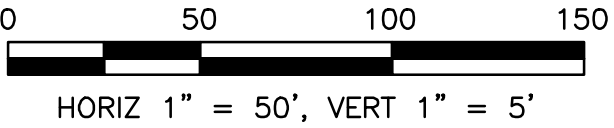





JENNY CREEK PROFILE

HORZ 1"=50', VERT 1"=5'

- NOTES:
- GRADES ARE APPROXIMATE AND BASED ON BEST AVAILABLE DATA; SEE NOTES BELOW.
  - EXISTING GRADE PROFILES ARE TAKEN FROM THE COMBINED 2018 BATHYMETRY AND LIDAR SURFACES PROVIDED TO KIEWIT BY KRRC.
  - POST DRAWDOWN PROFILES ARE INTENDED TO REPRESENT A PLAUSIBLE ENDPOINT FOR BASIN SEDIMENTS AFTER DAM REMOVAL, RESERVOIR DRAWDOWN, AND SEDIMENT EVACUATION IN A TYPICAL YEAR.
  - POST DRAWDOWN PROFILES ARE NOT INTENDED TO PROVIDE A GRADING TARGET ELEVATION; HOWEVER, POST-DRAWDOWN GRADING OF RESIDUAL SEDIMENT OR OTHER IN-CHANNEL WORK (SEE SHEET R0808) MAY BE REQUIRED TO PROMOTE VOLITIONAL FISH PASSAGE IN CERTAIN TRIBUTARIES AND AT THEIR CONFLUENCES WITH THE KLAMATH RIVER QUANTITY ESTIMATES ARE DERIVED FROM COMPARISON OF THE POST-DRAWDOWN SURFACE AND 2018 BATHYMETRY WITHIN ANTICIPATED CHANNEL EXTENTS.
  - POST DRAWDOWN SURFACES WERE GENERATED BY ESTIMATING MATERIAL CONSOLIDATION AFTER RESERVOIR DRAWDOWN, SUBTRACTING THE ESTIMATED CONSOLIDATION FROM THE 2018 EXISTING GROUND SURFACE, AND THEN SUBTRACTING ESTIMATED EVACUATION VOLUME WITHIN THE KLAMATH RIVER AND ITS TRIBUTARIES FROM THE RESULTANT SURFACE.
  - FULL SEDIMENT EVACUATION WAS ASSUMED WITHIN CHANNEL SECTIONS. FOR THE IRON GATE BASIN, REASONABLE PRE-DAM DATA WERE AVAILABLE UPSTREAM OF APPROXIMATELY THE LONG GULCH CONFLUENCE TO ESTIMATE HISTORIC CONDITIONS. THESE DATA WERE USED TO SET POST-DRAWDOWN THALWEG ELEVATIONS OF THE KLAMATH RIVER AND ITS TRIBUTARIES. FOR LONG GULCH DOWNSTREAM TO THE DAM LOCATION, PRE-DAM THALWEG ELEVATIONS WERE ESTIMATED BY SUBTRACTING TOTAL SEDIMENT DEPTHS FROM THE BUREAU OF RECLAMATION 2011 HYDROLOGY, HYDRAULICS, AND SEDIMENT TRANSPORT STUDIES FOR THE SECRETARY'S DETERMINATION ON KLAMATH RIVER DAM REMOVAL AND BASIN RESTORATION (TECHNICAL REPORT NO. SRH-2011-02) FROM THE 2018 EXISTING CONDITIONS SURFACE. THE CHANNEL SECTION FOR THE KLAMATH RIVER WAS TAKEN FROM THE EXISTING AECOM POST-DAM MODEL.
  - POST DRAWDOWN PROFILE SLOPES REPRESENT GENERALIZED SLOPES FOR THE CHANNEL AND MAY REQUIRE LOCALIZED WORK TO ALLOW VOLITIONAL FISH PASSAGE. REFER TO SHEET R0807 FOR POTENTIAL GRADING ACTIONS.



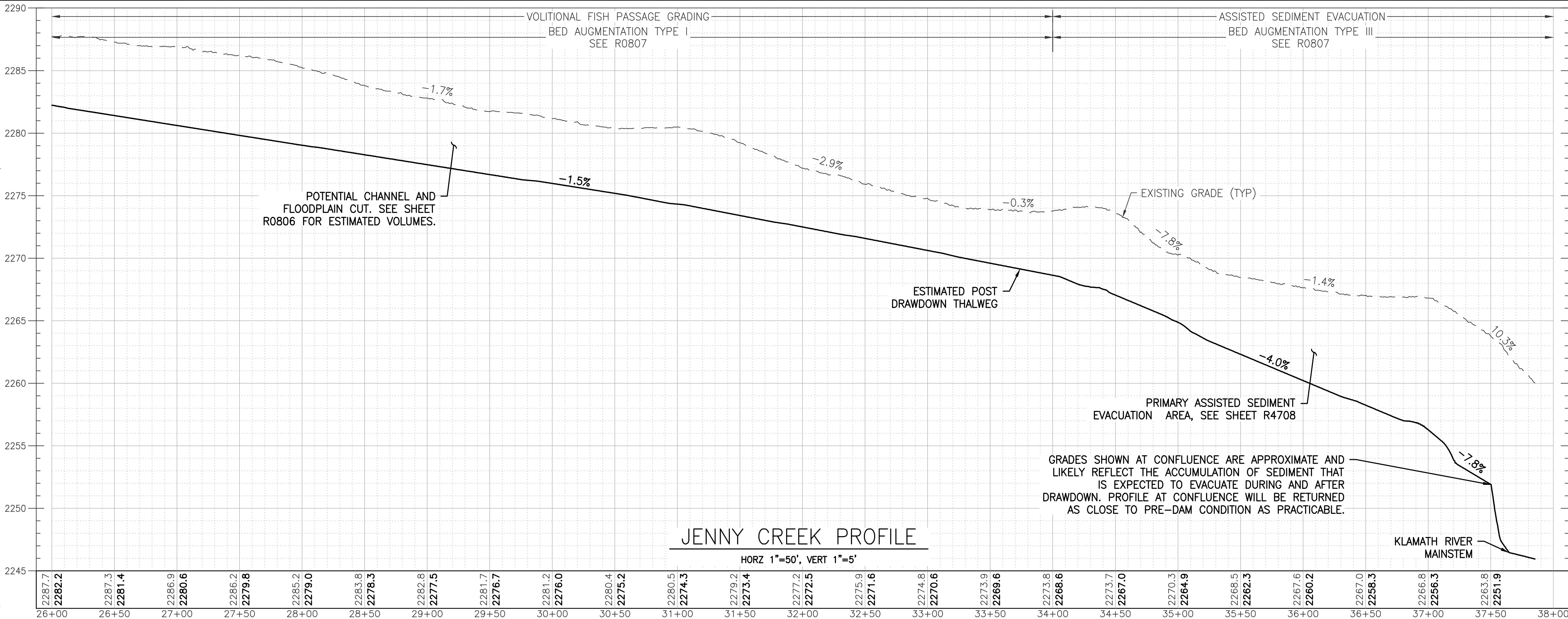
PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

				<div>WARNING</div> <div>0 1/2 1</div> <div>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</div>								<div>PREPARED BY</div> <div><div></div><div></div></div>				<div>DESIGNED JMR</div> <div>DRAWN CW</div> <div>REVIEWED JFS</div> <div>IN CHARGE SDP</div> <div>APPROVED MFA</div>				<div>PREPARED FOR</div> <div></div>				<div>PROJECT</div> <div>KLAMATH RIVER RENEWAL PROJECT</div>				<div>PROJ #</div> <div>VA103-640/1</div>	
																				<div>DATE</div> <div>2020.02.07</div>									
<div>B</div> <div>ISSUED - 60% RESTORATION DESIGN SUBMITTAL</div>				<div>SMS</div>		<div>JFS</div>		<div>MFA</div>		<div>02/07/20</div>										<div>DWG</div> <div>R4720</div>									
<div>A</div> <div>ISSUED - 30% RESTORATION DESIGN SUBMITTAL</div>				<div>SMS</div>		<div>JFS</div>		<div>MFA</div>		<div>10/11/19</div>																			
<div>REV</div> <div>DESCRIPTION</div>				<div>BY</div>		<div>CHK</div>		<div>APP</div>		<div>DATE</div>																			

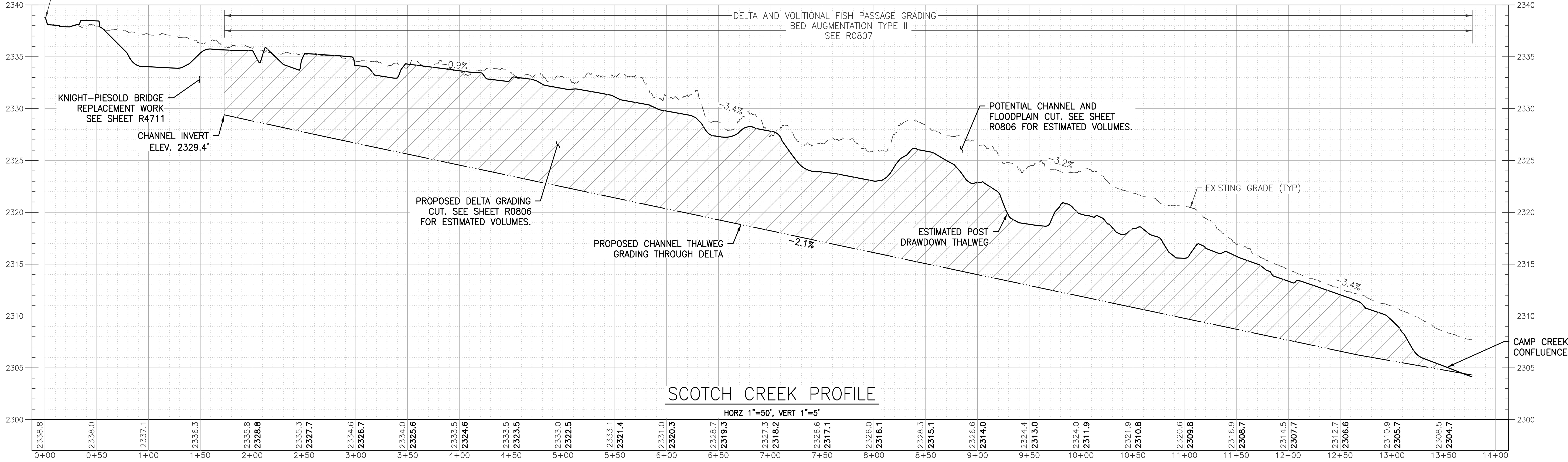
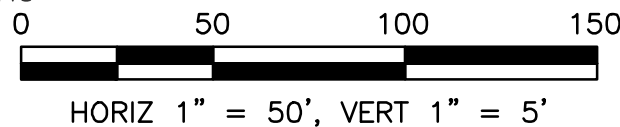
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2020.02.07 11:05am  
JFS



- NOTE:
1. GRADING REQUIRED IN SCOTCH CREEK FROM PROPOSED BRIDGE TO CONFLUENCE WITH CAMP CREEK TO PROMOTE VOLITIONAL FISH PASSAGE.
  2. ADAPTIVE MANAGEMENT ACTIONS REQUIRED AT CAMP CREEK CONFLUENCE WITH THE KLAMATH RIVER. SEE SHEET R0807 FOR POTENTIAL GRADING ACTIONS.



PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN



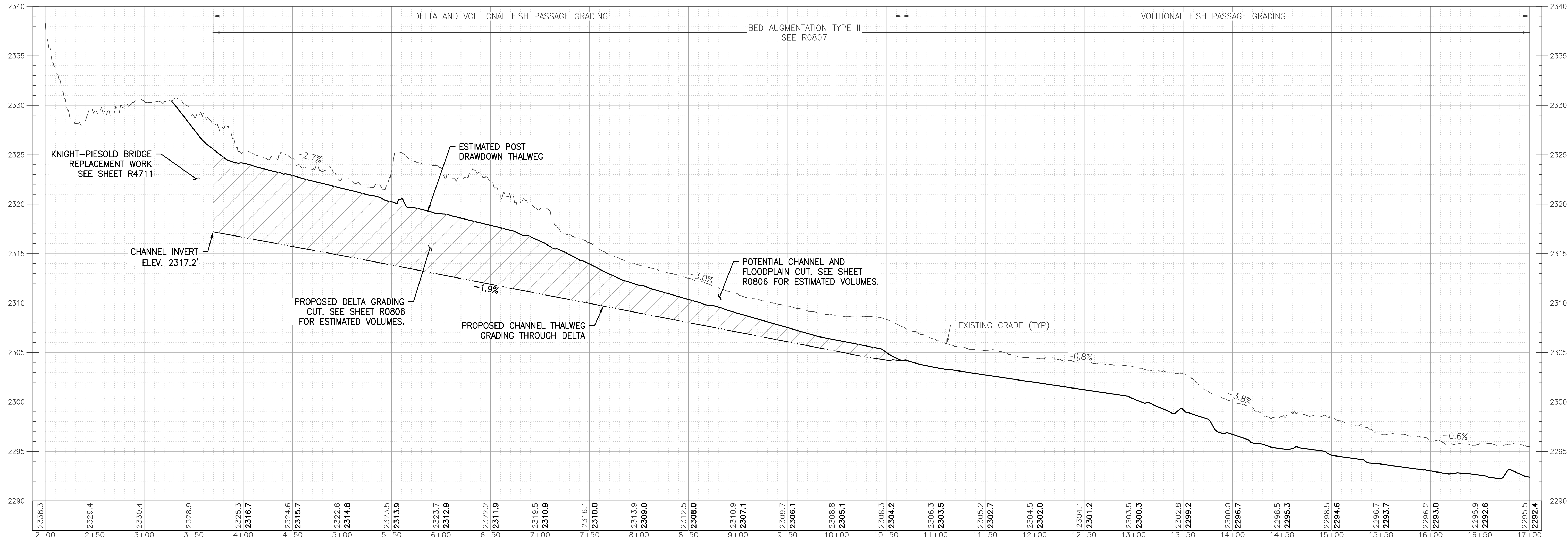
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REV	DESCRIPTION	BY	CHK	APP	DATE
B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19



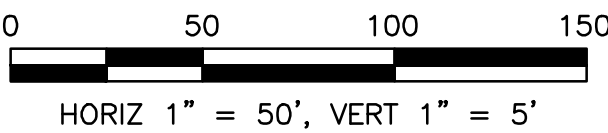
PREPARED BY	DESIGNED	PREPARED FOR
	JMR	
	DRAWN	
	REVIEWED	
	IN CHARGE	
APPROVED	MFA	

PROJECT	PROJ #
KLAMATH RIVER RENEWAL PROJECT IRON GATE RESERVOIR-JENNY CREEK PROFILE 2 & SCOTCH CREEK PROFILE	VA103-640/1
	DATE
	2020.02.07
SHEET TITLE	DWG
	R4721



CAMP CREEK PROFILE  
HORZ 1"=50', VERT 1"=5'

- NOTES:
- 1. GRADING REQUIRED IN CAMP CREEK FROM PROPOSED BRIDGE TO CONFLUENCE WITH SCOTCH CREEK.
  - 2. ADAPTIVE MANAGEMENT ACTIONS REQUIRED AT CAMP CREEK CONFLUENCE WITH THE KLAMATH RIVER. SEE SHEET R0807 FOR POTENTIAL GRADING ACTIONS.



PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA 02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA 10/11/19
REV	DESCRIPTION	BY	CHK	APP DATE



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PREPARED BY



DESIGNED JMR

DRAWN CW

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

IRON GATE RESERVOIR-CAMP CREEK PROFILE 1

PROJ #

VA103-640/1

DATE

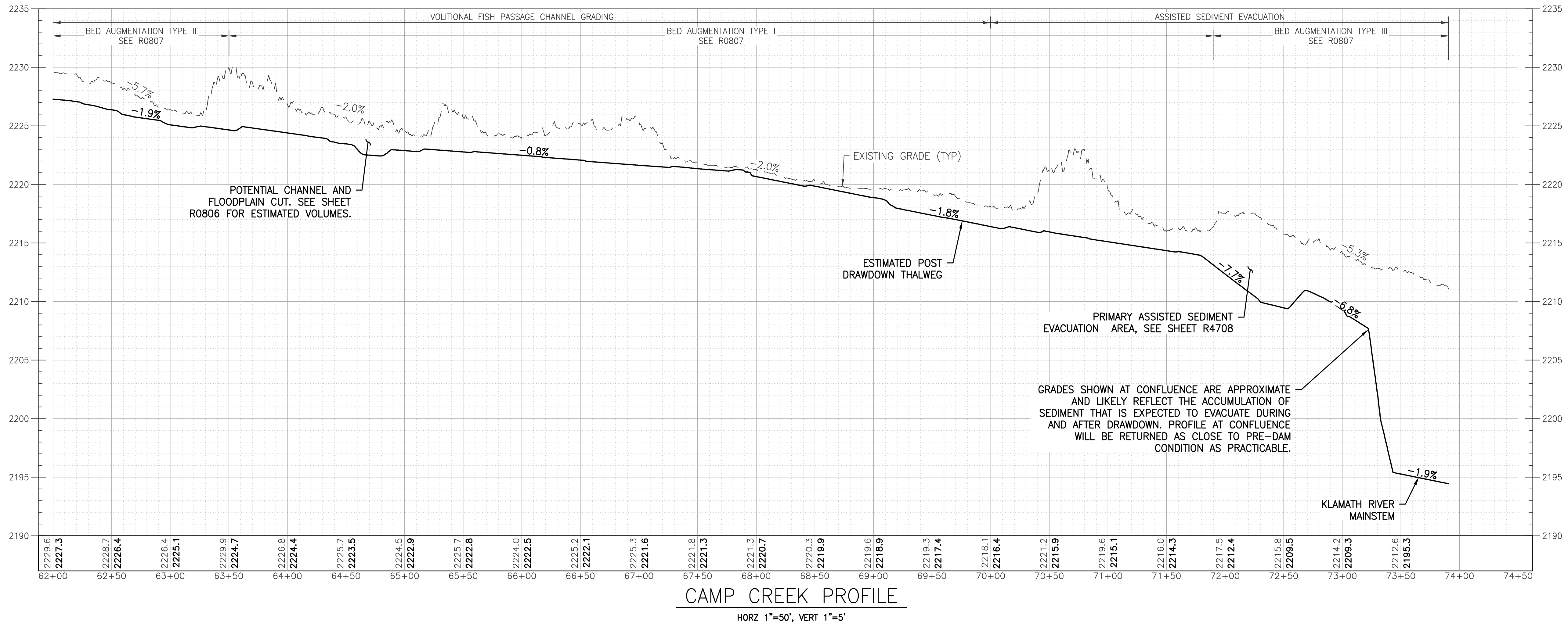
2020.02.07

DWG

R4722



- NOTES:
1. GRADING REQUIRED IN CAMP CREEK FROM PROPOSED BRIDGE TO CONFLUENCE WITH SCOTCH CREEK.
  2. ADAPTIVE MANAGEMENT ACTIONS REQUIRED AT CAMP CREEK CONFLUENCE WITH THE KLAMATH RIVER. SEE SHEET R0807 FOR POTENTIAL GRADING ACTIONS.



CAMP CREEK PROFILE  
HORZ 1"=50', VERT 1"=5'

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

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B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA 02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA 10/11/19
REV	DESCRIPTION	BY	CHK	APP DATE



WARNING  
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PREPARED BY

DESIGNED JMR

DRAWN CW

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

IRON GATE RESERVOIR-CAMP CREEK PROFILE 2

PROJ #

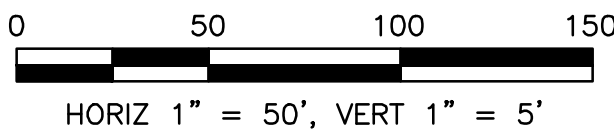
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DATE

2020.02.07

DWG

R4723





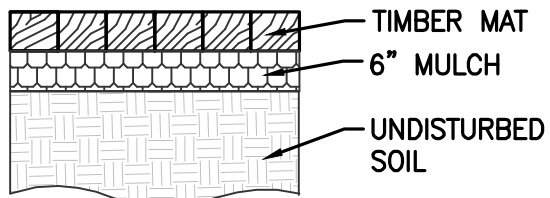
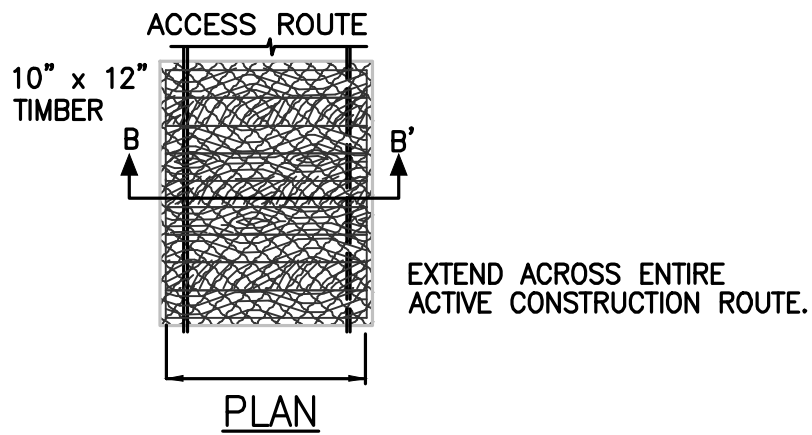
RESTORATION AREA EROSION AND SEDIMENT CONTROL NOTES FOR POST-DRAWDOWN (AFTER MARCH 15, DRAWDOWN YEAR) ACTIVITIES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND IMPLEMENTING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE CALIFORNIA CONSTRUCTION GENERAL PERMIT OR A WATER QUALITY MANAGEMENT PLAN (WQMP) AND AN EROSION SEDIMENT AND CONTROL PLAN APPROVED BY OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ).
- POST-DRAWDOWN CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED TO LIMIT SOIL DISTURBING ACTIVITIES DURING RAIN EVENTS.
- CONSTRUCTION VEHICLES AND EQUIPMENT ENTERING AND EXITING EXISTING PAVED AREAS SHALL BE FREE OF MUD, SILT AND OTHER DEBRIS DURING ALL PHASES OF WORK. NO MUD, SILT AND OTHER DEBRIS SHALL BE TRACKED ON PAVED SURFACES. IF SUCH MATERIALS ARE TRACKED ON THE STREETS OR OTHER PAVED AREAS BOTH PUBLIC AND PRIVATE, THE CONTRACTOR SHALL IMMEDIATELY REMOVE THESE MATERIALS WITH THE USE OF HAND BROOMS OR MECHANICAL SWEEPERS. DAILY INSPECTIONS WILL BE PERFORMED ON PAVED ROADS.
- CONSTRUCT STABILIZED CONSTRUCTION ACCESS AT ALL PAVED ENTRY AND EXIT POINTS. WHEEL WASH STATIONS SHALL BE USED IF CONDITIONS WARRANT. MAINTAIN STABILIZED CONSTRUCTION ACCESS AS NEEDED BASED ON DAILY INSPECTIONS. ANY OFFSITE TRACKING OF SEDIMENT IS PROHIBITED.
- FIBER ROLLS OR SILT FENCE SHALL BE INSTALLED DOWNSLOPE OF GROUND DISTURBING ACTIVITY OR AT THE TOE OF UNSTABLE SLOPES AND STOCKPILES TO PREVENT UPLAND SEDIMENT FROM ENTERING WATERWAYS. PLACE FIBER ROLLS OR SILT FENCE AROUND THE BASE OF ALL TEMPORARY SOIL STOCKPILES THROUGHOUT THE DURATION OF PROJECT. USE BIODEGRADABLE FIBER ROLLS ONLY.
- STOCKPILES SHALL HAVE PERIMETER SEDIMENT BARRIERS AND BE COVERED.
- WIND EROSION OR DUST CONTROL SHALL CONSIST OF APPLYING WATER AS NECESSARY TO PREVENT OR ALLEVIATE DUST NUISANCE GENERATED BY CONSTRUCTION ACTIVITIES.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AS INDICATED IN THE SPECIFICATIONS UNTIL DISTURBED AREAS ARE STABILIZED. AREAS DISTURBED AFTER SEDIMENT EVACUATION IS COMPLETE (MARCH 15th, DRAWDOWN YEAR) SHALL BE RE-SEEDED AND MULCHED IMMEDIATELY AFTER GROUND DISTURBANCE IS COMPLETE. SEE THE RESTORATION DESIGN REPORT FOR GUIDANCE ON SEED AND MULCH APPLICATION REQUIREMENTS. AFTER DRAW-DOWN AND SEDIMENT EVACUATION, EXPOSED SEDIMENT AREAS WILL BE STABILIZED WITH NATIVE SEEDING AND WOODY PLANTINGS. SEE SHEETS R1703-R1704, R2703-R2704, AND R4703-R4707 FOR PLANTING PLANS, SHEET R0809 FOR PLANTING PALETTE, AND SHEETS R0810-R0811 FOR PLANTING DETAILS.
- CONTRACTOR SHALL LIMIT THE EXTENT OF OVERLAND ACCESS ROUTES.
- CONTRACTOR SHALL UTILIZE A THICK (8 INCHES OR GREATER) LAYER OF WOOD CHIP MULCH TO PREVENT EROSION AND PROTECT EXISTING VEGETATION WHERE DEEMED NECESSARY ON OVERLAND ACCESS ROUTES. SEE SHEETS R1702, R2702, AND R4702 FOR ACCESS PLAN.
- CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL MEASURES DAILY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
- THE EROSION AND SEDIMENT CONTROL PLAN MEASURES SHOWN AND DESCRIBED SHALL BE CONSIDERED MINIMUM. SUPPLEMENTAL MEASURES SHALL BE PROVIDED BY THE CONTRACTOR AS FIELD CONDITIONS DICTATE OR AS DIRECTED BY THE ENGINEER, OWNER, OR ANY REGULATORY AUTHORITY.
- SOME MEASURES MAY NOT BE NECESSARY AND OTHERS MAY NOT BE INSTALLED UNTIL THE YEAR FOLLOWING DRAWDOWN.
- REQUIREMENTS LISTED IN SECTION 401 WATER QUALITY PERMITS WILL TAKE PRECEDENCE OVER THOSE SHOWN IN THESE DRAWINGS.

STAGING AREA EROSION AND SEDIMENT CONTROL NOTES:

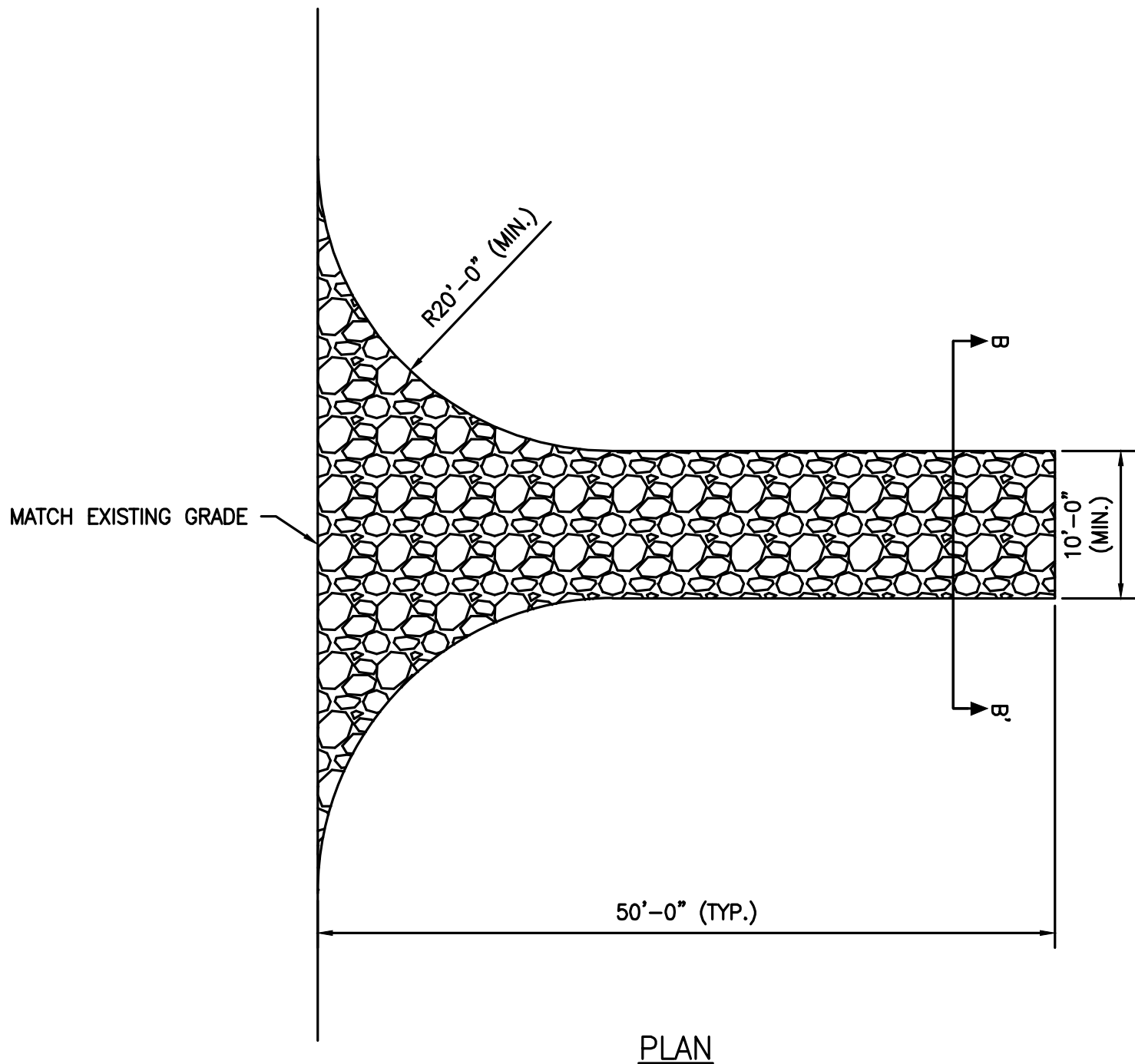
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING IMPLEMENTING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE CALIFORNIA CONSTRUCTION GENERAL PERMIT OR A WATER QUALITY MANAGEMENT PLAN (WQMP) AND AN EROSION SEDIMENT AND CONTROL PLAN APPROVED BY OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ).
- LINEAR SEDIMENT CONTROL BMPS (SUCH AS FIBER ROLLS OR SILT FENCE) SHALL BE INSTALLED ON THE DOWNGRADIENT EDGE OF THE STAGING AREA AS NEEDED TO PREVENT SEDIMENT AND POLLUTANT DISCHARGES. SEE SHEETS R1702, R2702, AND R4702 ACCESS PLAN FOR PROPOSED STAGING AREAS
- STOCKPILES SHALL HAVE PERIMETER SEDIMENT BARRIERS AND BE COVERED.
- WIND EROSION OR DUST CONTROL SHALL CONSIST OF APPLYING WATER AS NECESSARY TO PREVENT OR ALLEVIATE DUST NUISANCE GENERATED BY CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL MEASURES DAILY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
- ALL WASTE COLLECTION CONTAINERS (DUMPSTERS AND TRASHCANS) SHALL BE FREE OF LEAKS AND WILL HAVE ADEQUATE COVERS.
- THE STAGING AREA SHALL HAVE APPROPRIATE CONTAINMENT BMPS SURROUNDING ANY EQUIPMENT MAINTENANCE OR FUELING ACTIVITIES.
- THE EROSION AND SEDIMENT CONTROL PLAN MEASURES SHOWN AND DESCRIBED SHALL BE CONSIDERED MINIMUM. SUPPLEMENTAL MEASURES SHALL BE PROVIDED BY THE CONTRACTOR AS FIELD CONDITIONS DICTATE OR AS DIRECTED BY THE ENGINEER, OWNER, OR ANY REGULATORY AUTHORITY.

