

# AS-BUILTS

## NAPA RIVER-RUTHERFORD REACH 4: WEST (RIGHT) BANK

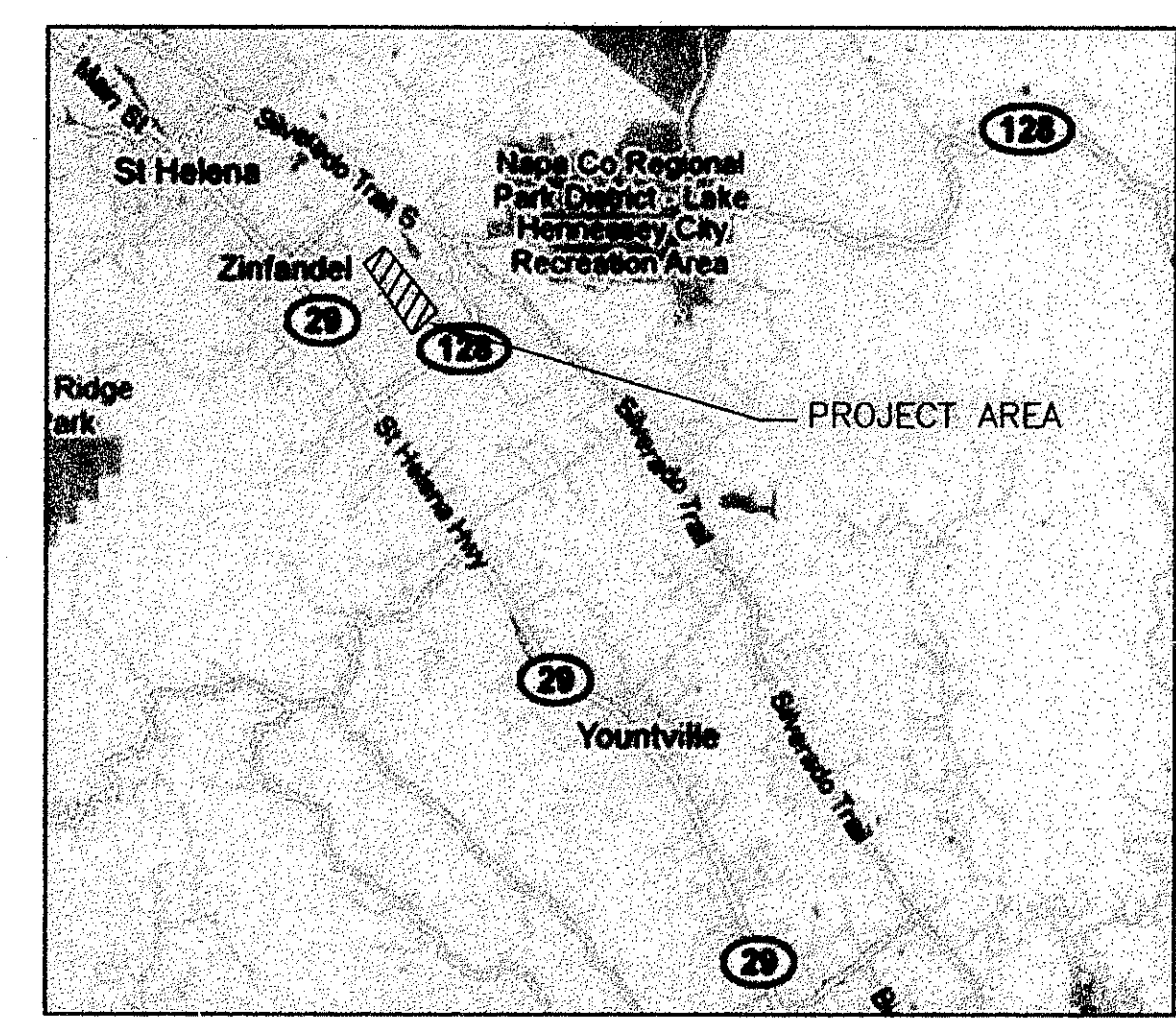
### NAPA COUNTY, CALIFORNIA

R01 -  
GET RID OF  
GUMPLANT

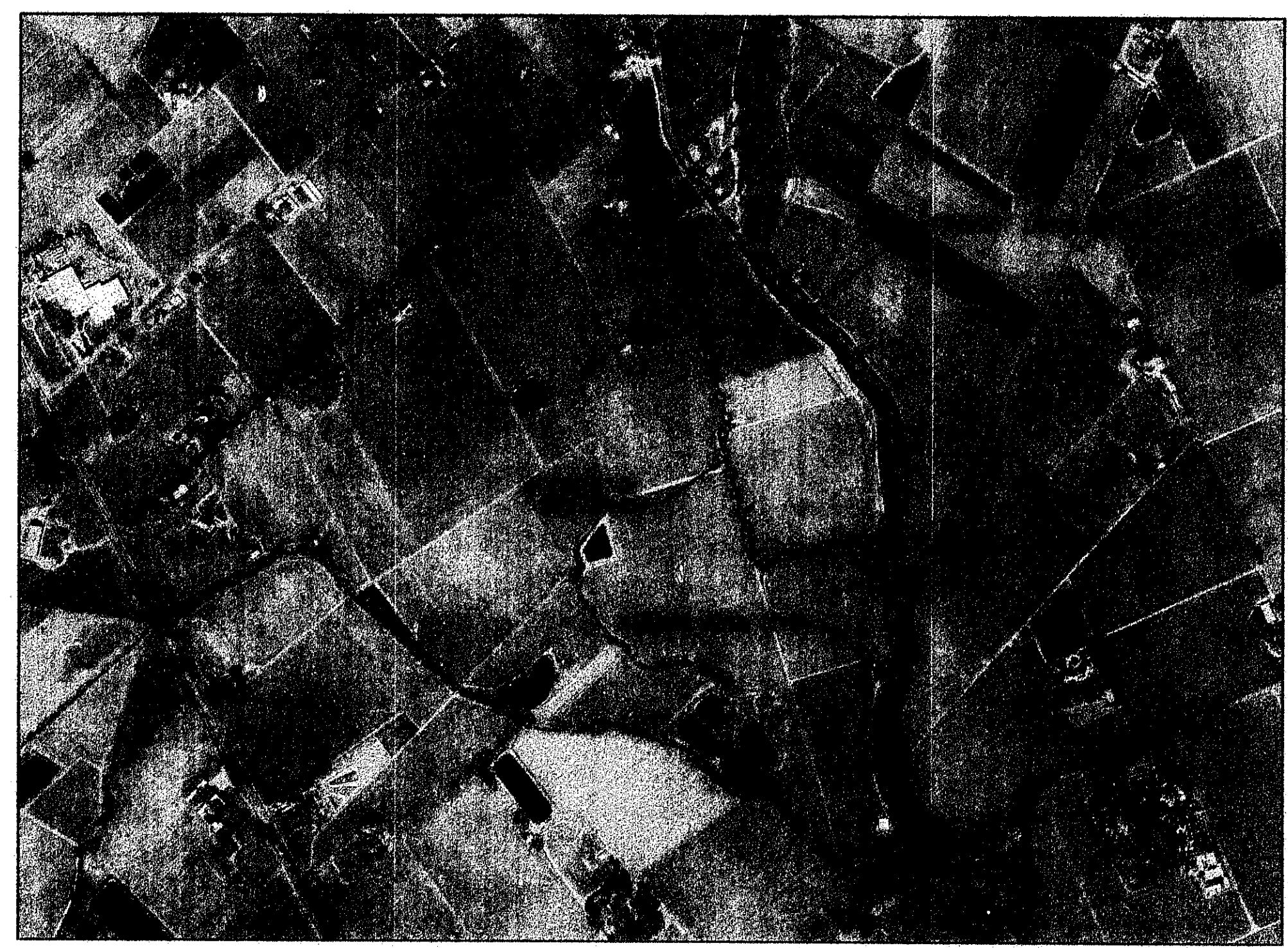
# DEC. 2012

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- R04 IRRIGATION PLAN STA 134+00 TO STA 146+00
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**VICINITY MAP**  
NOT TO SCALE



**LOCATION MAP**  
NOT TO SCALE

### ABBREVIATIONS

ALD	ALDER	NIC	NOT IN CONTRACT
APPROX	APPROXIMATE	NTS	NOT TO SCALE
CL	CENTERLINE	OC	ON CENTER
CW	COTTONWOOD	PIP	PROTECT IN PLACE
DBH	DIAMETER BREAST HEIGHT	PWA	PHILIP WILLIAMS & ASSOCIATES
DEMO	DEMOLISH	Q AG	QUERCUS AGRIFOLIA (LIVE OAK)
DS	DOWNSTREAM	Q LO	QUERCUS LOBATA (VALLEY OAK)
ELEV	ELEVATION	RC	RELATIVE COMPACTION
(E)	EXISTING	SPECS	SPECIFICATIONS
EG	EXISTING GRADE	STA	STATION
FG	FINISHED GRADE	3:1	SLOPE, HORIZONTAL:VERTICAL
FL	FLOW LINE	TBD	TO BE DETERMINED
FT	FOOT, FEET	(TYP)	TYPICAL
GB	GRADE BREAK	US	UPSTREAM
MAX	MAXIMUM	VAR	VARIES
MIN	MINIMUM	VIF	VERIFY IN FIELD
(N)	NEW	WAL	WALNUT
		WIL	WILLOW

### LEGEND

	EXISTING GRADE (PROFILE & SECTION)
	DESIGN GRADE
	APPROX PROPERTY BOUNDARY
	GRADING LIMITS
	PROJECT LIMITS
	APPROX THALWEG
	CONSTRUCTION ACCESS
	EXISTING WATERLINE
	APPROX TREELINE
	NEW CONTOUR LINE
	EXISTING CONTOUR LINE
	BRUSH MAT (PLAN)
	LIVE POLE PLANTING (PLAN)
	EXISTING GROUND (SECTION)
	EXCAVATION (SECTION)
	FILL (SECTION)
	VINEYARD TOPSOIL OR PLANTING SOIL

### LEGEND (CONT.)

	DEMO TREE
	WILLOW BAFFLE
	LARGE WOODY DEBRIS TYPE 2 & 3
	LARGE WOODY DEBRIS TYPE 1
	BOULDER CLUSTER
	FLOW DIRECTION
	SPOT ELEVATION
	BENCHMARK
	CONTROL POINT
	EXISTING UTILITY

PHILIP M. MILLER, P.E., R.C.E. 30680  
 DEPUTY DIRECTOR OF PUBLIC WORKS

3/22/12  
DATE

1 INDICATES SECTION OR  
 2 DETAIL NUMBER  
 3 SHEET NUMBER ON  
 WHICH SECTION OR  
 DETAIL APPEARS  
 SHEET NUMBER FROM  
 WHICH WHICH SECTION OR  
 DETAIL WAS SPECIFIED



PREPARED BY: **PWA**  
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 SAN FRANCISCO, CALIFORNIA 94109  
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PREPARED BY: **RESTORATION RESOURCES**  
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SHEET TITLE  
 NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK

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PREPARED FOR:  
 NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559

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APPROVED  
 DESIGNED: R. BROWN  
 J. SLOMBERG  
 DRAWN: B. TANAKA  
 INCHARGE: A. BORGONOVO  
 C053102  
 SCALE: NOT TO SCALE  
 DATE: NOVEMBER 2011  
 SHEET:

C01

1 OF 34

# AS-BUILTS



# GENERAL NOTES

## GENERAL

- CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE COUNTY AND ITS REPRESENTATIVES HARMLESS FROM ANY AND ALL LIABILITY, REAL AND/OR ALLEGED, IN CONJUNCTION WITH THE PERFORMANCE OF THIS PROJECT.
- A SET OF SIGNED WORKING DRAWINGS AND A SET OF SPECIFICATIONS WILL BE KEPT ON THE JOB SITE AT ALL TIMES ON WHICH ALL CHANGES OR VARIATIONS IN THE WORK, INCLUDING ALL EXISTING UTILITIES, ARE TO BE RECORDED AND/OR CORRECTED DAILY AND SUBMITTED TO THE COUNTY ENGINEER WHEN THE WORK TO BE DONE IS COMPLETED.
- CONTRACTOR SHALL CONTACT THE COUNTY'S DIRECTOR OF PUBLIC WORKS, OR HIS/HER DESIGNEE, TO ARRANGE A PRE-CONFERENCE FOR THE PURPOSE OF REVIEWING JOB REQUIREMENTS AND COUNTY PROCEDURES.
- ALL MATERIAL SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
- ALL WORKMANSHIP AND MATERIALS FOR BOTH ON-SITE AND OFF-SITE IMPROVEMENTS SHALL CONFORM TO THE LATEST EDITION OF THE COUNTY OF NAPA PUBLIC WORKS DEPARTMENT ROAD AND STREET STANDARDS AND THE LATEST EDITION OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS AND STANDARD PLANS. THE ON-SITE IMPROVEMENTS SHALL BE INSPECTED BY THE COUNTY PUBLIC WORKS INSPECTORS.
- CONTRACTOR SHALL NOTIFY THE COUNTY OF NAPA DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY PART OF WORK.
- CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT TEMPORARY BARRICADES TO PROVIDE FOR THE SAFETY OF THE STAFF AND GENERAL PUBLIC TO THE SATISFACTION OF THE PUBLIC WORKS DIRECTOR.

## PROTECTION OF EXISTING CONDITIONS

- CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGES TO EXISTING VEGETATION, STRUCTURES AND UTILITIES DURING CONSTRUCTION.
- PROTECT ALL EXISTING IMPROVEMENTS AND VEGETATION NOT SLATED FOR DEMOLITION. PLACE TEMPORARY FENCING, FLAGGING OR EQUIVALENT AT THE WATER DIVERSION, PERIMETER OF ALL VEGETATED AREAS AND/OR INDIVIDUAL TREES TO BE PRESERVED, AND ANY OTHER IMPROVEMENTS ONSITE.
- PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL REVIEW ALL TREE AND OTHER PROTECTION FENCING WITH THE OWNER'S REPRESENTATIVE, AND FIELD ADJUST THE LIMITS AS DIRECTED.

## UTILITIES

- CONTRACTOR SHALL NOTIFY ALL PUBLIC OR PRIVATE UTILITY COMPANIES 48 HOURS PRIOR TO COMMENCEMENT OF WORK ADJACENT TO EXISTING UTILITY LINES.
- CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600 PRIOR TO START OF ANY CONSTRUCTION.
- LOCATIONS OF UTILITIES AND FACILITIES SHOWN ARE APPROXIMATE AND FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES AS NEEDED FOR VERIFICATION.
- CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES AND PROTECT THROUGHOUT CONSTRUCTION.

## ENVIRONMENTAL PROTECTION

- CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN SUCH MANNER AS TO PRECLUDE WIND BLOWN DIRT AND DUST AND RELATED DAMAGE TO NEIGHBORING PROPERTIES. SUFFICIENT WATERING TO CONTROL DUST IS REQUIRED AT ALL TIMES. CONTRACTOR SHALL ASSUME LIABILITY FOR CLAIMS RELATED TO WIND BLOWN MATERIAL. IF THE DUST CONTROL IS INADEQUATE AS DETERMINED BY THE PUBLIC WORKS DIRECTOR OR HIS DESIGNATED REPRESENTATIVE, THE CONSTRUCTION WORK SHALL BE TERMINATED UNTIL CORRECTIVE MEASURES ARE TAKEN.
- CONTRACTOR SHALL ELIMINATE OR MINIMIZE NON-STORM DISCHARGE FROM THE CONSTRUCTION SITE TO STORM DRAINS AND OTHER WATER BODIES. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN A MANNER THAT MINIMIZES, TO THE MAXIMUM EXTENT PRACTICABLE, ANY POLLUTANTS ENTERING DIRECTLY OR INDIRECTLY INTO GROUND WATER. ALL MATERIALS THAT COULD CAUSE WATER POLLUTION (i.e., MOTOR OIL, FUELS, PAINTS, ETC.) SHALL BE STORED AND USED IN A MANNER THAT WILL NOT CAUSE ANY POLLUTION. ALL DISCARDED MATERIAL AND ANY ACCIDENTAL SPILLS SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL SITE.
- CONTRACTOR SHALL PROVIDE TO THE PUBLIC WORKS DEPARTMENT ANY CHANGES PROPOSED FOR THE PROJECT'S EROSION CONTROL PLAN AND SHALL PROVIDE A SCHEDULE FOR IMPLEMENTATION OF CONTROL MEASURES. CONTRACTOR SHALL MEET WITH COUNTY PUBLIC WORKS STAFF PRIOR TO OCTOBER 1 TO REVIEW STATUS OF PROJECT'S EROSION CONTROL AND WATER POLLUTION MEASURES.
- CONTRACTOR SHALL SUBMIT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) THAT PROVIDES, AT A MINIMUM, THE EROSION CONTROL MEASURES SHOWN ON SHEET R01. THE SWPPP SHALL COMPLY WITH THE NEW CONSTRUCTION GENERAL STORMWATER PERMIT (2009-009-DWQ). THE PROJECT SHOULD BE ASSUMED TO BE IN THE 'L.U.P. TYPE 3' CATEGORY. CONTRACTOR SHALL MAINTAIN A COPY OF THE SWPPP ONSITE AT ALL TIMES, AND SHALL UPDATE THE SWPPP REGULARLY AS NEEDED TO RESPOND TO SITE CONDITIONS.
- THE CONTRACTOR SHALL UTILIZE BEST MANAGEMENT PRACTICES TO PREVENT EROSION, SEDIMENT AND HAZMAT RUNOFF FROM THE CONSTRUCTION SITE.
- THE OWNER HAS OBTAINED PERMITS FROM RESOURCE AGENCIES FOR THIS PROJECT (SEE SPECS). COMPLY WITH ALL PERMIT REQUIREMENTS FOR PROTECTION OF WATER QUALITY, WILDLIFE AND VEGETATION. COOPERATE WITH THE ACTIVITIES OF THE COUNTY'S BIOLOGIST AND COMPLY WITH ALL-REQUIRED NOTIFICATIONS.
- DURING GRADING, THE CONTRACTOR SHALL PROVIDE AN ONSITE MONITOR TO MAKE SURE THE GRADING LIMITS ARE CLEAR OF RED-LEGGED FROG AND OTHER PROTECTED WILDLIFE.
- CONSTRUCTION OF THE BOULDER GRADE CONTROL STRUCTURE, LOG STRUCTURES, AND ROCK TOE PROTECTION REQUIRES WORK IN THE ACTIVE CHANNEL, INCLUDING DEWATERING AND FLOW DIVERSION. COMPLY WITH PERMIT REQUIREMENTS FOR WILDLIFE AND WATER QUALITY PROTECTION (SEE SPECS).

## TREE PROTECTION

- ONLY TREES GREATER THAN 12" DIAMETER ARE SHOWN ON THE PLANS.
- CONTRACTOR TO PROTECT ALL TREES, EXCEPT THOSE SLATED FOR REMOVAL, REGARDLESS OF SIZE. SEE ALSO NOTES 9 AND 10 ABOVE.

## CULTURAL RESOURCES

- THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF CULTURAL RESOURCES ARE ENCOUNTERED DURING EXCAVATION FOR ANY PHASE OF THE PROJECT, AND THAT PORTION OF WORK SHALL BE HALTED UNTIL A CULTURAL RESOURCE CONSULTANT HAS EVALUATED THE SITUATION.

## USE OF SITE

- THE PROJECT SITE IS ON PRIVATE PROPERTY. THE CONTRACTOR SHALL ONLY USE SITE ACCESS ROUTES TO THE SITE AS NOTED ON THE DRAWINGS.
- STAGING, STORAGE AND TEMPORARY STOCKPILING SHALL BE LIMITED TO THE AREAS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL ONLY OPERATE EQUIPMENT WITHIN THE LIMITS OF GRADING, THE AREA BETWEEN THE NEW AND EXISTING BERM, AND ALONG APPROVED ACCESS ROUTES WITHIN THE SITE.
- DRAWINGS SHOW SUGGESTED ACCESS ROUTES WITHIN THE SITE. THE CONTRACTOR SHALL LIMIT ITS ACCESS TO THESE LOCATIONS, AND/OR ALTERNATIVE ROUTE(S) AS APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.

## TRAFFIC CONTROL

- ALL TRAFFIC CONTROL REQUIRED FOR CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE CALTRANS TRAFFIC MANUAL. FOR ALL LANE CLOSURES AND DETOURS, A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE COUNTY OF NAPA FOR REVIEW AND APPROVAL AT LEAST FIVE (5) WORKING DAYS BEFORE THE SCHEDULED CLOSURE.

## TOPOGRAPHIC DATA AND MAPPING

- THE TOPOGRAPHIC SURVEY IS BASED ON LIDAR DATA COLLECTED BY AIRBORNE1 OF EL SEGUNDO, CA ON 3/22/07. TOPOGRAPHIC INFORMATION FOR BENCH GRADING WAS SUPPLEMENTED BY GROUND SURVEY PERFORMED BY DOBLE THOMAS & ASSOCIATES IN NOV TO DEC 2009. BENCHMARKS ARE BASED ON GROUND SURVEYS COMPLETED BY DOBLE THOMAS & ASSOCIATES OF NAPA, CA.
- THE EXISTING GRADE REFLECTS SITE CONDITIONS AT THE TIME OF THE SURVEYS. CONTRACTOR SHOULD VERIFY GRADES PRIOR TO COMMENCING WORK AND SHALL REPORT ANY DISCREPANCY BETWEEN DESIGN DRAWINGS AND FIELD CONDITIONS IMMEDIATELY TO THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL NOT COMMENCE WITH GRADING UNTIL THE DISCREPANCY IS RESOLVED.
- HORIZONTAL CONTROL IS CALIFORNIA STATE PLANE ZONE II (NAD83) IN US FT. VERTICAL CONTROL IS NAVD88.
- CONTRACTOR SHALL VERIFY AND CHECK EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

- CONTRACTOR SHALL VERIFY LOCATIONS, LEVELS DISTANCES, AND FEATURES THAT MAY AFFECT THE WORK. SHOULD EXISTING CONDITIONS DIFFER FROM THOSE SHOWN OR INDICATED, OR IF IT APPEARS THAT THESE PLANS, STANDARD SPECIFICATION, AND SPECIAL PROVISIONS DO NOT ADEQUATELY DETAIL THE WORK TO BE DONE, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WITH ANY RELATED WORK. NO ALLOWANCE WILL BE MADE IN HIS/HER BEHALF FOR ANY EXTRA EXPENSE RESULTING FROM FAILURE OR NEGLIGENCE IN DETERMINING THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. NOTED DIMENSION SHALL TAKE PRECEDENCE OVER SCALE.

## EARTHWORK

- A GEOTECHNICAL REPORT WAS PREPARED BY HULTGREN-TILLIS ENGINEERS FOR THIS PROJECT. WORK SHALL BE PERFORMED WITH CONSTRUCTION EQUIPMENT THAT IS COMPATIBLE FOR SOIL CONDITIONS. SEE SPECS.
- RESTORE ALL DISTURBED AREAS BY SEEDING AND APPLYING EROSION CONTROL MEASURES PER THE DRAWINGS AND SPECS. RESTORE ALL ACCESS ROUTES TO ORIGINAL GRADES AND CONDITION.

ADDENDUM #1

## ITEM 11-Revised Construction Access

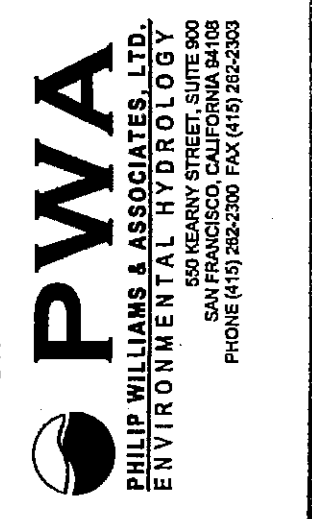
The access point located at the southern portion of the project off of highway 128 on the Round Pond shall be limited to passenger vehicles only due to structural limitations of the bridge. All access for mobilizing/demobilizing equipment and off-haul activities shall be limited to Mee Lane.

## ITEM 12: Re-establishment Of Monitoring Points

During the pre-construction survey the Contractor shall survey in the existing monitoring points at the locations shown on the attached map prior to any construction activities. These points will be flagged and identified prior to any surveys and are located at the approximate river stations shown on the map. These points will be re-established after construction is complete as part of the post construction survey. Half inch rebar shall be set with lath and flagging identifying the new point. See the attached sheets titled 'Napa River Rutherford Reach Restoration Project, Reach 4 West Bank Benchmarks'

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GA:ENGINEER\DESIGN\11-37 Rutherford Dust Reach 4 West Bank\Advertise & Award\Addendums\Addendum 1\RD Reach 4W-Addendum 1.doc



PREPARED BY:

GENERAL NOTES

SHEET TITLE

NAPA RIVER RESTORATION RUTHERFORD REACH 4: WEST (RIGHT) BANK

PREPARED FOR:

NAPA COUNTY DEPARTMENT OF PUBLIC WORKS 1195 Third St, Suite 201 Napa, CA 94559



APPROVED

DESIGNED R. BROWN J. BLUMBERG

DRAWN B. TANAKA

INCHARGE A. BORGONOVO C053102

SCALE AS SHOWN

DATE NOV 2011

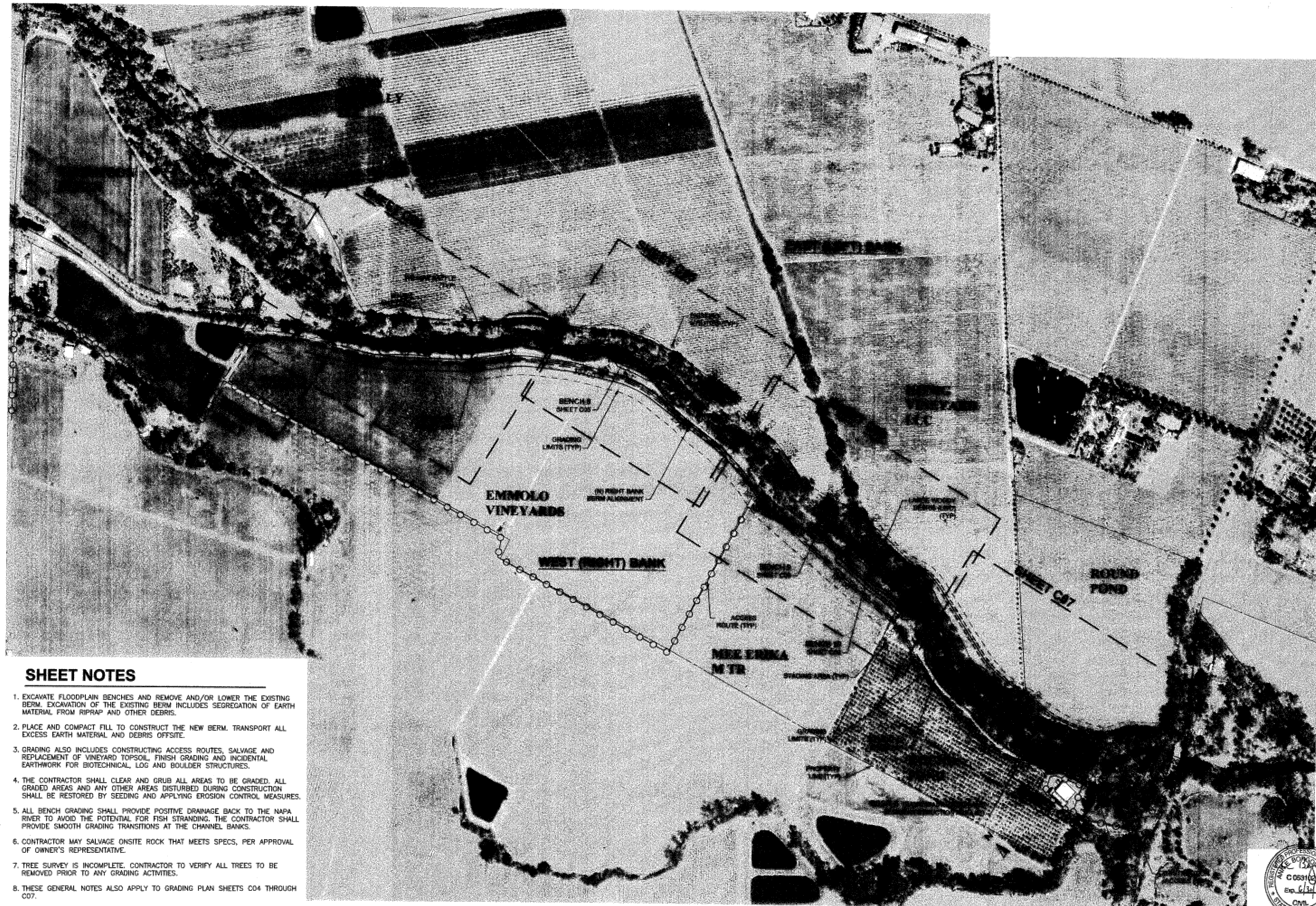
SHEET

C02



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**SHEET NOTES**

1. EXCAVATE FLOODPLAIN BENCHES AND REMOVE AND/OR LOWER THE EXISTING BERM. EXCAVATION OF THE EXISTING BERM INCLUDES SEGREGATION OF EARTH MATERIAL FROM RIPRAP AND OTHER DEBRIS.
2. PLACE AND COMPACT FILL TO CONSTRUCT THE NEW BERM. TRANSPORT ALL EXCESS EARTH MATERIAL AND DEBRIS OFFSITE.
3. GRADING ALSO INCLUDES CONSTRUCTING ACCESS ROUTES, SALVAGE AND REPLACEMENT OF VINEYARD TOPSOIL, FINISH GRADING AND INCIDENTAL EARTHWORK FOR BIOTECHNICAL, LOG AND BOULDER STRUCTURES.
4. THE CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS TO BE GRADED. ALL GRADED AREAS AND ANY OTHER AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY SEEDING AND APPLYING EROSION CONTROL MEASURES.
5. ALL BENCH GRADING SHALL PROVIDE POSITIVE DRAINAGE BACK TO THE NAPA RIVER TO AVOID THE POTENTIAL FOR FISH STRANDING. THE CONTRACTOR SHALL PROVIDE SMOOTH GRADING TRANSITIONS AT THE CHANNEL BANKS.
6. CONTRACTOR MAY SALVAGE ONSITE ROCK THAT MEETS SPECS, PER APPROVAL OF OWNER'S REPRESENTATIVE.
7. TREE SURVEY IS INCOMPLETE. CONTRACTOR TO VERIFY ALL TREES TO BE REMOVED PRIOR TO ANY GRADING ACTIVITIES.
8. THESE GENERAL NOTES ALSO APPLY TO GRADING PLAN SHEETS C04 THROUGH C07.



