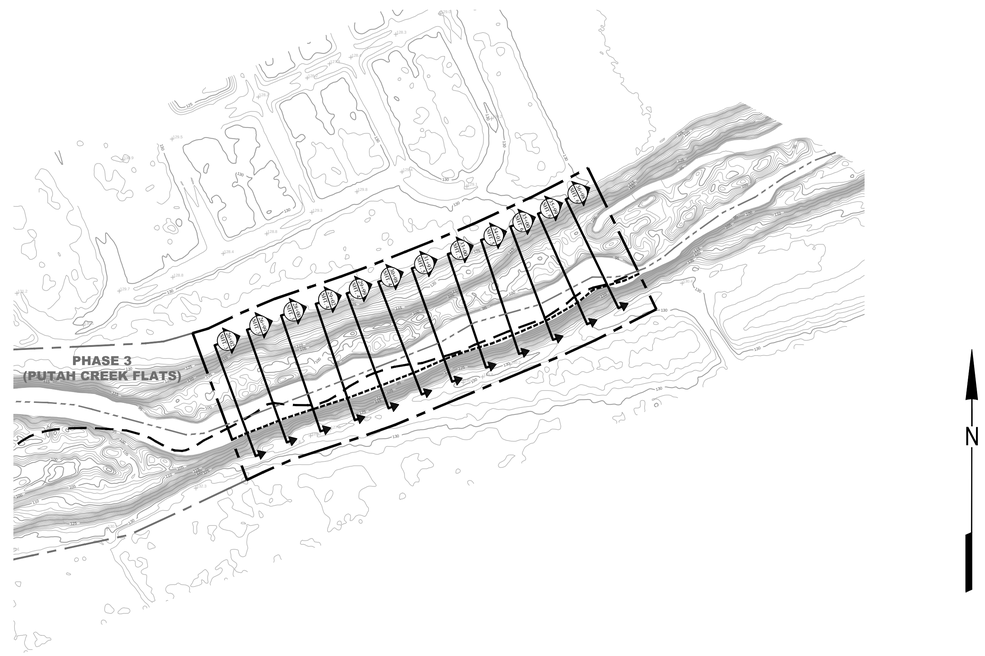
# IMPROVEMENT PLANS
## FOR
# PUTAH CREEK FLOOD PLAIN RESTORATION, PHASE 2

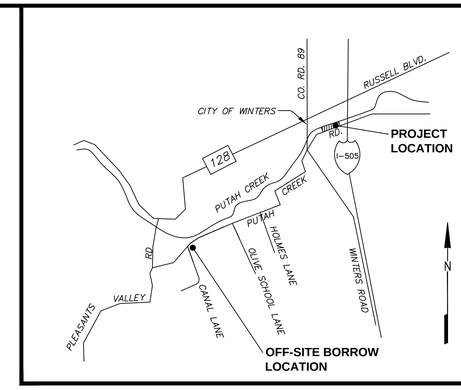
**SOLANO COUNTY WATER AGENCY &**
**LOWER PUTAH CREEK COORDINATING COMMITTEE**
**SOLANO COUNTY, CALIFORNIA**
**MAY 2011**

**LEGEND**

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




**SITE MAP**
1"=200'



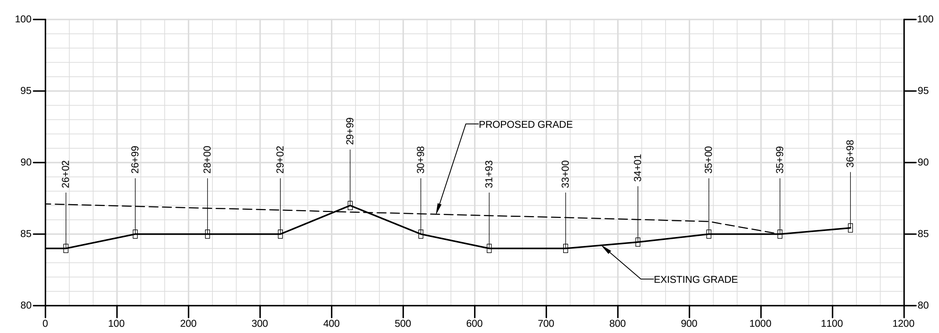

**VICINITY MAP**
N.T.S.

## SHEET INDEX


1. TITLE SHEET
2. SITE PLAN
3. CREEK SECTIONS (26+02, 26+99, 28+00)
4. CREEK SECTIONS (29+02, 29+99, 30+98)
5. CREEK SECTIONS (31+93, 33+00, 34+01)
6. CREEK SECTIONS (35+00, 35+99, 36+98)
7. 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 7
DATE: 4/30/11
JOB NO:

| NO. | DATE | REVISIONS | BY | APPD. |
|---|---|---|---|---|
| | | | | |

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SCALE AS NOTED


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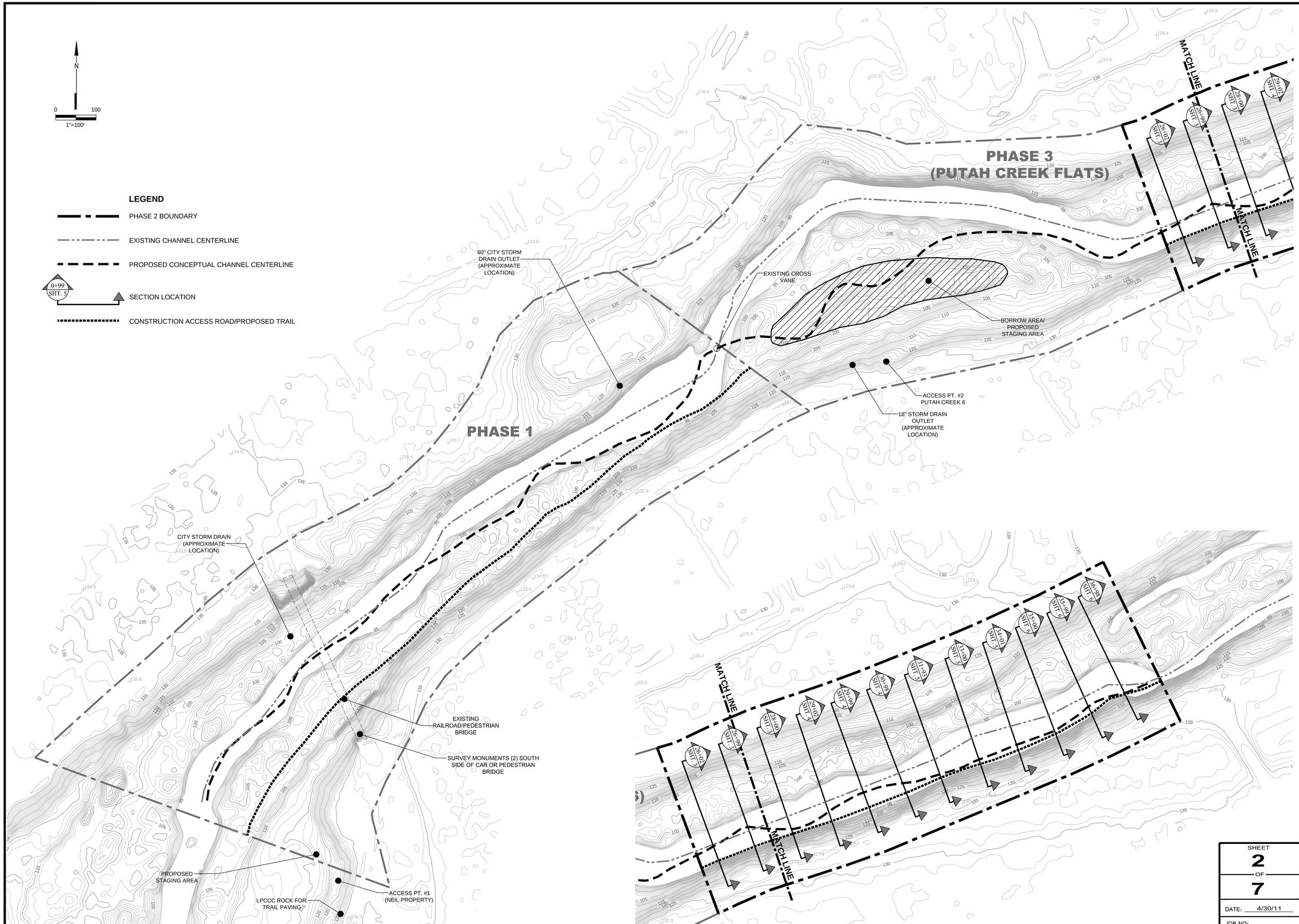
PUTAH CREEK FLOOD PLAIN RESTORATION, PHASE 2
SOLANO COUNTY WATER AGENCY &
LOWER PUTAH CREEK COORDINATING COMMITTEE
CITY OF WINTERS CALIFORNIA

**TITLE SHEET**

Solano County Water Agency

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# PUTAH CREEK FLOOD PLAIN RESTORATION, PHASE 2
## SOLANO COUNTY WATER AGENCY & LOWER PUTAH CREEK COORDINATING COMMITTEE
## SITE PLAN

