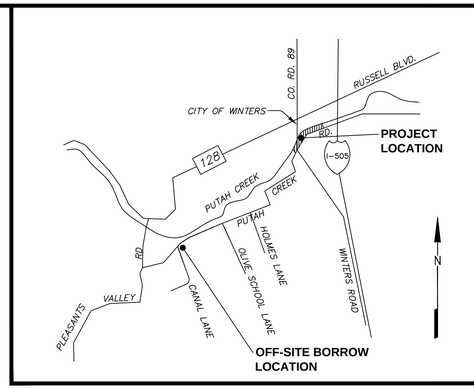
IMPROVEMENT PLANS
FOR
PUTAH CREEK FLOOD PLAIN RESTORATION, PHASE 1

SOLANO COUNTY WATER AGENCY &
LOWER PUTAH CREEK COORDINATING COMMITTEE
SOLANO COUNTY, CALIFORNIA
MAY 2011

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING CHANNEL CENTERLINE
- NEW CHANNEL CENTERLINE
- A/3 SECTION LOCATOIN

SITE MAP
1"=200'



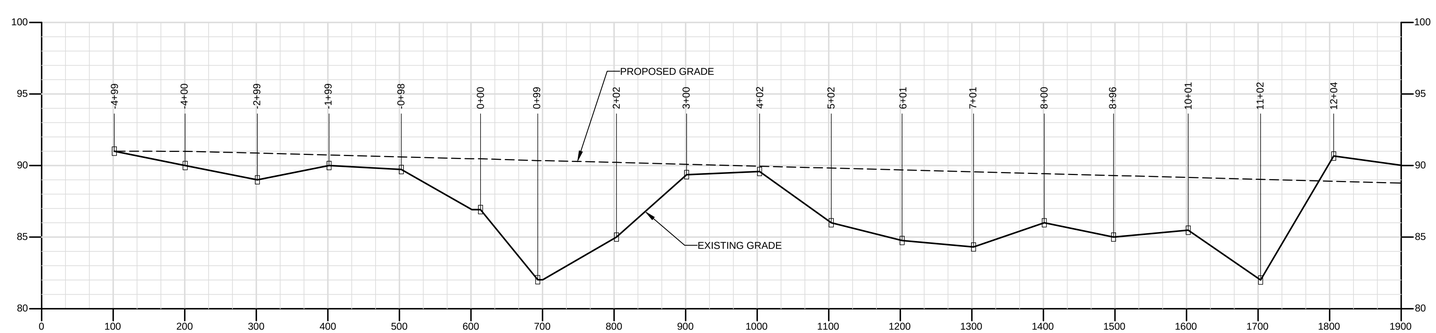
VICINITY MAP
N.T.S.

SHEET INDEX

1. TITLE SHEET
2. SITE PLAN
3. CREEK SECTIONS (-4+99, -4+00, -2+99)
4. CREEK SECTIONS (-1+99, -0+98, 0+00)
5. CREEK SECTIONS (0+99, 2+02, 3+00)
6. CREEK SECTIONS (4+02, 5+02, 6+01)
7. CREEK SECTIONS (7+01, 8+00, 8+96)
8. CREEK SECTIONS (10+01, 11+02, 12+04)
9. DETAILS

GENERAL NOTES

1. ALL ELEVATIONS REFERENCE NAVD 29
2. PLANS ARE CONCEPTUAL AND ARE AS ACCURATE AS THE AVAILABLE DATA. FIELD MODIFICATIONS MAY BE MADE AT DISCRETION OF AGENCY.



LONGITUDINAL SECTION
1"=100' HORIZONTAL
1"=5' VERTICAL

ABBREVIATIONS

AB	AGGREGATE BASE	GB	GRADE BREAK	PUE	PUBLIC UTILITY EASEMENT
AGG	AGGREGATE	GV	GATE VALVE	PVMT	PAVEMENT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	GALV.	GALVANIZED	R	RADIUS
AWWA	AMERICAN WATER WORKS ASSOCIATION	HC	HANDICAP	R/W	RIGHT OF WAY
ANG. PT.	ANGLE POINT	HDPE	HIGH DENSITY POLYETHYLENE	RD	ROAD
AC	ASPHALT CONCRETE	HP	HIGH POINT	RP	RADIUS POINT
BC	BEGINNING OF CURVE	HPS	HIGH PRESSURE SODIUM	RCP	REINFORCED CONCRETE PIPE
BLVD.	BOULEVARD	HORIZ.	HORIZONTAL	RT	RIGHT
BLDG.	BUILDING	INTX	INTERSECTION	S	SLOPE, SEWER, SOUTH, SANITARY LINE
BOC	BACK OF CURB	INV, IE	INVERT ELEVATION	SB	SIGNAL PULL BOX
BOW, B/W	BACK OF WALK	IRR	IRRIGATION	SD	STORM DRAIN
BOV	BLOW OFF VALVE	L	LENGTH	SERV	SERVICE
BMP	BEST MANAGEMENT PRACTICES	LD	LANDSCAPE DRAIN	SF	SQUARE FEET
CC	CENTER ON CENTER	LF	LINEAL FEET	SHT	SHEET
CIPCP	CAST-IN-PLACE CONCRETE PIPE	LN	LANE	SPEC	SPECIFICATION
CL	CENTERLINE; CLASS	LP	LOW POINT	SS	SANITARY SEWER
C.O.	CLEAN OUT, COMPANY	LT	LEFT	ST	STREET
CONC.	CONCRETE	LTB	LIME TREATED BASE	STA	STATION
CONST	CONSTRUCT	MAX	MAXIMUM	STD	STANDARD
CORP.	CORPORATION	MH	MAINTENANCE HOLE	STE	SUITE
CP	CONCRETE PIPE	SDMH	STORM DRAIN MAINTENANCE HOLE	SUBD.	SUBDIVISION
CR	CURB RETURN	SSMH	SANITARY SEWER MAINTENANCE HOLE	S.L.	STREET LIGHT
CT	COURT	MIN	MINIMUM	S/W	SIDEWALK
D	DRAIN LINE	N	NORTH	TA	TOP OF APRON
DI	DRAIN INLET	NG	NATURAL GROUND	TBD	TO BE DETERMINED
DIP	DUCTILE IRON PIPE	N.I.C.	NOT IN CONTRACT	TBW	TOP BACK OF WALK
DR.	DRIVE	NO	NUMBER	TC	TOP OF CURB
DT	DRAINAGE TILE	NPTC	NOT PART OF THIS CONTRACT	TI	TRAFFIC INDEX
D/W	DRIVEWAY ENTRANCE	NTS	NOT TO SCALE	TPM	TENTATIVE PARCEL MAP
E	EAST, ELECTRIC	OC	ON CENTER	TRANS	TRANSITION
EA	EACH	OHE	OVERHEAD ELECTRIC	TV	TELEVISION
EC	END OF CURVE	PB	ELECTRIC PULL BOX	TYP.	TYPICAL
ELEV, EL	ELEVATION	PCC	PORTLAND CEMENT CONCRETE,	USGS	UNITED STATES GEOLOGICAL SURVEY
E.P.	EDGE OF PAVEMENT		POINT OF COMPOUND CURVE	VC	VERTICAL CURVE
ESMT.	EASEMENT	PED	PEDESTAL, PEDESTRIAN	VCP	VITRIFIED CLAY PIPE
ETC.	ETCETERA	PI	POINT OF INTERSECTION	VERT.	VERTICAL
EXIST, EX.	EXISTING	PG&E	PACIFIC GAS & ELECTRIC COMPANY	W	WEST, WATER
FF	FINISHED FLOOR	PKWY	PARKWAY	WM	WATER MAIN
FH	FIRE HYDRANT	PL	PROPERTY LINE, PLACE	WTR	WATER
FIN	FINISH	POC	POINT OF CONNECTION	W/	WITH
FL	FLOW LINE	PRC	POINT OF REVERSE CURVE	XING	CROSSING
FM	FORCE MAIN	PSI	POUNDS PER SQUARE INCH		
FOC	FACE OF CURB	PT	POINT, POINT OF TANGENCY		

