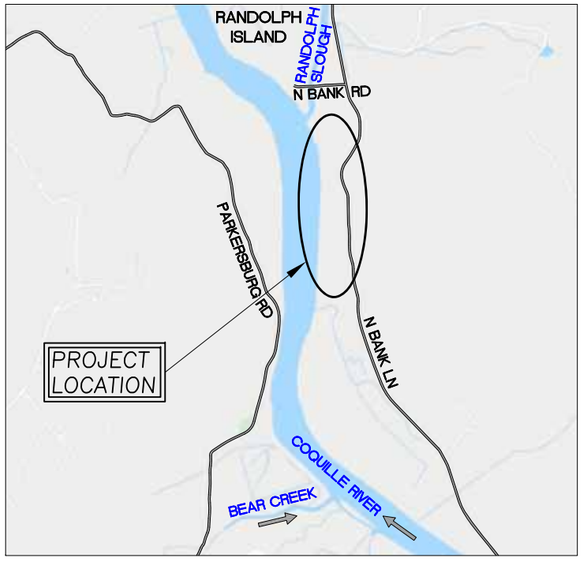
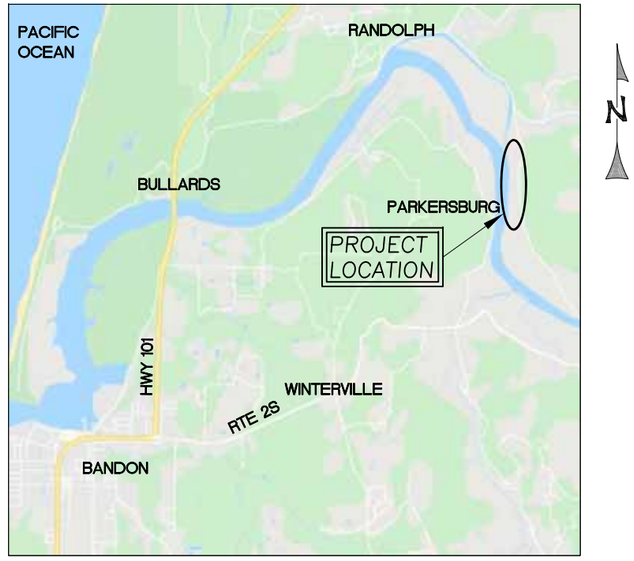
NORTH BANK LANE
TIDAL FLOODPLAIN RESTORATION PROJECT
PHASE 2
100% DESIGN SUBMITTAL



VICINITY MAP
N.T.S. (GOOGLE)



REGIONAL MAP
N.T.S. (GOOGLE)

GENERAL NOTES

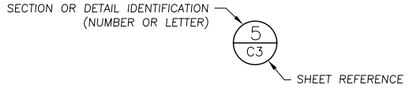
1. TOPOGRAPHIC MAPPING WAS PERFORMED BY:
   WATERWAYS CONSULTING, INC.
   1020 SW TAYLOR STREET, SUITE 380
   PORTLAND, OR 97205
   INITIAL SURVEY DATE: NOVEMBER 14–15, 2018.
   PHASE 1 RECORD SURVEY DATE: OCTOBER 22, 2022.
2. LIDAR PROVIDED BY DOGAMI (COLLECTED BY DOGAMI FROM MAY 3, 2008 THROUGH APRIL 5, 2009.
3. ELEVATION DATUM: GPS TIES TO NAVD88 USING THE LEICA GEOSYSTEMS SMARTNET GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) NETWORK.
4. BASIS OF BEARINGS: GPS TIES TO NAD83 OREGON STATE PLANE SOUTH USING THE LEICA GEOSYSTEMS SMARTNET GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) NETWORK.
5. AERIAL PHOTO SOURCE: AUTODESK CIVIL 3D 2019.
6. CONTOUR INTERVAL IS ONE FOOT. ELEVATIONS AND DISTANCES SHOWN ARE IN DECIMAL FEET.
7. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE NOT SHOWN HEREON.
8. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE 2018 EDITION OF THE STATE OF OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, ISSUED BY THE DEPARTMENT OF TRANSPORTATION (HEREAFTER REFERRED TO AS "STANDARD SPECIFICATIONS").
9. THESE DESIGNS ARE INCOMPLETE WITHOUT THE FINAL STAMPED TECHNICAL SPECIFICATIONS PREPARED BY WATERWAYS CONSULTING, INC. REFER TO TECHNICAL SPECIFICATIONS FOR DETAILS NOT SHOWN HEREON.

*** CALL BEFORE YOU DIG ***
CONTACT UNDERGROUND SERVICE ALERT (USA)
PRIOR TO ANY CONSTRUCTION WORK 1-800-332-2344

ABBREVIATIONS

AVG.	AVERAGE	N	NEW
CC	CONCRETE	NIC	NOT IN CONTRACT
CY	CUBIC YARDS	N.T.S.	NOT TO SCALE
DIA.	DIAMETER	O.C.	ON CENTER
E	EXISTING	RC	RELATIVE COMPACTION
EG	EXISTING GROUND	RSP	ROCK SLOPE PROTECTION
ELEV.	ELEVATION	SPK	SPIKE
DI	DRAINAGE INLET	SQ.FT.	SQUARE FOOT
FG	FINISHED GRADE	T	TREE
FT	FEET	T.B.D.	TO BE DETERMINED
INV	INVERT	TYP	TYPICAL
LEEA	LOW–ELEVATION ENHANCEMENT AREA	UNK	UNKNOWN
		WSE	WATER SURFACE ELEVATION
MIN	MINIMUM	YR	YEAR
MTR	MUTED TIDAL REGULATOR		

SECTION AND DETAIL CONVENTION



PROJECT DESCRIPTION

THESE DRAWINGS PROVIDE 100% DESIGN LEVEL DETAILS FOR INFRASTRUCTURE REPLACEMENT AND HABITAT ENHANCEMENT OF THE NORTH BANK LANE TIDAL FLOODPLAIN ON THE COQUILLE RIVER IN COOS COUNTY, OREGON.

WORK SHALL CONSIST OF REPLACING EXISTING TIDE GATED CULVERT WITH LARGER HDPE CULVERT WITH A SIDE MOUNTED TIDE GATE AND MUTED TIDAL REGULATOR, EXCAVATION OF TIDAL CHANNELS, STABILIZATION AND REINFORCEMENT OF BERMS, INSTALLATION OF HABITAT LOGS STRUCTURES, LIVESTOCK EXCLUSION FENCING, CULVERT CROSSINGS OVER THE NEW TIDAL CHANNELS, AND A LOW–ELEVATION ENHANCEMENT AREA.

SHEET INDEX

WATERWAYS CONSULTING INC.
509A SWIFT ST.
SANTA CRUZ, CA 95060
PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

2022.11.18 10:08:02 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JULY 12, 2005 JANE M. HAY

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

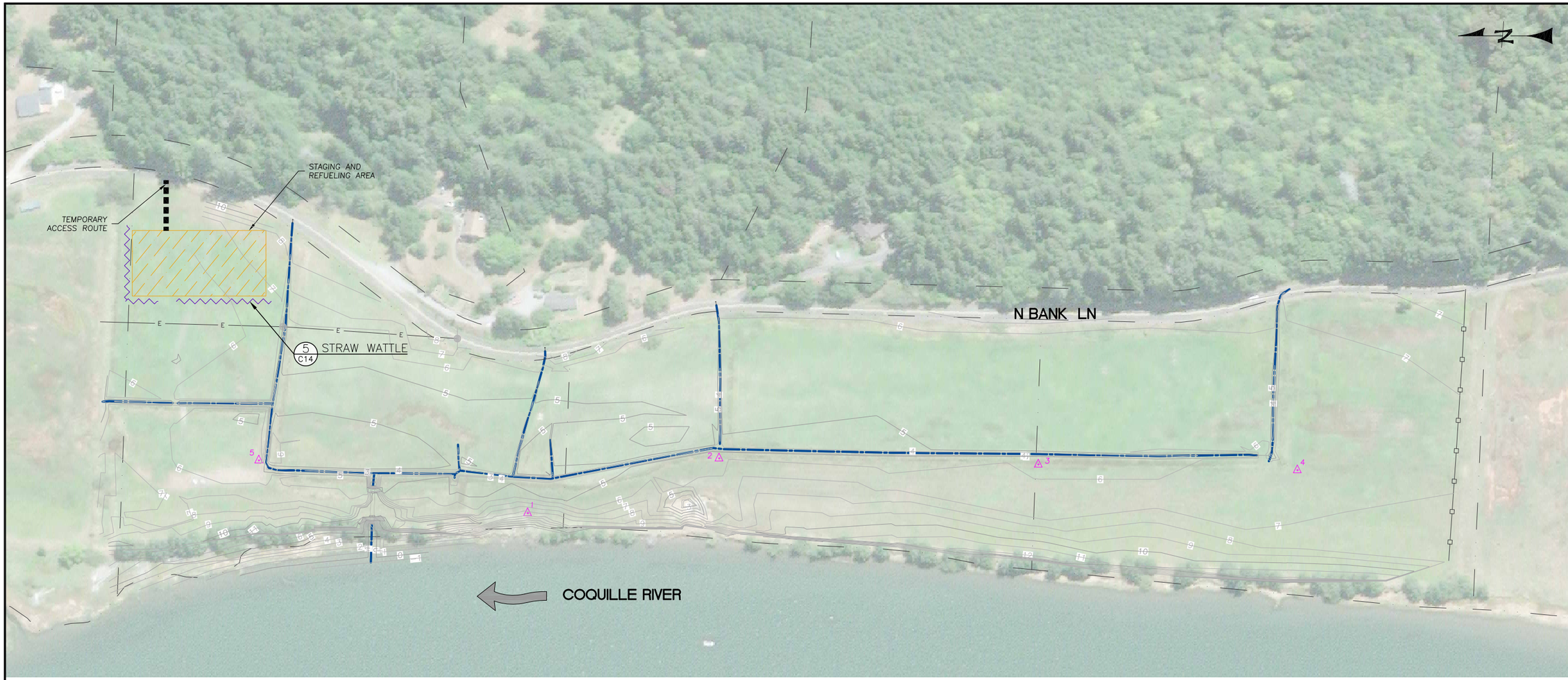
COVER

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION – PHASE 2 100% DESIGN

DESIGNED BY: J.H.
DRAWN BY: D.H.
CHECKED BY: J.H.
DATE: 11/17/2022
JOB NO.: 18–055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C1



EXISTING CONDITIONS, ACCESS, AND STAGING PLAN
SCALE: 1" = 100'

LEGEND

- EXISTING CONTOURS
- EXISTING FLOW LINE
- EXISTING POWER LINE
- EXISTING PIPE
- EXISTING PHASE 1 CULVERT WITH MTR AND TIDE GATE
- PARCEL LINE (APPROXIMATE)
- EXISTING FENCE
- TEMPORARY CONSTRUCTION ACCESS ROUTE
- TEMPORARY STRAW WATTLE
- TEMPORARY CONSTRUCTION STAGING AND STOCKPILING AREA
- EXISTING POWER POLE
- CONTROL POINT

ACCESS AND STAGING AREA NOTES

1. USE ONLY THE APPROVED ACCESS POINTS, AS SHOWN ON THE DRAWINGS. STOCKPILE MATERIALS WITHIN AN EXISTING FLAT AND PREVIOUSLY DISTURBED AREA.
2. THE ACCESS PLAN SHOWN ON THE DRAWINGS IS SCHEMATIC. SUBMIT A SITE ACCESS PLAN FOR APPROVAL BY THE ENGINEER, PRIOR TO MOBILIZATION.
3. MAINTAIN A MINIMUM OF 20 FT UNDISTURBED VEGETATED BUFFER AROUND DOWNSLOPE PERIMETER OF STAGING/STOCKPILING AREAS.
4. CONTAIN THE DOWNSLOPE PERIMETER OF STAGING OR STOCKPILE AREAS WITH STRAW WATTLES.
5. STORE, MAINTAIN AND REFUEL ALL EQUIPMENT AND MATERIALS IN A DESIGNATED PORTION OF THE STAGING AREA.

