOR SHALL INDEPENDENTLY SUPPORT ALL PIPES CONNECTED TO THE TANK. A GALVANIZED STEEL STRUT SHALL BE PROVIDED AND DESIGNED TO WITHSTAND SEISMIC, WIND, AND SNOW LOADS. CALCULATIONS SHALL BE STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF UTAH.



ENLARGEMENT 3
M-1

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID

SCALE	AS SHOWN
-------	----------

DESIGNED	R. DIAZ
DRAWN	S. SOLLIE
CHECKED	N. ZAUGG

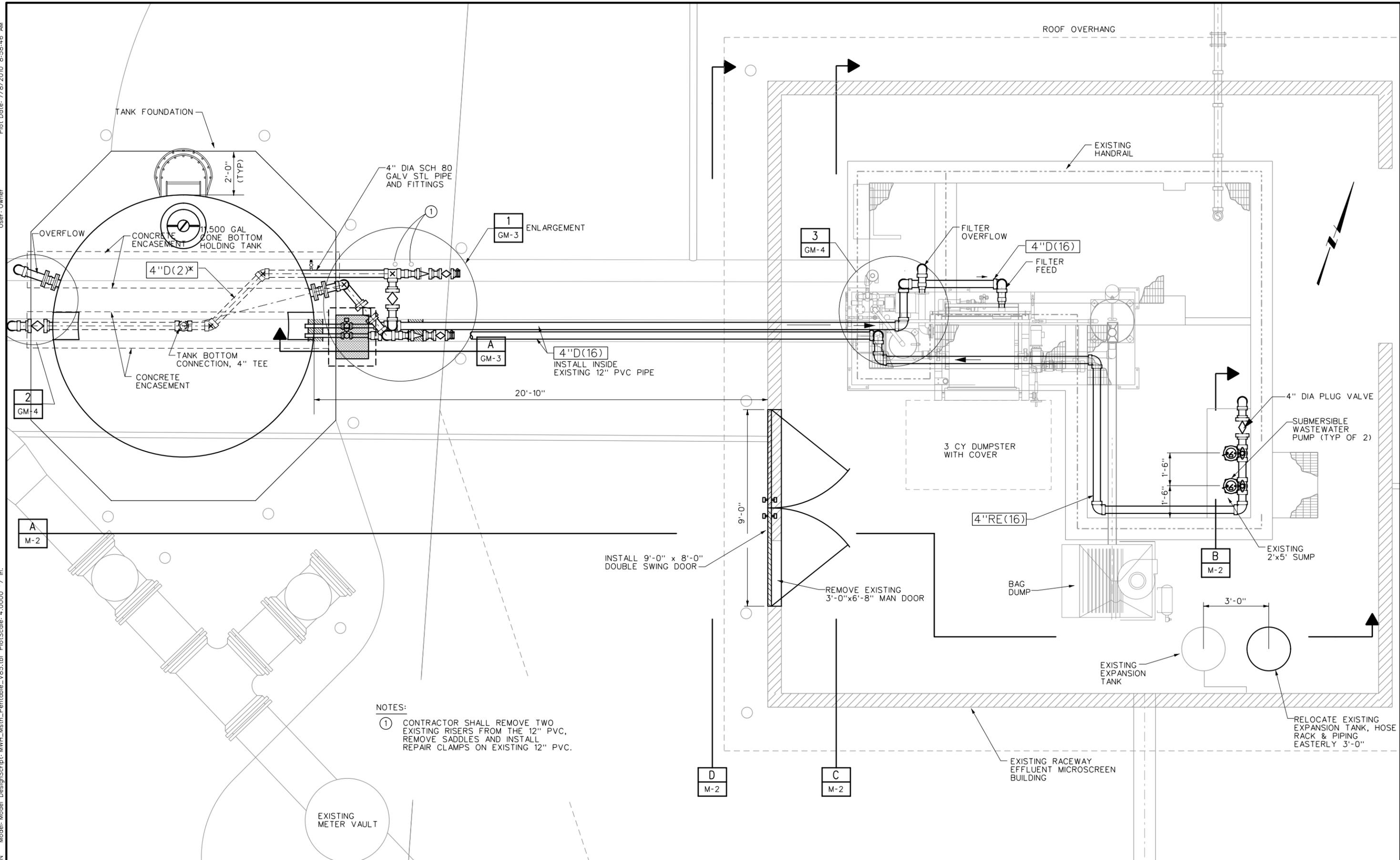
SUBMITTED BY	
(PROJECT MANAGER'S NAME)	LICENSE NO. DATE
(COMPANY OFFICER'S NAME)	LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

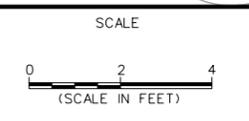
MECHANICAL DETAILS

SHEET
 GM-4



NOTES:
 ① CONTRACTOR SHALL REMOVE TWO EXISTING RISERS FROM THE 12" PVC, REMOVE SADDLES AND INSTALL REPAIR CLAMPS ON EXISTING 12" PVC.

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED R. DIAZ	SUBMITTED BY	
DRAWN S. SOLLIE	(PROJECT MANAGER'S NAME)	LICENSE NO. DATE
CHECKED N. ZAUGG	(COMPANY OFFICER'S NAME)	LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