CLIENT:
SOLANO COUNTY WATER AGENCY
810 VACA VALLEY PARKWAY
SUITE 203
VACAVILLE, CA 95688
(702) 455-1104

PROPERTY OWNER:
CITY OF WINTERS
318 FIRST STREET
WINTERS, CA 95618
(530) 758-2026

ENVIRONMENTAL/GEOTECHNICAL ENGINEER:
BSK ASSOCIATES
3140 GOLD CAMP DR. SUITE 160
RANCHO CORDOVA, CA 95670
(916) 853-9293

SHEET 1 OF 9
DATE: 4/30/11
JOB NO:

NO.	DATE	REVISIONS	BY	APPD.

DESIGNED BY
DRAWN BY
CHECKED BY
SCALE AS NOTED

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PUTAH CREEK FLOOD PLAIN RESTORATION, PHASE 1
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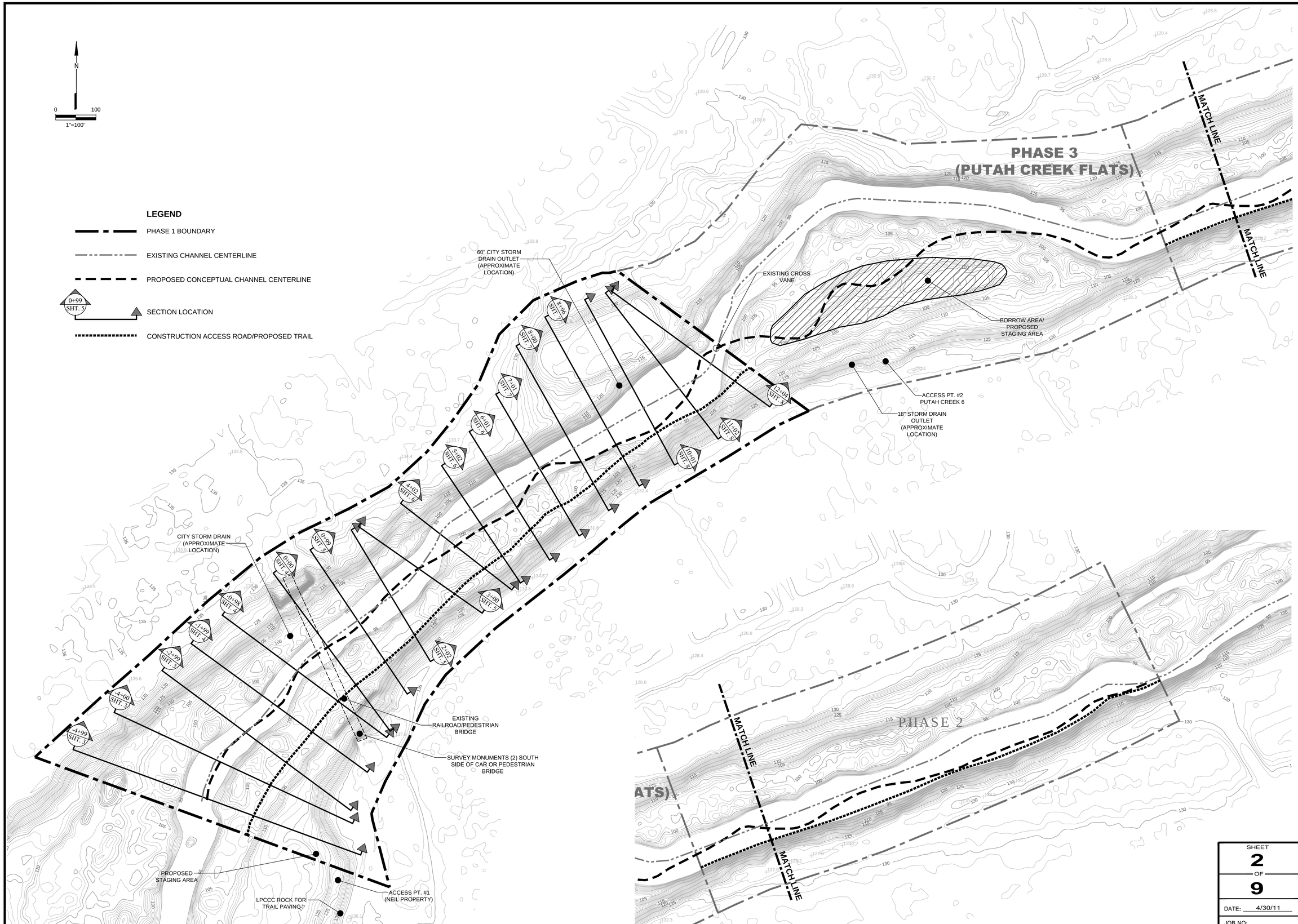
CITY OF WINTERS CALIFORNIA