CONTROL POINTS

POINT	NORTHING	EASTING	ELEV.	DESC.
1	564669.36'	3897119.74'	9.67'	REBAR
2	564305.48'	3897223.82'	5.86'	REBAR
3	563698.45'	3897212.22'	5.87'	REBAR
4	563205.88'	3897201.30'	6.42'	REBAR
5	565180.63'	3897219.92'	6.56'	REBAR

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PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

2022.11.18 10:08:32 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JULY 31, 2015 JANE DYLAN WATSON

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER
CONSERVATION DISTRICT

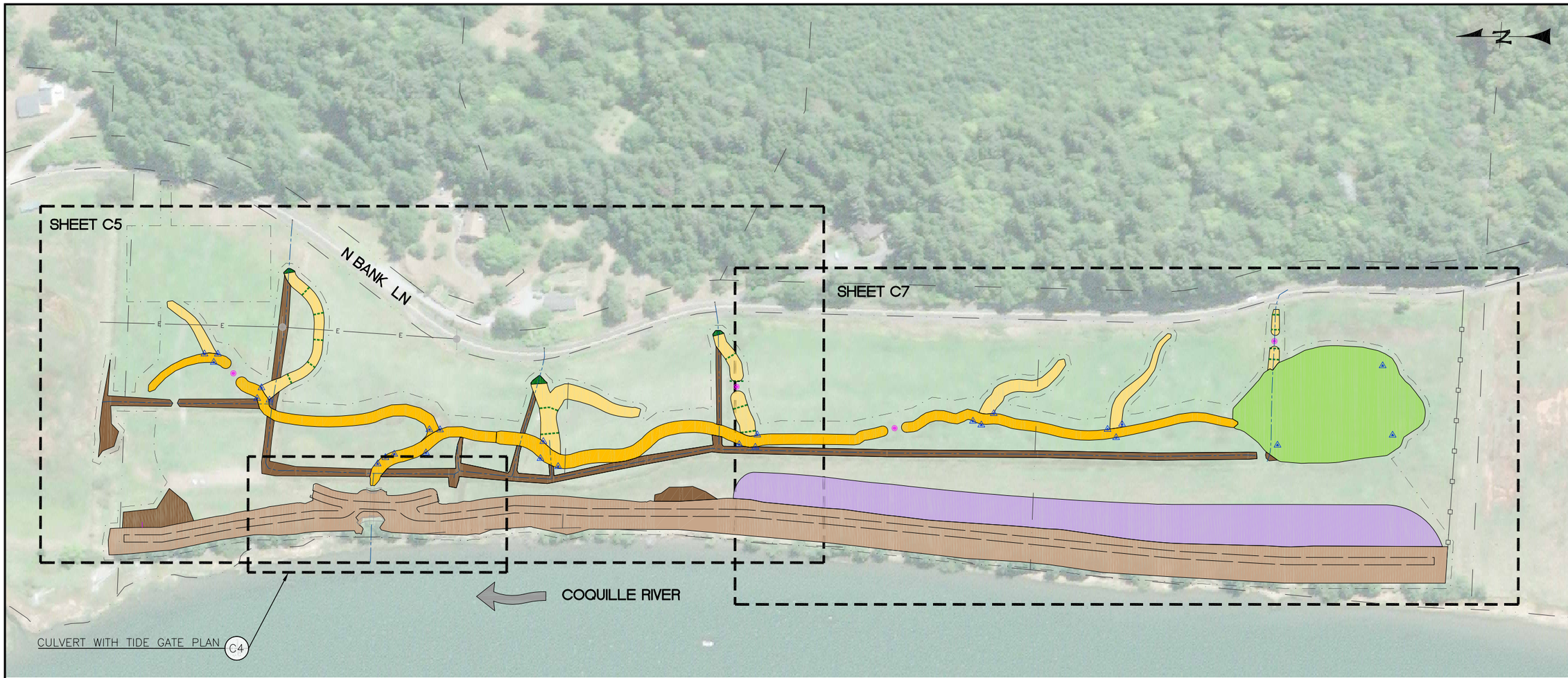
EXISTING CONDITIONS, ACCESS, AND STAGING PLAN

NORTH BANK LANE
TIDAL FLOODPLAIN
RESTORATION -
PHASE 2
100% DESIGN

DESIGNED BY: J.H.
DRAWN BY: D.H.
CHECKED BY: J.H.
DATE: 11/17/2022
JOB NO.: 18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C2



LEGEND

- EXISTING FLOW LINE
- E — EXISTING POWER LINE
- EXISTING PIPE TO REMAIN
- EXISTING PHASE 1 CULVERT WITH MTR AND TIDE GATE TO REMAIN
- PARCEL LINE (APPROXIMATE)
- EXISTING FENCE
- LIMITS OF DISTURBANCE
- NEW EDGE OF GRAVEL ROAD
- FILL EXISTING DITCH/DEPRESSION
- NEW BERM STABILIZATION AREA
- NEW BERM REINFORCEMENT AREA
- NEW ESM
- NEW PRIMARY CHANNEL EXCAVATION
- NEW SECONDARY CHANNEL EXCAVATION
- NEW LOW ELEVATION ENHANCEMENT AREA
- EXISTING POWER POLE
- NEW CULVERT AND LIVESTOCK CROSSING
- NEW LOG STRUCTURE
- NEW ESM SILL

OVERVIEW PLAN
SCALE: 1" = 100'

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PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

2022.11.1 8 10:09:02 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JAMES W. HALL

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

OVERVIEW PLAN

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

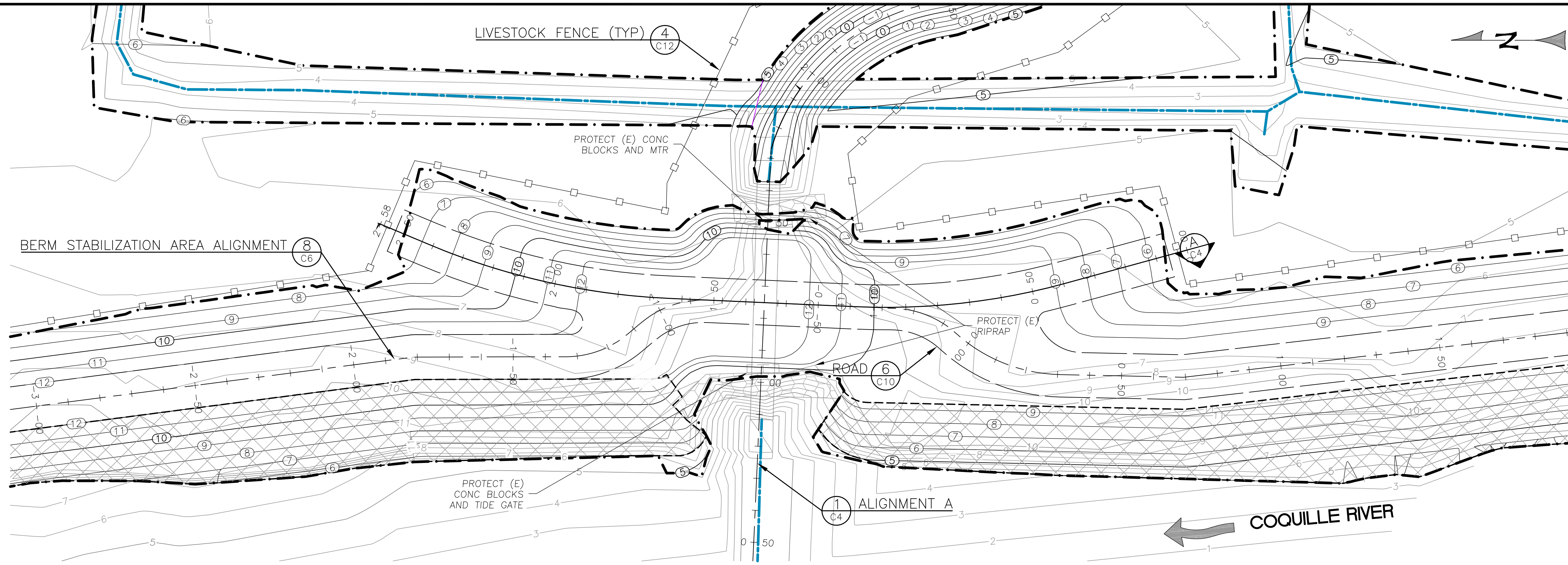
DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C3

LEGEND

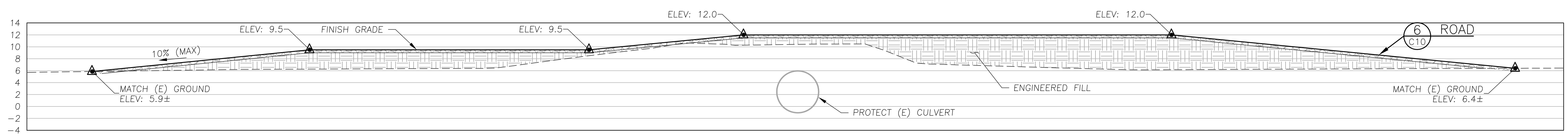
10 / 11	EXISTING CONTOURS
100 / 101	PROPOSED CONTOURS
	EXISTING FLOW LINE
	EXISTING PHASE 1 CULVERT WITH MTR AND TIDE GATE TO REMAIN
0+00 / 0+16	NEW ALIGNMENT
	NEW LIVESTOCK FENCE
	NEW CULVERT
	NEW BURIED RIPRAP BALLAST
	NEW EDGE OF GRAVEL ROAD
	LIMITS OF GRADING
	EXISTING RIPRAP BALLAST
	NEW SLOPE PROTECTION FABRIC



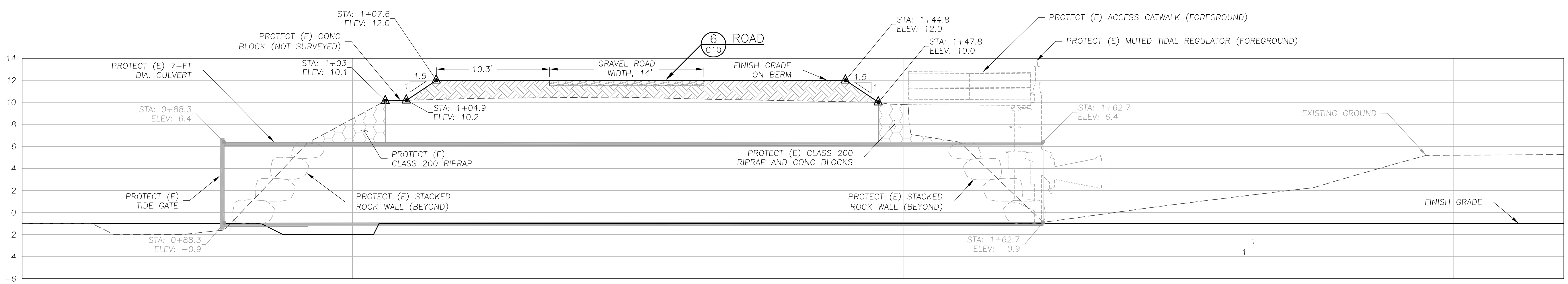
NOTES:

1. SALVAGE TREES WITHIN LIMITS OF CULVERT AND BERM STABILIZATION GRADING AREAS FOR USE AS LOG STRUCTURES.

CULVERT AND TIDE GATE PLAN
SCALE: 1" = 20'



ROAD RAMP SECTION A C4
SCALE: 1" = 10'



ALIGNMENT A PROFILE 1 C4
SCALE: 1" = 5'

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2022.11.18 10:09:35 -08'00'

REGISTERED PROFESSIONAL ENGINEER, OREGON, JAKE DYLAN HILL, EXPIRES: 6/30/2023

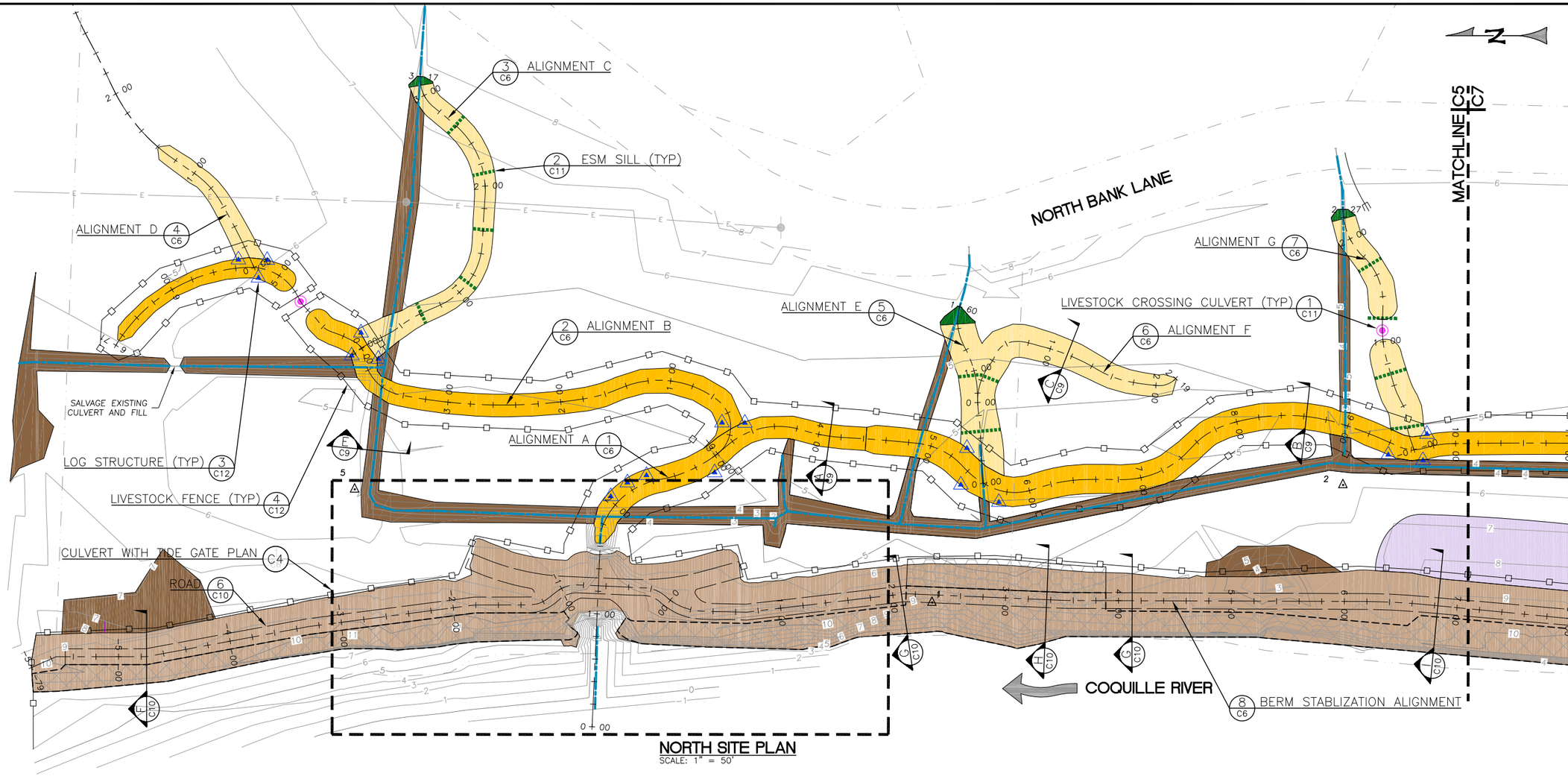
PREPARED AT THE REQUEST OF: COOS SOIL AND WATER CONSERVATION DISTRICT

CULVERT WITH TIDE GATE PLAN AND PROFILE

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

DESIGNED BY: J.H.
DRAWN BY: D.H.
CHECKED BY: J.H.
DATE: 11/17/2022
JOB NO.: 18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS



NORTH SITE PLAN
SCALE: 1" = 50'

LEGEND

- EXISTING CONTOURS
- EXISTING FLOW LINE
- PARCEL LINE (APPROX.)
- NEW CHANNEL ALIGNMENT
- EXISTING PIPE TO REMAIN
- EXISTING PHASE 1 CULVERT WITH MTR AND TIDE GATE TO REMAIN
- NEW LIVESTOCK FENCE, SEE DETAIL 4/C12
- NEW EDGE OF ROAD
- FILL EXISTING DITCH/DEPRESSION
- NEW BERM STABILIZATION AREA
- NEW BERM REINFORCEMENT AREA
- NEW ESM
- NEW PRIMARY CHANNEL EXCAVATION
- NEW SECONDARY CHANNEL EXCAVATION
- NEW CLASS 200 RIPRAP
- NEW SLOPE PROTECTION FABRIC
- NEW CULVERT AND LIVESTOCK CROSSING, SEE DETAIL 1/C11
- NEW LOG STRUCTURE, SEE DETAIL 3/C12
- NEW ESM SILL, SEE DETAIL 2/C11
- NEW CULVERT AND TIDE GATE

TABLE 1: NORTH FLOODPLAIN CHANNEL EXCAVATION SUMMARY

ALIGNMENT	CUT (CY)
ALIGNMENT A	720.1
ALIGNMENT B	1163.3
ALIGNMENT C	392.2
ALIGNMENT D	131.5
ALIGNMENT E	431.1
ALIGNMENT F	350.0
ALIGNMENT G	438.9

NOTES:

1. LOG STRUCTURE LOCATION SHOWN AS SYMBOLS FOR GRAPHICAL CLARITY. EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. QUANTITIES SHOWN ARE APPROXIMATE IN-PLACE VOLUMES CALCULATED AS THE DIFFERENCE BETWEEN EXISTING GROUND AND THE PROPOSED FINISH GRADE, PREPARED FOR PERMITTING PURPOSES ONLY. EXISTING GROUND IS DEFINED BY THE LIDAR DATA AND/OR SPOT ELEVATIONS ON THE PLAN AND HAVE NOT BEEN FIELD VERIFIED. PROPOSED FINISH GRADE IS DEFINED AS THE DESIGN SURFACE ELEVATION OF WORK TO BE CONSTRUCTED. THE QUANTITIES HAVE NOT BEEN FACTORED TO INCLUDE ALLOWANCES FOR BULKING, CLEARING AND GRUBBING, SUBSIDENCE, SHRINKAGE, OVER EXCAVATION, AND RECOMPACTION, UNDERGROUND UTILITY AND SUBSTRUCTURE SPOILS AND CONSTRUCTION METHODS.
3. SALVAGE TREES WITHIN LIMITS OF CULVERT AND BERM STABILIZATION GRADING AREAS FOR USE AS LOG STRUCTURES.

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WWW.WATWAYS.COM

2022.11.1 8 10:10:00 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JAMIE HALL PLAN

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

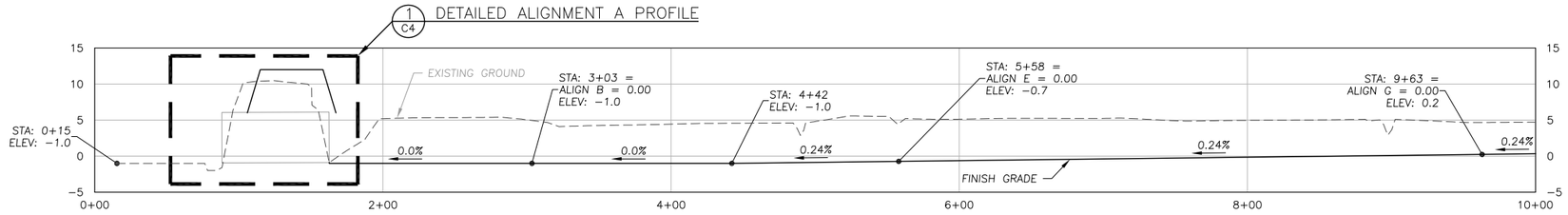
NORTH SITE PLAN

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

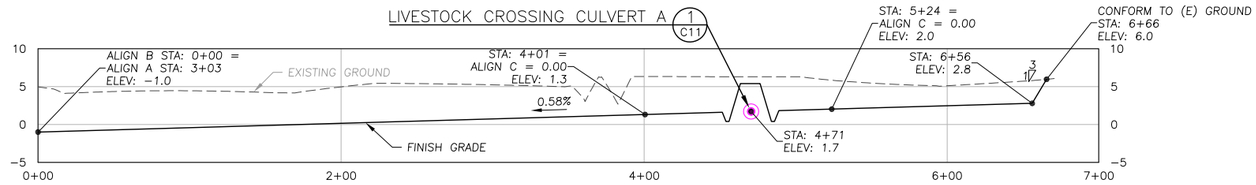
DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

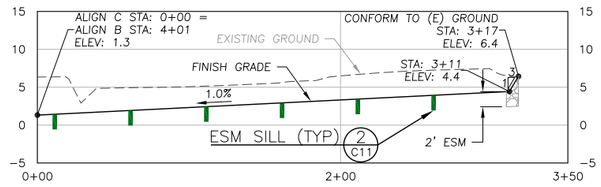
C5 | 5 OF 15



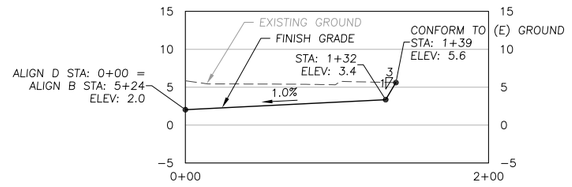
PRIMARY CHANNEL A PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (1 C5)



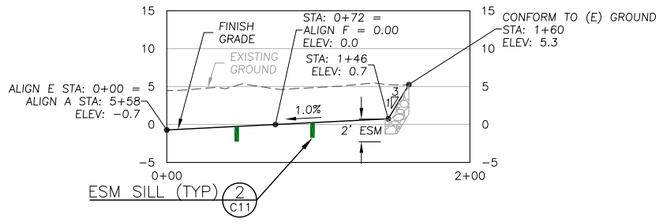
PRIMARY CHANNEL B PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (2 C5)



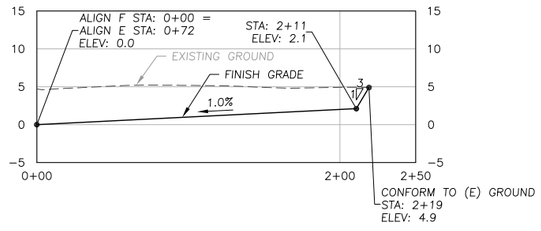
SECONDARY CHANNEL C PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (3 C5)



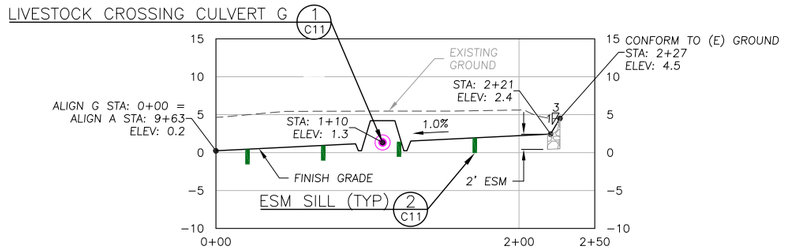
SECONDARY CHANNEL D PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (4 C5)



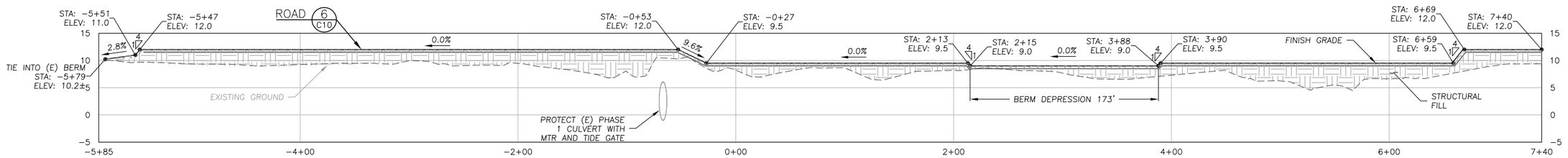
SECONDARY CHANNEL E PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (5 C5)



SECONDARY CHANNEL F PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (6 C5)



SECONDARY CHANNEL G PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (7 C5)



BERM STABILIZATION AREA PROFILE
SCALE: HORIZ: 1" = 50', VERT: 1" = 10' (8 C5)

WATERWAYS CONSULTING INC.
509A SWIFT ST.
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PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

2022.11.1
8 10:10:27
-08'00'

REGISTERED PROFESSIONAL ENGINEER
77870PE
OREGON
JAMES M. HUNT
EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER
CONSERVATION DISTRICT

NORTH
PROFILES

NORTH BANK LANE
TIDAL FLOODPLAIN
RESTORATION -
PHASE 2
100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
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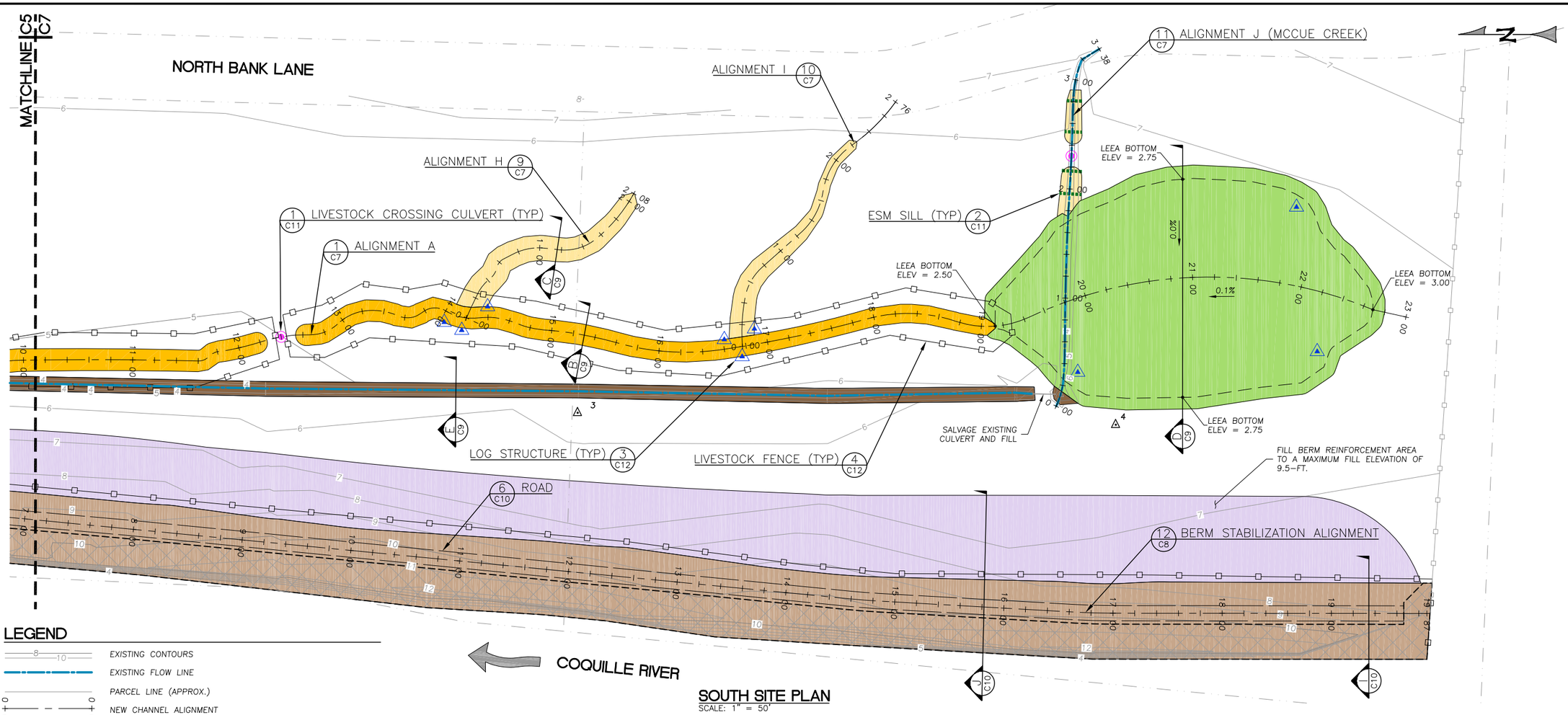
0 1"

C6

6 OF 15



SOUTH SITE PLAN
SCALE: 1" = 50'

LEGEND

- EXISTING CONTOURS
- EXISTING FLOW LINE
- PARCEL LINE (APPROX.)
- NEW CHANNEL ALIGNMENT
- NEW LIVESTOCK FENCE, SEE DETAIL 4/C12
- NEW EDGE OF ROAD
- NEW LEEA BOTTOM
- FILL EXISTING DITCH
- NEW BERM STABILIZATION AREA
- NEW BERM REINFORCEMENT AREA
- NEW ESM
- NEW PRIMARY CHANNEL EXCAVATION
- NEW SECONDARY CHANNEL EXCAVATION
- NEW LOW ELEVATION ENHANCEMENT AREA
- NEW SLOPE PROTECTION FABRIC
- NEW CULVERT AND LIVESTOCK CROSSING, SEE DETAIL 1/C11
- NEW LOG STRUCTURE, SEE DETAIL 3/C12
- NEW ESM SILL, SEE DETAIL 2/C11

TABLE 2: SOUTH FLOODPLAIN CHANNEL EXCAVATION SUMMARY

ALIGNMENT	CUT (CY)
ALIGNMENT A	8952.6
ALIGNMENT H	298.2
ALIGNMENT I	186.0
ALIGNMENT J	48.0

NOTES:

1. LOG STRUCTURE LOCATION SHOWN AS SYMBOLS FOR GRAPHICAL CLARITY. EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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3. SALVAGE TREES WITHIN LIMITS OF CULVERT AND BERM STABILIZATION GRADING AREAS FOR USE AS LOG STRUCTURES.