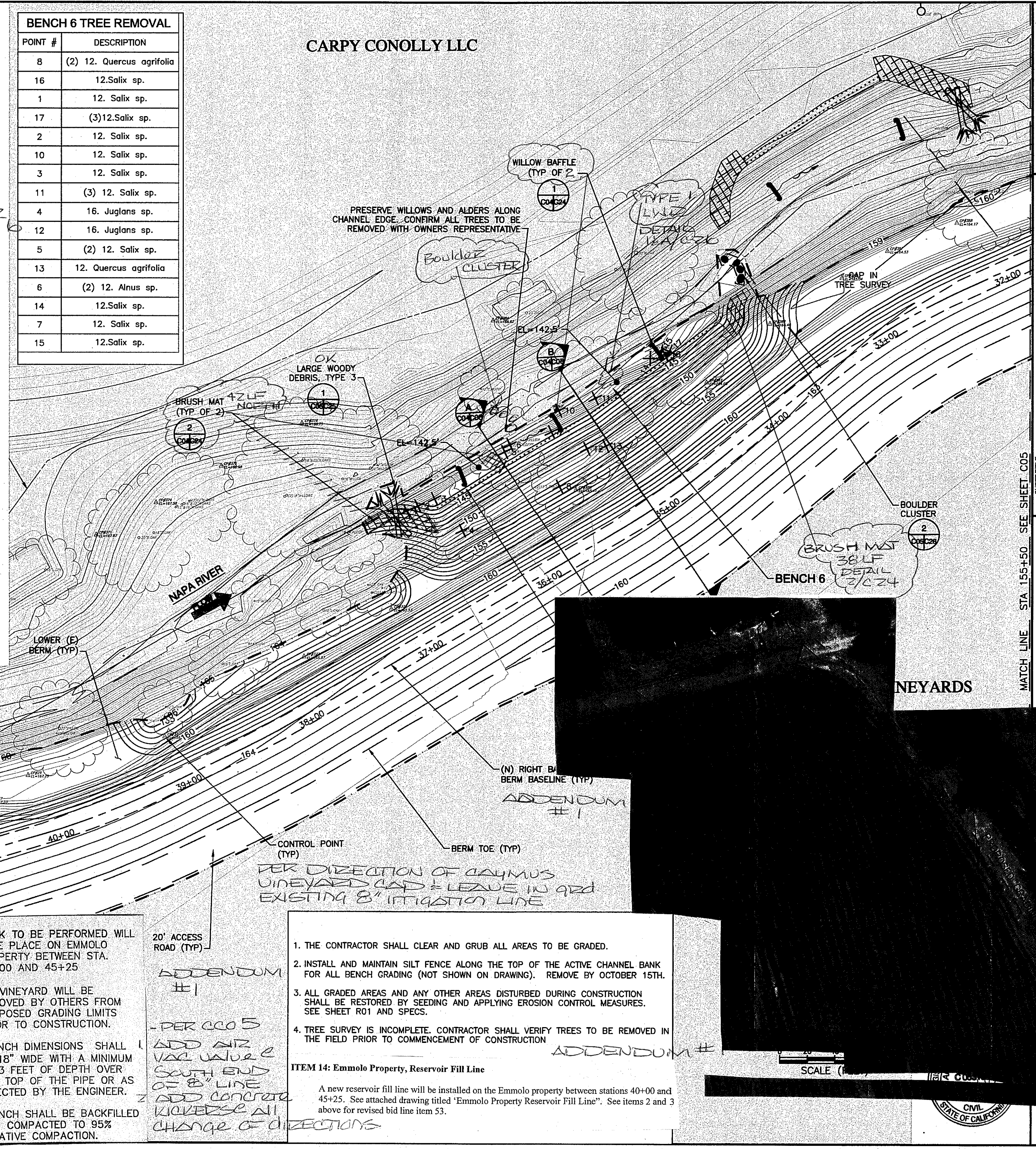
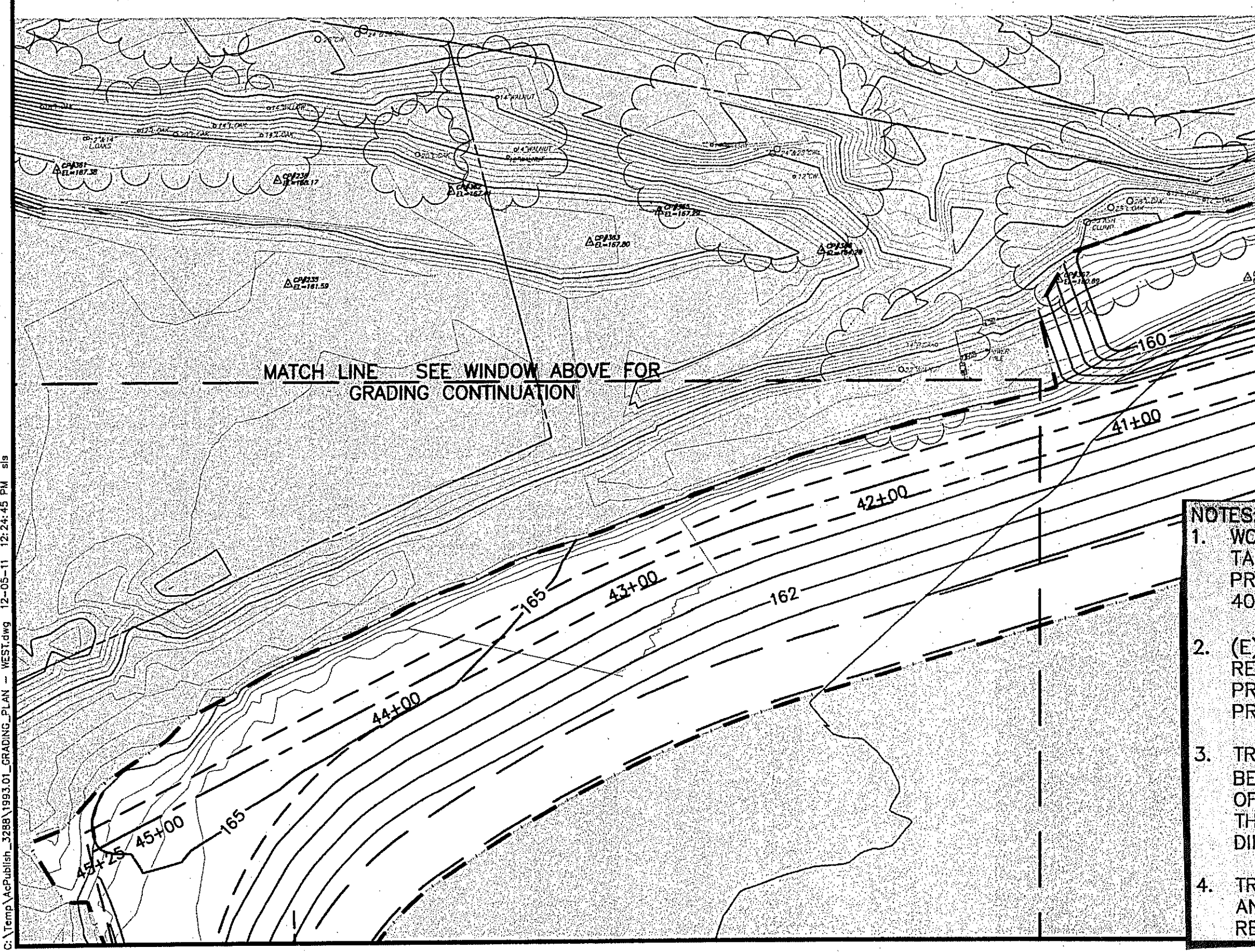
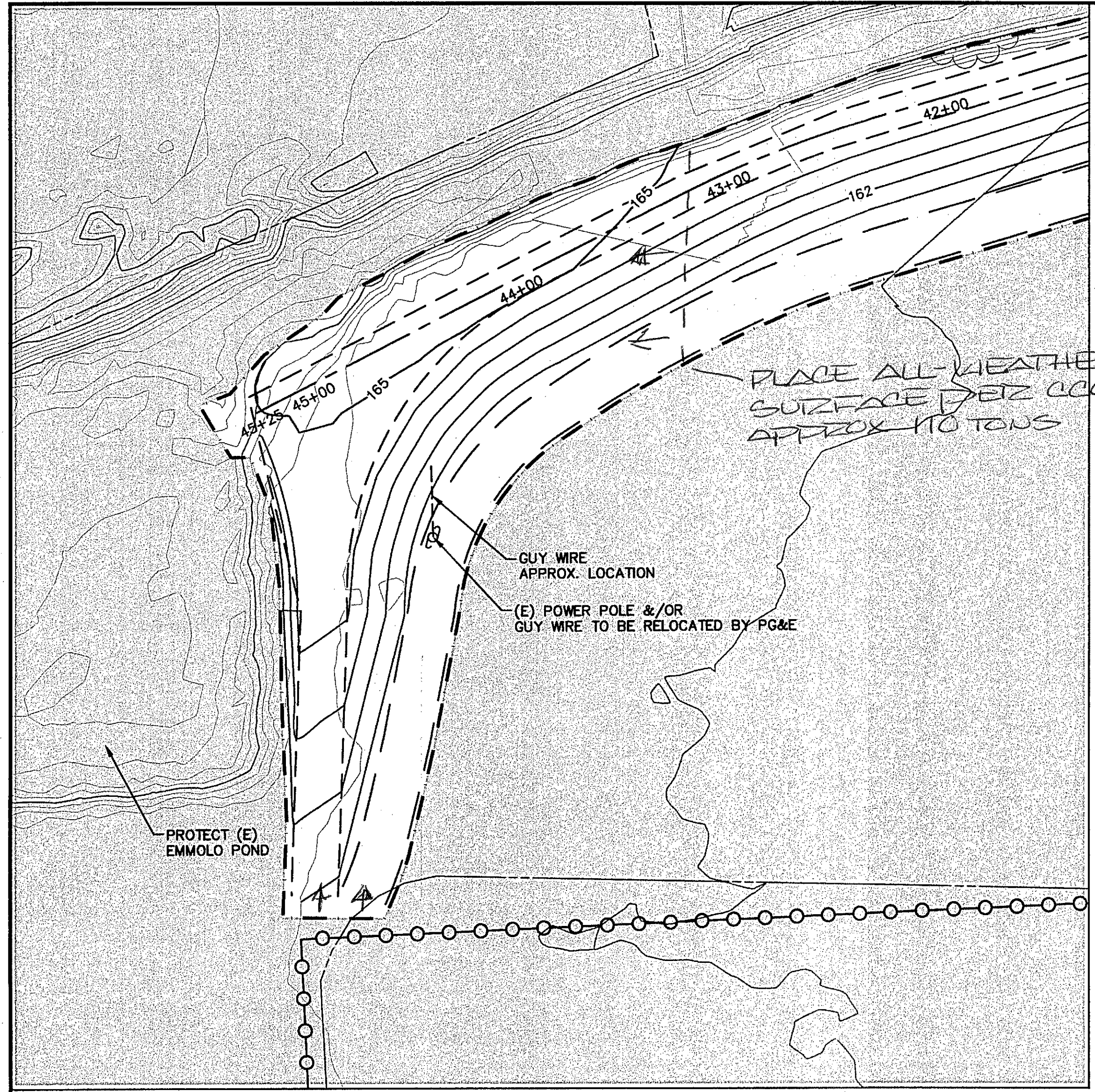
PREPARED BY: <b>PWA</b> <small>PHILLIP WILLIAMS &amp; ASSOCIATES, LTD.          ENVIRONMENTAL HYDROLOGY          SAN FRANCISCO, CALIFORNIA 94109          PHONE (415) 262-5000 FAX (415) 262-5050</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">           SHEET TITLE  <b>PROJECT LAYOUT AND KEY PLAN</b> </td> <td style="width: 50%; padding: 2px;">           PROJECT  <b>NAPA RIVER RESTORATION            RUTHERFORD REACH 4:            WEST (RIGHT) BANK</b> </td> </tr> <tr> <td colspan="2" style="padding: 2px;">           PREPARED FOR  <b>NAPA COUNTY            DEPARTMENT OF PUBLIC WORKS            1195 Third St, Suite 201            Napa, CA 94559</b> </td> </tr> <tr> <td colspan="2" style="padding: 2px; text-align: center;"> </td> </tr> <tr> <td colspan="2" style="padding: 2px;">           APPROVED              DESIGNED            R. BROWN            J. BLOMBERG            DRAWN            B. TANAKA            INCHARGE            A. BORGONOVO            C053102            SCALE            AS SHOWN            DATE            NOV 2011            SHEET  <div style="text-align: center; font-size: 1.2em; font-weight: bold;">C03</div> </td> </tr> <tr> <td colspan="2" style="padding: 2px; text-align: right;">           3 of 34         </td> </tr> </table>	SHEET TITLE <b>PROJECT LAYOUT AND KEY PLAN</b>	PROJECT <b>NAPA RIVER RESTORATION            RUTHERFORD REACH 4:            WEST (RIGHT) BANK</b>	PREPARED FOR <b>NAPA COUNTY            DEPARTMENT OF PUBLIC WORKS            1195 Third St, Suite 201            Napa, CA 94559</b>				APPROVED  DESIGNED R. BROWN J. BLOMBERG DRAWN B. TANAKA INCHARGE A. BORGONOVO C053102 SCALE AS SHOWN DATE NOV 2011 SHEET <div style="text-align: center; font-size: 1.2em; font-weight: bold;">C03</div>		3 of 34	
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3 of 34											

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CARPY CONOLLY LLC

BENCH 6 TREE REMOVAL	
POINT #	DESCRIPTION
8	(2) 12. Quercus agrifolia
16	12. Salix sp.
1	12. Salix sp.
17	(3) 12. Salix sp.
2	12. Salix sp.
10	12. Salix sp.
3	12. Salix sp.
11	(3) 12. Salix sp.
4	16. Juglans sp.
12	16. Juglans sp.
5	(2) 12. Salix sp.
13	12. Quercus agrifolia
6	(2) 12. Alnus sp.
14	12. Salix sp.
7	12. Salix sp.
15	12. Salix sp.



- NOTES:
1. WORK TO BE PERFORMED WILL TAKE PLACE ON EMMOLO PROPERTY BETWEEN STA. 40+00 AND 45+25
  2. (E) VINEYARD WILL BE REMOVED BY OTHERS FROM PROPOSED GRADING LIMITS PRIOR TO CONSTRUCTION.
  3. TRENCH DIMENSIONS SHALL BE 18" WIDE WITH A MINIMUM OF 3 FEET OF DEPTH OVER THE TOP OF THE PIPE OR AS DIRECTED BY THE ENGINEER.
  4. TRENCH SHALL BE BACKFILLED AND COMPACTED TO 95% RELATIVE COMPACTION.

1. THE CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS TO BE GRADED.
2. INSTALL AND MAINTAIN SILT FENCE ALONG THE TOP OF THE ACTIVE CHANNEL BANK FOR ALL BENCH GRADING (NOT SHOWN ON DRAWING). REMOVE BY OCTOBER 15TH.
3. ALL GRADED AREAS AND ANY OTHER AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY SEEDING AND APPLYING EROSION CONTROL MEASURES. SEE SHEET R01 AND SPECS.
4. TREE SURVEY IS INCOMPLETE. CONTRACTOR SHALL VERIFY TREES TO BE REMOVED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION

ITEM 14: Emmolo Property, Reservoir Fill Line  
 A new reservoir fill line will be installed on the Emmolo property between stations 40+00 and 45+25. See attached drawing titled "Emmolo Property Reservoir Fill Line". See items 2 and 3 above for revised bid line item 53.

ADDENDUM #1  
 - PER CCO 5  
 ADD AIR VALVE SOUTH END OF 8" LINE  
 ADD CONCRETE WICKERSE ALL CHANGE OF DIRECTIONS

PREPARED BY:  
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GRADING PLAN: STA 155+50 TO STA 169+15  
 PROJECT: NAPA RIVER RESTORATION RUTHERFORD REACH 4; WEST (RIGHT) BANK

NAPA COUNTY DEPARTMENT OF PUBLIC WORKS  
 Third St, Suite 201  
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DEF  
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 2053102  
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 CIVIL ENGINEER  
 STATE OF CALIFORNIA  
 C04  
 4 OF 34



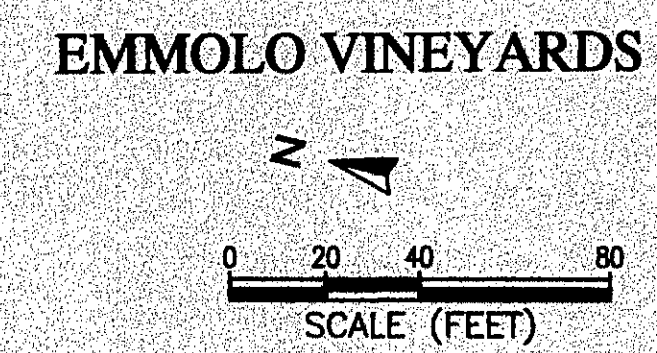
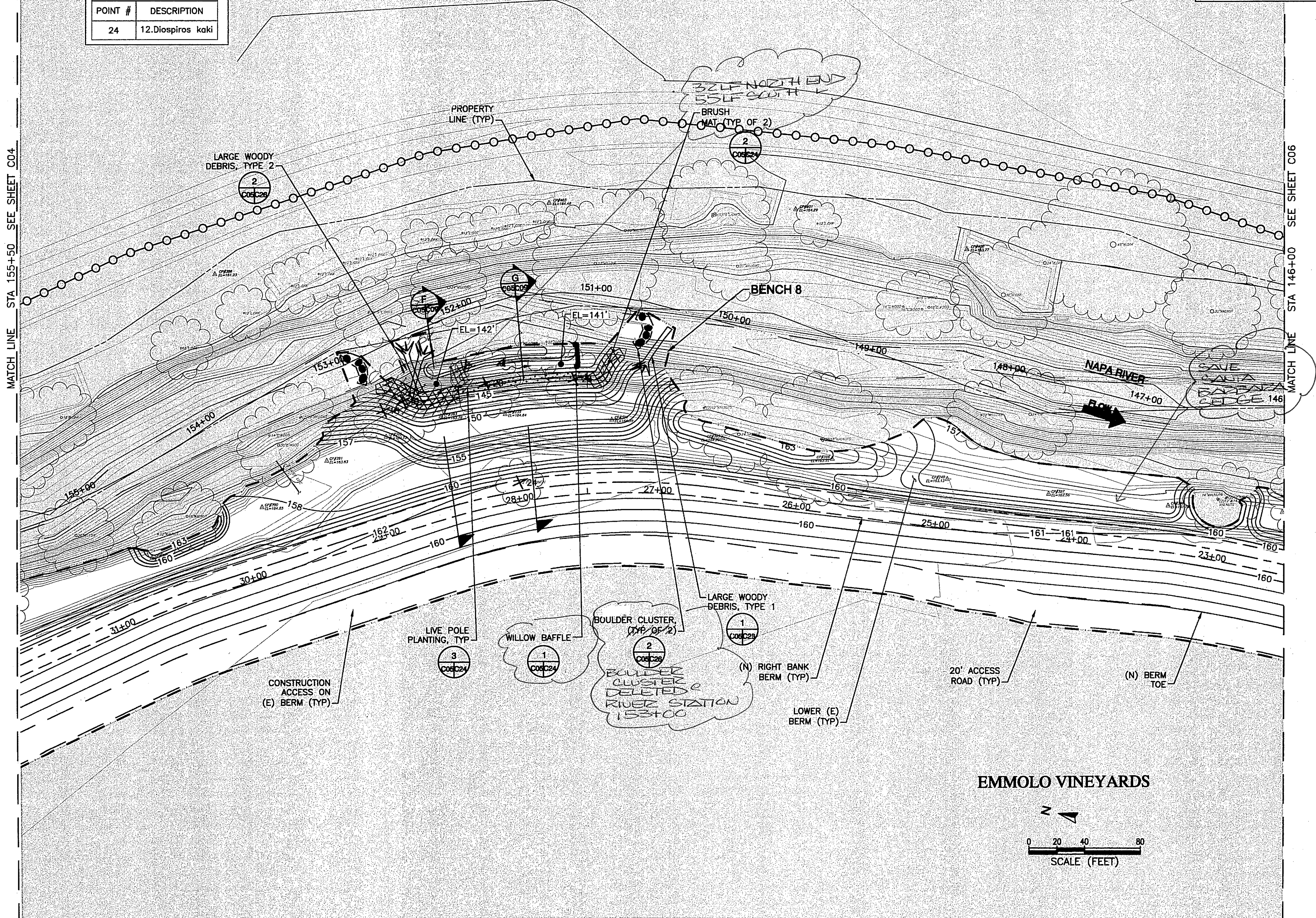
TREE REMOVAL	
BENCH 8	
POINT #	DESCRIPTION
18	12.Juglans sp.
19	20.Quercus lobata
20	30.Juglans sp.
23	12.Alnus sp.

R.B. STA 151+50	
POINT #	DESCRIPTION
24	12.Diospiros kaki

CARPY CONOLLY LLC

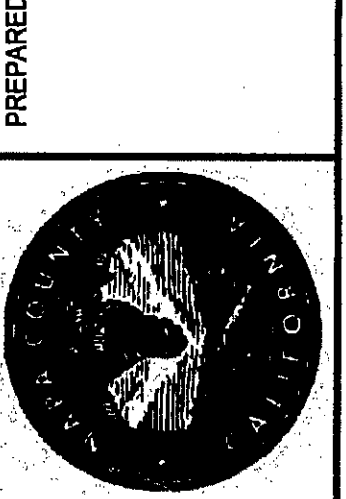
- SHEET NOTES**
1. THE CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS TO BE GRADED.
  2. INSTALL AND MAINTAIN SILT FENCE ALONG THE TOP OF THE ACTIVE CHANNEL BANK FOR ALL BENCH GRADING (NOT SHOWN ON DRAWING). REMOVE BY OCTOBER 15TH.
  3. ALL GRADED AREAS AND ANY OTHER AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY SEEDING AND APPLYING EROSION CONTROL MEASURES. SEE SHEET R01 AND SPECS.
  4. TREE SURVEY IS INCOMPLETE. CONTRACTOR SHALL VERIFY TREE TO BE REMOVED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION



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**PWA**  
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SHEET TITLE  
 GRADING PLAN: STA 146+00 TO STA 155+50  
 PROJECT  
 NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK

PREPARED FOR:  
 NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559



APPROVED  
 DESIGNED R. BROWN  
 J. BLOMBERG  
 DRAWN B. TANAKA  
 INCHARGE A. BORGONOVO  
 C053102  
 SCALE AS SHOWN  
 DATE NOV 2011  
 SHEET

C05  
 5 OF 34

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**TREE REMOVAL**

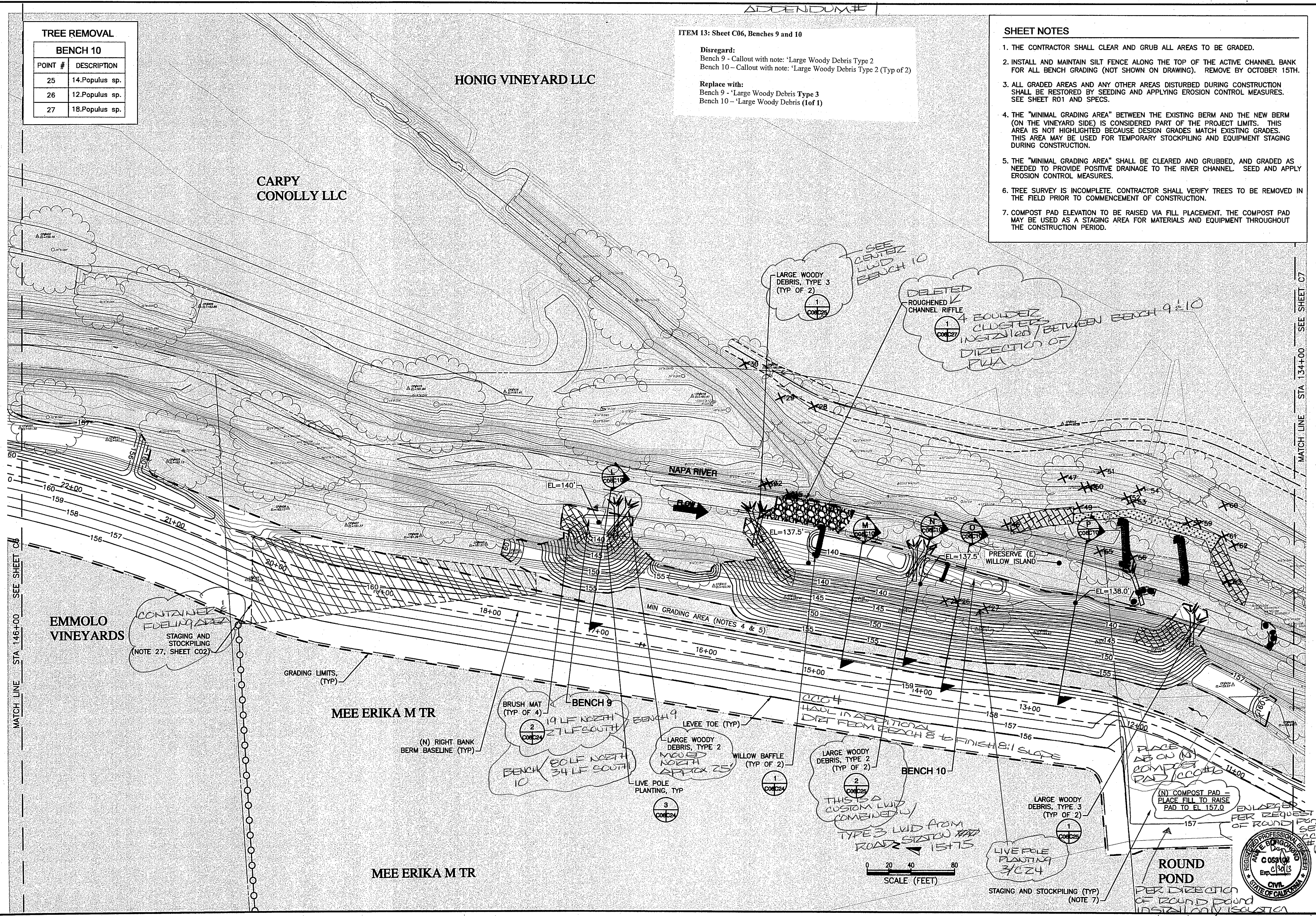
BENCH 10	
POINT #	DESCRIPTION
25	14. Populus sp.
26	12. Populus sp.
27	18. Populus sp.

**ITEM 13: Sheet C06, Benches 9 and 10**

**Disregard:**  
 Bench 9 - Callout with note: 'Large Woody Debris Type 2'  
 Bench 10 - Callout with note: 'Large Woody Debris Type 2 (Typ of 2)'

**Replace with:**  
 Bench 9 - 'Large Woody Debris Type 3'  
 Bench 10 - 'Large Woody Debris (1 of 1)'

- SHEET NOTES**
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  4. THE "MINIMAL GRADING AREA" BETWEEN THE EXISTING BERM AND THE NEW BERM (ON THE VINEYARD SIDE) IS CONSIDERED PART OF THE PROJECT LIMITS. THIS AREA IS NOT HIGHLIGHTED BECAUSE DESIGN GRADES MATCH EXISTING GRADES. THIS AREA MAY BE USED FOR TEMPORARY STOCKPILING AND EQUIPMENT STAGING DURING CONSTRUCTION.
  5. THE "MINIMAL GRADING AREA" SHALL BE CLEARED AND GRUBBED, AND GRADED AS NEEDED TO PROVIDE POSITIVE DRAINAGE TO THE RIVER CHANNEL. SEED AND APPLY EROSION CONTROL MEASURES.
  6. TREE SURVEY IS INCOMPLETE. CONTRACTOR SHALL VERIFY TREES TO BE REMOVED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION.
  7. COMPOST PAD ELEVATION TO BE RAISED VIA FILL PLACEMENT. THE COMPOST PAD MAY BE USED AS A STAGING AREA FOR MATERIALS AND EQUIPMENT THROUGHOUT THE CONSTRUCTION PERIOD.



