

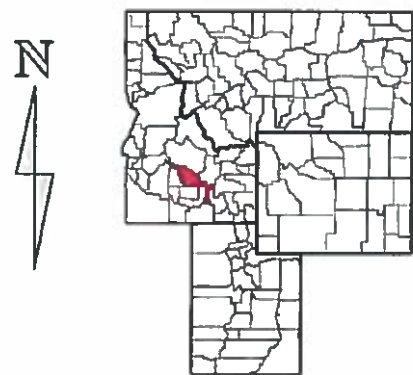
BIG WOOD RIVER BANK RESTORATION PROJECT PALE GEM LLC PROPERTY, BLAINE COUNTY, IDAHO DESIGN PLANS

PREPARED FOR:
PALE GEM LLC
11038 HIGHWAY 75
BELLEVUE, ID 83313

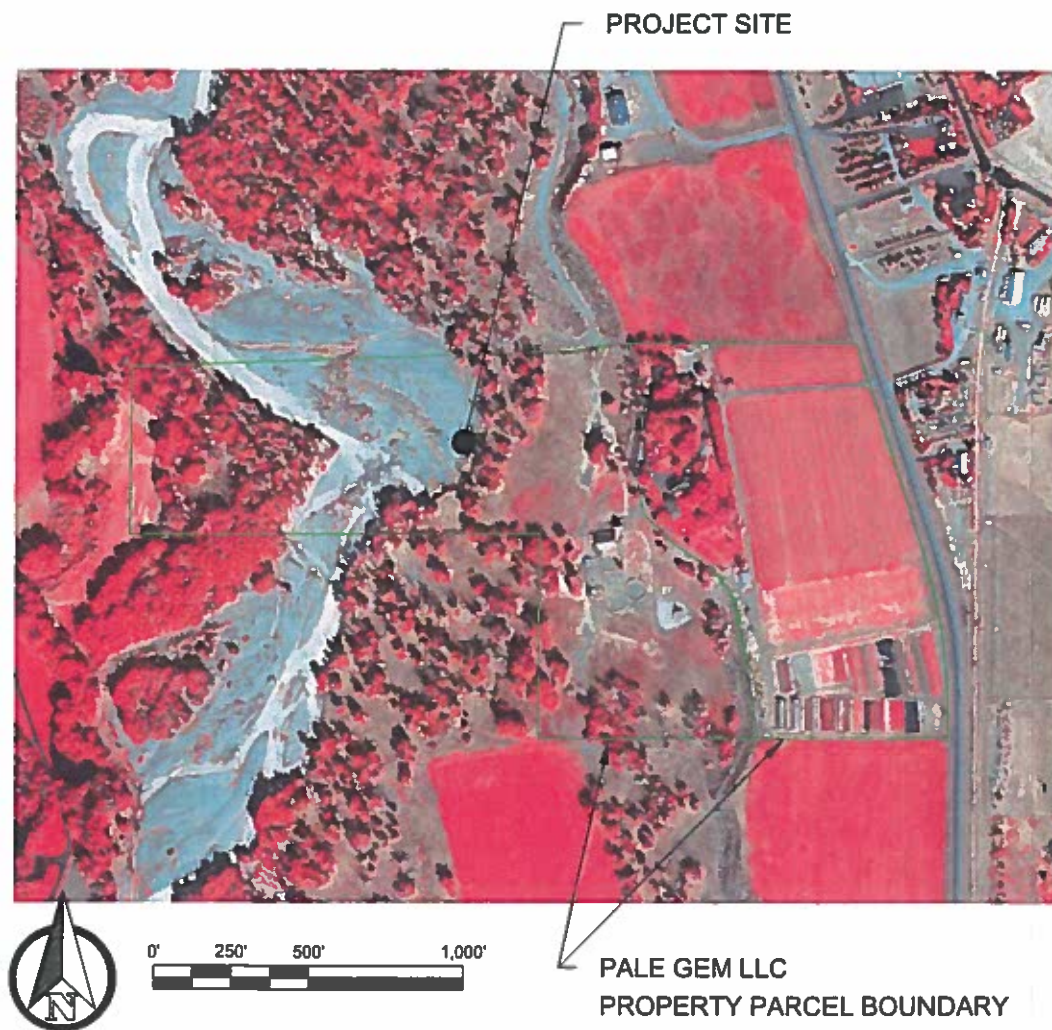
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Project Locator Map



Blaine County, Idaho



PROJECT SITE

PALE GEM LLC
PROPERTY PARCEL BOUNDARY



PO Box 8578, 140 E. Broadway, Suite 23 Jackson, WY 83002

TITLE SHEET

BIG WOOD RIVER BANK RESTORATION PROJECT
PALE GEM LLC PROPERTY, BLAINE COUNTY, IDAHO

REV.	DATE	BY	DESC
A	06-03-2022	CB	CONCEPT
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UNITS: US FOOT

BASEMAP SOURCE: AERIAL IMAGERY - 2021 NAIP

SHEET 1

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EG
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NAD83
NAVD88
NTS
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RD
REV

ABBREVIATIONS		
HORIZONTAL TO VERTICAL EXAGGERATION	ST	STREET
PERCENT	STA	STATION
APPROXIMATE	TBD	TO BE DETERMINED
DESCRIPTION	TYP	TYPICAL
DRAWING	US	UNITED STATES
EXEMPLI GRATIA, FOR EXAMPLE	WSE	WATER SURFACE ELEVATION
ELEVATION	XS	CROSS SECTION
EROSION & SEDIMENT CONTROL	YD	YARD
EXISTING	YR	YEAR
FOOT		
IDAHO		
IDAHO DEPARTMENT OF WATER RESOURCES		
INVERT ELEVATION		
INCH		
POUNDS		
LIGHT DETECTION AND RANGING		
MAINTENANCE		
NORTH AMERICAN DATUM 1983		
NORTH AMERICAN VERTICAL DATUM 1988		
NOT TO SCALE		
ON CENTER		
ROAD		
REVISION #		

SYMBOLS

SECTIONS ARE REFERENCED IN THE FOLLOWING MANNER:



NOTES ARE REFERENCED IN THE FOLLOWING MANNER:



PROPOSED PROJECT SEQUENCING:

1. PLACE STANDARD TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) MEASURES.
2. REMOVE AND SALVAGE EXISTING TREES TO BE USED IN JAM CONSTRUCTION.
3. INSTALL JAMS WITH BOULDER BALLAST.
4. INSTALL ROCK JOE.
5. INSTALL ACCESS RAMP GRADING AND EROSION PROTECTION.
6. REVEGETATE BANK TOE WITH CUTTINGS AND GRAVEL BAR WITH BRUSH TRENCHES.
7. RESTORE AND RE-VEGETATE WORK AREAS.
8. REMOVE TESC.