TITLE SHEET

SOLANO COUNTY WATER AGENCY



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SITE PLAN

CITY OF WINTERS CALIFORNIA

SHEET 2 OF 9

DATE: 4/30/11

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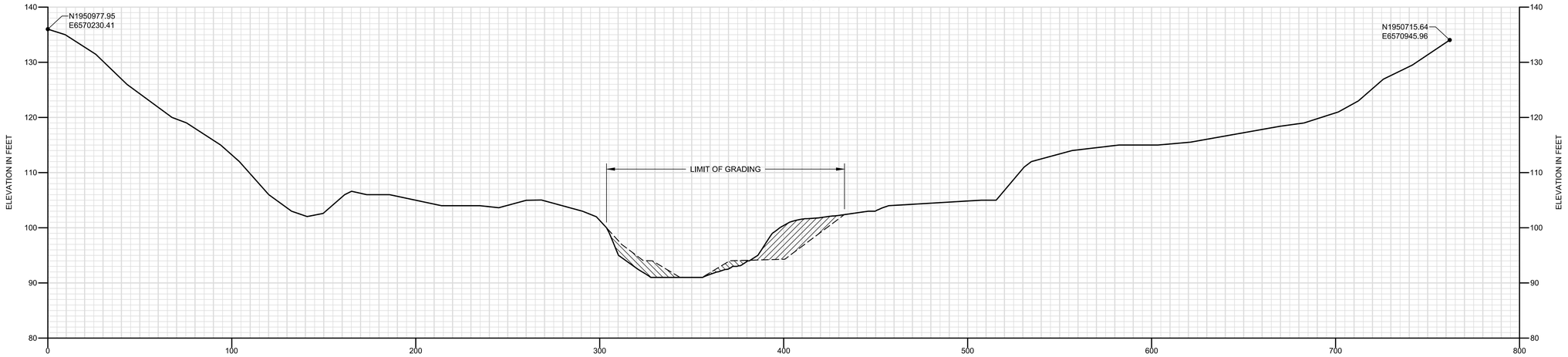
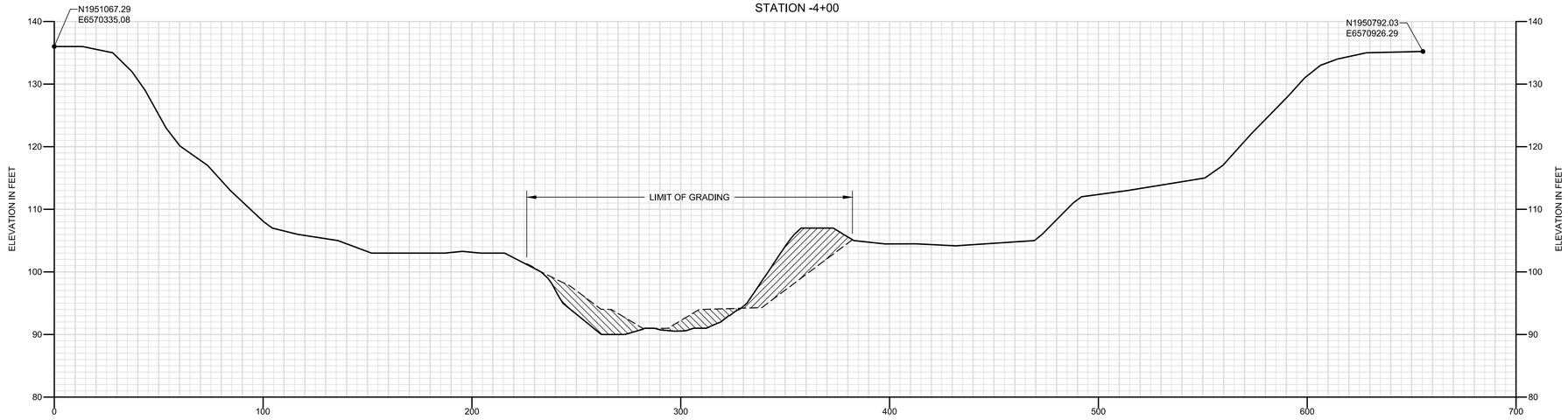
SOLANO COUNTY WATER AGENCY

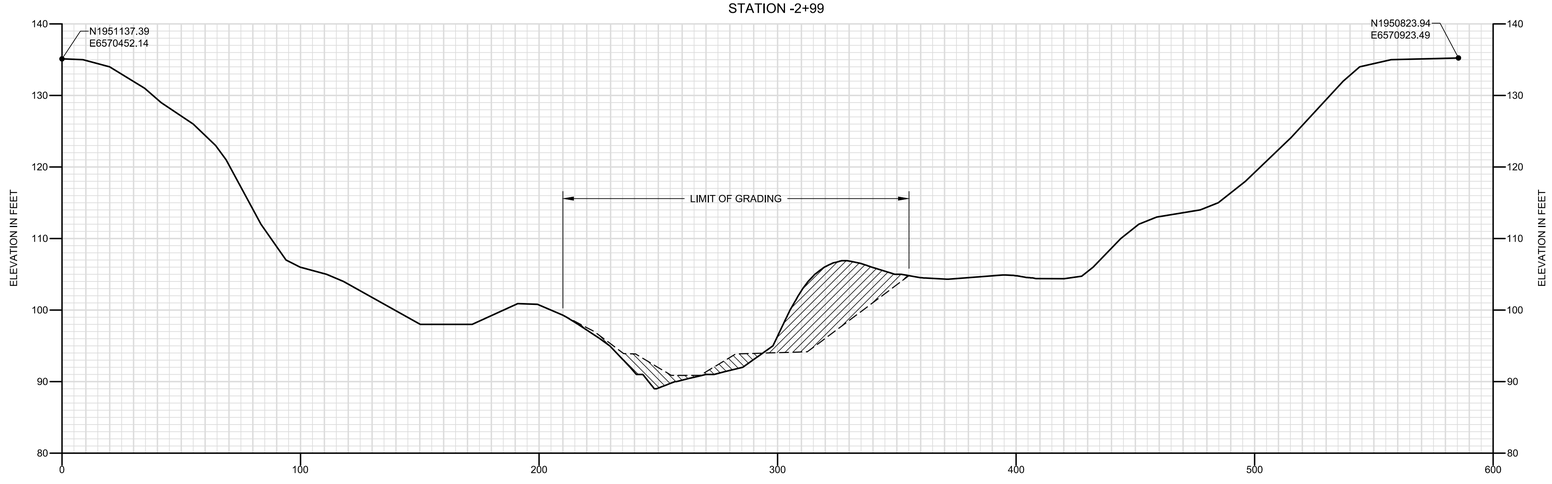
STATION -4+99



STATION -4+00



STATION -2+99



LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- CUT AREA
- FILL AREA

NO.	DATE	REVISIONS	BY	APPD.

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SCALE
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1"=30' HORIZONTAL

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CREEK SECTIONS

CITY OF WINTERS CALIFORNIA

SHEET 3 OF 9

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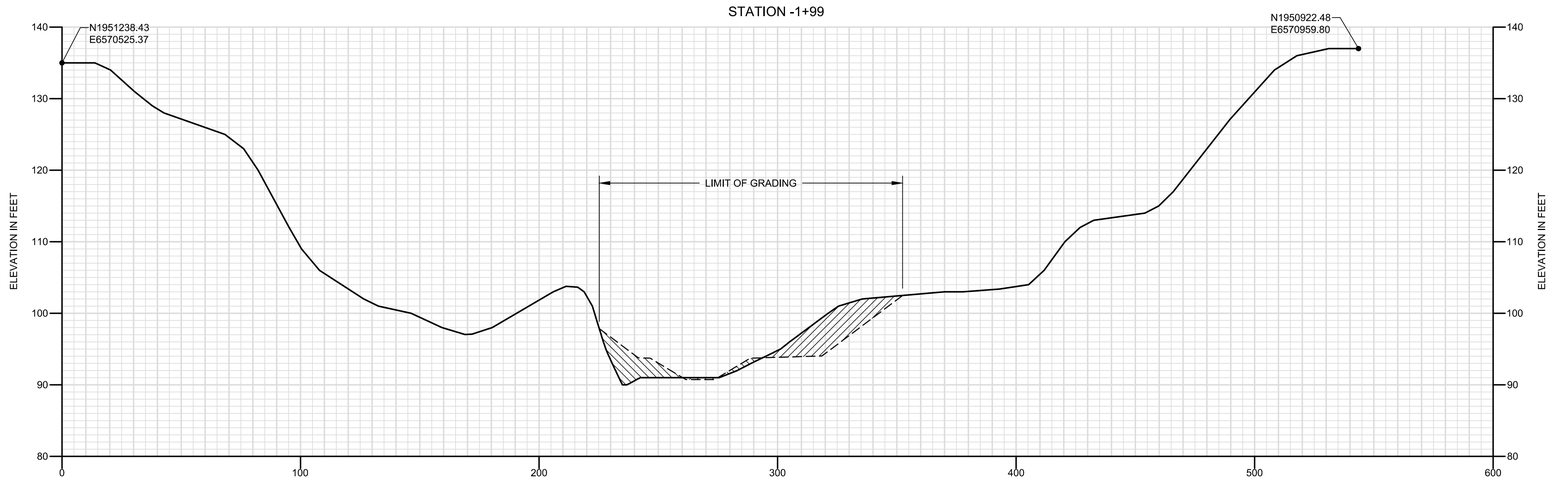

