



# US-CA-602-1

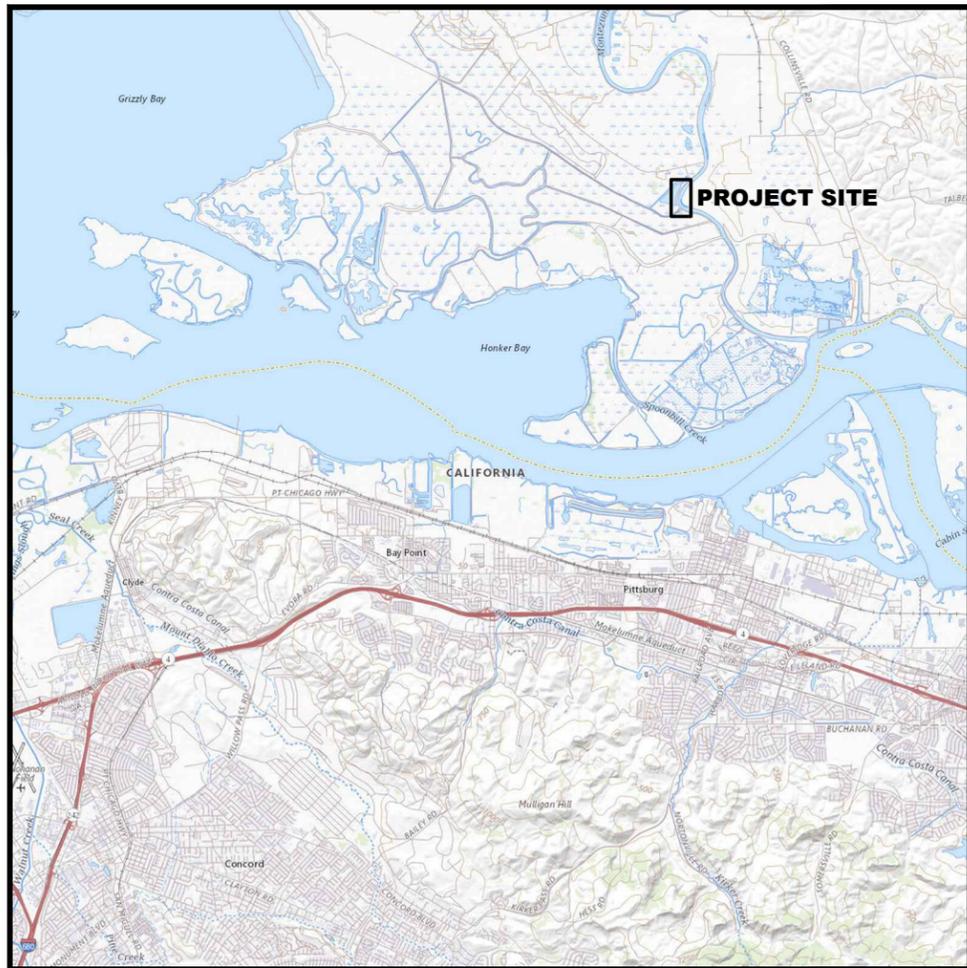
## GRIZZLY ISLAND WILDLIFE AREA

### MONTEZUMA SLOUGH

### FISH SCREEN INSTALLATION



#### LOCATION MAP



NOT TO SCALE

#### VICINITY MAP



#### SURVEY DATUM

Horizontal and Vertical Control:  
 The horizontal datum for this survey is the California Coordinate System of 1983, Zone 2 (0402), NAD 83, Epoch Date 1997.30 in U.S. Survey Feet. The vertical datum for this survey is the North American Vertical Datum of 1988 (NAVD88) computed using GEOID03. Both datums were derived from GPS observations collected on March 29, 2005. Said observations were fixed to local area National Geodetic Survey (NGS) horizontal and vertical control points, respectively.

#### MAP DATA

Contour Interval: 1 Foot  
 Aerial Photo: 2020 NAIP, Autodesk / Bing

#### SHEET INDEX

1	Cover Sheet
2	Definitions & Legend
3	Sheet Index & Site Overview
4	Site Plan
5	Site Plan
6	Fish Screen Plan & Profile
7-8	Details

#### EMERGENCY CONTACT INFORMATION

In case of emergency: CALL 911  
 Then contact:  
 Shawn Overton  
 Senior Fish & Wildlife Habitat Supervisor  
 (707) 738-3485

#### PROJECT DIRECTORY

Ducks Unlimited, Inc.  
 Western Regional Office  
 3074 Gold Canal Drive  
 Rancho Cordova, Ca. 95670-6116  
 Ph. (916) 852-2000

**65% DESIGN**

**Unauthorized Changes & Uses**  
 The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.



REV. NO.	DESCRIPTION	DATE	APPROVED



PROJECT NO. **US-CA-602-1** DATE: **3/14/2023**  
**GRIZZLY ISLAND WILDLIFE AREA**  
**MONTEZUMA SLOUGH**  
**FISH SCREEN INSTALLATION**  
 APPROVED BY:

DESIGNED BY: AT  
 DRAWN BY: JS  
 SURVEYED BY: AT  
 CHECKED BY: BW  
 SHEET NO.

**GENERAL NOTES:**

- Ducks Unlimited makes no representations as to the existence or nonexistence of utilities. It is the responsibility of the contractor to comply with the provisions of all applicable utility notification regulations. The contractor will be liable for any damage to utilities caused by construction activities.
- The engineer does not represent that the location of utilities shown on the plans are exact or complete. It shall be the responsibility of the contractor to determine the presence of, actual locations of and make provisions for all watercourses and utilities. The contractor shall verify location, depth and height. Their verification shall be coordinated by the contractor with the appropriate utility company.
- The contractor shall exercise extreme caution when working in the vicinity of overhead power lines. Verify location in the field and protect in place.
- At least 2 working days prior to beginning any digging or excavation work, the contractor shall notify underground service alert (a.k.a. USA North) at www.usanorth.org or by phone at 811 or 1-800-227-2600, to determine locations of existing utilities.
- In accordance with generally accepted construction practices, the contractor will be solely and completely responsible for the conditions of the job site including safety of all persons and property during performance of the work. The contractor shall ensure that all work is performed in accordance with occupational safety laws, including the design and construction of proper shoring of trenches. The duties of the project engineer do not include review of the adequacy of the contractor's safety in, on, or near the job site.
- It is the responsibility of the contractor to be knowledgeable about the project specifications and permits. All work shall be completed in compliance with the contract documents. The contractor shall have copies of the most current approved plans, specifications and permit conditions on site during all work operations.
- The project site and adjacent areas contain sensitive habitat areas for protected wildlife, and may include endangered species. The contractor shall protect wildlife and water quality, and minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- Should it appear that the work to be done, or any matter relative thereto, is not sufficiently detailed or explained on these plans or in the specifications, the contractor shall contact the construction manager for such further explanations as may be necessary.
- Should the contractor find any discrepancies between the conditions existing in the field and the information shown on the drawings, he shall notify the construction manager before proceeding with construction.

