



**MCMILLEN, LLC**

PACIFICORP ENERGY  
LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS

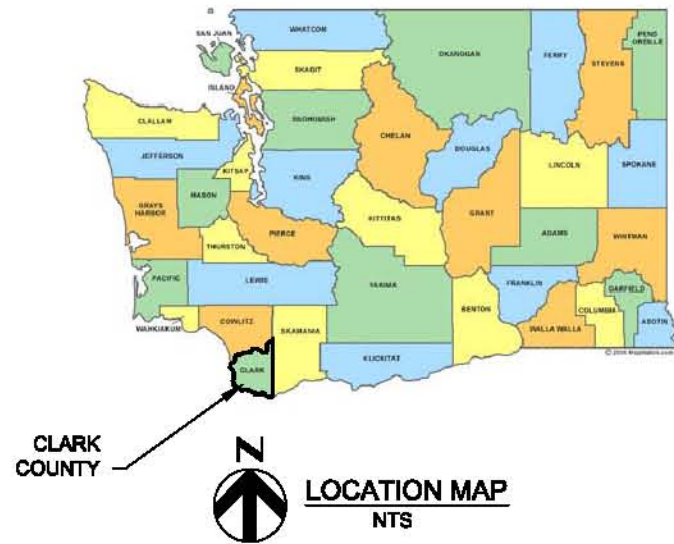
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VOLUME 1 - CONSTRUCTION DRAWINGS  
SEPTEMBER 2010

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*90% NON-SITE SPECIFIC DESIGN SUBMITTAL*

# PACIFICORP LEWIS RIVER WOODLAND RELEASE POND IMPROVEMENTS



<b>SAP#</b>			
<b>PL#</b>			
<b>DATE</b>	9/21/2010		
<b>ENG</b>	MCM	DES	MCR
<b>DR</b>	DL	CH M. McMILLEN	
APPROVAL			
		<b>PacificCorp ENERGY</b> HYDRO	
<b>SCALE</b>	AS NOTED	<b>SHEET</b>	G-1
<b>REV.</b>			A

**McMILLEN, LLC**  
 THE SONNA BUILDING  
 910 MAIN ST. SUITE 258 BOISE, ID 83702 OFFICE: 208.342.4214 FAX: 208.342.4216

	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS
A						
B						
C						
D						
E						
F						

PLOT SCALE: AS NOTED

REVISION  
No. DATE BY CHK APP  
A 9/21/10 MR DSJ

REVISION  
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MR DSJ

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**INDEX OF DRAWINGS**

100%	DRAWING NUMBER	DRAWING TITLE
		<u>GENERAL</u>
*		COVER SHEET
*	G-1	LOCATION MAP AND VICINITY MAP
*	G-2	INDEX OF DRAWINGS
*	G-3	ABBREVIATIONS AND GENERAL NOTES
*	G-4	STANDARD SYMBOLS AND DESIGN CRITERIA
*	G-5	EXISTING SITE PLAN, CONTRACTOR STAGING AND SURVEY CONTROL PLAN
*	G-6	HYDRAULIC PROFILE
		<u>EROSION AND SEDIMENT CONTROL</u>
*	ESC-1	EROSION AND SEDIMENT CONTROL PLAN
*	ESC-2	EROSION AND SEDIMENT CONTROL DETAILS
		<u>CIVIL</u>
*	GC-1	GENERAL CIVIL DETAILS 1
*	GC-2	GENERAL CIVIL DETAILS 2
*	C-1	CLEARING, GRUBBING AND DEMOLITION PLAN
*	C-2	SITE PLAN
*	C-3	ACCESS ROAD PLAN AND PROFILE
*	C-4	ENLARGED SITE LAYOUT AND GRADING PLAN
*	C-5	INTAKE PLAN AND SECTIONS
		<u>STRUCTURAL</u>
*	GS-1	STANDARD STRUCTURAL NOTES
*	GS-2	STANDARD STRUCTURAL DETAILS 1
*	GS-3	STANDARD STRUCTURAL DETAILS 2
*	GS-4	STANDARD STRUCTURAL DETAILS 3
*	GS-5	STANDARD STRUCTURAL DETAILS 4
*	GS-6	STANDARD STRUCTURAL DETAILS 5
*	S-1	RELEASE POND FOUNDATION PLAN
*	S-2	RELEASE POND TOP PLAN AND SECTION
*	S-3	RELEASE POND SECTIONS AND DETAILS
*	S-4	RELEASE POND DETAILS 1
*	S-5	PREDATOR NETTING PLAN AND SECTION
*	S-6	PREDATOR NETTING SECTION AND DETAILS
*	S-7	OUTLET STRUCTURE ELEVATION, SECTION AND DETAIL
*	S-8	CONTROL BUILDING -- FOUNDATION, SLAB, FLOOR AND ROOF PLAN
*	S-9	CONTROL BUILDING ELEVATIONS
*	S-10	CONTROL BUILDING SECTIONS AND DETAILS

\* DENOTE DRAWINGS INCLUDED IN THE 100% SUBMITTAL

**INDEX OF DRAWINGS**

100%	DRAWING NUMBER	DRAWING TITLE
		<u>MECHANICAL</u>
*	GM-1	PIPING SCHEDULE
*	GM-2	MECHANICAL SCHEDULE
*	GM-3	STANDARD MECHANICAL DETAILS 1
*	GM-4	STANDARD MECHANICAL DETAILS 2
*	M-1	PUMP STATION -- PLAN, SECTION AND DETAILS
*	M-2	WATER SUPPLY PIPELINE -- PLAN AND PROFILE
*	M-3	YARD PIPING PLAN
*	M-4	YARD PIPING SECTIONS
*	M-5	DISCHARGE AND FISH RELEASE PIPELINE -- PLAN AND PROFILE
		<u>PROCESS FLOW AND INSTRUMENTATION DIAGRAMS</u>
*	PID-1	PROCESS FLOW AND INSTRUMENTATION DIAGRAM
		<u>ELECTRICAL</u>
*	E-0	ELECTRICAL COVER SHEET
*	E-1	ELECTRICAL SITE PLAN
*	E-2	ENLARGED ELECTRICAL SITE PLAN
*	E-3	ELECTRICAL DETAILS, ONE-LINE AND SCHEDULES
*	E-4	ENLARGED CONTROLS SITE PLAN

SAP#						
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APPROVAL						
<table border="0"> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						
<table border="0"> <tr> <td>SCALE: AS NOTED</td> <td>SHEET G-2</td> <td></td> <td>REV. A</td> </tr> </table>		SCALE: AS NOTED	SHEET G-2		REV. A	
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PLOT SCALE: AS NOTED

90% NON-SITE SPECIFIC DESIGN SUBMITTAL

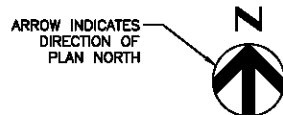
9/21/10

ABBREVIATIONS

1	2	3	4	5	6	7	8		
A	AIR ALARM ANALOG AMPERE ANCHOR BOLT ABBREVIATION ABANDON AGGREGATE BASE COURSE ALTERNATING CURRENT ASPHALT CONCRETE AIR CHANGES PER HOUR AMERICAN CONCRETE INTERNATIONAL ACOUSTIC, ACOUSTICAL ASPHALTIC CONCRETE PAVEMENT AIR CONDITIONING UNIT ADDITIONAL ADHESIVE ADJUSTABLE, ADJACENT AIR EVACUATION AMP FRAME, AMP FUSE ABOVE FINISH FLOOR ABOVE FINISH GRADE AGGREGATE AIR HANDLING UNIT AREA INLET AMPERES INTERRUPTING CURRENT AMERICAN INSTITUTE OF STEEL CONSTRUCTION ALIGNMENT ALARM ALTERNATE ALUMINUM AMBIENT ANCHOR ANCHOR BOLT ANGLE ACCESS PANEL APPROXIMATE ARCHITECTURE VALVE, AIR RELIEF AIR SUPPLY ALLOWABLE STRESS DESIGN ASSEMBLY AMP TRIP ACOUSTICAL TILE ATMOSPHERE AUTOMATIC TRANSFER SWITCH AUTOMATIC AUXILIARY VALVE, AIR AVENUE AVERAGE BACK OF WALL BOARD BOUNDARY BOTH ENDS, BELL END BOTH FACES, BOTTOM FACE, BLIND FLANGE, BOARD FEET BACK FLOW PREVENTER BITUMINOUS BACKING BREAKER BASELINE BUILDING BLOCK DETAIL BLOCKING BENCHMARK, BEAM BEST MANAGEMENT PRACTICE BACK OF CURB BOTTOM OF FOOTING BOTTOM/BEGINNING OF PIPE BOTTOM BASE PLATE BEARING BEARING PLATE BRACKET BOTH SIDES BRITISH THERMAL UNIT BETWEEN BUTT WELD BELL UP, BUILT UP BUILT-UP ROOF BEGIN VERTICAL CURVE BOTH WAYS CENTIGRADE CONDUIT COMPRESSED AIR CABINET CONTINUOUS ACTING AIR VALVE CATCH BASIN CIRCUIT BREAKER CABLE CENTER TO CENTER CONCRETE BLOCK CABLE, COMMUNICATION CONCRETE CYLINDER PIPE COUNTER CLOCKWISE CONDUCTOR CONDENSER UNIT CONCRETE EDGE CUBIC FEET (FOOT) CUBIC FEET PER HOUR CUBIC FEET PER MINUTE PUMP, CHEMICAL FEED CUBIC FEET PER SECOND EAST, ELECTRICAL (DWG DISCIPLINE) EACH ECCENTRIC ELECTRICAL DUCT BANK EACH END EMERGENCY EYE WASH STATION EACH FACE EFFLUENT, EFFICIENCY ENERGY GRADE LINE EXPANSION JOINT ELEVATION ELECTRICAL ELEVATION EMBEDDED EMERGENCY ENCLOSURE ENGINEER END OF PIPE, EDGE OF PAVEMENT ETHYLENE PROPYLENE RUBBER EQUAL EQUIPMENT EQUIVALENT EACH SIDE, EQUAL SPACE EMERGENCY SHOWER AND EYE WASH ESTIMATE ELAPSED TIME METER END VERTICAL CURVE EACH WAY	CHORD CHEMICAL CHAMFER COMMUNICATION HANDHOLE CHANNEL CHILLER CAST IN PLACE CONSTRUCTION JOINT CIRCUIT CENTERLINE, CLASS, CLOSE CHLORINE CHAIN LINK FENCE CLARIFIER CLEAR CHLORINATOR CORRUGATED METAL PIPE CONCRETE MASONRY UNIT CONTROL CLEAN OUT, CONCRETE OPENING COLUMN COMMON COMBINATION COMPOSITION, COMPRESSIBLE, COMPOSITE COMPRESSOR CONCRETE CONNECTION CONSTRUCTION CONTINUOUS CONTINUED COORDINATE CORRUGATED CONTROL POINT CORRUGATED POLYETHYLENE PIPE COUPLING CHLORINATED POLYVINYL CHLORIDE CONTROL RELAY CORROSION RESISTANT LINING CRANES AND HOIST SYSTEMS FISH CROWDER COMPRESSION SLEEVE COUPLING CONSTRUCTION SILT FENCE COUNTERSINK CURRENT TRANSFORMER CERAMIC TILE CHLORINE TREATMENT CENTER CONTROL CUBIC CULVERT VALVE, CONTROL CLOCKWISE CHILLED WATER CHAIN WHEEL OPERATED CUBIC YARD DEEP, DIFFUSER DUCT BANK, DECIBEL, DRY BULB DEFORMED BAR ANCHOR DOUBLE DIRECT CURRENT DEGREE DEGREE CENTIGRADE DEGREE FAHRENHEIT DEMO DETAIL DRINKING FOUNTAIN DUCTILE IRON DIAMETER DIAGONAL, DIAGRAM DIFFERENTIAL, DIFFERENCE DIMENSION PIPE, DUCTILE IRON DISCONNECT DISCHARGE DISTANCE, DISTRIBUTION DIVISION DEAD LOAD DOUBLE MECHANICAL JOINT DISSOLVED OXYGEN DEPTH DRAIN DUPLICATE DRAWING(S) DOWN	EXISTING EXHAUST EXPANSION ANCHOR EXPANSION BOLT EXCAVATION EXPANSION, EXPOSED EXPANSION EXISTING EXTERIOR, EXTERNAL, EXTENSION EXTRUDED FEMALE FABRICATE FLAT BAR FURNISHED BY OWNER FLUSHING CONNECTION FLANGED COUPLING ADAPTER FLOOR DRAIN CLEAN OUT, CONCRETE OPENING COLUMN COMMON COMBINATION COMPOSITION, COMPRESSIBLE, COMPOSITE FEM FENCE FIRE EXTINGUISHER CABINET FINISHED FLOOR FINISHED GRADE FIRE HYDRANT FLAT HEAD HOPPER, FISH FIGURE FLOW, FLOW LINE SEDIMENT FLUSH FLEXIBLE FLANGE, FLANGED FLOOR FORCE MAIN FINISHED OPENING, FIBER OPTIC FACE OF CONCRETE FACE OF MASONRY FLAT ON TOP FACE OF WALL FIRE PROTECTION FEET PER MINUTE FEET PER SECOND FEMALE PIPE THREAD FRAME FISH RELEASE FIBERGLASS REINFORCED PLASTIC FLOOR SINK FINISHED SURFACE SINK, FLOOR FIRE SYSTEM FOOT/FEET FOOTING, FITTING FURRING FUTURE FRONT VIEW FIELD WELD FORWARD FURNISHED WITH EQUIPMENT GAS GAGE (METAL THICKNESS) GAGE, GAUGE GALVANIZED GRADE BREAK GROOVED COUPLING GENERAL GENERATOR GENERATOR SYSTEM GROUND-FAULT CIRCUIT INTERRUPTING GROUND-FAULT INTERRUPTION GROUND-FAULT PROTECTION PIPE, GALVANIZED IRON GROUND GUY POLE GALLONS PER DAY GALLONS PER MINUTE GRADE GLASS REINFORCED PLASTIC GALVANIZED RIGID STEEL GRATING PIPE, GALVANIZED STEEL GREASE TRAP GRAVEL GYPSUM HEIGHT HYDRAULIC ACTUATOR HOSE BIB HOSE CONNECTION CABINET, FIRE HOSE HIGH DENSITY POLYETHYLENE HEADER HARDWARE HEXAGONAL HYDRAULIC GRADE LINE HANGER HANDHOLE HEADLOSS HIGH-LOW-OFF-AUTO HOLLOW METAL METAL HAND OFF HAND OFF-AUTO LOCAL HAND OFF-REMOTE HORIZONTAL HIGH POINT	HP HORSEPOWER HORIZONTAL POINT OF CURVATURE HORIZONTAL POINT OF TANGENCY HANDRAIL HOSE REEL HOUR HYDRAULIC SUPPLY HOLLOW STRUCTURAL SHAPE HIGH STRENGTH TANK, HOT WATER HEIGHT PUMP, HEAT HEATER HEATING, VENTILATION, & AIR CONDITIONING HIGH WATER LEVEL HAND WHEEL OPERATED WATER HEATER RETURN WATER HEATER SUPPLY HYDRAULIC HYDRANT HERTZ (CYCLES PER SECOND) INSTRUMENTATION AND CONTROL INPUT/OUTPUT INSTRUMENT AIR INSTRUMENT AIR SYSTEM INSTRUMENT AIR SUPPLY INTERNATIONAL BUILDING CODE INSULATION CONTACTOR INSIDE (OR INTERNAL) DIAMETER INVERT ELEVATION INSIDE FACE INSIDE FACE ISOLATED GROUND INTAKE STRUCTURE INCH/INCHES INCLUDE, INCLUDING INFLUENT INSTANTANEOUS INSTRUMENTATION INTERSECTION INTERLOCK INTERMEDIATE INVERT PIPE, IRON ILLUMINATED PUSH BUTTON IRON PIPE SIZE INTERNAL PIPE THREAD INSIDE RADIUS IRRIGATION INSULATION ISOMETRIC INDICATING ISOLATION TRANSMITTER JUNCTION BOX (J-BOX) JUNCTION JOINT FILLER JOISTS JOINT KILO, KELVIN KIP (1000 POUNDS) KNOCK OUT KILOVOLTS KILOVOLT AMPERES (APPARENT POWER) KILOVAR KILOWATTS (REAL POWER) KILOWATT HOUR LENGTH, LITER LADDER LATERAL LAVATORY LAG BOLT, POUND LIFTING EYE LINEAR FOOT LONG LINEAR LIQUID LONG LEG HORIZONTAL LONG LEG VERTICAL LOCATION LONGITUDINAL LOW POINT LOW PRESSURE LOCAL-REMOTE LIFT STATION LEFT LIMITED LIQUID TIGHT FLEXIBLE METAL CONDUIT LIGHTING LOW VOLTAGE LOUVER LIGHTWEIGHT LIGHTWEIGHT CONCRETE LOW WATER LEVEL METER, MALE MILLIAMPERES ACTUATOR, MOTOR MANUAL MASONRY MATERIAL MAXIMUM MACHINE BOLT MECHANICAL COUPLING MECHANICAL MOTOR CONTROL CENTER MAIN CONTROL PANEL MEDIUM	MFR MANUFACTURER MANHOLE MILE MINIMUM MIRROR MISC MISCELLANEOUS MECHANICAL JOINT MASONRY OPENING MODIFY MONUMENT MALE PIPE THREAD MEAN SEA LEVEL MOUNT MECHANICAL-TYPE COUPLING MANUAL TRANSFER SWITCH MASONRY UNIT MILLVOLTS NORTH, NEUTRAL NOT APPLICABLE NATURAL NORMALLY CLOSED NEGATIVE NON-FUSED NEAR FACE NOT IN CONTRACT NUMBER, NORMALLY OPEN NOMINAL NAMEPLATE NOMINAL PIPE SIZE NET POSITIVE SUCTION HEAD NATIONAL PIPE THREAD NON-RISING STEM NATURAL SUPPLY NEAR SIDE NORMALLY THROTTLED NOT TO SCALE NORMAL WATER LEVEL O TO O OUT-TO-OUT OPERATIONS AND MAINTENANCE OPEN-AUTOMATIC-CLOSED ON CENTER OUTSIDE DIAMETER OPEN END DUCT OUTSIDE FACE OVERFLOW OFFICE ORIGINAL GROUND OVERHEAD OVERHEAD POWER ORDINARY HIGH WATER LEVEL OVERLOAD OPENING OPPOSITE OPTIONAL OUTSIDE RADIUS ORIGINAL OUTLET OVERFLOW OVERHANG OUNCE PRESSURE, PUMP PLANT AIR ACTUATOR, PNEUMATIC PARALLEL PULL BOX PANEL BOARD POINT OF CURVE, PRECAST POINT OF COMPOUND CURVATURE PORTLAND CEMENT CONCRETE POUNDS PER CUBIC FOOT PERCENT PEDESTAL PENETRATION PERFORATED PERMANENT PERPENDICULAR PHASE POINT OF INTERSECTION PLATE, PROPERTY LINE PLYWOOD POWER MONITOR PNEUMATIC PANEL POINT OF BEGINNING POINT OF END POSITIVE, POSITION POTABLE WATER SYSTEM POWER POLE POLYPROPYLENE SHIELDED PAIR POINT OF REVERSE CURVATURE POWER RECEPTACLE PRECAST PREFABRICATED PRELIMINARY PREPARE PRESSURE PRIMARY PROFILE PROPERTY	PROT PROTECTION PROPANE VALVE, PRESSURE RELIEF OR REDUCING PIPE SUPPORT PUMP STATION POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH ABSOLUTE POUNDS PER SQUARE INCH GAUGE POINT, POINT OF TANGENCY PIT TAG DETECTOR POLYVINYL CHLORIDE POINT OF VERTICAL INTERSECTION PAVEMENT POTABLE WATER PIEZOMETER RATE OF FLOW QUARTER QUANTITY QUALITY RADIUS REMOVE AND REPLACE REMOVE AND SALVAGE AIR, RETURN REINFORCED CONCRETE REINFORCED CONCRETE CYLINDER PIPE RECEPTACLE PIPE, REINFORCED CONCRETE ROUND RECESS RECEIVED RECTANGULAR REDUCER REFERENCE REINFORCE/REINFORCED REMOVE REQUIRED RESILIENT RETAINING RETURN REVISION ROOFING ROUGH RIGID GALVANIZED STEEL PVC COATED RGS RELAY ROOM ROUND RIGHT OF WAY RADIUS POINT REVOLUTIONS PER MINUTE RAILROAD RISING STEM RIGHT RESISTANCE TEMPERATURE DETECTOR RIGHT HAND WATER, RAW UNIFORM BUILDING CODE UNIFORM FIRE CODE UNDERGROUND ULTRA HIGH MOLECULAR WEIGHT ACQUISITION SCHEDULE SCHEMATIC SCALE SCREEN STORM DRAIN SECONDARY, SECONDS SECTION SELECTOR SEPARATE, SEPARATOR SQUARE FOOT/FEET SHELVING SHOWER SHEET SHEATHING SLOPE SLOTTED SLEEVE SLAB ON GRADE STANDPIPE PIPE STEEL PUMP, SUMP SPACING SPECIFICATION SUPPLY SQUARE	SS SANITARY SEWER STAINLESS STEEL SAND SEPARATOR STATION, STAIR SLEEVE-TYPE COUPLING STANDARD STIFFENER STIRRUP STEEL STOPLOG STORAGE STRAIGHT, STRUCTURE SUBSTITUTE SUCTION SUMP SUSPENDED VALVE, SOLENOID SWITCH WATER, SERVICE SWITCH GEAR SIDEWALK STORMWATER POLLUTION PREVENTION PLAN SQUARE YARD SYMBOL SYMMETRICAL SYNTHETIC SYSTEM TEMPERATURE TOP AND BOTTOM TANGENT TERMINAL BLOCK TEMPORARY BENCHMARK TOTAL DYNAMIC HEAD TELEPHONE TEMPERATURE TEMPORARY THREAD TANK THERMOMETER TOP OF OPENING TEST-OFF-AUTO TOP OF BANK TOP OF CONCRETE TOP OF CMU RETAINING TOP OF COLUMN TOP OF DUCT TOP OF FOOTING TOP OF GRATING TOLERANCE TOP OF MASONRY TOP OF PLATE/PIPE TOPOGRAPHIC TOP OF SLAB/STEEL TOP OF WALL TELEPHONE POLE TRANSITION TRENCH DRAIN TREAT, TREATMENT TWISTED SHIELDED PAIR TOTAL SUSPENDED SOLIDS TWISTED SHIELDED TRIAD TYPICAL UNIFORM BUILDING CODE USFS US FISH & WILDLIFE SERVICE USACA US ARMY CORP OF ENGINEERS UNLESS NOTED OTHERWISE UTILITY POWER, UTILITY POLE UNIFORM PLUMBING CODE UNINTERRUPTED POWER SUPPLY URINAL UTILITY VALVE, VAULT, VENT, VOLT(S) VOLT AMPERE VACUUM, VOLTS ALTERNATING CURRENT VARIES, VARIABLE VALVE BOX VERTICAL CURVE PIPE, VITRIFIED CLAY VERTICAL CENTERLINE VOLTS DIRECT CURRENT	VEL VELOCITY VENTILATION VERTICAL VARIABLE FREQUENCY DRIVE VINYL VOLUME VERTICAL POINT OF CURVATURE VERTICAL POINT OF INTERSECTION VERTICAL POINT OF TANGENCY VARIABLE SPEED DRIVE VENT TO CEILING VENT THROUGH ROOF SUBSTITUTE WEST, WIRE, WASTE, WIDE WITH WITHOUT WATER COLUMN WIDTH, WOOD WINDOW WATER GAGE WATER INTAKE STRUCTURE AND SYSTEM WATER LEVEL WELDED WIRE MESH WATERPROOF PRESSURE, WORKING WATERPROOFING WATER SURFACE, WATER SUPPLY WATER SURFACE ELEVATION PIPE, WELDED STEEL WATERSTOP WEIGHT, WATERTIGHT TOTAL DYNAMIC HEAD TELEPHONE TEMPERATURE TEMPORARY THREAD TANK THERMOMETER TOP OF OPENING TEST-OFF-AUTO TOP OF BANK TOP OF CONCRETE TOP OF CMU RETAINING TOP OF COLUMN TOP OF DUCT TOP OF FOOTING TOP OF GRATING TOLERANCE TOP OF MASONRY TOP OF PLATE/PIPE TOPOGRAPHIC TOP OF SLAB/STEEL TOP OF WALL TELEPHONE POLE TRANSITION TRENCH DRAIN TREAT, TREATMENT TWISTED SHIELDED PAIR TOTAL SUSPENDED SOLIDS TWISTED SHIELDED TRIAD TYPICAL UNIFORM BUILDING CODE USFS US FISH & WILDLIFE SERVICE USACA US ARMY CORP OF 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THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS. 2. LISTING OF ABBREVIATIONS DOES NOT IMPLY ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS. 3. ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF THE WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION; "INC" MAY MEAN INCLUDED OR INCLUDING; "REIN" MAY MEAN EITHER REINFORCE OR REINFORCING. 4. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE. 5. SEE PIPING SCHEDULE, CIVIL, GENERAL ELECTRICAL AND GENERAL INSTRUMENTATION SHEETS FOR ADDITIONAL PROJECT SPECIFIC ABBREVIATIONS AND PIPING FLUID ABBREVIATIONS.
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>McMILLEN, LLC</b> THE SONNA BUILDING 910 MAIN ST, SUITE 258 BOISE, ID 83702 OFFICE: 208.342.4214 FAX: 208.342.4216</p> </div> <div style="width: 45%; text-align: right;"> <p>LEWIS RIVER WOODLAND RELEASE POND IMPROVEMENTS ABBREVIATIONS AND GENERAL NOTES <b>Hydro</b></p> <p>SCALE: AS NOTED SHEET G-3 REV. A</p> </div> </div>									



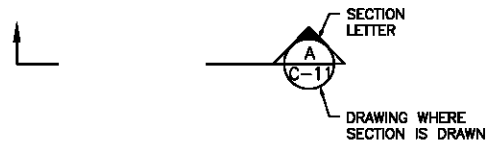
**SHEET SYMBOLS**



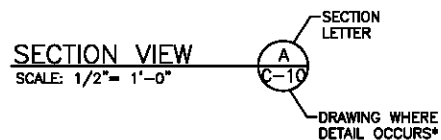
**PLAN**  
SCALE: 1/2" = 1'-0"

**SECTION IDENTIFICATION**

(1) SECTION CUT ON DRAWING C-10:

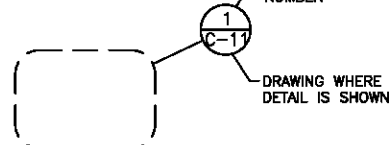


(2) ON DRAWING C-11 THIS SECTION IS IDENTIFIED AS:

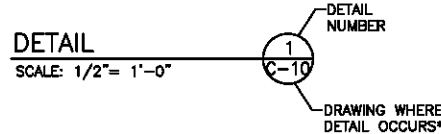


**DETAIL IDENTIFICATION**

(1) DETAIL CALL-OUT ON DRAWING C-10:



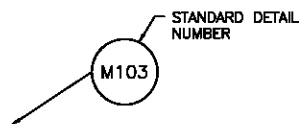
(2) ON DRAWING C-11 THIS SECTION IS IDENTIFIED AS:



\*NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE.

**STANDARD DETAIL IDENTIFICATION**

(1) STANDARD DETAIL CALL-OUT ON PLAN OR SECTION:



(2) ON GENERAL DISCIPLINE DRAWINGS, IDENTIFIED AS:



\* IF PLAN AND SECTION, OR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON SAME SHEET, SHEET NUMBER IS REPLACED BY A LINE (-).

