

SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT PLANS FOR THE RODRIGUEZ BRIDGE WATERLINE CROSSING FISH PASSAGE IMPROVEMENTS CONTRACT NO. 300369

TO BE SUPPLEMENTED BY THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS, MAY 2006

WATERWAYS CONSULTING INC.
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WWW.WATWAYS.COM

DATE: 5/15/12
No. 62235
Exp. 9-30-13
REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA
MATT W. WELD

PREPARED AT THE REQUEST OF:
SAN LUIS OBISPO COUNTY
PUBLIC WORKS
DEPARTMENT

COVER SHEET

RODRIGUEZ BRIDGE
WATERLINE CROSSING
FISH PASSAGE
IMPROVEMENTS
100% SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.M.Z.
CHECKED BY: M.W.W.
DATE: 05/15/12
JOB NO.: 09-040

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C1 1 OF 6

SHEET INDEX

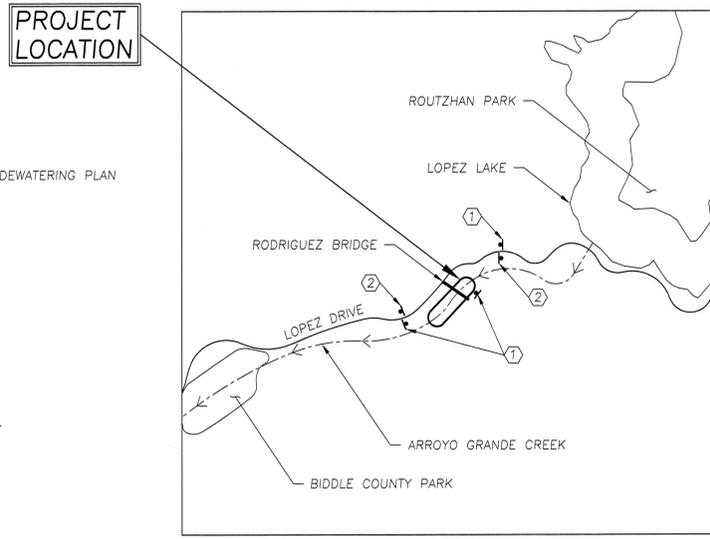
- C1 COVER SHEET
- C2 ACCESS, EROSION CONTROL AND DEWATERING PLAN
- C3 SITE PLAN AND PROFILE
- C4 SECTIONS
- C5 DETAILS
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ABBREVIATIONS

- AC ASPHALT CONCRETE
- AVG. AVERAGE
- CC CONCRETE
- CY CUBIC YARDS
- DIA. DIAMETER
- E EXISTING
- E.G. EXISTING GROUND
- ESM ENGINEERED STREAMBED MATERIAL
- ELEV. ELEVATION
- F.G. FINISHED GRADE
- FT. FEET
- INV. INVERT
- N NEW
- N.T.S. NOT TO SCALE
- RSP ROCK SLOPE PROTECTION
- SPK SPIKE
- SQ.FT. SQUARE FOOT
- T.B.D. TO BE DETERMINED
- TYP TYPICAL
- UNK UNKNOWN
- WSE WATER SURFACE ELEVATION

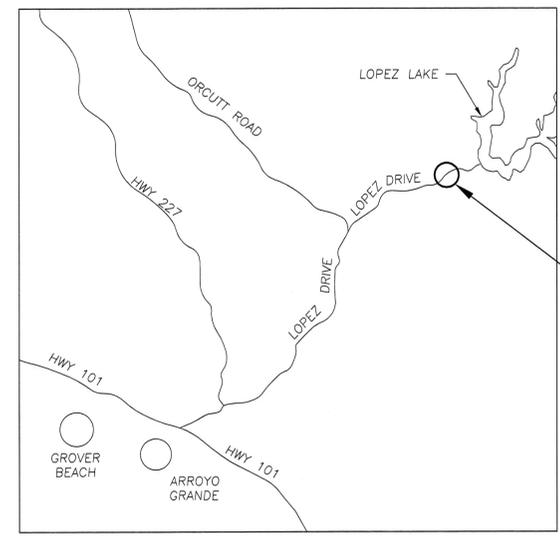
SURVEY NOTES

1. TOPOGRAPHIC MAPPING PROVIDED BY:
PENFIELD & SMITH
210 EAST ENOS DRIVE, SUITE A
SANTA MARIA, CA 93454
0805-925-2345
2. SURVEY CONDUCTED JANUARY 2011.
3. ELEVATION DATUM: REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29), DEFINED LOCALLY BY "LOPEZ DAM MONITORING POINTS AND SURVEY CONTROL" AS SHOWN ON A MAP PROVIDED TO PENFIELD & SMITH BY THE COUNTY OF SAN LUIS OBISPO PUBLIC WORKS DEPARTMENT. THIS SURVEY TIED TO BENCHMARK SM-14 (CONTROL POINT 201), BEING A 3/8" REBAR MARKED "X" IN CONCRETE DOWN 1' IN MONUMENT WELL 3' SOUTHWEST OF THE EDGE OF PAVEMENT AND 150' EAST OF THE SPILLWAY ON LOPEZ DAM. ELEVATION = 534.65 FEET.
4. BASIS OF BEARINGS AND COORDINATES: BEARINGS SHOWN ON THIS MAP ARE REFERENCED TO THE CALIFORNIA COORDINATE SYSTEM, NAD 27, ZONE 5 GRID, DEFINED LOCALLY BY "LOPEZ DAM MONITORING POINTS AND SURVEY CONTROL" AS SHOWN ON A MAP PROVIDED TO PENFIELD & SMITH BY THE COUNTY OF SAN LUIS OBISPO PUBLIC WORKS DEPARTMENT. THIS SURVEY IS ROTATED TO MATCH THE BEARING OF SOUTH 47°37'58" EAST BETWEEN POINTS CM-4 (CONTROL POINT 201) AND CM-12 (CONTROL POINT 202). SEE CONTROL POINT LISTING.
5. ELEVATIONS AND DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF. CONTOUR INTERVAL IS 1 FOOT.
6. UTILITIES: SURFACE UTILITY FEATURES SHOWN HEREON WERE LOCATED AS A PART OF THE FIELD SURVEY PERFORMED BY PENFIELD & SMITH BASED ON VISIBILITY ON THE DATE OF SURVEY. NO RESEARCH OR MAPPING OF SUBSURFACE UTILITIES HAS BEEN PERFORMED.
7. THE ALIGNMENT OF THE EXISTING 20-INCH WATERLINE AND EXISTING TELEPHONE CABLE AS SHOWN ON SHEETS C2 AND C3 WERE APPROXIMATED FROM SHEET 13 OF THE "LOPEZ WATER SUPPLY PROJECT" DESIGN DRAWINGS BY KOEBIG & KOEBIG, INC., DATED 9/24/68. ONLY ACTUAL EXCAVATION WILL REVEAL THE DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND DEPTH OF THE UNDERGROUND UTILITIES.
8. THIS IS NOT A BOUNDARY SURVEY. COUNTY RIGHT-OF-WAY BOUNDARIES, AND COUNTY CONSTRUCTION AND PERMANENT EASEMENT LINES WHERE OBTAINED FROM THE SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS, UTILITIES DIVISION.