**SURVEY POINT DESCRIPTORS**

CTBM	Bench Mark (permanent)	RDSH	Road Shoulder
CTBT	Bench Mark (temporary)	RDSN	Road Sign
CTCP	Survey Control Point (permanent)	RDTO	Road, Toe of Slope
CTCT	Survey Control Point (temporary)	RDTP	Road, Top of Slope
DIFL	Ditch Flowline	SDMH	Storm Drain, Manhole
DIGB	Ditch Grade Break	SDPI	Storm Drain, Pipe Invert
DITO	Ditch Toe	SDPT	Storm Drain, Pipe Top
DITP	Ditch Top	SSMH	Sanitary Sewer, Manhole
ELBX	Electric, Box or Pullbox	SWFL	Swale Flowline
ELGY	Electric, Guy Wire	SWGGB	Swale Grade Break
ELPP	Electric, Power Pole	SWTO	Swale Toe
ELSN	Electric, Warning Sign	SWTP	Swale Top
ELTR	Electric, Transformer	TFBL	Topo Feature, Building
ELTW	Electric, Tower	TFBR	Topo Feature, Brush
ELVT	Electric, Vault	TFCO	Topo Feature, Concrete (pad, slab, etc.)
FNAP	Fence Angle Point	TFFL	Topo Feature, Flowline
FNCR	Fence Corner	TFGB	Topo Feature, Grade Break
FNGT	Fence Gate	TFGS	Topo Feature, Ground Shot
FNLN	Fence Line	TFRK	Topo Feature, Rock Or Rocky Area Boundary
IRCO	Irrigation Concrete Pad	TFTL	Topo Feature, Tree line
IRCP	Irrigation Control Panel	TFTO	Topo Feature, Grade Break at Toe
IRPI	Irrigation Pipe Invert	TFTP	Topo Feature, Grade Break at Top
IRPM	Irrigation Pump	TFTR	Topo Feature, Tree
IRPT	Irrigation Pipe Top	WAEW	Edge of Water
IRVL	Irrigation Valve	WAHW	High Water Mark
IRWL	Irrigation Well	WAUW	Under Water Ground Shot
LVCL	Levee Centerline	WAWS	Water Surface
LVGB	Levee Grade Break	WCFL	Water Control Structure, Flowline/Invert at Structure
LVTO	Levee Toe of Slope	WCFR	Water Control Structure, Frame Top
LVTP	Levee Top of Slope	WCHW	Water Control Structure, Headwall
RDCL	Road, Centerline	WCPI	Water Control Structure, Pipe Invert at Outlet
RDED	Road, Edge of Dirt Road	WCPT	Water Control Structure, Pipe Top at Outlet
RDEG	Road, Edge of Gravel Road	WCST	Water Control Structure, Top of Structure
RDEP	Road, Edge of Paved Road	WCWW	Water Control Structure, Wing Wall
RDGB	Road Grade Break		

**ABBREVIATIONS**

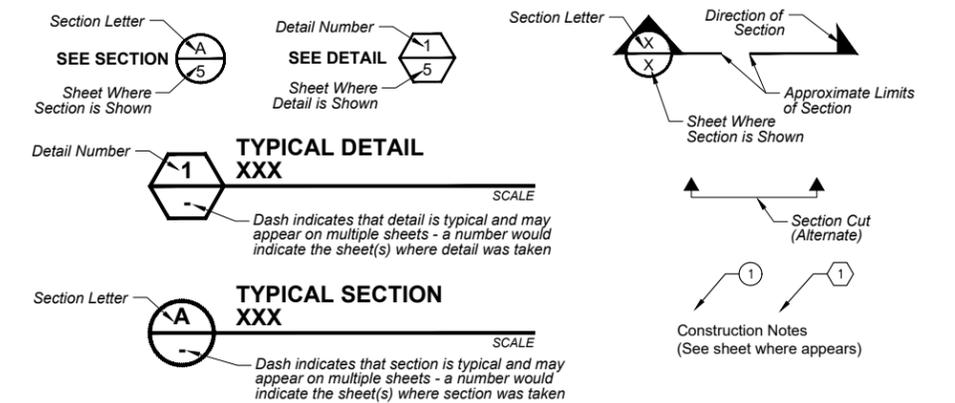
AB	Aggregate Base	LBF	Pounds-Force	TEMP	Temporary
AC	Acre	LF	Linear Feet	TOI	Top of Island
ADA	Americans with Disabilities Act	MAINT	Maintenance	TOL	Top of Levee
APPROX	Approximate	MAX	Maximum	TOB	Top of Berm
BM	Benchmark	MIN	Minimum	TYP	Typical
CAP	Corrugated Aluminum Pipe	MISC	Miscellaneous	USA	Underground Service Alert
CC	Center to Center	(N)	New	U.S.A.	United States of America
CCF	Coast Casey Forebay	N	North	U/S	Upstream
CF	Cubic Foot	NE	Northeast	VLV	Valve
CFS	Cubic Foot Per Second	NIC	Not In Contract	W	Width, West (where applicable)
CL, ε	Centerline	NTS	Not To Scale	W /	With
CMP	Corrugated Metal Pipe	NW	Northwest	WCS	Water Control Structure
CMPA	Corrugated Metal Arch Pipe	OC	On Center	WS	Water Surface
CONC	Concrete	OD	Outside Diameter	WSEL	Water Surface Elevation
CP	Control Point	PG&E	Pacific Gas and Electric	WWF	Welded Wire Fabric
CY	Cubic Yard	PIP	Pressure Irrigation Pipe	X:1	Slope, Horizontal:Vertical
DEMO	Demolish	PL	Property Line		
DIA, Ø	Diameter	PP	Power Pole		
Dp	Pipe Diameter	PSI	Pounds per Square Inch		
Dr	Riser Diameter	PT	Pressure Treated		
DU	Ducks Unlimited, Inc.	PVC	Polyvinyl Chloride		
D/S	Downstream	QTY	Quantity		
E	East	R	Right		
EG	Existing Ground	RC	Relative Compaction		
EL	Elevation	RCB	Reinforced Concrete Box		
EX, EXIST	Existing	RD	Road		
FG	Finished Grade	REF	Reference Dimension		
FL	Flowline	REQD	Required		
FRG	Final Rough Grade	ROW	Right Of Way		
FT	Foot, Feet	S	South		
FTG	Fitting, Footing	SCH	Schedule		
GA	Gauge	SE	Southeast		
GB	Grade Break	SS	Stainless Steel		
H	Height	SDR	Standard Dimension Ratio		
HDPE	High-Density Polyethylene	SF	Square Feet		
HR	Half Round	SHT	Sheet		
HTZ	Habitat Transition Zone	SP	Special		
ID	Inside Diameter	SPECS	Specifications		
IE	Invert Elevation	STA	Station		
IG	Initial Grade	STD	Standard		
IN	Inch, Inches	SW	Southwest		
INV	Invert	SY	Square Yard		
IPS	Iron Pipe Size	TBD	To Be Determined by Engineer		
ISI	Intake Screens, Inc.	TBM	Temporary Benchmark		
L	Length, Left	TE	Top Elevation		

**LEGEND & STANDARD SYMBOLS** ( Symbols do not represent actual scale / size of object )

	Existing Fence Line - Barbed Wire		Existing Power / Telephone Pole
	Existing Fence Line - Chain Link		Existing Electric Guy Wire
	Existing Fence Line - Stockade		Existing Electric Transformer
	Power / Telephone Overhead Lines		Existing Electric Tower
	Underground Gas Line		Existing Electric Vault
	Electric Line		Existing Blind
	Force Main Line		Existing Gate Valve
	Sanitary Sewer Line		Existing Air Relief Valve
	Storm Drain Line		Existing Alfalfa / Overflow Valve
	Existing Ditch		Existing Irrigation Well
	Existing Levee		Existing Irrigation Pump
	Existing Swale		Existing Water Meter
	Existing Road - Dirt		Existing Fire Hydrant
	Existing Road - Gravel		Existing Manhole
	Existing Road - Paved		Existing Natural Gas Meter / Valve
	Existing Trees / Brushline		Existing Sign