CITY OF WINTERS CALIFORNIA

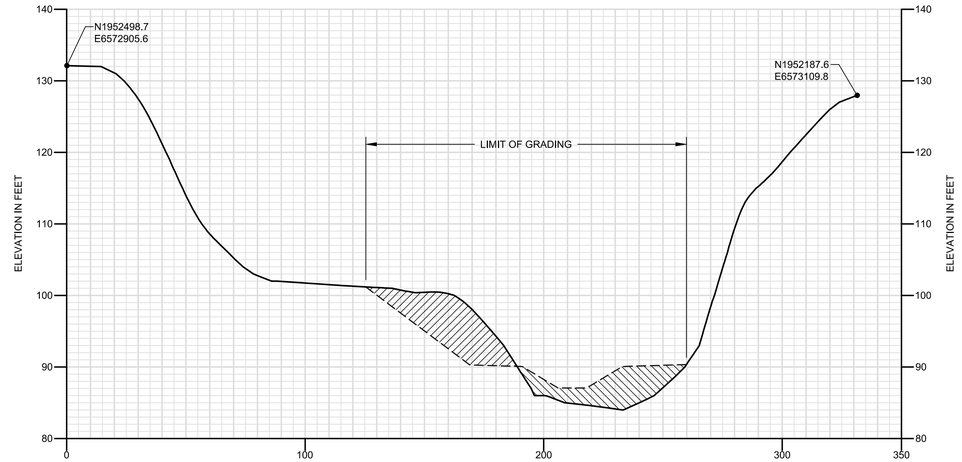
SHEET 2 OF 7

DATE: 4/30/11

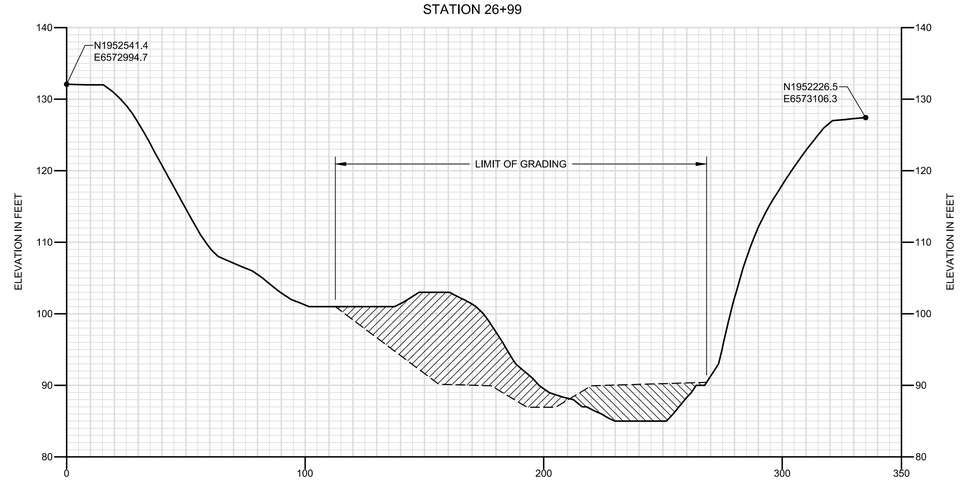
JOB NO:

SOLANO COUNTY WATER AGENCY

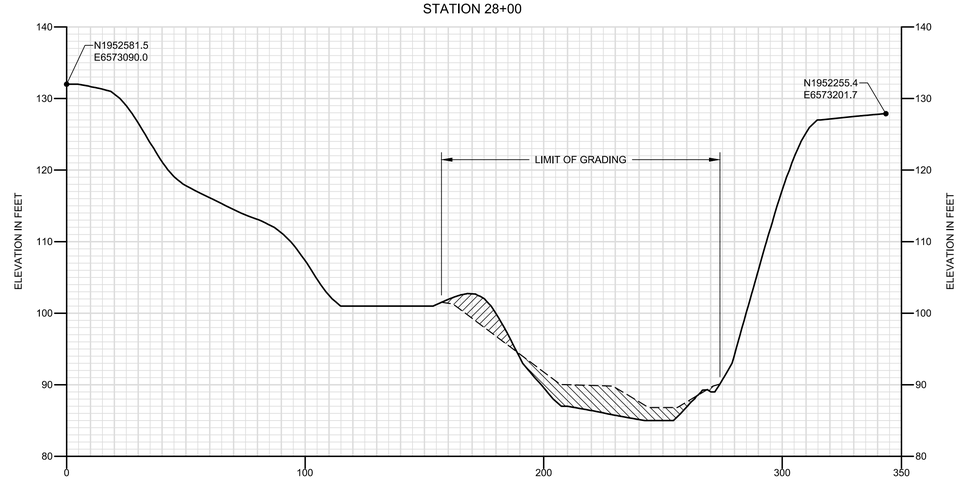
STATION 26+02




STATION 26+99




STATION 28+00




**LEGEND**

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

| NO. | DATE | REVISIONS | BY | APPD. |
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SCALE
1"=10' VERTICAL
1"=30' HORIZONTAL


