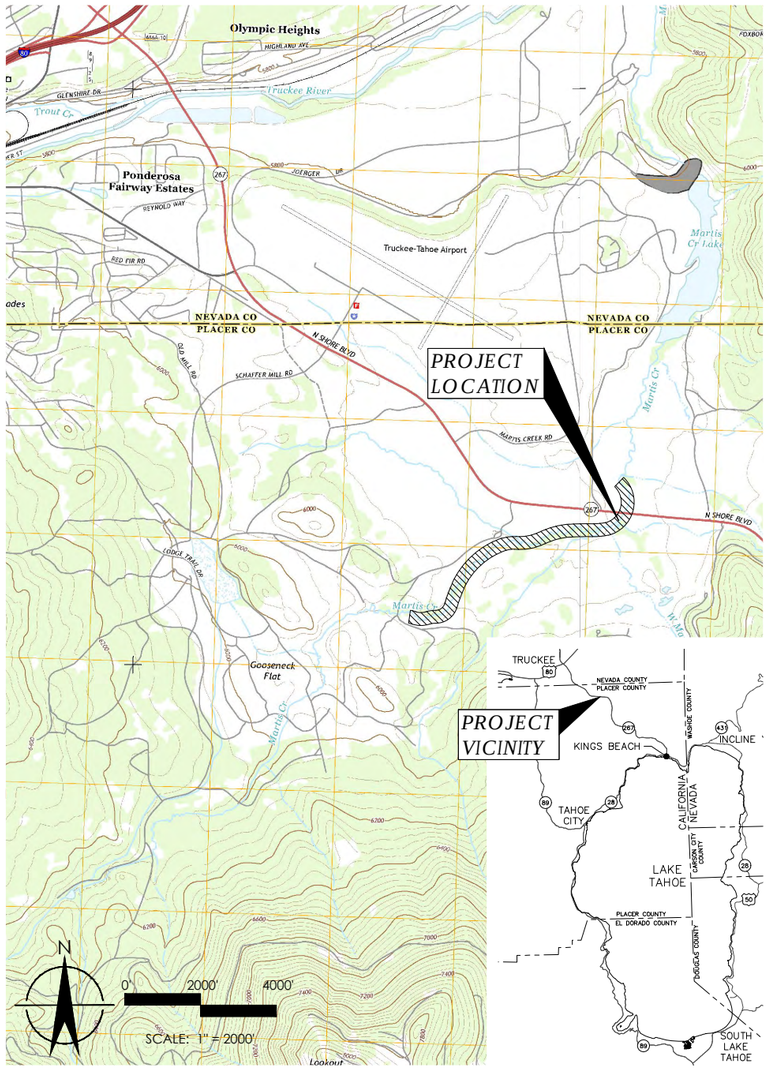
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA

LOCATION MAP



SHEET INDEX

PROJECT TEAM

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LAND OWNER
U.S. ARMY CORPS OF ENGINEERS

PREPARED FOR: Truckee River Watershed Council

Balance Hydrologics, Inc.
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tel (530) 550-9776
www.balancehydro.com

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

COVER SHEET

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
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SHEET
1.0

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PH2\215063-0100-COVER.DWG

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

LEGEND:

EXISTING MAJOR CONTOUR - 5 FT — 5835

EXISTING MINOR CONTOUR -1 FT

EXISTING CHANNEL/FLOWPATH

EXISTING FENCE — X — X — X — X —

EXISTING EDGE OF GRAVEL AREA

EXISTING TRAIL

EXISTING PROPERTY LINE

PROPOSED MAJOR CONTOUR — 5950

PROPOSED MINOR CONTOUR

GRADE BREAK

GRADING LIMIT

PROPOSED FINISHED GRADE ELEVATION — 5850.0

PROPOSED SURFACE FLOW DIRECTION

PROPOSED EMBANKMENT SLOPE
(3:1 UNLESS NOTED OTHERWISE)

TEMPORARY GRAVEL BAGS

FILL EXISTING DITCH

DEMOLISH AND REMOVE FEATURE

SOD HARVEST AREA

ABBREVIATIONS:

'	FEET
"	INCH
#	NUMBER
APPROX	APPROXIMATE
CBM	CHANNEL BED MATERIAL
CMP	CORRUGATED METAL PIPE
DIA, Ø	DIAMETER
E	EASTING
EG	EXISTING GRADE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EX	EXISTING
FG	FINISH GRADE
FT	FEET
H	HORIZONTAL
IN	INCH
LT	LEFT
LWM	LARGE WOODY MATERIAL
MAX	MAXIMUM
MIN	MINIMUM
N	NORTHING
NTS	NOT TO SCALE
OC	ON CENTER
PC	POLE CUTTING
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
ROW	RIGHT OF WAY
STA	STATION
STR	STRUCTURE
TYP	TYPICAL
USACE	U.S. ARMY CORPS OF ENGINEERS
V	VERTICAL
W/I	WITHIN
WSE	WATER SURFACE ELEVATION
Z	ELEVATION

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE PROJECT SITE TO VERIFY SITE CONDITIONS AND FOR COMPLETELY UNDERSTANDING THE REQUIRED SCOPE OF WORK SHOWN ON THESE DRAWINGS AND CONTAINED IN THE PROJECT SPECIFICATIONS.
2. ALL PARTS OF THIS PROJECT - INCLUDING SOIL PREPARATION, EARTHWORK, AND PLANTING - ARE SUBJECT TO FIELD DESIGN BY THE ENGINEER'S REPRESENTATIVE. AT ANY TIME, THE CONTRACTOR'S OPERATIONS AND CONSTRUCTION MAY BE SUBJECT TO OBSERVATION BY THE FIELD REPRESENTATIVE. WHEN REQUESTING THE PRESENCE OF THE FIELD REPRESENTATIVE AT THE PROJECT SITE FOR DESIGN CLARIFICATION, STAGE ACCEPTANCE, OR OTHER APPROVALS, THE CONTRACTOR SHALL PROVIDE 48 HOURS ADVANCE NOTICE DIRECTLY TO THE FIELD REPRESENTATIVE.
3. UTILITY LOCATIONS DEPICTED HEREIN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES BEFORE THE START OF ANY CONSTRUCTION OPERATIONS, INCLUDING AND NOT LIMITED TO EXCAVATION OR TRENCHING. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT 811/1-800-227-2600. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS ADVANCE NOTICE FOR LOCATING UTILITIES.
4. THE CONTRACTOR SHALL INSTALL PRESERVATION FENCING, STAKE AND FLAG THE LIMITS OF GRADING, AND INSTALL EXCLUSION FENCING AS PRESCRIBED IN THE SPECIFICATIONS AT LOCATIONS SHOWN ON THE DRAWINGS BEFORE THE START OF ANY OTHER SITE WORK INCLUDING DEMOLITION, CLEARING AND GRUBBING, AND EARTHWORK. REFER TO THE SPECIFICATIONS FOR ADDITIONAL PRESERVATION REQUIREMENTS AND INFORMATION.
5. THE CONTRACTOR SHALL CONTACT THE FIELD REPRESENTATIVE IMMEDIATELY UPON FINDING ANY FIELD CONDITIONS THAT WOULD CONFLICT WITH THE INFORMATION INDICATED ON THESE DRAWINGS OR THE PROJECT SPECIFICATIONS. ALL FIELD ADJUSTMENTS MUST BE APPROVED BY THE FIELD REPRESENTATIVE BEFORE CONSTRUCTION OF SAID ADJUSTMENTS; FAILURE TO DO SO SHALL RESULT IN THE CONTRACTOR ASSUMING FULL RESPONSIBILITY FOR ANY REQUIRED REVISIONS OR FIELD MODIFICATIONS, AS DIRECTED BY THE FIELD REPRESENTATIVE, AT NO ADDITIONAL COST.
6. CONFORM TO EXISTING GRADES AND CONDITIONS WHENEVER POSSIBLE. ANY ADJACENT OR OFFSET AREAS DISTURBED BY THE CONTRACTOR'S OPERATION MUST BE RESTORED BY THE CONTRACTOR TO THE PRE-DISTURBANCE CONDITIONS TO THE SATISFACTION OF THE FIELD REPRESENTATIVE.
7. ALL LUBRICATION, REFUELING, OR MAINTENANCE OF CONSTRUCTION VEHICLES SHALL BE CONDUCTED WITHIN APPROVED CONSTRUCTION STAGING AREAS AND BE A MINIMUM OF 100 FEET AWAY FROM EXISTING CHANNELS
8. STAGING AREAS MUST BE CONTAINED TO CONFINE THE AREA AND PREVENT CONTAMINANTS FROM ENTERING NEARBY CHANNELS AND WATER BODIES.
9. ELEVATIONS ARE RELATIVE TO THE NAVD88 DATUM.
10. WHERE NO WORK LIMIT IS SHOWN, THE PRESERVATION FENCING SHALL BE THE WORK LIMIT.
11. PRESERVE TREES AND VEGETATION OUTSIDE OF THE LIMITS OF WORK. ANY TREES OR VEGETATION DISTURBED OUTSIDE OF THE LIMITS OF WORK SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

EARTHWORK NOTES:

1. EARTHWORK OPERATIONS SHALL BE EXECUTED ACCORDING TO THIS DOCUMENT AND THE RELEVANT PROJECT PERMITS.
2. THE CONTRACTOR SHALL CONSTRUCT FINISHED SURFACES TO ±0.3' OF THE ELEVATIONS INDICATED ON THE PLANS.
3. EXCAVATING, FILLING, AND GRADING WORK SHALL NOT BE PERFORMED DURING WEATHER CONDITIONS WHICH MIGHT DAMAGE OR BE DETRIMENTAL TO THE CONDITION OF EXISTING GROUND, IN-PROGRESS WORK, OR COMPLETED WORK. WHEN THE WORK IS INTERRUPTED BY RAIN OR SNOW; EXCAVATING, FILLING, AND GRADING WORK SHALL NOT RESUME UNTIL THE SITE AND SOIL CONDITION (MOISTURE CONTENT) ARE SUITABLE FOR COMPACTION.
4. SOIL MATERIAL THAT IS TOO WET FOR COMPACTION SHALL BE LEFT TO DRAIN, THEN TO BE AERATED AND DRIED BY DISKING AND HARROWING OR OTHER APPROVED METHODS UNTIL THE MOISTURE CONTENT OF THE MATERIAL IS UNIFORM AND WITHIN THE SPECIFIED LIMITS.
5. THE CONTRACTOR SHALL COMPLY WITH THE EROSION CONTROL MEASURES PRESENTED HEREIN AND THOSE OF THE PERTINENT REGULATORY REQUIREMENTS.
6. MATERIAL USED FOR FILL SHALL BE AN INERT, INORGANIC SOIL, FREE FROM DELETERIOUS SUBSTANCES, AND OF SUCH QUALITY THAT IT WILL COMPACT THOROUGHLY WITHOUT THE PRESENCE OF VOIDS WHEN ROLLED. INORGANIC SOIL IS DEFINED AS SOIL CONTAINING LESS THAN TWO PERCENT BY WEIGHT OF ORGANIC MATERIAL WHEN TESTED IN ACCORDANCE WITH ASTM D2974. EXCAVATED ON-SITE MATERIAL WILL BE CONSIDERED SUITABLE FOR FILL, IF IT IS FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES AND CONFORMS TO THE REQUIREMENTS SPECIFIED HEREIN.
7. EXCAVATED MATERIAL THAT IS SUITABLE FOR FILL SHALL BE CONDITIONED FOR REUSE AND PROPERLY STOCKPILED FOR LATER FILLING OPERATIONS. STOCKPILE TOPSOIL SEPARATELY AS DESCRIBED IN THE REVEGETATION NOTES. CONDITIONING SHALL CONSIST OF SPREADING MATERIAL IN LAYERS NOT TO EXCEED 8 INCHES THICK AND RAKING FREE OF DEBRIS AND RUBBLE. CONDITIONING MAY TAKE PLACE WITHIN THE GRADING LIMITS AND STAGING AREAS. EXCAVATED MATERIALS SHALL BE DEEMED SUITABLE IF MATERIALS CONFORM TO THE NOTES HEREIN AND ARE ACCEPTED BY THE FIELD REPRESENTATIVE. DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF.
8. MATERIAL EXCAVATED FROM THE PROJECT SITE SHALL BE DEEMED UNSUITABLE FOR REUSE IF IT IS: OF SUCH NATURE AS TO BE INCAPABLE OF BEING COMPACTED TO SPECIFIED DENSITY USING ORDINARY METHODS, TOO WET TO BE PROPERLY COMPACTED AND CIRCUMSTANCES PREVENT SUITABLE DRYING PRIOR TO INCORPORATION INTO THE WORK, FOUND TO CONTAIN DEBRIS WASTE, VEGETATION OR OTHER DELETERIOUS MATTER, OR OTHERWISE DEEMED UNSUITABLE BY THE FIELD REPRESENTATIVE.
9. THE CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO PREVENT THE INTRODUCTION AND SPREAD OF NON-NATIVE PLANTS.
10. THE CONTRACTOR SHALL PROVIDE ADEQUATE DUST CONTROL MEASURES DURING EARTHWORK OPERATIONS THAT ARE IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS, ALONG WITH PERMIT CONDITIONS.
11. THE FIELD REPRESENTATIVE SHALL APPROVE FINISH GRADE ELEVATIONS.

PREPARED FOR:
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SUBMITTALS / REVISIONS	BY	DATE
CONCEPTUAL PLANS	BKH	6-10-16
95% PROGRESS DRAFT	BKH	3-8-17
DRAFT 95% DESIGN	BKH	4-7-17

DESIGNED BY B HASTINGS
DRAWN BY P KULCHAWIK
CHECKED BY E BALLMAN
IN CHARGE D SHAW
DATE 4-7-17

GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

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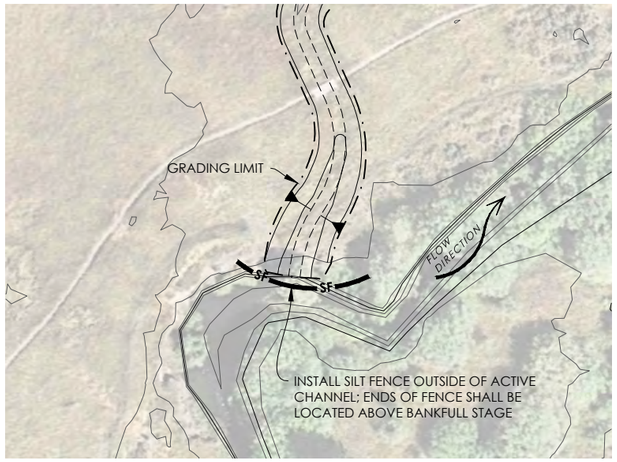
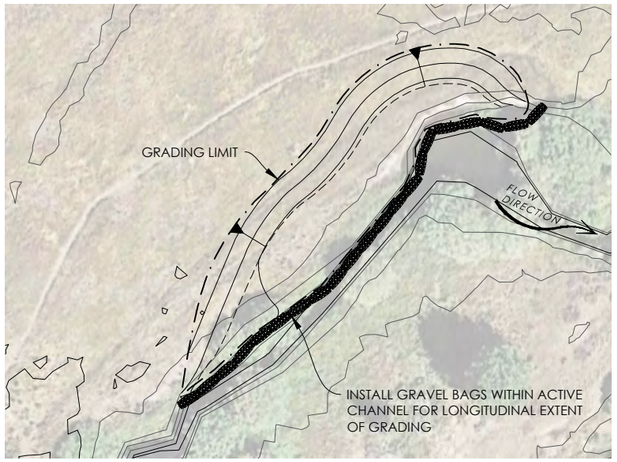


TREATMENT TYPE 1: SILT FENCE

1" = 20'

SILT FENCE NOTES:

1. GENERAL
   - 1.1. INSTALL SILT FENCE IN LOCATIONS IDENTIFIED BY THE FIELD REPRESENTATIVE.
   - 1.2. INSTALL A SUFFICIENT AMOUNT OF SILT FENCING TO PREVENT SEDIMENT GENERATED BY CONSTRUCTION ACTIVITIES FROM ENTERING THE CHANNEL.
   - 1.3. SILT FENCE SHALL EITHER BE PREFABRICATED OR CONSTRUCTED WITH SILT FENCE FABRIC, POSTS, AND FASTENERS.
2. MATERIALS
   - 2.1. SILT FENCE FABRIC
     - 2.1.1. SILT FENCE FABRIC SHALL BE IMPERMEABLE POLYMER MATERIAL.
     - 2.1.2. SILT FENCE FABRIC MAY BE VIRGIN, RECYCLED, OR A COMBINATION OF VIRGIN AND RECYCLED POLYMER MATERIALS. NO VIRGIN OR RECYCLED POLYMER MATERIALS SHALL CONTAIN BIODEGRADABLE FILLER MATERIALS THAT CAN DEGRADE THE PHYSICAL OR CHEMICAL CHARACTERISTICS OF THE FINISHED FABRIC.
   - 2.2. POSTS SHALL BE ONE OF THE FOLLOWING:
     - 2.2.1. UNTREATED FIR OR PINE, A MINIMUM OF 2" X 2" IN SIZE, AND 4'-0" IN LENGTH. ONE END OF THE POST SHALL BE POINTED.
     - 2.2.2. STEEL AND HAVE A "U," "T," "L," OR OTHER CROSS SECTIONAL SHAPE THAT CAN RESIST FAILURE FROM LATERAL LOADS. THE STEEL POSTS SHALL HAVE A MINIMUM MASS PER LENGTH OF 0.8 LB/FT AND A MINIMUM LENGTH OF 4'-0". ONE END OF THE STEEL POSTS SHALL BE POINTED AND THE OTHER END SHALL BE CAPPED WITH AN ORANGE OR RED PLASTIC SAFETY CAP WHICH FITS SNUGLY TO THE STEEL POST.
   - 2.3. FASTNERS
     - 2.3.1. WHEN PREFABRICATED SILT FENCE IS USED, POSTS SHALL BE INSERTED INTO SEWN POCKETS.
     - 2.3.2. SILT FENCE FABRIC SHALL BE ATTACHED TO WOODEN POSTS WITH NAILS OR STAPLES AS SHOWN ON THE PLANS OR AS RECOMMENDED BY THE MANUFACTURER OR SUPPLIER. TIE WIRE OR LOCKING PLASTIC FASTENERS SHALL BE USED TO FASTEN THE SILT FENCE FABRIC TO STEEL POSTS. MAXIMUM SPACING OF FASTENERS SHALL BE 8" ALONG THE LENGTH OF THE STEEL POST.
3. EXECUTION
   - 3.1. SILT FENCE SHALL BE INSTALLED PARALLEL WITH THE SLOPE CONTOUR IN REACHES NOT TO EXCEED 500'. A REACH IS CONSIDERED A CONTINUOUS RUN OF TEMPORARY SILT FENCE FROM END TO END OR FROM AN END TO AN OPENING, INCLUDING JOINED PANELS. EACH REACH SHALL BE CONSTRUCTED SO THAT THE ELEVATION AT THE BASE OF THE FENCE DOES NOT DEVIATE FROM THE CONTOUR MORE THAN 1/3 OF THE FENCE HEIGHT.
   - 3.2. THE SILT FENCE FABRIC SHALL BE INSTALLED ON THE SIDE OF THE POSTS FACING THE SLOPE. THE SILT FENCE FABRIC SHALL BE ANCHORED IN A TRENCH WITH A MINIMUM DEPTH OF 6 INCHES. THE TRENCH SHALL BE BACKFILLED AND MECHANICALLY OR HAND TAMPED TO SECURE THE SILT FENCE FABRIC IN THE BOTTOM OF THE TRENCH.
   - 3.3. THE MAXIMUM POST SPACING MAY BE INCREASED TO 10' IF THE FENCE IS REINFORCED BY A WIRE OR PLASTIC MATERIAL BY PREFABRICATION OR BY FIELD INSTALLATION. THE FIELD ASSEMBLED REINFORCED SILT FENCE SHALL BE ABLE TO RETAIN SATURATED SEDIMENT WITHOUT COLLAPSING.
   - 3.4. SILT FENCE SHALL BE JOINED BY TYING THE TOPS OF THE POSTS TOGETHER BY MINIMUM OF 2 WRAPS OF TIE WIRE OF A MINIMUM 16-GAGE DIAMETER. THE SILT FENCE FABRIC SHALL BE ATTACHED TO THE POSTS AT THE JOINT AS SPECIFIED IN THESE NOTES.
   - 3.5. MAINTENANCE: SILT FENCE SHALL BE MAINTAINED TO PROVIDE A SEDIMENT HOLDING CAPACITY OF APPROXIMATELY 1/3 THE HEIGHT OF THE SILT FENCE FABRIC ABOVE GROUND. WHEN SEDIMENT EXCEEDS THIS HEIGHT, SEDIMENT SHALL BE REMOVED. THE REMOVED SEDIMENT SHALL BE DEPOSITED WITHIN THE PROJECT LIMITS SO THAT THE SEDIMENT IS NOT SUBJECT TO EROSION BY WIND OR BY WATER.
   - 3.6. SILT FENCE SHALL BE REPAIRED OR REPLACED THE SAME DAY THE DAMAGE OCCURS. DAMAGE TO THE TEMPORARY SILT FENCE RESULTING FROM THE CONTRACTOR'S VEHICLES, EQUIPMENT, OR OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
   - 3.7. WHEN ALL WORK HAS BEEN COMPLETED, SILT FENCE SHALL BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND AT THE CONTRACTOR'S EXPENSE. TRIMMING THE SILT FENCE FABRIC AND LEAVING IT IN PLACE WILL NOT BE ALLOWED.