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SANTA CRUZ, CA 95060
PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

2022.11.1
8 10:10:50
-08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JAMES D. HUDDLESTON JAMES D. HUDDLESTON

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

SOUTH SITE PLAN

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

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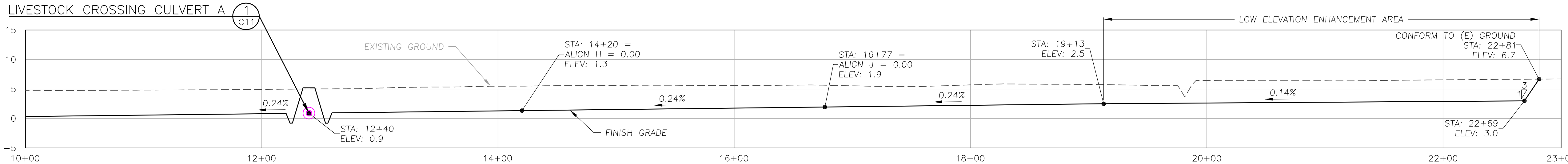
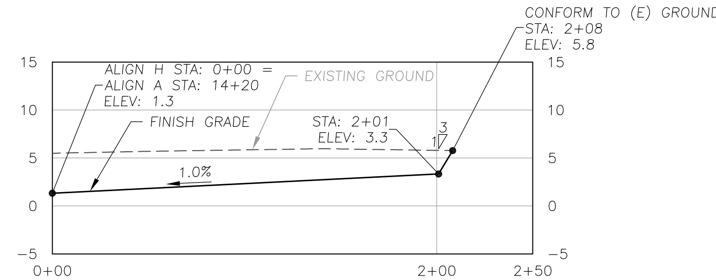
0 1"



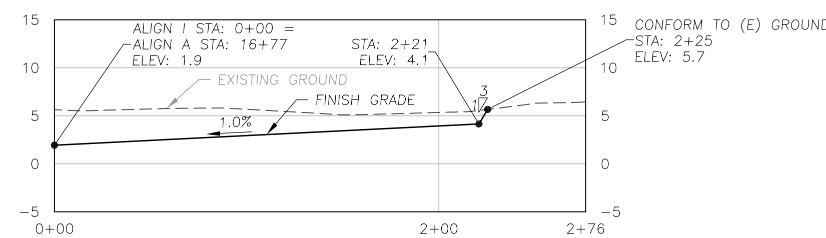
PRIMARY CHANNEL A PROFILE (1/C7)

SCALE: HORIZ: 1" = 50', VERT: 1" = 10'



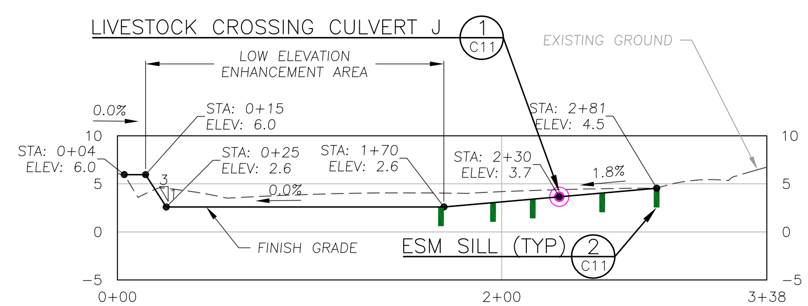
SECONDARY CHANNEL H PROFILE (9/C7)

SCALE: HORIZ: 1" = 50', VERT: 1" = 10'



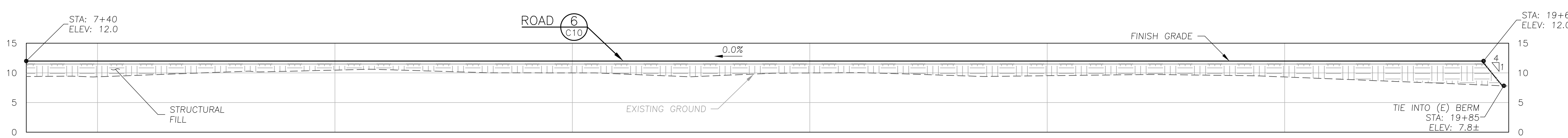
SECONDARY CHANNEL I PROFILE (10/C7)

SCALE: HORIZ: 1" = 50', VERT: 1" = 10'



SECONDARY CHANNEL J (MCCUE CREEK) PROFILE (11/C7)

SCALE: HORIZ: 1" = 50', VERT: 1" = 10'



BERM STABILIZATION AREA PROFILE (12/C7)

SCALE: HORIZ: 1" = 50', VERT: 1" = 10'

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2022.11.18 10:11:30 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870 OREGON — JAMES DYLAN HUDSON
EXPIRES: 6/30/2023

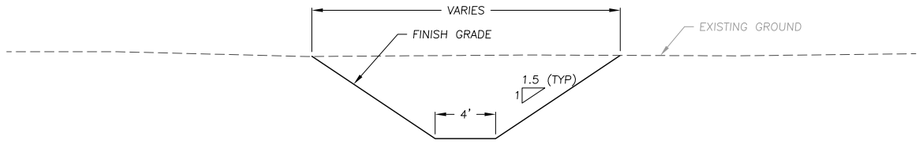
PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

SOUTH PROFILES

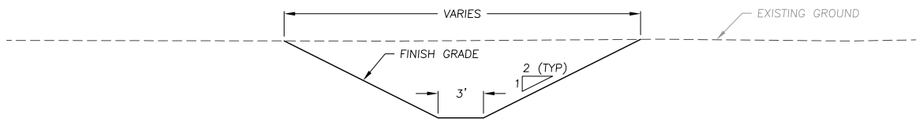
NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2
100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"



TYPICAL PRIMARY CHANNEL 4-FT BASE WIDTH SECTION (A, C5)
SCALE: 1" = 5'



TYPICAL PRIMARY CHANNEL 3-FT BASE WIDTH SECTION (B, C5,C7)
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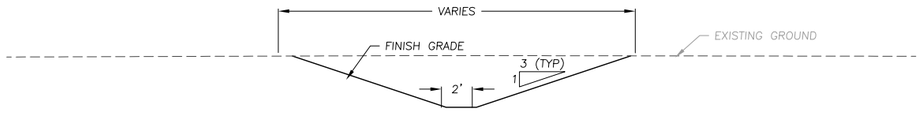

TYPICAL SECONDARY CHANNEL SECTION (C, C5,C7)
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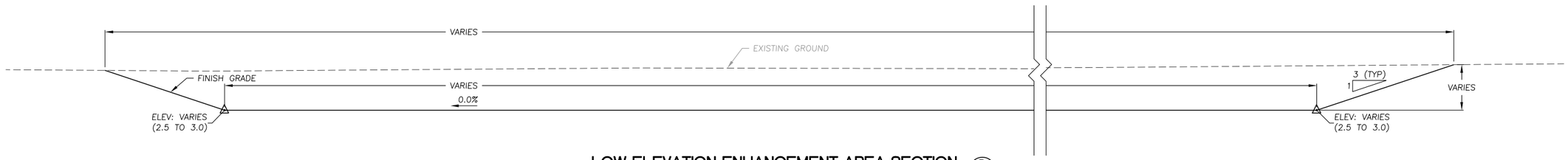

LOW ELEVATION ENHANCEMENT AREA SECTION (D, C7)
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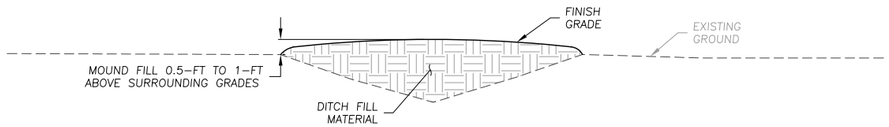

TYPICAL DITCH FILL SECTION (E, C5,C7)
SCALE: 1" = 5'

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2022.11.1 8 10:11:56 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JAMIE PYLAN HALL

EXPIRES: 6/30/2023

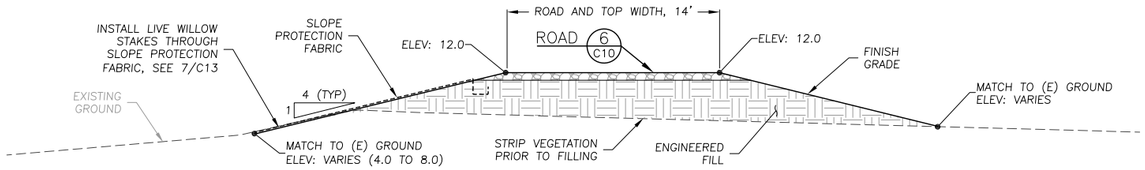
PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

CHANNEL SECTIONS

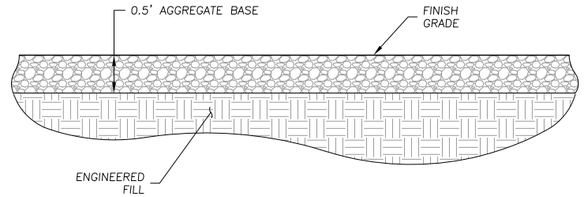
NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

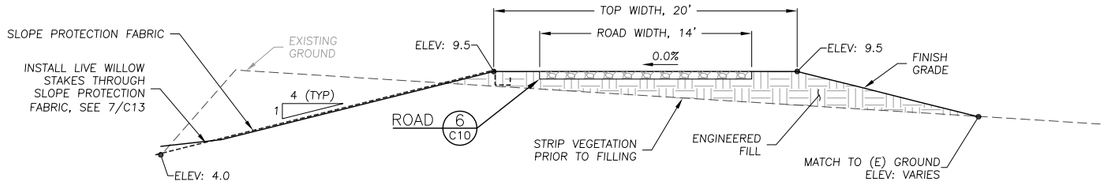
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"



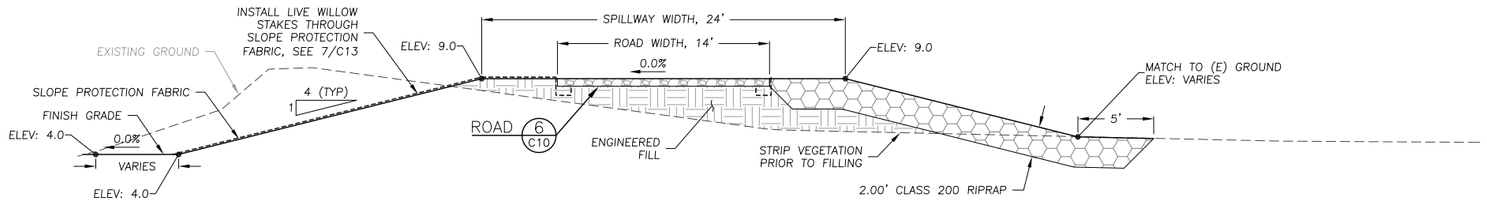
TYPICAL BERM STABILIZATION AREA SECTION NORTH OF CULVERT (F C5)
SCALE: 1" = 5'



ROAD DETAIL (6 C4–C8,C10–C11)
SCALE: 1" = 5"



TYPICAL BERM STABILIZATION AREA SECTION (G C5)
SCALE: 1" = 5'



TYPICAL SPILLWAY SECTION (H C5)
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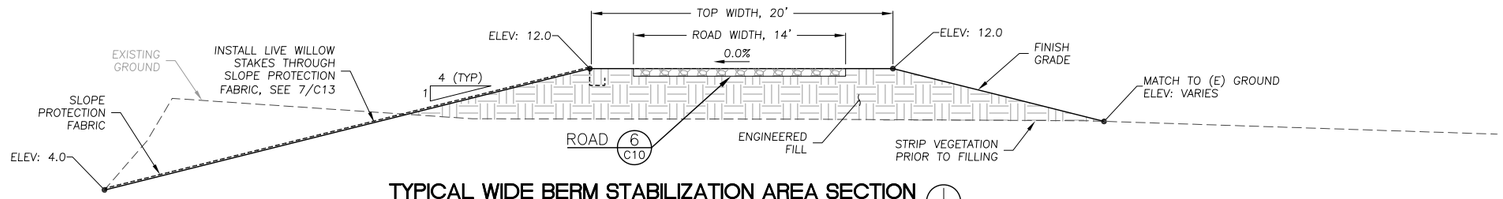
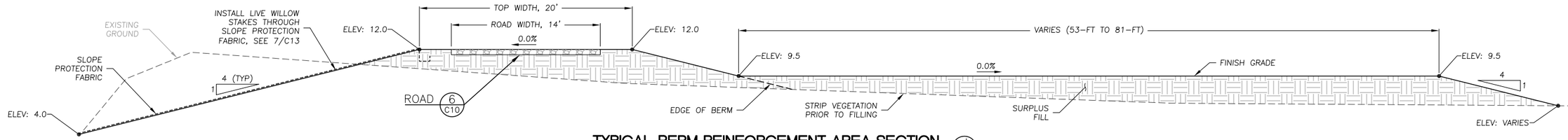


TYPICAL WIDE BERM STABILIZATION AREA SECTION (I C5,C7)
SCALE: 1" = 5'



TYPICAL BERM REINFORCEMENT AREA SECTION (J C7)
SCALE: 1" = 5'