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**GRADING PLAN: STA 134+00 TO STA 146+00**  
**NAPA RIVER RESTORATION**  
**RUTHERFORD REACH 4:**  
**WEST (RIGHT) BANK**

**NAPA COUNTY**  
**DEPARTMENT OF PUBLIC WORKS**  
 1195 Third St, Suite 201  
 Napa, CA 94559



APPROVED  
 DESIGNED R. BROWN  
 J. BLOMBERG  
 DRAWN B. TANAKA  
 INCHARGE A. BORGONOVO  
 C053102  
 SCALE AS SHOWN  
 DATE NOV 2011  
 SHEET

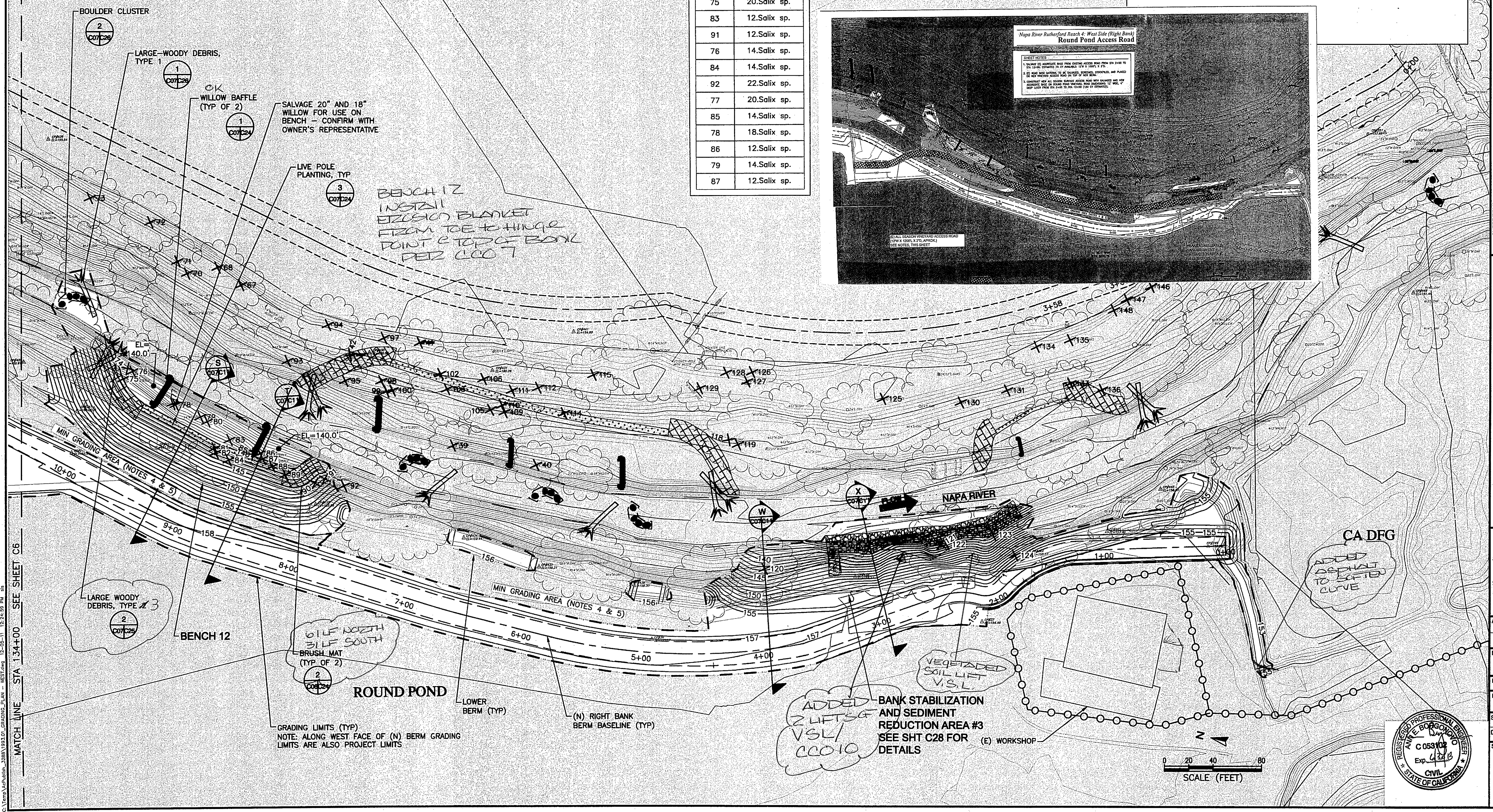
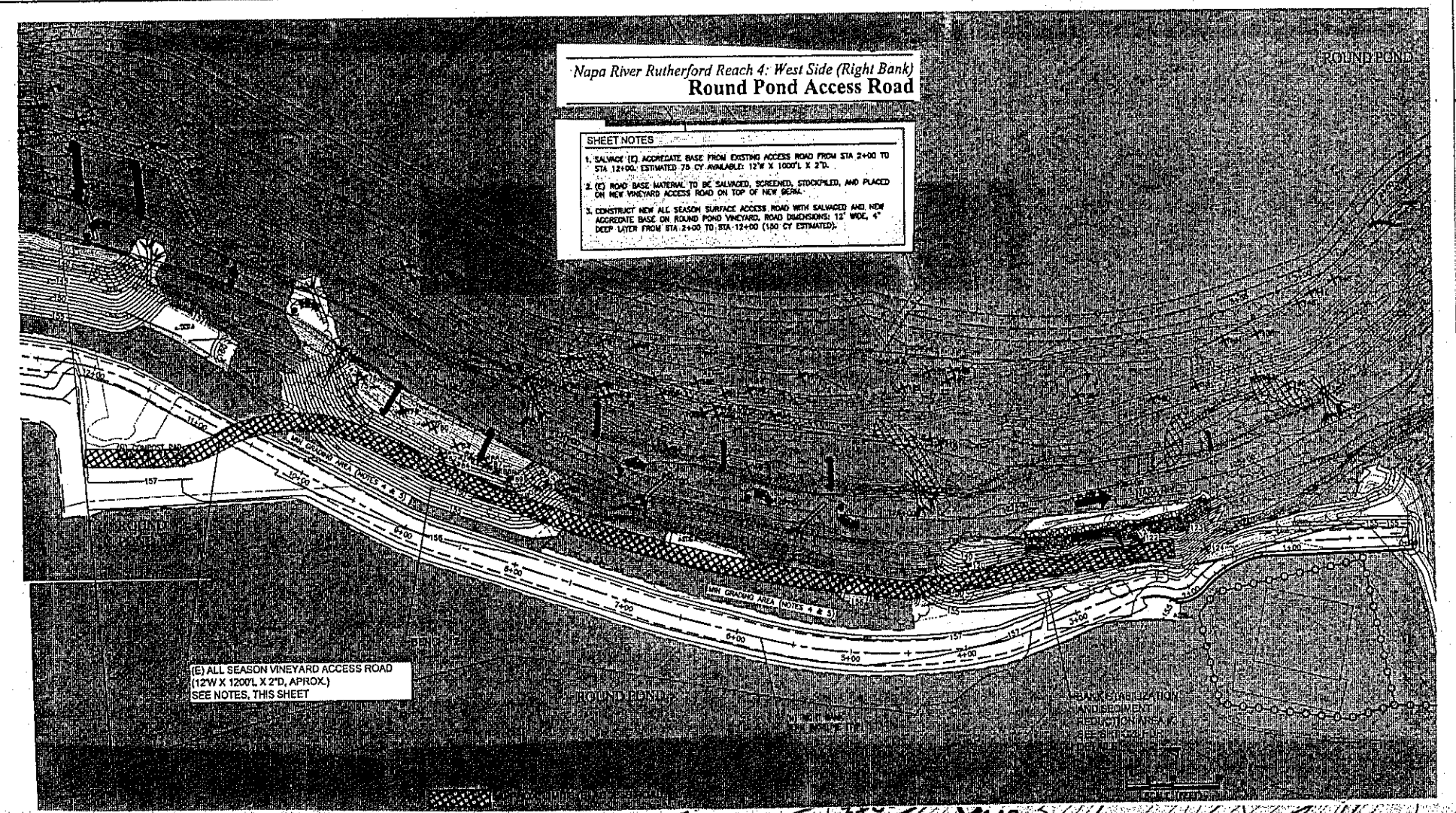


HONIG VINEYARD LLC

BANK STABL. #3		BENCH 12	
POINT #	DESCRIPTION	POINT #	DESCRIPTION
120	20.Juglans sp.	80	12.Salix sp.
121	24.Quercus lobata	88	20.&12.Salix sp.
122	24.Quercus agrifolia	81	12.Salix sp.
123	18.Quercus lobata	89	(2)12.Salix sp.
124	22.Quercus lobata	74	14.Salix sp.
		82	12.Salix sp.
		90	12.Salix sp.
		75	20.Salix sp.
		83	12.Salix sp.
		91	12.Salix sp.
		76	14.Salix sp.
		84	14.Salix sp.
		92	22.Salix sp.
		77	20.Salix sp.
		85	14.Salix sp.
		78	18.Salix sp.
		86	12.Salix sp.
		79	14.Salix sp.
		87	12.Salix sp.

- SHEET NOTES**
1. THE CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS TO BE GRADED.
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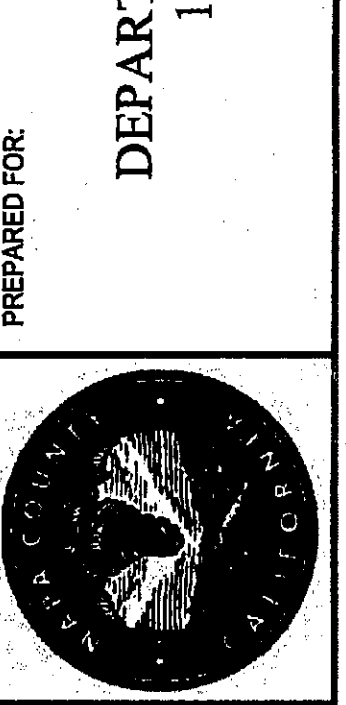
ADDENDUM #1



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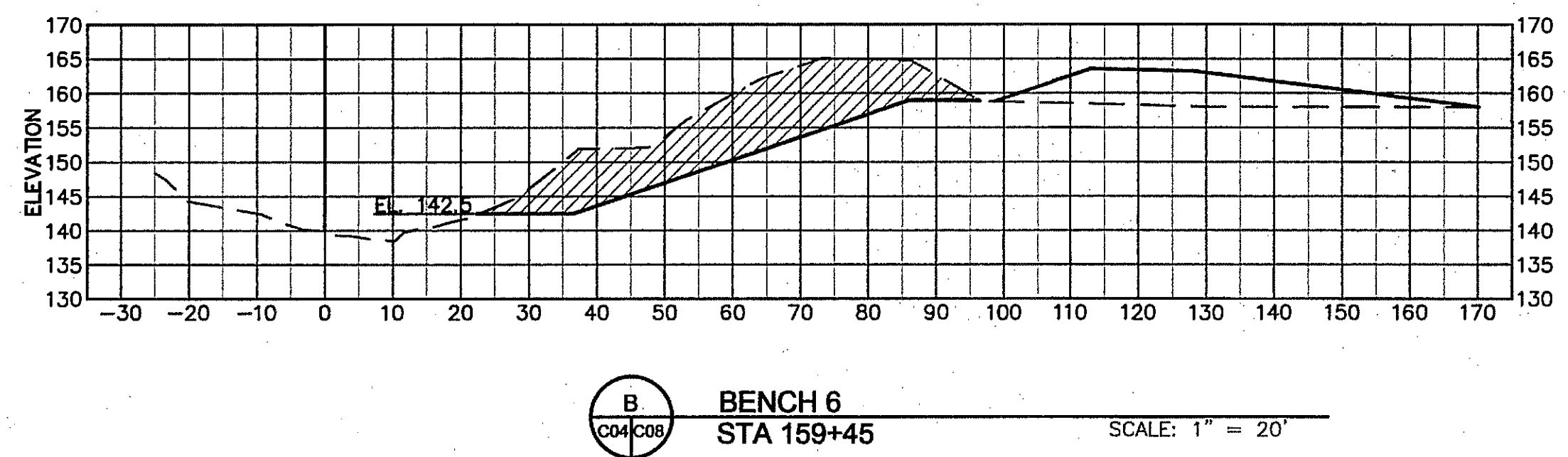
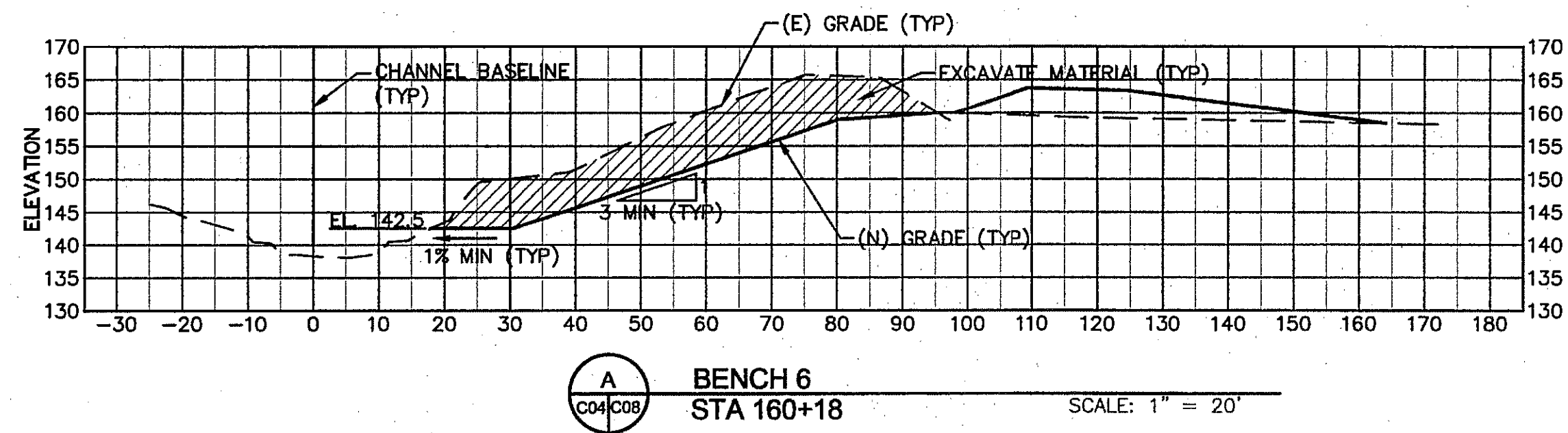
SHEET TITLE  
 GRADING PLAN: STA 120+60 TO STA 134+00  
 PROJECT  
 NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK

PREPARED FOR:  
 NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559



APPROVED  
 DESIGNED R. BROWN  
 J. BLUMBERG  
 DRAWN B. TANAKA  
 INCHARGE A. BORGONOVO  
 C053102  
 SCALE AS SHOWN  
 DATE NOV 2011  
 SHEET

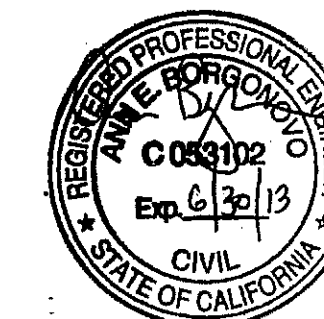




**NOTES:**

1. SECTIONS ARE SHOWN LOOKING DOWNSTREAM. STATION 0 IS THE CHANNEL BASELINE, SEE SHEET C02 FOR CONTROL TABLE.
2. THE ACCURACY OF TOPOGRAPHIC DATA WITHIN THE ACTIVE CHANNEL IS LIMITED. THE GROUND SURVEY GENERALLY EXTENDS DOWN THE CHANNEL BANK, BUT NOT ACROSS THE CHANNEL. LIDAR DATA FOR THE CHANNEL DOES NOT EXTEND BELOW THE WATER SURFACE AT THE TIME OF THE SURVEY.
3. AT SOME LOCATIONS THE MATCHLINE BETWEEN THE GROUND SURVEY AND LIDAR TOPOGRAPHIC DATA DOES NOT ALIGN VERTICALLY. ALL AVAILABLE DATA IS SHOWN FOR COMPLETENESS. THE GROUND SURVEY DATA (ON THE BENCH SIDE) IS A MORE ACCURATE REPRESENTATION OF ACTUAL CONDITIONS.

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SHEET TITLE: GRADING SECTIONS  
 BENCH 6  
 PROJECT: NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK

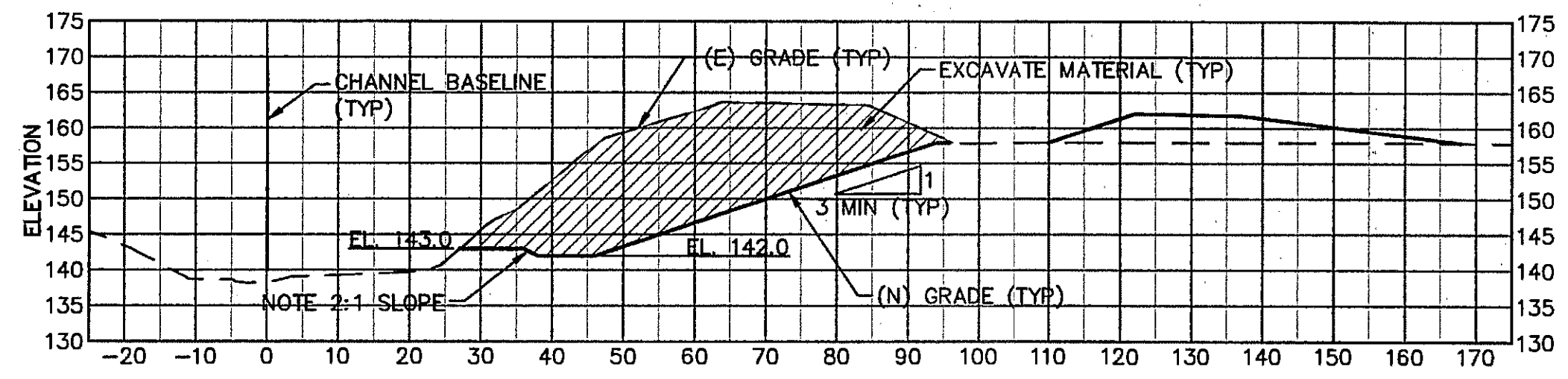
PREPARED FOR:  
 NAPA COUNTY  
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 Napa, CA 94559



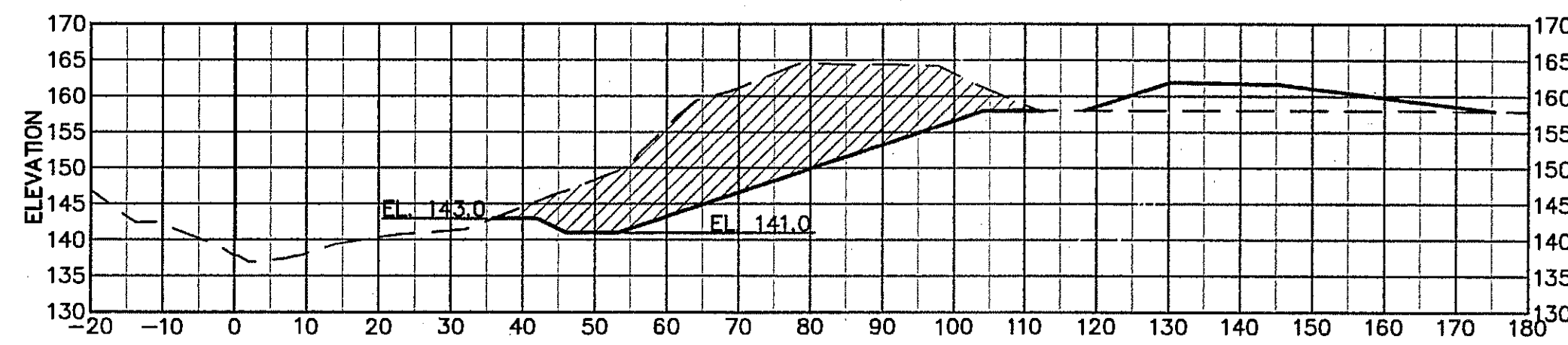
APPROVED:  
 DESIGNED: R. BROWN  
 J. BLOMBERG  
 DRAWN: B. TANAKA  
 INCHARGE: A. BORGONOVO  
 C053102  
 SCALE: AS SHOWN  
 DATE: NOV 2011  
 SHEET:

C08  
 8 OF 34





**F**  
BENCH 8  
STA 151+57  
SCALE: 1" = 20'



**G**  
BENCH 8  
STA 151+13  
SCALE: 1" = 20'

**NOTES:**

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SHEET TITLE: GRADING SECTIONS: BENCH 8  
PROJECT: NAPA RIVER RESTORATION  
RUTHERFORD REACH 4:  
WEST (RIGHT) BANK

PREPARED FOR:  
NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559



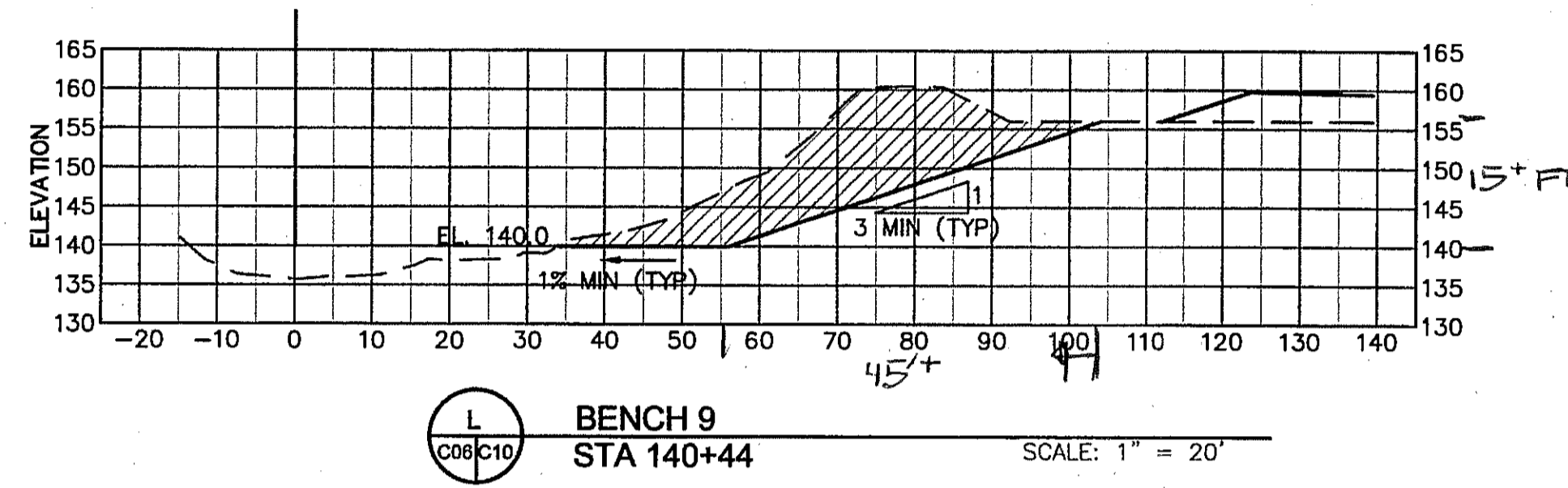
APPROVED  
DESIGNED: R. BROWN  
J. BLOMBERG  
DRAWN: B. TANAKA  
INCHARGE: A. BORGONOVO  
C063102  
SCALE: AS SHOWN  
DATE: NOV 2011  
SHEET

C09

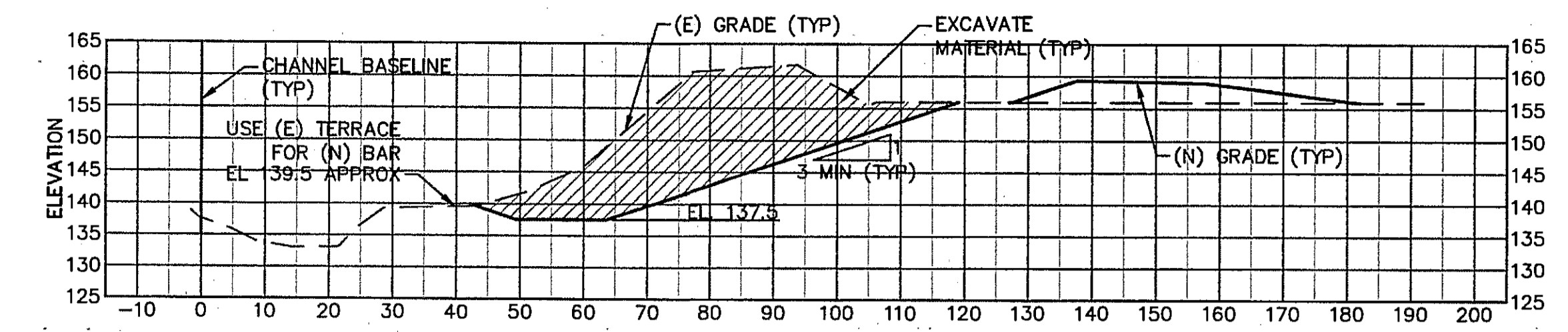
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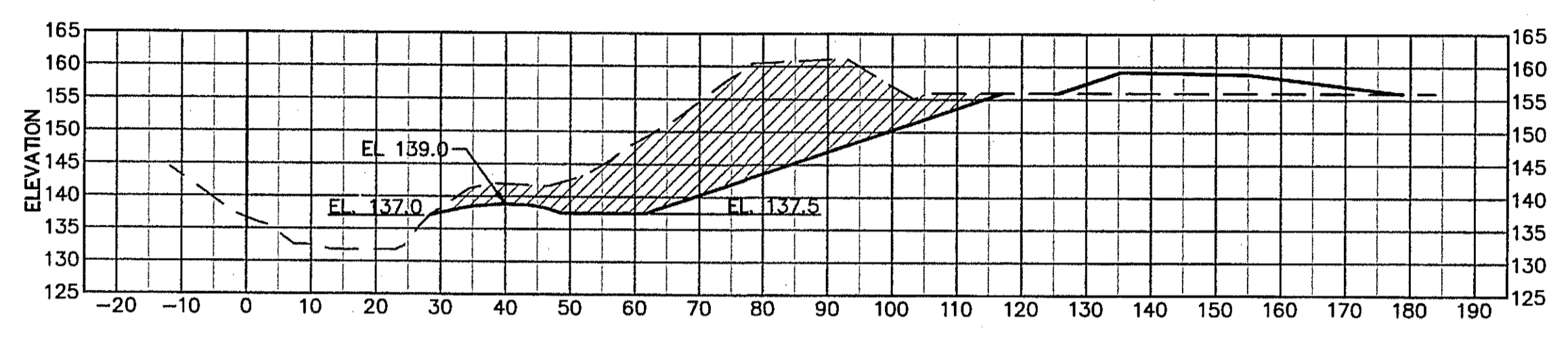
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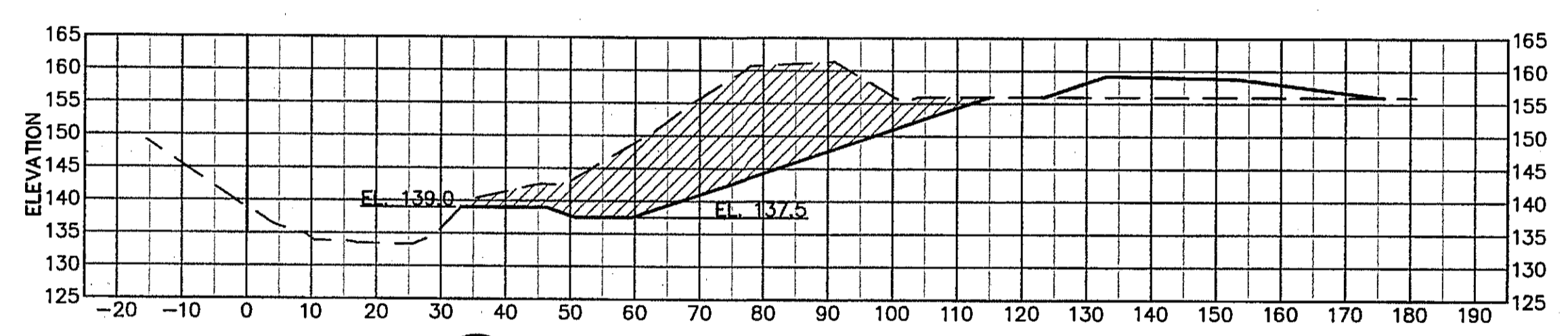
**L**  
C06C10  
**BENCH 9**  
**STA 140+44** SCALE: 1" = 20'



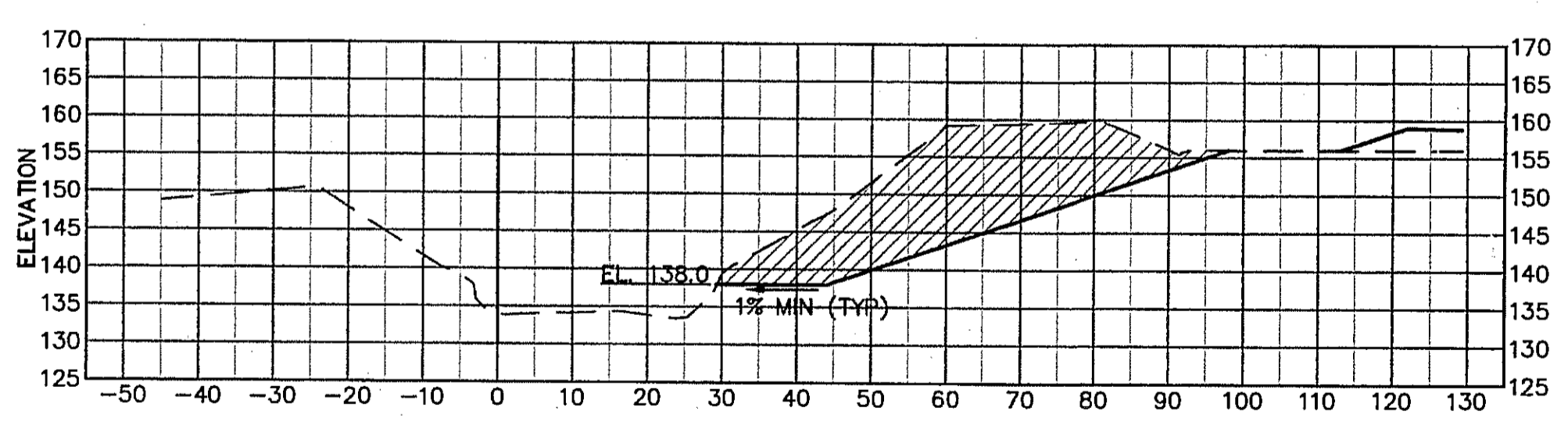
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C06C10  
**BENCH 10**  
**STA 138+08** SCALE: 1" = 20'



**N**  
C06C10  
**BENCH 10**  
**STA 137+48** SCALE: 1" = 20'

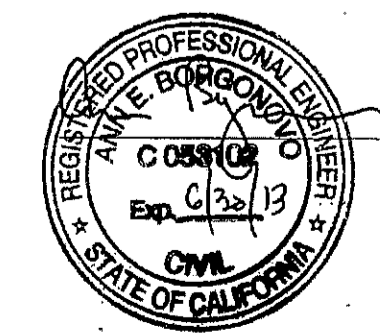


**O**  
C06C10  
**BENCH 10**  
**STA 137+11** SCALE: 1" = 20'



**P**  
C06C019  
**BENCH 10**  
**STA 136+06** SCALE: 1" = 20'

- NOTES:**
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500 WAREHOUSING AVENUE, SUITE 200  
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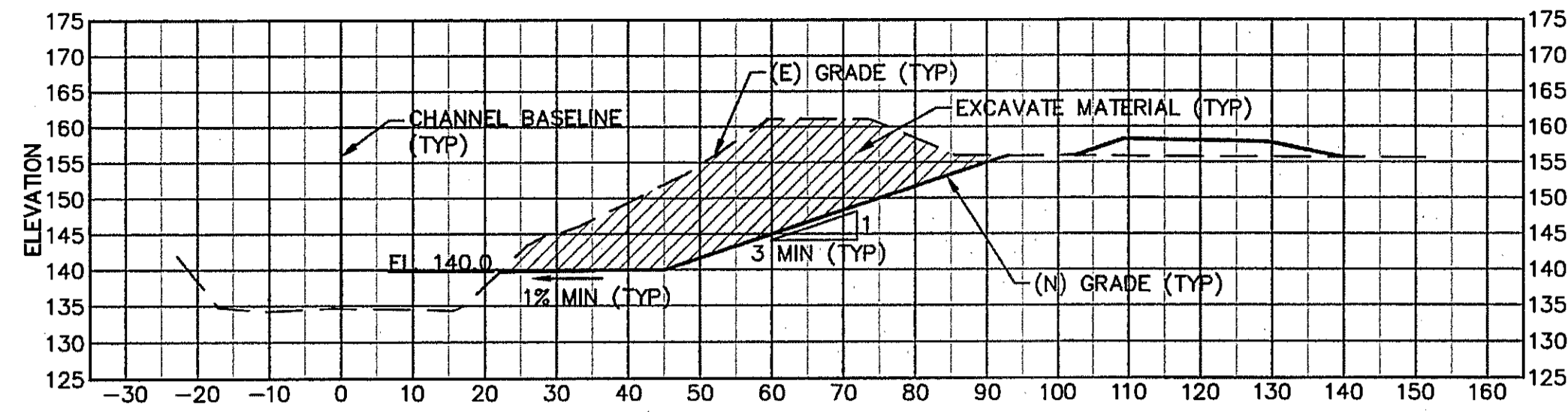
SHEET TITLE  
**GRADING SECTIONS**  
**BENCH 10**  
PROJECT  
**NAPA RIVER RESTORATION**  
**RUTHERFORD REACH 4:**  
**WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY**  
**DEPARTMENT OF PUBLIC WORKS**  
1195 Third St, Suite 201  
Napa, CA 94559