VICINITY MAP
N.T.S. (GOOGLE)

- ① PLACE CALTRANS C23 "ROAD WORK AHEAD" SIGN
- ② PLACE CALTRANS C14 "END ROAD WORK" SIGN



REGIONAL MAP
N.T.S. (GOOGLE)

TREE LEGEND

- C = COTTONWOOD
- O = OAK
- S = SYCAMORE
- W = WILLOW

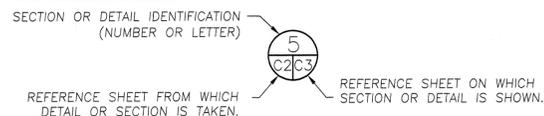
TREES TO BE REMOVED

- (2) 12" WILLOW
- (1) 14" WILLOW
- (1) 24" WILLOW
- (2) 10" COTTONWOOD

LICENSE REQUIREMENTS

THE SUCCESSFUL BIDDER SHALL POSSESS A CLASS A GENERAL ENGINEERING CONTRACTOR'S LICENSE AT THE TIME THIS CONTRACT IS AWARDED. IN THE ALTERNATIVE, THE SUCCESSFUL BIDDER SHALL POSSESS A SPECIALTY CONTRACTOR'S LICENSE AT THE TIME THIS CONTRACT IS AWARDED THAT PERMITS THE SUCCESSFUL BIDDER TO PERFORM WITH HIS OR HER OWN ORGANIZATION CONTRACT WORK AMOUNTING TO NOT LESS THAN 30% OF THE ORIGINAL TOTAL CONTRACT PRICE AND TO SUBCONTRACT THE REMAINING WORK IN ACCORDANCE WITH SECTION 8-1.01, "SUBCONTRACTING", OF THE STANDARD SPECIFICATIONS.

SECTION AND DETAIL CONVENTION



APPROVED: June 1 2012
Dave Flynn
DEPUTY DIRECTOR OF PUBLIC WORKS

APPROVED: June 1 2012
Dave Belyj
UTILITIES DIVISION MANAGER

LEGEND

	EXISTING CONTOURS
	SILT FENCE
	ESA FENCE
	CONTROL POINT
	EXISTING TREE
	TREE TO BE REMOVED
	EXISTING BEAVER HUT
	BEAVER HUT TO BE REMOVED
	STAGING AND STOCKPILE AREA
	TEMPORARY ACCESS ROAD
	LIMITS OF DISTURBANCE, APPROX.
	FISH BLOCK NET
	COUNTY CONSTRUCTION EASEMENT
	COUNTY PERMANENT EASEMENT
	COUNTY RIGHT-OF-WAY
	EXISTING 20\"/>
	EXISTING TELEPHONE CABLE

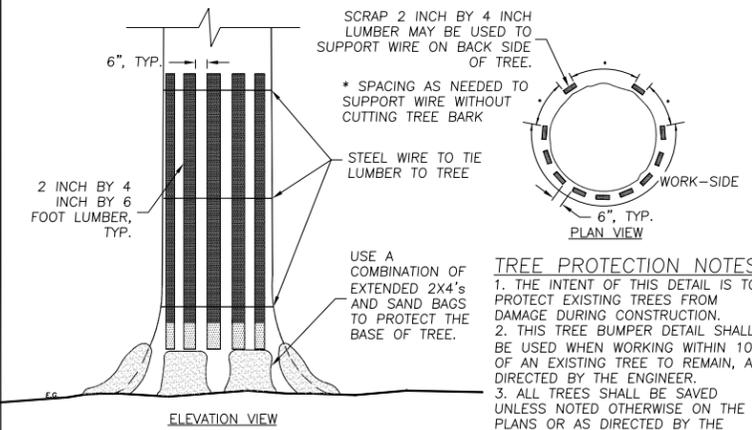
BRIDGE WEIGHT LIMITS

- 11 TONS FOR 2-AXLE
- 16 TONS FOR 3-AXLE
- 20 TONS FOR 4-AXLE

EROSION CONTROL SEEDING

1. PRIOR TO COMPLETION OF CONSTRUCTION, ALL DISTURBED AREAS NOT RECEIVING ROCK TREATMENTS SHALL BE STABILIZED, WINTERIZED AND VEGETATED WITH THE FOLLOWING NATIVE SEED MIX:

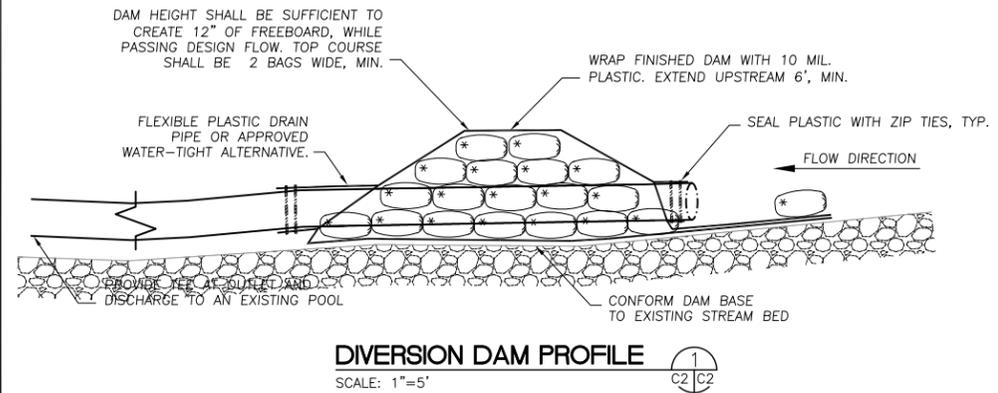
SEED TYPE	APPLICATION RATE
Bromus carinatus "Cucamonga" (Cucamonga Brome)	20 lb/acre
Trifolium tridentatum (Tomcat Clover)	4 lb/acre
Vulpia microstachys (Small Fescue)	8 lb/acre