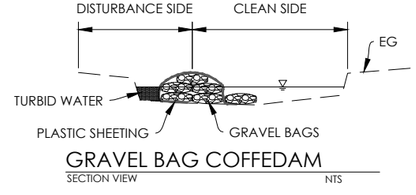


TREATMENT TYPE 2: GRAVEL BAG COFFERDAM

1" = 20'

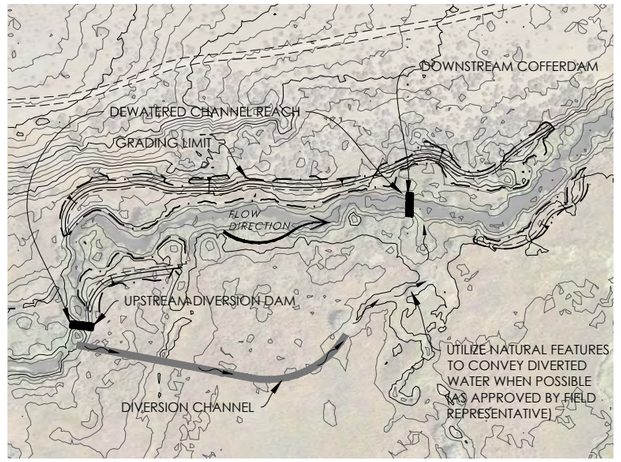
GRAVEL BAG COFFERDAM NOTES:

1. GENERAL
   - 1.1. INSTALL GRAVEL BAG COFFERDAMS IN LOCATIONS DETERMINED IN THE FIELD BY THE PROJECT GEOMORPHOLOGIST.
   - 1.2. THE LAYOUT OF THE GRAVEL BAG COFFERDAM SHALL BE SUFFICIENT TO PREVENT SEDIMENT GENERATED BY CONSTRUCTION ACTIVITIES FROM ENTERING THE CHANNEL. .
2. MATERIALS
   - 2.1. GRAVEL BAGS:
     - 2.1.1. BAG MATERIAL: BAGS SHALL BE EITHER POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MINIMUM UNIT WEIGHT 135 G/M2 (FOUR OUNCES PER SQUARE YARD), MULLEN BURST STRENGTH EXCEEDING 2,070 KPA (300 PSI) IN CONFORMANCE WITH THE REQUIREMENTS IN ASTM DESIGNATION D3786, AND ULTRAVIOLET STABILITY EXCEEDING 70% IN CONFORMANCE WITH THE REQUIREMENTS IN ASTM DESIGNATION D4355.
     - 2.1.2. BAG SIZE: EACH GRAVEL-FILLED BAG SHALL HAVE A LENGTH OF 450 MM (18 IN), WIDTH OF 300 MM (12 IN), THICKNESS OF 75 MM (3 IN), AND MASS BETWEEN 13 KG AND 22 KG (28 AND 48 LB). BAG DIMENSIONS ARE NOMINAL, AND MAY VARY BASED ON LOCALLY AVAILABLE MATERIALS. ALTERNATIVE BAG SIZES SHALL BE SUBMITTED TO THE FIELD REPRESENTATIVE FOR APPROVAL PRIOR TO DEPLOYMENT.
     - 2.1.3. FILL MATERIAL: FILL MATERIAL SHALL BE BETWEEN 10 MM AND 20 MM (0.4 AND 0.8 INCH) IN DIAMETER, AND SHALL BE CLEAN AND FREE FROM CLAY BALLS, ORGANIC MATTER, WEEDS, AND OTHER DELETERIOUS MATERIALS. THE OPENING OF GRAVEL-FILLED BAGS SHALL BE SECURED SUCH THAT GRAVEL DOES NOT ESCAPE. GRAVEL-FILLED BAGS SHALL BE BETWEEN 13 KG AND 22KG (28 AND 48 LB) IN MASS. FILL MATERIAL IS SUBJECT TO APPROVAL BY THE FIELD REPRESENTATIVE.
   - 2.2. PLASTIC SHEETING
     - 2.2.1. PLASTIC SHEETING SHALL IMPERMEABLE MATERIAL SUITABLE FOR USE AS PROTECTIVE LINER AND SHALL BE COMMERCIAL QUALITY POLYETHYLENE WITH A MINIMUM THICKNESS OF 0.25 MM OR MIRAFI 700X OR EQUAL APPROVED BY THE FIELD REPRESENTATIVE.
     - 2.2.2. ALL PLASTIC SHEETING SHALL BE FREE OF CRACKS, CLEAVAGES, OR OTHER DEFECTS ADVERSELY AFFECTING THE PROTECTIVE CHARACTERISTIC OF THE MATERIAL
3. EXECUTION
   - 3.1. GRAVEL BAG COFFERDAMS SHALL BE INSTALLED PARALLEL WITH THE PRIMARY FLOW DIRECTION, AND SHALL BOTH ENDS SHALL EXTEND ONTO THE BANKS (ABOVE THE WATER SURFACE ELEVATION).
   - 3.2. THE TOP ROW OF GRAVEL BAGS SHALL BE HIGH ENOUGH TO CONTAIN AN INCREASE IN FLOW CAUSED BY A THUNDERSTORM. THE TOP ELEVATION SHALL BE LEVEL ACROSS THE TOP OF THE COFFERDAM, AND APPROXIMATELY EQUAL TO BANKFULL STAGE, AS DETERMINED BY THE FIELD REPRESENTATIVE.
   - 3.3. THE GRAVEL BAGS SHALL BE ENCASED BY THE PLASTIC SHEETING BY FIRST LAYING THE SHEETING ON THE CHANNEL BED, THEN INSTALLING THE FIRST ROW OF GRAVEL BAGS ON TOP OF THE SHEETING FOR ANCHORING. INSTALL SUBSEQUENT ROWS TO ACHIEVE THE REQUIRED HEIGHT. WRAP THE SHEETING OVER THE TOP OF THE LAST ROW OF GRAVEL BAGS TO PROVIDE AN IMPERMEABLE SEAL FOR THE PORTION OF THE BANK TO BE DISTURBED.
   - 3.4. PLACE ALL GRAVEL BAGS CAREFULLY TO ENSURE FIRM CONTACT AMONG ALL BAGS AND THE CHANNEL BED.
   - 3.5. MAINTENANCE: SILT FENCE SHALL BE MAINTAINED AS NEEDED AT THE CONTRACTOR'S EXPENSE.
   - 3.6. WHEN ALL WORK HAS BEEN COMPLETED, THE COFFERDAM SHALL BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND AT THE CONTRACTOR'S EXPENSE. DISPOSING OF GRAVELS IN THE CHANNEL IS NOT PERMITTED.



GRAVEL BAG COFFEDAM

SECTION VIEW NTS

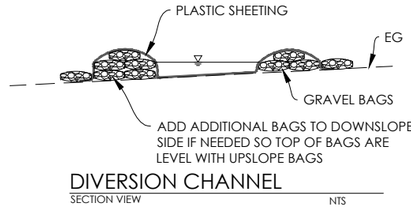


TREATMENT TYPE 3: STREAM DIVERSION

1" = 60'

STREAM DIVERSION NOTES:

1. GENERAL
   - 1.1. INSTALL STREAM DIVERSIONS IN LOCATIONS AGREED UPON IN THE FIELD BY THE PROJECT GEOMORPHOLOGIST AND CONTRACTOR.
2. MATERIALS
   - 2.1. GRAVEL BAGS AND PLASTIC SHEETING SHALL BE AS DESCRIBED IN THE GRAVEL BAG COFFERDAM NOTES, THIS SHEET.
3. EXECUTION
   - 3.1. DEPENDING ON THE SIZE OF THE GRADING AREA AND FIELD CONDITIONS, STREAM DIVERSIONS MAY NEED TO BE COMPLETED IN PHASES.
   - 3.2. CONSTRUCT THE UPSTREAM DIVERSION DAM AND DOWNSTREAM COFFERDAM AS AS DESCRIBED IN THE GRAVEL BAG COFFERDAM NOTES, THIS SHEET. TOP ELEVATIONS MAY NEED TO BE GREATER THAN BANKFULL DEPTH TO PROVIDE POSITIVE DRAINAGE.
   - 3.3. THE CONTRACTOR AND FIELD REPRESENTATIVE SHALL AGREE ON AN ALIGNMENT FOR THE DIVERSION CHANNEL PRIOR TO CONSTRUCTION.
   - 3.4. INSTALL THE DIVERSION CHANNEL AS SHOWN ON THIS SHEET. OVERLAP ALL PLASTIC SHEETING IN THE DOWNSTREAM DIRECTION.
   - 3.5. REMOVE THE STREAM DIVERSION UPON COMPLETION OF THE GRADING AREA.



DIVERSION CHANNEL

SECTION VIEW NTS

Restoration Area	Recommended Treatment Type	Restoration Area	Recommended Treatment Type
1-L1	1	3-R4	1
1-L2	1	3-L5	1
1-L3	2	3-L6	2
1-R1	2	3-R5	2
1-R2	1	3-R6	1
1-R3	2	4-L1	2/3
1-R4	1	4-R1	1
1-R5	2	4-R2	1
3-L1	1	4-L2	2
3-L2	1/2	5-R1	2
3-L3	2	5-L1	2/3
3-R1	1	5-R2	2
3-R2	1	5-R3	3
3-R3	1	6-R1	2
3-L4	1	6-L1	1

DEWATERING AND DIVERSION GENERAL NOTES:

1. THE TREATMENT TYPES IN THE TABLE ARE RECOMMENDATIONS ONLY AND THE CONTRACTOR SHALL SELECT THE MOST APPROPRIATE TREATMENT FOR EACH RESTORATION AREA BASED ON FIELD CONDITIONS.
2. DEWATERING OR DIVERSION TREATMENTS NOT PRESENTED HEREIN MUST BE APPROVED BY THE FIELD REPRESENTATIVE.
3. ALL TURBID WATER CONTAINED BY COFFERDAM OR SILT FENCE AREAS SHALL BE PUMPED AND SPRAYED IN OVERBANK AREAS. WATER CONTAINED BY COFFERDAMS MUST BE COMPLETELY CLEAR PRIOR TO REMOVING COFFERDAMS.

PREPARED FOR:
Truckee River Watershed Council
Balance Hydrologics, Inc.
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DEWATERING, DIVERSION, AND SEDIMENT CONTROL PLAN

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
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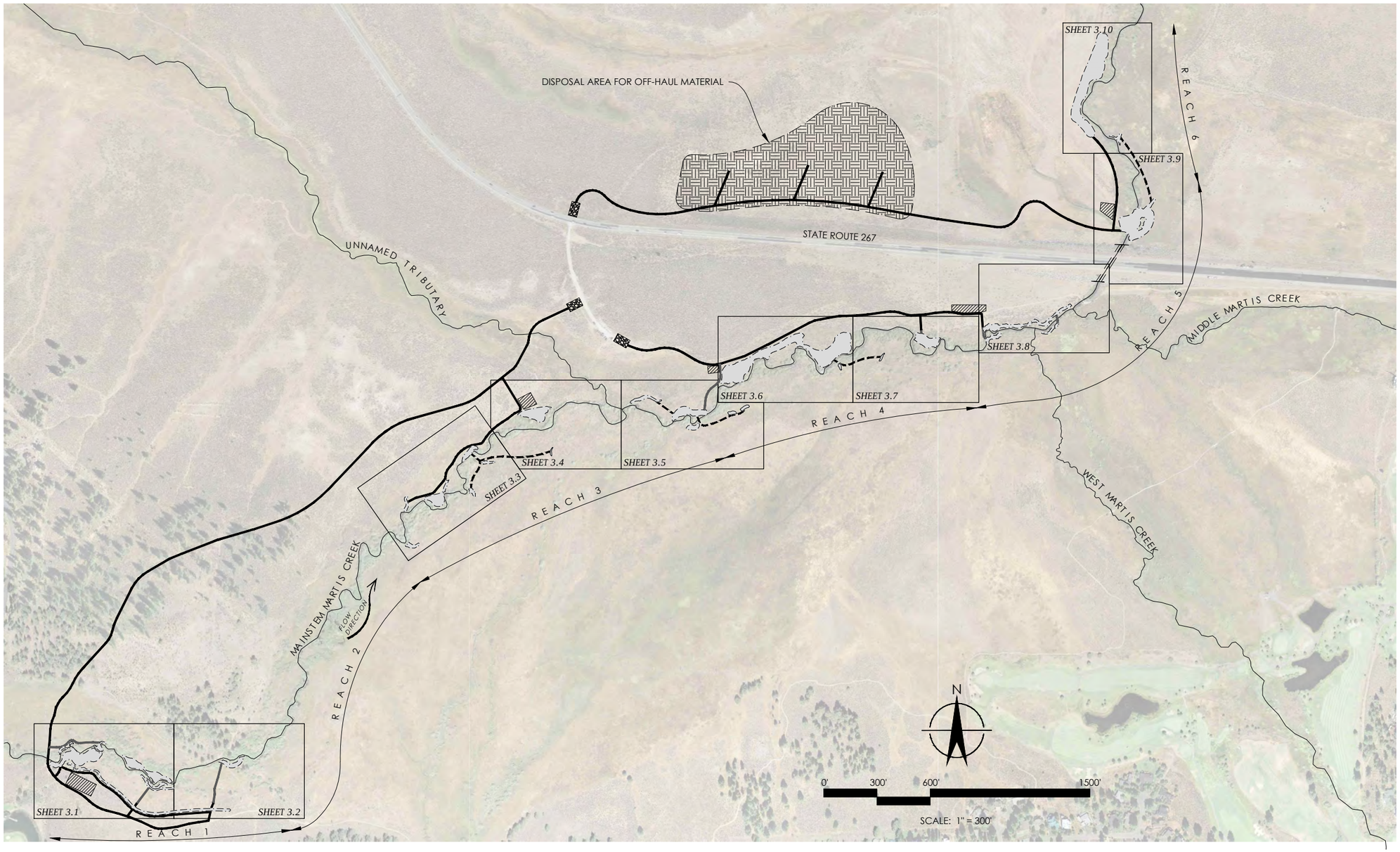


LEGEND:

- CONSTRUCTION ACCESS ROUTE
- CONSTRUCTION ACCESS ROUTE - INSTALL MEADOW PROTECTION MATS
- CONSTRUCTION ACCESS ROUTE - LIGHT EQUIPMENT AND FOOT TRAVEL ONLY
- STAGING AND STOCKPILE AREA
- GRADING LIMIT
- TEMPORARY CONSTRUCTION ENTRANCE

NOTES:

1. CONTRACTOR SHALL COORDINATE STAGING AGREEMENTS WITH USACE PRIOR TO MOBILIZATION.
2. LIGHT EQUIPMENT SHALL MEAN RUBBERIZED TRACK EQUIPMENT APPLYING NO MORE THAN 5 PSI GROUND PRESSURE.
3. ENCLOSE ALL STAGING AND STOCKPILE AREAS WITH TEMPORARY SILT FENCE OR FIBER ROLLS TO CONTAIN SEDIMENT PER PLACER COUNTY STANDARD DETAILS.
4. IF A PRECIPITATION EVENT OCCURS OR IS FORECASTED FOR NON-WORK HOURS, COVER STOCKPILED MATERIAL WITH IMPERMEABLE PLASTIC SHEETING AND ANCHOR SHEETING WITH GRAVEL BAGS.
5. TEMPORARY CONSTRUCTION ENTRANCES SHALL BE INSTALLED AND MAINTAINED PER PLACER COUNTY STANDARD DETAILS.

MEADOW PROTECTION MATS NOTES:

1. PRODUCTS
   - 1.1. MEADOW PROTECTION MATS SHALL BE DURA-BASE®, GEOTERRA®, OR AN EQUIVALENT MEADOW PROTECTION MAT PRODUCT (APPROVED BY THE FIELD REPRESENTATIVE) CAPABLE OF MINIMIZING SOIL COMPACTION AND VEGETATION MORTALITY DURING CONSTRUCTION.
   - 1.2. MEADOW PROTECTION MATS SHALL BE CONNECTED TO ONE ANOTHER WITH HARDWARE RECOMMENDED BY THE MANUFACTURER.
2. EXECUTION
   - 2.1. INSTALL MEADOW PROTECTION MATS IN THE LOCATIONS SHOWN ON THIS SHEET. DEPENDING ON FIELD CONDITIONS, INSTALL ADDITIONAL MATS PER THE DIRECTION OF THE FIELD REPRESENTATIVE.
   - 2.2. MEADOW PROTECTION MATS SHALL BE MINIMALLY ANCHORED TO THE GROUND ON AN AS-NEEDED BASIS TO PREVENT SHIFTING CAUSED BY VEHICLE TRAFFIC. ANCHORING MATERIALS SHALL BE HARDWARE RECOMMENDED BY THE MANUFACTURER
   - 2.3. MAINTAIN MEADOW PROTECTION MATS THROUGHOUT CONSTRUCTION IF SHIFTING OCCURS OR IF THERE IS DAMAGE TO MEADOW VEGETATION OR SOILS.
   - 2.4. REMOVE THE MATS UPON COMPLETION OF THE PROJECT.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHO\215063-0300-OVERVIEW.DWG

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

PREPARED FOR:

Balance Hydrologics, Inc.
P.O. Box 1077
12020 Donner Pass Road
Truckee, CA 96161
tel (530) 550-9776
www.balancehydro.com

Truckee River Watershed Council

KEY MAP AND ACCESS/STAGING PLAN

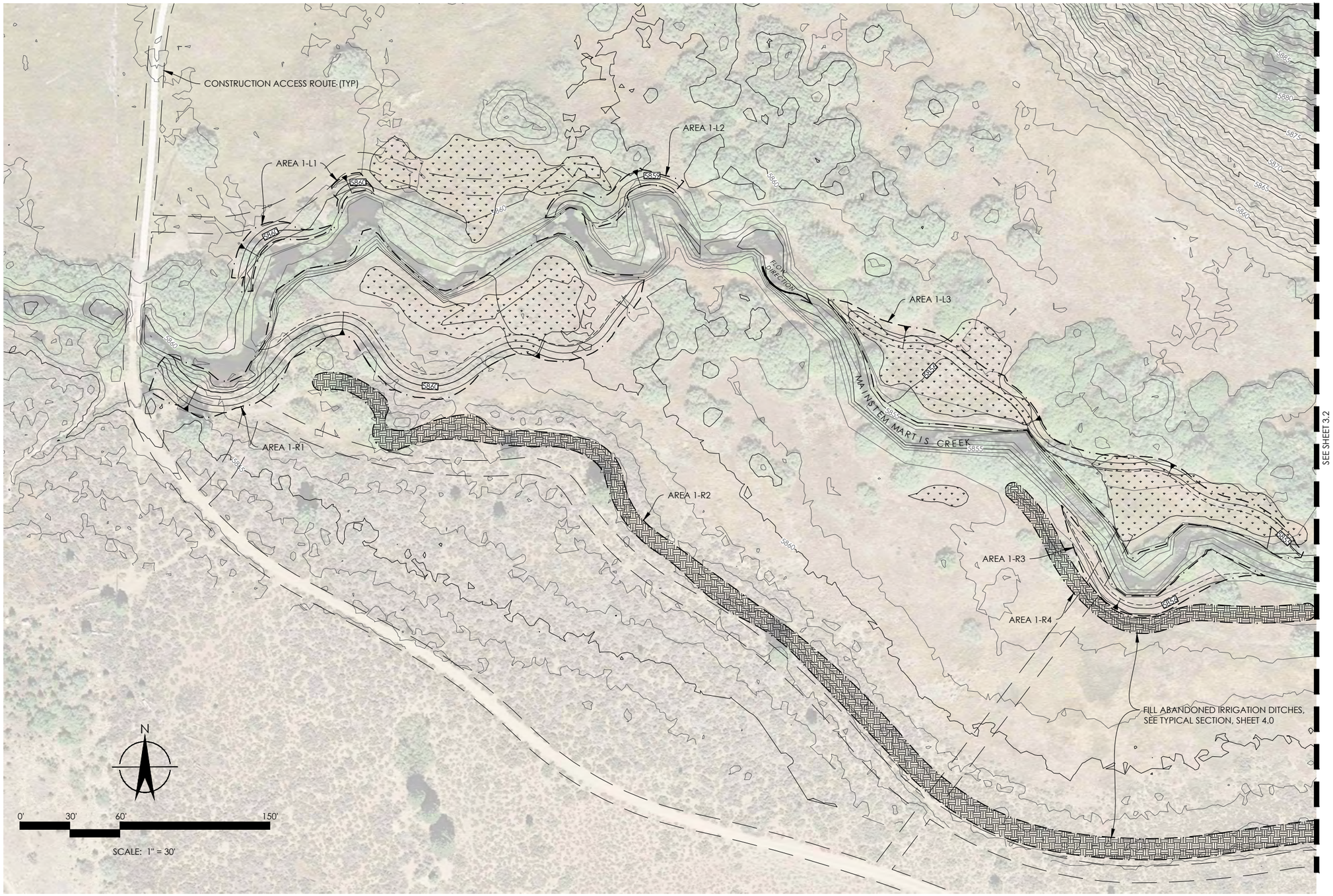
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 300'