QUANTITIES FOR EROSION AND SEDIMENT CONTROL MEASURES			
RESERVOIR	SILT FENCE (LF)	CONSTRUCTION ENTRANCE (EA)	FIBER ROLL (LF)
JC BOYLE	1,900	3	3,500
COPCO 1	5,300	4	12,000
IRON GATE	13,900	4	30,000



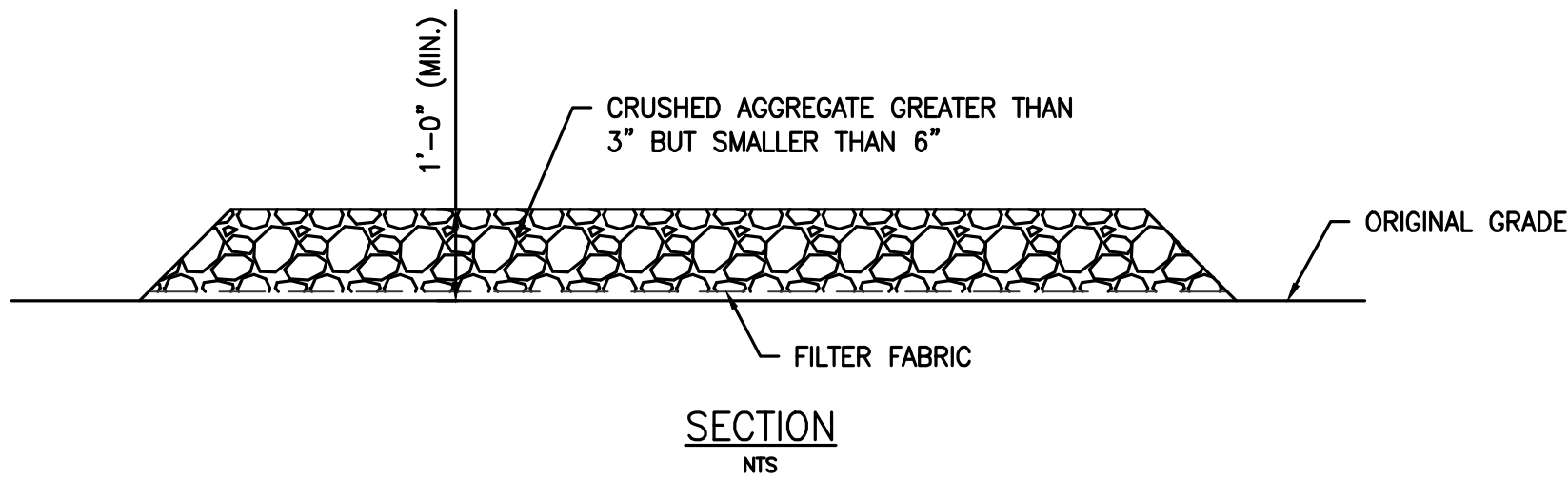
SECTION B-B'

5  
R0801  
DETAIL — TIMBER MAT  
NOT TO SCALE

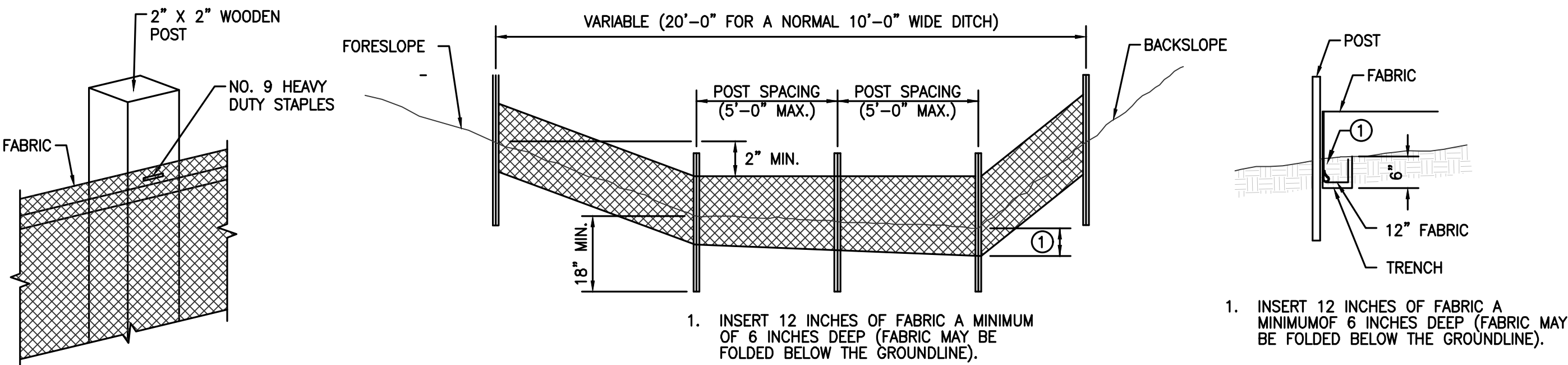


NOTE:  
ON SMALL SITES LENGTH SHOULD BE THE MAXIMUM ALLOWED BY THE SITE.

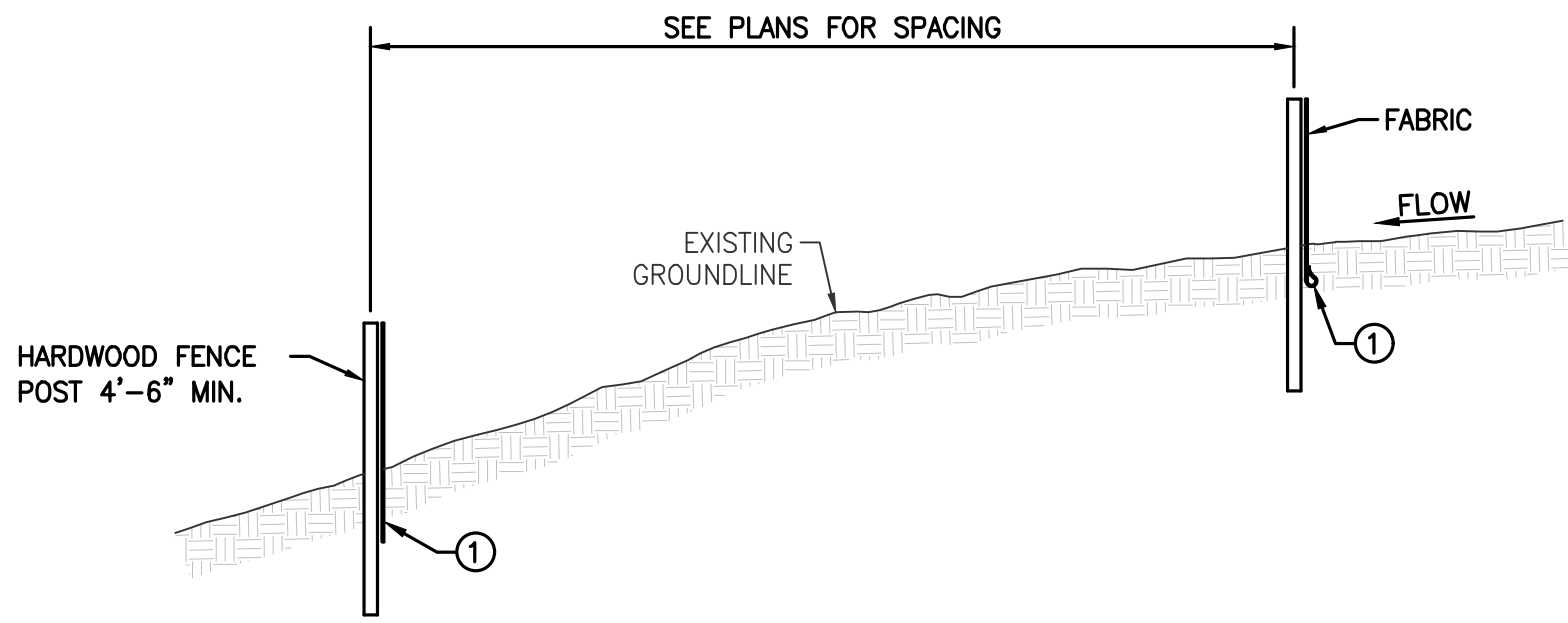
4  
R0801  
DETAIL — CONSTRUCTION ENTRANCE  
NOT TO SCALE



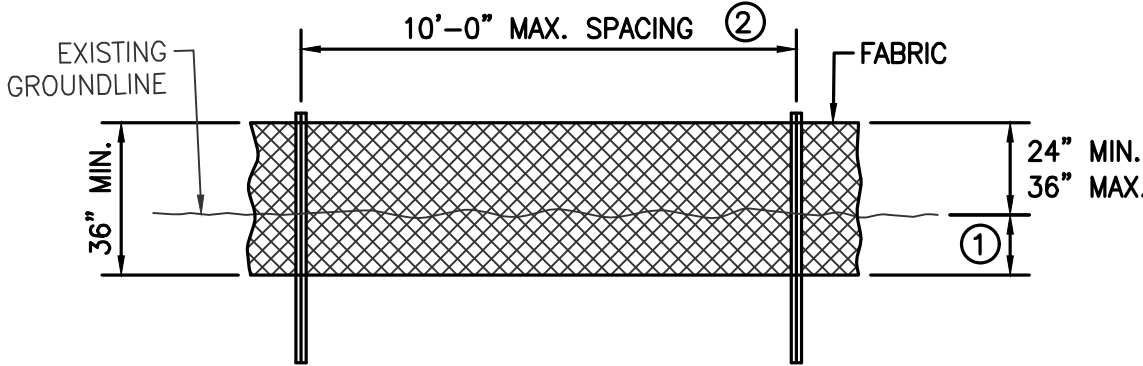
SECTION  
NTS



ATTACHMENT TO POST



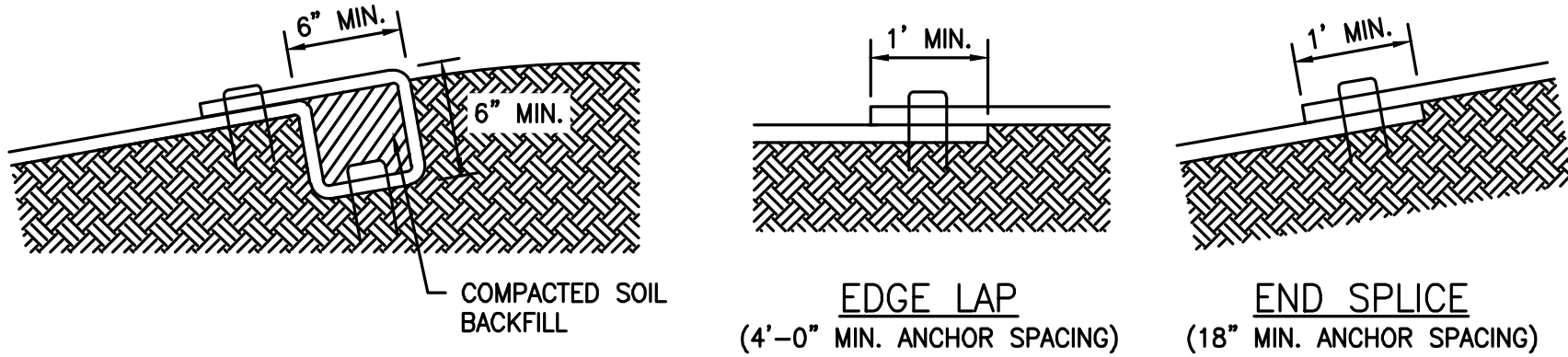
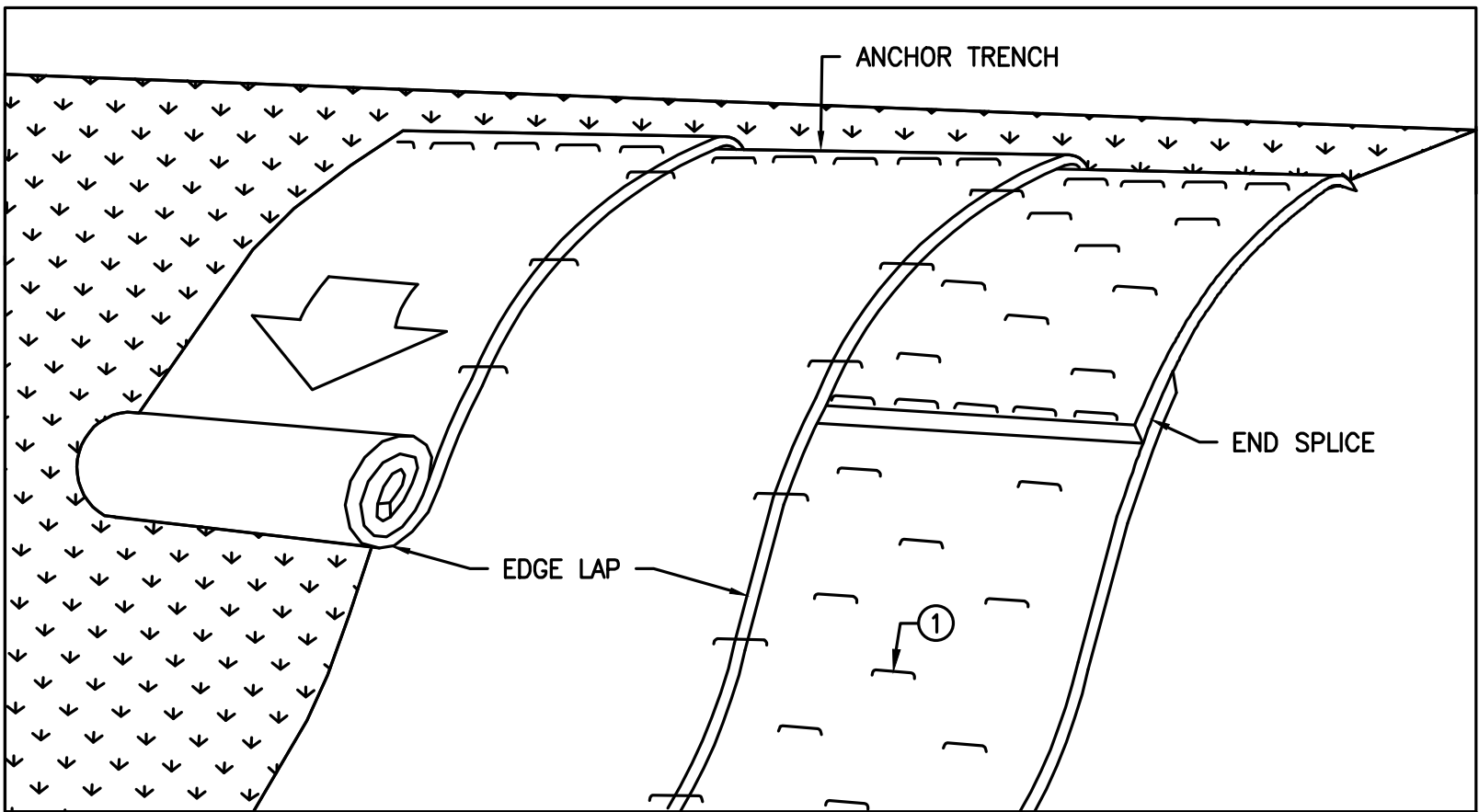
TYPICAL SILT FENCE INSTALLATION ON  
LONGITUDINAL SLOPES (PROFILE VIEW)



- NOTES:
- INSERT 12 INCHES OF FABRIC A MINIMUM OF 6 INCHES DEEP (FABRIC MAY BE FOLDED BELOW THE GROUNDLINE).
  - REDUCE POST SPACING TO 5'-0" AT WATER CONCENTRATION AREAS, OR AS REQUIRED TO ADEQUATELY SUPPORT FENCE.

DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

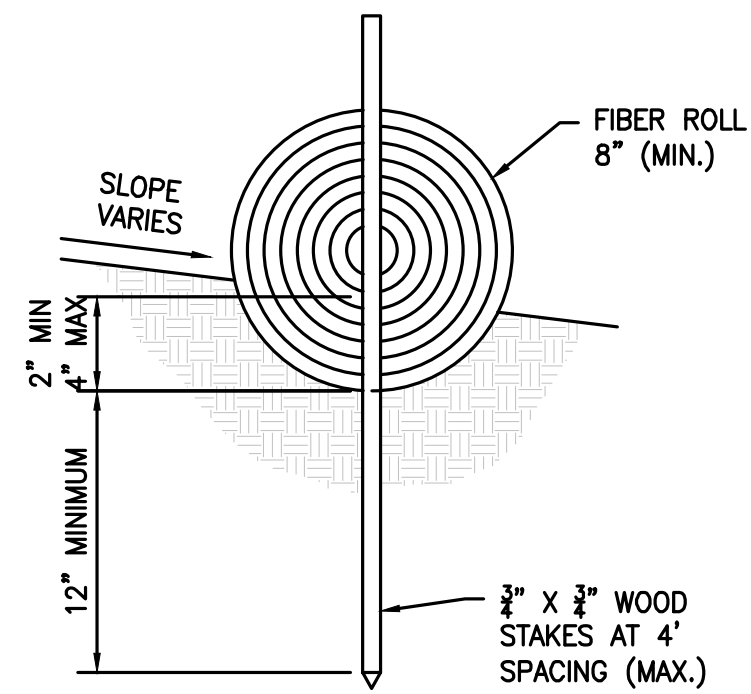
3  
R0801  
DETAIL — SILT FENCE  
NOT TO SCALE



ANCHOR TRENCH  
(12" MIN. ANCHOR SPACING)

- NOTE:
- SECURE BLANKET TO GROUND ACCORDING TO MANUFACTURER'S RECOMMENDED ANCHORING PATTERN AND MINIMUM SHOWN IN TABLE 1.
  - DETAIL INCLUDED TO PROVIDE GUIDANCE IN THE EVENT EROSION CONTROL BLANKET IS NEEDED.