	Water Control Structure ID#		New Power Pole
	Revision Number Identifier		New Gate Valve
	Cut/Borrow Area / Pothole		New Air Relief Valve
	Fill Area		New Alfalfa / Overflow Valve
	Extent of Field Grading		New Irrigation Pump
	Ditch/Stream/Channel Flow Direction		New Water Control Structure
	Ditch Cleaning		New Water Control Structure w/ Flow
	New Ditch Centerline / Flowline		Benchmark
	New Swale Centerline / Flowline		Temporary Benchmark
	Regrade Existing Swale		Control Point
	New Levee Centerline		Wood Debris Pile
	Improved Levee Centerline		
	Regraded/Lowered Levee Centerline		
	Remove Existing Levee		
	Design Water Surface Elevation (with Field or Unit number optional)		

**DETAILING CONVENTIONS**



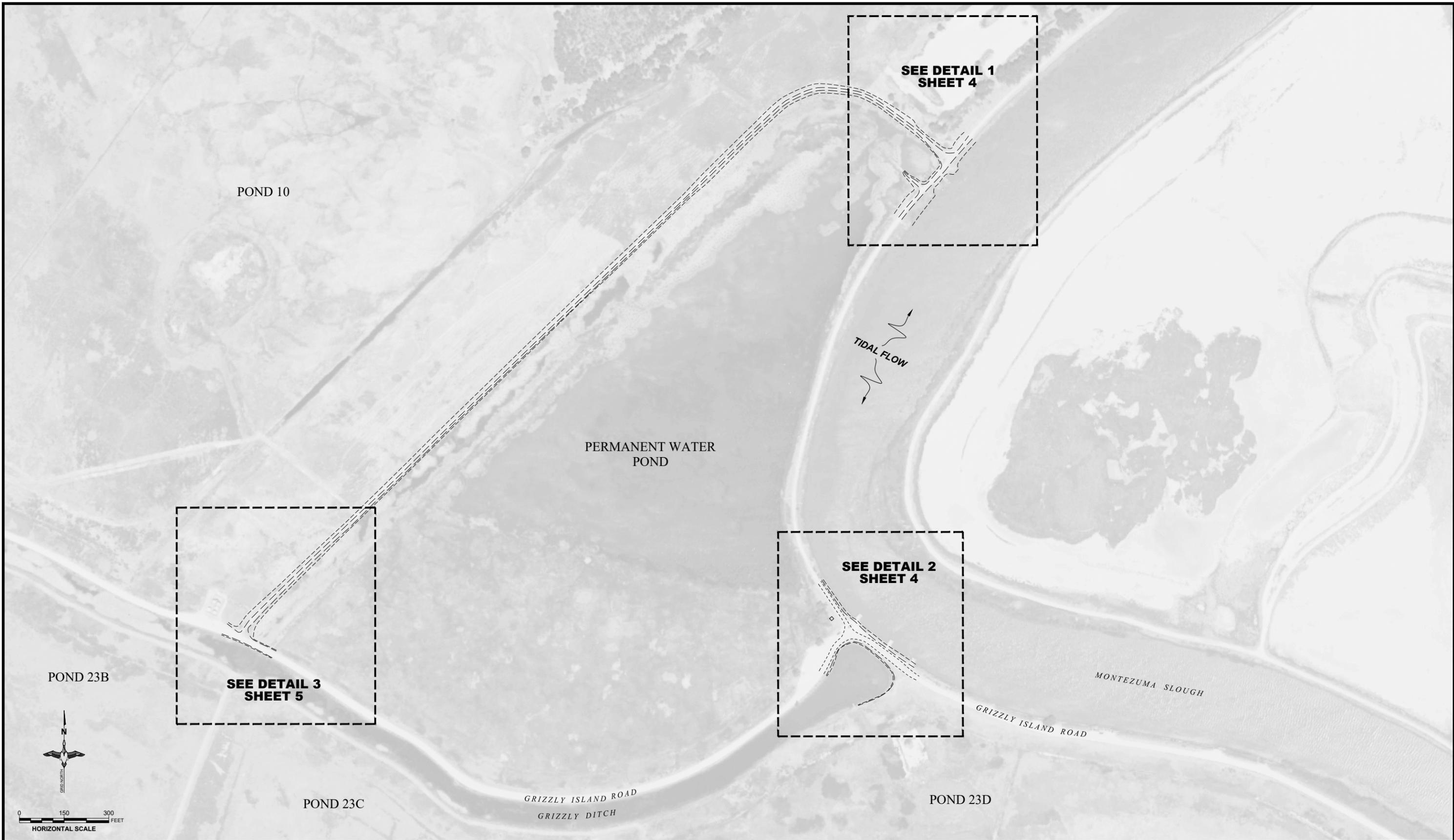
**65% DESIGN**

**Unauthorized Changes & Uses**  
 The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

REV. NO.	DESCRIPTION	DATE	APPROVED



PROJECT NO. <b>US-CA-602-1</b>	DATE: <b>3/14/2023</b>	DESIGNED BY: <b>AT</b>
<b>GRIZZLY ISLAND WILDLIFE AREA</b>		
<b>MONTEZUMA SLOUGH</b>		
<b>FISH SCREEN INSTALLATION</b>		
DRAWN BY: <b>JS</b>		
SURVEYED BY: <b>AT</b>		
CHECKED BY: <b>BW</b>		
SHEET NO. <b>2 of 8</b>		



POND 23B

SEE DETAIL 3  
SHEET 5

POND 23C

GRIZZLY ISLAND ROAD  
GRIZZLY DITCH

POND 23D

MONTEZUMA SLOUGH  
GRIZZLY ISLAND ROAD

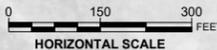
PERMANENT WATER  
POND

SEE DETAIL 2  
SHEET 4

SEE DETAIL 1  
SHEET 4

TIDAL FLOW

POND 10



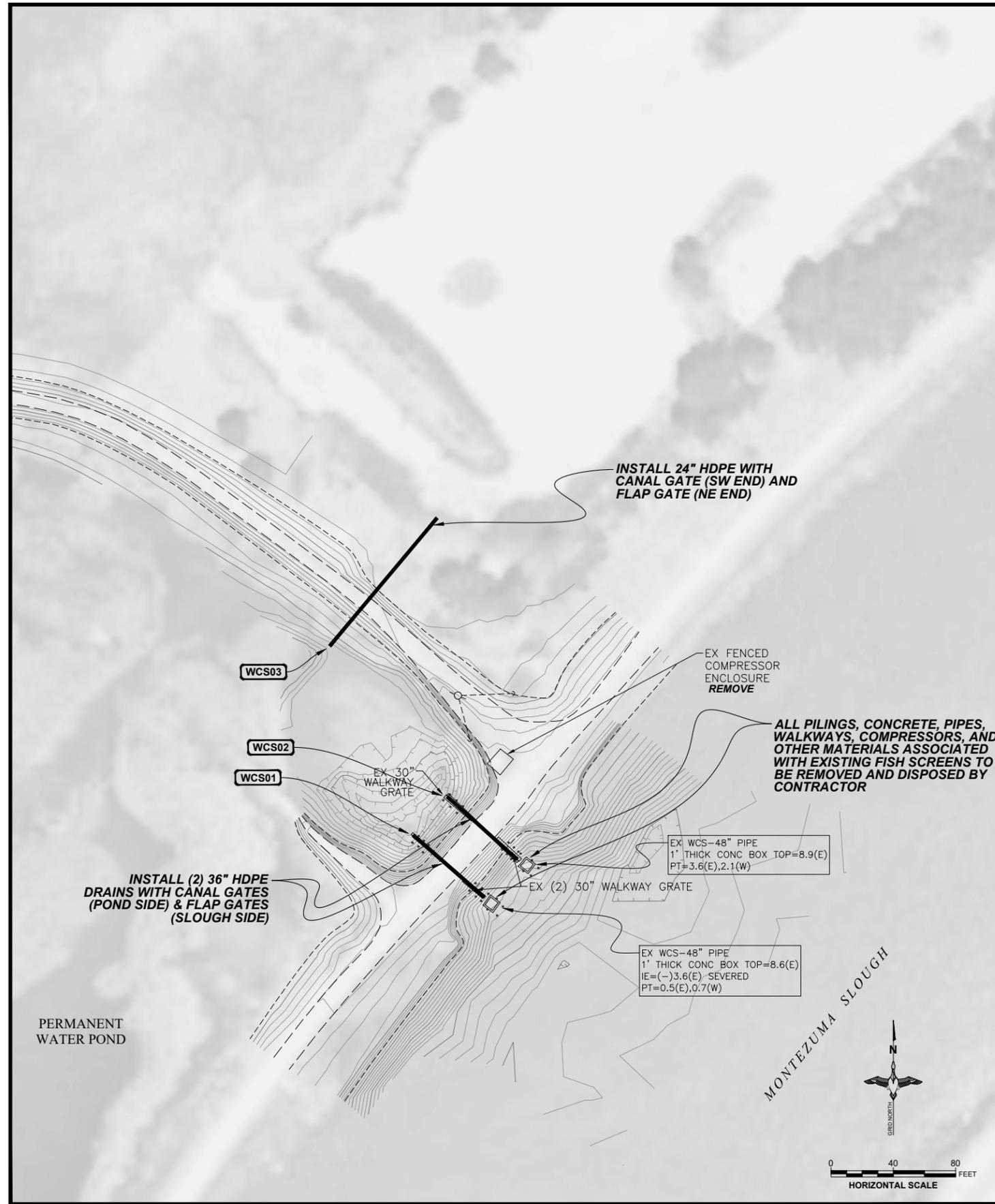
**Unauthorized Changes & Uses**  
The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