**DESIGN CRITERIA**

DESCRIPTION	UNITS	VALUE
<b>BIOLOGICAL</b>		
PEAK LOADING	SMOLTS	76,000
SMOLT SIZE	FISH/LB	8 TO 20
DENSITY	LB FISH/CF	2
TOTAL LB/ FISH	LB	8,000
FLOW INDEX	LB/GPM/IN	0.4 TO 0.73
TOTAL FLOW	GPM	1,900
TOTAL FLOW	CFS	4.23
FLOW RATE PER CELL	GPM	475
<b>HOLDING POND</b>		
HOLDING POND DEPTH (AVE)	FT	4.0
HOLDING POND WITH	FT	8
HOLDING POND LENGTH	FT	55
TOTAL VOL PER POND	CF	1,760
TOTAL VOL 4 PONDS	CF	7,040
<b>INTAKE SCREEN, PIPELINE AND PUMP</b>		
LOW RIVER WATER LEVEL AT 95% EXCEEDANCE	FT	7.4
HIGH RIVER WATER LEVEL AT 5% EXCEEDANCE	FT	14.5
DEGASSER WATER LEVEL	FT	39
POND WATER LEVEL	FT	35.75
INTAKE SCREEN APPROACH VELOCITY	FPS	0.4
INTAKE SCREEN AREA (MIN)	SF	10.6
INTAKE PIPE SIZE	IN	16
INTAKE PIPE AREA	SF	1.4
INTAKE PIPE VELOCITY	FT/SEC	3.0
INTAKE PIPE LENGTH	LF	350
INTAKE SCREEN AND PIPE HEAD LOSS	FT	3
PUMP DISCHARGE PIPE SIZE	IN	12
PUMP DISCHARGE PIPE LENGTH	LF	600
PUMP DISCHARGE HEAD LOSS	FT	6
MAX PUMP HEAD REQ'D	TDH	41
MIN PUMP HEAD REQ'D	TDH	29
<b>DEGASSING UNIT ALTERNATIVES</b>		
NUMBER OF UNITS	QTY	4
DEGASSING COLUMN FLOW RATE	GPM	475
DEGASSING COLUMN LOADING RATE	GPM/SQF	220
DEGASSING COLUMN AREA	SF	2.16
TOP PLATE DIAMETER	IN	20
TOTAL HEIGHT	FT	7
<b>FISH TRANSFER/OUTFALL PIPE</b>		
AVERAGE FLOW	CFS	4.23
MAX FLOW	CFS	6.7
PIPE SIZE	IN	16
VELOCITY RANGE	FPS	6.5-7.3
FLOW DEPTH RANGE	% FULL	55-75

A	REFERENCE DRAWINGS						
	DRAWING No.						
B	REFERENCE DRAWINGS						
	DRAWING No.						
C	CHK APP						
	BY						
D	REVISION						
	DATE						
E	CHK APP						
	MR						
F	REVISION						
	DATE						

**McMILLEN, LLC**

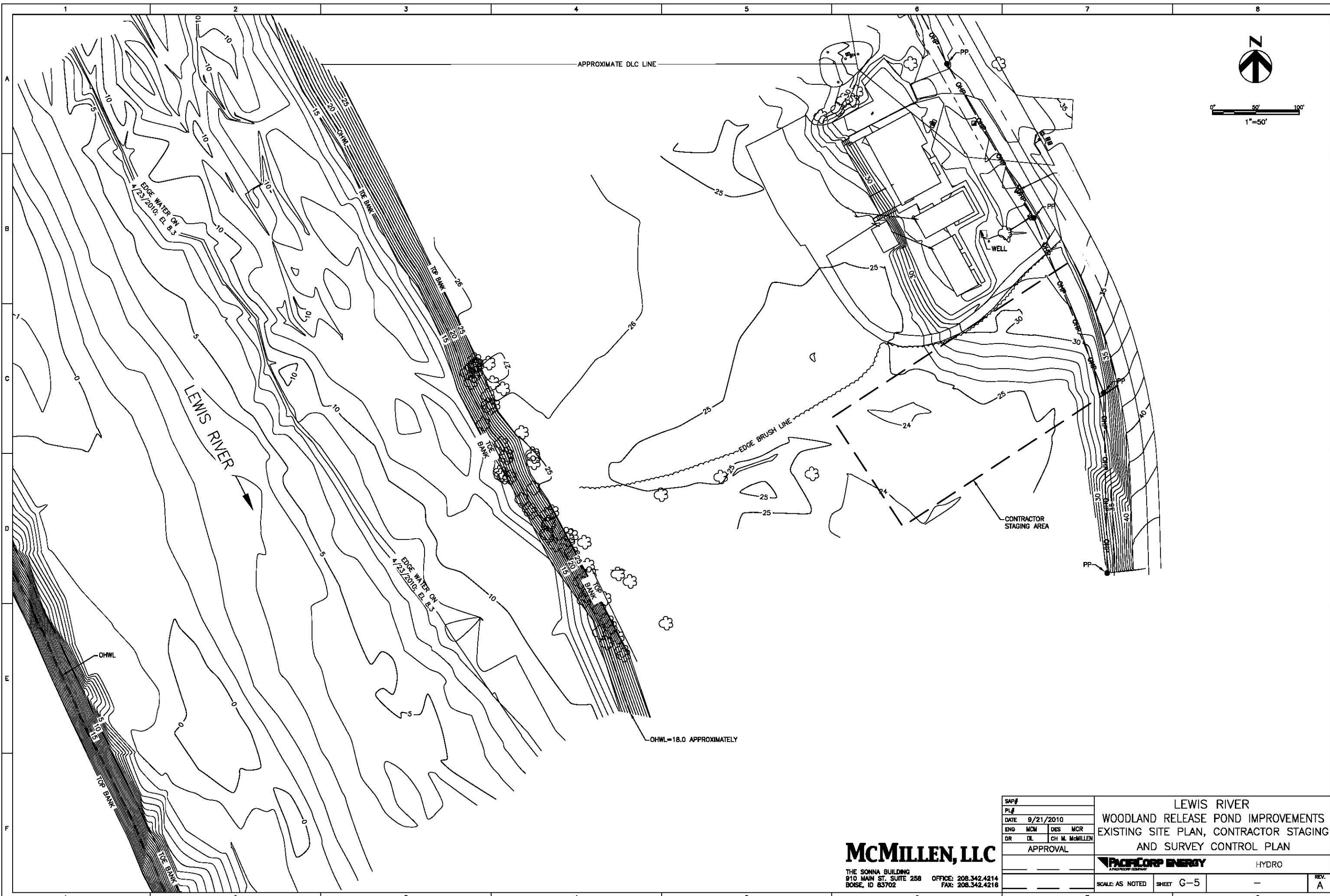
THE SONNA BUILDING  
910 MAIN ST. SUITE 258 OFFICE: 208.342.4214  
BOISE, ID 83702 FAX: 208.342.4216

LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS  
STANDARD SYMBOLS  
AND DESIGN CRITERIA



HYDRO  
SCALE: AS NOTED SHEET G-4

REV. A



No.	DATE	REVISION	BY	CHK APP	DATE	REVISION	BY	CHK APP	DRAWING No.	REFERENCE DRAWINGS
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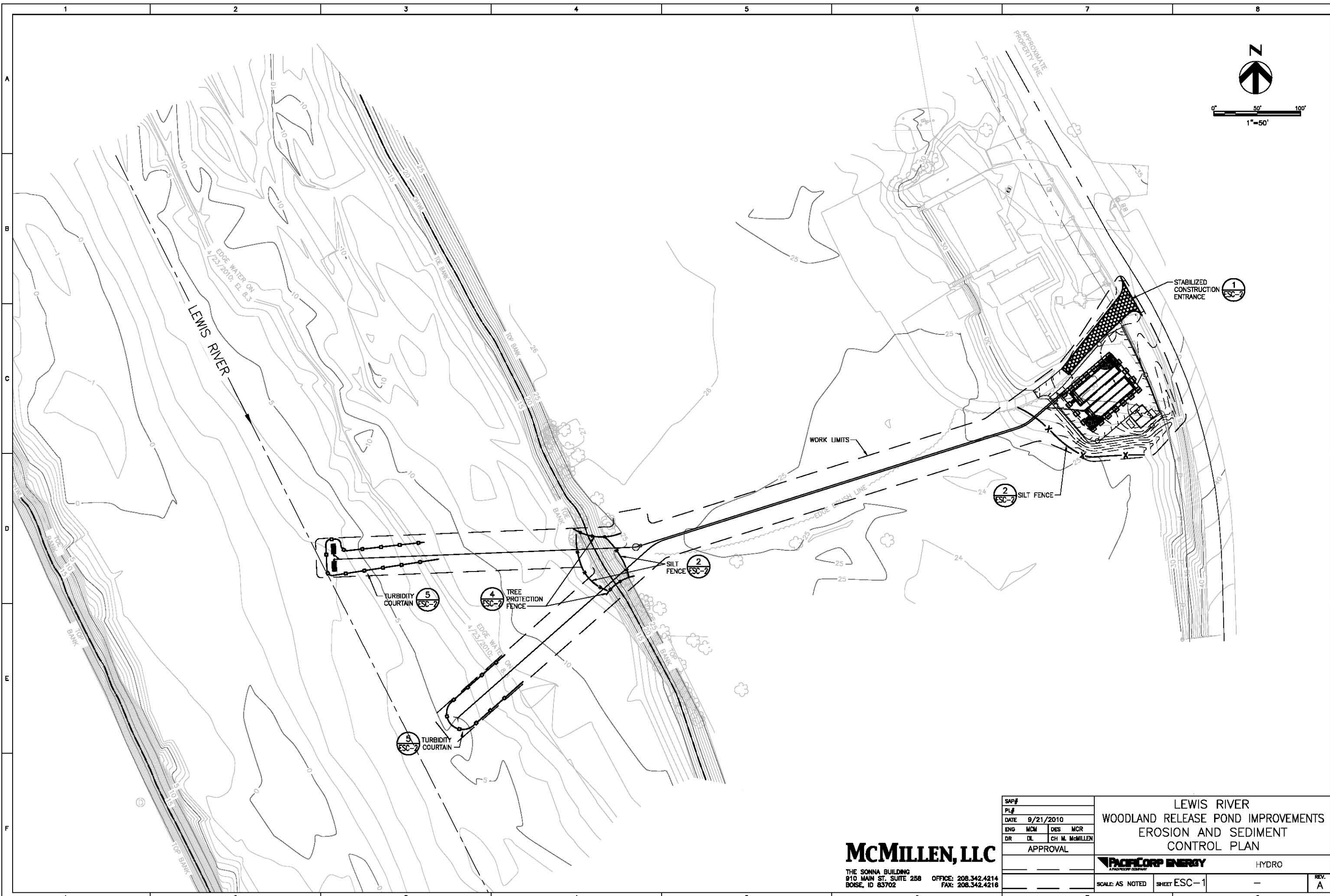
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BOISE, ID 83702 FAX: 208.342.4216

SAP#		LEWIS RIVER
PL#		WOODLAND RELEASE POND IMPROVEMENTS
DATE	9/21/2010	EXISTING SITE PLAN, CONTRACTOR STAGING
ENG	MCM DES MCR	AND SURVEY CONTROL PLAN
DR	DL CH M. McMILLEN	
APPROVAL		
		HYDRO
SCALE: AS NOTED	SHEET G-5	REV. A

PLOT SCALE: AS NOTED

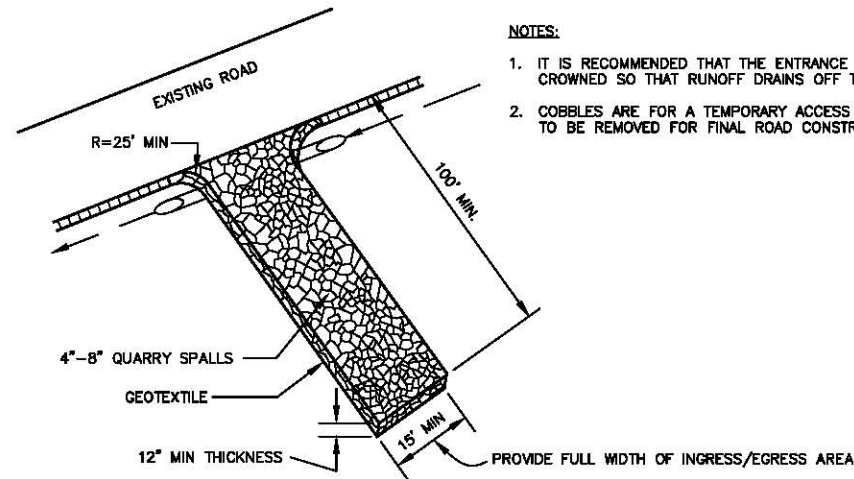




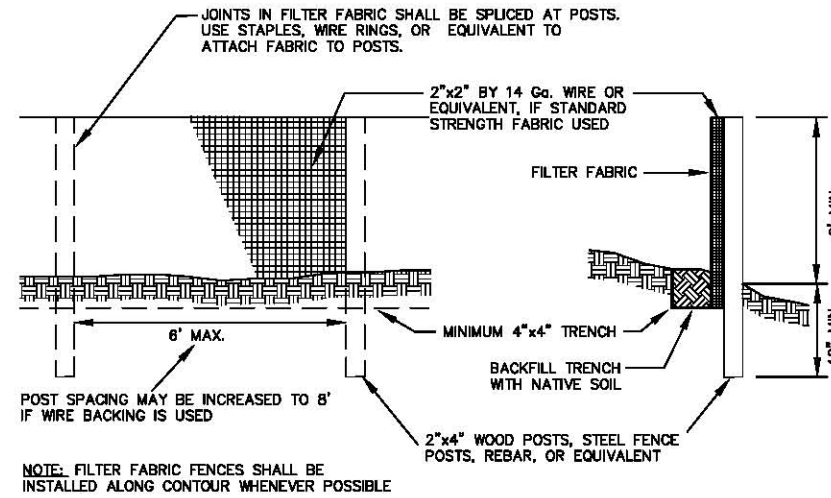
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A	9/21/10		MR															
PLOT SCALE: AS NOTED																		
NO. DATE REVISION																		
A 9/21/10 80% NON-SITE SPECIFIC DESIGN SUBMITTAL																		

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 THE SONNA BUILDING  
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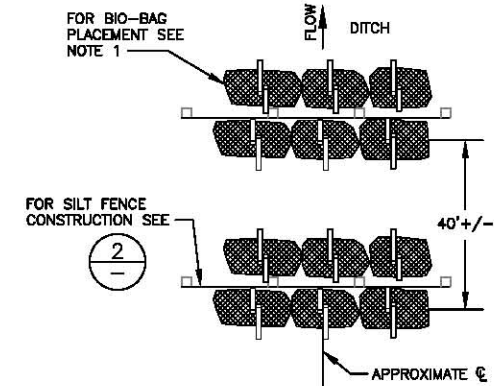
SAP#	PL#	DATE	9/21/2010	ENG	MCM	DES	MCR	DR	DL	CH	M. McMILLEN	LEWIS RIVER WOODLAND RELEASE POND IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN		PACIFIC CORP ENERGY HYDRO	
APPROVAL												SCALE: AS NOTED	SHEET ESC-1	REV. A	



STABILIZED CONSTRUCTION ENTRANCE (1)  
NO SCALE

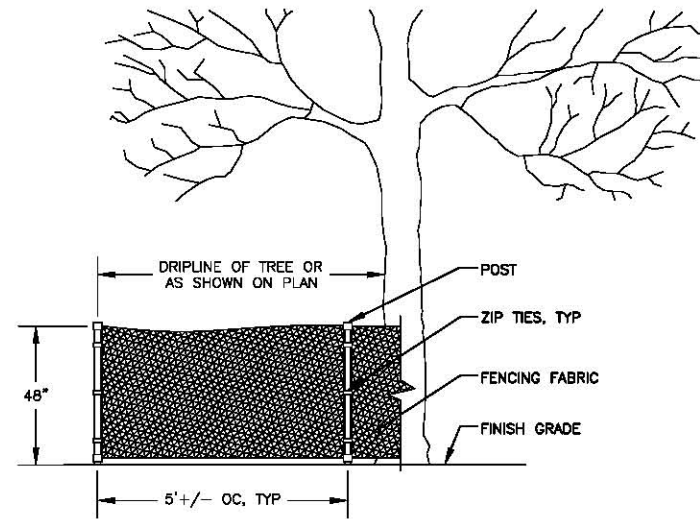


SILT FENCE INSTALLATION (2)  
NO SCALE

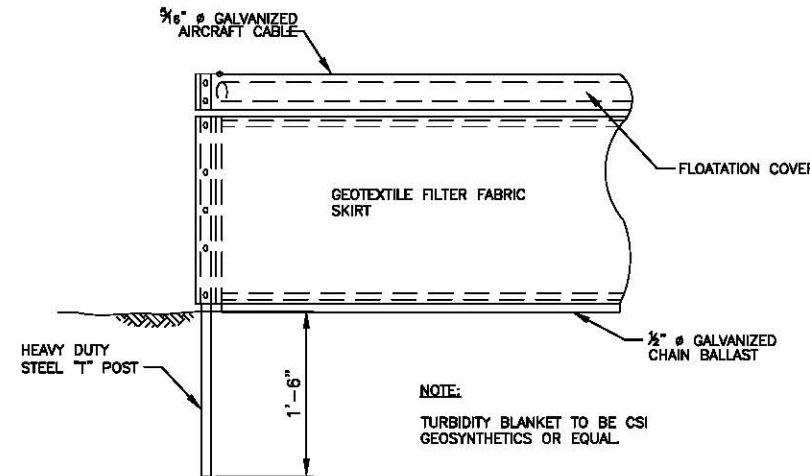


- NOTES:  
1. PLACE BIO-BAGS ON EITHER SIDE OF A SILT FENCE ACROSS DITCH AND PUSH BIO-BAGS TOGETHER FOR TIGHT FIT  
2. EXTEND SEDIMENT BARRIER 6' EACH SIDE OF CHANNEL BOTTOM

BIO-BAG AND SILT FENCE SEDIMENT BARRIER (3)  
NO SCALE



TREE PROTECTION FENCE (4)  
NO SCALE



TURBIDITY CURTAIN (5)  
NO SCALE

GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES:

- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO ANY LAND DISTURBING ACTIVITY CAUSED BY CLEARING OR GRADING. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CLARK COUNTY AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANUAL FOR WESTERN WASHINGTON, WHERE THE CITY OF SEATTLE GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL MEASURES DURING AND AFTER INSTALLATION OF ALL UTILITY WORK ASSOCIATED WITH UTILITY TRENCHES.
- PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAINAGE INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS PER THE STANDARD DETAILS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREAS. CLEAN THE FILTER FABRIC AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
- THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS.
- THE CONTRACTOR IS REQUIRED TO DEVELOP A STORM WATER POLLUTION AND PREVENTION PLAN (SWPPP) WITH NARRATIVE ACCORDING TO ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. DRAWINGS ESC-1 AND ESC-2 ARE PROVIDED FOR CONTRACTOR USE IN DEVELOPING THE SWPPP. THE CONTRACTOR SHALL SUBMIT THE SWPPP TO PACIFICORP FOR APPROVAL WITHIN 14 DAYS OF NTP.
- MAINTAIN EXISTING VEGETATION FOR USE AS VEGETATIVE BUFFER STRIP.

**McMILLEN, LLC**

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SAP#	
PL#	
DATE	9/21/2010
ENG	MCM DES MCR
DR	DL CH M. McMILLEN
APPROVAL	

LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS  
EROSION AND SEDIMENT CONTROL  
DETAILS 1

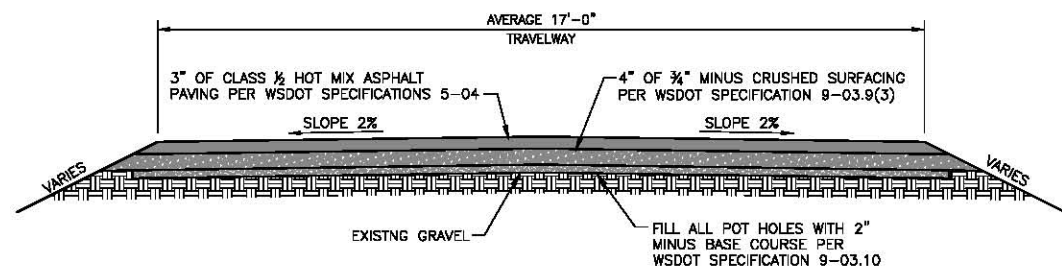
PACIFICORP ENERGY

HYDRO

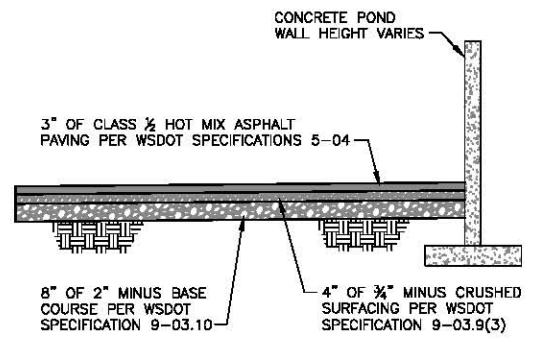
SCALE: AS NOTED SHEET ESC-2

REV. A

REFERENCE DRAWINGS	
DRAWING No.	
REFERENCE DRAWINGS	
DRAWING No.	
CHK APP	
BY	
REVISION	
DATE	
No.	
CHK APP	
BY	
MR	
DSN	
REVISION	
AS NOTED	
DATE	
No.	
9/21/10	
90% NON-SITE SPECIFIC DESIGN SUBMITTAL	

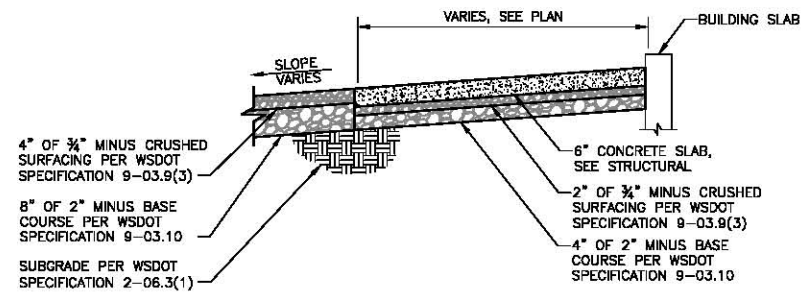


**EXISTING ACCESS ROAD AND SITE PAVING**  
SCALE: NTS

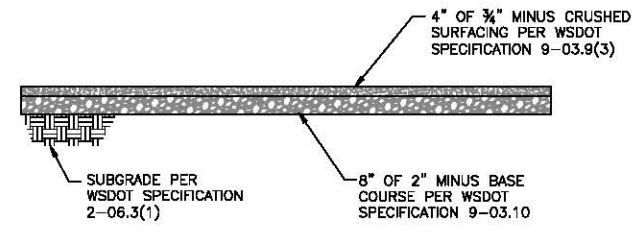


**SITE PAVING**  
SCALE: NTS

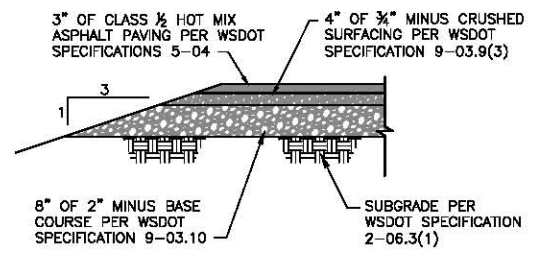
- NOTES:**
1. ALL MATERIALS, SUBGRADE, BASE COURSE AND SURFACE COURSES SHALL BE COMPACTED IN ACCORDANCE WITH THE WSDOT STANDARDS SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION 2010.
  2. SEE GRADING PLAN FOR ALL FINISHED GRADE ELEVATIONS.



**SLAB AT BUILDING ENTRANCES**  
SCALE: NTS



**GRAVEL SURFACING DETAIL**  
SCALE: NTS



**TYPICAL NEW WIDEN & FILL AREAS**  
SCALE: NTS

NO.	DATE	REVISION	BY	CHK APP	DATE	NO.	REVISION
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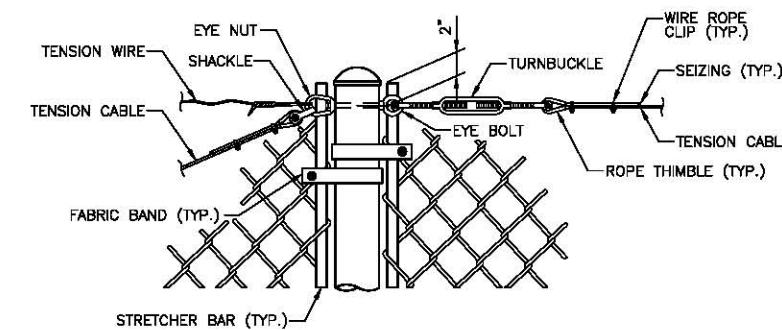
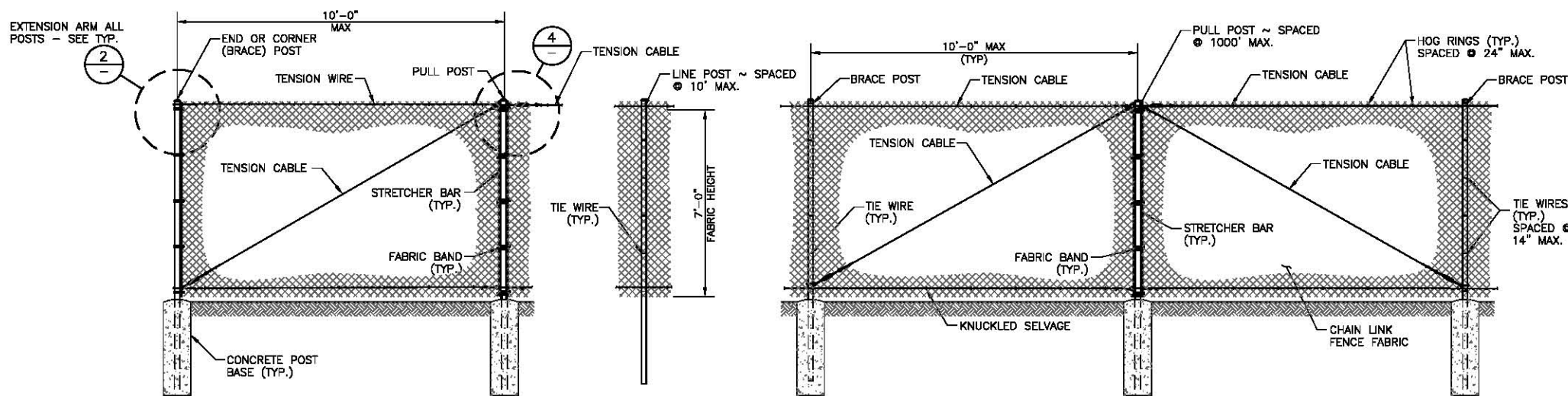
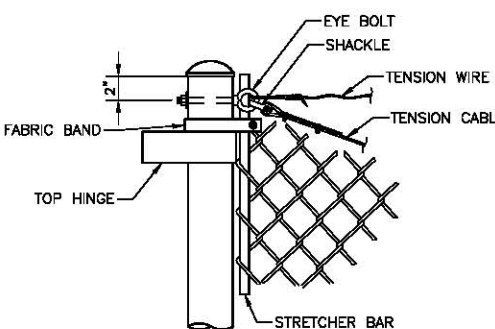
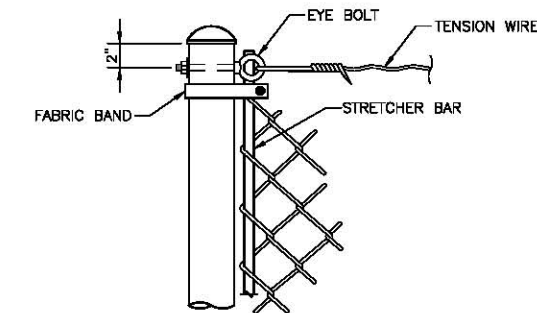
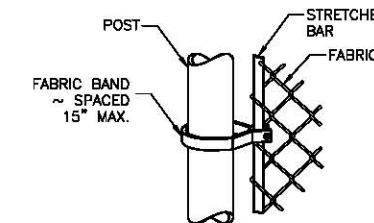
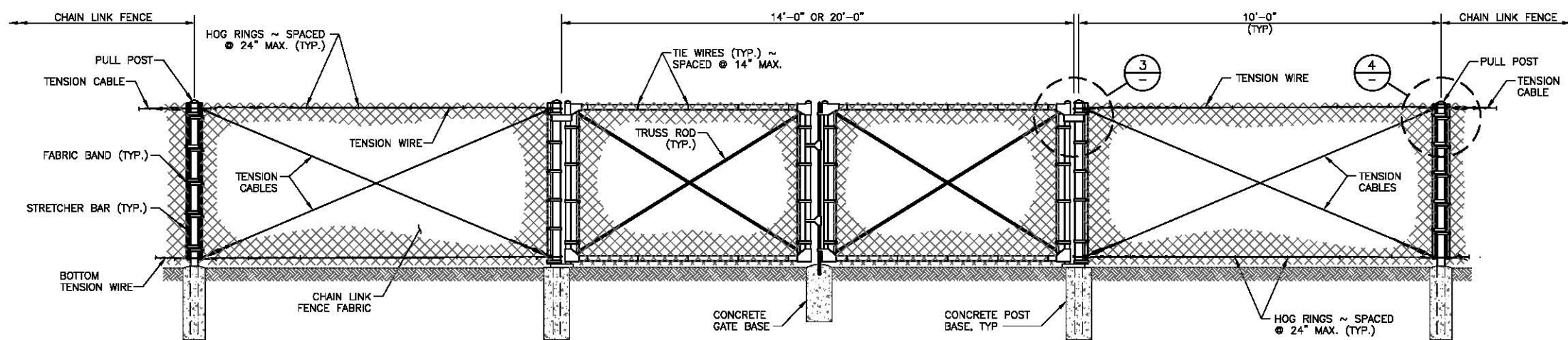
**McMILLEN, LLC**  
 THE SONNA BUILDING  
 910 MAIN ST. SUITE 258 BOISE, ID 83702  
 OFFICE: 208.342.4214  
 FAX: 208.342.4216

SAP#	LEWIS RIVER
PL#	WOODLAND RELEASE POND IMPROVEMENTS
DATE	9/21/2010
ENG	MCM DES MCR
DR	DL CH M. McMILLEN
APPROVAL	
HYDRO	
SCALE: AS NOTED	SHEET GC-1
REV. A	



NOTE:

1. HATCHERY PERIMETER FENCE SHALL MEET THE REQUIREMENTS OF PACIFICORP STANDARD SPECIFICATIONS AND DETAILS SHOWN HEREIN.



NO.	DATE	REVISION	BY	CHK	APP	DRAWING No.	REFERENCE DRAWINGS	
							NO.	DATE
A	9/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR					

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LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS

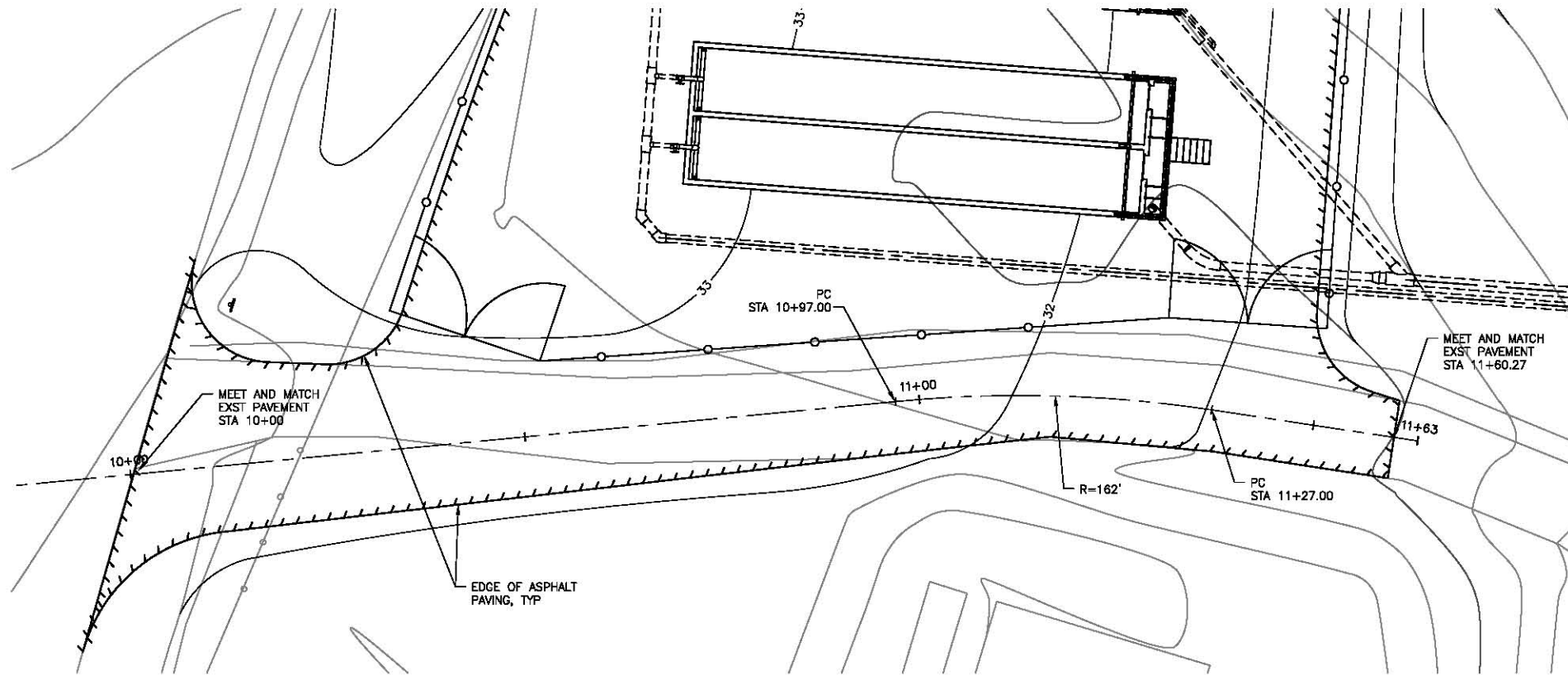
GENERAL CIVIL DETAILS 2

PACIFICORP ENERGY HYDRO

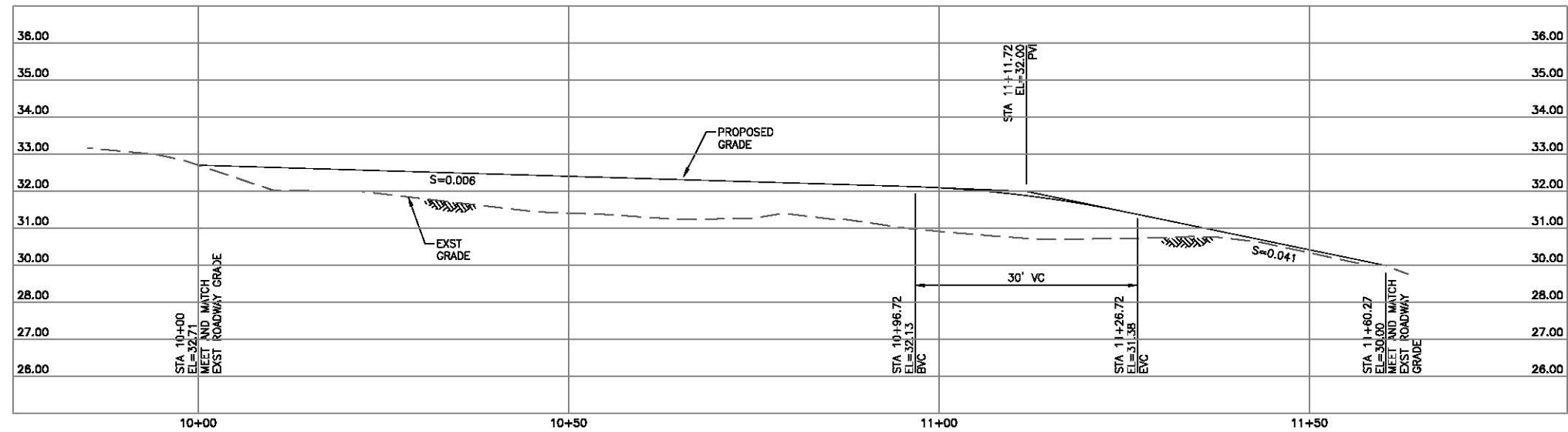
SCALE: AS NOTED SHEET GC-2 REV. A



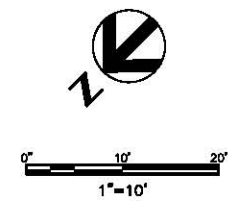




**ACCESS ROAD PLAN**  
SCALE: 1"=10'



**ACCESS ROAD PROFILE**  
SCALE: 1"=10' HORIZ; 1"=2' VERT

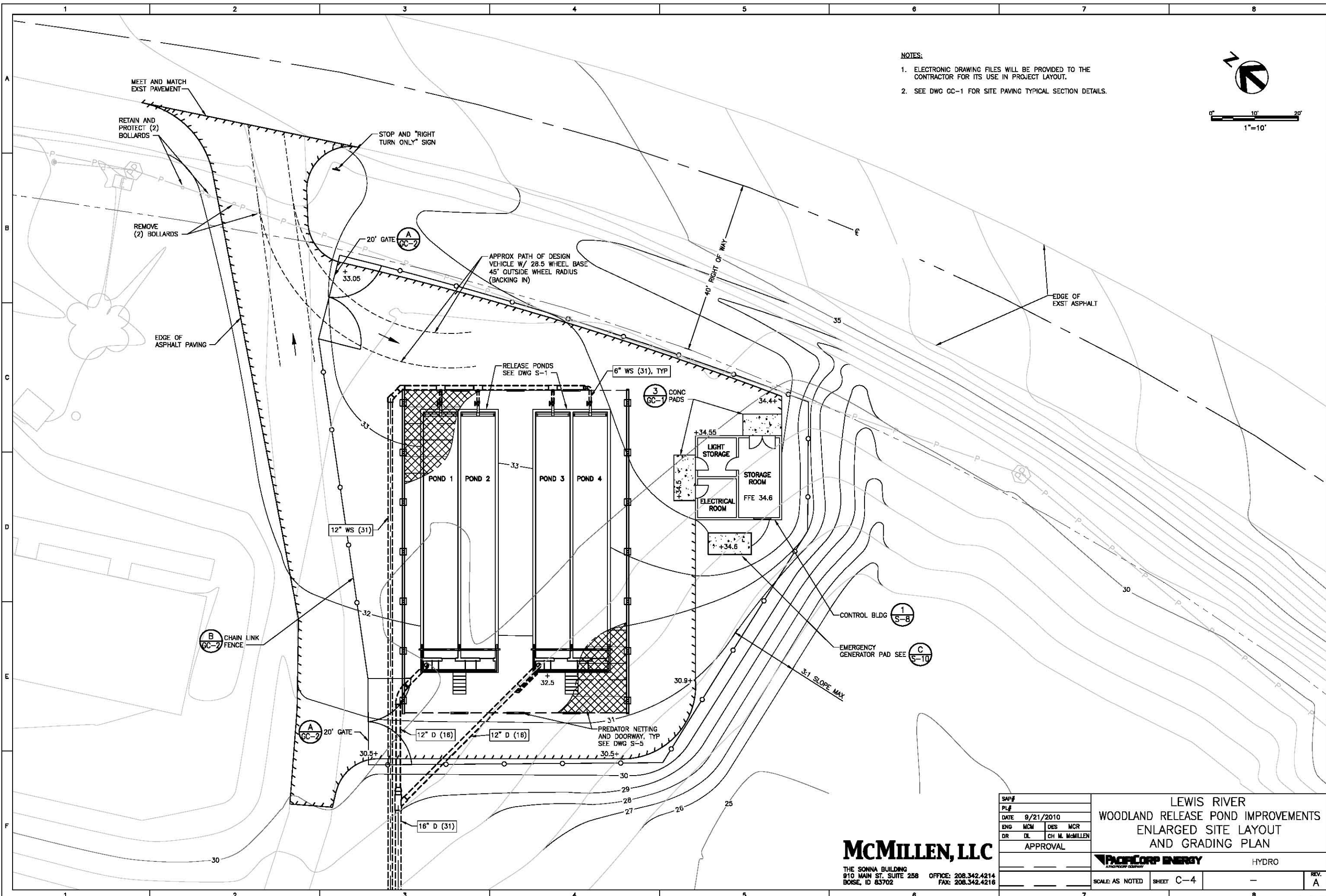


REFERENCE DRAWINGS		REVISION	
DRAWING No.		No.	DATE

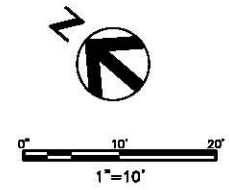
SAP#	
PL#	
DATE	9/21/2010
ENG	MCM DES MCR
DR	DL CH M. McMILLEN
APPROVAL	
<p>LEWIS RIVER WOODLAND RELEASE POND IMPROVEMENTS ACCESS ROAD PLAN AND PROFILE</p>	
SCALE: AS NOTED	HYDRO
SHEET C-3	REV. A

**McMILLEN, LLC**  
 THE SONNA BUILDING  
 910 MAIN ST. SUITE 258 OFFICE: 208.342.4214  
 BOISE, ID 83702 FAX: 208.342.4216





- NOTES:**
1. ELECTRONIC DRAWING FILES WILL BE PROVIDED TO THE CONTRACTOR FOR ITS USE IN PROJECT LAYOUT.
  2. SEE DWG CC-1 FOR SITE PAVING TYPICAL SECTION DETAILS.



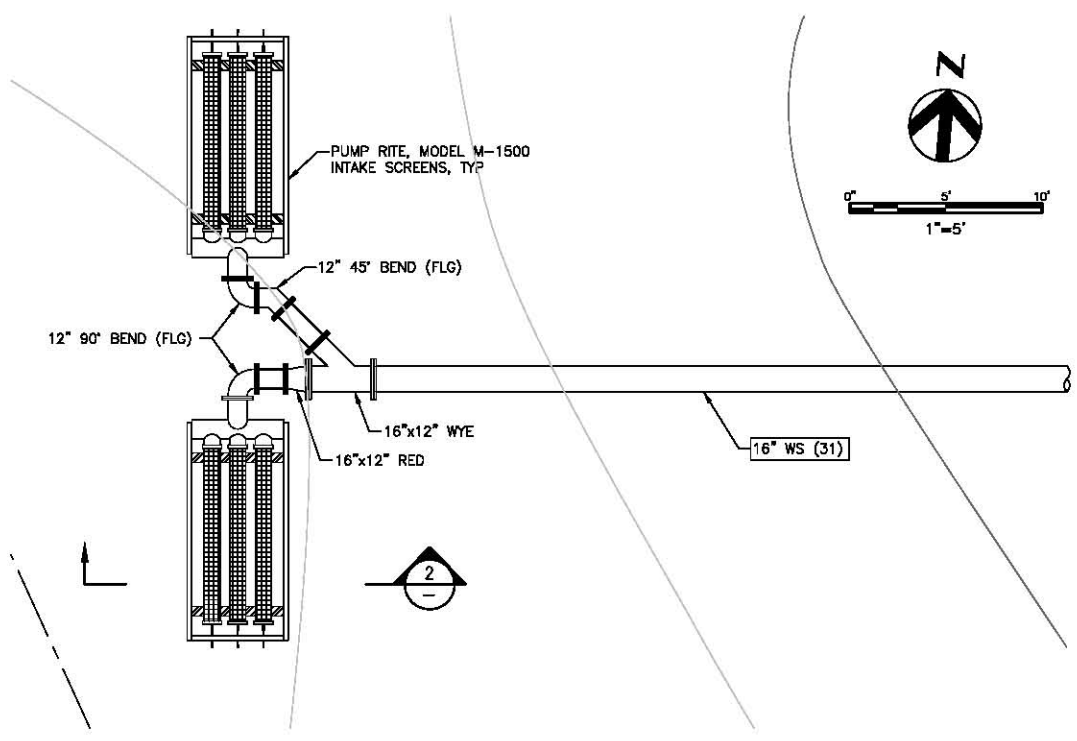
NO.	DATE	REVISION	BY	CHK APP	DATE	NO.	REVISION
A	9/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR	DSN			

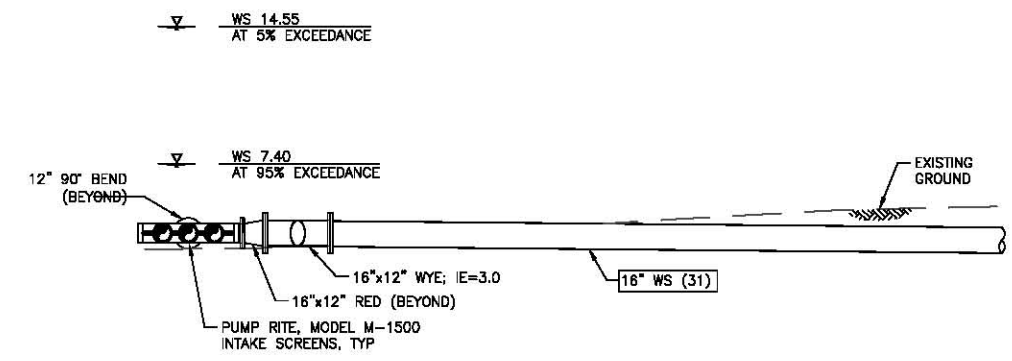
DRAWING No.	REFERENCE DRAWINGS

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SAP#	
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APPROVAL	
<b>PACIFICORP ENERGY</b>	
HYDRO	
SCALE: AS NOTED	SHEET C-4
	REV. A



RIVER WATER INTAKE PLAN (1)  
SCALE: 1"=5'



RIVER WATER INTAKE SECTION (2)  
SCALE: 1"=5'

No.	DATE	REVISION	BY	CHK APP	DATE	REVISION	BY	CHK APP	DRAWING No.	REFERENCE DRAWINGS
A	9/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR							

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ENG	MCM	DES MCR
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APPROVAL		
		HYDRO
SCALE: AS NOTED	SHEET C-5	REV. A

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 BOISE, ID 83702 FAX: 208.342.4216



# STRUCTURAL NOTES:

## 1) GENERAL:

### A. CONSTRUCTION DOCUMENTS:

- THE CONTRACTOR SHALL REVIEW THE APPROVED CONSTRUCTION DOCUMENTS AND NOTIFY THE ENGINEER OF ANY ERRORS OR DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL EVERYTHING REQUIRED TO PROVIDE A COMPLETE STRUCTURE AS SHOWN HEREIN. IF THERE IS AN OMISSION ON THE PLANS, SUCH OMISSION SHALL NOT BE CONSTRUED TO MEAN THAT THE CONTRACTOR IS NOT REQUIRED TO FURNISH OR PROVIDE EVERYTHING THAT IS NECESSARY TO COMPLETE THE PROJECT TO THE MINIMUM REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE AND ALL OTHER SPECIFICATIONS, CODES AND STANDARDS NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITIES ARE DISCOVERED. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS.
- THE STRUCTURAL CONSTRUCTION DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING AND/OR SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. CONTRACTOR AT HIS/HER OWN EXPENSE SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DESIGN BRACING, SHORING, ETC. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.
- UNDER NO CIRCUMSTANCES CAN STRUCTURAL COMPONENTS BE SUBSTITUTED, OMITTED, OR ALTERED FROM THE APPROVED SET OF CONSTRUCTION DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

### B. DIMENSIONS AND NOTATIONS:

- WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS.
- ABBREVIATIONS USED ON THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE CONSIDERED TYPICAL ABBREVIATIONS FOR THE INDUSTRY. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY ABBREVIATIONS THAT ARE UNKNOWN TO THE CONTRACTOR.

### C. SHOP DRAWINGS:

- SHOP DRAWINGS, AS REQUIRED PER THESE STRUCTURAL NOTES, SHALL BE SUBMITTED TO THE ENGINEER IN A TIMELY FASHION PRIOR TO FABRICATION TO ALLOW FOR PROPER REVIEW AS REQUIRED PER SECTION 107.342 OF THE IBC.
- SHOP DRAWING ITEMS SHALL NOT BE INSTALLED UNTIL THE CONSTRUCTION DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL AND SHOP DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER PER SECTION 107.342 OF THE IBC.
- DURING SHOP DRAWING REVIEW, DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER AND MUST BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW AND STAMP SHOP DRAWINGS PRIOR TO REVIEW BY ENGINEER.

### D. SPECIAL INSPECTION:

- THE OWNER SHALL EMPLOY A SPECIAL INSPECTION SERVICE AS REQUIRED PER THESE STRUCTURAL NOTES.

### E. TYPICAL NOTES AND DETAILS:

- SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER STANDARD TYPICAL NOTES AND DETAILS.
- STANDARD TYPICAL NOTES AND DETAILS ARE TO BE USED WHEN REFERRED TO OR WHEN NO OTHER MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS.
- WORK NOT PARTICULARLY SHOWN OR SPECIFIED SHALL BE THE SAME AS SIMILAR PARTS THAT ARE SHOWN OR SPECIFIED.

### F. CODE REQUIREMENTS:

- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
  - 2009 INTERNATIONAL BUILDING CODE (IBC)
  - ANY OTHER REGULATING AGENCIES WHICH MAY HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF WASHINGTON.
- SPECIFICATIONS, CODES AND STANDARDS NOTED SHALL BE OF THE LATEST APPROVED ISSUE, INCLUDING SUPPLEMENTS, UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL BE PROPERLY REGISTERED IN THE STATE OF WASHINGTON PER WASHINGTON STATE LAW

## 2) DESIGN CRITERIA:

- 2009 INTERNATIONAL BUILDING CODE (IBC).
- DESIGN LOADS:
  - LIVE LOADS = 20 PSF
  - GROUND SNOW LOAD = 25 PSF
- IBC SEISMIC DESIGN:
  - SEISMIC DESIGN CATEGORY = D
  - IMPORTANCE FACTOR = 1.10
  - SITE CLASS = D
  - SEISMIC RESPONSE COEFFICIENTS:
    - SDS = 0.668
    - SD1 = 0.376
- WIND DESIGN:
  - WIND SPEED = 90 MPH
  - IMPORTANCE FACTOR = 1.0

## 3) FOUNDATIONS:

- MAXIMUM ALLOWABLE FOUNDATION SOIL BEARING PRESSURE = 2000 PSF. (ASSUMED)
- FOR FROST PROTECTION, THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 18 INCHES MINIMUM BELOW ADJACENT FINISHED GRADE, UNO.
- STRUCTURAL BACKFILL SHALL BE COMPACTED TO 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D1557. BRACE WALLS AND PIERS AS REQUIRED DURING BACKFILLING OPERATIONS.

## 4) SPECIAL INSPECTION PROGRAM:

- THE OWNER SHALL EMPLOY AN APPROVED AGENCY FOR SPECIAL INSPECTION SERVICES TO PERFORM SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE 2009 INTERNATIONAL BUILDING CODE.
- AN APPROVED AGENCY SHALL BE AN ESTABLISHED AND RECOGNIZED AGENCY REGULARLY ENGAGED IN CONDUCTING TESTS OR FURNISHING INSPECTION SERVICES.
- A SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL SHOW COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. A SPECIAL INSPECTOR SHALL ALSO DEMONSTRATE A THOROUGH WORKING KNOWLEDGE OF CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AS SUMMARIZED BELOW. IF THERE IS ANY OMISSION ON THE SUMMARIZED LIST BELOW, SUCH OMISSION SHALL NOT BE CONSTRUED TO MEAN THAT THE SPECIAL INSPECTOR IS NOT REQUIRED TO INSPECT EVERYTHING THAT IS NECESSARY TO MEET THE MINIMUM REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE.
- SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS TO THE ENGINEER IN A TIMELY FASHION.
- SPECIAL INSPECTION REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.

## 5) SPECIAL INSPECTIONS:

- SPECIAL INSPECTION AS HEREIN REQUIRED OF THE FOLLOWING MATERIALS, INSTALLATION, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
- STRUCTURAL OBSERVATION OF THE STRUCTURAL SYSTEM BY THE ENGINEER OF RECORD DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE SPECIAL INSPECTION REQUIRED BY SECTION 110, 1704, OR OTHER SECTIONS OF THE INTERNATIONAL BUILDING CODE.
- FABRICATORS:
  - SPECIAL INSPECTION IS REQUIRED PER SECTION 1704.2 WHERE FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATOR'S SHOP, UNLESS THE FABRICATOR IS REGISTERED AND APPROVED TO PERFORM WITHOUT SPECIAL INSPECTION.
- STEEL:
  - SPECIAL INSPECTION IS REQUIRED PER SECTION 1704.3 AND TABLE 1704.3.
- WELDING:
  - SPECIAL INSPECTION IS REQUIRED PER SECTION 1704.3.1.
    - CONTINUOUS INSPECTION IS REQUIRED FOR:
      - GROOVE WELDS
      - MULTI-PASS FILLET WELDS
      - SINGLE PASS FILLET WELDS >5/16"
      - REINFORCING STEEL
    - PERIODIC INSPECTION IS REQUIRED FOR:
      - SINGLE PASS FILLET WELDS <5/16"
      - DECK WELDS
  - SPECIAL INSPECTORS SHALL BE PROVIDED DURING STRUCTURAL WELDING INCLUDING THE WELDING OF REINFORCING STEEL NOT PERFORMED IN A CERTIFIED FABRICATION FACILITY.
- BOLTS:
  - SPECIAL INSPECTION IS REQUIRED PER SECTION 1704.3.3.
    - PERIODIC INSPECTION IS REQUIRED FOR:
      - BEARING TYPE CONNECTIONS
      - MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS, NUTS, AND WASHERS.
    - BOLTS OR REBAR INSTALLED IN CONCRETE AND REQUIRING THE USE OF AN EPOXY APPLICATION REQUIRE A SPECIAL INSPECTOR BE PRESENT DURING THE INSTALLATION PROCESS, PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- CONCRETE:
  - SPECIAL INSPECTION IS REQUIRED PER SECTION 1704.4 AND TABLE 1704.4.
    - PERIODIC INSPECTION IS REQUIRED FOR:
      - PLACEMENT OF REINFORCING STEEL.
      - ERECTION OF PRE-CAST CONCRETE MEMBERS
- SOILS:
  - SPECIAL INSPECTION IS REQUIRED PER SECTION 1704.7. SPECIAL INSPECTION IS NOT REQUIRED DURING PLACEMENT OF FILL LESS THAN 12" DEEP.
  - COMPACTION REPORTS ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL AND ENGINEER FOR REVIEW.

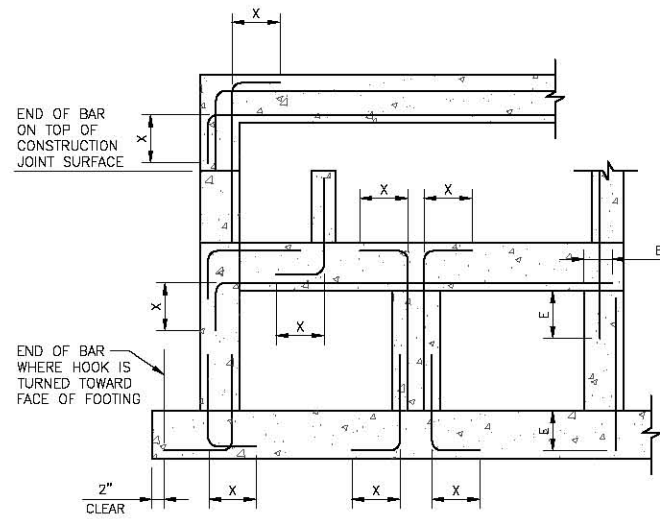
A	REFERENCE DRAWINGS						
	DRAWING No.						
B	REFERENCE DRAWINGS						
	DRAWING No.						
C	CHK APP						
	BY						
D	REVISION						
	DATE						
E	CHK APP						
	BY						
F	REVISION						
	DATE						

SAP#	
PL#	
DATE	09/21/2010
ENG M. REISER	DES J. RUSH
DR S. ROBISON	CH D. NELSON
APPROVAL	
<div style="display: flex; justify-content: space-between;"> <div> <p>LEWIS RIVER WOODLAND RELEASE POND IMPROVEMENTS</p> <p>STANDARD STRUCTURAL NOTES</p> <p><b>PACIFICORP ENERGY</b> HYDRO</p> </div> <div> <p>SCALE: AS NOTED SHEET GS-1</p> </div> </div>	
PLT SCALE: AS NOTED	REV. A

**McMILLEN, LLC**

THE SONNA BUILDING  
910 MAIN ST. SUITE 258 BOISE, ID 83702

OFFICE: 208.342.4214  
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LENGTH (x)		
BAR SIZE	HOOK X	EMBEDMENT E
#3	6"	12" (18")
#4	8"	12" (16")
#5	10"	15" (20")
#6	12"	22" (28")
#7	14"	37" (48")
#8	16"	48" (62")
#9	19"	61" (79")
#10	22"	77" (100")
#11	24"	95" (123")

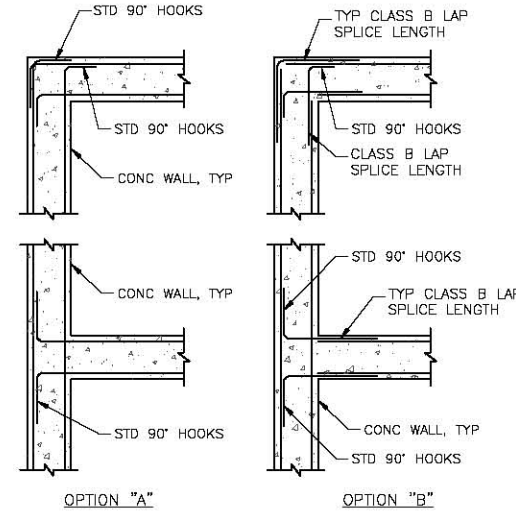
\* USE LENGTH IN PARENTHESIS FOR WALL HORIZONTAL REBARS AND SLAB BARS WITH 12" OR MORE OF FRESH CONCRETE UNDERNEATH

- NOTES:
- THE TABLES SHOWN ARE FOR  $f'_c=4000\text{psi}$ ,  $f_y=60,000\text{psi}$ , 1.5" MIN CONCRETE COVER AND 3" MIN BAR SPACING.
  - MULTIPLY THE LAP AND E SHOWN IN THESE TABLES BY 1.5 FOR EPOXY COATED REINFORCING.
  - UNLESS NOTED OTHERWISE USE REBAR COUPLERS FOR SPLICES OF #11 AND LARGER BARS.
  - ALL DOWEL BARS SHALL EXTEND AN EMBEDMENT LENGTH E INTO ANOTHER MEMBER OR ACROSS A CONSTRUCTION JOINT UNLESS SHOWN TO SPLICE WITH OTHER BARS OR TO EXTEND TO THE FAR FACE OF THE MEMBER AND END WITH A STANDARD HOOK.

**STANDARD 90° BAR HOOKS AND EMBEDMENT LENGTHS**

SCALE: NTS

S-1

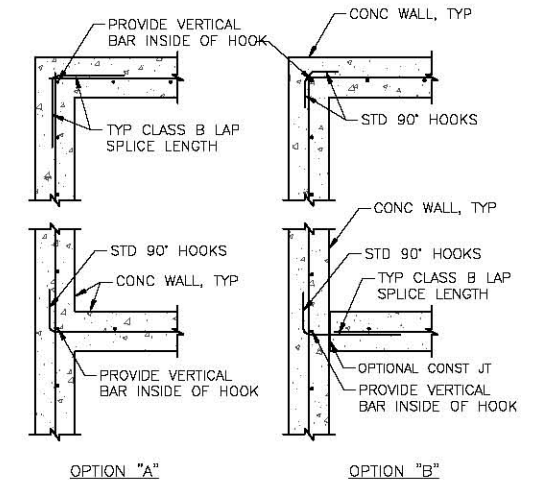


- NOTES:
- CORNER & INTERSECTION BARS TO MATCH SIZE & SPACING OF HORIZONTAL BARS.
  - REFER TO OTHER DETAILS & GENERAL NOTES FOR BAR CLEARANCE REQUIREMENTS.
  - REFER TO OTHER SECTIONS & DETAILS FOR REQUIRED BAR SIZE AND SPACING.
  - VERTICAL BARS NOT SHOWN FOR CLARITY, REFER TO OTHER DETAILS.

**CONCRETE WALL REINF FOR (2) MAT OF REINF**

SCALE: NTS

S-2



- NOTE:
- CORNER & INTERSECTION BARS TO MATCH SIZE & SPA OF HORIZ BARS. CENTER VERTICAL BARS IN WALL UNLESS NOTED OTHERWISE. REFER TO OTHER DETAILS FOR REQUIRED BAR SIZE AND SPACING.

**CONCRETE WALL REINF FOR (1) MAT OF REINF**

SCALE: NTS

S-3

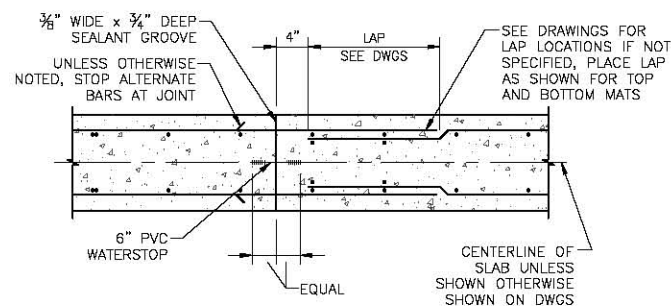
TYPICAL LAP SPLICE LENGTHS IN INCHES, PER ACI 350									
BAR SIZE	LAP CLASS	$f'_c=3,000\text{ psi}$		$f'_c=4,000\text{ psi}$		$f'_c=5,000\text{ psi}$		$f'_c=6,000\text{ psi}$	
		CAT 1	CAT 2	CAT 1	CAT 2	CAT 1	CAT 2	CAT 1	CAT 2
#3	A	16	25	14	21	13	19	12	17
	B	21	32	19	28	17	25	15	23
#4	A	22	33	19	28	17	25	15	23
	B	28	43	25	37	22	33	20	30
#5	A	27	41	24	36	21	32	19	29
	B	36	53	31	46	28	41	25	38
#6	A	33	49	28	43	25	38	23	35
	B	43	64	37	55	33	50	30	45
#7	A	48	72	42	62	37	56	34	51
	B	62	93	54	81	48	72	44	66
#8	A	55	82	47	71	42	64	39	58
	B	71	106	61	92	55	83	50	76
#9	A	62	92	53	80	48	72	44	65
	B	80	120	69	104	62	93	57	85

- NOTES:
- FOR GRADE 60 REINFORCING STEEL BARS.
  - ALL LAP SPLICES SHALL BE CLASS B, UNLESS NOTED OTHERWISE.
  - CATEGORY 1: CLEAR COVER  $\geq db$  & CLR SPACING  $\geq db$ , AND STIRRUPS OR TIES THROUGHOUT  $L_d$  ARE PROVIDED.
  - CATEGORY 2: CLEAR COVER  $< db$  OR CLR SPACING  $< 2db$ .
  - CATEGORY 1: CLEAR COVER  $\geq db$  & CLR SPACING  $\geq 2db$ .
  - FOR TOP BARS MULTIPLY LAP LENGTH LISTED BY 1.30 TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
  - MODIFY ABOVE VALUES FOR LIGHT-WEIGHT CONCRETE.

**LAP SPLICE SCHEDULE**

SCALE: NTS

S-4

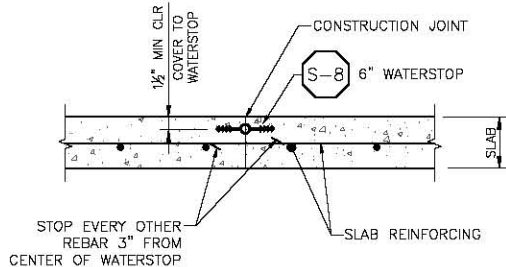


- NOTES:
- IN ALL WALL CONSTRUCTION JOINTS WITH WATERSTOPS, APPLY 2 COATS OF BOND BREAKER TO FACE OF JOINT AVOID COATING WATERSTOP.
  - WHERE WATERSTOP IS REQUIRED IN SINGLE CURTAIN WALL REINF PLACE WATERSTOP ON WATER SIDE OF WALL.
  - STAGGER SPLICES UNLESS NOTED OTHERWISE.

**DOUBLE MAT REINF WITH WATERSTOP/SEALANT GROOVE**

SCALE: NTS

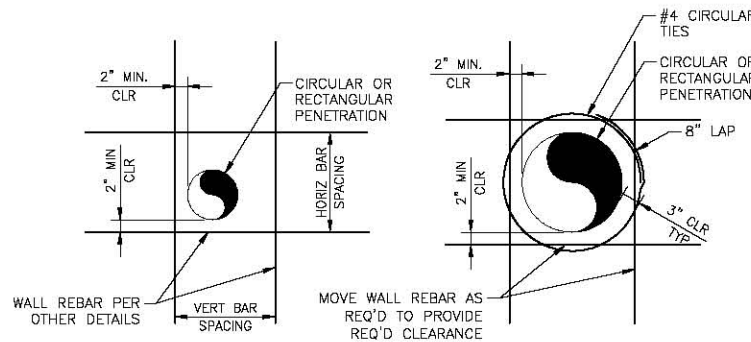
S-5



**SECTION - TYPICAL CONST JT**

SCALE: NTS

S-6



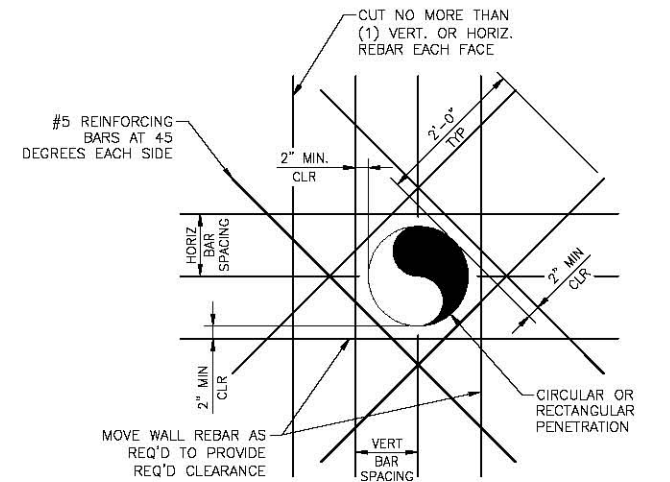
- FOR HOLES w/ DIA.  $< \text{BAR SPACE} + 4"$       FOR HOLES w/ DIA.  $> \text{BAR SPACE} + 4"$  AND w/ DIA.  $< 1.5 \times \text{BAR SPACE}$

- NOTES:
- NO SPECIAL REINFORCEMENT IS REQUIRED AROUND THE PENETRATION.
  - PROVIDE (1) CIRCULAR TIE FOR WALLS w/ ONE MAT OF REBAR & (2) TIES FOR WALLS w/ TWO MATS OF REBAR.

**ROUND CONCRETE WALL/SLAB HOLE PENETRATION DETAIL**

SCALE: NTS

S-7



- NOTE:
- PROVIDE (4) REINFORCING BARS FOR WALLS w/ ONE MAT OF REBAR & (4) REINFORCING BARS EA. FACE FOR WALLS w/ TWO MATS OF REBAR.