GENERAL NOTES:

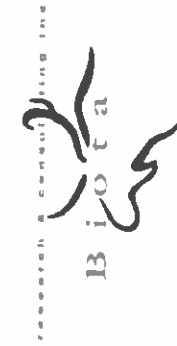
1. HORIZONTAL PROJECTION: NAD83 IDAHO STATE PLANE, CENTRAL ZONE, US FOOT.
2. VERTICAL DATUM: NAVD88.
3. PROPOSED PROJECT DESIGN, CONSTRUCTION ACTIVITIES, AND MATERIALS SUBJECT TO APPROVAL BY LANDOWNER.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT THE DESIGN ELEMENTS IN ACCORDANCE WITH THE PLANS STAMPED "ISSUED FOR CONSTRUCTION". THESE PLANS WILL BE PROVIDED TO THE CONTRACTOR BY THE OWNER PRIOR TO CONSTRUCTION. WORK SHALL NOT BE DONE WITHOUT THE CURRENT SET OF APPROVED CONSTRUCTION PLANS.
2. CONTRACTOR SHALL CONTACT THE ONECALL OF IDAHO 1-800-342-1585 (OR 811) AND LOCAL UTILITY LOCATES BEFORE ANY EXCAVATION WORK BEGINS.
3. THE CONTRACTOR SHALL PURSUE WORK IN A CONTINUOUS AND EFFICIENT MANNER TO ENSURE TIMELY COMPLETION OF THE PROJECT.
4. ANY DELETERIOUS MATERIALS FOUND ON SITE ARE THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF AT AN APPROPRIATE LOCATION.

GRADING & EROSION CONTROL NOTES:

1. CONSTRUCTION TO BE COMPLETED UNDER THE SUPERVISION OF DESIGN CONSULTANT.
2. CONSTRUCTION IMPLEMENTATION WILL BE DURING PERIOD OF LOW FLOW AND SHALL ADHERE TO IDWR AND USACE PERMIT REQUIREMENTS, IF APPLICABLE.
3. CONTRACTOR SHALL LIMIT DISTURBANCE TO THE BANK, ACCESS, AND STOCKPILE LOCATIONS AS SHOWN ON THE PLANS.
4. STOCKPILES OF EXCAVATED MATERIAL, IF THERE ARE ANY, WILL BE SURROUNDED WITH A SILT FENCE ON SIDES ADJACENT TO THE CHANNEL. ALL STOCKPILE AND ACCESS ROADS SHALL BE RECLAIMED AND REVEGETATED PRIOR TO DEMOBILIZATION.
5. TO THE EXTENT PRACTICABLE, EROSION AND SEDIMENT CONTROL (ESC) MEASURES SHALL BE INSTALLED PRIOR TO GRADING ACTIVITIES. AT ALL TIMES DURING PROJECT CONSTRUCTION, ALL TEMPORARY AND PERMANENT ESC MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO PREVENT ACCELERATED EROSION ON THE SITE AND ANY ADJACENT PROPERTIES. KEEP LAND DISTURBANCE TO A MINIMUM. PLAN THE PHASES OF CONSTRUCTION SO THAT ONLY THE AREAS ACTIVELY BEING DEVELOPED ARE EXPOSED. ALL OTHER AREAS SHOULD HAVE NATURAL VEGETATION PRESERVED, HAVE GOOD TEMPORARY COVER, OR PERMANENT VEGETATION ESTABLISHED.
6. ALL ESC MEASURES SHALL BE INSPECTED BY THE OWNER, OR OWNER APPROVED AGENT, AFTER ALL STORM EVENTS. ANY ESC MEASURES WHICH ARE DAMAGED PRIOR TO RE-ESTABLISHMENT OF VEGETATIVE COVER SHALL BE REPLACED IMMEDIATELY.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TESC DEVICES AFTER THE ESTABLISHMENT OF FULL VEGETATION.
8. IF NECESSARY, IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN NPDES STORMWATER PERMIT PRIOR TO START OF CONSTRUCTION.
9. PROTECTION OF ADJACENT WORK, UTILITIES, AND OTHER IMPROVEMENTS MUST BE ACCOMPLISHED. PROPERLY SLOPE CUTS TO PROVIDE STABILITY. TEMPORARY CUTS SHOULD BE NO STEEPER THAN ONE VERTICAL TO ONE HORIZONTAL. PERMANENT SLOPES SHOULD BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL. COVER EXPOSED SLOPES IF EROSION OR RAVELING THREATENS.
10. UNLESS OTHERWISE SPECIFIED, ANY APPROPRIATE METHOD OF EXCAVATION WITHIN THE WORK LIMITS SHOWN MAY BE EMPLOYED WHICH, IN THE OPINION OF THE CONTRACTOR, IS CONSIDERED BEST, AND MEETS APPLICABLE SAFETY STANDARDS. THE CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO MAINTAIN THE UNDISTURBED STATE OF THE NATURAL SOILS AT AND BELOW THE BOTTOM OF THE EXCAVATION. EXCAVATION AND GRADING WITHIN FLOODPLAIN AREAS SHALL BE COMPLETED TO THE LINES, GRADES, AND DIMENSIONS SHOWN ON THE DRAWINGS, OR AS DIRECTED IN THE FIELD BY THE OWNER'S REPRESENTATIVE. EXCAVATION SHALL CONFORM TO THE BOUNDARIES, ELEVATIONS, AND EXCAVATION SLOPES SHOWN ON THE DRAWINGS. LIMITS OF EXCAVATION SHALL BE THE MINIMUM REQUIRED TO COMPLETE THE WORK. GRADED AREAS SHALL BE SLOPED TO PROMOTE SURFACE DRAINAGE.



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GENERAL NOTES

BIG WOOD RIVER BANK RESTORATION PROJECT
PALE GEM LLC PROPERTY, BLAINE COUNTY, IDAHO

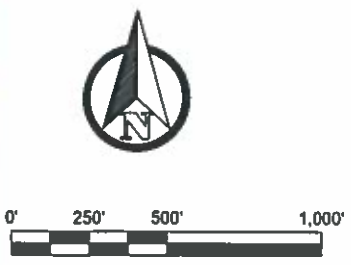
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LEGEND
 ——— PARCEL BOUNDARY
 - - - - PROPOSED WORK AREA (APPROX.)

PARCEL OWNERSHIP			
PARCEL LABEL	PARCEL #	OWNER 1	OWNER 2
1	RP01N18001038A	PALE GEM LLC	
2	RP01N18001036B	PALE GEM LLC	
3	RP01N18001036A	CYDNEY CONGER TRUST	
4	RP00140000010A	SKILLMAN PETER NILS	SKILLMAN LAUREL C
5	RP00140000009A	COOKSTON REBECCA DAHL	COOKSTON ROBERT LLOYD
6	RP00140000004A	WALKER FAMILY TRUST	
7	RP00140000005A	WALKER FAMILY TRUST	