1  
R0801  
DETAIL — EROSION CONTROL BLANKET  
NOT TO SCALE



2  
R0801  
DETAIL — FIBER ROLL ENTRENCHMENT  
NOT TO SCALE

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

REV	DESCRIPTION	BY	CHK	APP	DATE
B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19



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DESIGNED JMR, GH/KB AND JM

DRAWN SMS

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

EROSION AND SDEIMENT CONTROL DETAILS

PROJ #

VA103-640/1

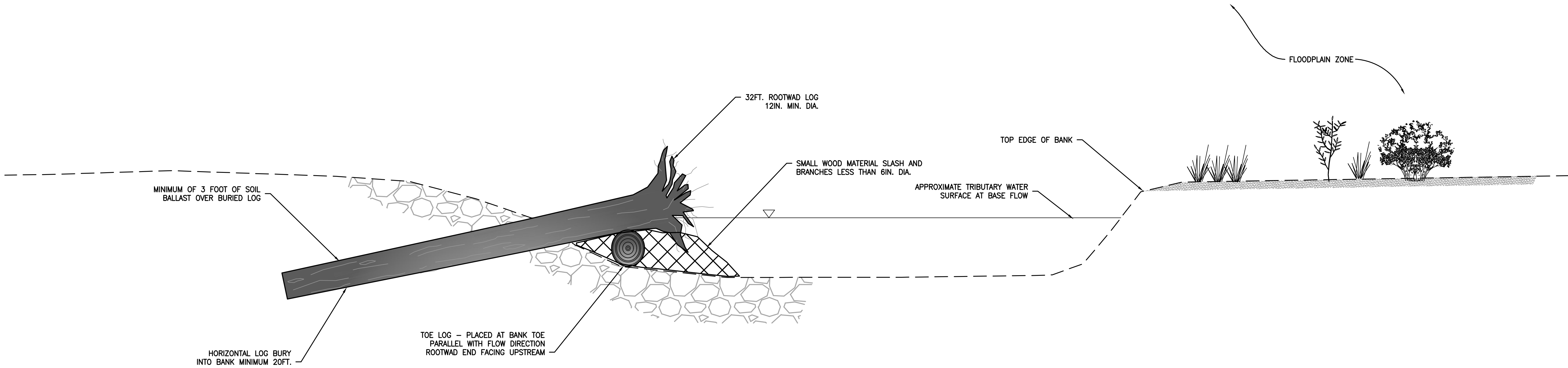
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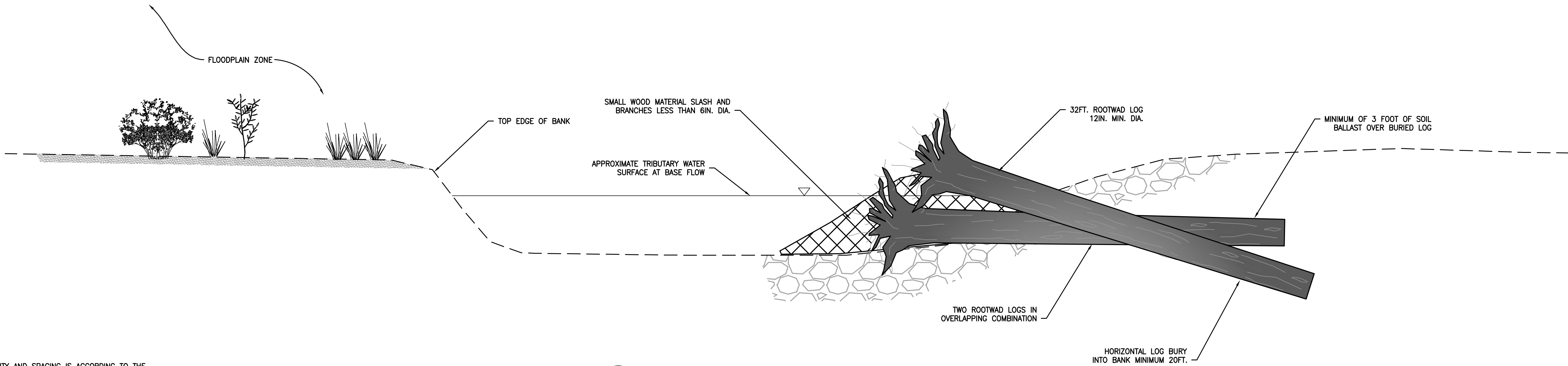
R0801





1 TYPE 1 – WOOD COMPLEX – TOE LOG  
R0802 X-SECTION – GROUND PLACED NOT TO SCALE

NOTE:  
WOOD DENSITY AND SPACING IS ACCORDING TO THE FOLLOWING CRITERIA: EACH WOOD COMPLEX (AVG. 2 LOGS IN COMBINATION) PLACED EVERY 42FT. ALONG TRIBUTARY LENGTH. EXACT LOCATION AND DENSITY DETERMINED ON-SITE BY DESIGN REPRESENTATIVE BASED ON DRAW-DOWN TOPOGRAPHIC CONDITIONS



2 TYPE 2 – WOOD COMPLEX – CROSS PATTERN  
R0802 X-SECTION – GROUND PLACED NOT TO SCALE

NOTE:  
WOOD DENSITY AND SPACING IS ACCORDING TO THE FOLLOWING CRITERIA: EACH WOOD COMPLEX (AVG. 2 LOGS IN COMBINATION) PLACED EVERY 42FT. ALONG TRIBUTARY LENGTH. EXACT LOCATION AND DENSITY DETERMINED ON-SITE BY DESIGN REPRESENTATIVE BASED ON DRAW-DOWN TOPOGRAPHIC CONDITIONS

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

REV	DESCRIPTION	BY	CHK	APP	DATE
B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19



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PREPARED BY



DESIGNED JMR, GH/KB AND JM

DRAWN SMS

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

RESTORATION DETAILS 1

PROJ #

VA103-640/1

DATE

2020.02.07

DWG

R0802



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Jchellon Jul 01, 2022 8:44am

1 TYPE 1 – WOOD COMPLEX – TOE LOG  
R0803 PLANVIEW – GROUND PLACED NOT TO SCALE

HORIZONTAL LOG BURY  
INTO BANK MINIMUM 20FT.

TOE LOG – PLACED AT BANK TOE  
PARALLEL WITH FLOW DIRECTION

SMALL WOOD MATERIAL SLASH  
AND BRANCHES LESS THAN  
6IN. DIAMETER.

TRIBUTARY EDGE OF WATER

TOP EDGE OF BANK

FLOODPLAIN ZONE

32FT. ROOTWAD LOG  
12IN. MIN. DIA.

2 TYPE 2 – WOOD COMPLEX – CROSS PASTER  
R0803 PLANVIEW – GROUND PLACED NOT TO SCALE

HORIZONTAL LOG BURY  
INTO BANK MINIMUM 20FT.

ANGLE OF CROSS PATTERN WILL  
RANGE FROM 60–110 DEGREES

HORIZONTAL LOG BURY  
INTO BANK MINIMUM 20FT.

NOTE:  
WOOD DENSITY AND SPACING IS ACCORDING TO THE  
FOLLOWING CRITERIA: EACH WOOD COMPLEX (AVG. 2  
LOGS IN COMBINATION) PLACED EVERY 42FT. ALONG  
TRIBUTARY LENGTH. EXACT LOCATION AND DENSITY  
DETERMINED ON-SITE BY DESIGN REPRESENTATIVE  
BASED ON DRAW-DOWN TOPOGRAPHIC CONDITIONS

SMALL WOOD MATERIAL SLASH AND  
BRANCHES LESS THAN 6IN. DIA.

32FT. ROOTWAD LOG  
12IN. MIN. DIA.

FLOW DIRECTION ALONG TRIBUTARY

TRIBUTARY EDGE OF WATER

TOP EDGE OF BANK

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19
REV	DESCRIPTION	BY	CHK	APP	DATE

WARNING  
0 1/2 1

IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE

PREPARED BY



DESIGNED JMR, GH/KB AND JM

DRAWN SMS

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

RESTORATION DETAILS 2

PROJ #

VA103-640/1

DATE

2020.02.07

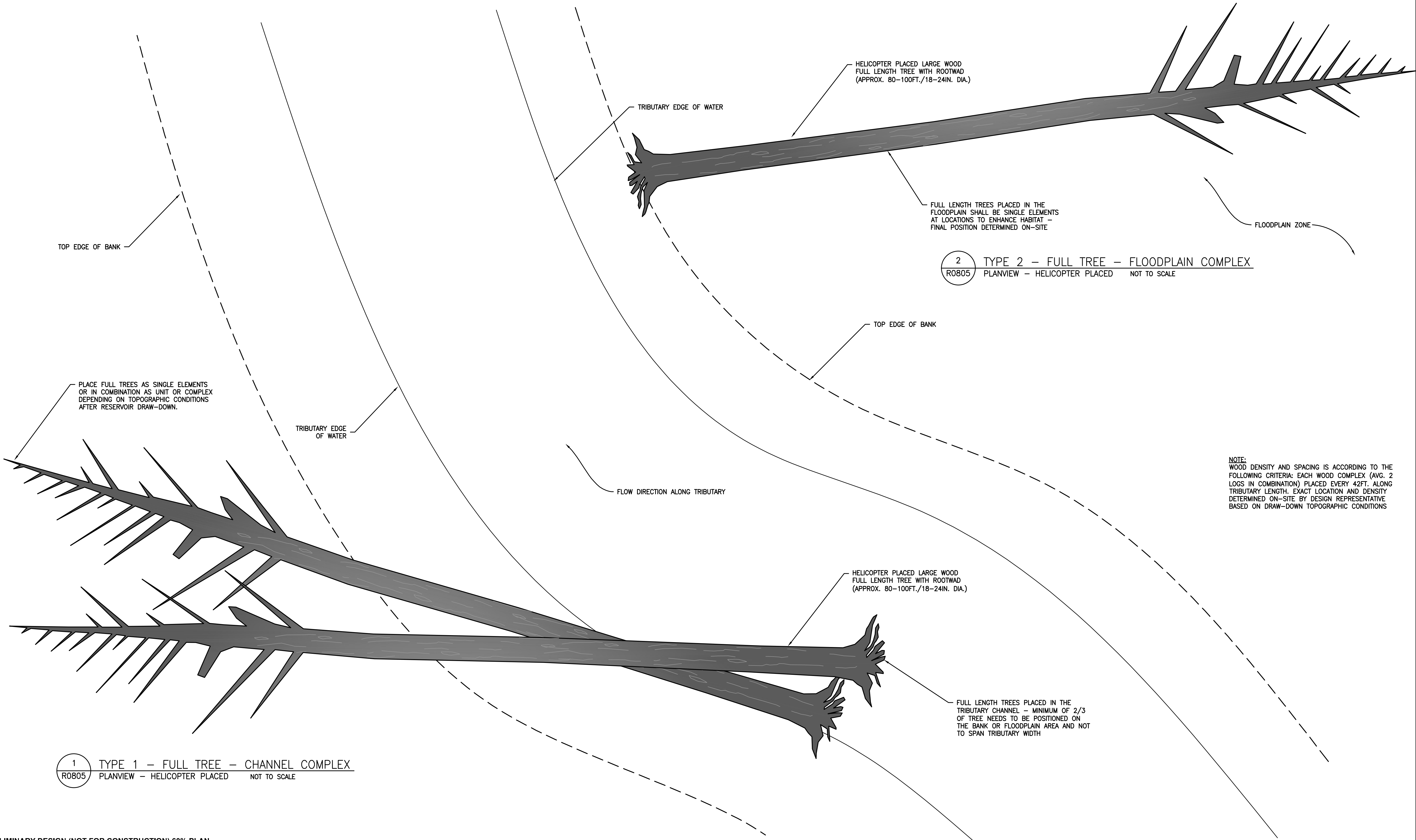
DWG

R0803





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jchellon Jul 21, 2022 8:44am



PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19
REV	DESCRIPTION	BY	CHK	APP	DATE



WARNING  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PREPARED BY



DESIGNED JMR, GH/KB AND JM

DRAWN SMS

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

RESTORATION DETAILS 4

PROJ #

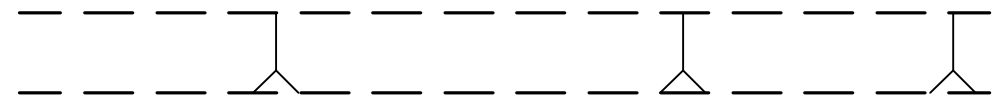
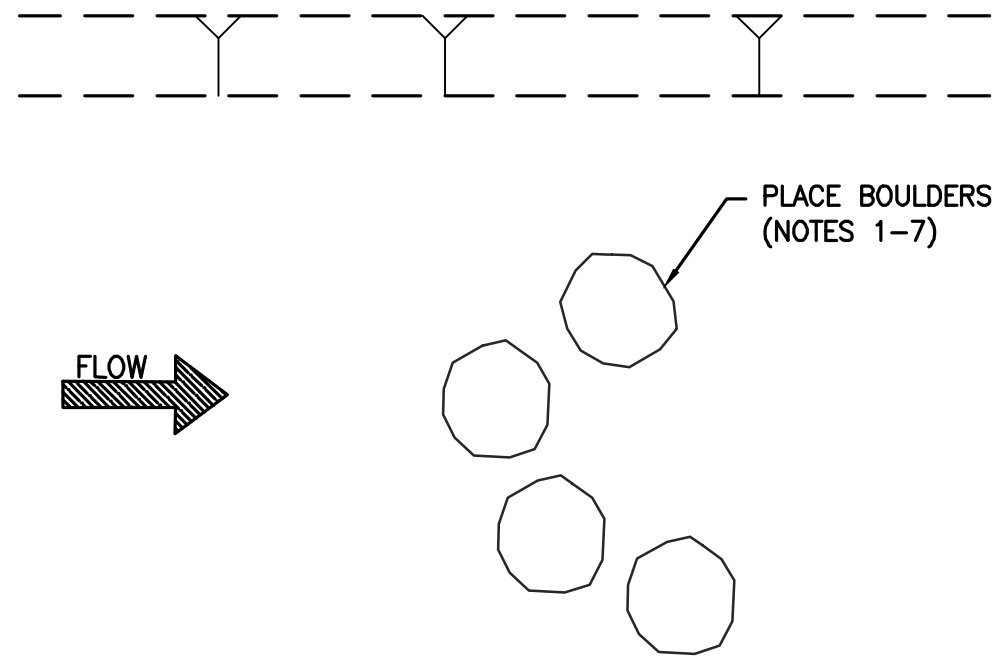
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DATE

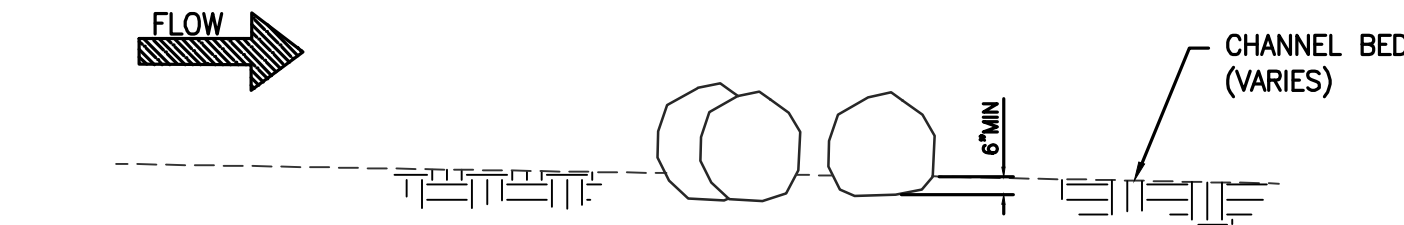
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R0805