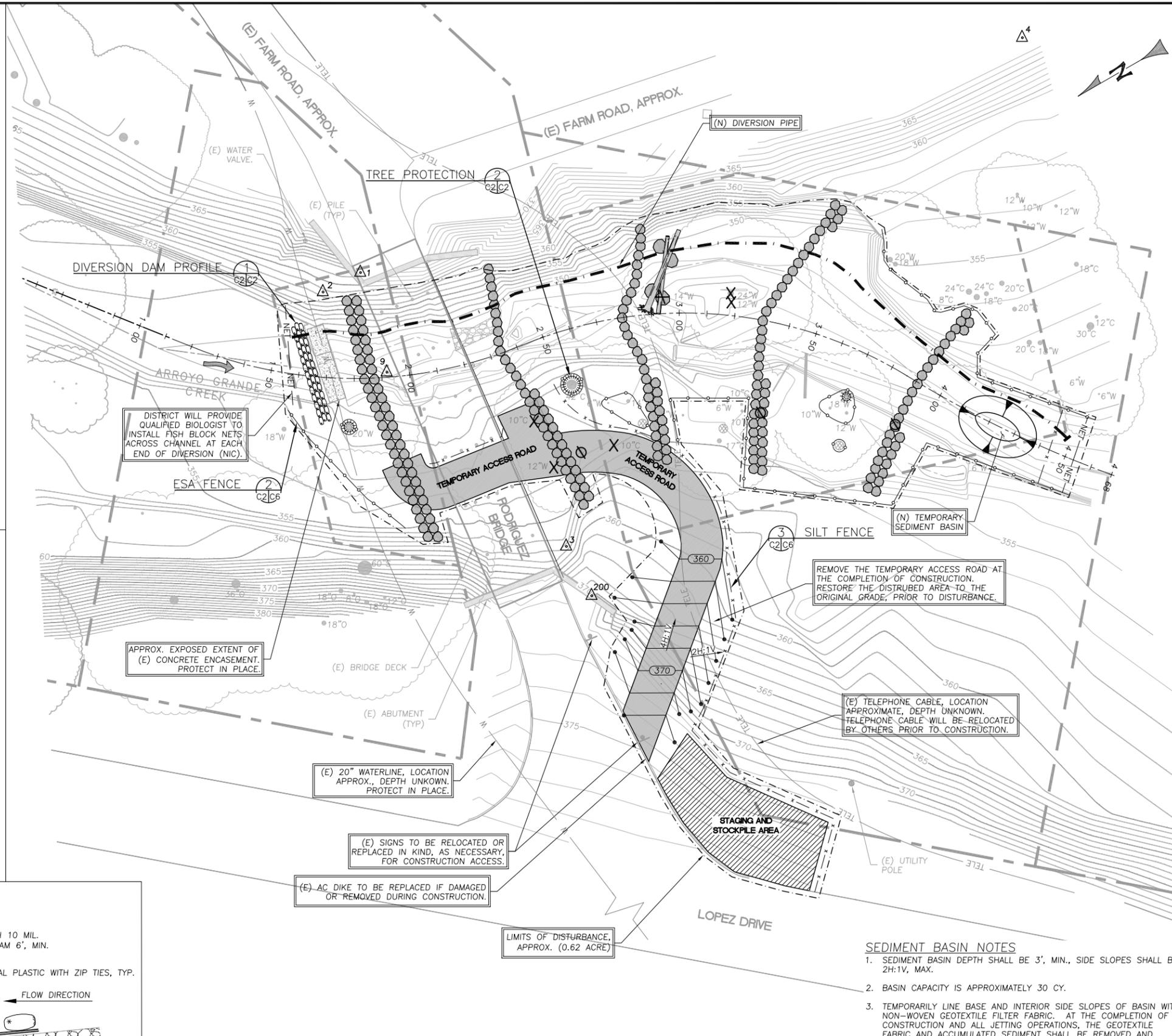
TREE PROTECTION NOTES:

1. THE INTENT OF THIS DETAIL IS TO PROTECT EXISTING TREES FROM DAMAGE DURING CONSTRUCTION.
2. THIS TREE BUMPER DETAIL SHALL BE USED WHEN WORKING WITHIN 10' OF AN EXISTING TREE TO REMAIN, AS DIRECTED BY THE ENGINEER.
3. ALL TREES SHALL BE SAVED UNLESS NOTED OTHERWISE ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. LUMBER, WIRE, AND SANDBAGS MAY BE REUSED AT OTHER TREES, AS WORK PROGRESSES.

TREE PROTECTION DETAIL
SCALE: 1"=2'



DIVERSION DAM PROFILE
SCALE: 1"=5'



ACCESS, EROSION CONTROL AND DEWATERING PLAN
SCALE: 1"=20'

- SEDIMENT BASIN NOTES**
1. SEDIMENT BASIN DEPTH SHALL BE 3', MIN., SIDE SLOPES SHALL BE 2H:1V, MAX.
 2. BASIN CAPACITY IS APPROXIMATELY 30 CY.
 3. TEMPORARILY LINE BASE AND INTERIOR SIDE SLOPES OF BASIN WITH NON-WOVEN GEOTEXTILE FILTER FABRIC. AT THE COMPLETION OF CONSTRUCTION AND ALL JETTING OPERATIONS, THE GEOTEXTILE FABRIC AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED FACILITY IN ACCORDANCE WITH APPLICABLE LAWS AND ORDINANCES.
 4. AT NO TIME SHALL OVERLOADING OF THE BASIN BE PERMITTED. ADJUST JETTING OPERATIONS TO ENSURE TURBID WATER DOES NOT ENTER THE RIVER FROM BASIN OVERFLOW.
 5. RETURN THE DISTURBED AREA TO THE ORIGINAL GRADE. PLACE A 6-INCH COBBLE VENEER AT THE SURFACE.