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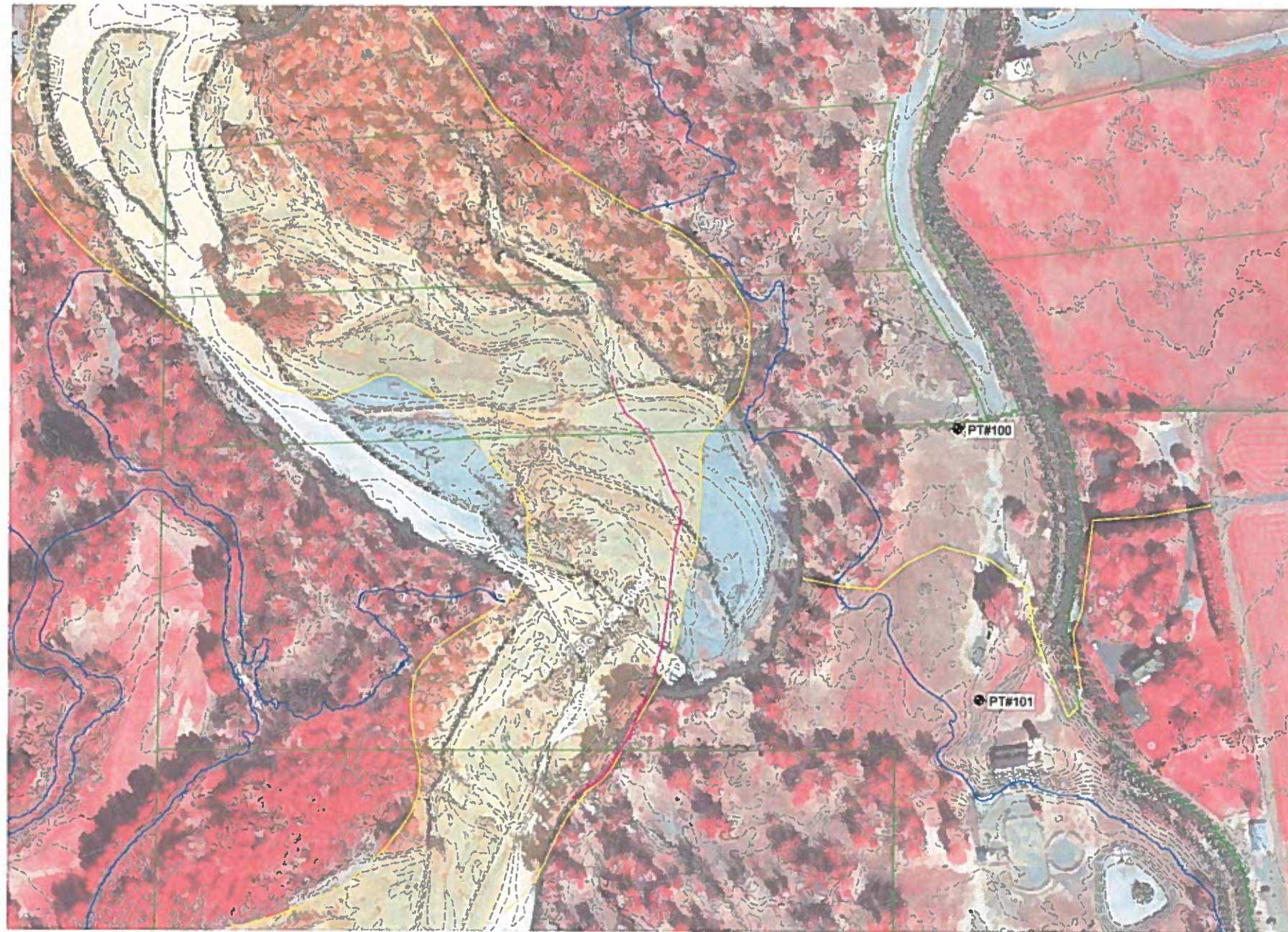
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PARCEL BOUNDARIES
 BIG WOOD RIVER BANK RESTORATION PROJECT
 PALE GEM LLC PROPERTY, BLAINE COUNTY, IDAHO

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 BASEMAP SOURCE: AERIAL IMAGERY - 2021 NAIP

SHEET 3



- LEGEND**
- EXISTING PARCEL BOUNDARY
 - EXISTING CONTOUR MAJOR (5')
 - EXISTING CONTOUR MINOR (1')
 - EXISTING 1% FLOODPLAIN
 - EXISTING FLOODWAY
 - 2018 TOP OF BANK
 - PROPOSED ACCESS ROUTE



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**EXISTING CONDITIONS
PLAN**

BIG WOOD RIVER BANK RESTORATION PROJECT
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UNITS: US FOOT

BASEMAP SOURCE: AERIAL IMAGERY - 2021
NAIP; 2017 LIDAR; 2021 SURVEY

SHEET 4

CONTROL POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	649139.6FT	1572208.9FT	5117.6FT	CP 1
101	648655.7FT	1572250.4FT	5115.9FT	CP 2
103	649028.0FT	1573160.9FT	5141.3FT	CP 3
104	655477.5FT	1570401.9FT	5160.9FT	BM
105	655694.3FT	1570387.3FT	5161.4FT	BM

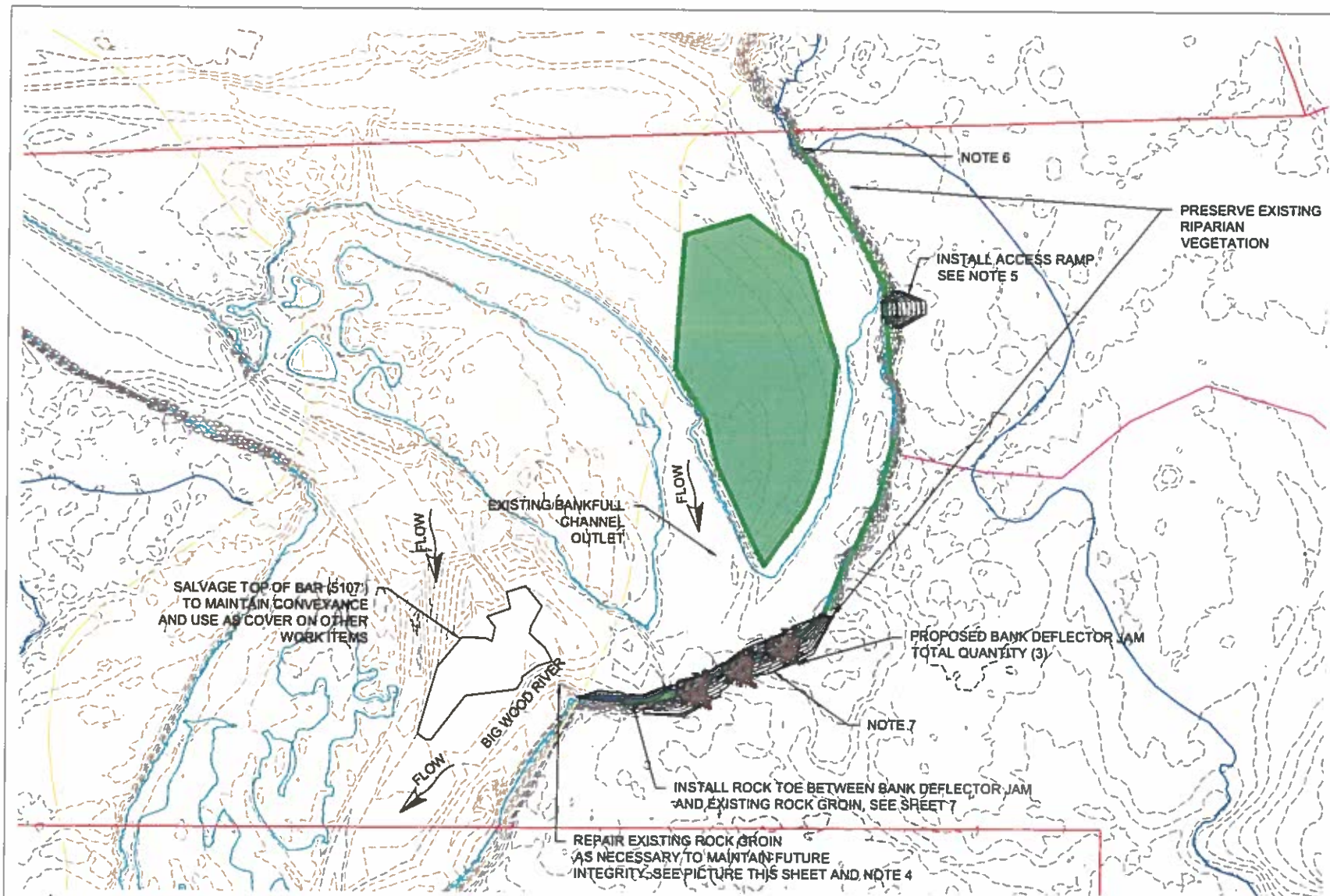
NOTES:

1. BM POINTS LOCATED ON UPSTREAM PROJECT.
2. CP 3 LOCATED AT THE TURNOFF FROM HIGHWAY, NEAR ENTRANCE GATE.



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LEGEND

- EXISTING PARCEL BOUNDARY
- EXISTING CONTOUR MAJOR (5')
- - - EXISTING CONTOUR MINOR (1')
- EXISTING 1% FLOODPLAIN
- EXISTING FLOODWAY
- PROPOSED TOE REVEGETATION
- PROPOSED ROCK TOE
- PROPOSED BRUSH TRENCHES
- PROPOSED ACCESS ROUTE
- APPROX EXISTING BANKFULL EXTENT

CONSTRUCTION QUANTITIES		
ITEMS	UNITS	
BANK DEFLECTOR STRUCTURE	EA	3
ROCK TOE	LF	77
ROCK TOE GRADING	CY	23*
ROCK TOE ROCK	CY	143
JAM SCOUR ROCK	CY	207
BARB SCOUR ROCK	CY	33
TOE REVEGETATION	LF	440
ACCESS RAMP CUT	CY	68
BAR EXCAVATION	CY	82
BANK TOPSOIL	CY	44
BANK GRADING FILL	CY	49
BANK GRADING CUT	CY	136

*QUANTITY IS PARTIALLY COUNTED IN ROCK QUANTITY TO PLACE 2:1 SLOPE

- NOTES:**
1. PRESERVE AND PROTECT EXISTING VEGETATION ON BANK SLOPE.
 2. INSTALL BANK JAMS AT THE DESIGNATED LOCATIONS. IF RIPARIAN TREES EXIST AT PROPOSED LOCATION. RELOCATE AT THE DIRECTION OF THE ENGINEER.
 3. REVEGETATE ERODED BANK TOE WITH NATIVE RIPARIAN CUTTINGS, DETAILS TO BE SHOWN ON REVEGETATION PLAN.
 4. EXISTING ROCK GROIN TO BE REBUILT WITH EXISTING ROCK. GROIN TO EXTEND UP TO BANKFULL AND SLOPE DOWN AT 10-15% TO CHANNEL INVERT. IMBED GROIN INTO CHANNEL BED DOWN TO SCOUR DEPTH. ANGLE GROIN AT 30 DEGREES FROM BANK. INTERLOCK ANY DISPLACED BOULDERS. NO ADDITIONAL BOULDERS TO BE PLACED.
 5. CONSTRUCT ACCESS RAMP: WIDTH OF 10', 4H:1V LONGITUDINAL SLOPE, 2H:1V SIDE SLOPES. PLACE LAYER OF COARSE GRAVEL ON THE RAMP SLOPE. PLACE COARSE ANGULAR ROCK ON THE SIDE SLOPES AND INSTALL CUTTINGS WHERE FEASIBLE. 69 CY OF CUT PLUS ADDITIONAL CUT TO INSTALL EROSION PROTECTION REMOVE AND SALVAGE EXISTING COTTONWOOD THAT IS MOSTLY EXPOSED AT THE ROOTBALL. REGRADE BANK TO 2:1 SLOPE. INSTALL RIPARIAN CUTTINGS AS SHOWN ON REVEGETATION PLAN.
 6. REGRADE BANK TO 3:1 SLOPE BY CUTTING UPPER BANK AND FILLING TOE. INSTALL RIPARIAN CUTTINGS AS SHOWN ON REVEGETATION PLAN. INSTALL JAMS AS SHOWN IN NOTE 2.



EXISTING ROCK GROIN



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**PROPOSED CONDITIONS
PLAN**

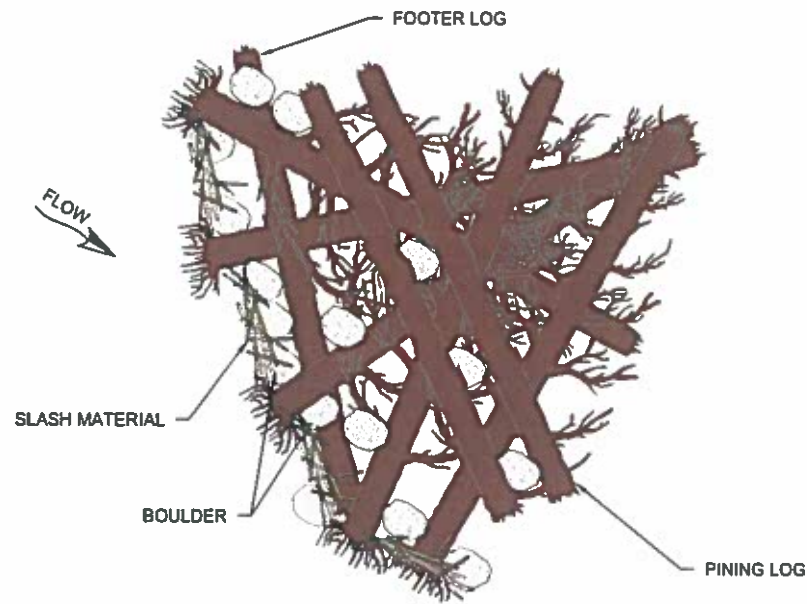
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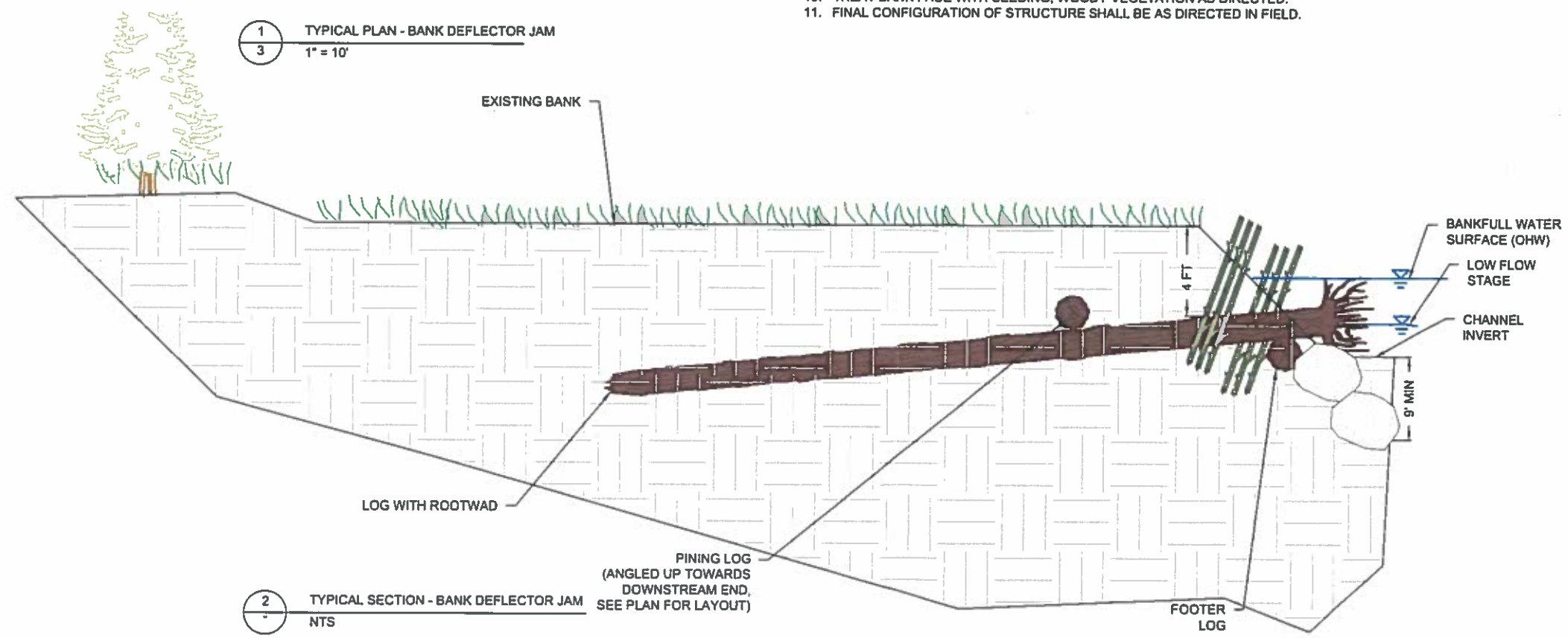
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1
3
TYPICAL PLAN - BANK DEFLECTOR JAM
1" = 10'