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REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JAMES D. HUNT
EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

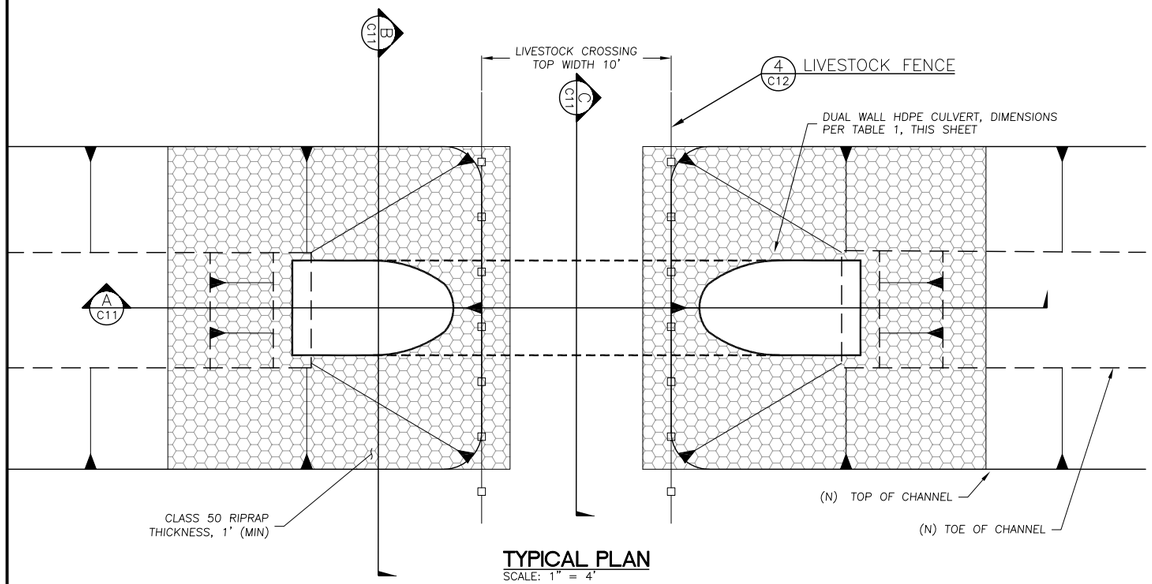
BERM SECTIONS AND DETAILS

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION – PHASE 2 100% DESIGN

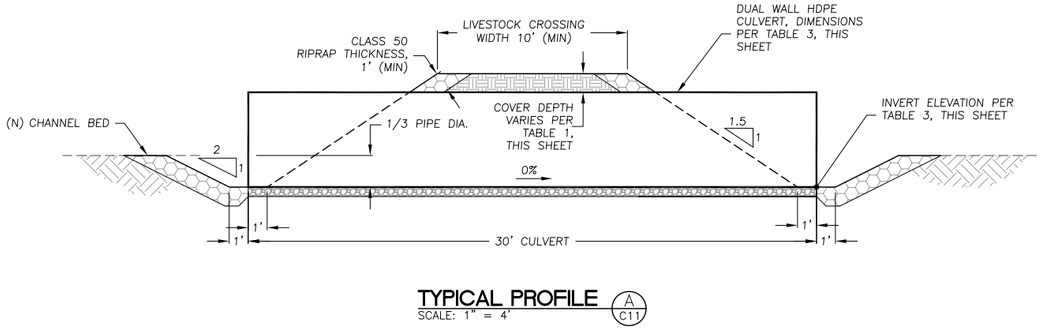
DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18–055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

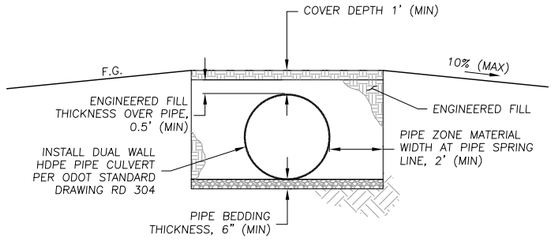
C10 | 10 OF 15



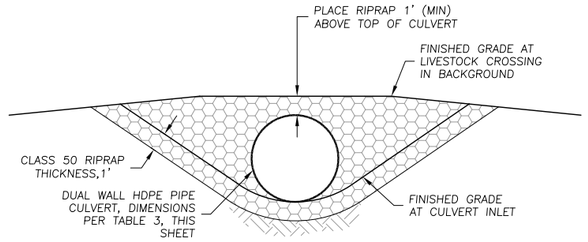
TYPICAL PLAN
SCALE: 1" = 4'



TYPICAL PROFILE
SCALE: 1" = 4'



TYPICAL SECTION
SCALE: 1" = 4'
C C11



TYPICAL OUTLET SECTION
SCALE: 1" = 4'
B C11

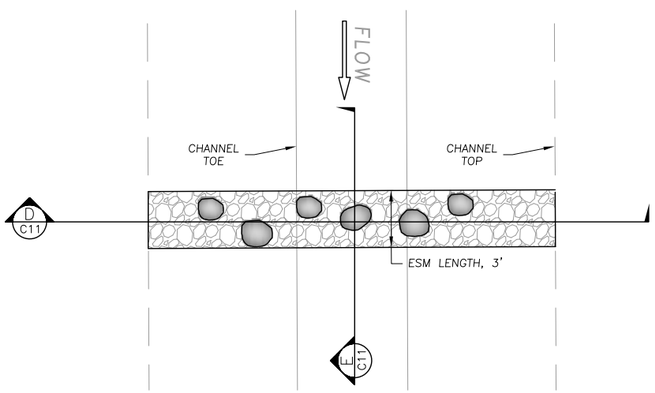
NOTE:

1. SEE GEOTECHNICAL REPORT BY PALI CONSULTING DATED JANUARY 28, 2019 FOR MATERIAL SPECIFICATIONS AND CULVERT CONSTRUCTION.

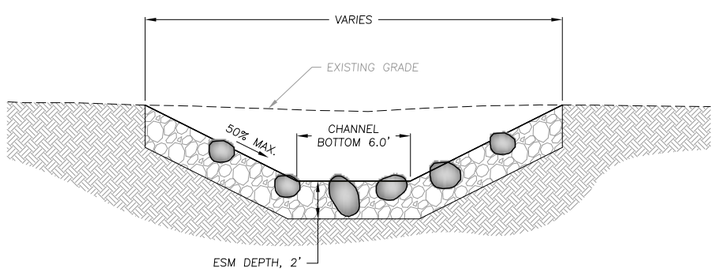
TABLE 3: CULVERT SIZE AND INVERT ELEVATIONS

CULVERT/ ALIGNMENT ID	ALIGNMENT STATION	DIAMETER (IN)	CULVERT LENGTH (FT)	INVERT ELEV (FT)
A	12+40	60	30	−0.8
B	4+70	48	30	0.4
G	1+10	36	30	0.2
J	2+30	36	30	2.5

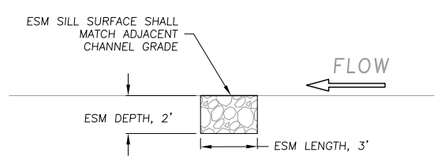
LIVESTOCK CROSSING CULVERT DETAIL
SCALE: 1" = 4'
1 C5–C8



TYPICAL ESM SILL PLAN VIEW
SCALE: 1" = 4'



TYPICAL ESM SILL SECTION
SCALE: 1" = 4'
D C11



TYPICAL ESM PROFILE
SCALE: 1" = 4'
E C11

ESM SILL DETAIL
SCALE: 1" = 4'
2 C5–C8

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REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JAMES M. HUNT RENEWAL: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

LIVESTOCK CROSSING CULVERT AND ESM SILL DETAILS

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

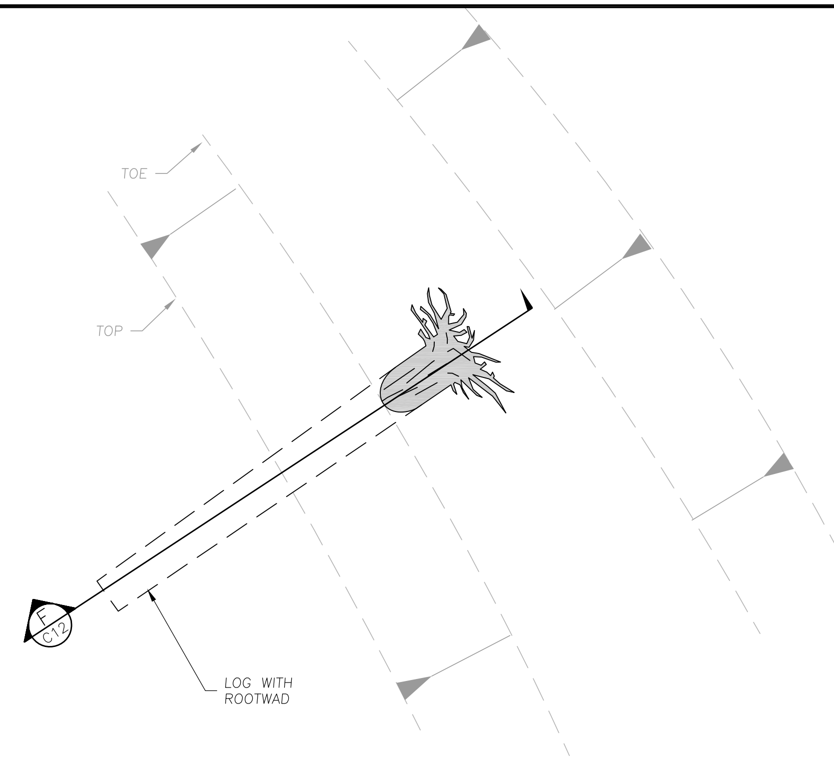
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

LOG STRUCTURE NOTES

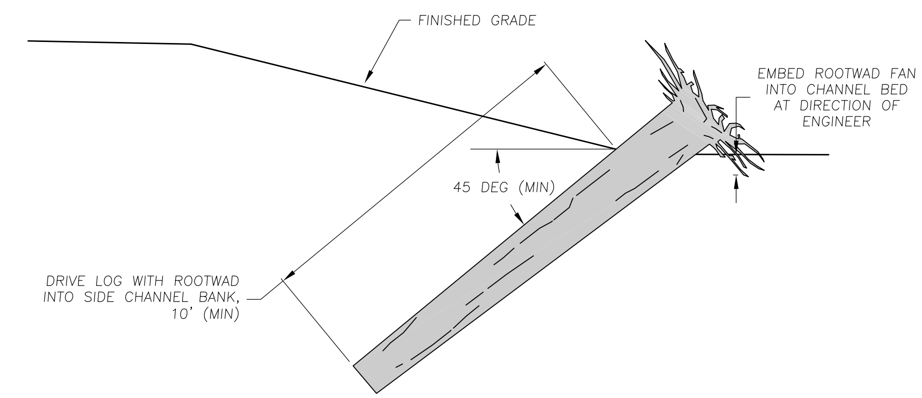
1. PLACEMENT LOCATIONS: LOG STRUCTURE LOCATIONS AND DESIGNS ARE SHOWN CONCEPTUALLY DUE TO THE INHERENT VARIABILITY OF THE MATERIAL PROPERTIES. THE DESIGN REQUIRES THAT THE ENGINEER WILL OBSERVE CONSTRUCTION OF THE LOG STRUCTURES TO ENSURE THE INTENT OF THE DESIGN IS MET. OBSERVATIONS MUST INCLUDE LOG SELECTION, PLACEMENT, AND BACKFILLING. ANY LOG STRUCTURES CONSTRUCTED WITHOUT THE ENGINEER PRESENT ON-SITE MAY RESULT IN REJECTION OF THE WORK BY THE ENGINEER.

2. LOGS: ALL LOGS SHALL BE SALVAGED ON SITE. MATERIALS FOR USE IN THE STRUCTURES SHALL MEET THE FOLLOWING SIZE CRITERIA:

ITEM	DIAMETER	LENGTH	TOTAL COUNT
LOG WITH ROOTWAD	12"-24" (MIN. 12" AT ANY POINT)	12'-15'	27

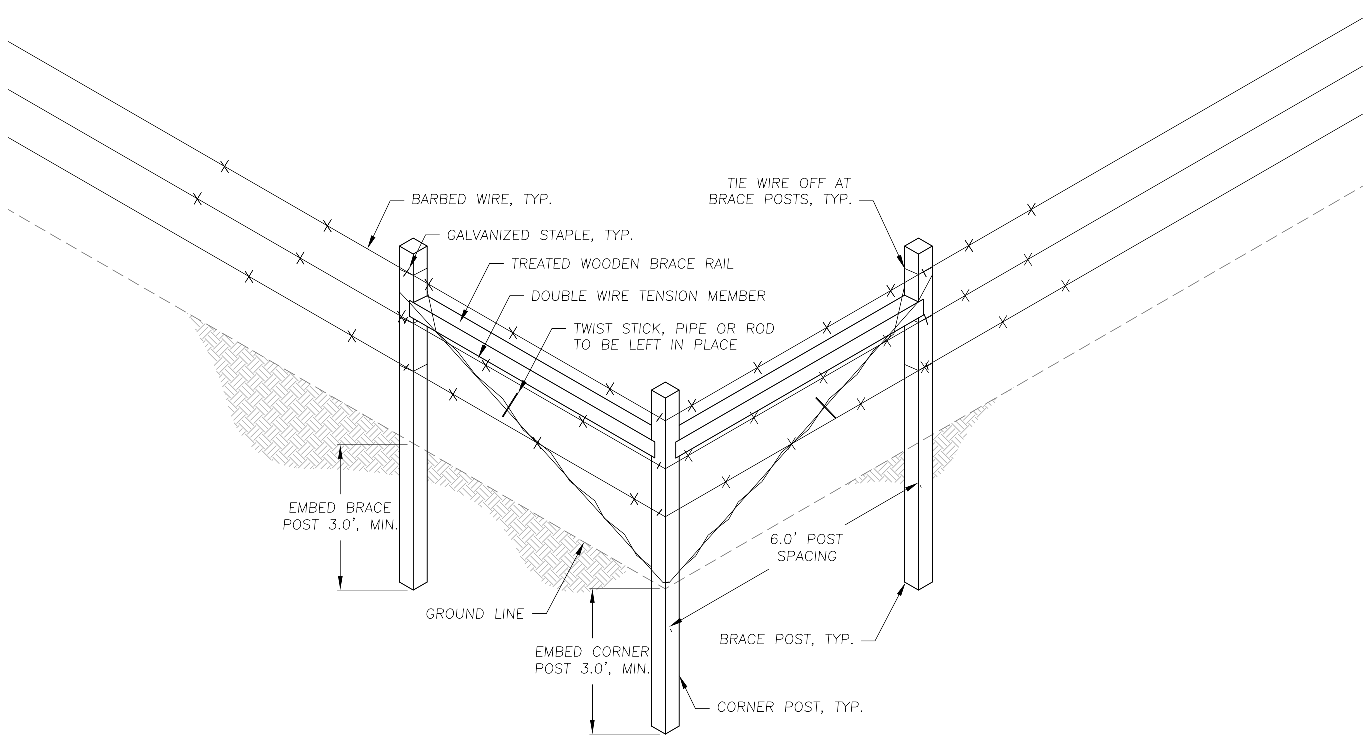


LOG STRUCTURE PLAN VIEW
SCALE: 1" = 4'

