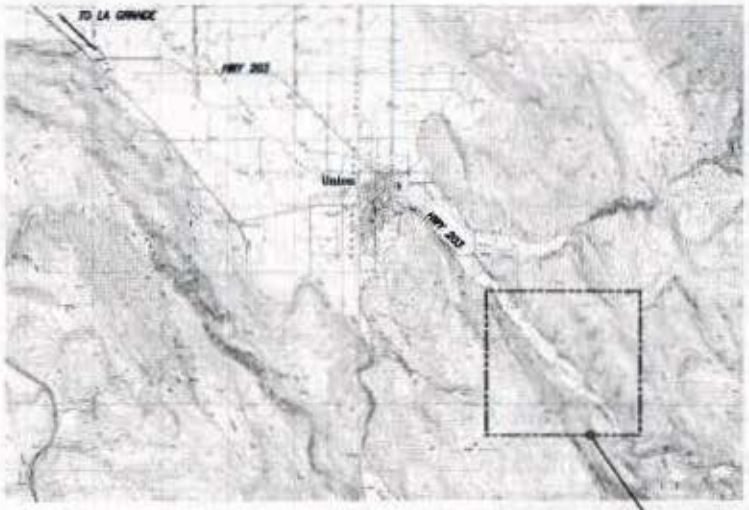
UNION SOIL AND WATER CONSERVATION DISTRICT

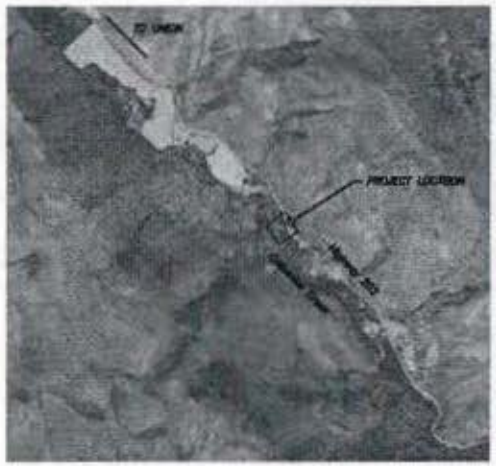
CC-44 DIVERSION AND ROUGHENED CHANNEL

30% DESIGN DRAWINGS



VICINITY MAP

SCALE OF FEET



LOCATION MAP

SCALE OF FEET

Union Soil and Water Conservation District

SUMMARY

T4S, R40E, SEC.24
UNION COUNTY, OR.
45°10'10.22"N 117°47'38.48"W

PROJECT SPONSOR:

UNION SOIL AND WATER CONSERVATION DISTRICT
CRAIG SCHELLSMIDT
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PREPARED FOR:

U.S. DEPARTMENT OF INTERIOR
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PREPARED BY:

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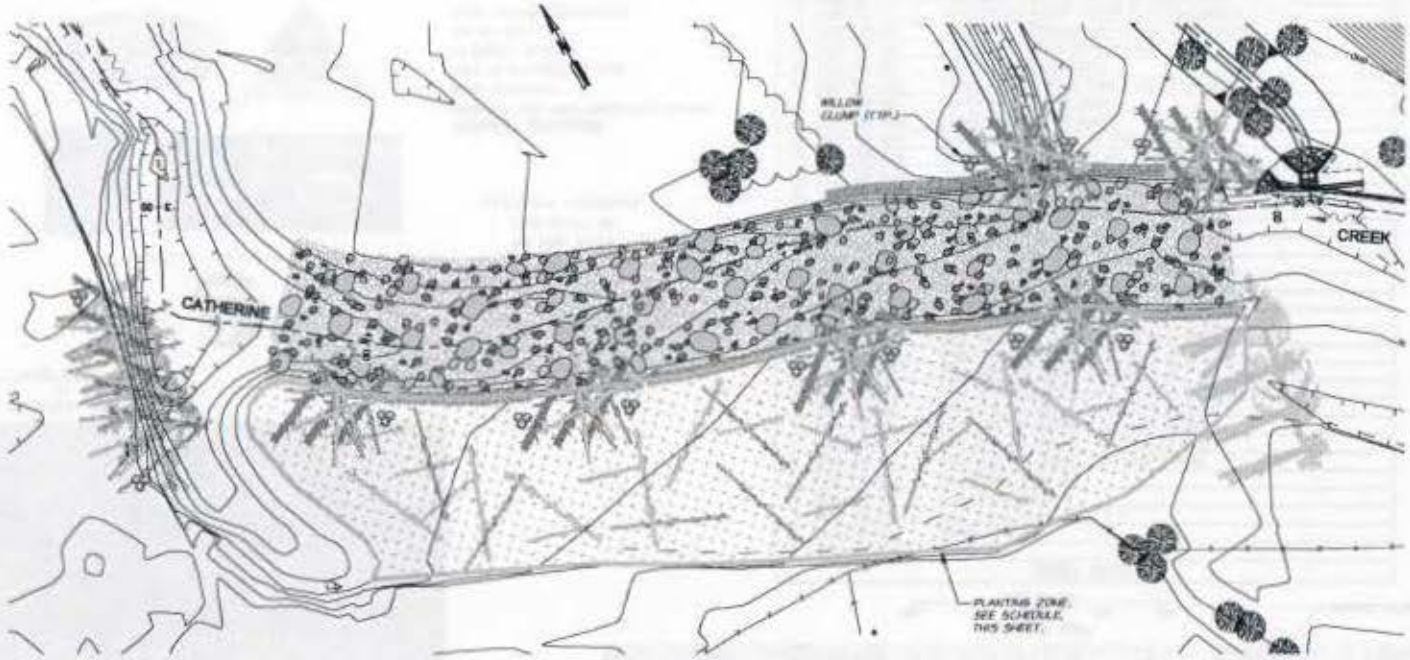
CC-44 PHASE 1 HABITAT ENHANCEMENT DIVERSION AND ROUGHENED CHANNEL

COVER SHEET

1678-100-2308



SITE PLANTING PLAN

1"=20'

CONTAINER PLANT INSTALLATION NOTES

1. PRIOR TO INSTALLATION OF CONTAINER PLANT, CLEANLY PRUNE ANY BROKEN BRANCHES AND SCARIFY OUTER 1" OF ROOT BALL. CLEANLY PRUNE BROKEN, DEAD, OR DISEASED ROOTS. ROOT BOUND PLANTS SHALL BE REJECTED.
2. EXCAVATE CIRCULAR PLANTING HOLE WITH VERTICAL SIDES. SCARIFY SIDES AND BOTTOM OF PLANTING HOLE.
3. PLACE ROOTBALL ON UNDISTURBED NATIVE SOIL AT BASE OF PLANTING HOLE AND SPREAD ROOTS OUT TO SIDES OF HOLE. CLEANLY TRIM ANY ROOTS THAT ARE TOO LONG TO LAY STRAIGHT IN PLANTING HOLE. PLANTS SHALL BE UPRIGHT, PLUMB, AND TOP OF ROOTBALL SHALL BE EVEN WITH FINISH GRADE. WHEN PLANTING ON SLOPES, CREATE LEVEL PLANTING SURFACE TO ENSURE COVER OF ROOTS ON DOWNHILL SIDE OF PLANT.
4. BACKFILL PLANTING HOLE WITH SOIL EXCAVATED FROM PLANTING HOLE AND TAMP SOIL AROUND ROOTS. ANY TRASH OR DEBRIS FOUND IN EXCAVATED SOIL SHALL NOT BE USED TO BACKFILL THE PLANTING HOLE. BACKFILL SOIL SHALL MAKE GOOD CONTACT WITH THE ROOTBALL, LEAVING NO VOIDS.
5. EACH CONTAINER PLANT SHALL HAVE A 15" TRANSLUCENT PLASTIC GROW TUBE INSTALLED AROUND THE BASE OF THE PLANT PER MANUFACTURER'S INSTRUCTIONS.
6. WITHIN 4 HOURS OF PLANT INSTALLATION, THOROUGHLY WATER EACH INSTALLED PLANT.

PLANT SCHEDULE

SPECIES	COMMON NAME	SPACING (FT.)	QUANTITY	SIZE/TYPE
ALNUS INCANA	SPECKLED ALDER	4	260	1 GALLON CONTAINER
BETULA OCCIDENTALIS	WATER BIRCH	8	60	1 GALLON CONTAINER
CORNUS SERICEA	RED-OSIER DOGWOOD	4	295	6 FT. LIVE STAKE
POPULUS TRICHOCARPA	BLACK COTTONWOOD	8	60	1 GALLON CONTAINER
SALIX PROLIXA	MACKENZIE WILLOW	4	295	6 FT. LIVE STAKE
	WILLOW CLUMP		12	

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0 5 10 15 20
SCALE IN FEET

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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM
FISH & WILDLIFE IMPROVEMENT PROGRAM

OC-44 PHASE II INSTREAM ENHANCEMENT DAMSCHON AND ROUNDHOUSE CHANNEL

PLANTING PLAN

PLANTING PLAN

1678-100-2321

SHEET 14 OF 14

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BUREAU OF RECLAMATION

TUALATIN BASIN, NORTH UNION RECOVERY PROGRAM
FISH AND WILDLIFE IMPORTANT PROJECT

CO-44 PHASE II HABITAT ENHANCEMENT
EMERSON AND ROUNDED CHANNEL
SITE ACCESS AND STAGING PLAN

SITE ACCESS AND STAGING PLAN

1678-100-2320

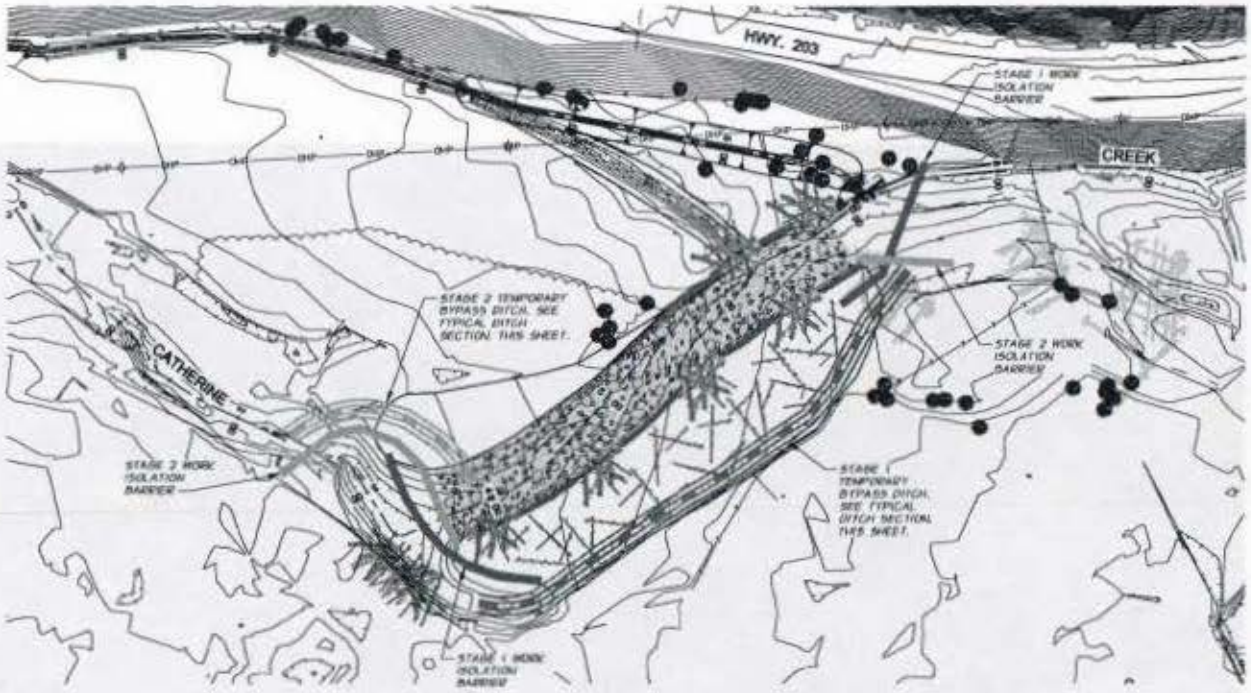
CONSTRUCTION SEQUENCING

STAGE 1

1. DIG STAGE 1 TEMPORARY BYPASS DITCH.
2. INSTALL WORK AREA ISOLATION BARRIERS AT THE UP AND DOWNSTREAM END OF THE PROJECT.
3. SET UP TEMPORARY PUMP SYSTEM TO SUPPLY IRRIGATION WATER TO THE EXISTING DITCH.
4. DIVERT WATER INTO THE STAGE 1 TEMPORARY BYPASS DITCH.
5. PERFORM FISH SALVAGE FOR THE ISOLATED AREA.
6. CONSTRUCT DIVERSION, NEW IRRIGATION DITCH, ROUGHENED CHANNEL, ALL WOODY MATERIAL STRUCTURES, AND AS MUCH OF THE RIVER LEFT FLOODPLAIN AS POSSIBLE.
7. STOCKPILE MATERIAL NEEDED TO FINISH THE RIVER LEFT FLOODPLAIN, CONSTRUCT THE LARGE WOOD HABITAT STRUCTURE, AND FILL THE STAGE 1 TEMPORARY BYPASS DITCH.

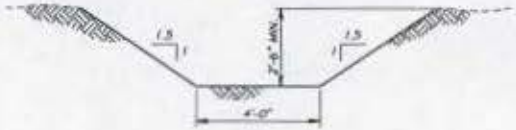
STAGE 2

1. DIG STAGE 2 TEMPORARY BYPASS DITCH.
2. REMOVE STAGE 1 WORK AREA ISOLATION BARRIERS.
3. INSTALL STAGE 2 WORK AREA ISOLATION BARRIERS.
4. DIVERT WATER INTO STAGE 2 TEMPORARY BYPASS DITCH.
5. PERFORM FISH SALVAGE FOR NEWLY ISOLATED AREA.
6. CONSTRUCT POOL AND LARGE WOOD HABITAT STRUCTURE, FILL IN STAGE 1 TEMPORARY BYPASS DITCH AND FINISH CONSTRUCTING THE RIVER LEFT FLOODPLAIN.
7. REMOVE STAGE 2 WORK AREA ISOLATION BARRIERS.
8. FILL IN STAGE 2 TEMPORARY BYPASS DITCH.
9. PERFORM SITE RESTORATION WORK (I.E. REMAINING PLANTING, SEEDING, ETC.)