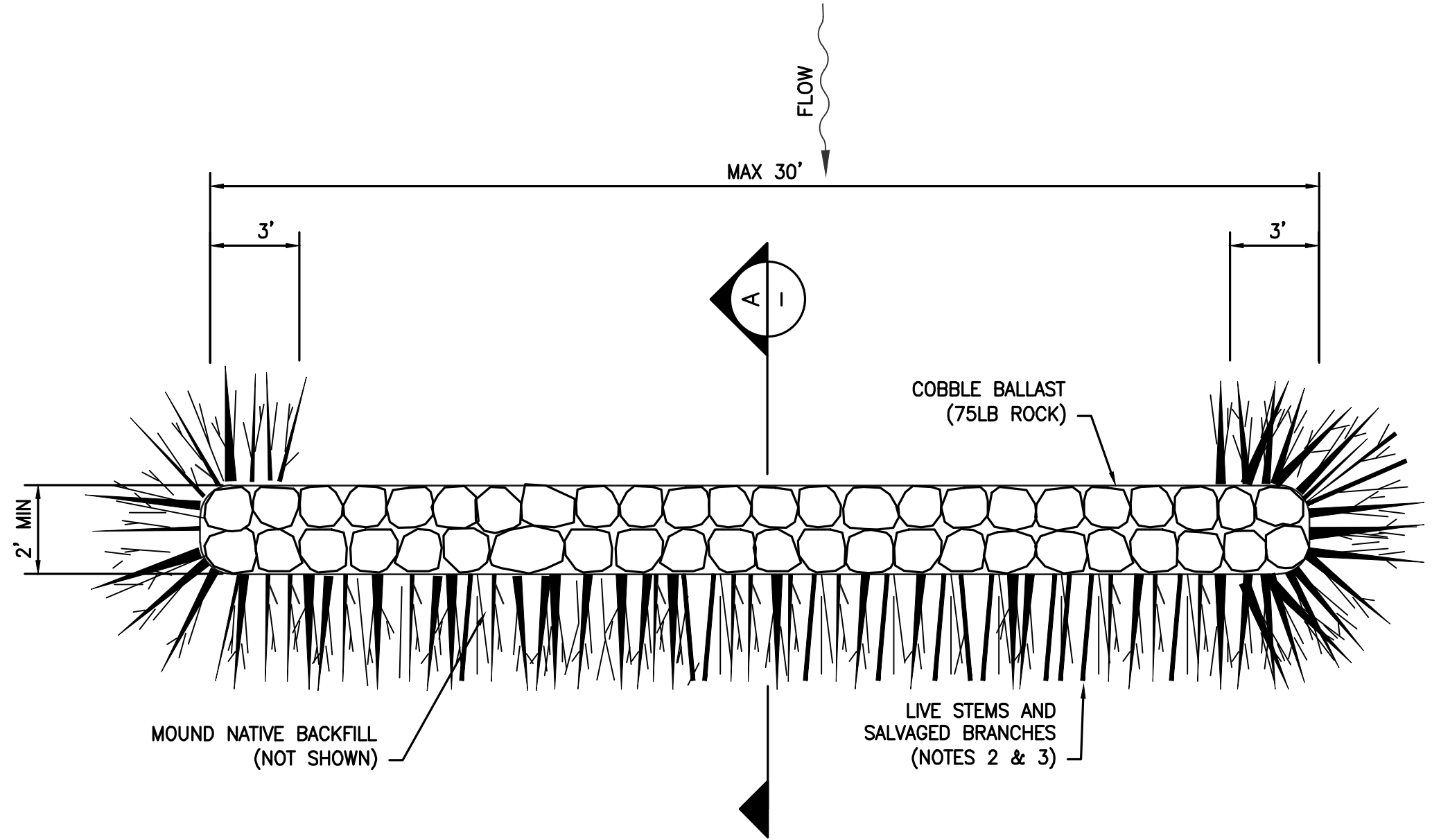


1  
R0806  
DETAIL — BOULDER CLUSTER — PLAN VIEW  
1" = 6'



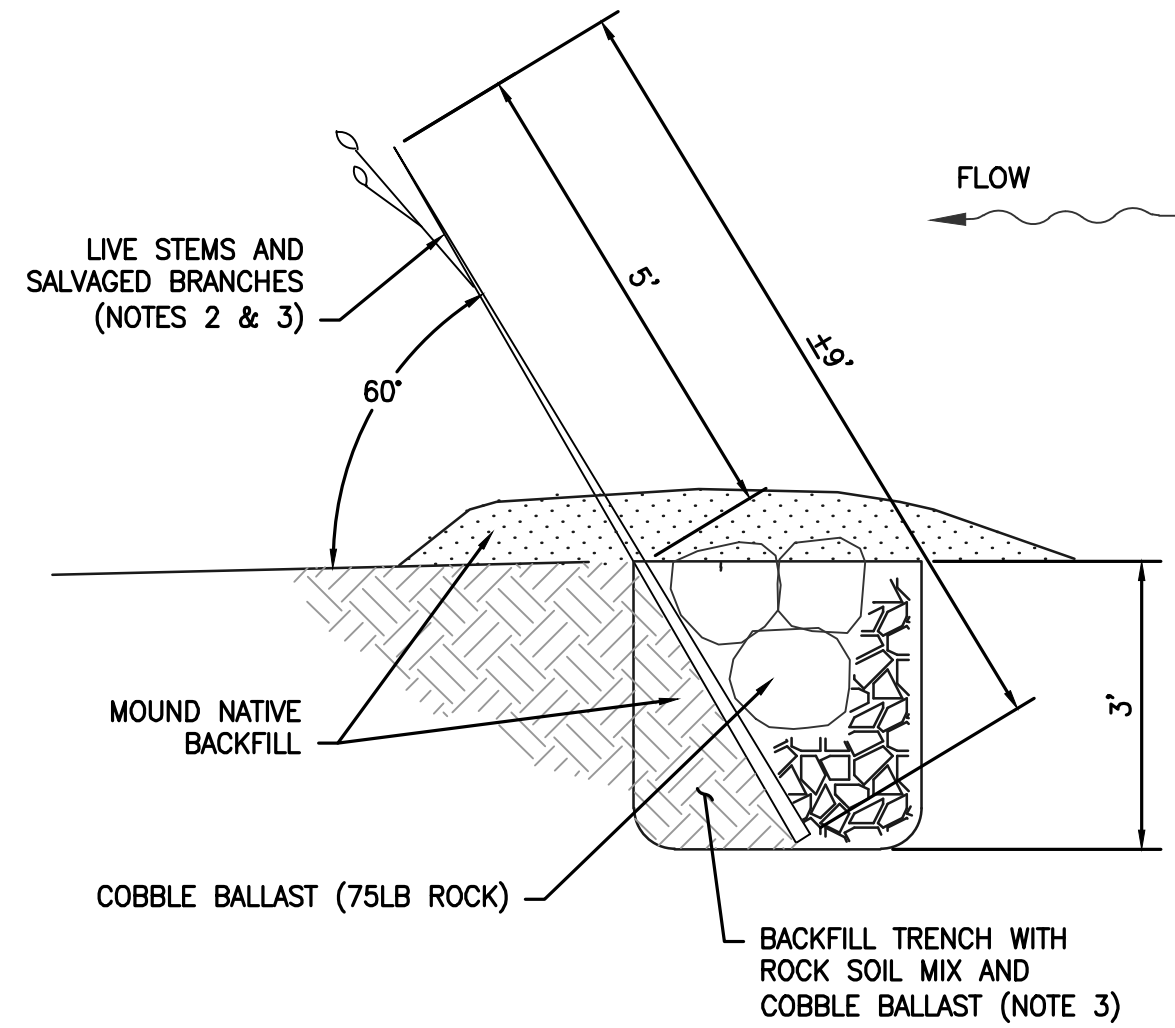
2  
R0806  
DETAIL — BOULDER CLUSTER — PROFILE VIEW  
1" = 6'

- NOTES:**
- BOULDER CLUSTERS MAY BE PLACED ONLY IN THE CHANNEL OF THE KLAMATH RIVER OR IN TRIBUTARIES.
  - THIS IS A SCHEMATIC DETAIL SHOWING PLACEMENT OF BOULDER CLUSTERS IN A TRIBUTARY.
  - BOULDER CLUSTERS TO BE PLACED TO: INCREASE ROUGHNESS, PROVIDE VELOCITY SHELTER, LOCALLY ELEVATE WATER SURFACE AND/OR FACILITATE SEDIMENT SORTING.
  - NUMBER AND SIZE OF BOULDERS TO VARY DEPENDING ON LOCATION AND FUNCTION.
    - NUMBER OF BOULDERS — 3 TO 8 EACH
    - APPROXIMATE SIZE OF BOULDERS — 2 TO 6 FOOT DIAMETER
  - USE ROUNDED BOULDERS SOURCED ONSITE.
  - GENERALLY, BOULDERS TO BE PLACED USING LAND-BASED EQUIPMENT IN READILY ACCESSIBLE AREAS.
  - ACTUAL LOCATION, SIZE AND NUMBER OF BOULDERS TO BE DETERMINED POST-DRAWDOWN.



1  
R0806  
DETAIL — WILLOW BAFFLE — PLAN VIEW  
NOT TO SCALE

- NOTES**
- WILLOW BAFFLES MAY BE PLACED ONLY ON THE FLOODPLAIN OF THE KLAMATH RIVER OR ITS TRIBUTARIES.
  - TRENCH: EXCAVATE TRENCH TO THE REQUIRED DIMENSION. MOUND HALF OF THE NATIVE BACKFILL ON THE DOWNSTREAM SIDE OF THE TRENCH FOR THE LIVE STEMS TO LEAN AGAINST
  - STEM PLACEMENT: REMOVE ALL LEAVES FROM APPROXIMATELY 50% OF THE LIVE STEMS. LAY LIVE STEMS AND SALVAGED BRANCH MATERIALS, ALTERNATING, IN THE TOE TRENCH PARALLEL TO EACH OTHER, WITH THE CUT/BASAL ENDS IN THE TOE TRENCH. STEMS SHALL BE PLACED CLOSELY TOGETHER AT A MINIMUM OF FOUR (4) LIVE STEMS AND A COMBINED TOTAL OF TEN (10) STEMS PER LINEAR FOOT. TAKE CARE NOT TO DAMAGE STEM BARK AND BRANCHES THROUGHOUT INSTALLATION.
  - ANCHOR STEMS: CAREFULLY BACKFILL TOE TRENCH WITH EXCAVATED NATIVE ALLUVIUM. SEQUENTIALLY PLACE 1-LAYER MINIMUM OF ROCK-SOIL MIX AND COBBLE BALLAST ON LIVE STEMS AND COMPLETE TRENCH BACKFILL WITH NATIVE BACKFILL. COMPACT BACKFILL TO 85% RELATIVE COMPACTION (RC) USING METHODS SUCH AS HAND TAMPING, WATERING, VIBRATORY PLATE, OR SIMILAR.
  - IMMEDIATELY UPON INSTALLING EACH WILLOW BAFFLE STRUCTURE, IRRIGATE ALL LIVE STEMS. IRRIGATE DEEPLY AND THOROUGHLY TWICE A WEEK MINIMUM UNTIL OCTOBER 31.



1A  
R0806  
WILLOW BAFFLE  
SECTION VIEW  
NOT TO SCALE

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

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B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
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RESTORATION DETAILS 5

PROJ #

VA103-640/1

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2020.02.07

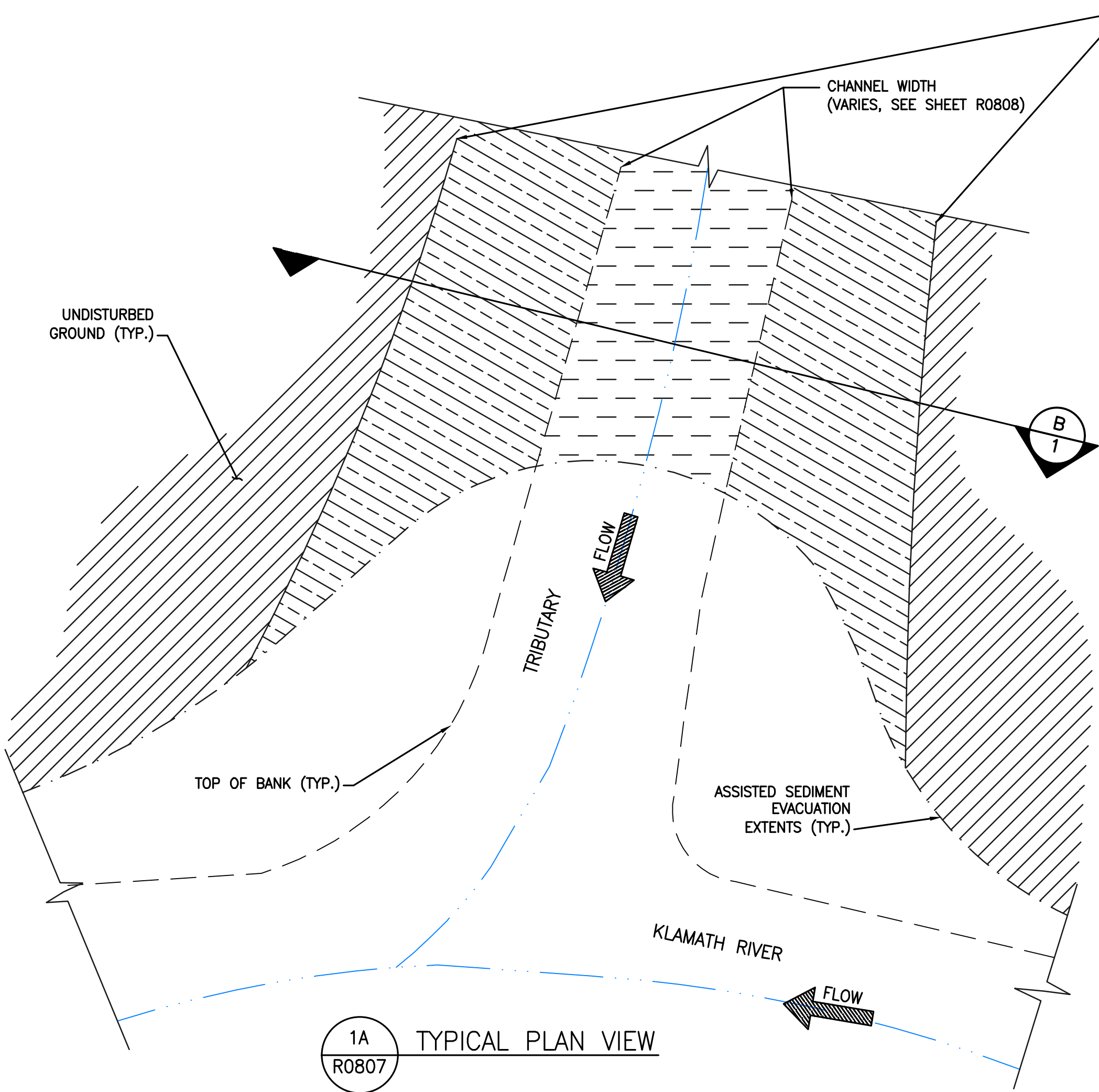
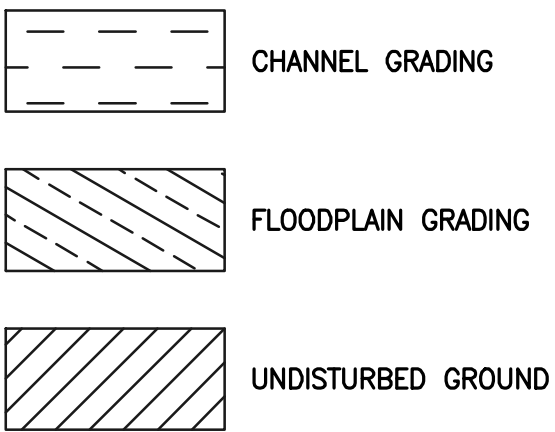
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GENERAL NOTES:

1. CHANNEL GRADING VOLUMES REPRESENT EXCAVATION NECESSARY TO ESTABLISH A STABLE VOLITIONAL FISH PASSAGE CHANNEL WHERE SEDIMENT EVACUATION IS NOT SUFFICIENT TO MEET THE ESTIMATED POST-DRAWDOWN SURFACE.
2. TRIBUTARY CHANNEL AND FLOODPLAIN GRADING VOLUMES ARE BASED ON THE TOTAL DEPTH OF SEDIMENT WITHIN THE FLOODPRONE AREA WIDTH UPSTREAM OF THE ASSISTED SEDIMENT EVACUATION EXTENTS.
3. FLOODPRONE AREA WIDTH WAS IDENTIFIED AS THE POINT OF INTERSECTION BETWEEN THE PRE-IMPOUNDMENT SURFACE AND THE ELEVATION ASSOCIATED WITH THE CHANNEL INVERT ELEVATION PLUS TWO TIMES THE MAXIMUM DEPTH ( $D_{max}$ ) OF THE TYPICAL CHANNEL SECTION ALONG THE ESTIMATED POST-DRAWDOWN CHANNEL ALIGNMENT.
4. DELTA GRADING VOLUMES REPRESENT EXCAVATION NECESSARY TO ESTABLISH A STABLE VOLITIONAL FISH PASSAGE CHANNEL THROUGH RELICT DELTAS REMAINING POST-DRAWDOWN.
5. SEDIMENT STABILIZATION GRADING VOLUMES REPRESENT SEDIMENT REMOVAL ACTIONS RELATED TO LONG-TERM FISH PASSAGE AND SEDIMENT STABILIZATION. THIS WORK MAY INCLUDE THE FOLLOWING IN ADDITION TO THE ABOVE ACTIONS:
  - 5.1. REMOVAL OF IN-CHANNEL SEDIMENT BLOCKAGES;
  - 5.2. EXCAVATION OF UNSTABLE DEPOSITS THAT MAY LEAD TO IMPEDIMENT OF FISH PASSAGE OR LARGE-MAGNITUDE TURBIDITY PULSES;
  - 5.3. EXCAVATION OF SEDIMENT DEPOSITS TO PROMOTE FLOODPLAIN CONNECTIVITY; AND
  - 5.4. EXCAVATION OF RIPARIAN BENCHES.
6. CONTINGENCY ACTIONS ARE PRIORITIZED AS LISTED ABOVE AND WILL NOT BE UNDERTAKEN UNTIL ACTIONS REQUIRED TO PROMOTE VOLITIONAL FISH PASSAGE IN IDENTIFIED TRIBUTARY RESTORATION AREAS HAVE BEEN COMPLETED.
7. ALL GRADATIONS ARE SUBJECT TO CHANGE BASED ON IN-SITU MATERIAL PRESENT POST-DRAWDOWN, AS WELL AS OTHER LOCALIZED GEOMORPHIC PROCESSES THAT MAY BE INFLUENCING BED GRADATION AND/OR BED FACET TYPE.
8. BOULDERS MAY BE REQUIRED TO PROVIDE GRADE CONTROL NECESSARY FOR VOLITIONAL FISH PASSAGE. SIZING TO BE DETERMINED ON A CASE-BY-CASE BASIS BASED ON SIZE OF IN-SITU MATERIAL AND SHEAR STRESSES.
9. THE ALIGNMENT AND PROFILE OF CHANNEL MAY NEED FIELD ADJUSTMENT AND MAY REQUIRE EXCAVATION BELOW PRE-DAM GROUND ELEVATIONS FOR PLACEMENT OF AUGMENTED BED MIX.



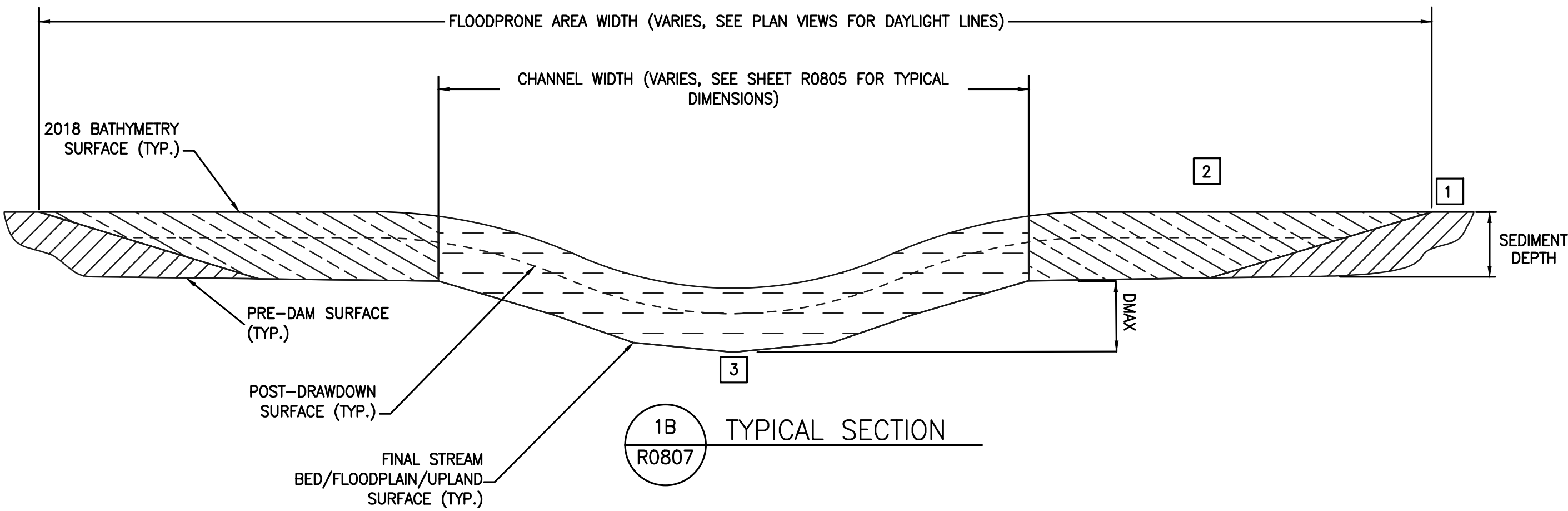
TRIBUTARY GRADING VOLUMES						
		VOLUME (CY)				
RESERVOIR	TRIBUTARY	CHANNEL GRADING	FLOODPLAIN GRADING	DELTA GRADING	SEDIMENT STABILIZATION	TOTAL
JC BOYLE	SPENCER CREEK	-----	-----	400	-----	400
COPCO 1	DEER CREEK	2,400	34,100	-----	-----	36,500
COPCO 1	BEAVER CREEK	9,700	220,200	-----	-----	229,900
IRON GATE	JENNY CREEK	18,800	170,900	21,600	-----	211,300
IRON GATE	CAMP/SCOTCH CREEK	19,200	45,400	32,000	-----	96,600
JC BOYLE	ALL	-----	-----	-----	40,000	40,000
COPCO 1	ALL	-----	-----	-----	80,000	80,000
IRON GATE	ALL	-----	-----	-----	80,000	80,000
					TOTAL	774,700

CONSTRUCTION NOTES:

1. TIE BOUNDARY OF RIPARIAN CORRIDOR INTO POST-DRAWDOWN SURFACE AT 3H:1V SLOPE.
2. RIPARIAN PLANTING CORRIDOR TYPICAL WIDTH IS 50 FEET ALONG THE MAINSTEM KLAMATH RIVER AND 30 FEET ALONG ALL TRIBUTARIES. ACTUAL PLANTED WIDTH MAY VARY BASED ON POST-DRAWDOWN TOPOGRAPHY. SEE PLANTING PLAN SHEETS R1703-R1704, R2703-R2704, AND R4703-R4707. SEE SHEETS R0809-R0811 FOR PLANTING PALETTES AND DETAILS.
3. RESTORATION TYPE DETERMINED BY BED MIX AUGMENTATION TYPE:  
TYPE I: IN-SITU MATERIAL WITH NO AUGMENTATION  
TYPE II: IN-SITU MATERIAL WITH GRAVEL/BOULDER AUGMENTATION  
TYPE III: IN-SITU MATERIAL WITH COBBLE/BOULDER AUGMENTATION WITH MACHINE PLACEMENT OF BOULDERS

BED MIX AUGMENTATION RATIOS				
		GRADATION (IN)*		
AUGMENTATION TYPE	NATIVE MATERIAL (%)	D <sub>15</sub>	D <sub>50</sub>	D <sub>84</sub>
I	100	N/A	N/A	N/A
II	70-90	2	4	6
III	50-80	8	20	30

\*SEE GENERAL NOTES 7 AND 8



1  
R0807  
DETAIL - TYPICAL TRIBUTARY CROSSING  
NOT TO SCALE

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

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jshelton Jul 20, 2022 - 11:24am

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PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

TRIBUTARY GRADING QUANTITIES

PROJ #

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DATE

2020.02.07

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R0807





## PIONEER UPLAND SEED MIX

Botanical Name	COMMON NAME	LIFE FORM
<i>Achillea millefolium</i>	COMMON YARROW	PERENNIAL FORB
<i>Bromus carinatus</i>	CALIFORNIA BROME	PERENNIAL FORB
<i>Croton setiger</i>	TURKEY MULLEIN	ANNUAL FORB
<i>Deschampsia elongata</i>	SLENDER HAIRGRASS	ANNUAL GRASS
<i>Drymocallis glandulosa</i>	STICKY CINQUOIL	PERENNIAL FORB
<i>Elymus elymoides</i>	SQUIRRELTAIL	PERENNIAL GRASS
<i>Elymus glaucus</i>	BLUE WILDRYE	PERENNIAL GRASS
<i>Elymus spicata</i>	BLUE BUNCH WHEAT GRASS	PERENNIAL GRASS
<i>Eriophyllum lanatum</i>	OREGON SUNSHINE	PERENNIAL FORB
<i>Festuca idahoensis</i>	IDAHO FESCUE	PERENNIAL GRASS
<i>Grindelia camporum</i>	GUMPLANT	PERENNIAL FORB
<i>Lupinus argenteus</i>	SILVERY LUPINE	PERENNIAL FORB
<i>Lupinus microcarpus</i>	CHICK LUPINE	ANNUAL FORB
<i>Penstemon roezlii</i>	ROZEL'S PENSTEMON	PERENNIAL FORB
<i>Poa secunda ssp sanbergii</i>	SANDBERG'S BLUEGRASS	PERENNIAL GRASS
<i>Solidago elongata</i>	CASCADE GOLDENROD	PERENNIAL FORB
<i>Trichostema lanceolata</i>	VINEGARWEED	ANNUAL FORB
APPLICATION RATE: 80 SEEDS PER SF		

PIONEER WETLAND / RIPARIAN SEED MIX

Botanical Name	COMMON NAME	LIFE FORM
<i>Agrostis exarata</i>	SPIKE BENTGRASS	PERENNIAL GRASS
<i>Artemesia douglasiana</i>	MUGWORT	PERENNIAL FORB
<i>Deschampsia caespitosa</i>	TUFTED HAIRGRASS	PERENNIAL GRASS
<i>Deschampsia elongata</i>	SLENDER HAIRGRASS	ANNUAL GRASS
<i>Drymocallis glandulosa</i>	STICKY CINQUFOIL	PERENNIAL FORB
<i>Elymus cinereus</i>	GREAT BASIN WILD RYE	PERENNIAL GRASS
<i>Elymus elymoides</i>	SQUIRRELTAIL	PERENNIAL GRASS
<i>Elymus triticoides</i>	CREEPING WILD RYE	PERENNIAL GRASS
<i>Euthamia occidentalis</i>	WESTERN GOLDENROD	PERENNIAL FORB
<i>Grindelia camporum</i>	GUMPLANT	PERENNIAL FORB
<i>Hordeum brachyantherum</i> ssp. <i>b</i>	MEADOW BARLEY	PERENNIAL GRASS
<i>Juncus balticus</i>	BALTIC RUSH	PERENNIAL RUSH
<i>Rumex transitorius</i>	WILLOW DOCK	PERENNIAL FORB
<i>Trichostema lanceolatum</i>	VINEGARWEED	ANNUAL FORB
APPLICATION RATE: 80 SEEDS PER SF		

## PLANT SPACING TABLE

VEGETATION COVER TYPE	PLANT MATERIAL TYPE	SPACING	SPATIAL EXTENT*
<i>RIPARIAN SHRUB</i>			
	CUTTINGS	10' O.C.	25% OF AREA
	BAREROOT SHRUBS	10' O.C.	25% OF AREA
<i>RIPARIAN DECIDUOUS</i>			
	CUTTINGS	10' O.C.	25% OF AREA
	POLE CUTTINGS	40' O.C.	25% OF AREA
	BAREROOT SHRUBS	10' O.C.	10% OF AREA
	BAREROOT TREES	40' O.C.	10% OF AREA
<i>RIPARIAN MIXED DECIDUOUS-CONIFEROUS</i>			
	CUTTINGS	10' O.C.	25% OF AREA
	POLE CUTTINGS	40' O.C.	25% OF AREA
	BAREROOT SHRUBS	10' O.C.	10% OF AREA
	BAREROOT TREES	40' O.C.	10% OF AREA
<i>PALUSTRINE EMERGENT WETLAND</i>			
	SOD TRANSPLANT	N/A	10% OF AREA
	BAREROOT HERBACEOUS	4' O.C.	25% OF AREA
<i>PALUSTRINE SHRUB-SCRUB WETLAND</i>			
	BAREROOT HERBACEOUS	4' O.C.	20% OF AREA
	CUTTINGS	10' O.C.	20% OF AREA
	BAREROOT SHRUBS	10' O.C.	20% OF AREA
<i>PALUSTRINE FORESTED WETLAND</i>			
	BAREROOT HERBACEOUS	4' O.C.	20% OF AREA
	CUTTINGS	10' O.C.	10% OF AREA
	POLE CUTTINGS	40' O.C.	10% OF AREA
	BAREROOT SHRUBS	10' O.C.	10% OF AREA
	BAREROOT TREES	40' O.C.	10% OF AREA
<i>JC BOYLE UPLAND</i>			
	BAREROOT SHRUBS	10' O.C.	25% OF AREA
	BAREROOT TREES	40' O.C.	75% OF AREA
<i>COPCO UPLAND</i>			
	BAREROOT SHRUBS	10' O.C.	25% OF AREA
	BAREROOT TREES	80' O.C.	50% OF AREA
<i>IRON GATE UPLAND</i>			
	BAREROOT SHRUBS	10' O.C.	25% OF AREA
	BAREROOT TREES	80' O.C.	50% OF AREA

\*SPATIAL EXTENT: INDICATES PERCENTAGE OF AREA WITHIN THE VEGETATION COVER TYPE BOUNDARY TO BE PLANTED WITH THIS PLANT MATERIAL TYPE. THE CONTRACTOR HAS THE FLEXIBILITY TO DETERMINE THE PRECISE PLANTING LOCATION BASED ON POST-DRAWDOWN CONDITIONS SUCH AS SOIL, HYDROLOGY, TOPOGRAPHY, ASPECT, SLOPE, AND ACCESS.

