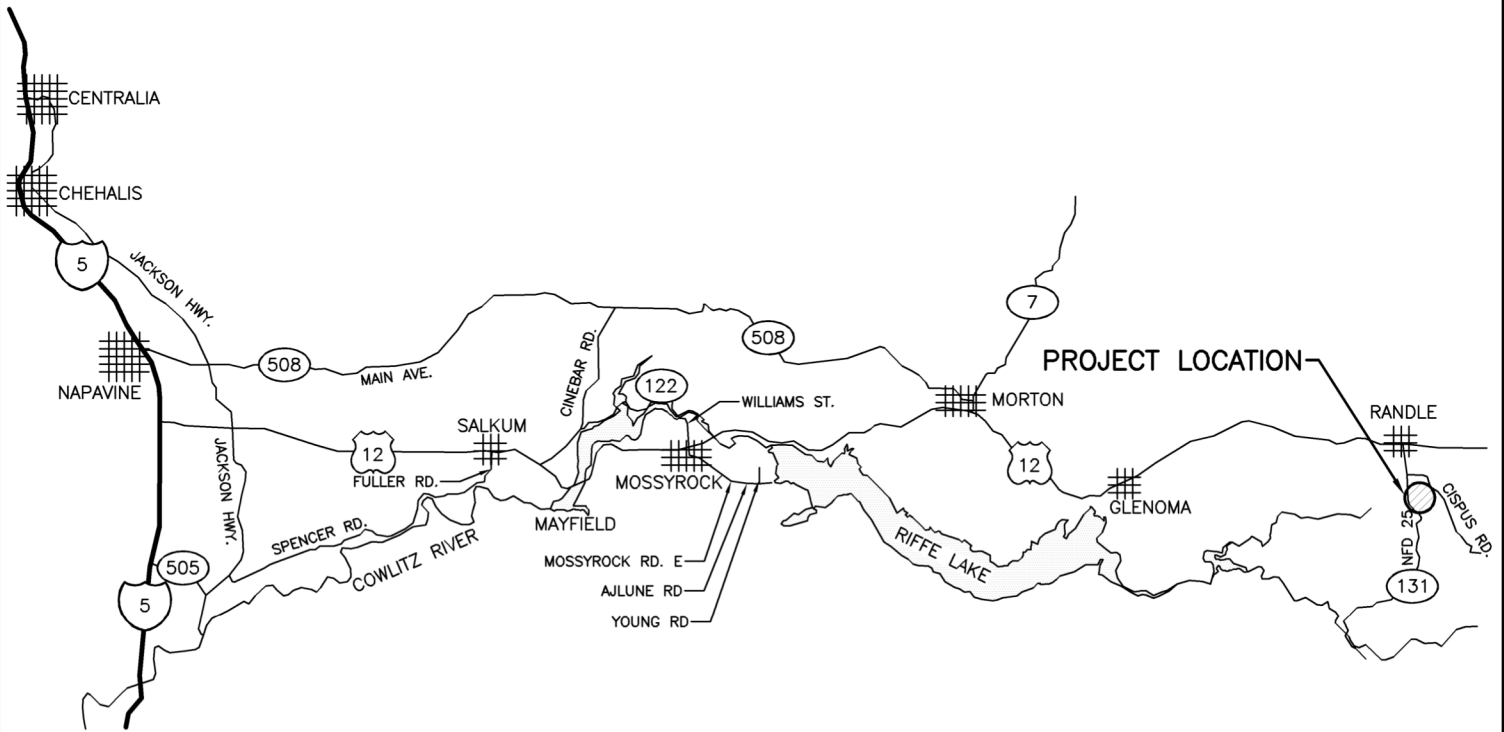


PROJECT LOCATION

STATE MAP  
NOT TO SCALE



VICINITY MAP  
NOT TO SCALE

DIRECTIONS  
FROM I-5 TAKE EXIT 68 ONTO US-12  
EAST TOWARD MORTON/YAKIMA. TURN  
RIGHT ONTO STATE ROUTE 131.  
PARKING AREA WILL BE ON THE LEFT  
AFTER CISPUS ROAD.

ENG. PROJECT NO. LS:R48:2021-1

PORTION OF: T 12 N, R 07 E, S 20

DRAWN BY: A. JOHNSON

REFERENCE NUMBER:

APPLICANT:  
**WASHINGTON DEPT. of FISH & WILDLIFE**  
600 CAPITOL WAY N.  
OLYMPIA, WA 98501-1091

ADJACENT PROPERTY OWNER:

- 1.
- 2.

PROJECT LOCATION (ADDRESS):

COWLITZ WLA - SPEARS UNIT  
HIGHWAY 131  
RANDLE, WA

LAT/LONG: 46.5121/-121.9535

DATUM: NAVD 88

SHEET 1 OF 10 DATE: 6/24/2021

PROPOSED PROJECT:

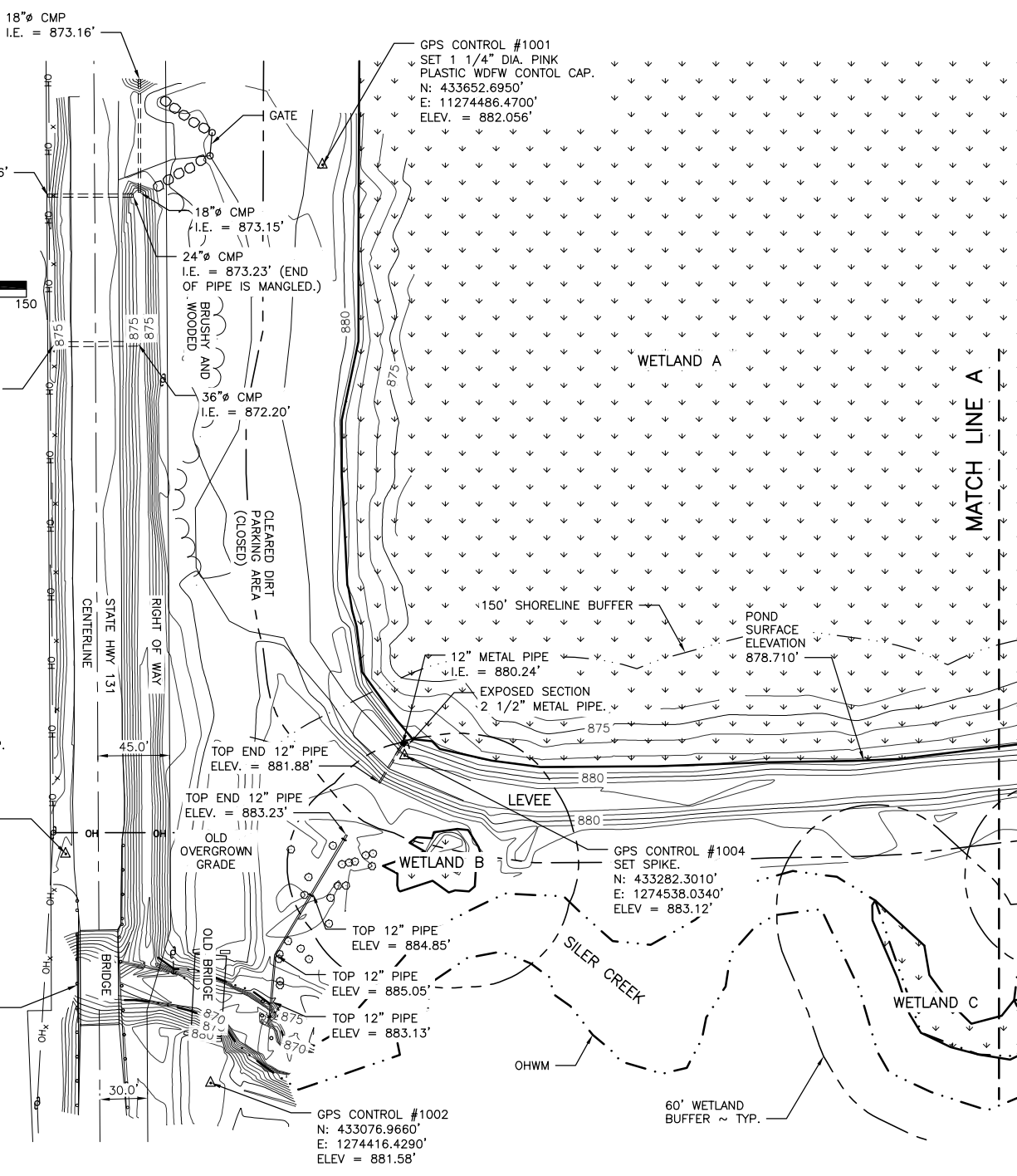
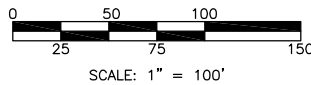
**COWLITZ WLA - SPEARS UNIT**  
POND WATER MANAGEMENT