REFERECE POINTS

POINT	NORTHING	EASTING	ELEV.
R1	622408.6560	1253326.2466	353.8
R2	622436.9045	1253315.1620	347.1
R3	622471.4622	1253289.3550	355.2
R4	622503.4201	1253316.2355	355.5
R5	622474.1744	1253362.6206	348.6
R6	622428.8483	1253384.8106	355.5
R7	622495.1240	1253414.4633	356.0
R8	622517.0064	1253388.5131	349.1
R9	622531.4426	1253336.9177	356.0
R10	622549.7100	1253429.5900	358.0
R11	622562.5241	1253399.6440	350.3
R12	622561.5014	1253337.7440	358.0
R13	622598.2622	1253444.2659	358.0
R14	622605.6709	1253414.2501	350.9
R15	622608.7969	1253415.9175	350.4
R16	622616.3048	1253353.2198	358.0

CONTROL POINTS

POINT	NORTHING	EASTING	ELEV.	DESC.
1	622590.9584	1253449.8351	371.91	SCRIBED "X"
2	622606.1245	1253450.5371	358.93	SET 1/2" IP
3	622575.9679	1253327.6925	357.70	SET 1/2" IP
4	622342.6479	1253403.8137	368.06	SET 1/2" IP
9	622600.6200	1253414.1100	350.05	SPIKE
200	622576.9231	1253307.7751	372.35	FOUND 3 1/2" IP

CONTROL POINT NOTES:

- CONTROL POINT #9 PROVIDED BY COUNTY, ALL OTHER CONTROL POINTS SET OR FOUND BY PENFIELD AND SMITH.
- CONTROL POINT #4 IS SHOWN ON SHT. C2.

NOTES:

- BRIDGE PILES SHOWN IN PROFILE ARE PROJECTED ONTO THE PROPOSED CHANNEL CENTERLINE.
- "BRIDGE SCOUR EVALUATION - PLAN OF ACTION", COMPLETED BY SAN LUIS OBISPO COUNTY PUBLIC WORKS DEPARTMENT, 6/23/10, STATES: "BENT 6 TIMBER PILE EXTENSIONS ONLY EXTEND TO A DETH OF APPROXIMATELY 1 METER BELOW THE INVERT."
- ALL WORK WITHIN 5 FT. OF THE BRIDGE PILES WILL BE OBSERVED BY THE ENGINEER.

(E) 20" WATERLINE, LOCATION APPROXIMATE, DEPTH UNKNOWN. PROTECT IN PLACE.

APPROX. EXPOSED EXTENT OF (E) CONCRETE ENCASEMENT, PROTECT IN PLACE.

PLACE ENGINEERED STREAMBED MATERIAL BETWEEN BOULDER WEIR AND ENCASEMENT, PER DETAIL 1, SHT. C6.

PROVIDE FOUR LOG/BOULDER CONNECTIONS AND ONE LOG/LOG CONNECTION AT LOG STRUCTURE PER DETAILS 2 AND 4, SHT. C5 AND C6.

UPPER BANK SLOPE GRADING SHOWN AT 2H:1V ON BOTH BANKS. FINISHED SLOPES SHALL VARY FROM 2H-3H:1V (AVG. 2.5H-1V) AND SHALL BE AS STAKED BY THE ENGINEER TO AVOID VEGETATION.

CONFORM WEIR TO MINIMIZE IMPACTS TO THE ROOTS OF (E) TREES, AT THE DIRECTION OF THE ENGINEER.

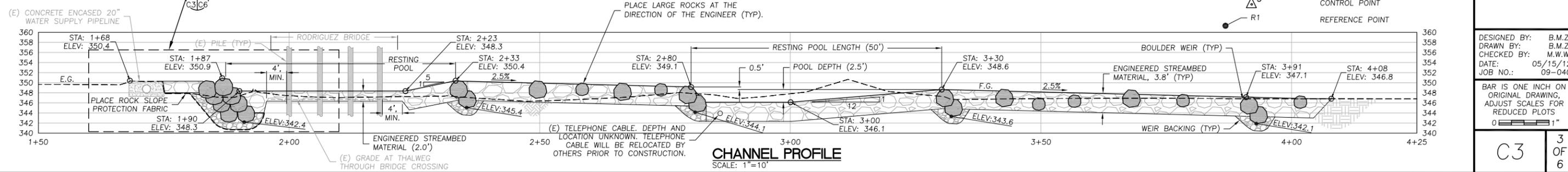
(E) TELEPHONE CABLE, LOCATION APPROXIMATE, DEPTH UNKNOWN. TELEPHONE CABLE WILL BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION.

LEGEND

- 350 — 349 — EXISTING CONTOURS
- (350) — FINISHED GRADE CONTOURS
- (351) — EXISTING FLOW LINE
- 36"DESC. EXISTING TREE
- ✕ 14"DESC. TREE TO BE REMOVED
- ⊗ EXISTING BEAVER HUT
- ⊗ BEAVER HUT TO BE REMOVED
- NEW BOULDER WEIR OR SILL (ONLY TOP COURSES SHOWN IN PLAN)
- ▨ NEW ENGINEERED STREAMBED MATERIAL
- ▨ NEW FABRIC WRAPPED SOIL POCKET
- TELE — EXISTING TELEPHONE CABLE
- W — EXISTING 20-INCH WATERLINE
- △³ CONTROL POINT
- R1 REFERENCE POINT

SITE PLAN
SCALE: 1"=10'

CONCRETE ENCASEMENT PROTECTION DETAIL



CHANNEL PROFILE
SCALE: 1"=10'