DEWATERING PLAN

1"=40'



TYPICAL BYPASS DITCH SECTION

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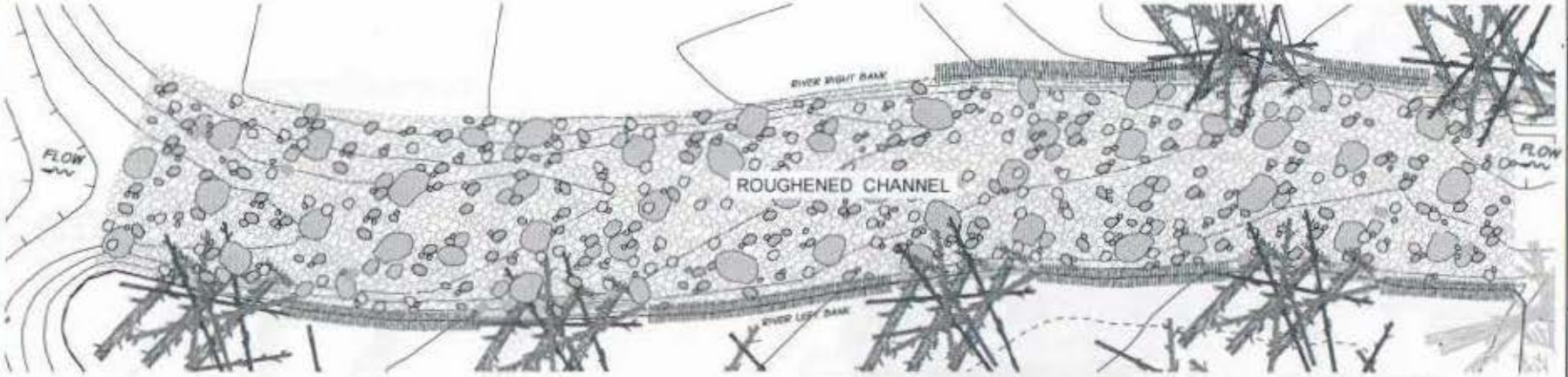
GC-44 PHASE II INSERT ENHANCEMENT DIVERSION AND ROUGHENED CHANNEL DEWATERING PLAN

DEWATERING PLAN

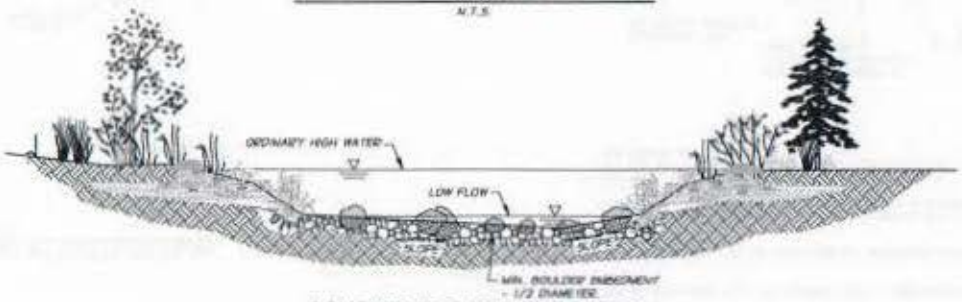
1678-100-2319

SHEET 12 OF 14



ROUGHENED CHANNEL PLAN VIEW

N.T.S.



ROUGHENED CHANNEL SECTION

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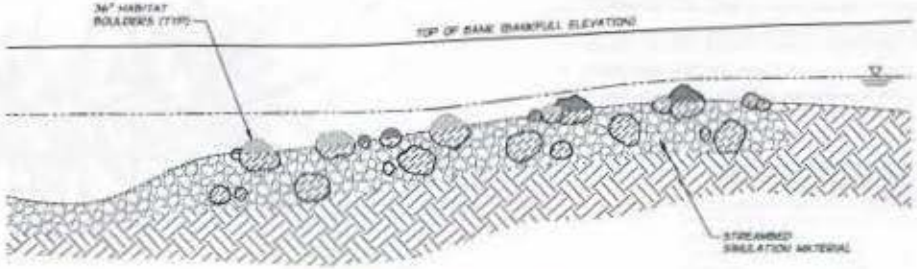

ROUGHENED CHANNEL PROFILE

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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM
FCRPS HABITAT IMPROVEMENT PROGRAM

CC-44 PHASE II HABITAT ENHANCEMENT DAMSCOR AND ROUGHENED CHANNEL

ROUGHENED CHANNEL DETAILS

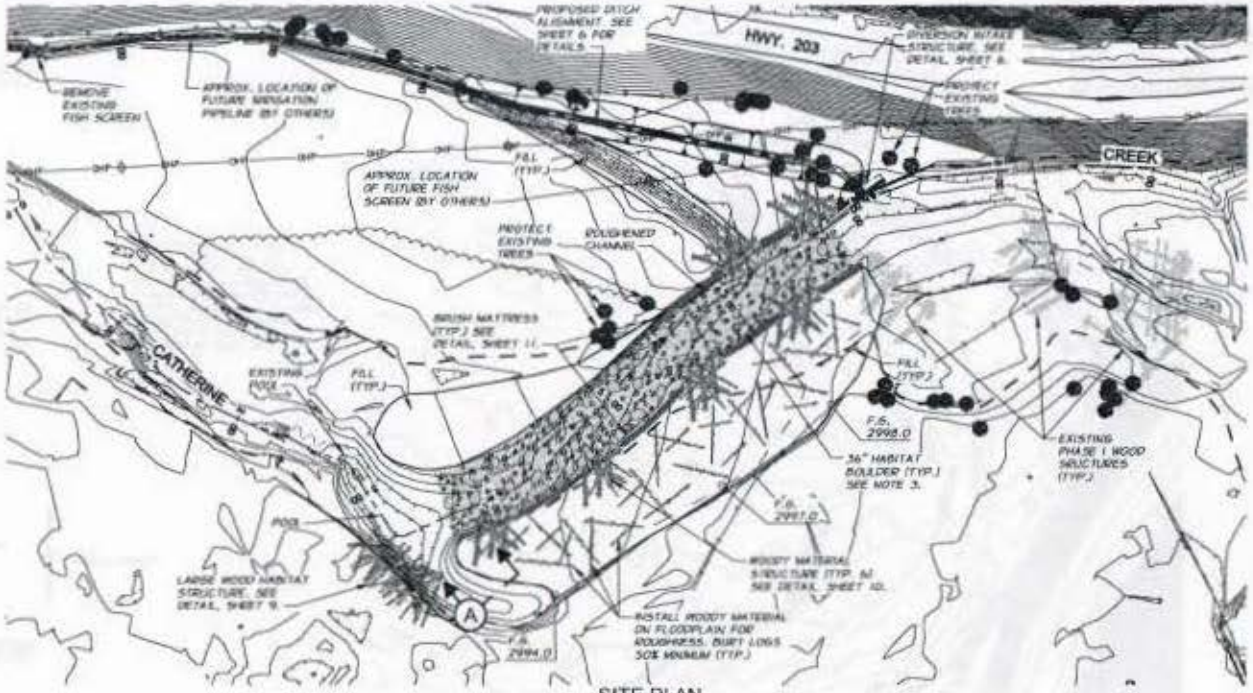
ROUGHENED CHANNEL DETAILS

1678-100-2315

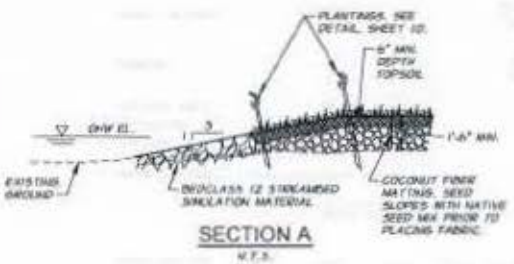
SHEET 8 OF 14

STREAM RESTORATION NOTES

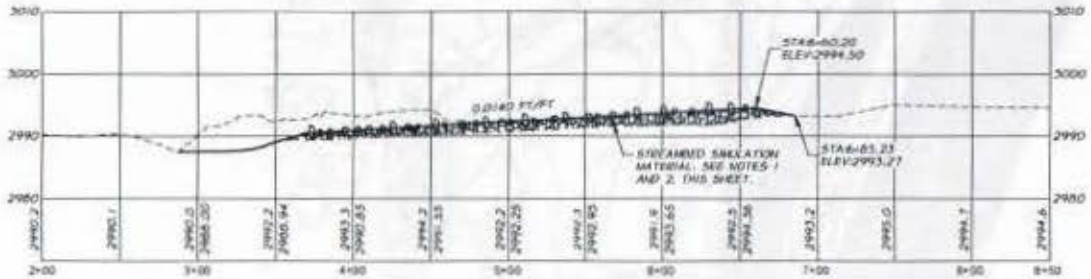
1. STREAMBED SIMULATION MATERIAL SHALL BE PLACED TO THE GRADE SHOWN ON THE DRAWINGS. MATERIAL SHALL BE PLACED BY FIRST INSTALLING THE LARGEST BOULDER THAT WILL PROTRUDE ABOVE THE STREAMBED SURFACE. SMALLER MATERIAL SHALL THEN BE USED TO FILL THE VOIDS BETWEEN THE LARGE BOULDERS. THIS MATERIAL SHALL BE TAMPED IN PLACE FOLLOWED BY JETTING OR FLOODING THE SURFACE WITH WATER TO WASH THE FINER MATERIAL INTO REMAINING VOIDS.
2. BEDCLASS 18 STREAMBED SIMULATION MATERIAL SHALL BE PLACED FROM THE UPSTREAM END OF THE ROUGHENED CHANNEL TO STA. 4+50. BEDCLASS 24 STREAMBED SIMULATION MATERIAL SHALL BE PLACED FROM STA. 4+50 TO THE DOWNSTREAM END OF THE ROUGHENED CHANNEL.
3. BOULDERS RANGING IN SIZE FROM 36" TO 48" SHALL BE PLACED NEAR THE SURFACE OF THE STREAMBED AND SHALL BE BURIED APPROXIMATELY 1/3 TO ACHIEVE LARGE SCALE HYDRAULIC ROUGHNESS AND RESTING LOCATIONS FOR FISH. SPACING SHALL BE ON AVERAGE APPROXIMATELY 15' O.C. THROUGHOUT THE NEWLY CONSTRUCTED REACH. ACTUAL LOCATIONS OF BOULDERS TO BE DETERMINED UNDER THE DIRECTION OF THE ENGINEER.
4. LOCATIONS OF WOODY MATERIAL STRUCTURES AND WOOD HABITAT STRUCTURES SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS OF STRUCTURES SHALL BE DETERMINED IN THE FIELD UNDER THE DIRECTION OF THE ENGINEER AND CONTRACTING OFFICER.



SITE PLAN
1"=40'



SECTION A
N.T.S.



STREAM PROFILE
1"=40' HORZ.
1"=10' VERT.

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02-44 PHASE II HABITAT ENHANCEMENT
DIVERSION AND ROUGHENED CHANNEL
SITE PLAN AND CREEK PROFILE

SITE PLAN AND CREEK PROFILE

1678-100-2310

UNION SOIL AND WATER CONSERVATION DISTRICT

CC-44 PHASE II ON FARM IMPROVEMENTS

30% DRAFT DESIGN DRAWINGS

LOCATION MAP

SCALE OF FEET

VICINITY MAP

SCALE OF FEET

Union Soil and Water Conservation District

SUMMARY

T4S, R40E, SEC.34

UNION COUNTY, WA.

45°10'10.22"N 117°47'58.49"W

PROJECT SPONSOR:

UNION SOIL AND WATER CONSERVATION DISTRICT

CRAIG SCHELLSMIDT

10507 N. MCALISTER RD., ROOM 7

LA GRANDE, OR 97850

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EMAIL: UNIONSWCD@NOTSWR.COM

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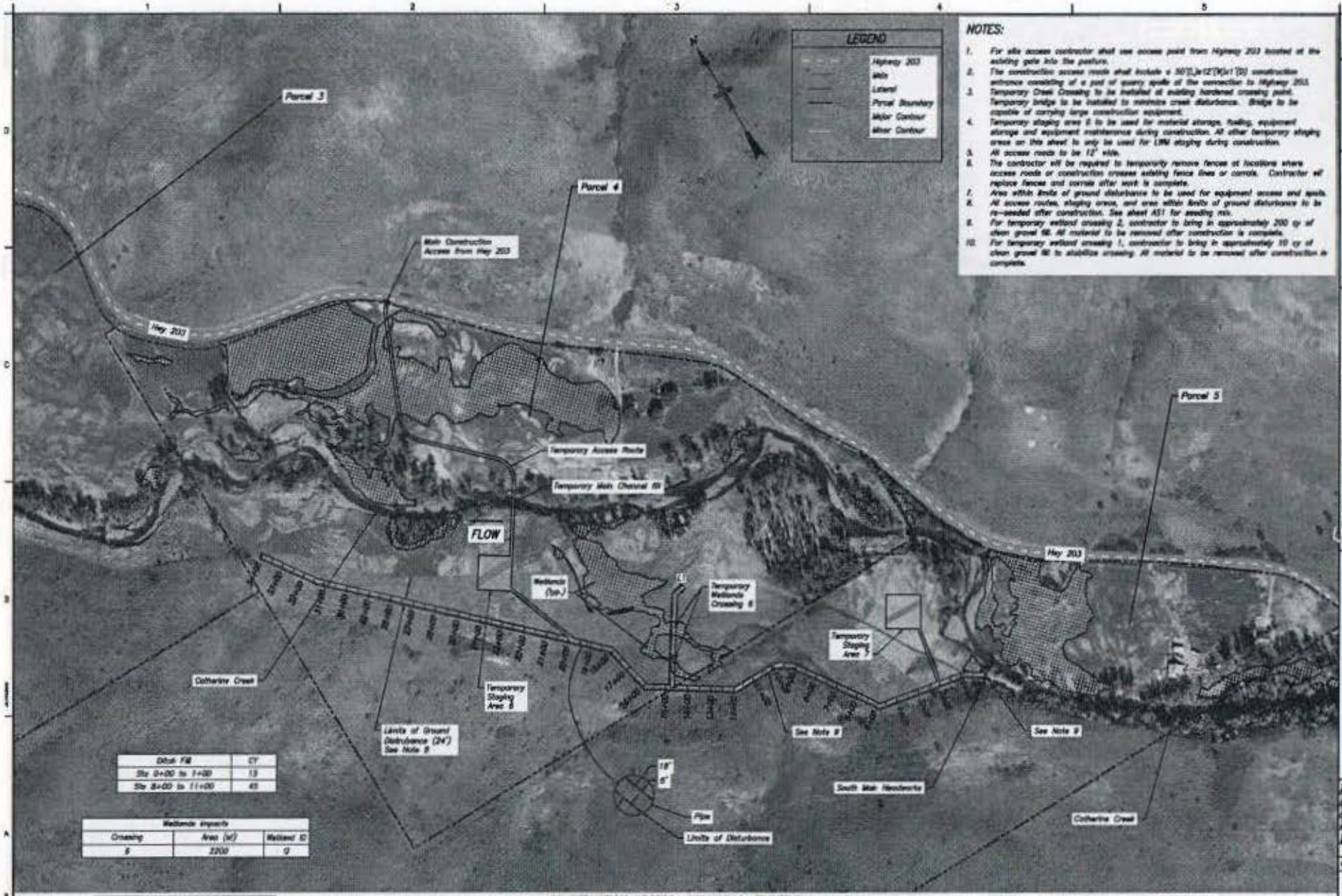
UNIONE ROAD SUBBASIN

CC-44 ON FARM IMPROVEMENTS

COVER SHEET

COVER SHEET

1678-100-COVER



Ditch Fill	CY
Sta 0+00 to 1+00	13
Sta 8+00 to 11+00	45

Wetlands impacts		
Crossing	Area (sf)	Wetland ID
8	2200	9

Temporary Main Channel Fill	
Material	CY
8 Ecology Block, Abutment fill	25

NOTES:

1. For site access contractor shall use access point from Highway 203 located at the existing gate into the pasture.
2. The construction access route shall include a 50'(L)x12'(W)x1'(D) construction entrance consisting of a pad of quarry spalls at the connection to Highway 203.
3. Temporary Creek Crossing to be installed at existing hardened crossing point. Temporary bridge to be installed to minimize creek disturbance. Bridge to be capable of carrying large construction equipment.
4. Temporary staging area 8 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for LIMM staging during construction.
5. All access roads to be 12' wide.
6. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or corrals. Contractor will replace fences and corrals after work is complete.
7. Area within limits of ground disturbance to be used for equipment access and spoils.
8. All access routes, staging areas, and area within limits of ground disturbance to be re-seeded after construction. See sheet AS1 for seeding mix.
9. For temporary wetland crossing 2, contractor to bring in approximately 200 cy of clean gravel fill. All material to be removed after construction is complete.
10. For temporary wetland crossing 1, contractor to bring in approximately 10 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.