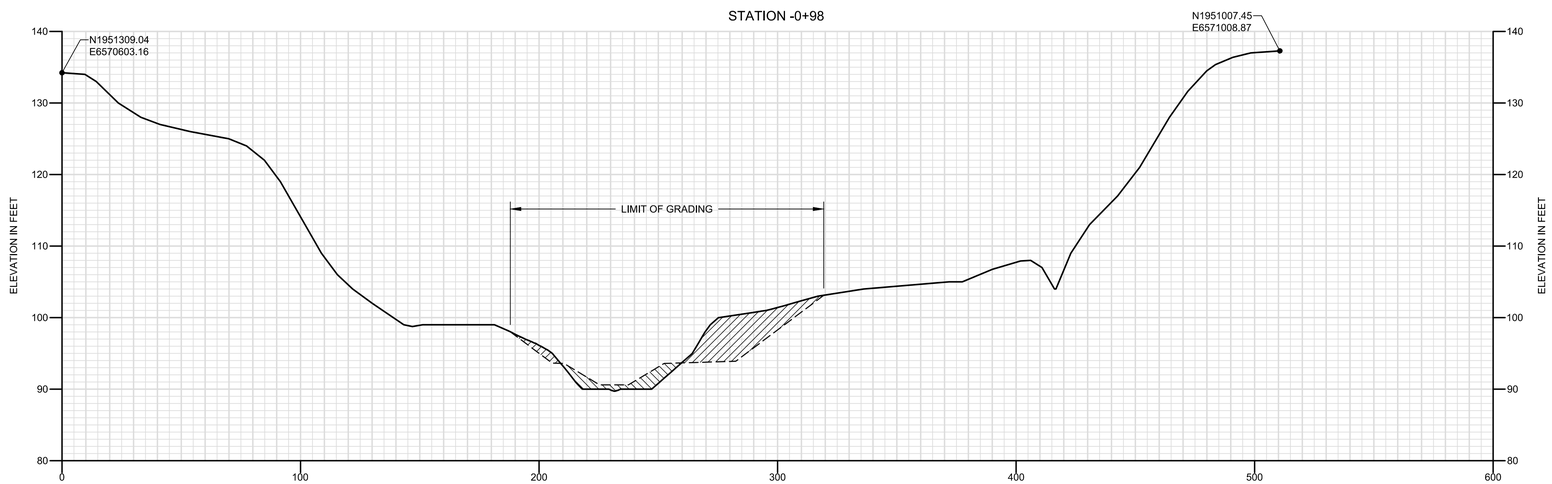

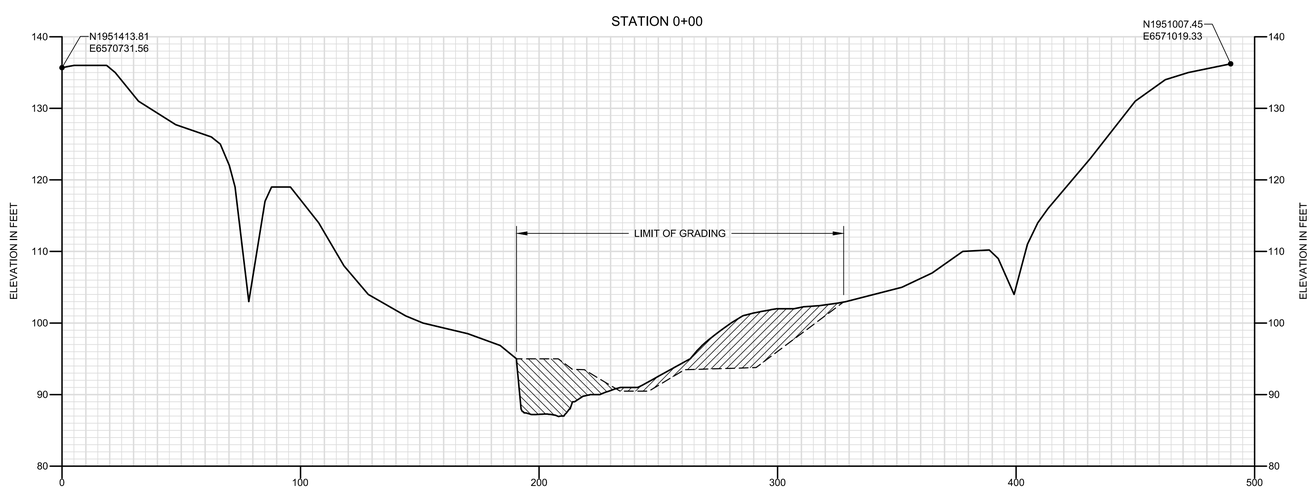

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SHEET 4 OF 9

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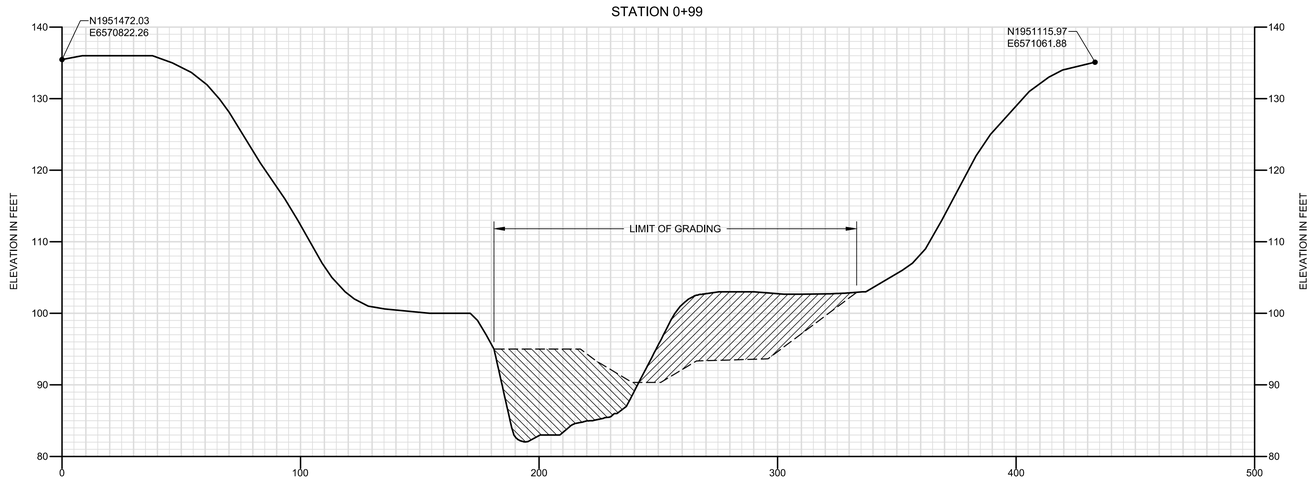