REVISIONS			
REV. NO.	DESCRIPTION	DATE	APPROVED
△			
△			
△			
△			
△			



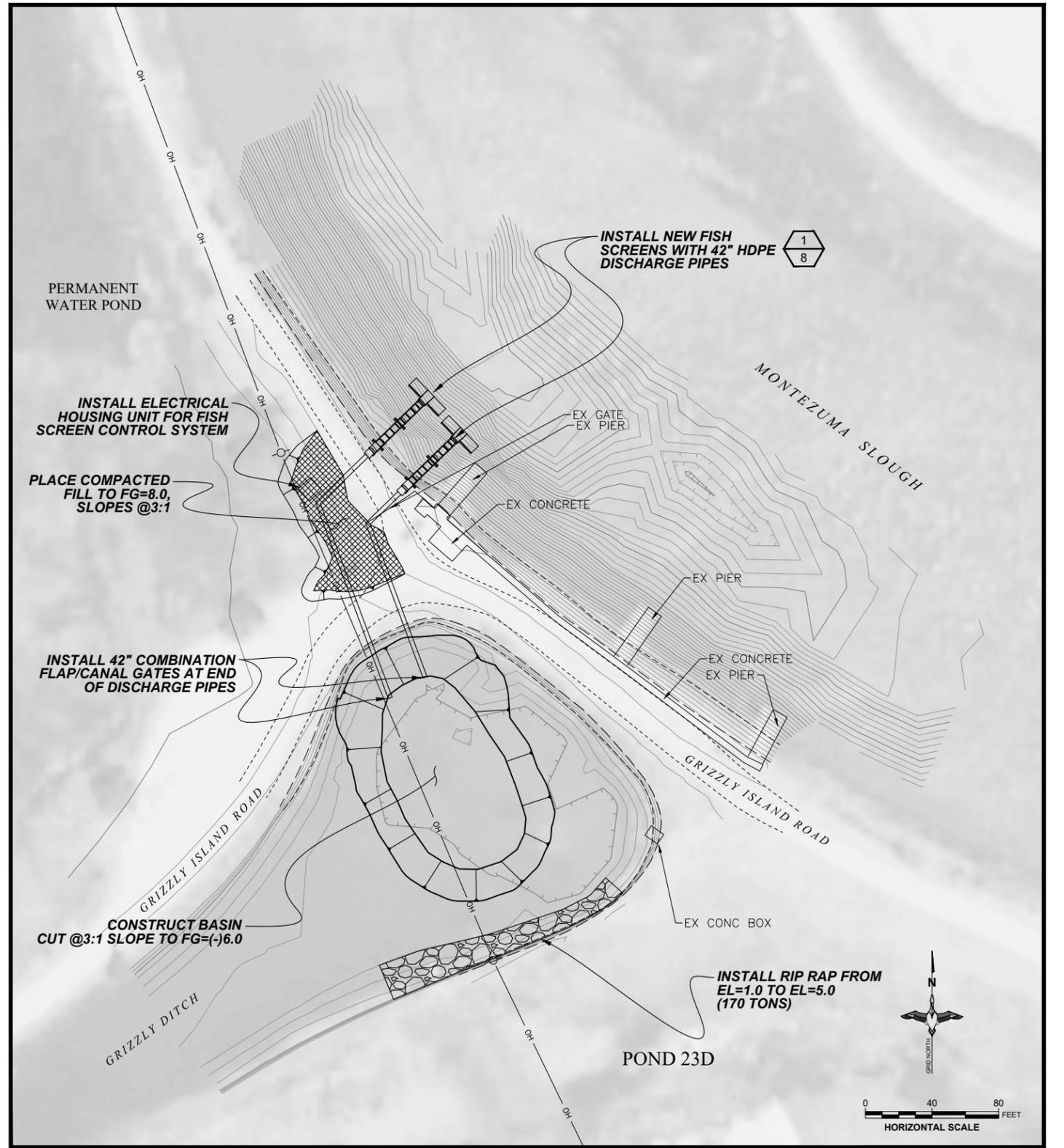
PROJECT NO. <b>US-CA-602-1</b>	DATE: <b>3/14/2023</b>	DESIGNED BY: AT
<b>GRIZZLY ISLAND WILDLIFE AREA MONTEZUMA SLOUGH FISH SCREEN INSTALLATION</b>		DRAWN BY: JS
		SURVEYED BY: AT
		CHECKED BY: BW
<b>SHEET INDEX &amp; SITE OVERVIEW</b>		SHEET NO. <b>3 of 8</b>