CONSTRUCTION ACCESS, STAGING & PLANTING
SOUTH PIPELINE

SCALE OF FEET

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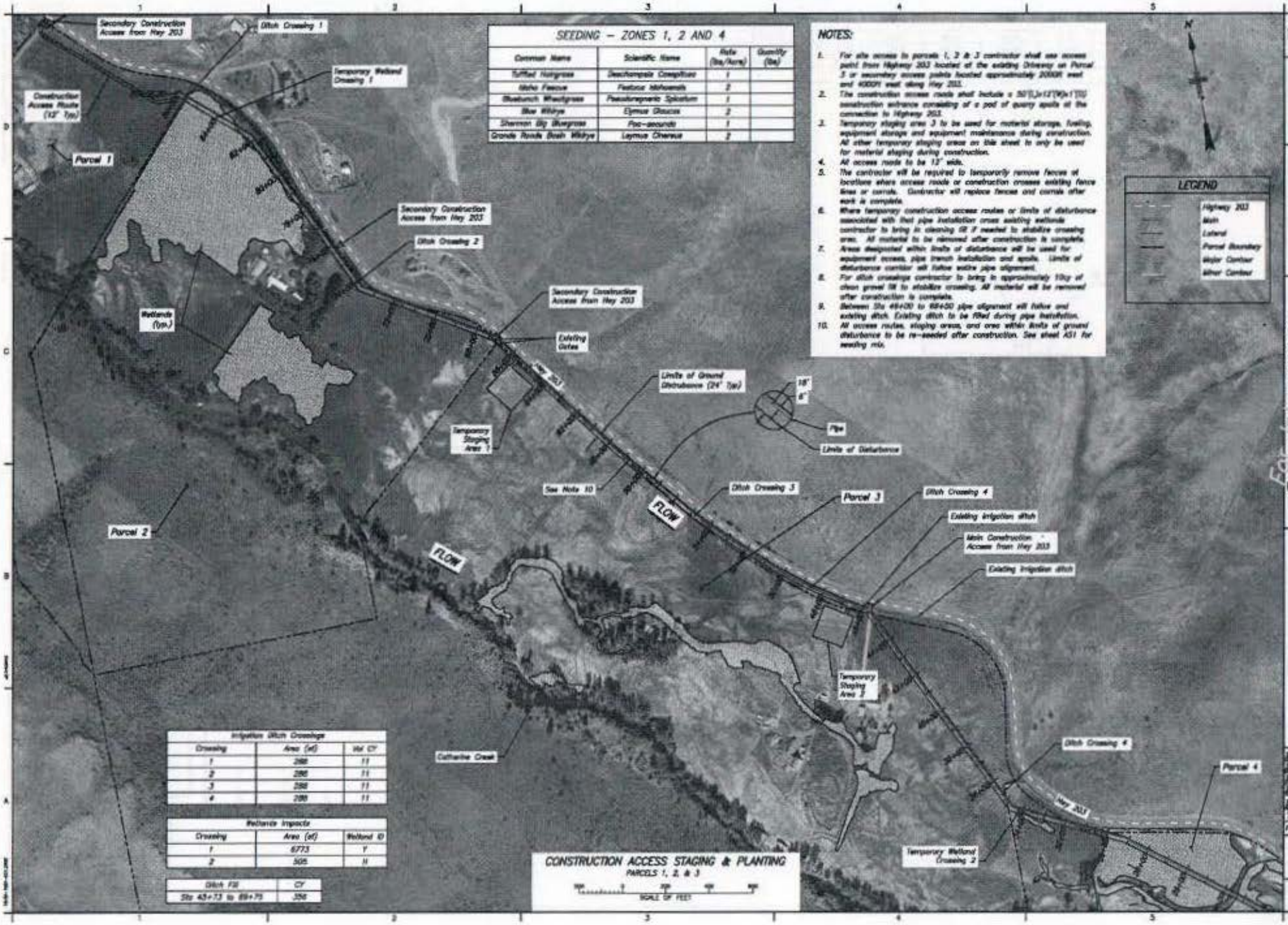
CONSTRUCTION ACCESS, STAGING & PLANTING

CONSTRUCTION ACCESS STAGING & PLANTING SOUTH SITE

1578-100-AS3

SHEET 3 OF 3



SEEDING – ZONES 1, 2 AND 4

Common Name	Scientific Name	Rate (lbs/Acre)	Quantity (lbs)
Tufted Hairgrass	Deschampsia Cespitosa	1	
Idaho Fescue	Festuca Idahoensis	2	
Bluebunch Wheatgrass	Pseudoregneria Spicatum	1	
Blue Wildrye	Elymus Glaucus	2	
Sherman Big Bluegrass	Poa-secunda	1	
Grande Ronde Basin Wildrye	Leymus Cinereus	2	

NOTES:

1. For site access to parcels 1, 2 & 3 contractor shall use access point from Highway 203 located at the existing Driveway on Parcel 3 or secondary access points located approximately 2000ft west and 4000ft west along Hwy 203.
2. The construction access roads shall include a 50'(L)x12'(W)x1'(D) construction entrance consisting of a pad of quarry spalls at the connection to Highway 203.
3. Temporary staging area 3 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for material staging during construction.
4. All access roads to be 12' wide.
5. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or corrals. Contractor will replace fences and corrals after work is complete.
6. Where temporary construction access routes or limits of disturbance associated with that pipe installation cross existing wetlands contractor to bring in cleaning fill if needed to stabilize crossing area. All material to be removed after construction is complete.
7. Areas designated within limits of disturbance will be used for equipment access, pipe trench installation and spoils. Limits of disturbance corridor will follow entire pipe alignment.
8. For ditch crossings contractor to bring in approximately 10cy of clean gravel fill to stabilize crossing. All material will be removed after construction is complete.
9. Between Sta 49+00 to 69+50 pipe alignment will follow and existing ditch. Existing ditch to be filled during pipe installation.
10. All access routes, staging areas, and area within limits of ground disturbance to be re-seeded after construction. See sheet AS1 for seeding mix.

LEGEND

- Highway 203
- Main
- Lateral
- Parcel Boundary
- Major Contour
- Minor Contour

Irrigation Ditch Crossings

Crossing	Area (sf)	Vol CY
1	288	11
2	288	11
3	288	11
4	288	11

Reliance Impacts

Crossing	Area (sf)	Wetland ID
1	6773	Y
2	505	N

Ditch Fill	CY
Sta 43+73 to 69+75	356

CONSTRUCTION ACCESS STAGING & PLANTING

PARCELS 1, 2 & 3

SCALE OF FEET

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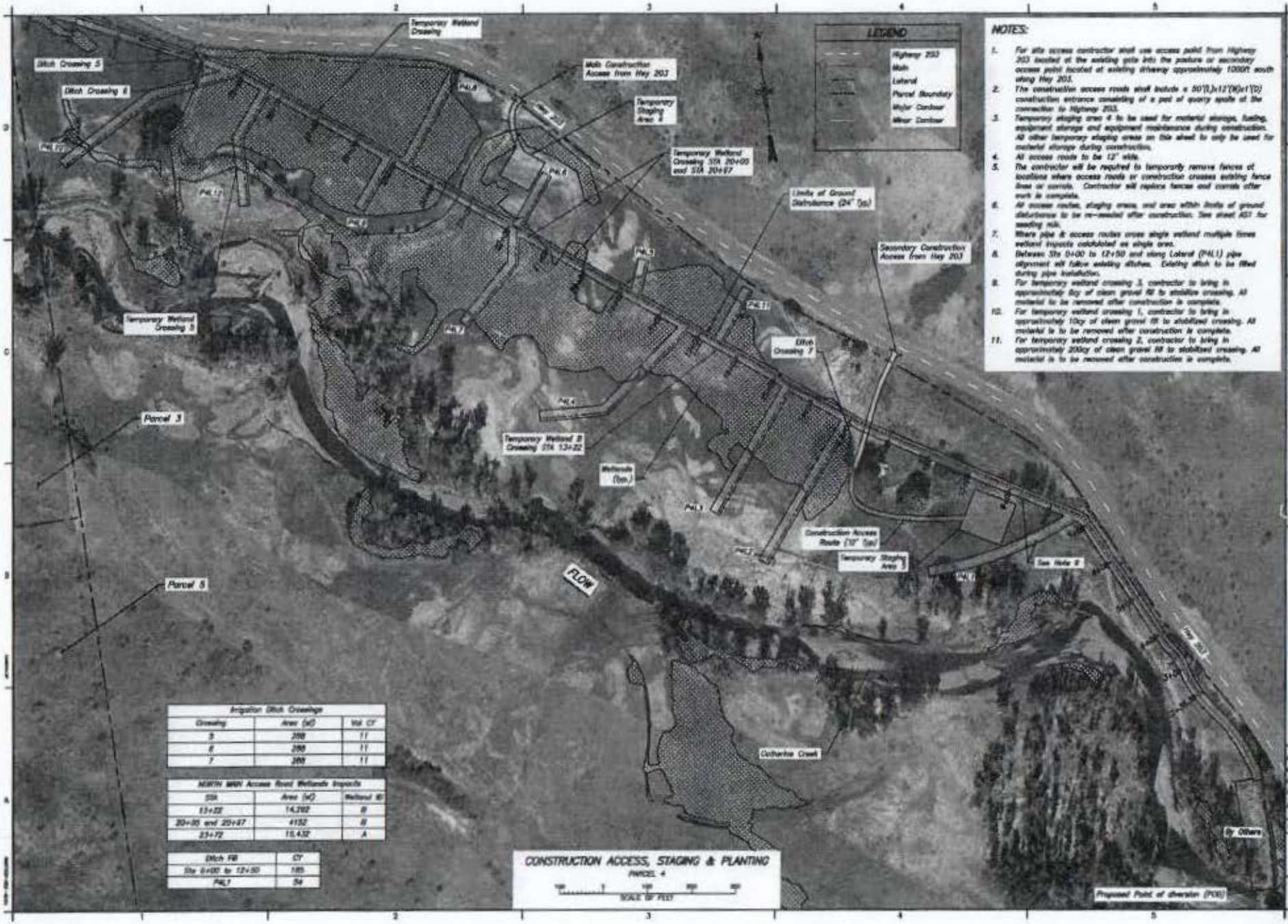
CONSTRUCTION ACCESS, STAGING & PLANTING

CONSTRUCTION ACCESS, STAGING & PLANTING PARCELS 1, 2 & 3

1678-100-AS1



Irrigation Ditch Crossings		
Crossing	Area (sf)	Vol. CY
5	200	11
6	200	11
7	200	11

NORTH MAIN Access Road Wetlands Impacts		
STA	Area (sf)	Wetland ID
13+22	14,302	B
20+05 and 20+97	4152	B
23+72	15,432	A

Ditch Fill	CY
Sta 0+00 to 12+50	185
PAL1	54

NOTES:

1. For site access contractor shall use access point from Highway 203 located at the existing gate into the pasture or secondary access point located at existing driveway approximately 1000ft south along Hwy 203.
2. The construction access roads shall include a 50'(L)x12'(W)x1'(D) construction entrance consisting of a pad of quarry spalls at the connection to Highway 203.
3. Temporary staging area 4 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for material storage during construction.
4. All access roads to be 12' wide.
5. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or corrals. Contractor will replace fences and corrals after work is complete.
6. All access routes, staging areas, and area within limits of ground disturbance to be re-seeded after construction. See sheet AS1 for seeding rate.
7. Where pipe & access routes cross single wetland multiple times wetland impacts calculated as single area.
8. Between Sta 0+00 to 12+50 and along Lateral (PAL1) pipe alignment will follow existing ditches. Existing ditch to be filled during pipe installation.
9. For temporary wetland crossing 3, contractor to bring in approximately 8cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.
10. For temporary wetland crossing 1, contractor to bring in approximately 10cy of clean gravel fill to stabilized crossing. All material is to be removed after construction is complete.
11. For temporary wetland crossing 2, contractor to bring in approximately 20cy of clean gravel fill to stabilized crossing. All material is to be removed after construction is complete.

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GRANDE RONDE SUBBASIN
CONSTRUCTION ACCESS, STAGING & PLANTING

CONSTRUCTION ACCESS, STAGING & PLANTING
PARCEL 4

1678-100-AS2

PIPE LAYOUT SOUTH SITE

SCALE OF FEET

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Managing Water in the West

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

ALWAYS THINK SAFETY

GRANDE RONDE SUBBASIN
15-14 ON FARM IMPROVEMENTS
PIPE LAYOUT SOUTH SITE

PIPE LAYOUT SOUTH SITE

1678-100-DV4

RECLAMATION
Managing Water in the West

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

ALWAYS THINK SAFETY

GRANDE RONDE SUBBASIN
PZ-44 ON FARM IMPROVEMENTS
PIPE LAYOUT PARCEL 4

For Use Only
Not

PIPE LAYOUT
PARCEL 4

1678-100-OV3

UNION SOIL AND WATER CONSERVATION DISTRICT

CC-44 PHASE II HABITAT ENHANCEMENT PLANS - UPPER REACH

30% DESIGN DRAWINGS

VICINITY MAP

NOT TO SCALE

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8	2215	BOULDERS
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11	2218	GRADING PLAN – SIDE CHANNEL 1
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13	2220	GRADING PLAN – SIDE CHANNEL 2
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31	2238	TYPE 3 HABITAT STRUCTURE DETAILS
32	2239	TYPE 4 HABITAT STRUCTURE DETAILS
33	2240	TYPE 5 HABITAT STRUCTURE DETAILS
34	2241	BOULDER BARB DETAILS
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50	2257	PLANTING PLAN
51	2258	PLANTING PLAN
52	2259	PLANTING PLAN
53	2260	PLANT SCHEDULE & DETAILS

Union Soil and Water Conservation District

PREPARED FOR:

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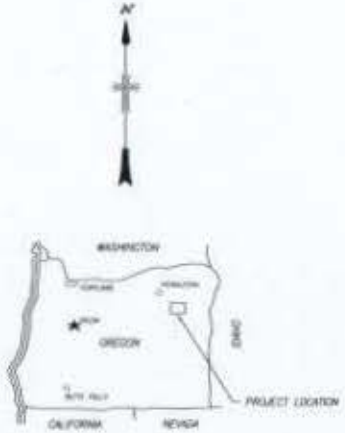
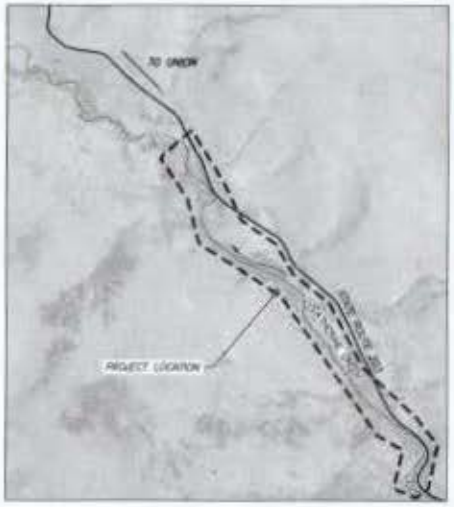
OREGON DEPARTMENT OF FISH AND WILDLIFE
CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION
BONNEVILLE POWER ADMINISTRATION