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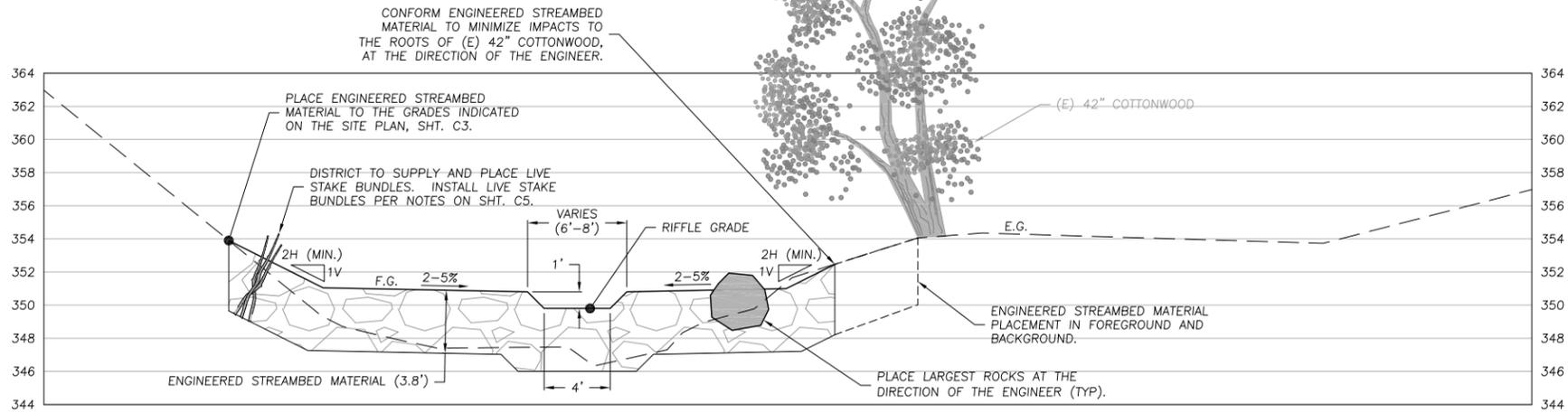
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**SITE PLAN
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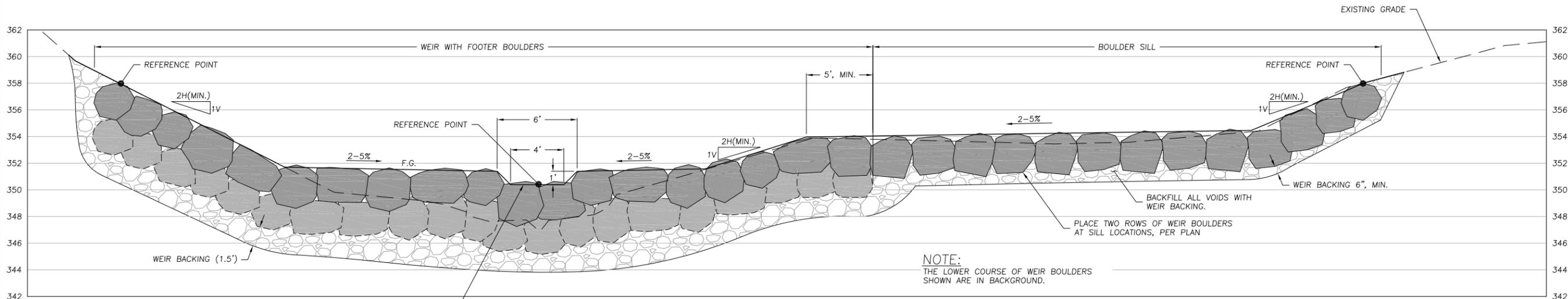
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1" 3 OF 6



ROUGHENED CHANNEL AT TREE SECTION

SCALE: 1"=5'

C3/C4



TYPICAL WEIR ELEVATION

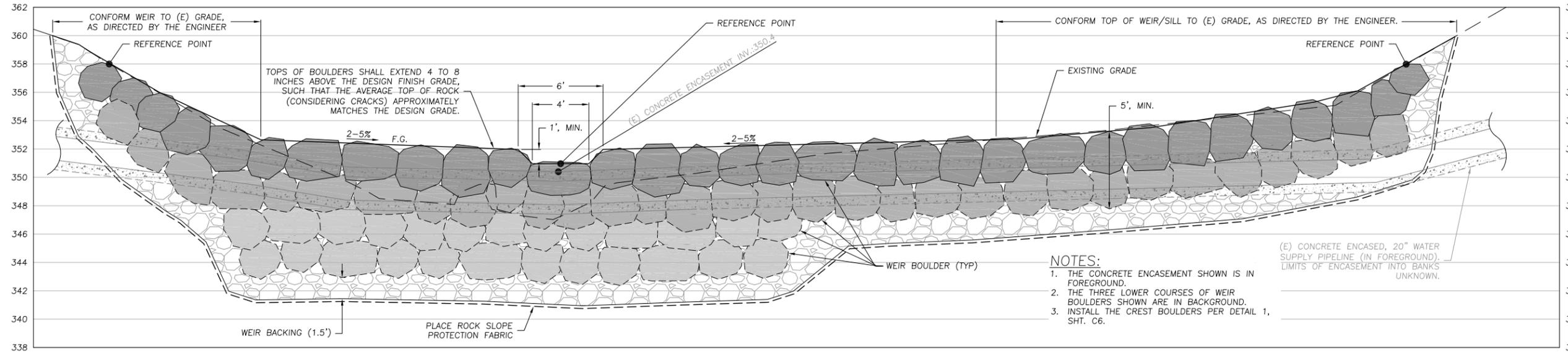
SCALE: 1"=4'

B3/C4

NOTE:
THE LOWER COURSE OF WEIR BOULDERS SHOWN ARE IN BACKGROUND.

NOTE:
REFERENCE POINT COORDINATES AND ELEVATIONS ARE SHOWN ON SHT. C3.

TOPS OF BOULDERS SHALL EXTEND 4 TO 8 INCHES ABOVE THE DESIGN FINISH GRADE, SUCH THAT THE AVERAGE TOP OF ROCK (CONSIDERING CRACKS) APPROXIMATELY MATCHES THE DESIGN GRADE.



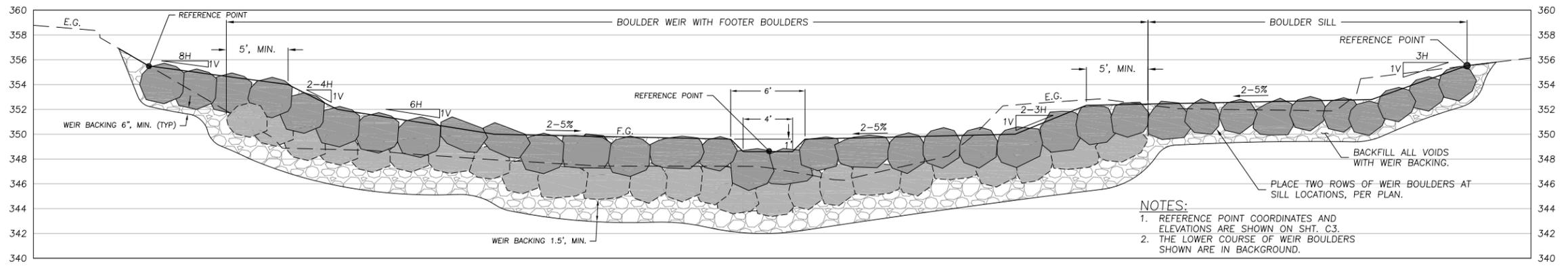
PIPELINE ENCASEMENT SCOUR PROTECTION ELEVATION