## TREE SHRUB SPECIES TABLE

Botanical Name	COMMON NAME	RIPARIAN SHRUB	RIPARIAN DECIDUOUS	RIPARIAN MIXED DECIDUOUS-CONIFEROUS	PALUSTRINE SCRUB-SHRUB WETLAND	PALUSTRINE FORESTED WETLAND	COPCO UPLAND	IRON GATE UPLAND	JC BOYLE UPLAND
<i>Acer macrophyllum</i>	BIGLEAF MAPLE					X	X		
<i>Alnus rhombifolia</i>	WHITE ALDER	X	X	X		X			
<i>Amelanchier alnifolia</i>	WESTERN SERVICEBERRY			X			X	X	X
<i>Arctostaphylos patula</i>	GREENLEAF MANZANITA								X
<i>Artemisia tridentata</i>	BIG SAGEBRUSH								X
<i>Berberis aquifolium</i>	OREGON GRAPE			X		X	X	X	X
<i>Betula occidentalis</i>	WATER BIRCH		X	X					
<i>Calocedrus decurrens</i>	INCENSE CEDAR						X		
<i>Ceanothus cuneatus</i>	BUCKBRUSH						X	X	X
<i>Ceanothus integerrimus</i>	DEERBRUSH						X	X	X
<i>Cercocarpus betuloides</i>	BIRCHLEAF MOUNTAIN MAHOGANY						X	X	X
<i>Chrysothamnus nauseosus</i>	GRAY RABBITBRUSH				X				X
<i>Cornus glabrata</i>	SMOOTH DOGWOOD	X	X			X	X	X	
<i>Cornus sericea</i>	RED-OSIER DOGWOOD				X				
<i>Ericameria linearifoli</i>	LINEAR-LEAF ERICAMERIA								X
<i>Fraxinus latifolia</i>	OREGON ASH	X	X	X	X	X			
<i>Juniperus occidentalis</i>	WESTERN JUNIPER						X	X	
<i>Lonicera interrupta</i>	CHAPARRAL HONEYSUCKLE						X	X	
<i>Philadelphus lewisii</i>	LEWIS MOCK ORANGE	X			X		X	X	X
<i>Physocarpus capitatus</i>	NINEBARK			X					
<i>Pinus ponderosa</i>	PONDEROSA PINE			X					X
<i>Prunus emarginata</i>	BITTER CHERRY						X	X	
<i>Prunus subcordata</i>	KLAMATH PLUM						X	X	X
<i>Prunus virginiana</i>	CHOKECHERRY	X			X				X
<i>Pseudotsuga menziesii</i>	DOUGLAS-FIR			X					X
<i>Purshia tridentata</i>	ANTELOPE BITTERBRUSH						X	X	X
<i>Quercus garryana</i>	OREGON WHITE OAK		X		X	X	X	X	X
<i>Quercus kelloggii</i>	CALIFORNIA BLACK OAK						X	X	
<i>Rhus trilobata</i>	SKUNKBUSH SUMAC		X		X	X	X	X	X
<i>Ribes velutinum</i>	DESERT GOOSEBERRY						X	X	X
<i>Rosa gymnocarpa</i>	DWARF ROSE								X
<i>Rosa woodsia</i>	WOOD ROSE						X	X	
<i>Salix exigu</i>	COYOTE WILLOW	X	X	X	X	X			
<i>Salix lasiolepis</i>	ARROYO WILLOW	X	X	X	X	X			
<i>Salix lucida ssp. Lasianдра</i>	SHINING WILLOW		X		X	X			
<i>Sambucus nigra</i>	BLUE ELDERBERRY	X					X	X	
<i>Spiraea douglasii</i>	ROSE SPIREA	X		X	X				
<i>Symphoricarpos albus</i>	COMMON SNOWBERRY	X		X			X	X	X

GENERAL NOTES:

1. THE ESTIMATED QUANTITIES IN THE TABLE OF REVEGETATION-RELATED QUANTITIES (THIS SHEET) ARE PROVIDED TO DEVELOP A THE CONSTRUCTION COST ESTIMATE. ADJUSTMENTS MAY BE MADE POST-DRAWDOWN WHEN SITE CONDITIONS, MATERIAL AVAILABILITY AND SUCCESS CRITERIA ARE BETTER UNDERSTOOD.
2. SPECIES RATIOS FOR ALL VEGETATION TYPES WILL BE REFINED FOR IFC DRAWINGS BASED ON RESULTS OF SEED COLLECTION YIELD INCREASE AND GROW-OUT ACTIVITIES.

RIPARIAN NOTES:

1. RIPARIAN PLANTING WIDTH SHOWN IS 50 FT EACH SIDE ALONG KLAMATH RIVER AND 30 FT EACH SIDE ALONG TRIBUTARIES. PLANTED WIDTHS MAY BE REDUCED OR INCREASED LOCALLY TO FIT POST-DRAWDOWN SITE CONDITIONS.

IRRIGATION NOTES:

1. IRRIGATION IS PROPOSED FOR THE RIPARIAN ZONE OF COPCO 1 AND IRON GATE ONLY.

SEEDING NOTES:

1. AREAS SEEDED WITH PIONEER WETLAND/RIPARIAN SEED MIX WILL BE AUGMENTED W/ BARERROOT SALTBASS (*DISTICHLIS SPICATA*) AND RHIZOME SHOWY MILKWEED (*ASCELIAS SPECIOSA*) PLANTED IMMEDIATELY AFTER SEEDING. DENSITY TO BE DETERMINED.
2. UPLAND DIVERSITY MIXES WILL BE DEVELOPED FOR SUPPLEMENTAL FALL/SPRING SEEDING. UPLAND DIVERSITY MIXES WILL INCLUDE MANY OF THE PIONEER UPLAND MIX SPECIES WITH THE ADDITION OF NEW SPECIES FROM SEED INCREASE FIELDS ESTABLISHED IN 2020 AND/OR SEED COLLECTED FROM THE WILD. THE SPECIES LIST WILL DEPEND ON SPRING 2020 AVAILABILITY. SPECIES AND SEEDING RATE WILL ALSO LIKELY VARY BY RESERVOIR AND MAY BE SITE SPECIFIC WITHIN RESERVOIRS DEPENDING ON MONITORING RESULTS FROM THE FIRST GROWING SEASON.
3. WETLAND / RIPARIAN DIVERSITY SEED MIXES WILL BE DEVELOPED FOR SUPPLEMENTAL FALL/SPRING SEEDING. WETLAND / RIPARIAN DIVERSITY MIXES WILL INCLUDE MANY OF THE PIONEER WETLAND / RIPARIAN SPECIES WITH THE ADDITION OF NEW SPECIES FROM SEED INCREASE FIELDS ESTABLISHED IN 2020 AND/OR SEED COLLECTED FROM THE WILD. THE SPECIES LIST WILL DEPEND ON SPRING 2020 AVAILABILITY. SPECIES AND SEEDING RATE WILL ALSO LIKELY VARY BY RESERVOIR AND MAY BE SITE SPECIFIC WITHIN RESERVOIRS DEPENDING ON MONITORING RESULTS FROM THE FIRST GROWING SEASON.
4. FOR A LIST OF SPECIES TARGETED FOR PROPAGATION FOR THE DIVERSITY MIXES REFER TO THE 60% DESIGN REPORT.

FENCING NOTES:

1. SELECT PLANTING AREAS MAY BE ENCLOSED WITH BARBED WIRE BROWSE-PROTECTION FENCE. SEE TABLE OF REVEGETATION-RELATED QUANTITIES THIS SHEET.
2. CHAIN LINK SECURITY FENCE TO BE INSTALLED AROUND STAGING AREAS.
3. FENCING TO BE PLACED AROUND PERIMETER OF RESTORATION AREAS.

## REVEGETATION-RELATED QUANTITIES BY RESERVOIR

RESERVOIR	ITEM	PIONEER SEED	DIVERSITY SEED	SALVAGED WETLAND TRANSPLANT	BAREROOT HERBACEOUS	CUTTINGS	POLE CUTTINGS	BAREROOT SHRUBS	BAREROOT TREES	IRRIGATION	FENCING
	UNIT	AC	AC	AC	EA	EA	EA	EA	EA	AC	LF
JC BOYLE		248	248	0.52	4,460	5,270	120	29,020	4,700	0	2,300
COPCO 1		845	845	0.04	5,890	8,600	1,770	99,300	5,780	98	18,100
IRON GATE		874	874	0.08	3,560	11,880	410	99,950	5,740	109	21,100

NOTE: PLANT QUANTITIES ARE BASED ON TRIANGULAR SPACING AND ARE ROUNDED UP TO THE NEAREST 10

## PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

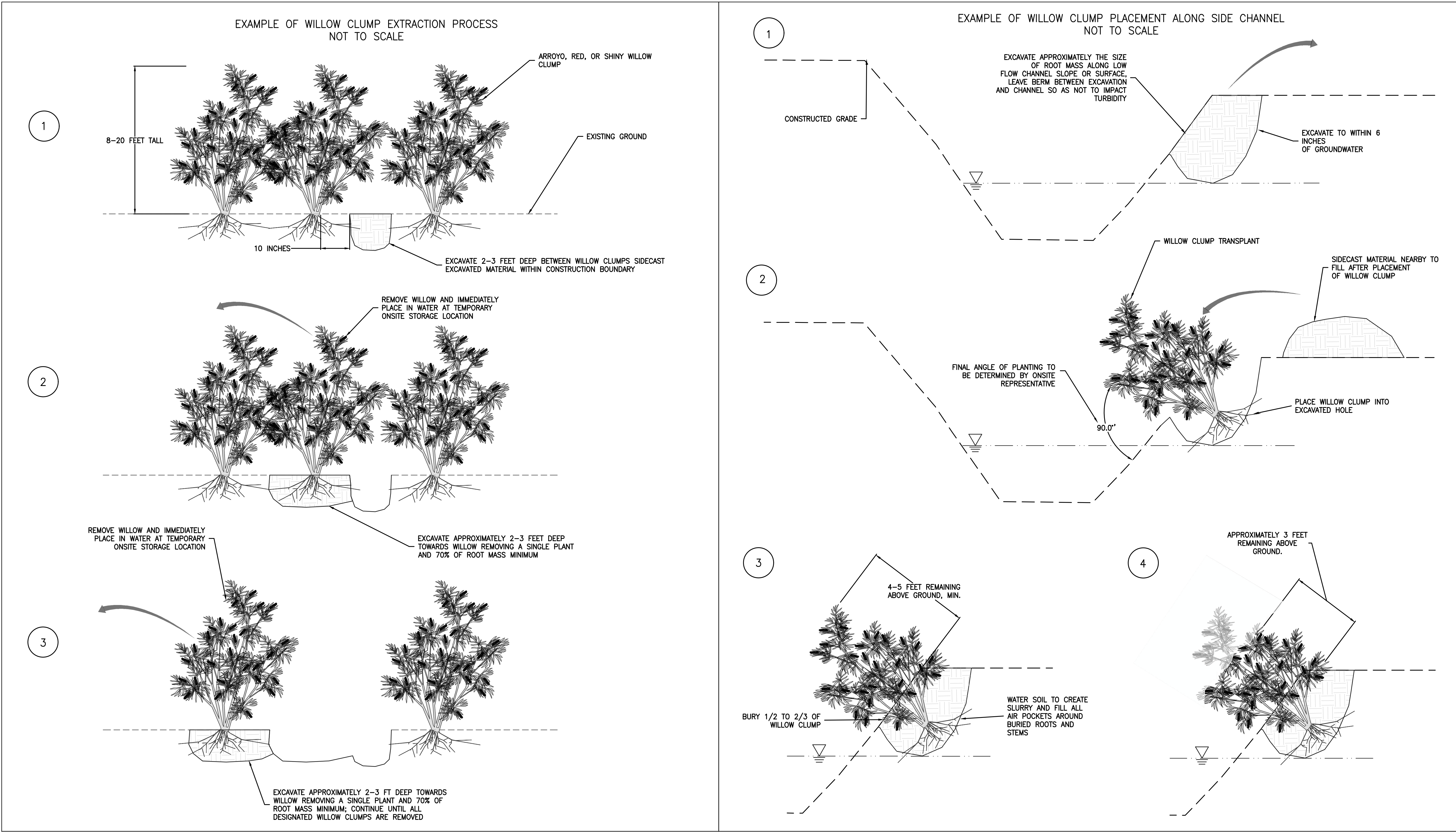
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Stantec - Jul 20, 2022 - 11:03am  
C:\Users\jchellon\OneDrive\Stantec\Klamath\173430095\environment\drawing\sheet\_files\R0811.dwg



1  
R0811

DETAIL — CLUMP PLANTING  
NOT TO SCALE

NOTES:

1. CLUMP PLANTINGS ARE SHOWN ON THE DRAWINGS AS EXAMPLE OF PLACEMENT. AN ONSITE REPRESENTATIVE WILL FLAG WILLOWS WITHIN THE CONSTRUCTION BOUNDARY TO BE SALVAGED FOR CLUMP PLANTINGS.
2. AN ONSITE REPRESENTATIVE WILL SPECIFY THE TEMPORARY STORAGE LOCATION FOR EXTRACTED WILLOW CLUMPS.
3. AN ONSITE REPRESENTATIVE WILL SPECIFY THE LOCATIONS WHERE CLUMP PLANTINGS SHALL BE INSTALLED AND THE ANGLE OF THE PLANTING OVER THE CHANNEL OR ALCOVE.