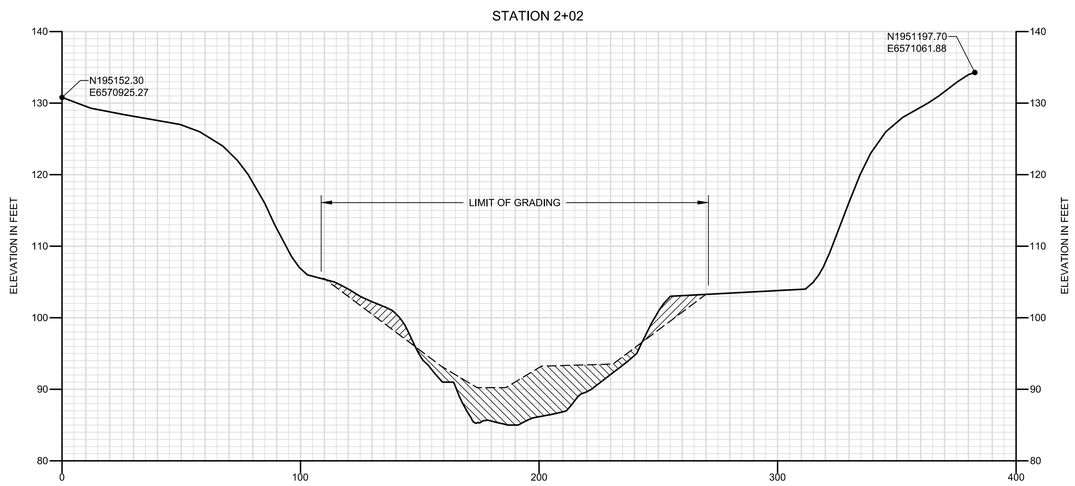

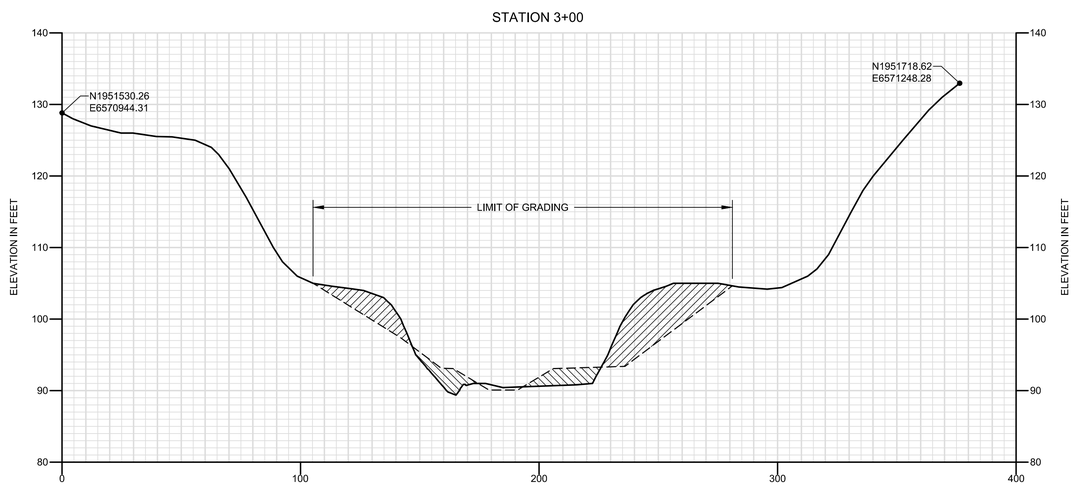

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SHEET **5** OF **9**

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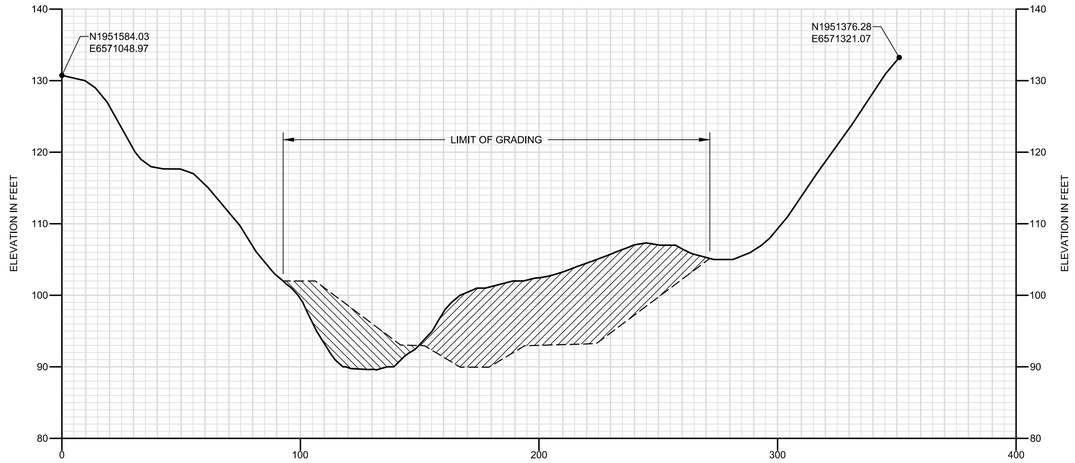
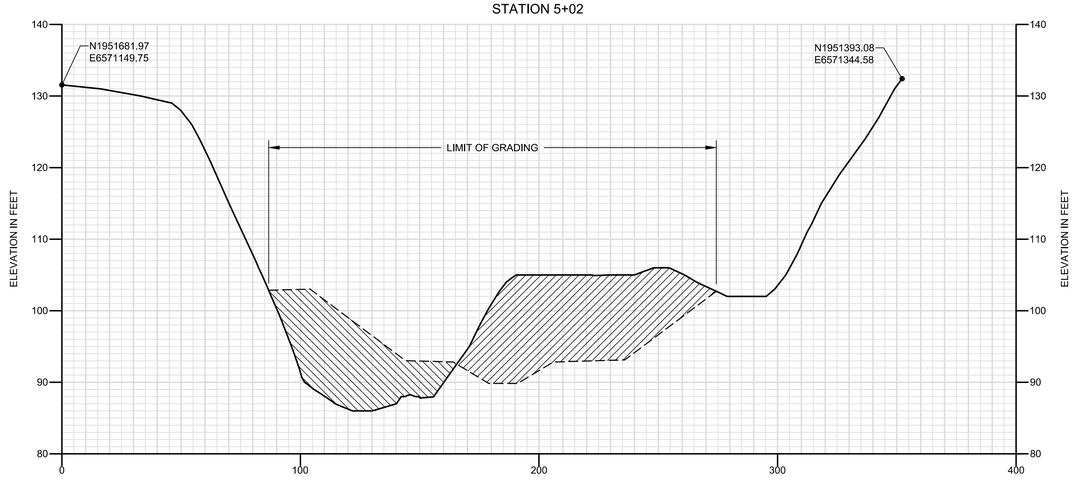
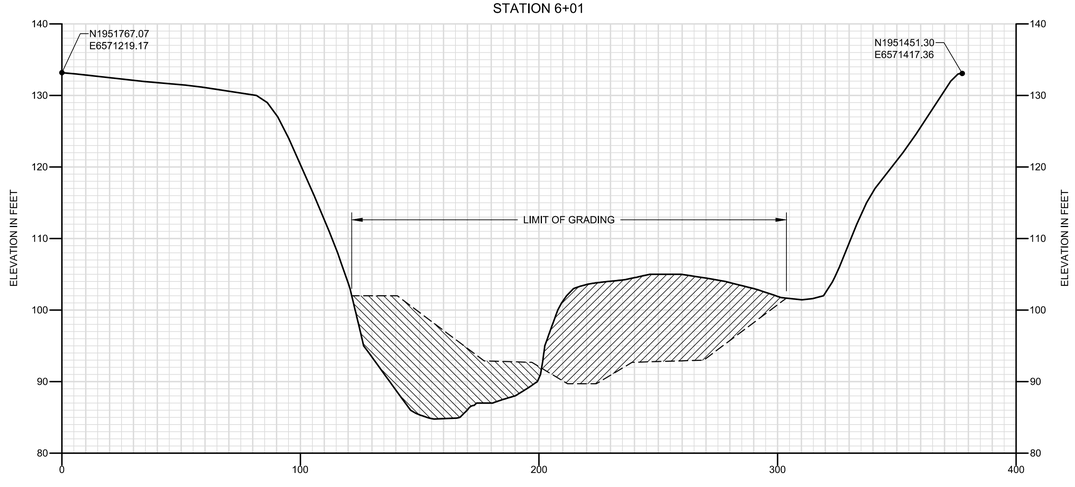
STATION 4+02