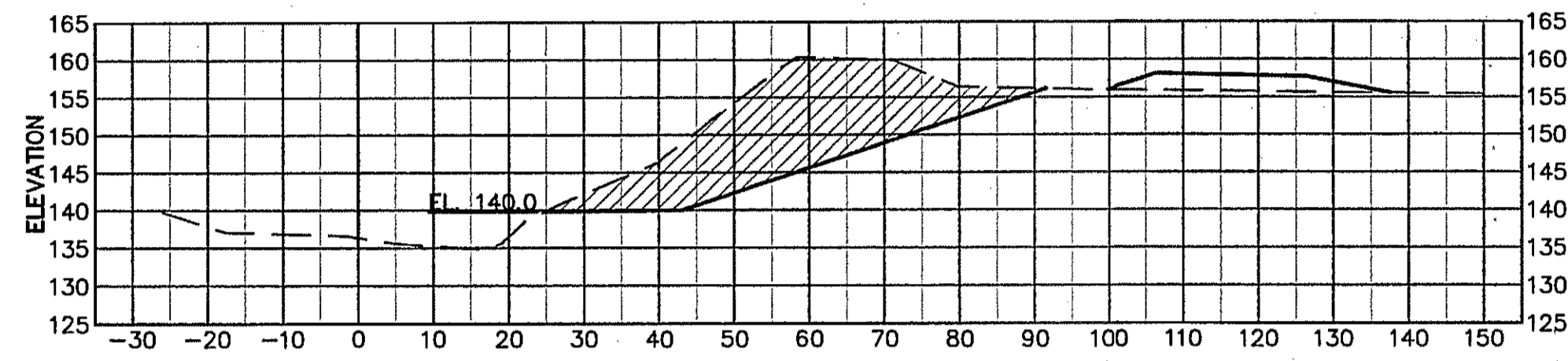


APPROVED	
DESIGNED	R. BROWN J. BLONBERG
DRAWN	B. TANAKA
INCHARGE	A. BORGONOVO C053102
SCALE	AS SHOWN
DATE	NOV 2011
SHEET	

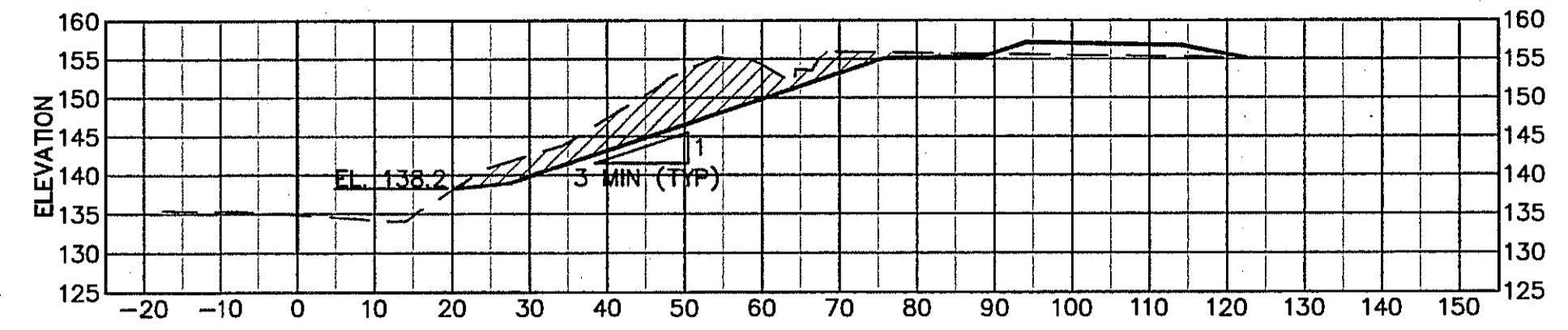




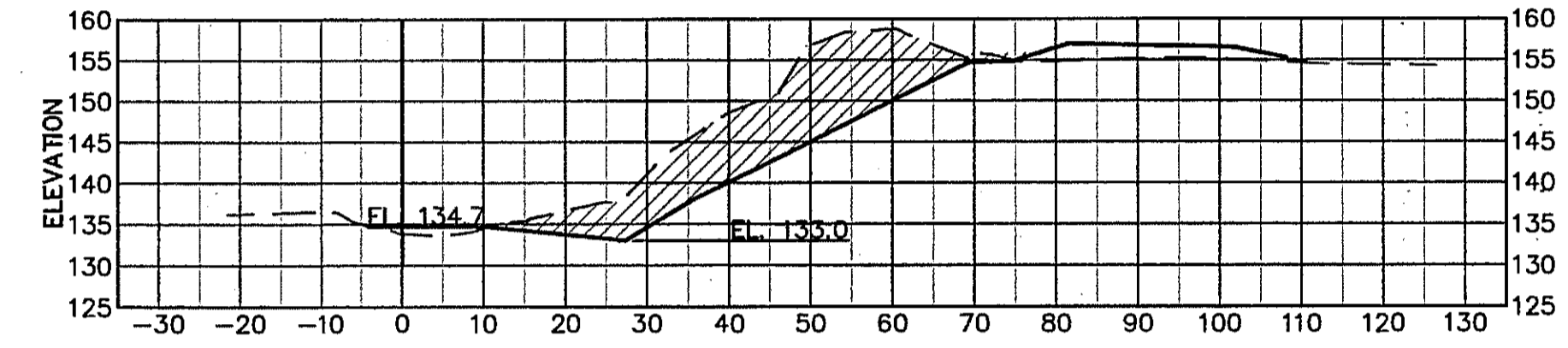
S BENCH 12  
C07/C11 STA 132+20 SCALE: 1" = 20'



T BENCH 12  
C07/C11 STA 131+58 SCALE: 1" = 20'



W BANK STABILIZATION AND SEDIMENT REDUCTION AREA 3  
C07/C11 STA 127+47 SCALE: 1" = 20'



X BANK STABILIZATION AND SEDIMENT REDUCTION AREA 3  
C07/C11 STA 126+64 SCALE: 1" = 20'

**NOTES:**

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PREPARED BY:

SHEET TITLE: GRADING SECTIONS: BENCH 12 & BANK STABILIZATION AREA 3  
PROJECT: NAPA RIVER RESTORATION RUTHERFORD REACH 4: WEST (RIGHT) BANK

PREPARED FOR:  
NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559



APPROVED  
DESIGNED: R. BROWN, J. BLONBERG  
DRAWN: B. TANAKA  
INCHARGE: A. BORGONOVO, C053102  
SCALE: AS SHOWN  
DATE: NOV 2011  
SHEET

C11

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**SHEET NOTES**

1. NEW RIGHT BANK BERM SECTIONS ARE SHOWN ON SHEETS C16 TO C23.
2. BERM SECTIONS ARE SHOWN LOOKING UPSTATION (UPSTREAM)
3. OVEREXCAVATE WITHIN THE FOOTPRINT OF THE NEW BERM CORE TO THE BERM DAYLIGHT ELEVATION. PLACE FILL FOR NEW BERM IN UNIFORM LIFTS.

PREPARED BY:  
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 EN VITRON W E L A S D R O C O S  
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 PHONE (415) 262-2200 FAX (415) 262-2203

SHEET TITLE  
**NEW BERM TYPICAL SECTION AND VERTICAL CONTROL**

PROJECT  
**NAPA RIVER RESTORATION RUTHERFORD REACH 4: WEST (RIGHT) BANK**

NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559

PREPARED FOR:



APPROVED

DESIGNED  
 R. BROWN  
 J. BLUMBERG

DRAWN  
 B. TANAKA

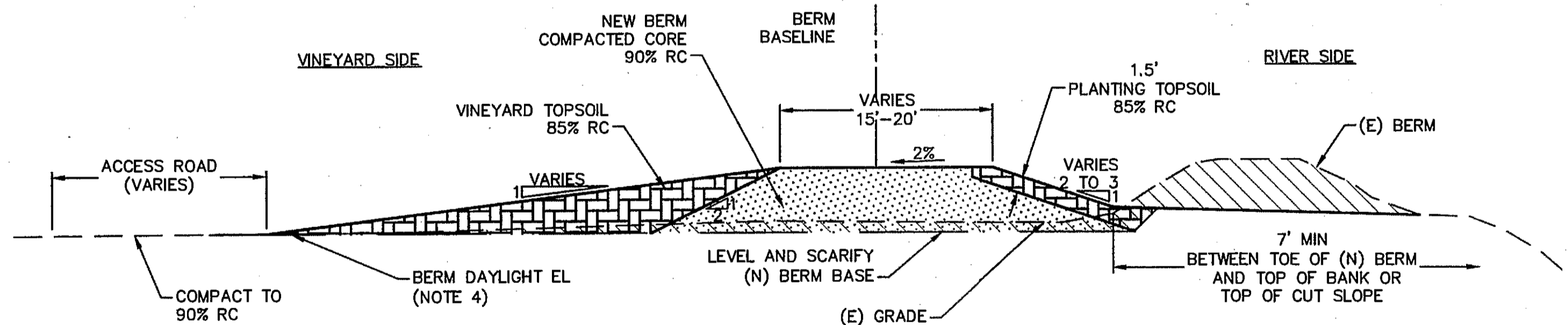
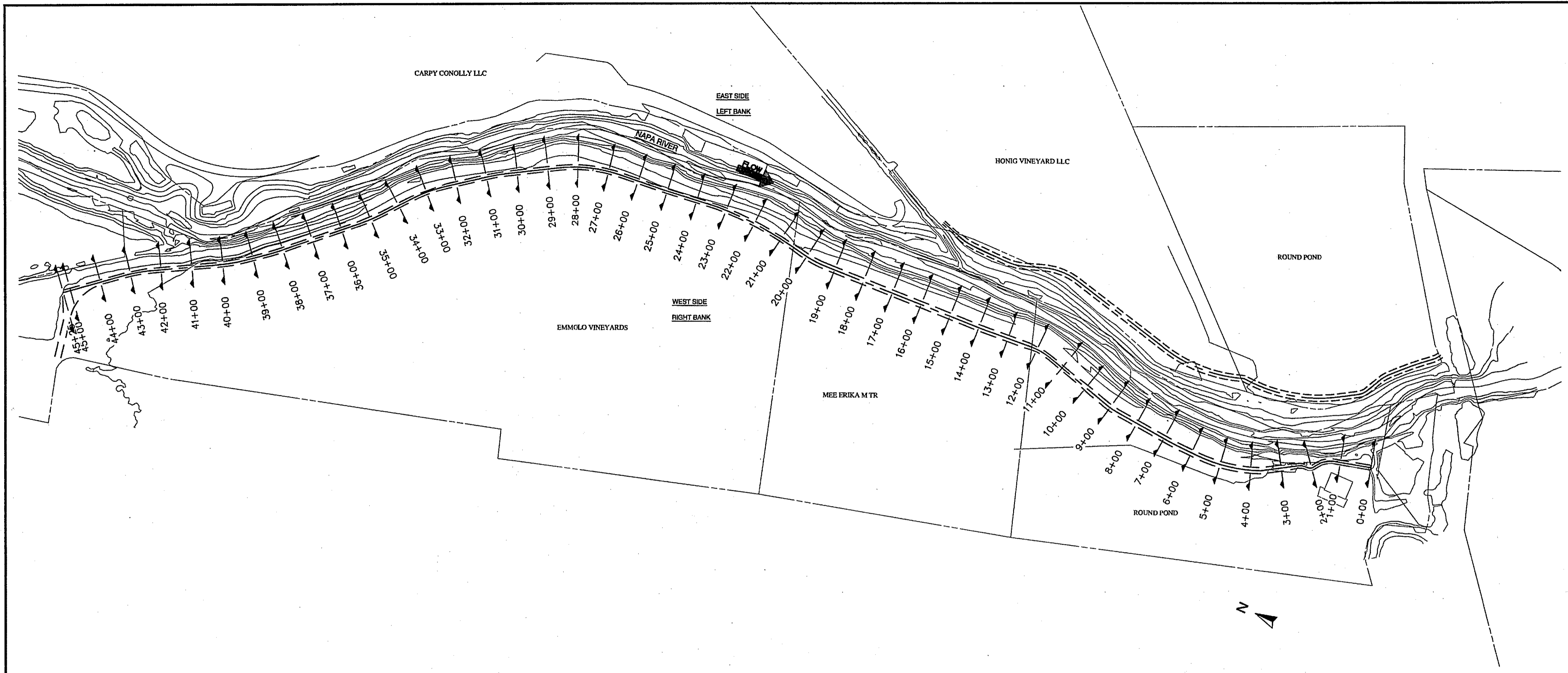
INCHARGE  
 A. BORGONOVO  
 C053102

SCALE  
 AS SHOWN

DATE  
 NOV 2011

SHEET

**C12**



**1**  
**NEW BERM TYPICAL SECTION**  
 SCALE: 1" = 10'

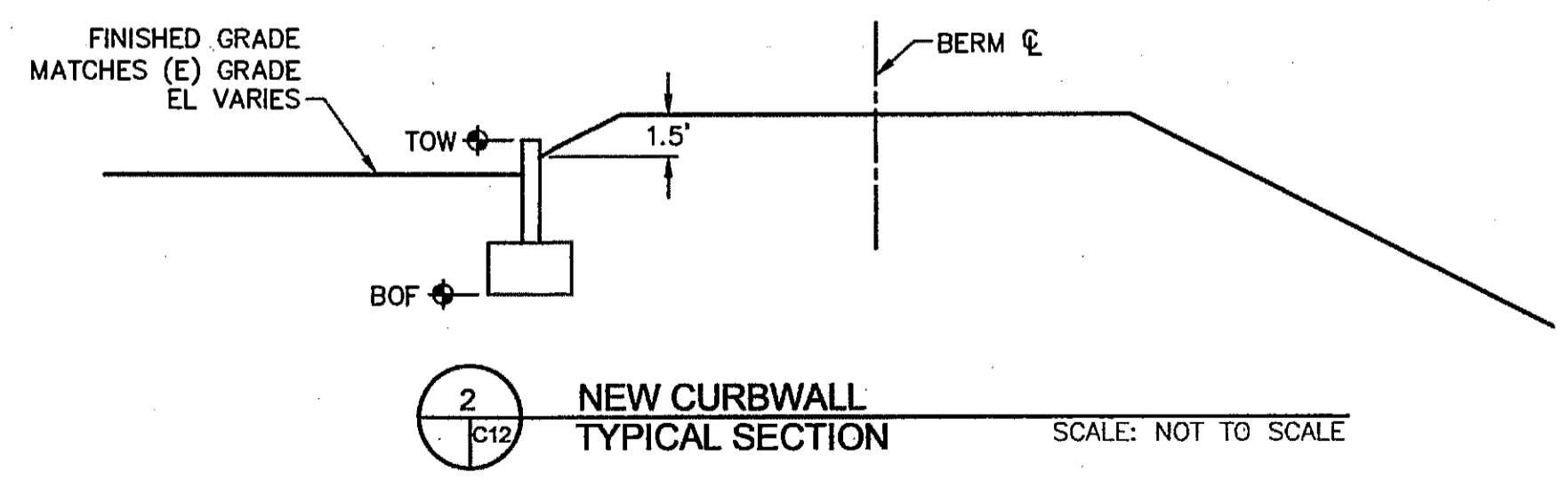
- NOTE:  
 1. SEE TABLE FOR VARIABLE BERM DIMENSIONS.  
 2. SEE SHEET C28 FOR BERM W/ CURB WALL DETAILS

**RIGHT (WEST) BANK NEW BERM ELEVATION CONTROL AT BASELINE**

BERM STATION	PROPOSED ELEVATION
0+00	156.2
1+38	156.5
3+88	157.0
6+38	157.5
8+88	158.0
11+38	158.5
13+89	159.0
16+39	159.5
18+89	160.0
21+39	160.5
23+89	161.0
26+39	161.5
28+89	162.0
31+24	162.5
33+31	163.0
35+70	163.5
39+05	164.0
42+40	164.5
45+25	164.9

**SCHEDULE OF RIGHT (WEST) BANK BERM DIMENSIONS**

PROPERTY	STATION (FT)	TOP WIDTH (FT)	ORCHARD/VINEYARD SIDE SLOPE	RIVER SIDE SLOPE	CONSTRUCTION ACCESS ROAD WIDTH (FT)
ROUND POND - SHOP	0+00 - 2+50	15	2H:1V & WALL	2H:1V	N/A
ROUND POND - TRANSITION	2+50 - 2+75	VARIES	5H:1V	2H:1V	TOP OF BERM
ROUND POND - MAIN	2+75 - 9+80	20 15' +/-	5H:1V	3H:1V	TOP OF BERM
ROUND POND - COMPOST PAD	9+80 - 12+20	VARIES (20 MIN)	3H:1V	3H:1V	20
MEE	12+20 - 20+50	20	8H:1V	3H:1V	20
EMMOLO - MAIN	20+50 - 43+90	15	8H:1V	3H:1V	20
EMMOLO - POND PAD	43+90 - 45+25	VARIES (15 MIN)	8H:1V	3H:1V	20



**2**  
**NEW CURB WALL TYPICAL SECTION**  
 SCALE: NOT TO SCALE

**CURB WALL CONTROL TABLE**

BERM STA	BERM CL EL	TOE SLOPE EL	TOP OF WALL (TOW)	FG PAVING EL	BOTTOM OF FOUNDATION (BOF)
0+00	156.2	154.7	155.2	152.6	150.1
0+50	156.3	154.8	155.3	153.0	150.5
1+00	156.4	154.9	155.4	153.2	150.7
1+50	156.5	155.0	155.5	153.7	151.2
2+00	156.6	155.1	155.6	154.6	152.1

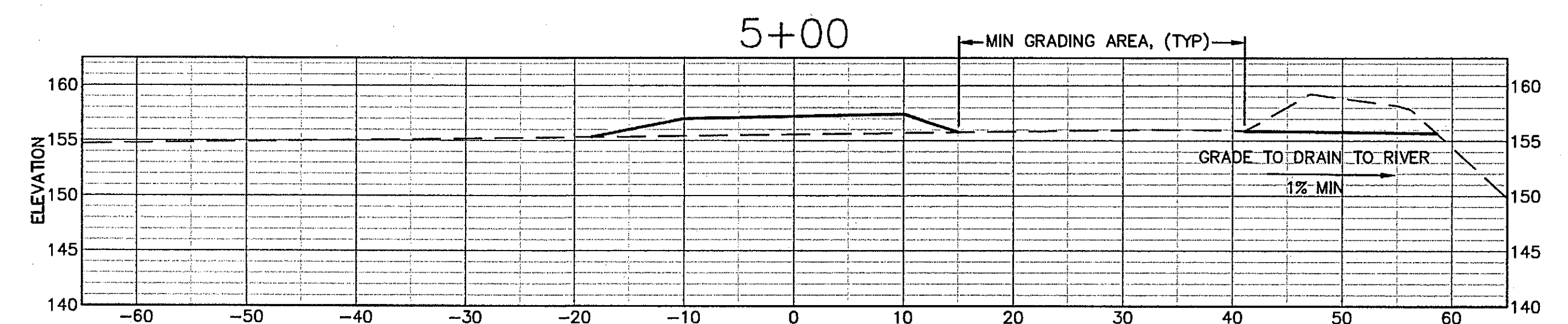
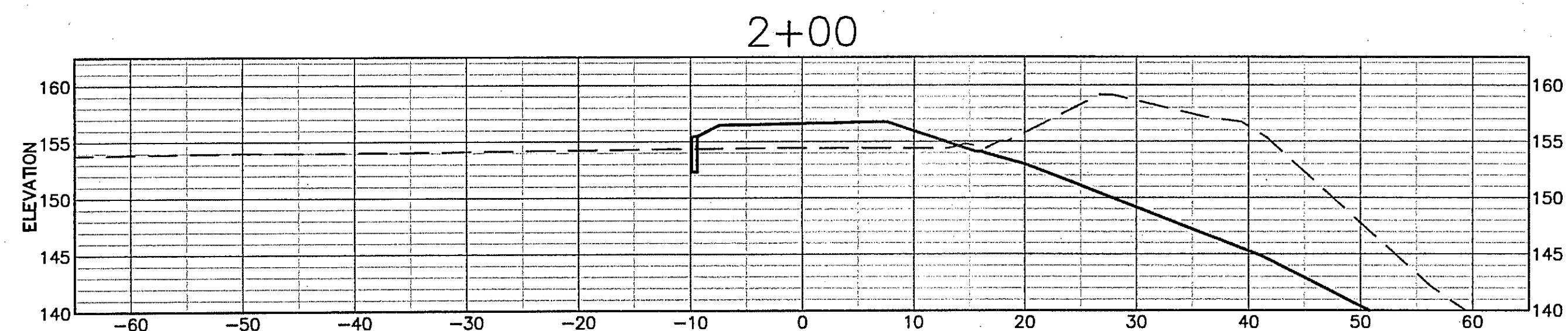
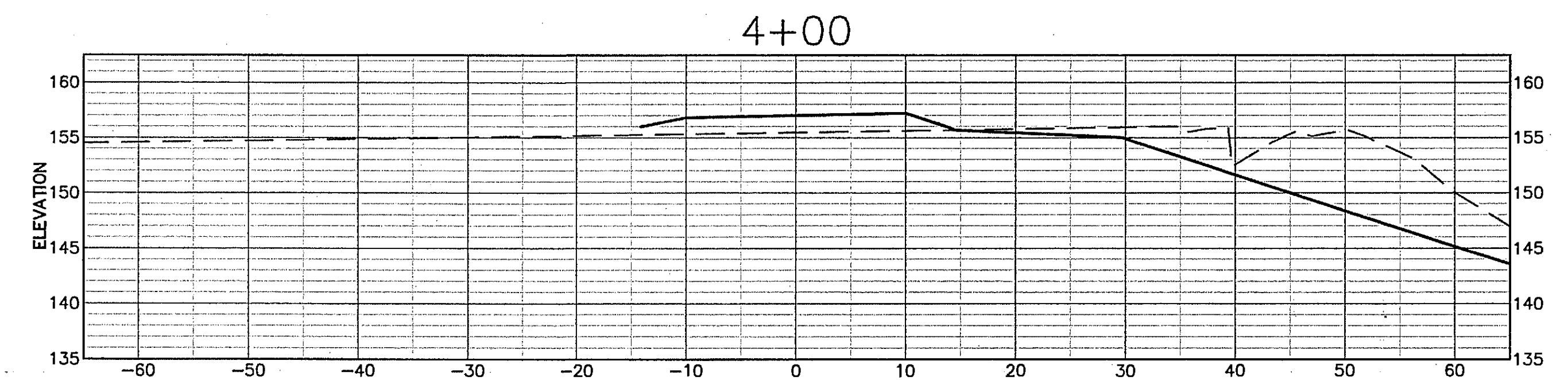
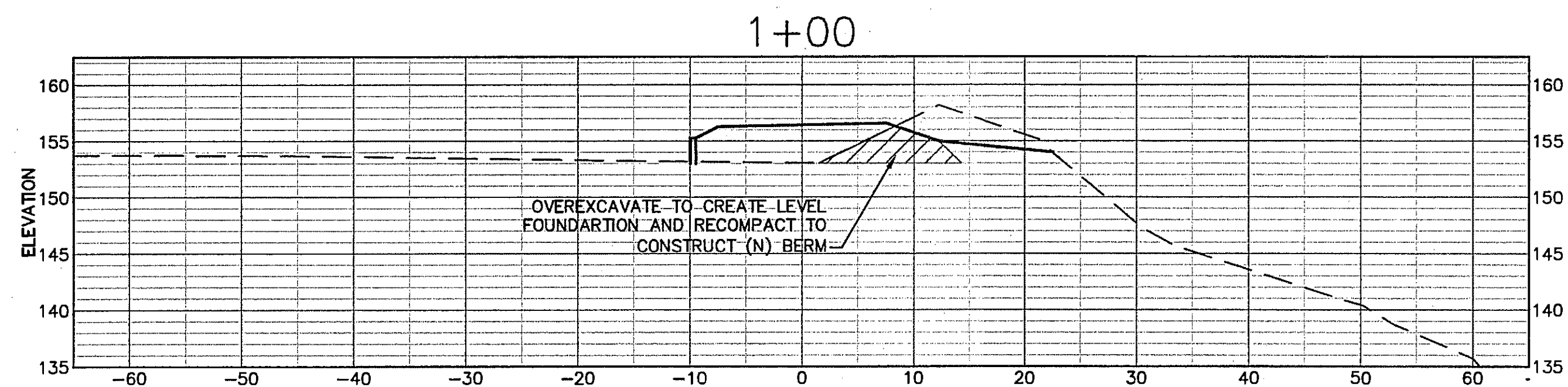
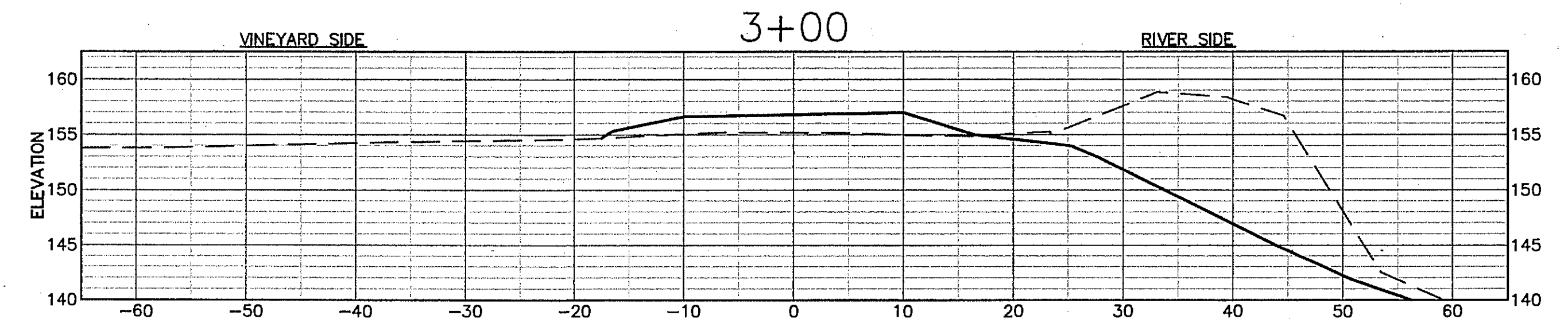
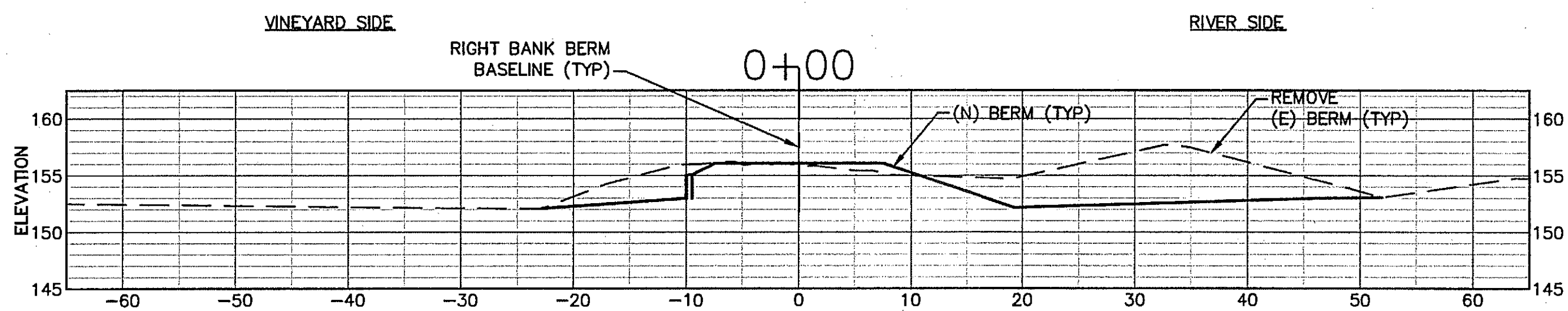


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**SHEET NOTES**

- SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM.
- SEE SHEET C12 FOR TYPICAL SECTION.
- OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
- STATION 0 ON THE CROSS-SECTION ALIGNS WITH THE (N) BERM BASELINE.