SITE SUMMARY

T4S, R40E, SEC.34
UNION COUNTY, OR
45°16'15.22"N 117°47'58.49"W



LOCATION MAP

1678-100-2208

RECLAMATION

ICF INTERNATIONAL

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

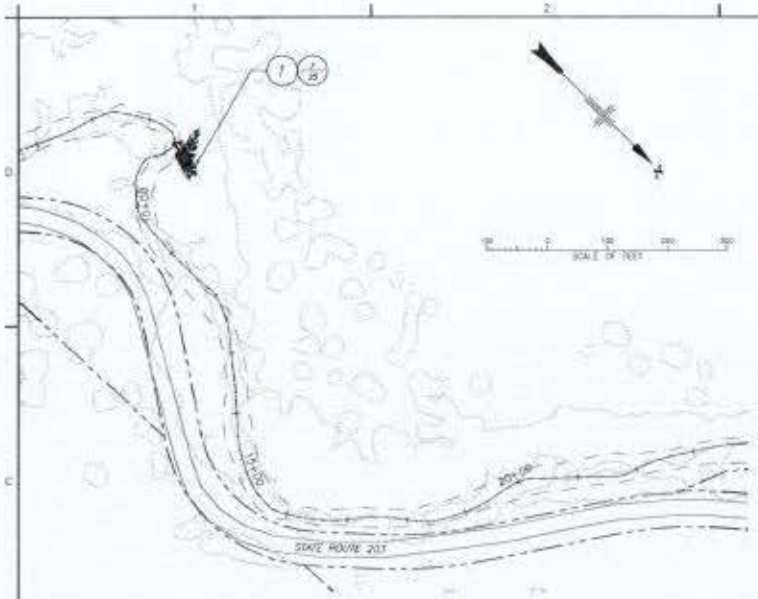
ALWAYS THINK SAFETY

GRANDE RONDE SUBBASIN
CC-44 PHASE II HABITAT ENHANCEMENT PLANS – UPPER REACH
COVER SHEET
PRELIMINARY DESIGN DRAWINGS

COVER SHEET

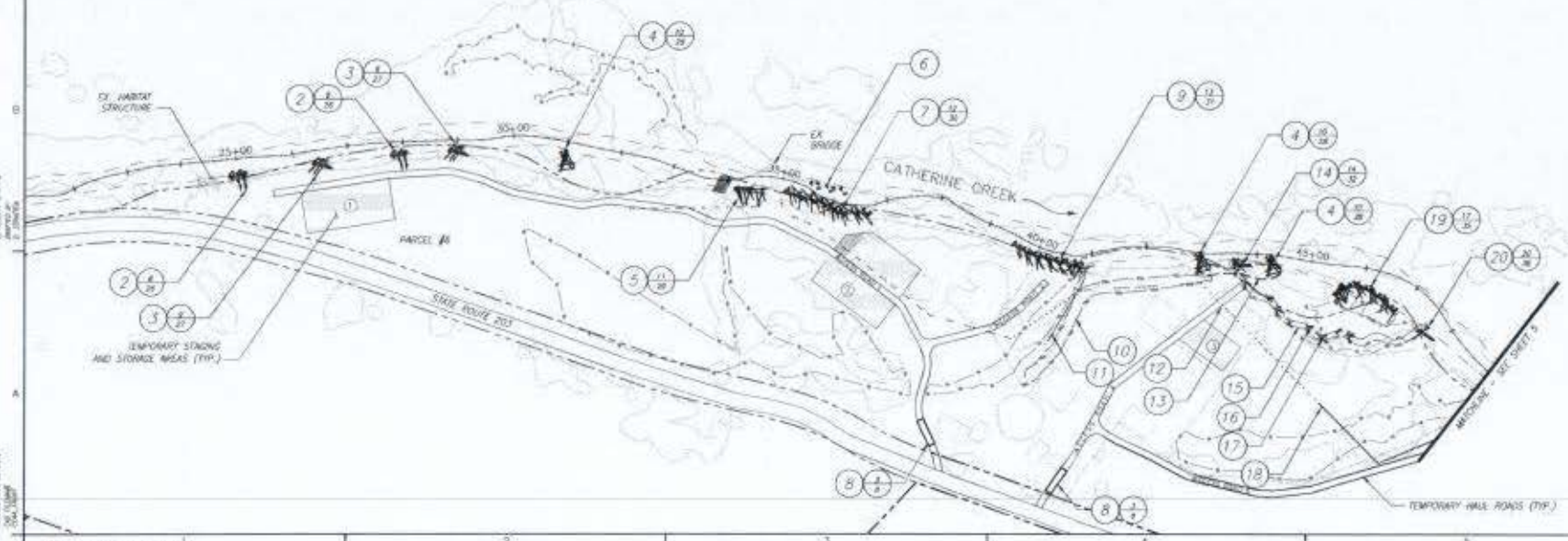
1678-100-2208

NWP-2013-133-1



NOTES:

1. CONSTRUCT TYPE 1 HABITAT STRUCTURE WITH HAND TOOLS ONLY. NO VEHICLE ACCESS. SEE SHEET 25 FOR DETAILS.
2. CONSTRUCT TYPE 2 HABITAT STRUCTURE. SEE SHEET 26 FOR DETAILS.
3. CONSTRUCT TYPE 3 HABITAT STRUCTURE. SEE SHEET 27 FOR DETAILS.
4. CONSTRUCT TYPE 4 HABITAT STRUCTURE. SEE SHEET 28 FOR DETAILS.
5. CONSTRUCT TYPE 5 HABITAT STRUCTURE. SEE SHEET 29 FOR DETAILS.
6. INSTALL BOULDER CLUSTERS IN CHANNEL. SEE SHEET 11 FOR DETAILS.
7. CONSTRUCT TYPE 6 HABITAT STRUCTURE. SEE SHEET 30 FOR DETAILS.
8. INSTALL STABILIZED CONSTRUCTION ENTRANCE. SEE SHEET 8 FOR DETAILS.
9. CONSTRUCT TYPE 7 HABITAT STRUCTURE. SEE SHEET 31 FOR DETAILS.
10. CONSTRUCT SPOILS AREA 1. SEE SHEET 12 FOR GRADING PLAN. SEE SHEET 24 FOR SPOILS AREA PROFILE AND SHEET 16 FOR TYPICAL CROSS-SECTION.
11. INSTALL FRENCH DRAIN. SEE SHEET 12 FOR DETAILS.
12. ON COMPLETION OF THE PROJECT, STAGING AND STORAGE AREA 3 SHALL BE COVERED WITH 4 INCHES OF STOCKPILED AGGREGATE WITH A SIZE OF ½" AND SHALL MEET THE REQUIREMENTS OF SECTION 9.09(6) OF THE STANDARD SPECIFICATIONS.
13. REMOVE RIPRAP AT THE DIRECTION OF CONTRACTING OFFICER.
14. CONSTRUCT TYPE 8 HABITAT STRUCTURE. SEE SHEET 32 FOR DETAILS.
15. CONSTRUCT SIDE CHANNEL. SEE SHEET 13 FOR SIDE CHANNEL GRADING PLAN. SEE SHEET 20 FOR SIDE CHANNEL PROFILE. SEE SHEET 21 FOR SIDE CHANNEL CROSS-SECTIONS.
16. INSTALL FOUR (4) TYPE 10 HABITAT STRUCTURES IN SIDE CHANNEL WHERE SHOWN.
17. INSTALL FOUR (4) TYPE 9 HABITAT STRUCTURES IN SIDE CHANNEL WHERE SHOWN.
18. PLANT EXISTING PASTURE ON THE RIGHT BANK OF CATHERINE CREEK WITHIN THE LIMIT OF PLANTING. SEE SHEETS 41 THRU 44 FOR PLANTING PLAN, PLANT SCHEDULE, AND INSTALLATION DETAILS.
19. CONSTRUCT TYPE 11 HABITAT STRUCTURE. SEE SHEET 35 FOR DETAILS.
20. CONSTRUCT TYPE 12 HABITAT STRUCTURE. SEE SHEET 38 FOR DETAILS.
21. THE CONTRACTOR WILL BE REQUIRED TO TEMPORARILY REMOVE FENCES AT LOCATIONS WHERE ACCESS ROADS OR CONSTRUCTION CROSSES EXISTING FENCE LINES OR CORRALS. CONTRACTOR SHALL REPLACE OR REPAIR FENCES AND CORRALS AFTER WORK IS COMPLETE.



SHEET 4

RECLAMATION
Managing Water in the West

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UNION SOIL AND WATER CONSERVATION DISTRICT

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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLUMBIA-SNAKE RIVER SALMON RECOVERY PROGRAM
FISH PASSAGE IMPROVEMENTS PROGRAM

GRANDE RONDE SUBBASIN

CC-44 PHASE 3 HABITAT ENHANCEMENT PLANS – UPPER REACH

PROJECT OVERVIEW

PRELIMINARY DESIGN DRAWINGS

DRAWN

CHECKED

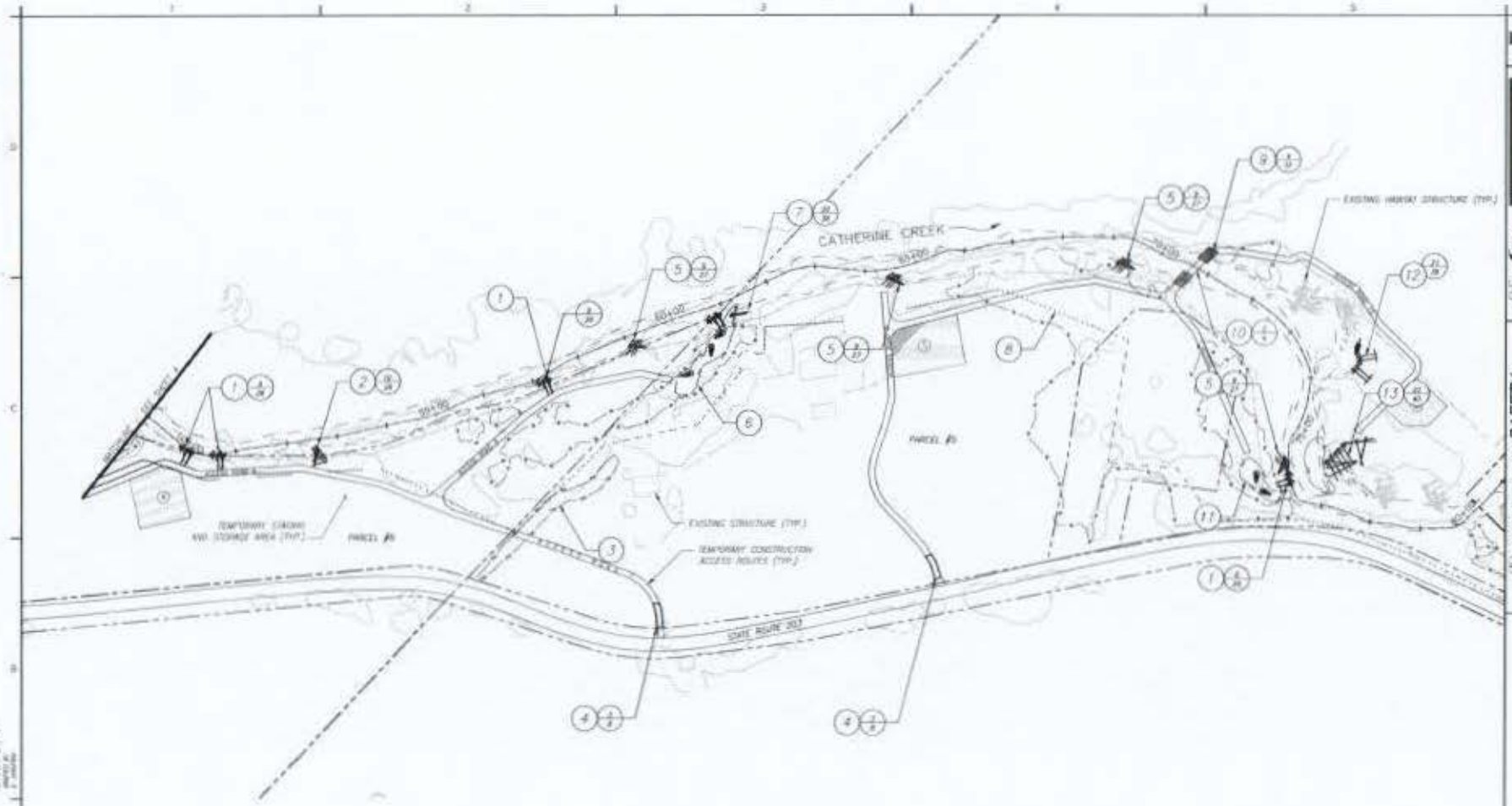
SCALE: 0" | DATE: 2014-03-14

PROJECT OVERVIEW

1678-100-2210

SHEET 4 OF 10

NWP-2013-133-1



NOTES:

1. CONSTRUCT TYPE 2 HABITAT STRUCTURE. SEE SHEET 26 FOR DETAILS.
2. CONSTRUCT TYPE 4 HABITAT STRUCTURE. SEE SHEET 28 FOR DETAILS.
3. CONSTRUCT SPOILS AREA 2. SEE SHEET 16 FOR GRADING PLAN AND CROSS-SECTION. SEE SHEET 24 FOR SPOILS AREA PROFILE.
4. INSTALLED STABILIZED CONSTRUCTION ENTRANCE. SEE SHEET 8 FOR DETAILS.
5. CONSTRUCT TYPE 3 HABITAT STRUCTURE. SEE SHEET 27 FOR DETAILS.
6. CONSTRUCT ALCOVE 1. SEE SHEET 13 FOR ALCOVE GRADING PLAN. SEE SHEET 22 FOR ALCOVE PROFILE AND CROSS-SECTIONS.
7. CONSTRUCT TYPE 12 HABITAT STRUCTURE. SEE SHEET 38 FOR DETAILS.
8. PLANT EXISTING PASTURE ON THE RIGHT BANK OF CATHERINE CREEK WITHIN THE LIMIT OF PLANTING. SEE SHEETS 41 THRU 44 FOR PLANTING PLAN, PLANT SCHEDULE, AND INSTALLATION DETAILS.
9. CONSTRUCT STABILIZED LIVESTOCK CROSSING. SEE SHEET 19 FOR DETAILS.
10. CONSTRUCT TEMPORARY CREEK CROSSING AT THIS LOCATION FOR LEFT BANK ACCESS. SEE DETAIL SHEET 9.
11. CONSTRUCT ALCOVE 2. SEE SHEET 19 FOR ALCOVE 2 GRADING PLAN. SEE SHEET 22 FOR ALCOVE PROFILE AND CROSS-SECTIONS.
12. CONSTRUCT TYPE 13 HABITAT STRUCTURE. SEE SHEET 39 FOR DETAILS.
13. CONSTRUCT TYPE 14 HABITAT STRUCTURE. SEE SHEET 40 FOR DETAILS.
14. THE CONTRACTOR WILL BE REQUIRED TO TEMPORARILY REMOVE FENCES AT LOCATIONS WHERE ACCESS ROADS OR CONSTRUCTION CROSSES EXISTING FENCE LINES OR CHANNELS. CONTRACTOR SHALL REPLACE OR REPAIR FENCES AND CORRALS AFTER WORK IS COMPLETE.