IN: SILER CREEK

NEAR/AT: SPEARS

COUNTY: LEWIS

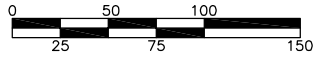
STATE: WA



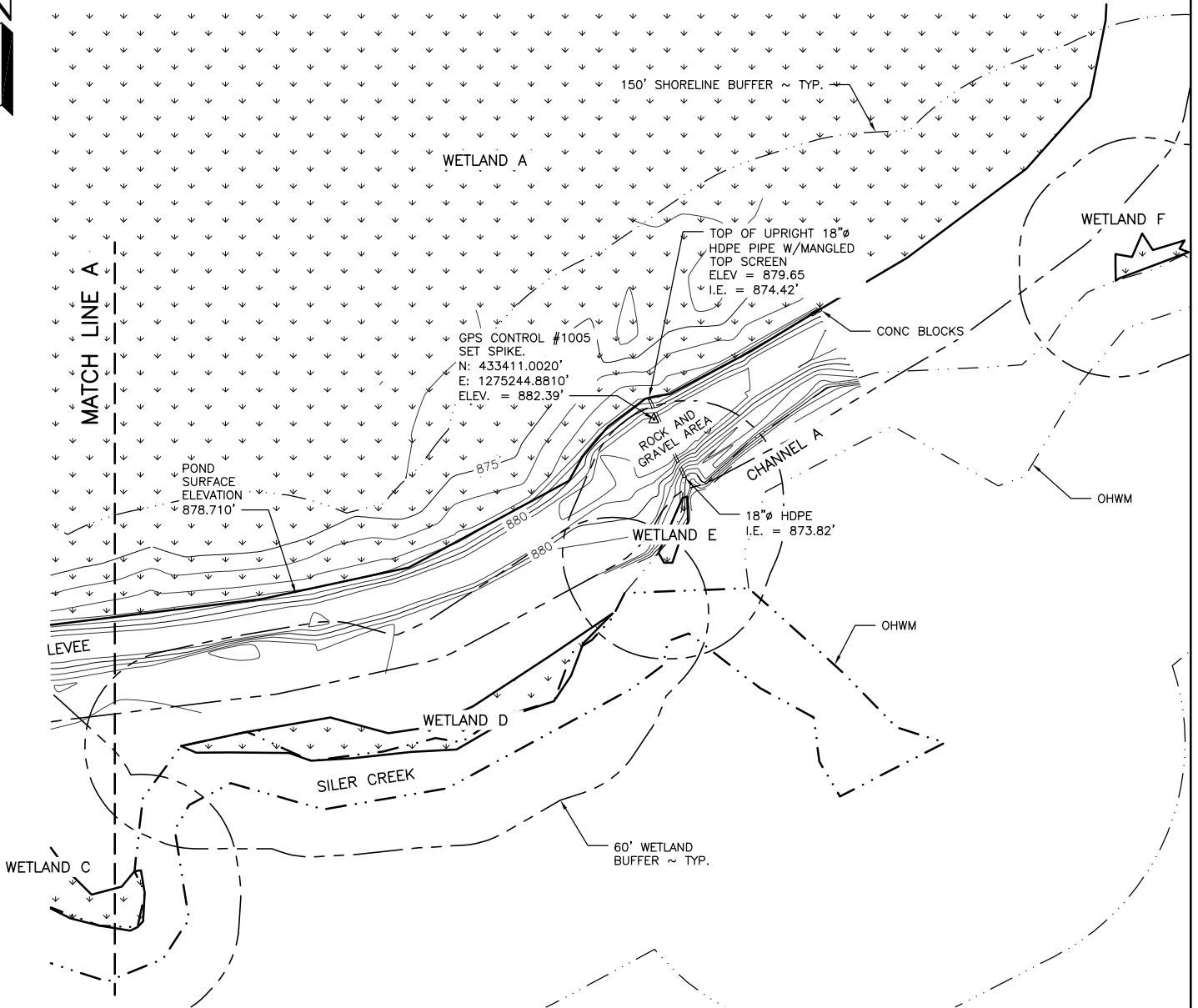
**EXISTING SITE 1 PLAN**

SCALE: 1" = 100'  
BASE FLOOD ELEVATION IS 886.50

REFERENCE NUMBER:  
 APPLICANT NAME:  
 WASHINGTON DEPT. of FISH & WILDLIFE  
 PROPOSED PROJECT:  
 POND WATER MANAGEMENT  
 LOCATION: COWLITZ WLA - SPEARS UNIT  
 SHEET 2 OF 10 DATE: 6/24/2021



SCALE: 1" = 100'

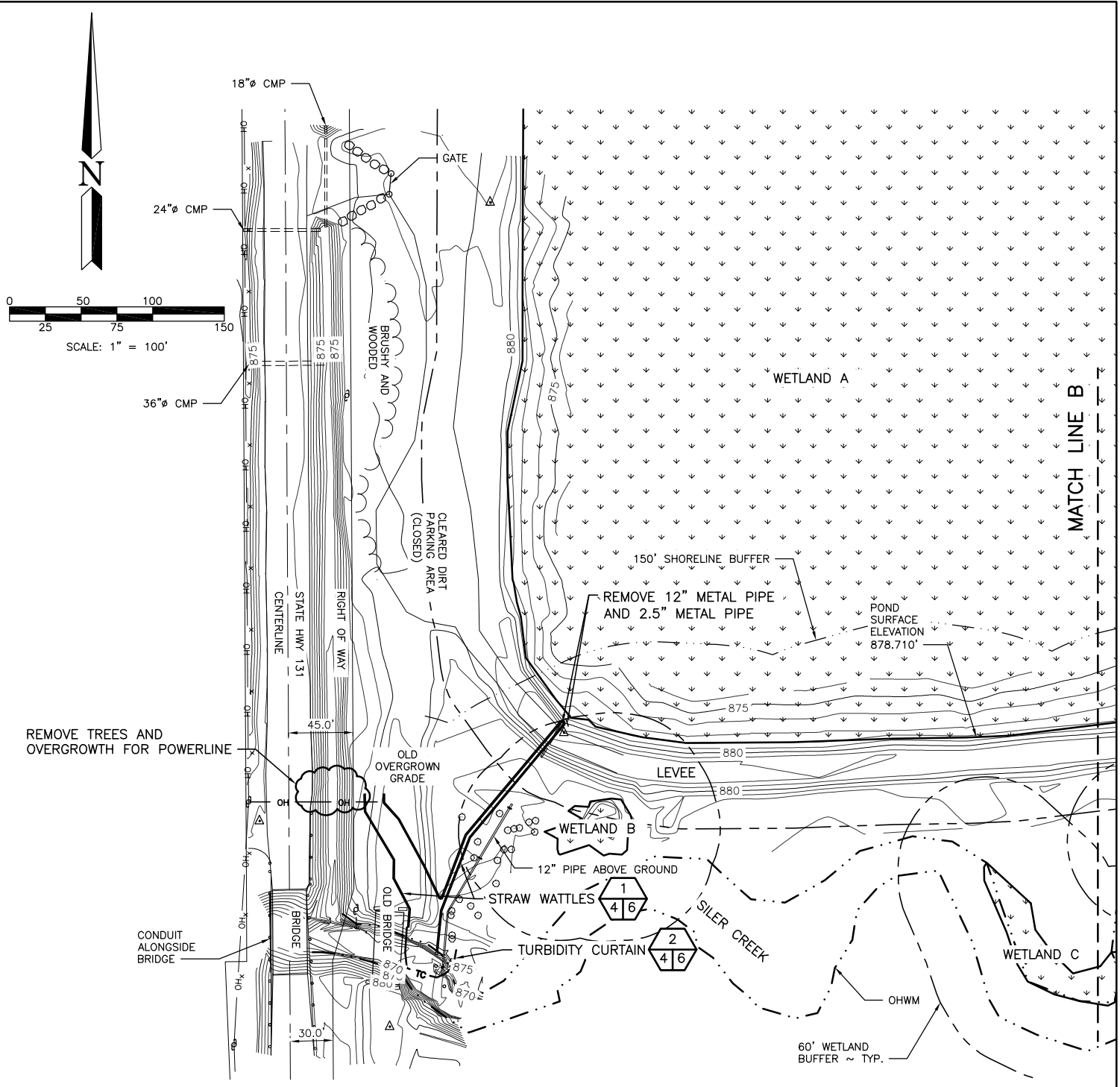


**EXISTING SITE 2 PLAN**

SCALE: 1" = 100'