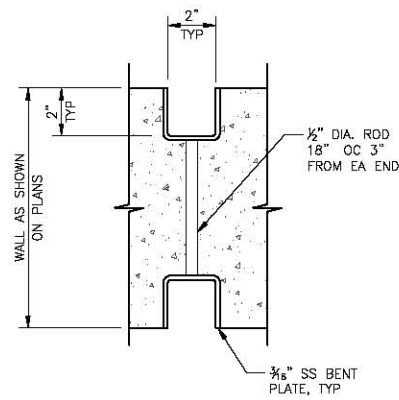
**McMILLEN, LLC**

THE SONNA BUILDING  
910 MAIN ST, SUITE 258 BOISE, ID 83702  
OFFICE: 208.342.4214  
FAX: 208.342.4216

SAP#	LEWIS RIVER
PL#	WOODLAND RELEASE POND IMPROVEMENTS
DATE	09/21/2010
ENG	M. REISER   DES J. RUSH
DR	S. ROBISON   CH D. NELSON
APPROVAL	STANDARD STRUCTURAL DETAILS 1
<b>PACIFICORP ENERGY</b> HYDRO	
SCALE: AS NOTED	SHEET GS-2
REV. A	

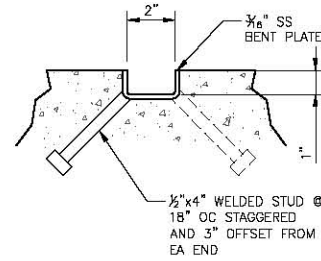
NO.	DATE	REVISION	BY	CHK	APP
1		90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR		





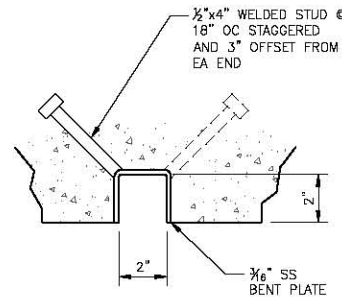
AT INTERIOR WALL

GUIDE SLOT DETAIL  
SCALE: 3" = 1'-0"



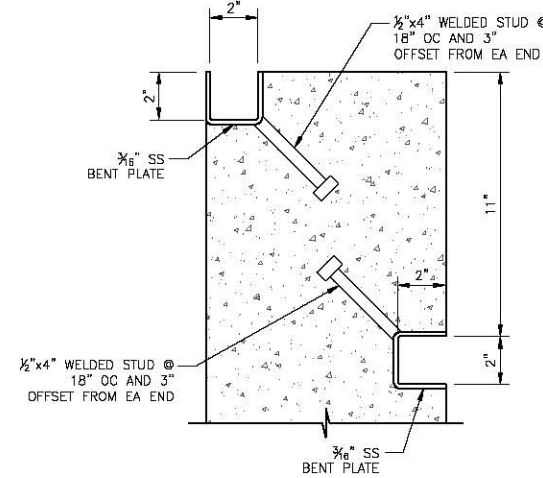
AT FLOOR

FLOOR GUIDE SLOT DETAIL  
SCALE: 3" = 1'-0"

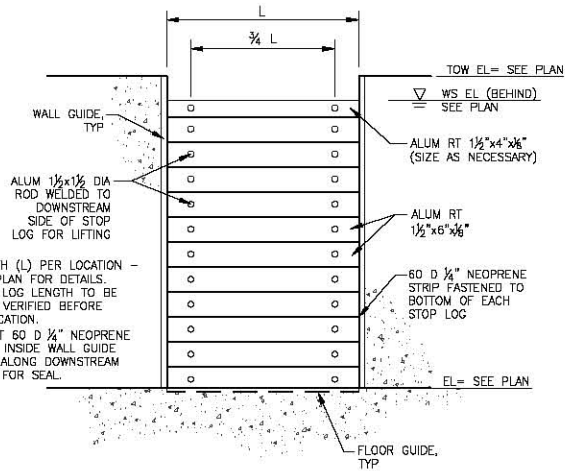


AT EXTERIOR WALL

WALL GUIDE SLOT DETAIL  
SCALE: 3" = 1'-0"



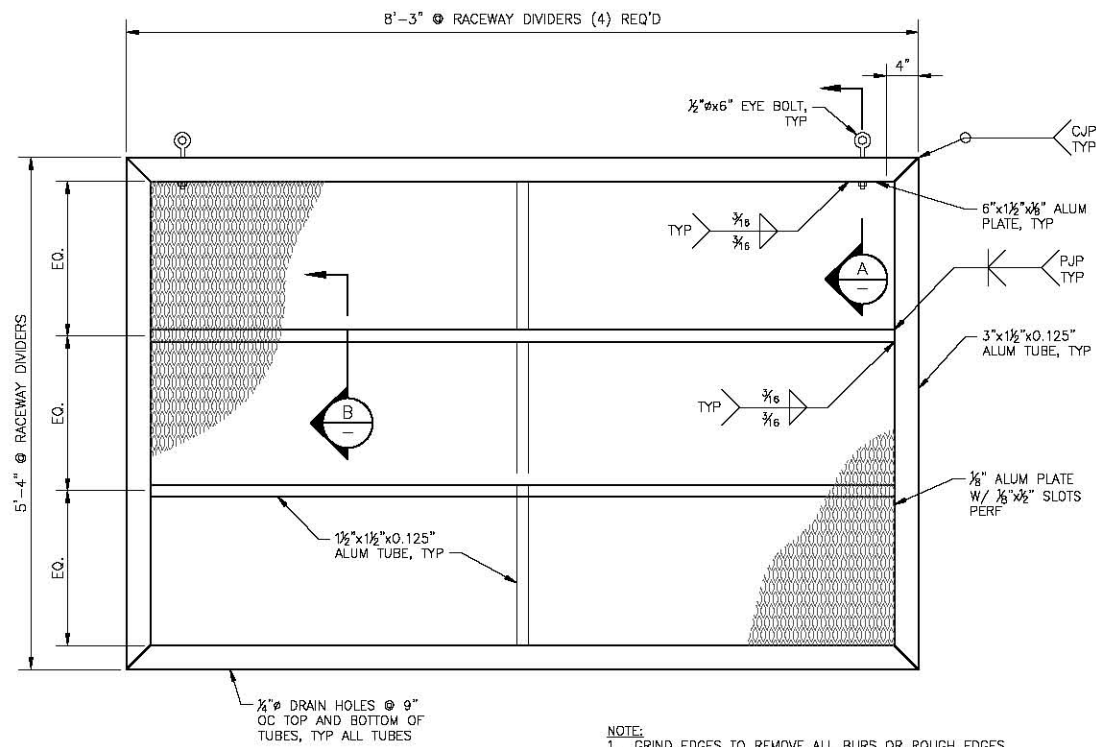
STOP LOG GUIDE DETAIL  
SCALE: 3" = 1'-0"



GENERAL STOP LOG DETAIL  
SCALE: 3" = 1'-0"



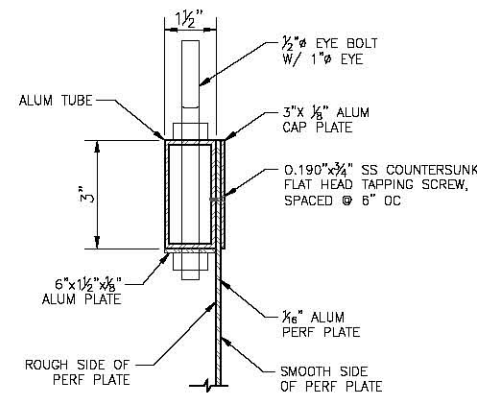
- NOTES:
- LENGTH (L) PER LOCATION - SEE PLAN FOR DETAILS.
  - STOP LOG LENGTH TO BE FIELD VERIFIED BEFORE FABRICATION.
  - MOUNT 60 D 1/4" NEOPRENE STRIP INSIDE WALL GUIDE SLOT ALONG DOWNSTREAM EDGE FOR SEAL.



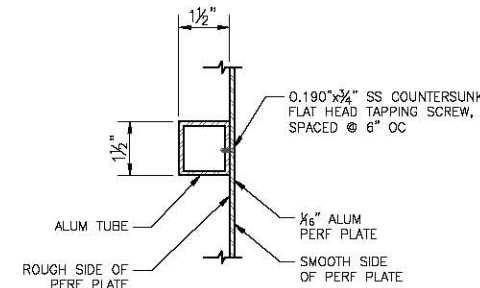
RACEWAY OUTLET SCREEN DETAIL  
SCALE: 1" = 1'-0"



NOTE:  
1. GRIND EDGES TO REMOVE ALL BURRS OR ROUGH EDGES AND PROVIDE A SMOOTH, FISH FRIENDLY SURFACE.



SECTION  
SCALE: NTS



SECTION  
SCALE: NTS



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BOISE, ID 83702 FAX: 208.342.4216

SAP#	
PL#	
DATE	09/21/2010
ENG	M. REISER DES J. RUSH
DR	S. ROBINSON CH D. NELSON

LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS  
STANDARD STRUCTURAL DETAILS 3

**PACIFICORP ENERGY**

HYDRO

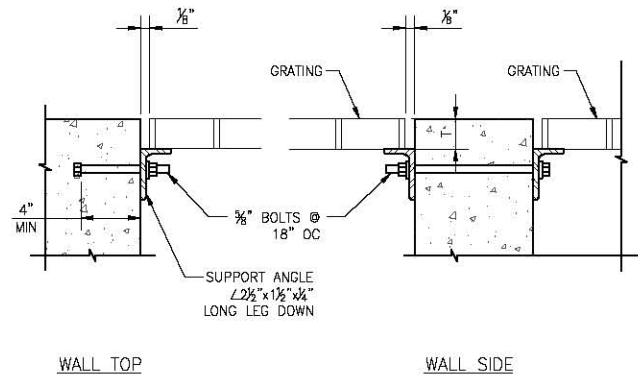
SCALE: AS NOTED	SHEET GS-4	REV. A
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REFERENCE DRAWINGS							
DRAWING No.							
BY	CHK APP						
REVISION							
DATE							
NO.							
BY	CHK APP						
MR	DSN						
REVISION							
NO.							
DATE							
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DATE							
NO.							
DATE							
NO.							
DATE							

GRATING FRAME TABLE

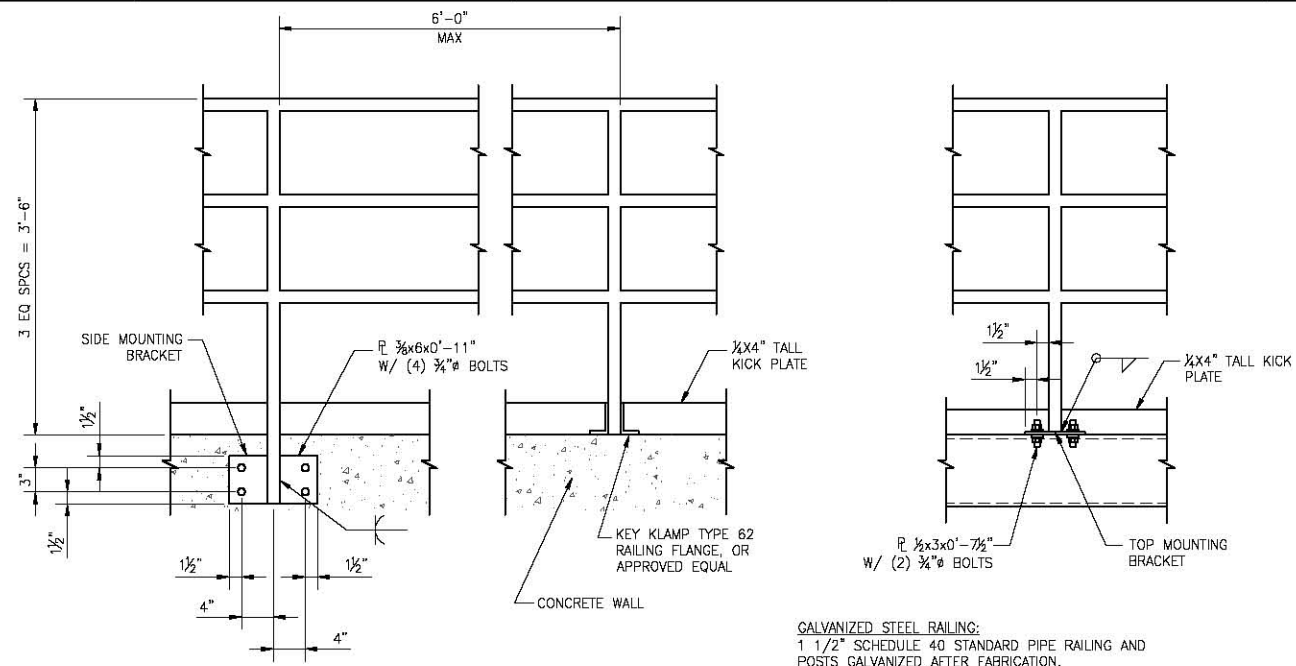
TYPE	MAX. SPAN	GRATING DEPTH "T"
1	4'-0"	1"
2	5'-0"	1 1/4"
3	5'-6"	1 1/2"
4	7'-0"	1 3/4"
5	8'-0"	2"
6	8'-6"	2 1/4"
7	9'-0"	2 1/2"

- NOTES:
- GRATING OF DEPTH "T" AS NOTED ON DRAWINGS SHALL BE SPECIFIED HEREIN.
  - ALL ENDS AND OPENINGS SHALL BE Banded.
  - ALL GRATINGS SHALL BE SECURED IN PLACE WITH REMOVABLE FASTENERS.
  - MAX. UNIFORM LOAD=100 PSF.
  - 3/8" EPOXY ANCHORS MAY BE SUBSTITUTED FOR 3/8" BOLTS. PROVIDE PRO-EPOXY 300 ADHESIVE W/ A36 BOLTS, 5/8" MIN EMBED, OR APPROVED EQUAL.
  - GALVANIZED STEEL GRATING SHALL BE USED FOR THE PONDS.
  - BEARING BARS: DEPTH "T" x 3/8" @ 1 1/2" OC CROSS BARS @ 4" OC USE STAINLESS STEEL ANGLE SUPPORTS AND BOLTS



WALL TOP

WALL SIDE



HAND RAILING DETAIL

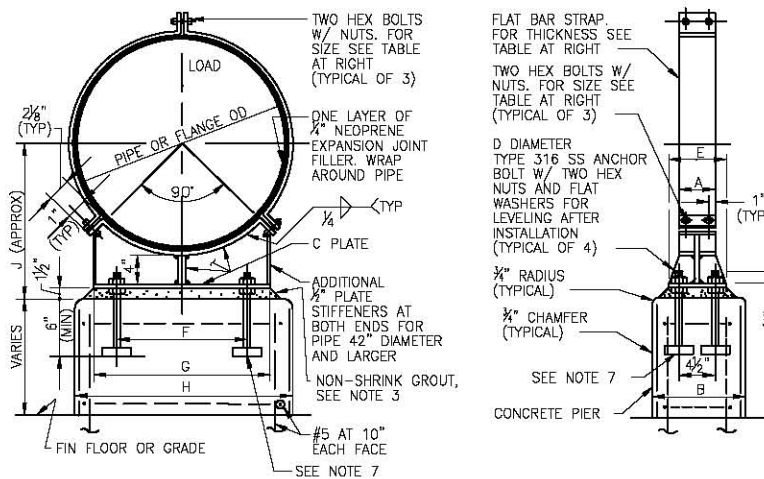
GALVANIZED STEEL RAILING:  
1 1/2" SCHEDULE 40 STANDARD PIPE RAILING AND  
POSTS GALVANIZED AFTER FABRICATION.

METAL GRATING DETAIL

SCALE: 1" = 1'-0"

S-16

S-17



NOMINAL PIPE SIZE	DIMENSIONS IN INCHES														
	STRAP						SUPPORTING								
	A	B	C	D	E	F	G	H	J	F	G	H	J		
16	4	18	3/4	3/4	6	1/2	1/4	9	15	80	15	12	20	26	18

- NOTES:
- 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.
  - PIPE SUPPORTS SHALL BE LOCATED IN PLAN AT POINTS MARKED THUS: (X)
  - WHERE DIFFERENTIAL SETTLEMENT IS LIKELY TO OCCUR, OMIT GROUT AS DIRECTED BY THE ENGINEER.
  - GALVANIZE ALL PARTS AFTER FABRICATION.
  - WHERE DIRECTED BY THE STRUCTURAL ENGINEER, BOTTOM OF PIERS SHALL EXTEND BELOW BOTTOM OF SLAB.
  - WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
  - TYPE 316 SS 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).

PIPE SUPPORT WITH STRAP

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

S-18

**McMILLEN, LLC**

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LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS

STANDARD STRUCTURAL DETAILS 4

PACIFIC CORP ENERGY

HYDRO

SCALE: AS NOTED

SHEET GS-5

REV. A

PLT SCALE: AS NOTED

REVISION  
A 09/21/10 90% NON-SITE SPECIFIC DESIGN SUBMITTAL

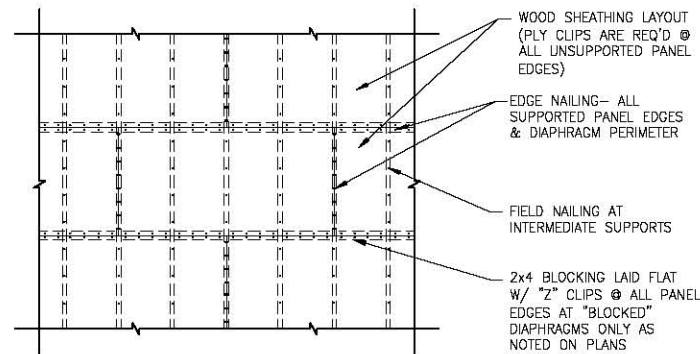
REVISION

CHK APP

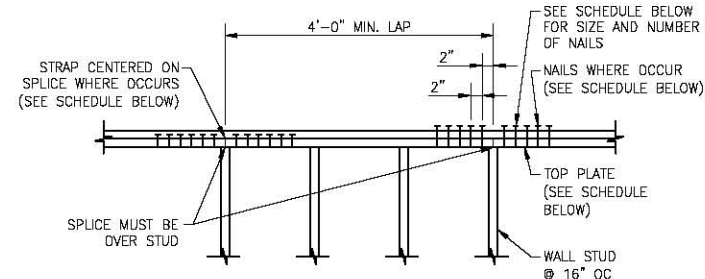
DRAWING No.

REFERENCE DRAWINGS

REFERENCE DRAWINGS



- NOTES:
1. MIN. EDGE DISTANCE FOR NAILS SHALL BE 3/8"
  2. MIN. SHTG SHEET SIZE SHALL BE 2'-0"x4'-0"
  3. NAIL HEAD SHALL NOT BREAK OUTER PLY OF SHEATHING
  4. NAILS SHALL BE COMMON WIRE TYPE. PNEUMATIC DRIVEN FASTENERS MAY BE USED W/ ENGINEER APPROVAL, SEE STRUCTURAL NOTES.



TOP PLATE SPLICE SCHEDULE

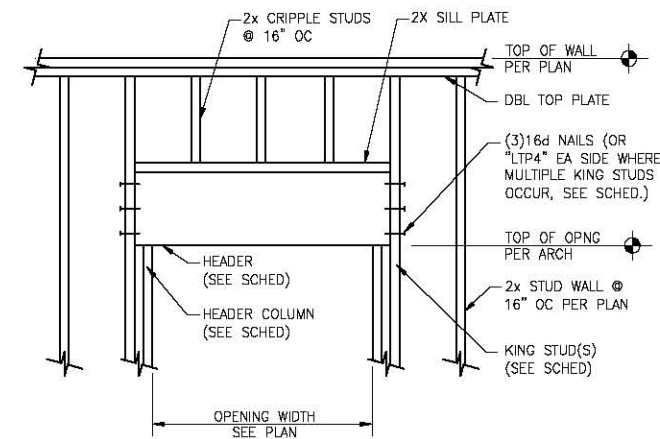
MARK	TOP PLATE	NAIL SIZE & NUMBER EA. SIDE OF SPLICE	NOTES
①	(2) 2x	(8) 16d NAILS	
②	(2) 2x	"STB224" STRAP W/ 10d x 1 1/2" NAILS	SEE S4.0
③	(2) 2x	"MSTC68" STRAP W/ 10d x 1 1/2" NAILS	SEE S4.0

NOTE: FOR WOOD WALLS NOT MARKED, USE ①

WOOD HEADER SCHEDULE

HEADER MARK	OPNG WIDTH	HEADER SIZE	HEADER COLUMN	KING STUD(S)
H1	3'-0"	(2) 2x6 DF-L#2	(2) 2x	(1) 2x
H2	6'-0"	(2) 2x6 DF-L#2	(2) 2x	(1) 2x

- NOTES:
1. WHERE BUILT-UP STUDS OR HEADER BEAMS ARE REQUIRED SEE PARTIAL FASTENING SCHEDULE (PER IBC TABLE 2304.9.1) ON STRUCTURAL NOTES SHEET.



WOOD DIAPHRAGM LAYOUT (ROOF AND WALL FRAMING)

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

S-19

TOP PLATE SPLICE SCHEDULE

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

S-20

WOOD HEADER ELEVATION AND SCHEDULE

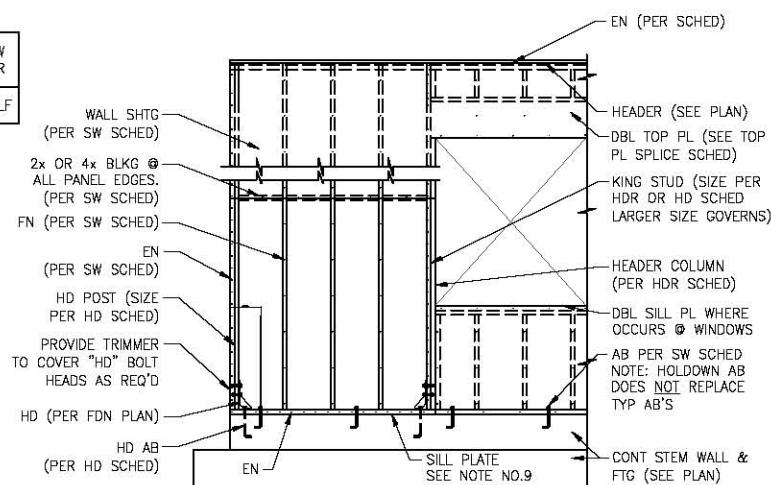
SCALE: NTS

S-21

SHEARWALL SCHEDULE (FOUNDATION)

MARK	PANEL EDGE NAILING	PANEL FIELD NAILING	PANEL EDGE FRAMING	APA RATED SHTG	ANCHOR BOLT SIZE & SPACING	BLKG CLIP	ALLOW SHEAR
①	8d @ 6" OC	8d @ 12" OC	2x	3/8" (1) SIDE	5/8" x 10" AB @ 48" OC	"A35" @ 16" OC	185 PLF

- NOTE:
1. FOR EXTERIOR WALLS NOT MARKED USE ①
  2. MIN. EDGE DISTANCE FOR NAILS SHALL BE 3/8"
  3. MIN. SHTG SHEET SIZE SHALL BE 2'-0"x4'-0"
  4. NAIL HEAD SHALL NOT BREAK OUTER PLY OF SHTG.
  5. NAILS SHALL BE COMMON WIRE TYPE.
  6. EN = EDGE NAILING
  7. WHERE PANELS ARE APPLIED TO BOTH FACES OF THE WALL AND NAIL SPACING IS LESS THAN 6" OC, NAILS ON EA SIDE SHALL BE STAGGERED.
  8. FOR HOLD DOWN REQUIREMENTS, SEE PLAN.
  9. THERE SHALL BE A MINIMUM OF TWO AB PER EA PIECE OF SILL PLATE.
  10. LOCATE AB NO MORE THAN 12" & NO LESS THAN 4" FROM EA END OF EA SILL PLATE.
  11. SW = SHEAR WALL, HD = HOLD DOWN, HDR = HEADER, AB = ANCHOR BOLTS



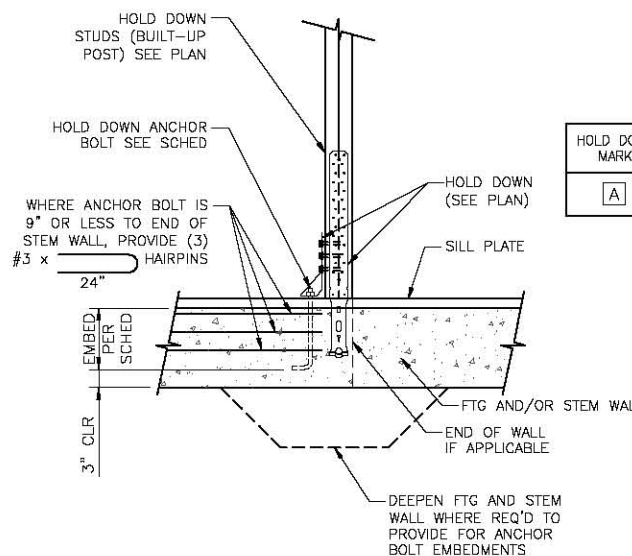
SHEAR WALL SCHEDULE

SCALE: NTS

S-22

HOLD DOWN DETAIL & SCHEDULE

SCALE: NTS



HOLD DOWN SCHEDULE OF FOUNDATION

HOLD DOWN MARK	HOLD DOWN SIZE	STUD BOLTS/ NAILS	ALTERNATE HOLD DOWN SIZE	ANCHOR BOLTS	STUDS BOLTS	STUDS REQD	TENSION
A	STD8	(24) 16d	HD2A	5/8"x9" EMBED	(2) 5/8" @	(2) 2x	1950#

- NOTE:
1. COMPARE HOLD DOWN STUD (PER FOUNDATION PLAN) TO KING STUD (PER HEADER SCHED). LARGER SIZE GOVERNS.

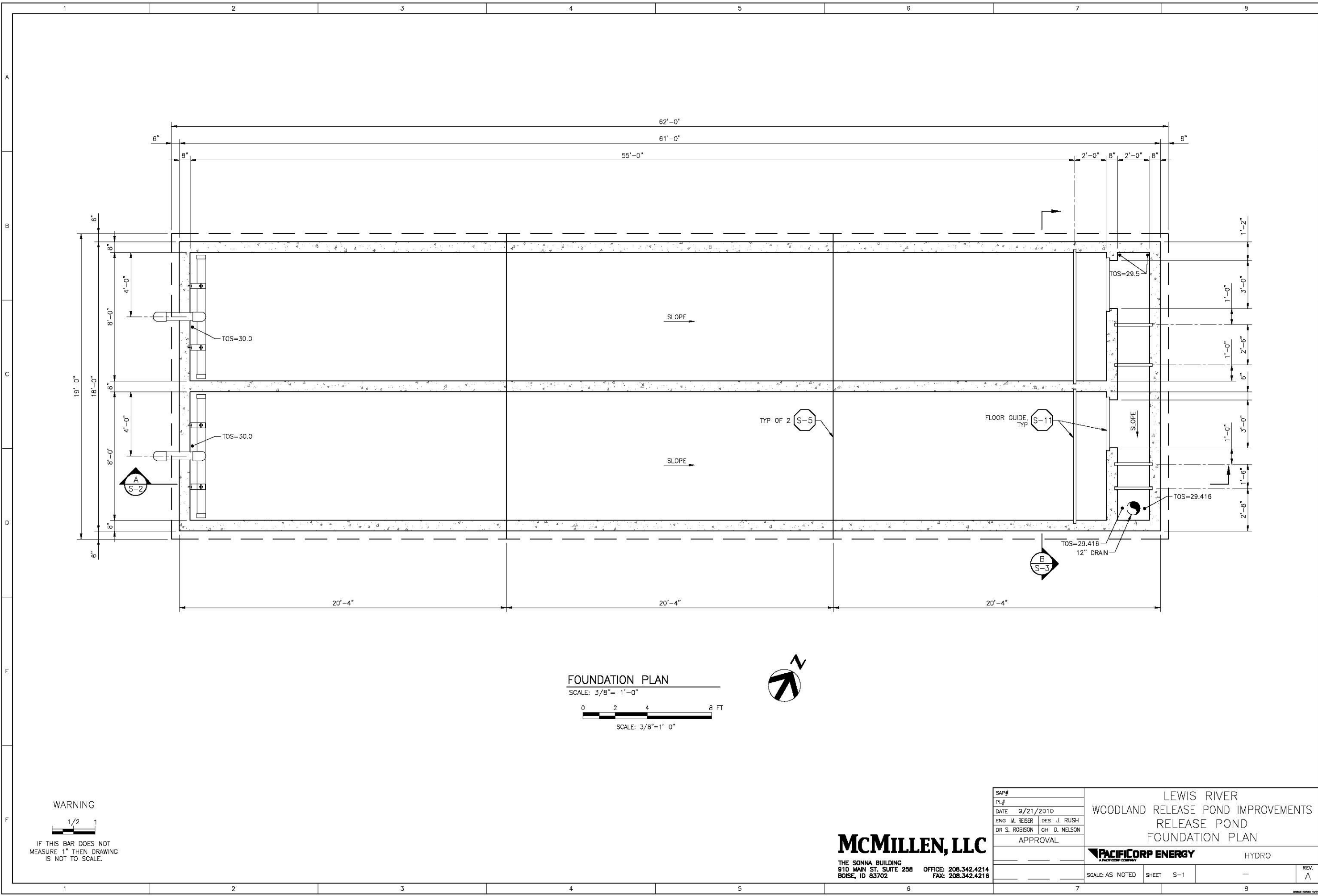
SAP#	LEWIS RIVER
PL#	WOODLAND RELEASE POND IMPROVEMENTS
DATE	09/21/2010
ENG M. REISER	DES J. RUSH
DR S. ROBISON	CH D. NELSON
APPROVAL	STANDARD STRUCTURAL DETAILS 5
<b>PACIFIC CORP ENERGY</b> HYDRO	
SCALE: AS NOTED	SHEET GS-6
DATE	REV. A

THE SONNA BUILDING  
910 MAIN ST. SUITE 258 BOISE, ID 83702 OFFICE: 208.342.4214 FAX: 208.342.4216

**McMILLEN, LLC**

NO.	DATE	REVISION	BY	CHK APP	DRAWING NO.	REFERENCE DRAWINGS
A	09/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR	DSN		





**FOUNDATION PLAN**  
 SCALE: 3/8"= 1'-0"

SCALE: 3/8"=1'-0"

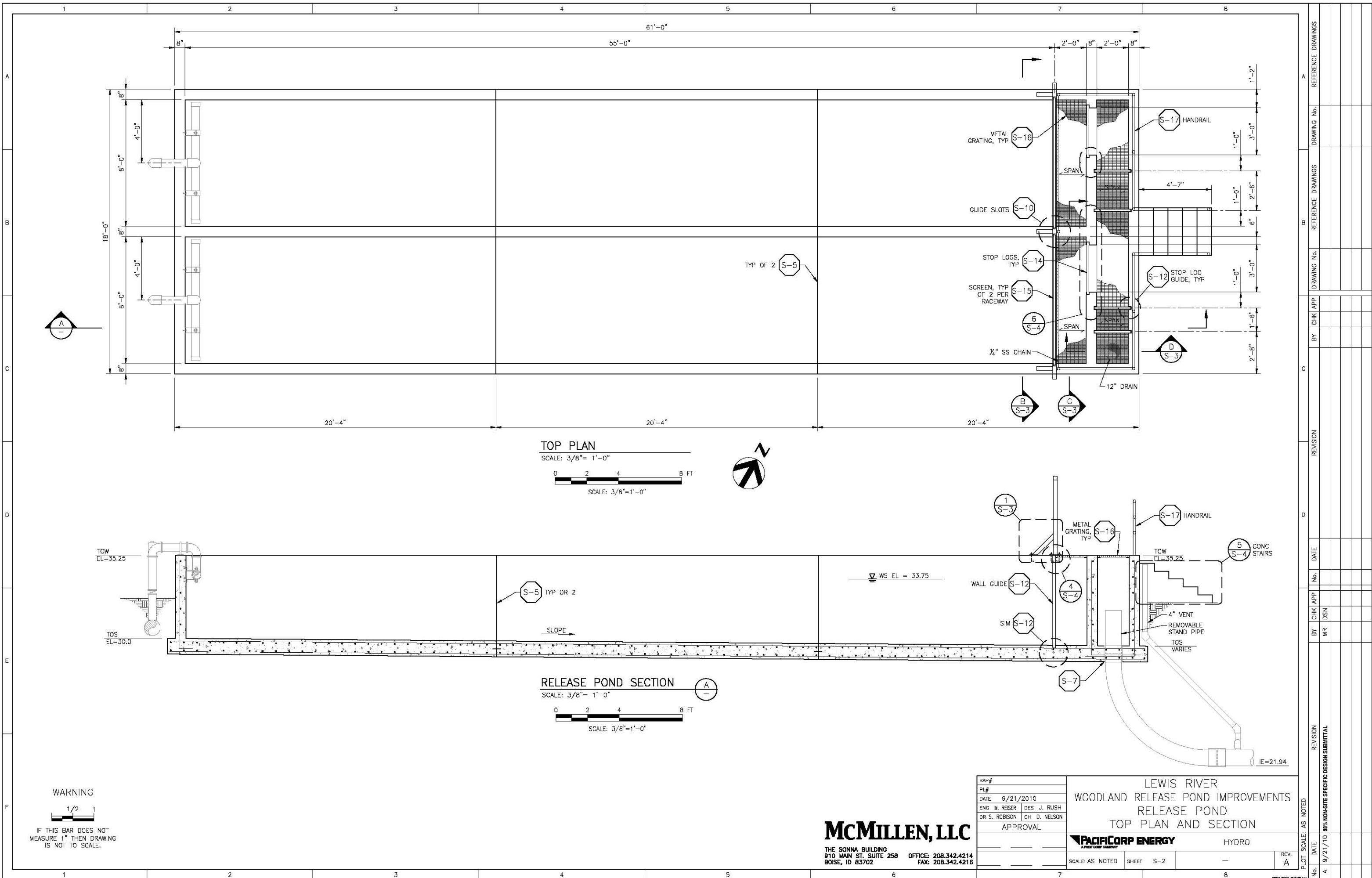


**WARNING**  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

**McMILLEN, LLC**  
 THE SONNA BUILDING  
 910 MAIN ST. SUITE 258 BOISE, ID 83702  
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SAP#	LEWIS RIVER	
PL#	WOODLAND RELEASE POND IMPROVEMENTS	
DATE	9/21/2010	RELEASE POND
ENG	W. REISER	DES. J. RUSH
DR	S. ROBINSON	CH. D. NELSON
APPROVAL	FOUNDATION PLAN	
PACIFICORP ENERGY		HYDRO
SCALE: AS NOTED	SHEET S-1	REV. A

PLOT SCALE: AS NOTED	REVISION	BY	CHK APP	DATE	NO.
	REVISION	MR	DSN		
90% NON-SITE SPECIFIC DESIGN SUBMITTAL	REFERENCE DRAWINGS	DRAWING No.			
	REFERENCE DRAWINGS	DRAWING No.			