SHEET 5

RECLAMATION
Managing Water in the West

ICF INTERNATIONAL

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

ALWAYS THINK SAFETY

AT BEGINNING OF THE WORKDAY
STOP, WALK, REST, PLAN, REVIEW, PROCEED
STOP WHEN INFORMALLY INSPECTING

GRANDE RONDE SUBBASIN

CC-44 PHASE II HABITAT ENHANCEMENT PLANS - UPPER REACH

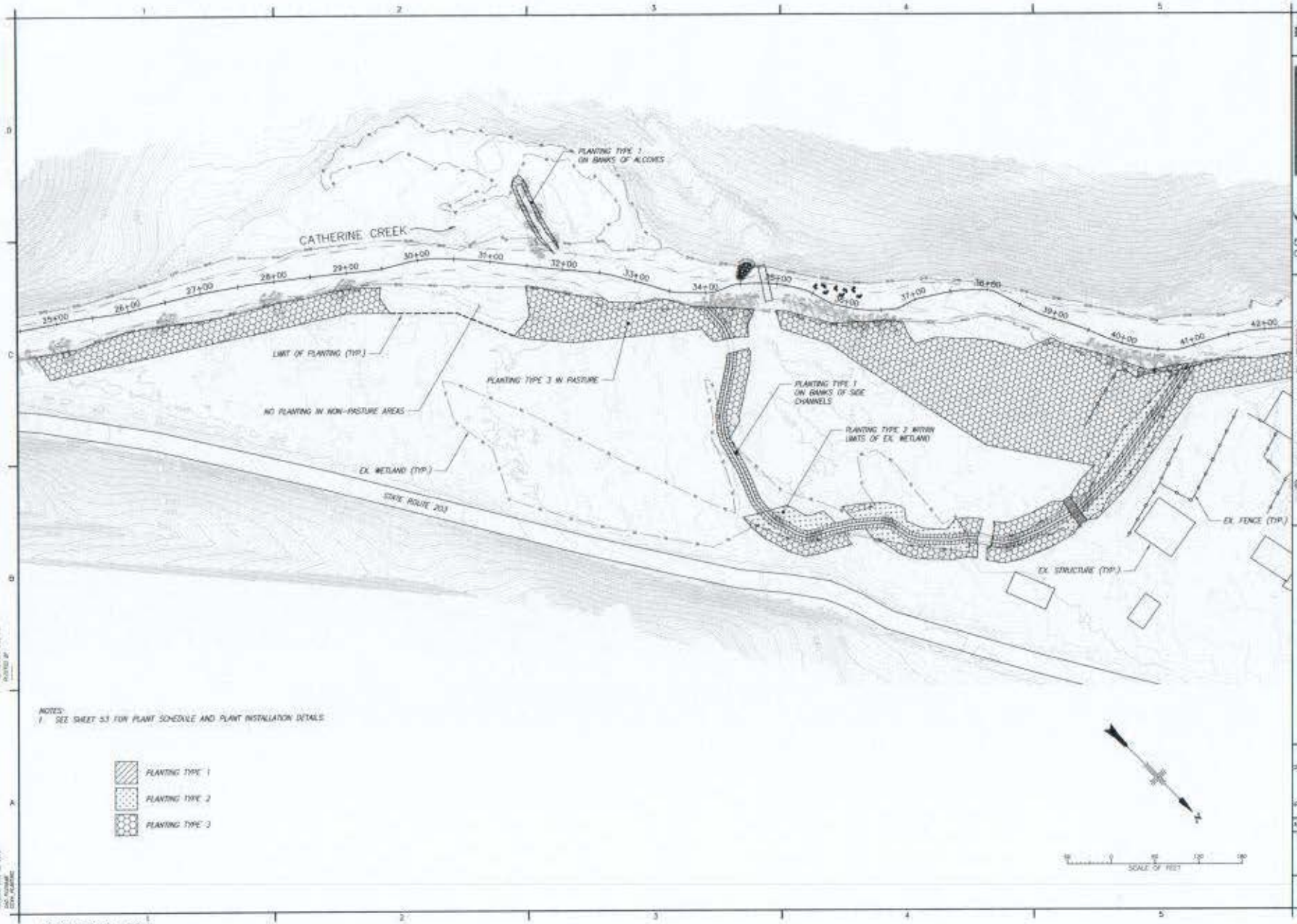
PROJECT OVERVIEW

PRELIMINARY DESIGN DRAWINGS

PROJECT OVERVIEW

1678-100-2212

NWP-2013-133-1



NOTES:
1. SEE SHEET 53 FOR PLANT SCHEDULE AND PLANT INSTALLATION DETAILS

PLANTING TYPE 1
PLANTING TYPE 2
PLANTING TYPE 3

1678-100-2257

RECLAMATION
Managing Water in the West

ICF INTERNATIONAL

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLUMBIA-PACIFIC NORTHWEST REGION
YAKIMA-TWISTED WATERSHED PROGRAM

GRANDE RONDE SUBBASIN

CZ-44 PHASE II HABITAT ENHANCEMENT PLANS - UPPER REACH

PLANTING PLAN

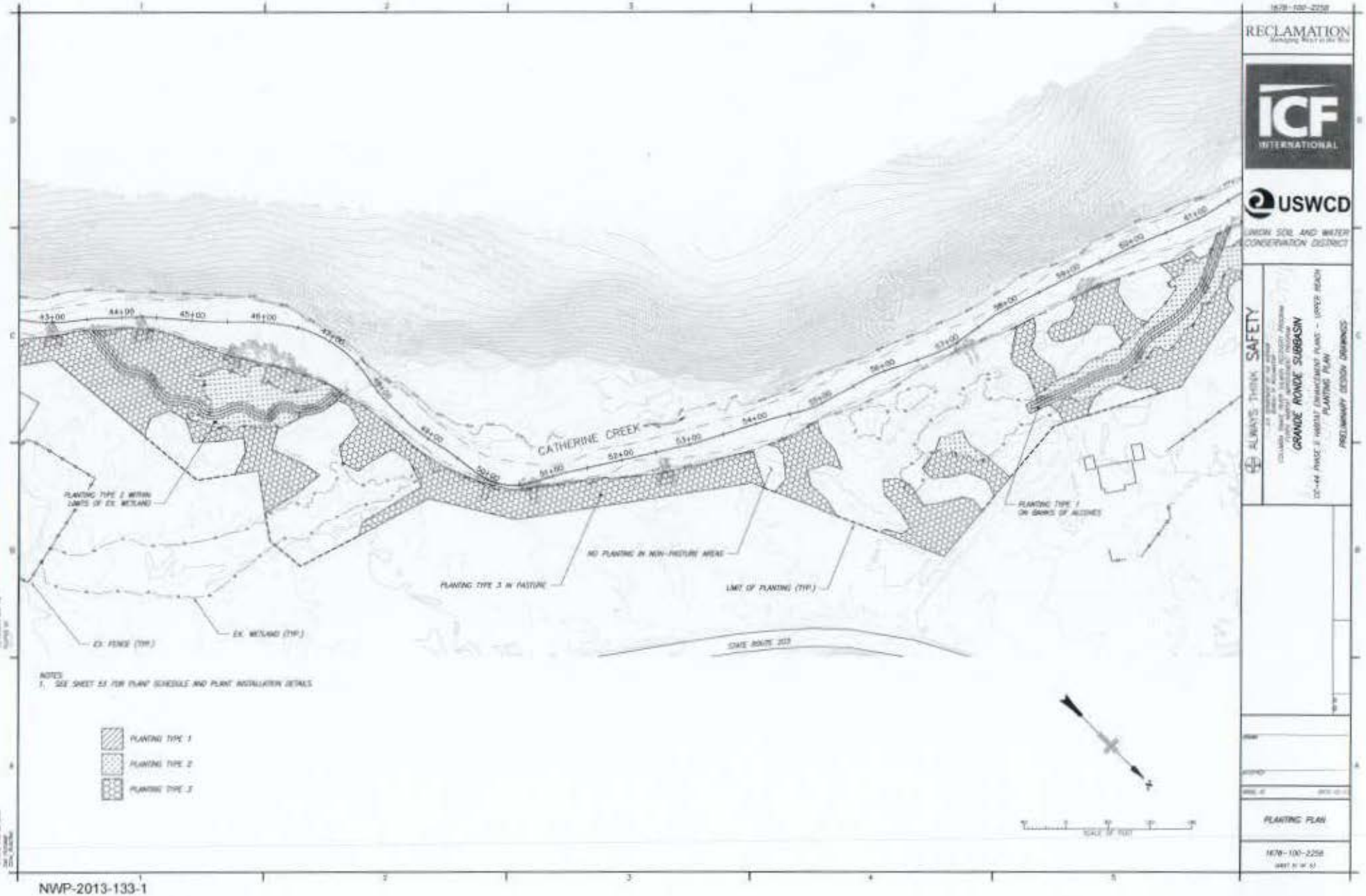
PRELIMINARY DESIGN DRAWINGS

DRAWN
REVIEWED
DATE: 2013-12-13

PLANTING PLAN

1678-100-2257
SHEET 52 OF 53

NWP-2013-133-1



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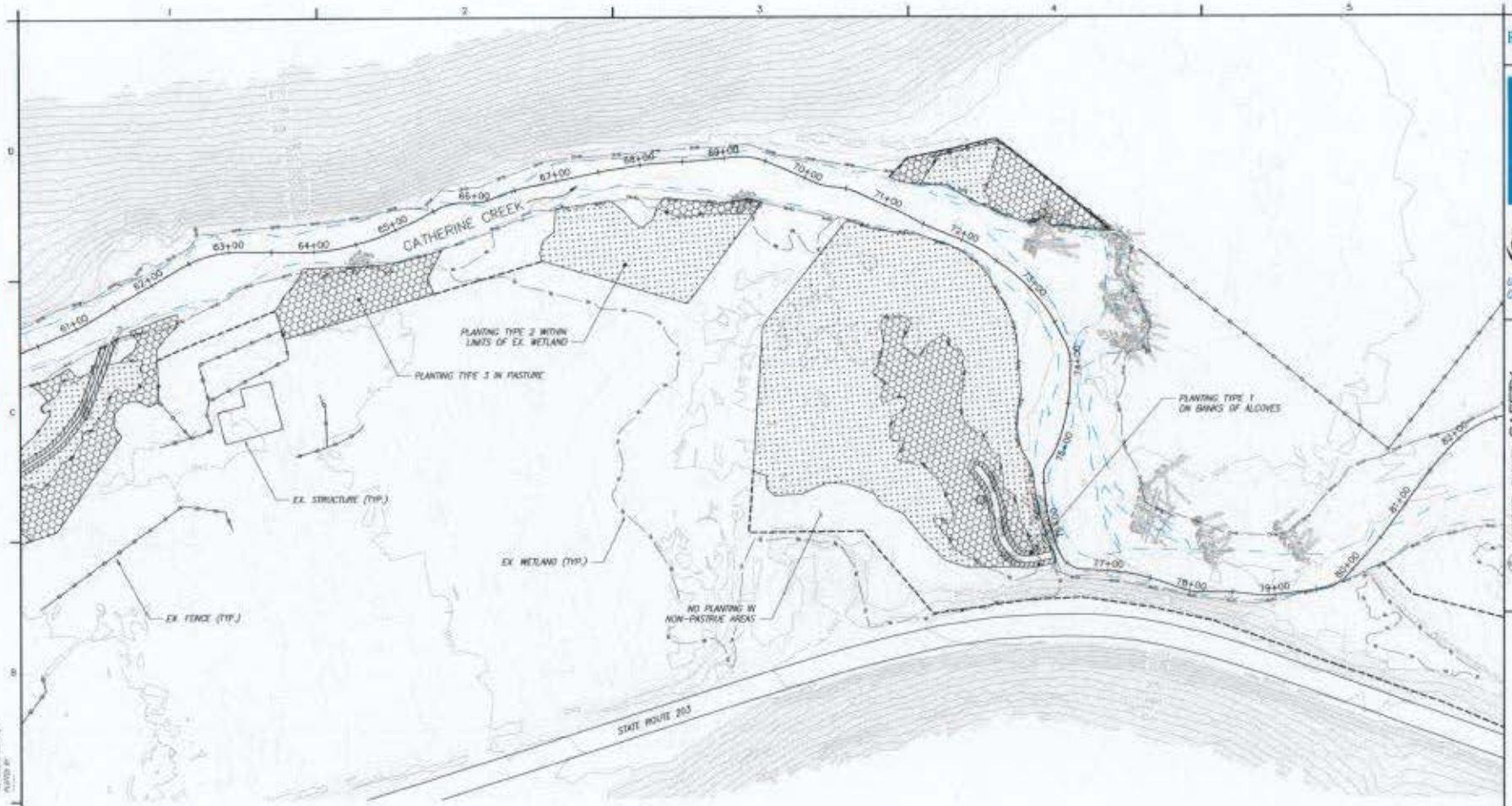

NOTES:
1. SEE SHEET 53 FOR PLANT SCHEDULE AND PLANT INSTALLATION DETAILS.

PLANTING TYPE 1
PLANTING TYPE 2
PLANTING TYPE 3

SCALE OF FEET

1678-100-2259

RECLAMATION
Managing Water in the West

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USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

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COLUMBIA SNAKE RIVER SALMON RECOVERY PROGRAM
FLOWS FOR FISH HABITAT IMPROVEMENT
GRANDE RONDE SUBBASIN
CC-44 PHASE II HABITAT ENHANCEMENT PLANS - UPPER REACH
PLANTING PLAN
PRELIMINARY DESIGN DRAWINGS

DATE: 2012-12-13

PLANTING PLAN

1678-100-2259

NWP-2013-133-1

UNION SOIL AND WATER CONSERVATION DISTRICT

CC-44 PHASE III & IV HABITAT ENHANCEMENT PLANS - LOWER REACH

30% DRAFT DESIGN DRAWINGS

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PARTNERS:
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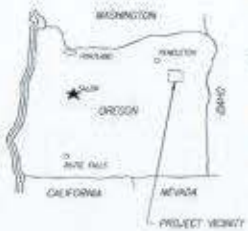
CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION
BONNEVILLE POWER ADMINISTRATION

SITE SUMMARY
T4S, R40E, SEC.34
UNION COUNTY, WA
45°10'10.22"N 117°47'58.49"W



VICINTIY MAP

LOCATION MAP

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2	1678-100-T2	GENERAL NOTES AND ABBREVIATIONS
3	1678-100-T3	QUANTITIES
4	1678-100-SC1	SURVEY CONTROL
5	1678-100-EX1	EXISTING CONDITIONS - OVERVIEW
6	1678-100-EC1	EXISTING CONDITIONS - PARCEL 4
7	1678-100-EC2	EXISTING CONDITIONS - PARCEL 3
8	1678-100-EC3	EXISTING CONDITIONS - PARCEL 1 AND 2
9	1678-100-PC1	PROPOSED CONDITIONS - PARCEL 4
10	1678-100-PC2	PROPOSED CONDITIONS - PARCEL 3
11	1678-100-PC3	PROPOSED CONDITIONS - PARCEL 1 AND 2
12	1678-100-GP1	GRADING PLAN OVERVIEW
13	1678-100-GP2	GRADING PLAN - STA 0+00 TO 13+50
14	1678-100-GP3	GRADING PLAN - STA 13+50 TO 27+00
15	1678-100-GP4	GRADING PLAN - STA 27+00 TO 45+50
16	1678-100-GP5	GRADING PLAN - STA 45+50 TO 61+00
17	1678-100-GP6	GRADING PLAN - STA 61+00 TO 74+00
18	1678-100-GP7	GRADING PLAN - STA 74+00 TO 89+00
19	1678-100-GP8	GRADING PLAN - STA 89+00 TO 102+00
20	1678-100-GP9	GRADING PLAN - STA 102+00 TO 116+00
21	1678-100-GP10	GRADING PLAN - STA 116+00 TO 121+50
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23	1678-100-PF2	MAIN CHANNEL PROFILE - STA 27+00 TO 54+00
24	1678-100-PF3	MAIN CHANNEL PROFILE - STA 54+00 TO 81+00
25	1678-100-PF4	MAIN CHANNEL PROFILE - STA 81+00 TO 108+00
26	1678-100-PF5	MAIN CHANNEL PROFILE - STA 108+00 TO 121+50
27	1678-100-PF6	SIDE CHANNEL PROFILES SC-1 AND SC-2
28	1678-100-PF7	SIDE CHANNEL PROFILES SC-3 AND SC-4
29	1678-100-PF8	SIDE CHANNEL PROFILE SC-5
30	1678-100-PF9	SIDE CHANNEL PROFILES SC-6 AND SC-7
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32	1678-100-PF11	ALCOVE PROFILES AC-1, -2, -3, -4, AND -5
33	1678-100-PF12	ALCOVE PROFILES AC-6, -7, AND -8
34	1678-100-CS1	TYPICAL CHANNEL SECTIONS
35	1678-100-CS2	TYPICAL SIDE CHANNEL SECTIONS
36	1678-100-CS3	TYPICAL ALCOVE SECTIONS
37	1678-100-VS1	VALLEY SECTIONS STA 5+00 TO 15+00
38	1678-100-VS2	VALLEY SECTIONS STA 20+00 TO 30+00
39	1678-100-VS3	VALLEY SECTIONS STA 35+00 TO 45+00
40	1678-100-VS4	VALLEY SECTIONS STA 50+00 TO 60+00
41	1678-100-VS5	VALLEY SECTIONS STA 65+00 TO 75+00
42	1678-100-VS6	VALLEY SECTIONS STA 80+00 TO 90+00
43	1678-100-VS7	VALLEY SECTIONS STA 95+00 TO 105+00
44	1678-100-VS8	VALLEY SECTIONS STA 110+00 TO 120+00
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46	1678-100-HP2	HABITAT PLAN - STA 0+00 TO 13+50
47	1678-100-HP3	HABITAT PLAN - STA 13+50 TO 27+00
48	1678-100-HP4	HABITAT PLAN - STA 27+00 TO 45+50
49	1678-100-HP5	HABITAT PLAN - STA 45+50 TO 61+00
50	1678-100-HP6	HABITAT PLAN - STA 61+00 TO 74+00
51	1678-100-HP7	HABITAT PLAN - STA 74+00 TO 89+00
52	1678-100-HP8	HABITAT PLAN - STA 89+00 TO 102+00
53	1678-100-HP9	HABITAT PLAN - STA 102+00 TO 116+00