2
NTS
TYPICAL SECTION - BANK DEFLECTOR JAM
PINING LOG (ANGLED UP TOWARDS DOWNSTREAM END, SEE PLAN FOR LAYOUT)

CONSTRUCTION QUANTITIES (PER JAM):

COMPONENT	DESCRIPTION	QUANTITY
FOOTER LOG W/O ROOTWAD	18"+ DBH, 30 FT MIN	1
LOGS WITH ROOTWAD	12"+ DBH, 25 FT MIN	5
PINING LOGS W/O ROOTWAD	10" DBH, 20 FT MIN	2
BALLAST BOULDERS	EA	8
SCOUR PROTECTION	CY	69

BANK DEFLECTOR JAM STRUCTURE NOTES:

1. INSTALL TEMPORARY COFFERDAM TO ISOLATE WORK AREA, IF NECESSARY BASED ON FLOW CONDITIONS AT TIME OF CONSTRUCTION.
2. CONTRACTOR SHALL UTILIZE EXISTING LARGE TREES IDENTIFIED ONSITE AS DIRECTED BY OWNER AND IMPORTED TREES AS NECESSARY.
3. LARGE FOOTER LOG DOES NOT REQUIRE ROOTWAD. PLACE AT EXISTING BANK TOE AND ANCHOR WITH BALLAST.
4. PLACE LOGS WITH ROOTWADS ON TOP OF FOOTER LOG WITH TRUNKS ANGLED DOWN INTO BANK.
5. PLACE BALLAST BOULDER ON TOP OF LOG AND BETWEEN PILING TO ANCHOR IN PLACE.
6. PLACE PINING LOG ON UPSTREAM SIDE AND ANGLE OVER LOGS WITH ROOTWADS AS SHOWN.
7. BACKFILL LOGS AND COMPACT WITH EXCAVATOR BUCKET TO A FIRM AND UNYIELDING SURFACE BUT USING CARE TO NOT DAMAGE THE INTEGRITY OF THE LOGS.
8. INSTALL STAKES, PLUGS OR CLUMPS INTO JAM WITH STEM END PROTRUDING FORWARD AS DESCRIBED ON SHEET 8.
9. PLACE RACKING MATERIAL IN FRONT OF STRUCTURE TO PROMOTE A SEAL AT THE FACE OF THE JAM.
10. TREAT BANK FACE WITH SEEDING, WOODY VEGETATION AS DIRECTED.
11. FINAL CONFIGURATION OF STRUCTURE SHALL BE AS DIRECTED IN FIELD.



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**PROPOSED BANK DEFLECTOR JAM
DETAILS**

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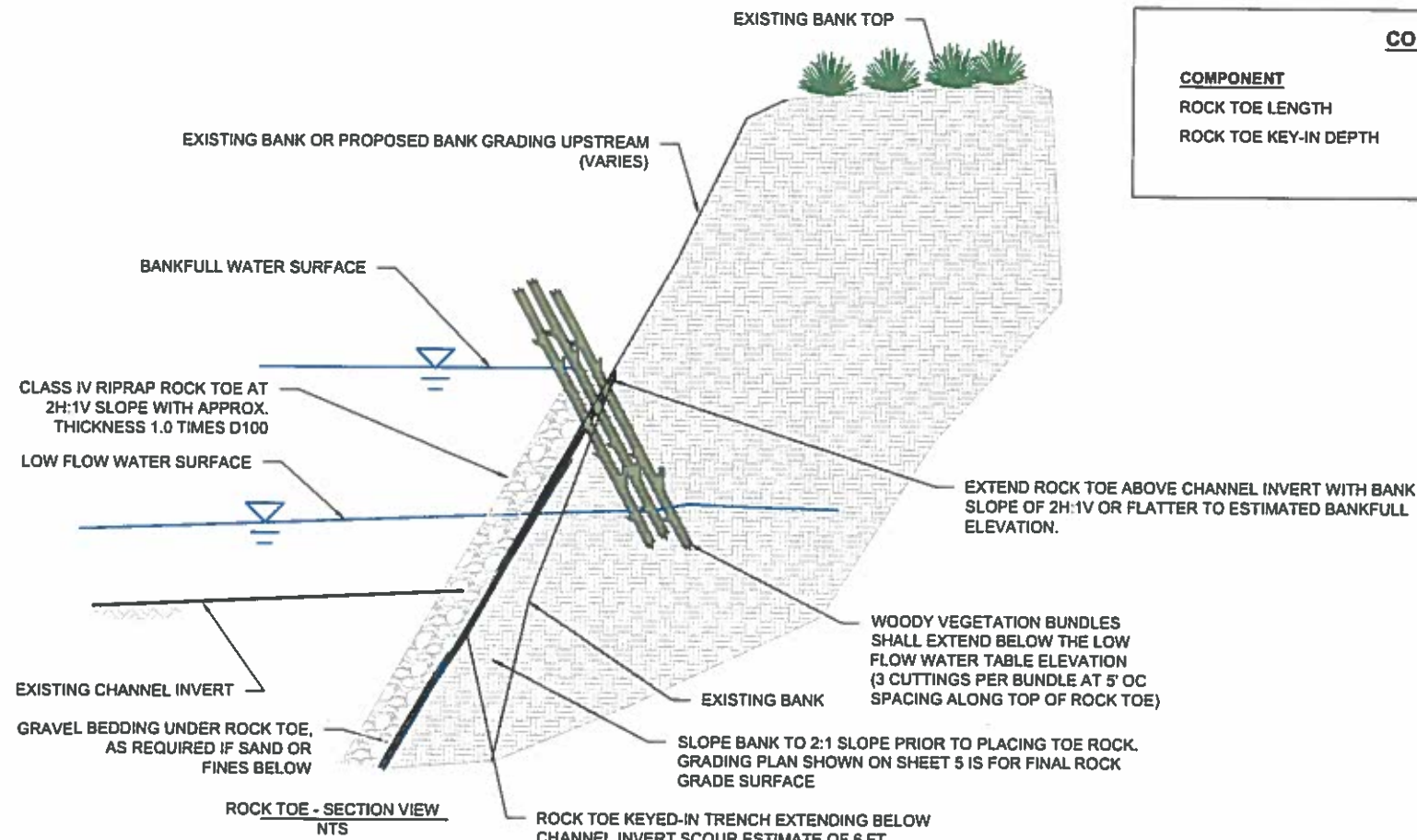
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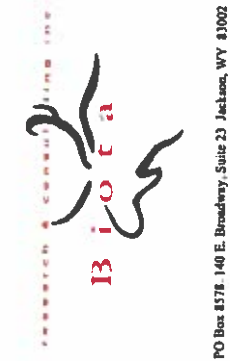
CONSTRUCTION QUANTITIES:

COMPONENT	DESCRIPTION	QUANTITY
ROCK TOE LENGTH	FT PARALLEL TO BANK	77
ROCK TOE KEY-IN DEPTH	FT DEPTH BELOW INVERT	6

CLASS IV RIPRAP GRADATION

SIZE	LOWER (IN)	HIGHER (IN)
D15	9	12
D50	14	17
D85	19	23
D100	27	33

- ROCK TOE CONSTRUCTION NOTES:**
1. INSTALL TEMPORARY COFFERDAM TO ISOLATE WORK AREA, IF NECESSARY. COFFERDAM METHOD TO BE PROPOSED BY THE CONTRACTOR AND APPROVED BY THE OWNER.
 2. CONSTRUCT THE ROCK TOE AND BIOENGINEERING BANK STABILIZATION TREATMENTS ALONG TOE AS SHOWN ON THE PLAN. BACKFILL OF EXISTING BANK IS REQUIRED TO CREATE 2H:1V SLOPE UP TO BANKFULL PRIOR TO PLACING ROCK. THE UPSTREAM EXTENT OF THE ROCK TOE OVERLAPS WITH THE BANK GRADING TIE IN.
 3. MINIMIZE DISTURBANCE OF MATURE RIPARIAN VEGETATION ON TOP OF EXISTING BANK.
 4. THE ROCK TOE SHOULD HAVE A SLOPE OF 2H:1V STARTING AT THE EXISTING TOE AND SLOPING DOWN.
 5. TOE ROCK SHALL BE HARD, DURABLE, SUB-ROUNDED TO ANGULAR IN SHAPE, RESISTANT TO WEATHERING TO WATER AND ICE ACTION; FREE OF EXCESS AMOUNTS OF THIN FLAT, AND ELONGATED PIECES, FREE FROM OVERBURDEN, SPOIL, SHALE, STRUCTURAL DEFECTS, AND ORGANIC MATERIAL. THE SMALLER STONE SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT THE WORK. THE ROCK SHALL BE MANIPULATED BY HAND OR MACHINE METHODS SUFFICIENTLY TO SECURE A UNIFORM SURFACE AND MASS STABILITY. ROCK SHALL BE SOURCED FROM LOCALLY AVAILABLE COARSE MATERIAL.
 6. STRUCTURE SHALL BE KEYED-IN A TRENCH EXTENDING BELOW THE SCOUR DEPTH OF 6 FT.
 7. ADD GRAVEL BEDDING FOR SETTING ROCK, AS NEEDED.
 8. PLACE GRAVEL FILTER BEHIND ROCK TOE, IF NECESSARY, BETWEEN RIPRAP AND NATIVE MATERIAL. FILTER SHALL BE SPREAD IMMEDIATELY AHEAD OF THE ROCK PLACEMENT.
 9. PLACEMENT OF ROCK RIPRAP SHALL START AT THE TOE OF THE SLOPE AND PROCEED UP THE CONSTRUCTED SLOPE. THE RIPRAP SHALL BE PLACED SUCH THAT DAMAGE TO THE FILTER LAYER DOES NOT OCCUR. FILTER DISPLACED OR OTHERWISE DAMAGED DURING PLACEMENT SHALL BE REPLACED. USE BAR EXCAVATION FOR COVERING ANY EXPOSED ROCK AT LOW FLOW.
 10. PLACE LOCALLY SOURCED RIPARIAN DORMANT HARDWOOD VEGETATION BUNDLES ALONG THE ROCK TOE AND BANK FACE USING A STANDARD LIVE STAKE INSTALLATION PROCEDURE AS DESCRIBED ON SHEET 8.
 11. FINAL CONFIGURATION OF ROCK TOE STRUCTURE SHALL BE AS DIRECTED IN FIELD.



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**PROPOSED ROCK TOE
DETAILS**

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REVEGETATION NOTES:

WOODY VEGETATION STAKES

DORMANT HARDWOOD CUTTINGS WILL BE UTILIZED TO FACILITATE BIOENGINEERING TECHNIQUES. CUTTINGS WILL BE HARVESTED FROM HEALTHY VIGOROUS PLANTS DURING THE DORMANT SEASON (I.E., BETWEEN DORMANCY/LEAF ABSCISSION IN THE FALL AND BUD BREAK IN THE SPRING). CARE WILL BE TAKEN TO AVOID HARVESTING CUTTINGS FROM DONOR PLANTS THAT EXHIBIT SIGNS OF DAMAGE BY DISEASE OR INSECTS. CUTTINGS WILL BE COMPRISED OF WILLOW AND COTTONWOOD STEMS THAT HAVE A MINIMUM BOTTOM DIAMETER OF 1-INCH, HAVE A MINIMUM LENGTH OF 7 FEET, AND ARE RELATIVELY STRAIGHT. CUTTINGS WILL BE REMOVED FROM THE DONOR PLANT WITH A CLEAN DIAGONAL CUT AT THE BASE OF THE STEM USING LOPPING SHEARS, BYPASS PRUNERS, OR A SHARP SAW. THE DIAGONAL SURFACE WILL DIFFERENTIATE THE BOTTOM (I.E., ROOTING END) FROM THE TOP (I.E., ABOVE GROUND PORTION), AND ALLOW FOR EASIER INSTALLATION. THE TERMINAL BUDS AND A FEW UPPER BRANCHES WILL BE LEFT INTACT UNTIL INSTALLATION. ALL OTHER BRANCHES WILL BE REMOVED BY CLIPPING THEM AS CLOSE TO THE STEM AS POSSIBLE. CAUTION WILL BE USED TO AVOID DAMAGING THE STEM WHILE TRIMMING THE LATERAL BRANCHES. CUTTINGS WILL BE BUNDLED BY TYPE (I.E., WILLOW, COTTONWOOD) AND KEPT COOL, MOIST, AND SHADED DURING TRANSPORTATION AND ON-SITE STORAGE. THE CUTTINGS WILL BE SOAKED IN WATER FOR 7-14 DAYS PRIOR TO INSTALLATION. AT LEAST HALF OF THE LENGTH OF THE CUTTING SHOULD BE IN CONTACT WITH WATER WHILE SOAKING, AND CUTTINGS SHOULD BE WEIGHTED DOWN WHEN SOAKED. THE TREATMENTS WILL UTILIZE BUNDLES OF 3 WILLOW CUTTINGS; THEREFORE, IT WILL BE NECESSARY TO BREAK DOWN ANY LARGER BUNDLES INTO BUNDLES OF 3 FOR THESE TREATMENTS. BUNDLES AND WILL BE INSTALLED ON 3-FOOT SPACING THROUGHOUT THE TREATMENT AREA.