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 ENVIRONMENTAL HYDROLOGY  
 1000 CALIFORNIA BLVD  
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SHEET TITLE  
**RIGHT BANK GRADING SECTIONS**  
 BERM STA 0+00 TO STA 5+00

PROJECT  
**NAPA RIVER RESTORATION**  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK

PREPARED FOR:  
**NAPA COUNTY**  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559



APPROVED

DESIGNED  
 R. BROWN  
 J. BLOMBERG

DRAWN  
 B. TANAKA

INCHARGE  
 A. BORGONOVO  
 C053102

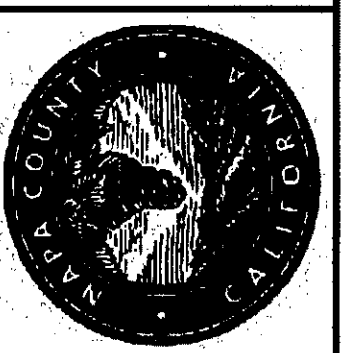
SCALE  
 AS SHOWN

DATE  
 NOV 2011

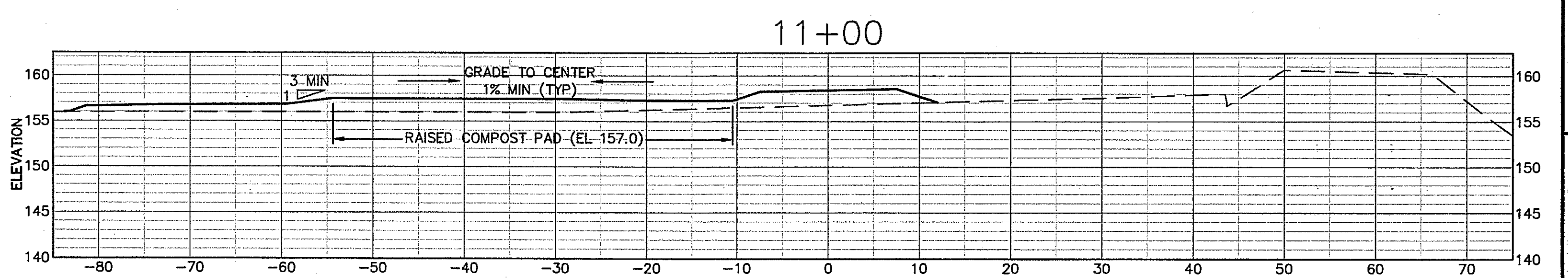
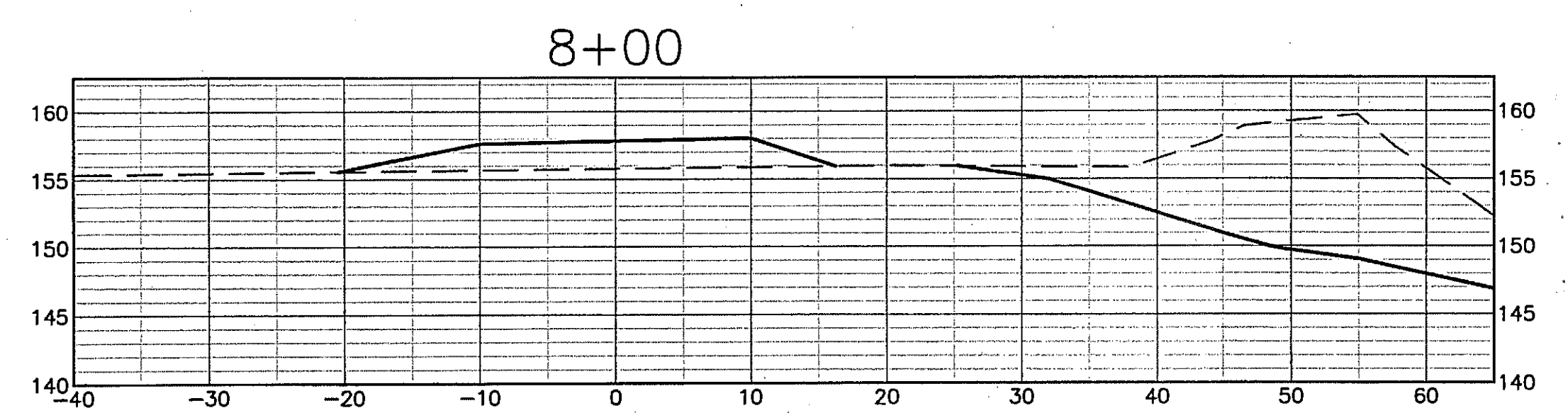
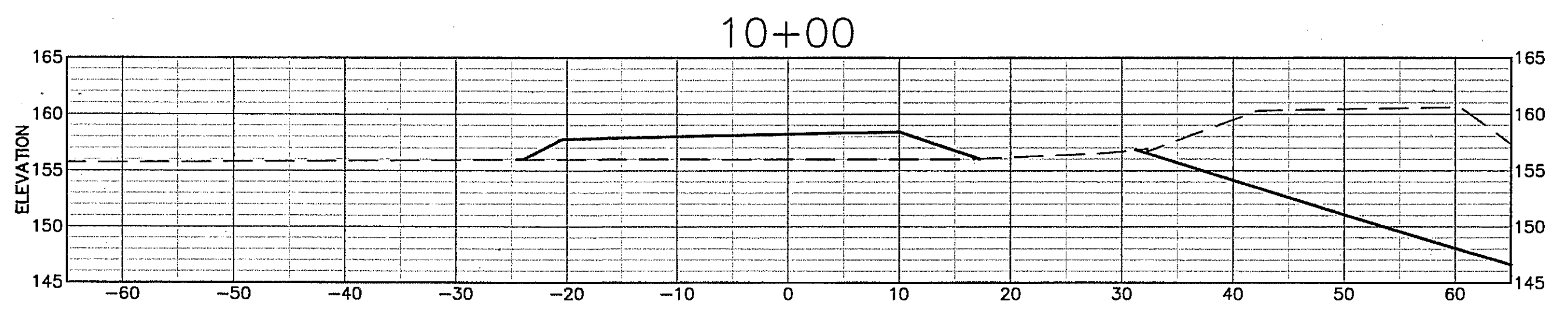
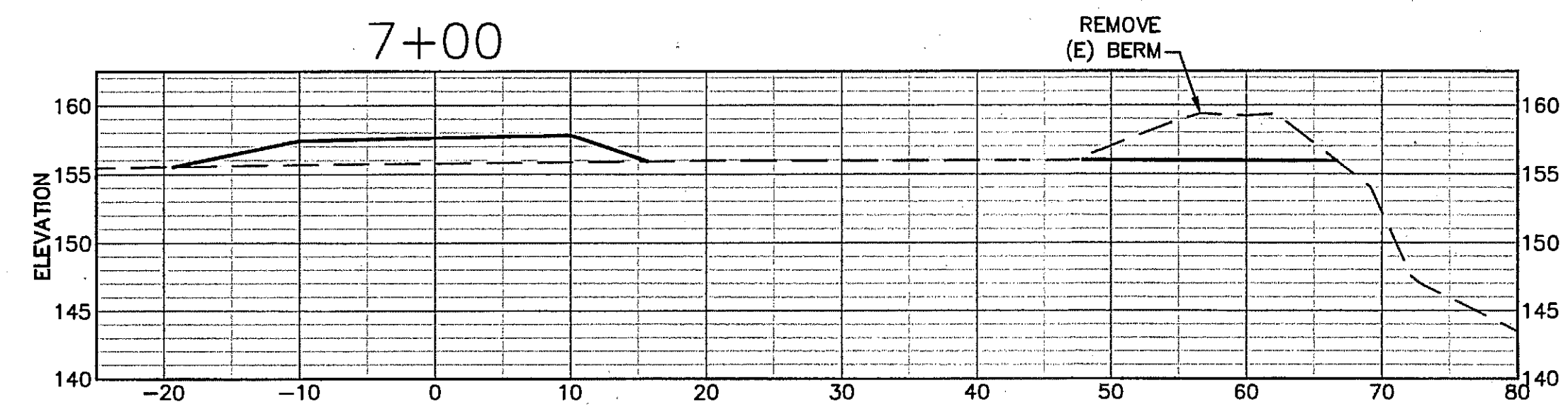
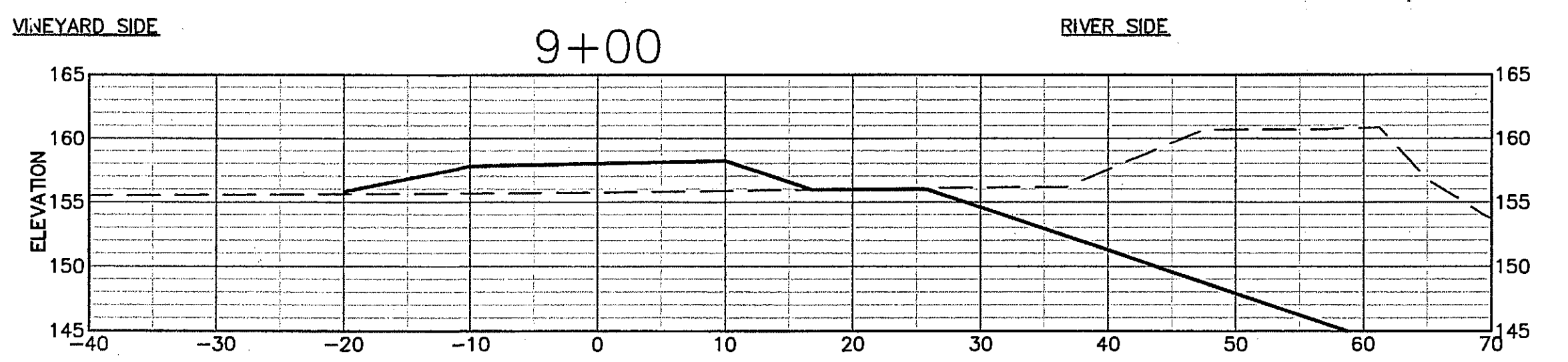
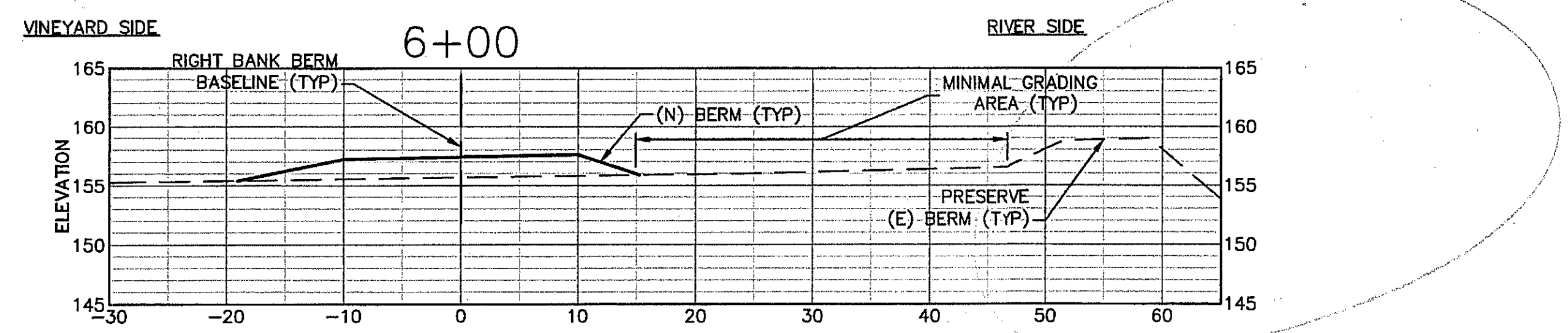
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**C16**





APPROVED	
DESIGNED	R. BROWN J. BLOMBERG
DRAWN	B. TANAKA
INCHARGE	A. BORGONOVO C053102
SCALE	AS SHOWN
DATE	NOV 2011
SHEET	



**SHEET NOTES**

- SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
- SEE SHEET C12 FOR TYPICAL SECTION.
- OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
- STATION 0 ON THE CROSS-SECTION ALIGNS WITH THE (N) BERM BASELINE.

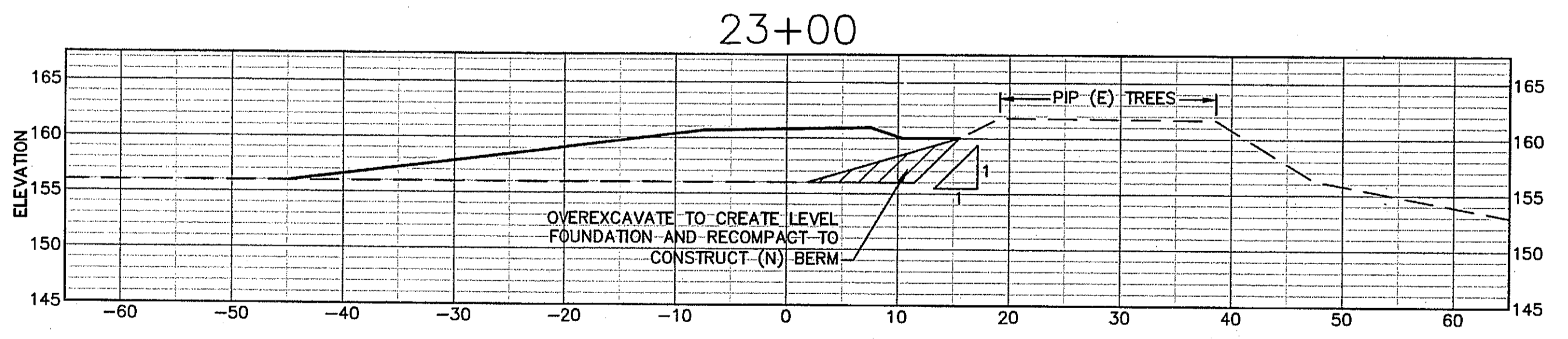
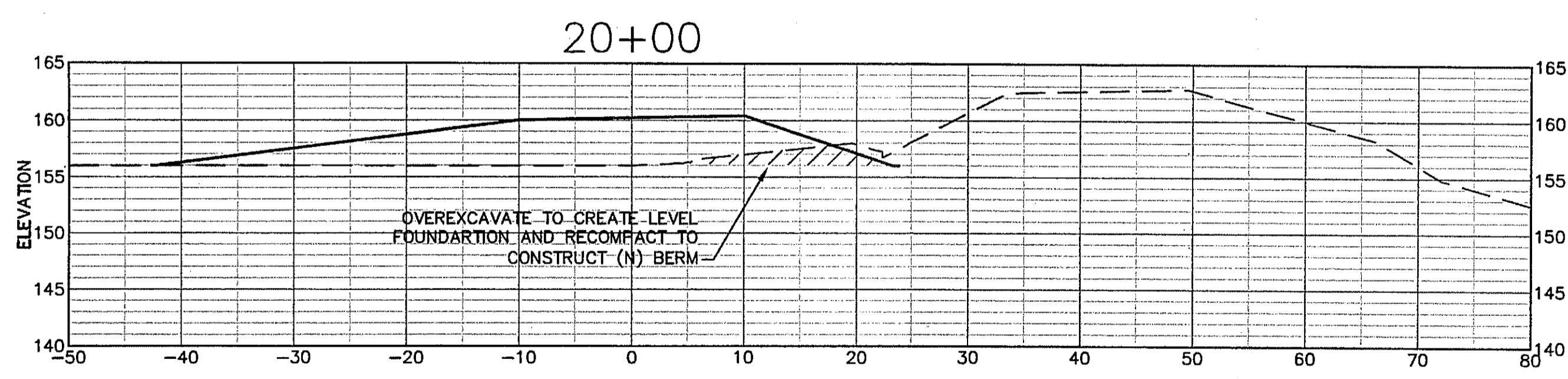
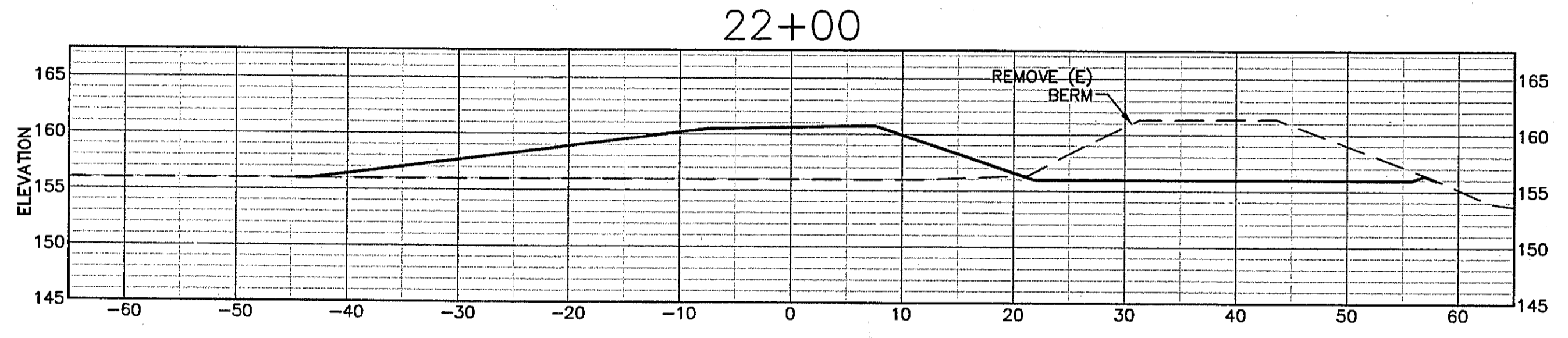
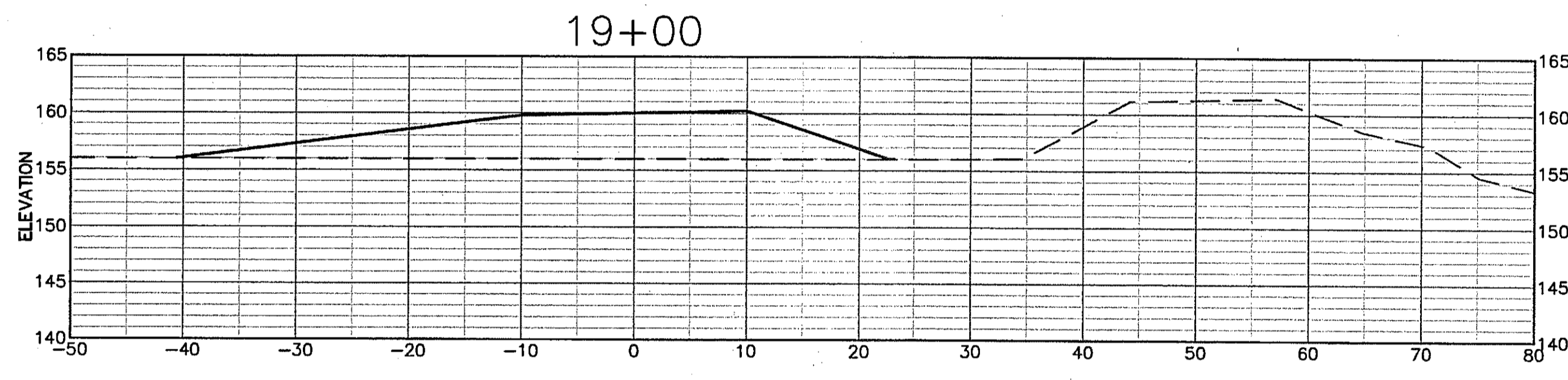
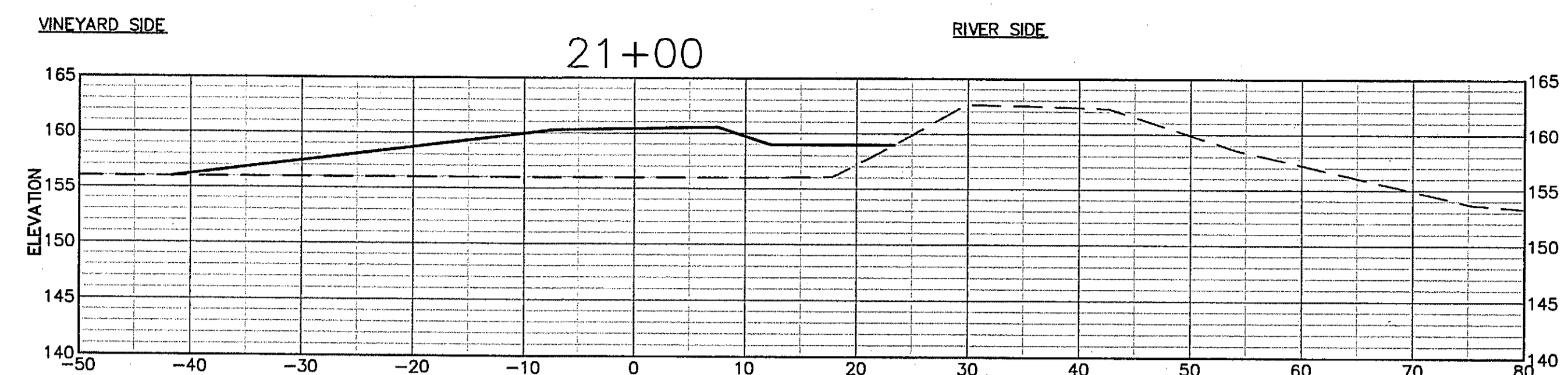
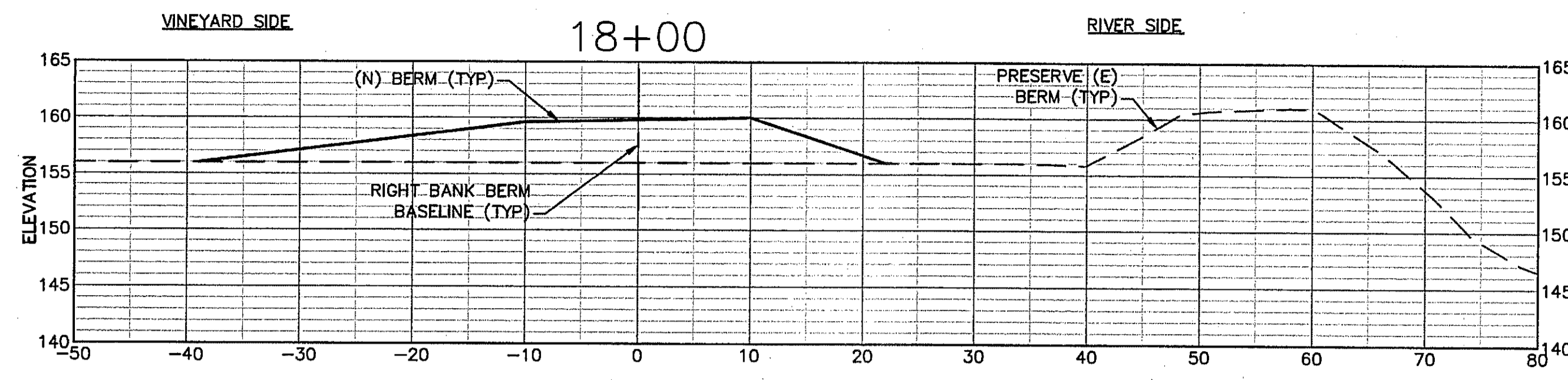


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**SHEET NOTES**

- SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
- SEE SHEET C12 FOR TYPICAL SECTION.
- OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
- STATION 0 ON THE CROSS-SECTION ALIGNS WITH THE (N) BERM BASELINE.

**RIGHT BANK (WEST)  
GRADING SECTIONS**



PREPARED BY:  
**PWA**  
 PHILIP WILLIAMS & ASSOCIATES, LTD.  
 ENVIRONMENTAL HYDROLOGY  
 150 GARDEN STREET, SUITE 600  
 NAPA, CALIFORNIA 94959  
 PHONE (415) 252-2200 FAX (415) 252-2203

SHEET TITLE  
**RIGHT BANK GRADING SECTIONS  
 BERM STA 18+00 TO STA 23+00**

PROJECT  
**NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559**



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DESIGNED  
 R. BROWN  
 J. BLONBERG

DRAWN  
 B. TANAKA

INCHARGE  
 A. BORGONOVO  
 C053102

SCALE  
 AS SHOWN

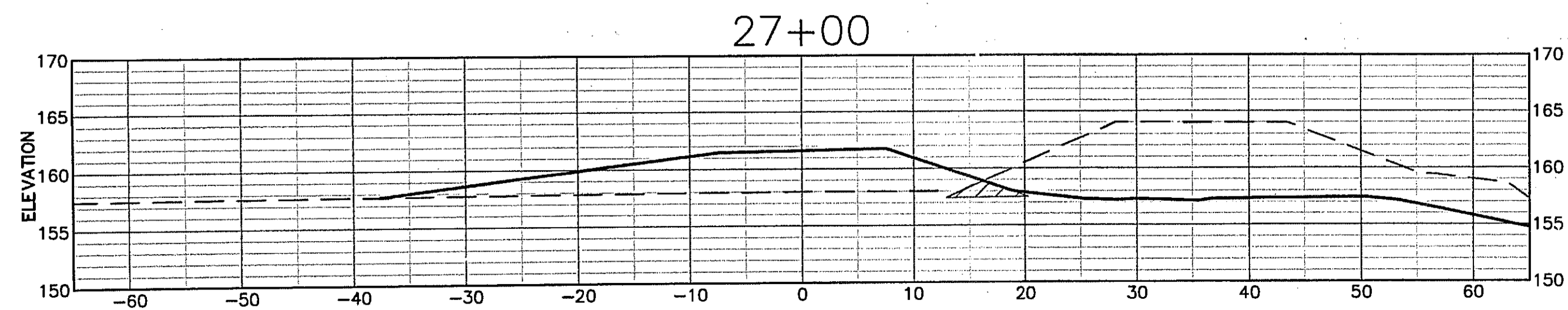
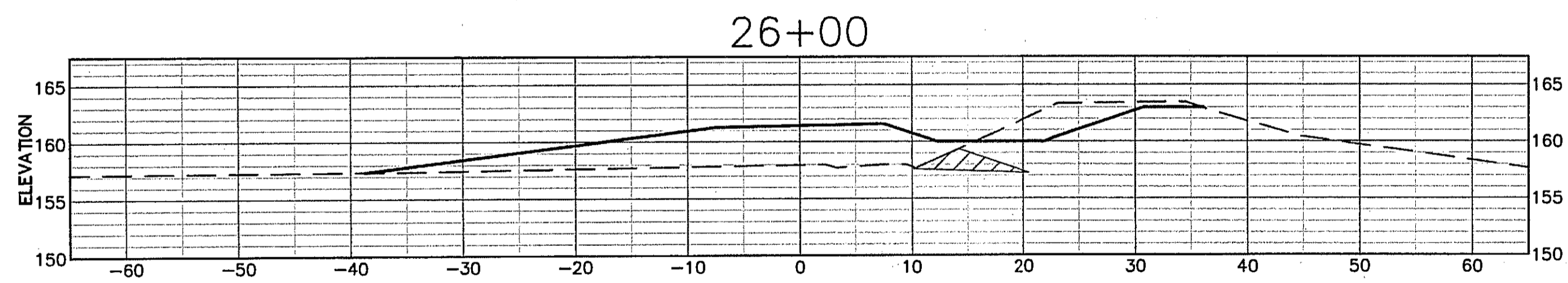
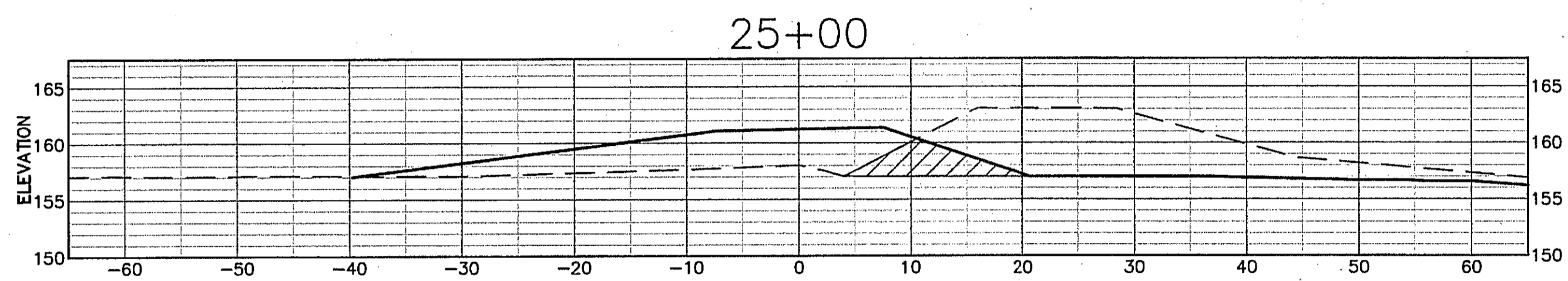
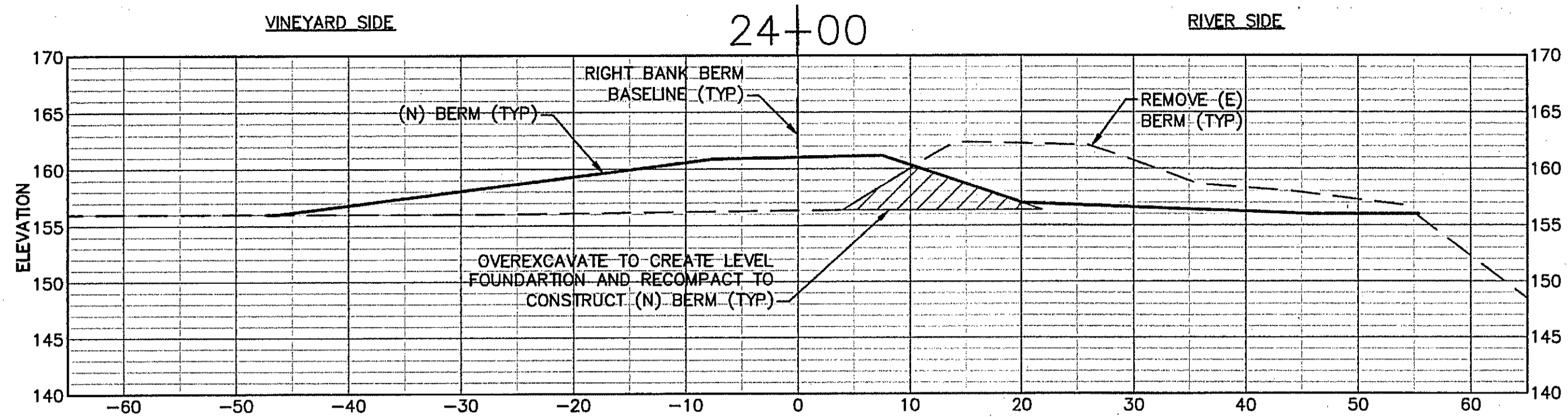
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 NOV 2011

SHEET

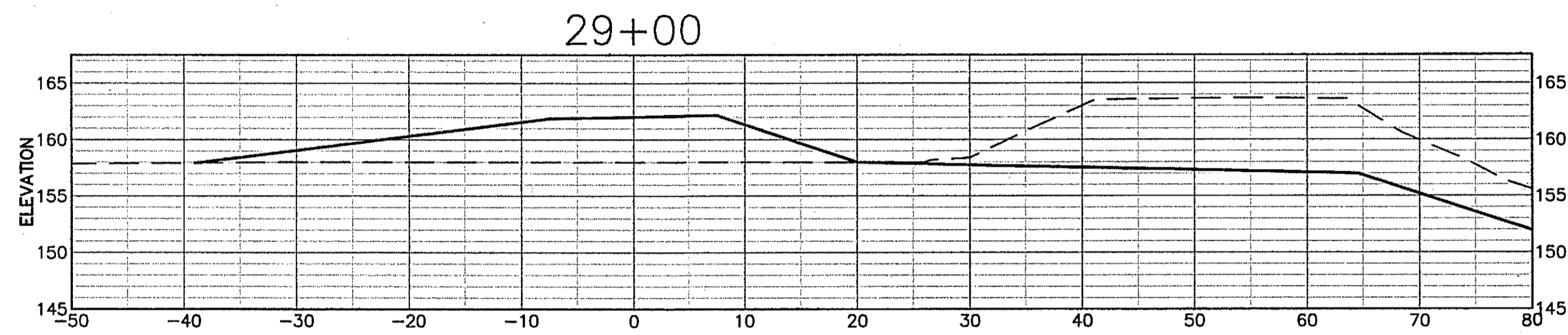
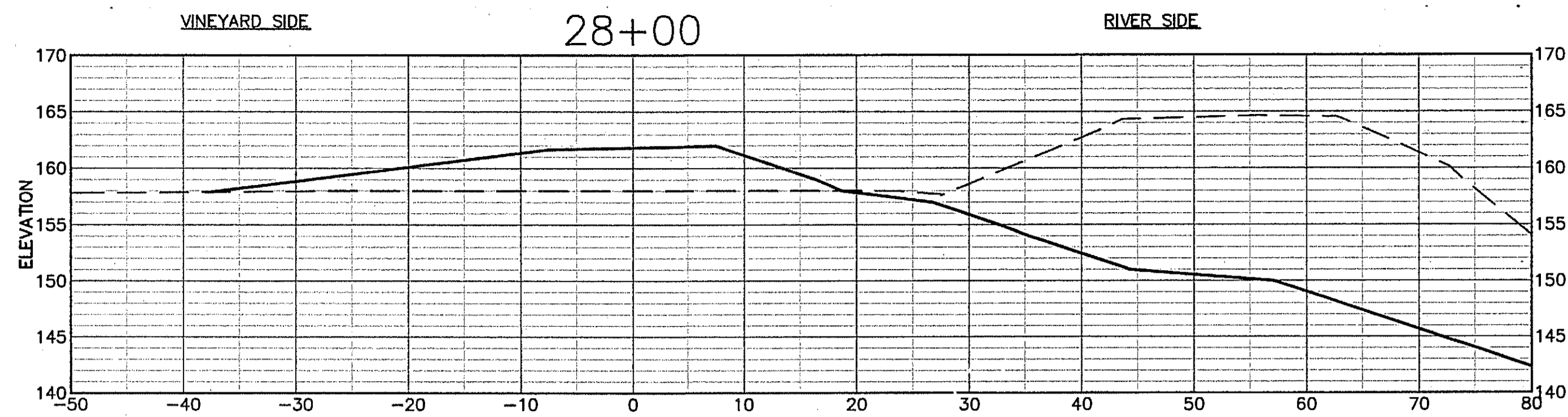
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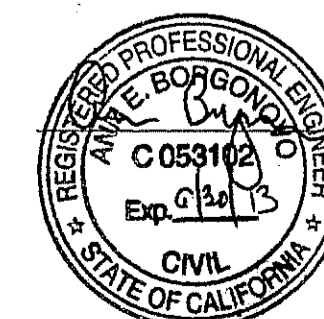