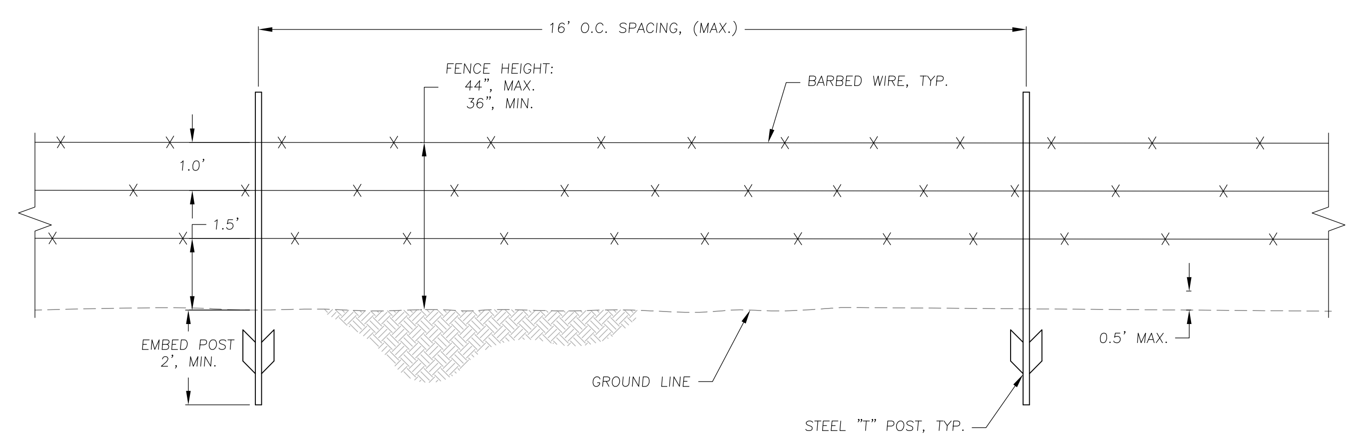


LOG STRUCTURE SECTION (F / C12)
SCALE: 1" = 4'

LOG STRUCTURE DETAIL (3 / C5,C7)
SCALE: 1" = 4'



FENCE BRACING
SCALE: 1"=2'



FENCE NOTES:

1. STEEL "T" POSTS SHALL BE PAINTED OR GALVANIZED AND SHALL BE A MINIMUM OF 1.25 LBS PER FOOT OF LENGTH.
2. STEEL POSTS MUST BE SET AT SIGNIFICANT HIGH AND LOW POINTS ALONG FENCE TO MAINTAIN PROPER WIRE HEIGHT.
3. CORNER AND BRACE POSTS SHALL BE PRESSURE TREATED DOUGLAS FIR 4"X4" POSTS WITH SUFFICIENT LENGTH TO CONSTRUCT A 42 INCH HIGH FENCE WITH A MINIMUM OF 3 FEET OF EMBEDMENT.
4. BRACE RAILS SHALL BE PRESSURE TREATED DOUGLAS FIR 4"X4" POSTS, NOTCHED INTO THE TOP ONE-HALF OF THE CORNER AND BRACE POSTS. BRACE RAILS SHALL BE ATTACHED TO CORNER AND BRACE POSTS WITH TWO 20D GALVANIZED NAILS ON EACH SIDE.
5. BARBED WIRE SHALL BE 12.5 GAGE, 2-STRAND, AND GALVANIZED.
6. WIRE CLIPS OR FASTENERS MUST BE GALVANIZED AND SIMILAR TO STRENGTH OF FENCE WIRE.
7. STAPLES SHALL BE AT LEAST 9 GAGE GALVANIZED AND AT LEAST 1.5 INCHES LONG FOR SOFT WOOD (PINE), AND AT LEAST 1 INCH LONG FOR HARDWOODS.
8. FENCE BRACING IS REQUIRED AT ALL CORNERS AND MAJOR ANGLES IN THE FENCE.
9. A DOUBLE WIRE TENSION MEMBER SHALL BE CONSTRUCTED OF TWO COMPLETE LOOPS OF 12.5 GAGE, GALVANIZED SMOOTH WIRE EXTENDING FROM A POINT APPROXIMATELY 6 INCHES BELOW THE TOP OF POST TO GROUND LEVEL OF THE CORNER POST. WIRE IS THEN TWISTED WITH A PIECE OF WOOD, PIPE, OR ROD UNTIL WIRE IS TAUT AND ASSEMBLY IS RIGID.
10. WHEN SPLICING OF WIRE IS NECESSARY, THE "WESTERN UNION" SPLICE WILL BE RECOMMENDED. THIS SPLICE IS MADE BY OVERLAPPING THE ENDS EACH WIRE AND WRAPPING EACH WIRE FIVE TIMES AROUND THE OTHER WIRE.

BARBED WIRE FENCE
SCALE: 1"=2'

LIVESTOCK FENCE DETAIL (4 / C4,C5,C7)
SCALE: 1" = 4'

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EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF: COOS SOIL AND WATER CONSERVATION DISTRICT

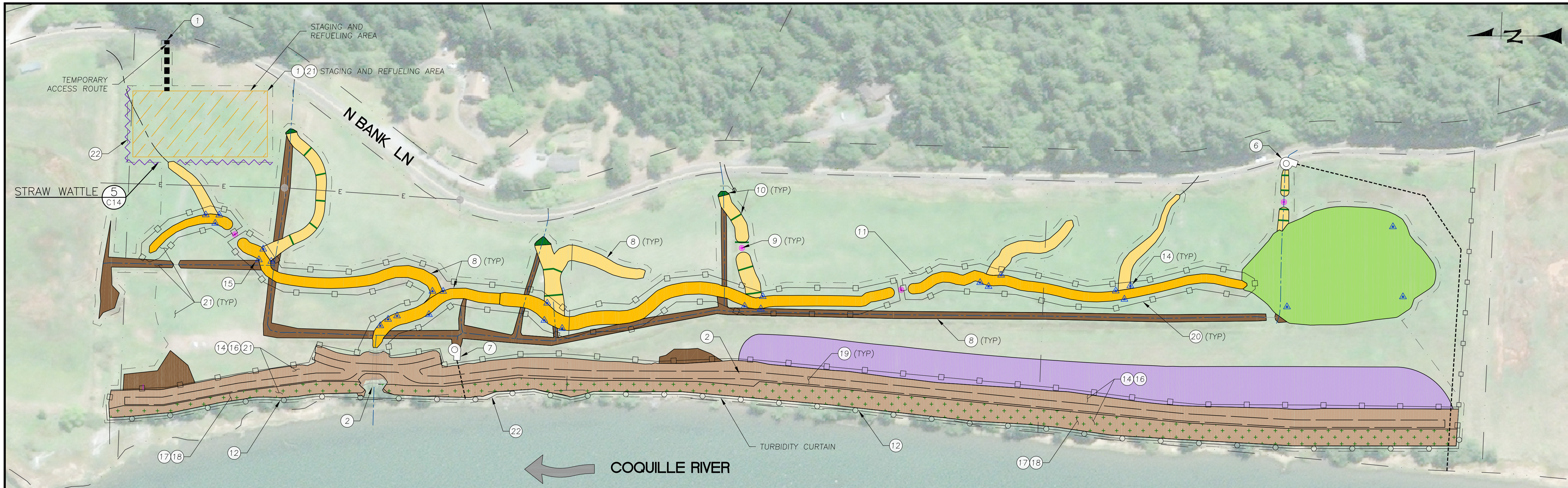
LOG STRUCTURE AND LIVESTOCK FENCE DETAILS

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C12



DEWATERING AND EROSION CONTROL PLAN

SCALE: 1" = 100'

LEGEND

- EXISTING FLOW LINE
- EXISTING POWER LINE
- EXISTING PIPE TO REMAIN
- EXISTING PHASE 1 CULVERT WITH MTR AND TIDE GATE TO REMAIN
- PARCEL LINE (APPROXIMATE)
- EXISTING FENCE
- EXISTING BERM BREACH LOCATION
- LIMITS OF DISTURBANCE
- NEW EDGE OF GRAVEL ROAD
- TEMPORARY STRAW WATTLE
- TEMPORARY TURBIDITY CURTAIN
- TEMPORARY DIVERSION/DEWATERING HOSE
- TEMPORARY COFFERDAM
- FILL EXISTING DITCH/DEPRESSION
- NEW BERM STABILIZATION AREA
- NEW BERM REINFORCEMENT AREA
- NEW ESM
- NEW PRIMARY CHANNEL EXCAVATION
- NEW SECONDARY CHANNEL EXCAVATION
- NEW LOW ELEVATION ENHANCEMENT AREA
- LIVE WILLOW STAKE ZONE, SEE DETAIL 7/C13 (1.6 ACRES)
- TEMPORARY STAGING AND REFUELING AREA
- EXISTING POWER POLE
- NEW CULVERT AND LIVESTOCK CROSSING
- NEW LOG STRUCTURE
- NEW ESM SILL
- EXISTING PHASE 1 CULVERT WITH MTR AND TIDE GATE
- DEWATERING/DIVERSION PUMP
- 1 23 KEYNOTE CALLOUT

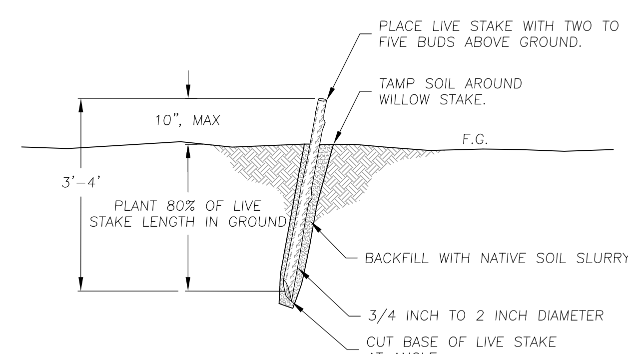
CONSTRUCTION PHASING PLAN KEY NOTES

THE FOLLOWING NOTES DETAIL THE RECOMMENDED SEQUENCE OF CONSTRUCTION TO CONTROL EROSION AND SEDIMENT FROM LEAVING THE PROJECT AREA DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT THE ANTICIPATED CONSTRUCTION SEQUENCING STRATEGY WITH THE CONSTRUCTION SCHEDULE FOR REVIEW BY THE ENGINEER.

1. ESTABLISH TRAFFIC CONTROL SIGNS, AND FLAG EXTENTS OF ALL CONSTRUCTION ACCESS ROADS, AND STAGING AND STORAGE AREAS.
2. DURING LOW TIDE, ALLOW THE DITCH NETWORK TO DRAIN, THEN CLOSE THE TIDE GATE DOOR TO PREVENT WATER FROM ENTERING THE PROJECT AREA FROM THE COQUILLE RIVER. THIS WORK WILL BE PAID FOR UNDER DEWATERING.
3. NOT USED.
4. NOT USED.
5. NOT USED.
6. DIVERT CREEK FLOW TO THE RIVER VIA PUMP.
7. PUMP WATER OUT OF SITE. INSTALL ADDITIONAL BMPS AS NECESSARY TO REDUCE TURBIDITY TO PERMITTED LEVELS.
8. CONSTRUCT INTERIOR WORK: CUT CHANNELS, CUT LEEA, AND FILL DITCHES.
9. INSTALL LIVESTOCK CULVERTS AND RIPRAP.
10. INSTALL ESM AND ESM SILLS.
11. SEED WETLAND.
12. INSTALL TURBIDITY CURTAIN ALONG COQUILLE RIVER.
13. NOT USED.
14. START BERM GRADING AND SALVAGE TREES DURING OPERATIONS.
15. INSTALL LARGE WOOD STRUCTURES.
16. SEED BANKS.
17. INSTALL SLOPE PROTECTION FABRIC.
18. STAKE WILLOWS OVER SLOPE PROTECTION FABRIC.
19. INSTALL ROAD.
20. INSTALL LIVESTOCK FENCE.
21. SEED AND MULCH BARE SOILS CREATED BY CONSTRUCTION ACTIVITIES.
22. REMOVE ALL REMAINING TEMPORARY STRAW WATTLES, TURBIDITY CURTAINS, PUMPS, AND OTHER DEWATERING/DIVERSION EQUIPMENT FROM DRAINAGE AREA.