BASE FLOOD ELEVATION IS 886.50

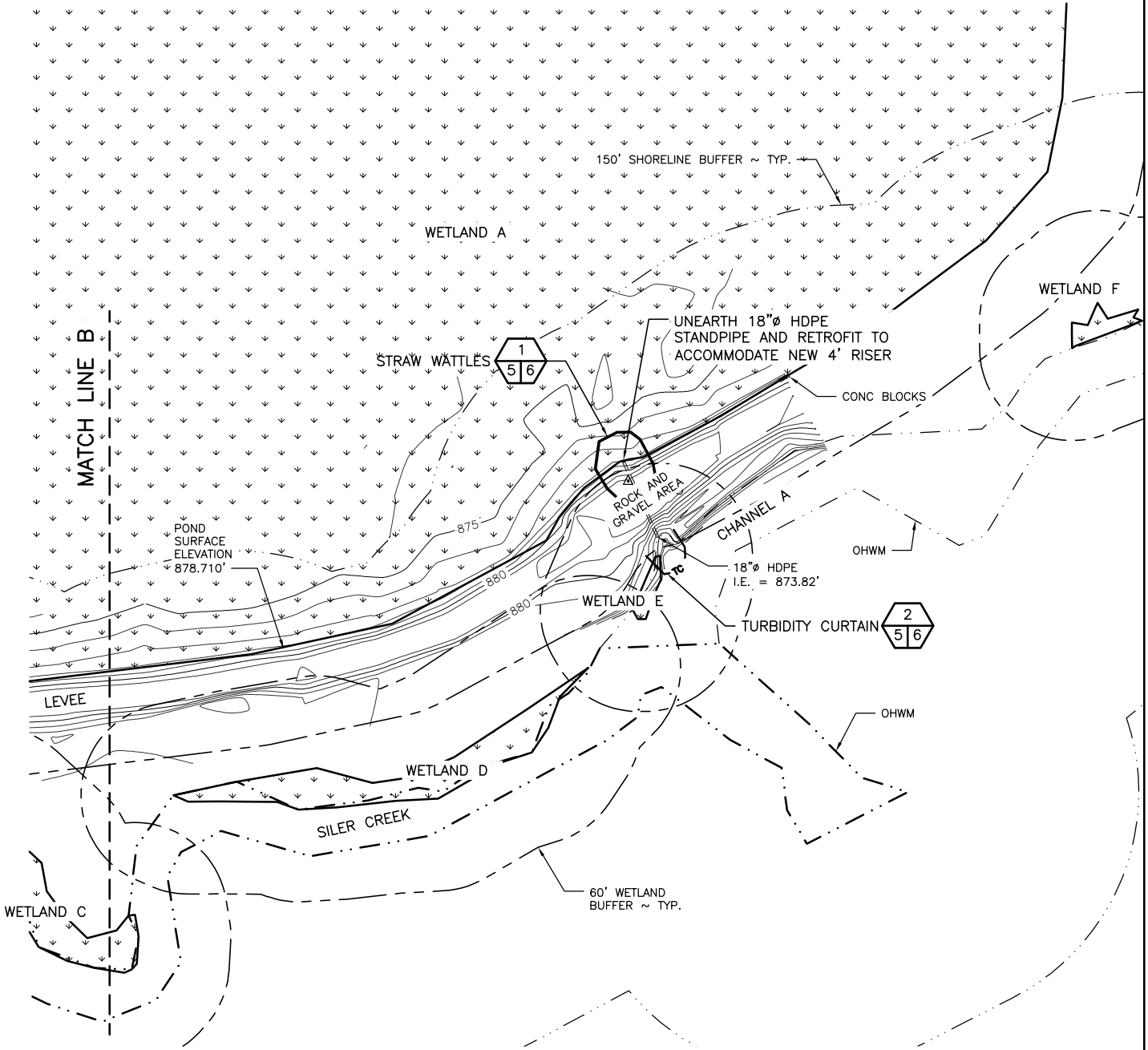
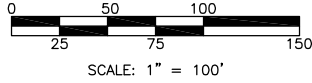
REFERENCE NUMBER:  
APPLICANT NAME:  
WASHINGTON DEPT. of FISH & WILDLIFE  
PROPOSED PROJECT:  
POND WATER MANAGEMENT  
LOCATION: COWLITZ WLA - SPEARS UNIT  
SHEET 3 OF 10 DATE: 6/24/2021



**EROSION CONTROL SITE 1 PLAN**

SCALE: 1" = 100'  
 BASE FLOOD ELEVATION IS 886.50

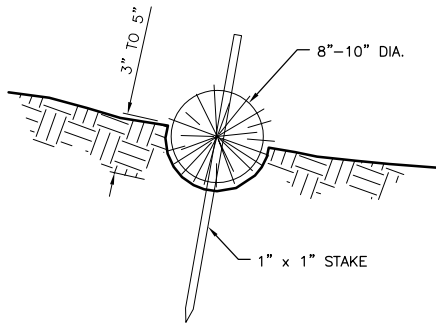
REFERENCE NUMBER:  
 APPLICANT NAME:  
 WASHINGTON DEPT. of FISH & WILDLIFE  
 PROPOSED PROJECT:  
 POND WATER MANAGEMENT  
 LOCATION: COWLITZ WLA - SPEARS UNIT  
 SHEET 4 OF 10 DATE: 6/24/2021



**DEMO & EROSION CONTROL SITE 2 PLAN**

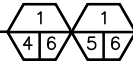
SCALE: 1" = 100'  
 BASE FLOOD ELEVATION IS 886.50

REFERENCE NUMBER:  
 APPLICANT NAME:  
 WASHINGTON DEPT. of FISH & WILDLIFE  
 PROPOSED PROJECT:  
 POND WATER MANAGEMENT  
 LOCATION: COWLITZ WLA - SPEARS UNIT  
 SHEET 5 OF 10 DATE: 6/24/2021



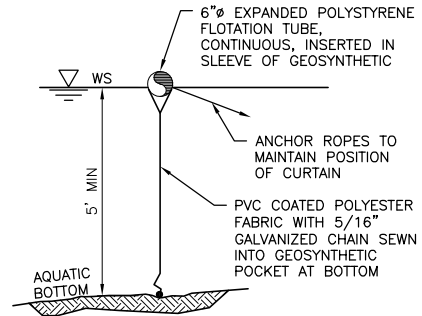
### STRAW WATTLE DETAIL

NOT TO SCALE



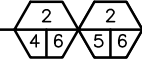
#### CONSTRUCTION SPECIFICATIONS:

1. PREPARE THE SLOPE BEFORE THE WATTLING PROCEDURE IS STARTED.
2. SMOOTH SHALLOW GULLIES AS WORK PROGRESSES.
3. DIG SMALL TRENCHES ACROSS THE SLOPE ON CONTOUR, TO PLACE ROLLS IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE HALF THE THICKNESS OF THE ROLL. WHEN THE SOIL IS LOOSE AND UNCOMPACTED, THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE ROLL 2/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE.
4. ROLLS SHALL BE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR.
5. BUILD TRENCHES AND INSTALL ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
6. CONSTRUCT TRENCHES AT CONTOUR INTERVALS 3-12 FEET APART DEPENDING ON STEEPNESS OF SLOPE. THE STEEPER THE SLOPE, THE CLOSER TOGETHER THE TRENCHES. 1:1=10' 2:1=20' 3:1=30' 4:1=40'
7. LAY THE ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.
8. USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE WATTLE AND INTO THE SOIL FOR THE WILLOW OR WOODEN STAKES.
9. DRIVE THE STAKE THROUGH PREPARED HOLE INTO SOIL. LEAVE ONLY 1 OR 2 INCHES OF STAKE EXPOSED ABOVE ROLL.
10. IF USING WILLOW STAKES REFER TO LIVE STAKING BEST MANAGEMENT PRACTICES.
11. INSTALL STAKES AT LEAST EVERY 4 FEET APART THROUGH THE WATTLE. ADDITIONAL STAKES MAY BE DRIVEN ON THE DOWNSLOPE SIDE OF THE TRENCHES ON HIGHLY EROSION OR VERY STEEP SLOPES.
12. INSPECT THE STRAW ROLLS AND THE SLOPES AFTER SIGNIFICANT STORMS. MAKE SURE THE ROLLS ARE IN CONTACT WITH THE SOIL.
13. REPAIR ANY RILLS OR GULLIES PROMPTLY.
14. RESEED OR REPLANT VEGETATION IF NECESSARY UNTIL SLOPES ARE STABILIZED.



### TURBIDITY CURTAIN

NOT TO SCALE



#### NOTES:

1. FABRIC IS 22 OUNCES PER SQUARE YARD

REFERENCE NUMBER:

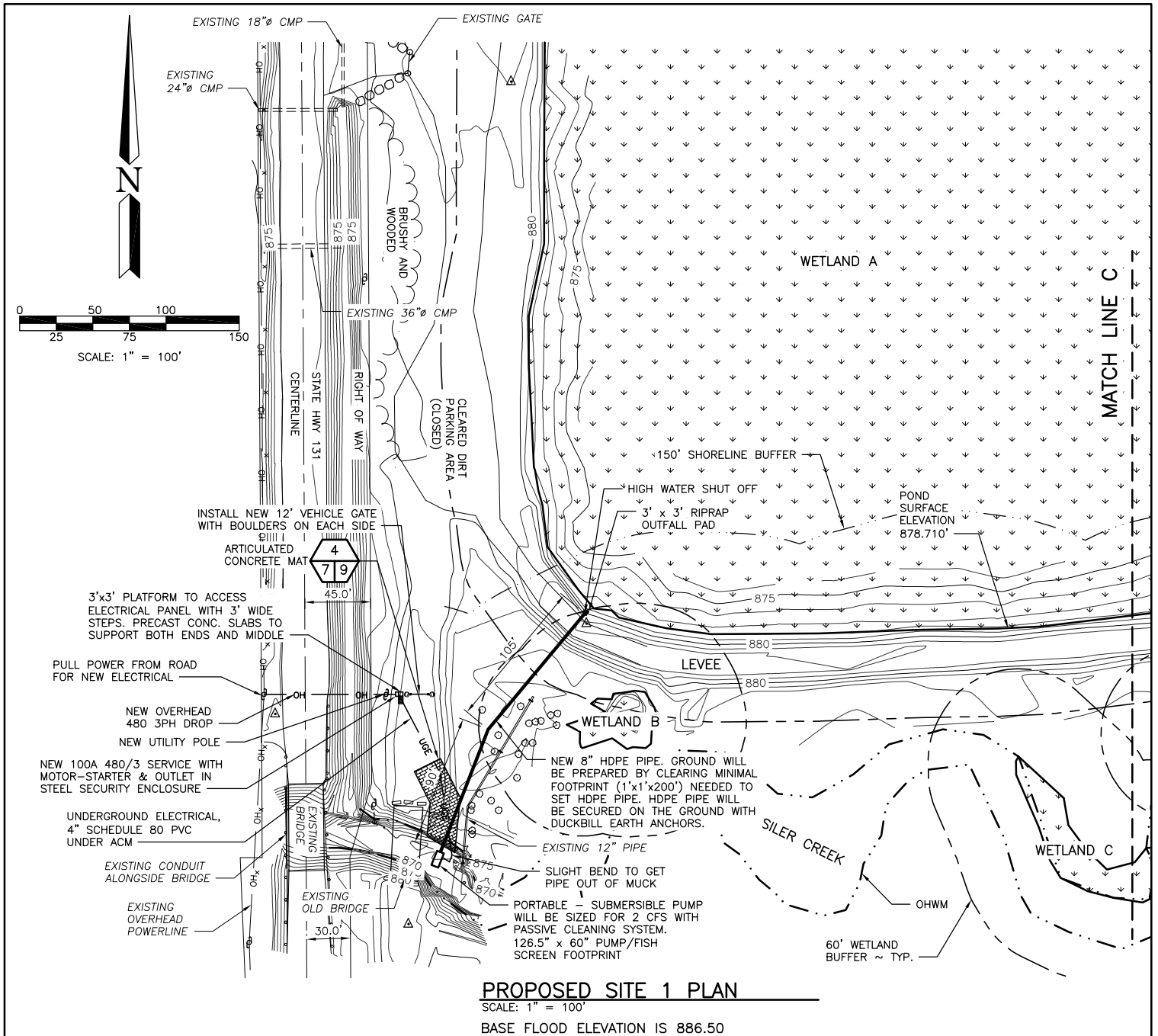
APPLICANT NAME:

WASHINGTON DEPT. of FISH & WILDLIFE  
PROPOSED PROJECT:

POND WATER MANAGEMENT

LOCATION: COWLITZ WLA - SPEARS UNIT

SHEET 6 OF 10 DATE: 6/24/2021



**QUANTITIES**

MATERIAL	AREA	CUT ABOVE OHW	CUT BELOW OHW	FILL ABOVE OHW	FILL BELOW OHW
PIPE EXCAVATION	116 SF	-49 CY	0 CY	40 CY	0 CY
4" CSBC	-	0 CY	0 CY	0.50 CY	0 CY
6" COMMON BORROW	-	0 CY	0 CY	0.50 CY	0 CY
8" HDPE PIPE	195 SF	0 CY	0 CY	8 CY	0 CY
ACM EXCAVATION	1165 SF	-53 CY	-5 CY	0 CY	0 CY
6" ACM BLOCK	-	0 CY	0 CY	20 CY	2 CY
ACM 6" CSBC	-	0 CY	0 CY	20 CY	2 CY
ACM 4" CRUSHED ROCK	-	0 CY	0 CY	13 CY	1 CY
RIP RAP	9 SF	0 CY	0 CY	1 CY	0 CY
PUMP	53 SF	0 CY	0 CY	4 CY	0 CY
PRECAST CONC SLABS	45 SF	-2.5 CY	0 CY	2.5 CY	0 CY
TOTAL	1583 SF	-104.5 CY	-5 CY	109.5 CY	5 CY