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**LOWER PUTAH CREEK COORDINATING COMMITTEE**

CITY OF WINTERS CALIFORNIA

# CREEK SECTIONS

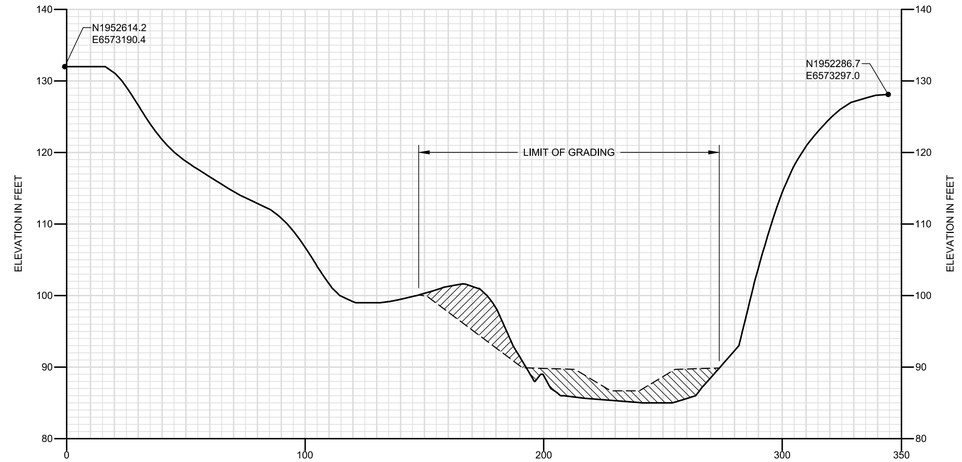
SHEET 3 OF 7

DATE: 4/30/11

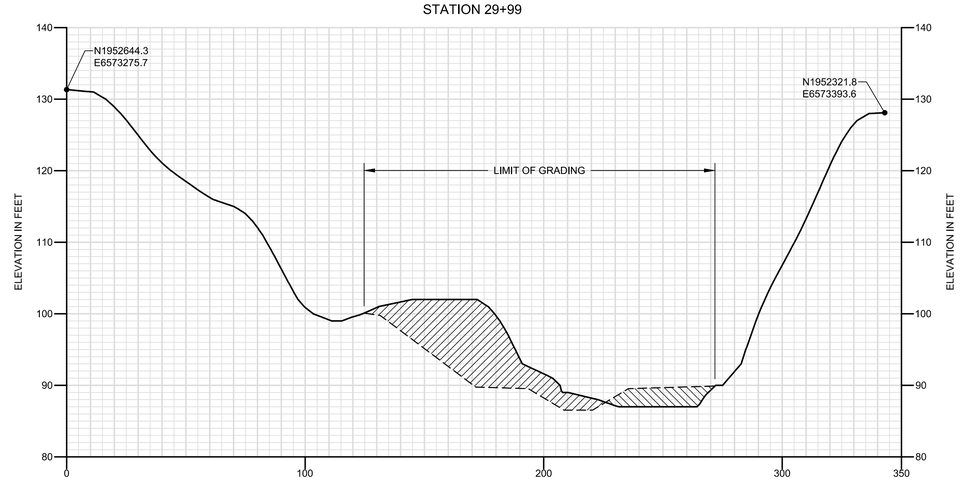
JOB NO:

SOLANO COUNTY WATER AGENCY

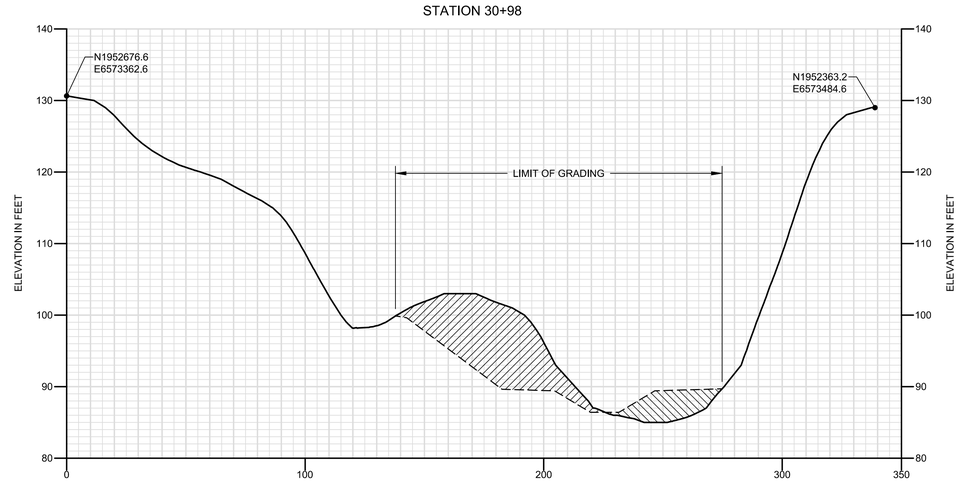
STATION 29+02




STATION 29+99




STATION 30+98

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## CREEK SECTIONS

CITY OF WINTERS CALIFORNIA

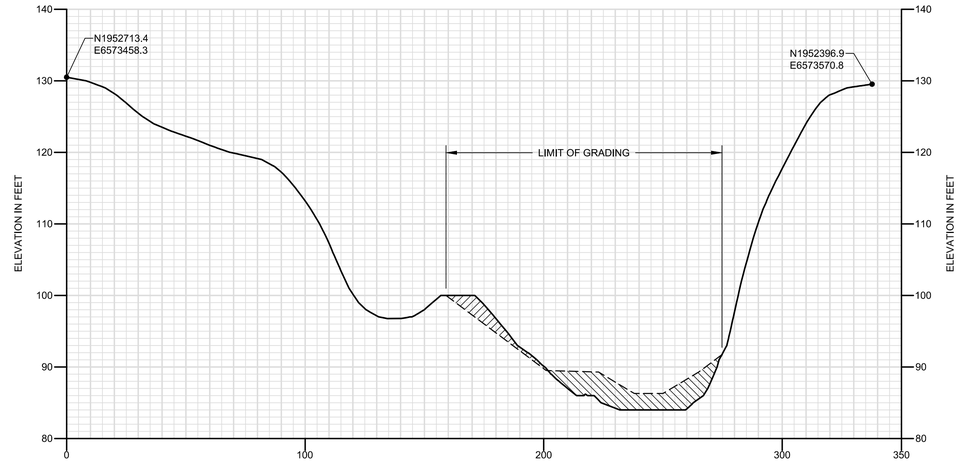
SHEET 4 OF 7

DATE: 4/30/11

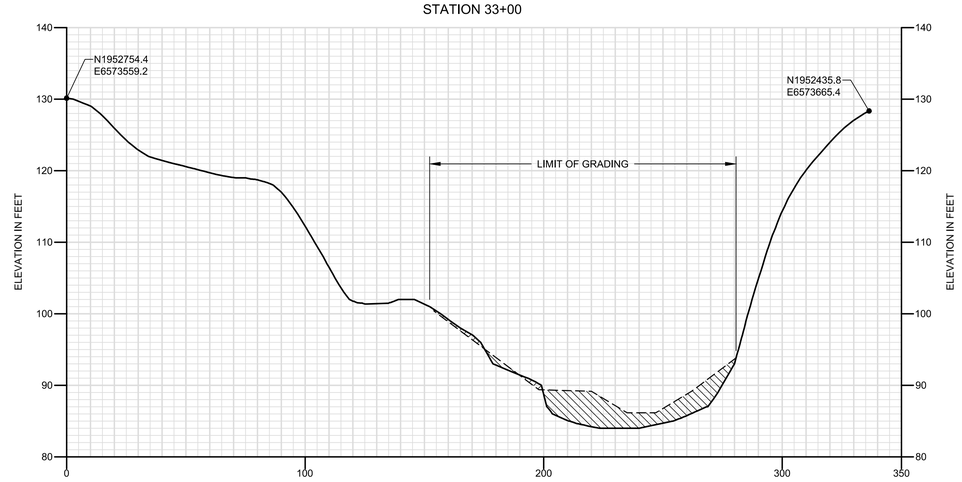
JOB NO:

SOLANO COUNTY WATER AGENCY

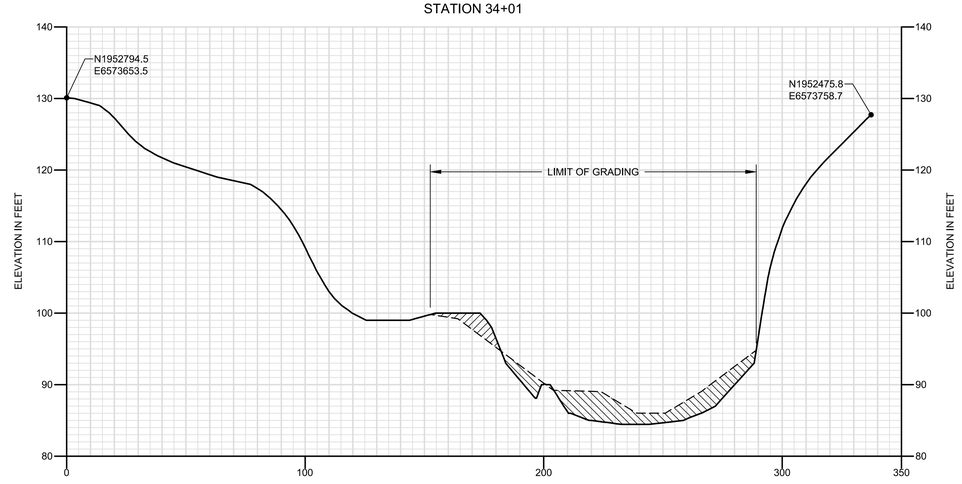
STATION 31+93




STATION 33+00




STATION 34+01

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# CREEK SECTIONS

CITY OF WINTERS CALIFORNIA

SHEET 5 OF 7

DATE: 4/30/11

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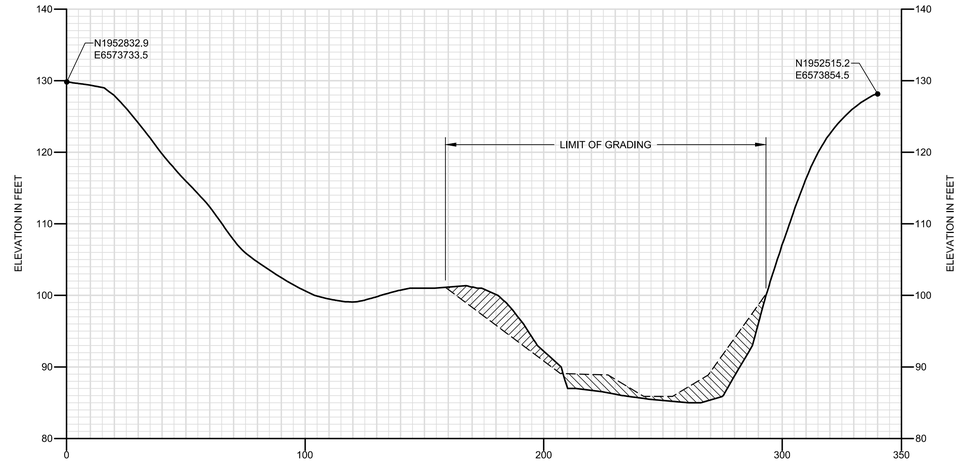
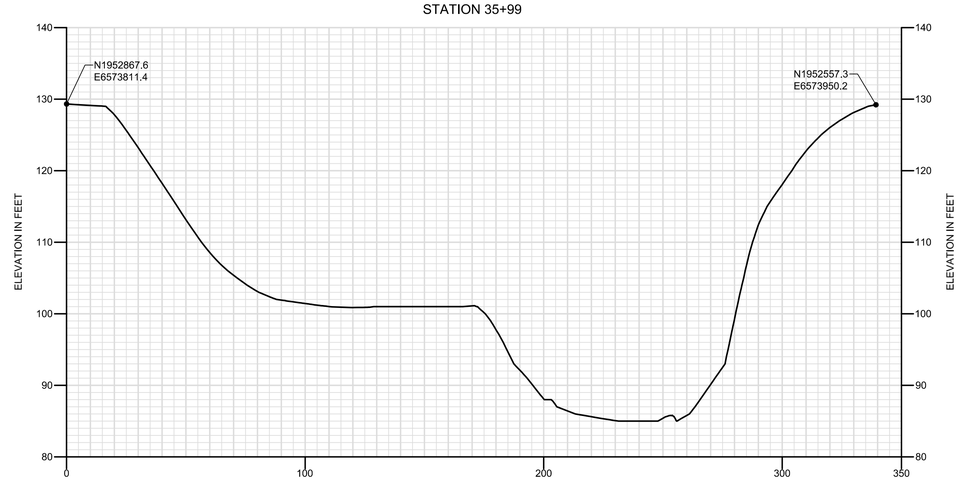
SOLANO COUNTY WATER AGENCY