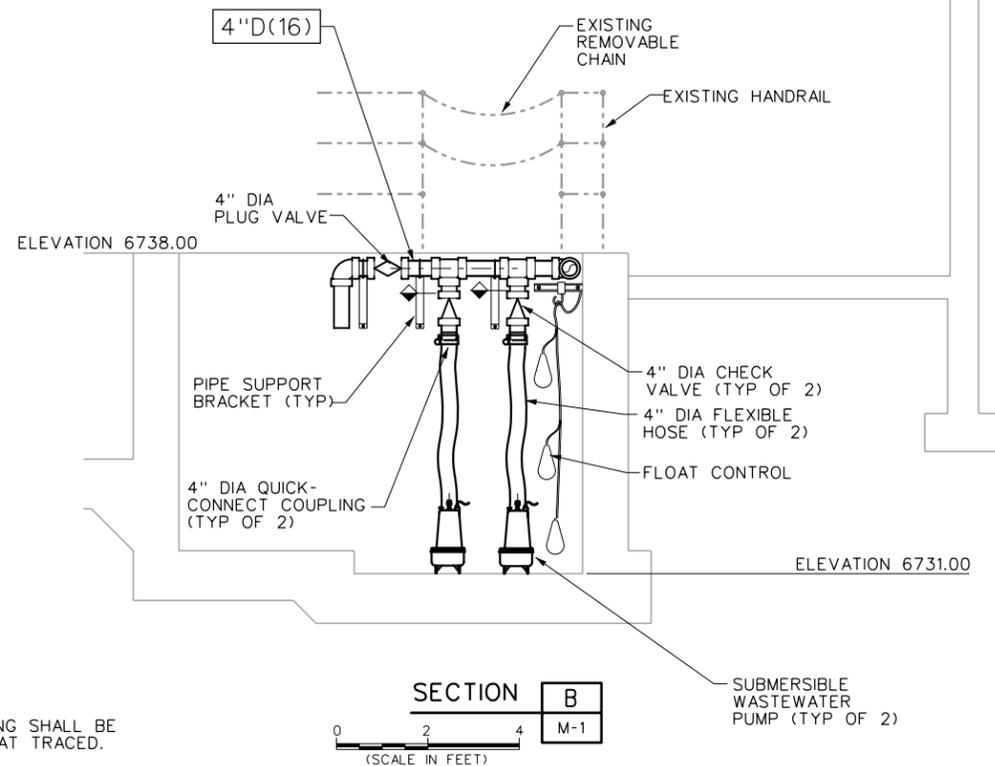
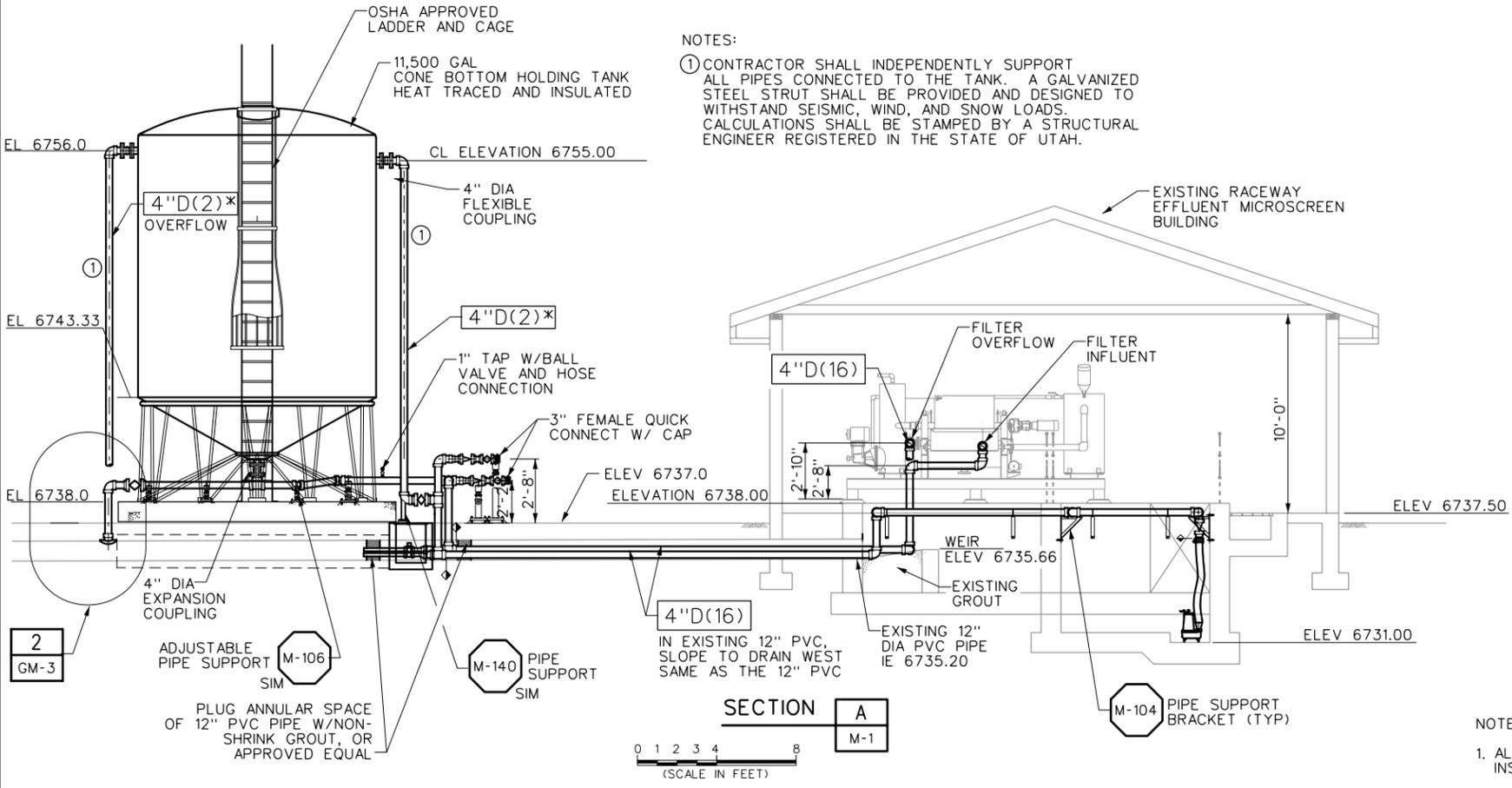
MECHANICAL LAYOUT