**TOP PLAN**  
 SCALE: 3/8" = 1'-0"  
 0 2 4 8 FT  
 SCALE: 3/8" = 1'-0"

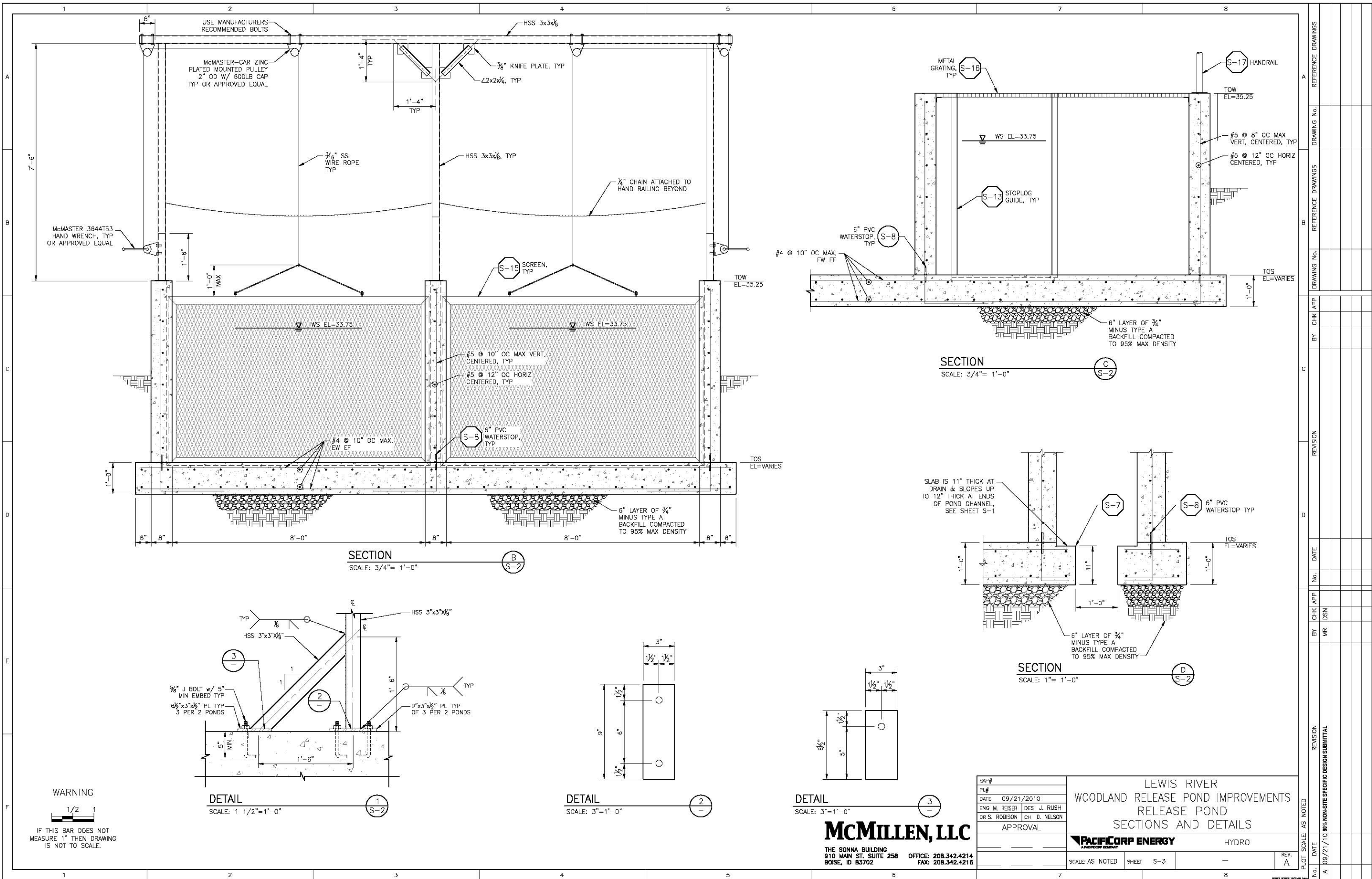
**RELEASE POND SECTION**  
 SCALE: 3/8" = 1'-0"  
 0 2 4 8 FT  
 SCALE: 3/8" = 1'-0"

**WARNING**  
 1/2 1  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

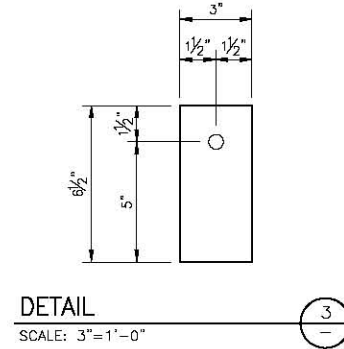
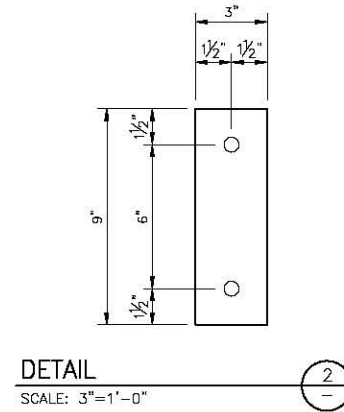
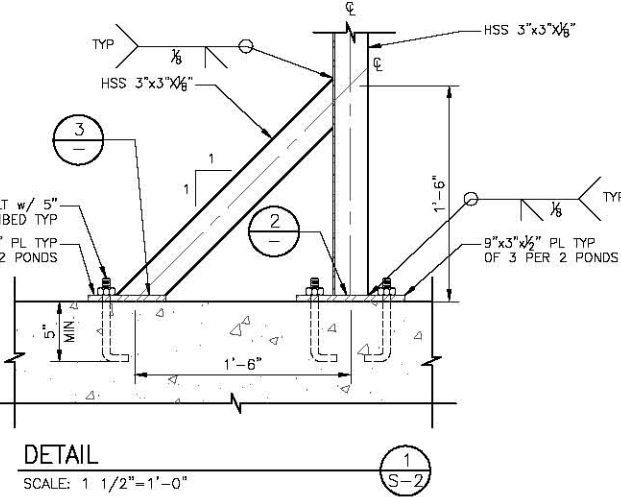
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 THE SONNA BUILDING  
 910 MAIN ST. SUITE 258 BOISE, ID 83702  
 OFFICE: 208.342.4214  
 FAX: 208.342.4216

SAP#		LEWIS RIVER	
PL#		WOODLAND RELEASE POND IMPROVEMENTS	
DATE		9/21/2010	
ENG. M. REISER	DES. J. RUSH	RELEASE POND	
DR. S. ROBISON	CH. D. NELSON	TOP PLAN AND SECTION	
APPROVAL		HYDRO	
PACIFICORP ENERGY		REV. A	
SCALE: AS NOTED	SHEET S-2		

No.	DATE	REVISION	BY	CHK APP	DRAWING No.	REFERENCE DRAWINGS
A	9/21/10	80% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR	DSN		



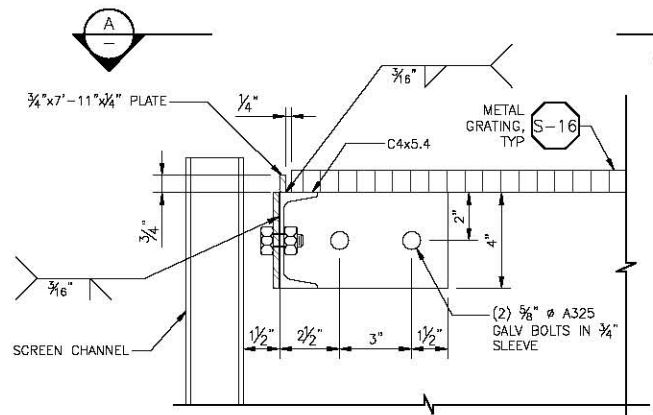
**WARNING**  
 1/2 1  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.



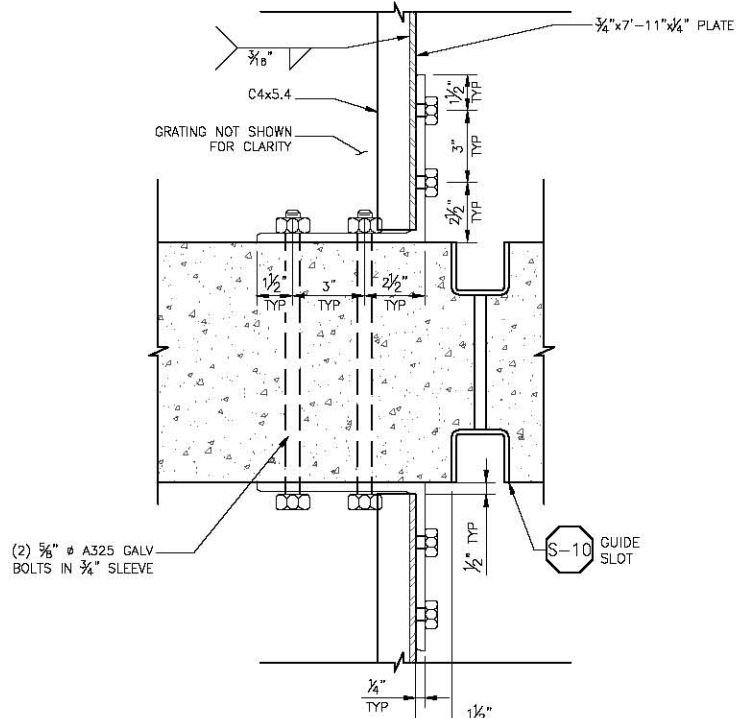
SAP#	LEWIS RIVER
PL#	WOODLAND RELEASE POND IMPROVEMENTS
DATE	09/21/2010
ENG	M. REISER DES J. RUSH
DR	S. ROBISSON CH D. NELSON
APPROVAL	
<b>PACIFICORP ENERGY</b>	
HYDRO	
SCALE: AS NOTED	SHEET S-3
REV. A	

NO.	DATE	REVISION	BY	CHK	APP	DATE	NO.	DATE	REVISION	BY	CHK	APP	DRAWING NO.	REFERENCE DRAWINGS
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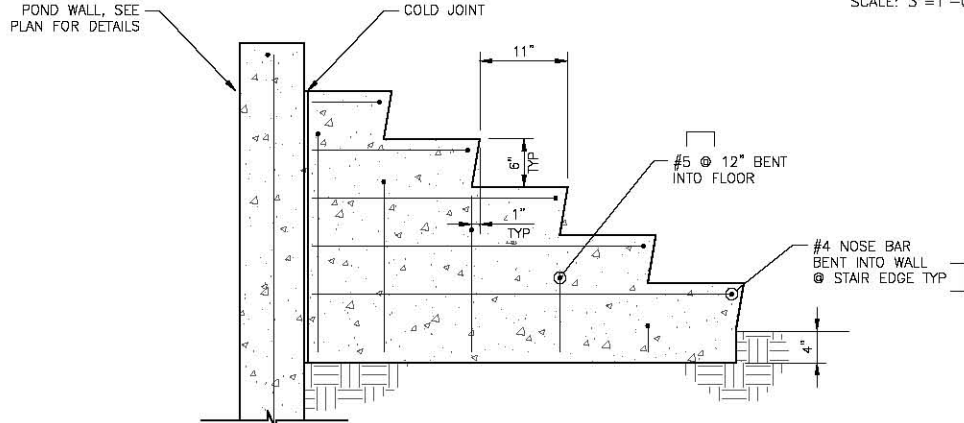
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**DETAIL 4**  
SCALE: 3"=1'-0"

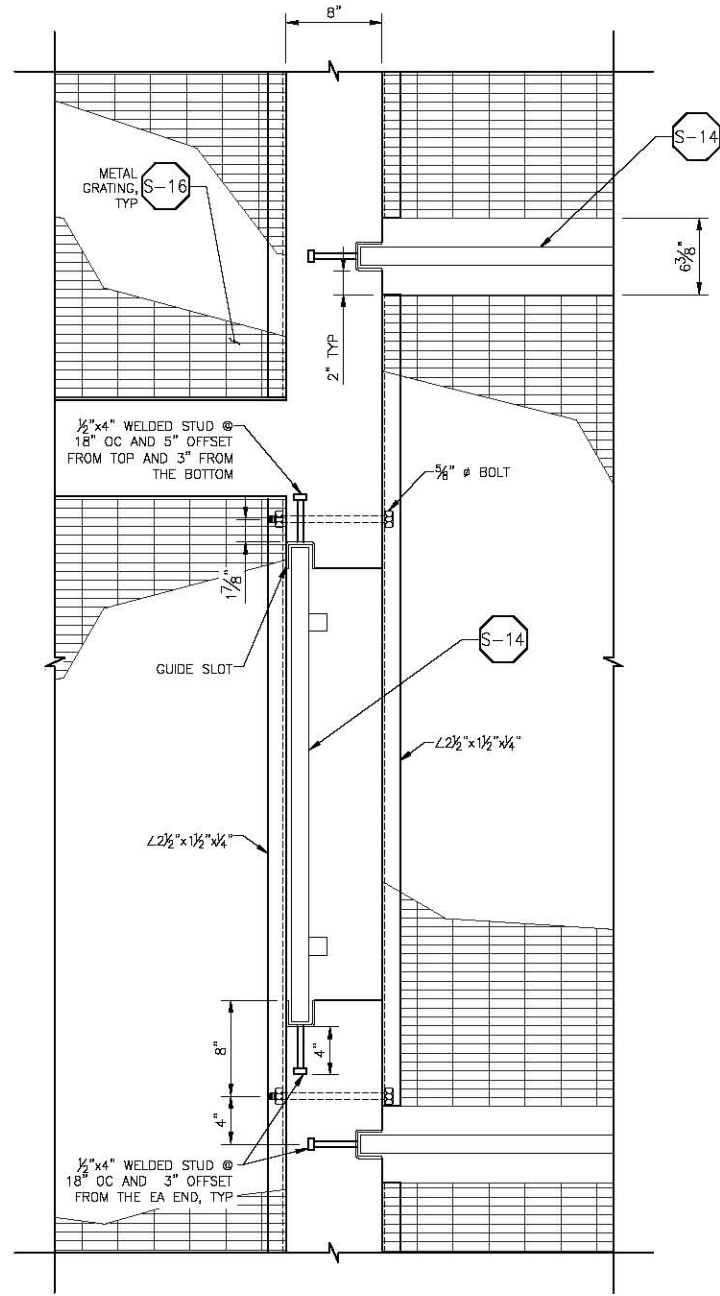


**DETAIL 3**  
SCALE: 3"=1'-0"



**DETAIL 5**  
SCALE: 1"=1'-0"

**NOTE:**  
1. TREAD SHALL RECEIVE A STEEL TROWEL FINISH IMMEDIATELY THEREAFTER. THE SURFACE SHALL BE SLIGHTLY ROUGHENED BY DRAWINGS A STIFF BROOM OVER THE SURFACE AT A RIGHT ANGLE TO THE DIRECTION OF TRAFFIC TO PRODUCE A NONSKID SURFACE.



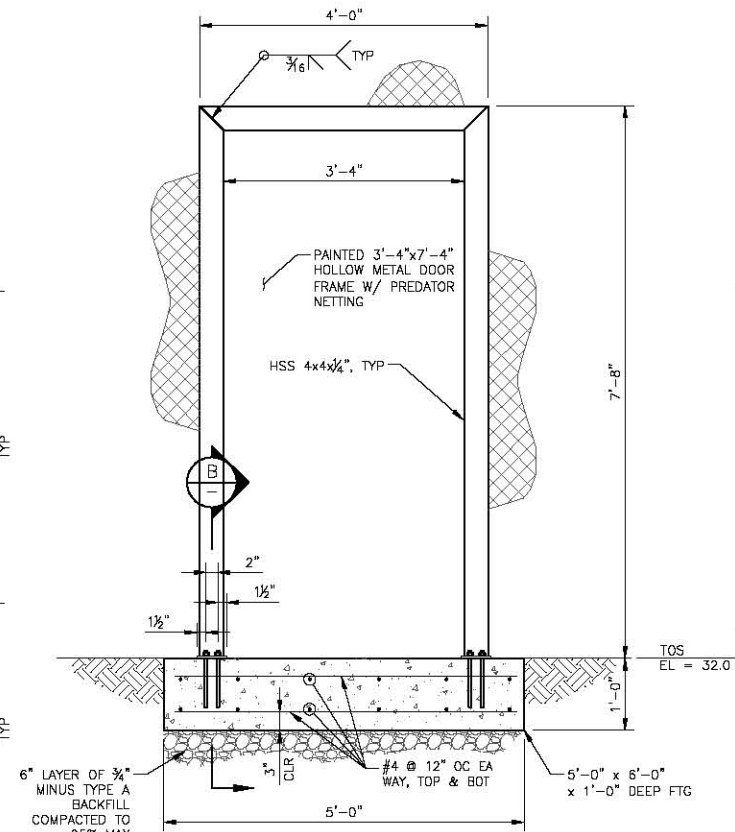
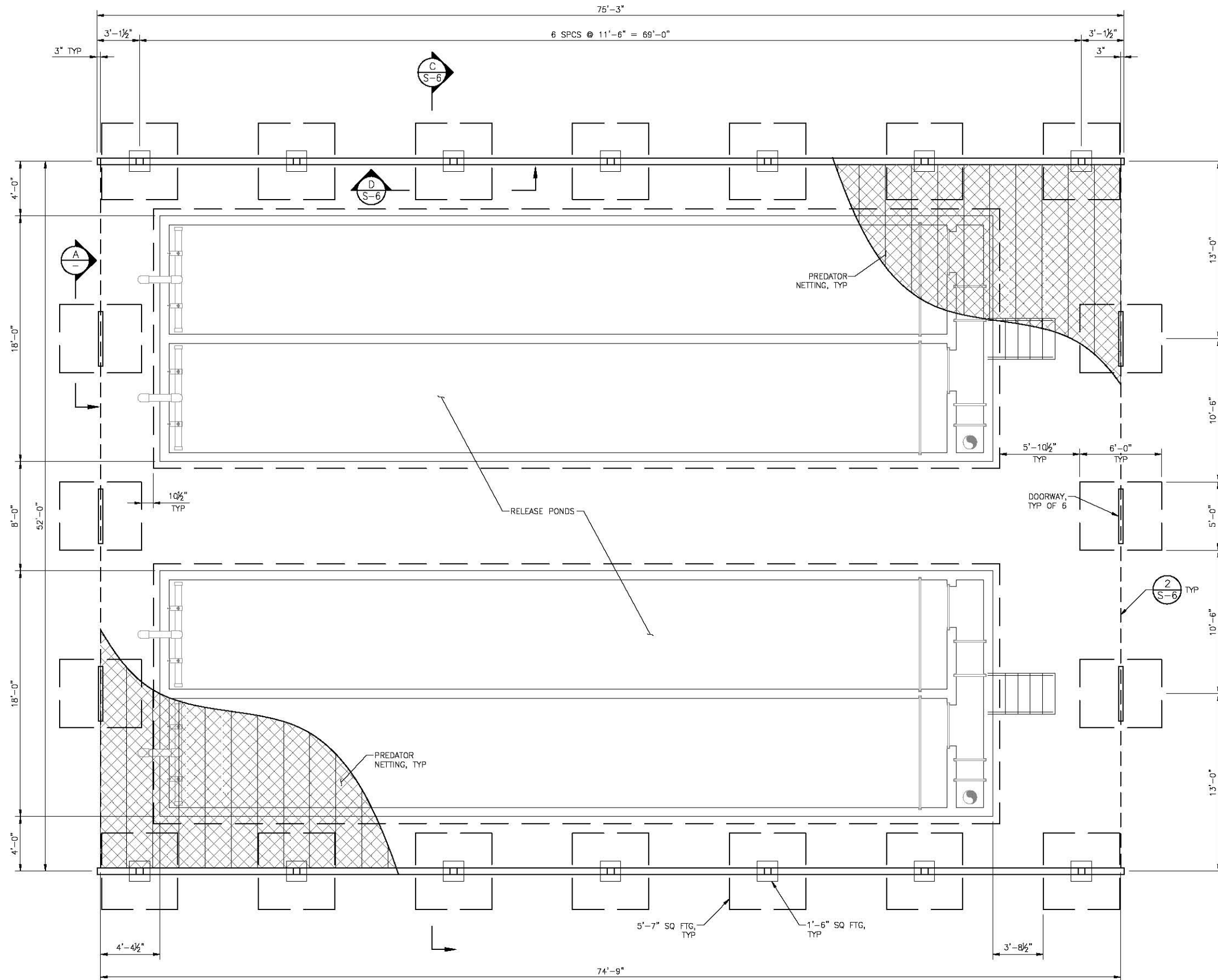
**DETAIL 6**  
SCALE: 1 1/2"=1'-0"

**WARNING**  
1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

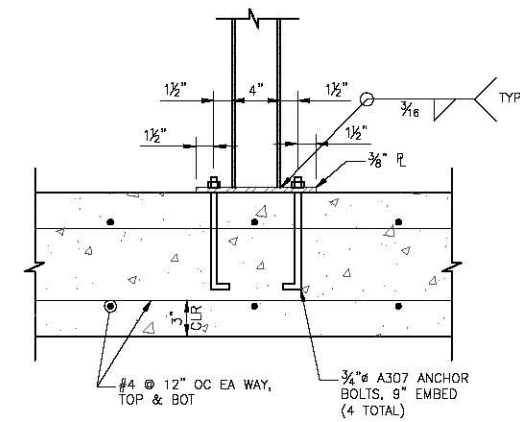
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FAX: 208.342.4216

SAP#	LEWIS RIVER		
PL#	WOODLAND RELEASE POND IMPROVEMENTS		
DATE	09/21/2010	RELEASE POND	
ENG	M. REISER	DES	J. RUSH
DR	S. ROBINSON	CH	D. NELSON
APPROVAL	_____		
SCALE	AS NOTED	SHEET	S-4
DATE	09/21/10	REV.	A

NO.	DATE	REVISION	BY	CHK APP	DRAWING NO.	REFERENCE DRAWINGS
A	09/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR	DSN		

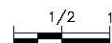


**SECTION (TYP OF 6)**  
SCALE: 3/4"=1'-0"



**SECTION**  
SCALE: 1 1/2"=1'-0"

WARNING



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**PREDATOR NETTING PLAN**  
SCALE: 1/4"=1'-0"



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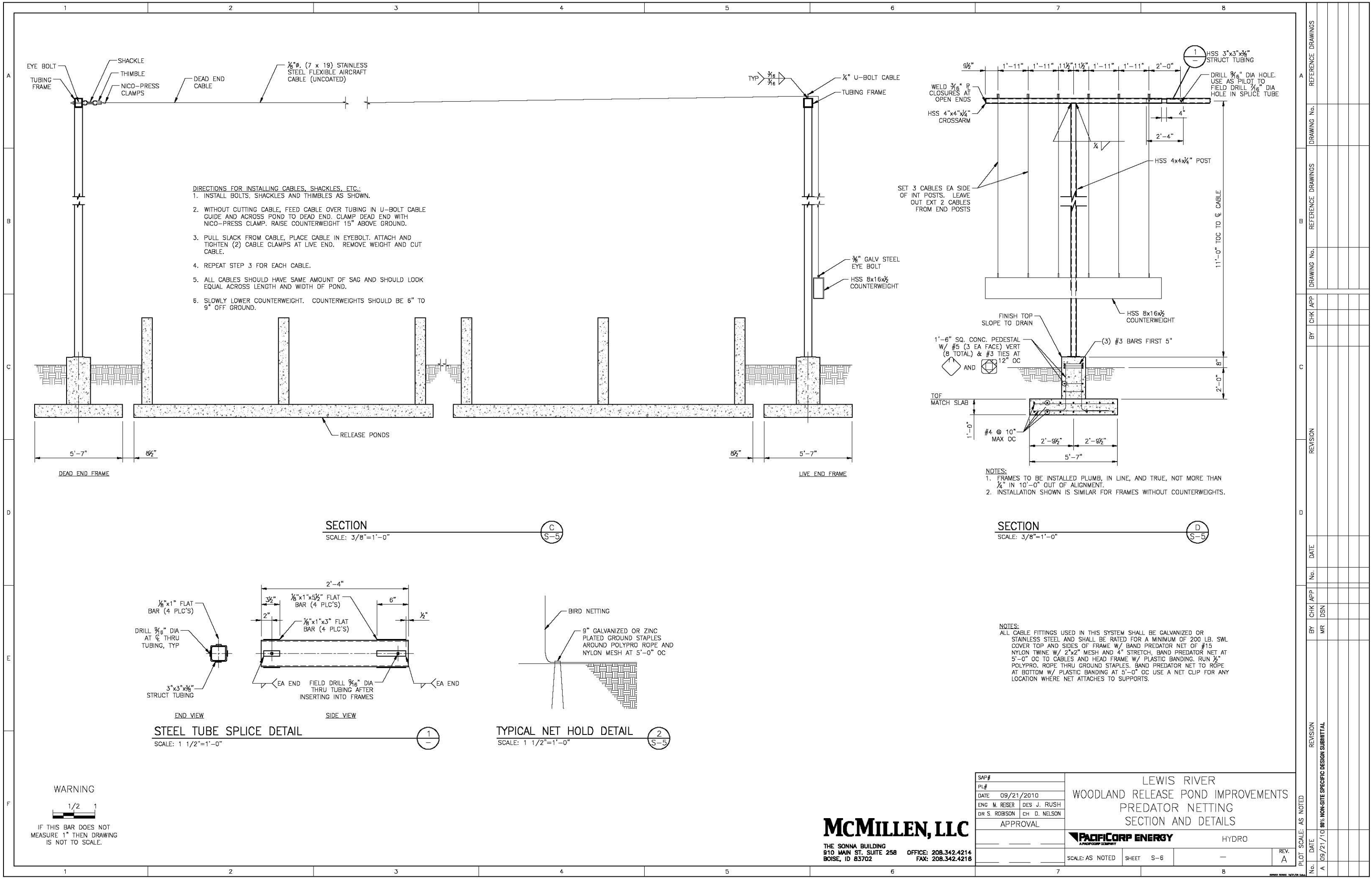
SAP#	
PL#	
DATE	9/21/2010
ENG	M. REISER DES J. RUSH
DR	S. ROBINSON CH D. NELSON
APPROVAL	

LEWIS RIVER	
WOODLAND RELEASE POND IMPROVEMENTS	
PREDATOR NETTING	
PLAN AND SECTION	
PACIFICORP ENERGY	HYDRO

SCALE: AS NOTED	SHEET: S-5	REV: A
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REVISION		CHK APP		DRAWING No.		DRAWING No.	
NO.	DATE	BY	CHK	APP	NO.	NO.	NO.

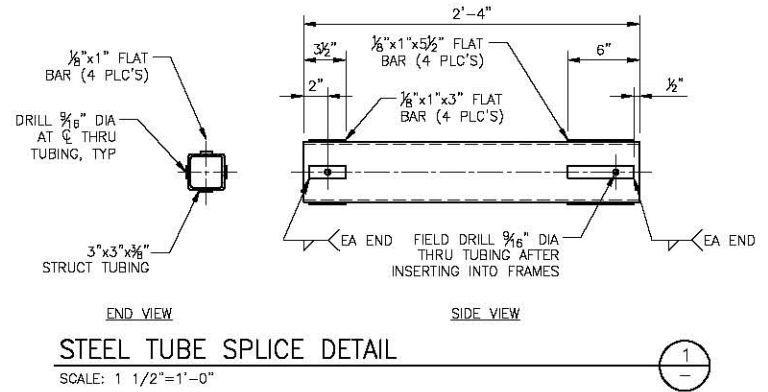
PLOT SCALE: AS NOTED



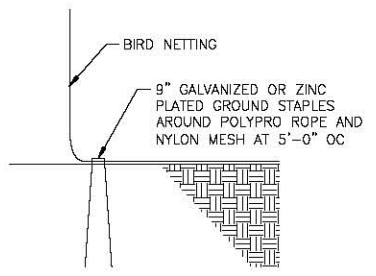
- DIRECTIONS FOR INSTALLING CABLES, SHACKLES, ETC.:**
1. INSTALL BOLTS, SHACKLES AND THIMBLES AS SHOWN.
  2. WITHOUT CUTTING CABLE, FEED CABLE OVER TUBING IN U-BOLT CABLE GUIDE AND ACROSS POND TO DEAD END. CLAMP DEAD END WITH NICO-PRESS CLAMP. RAISE COUNTERWEIGHT 15" ABOVE GROUND.
  3. PULL SLACK FROM CABLE, PLACE CABLE IN EYEBOLT. ATTACH AND TIGHTEN (2) CABLE CLAMPS AT LIVE END. REMOVE WEIGHT AND CUT CABLE.
  4. REPEAT STEP 3 FOR EACH CABLE.
  5. ALL CABLES SHOULD HAVE SAME AMOUNT OF SAG AND SHOULD LOOK EQUAL ACROSS LENGTH AND WIDTH OF POND.
  6. SLOWLY LOWER COUNTERWEIGHT. COUNTERWEIGHTS SHOULD BE 6" TO 9" OFF GROUND.