**RIGHT BANK (WEST)  
GRADING SECTIONS**



**SHEET NOTES**

- SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
- SEE SHEET C12 FOR TYPICAL SECTION.
- OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
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SAN FRANCISCO, CALIFORNIA 94109  
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SHEET TITLE  
**RIGHT BANK GRADING SECTIONS  
BERM STA 24+00 TO STA 29+00**

PROJECT  
**NAPA RIVER RESTORATION  
RUTHERFORD REACH 4:  
WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559**



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R. BROWN  
J. BLUMBERG

DRAWN  
B. TANAKA

INCHARGE  
A. BORGONOVO  
C053102

SCALE  
AS SHOWN

DATE  
NOV 2011

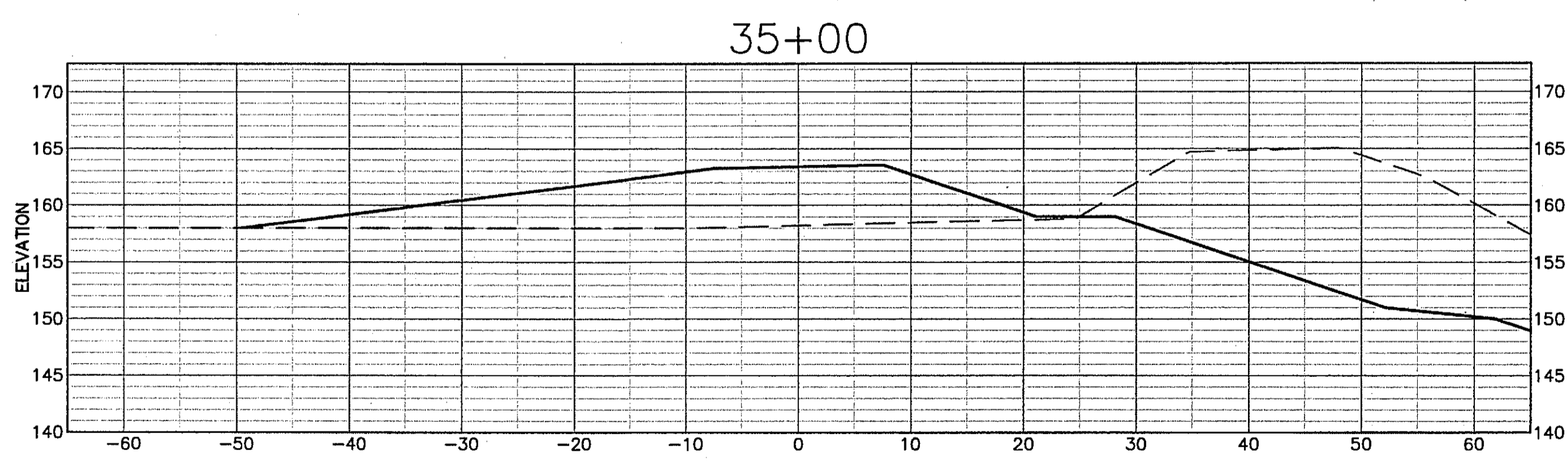
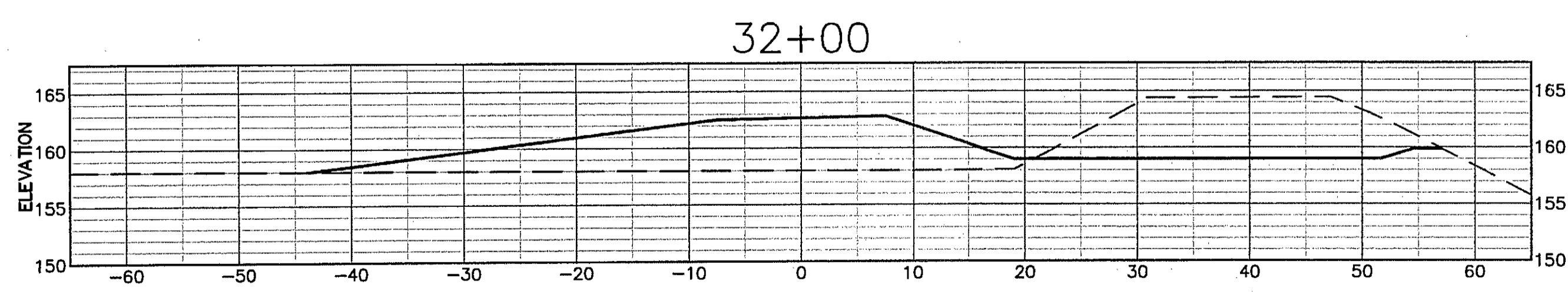
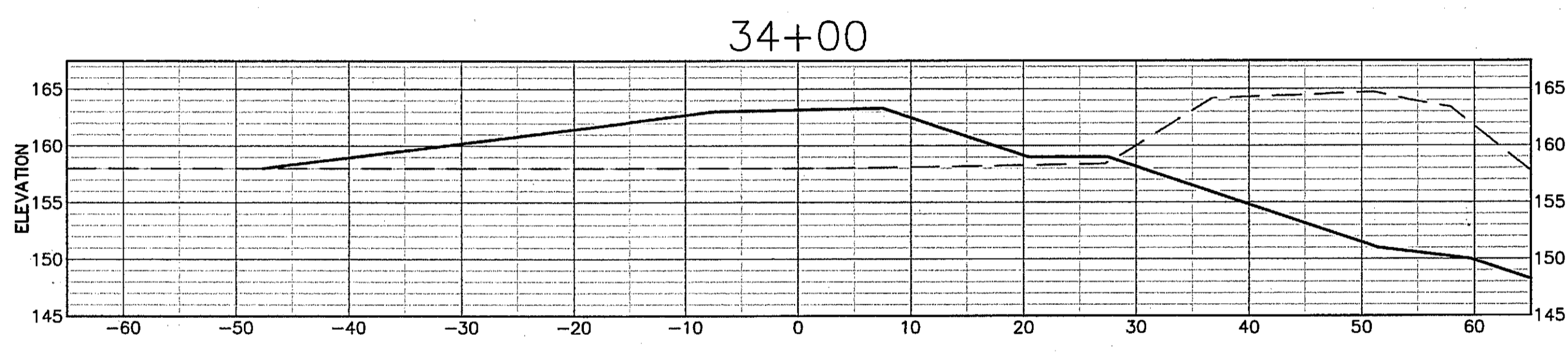
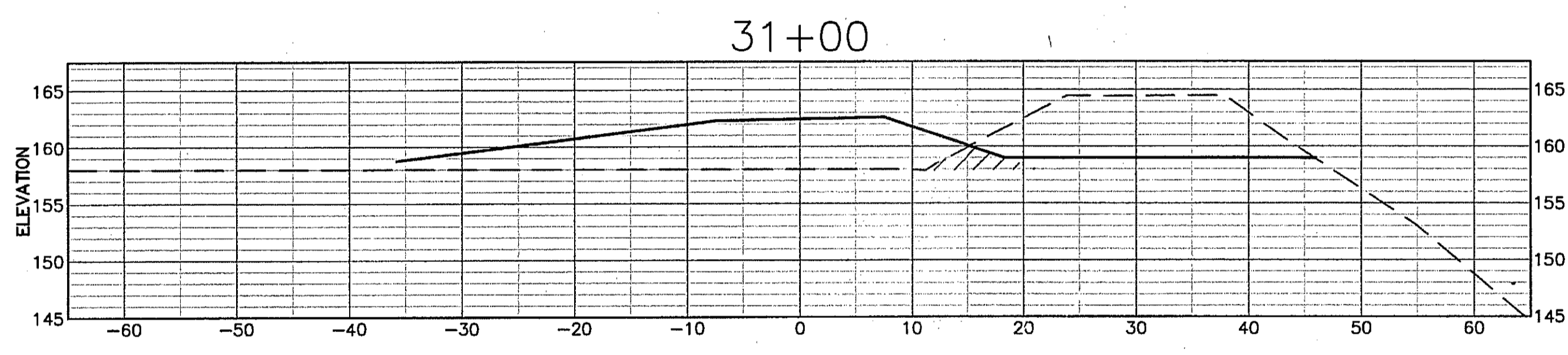
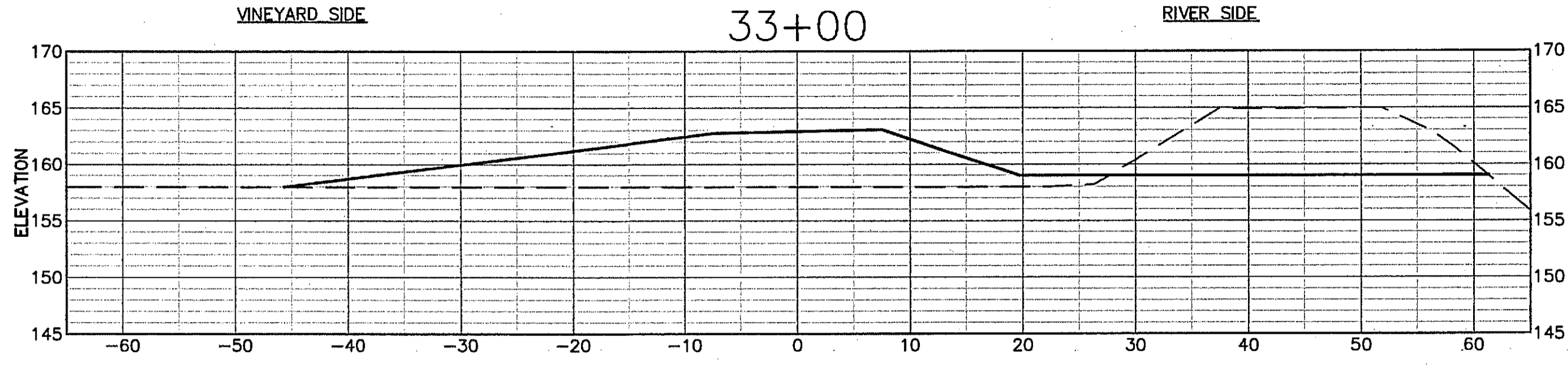
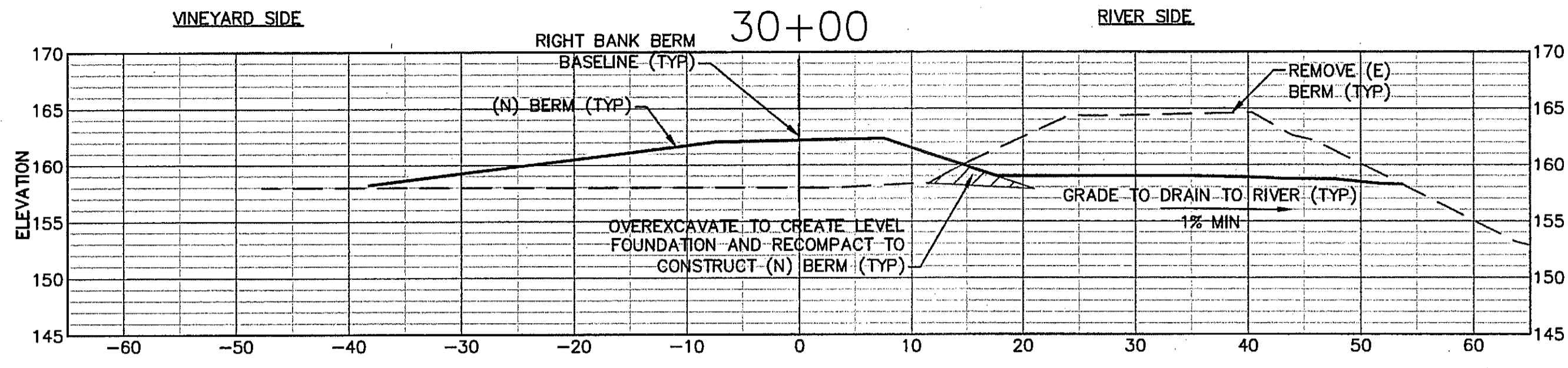
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**C20**





APPROVED
DESIGNED R. BROWN J. BLUMBERG
DRAWN B. TANAKA
INCHARGE A. BORGONOVO C053102
SCALE AS SHOWN
DATE NOV 2011
SHEET



**SHEET NOTES**

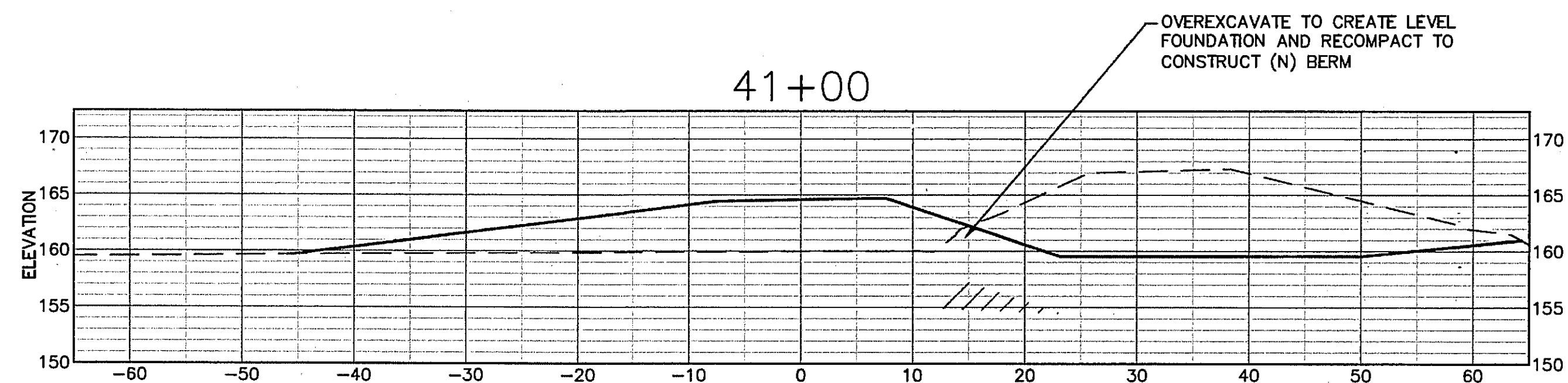
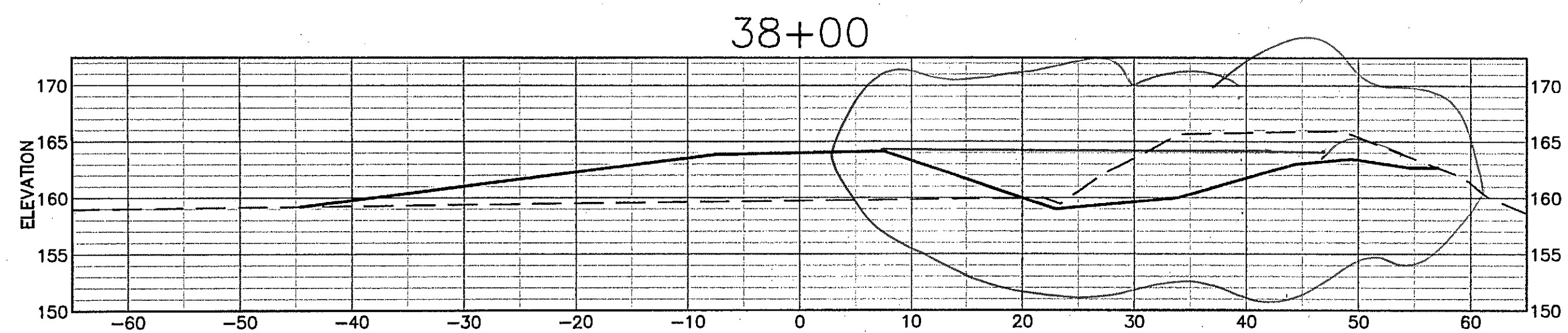
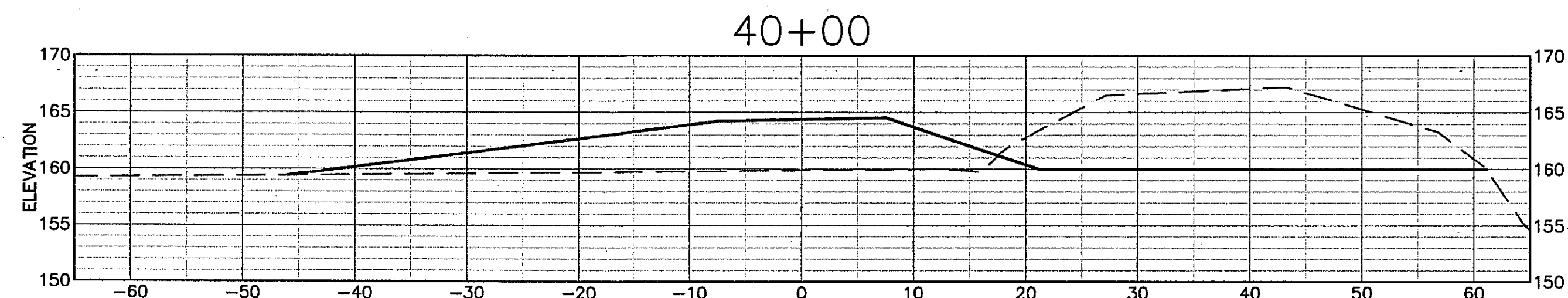
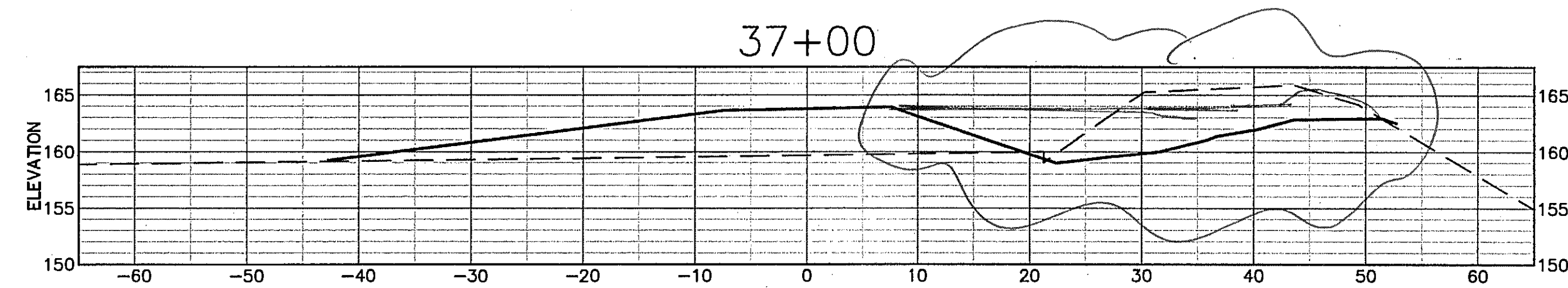
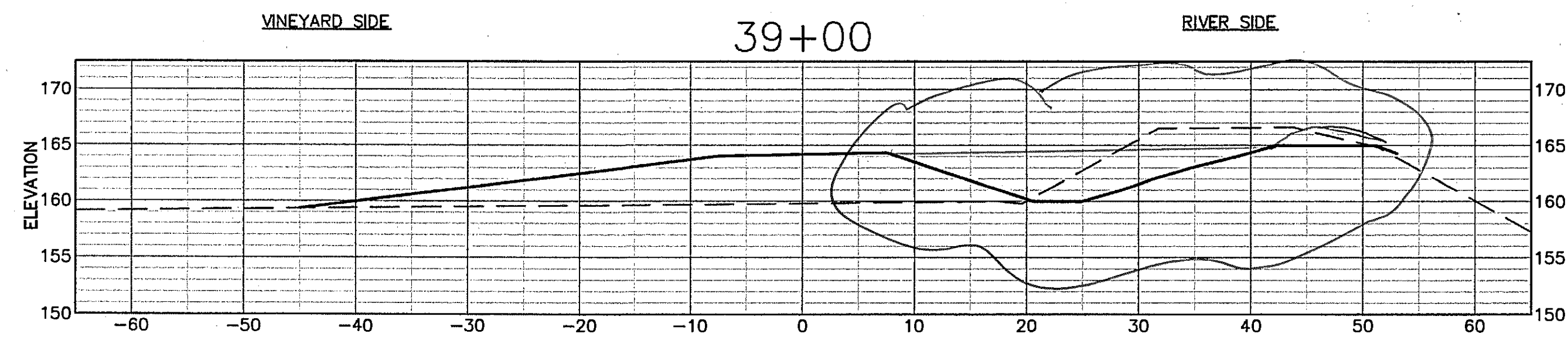
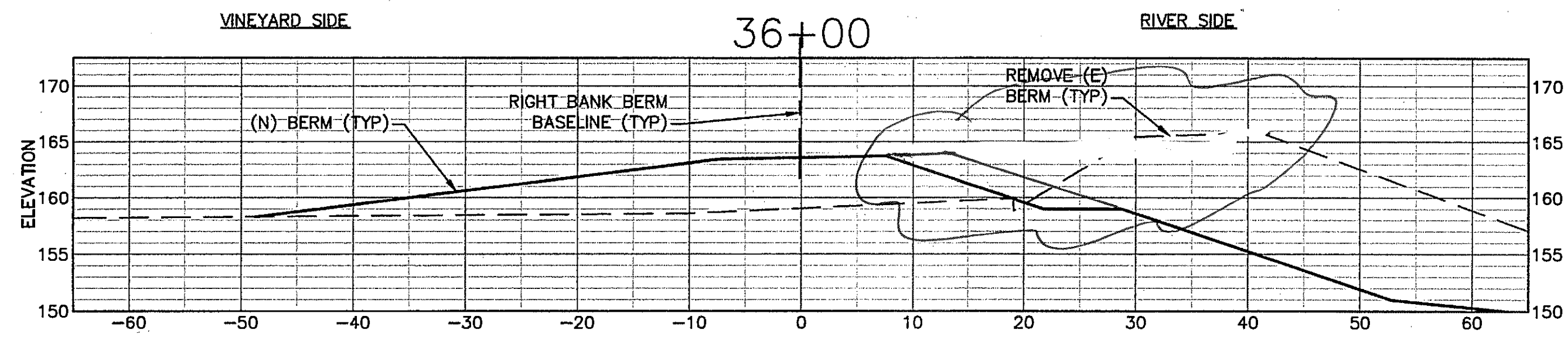
- SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
- SEE SHEET C12 FOR TYPICAL SECTION.
- OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
- STATION 0 ON THE CROSS-SECTION ALIGNS WITH THE (N) BERM BASELINE.



**RIGHT BANK (WEST) GRADING SECTIONS**

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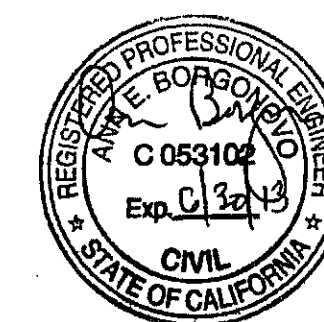




**RIGHT BANK (WEST)  
GRADING SECTIONS**

**SHEET NOTES**

- SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
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PREPARED BY:  
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 PHONE (415) 262-5200 FAX (415) 262-5200

SHEET TITLE  
**RIGHT BANK GRADING SECTIONS  
 BERM STA 36+00 TO STA 41+00**

PROJECT  
**NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559**



APPROVED

DESIGNED  
 R. BROWN  
 J. BLOMBERG

DRAWN  
 B. TANAKA

INCHARGE  
 A. BORGONOVO  
 C053102

SCALE  
 AS SHOWN

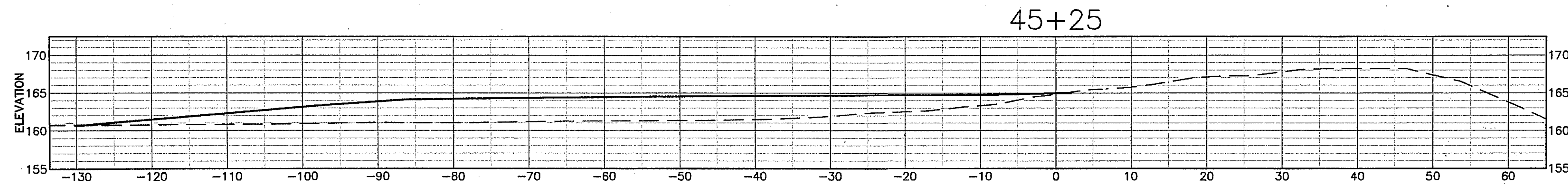
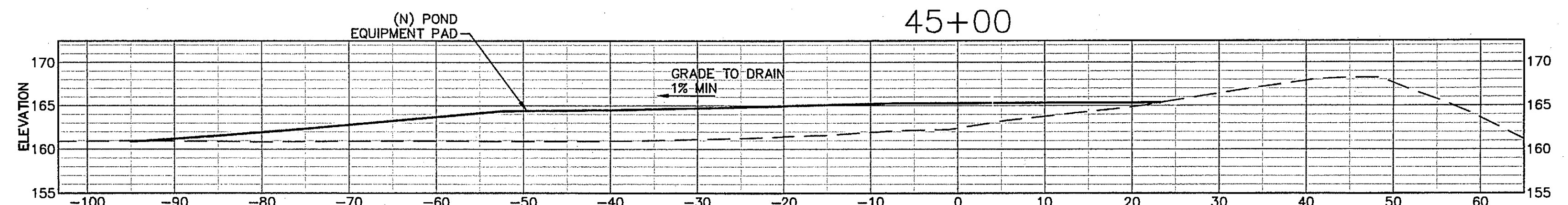
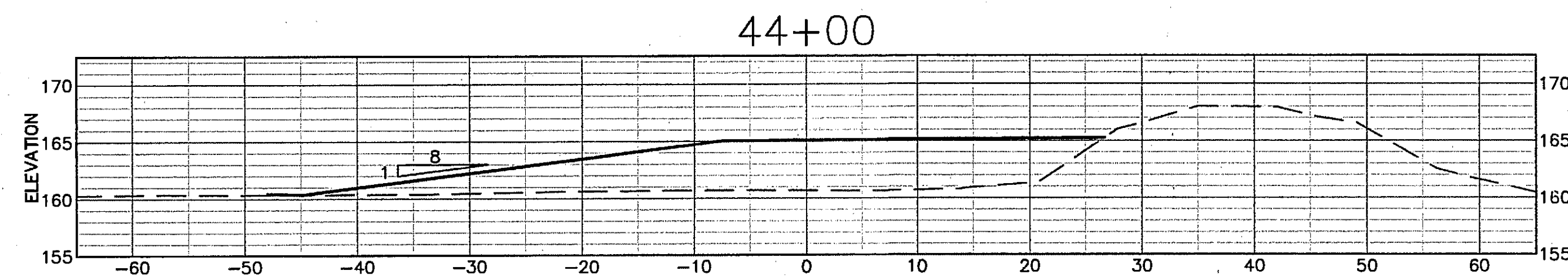
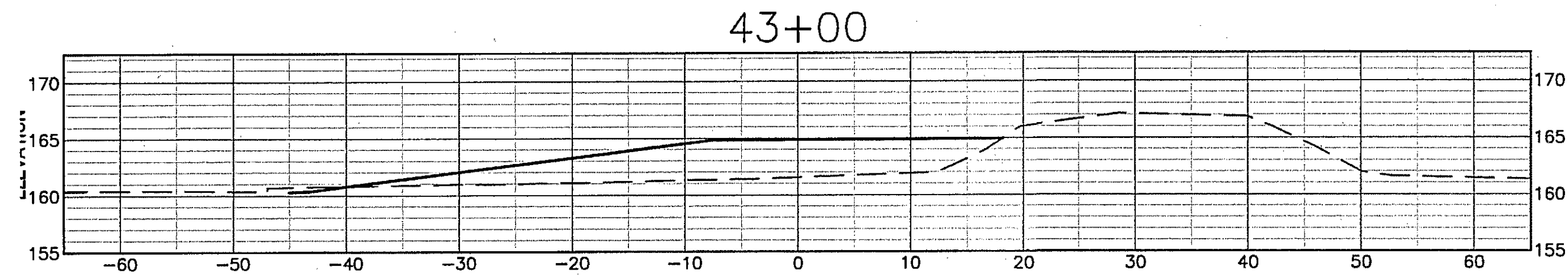
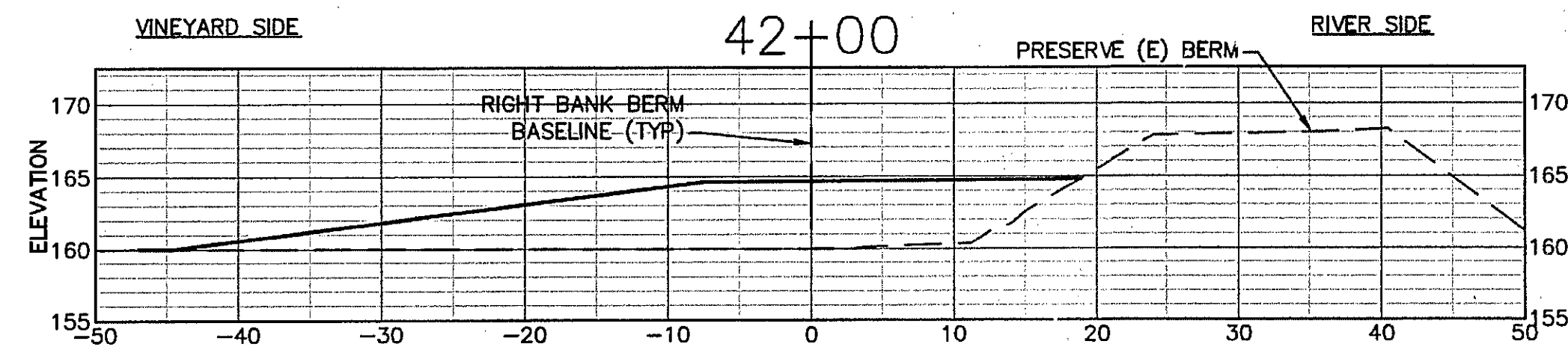
DATE  
 NOV 2011

SHEET

**C22**

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**SHEET NOTES**

1. SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
2. SEE SHEET C12 FOR TYPICAL SECTION.
3. OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
4. STATION 0 ON THE CROSS-SECTION ALIGNS WITH THE (N) BERM BASELINE.