SHEET
3.0



NOTES:
1. ALL SLOPES ARE SHOWN AS 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHO\215063-0301-PLAN01.DWG

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

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UPPER REACH 1

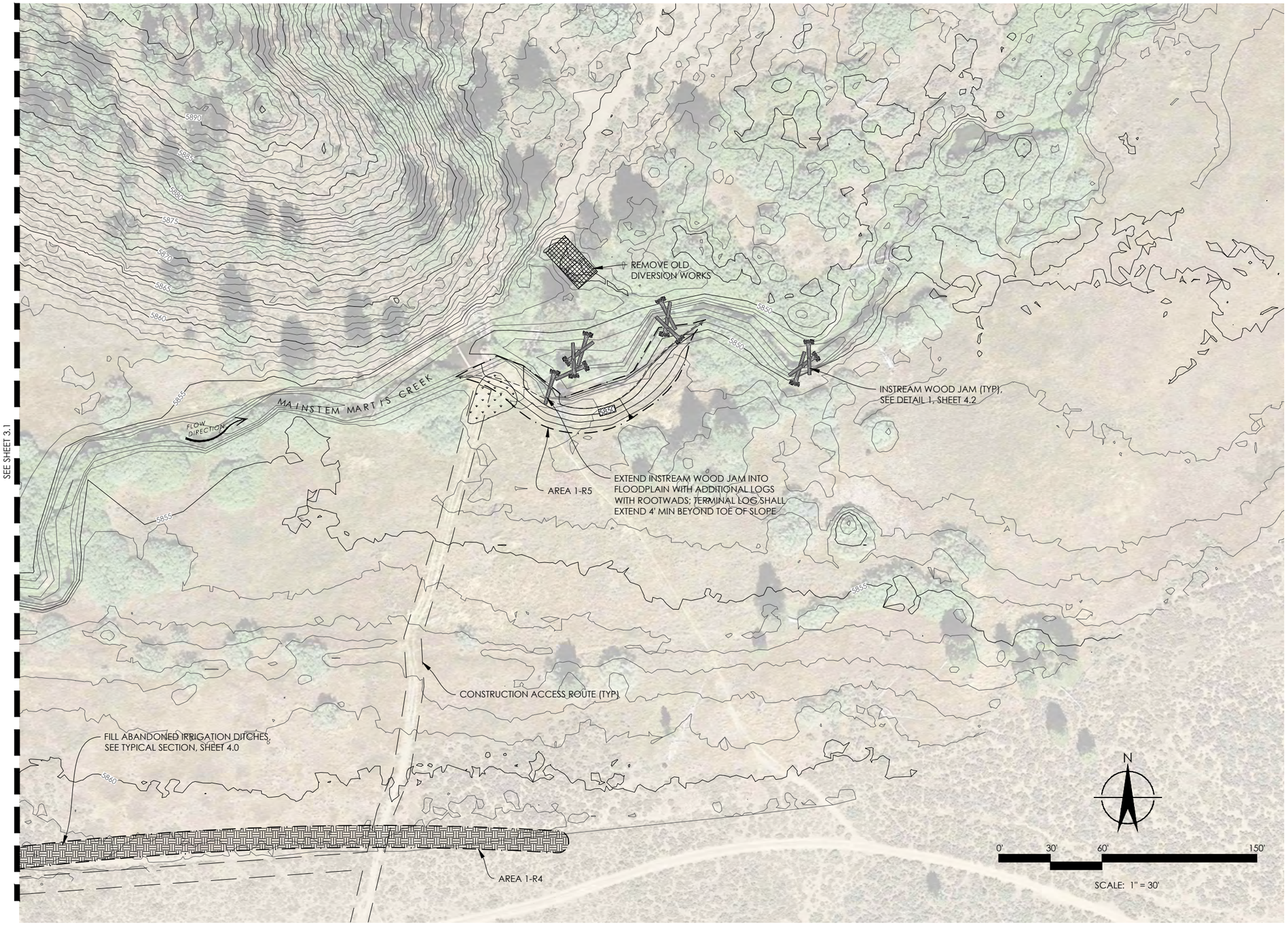
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.1



NOTES:
1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHZ\215063-0302-PLAN02.DWG

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

PREPARED FOR:

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Truckee River Watershed Council

LOWER REACH 1

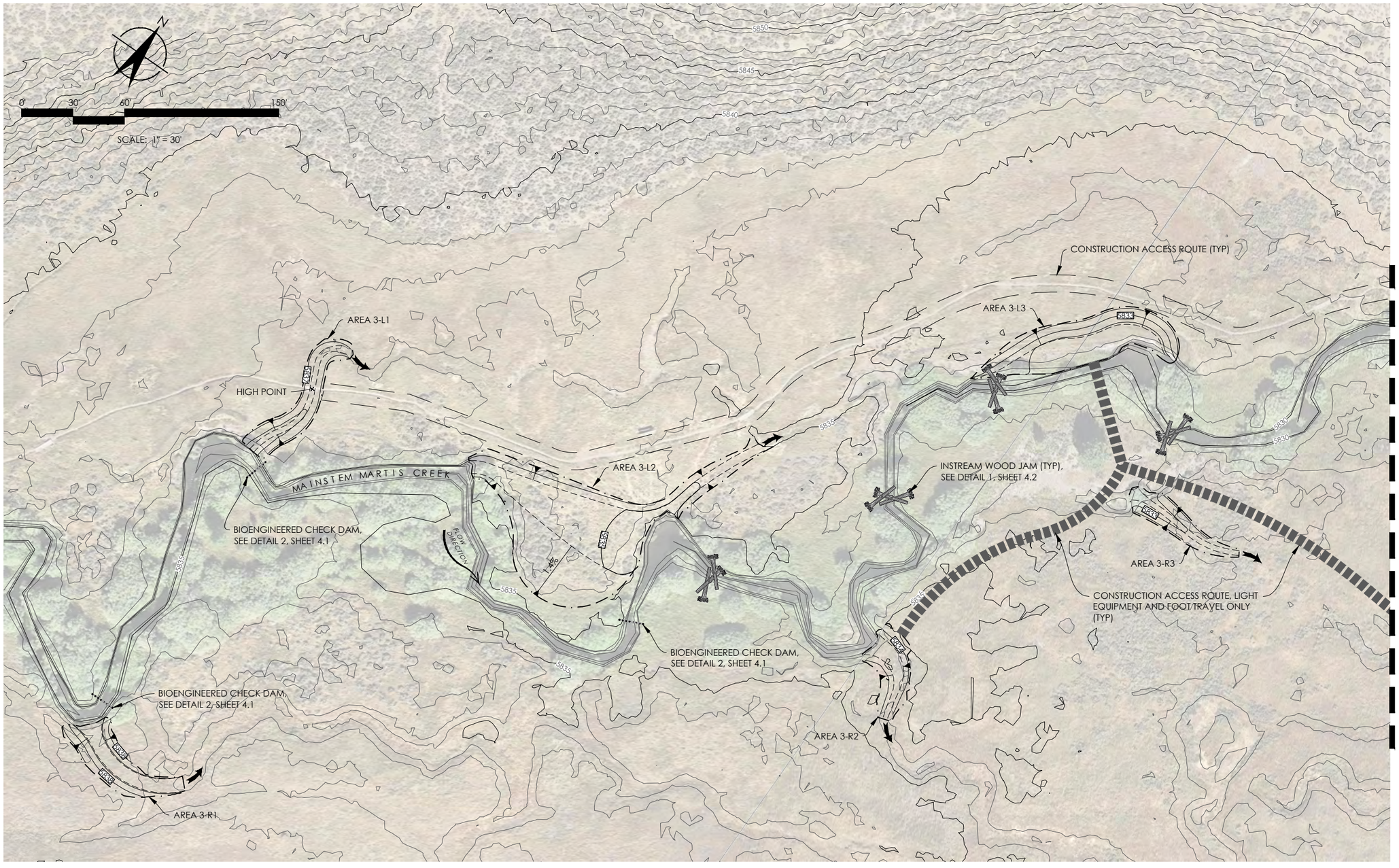
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.2



NOTES:

1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS.PWP\215063-0303-PLAN03.DWG

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DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

UPPER REACH 3

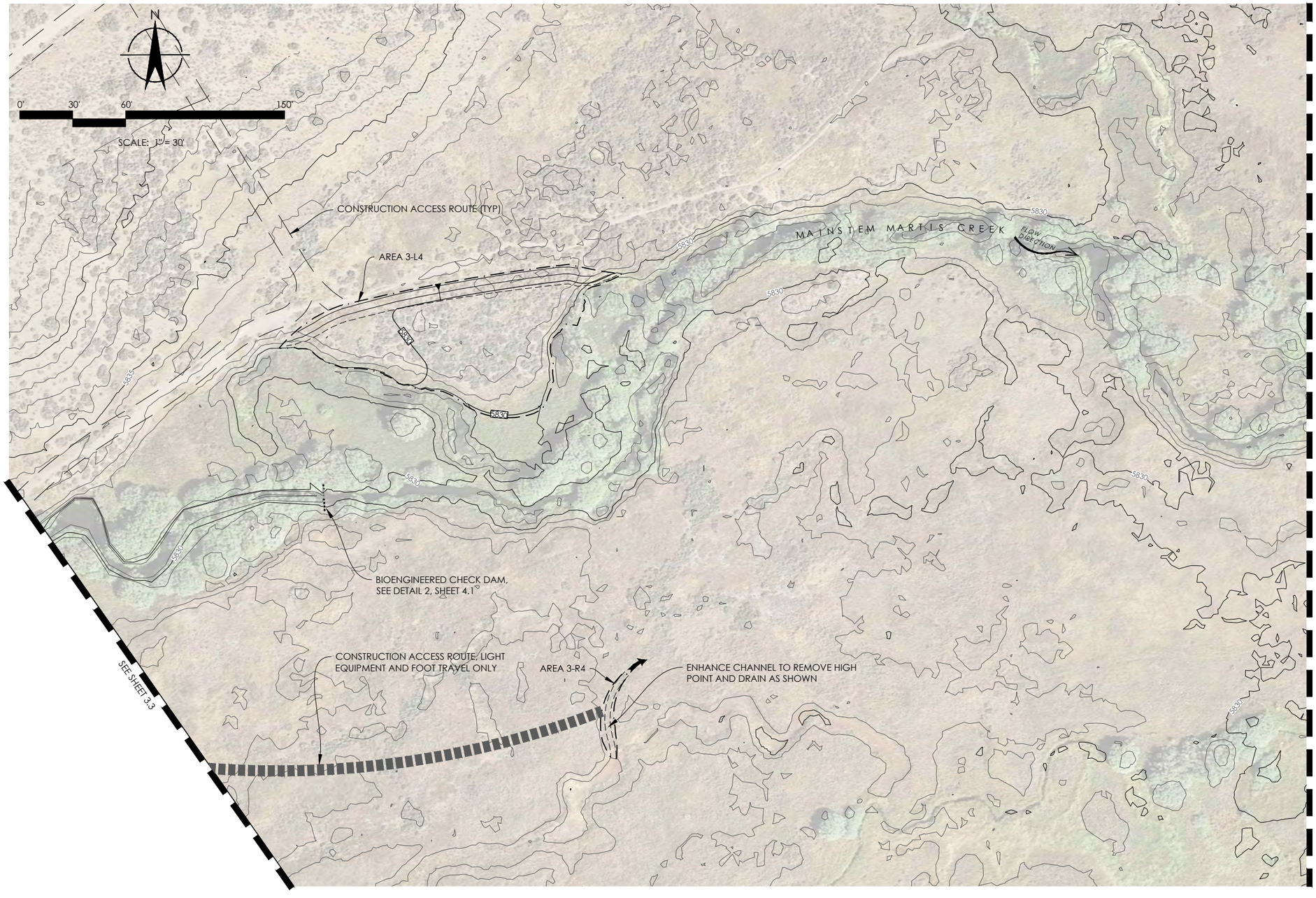
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.3



NOTES:

1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PH2\215063-0304-PLAN04.DWG

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

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MIDDLE REACH 3

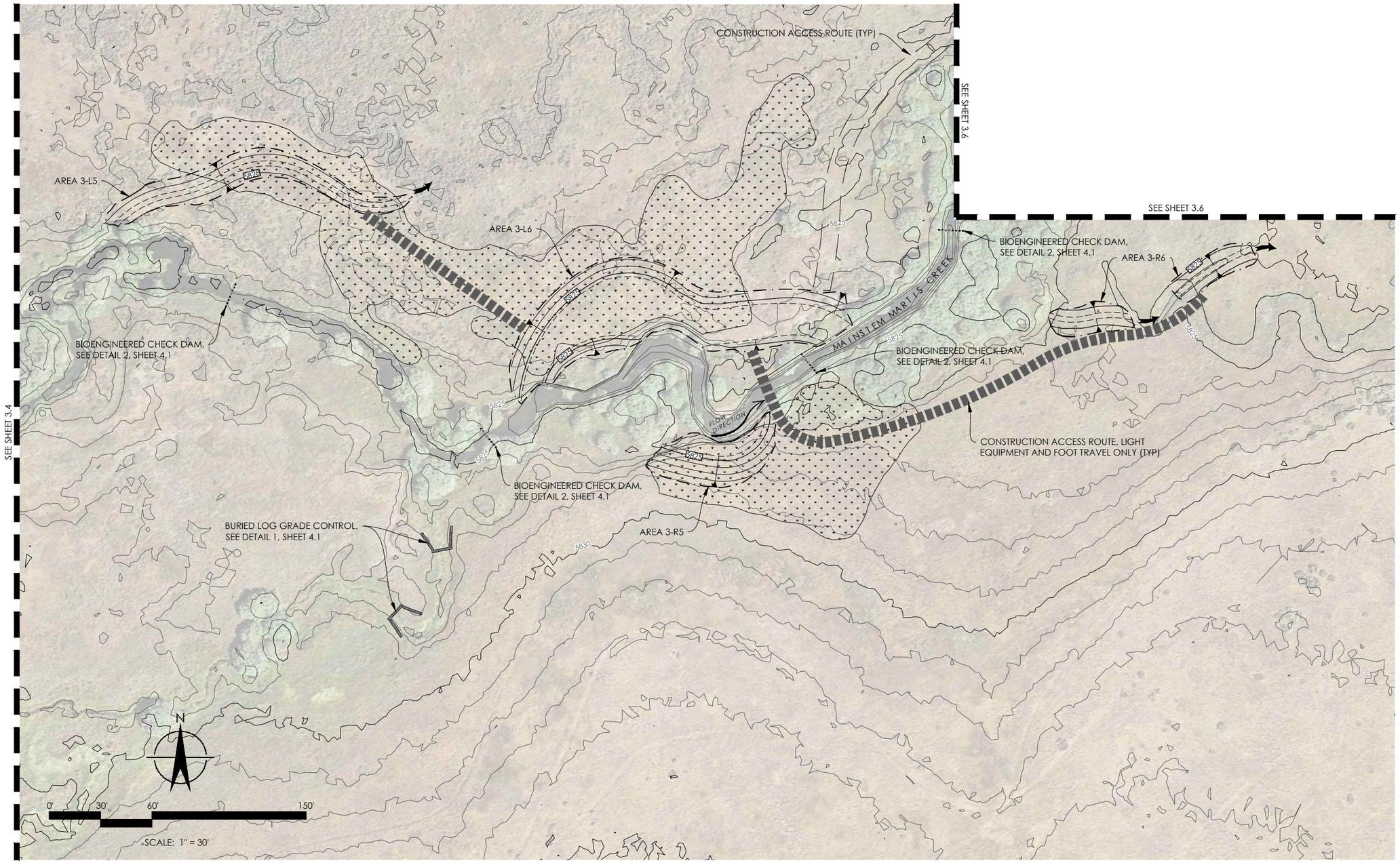
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.4



NOTES:
1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHD\215063-000S-PLAN05.DWG

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DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

LOWER REACH 3

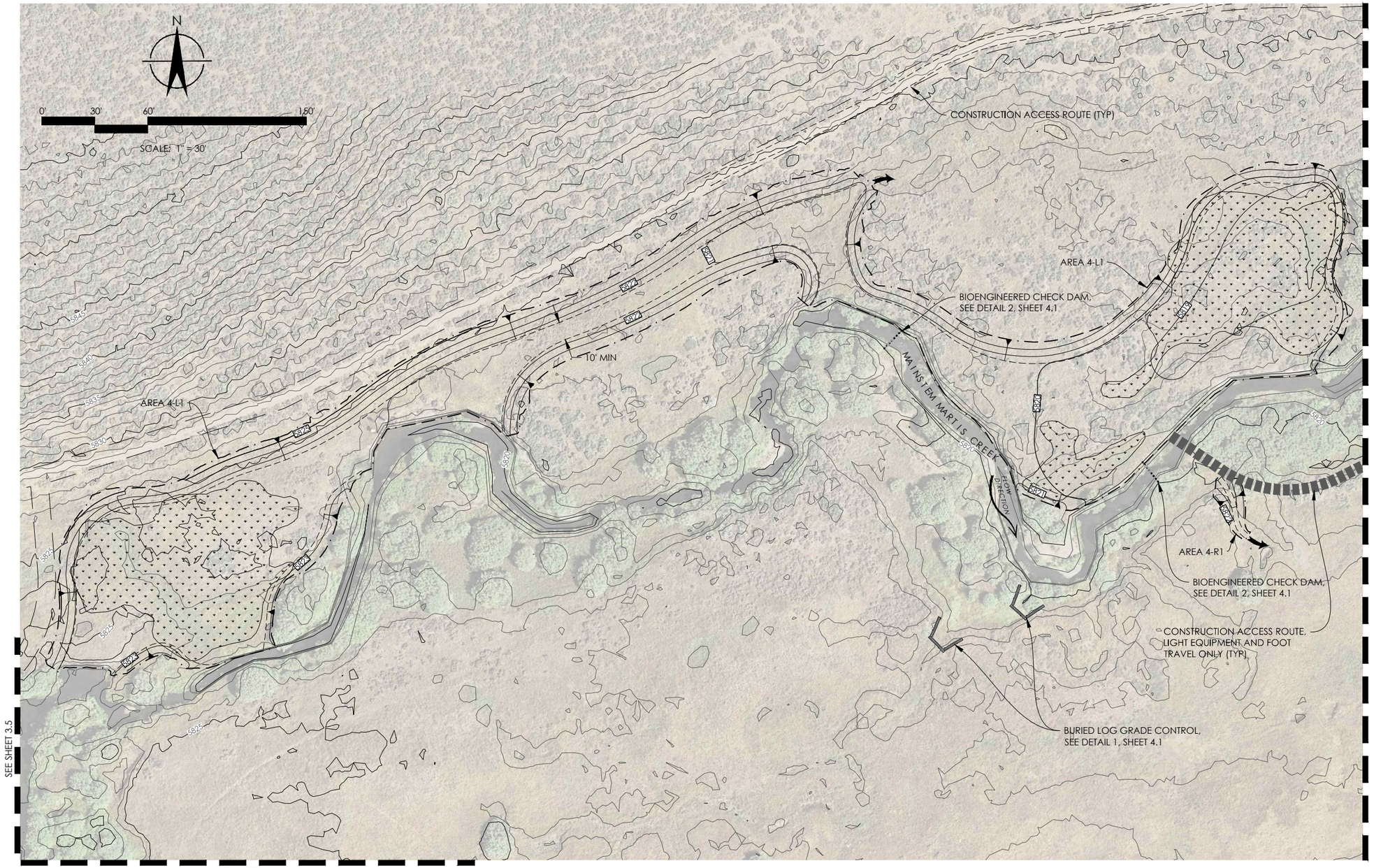
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.5



NOTES:

1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

PREPARED FOR:

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UPPER REACH 4

MAINSTEM MARTIS CREEK RESTORATION

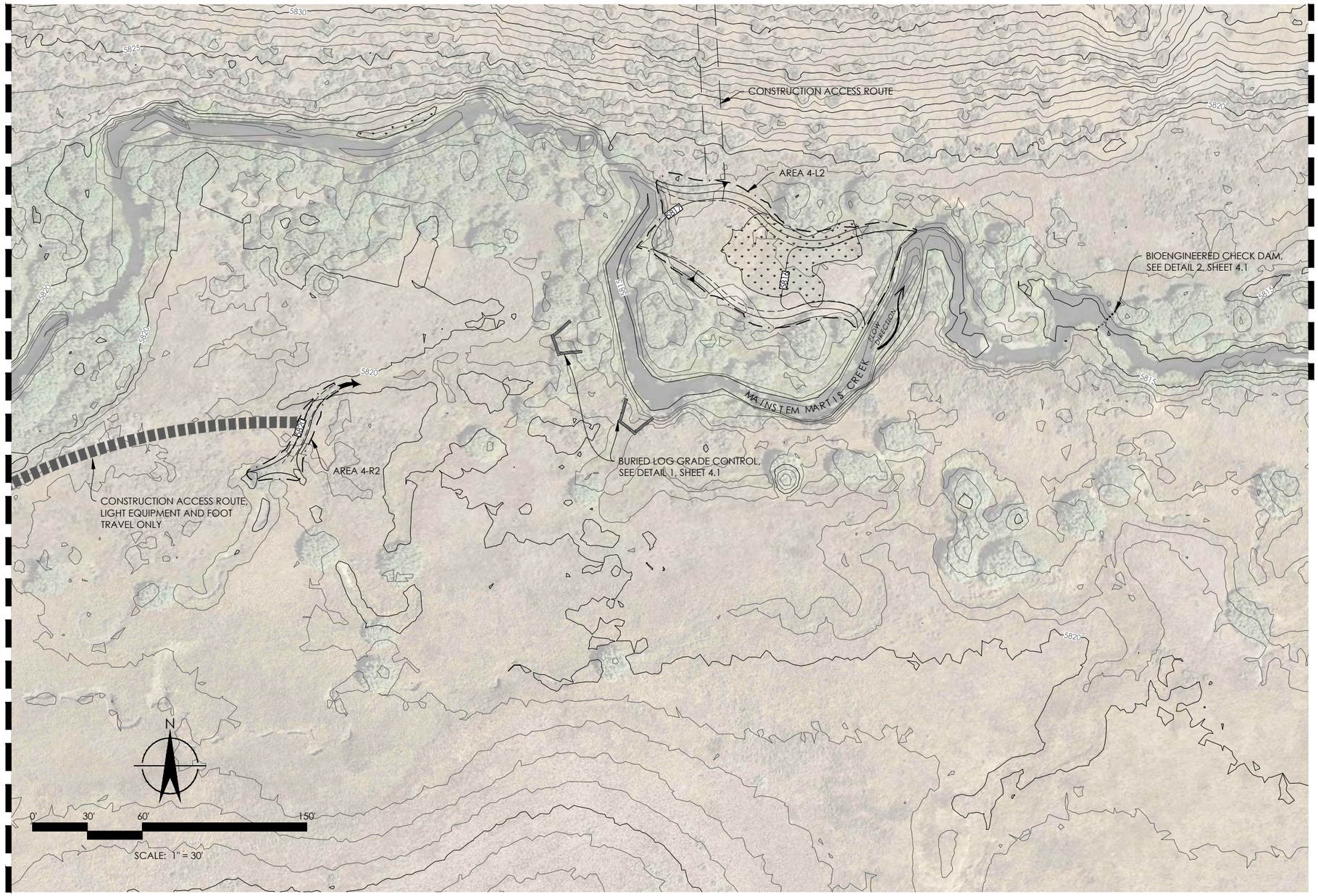
PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.6

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHOTOS\215063-03D6-PLAN06.DWG



NOTES:
1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

DESIGNED BY B HASTINGS	DATE	BY	SUBMITTALS / REVISIONS
DRAWN BY P KULCHAWIK	6-10-16	BKH	CONCEPTUAL PLANS
	3-8-17	BKH	95% PROGRESS DRAFT
CHECKED BY E BALLMAN	4-7-17	BKH	DRAFT 95% DESIGN
IN CHARGE D SHAW			
DATE 4-7-17			

PREPARED FOR:
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LOWER REACH 4

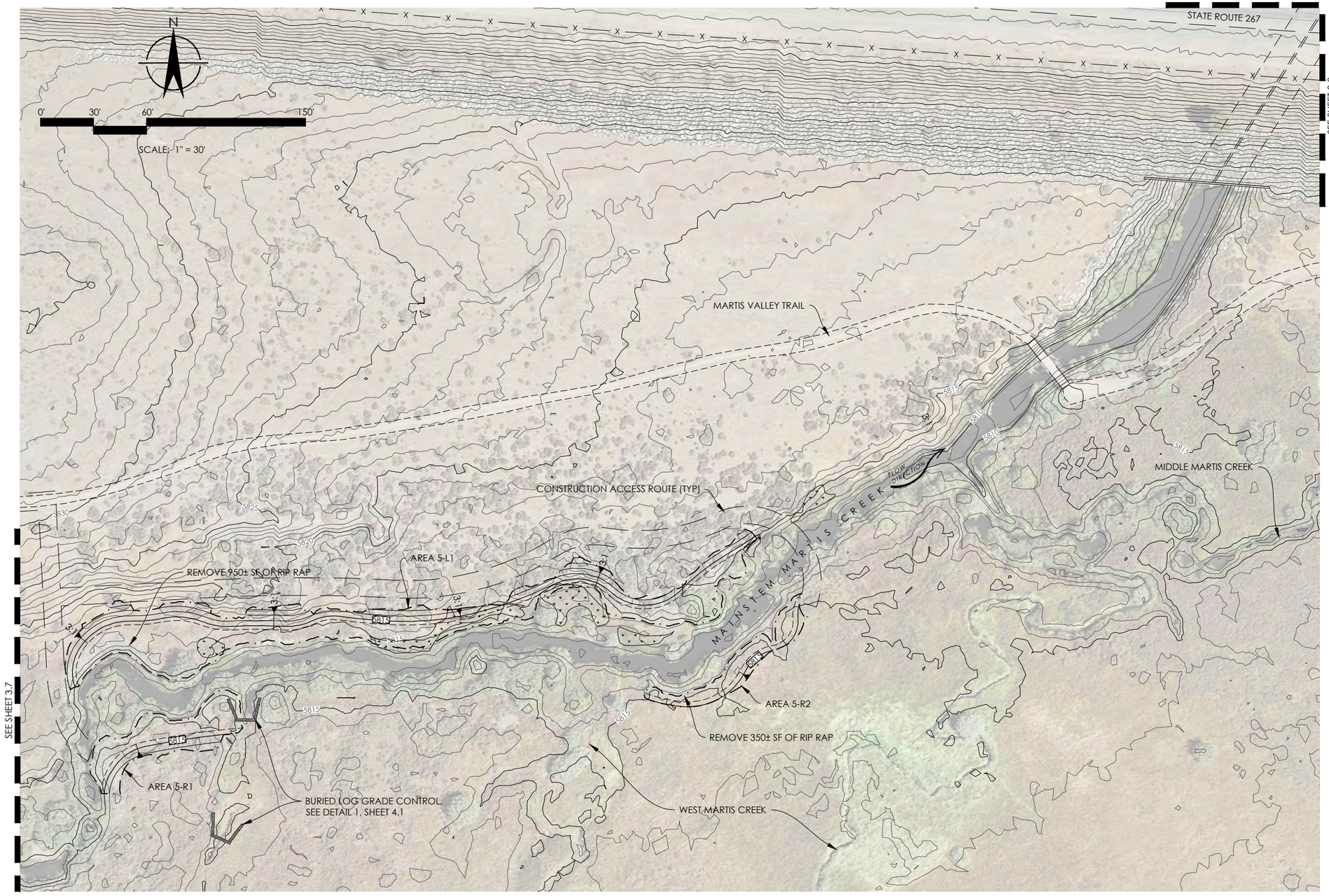
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER 215063

SCALE 1" = 30'

SHEET 3.7



NOTES:

1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHO\215063-0308-PLAN08.DWG

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

PREPARED FOR:

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UPPER REACH 5

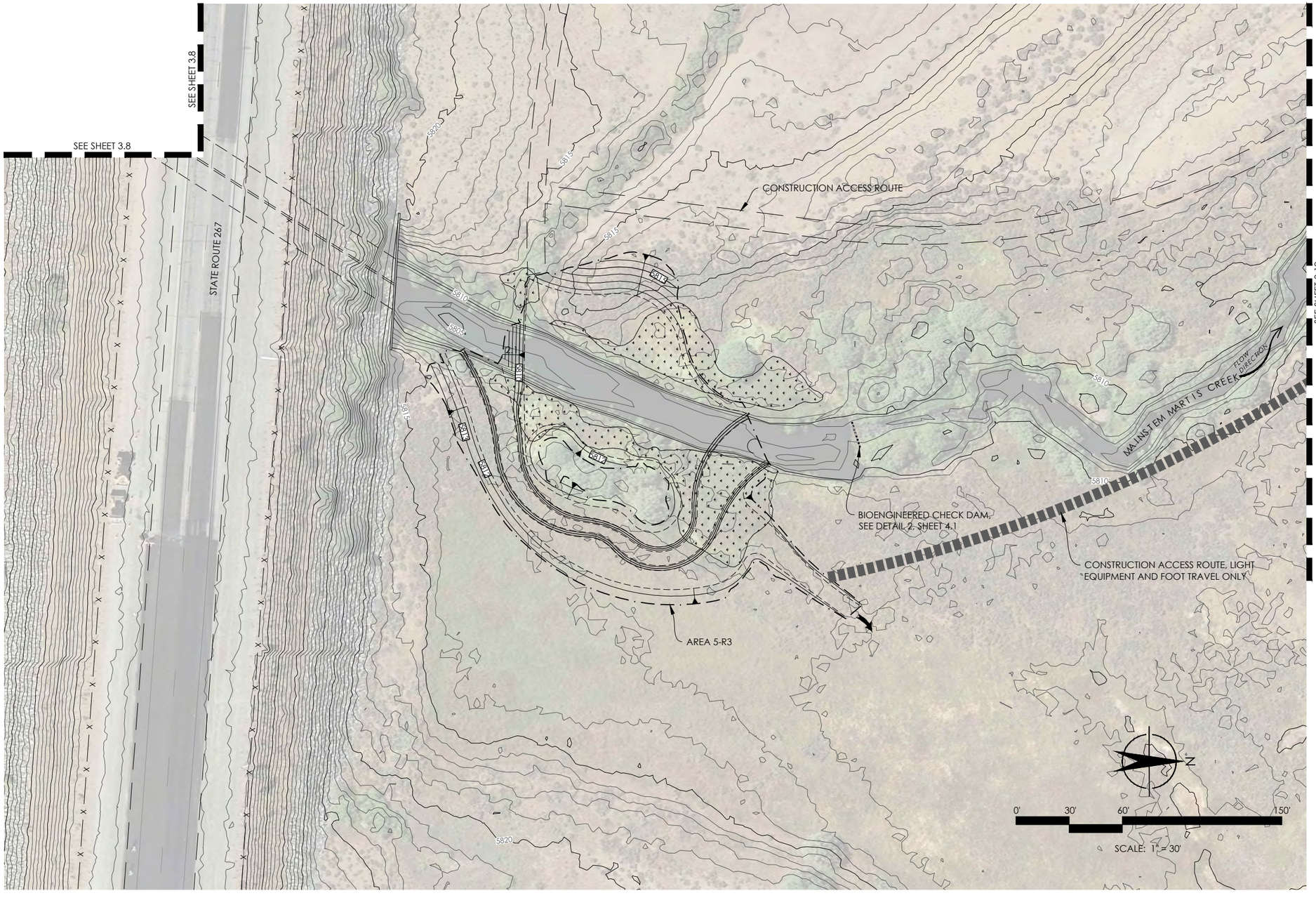
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.8



NOTES:

1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. CONSTRUCTION ACCESS ROUTE, LIGHT EQUIPMENT AND FOOT TRAVEL ONLY (TYP)

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PH2\215063-0309-PLAN09.DWG

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

PREPARED FOR:

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Truckee River Watershed Council

LOWER REACH 5 / UPPER REACH 6

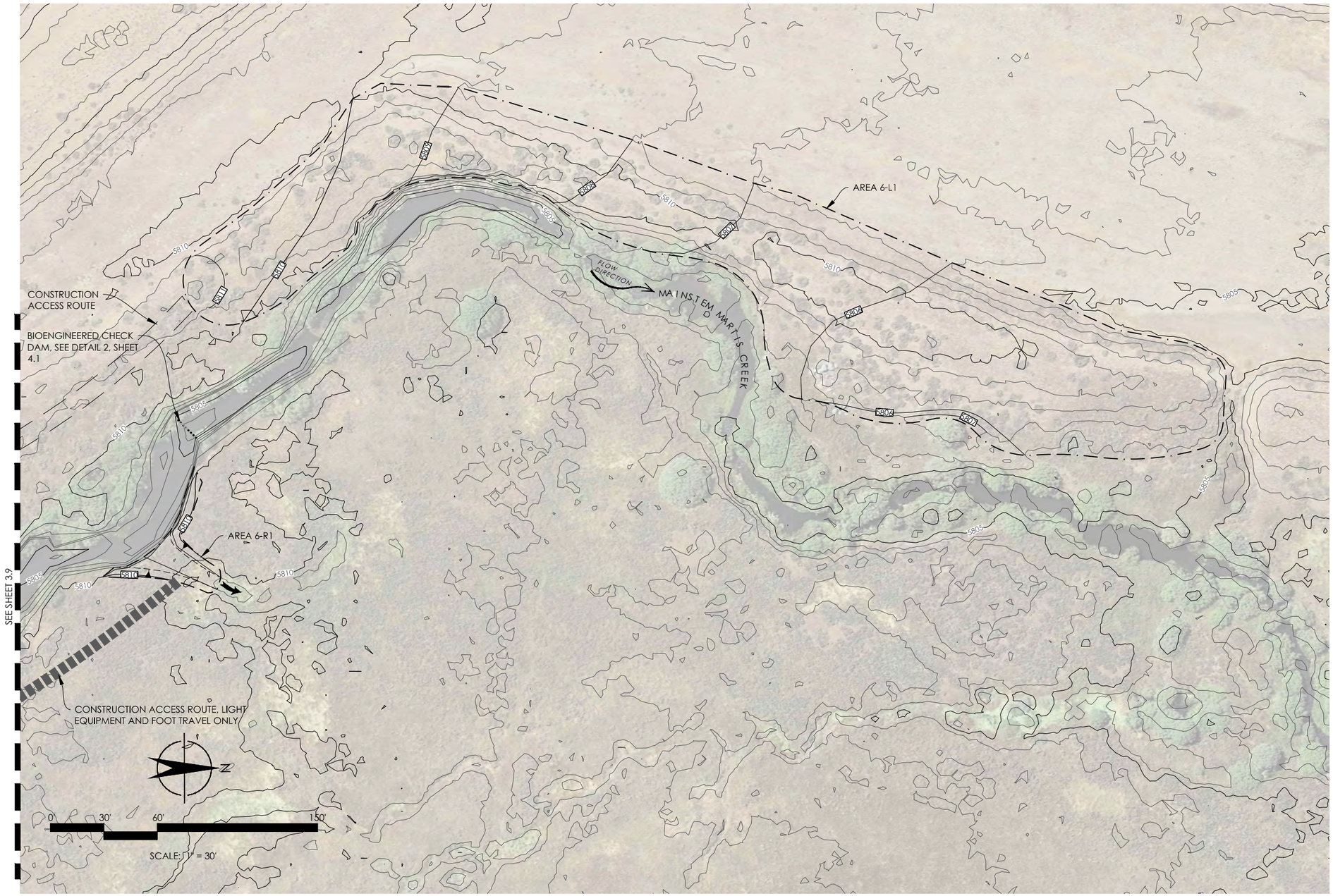
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
1" = 30'

SHEET
3.9



NOTES:

1. ALL SLOPES ARE 4:1 UNLESS NOTED OTHERWISE. WARP SLOPES BETWEEN 3:1 AND 6:1 TO CREATE VARIED TOPOGRAPHY.

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

DESIGNED BY B HASTINGS	DATE	BY	SUBMITTALS / REVISIONS
DRAWN BY P KULCHAWIK	6-10-16	BKH	CONCEPTUAL PLANS
	3-8-17	BKH	95% PROGRESS DRAFT
CHECKED BY E BALLMAN	4-7-17	BKH	DRAFT 95% DESIGN
IN CHARGE D SHAW			
DATE 4-7-17			

PREPARED FOR:
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Balance Hydrologics, Inc.
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tel (530) 550-9776
www.balancehydro.com

LOWER REACH 6

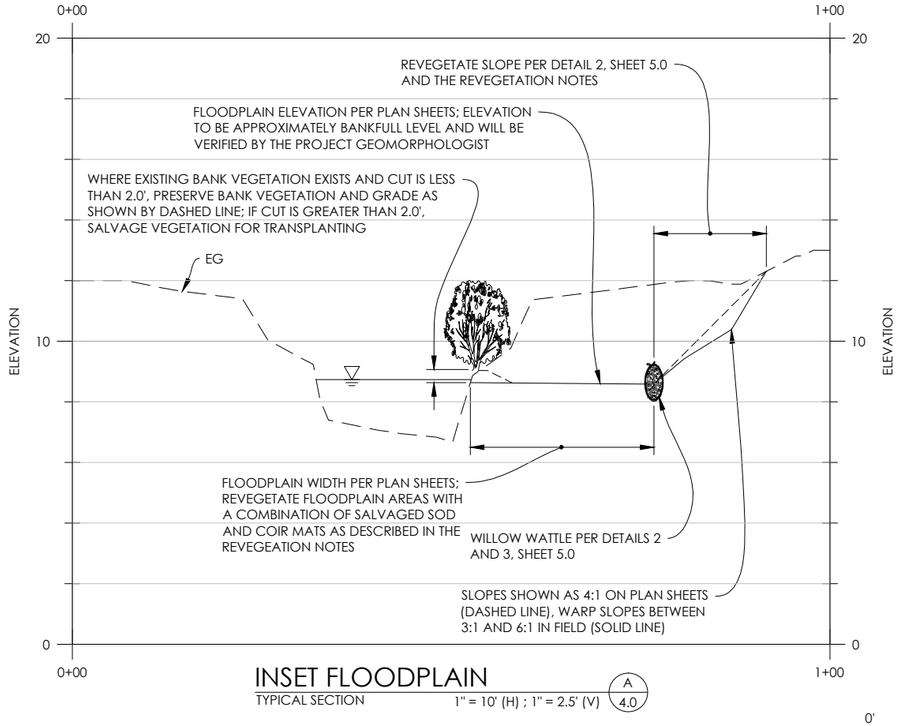
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER 215063

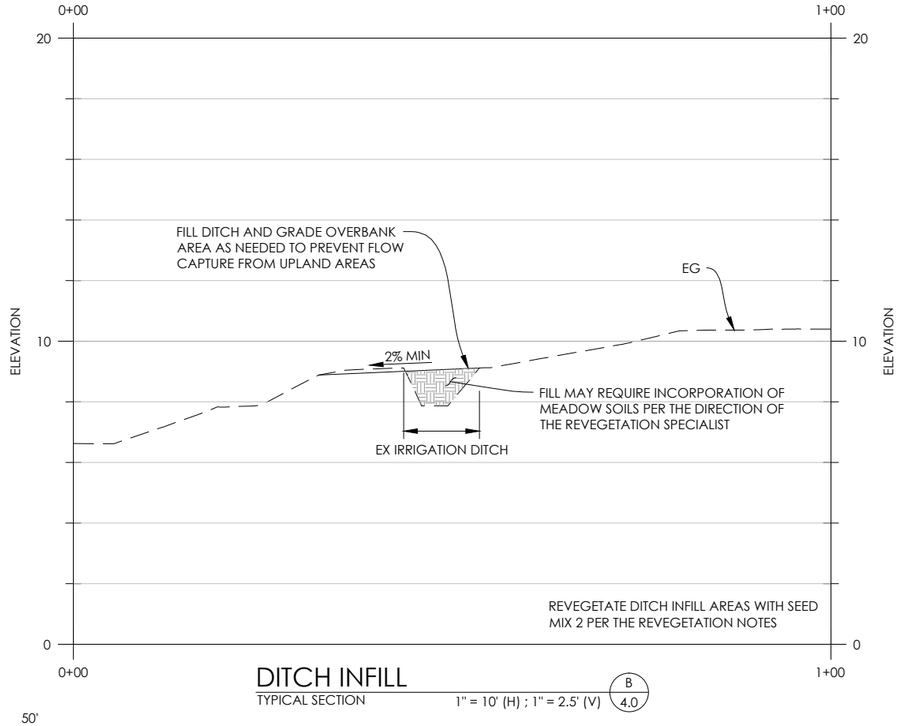
SCALE 1" = 30'