**SECTION C**  
SCALE: 3/8"=1'-0"

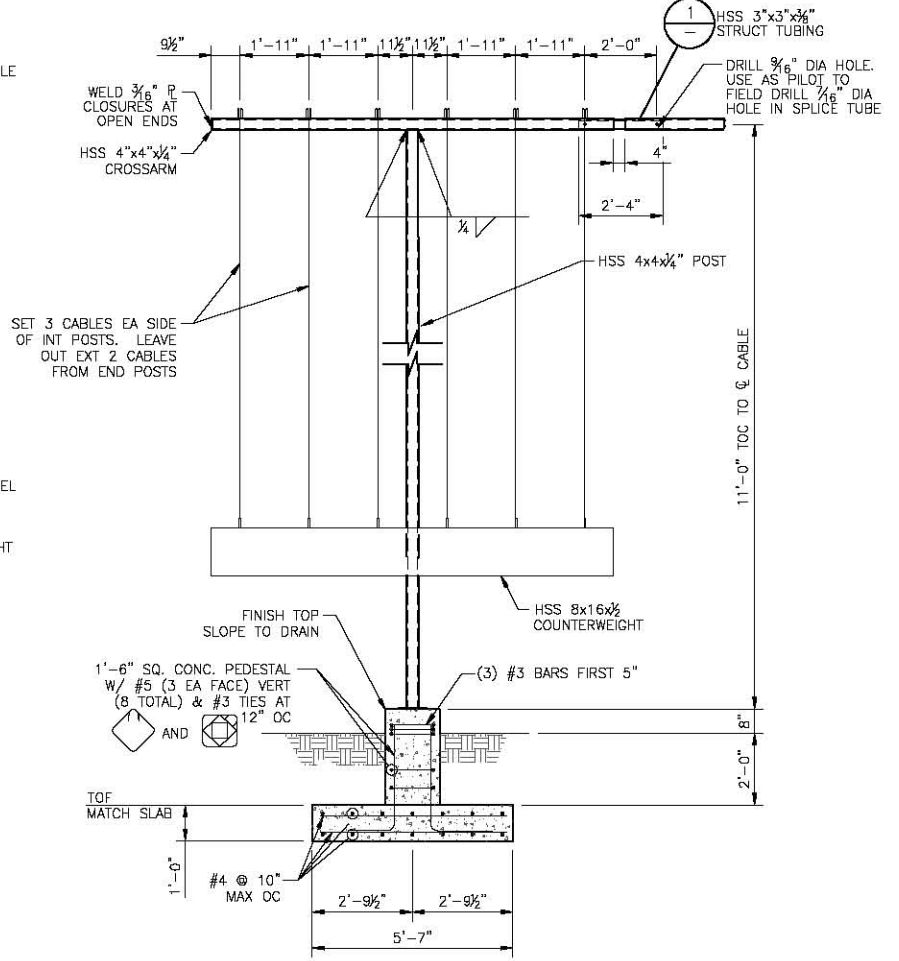
**SECTION D**  
SCALE: 3/8"=1'-0"



**STEEL TUBE SPLICE DETAIL**  
SCALE: 1 1/2"=1'-0"



**TYPICAL NET HOLD DETAIL**  
SCALE: 1 1/2"=1'-0"



- NOTES:**
1. FRAMES TO BE INSTALLED PLUMB, IN LINE, AND TRUE, NOT MORE THAN 1/4" IN 10'-0" OUT OF ALIGNMENT.
  2. INSTALLATION SHOWN IS SIMILAR FOR FRAMES WITHOUT COUNTERWEIGHTS.

- NOTES:**
- ALL CABLE FITTINGS USED IN THIS SYSTEM SHALL BE GALVANIZED OR STAINLESS STEEL AND SHALL BE RATED FOR A MINIMUM OF 200 LB. SWL COVER TOP AND SIDES OF FRAME W/ BAND PREDATOR NET OF #15 NYLON TWINE W/ 2"x2" MESH AND 4" STRETCH. BAND PREDATOR NET AT 5'-0" OC TO CABLES AND HEAD FRAME W/ PLASTIC BANDING. RUN 1/2" POLYPRO. ROPE THRU GROUND STAPLES. BAND PREDATOR NET TO ROPE AT BOTTOM W/ PLASTIC BANDING AT 5'-0" OC USE A NET CLIP FOR ANY LOCATION WHERE NET ATTACHES TO SUPPORTS.

**WARNING**

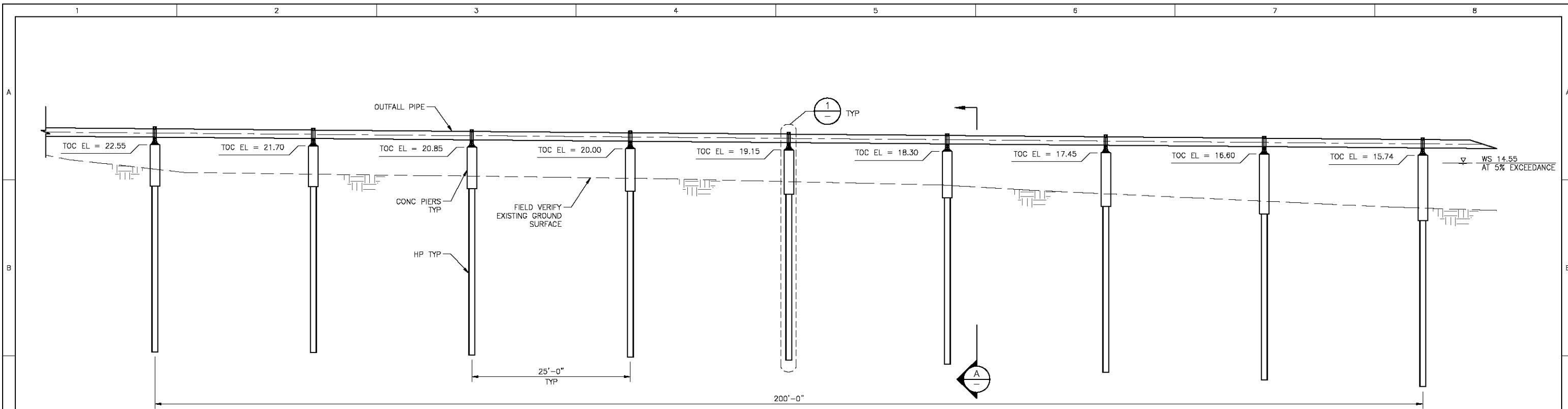
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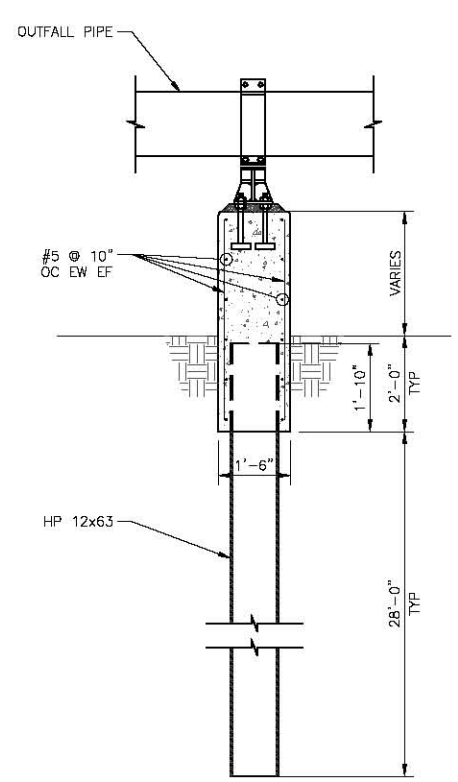
SAP#	LEWIS RIVER
PL#	WOODLAND RELEASE POND IMPROVEMENTS
DATE	09/21/2010
ENG	M. REISER DES J. RUSH
DR	S. ROBINSON CH D. NELSON
APPROVAL	
<b>PACIFICORP ENERGY</b>	
HYDRO	
SCALE: AS NOTED	SHEET S-6
DATE	REV. A

REFERENCE DRAWINGS	
DRAWING No.	
REFERENCE DRAWINGS	
DRAWING No.	
CHK APP	
BY	
REVISION	
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DATE	
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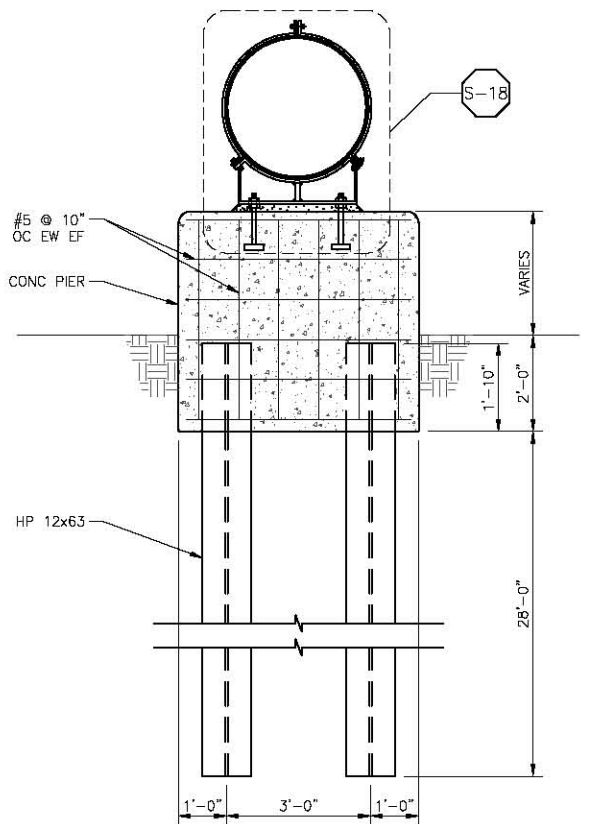




OUTLET ELEVATION  
SCALE: 1/8"=1'-0"



DETAIL  
SCALE: 1/2"=1'-0"



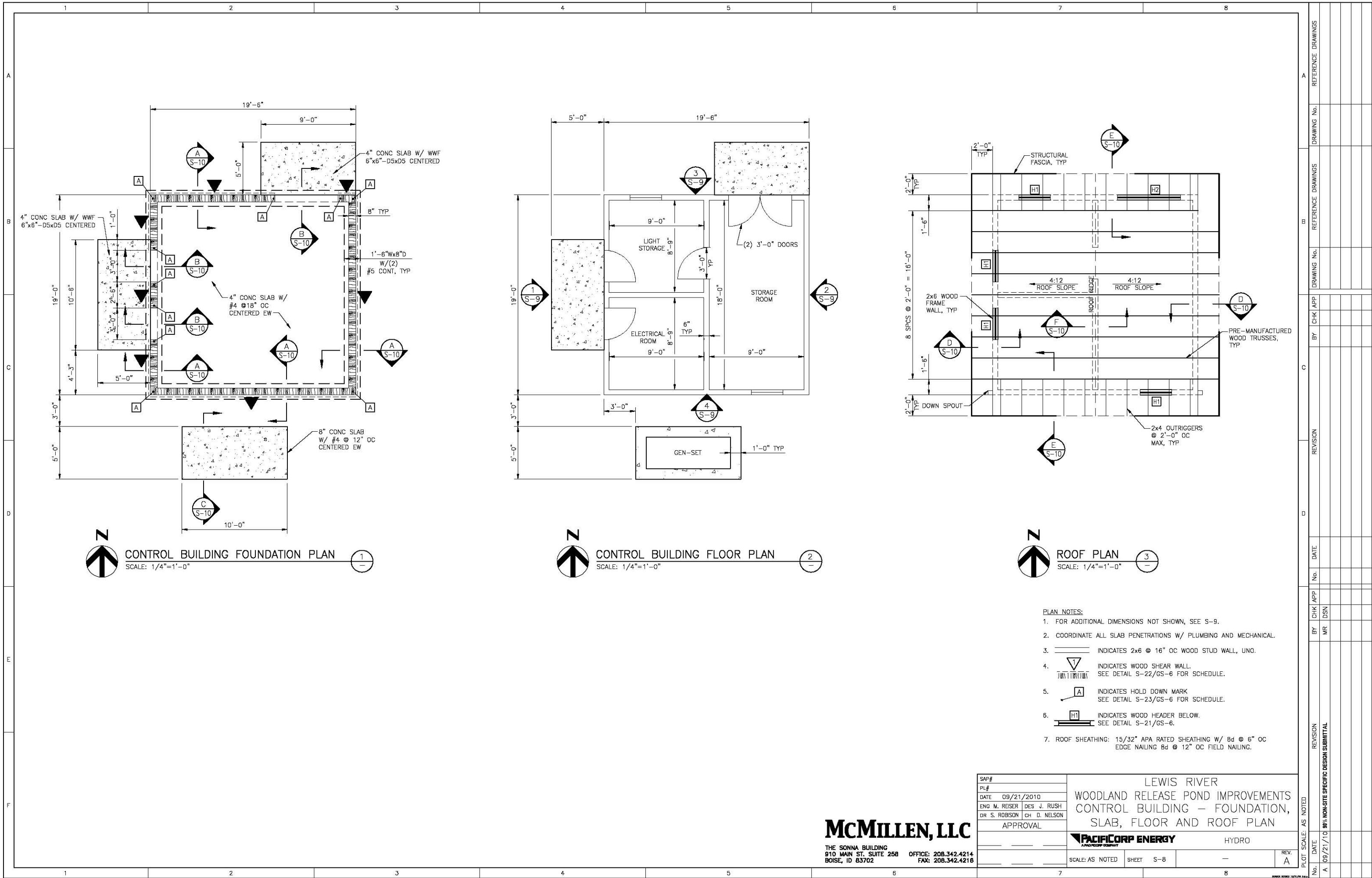
TYPICAL SECTION  
SCALE: 1/2"=1'-0"

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SAP#	LEWIS RIVER		
PL#	WOODLAND RELEASE POND IMPROVEMENTS		
DATE	09/21/2010	ELEVATION, SECTION AND DETAIL	
ENG	M. REISER	DES	J. RUSH
DR	S. ROBISON	CH	D. NELSON
APPROVAL	PACIFICORP ENERGY		
SCALE	AS NOTED	SHEET	S-7
DATE	09/21/10	REV.	A
90% NON-SITE SPECIFIC DESIGN SUBMITTAL			

REFERENCE DRAWINGS							
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REVISION							
DATE							
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BY	CHK APP	MR	DSN				
REVISION							
DATE							
NO.							
PLOT SCALE: AS NOTED							



**CONTROL BUILDING FOUNDATION PLAN**  
SCALE: 1/4"=1'-0" 1







**CONTROL BUILDING FLOOR PLAN**  
SCALE: 1/4"=1'-0" 2



**ROOF PLAN**  
SCALE: 1/4"=1'-0" 3

**PLAN NOTES:**

1. FOR ADDITIONAL DIMENSIONS NOT SHOWN, SEE S-9.
2. COORDINATE ALL SLAB PENETRATIONS W/ PLUMBING AND MECHANICAL.
3.  INDICATES 2x6 @ 16" OC WOOD STUD WALL, UNO.
4.  INDICATES WOOD SHEAR WALL. SEE DETAIL S-22/GS-6 FOR SCHEDULE.
5.  INDICATES HOLD DOWN MARK. SEE DETAIL S-23/GS-6 FOR SCHEDULE.
6.  INDICATES WOOD HEADER BELOW. SEE DETAIL S-21/GS-6.
7. ROOF SHEATHING: 15/32" APA RATED SHEATHING W/ Bd @ 6" OC. EDGE NAILING Bd @ 12" OC. FIELD NAILING.

REFERENCE DRAWINGS	
DRAWING No.	
REVISION	
BY	CHK APP
MR	DSN
DATE	
REVISION	
No.	DATE
1	09/21/10

PLOT SCALE: AS NOTED

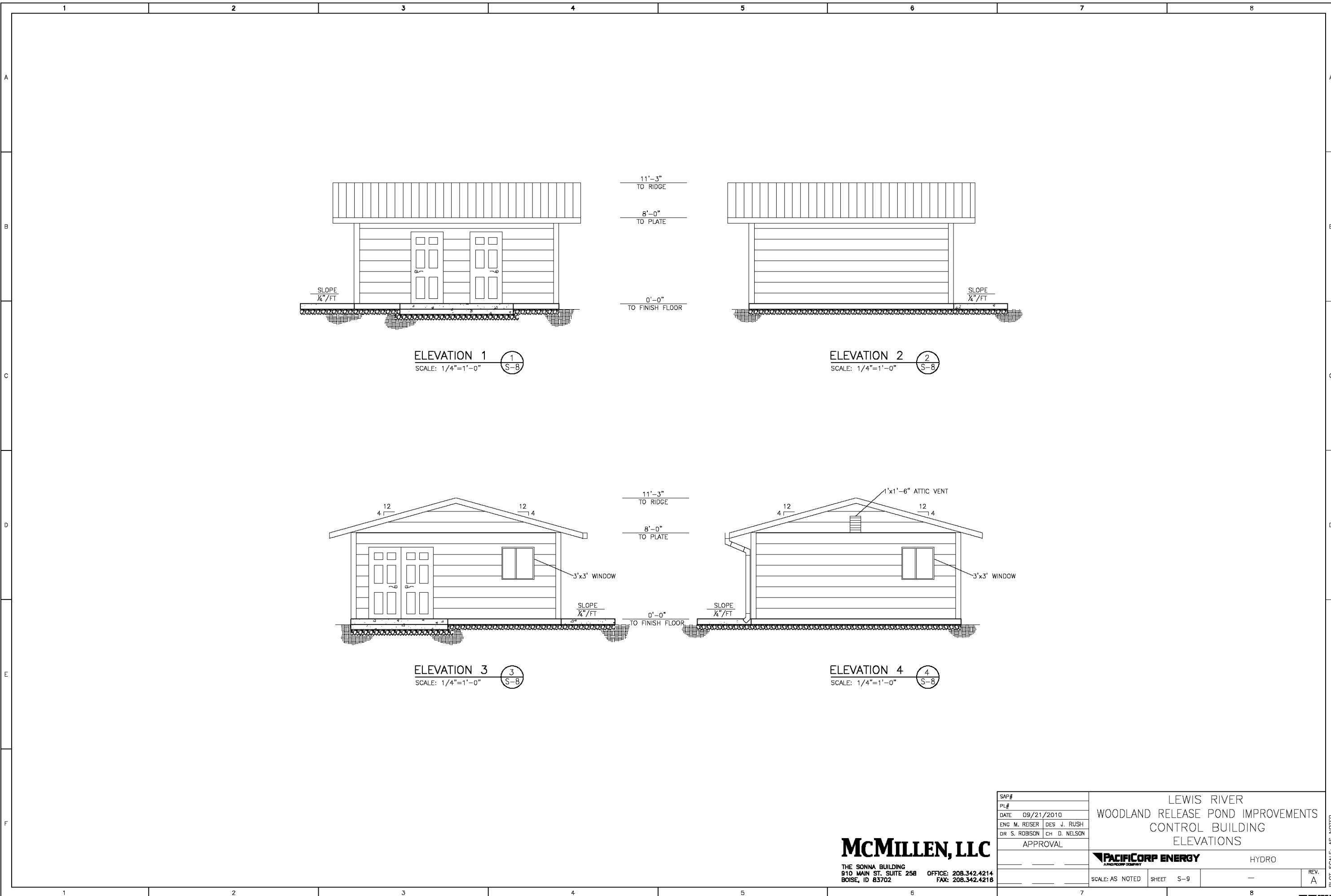
SAP#	
PL#	
DATE	09/21/2010
ENG	M. REISER
DES	J. RUSH
DR	S. ROBISON
CH	D. NELSON
APPROVAL	
SCALE	AS NOTED
SHEET	S-8
REV.	A

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LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS  
CONTROL BUILDING - FOUNDATION,  
SLAB, FLOOR AND ROOF PLAN

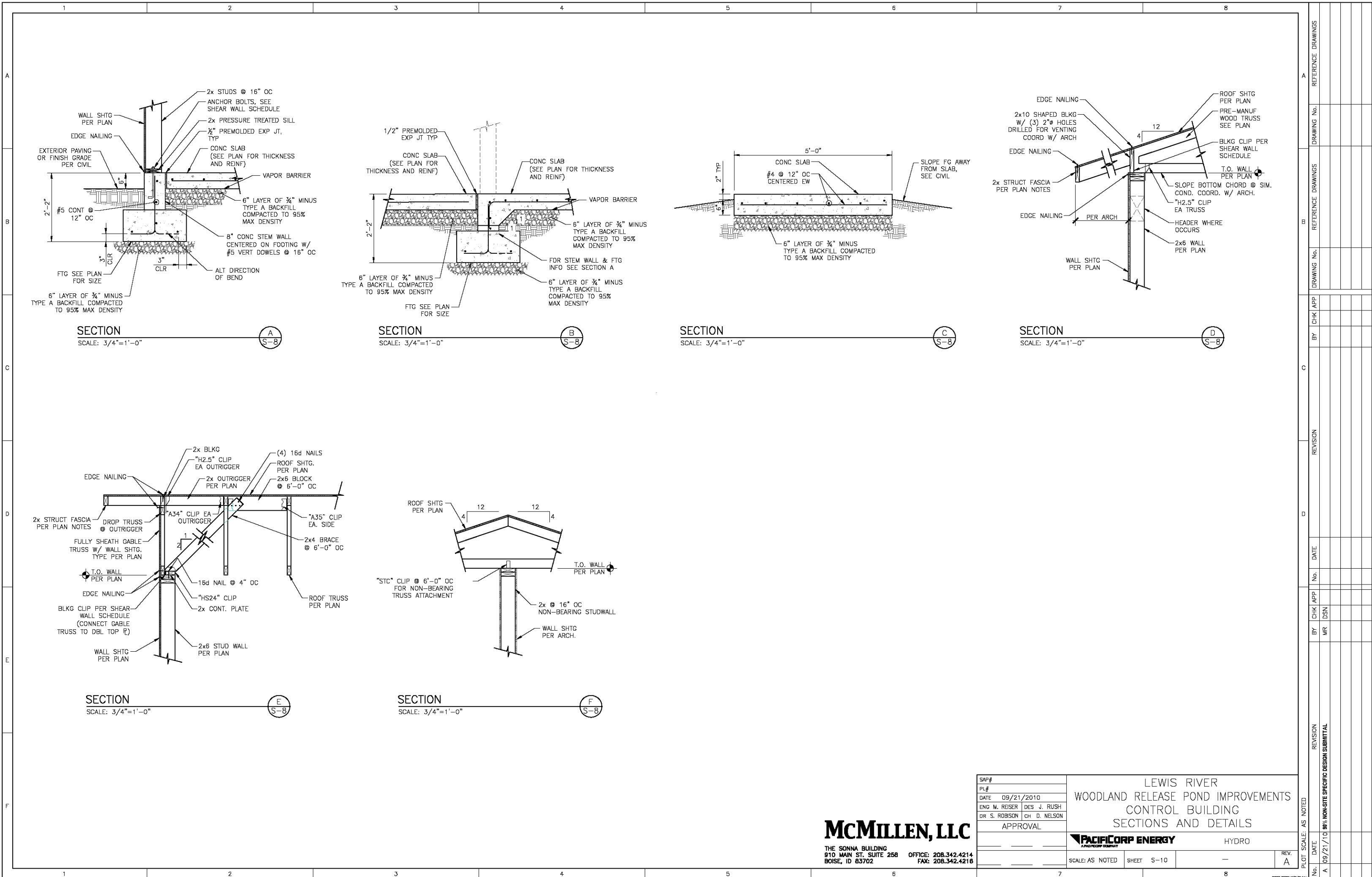
**PACIFICORP ENERGY** HYDRO



NO.	DATE	REVISION	BY	CHK APP	DATE	NO.	REVISION	BY	CHK APP

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DATE	09/21/2010
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DR S. ROBISON	CH D. NELSON
APPROVAL	
<b>PACIFICORP ENERGY</b> HYDRO	
SCALE: AS NOTED	SHEET S-9
REV. A	

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NO.	DATE	REVISION	BY	CHK APP	DATE	NO.	REVISION	BY	CHK APP
A	09/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR	DSN					

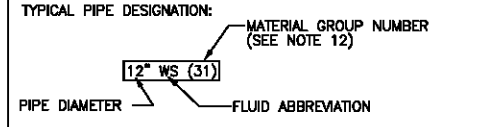
SAP#	
PL#	
DATE	09/21/2010
ENG	M. REISER   DES J. RUSH
DR	S. ROBISON   CH D. NELSON
APPROVAL	
<b>LEWIS RIVER WOODLAND RELEASE POND IMPROVEMENTS CONTROL BUILDING SECTIONS AND DETAILS</b>	
<b>PACIFICORP ENERGY</b> HYDRO	
SCALE: AS NOTED	SHEET S-10
REV. A	

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 THE SONNA BUILDING  
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PLOT SCALE: AS NOTED

FLUID ABBREVIATION	FUNCTION  THIS LIST MAY INCLUDE FLUIDS NOT USED IN THIS PROJECT (* SEE NOTE 5)	ALLOWABLE PIPING MATERIAL GROUP NO. (SEE NOTES 1 AND 4)				FIELD TEST REQUIREMENTS (SEE NOTE 3 AND NOTE 4)		
		EXPOSED PIPING (SEE NOTE 14)		BURIED PIPING (SEE NOTE 13)		MINIMUM TEST PRESSURE PSI	TEST MEDIUM	LEAKAGE ALLOWANCE (SEE NOTE 2)
		3" DIA AND SMALLER	4" DIA AND LARGER	3" DIA AND SMALLER	4" DIA AND LARGER			
D	DRAIN	-	-	-	16,31	NOTE 6	WATER	(D)
EE	ENGINE EXHAUST	15	15	15	15	NOTE 8	---	---
OF	OVERFLOW	---	8,16	---	16,31	25	WATER	(A)
WS	WATER SUPPLY	16	16	16	11,16,31	125	WATER	---
VT	VENT	-	16 (SCH 40)	---	16 (SCH 40)	15 IN Hg	VACUUM	(A) (D) NOTE 18

LIST OF SAMPLE LINES	
PIPE DESIGNATION	SAMPLE POINT



**NOTES:**

**NOTE 1**  
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 2**  
LEAKAGE ALLOWANCE IS AS FOLLOWS  
A. PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE.  
B. PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE FOR UNBURIED PIPE AND NOT MORE THAN 0.02 GALLON PER HOUR PER INCH DIAMETER PER 100 FEET OF BURIED PIPE.  
C. PIPES SO DESIGNATED SHALL NOT SHOW A LEAKAGE OF MORE THAN 0.15 GALLON PER HOUR PER INCH OF DIAMETER PER 100 FEET OF PIPE.  
D. PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF PRESSURE OF MORE THAN 5 PERCENT.  
E. PIPE SO DESIGNATED SHALL NOT SHOW A LOSS OF VACUUM OF MORE THAN 4 INCHES MERCURY COLUMN.

**NOTE 3**  
NO SUBSTITUTIONS U.M.O. IN THE SPECIFICATIONS.

**NOTE 4**  
FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.

**NOTE 5**  
PIPING GROUP FUNCTION SHOWN THIS \* SHALL BE INSULATED PER SPECIFICATIONS.

**NOTE 6**  
STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGH POINT OF PIPE.

**NOTE 7**  
INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.

**NOTE 8**  
NO APPARENT LEAKS UNDER NORMAL OPERATING CONDITIONS.

**NOTE 9**  
INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.

**NOTE 10**  
PIPING MATERIALS SHALL BE IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.

**NOTE 11**  
FOR VALVES 3" AND LARGER SEE VALVE SCHEDULE

**NOTE 12**  
CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED THIS:  $\rightarrow \diamond$

**NOTE 13**  
FOR FULL PIPE LINING AND COATING REQUIREMENTS OF AWWA C200 STL PIPE & AWWA C151 DI PIPE, SEE SPECIFICATIONS.

**NOTE 14**  
EXPOSED STEEL PIPING ONLY SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS. COLORS TO BE SELECTED BY OWNER.

**NOTE 15**  
NATURAL GAS BURIED PIPE SHALL BE BLACK STEEL SCH 40 PIPE IN ACCORDANCE W/ LOCAL GAS UTILITY PIPE REQUIREMENTS FOR PRESSURE GAS SERVICE.

**NOTE 16**  
NOT USED

**NOTE 17**  
FOR HDPE PIPING THE SIZE OF PIPE SHOWN ON DRAWING CALL-OUTS SHALL BE THE NOMINAL DIAMETER. PIPE WALL THICKNESS SHALL BE PER DR RATING REQUIREMENT.