**RIGHT BANK (WEST)  
GRADING SECTIONS**



PREPARED BY:  
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 ENVIRONMENTAL HYDROLOGY  
 SAN FRANCISCO, CALIFORNIA 94108  
 PHONE (415) 262-2000 FAX (415) 262-2000

SHEET TITLE: **RIGHT BANK GRADING SECTIONS  
BERM STA 42+00 TO STA 45+25**  
 PROJECT: **NAPA RIVER RESTORATION  
RUTHERFORD REACH 4:  
WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559**

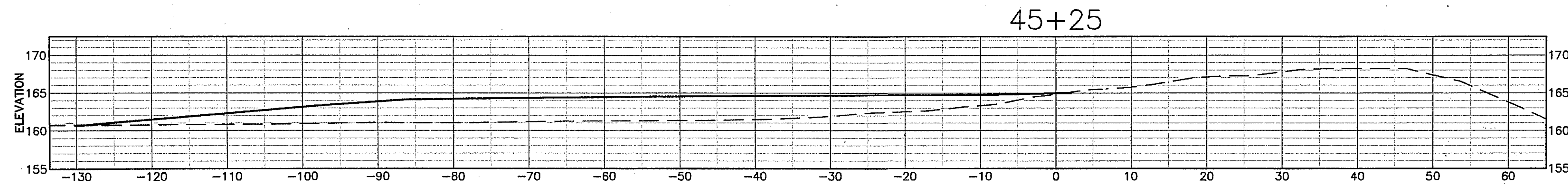
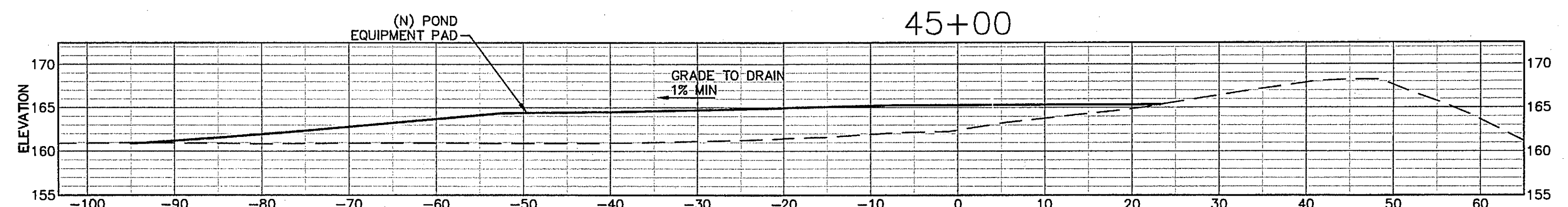
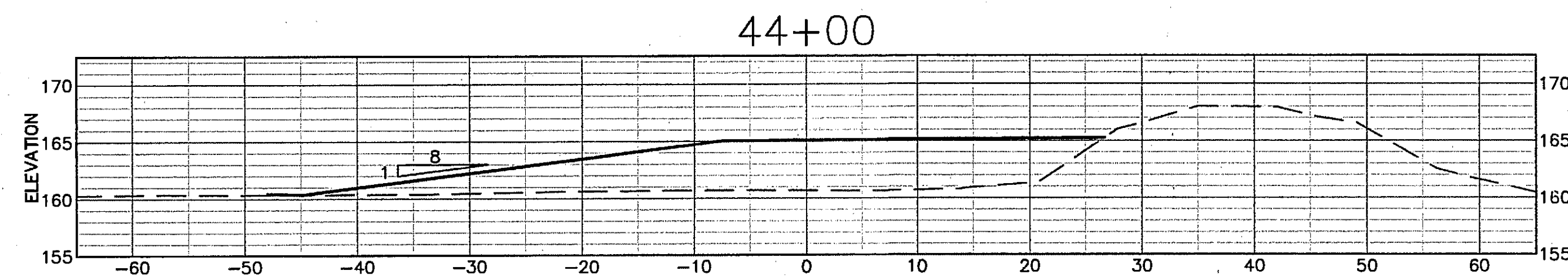
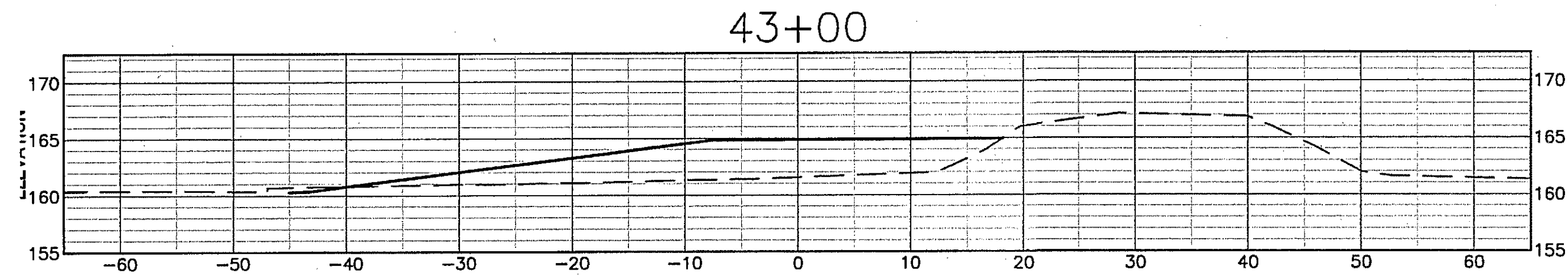
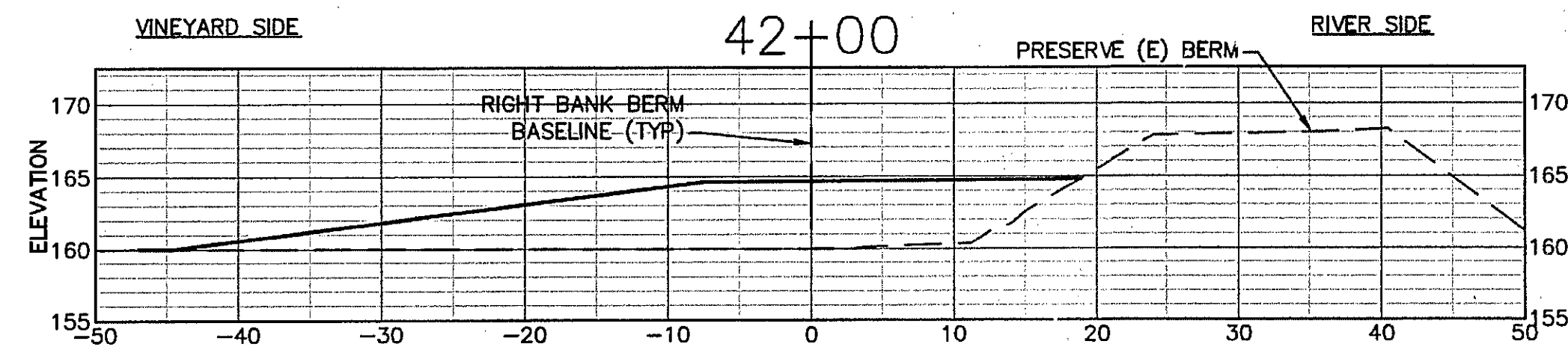


APPROVED:  
 DESIGNED: **R. BROWN  
J. BLOMBERG**  
 DRAWN: **B. TANAKA**  
 INCHARGE: **A. BORGONOVO  
C053102**  
 SCALE: **AS SHOWN**  
 DATE: **NOV 2011**  
 SHEET:

**C23**

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**SHEET NOTES**

1. SCALE FOR ALL GRADING SECTIONS IS 1"=10'. SECTIONS ARE SHOWN LOOKING UPSTREAM
2. SEE SHEET C12 FOR TYPICAL SECTION.
3. OVEREXCAVATE AS NEEDED TO CREATE LEVEL BERM FOUNDATION. SUBGRADE LIMITS NOT SHOWN ON THIS SHEET. SEE TYPICAL SECTIONS, SHEET C12.
4. STATION 0 ON THE CROSS-SECTION ALIGNS WITH THE (N) BERM BASELINE.

**RIGHT BANK (WEST)  
GRADING SECTIONS**



PREPARED BY:  
**PWA**  
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 PHONE (415) 262-2000 FAX (415) 262-2000

SHEET TITLE  
**RIGHT BANK GRADING SECTIONS  
 BERM STA 42+00 TO STA 45+25**

PROJECT  
**NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559**



APPROVED

DESIGNED  
 R. BROWN  
 J. BLOMBERG

DRAWN  
 B. TANAKA

INCHARGE  
 A. BORGONOVO  
 C053102

SCALE  
 AS SHOWN

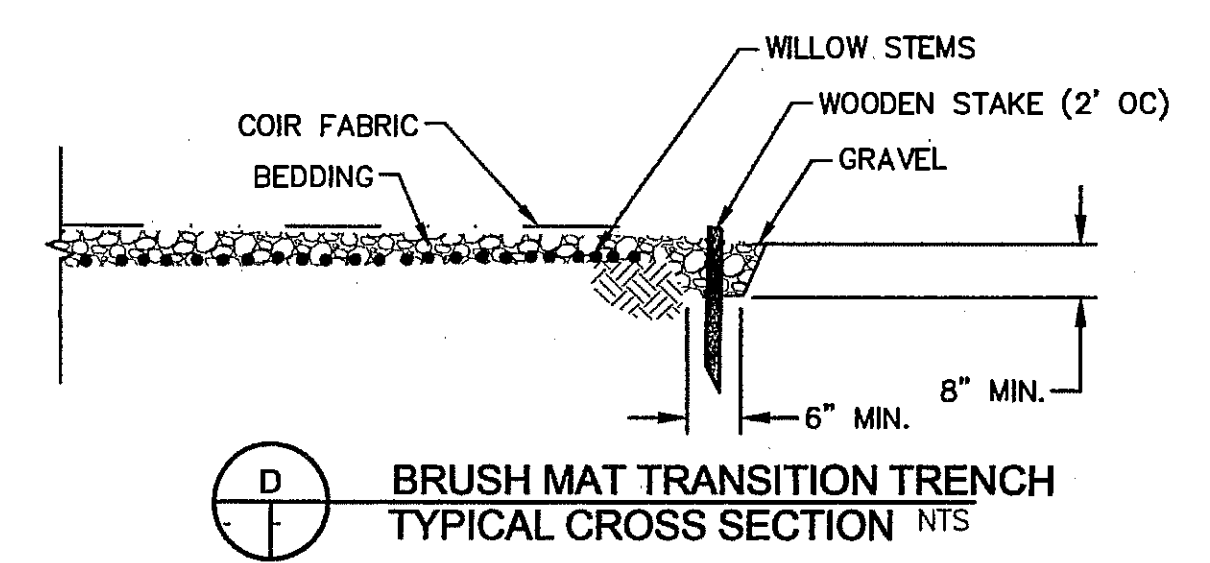
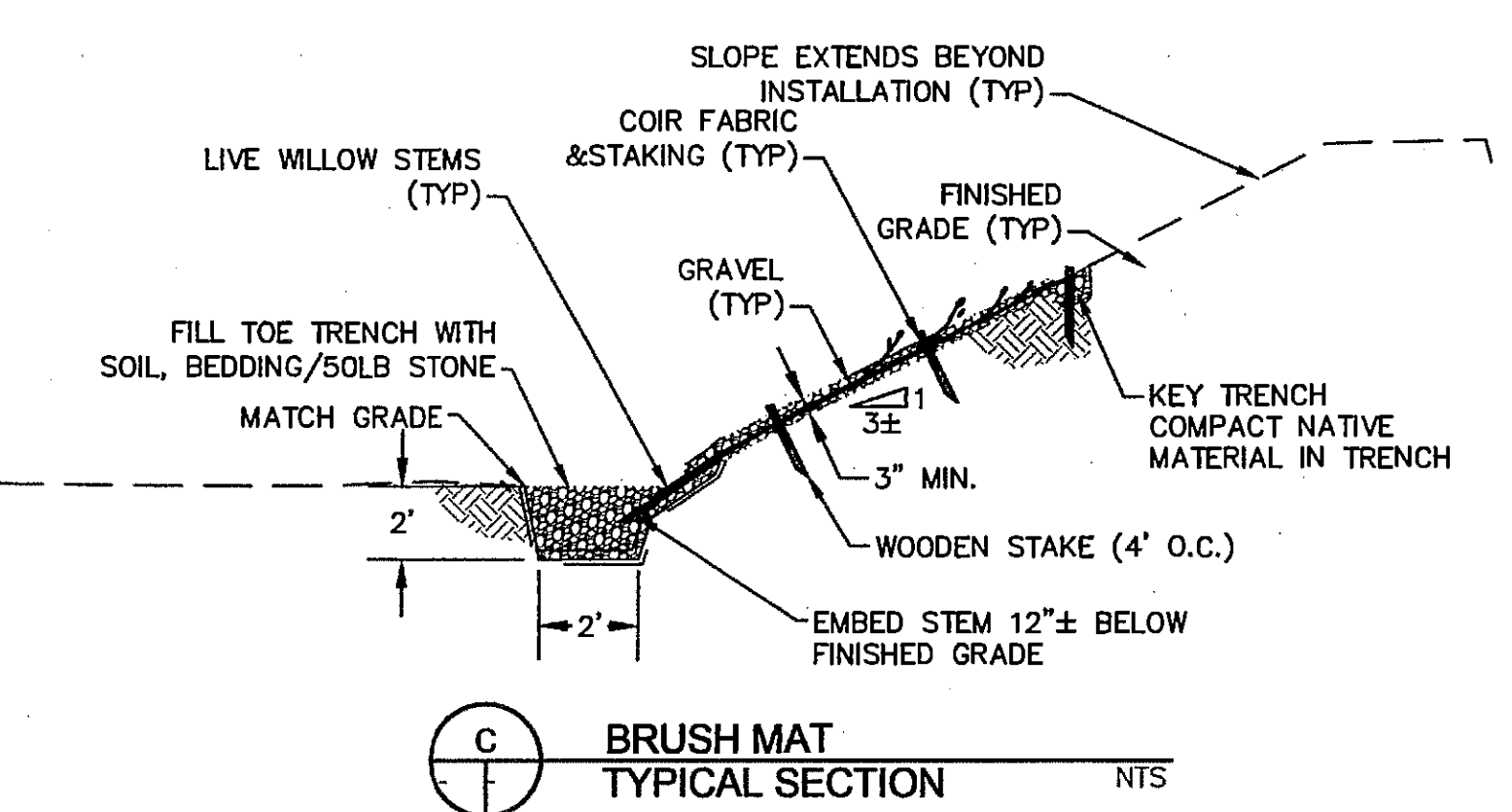
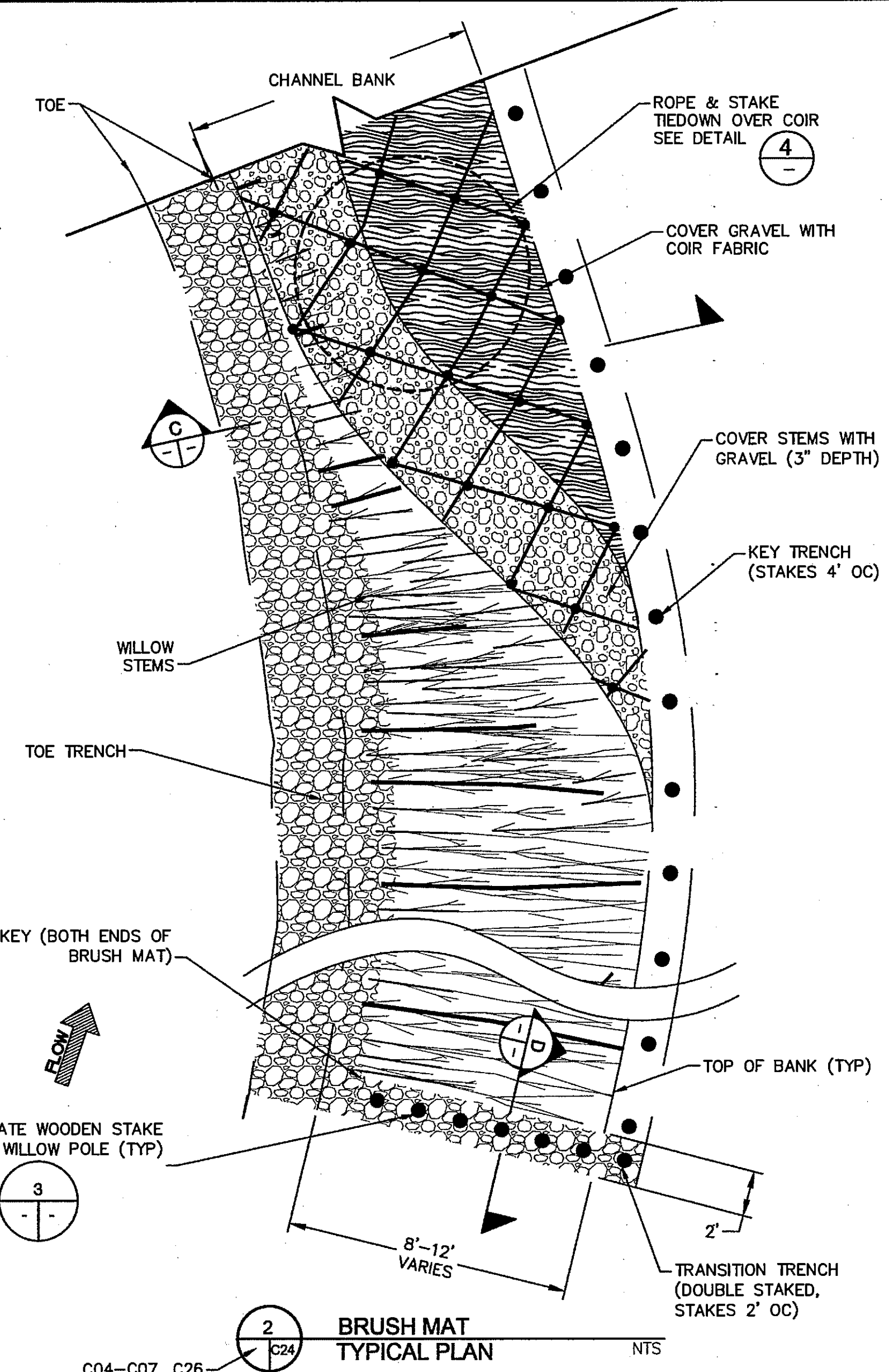
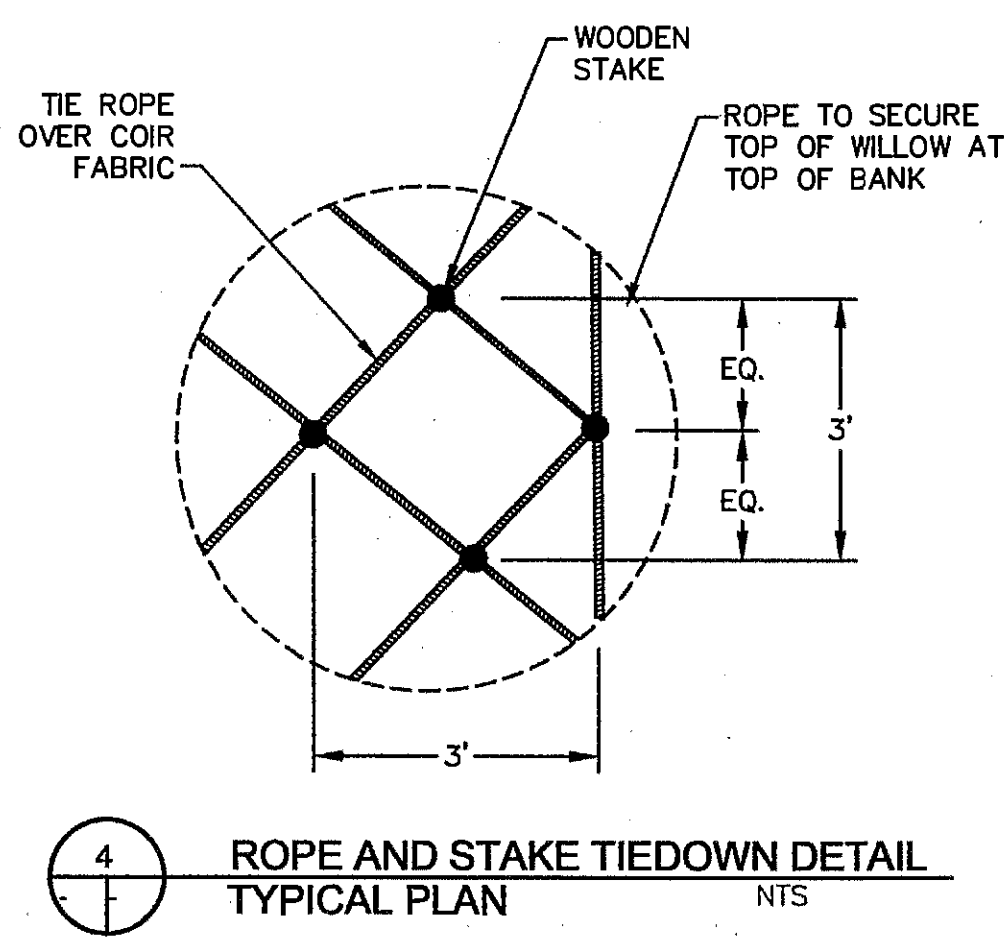
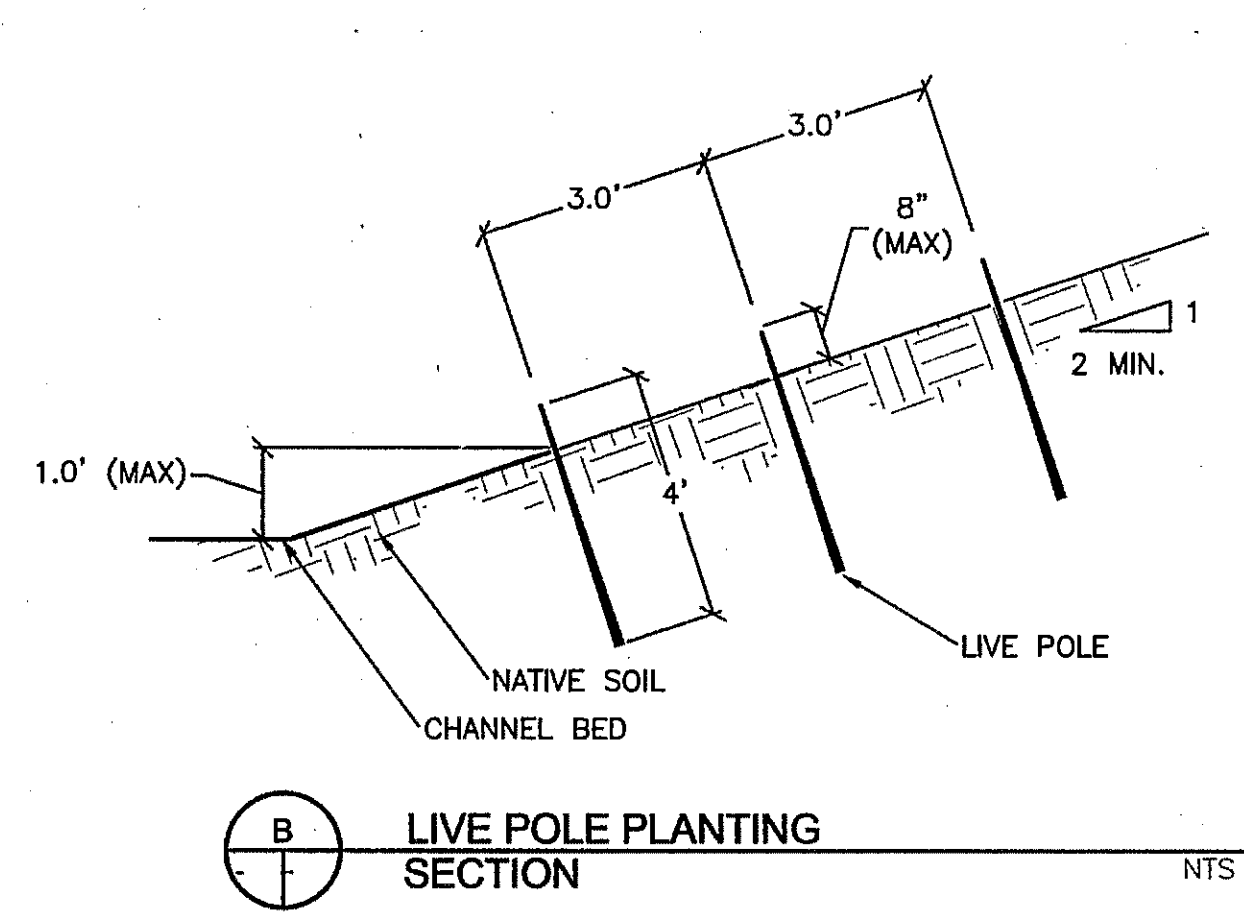
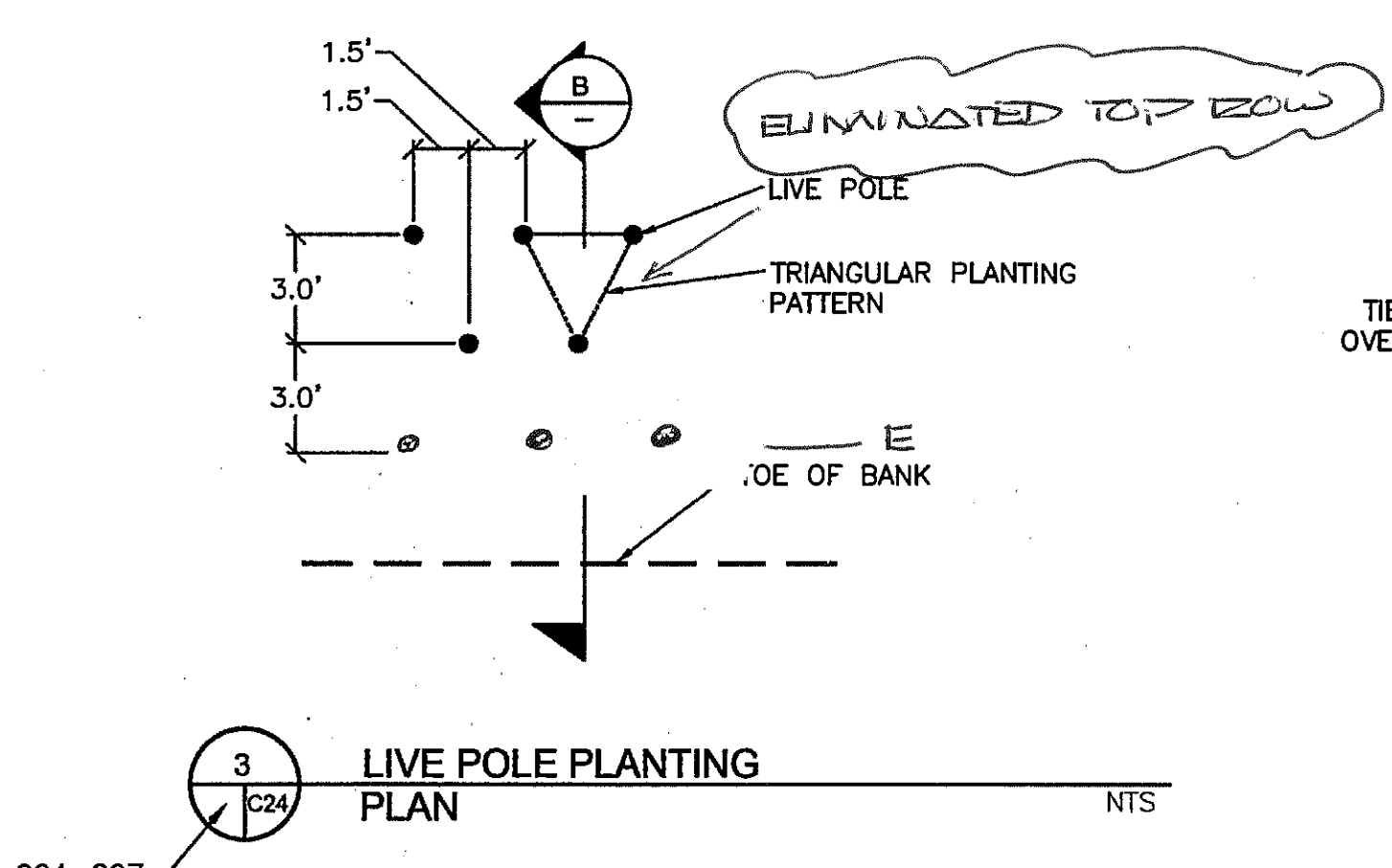
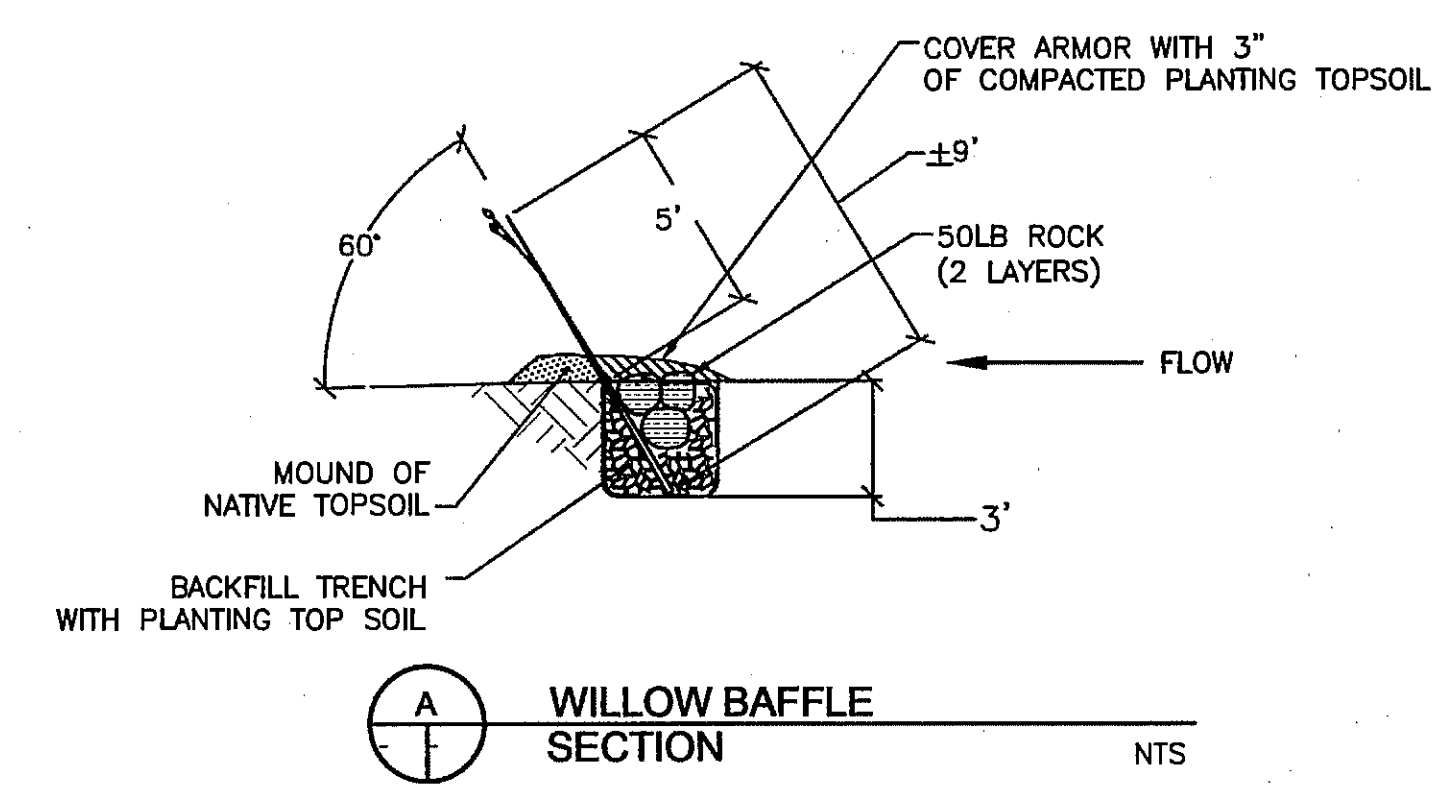
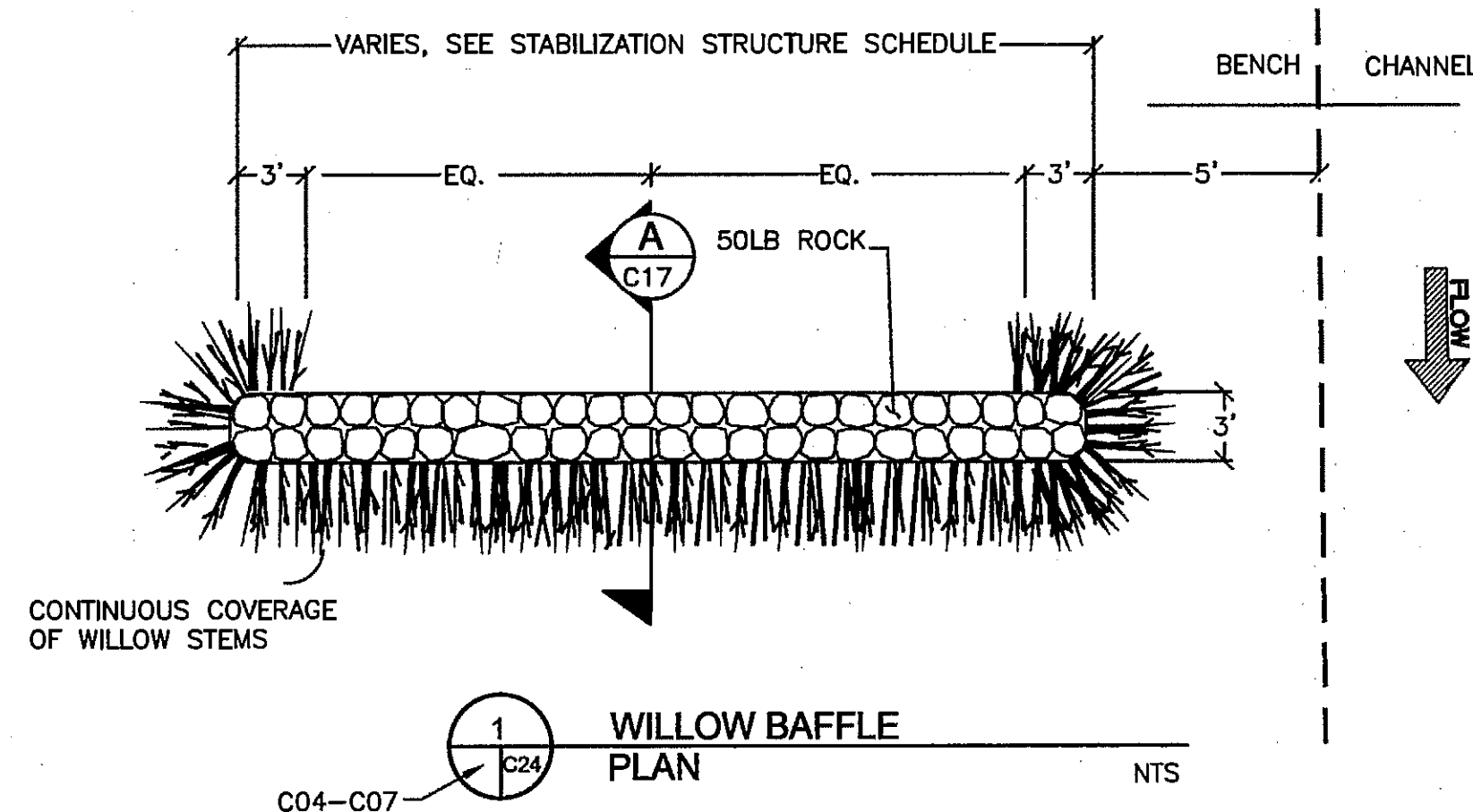
DATE  
 NOV 2011