SHEET 3.10



INSET FLOODPLAIN

TYPICAL SECTION — 1" = 10' (H) ; 1" = 2.5' (V) — A / 4.0

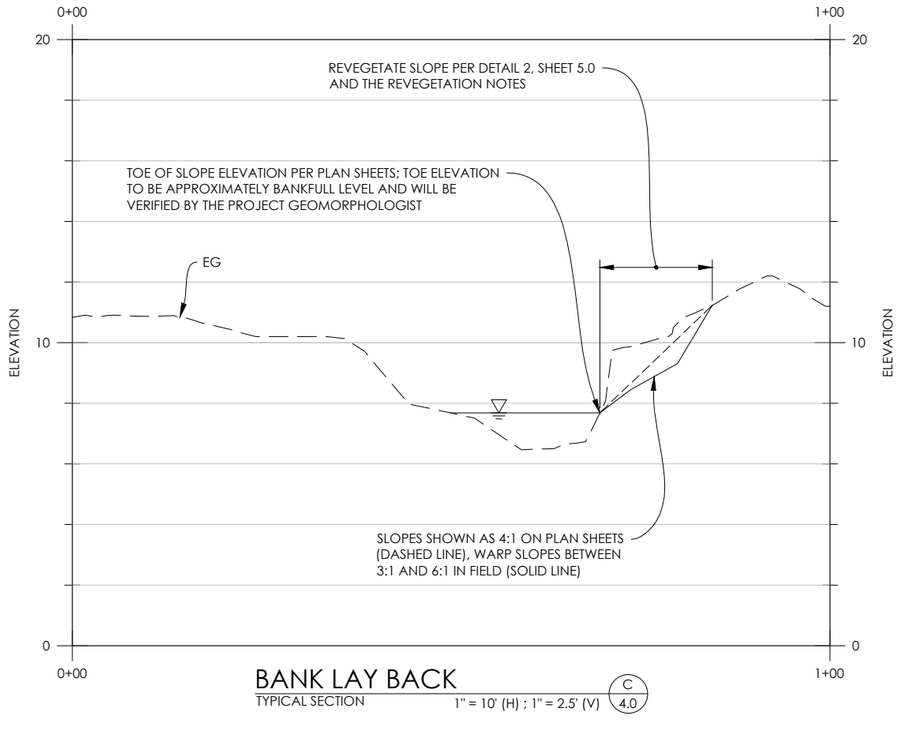


DITCH INFILL

TYPICAL SECTION — 1" = 10' (H) ; 1" = 2.5' (V) — B / 4.0

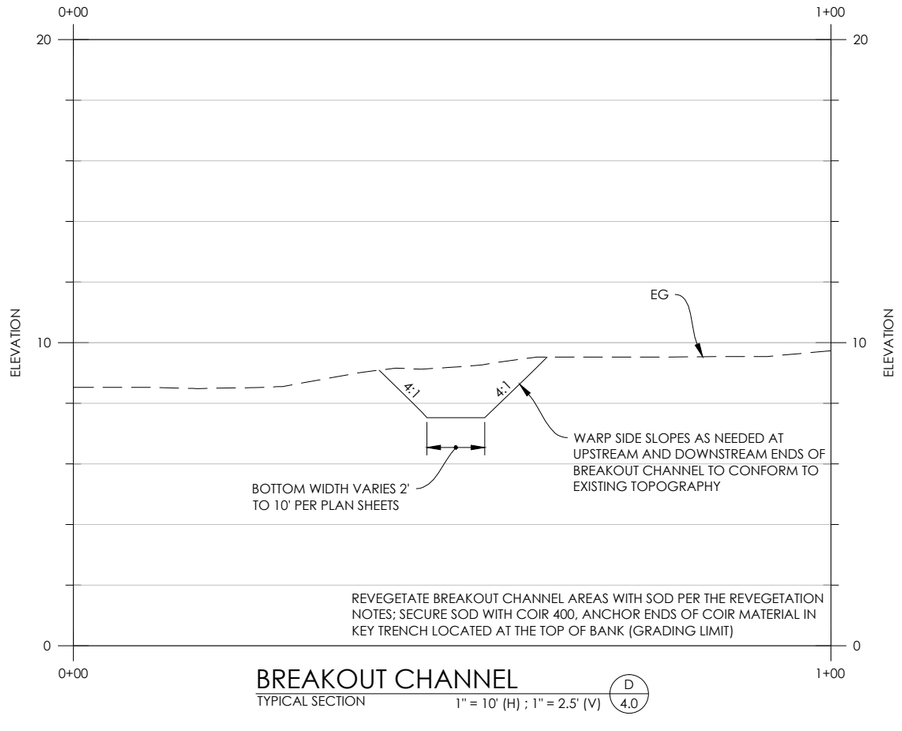
0' 10' 20' 50'

SCALE: 1" = 10'



BANK LAY BACK

TYPICAL SECTION — 1" = 10' (H) ; 1" = 2.5' (V) — C / 4.0



BREAKOUT CHANNEL

TYPICAL SECTION — 1" = 10' (H) ; 1" = 2.5' (V) — D / 4.0

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHZ\215063-0400-X001.DWG

PREPARED FOR: Truckee River Watershed Council

Balance Hydrologics, Inc.
P.O. Box 1077
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Truckee, CA 96161
tel (530) 550-9776
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DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE 4-7-17			

TYPICAL SECTION VIEWS

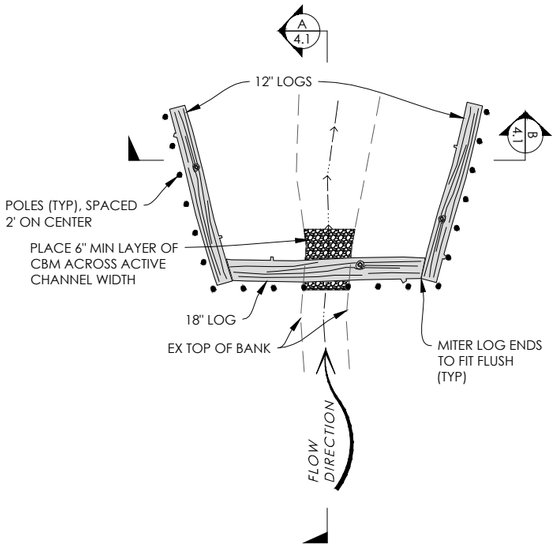
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

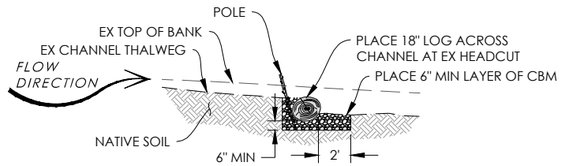
PROJECT NUMBER 215063

SCALE AS SHOWN

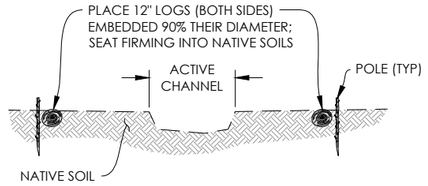
SHEET 4.0



1 BURIED LOG GRADE CONTROL
SCALE: 1" = 5'



BURIED LOG GRADE CONTROL (A 4.1)
PROFILE VIEW 1" = 5'



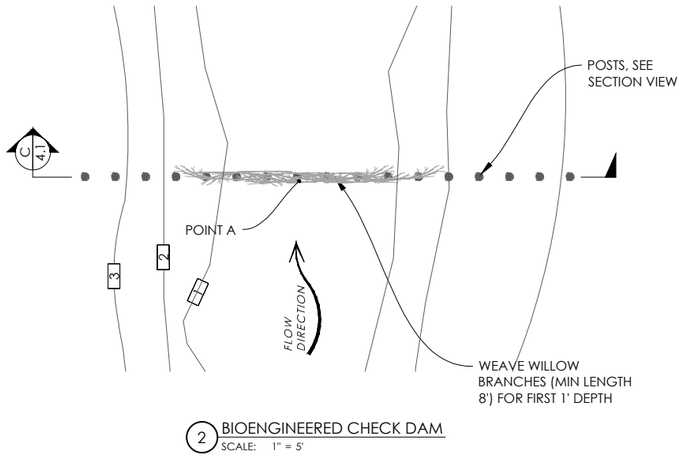
BURIED LOG GRADE CONTROL (B 4.1)
SECTION VIEW 1" = 5'

BURIED LOG GRADE CONTROL NOTES:

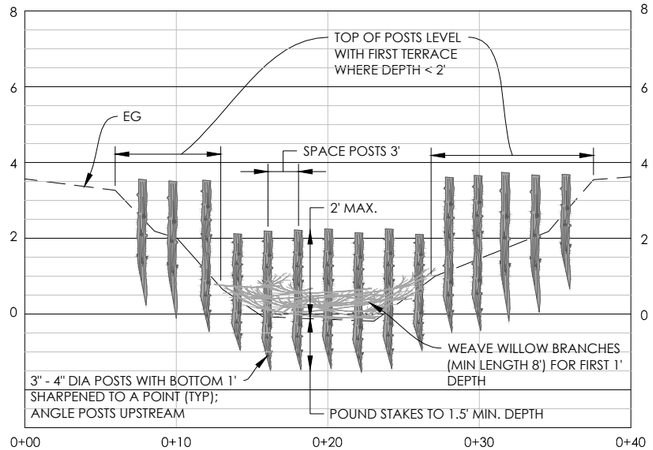
1. GENERAL
   - 1.1. CONSTRUCT BURIED LOG GRADE CONTROLS AT THE LOCATIONS INDICATED ON THE PLANS AND AS DIRECTED BY THE FIELD REPRESENTATIVE.
   - 1.2. IF A CONFLICT EXISTS BETWEEN THE INFORMATION ON THE PLANS AND SITE CONDITIONS, NOTIFY THE FIELD REPRESENTATIVE IMMEDIATELY.
   - 1.3. PURPOSE: BURIED LOG GRADE CONTROLS ARE INTENDED TO STABILIZE THE BED AND BANKS OF SIDE CHANNELS AS THEY CROSS STEEP TERRAIN JUST BEFORE RE-ENTERING MAINSTEM MARTIS CREEK. DOING SO IS INTENDED TO PREVENT HEADCUTS FROM MIGRATING UPSTREAM THROUGH SIDE CHANNELS.
2. MATERIALS
   - 2.1. LOGS
     - 2.1.1. THERE ARE NO LIMITATIONS TO THE SPECIES OF LOGS OBTAINED, OTHER THAN THEY MUST COME FROM WITHIN A 25-MILE RADIUS OF THE PROJECT SITE, AND BE SOURCED FROM AN AREA HAVING SIMILAR CLIMATE, ELEVATION, AND VEGETATION COMMUNITIES AS THE PROJECT SITE.
     - 2.1.2. LOGS SHALL BE SOUND, FREE FROM ROT OR INFESTATION BY INSECTS, AND FREE OF ADHERED DIRT, LITTER, OR OTHER MATERIAL.
     - 2.1.3. LOGS SHALL HAVE NO WEAKNESSES SUCH AS CRACKS AND SPLITS THROUGH MORE THAN 25 PERCENT OF THE LOG DIAMETER.
     - 2.1.4. LOGS SHALL BE GENERALLY STRAIGHT AND SHALL BE TRIMMED SO THAT BRANCHES PROTRUDE NO MORE THAN 6 INCHES FROM THE TRUNK.
     - 2.1.5. LOGS FOR THE BURIED LOG GRADE CONTROLS ARE CLASSIFIED IN TERMS OF THE FOLLOWING SIZE CLASSES:
       - 2.1.5.1. 12" LOGS: 12 FEET LONG AND 15 TO 18 INCHES IN DIAMETER.
       - 2.1.5.2. 18" LOGS: 12 FEET LONG AND 10 TO 15 INCHES IN DIAMETER.
     - 2.1.6. CUTS SHALL BE SMOOTH, WITHOUT BREAKS OR JAGGED EDGES.
   - 2.2. CHANNEL BED MATERIAL (CBM):
     - 2.2.1. CBM SHALL BE CLEAN SUBANGULAR TO SUBROUNDED ROCK GENERALLY CONSISTING OF COBBLES, GRAVELS, AND SAND. THE CBM SHALL BE WELL-MIXED PRIOR TO PLACEMENT.
     - 2.2.2. CBM SHALL BE CLEANED PRIOR TO DELIVERY TO THE PROJECT SITE AND WILL BE REJECTED BY THE FIELD REPRESENTATIVE IF THE MIXTURE IS FOUND TO HAVE EXCESSIVE FINES.
     - 2.2.3. CBM SHALL HAVE THE FOLLOWING GRADATION:

SIEVE OPENING	% PASSING, BY WEIGHT
1"	100
3/4"	84
1/2"	50
NO. 4	16
NO.10	5

3. EXECUTION
   - 3.1. LOCATE AND FLAG THE APPROXIMATE LOCATIONS OF BURIED LOG GRADE CONTROLS AS SHOWN ON THE DRAWINGS IN THE FIELD.
   - 3.2. THE FIELD REPRESENTATIVE SHALL APPROVE THE FLAGGED LOCATIONS FOR THE BURIED LOG GRADE CONTROLS PRIOR TO INSTALLATION.
   - 3.3. THE FIELD REPRESENTATIVE AND CONTRACTOR SHALL AGREE ON AN ELEVATION FOR EACH BURIED LOG GRADE CONTROLS PRIOR TO PLACEMENT. THE ELEVATION WILL BE BASED ON FIELD CONDITIONS AND INFORMATION PROVIDED ON THE DRAWINGS.
   - 3.4. EXCAVATE TRENCHES FOR THE LOGS AND CBM, CAREFULLY HARVESTING AND STORING THE SOD (IF SUITABLE FOR REUSE) WITHIN THE TRENCH FOOTPRINT. MINIMIZE THE SIZE OF THE TRENCH, MAKING IT NO LARGER OR DEEPER THAN NEEDED TO INSTALL EACH LOG.
   - 3.5. PLACE A 6-INCH (MINIMUM) LAYER OF CBM IN THE LOCATIONS SHOWN ON THE DRAWINGS.
   - 3.6. PLACE LOGS AS SHOWN, SEATING THEM PIECES FIRMLY IN THE CBM OR NATIVE SOILS. CAREFULLY PLACE LOGS AND MITER CUT THE 18-INCH DIAMETER LOG TO PROVIDE INTIMATE CONTACT AMONG ALL LOGS.
   - 3.7. BACKFILL REMAINING PORTION OF THE TRENCH WITH EITHER CBM OR MATERIAL REMOVED DURING EXCAVATION, AS SHOWN ON THE DRAWINGS. COMPACT BACKFILL MATERIAL WITH AN EXCAVATOR BUCKET OR WITH TRACK EQUIPMENT.
   - 3.8. INSTALL CUTTINGS AS SHOWN AND WATER IMMEDIATELY AFTER INSTALLATION.



2 BIOENGINEERED CHECK DAM
SCALE: 1" = 5'



BIOENGINEERED CHECK DAM (C 4.1)
SECTION VIEW 1" = 5' (H); 1" = 2' (V)

BIOENGINEERED CHECK DAM NOTES:

1. GENERAL
   - 1.1. CONSTRUCT BIOENGINEERED CHECK DAMS AT THE LOCATIONS INDICATED ON THE DRAWINGS AND AS DIRECTED BY THE FIELD REPRESENTATIVE.
   - 1.2. IF A CONFLICT EXISTS BETWEEN THE INFORMATION ON THE DRAWINGS AND SITE CONDITIONS, NOTIFY THE FIELD REPRESENTATIVE IMMEDIATELY.
   - 1.3. PURPOSE: THE BIOENGINEERED CHECK DAMS ARE INTENDED TO PROMOTE LONG-TERM AGGRADATION OF THE CHANNEL BED, THEREBY INCREASING CONNECTIVITY BETWEEN MAINSTEM MARTIS CREEK AND ITS FLOODPLAIN. THE BIOENGINEERED CHECK DAMS ARE ALSO USED TO RAISE WATER SURFACE ELEVATIONS IN ORDER TO ACTIVATE SIDE CHANNELS MORE FREQUENTLY.
2. MATERIALS
   - 2.1. POSTS
     - 2.1.1. POSTS PROPOSED FOR THE CONSTRUCTION OF BIOENGINEERED CHECK DAMS SHALL HAVE A DIAMETER OF 1 TO 2 INCHES, LENGTHS OF 2.5 TO 4.0 FEET. ONE END OF EACH POST SHALL BE SHARPENED TO A POINT.
     - 2.1.2. POSTS MAY EITHER BE HARVESTED OR PRE-FABRICATED.
       - 2.1.2.1. HARVESTED POSTS SHALL BE CUT FROM LIVE, DORMANT BRANCHES OF WILLOW OR ALDER AND SHALL BE TAKEN FROM SUITABLE PLANTS WITHIN THE PROJECT AREA. EXCLUSIVELY CUTTING POLES FROM ONE PLANT IS NOT ALLOWED (EXPECT WHERE VEGETATION REMOVAL IS INDICATED ON THE PLANS). HARVESTED POSTS SHALL BE STORED FOR 48 HOURS MAXIMUM, AND THE CUT ENDS KEPT IN WATER DURING STORAGE.
       - 2.1.2.2. PRE-FABRICATED POSTS SHALL BE UNTREATED PINE, FIR, OR CEDAR, UNLESS OTHERWISE APPROVED BY THE FIELD REPRESENTATIVE. POSTS SHALL NOT HAVE WEAKNESSES SUCH AS CRACKS AND SPLITS THROUGH MORE THAN 25 PERCENT OF THE POST DIAMETER.
     - 2.1.3. ONE END OF POSTS SHALL BE A CLEAN SQUARE CUT. THE OPPOSITE END SHALL BE SHARPENED TO A POINT.
   - 2.2. DEBRIS
     - 2.2.1. DEBRIS SHALL CONSIST OF WILLOW OR ALDER BRANCHES WITH A STEM DIAMETER 2 INCHES OR LESS.
     - 2.2.2. DEBRIS SHALL BE 2' MINIMUM LENGTH. THERE IS NO MAXIMUM LENGTH FOR DEBRIS.
     - 2.2.3. ALL LEAVES AND MINOR BRANCHES SHALL BE KEPT IN TACT TO THE EXTENT PRACTICABLE.
     - 2.2.4. THE SAME STORAGE REQUIREMENTS AS FOR HARVESTED POSTS APPLIES FOR DEBRIS.
3. EXECUTION
   - 3.1. PRIOR TO INSTALLATION, THE FIELD REPRESENTATIVE SHALL FIELD IDENTIFY THE LOCATIONS OF THE ENDPOINTS FOR EACH STRUCTURE WHICH, IN TURN, WILL DICTATE THE FINAL ELEVATIONS AND LENGTH OF THE BIOENGINEERED CHECK DAM.
   - 3.2. BIOENGINEERED CHECK DAMS SHALL BE CONSTRUCTED TO THE DIMENSIONS INDICATED ON THE DRAWINGS AND AT THE LOCATIONS ESTABLISHED BY THE FIELD REPRESENTATIVE.
   - 3.3. POSTS SHALL BE DRIVEN IN TO THE GROUND ANGLED IN THE UPSTREAM DIRECTION AND SHALL PENETRATE THE GROUND A MINIMUM DEPTH OF 1.5 FEET.
   - 3.4. ONCE ALL POSTS HAVE BEEN INSTALLED, PACK DEBRIS BETWEEN THE UPSTREAM AND DOWNSTREAM ROWS OF POSTS TO THE ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS. NO POINT ALONG THE TOP OF THE PACKED DEBRIS SHALL BE HIGHER THAN THE UNTREATED ADJACENT GROUND.