SHEET
 M-1

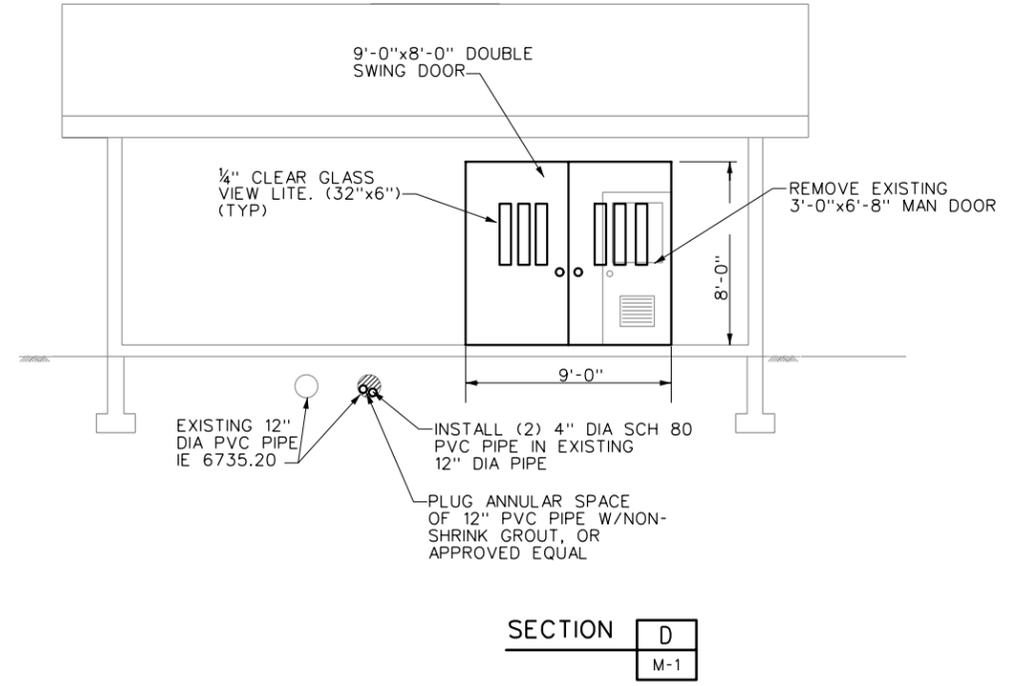
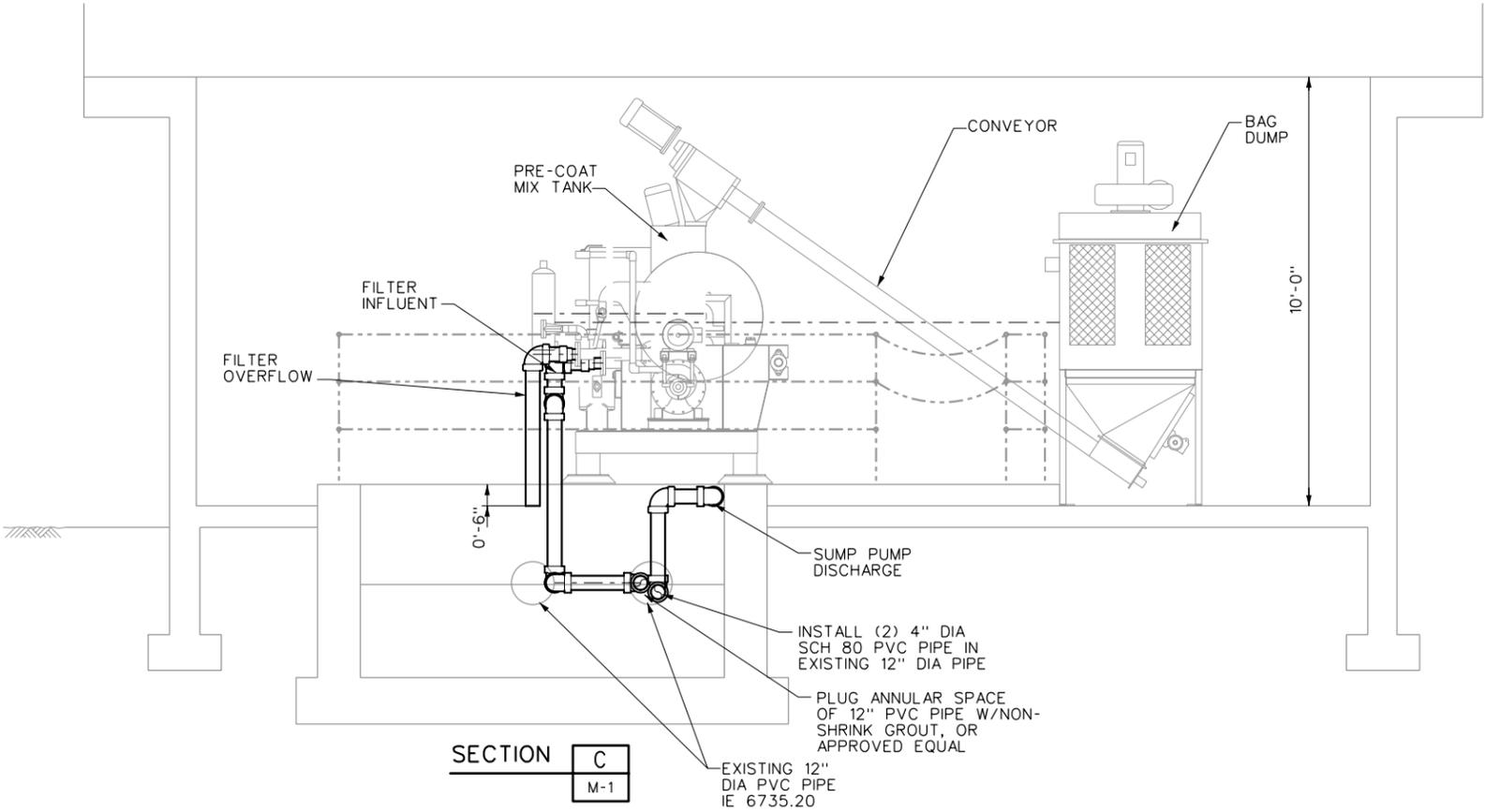
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User: Owner

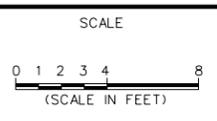
File: k-M002.DGN Model: Model DesignScript: MWH_Mstr_Pentable_V85.tbl PlotScale: 8.0000 1/4" = 1'-0"



NOTES:
 1. ALL EXTERIOR PIPING SHALL BE INSULATED AND HEAT TRACED.



REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED	R. DIAZ	SUBMITTED BY	
DRAWN	S. SOLLIE	(PROJECT MANAGER'S NAME)	LICENSE NO. DATE
CHECKED		(COMPANY OFFICER'S NAME)	LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