SCALE: 1"=4'

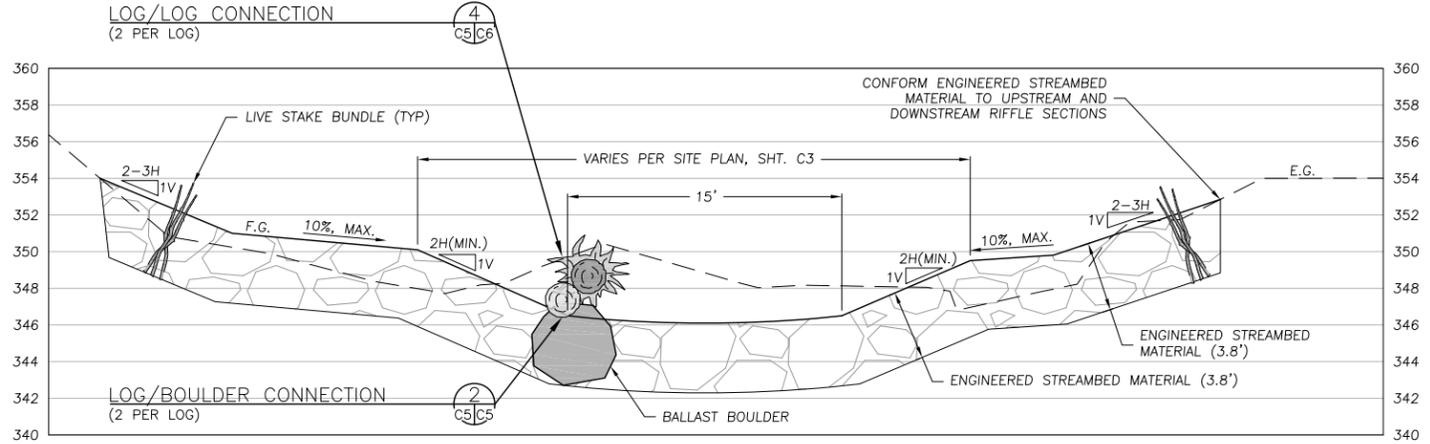
A3/C4

NOTES:
1. THE CONCRETE ENCASEMENT SHOWN IS IN FOREGROUND.
2. THE THREE LOWER COURSES OF WEIR BOULDERS SHOWN ARE IN BACKGROUND.
3. INSTALL THE CREST BOULDERS PER DETAIL 1, SHT. C6.

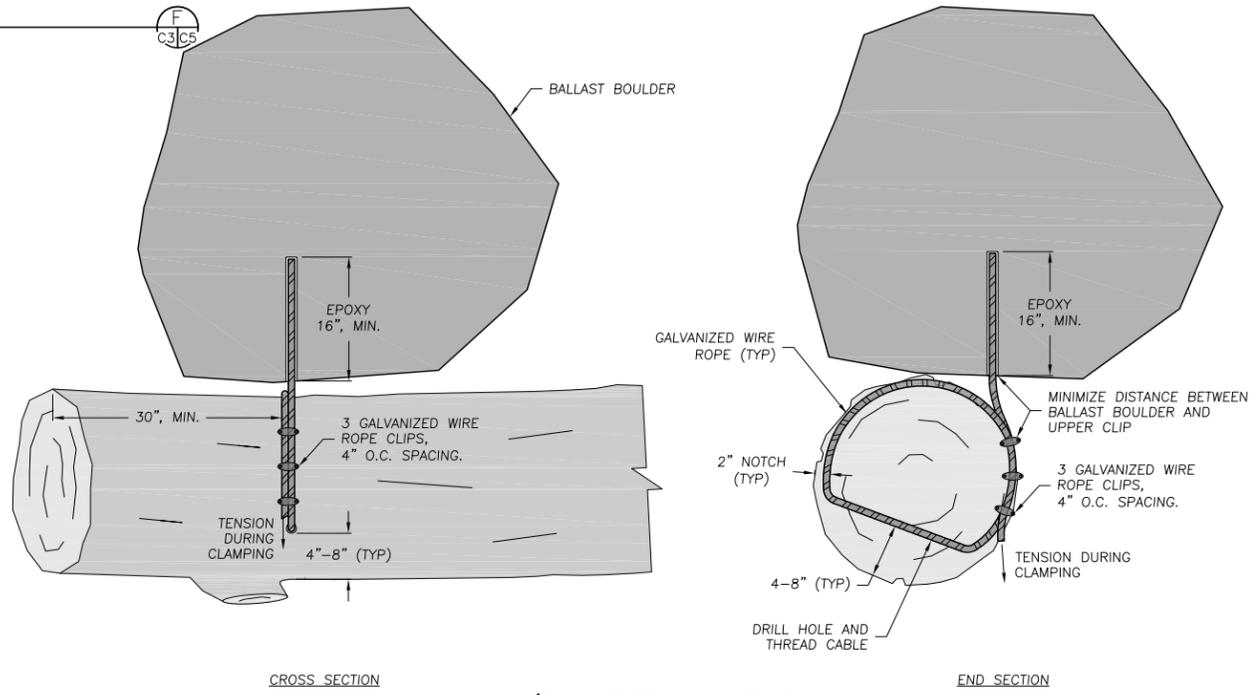
(E) CONCRETE ENCASED, 20" WATER SUPPLY PIPELINE (IN FOREGROUND). LIMITS OF ENCASEMENT INTO BANKS UNKNOWN.