PREPARED FOR:
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Balance Hydrologics, Inc.
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www.balancehydro.com

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

LOG GRADE CONTROL AND BEAVER DAM ANALOG DETAILS

MAINSTEM MARTIS CREEK RESTORATION

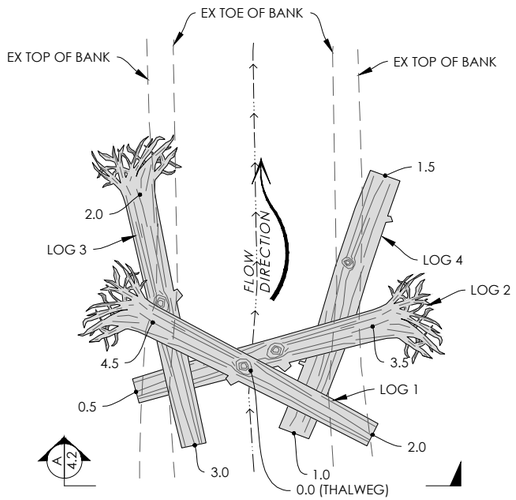
PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
AS SHOWN

SHEET
4.1

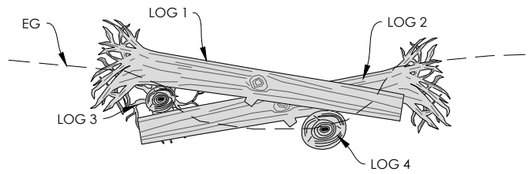
DRAFT 95% DESIGN - NOT FOR CONSTRUCTION



1 INSTREAM WOOD JAM
SCALE: 1" = 5'

LEGEND:

1.5 ELEVATION OF LOG ENDS (TOP OF LOG, IN FEET)



INSTREAM WOOD JAM
ELEVATION VIEW 1" = 5' A 4.2

INSTREAM WOOD JAM NOTES:

1. GENERAL
   - 1.1. CONSTRUCT INSTREAM WOOD JAMS AT THE LOCATIONS INDICATED ON THE DRAWINGS AND AS DIRECTED BY THE FIELD REPRESENTATIVE.
   - 1.2. IF A CONFLICT EXISTS BETWEEN THE INFORMATION ON THE DRAWINGS AND SITE CONDITIONS, NOTIFY THE FIELD REPRESENTATIVE IMMEDIATELY.
   - 1.3. PURPOSE: THE INSTREAM WOOD JAMS ARE INTENDED TO PROMOTE LONG-TERM AGGRADATION OF THE CHANNEL BED, THEREBY INCREASING CONNECTIVITY BETWEEN MAINSTEM MARTIS CREEK AND ITS FLOODPLAIN. INSTREAM WOOD JAMS ARE ALSO USED TO RAISE WATER SURFACE ELEVATIONS IN ORDER TO ACTIVATE SIDE CHANNELS MORE FREQUENTLY.
2. MATERIALS
   - 2.1. LOGS
     - 2.1.1. THERE ARE NO LIMITATIONS TO THE SPECIES OF LOGS OBTAINED, OTHER THAN THEY MUST COME FROM WITHIN A 25-MILE RADIUS OF THE PROJECT SITE, AND BE SOURCED FROM AN AREA HAVING SIMILAR CLIMATE, ELEVATION, AND VEGETATION COMMUNITIES AS THE PROJECT SITE.
     - 2.1.2. LOGS SHALL BE SOUND, FREE FROM ROT OR INFESTATION BY INSECTS, AND FREE OF ADHERED DIRT, LITTER, OR OTHER MATERIAL.
     - 2.1.3. LOGS SHALL HAVE NO WEAKNESSES SUCH AS CRACKS AND SPLITS THROUGH MORE THAN 25 PERCENT OF THE LOG DIAMETER.
     - 2.1.4. LOGS SHALL BE GENERALLY STRAIGHT AND SHALL BE TRIMMED SO THAT BRANCHES PROTRUDE NO MORE THAN 6 INCHES FROM THE TRUNK.
     - 2.1.5. LOGS FOR THE INSTREAM LOG JAMS ARE CLASSIFIED IN TERMS OF THE FOLLOWING SIZE CLASSES:
       - 2.1.5.1. LOGS WITH ROOTWADS SHALL BE 18 FEET LONG (MEASURED FROM THE CUT END TO THE ROOTWAD BOLE), 15 TO 18 INCHES IN DIAMETER (MEASURED AT THE CUT END), AND HAVE THEIR ROOTWADS ATTACHED. ROOTWAD FANS SHALL BE TRIMMED SO THEY ARE NO LARGER THAN 6 FEET IN DIAMETER. ROOTWADS SHALL BE THOROUGHLY WASHED BEFORE DELIVERY TO THE PROJECT SITE.
       - 2.1.5.2. CUT LOGS SHALL BE 18 FEET LONG AND 20 TO 24 INCHES IN DIAMETER.
     - 2.1.6. CUTS SHALL BE SMOOTH, WITHOUT BREAKS OR JAGGED EDGES.
3. EXECUTION
   - 3.1. THE FIELD REPRESENTATIVE AND CONTRACTOR SHALL AGREE ON A CONFIGURATION AND ELEVATIONS FOR EACH INSTREAM WOOD JAM PRIOR TO PLACEMENT. THE ELEVATION WILL BE BASED ON FIELD CONDITIONS AND INFORMATION PROVIDED ON THE DRAWINGS.
   - 3.2. LOGS 1, 2, AND 3 SHALL BE LOGS WITH ROOTWADS. LOG 4 SHALL BE A CUT LOG.
   - 3.3. ARRANGE LOGS APPROXIMATELY AS SHOWN IN THE DRAWINGS, PER THE DIRECTION OF THE FIELD REPRESENTATIVE, AND BY THE FOLLOWING GUIDELINES:
     - 3.3.1. PIN EACH LOG USING AT LEAST ONE OTHER LOG.
     - 3.3.2. EMBED AT LEAST 30% OF THE LENGTH OF EACH LOG IN EITHER THE CHANNEL BED OR BANKS.
     - 3.3.3. FIRMLY SEAT EACH LOG IN THE NATIVE SOILS USING THE BACK ON AN EXCAVATOR BUCKET.
     - 3.3.4. MAXIMIZE CONTACT AMONG ALL LOGS.
   - 3.4. ONCE ALL LOGS ARE INSTALLED TO THE SATISFACTION OF THE FIELD REPRESENTATIVE, BACKFILL ANY REMAINING TRENCH AREAS TO RESEMBLE THE PRE-DISTURBANCE TOPOGRAPHY OF THE CHANNEL BED AND BANKS. IT IS LIKELY THAT PORTIONS OF SOME LOGS WILL PROTRUDE ABOVE THE BANKS.

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DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

INSTREAM WOOD JAM DETAIL

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

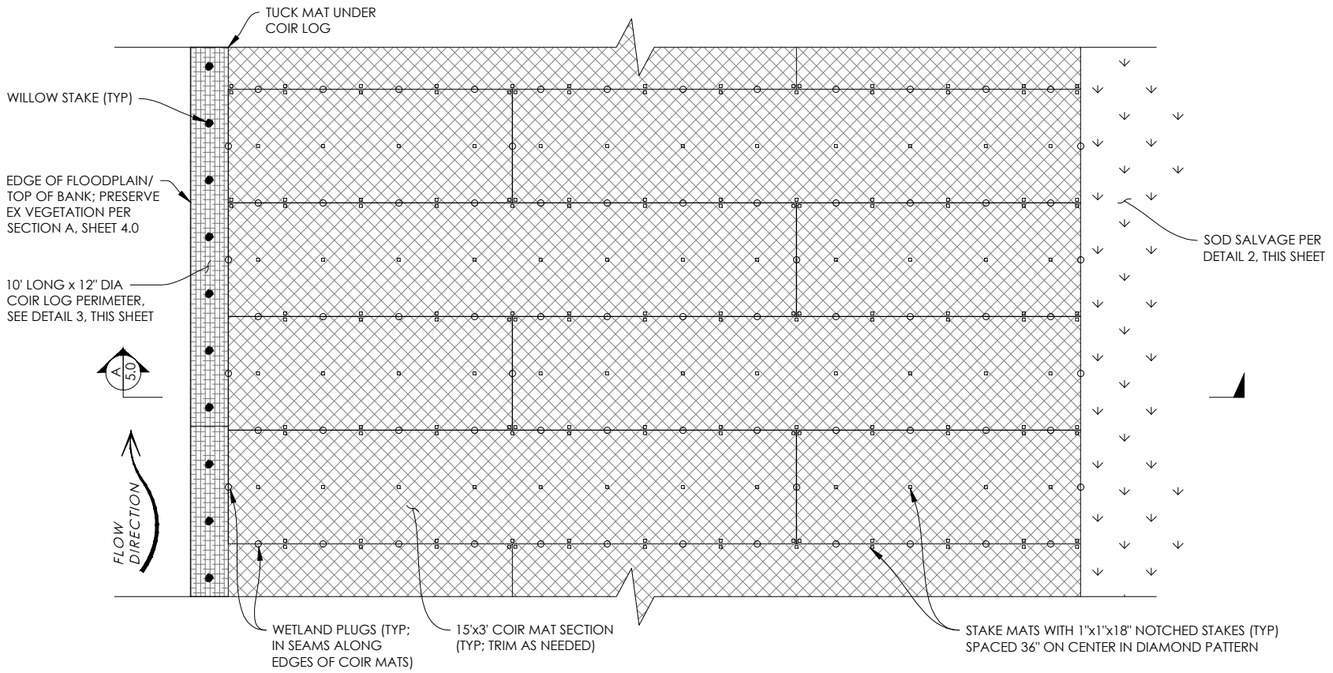
PROJECT NUMBER
215063

SCALE
AS SHOWN

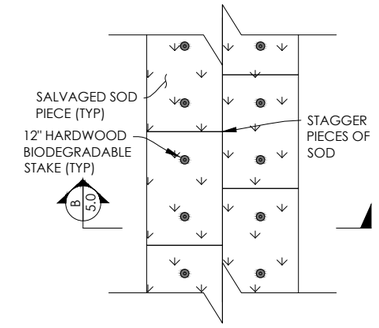
SHEET
4.2

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PHO\215063-DA02-DET02.DWG

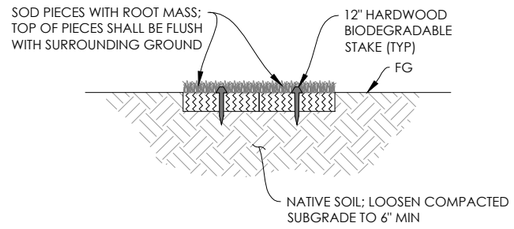
DRAFT 95% DESIGN - NOT FOR CONSTRUCTION



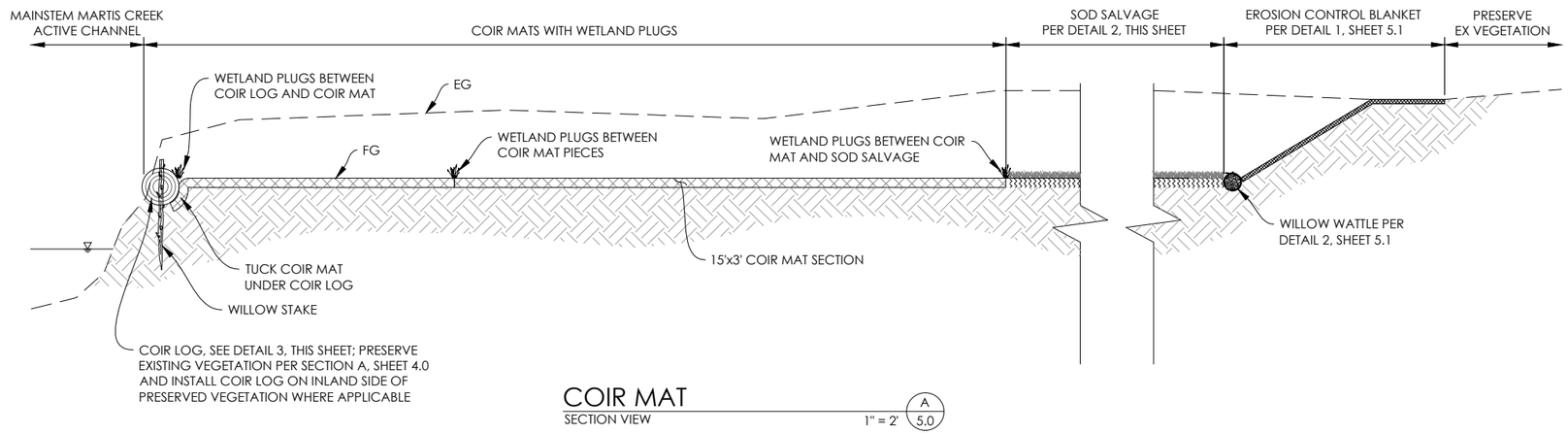
1 COIR MAT
SCALE: 1" = 2'



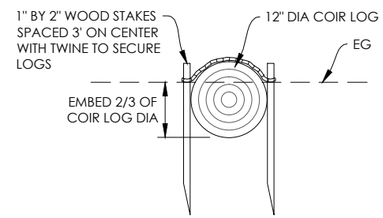
2 SOD SALVAGE LAYOUT
SCALE: 1" = 2'



SOD SALVAGE LAYOUT
SECTION VIEW 1" = 2' B 5.0



COIR MAT
SECTION VIEW 1" = 2' A 5.0



3 COIR LOG INSTALLATION
SCALE: NTS

GENERAL NOTES:
1. REFER TO SHEETS 5.2 AND 5.3 FOR ADDITIONAL NOTES
2. DETAILS SHOWN ON THIS SHEET WERE ADAPTED FROM DRAWINGS DEVELOPED BY NORTHWEST HYDRAULIC CONSULTANTS

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

Y:_PROJECTS\215063 MAINSTEM MARTIS RESTORATION\215063 CAD\215063 SHEETS PH2\215063-0500-REVEG01.DWG

PREPARED FOR: Truckee River Watershed Council

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www.balancehydro.com

	DATE	BY	SUBMITTALS / REVISIONS
	6-10-16	BKH	CONCEPTUAL PLANS
	3-8-17	BKH	95% PROGRESS DRAFT
	4-7-17	BKH	DRAFT 95% DESIGN

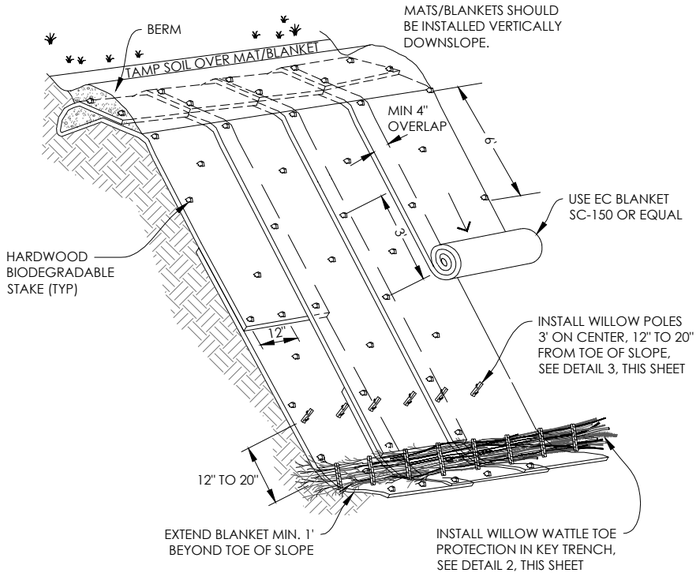
DESIGNED BY B HASTINGS
DRAWN BY P KULCHAWIK
CHECKED BY E BALLMAN
IN CHARGE D SHAW
DATE 4-7-17

FLOODPLAIN REVEGETATION DETAILS

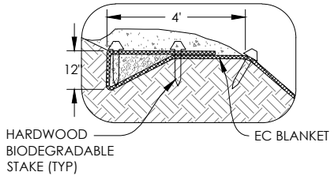
MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER 215063
SCALE --
SHEET 5.0



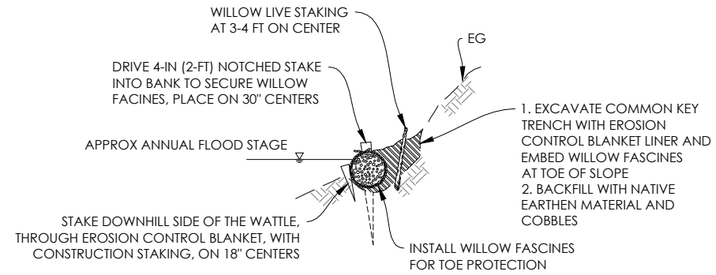
1 EROSION CONTROL BLANKET - WILLOW WATTLE TOE PROTECTION
SCALE: NTS

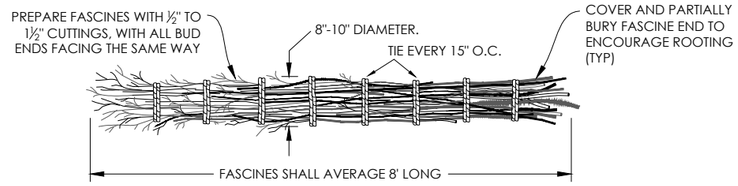


BERM - SECTION VIEW

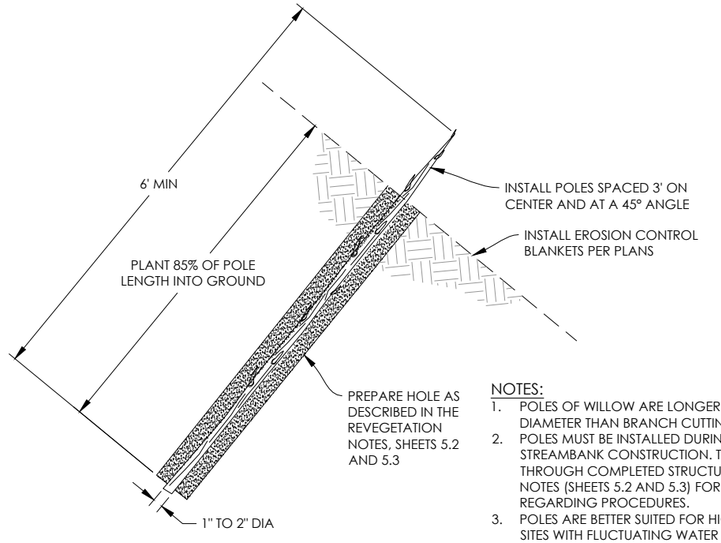
HARDWOOD BIODEGRADABLE STAKES

NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. APPLY WOOD CHIP MULCH TO ACHIEVE 85% COVER.





2 WILLOW WATTLE
SCALE: NTS



NOTES:
1. POLES OF WILLOW ARE LONGER AND HAVE A LARGER DIAMETER THAN BRANCH CUTTINGS OR LIVE STAKES.
2. POLES MUST BE INSTALLED DURING BIOTECHNICAL STREAMBANK CONSTRUCTION. THEY SHALL NOT BE INSTALLED THROUGH COMPLETED STRUCTURES. SEE REVEGETATION NOTES (SHEETS 5.2 AND 5.3) FOR MORE INFORMATION REGARDING PROCEDURES.
3. POLES ARE BETTER SUITED FOR HIGHLY ERODIBLE AREAS AND SITES WITH FLUCTUATING WATER LEVELS.
4. POLES SHOULD EXTEND THROUGH THE EROSION CONTROL BLANKET INTO MOIST SOIL. AT LEAST 85% OF THE POLE SHOULD BE BELOW THE GROUND.

3 WILLOW POLE INSTALLATION
SCALE: NTS

GENERAL NOTES:
1. REFER TO SHEETS 5.2 AND 5.3 FOR ADDITIONAL NOTES
2. DETAILS SHOWN ON THIS SHEET WERE ADAPTED FROM DRAWINGS DEVELOPED BY NORTHWEST HYDRAULIC CONSULTANTS

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DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

SLOPE REVEGETATION DETAILS

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
--

SHEET
5.1

DRAFT 95% DESIGN - NOT FOR CONSTRUCTION

1. GENERAL
   1.1. IN THE EVENT OF A CONFLICT BETWEEN THE INFORMATION CONTAINED IN THESE NOTES AND GRAPHICAL REPRESENTATIONS OF REVEGETATION ELEMENTS, THE INFORMATION IN THESE NOTES SHALL PREVAIL.
   1.2. DEFINITIONS
      1.2.1. C-27 LANDSCAPE CONTRACTOR. THE CONTRACTORS STATE LICENSE BOARD DEFINES A LANDSCAPE CONTRACTOR AS SOMEONE WHO CONSTRUCTS, MAINTAINS, REPAIRS, INSTALLS OR SUBCONTRACTS THE DEVELOPMENT OF LANDSCAPE SYSTEMS AND FACILITIES FOR PUBLIC AND PRIVATE GARDENS AND OTHER AREAS WHICH ARE DESIGNED TO AESTHETICALLY, ARCHITECTURALLY, HORTICULTURALLY, OR FUNCTIONALLY IMPROVE THE GROUNDS WITHIN OR SURROUNDING A STRUCTURE OR A TRACT OR PLOT OF LAND. IN CONNECTION THEREWITH, A LANDSCAPE CONTRACTOR PREPARES AND GRADES PLOTS AND AREAS OF LAND FOR THE INSTALLATION OF ANY ARCHITECTURAL, HORTICULTURAL AND DECORATIVE TREATMENT OR ARRANGEMENT. CALIFORNIA CODE OF REGULATIONS, TITLE 16, DIVISION 8, ARTICLE 3. CLASSIFICATIONS AUTHORITY CITED: SECTIONS 7008 AND 7059, REFERENCE: SECTIONS 7058 AND 7059 (BUSINESS AND PROFESSIONS CODE) WWW.CSLB.CA.GOV. FOR THIS PROJECT THE C-27 IS TASKED WITH ALL WORK ASSOCIATED WITH VEGETATION AND BIOENGINEERING.
      1.2.2. CERTIFIED PROFESSIONAL EROSION AND SEDIMENT CONTROL (CPESC) AS CERTIFIED THROUGH ENVIROCERT.
      1.2.3. SCOPE OF WORK: SCOPE OF WORK INCLUDES: SOD AND ORGANIC MATTER SALVAGE AND REPLACEMENT, SITE PREPARATION, SEEDING, MULCH APPLICATION, WILLOW SALVAGE AND REPLACEMENT, COIR MAT PLACEMENT, WETLAND PLUG PLANTING, COIR LOG PLACEMENT AND WILLOW STAKE PLANTINGS, EROSION CONTROL BLANKET INSTALLATION WITH POLE PLANTINGS, AND MAINTENANCE. IT ALSO INCLUDES RESTORATION OF ALL ACCESS ROAD, INCLUDING DECOMPACTION AS DIRECTED, APPLICATION OF SEED MIX 2 AND INCORPORATION, AND APPLICATION OF WOOD SHIP MULCH TO ACHIEVE 85% COVER.
   1.3. SUBMITTALS
      1.3.1. GENERAL: SUBMIT UNDER AS PER THE REQUIREMENTS OF THE CONTRACT PROVISIONS.
      1.3.2. SAMPLES AND DOCUMENTATION:
         1.3.2.1. CONSTRUCTION SCHEDULE
         1.3.2.2. SEED MIXES 1 AND 2
         1.3.2.3. SOIL INOCULANT
         1.3.2.4. COIR MAT
         1.3.2.5. COIR LOG
         1.3.2.6. COIR EROSION CONTROL BLANKETS
         1.3.2.7. STAKES
         1.3.2.8. WETLAND PLUGS
         1.3.2.9. WOOD CHIP MULCH
   1.4. QUALITY CONTROL
      1.4.1. ALL REVEGETATION WORK SHALL BE OVERSEEN BY A CERTIFIED PROFESSIONAL EROSION AND SEDIMENT CONTROL (CPESC) AND SHALL BE DOCUMENTED ON A DAILY BASIS.
   1.5. SITE CONDITIONS
      1.5.1. UNFAVORABLE WEATHER CONDITIONS: ALL RESTORATION WORK SHALL NOT BE PERFORMED DURING WEATHER CONDITIONS THAT MIGHT DAMAGE OR BE DETRIMENTAL TO THE CONDITION OF EXISTING GROUND, IN-PROGRESS WORK, OR COMPLETED WORK.
      1.5.2. PREVENTION OF EROSION: COMPLY WITH REQUIREMENTS OF THE PROJECT PERMITS AND THE FOLLOWING:
         1.5.1.1. PREVENT EROSION OF STOCKPILES, DITCHES, EMBANKMENTS, FILLED, BACKFILLED, AND GRADED AREAS UNTIL SUCH TIME AS PERMANENT DRAINAGE AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
         1.5.1.2. PERFORM "PROTECTIVE GRADING" TO PROVIDE POSITIVE DRAINAGE AND TO MINIMIZE PONDING OF SURFACE WATER.
         1.5.1.3. APPLY TEMPORARY EROSION CONTROL TO ALL AREAS AT FINISH GRADE FOR MORE THAN 14 DAYS.