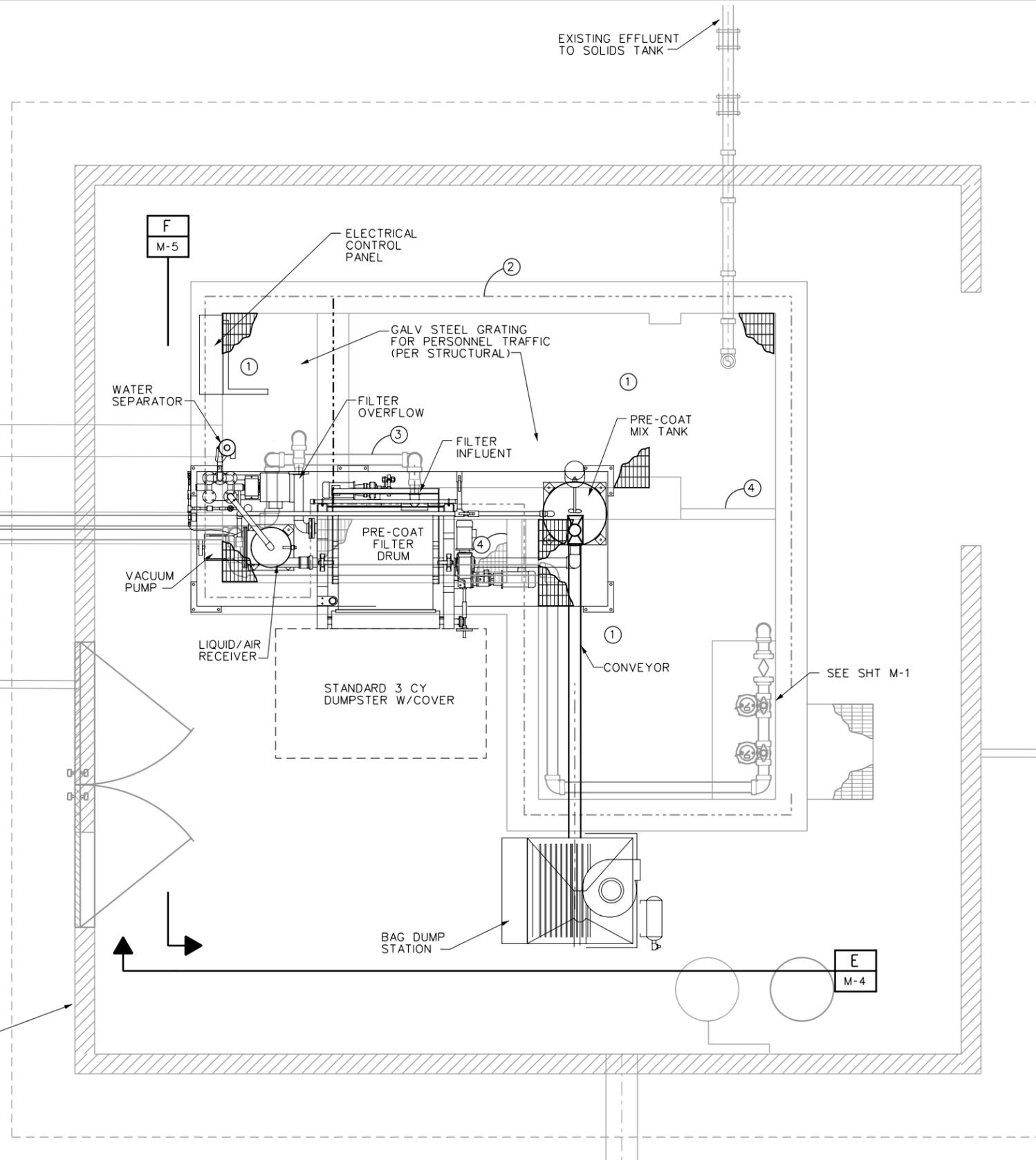
MECHANICAL SECTIONS

SHEET
M-2



EXISTING RACEWAY
EFFLUENT MICROFILTER
BUILDING

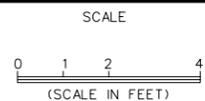
SEE SHT M-1



NOTES:

- ① EQUIPMENT SHALL BE PLACED ON INDEPENDANT STRUCTURES DESIGNED BY A STRUCTURAL ENGINEER FOR THE LOADS ANTICIPATED AND SHALL NOT BE PLACED ON THE NEW GRATING.
- ② CONTRACTOR SHALL REMOVE, RELOCATE AND OR INSTALL HANDRAILING WHERE NEEDED, AFTER INSTALLATION OF VACUUM FILTER AND FLEXIBLE SCREEN CONVEYOR. HANDRAIL AND APPURTENANCES SHALL MATCH STYLE, MATERIAL AND FINISH OF EXISTING HANDRAIL.
- ③ CONTRACTOR SHALL COORDINATE WITH EQUIPMENT MANUFACTURER AND INSTALL ALL PIPING REQUIRED FOR THE OPERATION OF THE VACUUM FILTER. PIPE MATERIAL TO BE GROUP 16.
- ④ CONTRACTOR SHALL REMOVE EXISTING GATES.