NOTES

1. SEE SEEDING NOTES AND TABLES ON SHEET C14.
2. SEED AND MULCH ALL EXPOSED SURFACES EXCEPT:
   2.1. BEDS OF PRIMARY CHANNELS
   2.2. RIPRAP
   2.3. ROAD
   2.4. BELOW ELEVATION 4.0
3. PLANT LIVE STAKES 4-FT O.C. IN LIVE WILLOW STAKE ZONE, SEE DETAIL 7/C13.



LIVE STAKE NOTES

LIVE STAKES SHALL CONSIST OF LOCALLY-OBTAINED, NATIVE WILLOW SPECIES.

PREPARATION

1. CUT LIVE STAKE CUTTINGS WITH SHARP PRUNING SHEARS OR WITH A SHARP SAW BLADE, WITHOUT CAUSING INJURY TO THE BARK OR SPLITTING OF THE ENDS. ANGLE THE BUTT END OF THE CUTTING AND KEEP THE TOP END SQUARE. REMOVE ALL SIDE BRANCHES WITH SHARP PRUNING SHEARS. CUT FLUSH WITH STAKE, WITHOUT CAUSING INJURY.

2. CUT WILLOW STAKES IN LENGTHS FROM 4 TO 6 FEET AND 0.75 TO 2.5 INCHES IN DIAMETER. CUT WILLOW POLES IN LENGTHS FROM 6 TO 8 FEET AND 2.5 TO 4 INCHES IN DIAMETER.

INSTALLATION

1. INSTALL LIVE STAKES WITHIN 6 HOURS OF BEING CUT OR SUBMERGE THEM IN CLEAN FRESH WATER FOR 24 HOURS, MIN. PRIOR TO INSTALLATION. DO NOT SOAK LIVE STAKES FOR MORE THAN 5 DAYS PRIOR TO INSTALLATION.

2. INSTALL LIVE STAKES WITH AT LEAST 2 BUDS AND/OR BUD SCARS ABOVE THE GROUND AFTER PLANTING.

3. INSTALL LIVE STAKES AS DEEP AS POSSIBLE INTO THE SOIL, PREFERABLY WITH 80% OF ITS LENGTH IN CONTACT WITH NATIVE SOIL. USE OF A POWER AUGER OR PILOT BAR MAY HELP WITH INSTALLATION.

4. DO NOT DAMAGE THE BUDS, SPLIT STAKE ENDS, OR STRIP THE BARK DURING INSTALLATION.

LIVE WILLOW STAKE DETAIL (7/C13)

SCALE: N.T.S.

WATERWAYS CONSULTING INC.
509A SWIFT ST.
SANTA CRUZ, CA 95060
PH:(831)421-9291 / FAX:(888)819-6847
WWW.WATWAYS.COM

2022.11.18 10:13:46 -08'00'

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

DEWATERING AND EROSION CONTROL PLAN

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2
100% DESIGN

DESIGNED BY:	J.H.
DRAWN BY:	D.H.
CHECKED BY:	J.H.
DATE:	11/17/2022
JOB NO.:	18-055

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

STREAM/WETLAND CONSTRUCTION BEST MANAGEMENT PRACTICES

1. ALL WORK WITHIN THE WETTED CHANNEL SHALL BE COMPLETED WITHIN THE IN-WATER WORK WINDOW AS LISTED IN THE PERMITS.
2. EQUIPMENT, VEHICLES, AND POWER TOOLS
   - 2.1. SELECT, OPERATE AND MAINTAIN ALL HEAVY EQUIPMENT, VEHICLES, AND POWER TOOLS TO MINIMIZE ADVERSE EFFECTS ON THE ENVIRONMENT, E.G., LOW PRESSURE TIRES, MINIMAL HARD-TURN PATHS FOR TRACK VEHICLES, USE OF TEMPORARY MATS OR PLATES TO PROTECT WET SOILS.
   - 2.2. BEFORE ENTERING WETLANDS OR WORKING WITHIN 150 FEET OF A WATERBODY, REPLACE ALL PETROLEUM-BASED HYDRAULIC FLUIDS WITH BIODEGRADABLE PRODUCTS.
   - 2.3. INVASIVE SPECIES PREVENTION AND CONTROL.
     - 2.3.1. BEFORE ENTERING THE PROJECT SITE, POWER WASH ALL HEAVY EQUIPMENT, VEHICLES AND POWER TOOLS, ALLOW THEM TO FULLY DRY, AND INSPECT THEM TO MAKE CERTAIN NO PLANTS, SOIL, OR OTHER ORGANIC MATERIAL IS ADHERING TO THEIR SURFACE.
     - 2.3.2. BEFORE ENTERING THE WATER, INSPECT ANY WATERCRAFT, WADERS, BOOTS, OR OTHER GEAR TO BE USED IN OR NEAR WATER AND REMOVE ANY PLANTS, SOIL, OR OTHER ORGANIC MATERIAL ADHERING TO THE SURFACE.
   - 2.4. INSPECT ALL EQUIPMENT, VEHICLES, AND POWER TOOLS FOR FLUID LEAKS BEFORE THEY LEAVE THE STAGING AREA.
   - 2.5. BEFORE OPERATION WITHIN 150 FEET OF ANY WATERBODY, AND AS OFTEN AS NECESSARY DURING OPERATION, THOROUGHLY CLEAN ALL EQUIPMENT, VEHICLES, AND POWER TOOLS TO KEEP THEM FREE OF EXTERNAL FLUIDS AND GREASE AND TO PREVENT LEAKS AND SPILLS FROM ENTERING THE WATER.
   - 2.6. GENERATORS, CRANES OR OTHER STATIONARY HEAVY EQUIPMENT OPERATED WITHIN 150 FEET OF ANY WATERBODY WILL BE MAINTAINED AND PROTECTED AS NECESSARY TO PREVENT LEAKS AND SPILLS FROM ENTERING THE WATER.
3. TEMPORARY ACCESS ROADS AND PATHS
   - 3.1. WHENEVER REASONABLE, USE EXISTING ACCESS ROADS AND PATHS PREFERENTIALLY.
   - 3.2. MINIMIZE THE NUMBER AND LENGTH OF TEMPORARY ACCESS ROADS AND PATHS THROUGH RIPARIAN AREAS AND FLOODPLAINS.
   - 3.3. MINIMIZE REMOVAL OF RIPARIAN VEGETATION.
   - 3.4. WHEN IT IS NECESSARY TO REMOVE VEGETATION, CUT AT GROUND LEVEL (NO GRUBBING).
   - 3.5. DO NOT BUILD TEMPORARY ACCESS ROADS OR PATHS WHERE GRADE, SOIL, OR OTHER FEATURES SUGGEST SLOPE INSTABILITY.
   - 3.6. AFTER CONSTRUCTION IS COMPLETE, OBLITERATE ALL TEMPORARY ACCESS ROADS AND PATHS, STABILIZE THE SOIL, AND REVEGETATE THE AREA.
   - 3.7. TEMPORARY ROADS AND PATHS IN WET AREAS OR AREAS PRONE TO FLOODING WILL BE OBLITERATED BY THE END OF THE IN-WATER WORK WINDOW. DECOMPACT ROAD SURFACES AND DRAINAGE AREAS, PULL FILL MATERIAL ONTO THE RUNNING SURFACE, AND RESHAPE TO MATCH THE ORIGINAL CONTOURS.
4. FISH RELOCATION
   - 4.1. SHALL BE PERFORMED BY OTHERS (N.I.C.) COORDINATE WITH THE OWNER ON TIMING OF DEWATERING ACTIVITIES AND FISH SALVAGE OPERATIONS.
5. DEWATERING/BYPASS FLOWS
   - 5.1. PUMPS: WHENEVER A PUMP IS USED TO DEWATER THE ISOLATION AREA AND ESA-LISTED FISH MAY BE PRESENT, A FISH SCREEN WILL BE USED THAT MEETS THE MOST CURRENT VERSION OF NMFS'S FISH SCREEN CRITERIA (NMFS 2011A). NMFS APPROVAL IS REQUIRED FOR PUMPING AT A RATE THAT EXCEEDS 3 CFS.
   - 5.2. TREAT ALL DISCHARGE WATER FROM DEWATERING ACTIVITIES WITHIN THE CONSTRUCTION AREA USING BEST MANAGEMENT PRACTICES TO REMOVE DEBRIS, SEDIMENT, PETROLEUM PRODUCTS, AND ANY OTHER POLLUTANTS LIKELY TO BE PRESENT. DEWATER THE SHORTEST LINEAR EXTENT OF WORK AREA PRACTICABLE.
   - 5.3. FLOW BYPASS SHALL BE PERFORMED AS SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

SEEDING NOTES

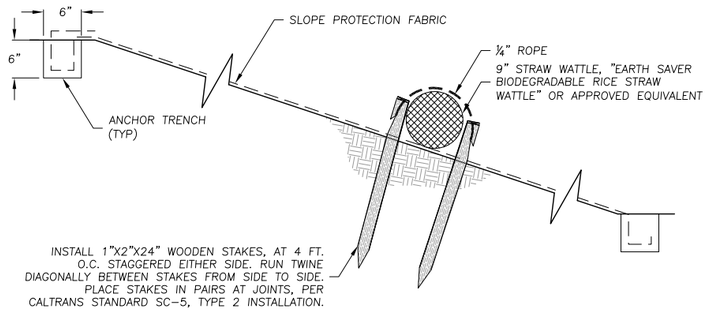
1. SEEDING MAY BE VIA HYDROSEEDING OR BROADCAST SEEDING AT THE CONTRACTOR'S OPTION.
2. SEEDING SHALL NOT BE REQUIRED FOR AREAS WHERE SOIL IS SPREAD TO A DEPTH EQUAL TO OR LESS THAN 3" OVER EXISTING VEGETATED SURFACES.
3. NO SEEDING SHALL BE PLACED ON THE BASE OF PRIMARY CHANNELS. ALL EXPOSED SOILS ASSOCIATED WITH EXCAVATION OF SECONDARY CHANNELS AND THE LEEA SHALL BE SEEDED AND MULCHED.
4. SEEDING SHALL BE APPLIED AT A RATE OF 180 LBS/ACRE.
5. SEEDING MIXES AND PLACEMENT METHODS SHALL BE BASED ON 2 ZONES SUMMARIZED AS FOLLOWS:
   - 5.1. BERM STABILIZATION AND BERM REINFORCEMENT ZONES – SEEDING SHALL BE PERFORMED ON ALL EXCAVATED AND FILL SLOPES ALONG THE LEVEE (TABLE 3, THIS SHEET).
     - 5.1.1. APPLY SEEDING BEFORE INSTALLING MATTING. INSTALL MATTING WITHIN 2 DAYS OF SEEDING.
     - 5.1.2. WHERE MATTING IS NOT INSTALLED, SEED AND COVER SEED WITH MULCH.
   - 5.2. CHANNEL ZONE – SEEDING SHALL BE PERFORMED ON ALL EXCAVATED SLOPES FOR PRIMARY CHANNELS AND THE ENTIRE EXCAVATION OF SECONDARY CHANNELS AND THE LEEA (TABLE 4, THIS SHEET).
   - 5.3. PASTURE ZONE – SEED PER TABLE 4, THIS SHEET.

TABLE 3: BERM SEED MIX

BOTANICAL NAME	COMMON NAME	% MIX BY PLS (PURE LIVE SEED)
POA PRATENSIS	KENTUCKY BLUEGRASS	20%
AGROSTIS STOLONIFERA	CREEPING BENTGRASS	20%
FESTYCA ARYNDUNACEA	TALL FESCUE	20%
LOLIUM MULTIFLORUM	ANNUAL RYE	20%
DISTICHLIS SPICATA	SALTGRASS	20%
	TOTAL	100%

TABLE 4: PASTURE SEED MIX

BOTANICAL NAME	COMMON NAME	% MIX BY PLS (PURE LIVE SEED)
AGROSTIS STOLONIFERA	CREEPING BENTGRASS	50%
LOLIUM MULTIFLORUM	ANNUAL RYE	50%
	TOTAL	100%



STRAW WATTLE DETAIL 5/C2
SCALE: 1" = 1'

WATERWAYS CONSULTING INC.
509A SWIFT ST.
SANTA CRUZ, CA 95060
PH:(831)421-9291 // FAX:(888)819-6847
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2022.11.1 8 10:14:13 -08'00'

REGISTERED PROFESSIONAL ENGINEER 77870PE OREGON JULY 31, 2007 JANE PLAIN

EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

NOTES AND DETAILS

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2 100% DESIGN

DESIGNED BY:	J.H.
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CHECKED BY:	J.H.
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GENERAL NOTES

1. NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER OR A DESIGNATED REPRESENTATIVE SHALL OBSERVE THE CONSTRUCTION PROCESS, AS NECESSARY TO ENSURE PROPER INSTALLATION PROCEDURES.

2. EXISTING UNDERGROUND UTILITY LOCATIONS:

   A. CALL UNDERGROUND SERVICE ALERT (1-800-642-2444) TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO COMMENCING CONSTRUCTION.

   B. PRIOR TO BEGINNING WORK, CONTACT ALL UTILITIES COMPANIES WITH REGARD TO WORKING OVER, UNDER, OR AROUND EXISTING FACILITIES AND TO OBTAIN INFORMATION REGARDING RESTRICTIONS THAT ARE REQUIRED TO PREVENT DAMAGE TO THE FACILITIES.

   C. EXISTING UTILITY LOCATIONS SHOWN ARE COMPILED FROM INFORMATION SUPPLIED BY THE APPROPRIATE UTILITY AGENCIES AND FROM FIELD MEASUREMENTS TO ABOVE GROUND FEATURES READILY VISIBLE AT THE TIME OF SURVEY. LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND DEPTH OF UNDERGROUND UTILITIES.