**65% DESIGN**



**1** DETAIL  
**3**

**Unauthorized Changes & Uses**  
The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

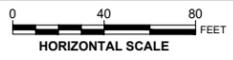
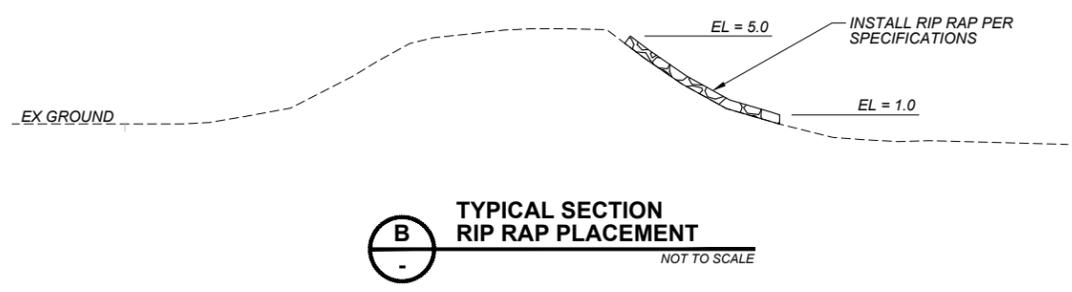
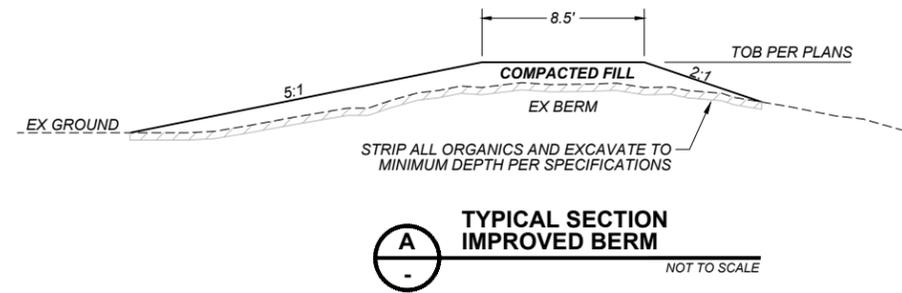
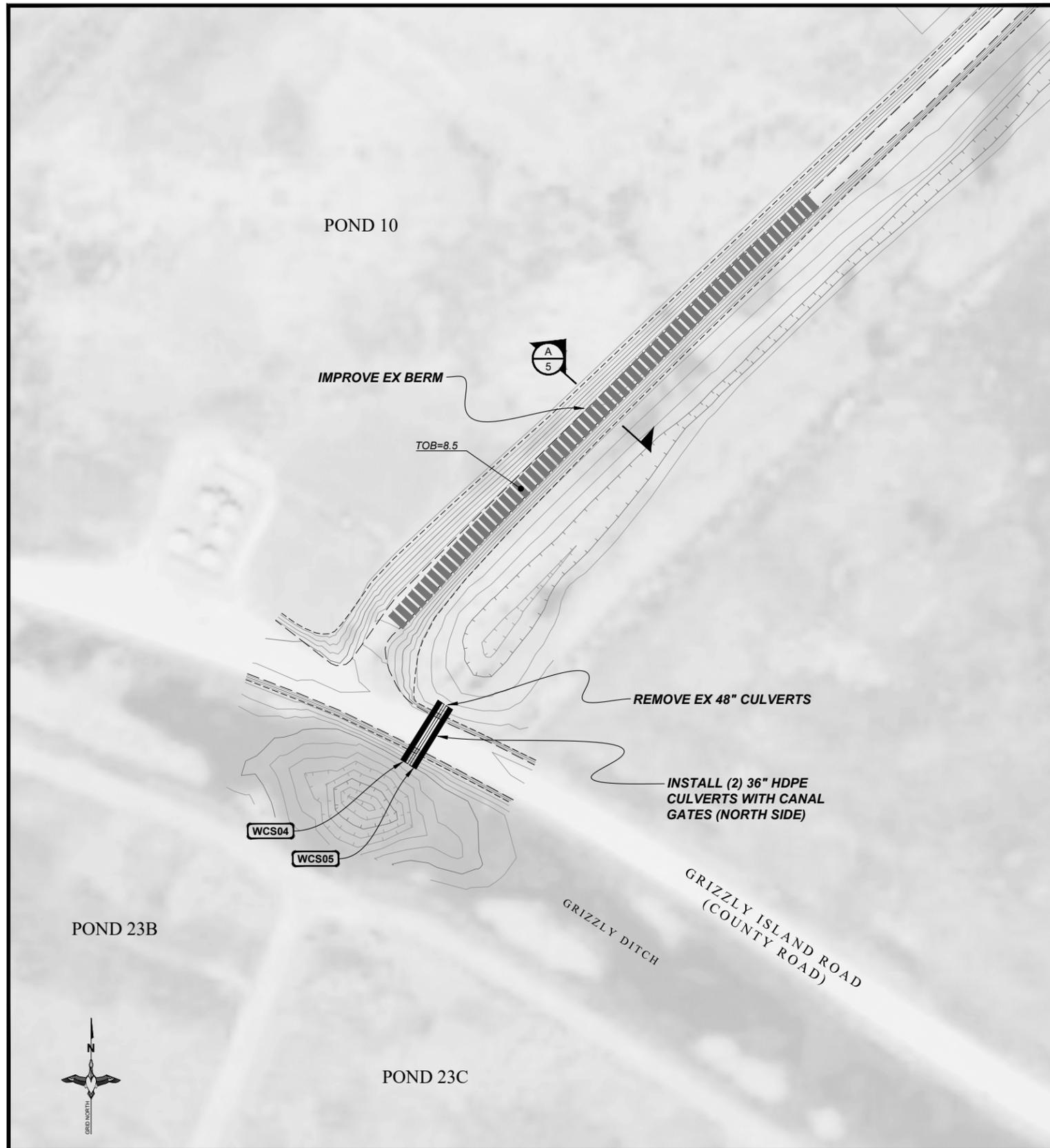


**2** DETAIL  
**3**

REVISIONS			
REV. NO.	DESCRIPTION	DATE	APPROVED
△			
△			
△			
△			
△			



PROJECT NO. <b>US-CA-602-1</b>	DATE: <b>3/14/2023</b>	DESIGNED BY: <b>AT</b>
<b>GRIZZLY ISLAND WILDLIFE AREA MONTEZUMA SLOUGH FISH SCREEN INSTALLATION</b>		DRAWN BY: <b>JS</b>
<b>SITE PLAN</b>		SURVEYED BY: <b>AT</b>
		CHECKED BY: <b>BW</b>
		SHEET NO. <b>4 of 8</b>



**3** DETAIL  
**3**

**Unauthorized Changes & Uses**  
The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

REVISIONS			
REV. NO.	DESCRIPTION	DATE	APPROVED



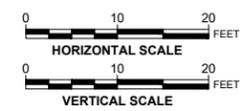
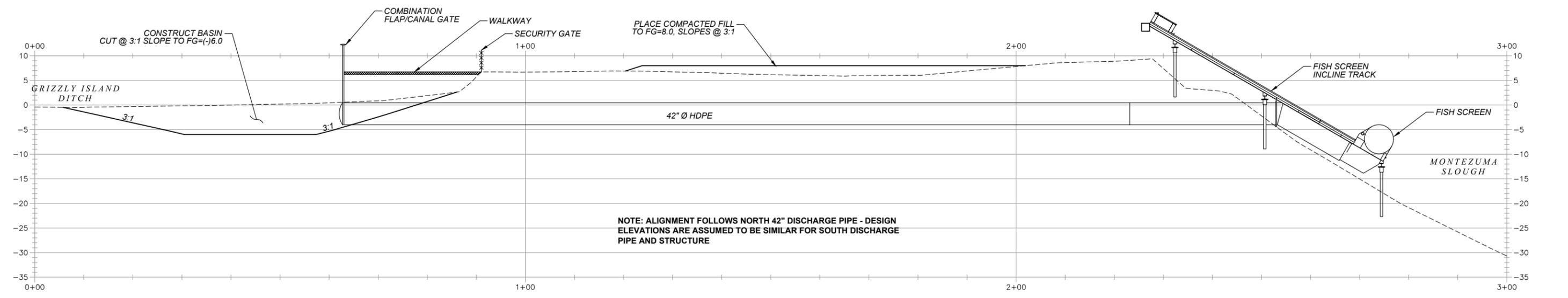
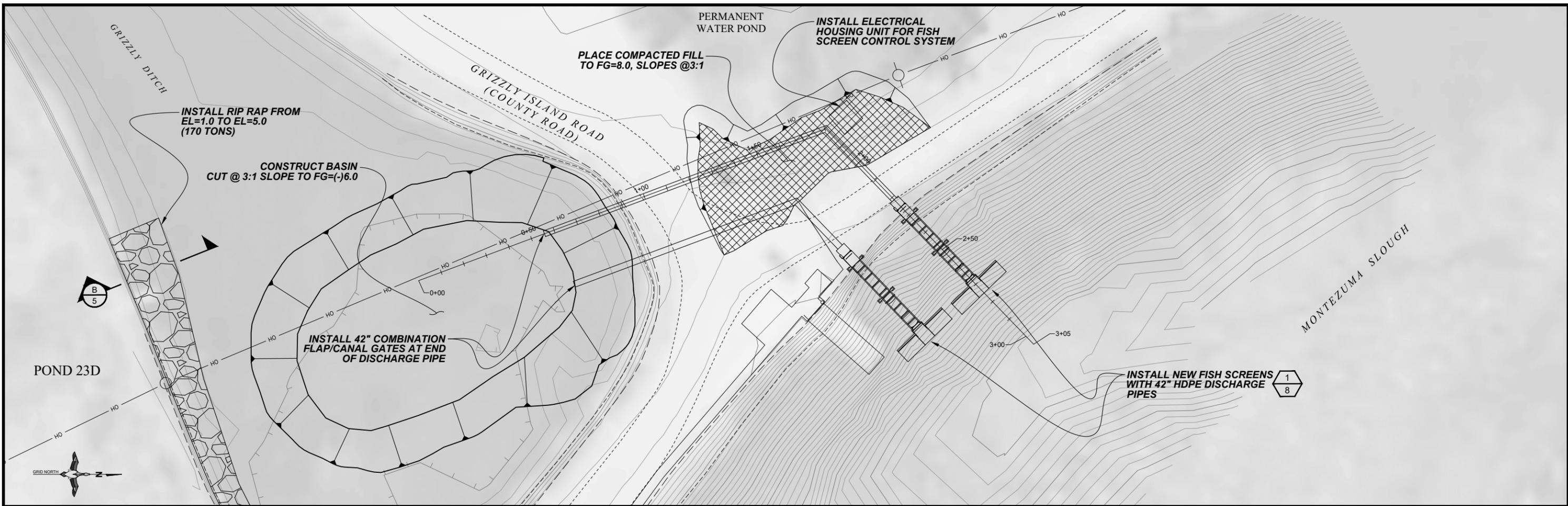
**65% DESIGN**