2. PRODUCTS
   2.1. SEED
      2.1.1. GENERAL:
         2.1.1.1. ALL SEED SHALL CONFORM TO ALL LAWS AND REGULATIONS PERTAINING TO THE SALE AND SHIPMENT OF SEED REQUIRED BY THE CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE AND THE FEDERAL SEED ACT. TEST ALL SEED WITHIN TWELVE (12) MONTHS PRIOR TO APPLICATION DATE. SEED TAGS MUST REFLECT THE MOST RECENT TEST DATE. SUBMIT ORIGINAL SEED TESTS BY LOT NUMBER TO THE CPESC A MINIMUM TEN (10) DAYS PRIOR TO APPLICATION FOR APPROVAL. FOLLOWING APPROVAL BY THE CPESC, SEED MAY BE MIXED AND DELIVERED TO THE SITE.
         2.1.1.2. ALL SEED SHALL BE DELIVERED TO THE PROJECT SITE IN SEALED BAGS WITH PROPER LABELING. WEED SEED SHALL NOT EXCEED 0.15% OF THE PURE LIVE SEED SPECIFIED AND SHALL NOT INCLUDE ANY SEED OF CHEATGRASS (*BROMUS TECTORUM*) OR SWEET CLOVERS (*MELILOTUS OFFICINALIS, M. ALBA*). CROP SEED SHALL NOT EXCEED 0.25%. THE CPESC MAY REJECT ANY SEED THAT INCLUDES OTHER UN-DESIRABLE WEEDY SPECIES.
         2.1.1.3. THE CONTRACTOR SHALL NOTIFY THE CPESC AT LEAST 72 HOURS IN ADVANCE OF ANY SEEDING.
         2.1.1.4. THE CPESC WILL REMOVE SEED LABELS FROM THE SEED BAGS AT THE TIME OF SEEDING TO VERIFY SPECIES IN THE MIX AND APPLICATION RATE IN ACCORDANCE WITH THESE SPECIAL PROVISIONS.
         2.1.1.5. SEED TAGS SHALL SHOW THE FOLLOWING INFORMATION:
            2.1.1.5.1. SCIENTIFIC NAME
            2.1.1.5.2. COMMON NAME
            2.1.1.5.3. LOT NUMBER
            2.1.1.5.4. PERCENT PURITY
            2.1.1.5.5. PERCENT GERMINATION, INCLUDING HARD AND DORMANT SEED
            2.1.1.5.6. PERCENT WEED SEED
            2.1.1.5.7. PERCENT CROP SEED
            2.1.1.5.8. ORIGIN

2.1.1.6. SEED MIXES SHALL BE THE FOLLOWING:

2.1.1.6.1. REVEGETATION SEED MIX TYPE 1:

Scientific Name	Common Name/Variety	PLS lbs/acre
Achillea millefolium	yarrow	0.1
Artemisia tridentata ssp vaseyana	mountain sagebrush	0.5
Bromus carinatus	California brome	3
Elymus elymoides	squirreltail	4
Elymus trachycaulus	slender wheat grass, 'Pryor'	4
Eriogonum umbellatum	sulphur buckwheat	3
Linum lewisii	Lewis flax. 'Apar'	1
Lupinus argenteus	silvery lupine	3
Lupinus lepidus	Pacific lupine	1
Poa secunda	big bluegrass, 'Sherman'	1
Purshia tridentata	antelope bitterbrush	1
Total		21.6

2.1.1.6.2. REVEGETATION SEED MIX TYPE 2:

Scientific Name	Common Name/Variety	PLS lbs/acre
Bromus carinatus	California brome	3
Carex [illegible]	slender sedge	0.25
Deschampsia [illegible]	tufted hairgrass	-
Elymus glaucus	blue wildrye, Sierra blue	3
Gayophytum [illegible]	[illegible]	0.5
Elymus trachycaulus	slender wheatgrass, Revenue	2
Hordeum [illegible]	meadow barley, from 5,000' and higher	2
Juncus balticus	Baltic rush	0.1
Lewisia [illegible]	[illegible]	3
Lupinus polyphyllus	Timber lupine	3
Mimulus guttatus	common monkeyflower	0.1
Poa [illegible]	Kentucky bluegrass	2
Potentilla gracilis	cinquefoil	0.5
Total		20.45

[illegible] seed per square foot.

2.2. SOIL INOCULANT
   2.2.1. GENERAL:
      2.2.1.1. MYCORRHIZAL INOCULANTS CONSIST OF SPORES, MYCELIUM, AND MYCORRHIZAL ROOT FRAGMENTS IN A SOLID CARRIER SUITABLE FOR HANDLING IN DRY APPLICATIONS. THE CARRIER MUST BE THE MATERIAL IN WHICH THE INOCULUM WAS ORIGINALLY PRODUCED AND MAY INCLUDE ORGANIC MATERIALS, VERMICULITE, PERLITE, CALCINED CLAY OR OTHER APPROVED MATERIALS CONSISTENT WITH PROPER APPLICATION, AND GOOD PLANT GROWTH.
      2.2.1.2. EACH ENDOMYCORRHIZAL INOCULUM SHOULD CARRY A SUPPLIER'S GUARANTEE OF NUMBER OF PROPAGULES PER UNIT WEIGH OR VOLUME OF BULK MATERIAL. INOCULUM SHALL CONTAIN *RHIZOPHAGUS IRREGULARIS*. THE INOCULUM SHOULD HAVE A PROPAGULE COUNT OF 120 PER GRAM OF WHICH A MINIMUM OF 20 SPORES PER GRAM PRESENT AT RANDOM TESTED SAMPLING.
      2.2.1.3. A REPRESENTATIVE 100-GRAM SAMPLE (FROM A RE-MIXED BAG IN ORDER TO OBTAIN A HOMOGENEOUS SAMPLE) SHALL BE DRAWN FROM THE INOCULANT BAGS USING THE CHART IN PART B.2.
      2.2.1.4. THIS SAMPLE SHALL BE SUBMITTED TO AN AUTHORIZED LABORATORY THIRTY DAYS PRIOR TO APPLICATION FOR VERIFICATION OF SPORE COUNT (A ROUNDED ½ CUP KITCHEN MEASURING SCOOP WILL YIELD ROUGHLY 100 G OF MATERIAL). INDEPENDENT TESTING RESULTS OF ACTUAL COUNTS OF VIABLE SPORES USING STANDARD SPORE EXTRACTION METHODS AS DESCRIBED BY SCHENCK ET AL IN "METHODS AND PRINCIPLES OF MYCORRHIZAL RESEARCH," UNIVERSITY OF FLORIDA SHOULD BE CONDUCTED.
   2.2.2. TESTING SHALL BE PERFORMED BY ONE OF THE FOLLOWING LABORATORIES:

Laboratory	Address	Contact Information
Western Laboratories, Inc.	211 Highway 95	Tel: 800-658-3858
	Parma, ID 83660	Harry Kreeft
U of Florida, Soil & Water	2169 McCarty Hall, PO Box 110290	Tel: 352-392-1951, ext 220
	Gainesville, FL 32611 0290	Abid Al Agely
MycoRoots	1970 NW Lance Way	Tel: 541-752-0339
	Corvallis, OR 97330-2209	Efren Cazeres

2.2.2.1. IF THE INOCULANT SPORE-DENSITY IS BELOW SPECIFIED COUNTS, THE CONTRACTOR SHALL BE REQUIRED TO SUPPLY ADDITIONAL MATERIAL TO MEET SPECIFICATIONS. INOCULA SHALL BE TRANSPORTED AND STORED IN AREAS WITH A TEMPERATURE OF LESS THAN 90 °F. USE A DUST MASK WHEN HANDLING THE MATERIAL.

2.2.2.2. WHEN AN INOCULANT LOT CONSISTS OF SIX BAGS OR LESS EACH BAG SHOULD BE SAMPLES FROM POINTS THROUGHOUT THE BAGS. REGARDLESS OF LOT SIZE THE MAXIMUM SAMPLE NUMBER IS 30. SEE CHART BELOW:

Bags in lot	5	7	10	23	50	100	200	300	400
Samples	5	6	6	7	10	15	25	30	30

2.3. COIR MATS, STAKES, AND COIR LOGS
   2.3.1. COIR MATS SHALL BE COIR FIBER SANDWICHED BETWEEN TWO LAYERS OF COIR NETTING AND SHALL BE IN BIOD-PILLOW, KOIR-PAD OR PRODUCT EQUAL. MATERIAL SHALL CONSIST OF 3' X 3' (1 SQ. YD.) OF 100% HIGH STRENGTH UNSORTED, DOUBLE CLEANED, COIR FIBER ENCASED BOTH TOP AND BOTTOM IN HIGH STRENGTH COIR NETTING, 2" - 4" IN THICKNESS (3" OVERALL) AND WITH COIR FIBER DENSITY AT 3 LBS/CU.FT AND 10 LBS/SY. DRY WEIGHT IS BASED ON 1.54 LBS WOVEN COIR TOP AND BOTTOM/ SQ. FT. AND SHALL CONSIST OF THREE (3) FOOT X FIVE (5) FOOT SECTIONS.
   2.3.2. COIR LOGS CONSIST OF 12" BIOD-SUPER LOG OR EQUAL WITH PRE-FORMED HOLES FOR PLANTING. COIR SUPER LOGS ARE MADE FROM CLEANED MATTRESS COIR FIBER UNIFORMLY PACKED INTO 12 IN X 12 IN (30 CM X 30 CM) SQUARE LOG WITH LENGTH OF 10 FT. PRE-FORMED PLANTING HOLES WITH 15 IN. (38 CM) SPACING AND THEY ARE PLUGGED WITH COIR FIBER PLUGS. THE PLACES OF PLUGS ARE MARKED WITH VISIBLE MARKINGS. THE UNIFORMLY-PACKED COIR FIBER SQUARE LOG IS COVERED WITH AN OUTER NETTING WITH EYE SIZE OF 2 IN X 2 IN (5CM X 5CM). THE OUTER NET IS KNITTED WITH 90 LBS. (400 N) STRENGTH MACHINE SPUN BRISTLE COIR TWINE. THE SQUARE COIR SUPER LOG COMES WITH MALE AND FEMALE ENDS TO FACILITATE STRONG CONNECTIONS BETWEEN UNITS. THE LENGTH OF THE FEMALE END CONNECTION IS 6 INCHES.
   2.3.3. FOR COIR MATS STAKES SHALL BE 1" X 1" X 18" NOTCHED STAKES.
   2.3.4. FOR COIR LOGS STAKES SHALL BE 1" X 2" X 24".
2.4. EROSION CONTROL BLANKETS AND STAKES
   2.4.1. BLANKETS SHALL BE 100% COIR FIBER TWINE WITH A WEIGHT OF 11.8 OZ/SY (400 G/SQ.M.), 30 INCHES THICK, (7.6 MM), 6.5 FT (2M) X 166 FT (50M) IN LENGTH, AND 65% OPEN AREA OF WEAVE (40 OR 400 OR PRODUCT EQUAL).
   2.4.2. STAKES SHALL BE 12 INCHES IN LENGTH, MANUFACTURED FROM A HARDWOOD (ECO-STAKE OR EQUIVALENT), OR AS APPROVED BY THE CPESC.
2.5. WETLAND PLUGS
   2.5.1. WETLAND PLUGS SHALL CONSIST OF 50% NEBRASKA SEDGE (*CAREX NEBRASCENSIS*) AND 50% BALTIC RUSH (*JUNCUS BALTICUS*) GROWN IN DEEPOTS (CYLINDRICAL CONTAINER 2" IN DIAMETER AND 10" DEEP WITH A SLIGHT TAPER TO THE BOTTOM AND ROUNDED AT THE BOTTOM) OR PRE-APPROVED EQUAL.
   2.5.2. PLANTS SHALL BE NURSERY-GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE OF THE PROJECT SITE. PLANTS SHALL BE SOUND, HEALTHY, AND VIGOROUS; FREE OF DISEASE, INSECT PESTS, EGGS, OR LARVAE; COMPRISED OF HEALTHY, WELL-DEVELOPED ROOT SYSTEMS; FREE FROM PHYSICAL DAMAGE OR ADVERSE CONDITIONS THAT WOULD PREVENT THRIVING GROWTH.
   2.5.3. ROOT SYSTEMS MUST BE COMPLETELY FREE OF CIRCLING, OR KINKS. UPON INSPECTION, PLANTS FOUND TO CONTAIN KINKED, CIRCLING, OR GIRDLING ROOTS WILL BE REJECTED. SIZE, INCLUDING HEIGHT AND WIDTHS, SHALL BE TYPICAL FOR THESE SPECIES. ROOT TO SHOOT RATIO SHALL BE 1:1
2.6. WOODS CHIPS
   2.6.1. MULCH SHALL BE WOOD CHIPS OR TUB GRINDINGS. PARTICLE SIZE SHALL BE BETWEEN ½ INCH AND TWO (2) INCHES IN LENGTH AND NOT LESS THAN ½ INCH IN WIDTH AND 0.125 INCHES IN THICKNESS, WITH AT LEAST 95% CONFORMING TO SPECIFIED SIZES.
   2.6.2. ALL MATERIAL SHALL BE CLEAN FROM ROCK, GARBAGE, WEEDS, OR OTHER DELETERIOUS MATERIAL.
2.7. SALVAGED WETLAND SOD AND ORGANIC MATTER
   2.7.1. HARVESTED SOD SHALL CONSIST OF ABOVE GROUND AND BELOW GROUND PLANT MATERIALS INCLUDING LEAVES AND ROOTS, AND THE SOIL BOUND BY THE ROOT MASS.
   2.7.2. SOILS MUST BE MOIST TO ROOT DEPTH PRIOR TO SALVAGING.
   2.7.3. SOD SHALL BE HARVESTED FROM THE SITE AS STAKED IN THE FIELD BY THE CPESC. REMOVE IN AS LARGE A UNIT AS PRACTICABLE, RESULTING IN CLEAN, VERTICAL EDGES. SOD SHALL BE SCALPED FROM THE ORIGINAL GROUND SURFACE TO A DEPTH OF NO LESS THAN EIGHT (8) INCHES, AS MEASURED FROM THE ROOT CROWN. SOD SHALL BE LIFTED FROM THE SUB-GRADE USING HAND TOOLS OR MACHINERY EQUIPPED WITH A FRONT-END BUCKET AS APPROVED.
   2.7.4. WORK SHALL PROGRESS IN SUCH A MANNER AS TO MINIMIZE THE DISTURBANCE OF THE SOIL BOUND BY THE ROOT MASS AND THE CONTIGUOUS INTEGRITY OF THE SOD SECTION. MATERIAL THAT CANNOT BE MOVED IN A CONTIGUOUS MANNER SHALL BE SALVAGED AND RE-APPLIED AS ORGANIC MATTER.
   2.7.5. MINIMALIZE STORAGE AND HANDLING. IF STORAGE IS REQUIRED DO NOT STACK; STORE IN A PROTECTED SHADED LOCATION APPROVED BY THE CPESC AND WATER REGULARLY TO MAINTAIN THE HEATH OF THE SOD.
2.8. SALVAGED WILLOW CLUMPS AND WILLOW BRANCHES
   2.8.1. PROTECT EXISTING WILLOWS TO THE EXTENT PRACTICABLE.
   2.8.2. SALVAGE UP TO 42 SMALL, MEDIUM, AND LARGE NATIVE WILLOWS CLUMPS AS STAKED IN THE FIELD BY THE CPESC. REMOVE AND RE-PLANT SELECTED WILLOWS CONCURRENT WITH CONSTRUCTION AS MUCH AS PRACTICABLE. PRIOR TO REMOVAL, PRUNE WILLOWS SO THAT BRANCHES INCLUDE TWO TO THREE NODES, BUT DO NOT EXCEED SIX (6) INCHES IN LENGTH. CUTS SHALL BE CLEAN, LEAVE NO FRAYED BARK, AND BE MADE ½ INCH ABOVE THE NODE. GENTLY REMOVE PLANTS BY EXCAVATING AROUND THE ROOT ZONE WITH A BACKHOE BUCKET, OR OTHER EQUIPMENT APPROVED BY THE CPESC. AS MUCH OF THE ROOT BALL AS FEASIBLE SHALL BE REMOVED INTACT. PRUNE DAMAGED ROOTS. BURLAP MAY BE USED TO WRAP AND PROTECT THE ROOT ZONE DURING TRANSPORT. RE-USE PRUNED WILLOWS FOR STAKE, POLES, AND WATTLES AS AVAILABLE AND SUITABLE DEPENDENT ON TIME OF YEAR OF HARVEST AND LENGTH OF MATERIAL. MINIMIZE HANDLING (SEE SECTION 3.04)
   2.8.3. ALL BRANCHES USED FOR STAKES, POLES, AND WATTLES SHALL MATERIALS SHALL BE CUT FROM HEALTHY, LIVE, DORMANT BRANCHES OF WILLOW (*SALIX LEMMONII, S. GEYERIANA, SALIX LUCIDA SSP LASIANDRA*) AND SHALL BE TAKEN FROM SUITABLE MATERIALS WITHIN THE PROJECT AREA AS IDENTIFIED BY THE CPESC. THIS WORK SHALL TAKE PLACE LATE IN THE FALL AFTER THE ON-SITE WILLOWS HAVE GONE DORMANT. STAKES MAY VARY IN LENGTH, DEPENDING ON SOURCE MATERIAL, BUT SHALL BE A MINIMUM 32 INCHES IN LENGTH AND A MINIMUM ½-INCH AND MAXIMUM ¾-INCH IN DIAMETER. POLES SHALL BE AT MINIMUM FIVE (5) FT. IN LENGTH AND NO MORE THAN ONE INCH IN DIAMETER. MATERIAL SHALL NOT BE CUT MORE THAN SEVEN (7) DAYS PRIOR TO INSTALLATION UNLESS APPROVED BY THE CPESC, AND STORED IN COOL, SHADED CONDITIONS. KEEP ALL MATERIALS IN WATER FILLED BUCKET. STAKES AND POLES SHALL BE STRAIGHT, WITH ALL LEAVES REMOVED FROM THE STEMS. ALL CUTS SHALL BE CLEAN WITHOUT FRAYED ENDS. CUT BOTTOMS ON A 45° ANGLE.

PREPARED FOR: Truckee River Watershed Council

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DESIGNED BY B HASTINGS	DATE	BY	SUBMITTALS / REVISIONS
DRAWN BY P KULCHAWIK	6-10-16	BKH	CONCEPTUAL PLANS
CHECKED BY E BALLMAN	3-8-17	BKH	95% PROGRESS DRAFT
IN CHARGE D SHAW	4-7-17	BKH	DRAFT 95% DESIGN
DATE 4-7-17			

REVEGETATION NOTES 1

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER 215063

SCALE --

SHEET 5.2

2.8.4 FOR WATTLES AND WEAVINGS, BRANCH LENGTH MAY VARY BUT SHOULD AVERAGE 8 FT. IN LENGTH. BUTT END DIAMETER OF BRANCHES SHALL NOT BE MORE THAN ¾-INCH IN DIAMETER. DO NOT REMOVE LEAVES OR BRANCHES. PLACE BUTT ENDS ALTERNATELY IN EACH WATTLE SO THAT APPROXIMATELY ONE-HALF OF THE BUTT ENDS ARE AT END OF THE WATTLE. TIE BUNDLES ON NOT MORE THAN 15-INCH CENTERS WITH TWO WRAPS OF JUTE OR SISAL BIODEGRADABLE BINDING TWINE USING A NON-SLIPPING KNOT. WHEN COMPRESSED FIRMLY AND TIED EACH WATTLE SHALL MEASURE APPROXIMATELY 8 INCHES IN DIAMETER (+/- 2 INCHES).