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55	1678-100-D1	LWM DETAILS
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62	1678-100-AS1	CONSTRUCTION ACCESS AND STAGING STA 0+00 TO 30+00
63	1678-100-AS2	CONSTRUCTION ACCESS AND STAGING STA 30+00 TO 64+00
64	1678-100-AS3	CONSTRUCTION ACCESS AND STAGING STA 64+00 TO 95+00
65	1678-100-AS4	CONSTRUCTION ACCESS AND STAGING STA 95+00 TO 121+50

RECLAMATION
Managing Water in the West

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

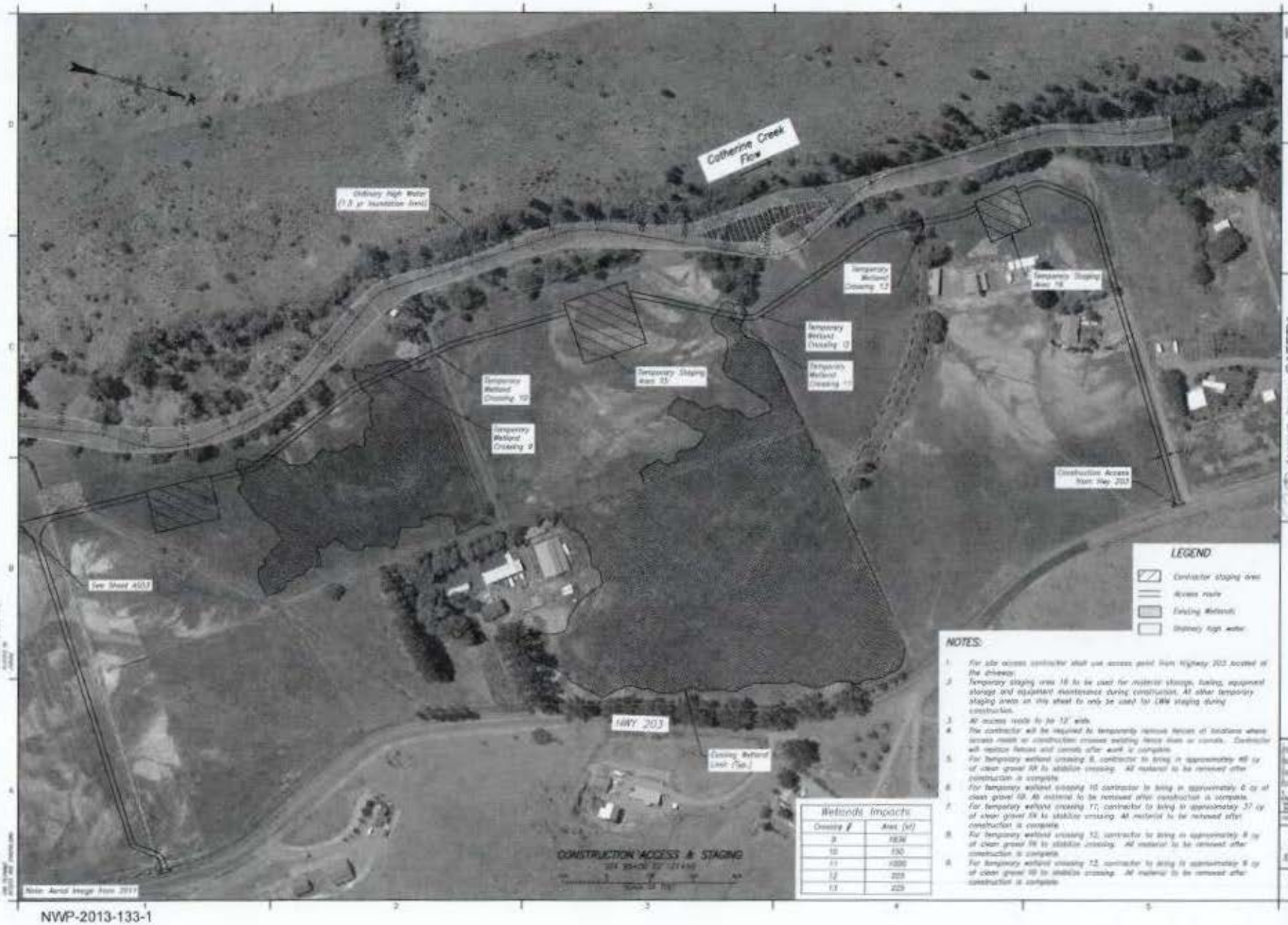
ALWAYS THINK SAFETY

CC-44 PHASE III & IV HABITAT ENHANCEMENT
GRANDE RONDE SUBBASIN
LOWER REACH-COVER SHEET

COVER SHEET

1678-100-T1

NWP-2013-133-1



NOTES:

1. For site access contractor shall use access point from Highway 203 located at the driveway.
2. Temporary staging area 16 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for LWM staging during construction.
3. All access roads to be 12' wide.
4. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or canals. Contractor will replace fences and canals after work is complete.
5. For temporary wetland crossing 9, contractor to bring in approximately 40 cy of clean gravel 9A to stabilize crossing. All material to be removed after construction is complete.
6. For temporary wetland crossing 10 contractor to bring in approximately 6 cy of clean gravel 9A. All material to be removed after construction is complete.
7. For temporary wetland crossing 11, contractor to bring in approximately 37 cy of clean gravel 9A to stabilize crossing. All material to be removed after construction is complete.
8. For temporary wetland crossing 12, contractor to bring in approximately 8 cy of clean gravel 9A to stabilize crossing. All material to be removed after construction is complete.
9. For temporary wetland crossing 13, contractor to bring in approximately 9 cy of clean gravel 9A to stabilize crossing. All material to be removed after construction is complete.

Wetlands Impacts

Crossing #	Area (sf)
9	1836
10	130
11	1000
12	203
13	225

RECLAMATION

USWCD
UNION SOIL AND WATER CONSERVATION DISTRICT

ALWAYS THINK SAFETY

Not for Construction

CRANDE RUNGE SUBBASIN
CC-44 PHASE III & IV HABITAT ENHANCEMENT
LOWER REACH-CONSTRUCTION ACCESS & STAGING

CONSTRUCTION ACCESS AND STAGING
STA. 95+00 TO 121+50

1678-100-A54

NWP-2013-133-1

CONSTRUCTION ACCESS & STAGING

STA 64+00 TO 85+00

SCALE OF FEET

Wetlands Impacts	
Crossing #	Area (sf)
6	200
7	640
8	150

LEGEND

- Contractor staging area
- Access route
- Existing Wetlands
- Ordinary high water

NOTES:

1. For site access contractor shall use access point from Highway 203 located at the existing gate into the pasture near MP4 or secondary access point located at existing driveway approximately 1000ft south along Hwy 203.
2. The construction access road shall include a 50'(L)x12'(W)x1'(D) construction entrance consisting of a pad of quarry spalls at the connection to Highway 203.
3. Temporary staging area 13 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for CWM staging during construction.
4. All access roads to be 12' wide.
5. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or canals. Contractor will replace fences and canals after work is complete.
6. For temporary wetland crossing 6, contractor to bring in approximately 8 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.
7. For temporary wetland crossing 7, contractor to bring in approximately 21 cy of clean gravel fill. All material to be removed after construction is complete.
8. For temporary wetland crossing 8, contractor to bring in approximately 8 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.

RECLAMATION

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GRANDE RONDE SUBBASIN
CC-4# PHASE III & IV HABITAT ENHANCEMENT
LOWER REACH-CONSTRUCTION ACCESS & STAGING

Not for Construction

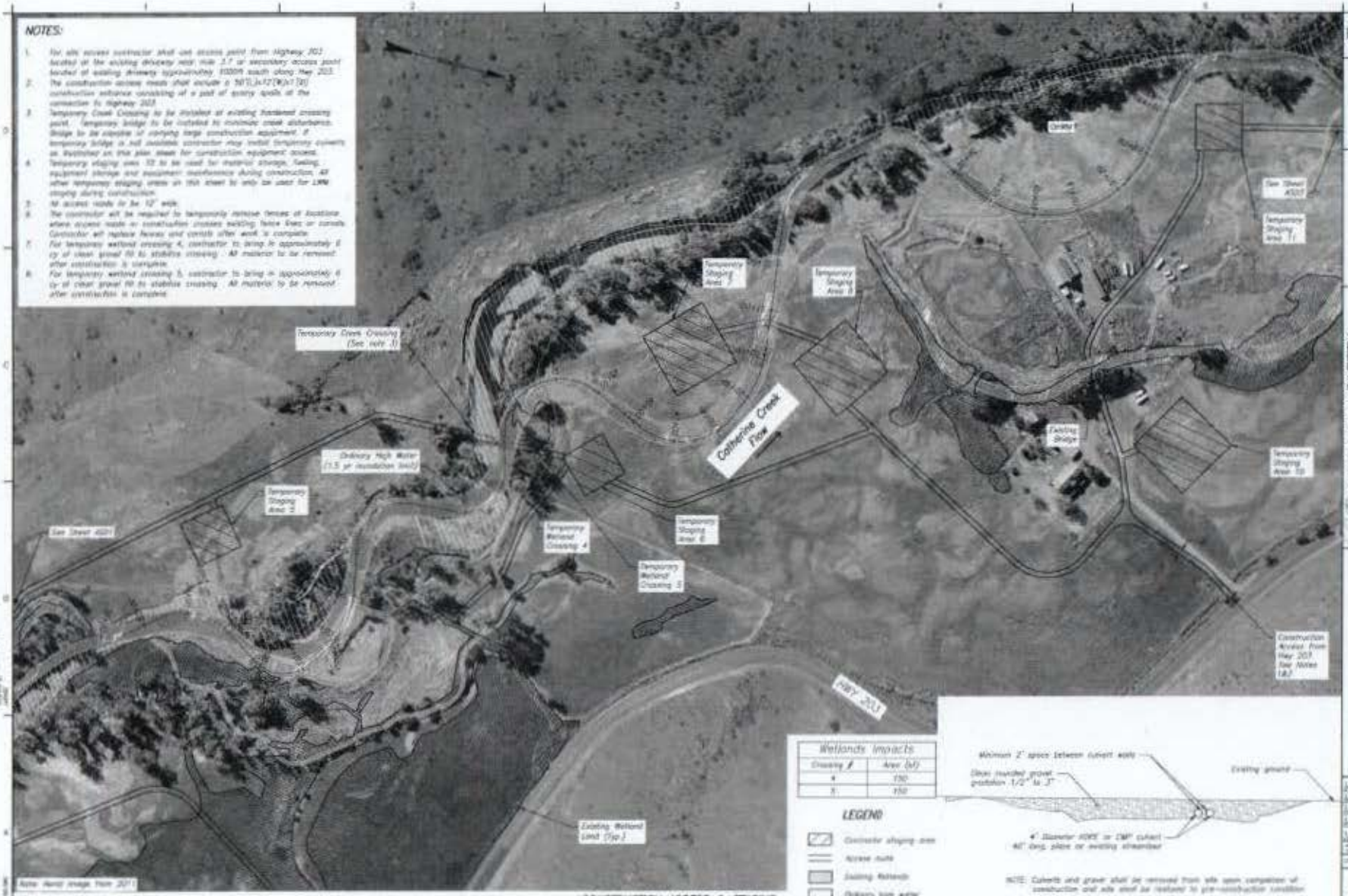
CONSTRUCTION ACCESS AND STAGING
STA. 64+00 TO 85+00

1678-100-A53

NWP-2013-133-1

NOTES:

1. For site access contractor shall use access point from Highway 203 located at the existing driveway near mile 3.7 or secondary access point located at existing driveway approximately 1000ft south along Hwy 203.
2. The construction access roads shall include a 50'(L)x12'(W)x1'(D) construction entrance consisting of a pad of quarry spalls at the connection to Highway 203.
3. Temporary Creek Crossing to be installed at existing hardened crossing point. Temporary bridge to be installed to minimize creek disturbance. Bridge to be capable of carrying large construction equipment. If temporary bridge is not available contractor may install temporary culverts as illustrated on this plan sheet for construction equipment access.
4. Temporary staging area 10 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for LIMITED staging during construction.
5. All access roads to be 12' wide.
6. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or corrals. Contractor will replace fences and corrals after work is complete.
7. For temporary wetland crossing 4, contractor to bring in approximately 6 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.
8. For temporary wetland crossing 5, contractor to bring in approximately 6 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.



Wetlands Impacts	
Crossing #	Area (sf)
4	150
5	150

LEGEND

- Contractor staging area
- Access route
- Existing Wetlands
- Ordinary high water

NOTE: Culverts and gravel shall be removed from site upon completion of construction and site shall be restored to pre-construction condition

TEMPORARY CREEK CROSSING DETAIL
NOT TO SCALE

CONSTRUCTION ACCESS & STAGING
STA 30+00 TO 64+00
SCALE OF FEET

RECLAMATION
Managing Water in the West

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CRANDE RUNGE SUBBASIN
CC-44 PHASE III & IV HABITAT ENHANCEMENT
LOWER REACH-CONSTRUCTION ACCESS & STAGING

Not Approved for Construction

CONSTRUCTION ACCESS AND STAGING STA. 30+00 TO 64+00

1678-100-AS2

NWP-2013-133-1

NOTES:

1. For site access contractor shall use access point from Highway 203 located at the existing gate into the pasture or secondary access point located at existing driveway approximately 1000ft south along Hwy 203.
2. The construction access roads shall include a 30'(L)x12'(W)x1'(D) construction entrance consisting of a pad of quarry spalls at the connection to Highway 203.
3. Temporary Creek Crossing to be installed at existing hardened crossing point. Temporary bridge to be installed to minimize creek disturbance. Bridge to be capable of carrying large construction equipment. If temporary bridge is not available contractor may install temporary culverts as illustrated on this plan sheet for construction equipment access.
4. Temporary staging area 2 to be used for material storage, fueling, equipment storage and equipment maintenance during construction. All other temporary staging areas on this sheet to only be used for LIMITED staging during construction.
5. All access roads to be 12' wide.
6. The contractor will be required to temporarily remove fences at locations where access roads or construction crosses existing fence lines or canals. Contractor will replace fences and corrals after work is complete.
7. For temporary wetland crossing 1, contractor to bring in approximately 10 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.
8. For temporary wetland crossing 2, contractor to bring in approximately 200 cy of clean gravel fill. All material to be removed after construction is complete.
9. For temporary wetland crossing 3, contractor to bring in approximately 6 cy of clean gravel fill to stabilize crossing. All material to be removed after construction is complete.