STATION 5+02



STATION 6+01



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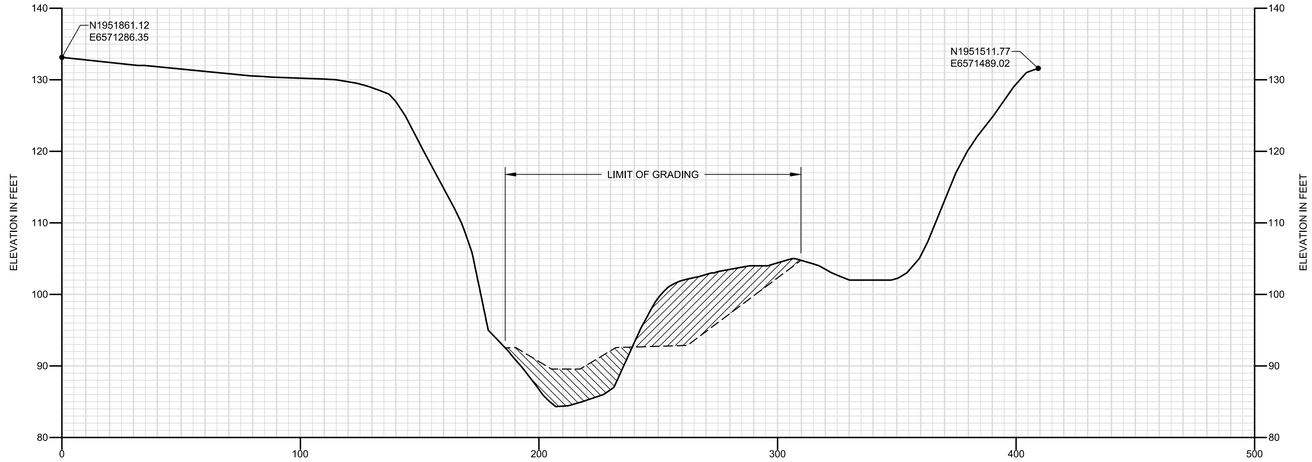
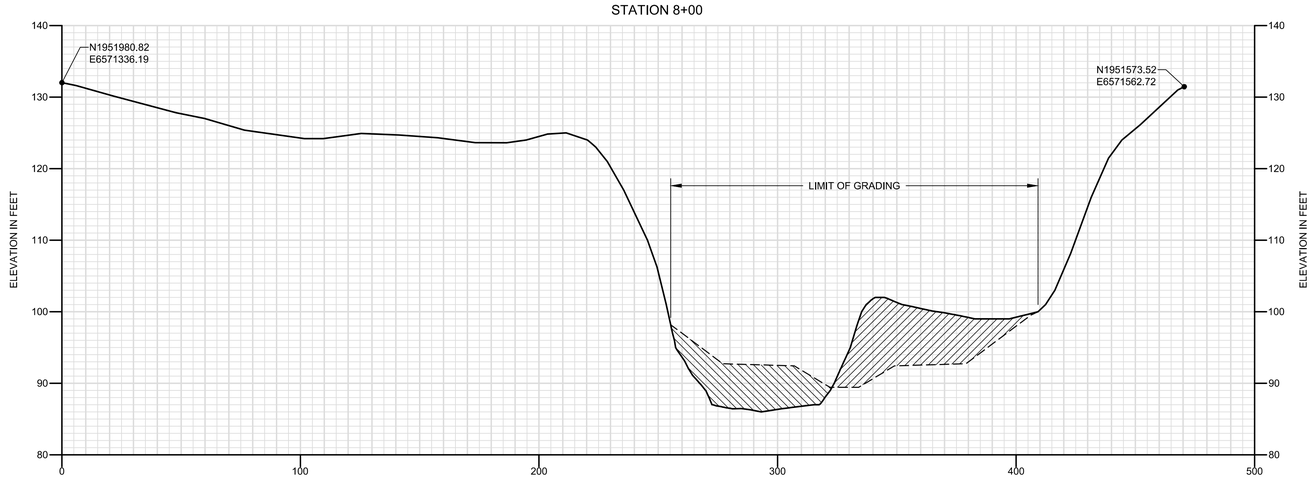
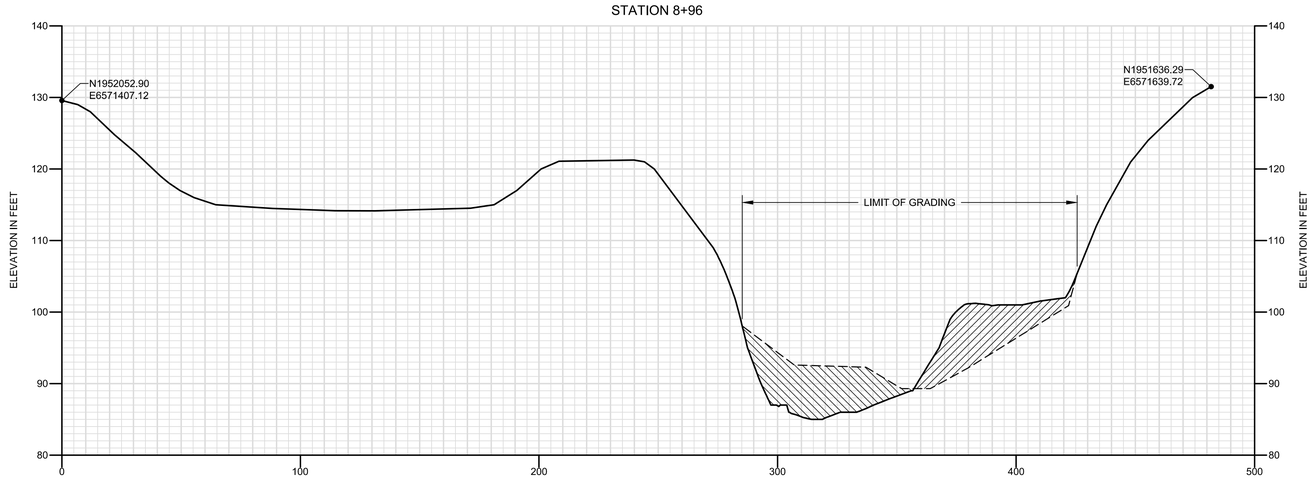
STATION 7+01