PROJECT NO. US-CA-602-1    DATE: 3/14/2023

**GRIZZLY ISLAND WILDLIFE AREA  
MONTEZUMA SLOUGH  
FISH SCREEN INSTALLATION**

SITE PLAN

DESIGNED BY: AT  
DRAWN BY: JS  
SURVEYED BY: AT  
CHECKED BY: BW  
SHEET NO. **5 of 8**



**Unauthorized Changes & Uses**  
 The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

REVISIONS			
REV. NO.	DESCRIPTION	DATE	APPROVED
△			
△			
△			
△			



**65% DESIGN**

PROJECT NO. US-CA-602-1 DATE: 3/14/2023

DESIGNED BY: AT

GRIZZLY ISLAND WILDLIFE AREA  
 MONTEZUMA SLOUGH  
 FISH SCREEN INSTALLATION

DRAWN BY: JS

SURVEYED BY: AT

CHECKED BY: BW

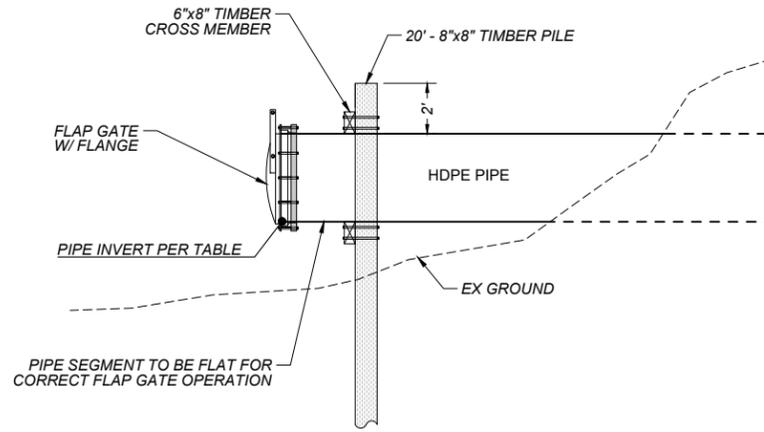
FISH SCREEN PLAN & PROFILE

SHEET NO. **6 of 8**

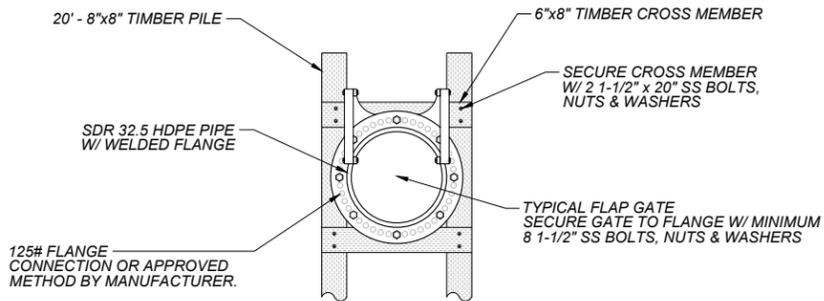
**WATER CONTROL STRUCTURE TABLE**

WCS#	W	H	Dp(in)	L(ft)	RISER TOP EL	LEVEE TOP EL	PIPE INVERT EL	NOTES
WCS01	-	-	36	60	-	9.5	0.0	1
WCS02	-	-	36	60	-	9.7	0.0	1
WCS03	-	-	24	110	-	6.4	(-)-2.8	1
WCS04	-	-	36	44	-	6.2	0.0	2
WCS05	-	-	36	44	-	6.2	0.0	2