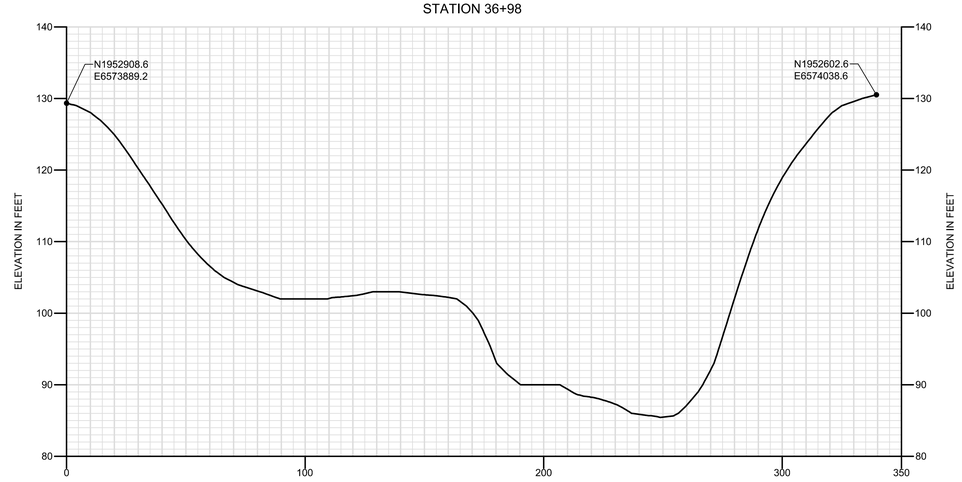
STATION 35+00




STATION 35+99




STATION 36+98

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SCALE
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1"=30' HORIZONTAL


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# CREEK SECTIONS

CITY OF WINTERS CALIFORNIA

SHEET 6 OF 7

DATE: 4/30/11

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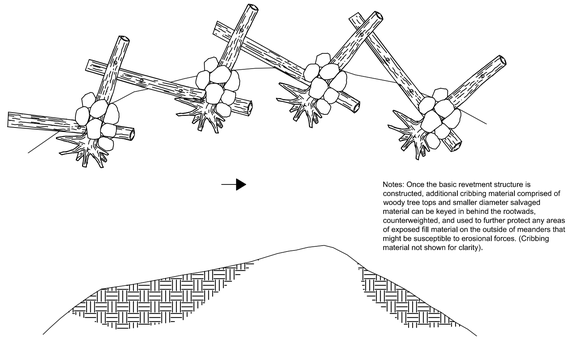
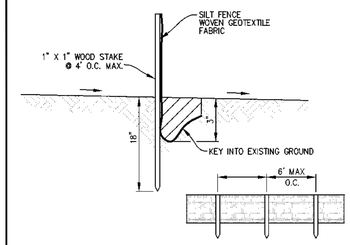
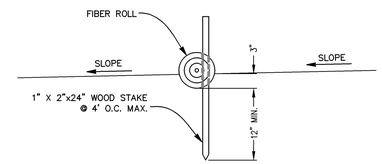