STATION 8+00



STATION 8+96



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CREEK SECTIONS

SHEET 7 OF 9

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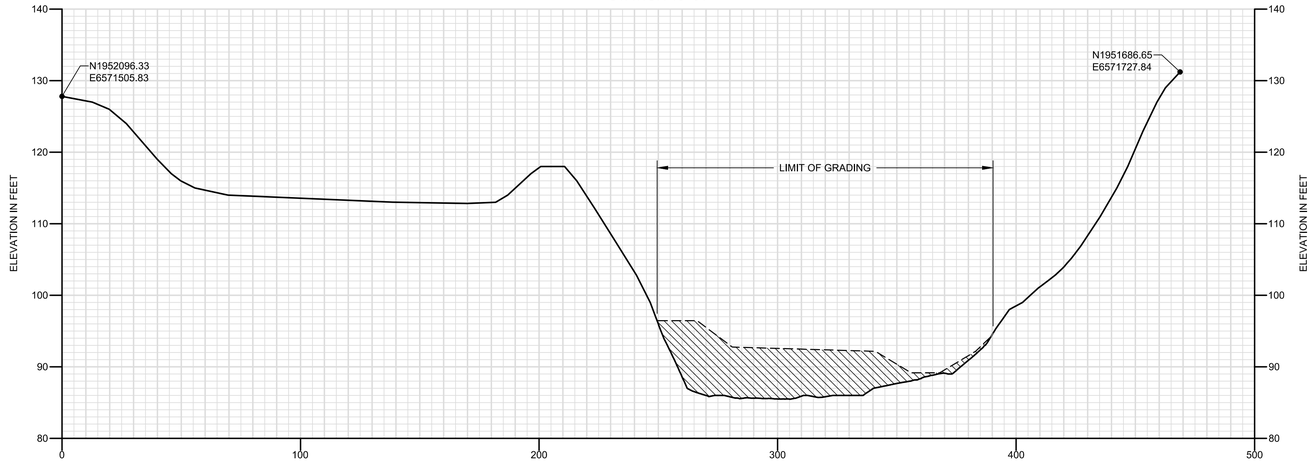
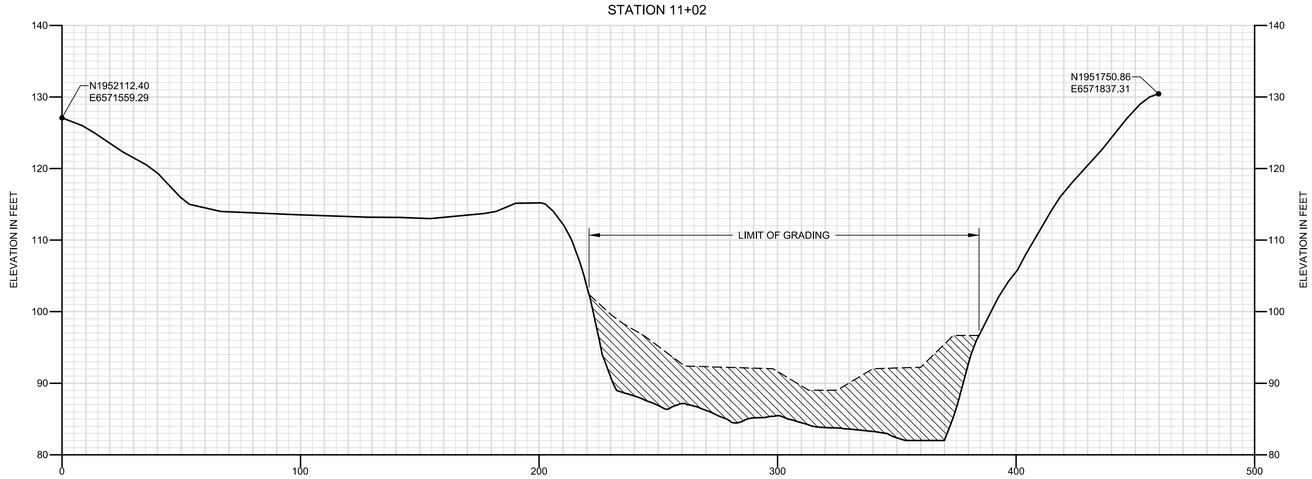
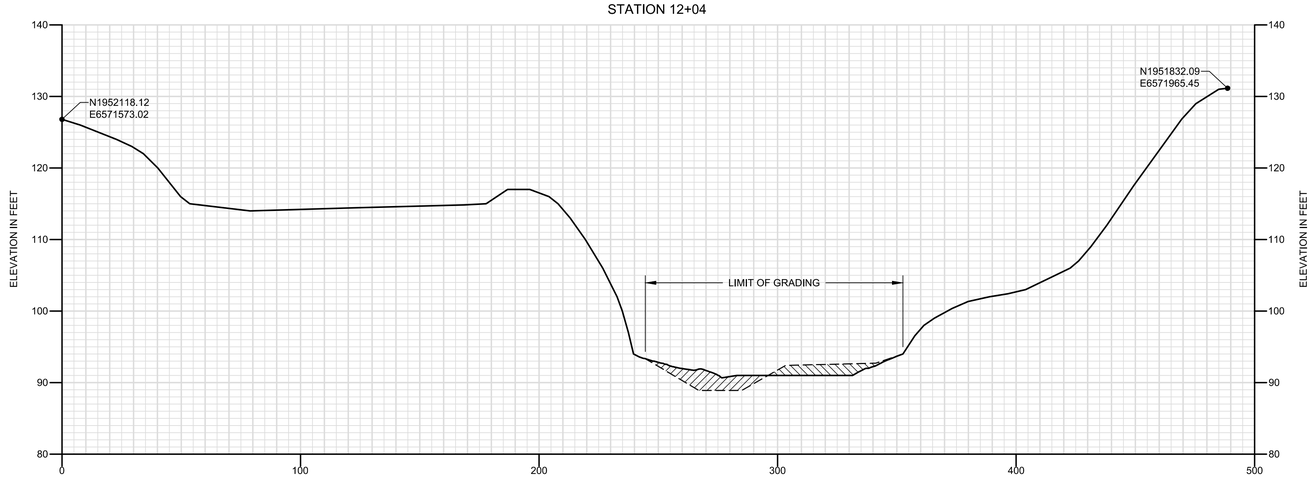
STATION 10+01



STATION 11+02



STATION 12+04



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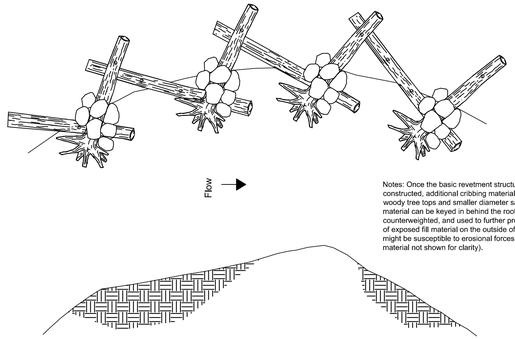
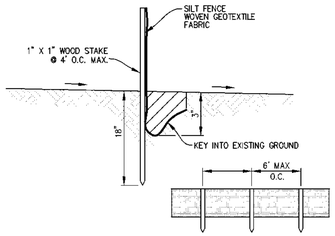
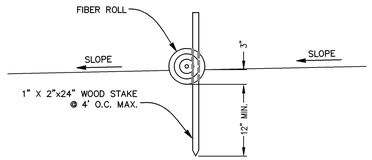


Notes: Once the basic revetment structure is constructed, additional cribbing material comprised of woody tree tops and smaller diameter salvaged material can be keyed in behind the rootwads, counterweighted, and used to further protect any areas of exposed fill material on the outside of meanders that might be susceptible to erosional forces. (Cribbing material not shown for clarity).