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE

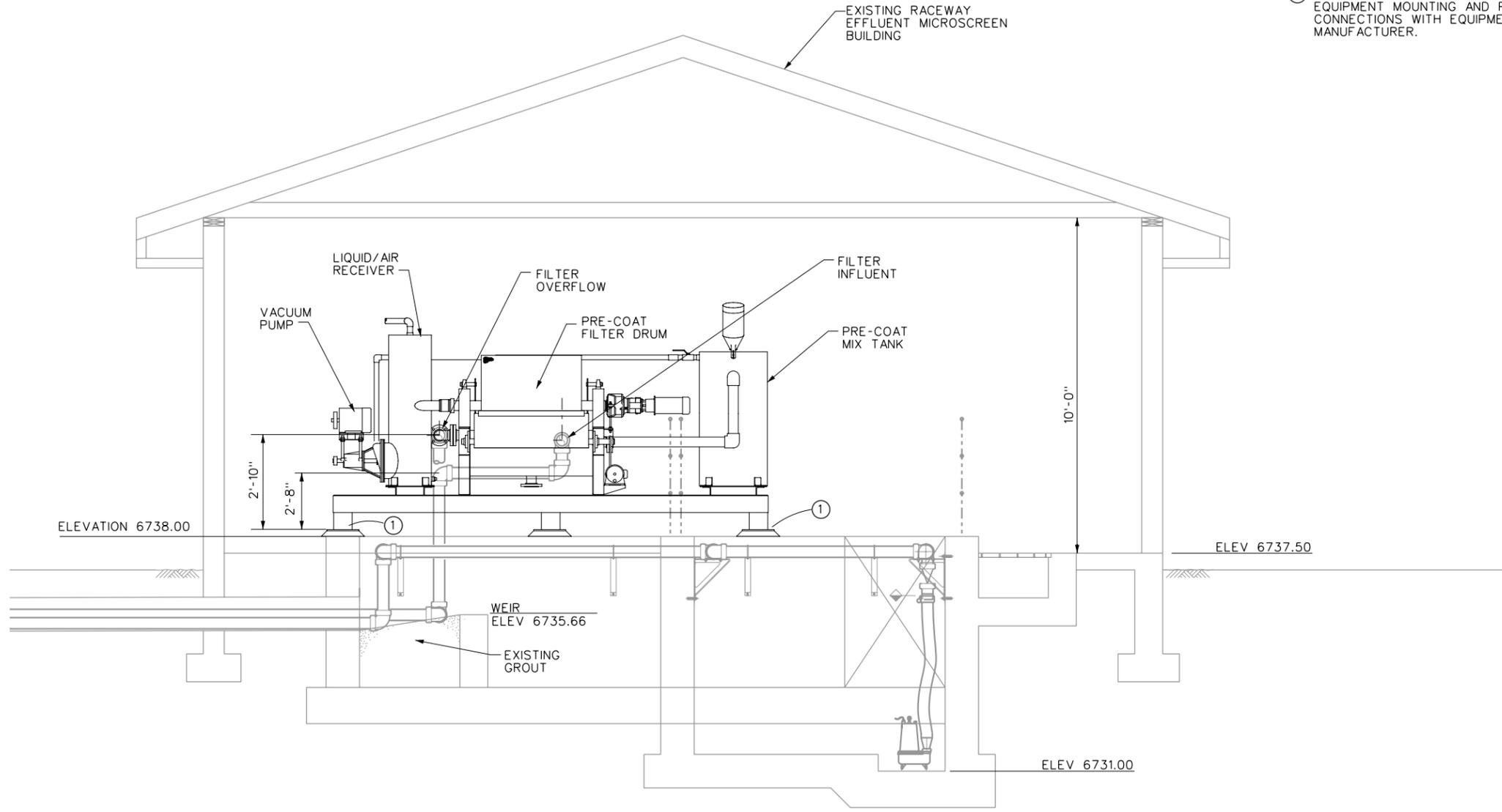


Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

PRECOAT VACUUM FILTER LAYOUT

SHEET
M-3

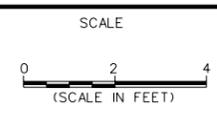
- NOTES:
- ① EQUIPMENT SHALL BE PLACED ON INDEPENDANT STRUCTURES DESIGNED BY A STRUCTURAL ENGINEER FOR THE LOADS ANTICIPATED AND SHALL NOT BE PLACED ON THE NEW GRATING.
 - ② CONTRACTOR SHALL COORDINATE EQUIPMENT MOUNTING AND PIPELINE CONNECTIONS WITH EQUIPMENT MANUFACTURER.



SECTION

E
M-3

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED R. DIAZ
 DRAWN S. SOLLIE
 CHECKED N. ZAUGG

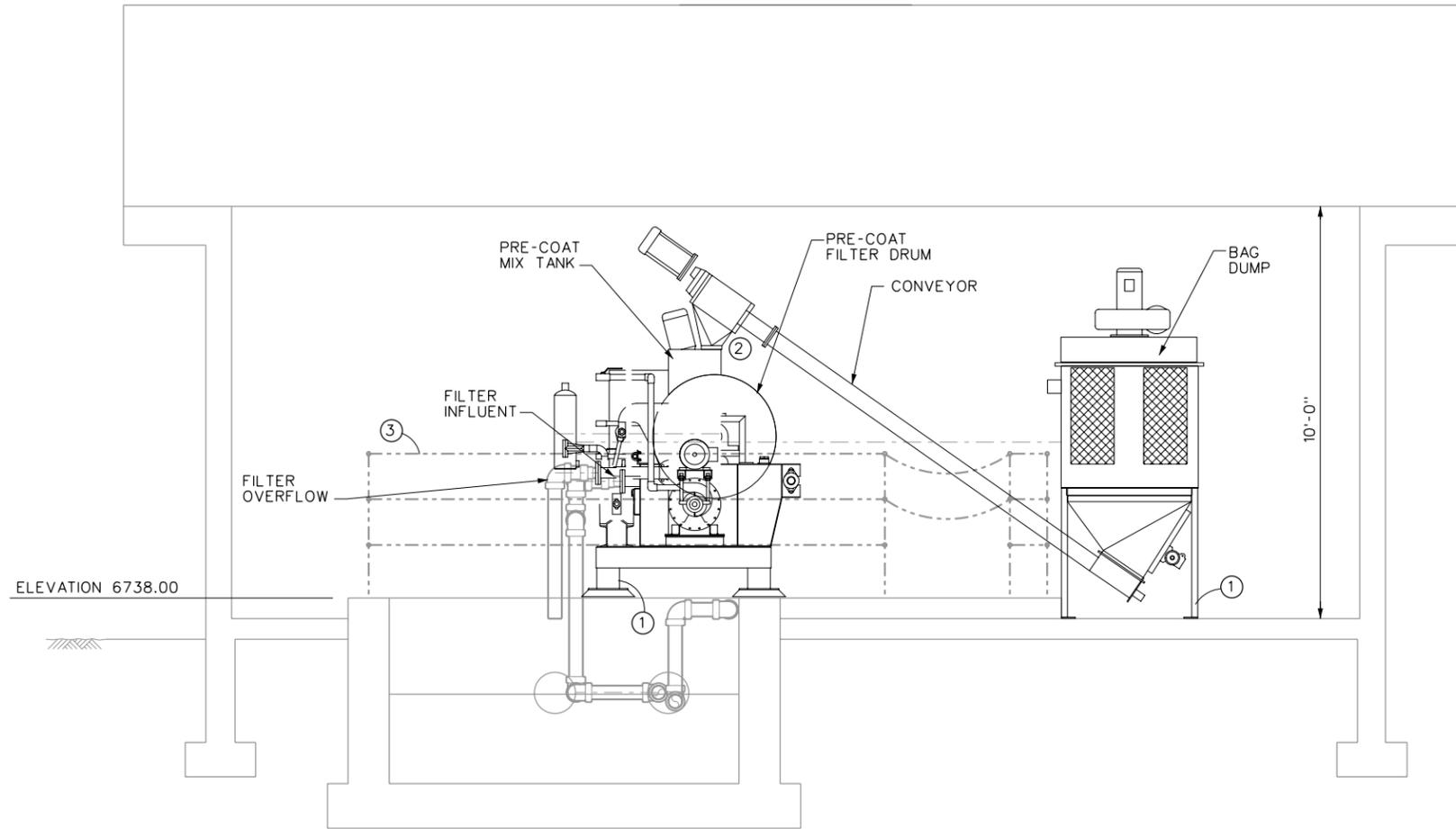
SUBMITTED BY
 (PROJECT MANAGER'S NAME) LICENSE NO. DATE
 (COMPANY OFFICER'S NAME) LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

PRECOAT VACUUM FILTER SECTIONS

SHEET
M-4

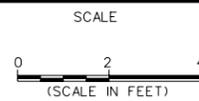


- NOTES:
- ① EQUIPMENT SHALL BE PLACED ON INDEPENDANT STRUCTURES DESIGNED BY A STRUCTURAL ENGINEER FOR THE LOADS ANTICIPATED AND SHALL NOT BE PLACED ON THE NEW GRATING.
 - ② CONTRACTOR SHALL DESIGN AND INSTALL STRUCTURAL SUPPORT FOR THE CONVEYOR DISCHARGE. STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF UTAH.
 - ③ CONTRACTOR SHALL REMOVE, RELOCATE AND OR INSTALL HANDRAILING WHERE NEEDED, AFTER INSTALLATION OF VACUUM FILTER AND FLEXIBLE SCREEN CONVEYOR. HANDRAIL AND APPURTENANCES SHALL MATCH STYLE, MATERIAL AND FINISH OF EXISTING HANDRAIL.