REFERENCE NUMBER:

APPLICANT NAME:

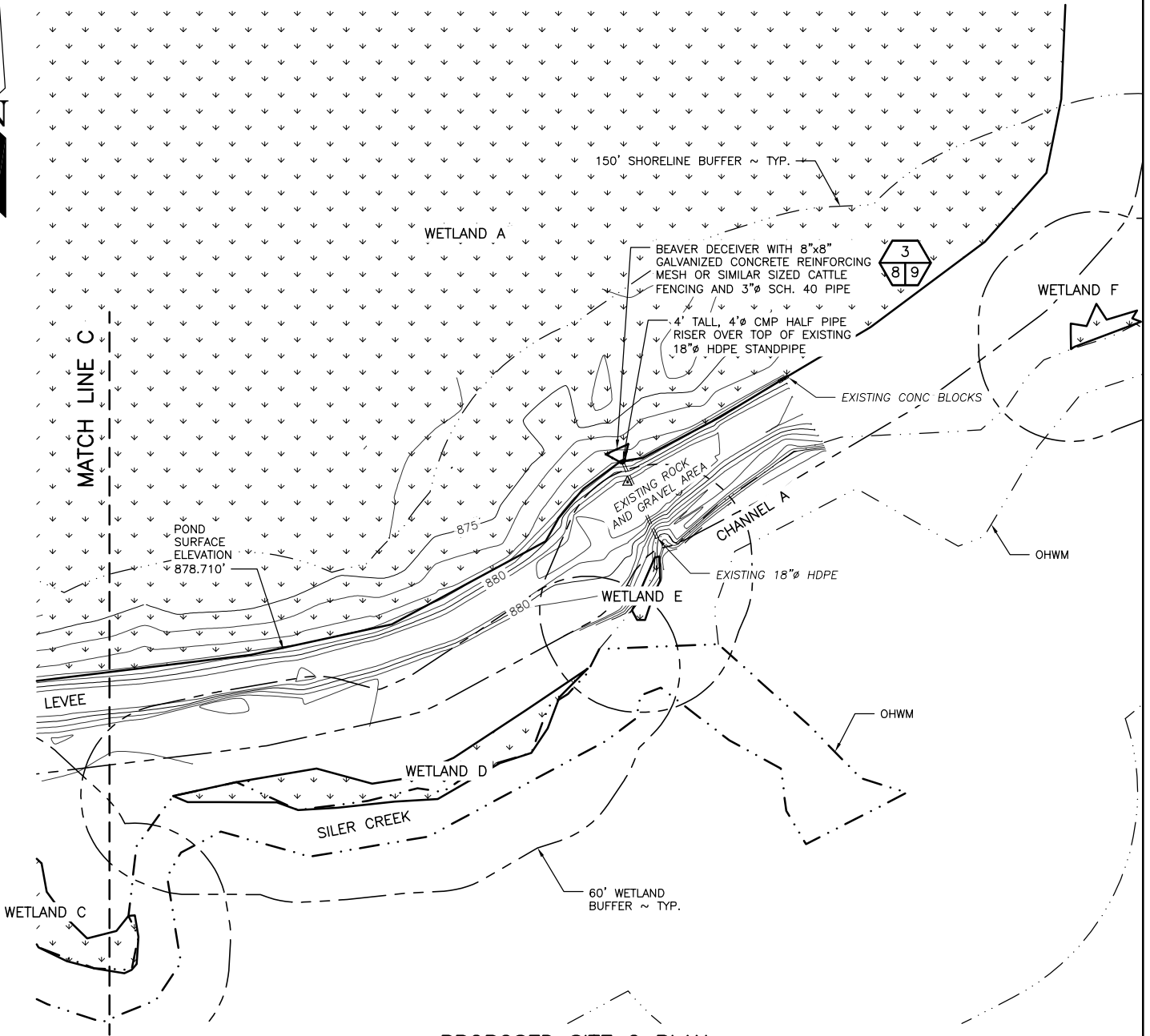
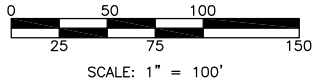
WASHINGTON DEPT. of FISH & WILDLIFE  
 PROPOSED PROJECT:

POND WATER MANAGEMENT

LOCATION: COWLITZ WLA - SPEARS UNIT

SHEET 7 OF 10

DATE: 6/24/2021



**PROPOSED SITE 2 PLAN**

SCALE: 1" = 100'  
 BASE FLOOD ELEVATION IS 886.50

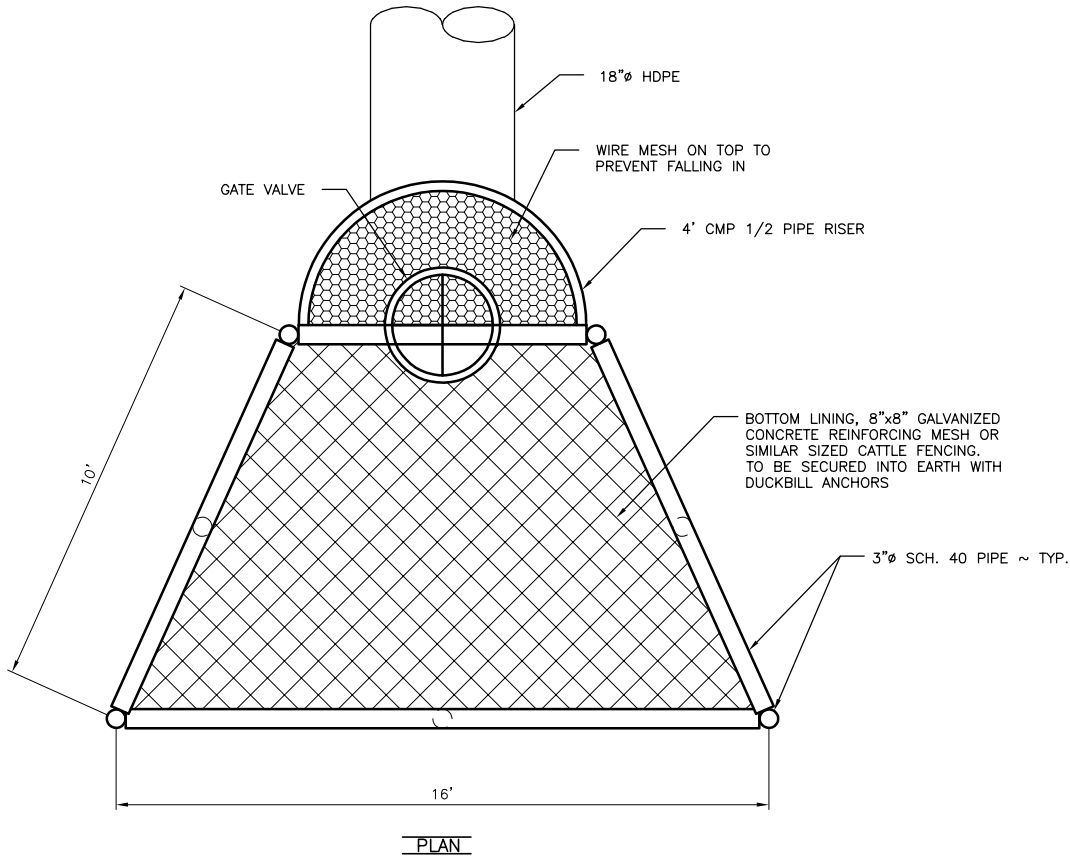
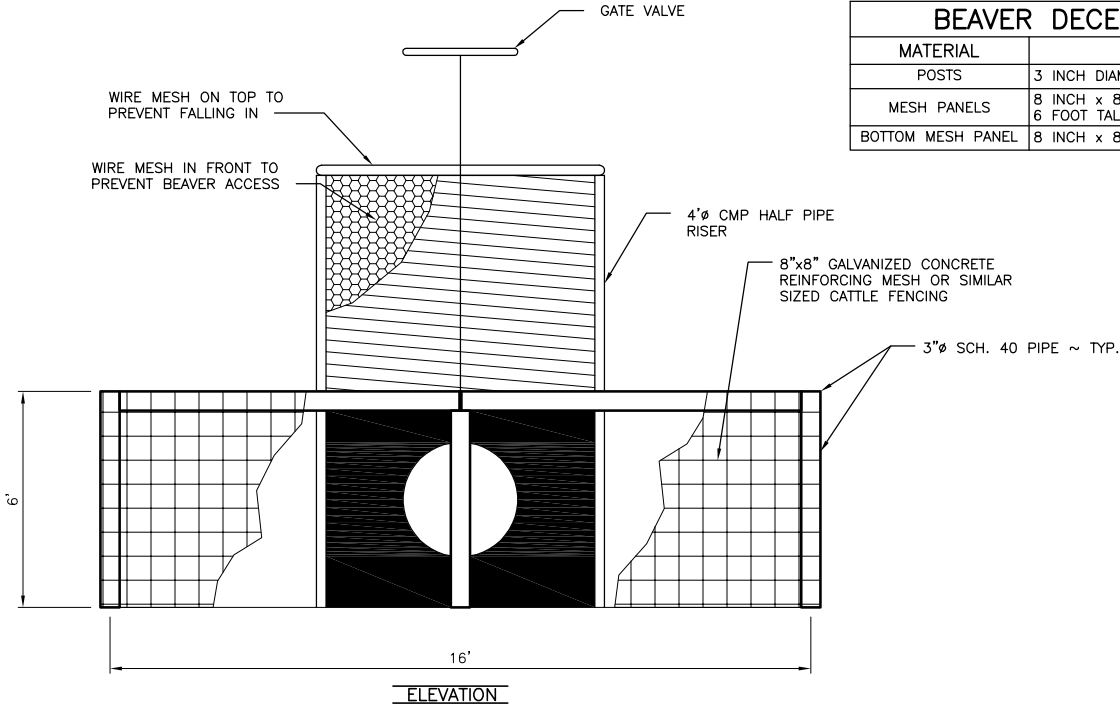
QUANTITIES					
MATERIAL	AREA	CUT OUTSIDE WETLAND	CUT INSIDE WETLAND	FILL OUTSIDE WETLAND	FILL INSIDE WETLAND
EXCAVATION	25 SF	-2 CY	0 CY	0.50 CY	0 CY
PRECAST CONC SLAB	-	0 CY	0 CY	0 CY	1 CY
4" CSBC	-	0 CY	0 CY	0 CY	0.50 CY
TOTAL	25 SF	-2 CY	0 CY	0.50 CY	1.50 CY

BEAVER DECEIVER MATERIALS		
MATERIAL	DETAILS	QUANTITY
POSTS	3 INCH DIAMETER, SCHEDULE 40	7 EACH
MESH PANELS	8 INCH x 8 INCH MESH, GALVANIZED, 6 FOOT TALL PANEL	216 SF
BOTTOM MESH PANEL	8 INCH x 8 INCH MESH, GALVANIZED	200 SF

REFERENCE NUMBER:  
 APPLICANT NAME:  
 WASHINGTON DEPT. of FISH & WILDLIFE  
 PROPOSED PROJECT:  
 POND WATER MANAGEMENT  
 LOCATION: COWLITZ WLA - SPEARS UNIT  
 SHEET 8 OF 10 DATE: 6/24/2021