NOTES:  
 1. Canal Gate & Flap Gate  
 2. Canal Gate Only

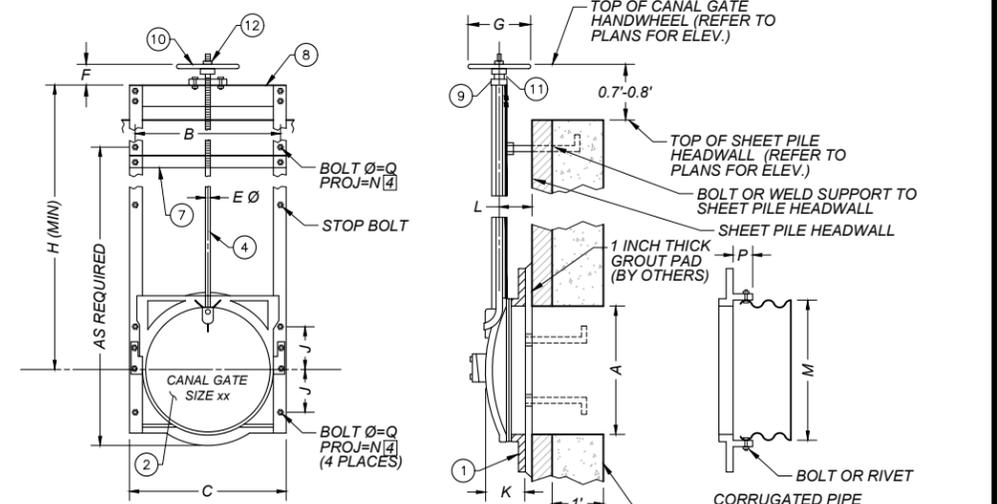


**SECTION**



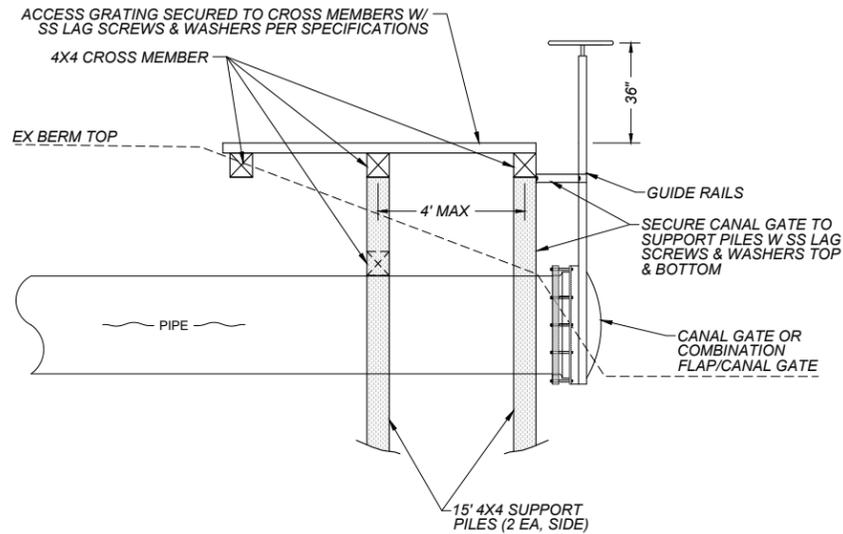
**END**

**2** TYPICAL DETAIL FLAP GATE  
NOT TO SCALE

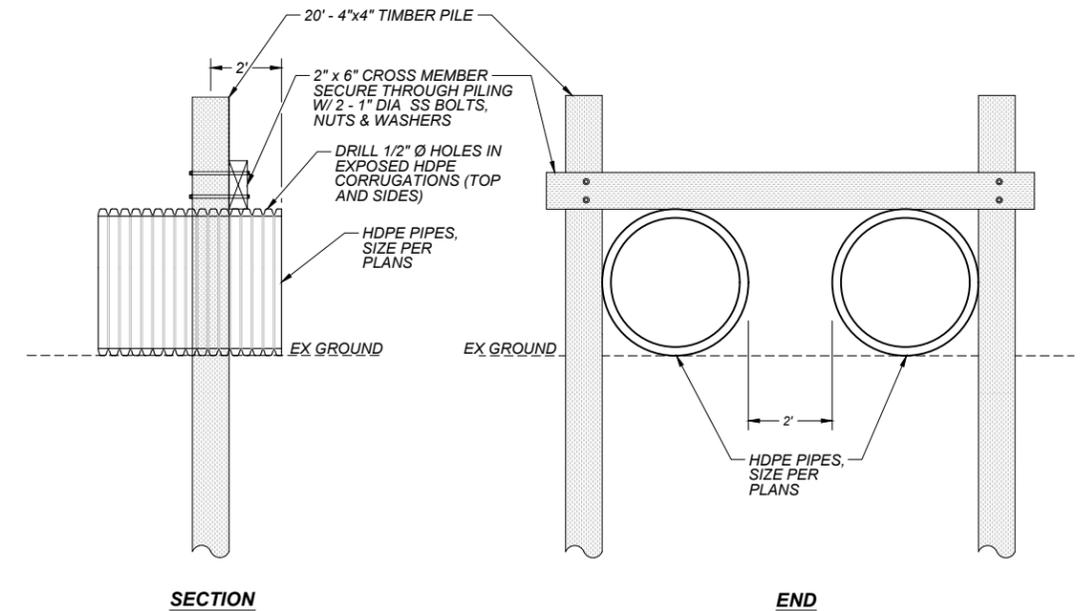


NOTE:  
 REFER TO WATERMAN STANDARD DRAWINGS AND MANUFACTURERS SPECIFICATIONS FOR LETTERED DIMENSION VALUES.