GROUP NO	PIPE MATERIAL	PIPING MATERIAL SCHEDULE (SEE NOTE 1)	
		FITTINGS/JOINTS	LININGS & COATINGS (SEE NOTE 13)
1	STEEL, ASTM A53, SCHEDULE 40, BLACK WELDED.	2 1/2" AND SMALLER, MALLEABLE IRON, ASME B16.3, THREADED, Banded, BLACK, 150 PSI OR STEEL, ASME B16.9, BUTT-WELDED. 3" AND LARGER, CAST IRON, ASME B16.1, 125 PSI FLANGED OR MECHANICAL COUPLING OR (STEEL, ASME B16.9, BUTT WELDED).	NOT APPLICABLE
2	STEEL, ASTM A53, SCHEDULE 40, BLACK WELDED, GALVANIZED	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.	NOT APPLICABLE
8	WELDED STEEL PIPE (AWWA C200 & MODIFIED PER SECTION 02570)	WELDED STEEL, AWWA C208, FABRICATED.	FUSION BONDED EPOXY PE AWWA C213 GRIND SMOOTH
11	DUCTILE IRON, ASME A21.51, (AWWA C151 AND MODIFIED PER SECTION 02565) (TYP SERVICE - RAW, POTABLE & SANITARY SEWER)	DUCTILE IRON AWWA C110 AND MODIFIED PER SECTION 02565, BELL AND SPIGOT JOINTS (RESTRAINT OR NON-RESTRAINT), MECH CPLNG, FLGD OR MECH JTS, 250 PSI (PRESS. RATING) 12" AND SMALLER, 150 PSI, (PRESS. RATING) 14" AND LARGER, WITH 125 PSI ASME B16.1 FLANGES. FOR HIGHER PRESS. RATING, REFER TO MFTR CATALOG.	STANDARD LINING
15	STAINLESS STEEL, TYPE 316, ASTM A312, SCHEDULE 10S.	STAINLESS STEEL, TYPE 316 WELDED SLIP-ON FLG ASME B16.3, OR SOCKET WELDED FITTINGS SCHEDULE 40S, (NO THREADED JOINTS ALLOWED)	NOT APPLICABLE
16	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT. ASTM D1785. (TYP SERVICE - INDOORS/COVERED)	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT, SOCKET SOLVENT WELD JOINTS, ASTM D2467. (SOLVENT & GLUE SHALL BE COMPATIBLE WITH FLUID SERVICE)	NOT APPLICABLE
20	HIGH DENSITY POLYETHYLENE CORRUGATED NON-PERFORATED, ASTM F40 (ADS N-12 "WATER-TIGHT" PIPE OR EQUAL; PERFORATE WHERE INDICATED. (TYP SERVICE - DRAINAGE & UC)	HIGH DENSITY POLYETHYLENE CORRUGATED. FABRICATED WITH SS CLAMPED CONNECTIONS; FOR WATER-TIGHT SERVICE.	NOT APPLICABLE
21	CORRUGATED METAL PIPE, GALVANIZED, AASHTO M36 (TYP SERVICE - DRAINAGE & CULVERTS)	FOR COUPLINGS AND END-PROTECTORS, SEE SPEC 02567	NOT APPLICABLE
24	COPPER, ASTM B88, TYPE K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED. (TYP SERVICE - COMPRESSED AIR, POTABLE WATER)	WROUGHT COPPER OR CAST BRONZE, ASME B16.22, SOLDER JOINT, 150 PSI, OR COMPRESSION FITTINGS. (FOR OXYGEN PIPING USE SILVER SOLDER, FOR COMPRESSED AIR PIPING USE 95-5 TIN-ANTIMONY SOLDER)	NOT APPLICABLE
27	POLYVINYL CHLORIDE GRAVITY SEWER PIPE, ASTM D3034, SDR. (TYP SERVICE - SANITARY SEWERS)	POLYVINYL CHLORIDE, ANSI/ASTM D3034, BELL AND/OR SPIGOT.	NOT APPLICABLE
31	HIGH DENSITY POLYETHYLENE (HDPE-AWWA C906) ASTM D3350 DIP OD SIZE AS INDICATED ON DWGS DR26 (NOTE 17)	HDPE THERMAL BUTT WELD; DIP OD SIZE FLANGE CONNECTIONS AT ALL TRANSITIONS TO PIPE MTL 11 OR 8, MECH JT PIPE CONNECTIONS @ VALVES.	GRIND INTERIOR WELD BEADS SMOOTH
37	STAINLESS STEEL SEAMLESS ANNEALED TUBING, TYPE 316L, ASTM A213, MIN. WALL THICKNESS OF 0.065 INCHES	STAINLESS STEEL, TYPE 316L, COMPRESSION FITTINGS AS MANUFACTURED BY SWAGELOCK OR EQUAL (NPT FITTINGS ALLOWED ON WATER LINES ONLY)	NOT APPLICABLE

A	REFERENCE DRAWINGS								
	DRAWING No.								
B	REFERENCE DRAWINGS								
	DRAWING No.								
C	CHK APP								
	BY								
D	REVISION								
	DATE								
E	CHK APP								
	BY								
F	REVISION								
	DATE								

**McMILLEN, LLC**  
 THE SONNA BUILDING  
 910 MAIN ST. SUITE 258 BOISE, ID 83702  
 OFFICE: 208.342.4214  
 FAX: 208.342.4216

SAP# \_\_\_\_\_  
 PL# \_\_\_\_\_  
 DATE 9/21/2010  
 ENG MCM DES MCR  
 DR DL CH M. McMILLEN  
 APPROVAL \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

LEWIS RIVER  
 WOODLAND RELEASE POND IMPROVEMENTS  
 PIPING SCHEDULE

**PacificCorp ENERGY** HYDRO  
 SCALE: AS NOTED SHEET GM-1 REV. A

PLOT SCALE: AS NOTED  
 DATE: 9/21/10 9:00 AM  
 NON-SITE SPECIFIC DESIGN SUBMITTAL

VALVES							
NO.	LOCATION	SERVICE	TYPE	SIZE OR CAPACITY	CONTROL	COMMENTS	BASIS OF DESIGN
PV1	P1 DISCHARGE - VALVE VAULT	PUMP ISOLATION	BUTTERFLY	8"	MANUAL	GEAR OPERATOR	AWWA C509 - PRATT, MUELLER OR EQUAL
PV2	P2 DISCHARGE - VALVE VAULT	PUMP ISOLATION	BUTTERFLY	8"	MANUAL	GEAR OPERATOR	AWWA C509 - PRATT, MUELLER OR EQUAL
CV1	P1 DISCHARGE - VALVE VAULT	PUMP ISOLATION	SWING CHECK	8"	AUTOMATIC	SPRING ASSIST	AWWA C508 GOLDEN ANDERSON FIG 250-D OR EQUAL
CV2	P2 DISCHARGE - VALVE VAULT	PUMP ISOLATION	SWING CHECK	8"	AUTOMATIC	SPRING ASSIST	AWWA C508 GOLDEN ANDERSON FIG 250-D OR EQUAL
AW1	VALVE VAULT	AIR-VACUUM RELEASE	COMBO	2"	AUTOMATIC		APCO, VENTOMAT OR EQUAL
AV1	VALVE VAULT	AIR-VACUUM VALVE ISOLATION	BALL	2"	MANUAL		TRU-UNION PVC
V1	RELEASE POND 1	FLOW CONTROL	BUTTERFLY	6"	MANUAL	GEAR OPERATOR	AWWA C509 - PRATT, MUELLER OR EQUAL
V2	RELEASE POND 2	FLOW CONTROL	BUTTERFLY	6"	MANUAL	GEAR OPERATOR	AWWA C509 - PRATT, MUELLER OR EQUAL
V3	RELEASE POND 3	FLOW CONTROL	BUTTERFLY	6"	MANUAL	GEAR OPERATOR	AWWA C509 - PRATT, MUELLER OR EQUAL
V4	RELEASE POND 4	FLOW CONTROL	BUTTERFLY	6"	MANUAL	GEAR OPERATOR	AWWA C509 - PRATT, MUELLER OR EQUAL

FLOW METERS							
NO.	LOCATION	SERVICE	TYPE	SIZE OR CAPACITY	CONTROL	COMMENTS	BASIS OF DESIGN
FM1	RELEASE POND 1	FLOW RATE/NO FLOW ALARM	PROPELLER IN FLOW TUBE	6"	NO FLOW ALARM	DIRECT READING	MCCROMETER MW800 OR EQUAL
FM2	RELEASE POND 2	FLOW RATE/NO FLOW ALARM	PROPELLER IN FLOW TUBE	6"	NO FLOW ALARM	DIRECT READING	MCCROMETER MW800 OR EQUAL
FM3	RELEASE POND 3	FLOW RATE/NO FLOW ALARM	PROPELLER IN FLOW TUBE	6"	NO FLOW ALARM	DIRECT READING	MCCROMETER MW800 OR EQUAL
FM4	RELEASE POND 4	FLOW RATE/NO FLOW ALARM	PROPELLER IN FLOW TUBE	6"	NO FLOW ALARM	DIRECT READING	MCCROMETER MW800 OR EQUAL

PUMPS							
NO.	LOCATION	SERVICE	TYPE	DESIGN POINT	CONTROL	COMMENTS	BASIS OF DESIGN
P1	WET WELL	WATER SUPPLY	SUBMERSIBLE NON-CLOG	1900 GPM/42' TDH	AUTOMATIC	LEAD/STANDBY	MYERS 8VC - 40 HP MOTOR
P2	WET WELL	WATER SUPPLY	SUBMERSIBLE NON-CLOG	1900 GPM/42' TDH	AUTOMATIC	LEAD/STANDBY	MYERS 8VC - 40 HP MOTOR

DEGAS TOWERS ALTERNATIVE							
NO.	LOCATION	SERVICE	TYPE	DESIGN POINT	CONTROL	COMMENTS	BASIS OF DESIGN
DG1-4	POND 1-4	WATER SUPPLY	VACUUM	475 GPM	MANUAL	N/A	CUSTOM FAB - 20" DIA

**McMILLEN, LLC**

THE SONNA BUILDING  
910 MAIN ST. SUITE 258 OFFICE: 208.342.4214  
BOISE, ID 83702 FAX: 208.342.4216

SAP#	
PL#	
DATE	9/21/2010
ENG	MCM DES MCR
DR	DL CH M. McMILLEN
APPROVAL	

LEWIS RIVER  
WOODLAND RELEASE POND IMPROVEMENTS  
MECHANICAL SCHEDULE

**PACIFIC CORP ENERGY** HYDRO

SCALE: AS NOTED SHEET GM-2

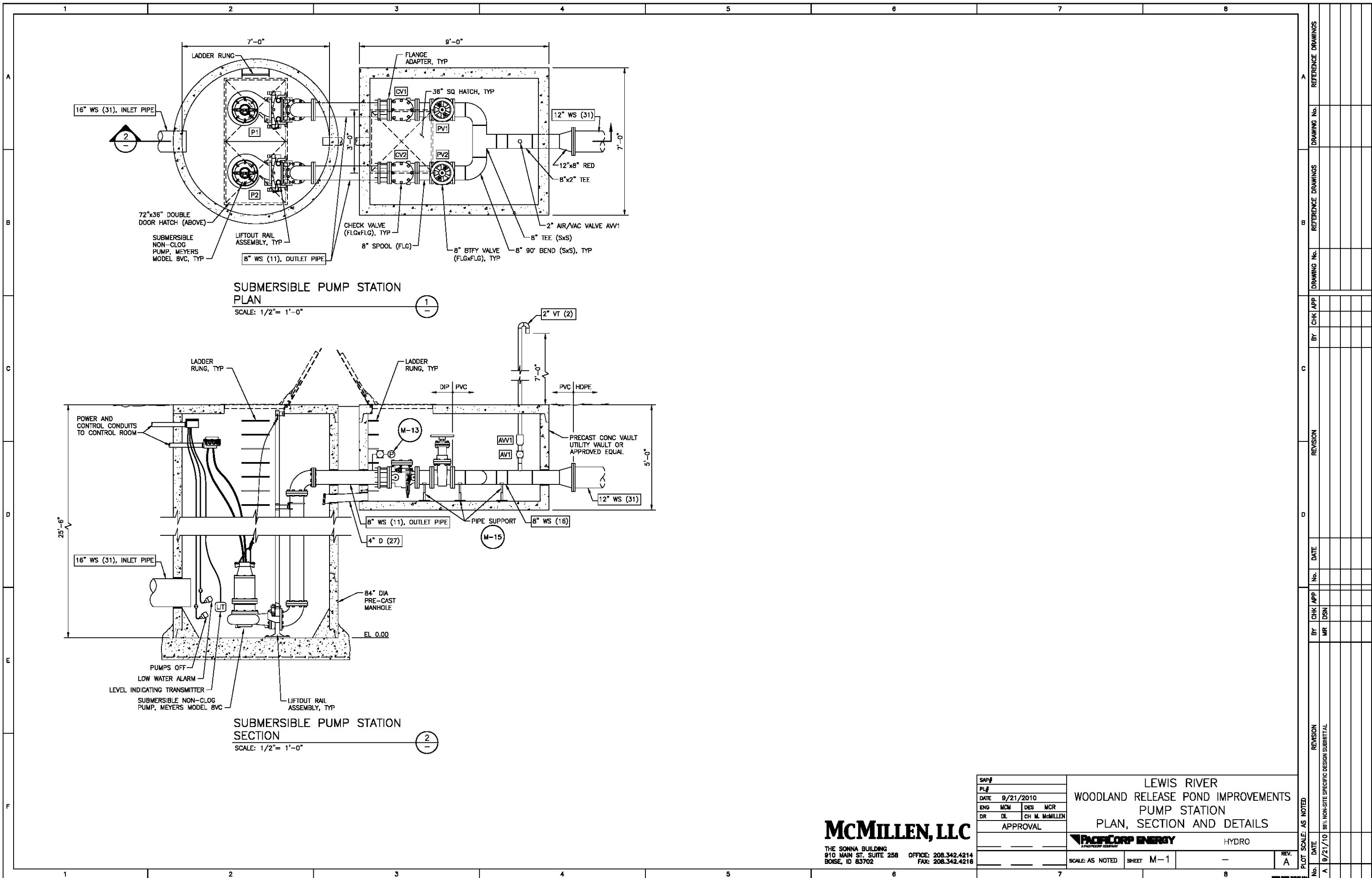
REV. A

A	REFERENCE DRAWINGS								
	DRAWING No.								
B	REFERENCE DRAWINGS								
	DRAWING No.								
C	CHK APP								
	BY								
D	REVISION								
	DATE								
E	CHK APP								
	BY								
F	REVISION								
	DATE								









**SUBMERSIBLE PUMP STATION PLAN**

SCALE: 1/2" = 1'-0"

1

**SUBMERSIBLE PUMP STATION SECTION**

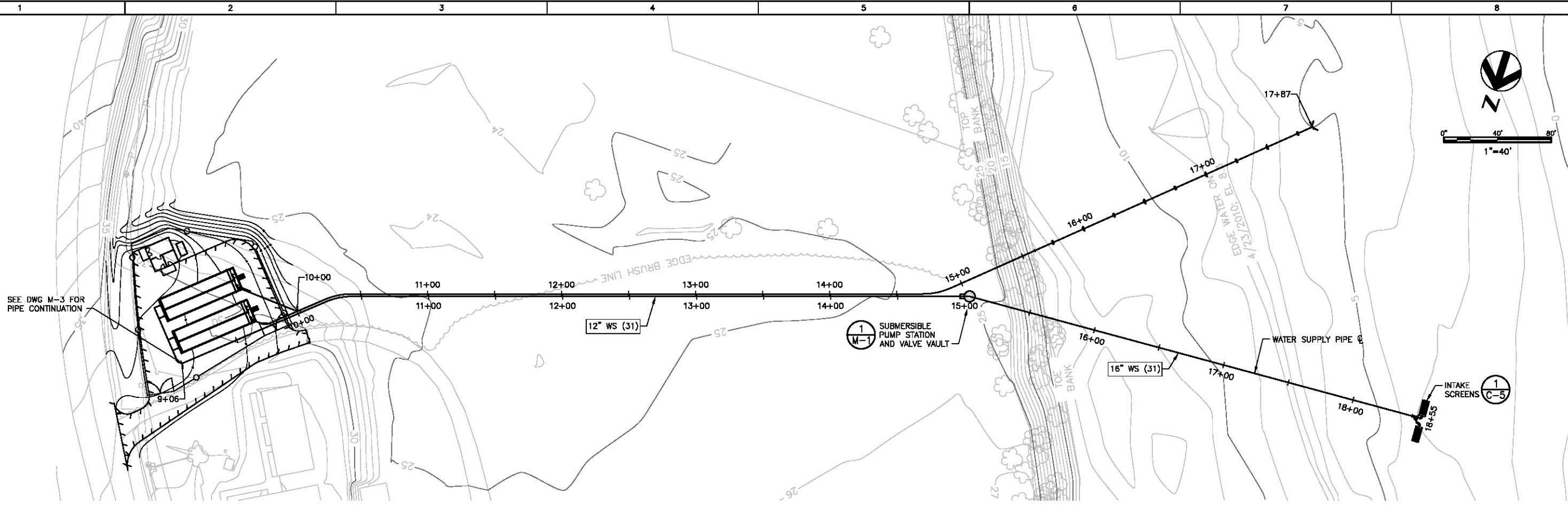
SCALE: 1/2" = 1'-0"

2

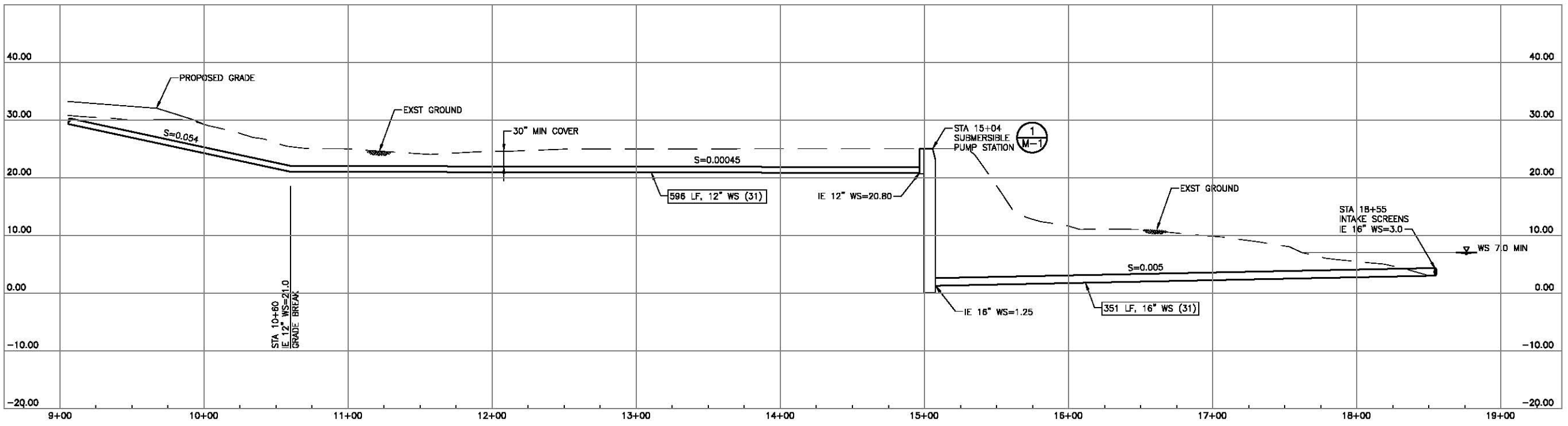
**McMILLEN, LLC**

THE SONNA BUILDING  
910 MAIN ST. SUITE 258 OFFICE: 208.342.4214  
BOISE, ID 83702 FAX: 208.342.4216

SAP#		LEWIS RIVER	
PL#		WOODLAND RELEASE POND IMPROVEMENTS	
DATE		9/21/2010	
ENG	MCM	DES	MCR
DR	DL	CH	M. McMILLEN
APPROVAL			
PACIFIC CORP ENERGY		HYDRO	
SCALE: AS NOTED		SHEET	M-1
DATE		REV.	A
PLOT SCALE: AS NOTED			
REVISION			
NO. DATE			
BY CHK APP			
MR DSN			
REVISION			
BY CHK APP			
DRAWING No.			
REFERENCE DRAWINGS			
DRAWING No.			
REFERENCE DRAWINGS			



**WATER SUPPLY PIPELINE PLAN**  
SCALE: 1"=40'



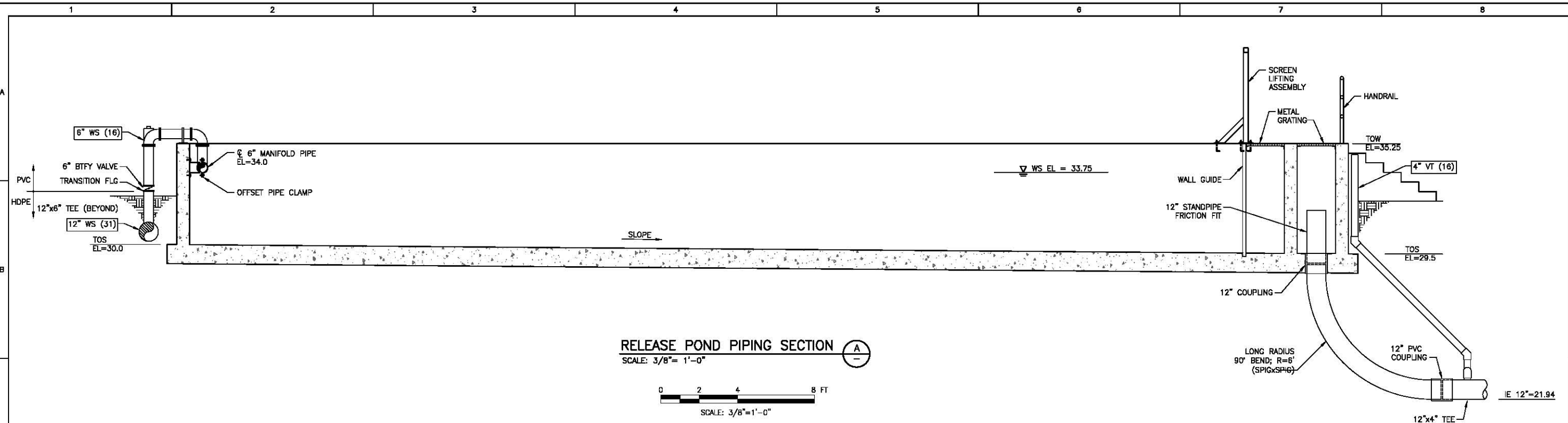
**WATER SUPPLY PIPELINE PROFILE**  
SCALE: 1"=40' HORIZ; 1"=10' VERT

NO.	DATE	REVISION	BY	CHK APP	MR	DSN	DATE	NO.	REVISION	REFERENCE DRAWINGS	
										DRAWING No.	REFERENCE DRAWINGS
A	9/21/10	98% NON-SITE SPECIFIC DESIGN SUBMITTAL									

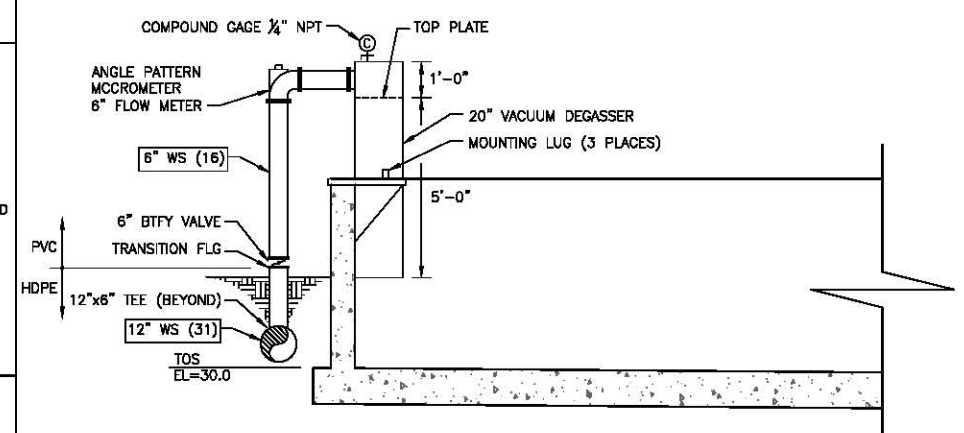
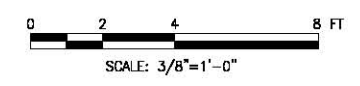
SAP#	LEWIS RIVER	
PL#	WOODLAND RELEASE POND IMPROVEMENTS	
DATE	9/21/2010	WATER SUPPLY PIPELINE
ENG	MCM	DES MCR
DR	DL	CH M. McMILLEN
APPROVAL		
PACIFIC CORP ENERGY		HYDRO
SCALE: AS NOTED	SHEET M-2	REV. A

**McMILLEN, LLC**  
THE SONNA BUILDING  
910 MAIN ST. SUITE 258 OFFICE: 208.342.4214  
BOISE, ID 83702 FAX: 208.342.4216

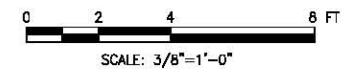




**RELEASE POND PIPING SECTION A**  
SCALE: 3/8"= 1'-0"



**RELEASE POND ALTERNATIVE DEGASSER PIPING SECTION B**  
SCALE: 3/8"= 1'-0"



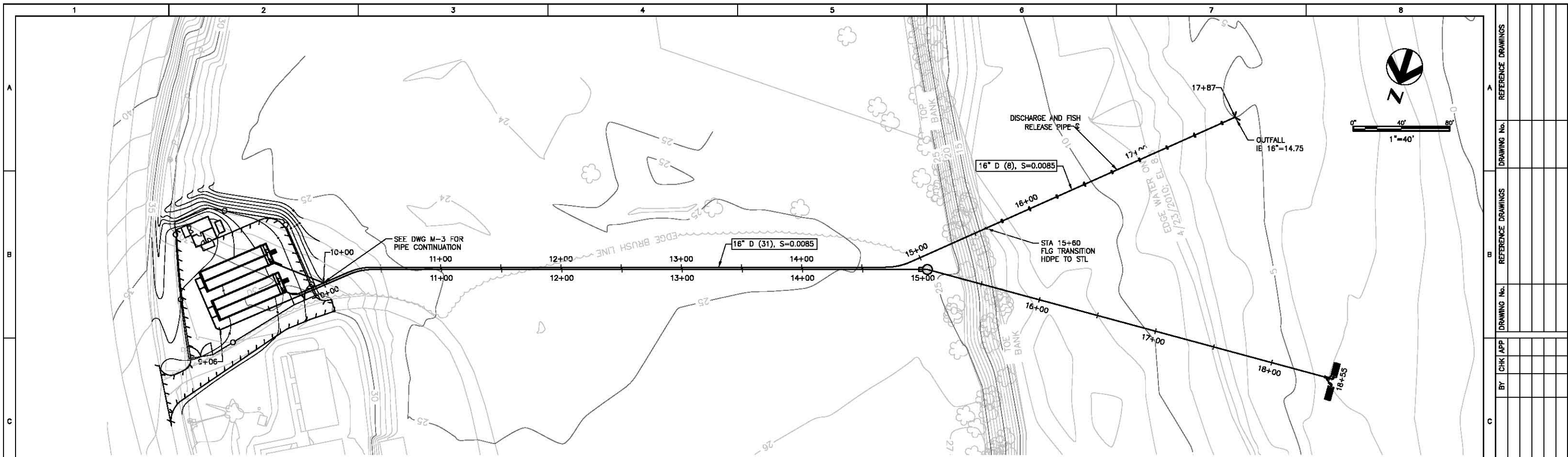
**NOTES:**  
1. SEE DWG GM-3 FOR TYPICAL TRENCH CROSS SECTIONS.

NO.	DATE	REVISION	BY	CHK APP	DATE	REVISION	BY	CHK APP	DRAWING No.	REFERENCE DRAWINGS
A	9/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL	MR	DSN						

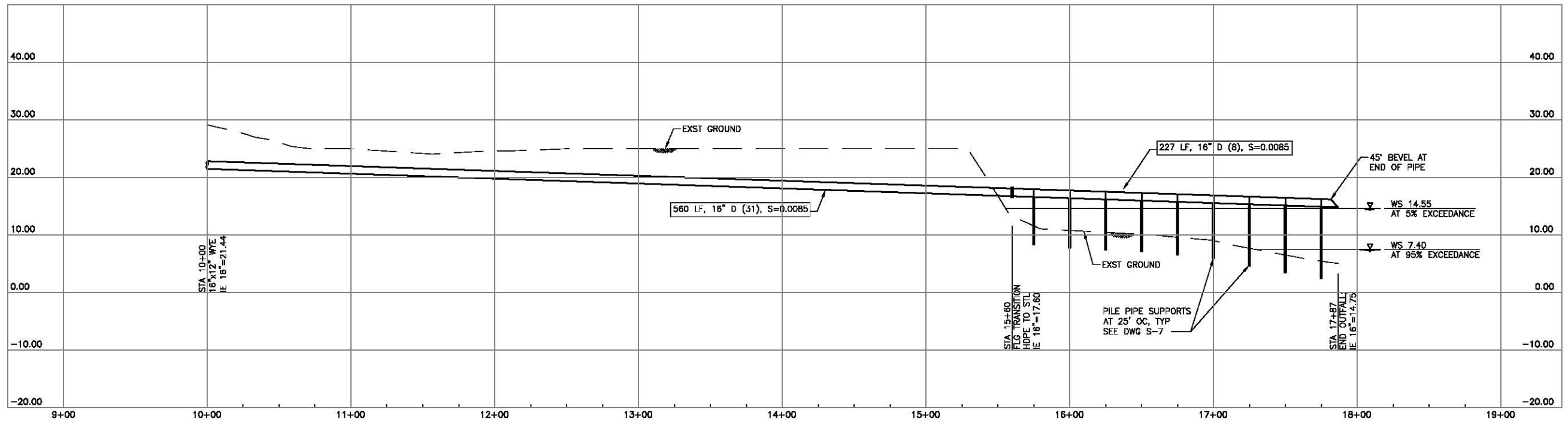
**McMILLEN, LLC**  
THE SONNA BUILDING  
910 MAIN ST. SUITE 258 BOISE, ID 83702  
OFFICE: 208.342.4214  
FAX: 208.342.4216

SAP#	LEWIS RIVER	
PL#	WOODLAND RELEASE POND IMPROVEMENTS	
DATE	9/21/2010	
ENG	MCM	DES MCR
DR	DL	CH
APPROVAL		
<b>PACIFICORP ENERGY</b>		
		HYDRO
SCALE: 1 = 32	SHEET M-4	REV. A





DISCHARGE AND FISH RELEASE PIPELINE PLAN  
SCALE: 1"=40'

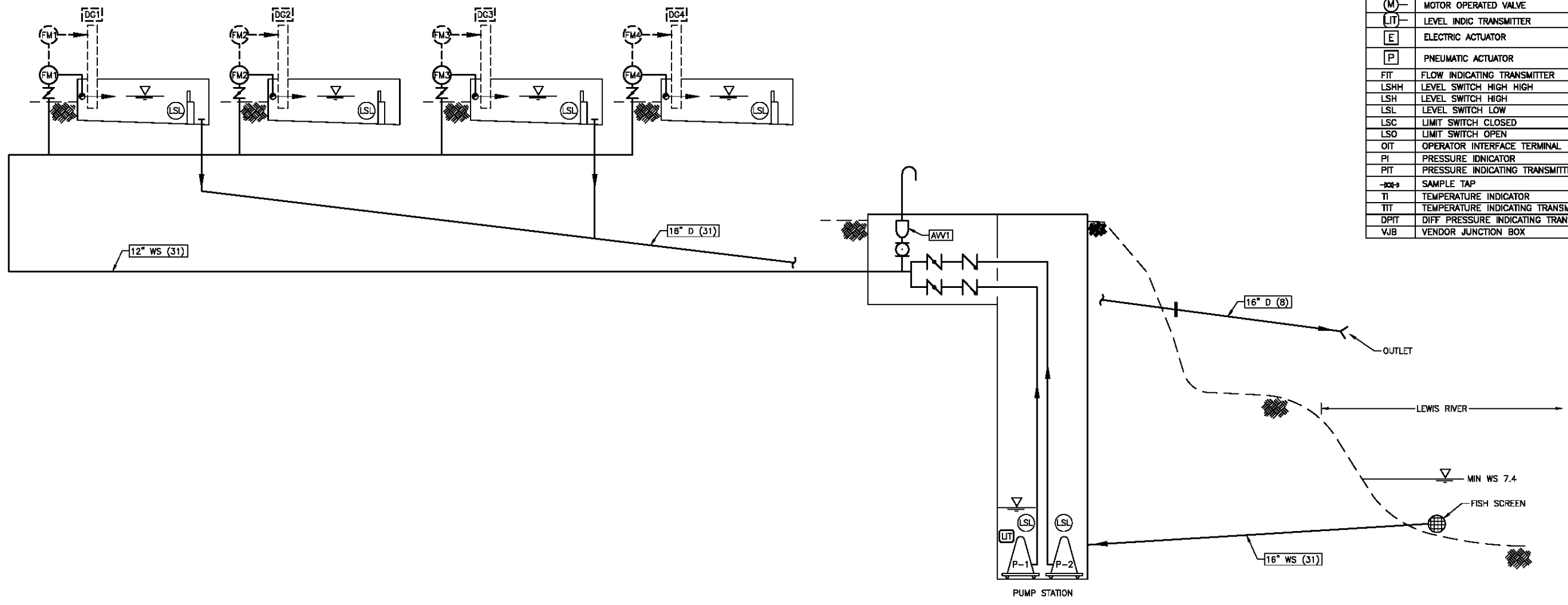


DISCHARGE AND FISH RELEASE PIPELINE PROFILE  
SCALE: 1"=40' HORIZ; 1"=10' VERT

SAP#				LEWIS RIVER			
PL#				WOODLAND RELEASE POND IMPROVEMENTS			
DATE				DISCHARGE AND FISH RELEASE PIPELINE			
9/21/2010				PLAN AND PROFILE			
ENG		MCM		DES		MCR	
DR		DL		CH		M. McMILLEN	
APPROVAL				HYDRO			
THE SONNA BUILDING 910 MAIN ST, SUITE 258 BOISE, ID 83702				OFFICE: 208.342.4214 FAX: 208.342.4216			
SCALE: AS NOTED		SHEET M-5		REV. A		PLOT SCALE: AS NOTED	

REFERENCE DRAWINGS		DRAWING No.		DRAWING No.		DRAWING No.	
BY		CHK APP		BY		CHK APP	
MR		DSN		MR		DSN	
REVISION		DATE		REVISION		DATE	
A		9/21/10		A		9/21/10	
NON-SITE SPECIFIC DESIGN SUBMITTAL				NON-SITE SPECIFIC DESIGN SUBMITTAL			

LEGEND	
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	FLOW METER
	GATE VALVE
	GLOBE VALVE
	MOTOR OPERATED VALVE
	LEVEL INDIC TRANSMITTER
	ELECTRIC ACTUATOR
	PNEUMATIC ACTUATOR
	FLOW INDICATING TRANSMITTER
	LEVEL SWITCH HIGH HIGH
	LEVEL SWITCH HIGH
	LEVEL SWITCH LOW
	LIMIT SWITCH CLOSED
	LIMIT SWITCH OPEN
	OPERATOR INTERFACE TERMINAL
	PRESSURE INDICATOR
	PRESSURE INDICATING TRANSMITTER
	SAMPLE TAP
	TEMPERATURE INDICATOR
	TEMPERATURE INDICATING TRANSMITTER
	DIFF PRESSURE INDICATING TRANSMITTER
	VENDOR JUNCTION BOX



PROCESS FLOW AND INSTRUMENTATION DIAGRAM 1  
NO SCALE

**McMILLEN, LLC**  
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 BOISE, ID 83702 FAX: 208.342.4216

SAP#	LEWIS RIVER
PL#	WOODLAND RELEASE POND IMPROVEMENTS
DATE	9/21/2010
ENG	MCM DES MCR
DR	DL CH M. McMILLEN
APPROVAL	
<b>PACIFIC CORP ENERGY</b>	
SCALE: AS NOTED	HYDRO
SHEET PID-1	REV. A

No.	DATE	REVISION	BY	CHK APP	DRAWING No.	REFERENCE DRAWINGS
A	9/21/10	90% NON-SITE SPECIFIC DESIGN SUBMITTAL				

# ELECTRICAL LEGEND

(LEGEND IS GENERAL IN NATURE. NOT ALL OF THE SYMBOLS SHOWN ARE USED IN THIS PROJECT.)