Wetlands Impacts	
Crossing #	Area (SF)
1	270
2	5370
3	150

LEGEND

- Contractor staging area
- Access route
- Existing Wetlands
- Ordinary high water

NOTE: Culverts and gravel shall be removed from site upon completion of construction and site shall be restored to pre-construction condition.

CONSTRUCTION ACCESS & STAGING
STA. 0+00 TO 30+00

SCALE OF FEET

TEMPORARY CREEK CROSSING DETAIL
NOT TO SCALE

RECLAMATION

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UNION SOIL AND WATER CONSERVATION DISTRICT

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Not Approved for Construction

CC-44 PHASE IV & V: HABITAT ENHANCEMENT
LOWER REACH-CONSTRUCTION ACCESS & STAGING

CONSTRUCTION ACCESS AND STAGING
STA. 0+00 TO 30+00

1678-100-A51

NWP-2013-133-1

RECLAMATION

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UNION SOIL AND WATER CONSERVATION DISTRICT

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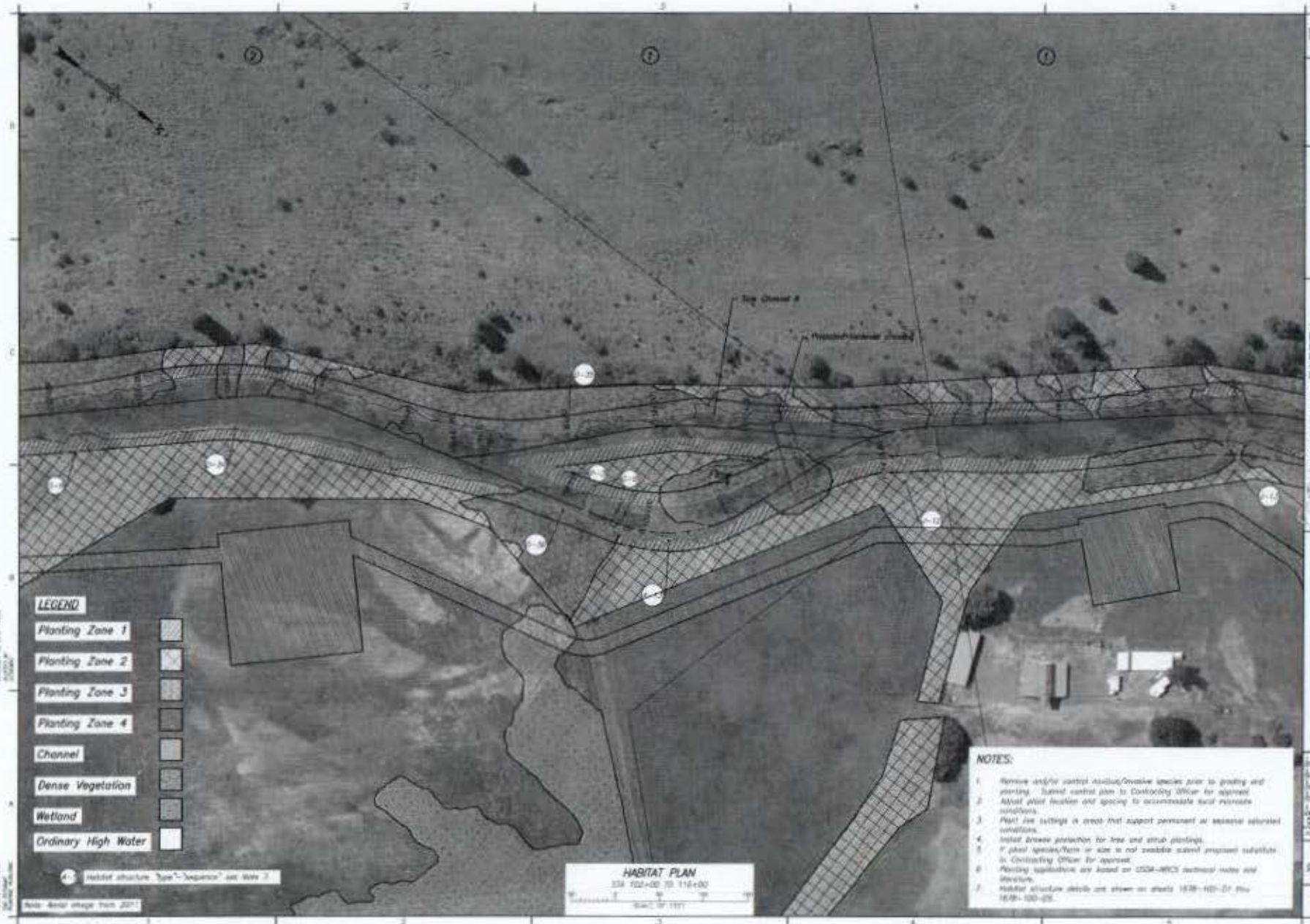
GRANDE RONDE SUBBASIN
GRANDE RONDE PHASE II & IV HABITAT ENHANCEMENT
LOSEY REACH – HABITAT PLAN

HABITAT PLAN
STA 116+00 TO 121+50

1678-100-HP10

NWP-2013-133-1



RECLAMATION

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UNION SOIL AND WATER CONSERVATION DISTRICT

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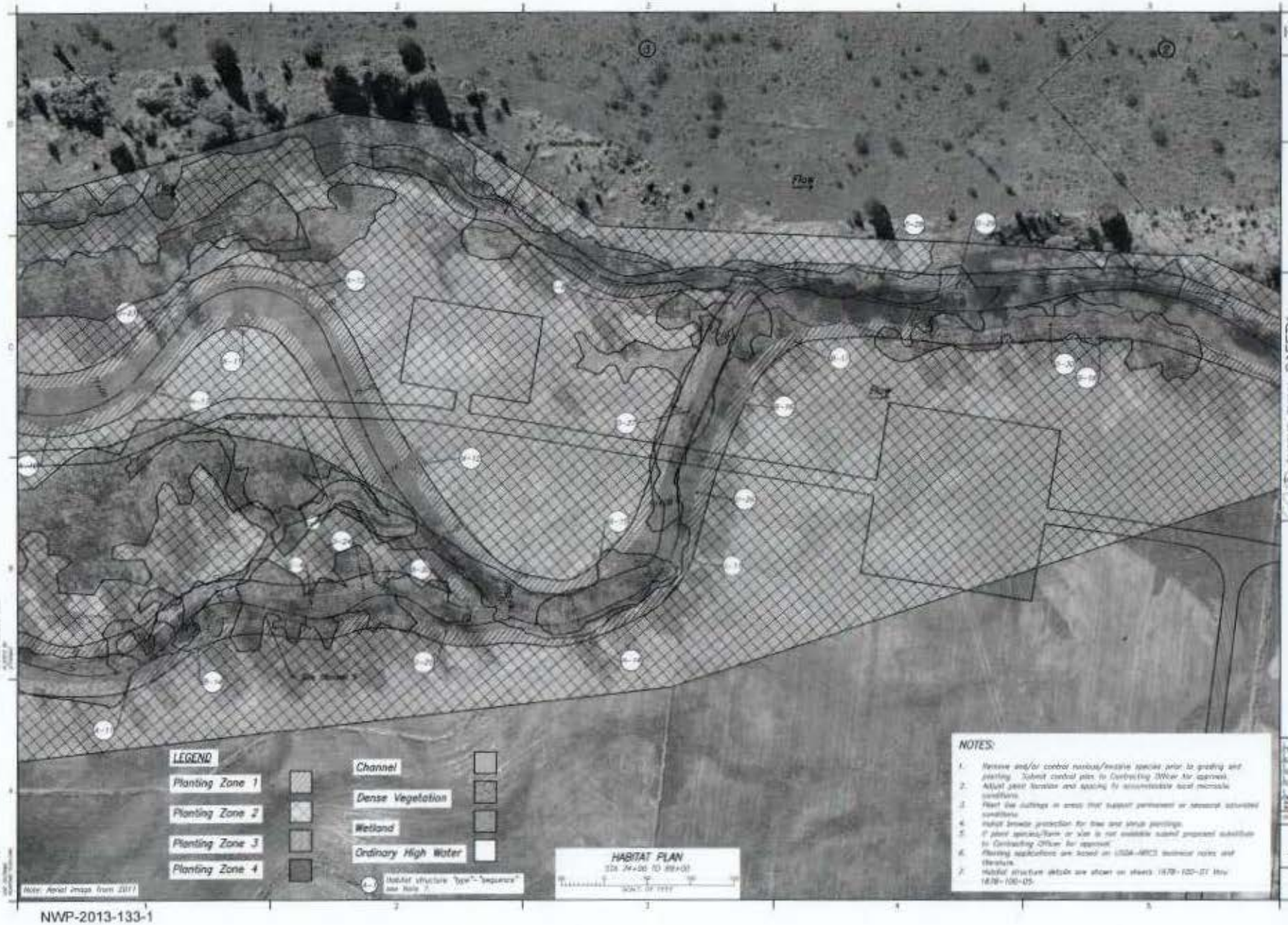
GRANDE RONDE SUBBASIN
Wallowa-44 Phase II & IV HABITAT ENHANCEMENT
LOWER WEIR - HABITAT PLAN

HABITAT PLAN
STA 102+00 TO 116+00

1678-100-HP9

NWP-2013-133-1

NWP-2013-133-1



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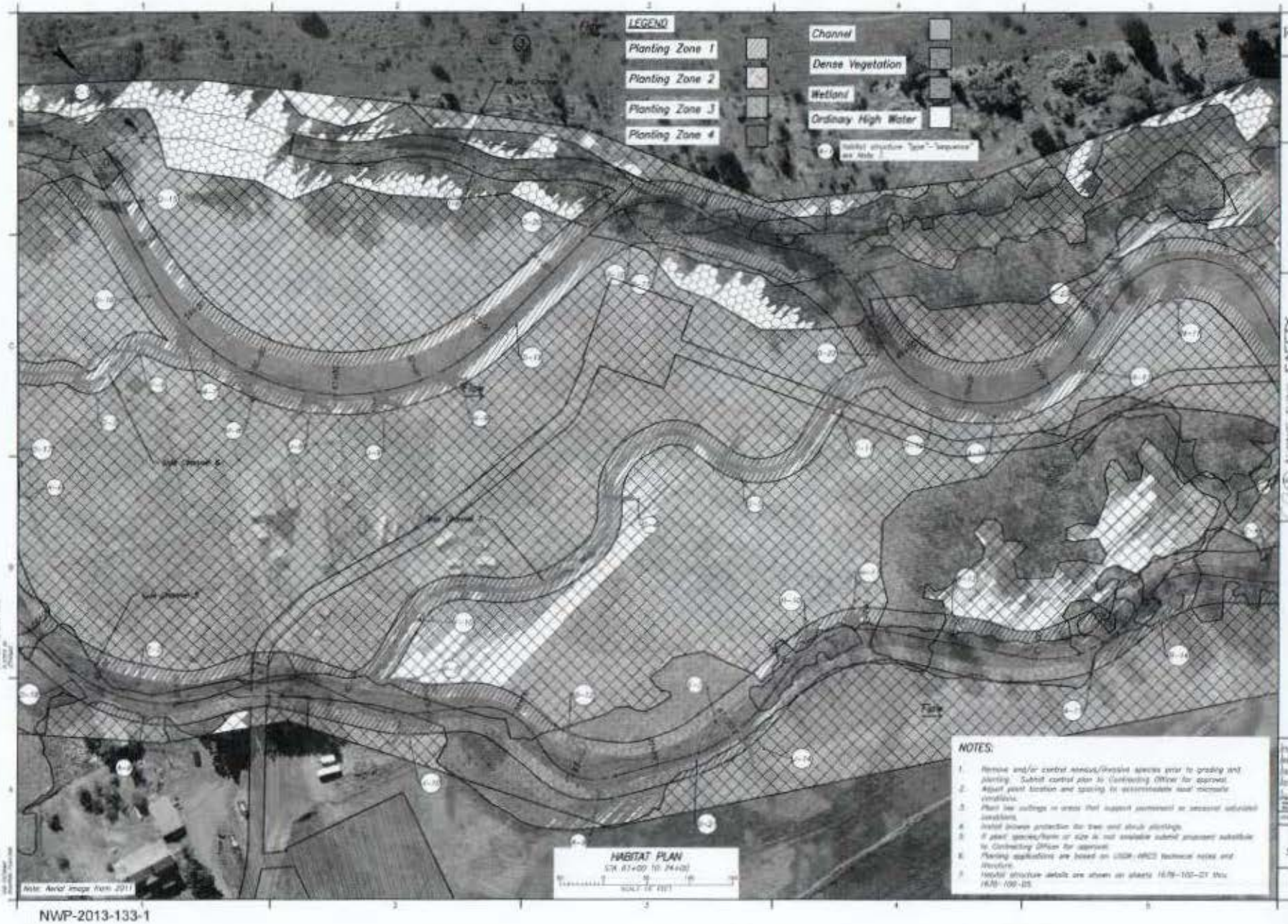