SECTION

F
M-3

REV	DATE	BY	DESCRIPTION
1	7-12-10	NZ	ISSUED FOR BID



DESIGNED R. DIAZ
 DRAWN S. SOLLIE
 CHECKED N. ZAUGG

SUBMITTED BY
 (PROJECT MANAGER'S NAME) LICENSE NO. DATE
 (COMPANY OFFICER'S NAME) LICENSE NO. DATE



Utah Division of Wildlife Resources
 Kamas Fish Hatchery
 SOLIDS DISPOSAL PROJECT

PRECOAT VACUUM FILTER
 SECTIONS

SHEET
M-5

CONDUIT AND RACEWAYS THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

RACEWAY OR WIRING SYSTEM IN OR UNDER FLOOR OR CONCEALED IN WALL OR BEHIND STRUCTURE OR EQUIPMENT OR CONDUIT ROUTED BELOW GRADE IN CONCRETE ENCASEMENT

FLEX CONDUIT

RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED

HOMERUN: DESIGNATIONS INDICATE A ONE-LINE DIAGRAM OR PANELBOARD SCHEDULE REFERENCE

JUNCTION BOX

RACEWAY OR WIRING SYSTEM TURNED TOWARD THE VIEWER (UP ON PLAN DRAWINGS)

RACEWAY OR WIRING SYSTEM TURNED AWAY FROM THE VIEWER (DOWN ON PLAN DRAWINGS)

RACEWAY OR WIRING SYSTEM CHANGE IN ELEVATION OR DISTANCE FROM VIEWER

CONDUIT STUB AND CAP

GENERAL DRAWING SYMBOLS AND REFERENCES

① REFERENCE NOTE THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

1 DEMOLITION NOTE

NO. REVISION NOTE

XX XX EQUIPMENT REFERENCE

WIRE WIRE SIZE REFERENCE

XXX-XXX EQUIPMENT ID TAG

PLAN SYMBOLS THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

EQUIPMENT

CIRCUIT DISTRIBUTION PANELBOARD SURFACE MOUNTED

CIRCUIT DISTRIBUTION PANELBOARD RECESSED

POWER DISTRIBUTION PANELBOARD SURFACE OR FLOOR MOUNTED DOORS DESIGNATE FRONT OF PANEL MDP DESIGNATES MAIN DISTRIBUTION PANEL

CONTROL PANEL ENCLOSURE

LIGHTING CONTROL PANEL

POWER ONE-LINE SYMBOLS THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

EQUIPMENT GROUND CONNECTION

VFD VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER

COMBINATION STARTER

MOTOR (HP SHOWN)

WIRE CONDUCTOR WITH CALLOUT REFERENCE (SEE CONDUIT/CONDUCTOR SCHEDULE)

CIRCUIT BREAKER

POWER FEED

CONNECTION POINT

LUG

M UTILITY METERING SOCKET WITH CIRCUIT BREAKER

TRANSFORMER

PNL EXISTING POWER DISTRIBUTION PANEL

PNL POWER DISTRIBUTION PANEL

CONDUIT/CONDUCTOR SCHEDULE *

THHN, THWN, THWN-2

AMP RATING	DRAWING ID TAG.	CONDUCTOR QTY.	CONDUCTOR SIZE	MIN. CONDUIT SIZE	EXCEPTIONS
20	212	2		3/4"	
	312	3	#12	3/4"	
	412	4		3/4"	
30	20	2		3/4"	
	30	3	#10	3/4"	
	40	4		3/4"	
50	28	2		3/4"	
	38	3	#8	3/4"	
	48	4		3/4"	
65	26	2		3/4"	
	36	3	#6	3/4"	
	46	4		3/4"	1"(C9)
85	24	2		3/4"	1"(C2,C9)
	34	3	#4	1"	3/4"(C4),1-1/4"(C9)
	44	4		1"	1-1/4"(C9)
115	22	2		1"	
	32	3	#2	1"	1-1/4"(C9)
	42	4		1-1/4"	1"(C3,C4)
130	21	2		1-1/4"	1"(C3)
	31	3	#1	1-1/4"	
	41	4		1-1/4"	1-1/2"(C2,C9,C10)
150	210	2		1-1/4"	
	310	3	1/0	1-1/4"	1-1/2"(C3,C9)
	410	4		1-1/2"	2"(C9)
175	220	2		1-1/4"	1-1/2"(C3,C4,C9)
	320	3	2/0	1-1/2"	
	420	4		2"	
200	230	2		1-1/2"	1-1/4"(C4)
	330	3	3/0	1-1/2"	2"(C3,C9)
	430	4		2"	
230	240	2		1-1/2"	2"(C3)
	340	3	4/0	2"	
	440	4		2"	2-1/2"(C9)
255	225	2	250 KCMIL	2"	1-1/2"(C4)
	325	3		2"	2-1/2"(C1,C8)
	425	4		2-1/2"	2"(C4)
310	235	2	350 KCMIL	2"	2-1/2"(C9)
	335	3		2-1/2"	2"(C4)
	435	4		3"	2-1/2"(C1,C4)
380	250	2	500 KCMIL	2-1/2"	2"(C4)
	350	3		3"	2-1/2"(C1,C4)
	450	4		3"	3-1/2"(C9)
475	275	2	750 KCMIL	3"	
	375	3		3-1/2"	3"(C1,C7,C8)
	475	4		4"	3-1/2"(C1,C4,C8)

* CONDUCTOR QUANTITY DOES NOT INCLUDE GROUNDING CONDUCTOR. SEE EQUIPMENT GROUNDING CONDUCTORS FOR WIRE SIZE.