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

REV	DESCRIPTION	BY	CHK	APP	DATE
B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PREPARED BY



DESIGNED JMR, GH/KB AND JM

DRAWN SMS

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT

KLAMATH RIVER RENEWAL PROJECT

SHEET TITLE

PLANTING DETAILS 2

PROJ #

VA103-640/1

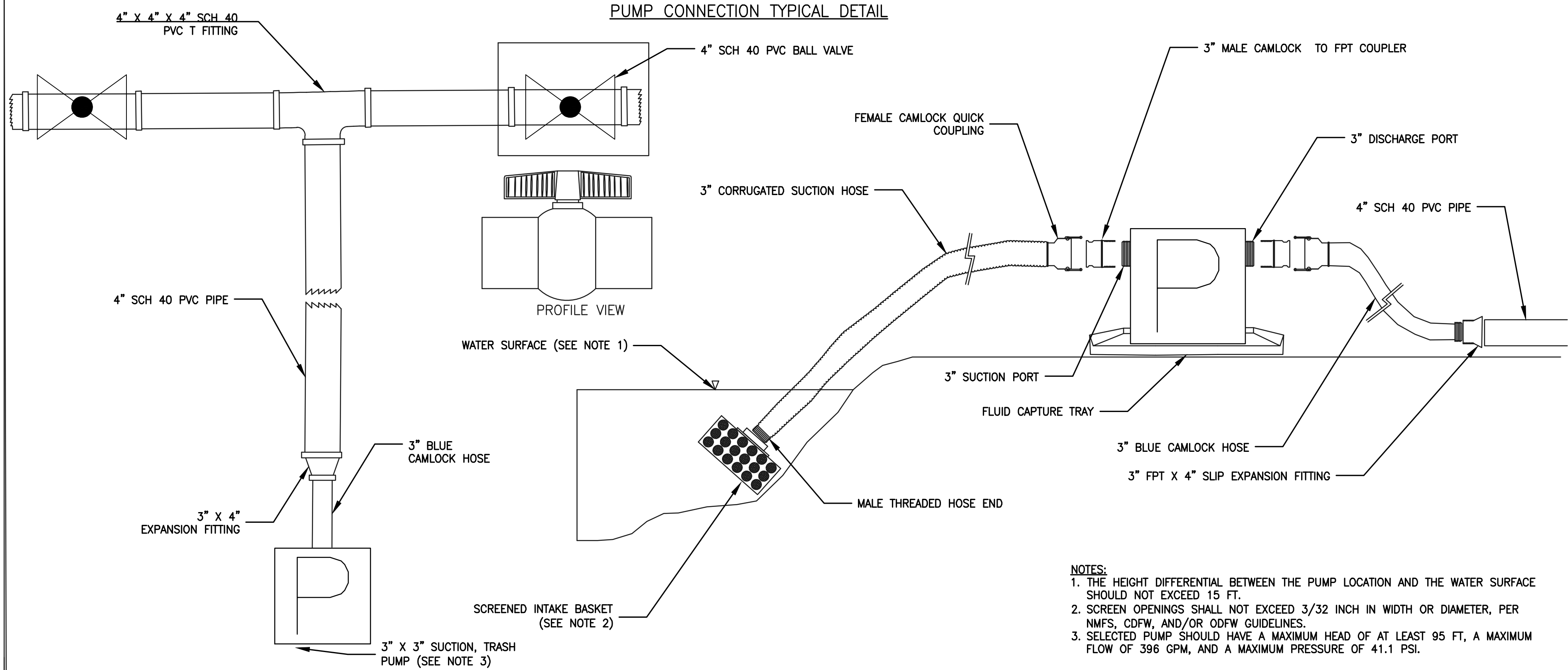
DATE

2020.02.07

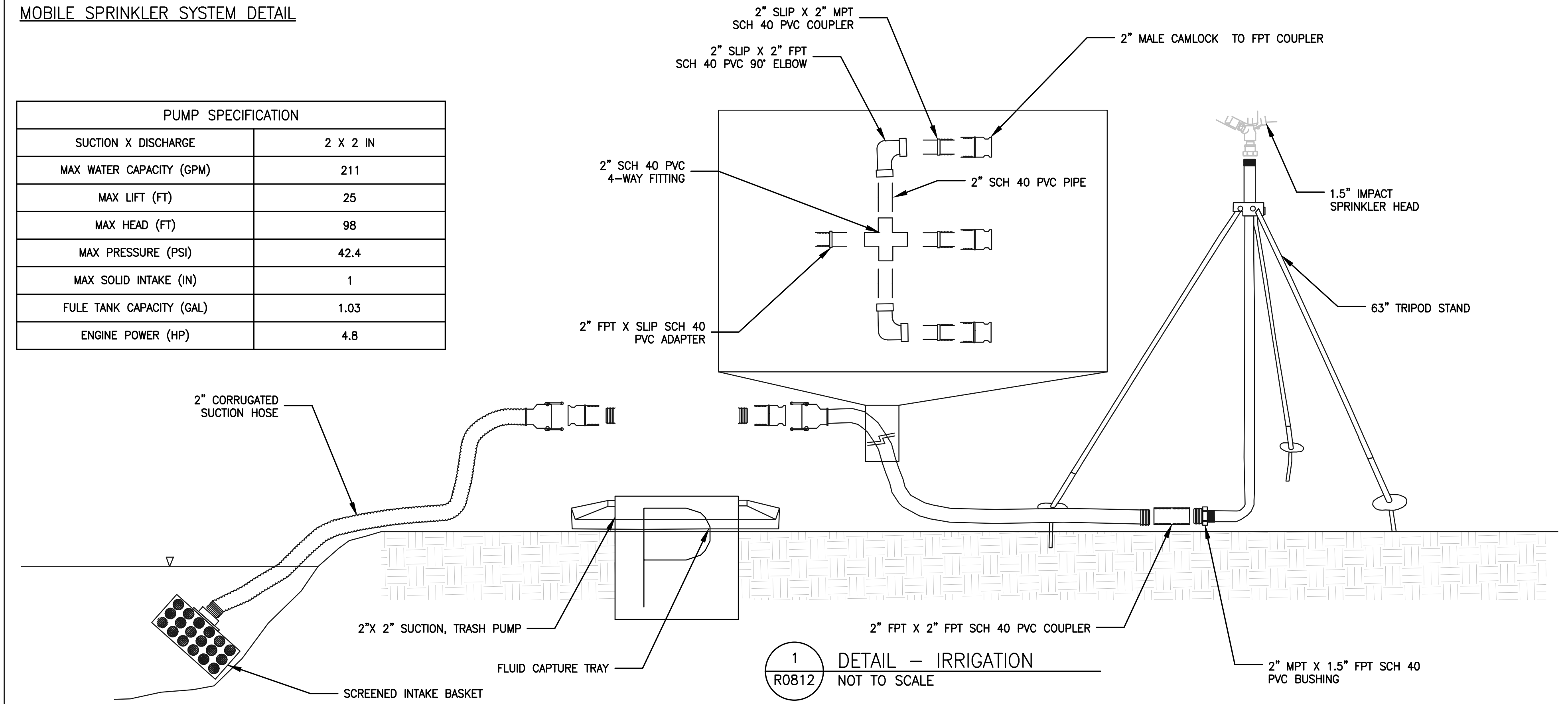
DWG

R0811

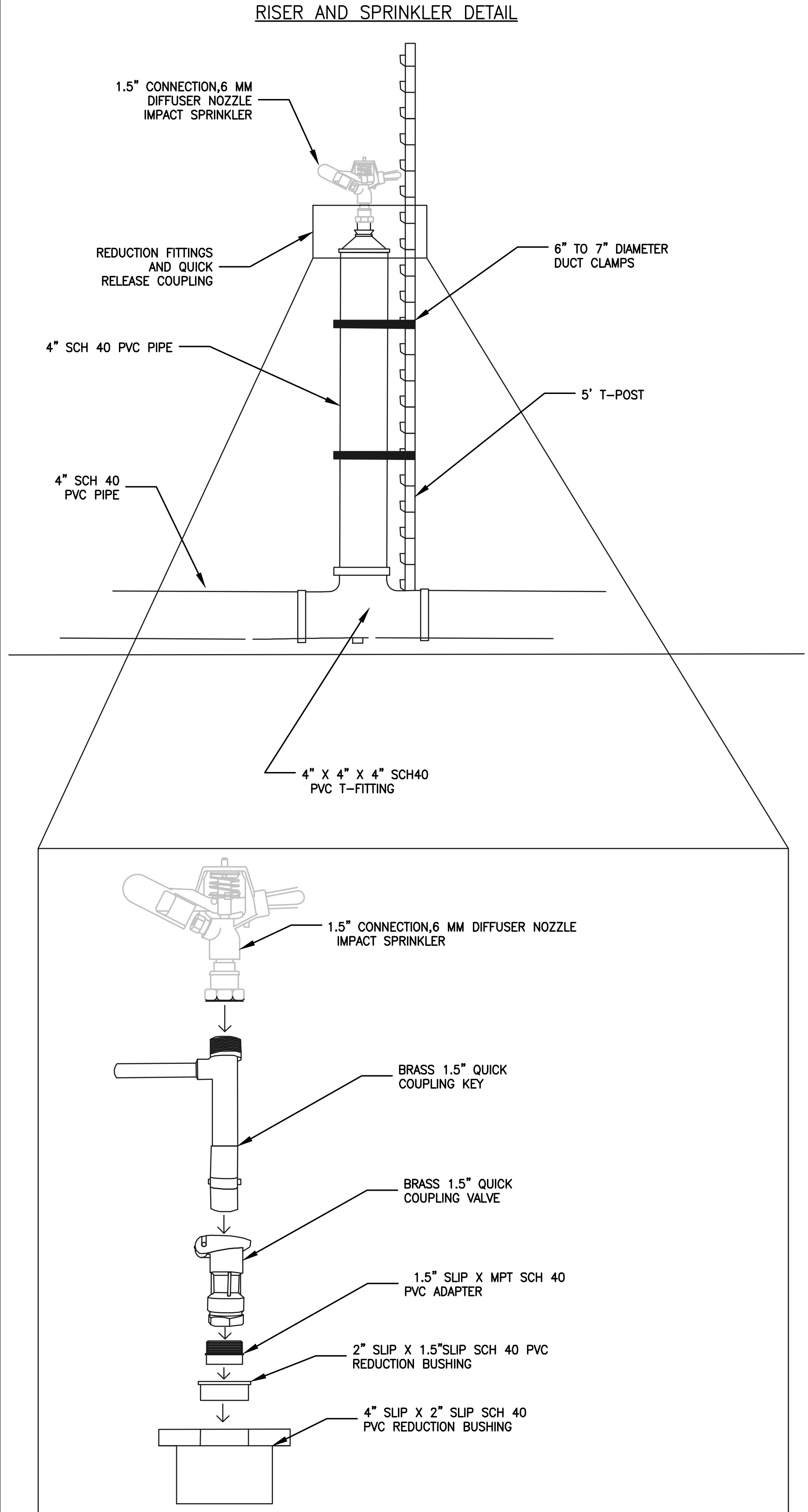




**MOBILE SPRINKLER SYSTEM DETAIL**



**RISER AND SPRINKLER DETAIL**



PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN

REV	DESCRIPTION	BY	CHK	APP	DATE
B	ISSUED - 60% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	02/07/20
A	ISSUED - 30% RESTORATION DESIGN SUBMITTAL	SMS	JFS	MFA	10/11/19



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PREPARED BY



DESIGNED JMR, GH/KB AND JM

DRAWN SMS

REVIEWED JFS

IN CHARGE SDP

APPROVED MFA

PREPARED FOR



PROJECT  
**KLAMATH RIVER RENEWAL PROJECT**

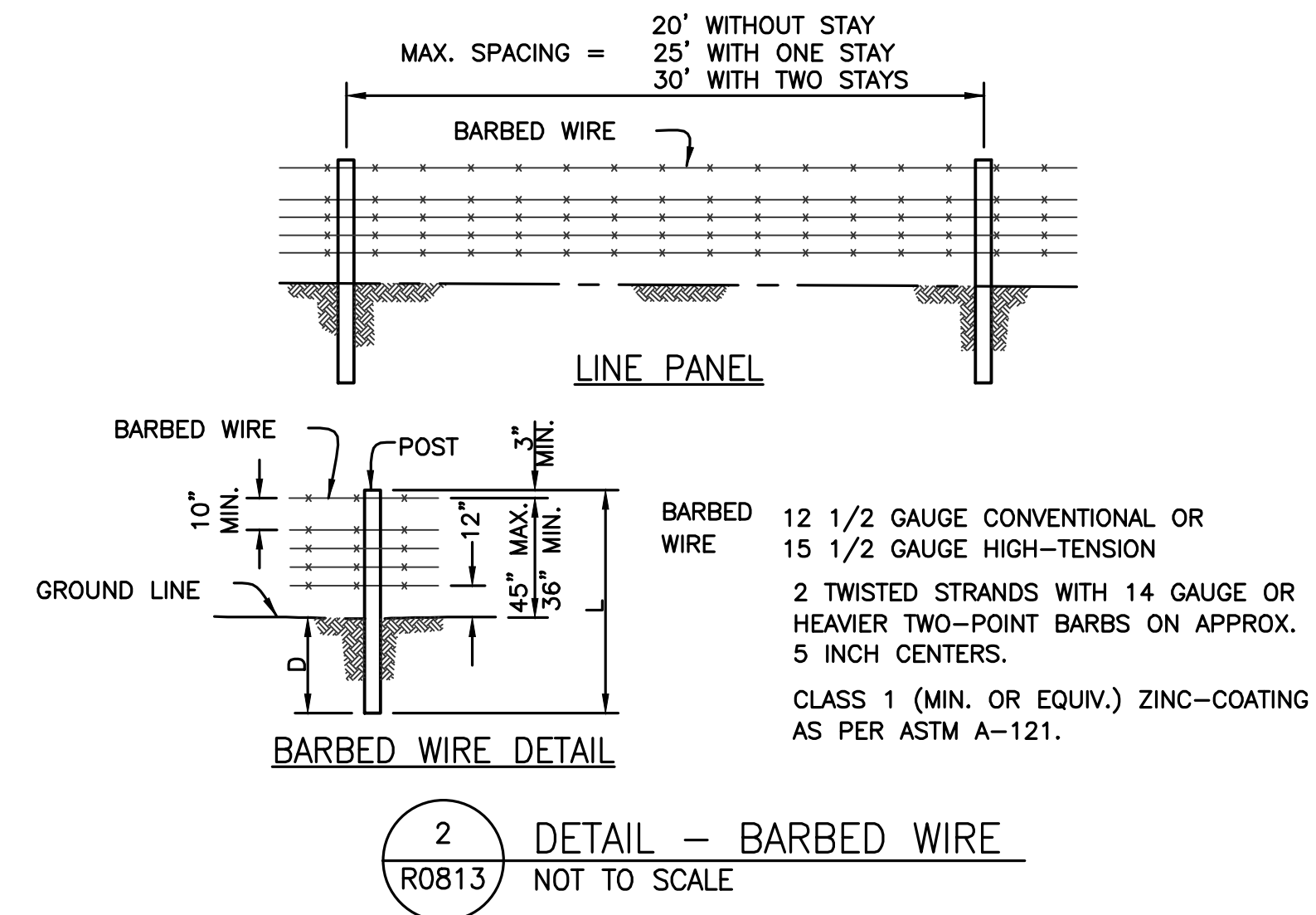
SHEET TITLE  
**IRRIGATION DETAILS**

PROJ #  
VA103-640/1

DATE  
2020.02.07

DWG  
**R0812**

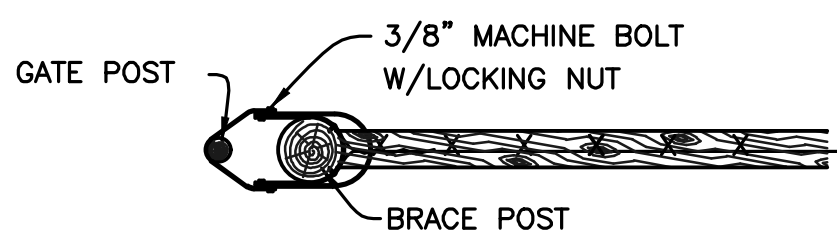




2  
R0813

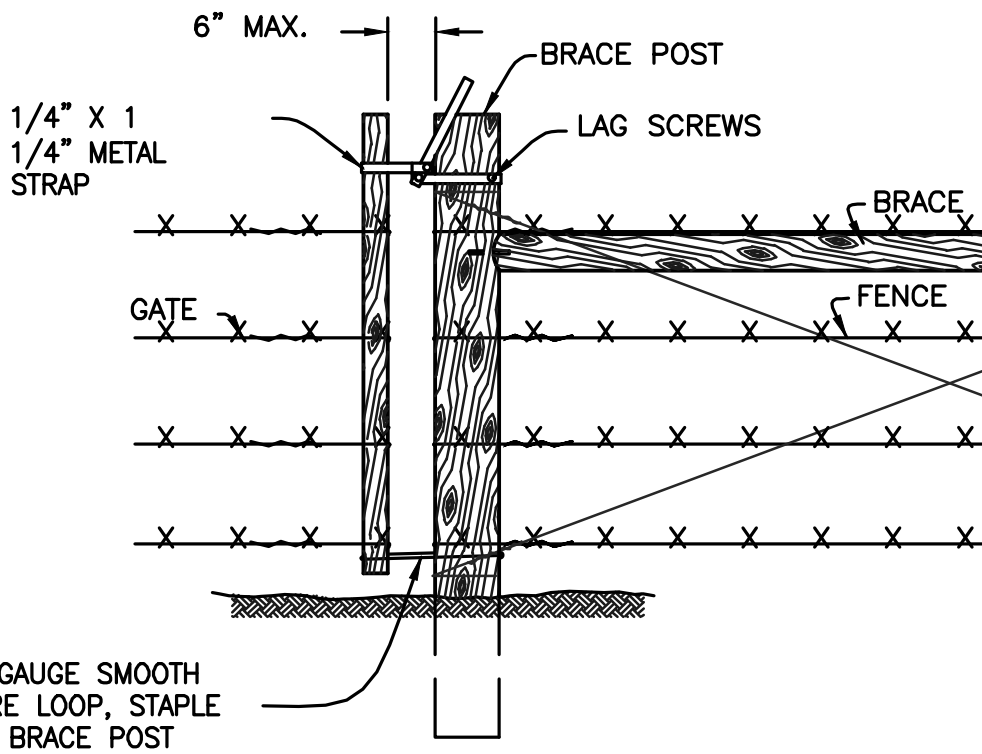
DETAIL — BARBED WIRE  
NOT TO SCALE

WASHINGTON STANDARD DRAWING	LIVESTOCK FACILITIES  <b>METAL GATE CLOSER</b>	STANDARD DRAWING NO. <b>LSK-0040</b> APPROVED BY: GBR DRAWN BY: KLY ISSUE DATE: 4/80
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The plan view shows a top-down perspective of the gate closer assembly. A horizontal line represents the 'GATE POST'. At its right end, a '3/8" MACHINE BOLT W/LOCKING NUT' is shown passing through a circular 'BRACE POST'. The bolt is oriented vertically in this view.

PLAN VIEW



The elevation view shows a side profile of the gate closer. A vertical 'BRACE POST' is secured to a horizontal 'GATE' post with 'LAG SCREWS'. A '6" MAX.' dimension line indicates the distance from the gate post to the brace post. A '1/4" X 1 1/4" METAL STRAP' is attached to the gate post. A 'BRACE' is shown extending from the brace post to the 'FENCE'. The fence is represented by a series of horizontal lines with 'X' marks. A '9-GAUGE SMOOTH WIRE LOOP, STAPLE TO BRACE POST' is shown at the bottom, connecting the brace post to the fence.

ELEVATION

**DRAWING NOT TO SCALE. STANDARDIZED DRAWING  
MUST BE ADAPTED TO THE SPECIFIC SITE.**

JOB CLASS _____  CAD FILE NO. LSK-0040.DWG  SHEET _____ OF _____	Date _____  Designed _____ Drawn _____ Checked _____ Approved _____
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**U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE**

4  
R0813

DETAIL - METAL GATE CLOSER  
NOT TO SCALE

WARNING

0      1/2      1



IF THIS BAR DOES NOT MEASURE 1 THEN DRAWING IS NOT TO SCALE



DRAWN	SMS
REVIEWED	JFS
IN CHARGE	SDP
APPROVED	MFA



**KLAMATH  
RIVER RENEWAL  
CORPORATION**

SHEET TITLE	FENCING DETAILS
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R0813

PRELIMINARY DESIGN (NOT FOR CONSTRUCTION) 60% PLAN