DORMANT CUTTINGS WILL BE INSTALLED USING A WATERJET STINGER (SEE SHEET 9) OR OTHER APPROVED METHOD. INSTALLATION TO FOLLOW METHODS RECOMMENDED IN USDA-NATURAL RESOURCES CONSERVATION SERVICE TECHNICAL NOTE - WATERJET STINGER, A TOOL TO PLANT DORMANT UNROOTED CUTTINGS OF WILLOW, COTTONWOOD, DOGWOOD, AND OTHER SPECIES (TN PLAN MATERIALS NO. 39, FEBRUARY 2001).

BRUSH TRENCHES

BRUSH TRENCHES WILL BE CONSTRUCTED ON THE BARE BAR AND ORIENTED PERPENDICULAR TO THE FLOW. THE PREPARATION AND CONSTRUCTION PROCEDURE FOR THE BRUSH TRENCHES WILL BE AS FOLLOWS:

1. TRENCHES WILL BE EXCAVATED TO THE DESIGN SPECIFICATION OF 10 FT X 2 FT (BOTTOM DIMENSIONS) AND WILL BE EXCAVATED TO A DEPTH OF 5 FEET. SEE DETAIL B ON SHEET 9.
2. INSTALL 10 PRE-SOAKED CUTTINGS ALONG WITH OTHER LIVE/DEAD BRANCHES INTO EACH TRENCH, ENSURING THAT THE BUTTS OF THE CUTTINGS ARE ON THE BOTTOM OF THE TRENCH AND INTO THE LOW-FLOW WATER TABLE.
3. ADD A SMALL AMOUNT OF FILL INTO THE BOTTOM OF THE TRENCH WHILE HOLDING THE CUTTINGS TO ENSURE THEY REMAIN UPRIGHT AND WILL NOT FALL OVER WHILE BACKFILLING.
4. CAREFULLY BACKFILL THE TRENCH WITH A 50/50 MIX OF SALVAGED TOPSOIL AND NATIVE ALLUVIUM. ALTERNATE DUMPING BUCKETS OF TOPSOIL/ALLUVIUM AND BUCKETS OF WATER INTO THE TRENCH, OR UTILIZE A WATER PUMP TO FULLY SATURATE THE TOPSOIL AFTER THE TRENCH HAS BEEN BACKFILLED TO ALLEVIATE AIR POCKETS AND MAXIMIZE SOIL-TO-STEM CONTACT.
5. ENSURE THAT THE TOP OF THE LIVE CUTTINGS PROTRUDE AT LEAST 1 FOOT ABOVE THE FLOODPLAIN ENSURING THAT A MINIMUM OF 3 OR 4 AUXILIARY BUDS OR BRANCHES REMAIN ON THE ABOVE-GROUND PORTION.

TRENCHES SHALL BE ARRANGED IN A NON-UNIFORM PATTERN ON THE BARE BAR, WITH 1 TRENCH CONSTRUCTED PER 500 SF OF FLOODPLAIN AREA.

GRADING AND TOPSOIL APPLICATION

PROVIDE ROUGH GRADING TO A SUBGRADE ELEVATION THAT IS 4 INCHES LOWER THAN THE PLANNED FINISHED GRADE IN ALL AREAS EXCEPT FOR BELOW THE BANKFULL ELEVATION. AFTER ROUGH GRADING, PLACE 4 INCHES OF SALVAGED TOPSOIL IN ALL DISTURBED AREAS TO ACHIEVE THE FINISHED GRADE AND PROVIDE FOR A SMOOTH TRANSITION TO SURROUNDING GRADE. IF TOPSOIL STOCKPILES ARE INSUFFICIENT, THEN IT WILL BE NECESSARY TO IMPORT WEED-FREE TOPSOIL OR ENGINEER TOPSOIL OUT OF A COMPOST/SUBSOIL/MYCORRHIZAL INOCULUM BLEND.

SEED BED PREPARATION

ONCE APPLIED, TOPSOIL SHALL BE ROLLED OR LIGHTLY TAMPED WITH AN EXCAVATOR BUCKET TO FIRM THE SEEDBED. CAUTION SHALL BE TAKEN IF THE TOPSOIL IS TRACK-WALKED WITH HEAVY EQUIPMENT DUE THE POTENTIAL FOR SOIL COMPACTION AND DETRIMENTAL EFFECTS ON GROWING CONDITIONS. PROPER SOIL FIRMNESS IS ESSENTIAL TO OPTIMIZING GERMINATION AND ESTABLISHMENT OF SEEDED VEGETATION. THE TARGET FIRMNESS IS MEASURED BY AN ADULT FOOTPRINT BEING ONLY SLIGHTLY VISIBLE (1/4" DEEP PRINT) AFTER WALKING ON IT.

SEEDING

AFTER FINISH GRADING AND SEEDBED PREP HAS BEEN COMPLETED, ALL DISTURBED AREAS SHALL BE SEEDED WITH THE SEED MIXES PROVIDED. UPLAND SEED MIX TO BE APPLIED TO DISTURBANCE AREAS INCLUDING HAUL ROADS AND STAGING AREAS. TRANSITIONAL SEED MIX TO BE APPLIED TO ANY BANK GRADING AREAS AND BAR REVEGETATION AREA. ANY SPECIES SUBSTITUTIONS MUST BE APPROVED BY THE DESIGN CONSULTANT. SEED SHALL MEASURED IN POUNDS OF PURE LIVE SEED (PLS) AND APPLIED AT THE RATE SPECIFIED BELOW. SEED SHALL BE CLEAN, DRY, NEW-CROP SEED DELIVERED TO THE PROJECT SITE IN ORIGINAL SEALED, LABELED AND UNDAMAGED CONTAINER(S). SEED CONTAINERS SHALL BE LABELED IN ACCORDANCE WITH THE REQUIREMENTS AND STANDARDS OF THE ASSOCIATION OF OFFICIAL SEED CERTIFICATION AGENCIES (AOSCA). SEED SHALL HAVE BEEN TESTED FOR, AND CERTIFIED FREE OF, NOXIOUS WEEDS SEED IN ACCORDANCE WITH THE IDAHO PURE SEED LAW (IS 22-414), AND SHALL BE SO LABELED. COPIES OF SEED TAGS AND CERTIFICATION LABELS SHALL BE MAINTAINED ON THE JOB SITE AND PROVIDED TO THE DESIGN CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO SOWING THE SEED.