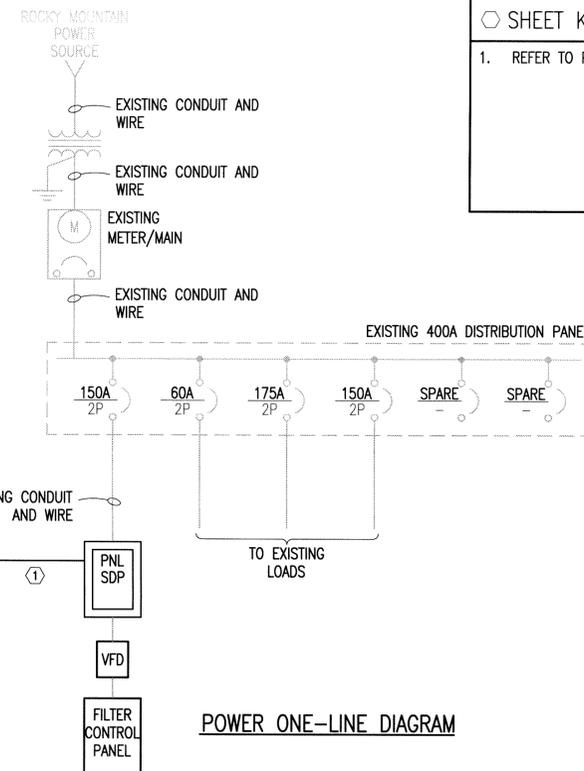
WHERE: C1 = ELECTRICAL METALLIC TUBING
 C2 = ELECTRICAL NON-METALLIC TUBING
 C3 = FLEXIBLE STEEL CONDUIT
 C4 = INTERMEDIATE METALLIC CONDUIT
 C7 = LIQUIDTIGHT FLEXIBLE METAL CONDUIT
 C8 = RIGID METALLIC CONDUIT
 C9 = PVC SCHEDULE 80 CONDUIT
 C10 = PVC SCHEDULE 40 CONDUIT

EQUIPMENT GROUNDING CONDUCTORS

FUSE OR CB SIZE	WIRE SIZE (COPPER)
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250
2500	350

GROUNDING ELECTRODE CONDUCTOR SERVICE ENTRANCE OR SEPARATELY DERIVED SYSTEM

COPPER CONDUCTOR #2 OR SMALLER	WIRE SIZE
1 OR 1/0	#8
2/0 OR 3/0	#6
>3/0 THRU 350 KCMIL	#4
>350 KCMIL THRU 600 KCMIL	#2
>600 KCMIL THRU 1100 KCMIL	1/0
>1100 KCMIL	2/0
>1100 KCMIL	3/0



H.P.E. INC. ELECTRICAL ENGINEERS
 POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
 HEGERHORST POWER ENGINEERING INCORPORATED (801) 756-0070
 752 EAST 1180 SOUTH, STE. 140 AMERICAN FORK, UT 84003 FAX (801) 756-0080
 HPE PROJECT 10038 © 2010
 FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: DAVID THOMAS

GENERAL NOTES

- VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH-IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH-IN.
- SEE APPLICABLE SHOP DRAWINGS FOR ROUGH-IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
- THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN THE OTHER AREAS.
- ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
- FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
- IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR.

SHEET KEYNOTES

- REFER TO PANEL SCHEDULE FOR CONDUIT AND WIRE SIZES.

REV	DATE	BY	DESCRIPTION

SCALE	DESIGNED _____	SUBMITTED BY _____
	DRAWN _____	(PROJECT MANAGER'S NAME) LICENSE NO. _____ DATE _____
	CHECKED _____	(COMPANY OFFICER'S NAME) LICENSE NO. _____ DATE _____



Utah Division of Wildlife Resources
 Kanab Fish Hatchery
 SOLIDS DISPOSAL PROJECT