# ABBREVIATIONS & DESCRIPTIONS

## DEVICES

- DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- DUPLEX CONVENIENCE OUTLET, +18" AFF UNO WITH GROUND FAULT INTERRUPTION PROTECTION
- DUPLEX CONVENIENCE OUTLET, MOUNTED ABOVE COUNTER UNO COUNTER UNO WITH GROUND FAULT INTERRUPTION PROTECTION
- DUPLEX CONVENIENCE OUTLET, MOUNTED ABOVE COUNTER UNO
- SWITCHED DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FOURPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FOURPLEX CONVENIENCE OUTLET, MOUNTED ABOVE COUNTER UNO
- DUPLEX 20A RECEPTACLE, +18" AFF UNO
- DUPLEX 20A RECEPTACLE, MOUNTED ABOVE COUNTER UNO
- SINGLE 20A RECEPTACLE, +18" AFF UNO
- FLOOR MOUNT DUPLEX CONVENIENCE OUTLET
- FLOOR MOUNT FOURPLEX CONVENIENCE OUTLET
- FLOOR MOUNT SPECIAL RECEPTACLE
- FLOOR MOUNT SWITCHED DUPLEX CONVENIENCE OUTLET
- FLOOR MOUNTED EMERGENCY RECEPTACLE
- EMERGENCY RECEPTACLE, +18" AFF UNO
- DUPLEX CONVENIENCE OUTLET, +18" AFF UNO, WITH ISOLATED GROUND.
- CONNECTION POINT TO EQUIPMENT SPECIFIED, FURNISHED, AND INSTALLED UNDER OTHER SECTIONS. ELECTRICAL CONTRACTOR TO SUPPLY RACEWAY AND CONDUCTORS AND MAKE FINAL CONNECTION TO EQUIPMENT UNDER THIS SECTION. UNO.
- SPECIAL PURPOSE RECEPTACLE/DEVICE, VERIFY SIZE AND TYPE WITH EQUIPMENT SUPPLIER
- FLOOR MOUNTED CONNECTION POINT, SEE NOTE ABOVE FOR REQUIREMENTS
- JUNCTION BOX
- WALL MOUNTED JUNCTION BOX
- WALL MOUNTED PUSHBUTTON, MOUNT AT SWITCH HEIGHT UNO
- WALL MOUNTED PUSHBUTTON, MOUNT AT SWITCH HEIGHT UNO
- MOTOR STARTER/CONTACTOR
- COMBINATION STARTER AND DISCONNECT
- NON-FUSED DISCONNECT SWITCH, SIZE AS INDICATED, NEMA 1 UNO, 3 POLE UNO
- FUSED DISCONNECT SWITCH, SIZE AS INDICATED, NEMA 1 UNO, 3 POLE UNO
- THERMOSTAT, +56" AFF UNO, UNIT CONTROLLED INDICATED
- HUMIDISTAT, +56" AFF UNO, UNIT CONTROLLED INDICATED
- MOTOR, SIZE AS INDICATED
- MECHANICAL EQUIPMENT SYMBOL (RE: MECHANICAL DRAWINGS FOR EXACT LOCATION OF UNITS).
- PHASE
- VOLTAGE
- HORSEPOWER
- SURFACE MOUNTED PANELBOARD. SEE SCHEDULE FOR TYPE.
- FLUSH MOUNTED PANELBOARD. SEE SCHEDULE FOR TYPE.
- SURFACE MOUNTED FIRE ALARM PANELBOARD.
- FLUSH MOUNTED FIRE ALARM PANELBOARD.

## LIGHTING

- DOUBLE FACE EXIT SIGN, CEILING MOUNTED
- WALL MOUNTED DOUBLE FACE EXIT SIGN
- SINGLE FACE EXIT SIGN, CEILING MOUNTED
- WALL MOUNTED SINGLE FACE EXIT SIGN
- ARROW INDICATES DIRECTION TO BE SHOWN ON SIGN
- 1'X1' LIGHT
- 1'X1' LIGHT ON EMERGENCY SOURCE
- 1'X4' LIGHT
- 1'X4' LIGHT ON EMERGENCY SOURCE
- 2'X2' LIGHT
- 2'X2' LIGHT ON EMERGENCY SOURCE
- 2'X4' LIGHT
- 2'X4' LIGHT ON EMERGENCY SOURCE
- 2' WALL FIXTURE, SEE SCHEDULE FOR MOUNTING HEIGHT
- 2' WALL FIXTURE ON EMERGENCY SOURCE, SEE SCHEDULE FOR MOUNTING HEIGHT
- 4' WALL FIXTURE, SEE SCHEDULE FOR MOUNTING HEIGHT
- 4' WALL FIXTURE ON EMERGENCY SOURCE, SEE SCHEDULE FOR MOUNTING HEIGHT
- TRACKLIGHT
- RECESSED LIGHT FIXTURE ON EMERGENCY SOURCE
- ROUND LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE, SEE SCHEDULE FOR MOUNTING HEIGHT
- PORCELAIN LAMP HOLDER
- WALL MOUNTED PORCELAIN LAMP HOLDER
- POLE LIGHT 1 HEAD ROUND WITH POLE
- POLE LIGHT 2 HEAD ROUND WITH POLE
- POLE LIGHT 1 HEAD SQUARE WITH POLE
- POLE LIGHT 2 HEAD SQUARE WITH POLE
- TIMECLOCK
- PHOTOCCELL
- EMERGENCY EGRESS LIGHTING
- SWITCH, TYPE AS INDICATED. +46" AFF
  - 2 DOUBLE POLE
  - 3 3-WAY
  - 4 4-WAY
  - K KEYS
  - P PILOT LIGHT
  - M MOMENTARY CONTACT
  - D DIMMER
  - MM MANUAL MOTOR STARTER
  - OS OCCUPANCY SENSOR TO THERMAL OVERLOAD
  - LV LOW VOLTAGE
  - o SUPERSCRIPT INDICATES LIGHTS TO BE SWITCHED TOGETHER
- DUAL LEVEL SWITCHING, INSIDE AND OUTSIDE LAMPS OF FIXTURE TO BE SWITCHED SEPARATELY. PROVIDE ADDITIONAL BALLASTS WHERE REQUIRED.
- DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR
- INDICATES FIXTURE TYPE. REFER TO LUMINAIRE SCHEDULE.
- EMERGENCY SOURCE TO BE BATTERY BACKED BALLAST WITH MINIMUM 1500 LUMEN OUTPUT FOR 90 MIN PERIOD. PROVIDE UNSWITCHED CONDUCTORS FOR CHARGING CIRCUIT AS REQUIRED.

## CIRCUITING SYMBOLS

- SURFACE RACEWAY
- CONDUIT UP
- CONDUIT STUBBED, CAPPED, AND MARKED WITH PULL CORD
- CONDUIT DOWN
- SINGLE CIRCUIT PANEL HOMERUN, PANEL AND CIRCUITS AS INDICATED
- DOUBLE CIRCUIT PANEL HOMERUN, PANEL AND CIRCUITS AS INDICATED
- TRIPLE CIRCUIT PANEL HOMERUN, PANEL AND CIRCUITS AS INDICATED
- QUADRUPLE CIRCUIT PANEL HOMERUN, PANEL AND CIRCUITS AS INDICATED
- RACEWAY SIZE
  - 3/4" - 1 1/2" 1#12G
  - CONDUCTOR SIZE
  - CONDUCTOR QUANTITY
- BEGINNING OF INDIVIDUAL CIRCUIT, CIRCUIT NUMBER INDICATED.
- CIRCUIT CONCEALED IN CEILING OR WALL 1/2" - 2#12, 1#12G UNO
- EXISTING CIRCUIT
- CIRCUIT CONCEALED IN FLOOR OR UNDERGROUND

## ONE LINE

- DELTA WYE TRANSFORMER, U.N.O.
- POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- BRANCH PANEL
- CIRCUIT BREAKER, FRAME SIZE (AF) AND TRIP PLUG/RATING (AT), 3 POLE, UNO.
- FUSE, SIZE AND TYPE AS SPECIFIED, PROVIDE FUSE FOR EACH POLE, 3 POLE, UNO.
- INTERRUPTER SWITCH, SIZE AS INDICATED, 3 POLE, UNO.
- FUSED SWITCH, SWITCH SIZE (AS) & FUSE SIZE (FS) AS INDICATED, 3 POLE, UNO.
- DRAW OUT CIRCUIT BREAKER FRAME (AF) SIZE AND TRIP PLUG RATING (AT), 3 POLE, UNO.
- INDIVIDUAL BREAKER FRAME (AF) SIZE AND TRIP PLUG RATING (AT), NEMA 1 UNO, 3 POLE UNO.

## ONE LINE (CONT.)

- METER
- AMMETER
- VOLTMETER
- KIRK KEY LOCK
- GROUND FAULT PROTECTION
- TRANSIENT VOLTAGE SURGE SUPPRESSION
- SHUNT TRIP COIL
- MOTOR, SIZE AS INDICATED
- KILOWATT HOUR METER
- KILOWATT DEMAND METER
- TEST BLOCK
- OVERHEAD SERVICE DROP
- GENERATOR SET, MAIN BREAKER SIZE INDICATED
- TRANSFER SWITCH
- GUTTER
- METER AND BASE
- NEUTRAL
- PAD MOUNT TRANSFORMER

A	AMPERES	KW	KILOWATT
AC	ABOVE COUNTER; REFER TO ARCHITECTURAL ELEVATIONS FOR REQUIRED HEIGHT.	KWH	KILOWATT HOUR
AFF	ABOVE FINISHED FLOOR	M	MAGNETIC CONTACTOR COIL
AFG	ABOVE FINISHED GRADE	MB	MAIN BREAKER
AF	AMPERE FRAME	MCC	MOTOR CONTROL CENTER
AT	AMP TRIP	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE	MS	MOTOR STARTER
BW	BLANKET WARMER	MH	MANHOLE
CB	CONDUIT	MW	MICROWAVE
CC	CIRCUIT BREAKER	N	NEUTRAL
CC	CRASH CART	NC	NORMALLY CLOSED
CKT	CIRCUIT	NCL	NON CRITICAL LOAD
CL	CRITICAL LOAD	NEC	NATIONAL ELECTRICAL CODE
CO	CONDUIT ONLY, PROVIDE PULL-LINE	NIC	NOT IN CONTRACT
D	MECHANICAL DUCT-MOUNTED DEVICE	NO	NORMALLY OPEN
DC	DIRECT CURRENT	NTS	NOT TO SCALE
DET	DETAIL	OL	OVERLOAD
E	EMERGENCY/CRITICAL CARE	OS	OCCUPANCY SENSOR
(E)	EXISTING	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
EF	EXHAUST FAN	P	PHOTO
EL	EMERGENCY LIGHT	PC	PHOTOCCELL
EWC	ELECTRIC WATER COOLER	PVC	POLYVINYL CHLORIDE
EWH	ELECTRIC WATER HEATER	RCPT	RECEPTACLE
F	FUSE	(R)	RELOCATED
FACP	FIRE ALARM CONTROL PANEL	(RE)	REPLACED
FVNR	FULL VOLTAGE NON-REVERSING	REF	REFRIGERATOR
G/BND	GROUND	SPST	SINGLE POLE SINGLE THROW
GFI	GROUND FAULT INTERRUPTION	TC	TIME CLOCK
GFP	GROUND FAULT PROTECTION	TDR	TIME DELAY RELAY
H	HEAT	TJB	TERMINAL JUNCTION BOX
HH	HANDHOLE	TSP	TWISTED SHIELDED PAIR
HID	HIGH INTENSITY DISCHARGE	TTB	TELEPHONE TERMINAL BOARD
HOA	HAND OFF AUTO	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
HP	HOUSE PHONE	TYP	TYPICAL
HVAC	HEATING, VENTILATING, & AIR CONDITIONING	UH	UNIT HEATER
I	IONIZATION	UNO	UNLESS NOTED OTHERWISE
ID	IN-DUCT	V	VOLT
IC	INTERLOCKING CAPACITY	VA	VOLT AMPERE
IG	ISOLATED GROUND	WC	WEATHER PROTECTIVE WIRE GAURD
J/JB	JUNCTION BOX	WP	WEATHER PROOF/NEMA 3R
		XFMR	TRANSFORMER

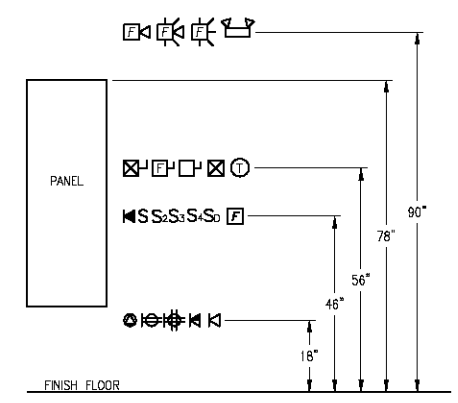
## SHEET INDEX

E-0	ELECTRICAL COVER SHEET
E-1	ELECTRICAL SITE PLAN
E-2	ENLARGED ELECTRICAL PLAN
E-3	ELECTRICAL ONE-LINE, DETAILS, AND SCHEDULES
E-4	ENLARGED CONTROLS PLAN

## GENERAL ELECTRICAL NOTES

- (RE: ALL ELECTRICAL SHEETS)
- ALL ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNIFORM FIRE CODE, AND ALL OTHER STATE AND LOCAL CODES. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER IN WRITING IF PORTIONS OF THE DESIGN SET OR FIELD CONDITIONS DO NOT MEET REQUIRED CODES.
  - PROVIDE FIRESTOPPING FOR ALL FLOOR AND FIREWALL PENETRATIONS FROM ELECTRICAL DEVICE, RACEWAY, AND CABLE PENETRATIONS. SEE ARCHITECTURAL DRAWINGS FOR FIREWALL LOCATIONS.

## MOUNTING HEIGHTS DETAIL

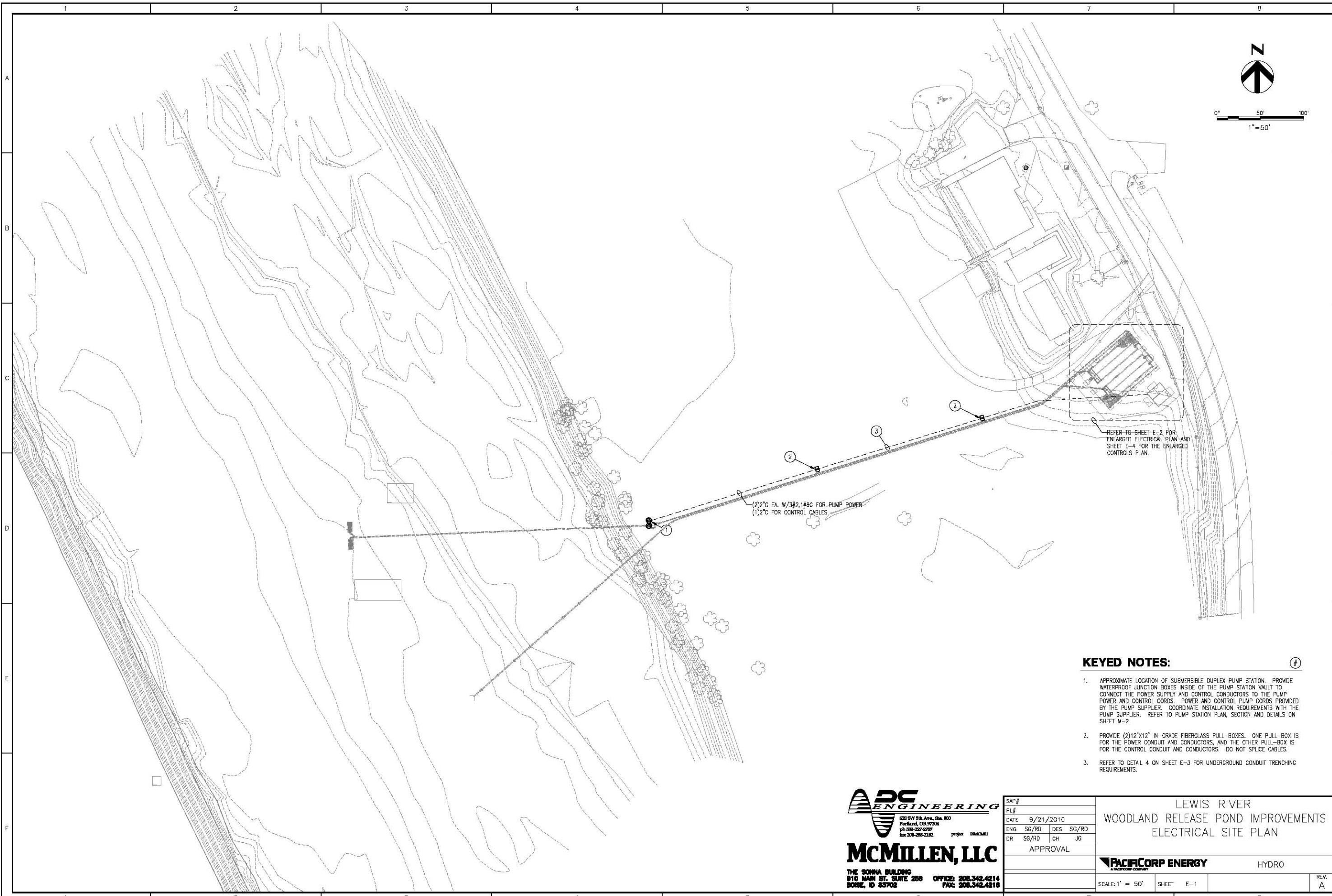


**DC ENGINEERING**  
 628 SW 5th Ave, Ste. 900  
 Portland, OR 97204  
 Ph: 503-222-2299  
 Fax: 503-288-2182  
 project: DMCM11

**McMILLEN, LLC**  
 THE SCHNA BUILDING  
 910 MAIN ST. SUITE 208  
 BORSE, ID 83702  
 OFFICE: 208-342-4214  
 FAX: 208-342-4216

SAP#		LEWIS RIVER	
PL#		WOODLAND RELEASE POND IMPROVEMENTS	
DATE	9/21/2010	ELECTRICAL COVER SHEET	
ENG	SG/RD	DES	SG/RD
DR	SG/RD	CH	JG
APPROVAL			
		<b>PACIFICORP ENERGY</b>	
		HYDRO	
SCALE:	N. T. S.	SHEET	E-0
REV.	A		

No.	DATE	REVISION	BY	CHK APP	DATE	NO.	REVISION	DRAWING No.	REFERENCE DRAWINGS	REFERENCE DRAWINGS
										9/21/10



(2) 2" EA. W/3#2.1#66 FOR PUMP POWER  
(1) 2" FOR CONTROL CABLES

REFER TO SHEET E-2 FOR ENLARGED ELECTRICAL PLAN AND SHEET E-4 FOR THE ENLARGED CONTROLS PLAN.

**KEYED NOTES:**

1. APPROXIMATE LOCATION OF SUBMERSIBLE DUPLEX PUMP STATION. PROVIDE WATERPROOF JUNCTION BOXES INSIDE OF THE PUMP STATION VAULT TO CONNECT THE POWER SUPPLY AND CONTROL CONDUCTORS TO THE PUMP POWER AND CONTROL CORDS. POWER AND CONTROL PUMP CORDS PROVIDED BY THE PUMP SUPPLIER. COORDINATE INSTALLATION REQUIREMENTS WITH THE PUMP SUPPLIER. REFER TO PUMP STATION PLAN, SECTION AND DETAILS ON SHEET M-2.
2. PROVIDE (2) 12"x12" IN-GRADE FIBERGLASS PULL-BOXES. ONE PULL-BOX IS FOR THE POWER CONDUIT AND CONDUCTORS, AND THE OTHER PULL-BOX IS FOR THE CONTROL CONDUIT AND CONDUCTORS. DO NOT SPLICE CABLES.
3. REFER TO DETAIL 4 ON SHEET E-3 FOR UNDERGROUND CONDUIT TRENCHING REQUIREMENTS.

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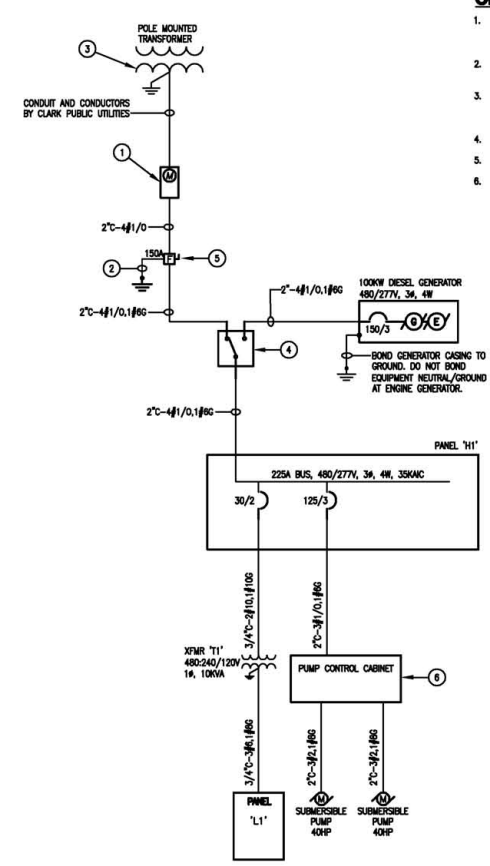
**McMILLEN, LLC**  
 THE SCHNA BUILDING  
 910 MAIN ST. SUITE 258  
 BORSE, ID 83702

OFFICE: 208.342.4214  
 FAX: 208.342.4216

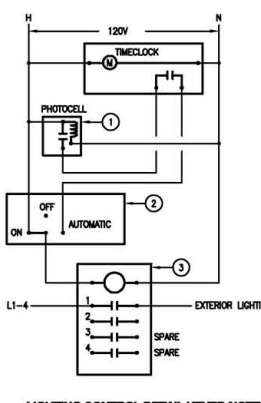
SAP#		
PL#		
DATE	9/21/2010	
ENG	SG/RD	DES SG/RD
DR	SG/RD	CH JG
APPROVAL		
		HYDRO
SCALE: 1" = 50'	SHEET E-1	REV. A

A	REFERENCE DRAWINGS						
	DRAWING No.						
B	REFERENCE DRAWINGS						
	DRAWING No.						
C	BY	CHK APP					
	REVISION						
D	DATE						
	No.						
E	BY	CHK APP					
	MR	DSN					
F	REVISION						
	98% NON-SITE SPECIFIC DESIGN SUBMITTAL						
PLOT SCALE: AS NOTED							
No.	DATE						
A	9/21/10						





**1 ONE-LINE DETAIL**  
SCALE: N.T.S.

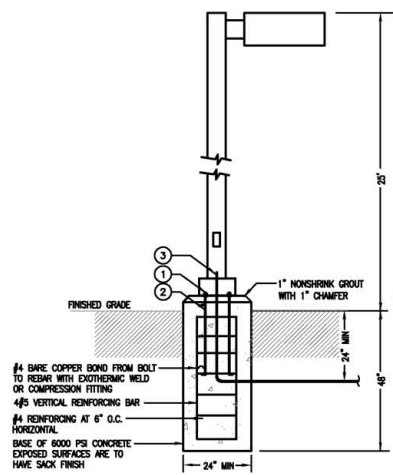


- LIGHTING CONTROL DETAIL KEYED NOTES:**
1. MOUNT PHOTOCELL 12" ABOVE ROOF FACING NORTH.
  2. LABEL HOA "PHOTOCELL ON/TIMECLOCK ON", ON ENCLOSURE.
  3. MOUNT LIGHTING CONTACTOR IN ENCLOSURE ADJACENT TO PANEL L1'.

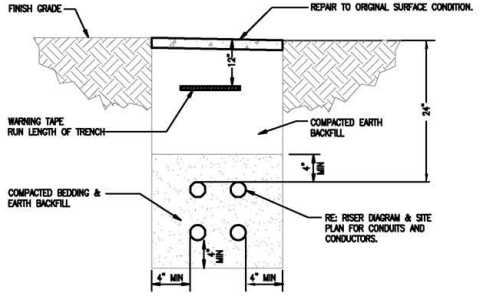
**3 LIGHTING CONTROL DETAIL**  
SCALE: N.T.S.

**ONE-LINE DIAGRAM KEY NOTES:**

1. NEW CT CAN AND METER BASE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE EQUIPMENT REQUIREMENTS WITH PACIFICORP. CT'S AND METER PROVIDED AND INSTALLED BY PACIFICORP.
2. PROVIDE AND INSTALL #4 AWG CU GROUNDING ELECTRODE BOND TO UFER GROUND, BUILDING STEEL, AND PIPE IN ACCORDANCE WITH NEC 250.
3. NEW TRANSFORMER PROVIDED AND INSTALLED BY PUBLIC UTILITIES WITH 480/277V, 3Ø, 4W SECONDARY. CONTRACTOR TO COORDINATE SERVICE PROVIDED BY PUBLIC UTILITIES FROM NEW TRANSFORMER TO BUILDING.
4. 150A, 480V, 3P, AUTOMATIC TRANSFER SWITCH.
5. SERVICE ENTRANCE DISCONNECT.
6. PUMP CONTROL CABINET PROVIDED BY PUMP MANUFACTURER TO INCLUDE MOTOR CONTACTORS AND OVERLOADS. PUMPS ARE REDUNDANT AND WILL NEVER OPERATE SIMULTANEOUSLY.



**2 POLE BASE DETAIL**  
SCALE: N.T.S.



**4 UNDERGROUND CONDUIT DETAIL**  
SCALE: N.T.S.

**ELECTRIC WALL HEATER SCHEDULE**

EQUIPMENT NO.	SERVICE	CFM	ELECTRIC			WEIGHT (LBS)	MANUFACTURER & MODEL	OPTIONS-ACCESSORIES	
			WATTS	RPM	MCA				VOLT.-PH.-CY.
EWH-1	SEE PLANS	100	1500	1060	12.5	120-1-60	10	MARKEL E3055TDWB	PROVIDE WITH MANUFACTURER'S RECESSED WALL MOUNT KIT AND SINGLE POLE INTEGRAL T-STAT. FIELD WIRE MULTI-TAP ELEMENT TO WATTAGE SHOWN.
EWH-2,3	SEE PLANS	100	750	1060	6.3	120-1-60	10	MARKEL E3055TDWB	PROVIDE WITH MANUFACTURER'S RECESSED WALL MOUNT KIT AND SINGLE POLE INTEGRAL T-STAT. FIELD WIRE MULTI-TAP ELEMENT TO WATTAGE SHOWN.

ALTERNATE MANUFACTURERS: QMARK, CHROMALOX, MARLEY, KING, INDEECO

**LOUVER SCHEDULE**

EQUIPMENT NO.	SERVICE	WIDTH	HEIGHT	FREE AREA (SQ. FT)	THICKNESS OF FRAME	MATERIAL	SCREEN	MANUFACTURER & MODEL	OPTIONS-ACCESSORIES
L-1	INLET LOUVER	24"	12"	0.6	6"	ALUMINUM	1/4" MESH	RUSKIN ELF637SD	FURNISH WITH BIRDSCREEN AND BACKDRIFT DAMPER.

ALTERNATE MANUFACTURERS: GREENHECK CESCO, L & D.

**EXHAUST FAN SCHEDULE**

EQUIPMENT NO.	LOCATION	CFM	STATIC PRESS. (IN. W.G.)	MOTOR			SONES	WEIGHT (LBS)	MANUFACTURER & MODEL	CONTROL	OPTIONS-ACCESSORIES	
				WATTS	HP	RPM						VOLT.-PH.-CY.
EF-1	CONTROL BLDG	300	0.35	140	-	1250	120V/1/60	3.8	12	COOK GN-520	HEAT RISE T-STAT	FURNISH WITH WHITE ALUMINUM GRILLE, ROOF CAP WITH BIRD SCREEN, ISOLATION MOUNT, HEAT RISE T-STAT.

**PANELBOARD SCHEDULE**

LOADS		CONNECTED		DEMAND FACTOR		DEMAND	
TYPE	VA	TYPE	VA	TYPE	VA	TYPE	VA
PUMP CONTROL PANEL	1500	TRANSFORMER TTY	2025				
SPACE	14133	SPACE	2900				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				
SPACE	---	SPACE	---				

LOADING BY TYPE  
 LIGHTING 0 VA 210-19 125% 0 VA  
 RECEPTACLES 0 VA 220-44 100%+LARGEST@25% 0 VA  
 MISC 5925 VA 220-60 100% 5925 VA  
 MOTOR 4299 VA 220-50 100%+LARGEST@25% 5299 VA  
 TOTAL 14133 VA 220-50 100%+LARGEST@25% 1714 VA

**PANELBOARD SCHEDULE**

LOADS		CONNECTED		DEMAND FACTOR		DEMAND	
TYPE	VA	TYPE	VA	TYPE	VA	TYPE	VA
TRANSFORMER TTY	2025						
SPACE	2900						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						
SPACE	---						

LOADING BY TYPE  
 LIGHTING 0 VA 210-19 125% 0 VA  
 RECEPTACLES 0 VA 220-44 100%+LARGEST@25% 0 VA  
 MISC 3000 VA 220-60 100% 3000 VA  
 MOTOR 4299 VA 220-50 100%+LARGEST@25% 5299 VA  
 TOTAL 6925 VA 220-50 100%+LARGEST@25% 264 VA

LUMINAIRE	MANUFACTURER	CATALOG NUMBER	LAMPS	INPUT WATTS	VOLTAGE	MOUNTING	COMMENTS
SP1	LITHONIA	C-2-32-MVOLT-GE810S-WGCUN NST	(2)32W T8	59	120	SURFACE	
SP1	LITHONIA	KA-D-250M-R3-120-SPD04	(1)250W MH	289	120	POLE	REFER TO NOTE 3
WP1	LITHONIA	TWF1-42TRT-MVOLT	(1)42W TRT	48	120	WALL	

- Notes:**
1. Contractor shall provide and coordinate all fixture mounting accessories.
  2. All fluorescent lighting fixtures in non-residential areas shall have a disconnect as required per NEC Section 410.73G
  3. Pole to be Lithonia SSS-25-SC-DOB.

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 fax: 208-288-2182 project 09MCM01

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SAP#  
 PL#  
 DATE 9/21/2010  
 ENG SG/RD DES SG/RD  
 DR SG/RD CH JG  
 APPROVAL

LEWIS RIVER  
 WOODLAND RELEASE POND IMPROVEMENTS  
 ELECTRICAL DETAILS, ONE-LINE  
 AND SCHEDULES

**PACIFICORP ENERGY** HYDRO  
 A PACIFICORP COMPANY

SCALE: N.T.S. SHEET E-3 REV. A

NO.	DATE	BY	CHK APP	REVISION	DESCRIPTION	REVISION	DATE	NO.	BY	CHK APP	REVISION	DESCRIPTION
						MR	DSN	NO.	DATE	BY	CHK APP	REVISION
1	9/21/10	A		90% NON-SITE SPECIFIC DESIGN SUBMITTAL	AS NOTED							