WEIR ELEVATION AT EXPANDED SECTION
 SCALE: 1"=5'

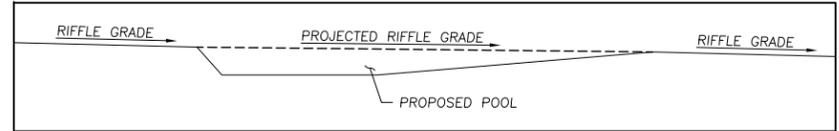


POOL SECTION
 SCALE: 1"=5'



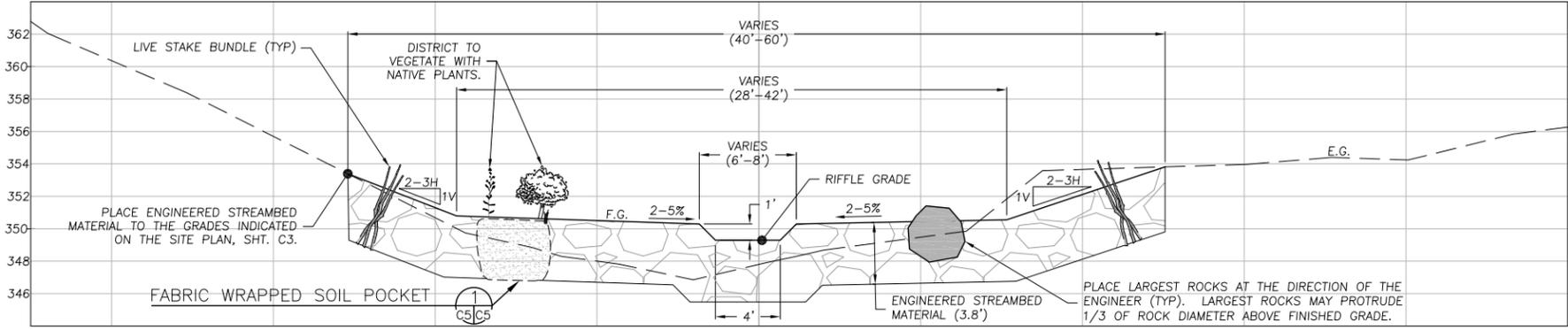
LOG/BOULDER CONNECTION
 SCALE: 1"=1'

- LIVE STAKE BUNDLE NOTES:**
- DISTRICT TO SUPPLY AND PLACE LIVE STAKE BUNDLES.
 - CONTRACTOR SHALL COORDINATE INSTALLATION WITH THE DISTRICT.
 - LIVE STAKE BUNDLES TO BE INSTALLED WITHIN ENGINEERED STREAMBED MATERIAL, 3', MIN. ABOVE THE RIFFLE GRADE OR PROJECTED RIFFLE GRADE AT 7" ON-CENTER SPACING. LIVE STAKE BUNDLES SHALL CONTACT NATIVE SOIL.
 - LIVE STAKE BUNDLES TO CONSIST OF LIVE STAKES 1"-2" IN DIA. AT THE BASAL END AND 4.5"-5.5' FEET LONG.
 - TOP ENDS OF STAKES SHALL BE BLUNT AND BASAL ENDS SHALL BE ANGLED AT 45 DEGREES.
 - LIVE STAKE BUNDLES SHALL BE PLACED COINCIDENT WITH THE ENGINEERED STREAMBED MATERIAL.
 - AFTER PLACEMENT, BACKFILL AND WATER-JET ALL VOIDS AROUND LIVE STAKE BUNDLES TO REMOVE AIR POCKETS.
 - AFTER INSTALLATION CLEANLY CUT EACH STAKE TO LEAVE 12" EXPOSED, MAX.
 - 70 LIVE STAKE BUNDLES TOTAL SHALL BE INSTALLED.

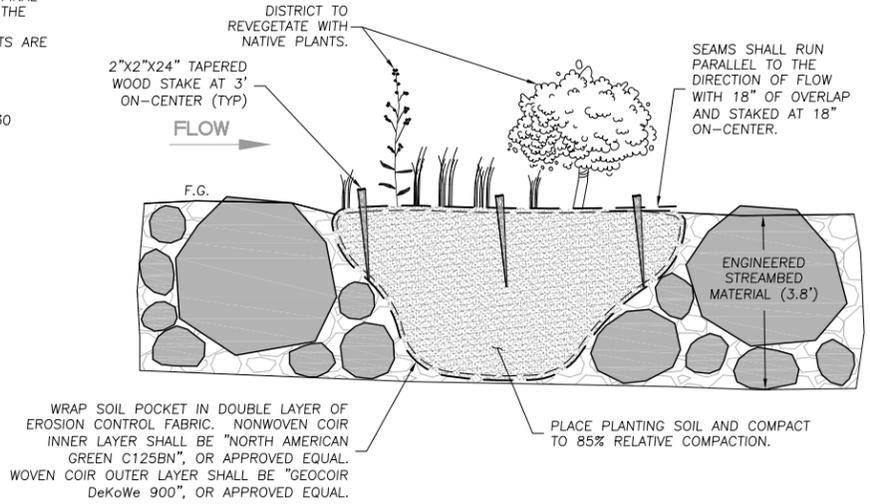


RIFFLE GRADE DIAGRAM
 N.T.S.

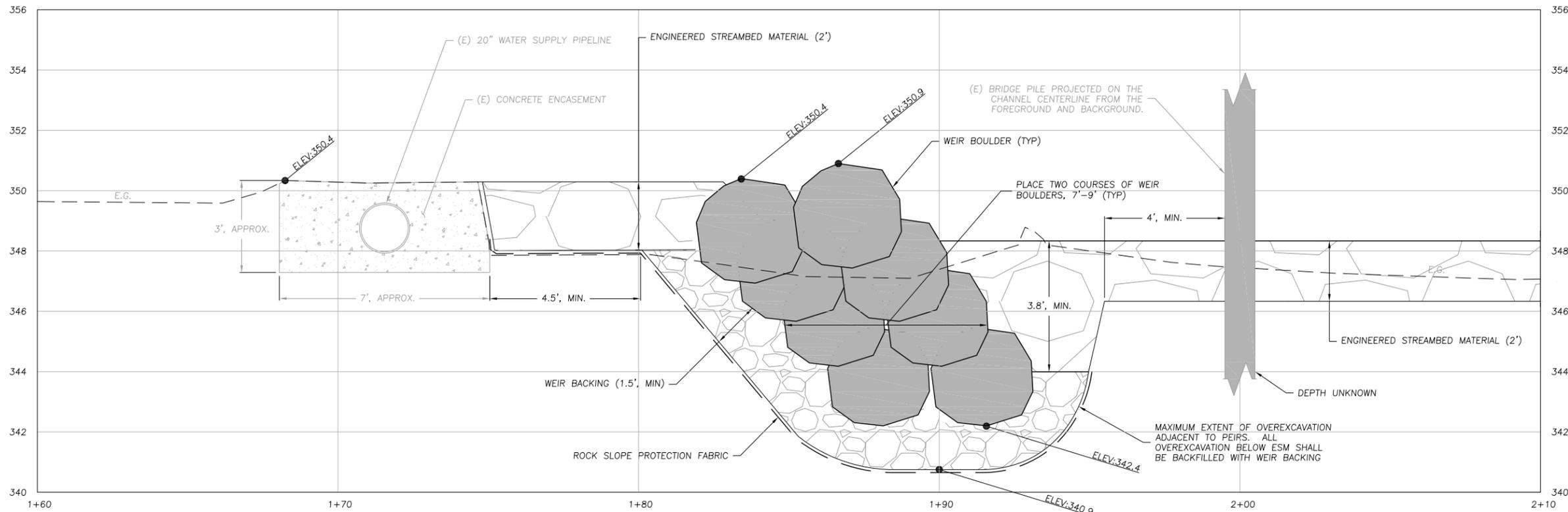
- FABRIC WRAPPED SOIL POCKET NOTES:**
- LOCATIONS SHOWN ON PLAN ARE APPROX. FINAL LOCATIONS TO BE STAKED IN THE FIELD BY THE ENGINEER.
 - ELEVATION OF FABRIC WRAPPED SOIL POCKETS ARE SHOWN ON PLAN.
 - FIVE (5) INDIVIDUAL FABRIC WRAPPED SOIL POCKETS SHALL BE CONSTRUCTED.
 - THE TOTAL SURFACE AREA OF CONSTRUCTED FABRIC WRAPPED SOIL POCKET SHALL BE 330 SQ.FT., MIN.