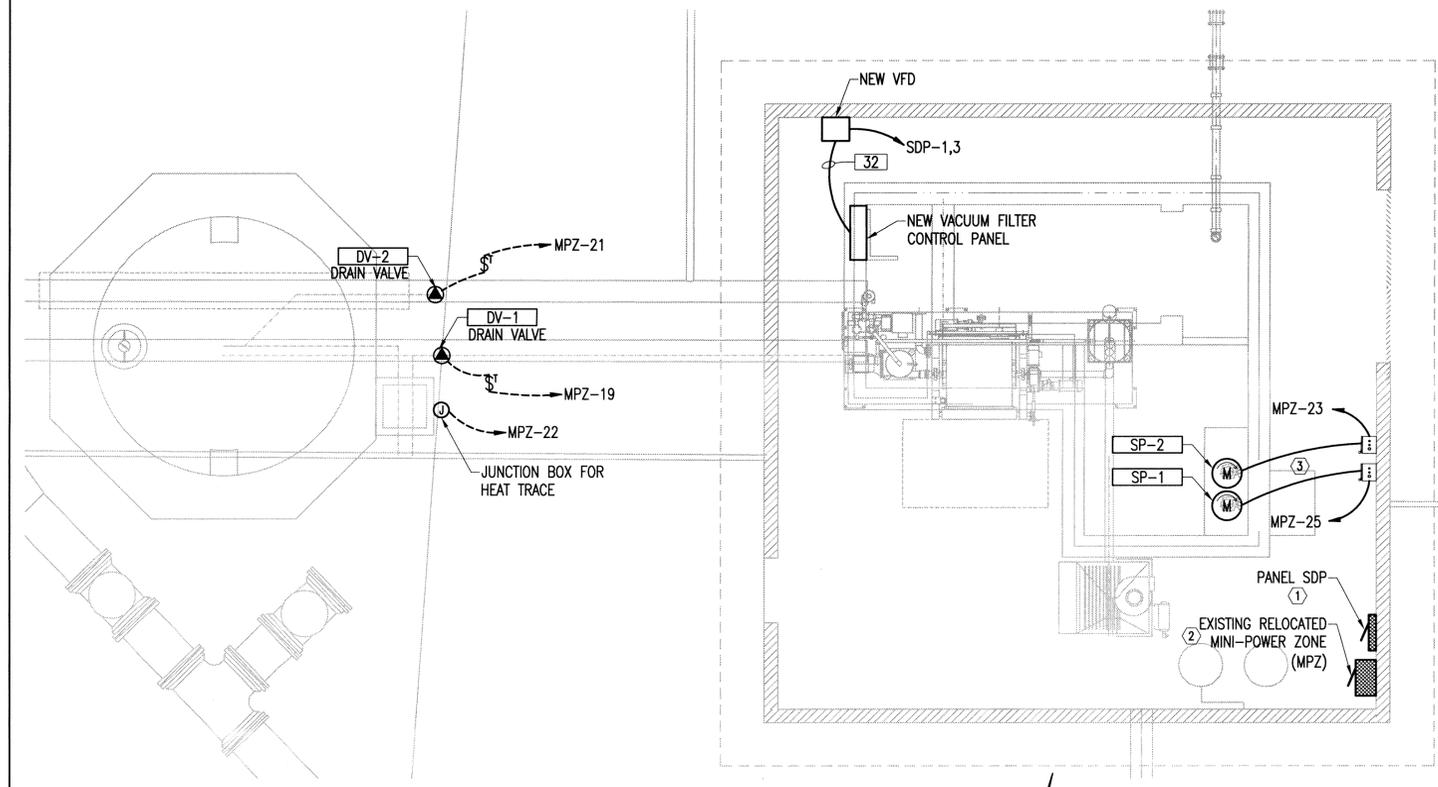
SYMBOLS LEGEND AND
 POWER ONE-LINE

SHEET
 E1

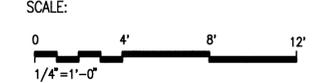
GENERAL SHEET NOTES

SHEET KEYNOTES

- RELOCATE MINI-POWER ZONE NEAR CORNER OF BUILDING. FURNISH AND INSTALL NEW SECONDARY DISTRIBUTION PANEL (SDP) IN PLACE OF MINI POWER ZONE SUCH THAT FEEDER FROM MDP WILL REACH NEW SDP PANEL WITHOUT REWIRING.
- INTERCEPT ALL HOME-RUN CONDUITS AND REWIRE TO NEW LOCATION OF MINI-POWER ZONE.
- REUSE EXISTING CONDUIT FROM OLD SUMP PUMP LOCATIONS TO NEW DISCONNECT/STARTER LOCATIONS.



EXISTING BUILDING POWER PLAN



PANEL SCHEDULE "SDP"

LOCATION: MICROSCREEN BUILDING TYPE: NF 150 AMPS VOLTS: 480/277
 DIMENSIONS: 20"W X 6.5"D X 50"H NEMA: 1 PHASE: 1
 MOUNTING: SURFACE 150 M.C.B. WIRES: 3
 FEED: BOTTOM 14,000 A.I.C.

BRKR	A	P	DESCRIPTION	WIRE SIZE	CONT. WATTS	NON-CONT. WATTS	PHASE LOADS				NON-CONT. WATTS	CONT. WATTS	WIRE SIZE	DESCRIPTION	BRKR	
							NO	CONT.	A	B						
110	2		3X3 VACUUM FILTER CONTROL PANEL	22	18,350		1	20,850	120	2	2	2,500	22	MINI POWER ZONE	100	
			1 SPACE		18,350		3		0	0	21,230	120	4			
			1 SPACE				5	0	0	0		120	4	SPACE	1	
			1 SPACE				7	0	0	0	0		6	SPACE	1	
			1 SPACE				9	0	0	0	0		8	SPACE	1	
			1 SPACE				11	0	0	0	0		10	SPACE	1	
			1 SPACE				13	0	0	0	0		12	SPACE	1	
			1 SPACE				15	0	0	0	0		14	SPACE	1	
			1 SPACE				17	0	0	0	0		16	SPACE	1	
			1 SPACE				19	0	0	0	0		18	SPACE	1	
			1 SPACE				21	0	0	0	0		20	SPACE	1	
			1 SPACE				23	0	0	0	0		22	SPACE	1	
			1 SPACE				25	0	0	0	0		24	SPACE	1	
			1 SPACE				27	0	0	0	0		26	SPACE	1	
			1 SPACE				29	0	0	0	0		28	SPACE	1	
			1 SPACE										30	SPACE	1	
TOTAL WATTS:					36,700	0	20,850	120	21,230	120	240	5,380				
CONTINUOUS LOAD:					42,080											
CONTINUOUS LOAD * 125%:					52,600											
NON-CONTINUOUS LOAD:					240											
DESIGN WATTS:					52,840											
MIN. RATING (AMPS):					110											

EXISTING MINI POWER ZONE

LOCATION: MICROSCREEN BUILDING TYPE: MINI POWER ZONE 100 AMPS VOLTS: 240/120
 DIMENSIONS: EXISTING NEMA: 1 PHASE: 1
 MOUNTING: SURFACE 100 M.C.B. WIRES: 3
 FEED: BOTTOM 10,000 A.I.C.

BRKR	A	P	DESCRIPTION	WIRE SIZE	NEW CONT. WATTS	NEW NON-CONT. WATTS	PHASE LOADS				NEW NON-CONT. WATTS	NEW CONT. WATTS	WIRE SIZE	DESCRIPTION	BRKR	
							NO	CONT.	A	B						
30	2		EXISTING LOAD	**			1	0	0	0	2	**	EXISTING LOAD	20		
			EXISTING LOAD	**			3			0	4	**	EXISTING LOAD	20		
20	2		EXISTING LOAD	**			5	0	0	0	6	**	EXISTING LOAD	20		
			EXISTING LOAD	**			7			0	8	**	EXISTING LOAD	20		
20	1		EXISTING LOAD	**			9	0	0	0	10	**	EXISTING LOAD	20		
20	1		EXISTING LOAD	**			11			0	12	**	EXISTING LOAD	20		
20	1		EXISTING LOAD	**			13	0	0	0	14	**	EXISTING LOAD	20		
40	2		EXISTING LOAD	**			15			0	16	**	EXISTING LOAD	20		
			EXISTING LOAD	**			17	0	0	0	18	**	EXISTING LOAD	30		
20	1		DRAIN VALVE DV-1	212		120	19			0	120	20	**	EXISTING LOAD		
20	1		DRAIN VALVE DV-2	212		120	21	2,500	120		22	2,500	20	HEAT TRACE		
50	1		SUMP PUMP SP-1	20	2,880		23			2,880	0	24		SPACE		
50	1		SUMP PUMP SP-2	20	2,880		25	2,880	0		26			SPACE		
NEW TOTAL WATTS:					2,880	240	2,500	120	2,880	120	0	2,500				
NEW CONTINUOUS LOAD:					5,380											
NEW CONTINUOUS LOAD * 125%:					6,725											
NEW NON-CONTINUOUS LOAD:					240											
NEW DESIGN WATTS:					6,965											
NEW MIN. RATING (AMPS):					29											

MECHANICAL EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	EQUIPMENT RATING				DISCONNECT				STARTER		REMARKS			
		VOLTS/PH	HP	WATTS	FLA	MCA	AMPS	VOLTS	POLES	NEMA	FUSE		CONNECTION	TYPE	NEMA SIZE
DV-1	DRAIN VALVE	120	1	120											THERMAL SWITCH
DV-2	DRAIN VALVE	120	1	120											THERMAL SWITCH
SP-1	SUMP PUMP	120	1	2,00			30	120	1	1	30	12	0		
SP-2	SUMP PUMP	120	1	2,00			30	120	1	1	30	12	0		
	3X3 VACUUM FILTER CONTROL PANEL	480	3	36,700											THROUGH VFD