   D. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE LOCATION AND/OR PROTECTION OF ALL EXISTING AND PROPOSED PIPING, UTILITIES, TRAFFIC SIGNAL EQUIPMENT (BOTH ABOVE GROUND AND BELOW GROUND), STRUCTURES, AND ALL OTHER EXISTING IMPROVEMENTS THROUGHOUT CONSTRUCTION.

   E. PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION, DISCOVER OR VERIFY THE ACTUAL DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES AND POTHOLE THOSE AREAS WHERE POTENTIAL CONFLICTS ARE LIKELY OR DATA IS OTHERWISE INCOMPLETE.

   F. TAKE APPROPRIATE MEASURES TO PROTECT EXISTING UTILITIES DURING CONSTRUCTION OPERATIONS. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COST OF REPAIR/REPLACEMENT OF ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.

   G. UPON LEARNING OF THE EXISTENCE AND/OR LOCATIONS OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER, IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE CITY BY TELEPHONE AND IN WRITING.

   H. UTILITY RELOCATIONS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT FACILITIES WILL BE PERFORMED BY THE UTILITY COMPANY, UNLESS OTHERWISE NOTED.

3. IF DISCREPANCIES ARE DISCOVERED BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE FULLY INFORMED OF AND TO COMPLY WITH ALL LAWS, ORDINANCES, CODES, REQUIREMENTS AND STANDARDS WHICH IN ANY MANNER AFFECT THE COURSE OF CONSTRUCTION OF THIS PROJECT, THOSE ENGAGED OR EMPLOYED IN THE CONSTRUCTION AND THE MATERIALS USED IN THE CONSTRUCTION.

5. ALL TESTS, INSPECTIONS, SPECIAL OR OTHERWISE, THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR THESE PLANS, SHALL BE DONE BY AN INDEPENDENT INSPECTION COMPANY. JOB SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN OFFICIAL INSPECTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE REQUIRED TESTS AND INSPECTIONS ARE PERFORMED.

6. PROJECT SCHEDULE: PRIOR TO COMMENCEMENT OF WORK, SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL A DETAILED CONSTRUCTION SCHEDULE. DO NOT BEGIN ANY CONSTRUCTION WORK UNTIL THE PROJECT SCHEDULE AND WORK PLAN IS APPROVED BY THE ENGINEER. ALL CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE ENGINEER SO THAT THE QUALITY OF WORK CAN BE CHECKED FOR APPROVAL. PURSUE WORK IN A CONTINUOUS AND DILIGENT MANNER TO ENSURE A TIMELY COMPLETION OF THE PROJECT.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, PERMITTING, INSTALLATION, AND MAINTENANCE OF ANY AND ALL TRAFFIC CONTROL MEASURES DEEMED NECESSARY.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GENERAL SAFETY DURING CONSTRUCTION. ALL WORK SHALL CONFORM TO PERTINENT SAFETY REGULATIONS AND CODES. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAINTAINING ALL WARNING SIGNS AND DEVICES NECESSARY TO SAFEGUARD THE GENERAL PUBLIC AND THE WORK, AND PROVIDE FOR THE PROPER AND SAFE ROUTING OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE CONSTRUCTION OF THIS PROJECT.

9. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTION LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL. NEITHER THE PROFESSIONAL ACTIVITIES OF CONSULTANT NOR THE PRESENCE OF CONSULTANT OR HIS OR HER EMPLOYEES OR SUB-CONSULTANTS AT A CONSTRUCTION SITE SHALL RELIEVE THE CONTRACTOR AND ITS SUBCONTRACTORS OF THEIR RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND APPLICABLE HEALTH OR SAFETY REQUIREMENTS OF ANY REGULATORY AGENCY OR OF STATE LAW.

10. MAINTAIN A CURRENT, COMPLETE, AND ACCURATE RECORD OF ALL AS-BUILT DEVIATIONS FROM THE CONSTRUCTION AS SHOWN ON THESE DRAWINGS AND SPECIFICATIONS, FOR THE PURPOSE OF PROVIDING THE ENGINEER OF RECORD WITH A BASIS FOR THE PREPARATION OF RECORD DRAWINGS.

11. MAINTAIN THE SITE IN A NEAT AND ORDERLY MANNER THROUGHOUT THE CONSTRUCTION PROCESS. STORE ALL MATERIALS WITHIN APPROVED STAGING AREAS.

12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE FULLY INFORMED OF AND TO COMPLY WITH ALL PERMIT CONDITIONS, LAWS, ORDINANCES, CODES, REQUIREMENTS AND STANDARDS, WHICH IN ANY MANNER AFFECT THE COURSE OF CONSTRUCTION OF THIS PROJECT, THOSE ENGAGED OR EMPLOYED IN THE CONSTRUCTION AND THE MATERIALS USED IN THE CONSTRUCTION.

13. PROVIDE, AT CONTRACTOR'S SOLE EXPENSE, ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO COMPLY WITH ALL APPLICABLE PERMIT CONDITIONS AND REQUIREMENTS.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND LAYOUT, UNLESS OTHERWISE SPECIFIED.

15. FIELD INSPECTIONS AND OR THE PROVISION OF CONSTRUCTION STAKES DO NOT RELIEVE THE CONTRACTOR OF THEIR SOLE RESPONSIBILITY FOR ESTABLISHING ACCURATE CONSTRUCTED LINES AND GRADES, AS SPECIFIED.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF ALL SURVEY MONUMENTS OR PROPERTY CORNERS. DISTURBED MONUMENTS SHALL BE RESTORED BACK TO THEIR ORIGINAL LOCATION AND SHALL BE CERTIFIED BY A REGISTERED CIVIL ENGINEER OR LAND SURVEYOR AT THE SOLE EXPENSE OF THE CONTRACTOR.

17. WILLOWS TO BE REMOVED SHALL BE TRIMMED, TRANSPLANTED, AND UTILIZED IN THE REVEGETATION PLAN.

18. CONTRACTOR IS REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

19. THE CONTRACTOR SHALL CONFORM TO THE RULES AND REGULATIONS OF THE CONSTRUCTION SAFETY ORDERS OF THE OREGON DIVISION OF OCCUPATIONAL SAFETY AND HEALTH PERTAINING TO EXCAVATION AND TRENCHES.

20. CULTURAL RESOURCES: IN THE EVENT THAT HUMAN REMAINS AND/OR CULTURAL MATERIALS ARE FOUND, ALL PROJECT-RELATED CONSTRUCTION SHALL CEASE WITHIN A 100-FOOT RADIUS. CONTRACTOR IS REQUIRED TO NOTIFY THE COOS COUNTY CORONER AND THE STATE HISTORIC PRESERVATION OFFICE IMMEDIATELY.

EARTHWORK NOTES

1. ALL GRADING SHALL COMPLY WITH THE RECOMMENDATIONS OF THE ENGINEERING GEOLOGIC REPORT, THE GEOTECHNICAL REPORT, AND WITH THE APPLICABLE REQUIREMENTS OF THE COOS COUNTY GRADING ORDINANCE. REFER TO GEOTECHNICAL INVESTIGATION REPORT BY:

   PALI CONSULTING, INC.
   1419 WASHINGTON STREET, SUITE 101
   OREGON CITY, OR 97045
   (503) 502-0820
   JOB No. 014-18-001

   A. PRIOR TO PERFORMING ANY WORK, THE CONTRACTOR SHALL BE FAMILIAR WITH THE GEOTECHNICAL INVESTIGATION. IN THE EVENT OF DISCREPANCY BETWEEN THE REPORT AND THE NOTES HEREIN, THE REPORT SHALL PREVAIL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND MAKE HIS OWN INTERPRETATIONS WITH REGARD TO MATERIALS, METHODS AND EQUIPMENT NECESSARY TO PERFORM THE WORK REQUIRED FOR THIS PROJECT.

   B. ON-SITE MATERIALS USED FOR BERM CONSTRUCTION WILL BE AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER WILL ALSO DIRECT THE RATE AT WHICH FILL MATERIALS CAN BE PLACED AND COMPACTED. THE CONTRACTOR SHOULD ASSUME THE BERM FILL MATERIAL CAN BE PLACED IN 2 FOOT LIFTS WITH A MINIMUM OF 10 DAYS OF SETTLEMENT BEFORE A SUBSEQUENT LIFT CAN BE PLACED. THE GEOTECHNICAL ENGINEER WILL DIRECT OTHERWISE BASED ON FIELD CONDITIONS.

2. GRADING SUMMARY:

CUT VOLUME SUMMARY BY AREA	
CHANNEL/LEEA CUT VOLUME =	13,110 CY
DITCH CUT VOLUME =	0 CY
BERM CUT VOLUME =	4,610 CY
BERM REINFORCEMENT CUT VOLUME =	0 CY
THIN SPREAD CUT VOLUME =	0 CY
TOTAL CUT VOLUME =	17,720 CY
FILL VOLUME SUMMARY BY AREA	
CHANNEL/LEEA FILL VOLUME =	10 CY
DITCH FILL VOLUME =	3,380 CY
BERM FILL VOLUME =	7,520 CY
BERM REINFORCEMENT FILL VOLUME =	6,360 CY
THIN SPREAD FILL VOLUME =	460 CY (THIN SPREAD WITHIN THE LIMITS OF DISTURBANCE, 3-IN DEPTH MAX.)
TOTAL FILL VOLUME =	17,730 CY
NET VOLUME SUMMARY BY AREA	
NET CHANNEL/LEEA (CUT) =	13,100 CY
NET DITCH (FILL) =	3,380 CY
NET BERM (FILL)	2,900 CY
BERM REINFORCEMENT (FILL) =	6,360 CY
THIN SPREAD (FILL) =	460 CY
SITE TOTAL NET =	0 CY

   THE ABOVE QUANTITIES ARE APPROXIMATE IN-PLACE VOLUMES CALCULATED AS THE DIFFERENCE BETWEEN EXISTING GROUND AND THE PROPOSED FINISH GRADE, PREPARED FOR PERMITTING PURPOSES ONLY. EXISTING GROUND IS DEFINED BY THE TOPOGRAPHIC CONTOURS AND/OR SPOT ELEVATIONS ON THE PLAN. PROPOSED FINISH GRADE IS DEFINED AS THE DESIGN SURFACE ELEVATION OF WORK TO BE CONSTRUCTED. THE QUANTITIES HAVE NOT BEEN FACTORED TO INCLUDE ALLOWANCES FOR BULKING, CLEARING AND GRUBBING, SUBSIDENCE, SHRINKAGE, OVER EXCAVATION, AND RECOMPACTION, UNDERGROUND UTILITY AND SUBSTRUCTURE SPOILS AND CONSTRUCTION METHODS.

3. PRIOR TO COMMENCING WORK, PROTECT ALL SENSITIVE AREAS TO REMAIN UNDISTURBED WITH TEMPORARY FENCING, AS SHOWN ON THE DRAWINGS, AS SPECIFIED, OR AS DIRECTED BY THE ENGINEER.

4. DO NOT DISTRURB AREAS OUTSIDE OF THE DESIGNATED LIMITS OF DISTURBANCE, UNLESS AUTHORIZED IN WRITING BY THE ENGINEER. THE COST OF ALL ADDITIONAL WORK ASSOCIATED WITH RESTORATION AND REVEGETATION OF DISTURBED AREAS OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE, AS SHOWN ON THE DRAWINGS, SHALL BE BORNE SOLELY BY THE CONTRACTOR.

5. REMOVE ALL EXCESS SOILS TO AN APPROVED DUMP SITE OR DISPOSE OF ON SITE AT A LOCATION TO BE APPROVED BY THE ENGINEER, IN A MANNER THAT WILL NOT CAUSE EROSION.

6. CLEARING AND GRUBBING, SUBGRADE PREPARATION AND EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS AND THE TECHNICAL SPECIFICATIONS.

7. PRIOR TO STARTING WORK ON THE PROJECT, SUBMIT FOR ACCEPTANCE BY THE ENGINEER A HAZARDOUS MATERIALS CONTROLS AND SPILL PREVENTION PLAN. INCLUDE PROVISIONS FOR PREVENTING HAZARDOUS MATERIALS FROM CONTAMINATING SOIL OR ENTERING WATER COURSES, AND ESTABLISH A SPILL PREVENTION AND COUNTERMEASURE PLAN.

9. UNLESS AUTHORIZED BY THE GEOTECHNICAL ENGINEER, THE FOLLOWING MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK FOR ENGINEERED FILL:

   A. ORGANIC MATERIALS SUCH AS PEAT, MULCH, ORGANIC SILT OR SOD.
   B. SOILS CONTAINING EXPANSIVE CLAYS.
   C. MATERIAL CONTAINING EXCESSIVE MOISTURE.
   D. POORLY GRADED COURSE MATERIAL
   E. PARTICLE SIZES IN EXCESS OF 6 INCHES.
   F. MATERIAL WHICH WILL NOT ACHIEVE SPECIFIED DENSITY OR BEARING.

10. FINE GRADING ELEVATIONS, CONFORMS, AND SLOPES NOT CLEARLY SHOWN ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO DIRECT DRAINAGE TO PROTECTED DRAINAGE CONTROL STRUCTURES OR NATURAL WATERWAYS IN A MANNER THAT SUPPORTS THE INTENT OF THE DESIGN. ALL FINAL GRADING SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

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REGISTERED PROFESSIONAL ENGINEER
77870PE
OREGON
JANUARY 3, 2011
JAKE DYLAN HOFELD
EXPIRES: 6/30/2023

PREPARED AT THE REQUEST OF:
COOS SOIL AND WATER CONSERVATION DISTRICT

NOTES

NORTH BANK LANE TIDAL FLOODPLAIN RESTORATION - PHASE 2
100% DESIGN

DESIGNED BY: J.H.
DRAWN BY: D.H.
CHECKED BY: J.H.
DATE: 11/17/2022
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