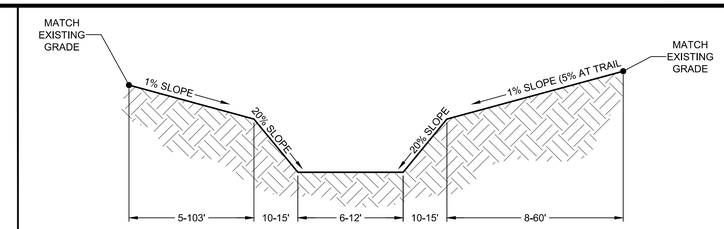

## ROOTWAD REVETMENT
NTS




## SILT FENCE
NTS

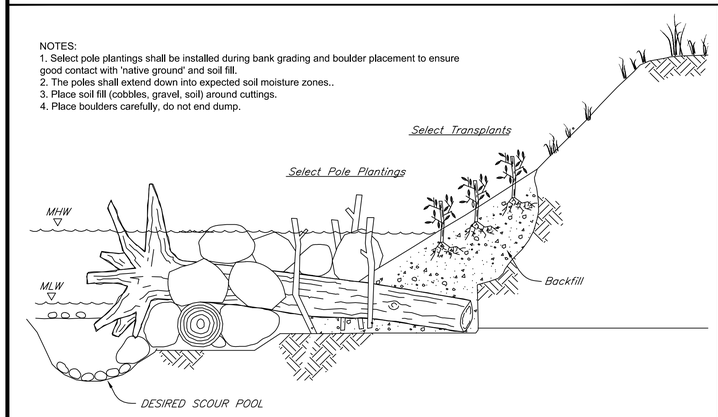



## FIBER WATTLE DETAIL

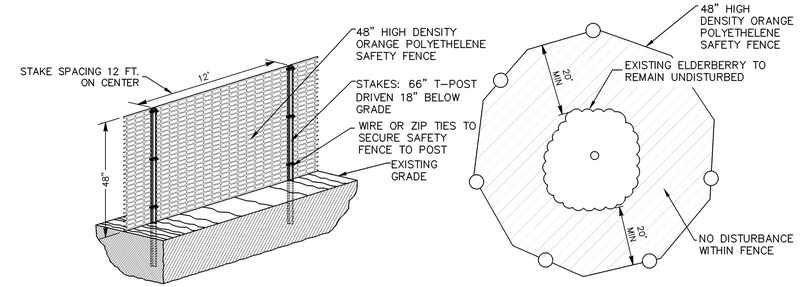



## TYPICAL DESIGN STREAM CROSS SECTION
NTS

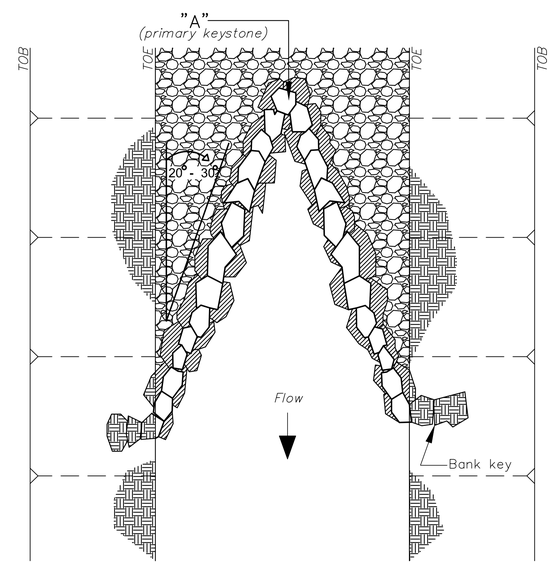
NOTES:
1. Select pole plantings shall be installed during bank grading and boulder placement to ensure good contact with 'native ground' and soil fill.
2. The poles shall extend down into expected soil moisture zones..
3. Place soil fill (cobbles, gravel, soil) around cuttings.
4. Place boulders carefully,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




## ROOTWAD REVETMENT
NTS




## ELDERBERRY PROTECTION DETAIL
NTS

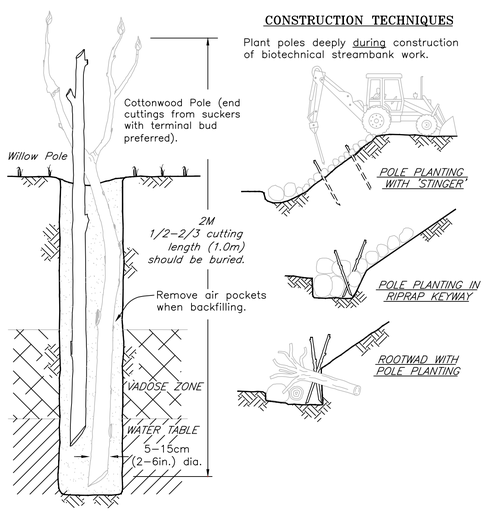



1. Primary vane arm to be 20-30 degrees measured from the tangent line where vane intercepts bank.
2. Bank key to be two to three rocks deep into bank.
3. Place approved backfill.

## CROSS VANE PLAN
NTS

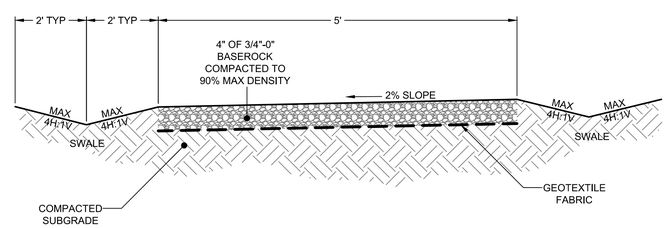
CONSTRUCTION TECHNIQUES

Plant poles deeply during construction of biotechnical streambank work.

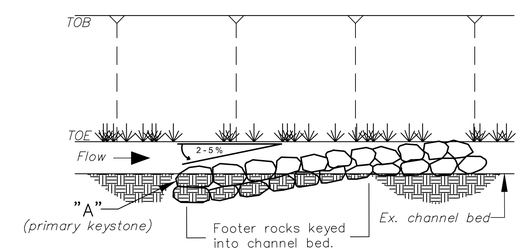



NOTES:
1. Pole cuttings of willow or cottonwood are longer and have a larger diameter than branch cuttings or live stakes.
2. Larger diameter cuttings have a greater supply of stored energy (stored photosynthesis) than smaller diameter cuttings.
3. The pole cuttings should extend through the vadose zone 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




## 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. |
|---|---|---|---|---|
| | | | | |

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CHECKED BY
SCALE


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CITY OF WINTERS CALIFORNIA

# DETAILS

SHEET 7 OF 7

DATE: 4/30/11

JOB NO:

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