3. EXECUTION

3.1. GENERAL

3.1.1. ALL REVEGETATION AND RESTORATION WORK SHALL CONSIST OF THE FOLLOWING COMPONENTS: TOPSOIL SALVAGE AND PLACEMENT AS FILL; SALVAGED SOD AND ORGANIC MATTER AND PLACEMENT; COIR MAT INSTALLATION AND WETLAND PLUG PLANTINGS; WILLOW SALVAGE AND PLANTINGS; WILLOW WATTLE AND POLE PLANTINGS; SEEDING; MULCHING; AND EROSION CONTROL BLANKET INSTALLATION. IT SHALL INCLUDE A TWO-YEAR MAINTENANCE AND WARRANTY PERIOD.

3.1.2. ALL OFF HAUL UPLAND FILL AND DITCH FILL SHALL BE BROADCAST SEEDED WITH SEED MIX 1 AND SEED MIX 2, RESPECTIVELY AND COVERED WITH 85% COVER BY MULCH DERIVED FROM WOOD CHIPS, CLEAN PINE NEEDLES, OR A COMBINATION THEREOF.

3.1.3. UPLAND FILL MAY REQUIRE INCORPORATION OF SALVAGED SOILS, AS DIRECTED.

3.1.4. PRIOR TO SEEDING ENSURE COMPACTION IS NOT GREATER THAN 85%. SOIL MATERIAL USED FOR SOD AND MAT INSTALLATION SHALL BE COMPACTED TO A MINIMUM OF 80% AND A MAXIMUM OF 85% AT +/- 2% OF OPTIMUM MOISTURE CONTENT AS MEASURED USING THE STANDARD METHOD (ASTM D 698).

3.1.5. A C-27 LICENSED IN THE STATE OF CALIFORNIA AND SHALL PERFORM ALL VEGETATION WORK AS SPECIFIED HEREIN, IN ACCORDANCE WITH THE PROVISIONS OF THESE SPECIAL PROVISIONS AND THE PLANS.

3.1.6. FOR EACH INSET FLOODPLAIN INSTALL APPROXIMATELY 50% SALVAGED SOD AND 50% COIR MAT TO ACHIEVE 100% COVER. FIELD ADJUST AS DIRECTED FOR EACH SITE.

3.1.7. PRESERVE EXISTING VEGETATION TO THE EXTENT PRACTICABLE.

3.2. TOPSOIL, ORGANIC MATTER, AND SOD SALVAGE AND PLACEMENT

3.2.1. ESTABLISH LIMITS OF SALVAGE AND REPLACEMENT, AS APPROVED BY THE CPESC.

3.2.2. SOD SALVAGE AND REPLACEMENT SHALL TAKE PLACE FOR THE INSET FLOODPLAIN AND THE BREAKOUT CHANNELS.

3.2.3. SALVAGE ALL SOD AND ORGANIC MATTER TO A DEPTH OF AT MINIMUM EIGHT (8) INCHES, AS MEASURED FROM THE ROOT CROWN. REDUCE HANDLING AND STORAGE TIME SO THAT EXCAVATION AND REAPPLICATION IS CONCURRENT.

3.2.4. SOD SHALL BE LIFTED FROM THE SUB-GRADE USING MACHINERY EQUIPPED WITH A FRONT-END BUCKET OR OTHERWISE APPROVED APPARATUS. WORK SHALL PROGRESS IN SUCH A MANNER AS TO MINIMIZE THE DISTURBANCE OF THE SOIL BOUND BY THE ROOT MASS AND THE CONTIGUOUS INTEGRITY OF THE SOD SECTION. MATERIAL THAT CANNOT BE MOVED IN A CONTIGUOUS MANNER SHALL SALVAGED AND RE-APPLIED AS ORGANIC MATTER. IF STORED, SOD SHALL BE PLACED WITH ROOTS DOWN AND EDGES SNUGLY ADJOINING ADJACENT SECTIONS IN A SHADED FACILITY FOR A MAXIMUM TIME OF ONE MONTH. STORED SOD SHALL NOT BE STACKED. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE MOISTURE TO THE SOD DURING THE INTERIM STORAGE PERIOD AND IS RESPONSIBLE FOR MAINTAINING HEALTHY MATERIAL UNTIL IT IS RE-PLANTED.

3.2.5. OVER-EXCAVATE AREAS FOR INSTALLATION AS NEEDED SO THAT ALL MATERIAL, INCLUDING CROWNS OF SOD, ARE AT FINISH GRADE. SPREAD ORGANIC MATTER ON PRE-WETTED SURFACES AS DIRECTED AND RAKE SMOOTH. PLANT INTO MOIST SOIL SUCH THAT EDGES SNUGLY ADJOINING ADJACENT SECTIONS. CHINK WITH NATIVE TOPSOIL SO THAT THE EDGES OF THE SOD ARE WELL COVERED. FINAL ELEVATION OF SOD CROWNS SHALL MATCH THE PLAN ELEVATION. THOROUGHLY WATER SOD. SOD SHALL BE MAINTAINED IN A MOIST, HEALTHY CONDITION AS DIRECTED BY THE CPESC UNTIL ESTABLISHED ACCORDING TO THE TWO-YEAR WARRANTY PERIOD.

3.2.6. WHERE SALVAGED SOD AND PLACEMENT IS LIMITED, PRIORITIZE PLANTING AND LOCATE IN THE INSET FLOODPLAIN ADJACENT AND AT THE TOE OF THE NEWLY GRADED SLOPES. APPLY SEED MIX 2 WHERE COVER BY PLACED SOD IS LESS THAT 100%.

3.2.7. WHEN GRADING NEW SLOPES, SEPARATE TOPSOIL FROM SUBSOIL AS MUCH AS PRACTICABLE. PLACE AS FILL IN THE OLD IRRIGATION DITCHES IN THE ORDER IN WHICH IT WAS REMOVED, SO THAT THE TOPSOIL IS PLACED ON TOP OF THE SALVAGED SUBSOIL.

3.2.8. FOR UPLAND SITES, DECOMPACT EXISTING SOILS AS DIRECTED BY THE CPESC AND INCORPORATE SALVAGED MATERIAL WITH RIPPERS OR OTHER APPROVED TOOLS. DO NOT TILL.

3.3. COIR MAT AND COIR LOG PLACEMENT, WILLOW STAKE AND WETLAND PLUG PLANTING

3.3.1. FOR THE COIR MAT, OVER EXCAVATE AS NEEDED SO THAT FINISH SURFACE OF THE MAT MATCHES FINISHED GRADE ELEVATION. TUCK COIR MAT UNDER COIR LOGS.

3.3.2. INSTALL PERPENDICULAR TO THE FLOW LINE OF THE CREEK. FIELD FIT TO THE SITE AS DIRECTED BY THE CPESC. PRIOR TO INSTALLING THE MAT, LOOSEN COMPACTED SURFACES TO A DEPTH OF DEPTH OF SIX (6) INCHES AND APPLY SALVAGED TOPSOIL TO A DEPTH OF ONE (1) INCH AND INCORPORATE. COIR MAT SHALL CONSIST OF THREE (3) FT. X FIFTEEN (15) FT. SECTIONS. INSTALL AS SHOWN IN DETAIL 1, SHEET 5.0. PLANT NEBRASKA SEDGE (*CAREX NEBRASCENSIS*) AND BALTIC RUSH (*JUNCUS BALTICUS*) PLUGS ON TWO- (2) FOOT CENTERS ALONG ALL SEAMS OF THE MAT, INCLUDING ALONG SALVAGED SOD. STAKE THE EDGES OF THE MAT WITH 1" X 1" X 18" NOTCHED STAKES 36" O.C. AS SHOWN IN DETAIL 1, SHEET 5.0.

3.3.3. WETLAND PLUGS SHALL BE DEEPOTS OR APPROVED EQUAL. PLANT WITH A WEDGE-SHAPED PLANTING BAR. USING THE PLANTING BAR PUNCH A HOLE IN SOIL CORRESPONDING TO THE DIAMETER AND LENGTH OF THE CONTAINER. REMOVE PLUG INTACT, PLACE IN THE HOLE SO CROWN IS AT OR SLIGHTLY BELOW GRADE. THOROUGHLY WATER, PRESS AND TAMP MOIST SOIL AROUND THE PLANT.

3.3.4. INSTALL COIR LOGS IN A KEY TRENCH AROUND THE PERIMETER OF THE ENTIRE LENGTH OF THE COIR MAT ALONG THE CHANNEL THE INSET FLOODPLAIN, AS DIRECTED BY THE CPESC. ANCHOR WITH 1" X 2" X 24" STAKES 24" O.C AS SHOW IN DETAIL 3, SHEET 5.0. PLANT 36" LENGTH WILLOW STAKES INTO THE PRE-DRILLED HOLES (15" O.C.) OF THE COIR LOGS SO THAT 24" OF THE STAKE IS IN THE SOIL. BACKFILL THE HOLES WITH NATIVE SOILS, TAMP TO COMPACT, AND WATER.

3.4. WILLOW SALVAGE AND REPLANTING

3.4.1. GENTLY REMOVE PLANTS BY EXCAVATING AROUND THE ROOT ZONE WITH A BACKHOE BUCKET, OR OTHER EQUIPMENT APPROVED BY THE FIELD REPRESENTATIVE AND REVEGETATION SPECIALIST. AS MUCH OF THE ROOT BALL AS FEASIBLE SHALL BE REMOVED INTACT. PRUNE DAMAGED ROOTS. BURLAP MAY BE USED TO WRAP AND PROTECT THE ROOT ZONE DURING TRANSPORT. STORE IN PRE-EXCAVATED, PRE-WATERED TRENCHES AND MAINTAIN WELL WATERED AND HEALTHY UNTIL MOVE TO THE PERMANENT PLANTING SITES.

3.4.2. PRECISE LOCATIONS FOR RE-PLANTING WILL BE DETERMINED BY THE CPESC BUT IN GENERAL WILL BE LOCATED CLOSE TO THE CHANNEL AND INSET FLOODPLAIN. PLANTING HOLES MAY NOT BE PREPARED MORE THAN EIGHT (8) HOURS PRIOR TO PLANT REMOVAL FROM STORAGE SITE. HOLES SHALL BE EXCAVATED TWELVE (12) INCHES BELOW THE ROOT ZONE AND TWELVE (12) INCHES WIDER ON BOTH SIDES OF THE ROOT MASS. LOOSEN SOILS IN THE BOTTOM AND ALONG THE SIDES OF THE HOLE AND PLACE THE PLANT IN THE HOLE, BACKFILL WITH THE EXCAVATED MOIST SOIL SO THAT THE ROOT BALL IS TWO TO FOUR (2 - 4) INCHES BELOW EXISTING GRADE. TAMP SOIL AND THOROUGHLY WATER IMMEDIATELY FOLLOWING PLANTING.

3.5. EROSION CONTROL BLANKETS WITH SEED AND MULCH

3.5.1. APPLY SEED MIX 2 AND INCORPORATE TO A DEPTH OF ¼" TO ½" INCHES.

3.5.2. APPLY WOOD CHIP MULCH TO ACHIEVE 85% COVER FOR SLOPES. DO NOT USE WOOD CHIPS FOR BREAKOUT CHANNELS.

3.5.3. FOR SLOPES, INSTALL BLANKETS FORM THE TOP OF SLOPE TO THE SLOPE TOE. EXCAVATE A SIX (6) INCH x SIX (6) INCH TRENCH AT THE TOE OR TOP OF ALL SLOPES. OVERLAP BLANKETS SIX (6) INCHES AND STAKE WITH TWELVE (12) INCH HARD WOOD STAKES, ON AN AVERAGE OF TWO (2) STAKES PER SQUARE YARD IN A DIAMOND PATTERN. ANCHOR BLANKETS IN TRENCHES WITH THE HARD WOOD STAKES ON TWO (2)-FT CENTERS, BACKFILL THE TRENCH AND COMPACT LOOSE SOIL. LAY THE BLANKET IN THE WILLOW WATTLE KEY TRENCH. CAREFULLY KEY IN BLANKETS UNDER ALL STRUCTURES AND AT ALL ENDS OF THE BLANKETS.

3.5.4. FOR BREAKOUT CHANNELS, INSTALL BLANKET OVER SALVAGED AND RE-PLANTED SOD. START AT THE CHANNEL (CREEK) END OF THE CHANNEL, WORKING TOWARDS THE MEADOW. OVERLAP THE BLANKETS IN A SHINGLE PATTERN, DRAPED SNUGGLY OVER THE SOD FROM TOP OF SLOPE TO THE OPPOSITE TOP OF SLOPE, AND ANCHORED IN A KEY TRENCH. ANCHOR WITH STAKES AS DESCRIBED ABOVE.

3.6. WILLOW WATTLE FABRICATION, WATTLE AND POLE INSTALLATION

3.6.1. OBTAIN ALL MATERIAL FROM WITHIN PROJECT FOOTPRINT AS DIRECTED BY THE CPESC. CUT FROM HEALTHY, LIVE, AND DORMANT BRANCHES OF WILLOW (SALIX SPP). DO NOT CUT LIVE MATERIAL MORE THAN SEVEN (7) DAYS PRIOR TO INSTALLATION UNLESS OBTAINED PRIOR TO BUD BREAK; (LATE FEBRUARY - EARLY APRIL, OR MID-SEPTEMBER). ALL DORMANT MATERIAL MUST BE STORED IT A COOL MOIST LOCATION, WRAPPED IN WET FABRIC OR STORED IN WATER FILLED BUCKETS OR OTHER MANNER APPROVED BY THE CPESC. BRANCH LENGTHS MAY VARY BUT SHOULD AVERAGE 6 (SIX) TO TEN (10) FT. IN LENGTH AND AVERAGE 8 (EIGHT) FT. BUTT END DIAMETER OF BRANCHES FOR WATTLES SHALL NOT BE MORE THAN ¾ INCH IN DIAMETER. DO NOT REMOVE LEAVES OR BRANCHES FOR WATTLES. PLACE BUTT ENDS ALTERNATELY IN EACH WATTLE SO THAT APPROXIMATELY ONE-HALF OF THE BUTT ENDS ARE AT EACH END OF THE WATTLE. TIE BUNDLES ON NOT MORE THAN 15-INCH CENTERS WITH TWO WRAPS OF JUTE OR SISAL BIODEGRADABLE BINDING TWINE USING A NON-SLIPPING KNOT. WHEN COMPRESSED FIRMLY AND TIED EACH WATTLE SHALL MEASURE APPROXIMATELY EIGHT (8) INCHES IN DIAMETER. ASSUME FIFTEEN (15) TO TWENTY (20) BRANCHES PER WATTLE.

3.6.2. INSTALL WILLOW WATTLES AT THE TOE OF ALL NEWLY GRADED SLOPE IN A KEY TRENCH LINED WITH THE EROSION CONTROL BLANKET. INSTALL ONE ROW OF WILLOW POLES ON THE SLOPE 12-20 INCHES ABOVE THE WATTLES.

3.6.3. PLACE WILLOW WATTLES IN THE EROSION CONTROL BLANKET TOE-OF-SLOPE KEY TRENCH, ROUGHLY 85% OF THE DIAMETER OF THE WATTLE. PLACE WATTLES WITH ENDS OVERLAPPING AT MINIMUM 12 INCHES. STAKE WATTLE FIRMLY IN PLACE THROUGH THE MIDDLE OF THE WATTLE ON NOT LESS THAN 30-INCH CENTERS. ADDITIONALLY, STAKE ON THE DOWNHILL SIDE OF THE WATTLE, THROUGH THE EROSION CONTROL BLANKET, WITH CONSTRUCTION STAKING, NOT MORE THAN 18-INCH CENTERS. PACK EXCAVATED SOIL AROUND THE WATTLE SO THAT ONLY APPROXIMATELY 15 PERCENT (15%) OF THE WILLOW MATERIAL IS EXPOSED. REMOVE WOOD STAKE MATERIAL PROTRUDING IN EXCESS OF 2 INCHES ABOVE THE WATTLE. WATER THE WATTLES THOROUGHLY SO THAT SOIL IS WASHED INTO THE BUNDLE.

3.6.4. INSTALL WILLOW POLES ON AVERAGE THREE (3) FT. CENTERS 12"-20" UP FROM SLOPE TOE INTO THE COIR EROSION CONTROL BLANKETS AS DIRECTED BY THE CPESC. INSTALL ON A 45° ANGLE SO THAT THE POLES ARE IN PLANTED INTO PERMANENTLY MOIST SOILS. PRE-PREPARE THE PLANTING HOLE FOR POLES USING RE-BAR, A 'STINGER' OR OTHER SUITABLE TOOL TO THE DEPTH OF THE POLE SO AS TO NOT DAMAGE THE BARK OF THE POLE DURING INSTALLATION. INSTALL THROUGH EROSION CONTROL BLANKETS WITHOUT TEARING THE FABRIC. PLANT SO THAT TWO TO THREE NODES ARE ABOVE GRADE AND MORE THAN 85% OF THE POLE IS IN THE GROUND. TIGHTLY PACK ALL LOOSE SOILS AROUND THE POLES SO THAT CANNOT BE REMOVED BY HAND

3.7. SEEDING WITH/WITHOUT SOIL INOCULANT AND MULCH APPLICATION

3.7.1. HAND BROADCAST SEED MIX 1 WITH INOCULANT AT 60 LBS./ACRE AND INCORPORATE TO A DEPTH OF ¼" - ½" FOR UPLAND SITES. USE CHAIN LINKED FENCE OR OTHER APPROVED EQUIPMENT TO COVER SEED. APPLY WOOD CHIP MULCH TO UPLAND SITES ONE LAYER DEEP TO ACHIEVE 85% COVER.

3.7.2. HAND BROADCAST SEED MIX 2 AND INCORPORATE TO A DEPTH OF ¼" - ½" FOR ALL OTHER DISTURBED SITES AND OVER SALVAGED WETLAND SOD.

3.8. WARRANTY

3.8.1. FOR TWO FULL YEARS FOLLOWING COMPLETION OF THE WORK, WARRANTY NO EVIDENCE OF EROSION SUCH AS RILLS OR SHEET FLOW.

3.8.2. WARRANTY 80% SURVIVAL OF WILLOW STAKES AND POLES, AND ONE WILLOW SPROUT PER LINEAL FOOT OF WILLOW WATTLE. WARRANTY 100% SURVIVAL OF WETLAND PLUGS.

EROSION CONTROL AND REVEGETATION PRODUCTS, SUPPLIERS, AND CONTACTS:

Product	Suppliers	Contact Information
Seed	Comstock Seed	(775) 746-3681, http://www.comstockseed.com/
	Pacific Coast Seed	(926) 373-4417
	S & S Seeds	(805) 684-0436
Soil Inoculants	Plant Health LLC	(541) 740-3691
	Pacific Coast Seed	http://www.pcseed.com/docs/nonseeded products.pdf
Coir Erosion Control Blankets 40/400	Rolanka	http://www.rolanka.com/GN/mat40.html
	Nedia Enterprises	http://www.nedia.com/Nedia_Products.html
Coir Medium Density Log 12" diameter	Ro-Lanka	http://www.rolanka.com/GN/scWatl.html
	Nedia Enterprises	http://www.nedia.com/Nedia_Products.html
BioD-Pillow, Koir-Pad	Ro-Lanka	http://www.rolanka.com/GN/WR-pillow.html
	Nedia Enterprises	http://www.nedia.com/Nedia_Products.html
Biodegradable stakes	Tensar/North American Green	http://www.tensarnagreen.com/Installation/Installation-products
Wetland Plugs	Nevada Division of Forestry	775-849-0213; http://forestry.nv.gov/ndf-state-forest-nurseries/washoe-state-tree-nursery/
	Cornflower Farms	http://www.cornflowerfarms.com
	Plants of the Wild	http://www.plantsofthewild.com/

PREPARED FOR:
Truckee River Watershed Council
Balance Hydrologics, Inc.
P.O. Box 1077
12020 Donner Pass Road
Truckee, CA 96161
tel (530) 550-9776
www.balancehydro.com

DESIGNED BY	DATE	BY	SUBMITTALS / REVISIONS
B HASTINGS	6-10-16	BKH	CONCEPTUAL PLANS
DRAWN BY	3-8-17	BKH	95% PROGRESS DRAFT
P KULCHAWIK	4-7-17	BKH	DRAFT 95% DESIGN
CHECKED BY			
E BALLMAN			
IN CHARGE			
D SHAW			
DATE			
4-7-17			

REVEGETATION NOTES 2

MAINSTEM MARTIS CREEK RESTORATION

PLACER COUNTY, CALIFORNIA
TRUCKEE RIVER WATERSHED COUNCIL

PROJECT NUMBER
215063

SCALE
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SHEET
5.3