TYPICAL ROUGHENED CHANNEL SECTION
 SCALE: 1"=5'



FABRIC WRAPPED SOIL POCKET
 SCALE: 1"=2'

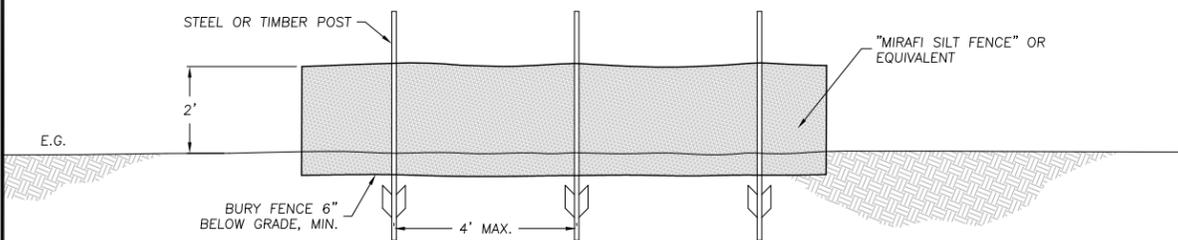


CONCRETE ENCASEMENT PROTECTION DETAIL

SCALE: 1"=2'



NOTE:
ALL WORK WITHIN 5 FT. OF THE CONCRETE ENCASEMENT AND BRIDGE PILES WILL BE OBSERVED BY THE ENGINEER.

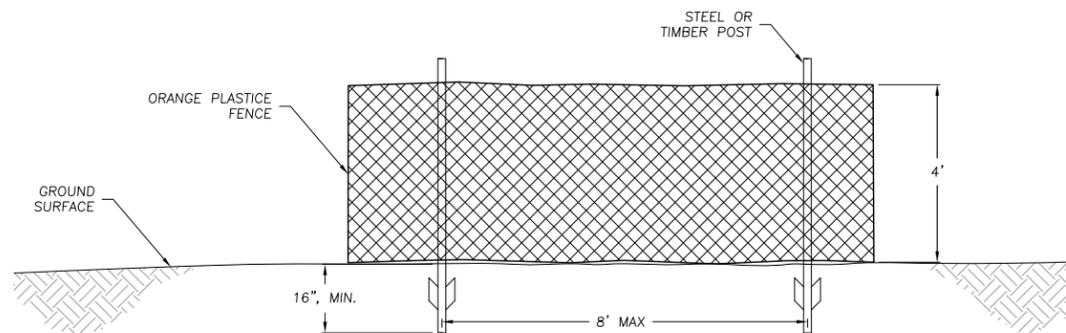


SILT FENCE

SCALE: 1"=2'

SILT FENCE NOTES

1. DIG TRENCH FIRST, THEN ERECT FENCE IN TRENCH. BACKFILL AND COMPACT SOIL TO SECURE FABRIC.
2. PROVIDE 1" MINIMUM OVERLAP AT FENCE SPLICES.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS.
4. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE ACCUMULATED SEDIMENT, TO AN APPROVED AREA.
5. ALL FENCE TERMINATIONS SHOULD BE TURNED UPSLOPE TO PREVENT FLANKING.



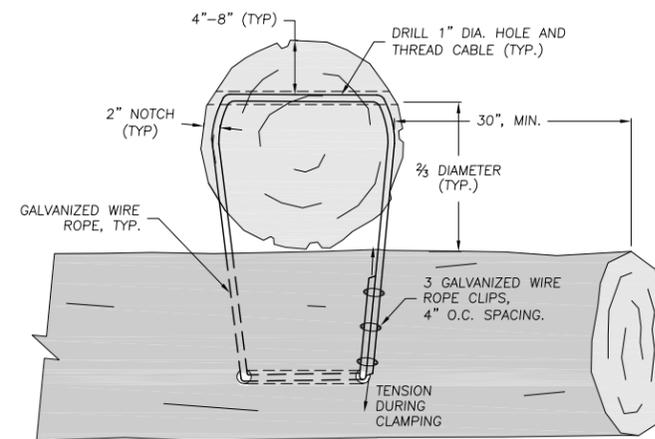
ESA FENCE DETAIL

SCALE: 1"=2'



LOG NOTES:

1. ALL LOGS SHALL BE DOUGLAS FIR OR REDWOOD, SOUND AND FREE OF SIGNIFICANT DECAY AND MEETING THE FOLLOWING CRITERIA.
 - A. LENGTH: 25 - 35 FEET
 - B. DIAMETER: 18"-30" (MIN. AT ANY POINT)
 - C. AT LEAST ONE LOG WITH ROODWAD ATTACHED PER STRUCTURE
2. ROOTWADS SHALL HAVE A MINIMUM DIAMETER OF 5 FEET.

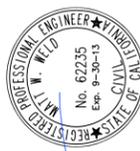


LOG/LOG CONNECTION

SCALE: 1"=1'



DATE: 5/15/12



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