SEED SHALL BE BROADCAST OR APPLIED WITH A HYDROSEEDER IN THE FALL PRIOR TO THE ONSET OF WINTER AND THE PRESENCE OF SEASON-LONG SNOW COVER. SEED SHALL NOT BE BROADCAST ON SNOW-COVERED GROUND. AFTER SEEDING, THE SEED SHOULD BE ROLLED, HARROWED, OR RAKED TO ENSURE MAXIMUM SEED-TO-SOIL CONTACT. ON REGRADED BANK, ALL SEED TO BE PLACED PRIOR TO INSTALLING THE EROSION CONTROL BLANKET.

MULCHING

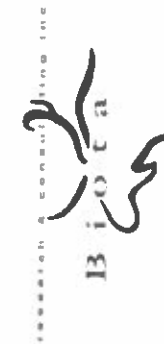
MULCH MAY BE APPLIED AFTER THE GRASS SEEDING TO ENHANCE SEED GERMINATION AND EARLY SEEDLING ESTABLISHMENT. LONG-STRAND MULCH SUCH AS WOOD STRANDS, STRAW, OR WOOD CHIPS IS THE PREFERRED MULCH FOR THIS PROJECT. IF STRAW IS USED, IT SHOULD BE CERTIFIED "WEED-FREE" STRAW DERIVED FROM WHEAT, RICE, BARLEY, OR NATIVE GRASSES. THE DEPTH/THICKNESS OF THE MULCH LAYER SHOULD BE ABOUT 1 INCH. APPROXIMATELY 15% TO 20% OF THE SOIL SURFACE SHOULD BE VISIBLE THROUGH THE MULCH AFTER APPLICATION. IF STRAW IS UTILIZED, A NATURAL TACKIFIER SHOULD BE HYDRAULICALLY APPLIED (125 LBS/ACRE) OVER THE STRAW IN ORDER TO KEEP IT IN PLACE. ALTERNATIVELY, STRAW MULCH CAN BE MECHANICALLY CRIMPED, ROLLED, OR PUNCHED INTO THE SOIL.

IRRIGATION

SUPPLEMENTAL SPRINKLER IRRIGATION MAY BE UTILIZED FOR THE FIRST 2 GROWING SEASONS TO ENHANCE GERMINATION RATES AND ESTABLISHMENT IF FEASIBLE TO GET IRRIGATION WATER TO PROJECT SITE. IRRIGATION SHOULD OCCUR TWICE PER WEEK, OR AS NEEDED, THROUGH THE DRY SUMMER MONTHS (JUNE-SEPTEMBER). THE SPECIFIED SPECIES ARE NATIVE AND ADAPTED TO THE REGIONAL CLIMATE; THEREFORE, NO IRRIGATION IS REQUIRED IF NOT FEASIBLE.

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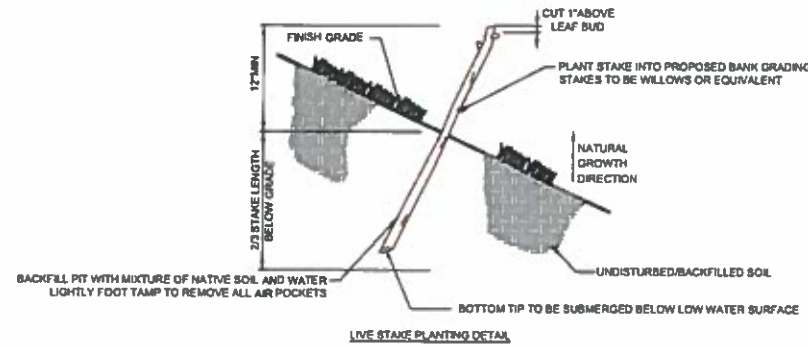
PO Box 8578, 140 E. Broadway, Suite 23, Jackson, WY 83002

**REVEGETATION NOTES
TYPICAL DETAILS**

BIG WOOD RIVER BANK RESTORATION PROJECT
PALE GEM LLC PROPERTY, BLAINE COUNTY, IDAHO

REV.	DATE	BY	DESC.
A	08-03-2022	CB	CONCEPT
B	08-22-2022	CB	PERMIT

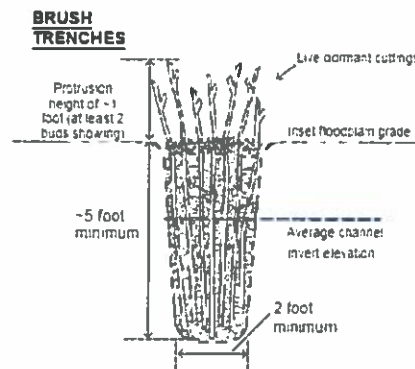
SHEET 8



A
TYPICAL DETAIL - LIVE STAKING
NTS

DISTURBANCE AREAS		
ITEMS	UNITS	
ACCESS RAMP	SF	800
BANK GRADING	SF	3,650
BAR REVEGETATION	SF	25,227
ACCESS ROAD	SF	TBD
STAGING AREA	SF	TBD
TBD - ACCESS ROAD AND STAGING AREA TO BE DETERMINED BY THE CONTRACTOR		

REVEGETATION PLANTING QUANTITIES				
PLANTING ITEMS	SPACING	QUANTITY	CUTTINGS PER TREATMENT	TOTAL # CUTTINGS
ROCK TOE	4 FT OC	19	3	58
BRUSH TRENCHES	22 FT OC	50	10	505
TOE REVEGETATION	2 FT OC/ 2 ROWS	440	1	440
SPECIES/QUANTITY/SIZE SUBJECT TO CUTTING AVAILABILITY				



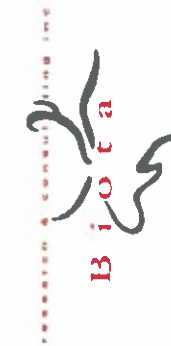
B
TYPICAL DETAIL - BRUSH TRENCH
NTS

TRANSITIONAL SEED MIX		
COMMON NAME	SCIENTIFIC NAME	LBS PLS PER ACRE
Idaho fescue	<i>Festuca idahoensis</i>	1.8
slender wheatgrass	<i>Elymus trachycaulus</i>	10.8
fowl bluegrass	<i>Poa palustris</i>	0.4
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	4.8
bluejoint reedgrass	<i>Calamagrostis canadensis</i>	0.3
western yarrow	<i>Achillea millefolium</i>	0.1
tufted hairgrass	<i>Deschampsia cespitosa</i>	0.2
	TOTAL	18.4

UPLAND SEED MIX		
COMMON NAME	SCIENTIFIC NAME	LBS PLS PER ACRE
Idaho fescue	<i>Festuca idahoensis</i>	1.8
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	7.2
slender wheatgrass	<i>Elymus trachycaulus</i>	10.8
big bluegrass	<i>Poa secunda</i>	0.8
western yarrow	<i>Achillea millefolium</i>	0.1
white sage	<i>Artemisia ludoviciana</i>	0.1
	TOTAL	20.8



TYPICAL WATERJET STINGER



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REVEGETATION NOTES
TYPICAL DETAILS
BIG WOOD RIVER BANK RESTORATION PROJECT
PALE GEM LLC PROPERTY, BLAINE COUNTY, IDAHO

REV.	DATE	BY	DESC.
A	06-03-2022	CB	CONCEPT
B	06-22-2022	CB	PERMIT

SHEET 9

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