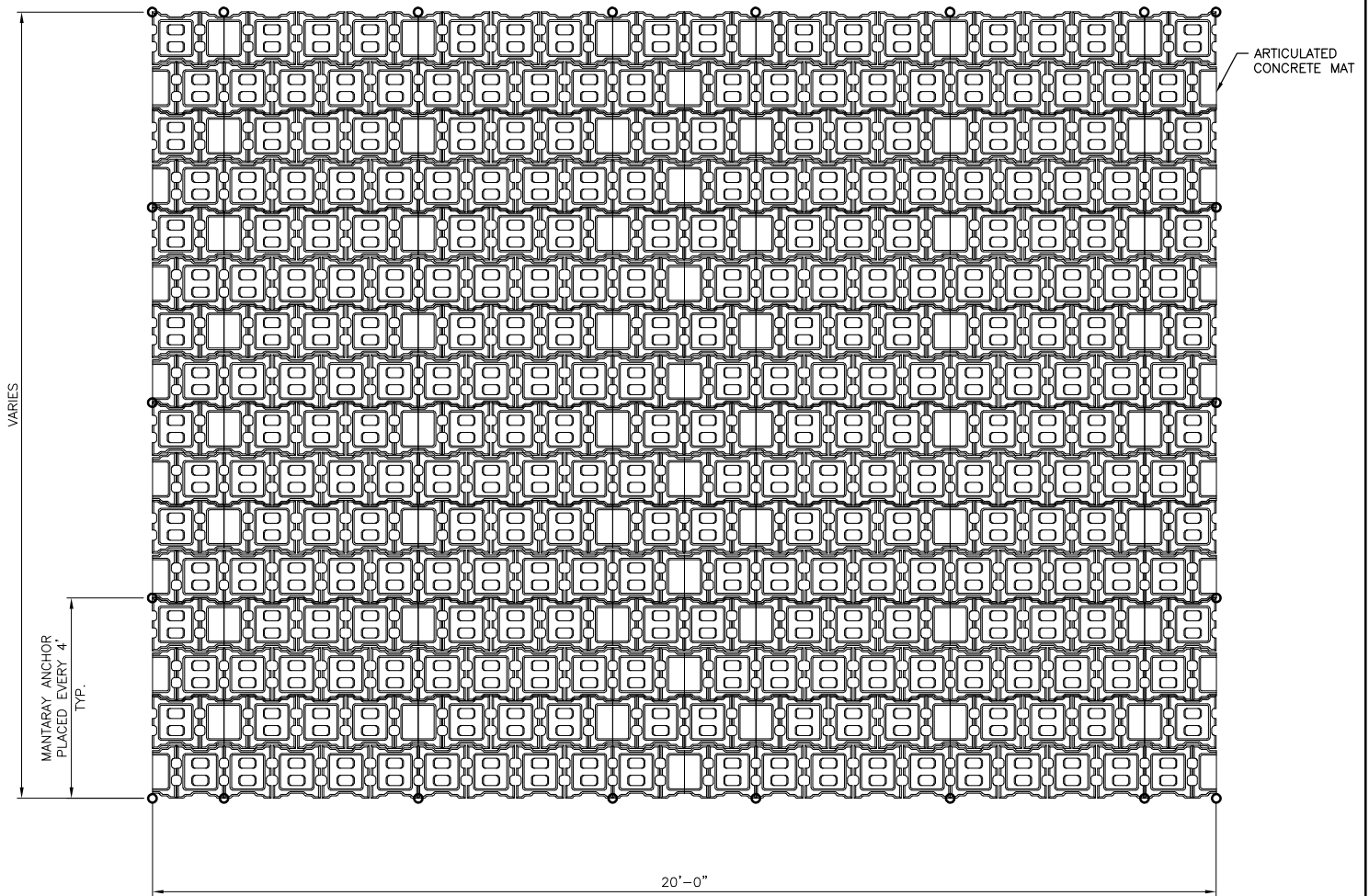
BEAVER DECEIVER MATERIALS		
MATERIAL	DETAILS	QUANTITY
POSTS	3 INCH DIAMETER, SCHEDULE 40	7 EACH
MESH PANELS	8 INCH x 8 INCH MESH, GALVANIZED, 6 FOOT TALL PANEL	216 SF
BOTTOM MESH PANEL	8 INCH x 8 INCH MESH, GALVANIZED	200 SF



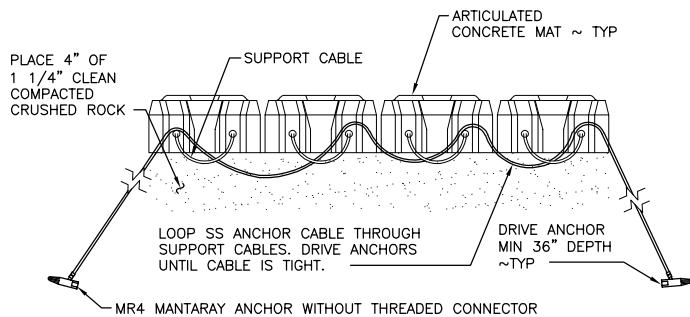
**BEAVER DECEIVER  
WITH RISER & TIDEGATE**  
NOT TO SCALE

3  
8 9

REFERENCE NUMBER:  
 APPLICANT NAME:  
 WASHINGTON DEPT. of FISH & WILDLIFE  
 PROPOSED PROJECT:  
 POND WATER MANAGEMENT  
 LOCATION: COWLITZ WLA – SPEARS UNIT  
 SHEET 9 OF 10 DATE: 6/24/2021

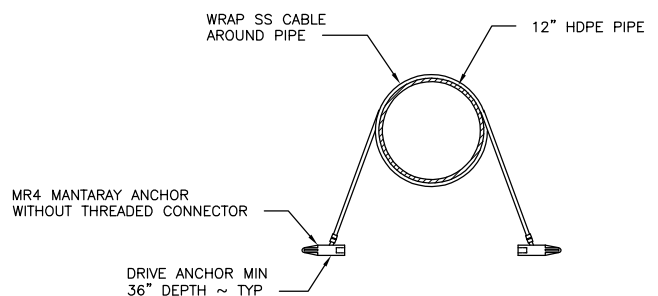


**ARTICULATED CONCRETE MAT DETAIL**  
NOT TO SCALE



**END OF ARTICULATED CONCRETE MAT ANCHORING DETAIL**  
NOT TO SCALE

**NOTE:**  
END MATS CAN BE VARIOUS WIDTHS.  
ADJUST ANCHOR CABLE LENGTH  
TO SIZE OF ARTICULATED CONCRETE MAT.



**PIPE ANCHORING DETAIL**  
NOT TO SCALE

REFERENCE NUMBER:  
APPLICANT NAME:  
WASHINGTON DEPT. of FISH & WILDLIFE  
PROPOSED PROJECT:  
POND WATER MANAGEMENT  
LOCATION: COWLITZ WLA – SPEARS UNIT  
SHEET 10 OF 10 DATE: 6/24/2021