RECLAMATION
Managing Water in the West

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UNION SOIL AND WATER CONSERVATION DISTRICT

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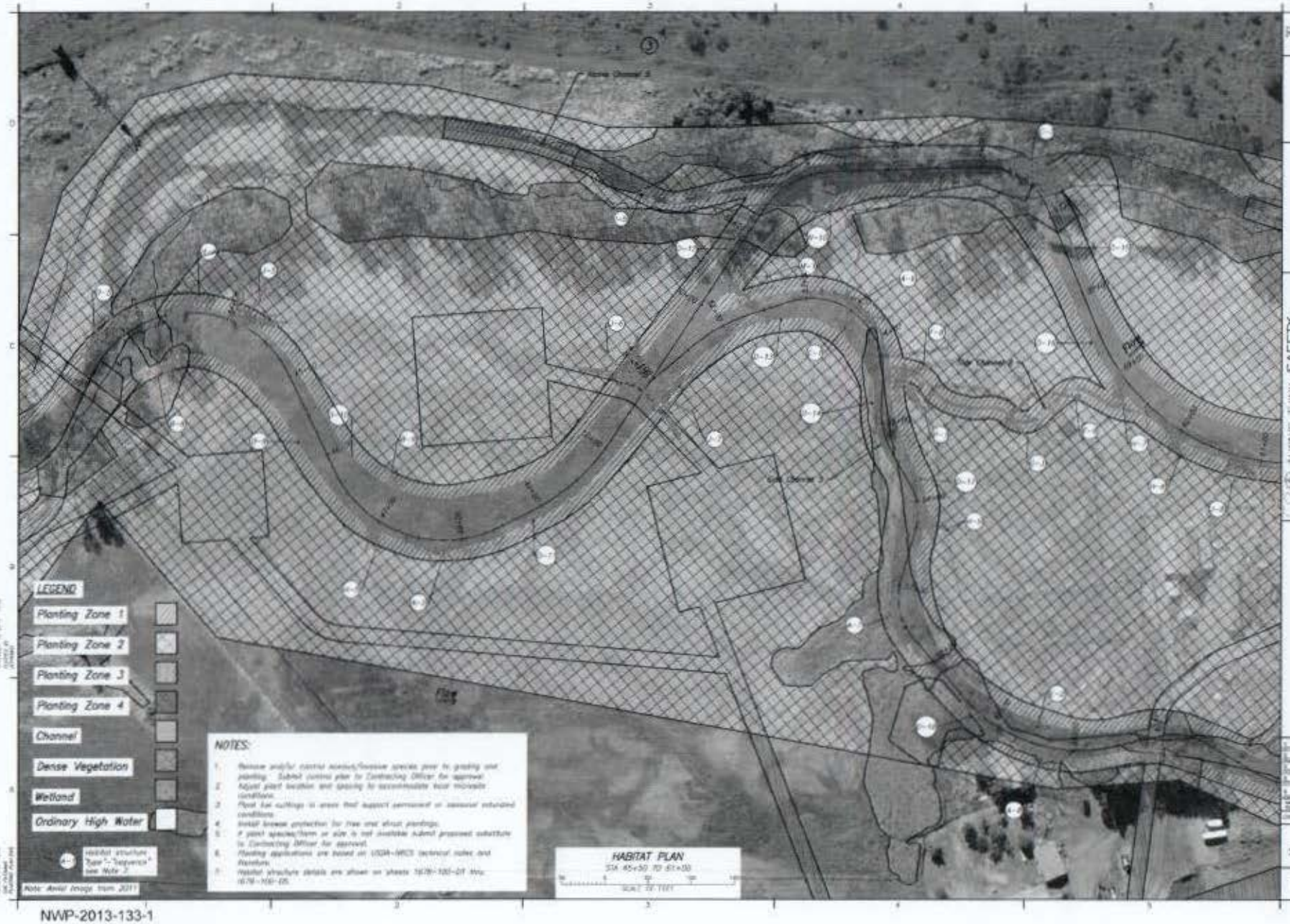
GRANDE RONDE SUBBASIN
Cycle 44 Phase III IV HABITAT ENHANCEMENT
LOWER REACH - HABITAT PLAN

HABITAT PLAN
STA 61+00 TO 74+00

1678-100-HP6

NWP-2013-133-1



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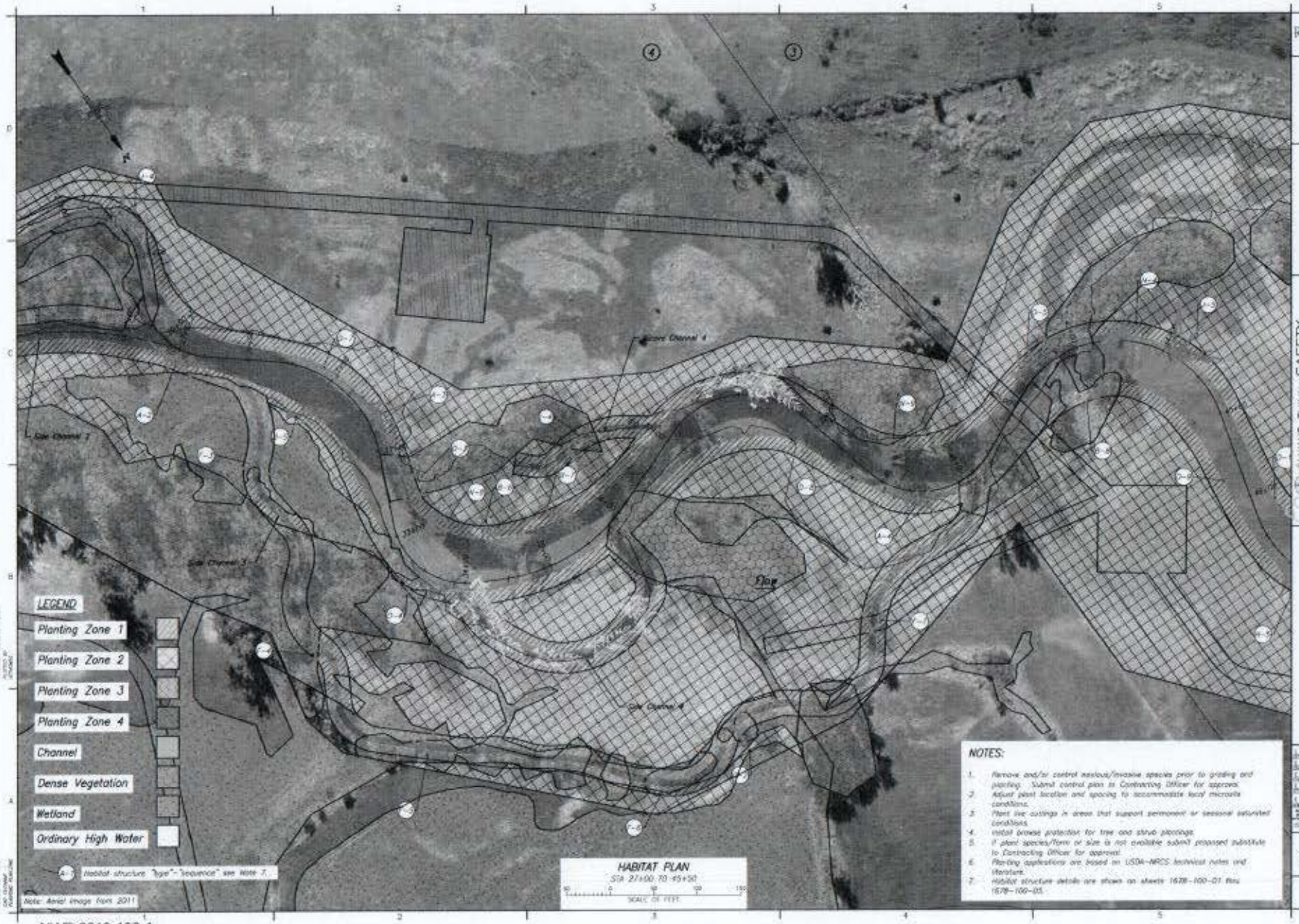

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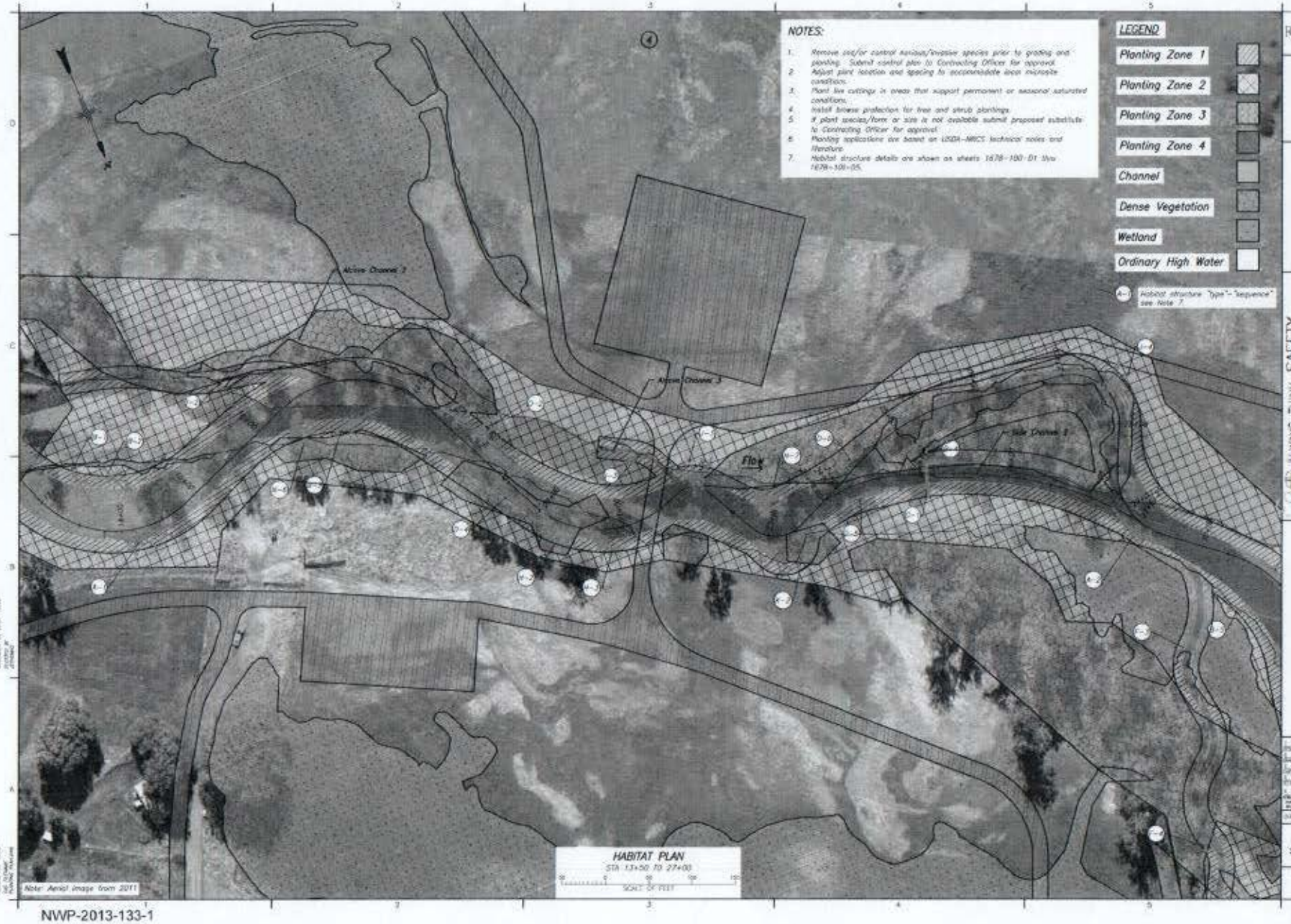

NWP-2013-133-1

NOTES:

1. Remove and/or control invasive/nuisance species prior to grading and planting. Submit control plan to Contracting Officer for approval.
2. Adjust plant location and spacing to accommodate local microsite conditions.
3. Plant live cuttings in areas that support permanent or seasonal saturated conditions.
4. Install browse protection for tree and shrub plantings.
5. If plant species/form or size is not available submit proposed substitute to Contracting Officer for approval.
6. Planting specifications are based on USDA-NRCS technical notes and literature.
7. Habitat structure details are shown on sheets 1678-100-D1 thru 1678-100-D5.

RECLAMATION

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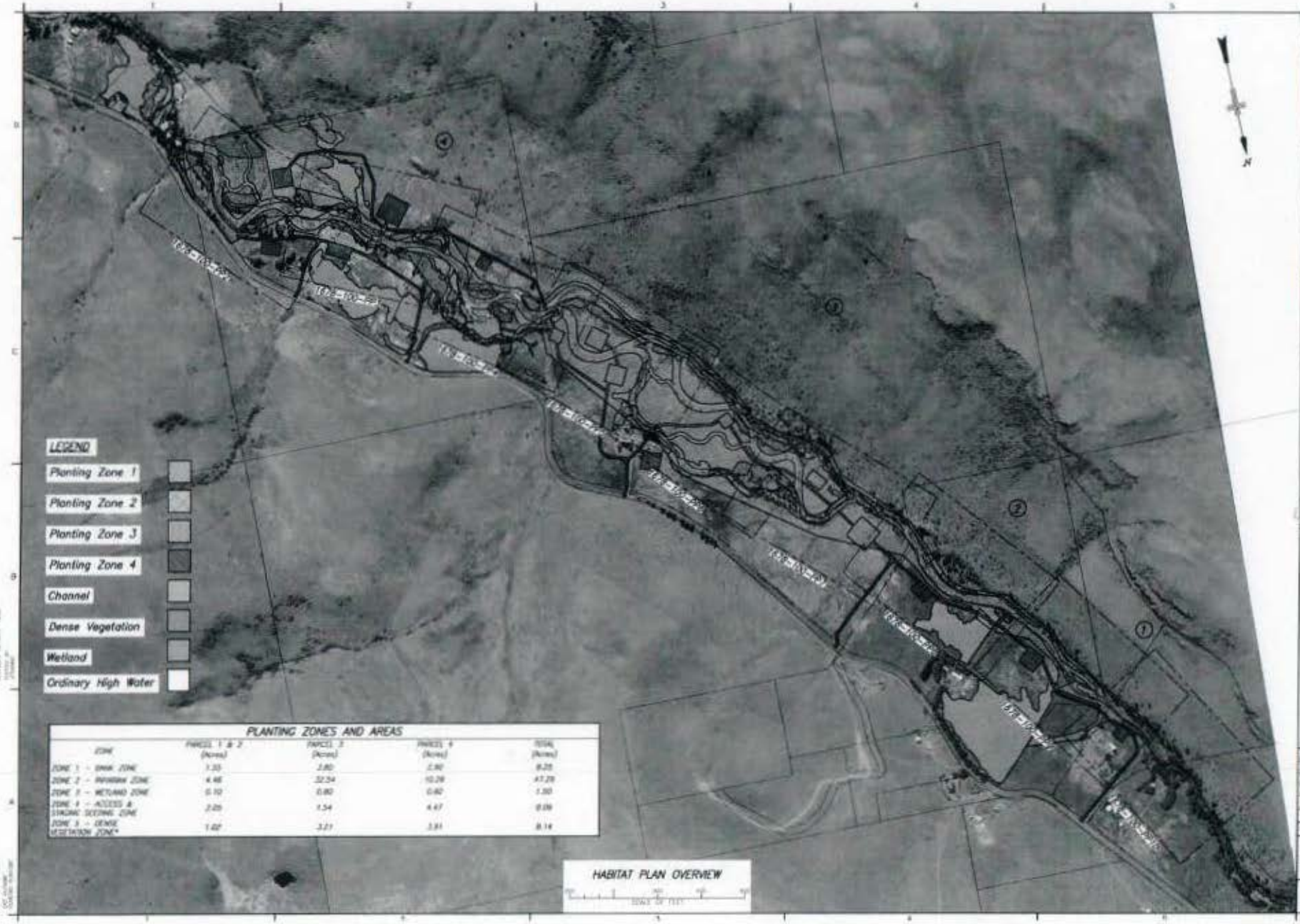
GRANDE RONDE SUBBASIN
GR-44 PHASE III & IV HABITAT ENHANCEMENT
LOWER BEACH HABITAT PLAN

HABITAT PLAN
STA 0+00 TO 13+50

1678-100-HP2

NWP-2013-133-1



PLANTING ZONES AND AREAS

ZONE	PARCEL 1 & 2 (Acres)	PARCEL 3 (Acres)	PARCEL 4 (Acres)	TOTAL (Acres)
ZONE 1 - DIVIA ZONE	1.33	2.80	2.90	9.23
ZONE 2 - RIPARIAN ZONE	4.46	32.54	10.28	47.28
ZONE 3 - WETLAND ZONE	0.10	0.80	0.60	1.50
ZONE 4 - ACCESS & STAGING SEEDING ZONE	2.05	1.54	4.47	8.06
ZONE 5 - DENSE VEGETATION ZONE*	1.62	3.21	3.31	8.14

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GRANDE RONDE SUBBASIN
DE-44 PHASE III & IV HABITAT ENHANCEMENT
LOWER REACH - HABITAT PLAN OVERVIEW

HABITAT PLAN OVERVIEW

1678-100-HP1