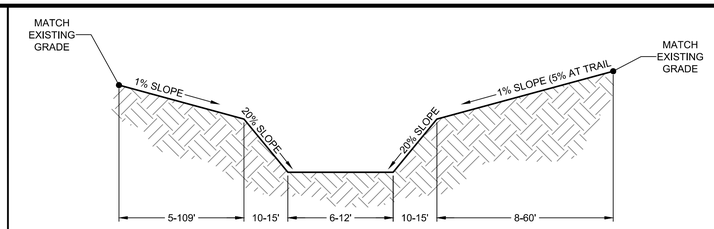
ROOTWAD REVETMENT
NTS



SILT FENCE
NTS

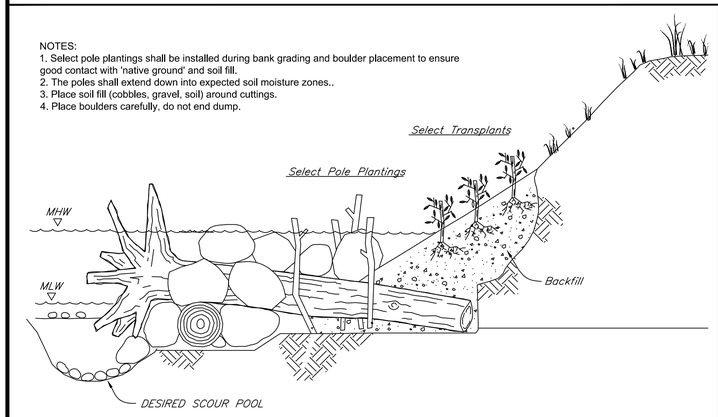


FIBER WATTLE DETAIL

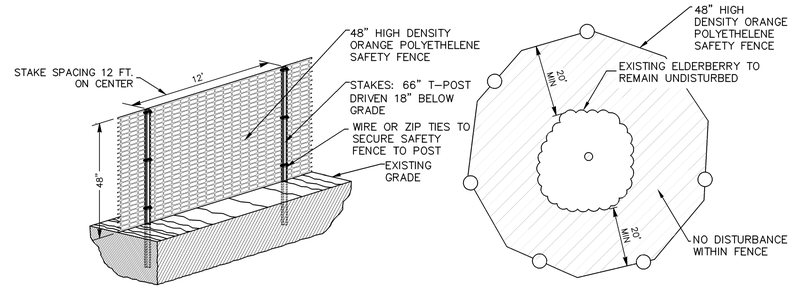


TYPICAL DESIGN STREAM CROSS SECTION
NTS

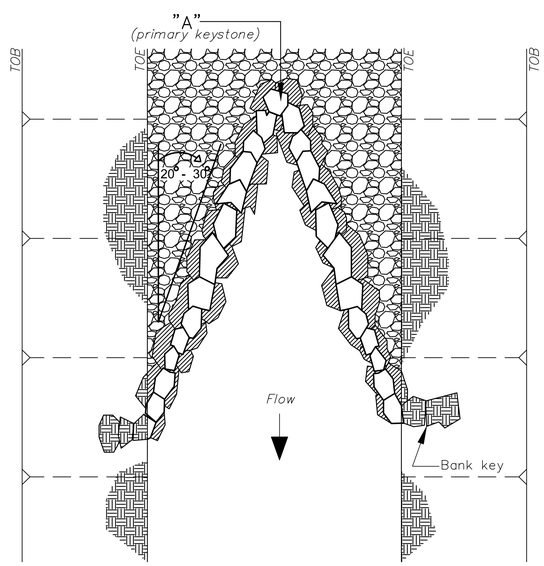
NOTES:
1. Select pole plantings shall be installed during bank grading and boulder placement to ensure good contact with 'native ground' and soil fill.
2. The poles shall extend down into expected soil moisture zones..
3. Place soil fill (cobbles, gravel, soil) around cuttings.
4. Place boulders carefully, do not end dump.



ROOTWAD REVETMENT
NTS



ELDERBERRY PROTECTION DETAIL
NTS

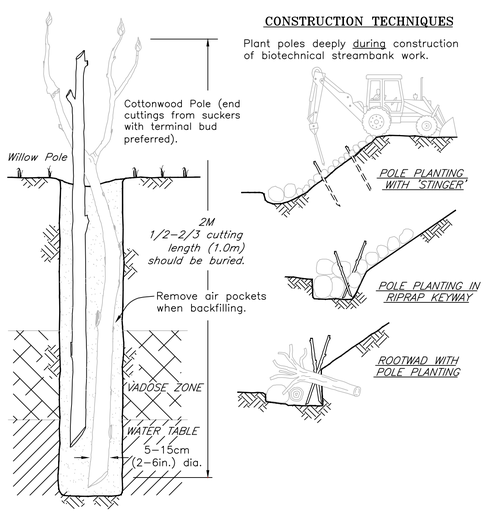


1. Primary vane arm to be 20-30 degrees measured from the tangent line where vane intercepts bank.
2. Bank key to be two to three rocks deep into bank.
3. Place approved backfill.

CROSS VANE PLAN
NTS

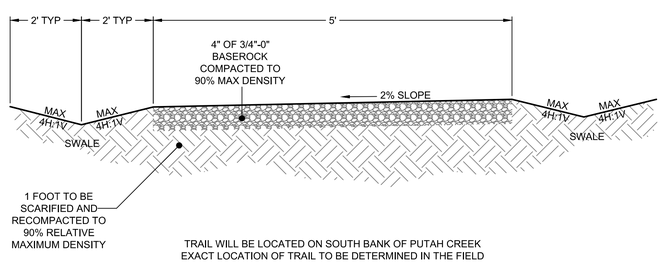
CONSTRUCTION TECHNIQUES

Plant poles deeply during construction of biotechnical streambank work.



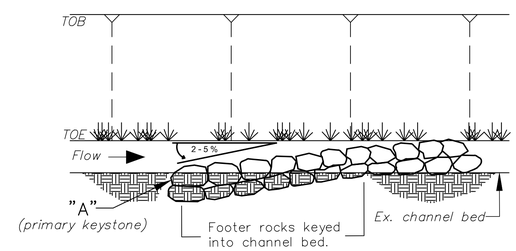
NOTES:
1. Pole cuttings of willow or cottonwood are longer and have a larger diameter than branch cuttings or live stakes.
2. Larger diameter cuttings have a greater supply of stored energy (stored photosynthesis) than smaller diameter cuttings.
3. The pole cuttings should extend through the vadose zone and into the permanent water table. At least 1/2 to 2/3 of the pole should be below the ground, at least 1.0m (3 ft.), and long enough to emerge above adjacent vegetation.
4. "Muddying" - filling the hole with water and then soil to make a mud slurry can remove air pockets.

POLE PLANTING
NTS



TRAIL WILL BE LOCATED ON SOUTH BANK OF PUTAH CREEK
EXACT LOCATION OF TRAIL TO BE DETERMINED IN THE FIELD

TYPICAL TRAIL CROSS SECTION
NTS



1. Slope of vane arm to be 2-5% of bank height to vane length ratio.
2. Install 1T+ class angular to sub-angular boulders. Boulders to be placed individually as directed by engineer, with proper equipment to insure rocks are interlocked and stable.
3. Minimum footer embankment depth at invert to be three times protrusion height of invert or keystone rock.

CROSS VANE ARM PROFILE
NTS

NO.	DATE	REVISIONS	BY	APPD.

DESIGNED BY
DRAWN BY
CHECKED BY
SCALE

BSK ASSOCIATES
3140 GOLD CAMP DR. SUITE 160
RANCHO CORDOVA, CA 95670
(916) 853-9293
BSK Associates Engineering Laboratories

PUTAH CREEK FLOOD PLAIN RESTORATION, PHASE 1
SOLANO COUNTY WATER AGENCY &
LOWER PUTAH CREEK COORDINATING COMMITTEE
CITY OF WINTERS CALIFORNIA

DETAILS

SHEET 9 OF 9

DATE: 4/30/11

JOB NO:

SOLANO COUNTY WATER AGENCY