**4** TYPICAL DETAIL CANAL GATE  
NOT TO SCALE



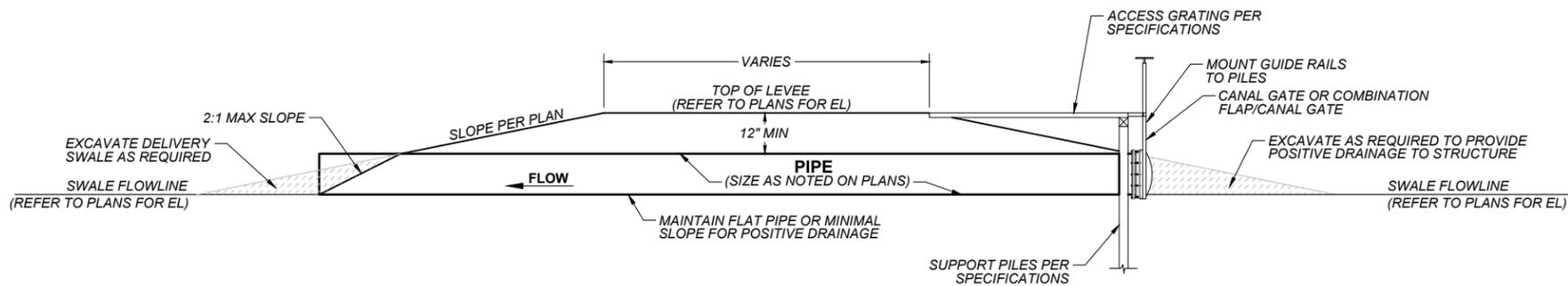
**1** TYPICAL DETAIL WATER CONTROL STRUCTURE - ACCESS GRATING  
NOT TO SCALE



**SECTION**

**END**

**5** TYPICAL DETAIL - HDPE CULVERT PIPE SUPPORT  
NOT TO SCALE



**3** TYPICAL DETAIL CROSSING AT WCS W/ CANAL GATE  
NOT TO SCALE

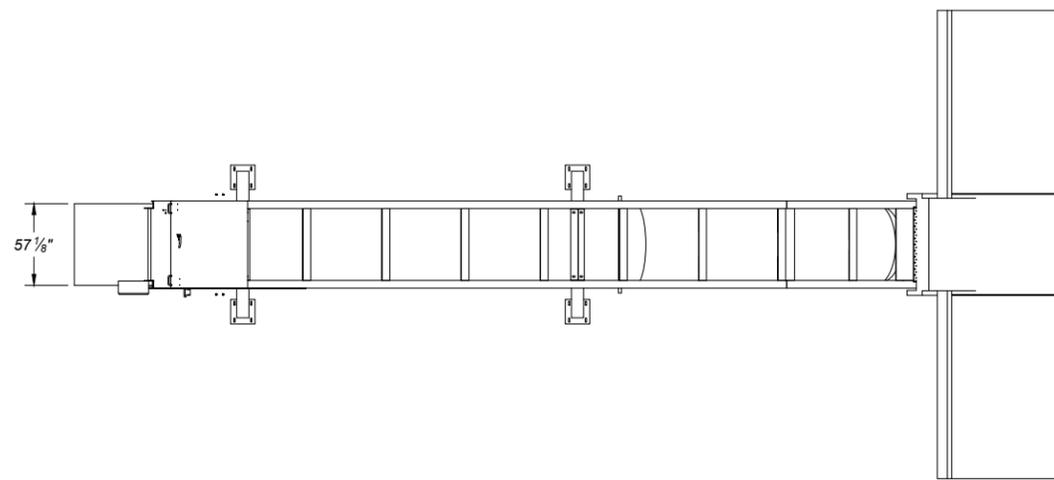
REV. NO.	DESCRIPTION	DATE	APPROVED



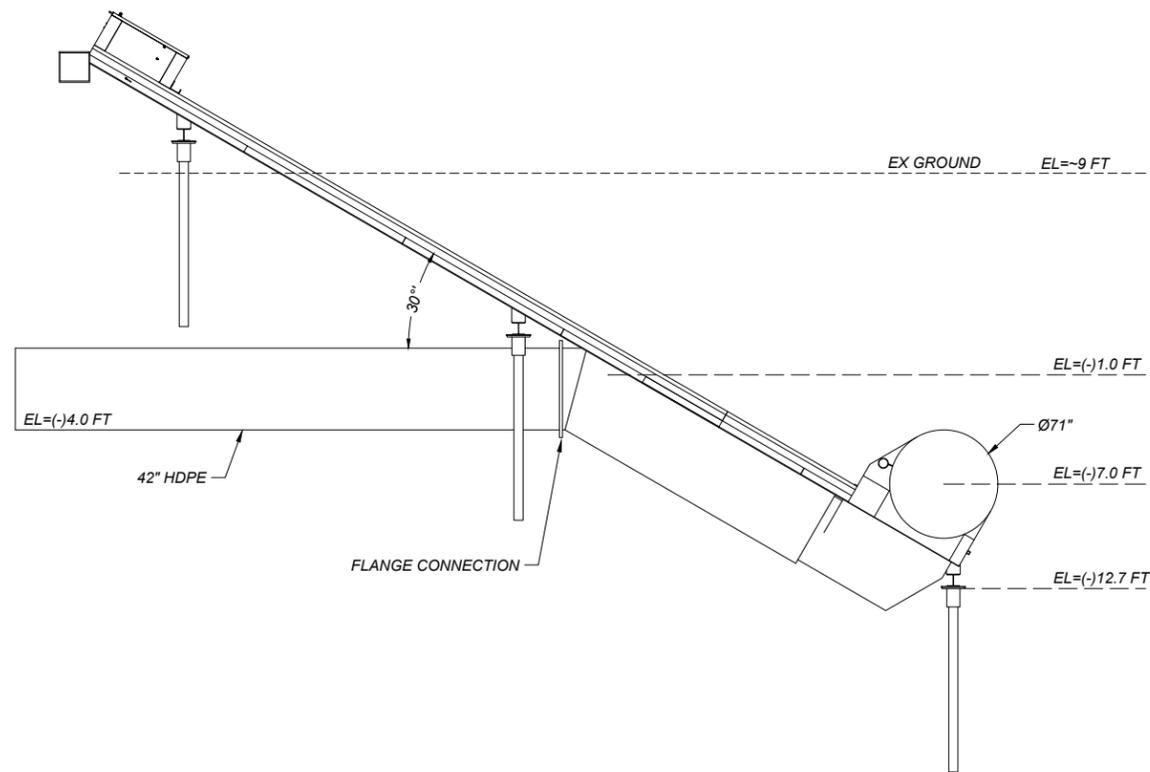
PROJECT NO. US-CA-602-1	DATE: 3/14/2023	DESIGNED BY: AT
GRIZZLY ISLAND WILDLIFE AREA MONTEZUMA SLOUGH FISH SCREEN INSTALLATION		DRAWN BY: JS
DETAILS		SURVEYED BY: AT
		CHECKED BY: BW
		SHEET NO. 7 of 8

**Unauthorized Changes & Uses**  
 The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

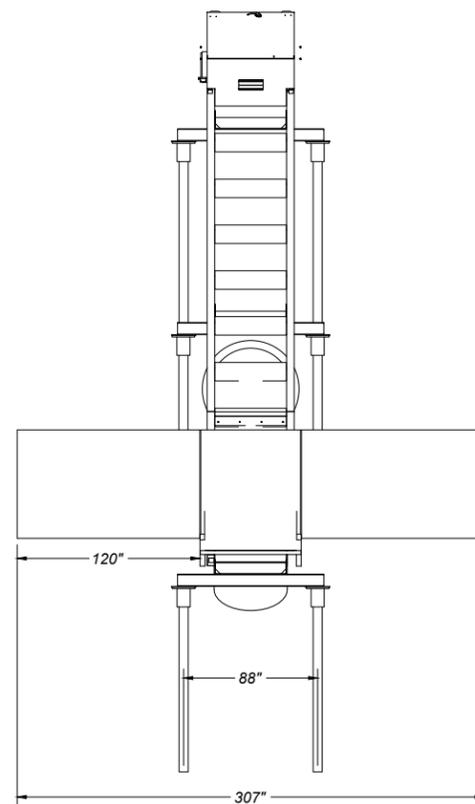
**65% DESIGN**



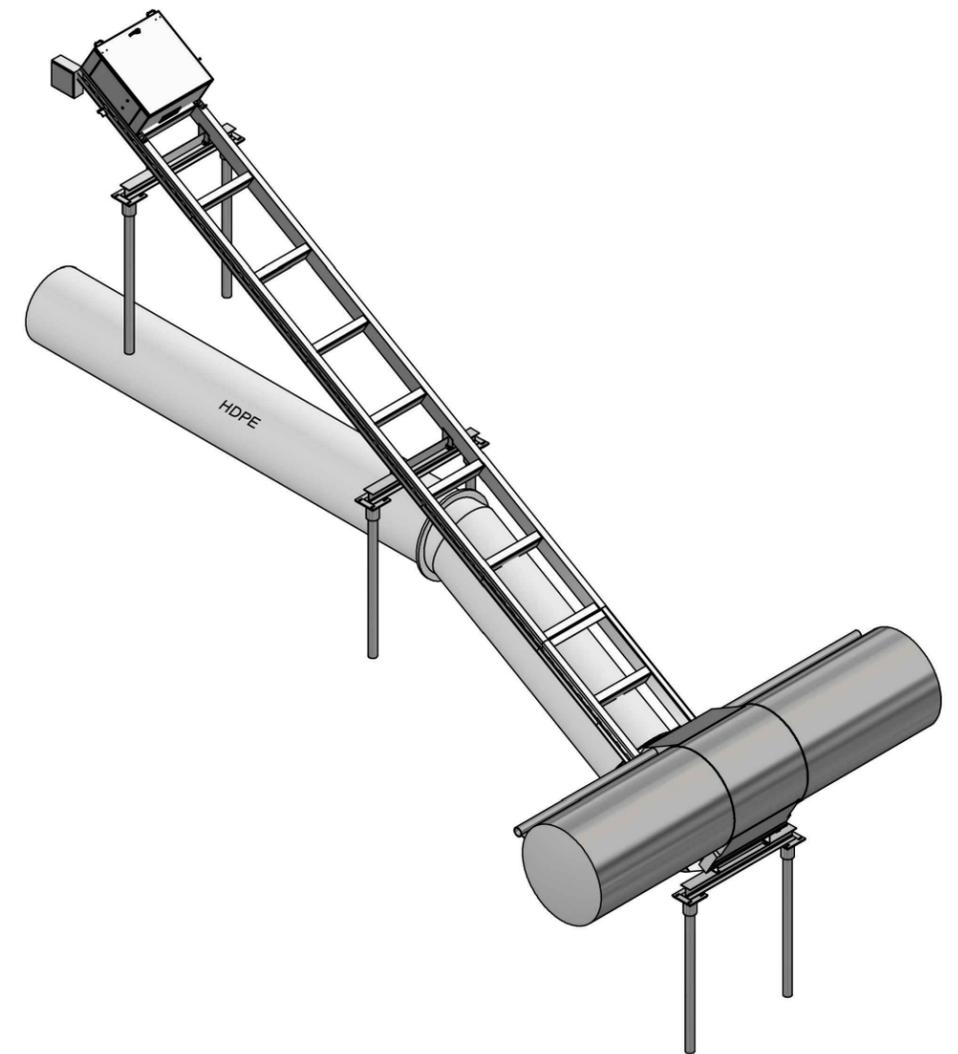
TOP



SIDE



FRONT



ISOMETRIC

**1** DETAIL - INTAKE SCREEN TRACK  
NOT TO SCALE

**Unauthorized Changes & Uses**  
The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the preparer of these plans.

REVISIONS			
REV. NO.	DESCRIPTION	DATE	APPROVED
△			
△			
△			
△			
△			



PROJECT NO. US-CA-602-1 DATE: 3/14/2023  
**GRIZZLY ISLAND WILDLIFE AREA**  
**MONTEZUMA SLOUGH**  
**FISH SCREEN INSTALLATION**

DESIGNED BY: AT  
 DRAWN BY: JS  
 SURVEYED BY: AT  
 CHECKED BY: BW  
 SHEET NO.

DETAILS

**8 of 8**

**65% DESIGN**