SHEET

**C23**

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STABILIZATION STRUCTURE SCHEDULE				
TREATMENT	STATION/RANGE	BANK	ELEVATION	WIDTH
<b>BENCH #6</b>				
BRUSH MAT	STA 157+70 TO STA 161+25	RIGHT	-	-
POLE PLANTING	160+75 TO 161+25	-	145 TO 149	-
LARGE WOODY DEBRIS TYPE 3	158+30 TO 160+75	-	143 TO 146	6
WILLOW BAFFLE	161+00	-	-	15
WILLOW BAFFLE	160+50	-	-	15
WILLOW BAFFLE	159+75	-	-	15
BRUSH MAT	158+75	-	-	15
BRUSH MAT	158+00 TO 158+30	-	145 TO 149	-
BOULDER CLUSTER	158+00	CENTER	-	-
<b>BENCH #8</b>				
BRUSH MAT	STA 150+25 TO STA 153+40	RIGHT	-	-
POLE PLANTING	152+15 TO 152+75	-	142 TO 146	-
POLE PLANTING	151+00 TO 152+15	-	142 TO 146	6
BOULDER CLUSTER	152+90	CENTER	-	-
LARGE WOODY DEBRIS TYPE 2	152+50	-	-	-
WILLOW BAFFLE	151+10	-	-	15
BOULDER CLUSTER	150+65	RIGHT	-	-
LARGE WOODY DEBRIS TYPE 1	150+50	-	-	-
BRUSH MAT	150+75 TO 151+00	-	142 TO 146	-

STABILIZATION STRUCTURE SCHEDULE				
TREATMENT	STATION/RANGE	BANK	ELEVATION	WIDTH
<b>BENCH #9</b>				
BRUSH MAT	STA 140+15 TO STA 140+85	RIGHT	-	-
POLE PLANTING	140+55 TO 140+85	-	141 TO 145	-
POLE PLANTING	140+35 TO 140+55	-	141 TO 144	6
LARGE WOODY DEBRIS TYPE 3	140+35	-	-	-
BRUSH MAT	140+15 TO 140+35	-	141 TO 145	-
<b>BENCH #10</b>				
STA 134+70 TO STA 139+15 RIGHT				
LARGE WOODY DEBRIS TYPE 3	139+05	-	-	-
BRUSH MAT	138+60 TO 139+15	-	138 TO 143	6
POLE PLANTING	135+40 TO 138+60	-	139 TO 143	6
WILLOW BAFFLE	138+60	-	-	30
CONSTRUCTED RIFFLE	138+45 TO 138+95	CENTER	-	-
LARGE WOODY DEBRIS TYPE 2	137+50	-	-	-
WILLOW BAFFLE	137+25	-	-	15
LARGE WOODY DEBRIS TYPE 3	135+00	-	-	-
BRUSH MAT	134+90 TO 135+40	-	138 TO 143	-
<b>In Channel</b>				
BOULDER CLUSTER	133+40 TO 133+50	LEFT	-	-
BOULDER CLUSTER	133+50	CENTER	-	-
LARGE WOODY DEBRIS TYPE 1	133+40	LEFT	-	-
<b>BENCH #12</b>				
STA 130+80 TO STA 133+50 RIGHT				
BRUSH MAT	132+80 TO 133+10	-	140 TO 145	-
POLE PLANTING	131+35 TO 132+60	-	141 TO 144	6
LARGE WOODY DEBRIS TYPE 2	133+00	-	-	30
WILLOW BAFFLE	132+50	-	-	30
WILLOW BAFFLE	131+60	-	-	30
BRUSH MAT	131+00 TO 131+35	-	140 TO 145	-

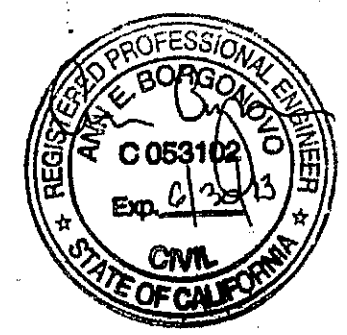
PREPARED BY: **PWA**  
 PHILIP WILLIAMS & ASSOCIATES, LTD.  
 ENVIRONMENTAL HYDROLOGY  
 SAN FRANCISCO, CALIFORNIA 94103  
 PHONE (415) 285-2000 FAX (415) 282-2033

SHEET TITLE: **BIOTECHNICAL STABILIZATION DETAILS**  
 PROJECT: **NAPA RIVER RESTORATION RUTHERFORD REACH 4: WEST (RIGHT) BANK**

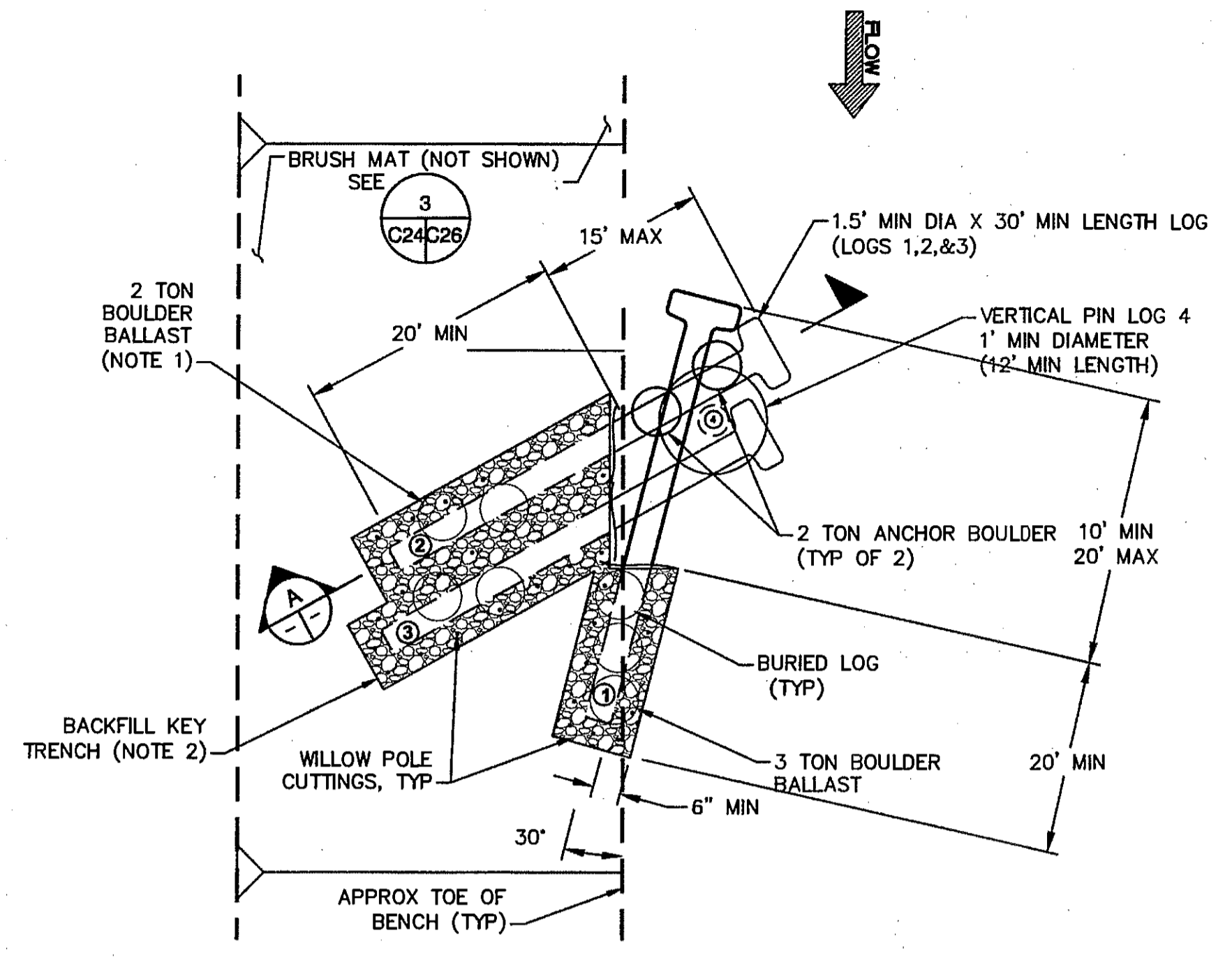
PREPARED FOR: **NAPA COUNTY DEPARTMENT OF PUBLIC WORKS**  
 1195 Third St, Suite 201  
 Napa, CA 94559



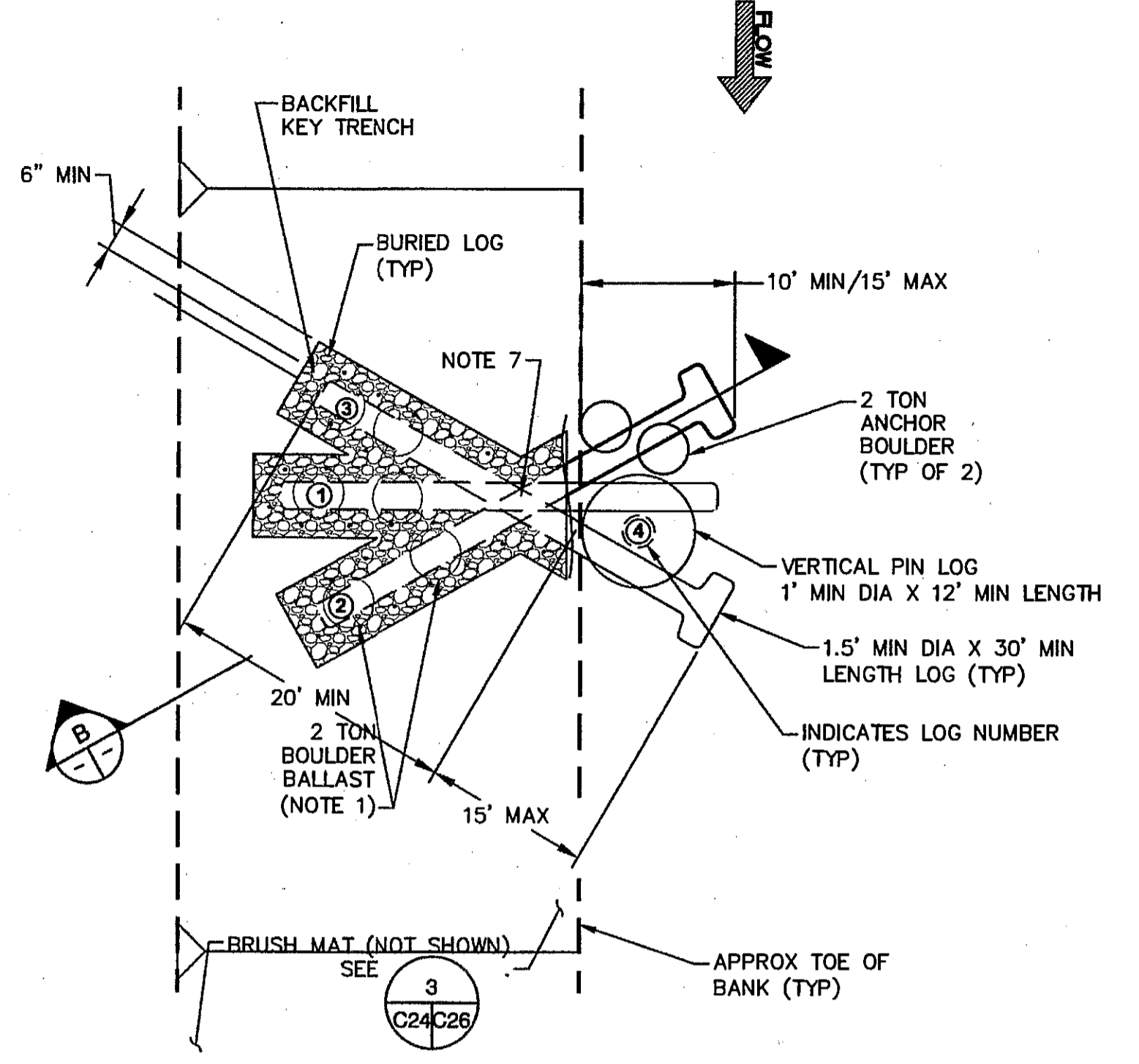
APPROVED: [Signature]  
 DESIGNED: R. BROWN, J. BLOMBERG  
 DRAWN: B. TANAKA  
 INCHARGE: A. BORGONOVO, C053102  
 SCALE: AS SHOWN  
 DATE: NOV 2011  
 SHEET: C24



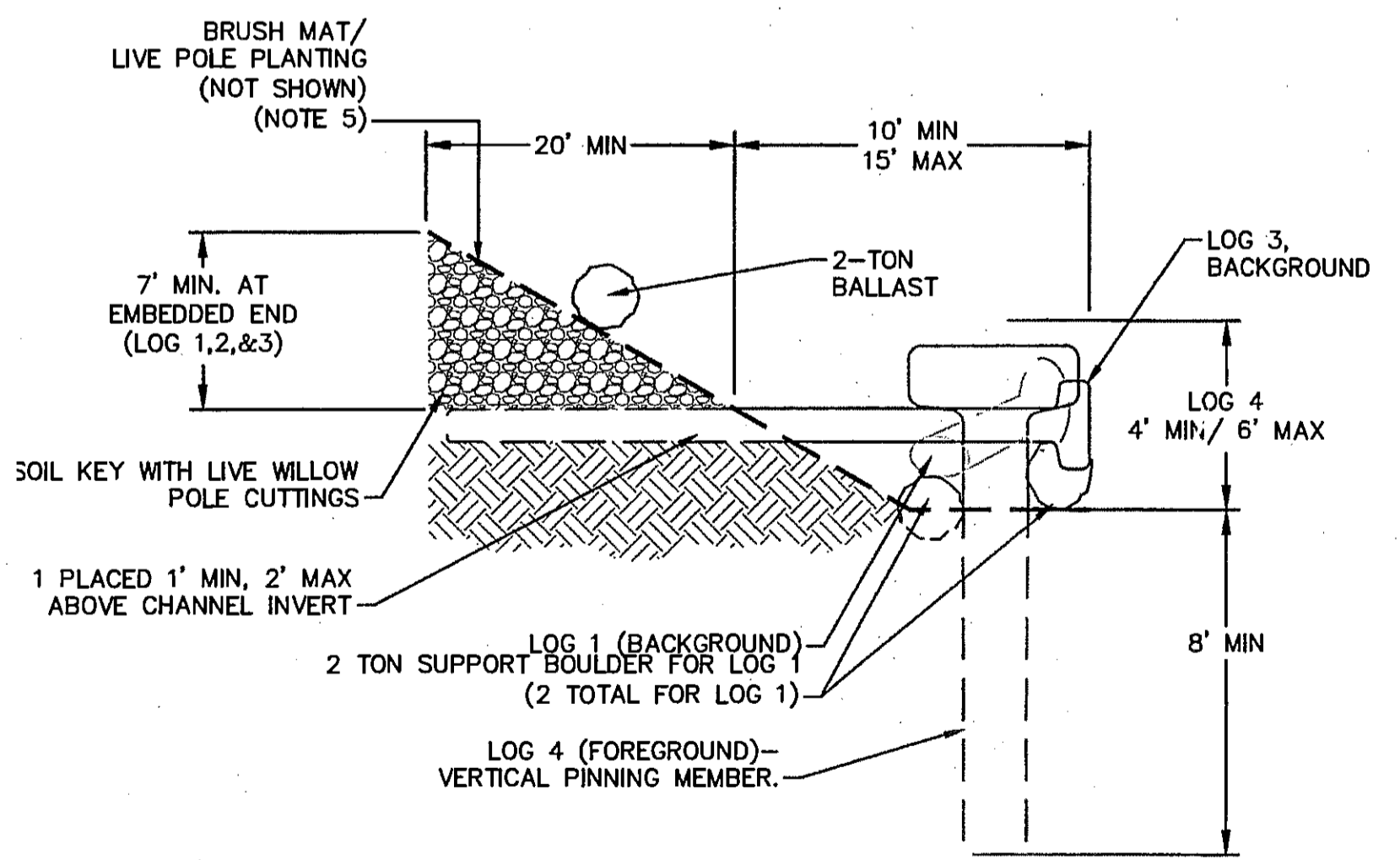




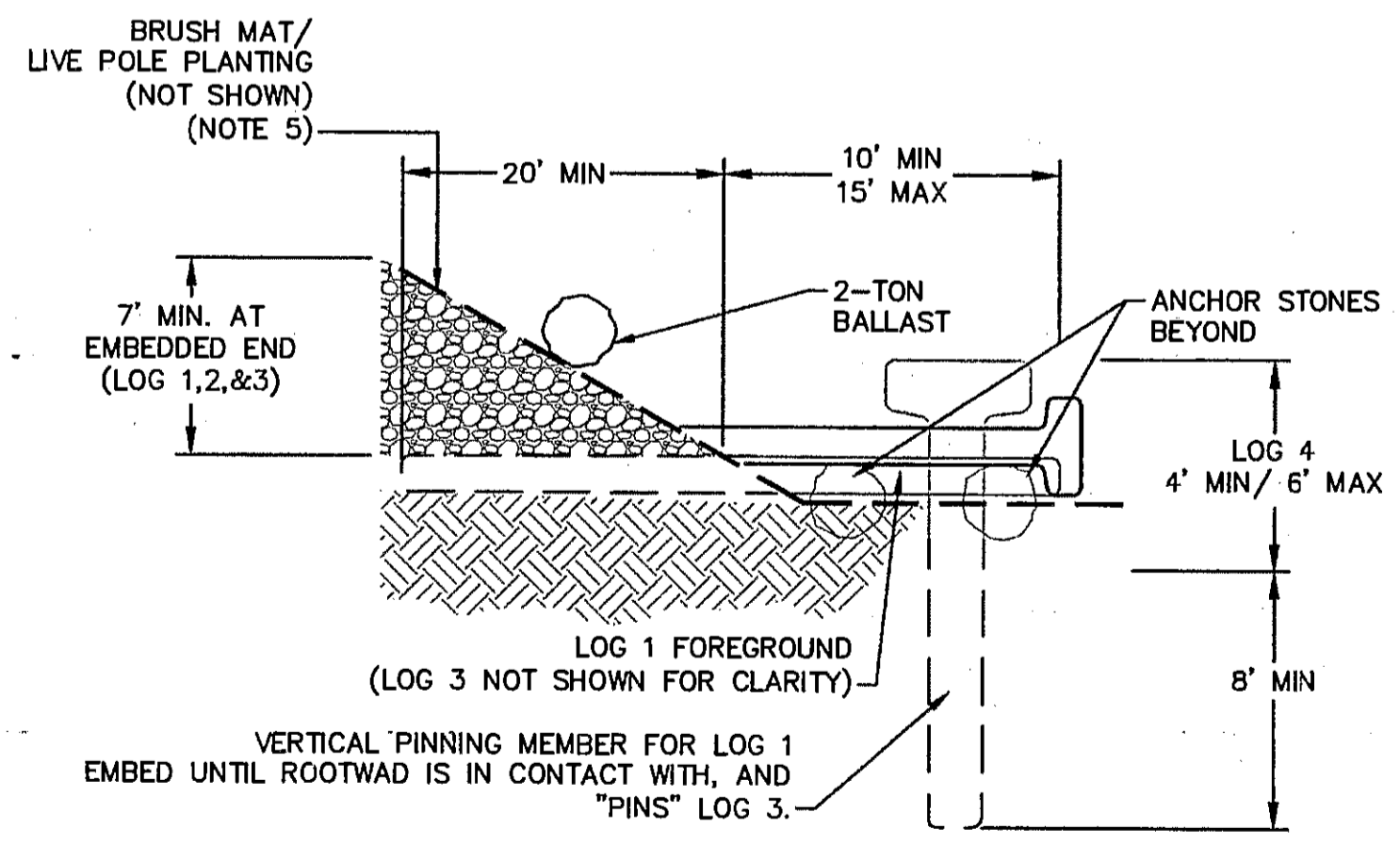
1  
C25  
LWD STRUCTURE - TYPE 3  
SCHEMATIC PLAN - RIVER RIGHT NTS  
C04-C07



2  
C25  
LWD STRUCTURE - TYPE 2  
SCHEMATIC PLAN - RIVER RIGHT NTS  
C04-C07



A  
LWD STRUCTURE, TYPE 3  
SECTION - UPSTREAM VIEW, RIVER RIGHT NTS



B  
LWD STRUCTURE, TYPE 2  
SECTION AT LOG 2 - UPSTREAM VIEW, RIVER RIGHT NTS

**SHEET NOTES**

1. PRIOR TO INSTALLATION, FIELD STAKE LWD STRUCTURE LOCATIONS (LOG ENDPOINTS) FOR REVIEW BY THE OWNER'S REPRESENTATIVE. ALLOW 3 WORKING DAYS FOR REVIEW AND ADJUST STAKES AS DIRECTED.
2. LOGS SHALL BE PLACED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN AND TO ACHIEVE LOG INTERLOCKING.
3. DETAIL SHOWS EMBEDMENT DEPTH ASSUMING THE LOG IS THE MINIMUM LENGTH SPECIFIED. IF LONGER LOGS ARE USED, INCREASE EMBEDMENT LENGTH AND DEPTH AS NEEDED TO MEET REQUIREMENTS SHOWN.
4. BACKFILL TRENCH WITH ROCK-SOIL MIX AND COMPACT TO 90% RC. STAKE THE ENDPOINTS OF THE BURIED LOG TO GUIDE BALLAST PLACEMENT.
5. INSTALL BRUSH MAT OVER FINISHED GRADE PER SHEET C24. INSTALL LIVE POLE PLANTING (PER SHEET C24) ON ANY PORTION OF THE DISTURBED BANK NOT COVERED WITH BRUSH MAT.
6. BALLAST BOULDERS CAN EITHER BE ONE 2-TON ROCK OR TWO 1-TON ROCKS AT CONTRACTOR'S OPTION. PLACE DIRECTLY OVER THE EMBEDDED LOG AND EMBED MIN 6 INCHES BELOW GRADE. BOULDERS MAY BE BURIED WITHIN KEY TRENCH. FIELD LOCATE AS DIRECTED BY THE OWNER'S REPRESENTATIVE. TRIM HOLE IN COMPLETED BRUSH MAT AS NEEDED FOR ROCK PLACEMENT.
7. LOGS MAY BE NOTCHED (3" MAX) TO ACHIEVE ORIENTATION AND EMBEDMENT AS SHOWN.



PREPARED BY:  
**PWA**  
PHILIP WILLIAMS & ASSOCIATES, LTD.  
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300 NEARBY STREET, SUITE 400  
NAPA, CA 94559  
PHONE (707) 252-2200 FAX (707) 252-2230

SHEET TITLE  
**LARGE WOODY DEBRIS (LWD)  
STRUCTURE DETAILS**  
PROJECT  
**NAPA RIVER RESTORATION  
RUTHERFORD REACH 4:  
WEST (RIGHT) BANK**

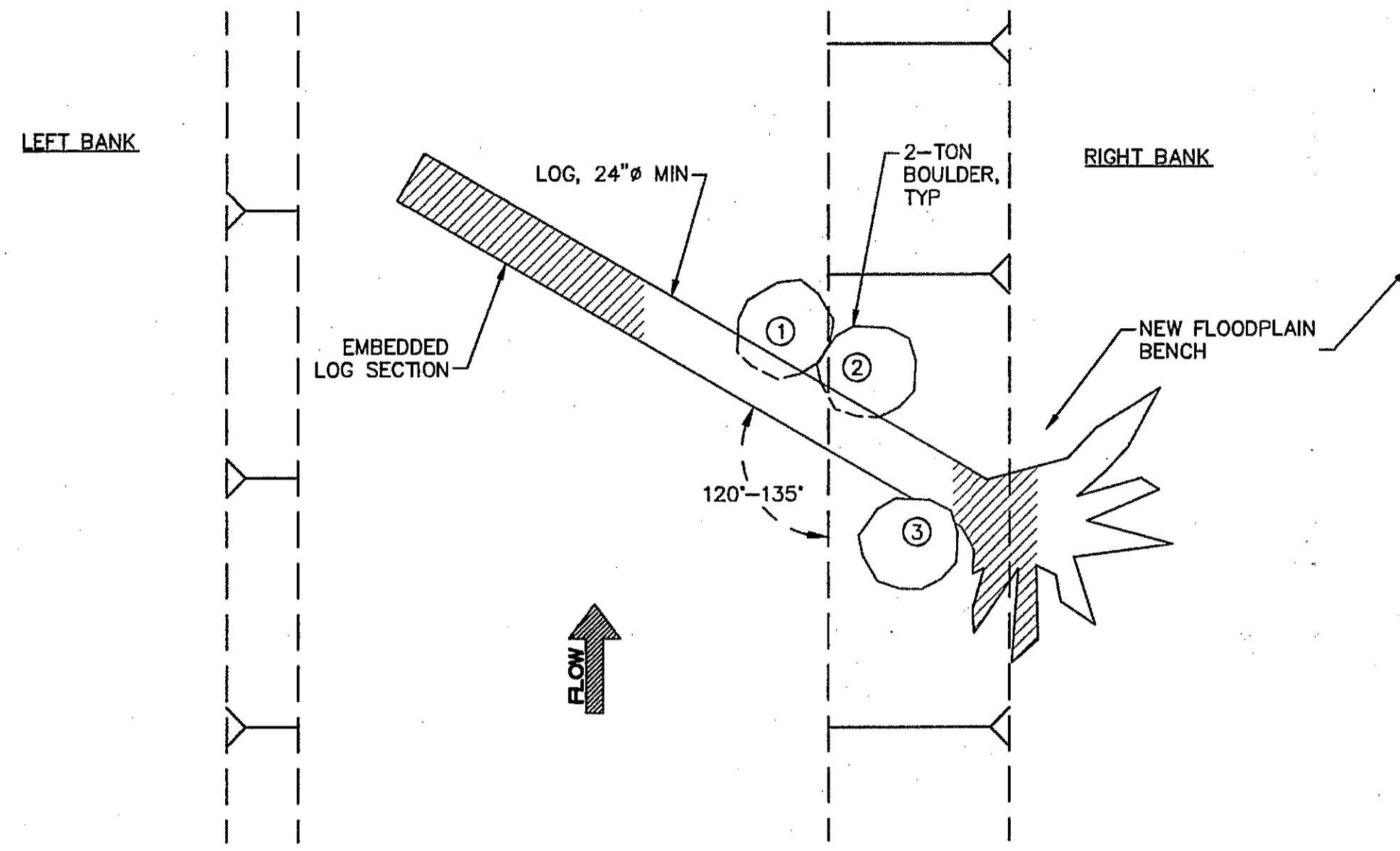
PREPARED FOR  
**NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559**



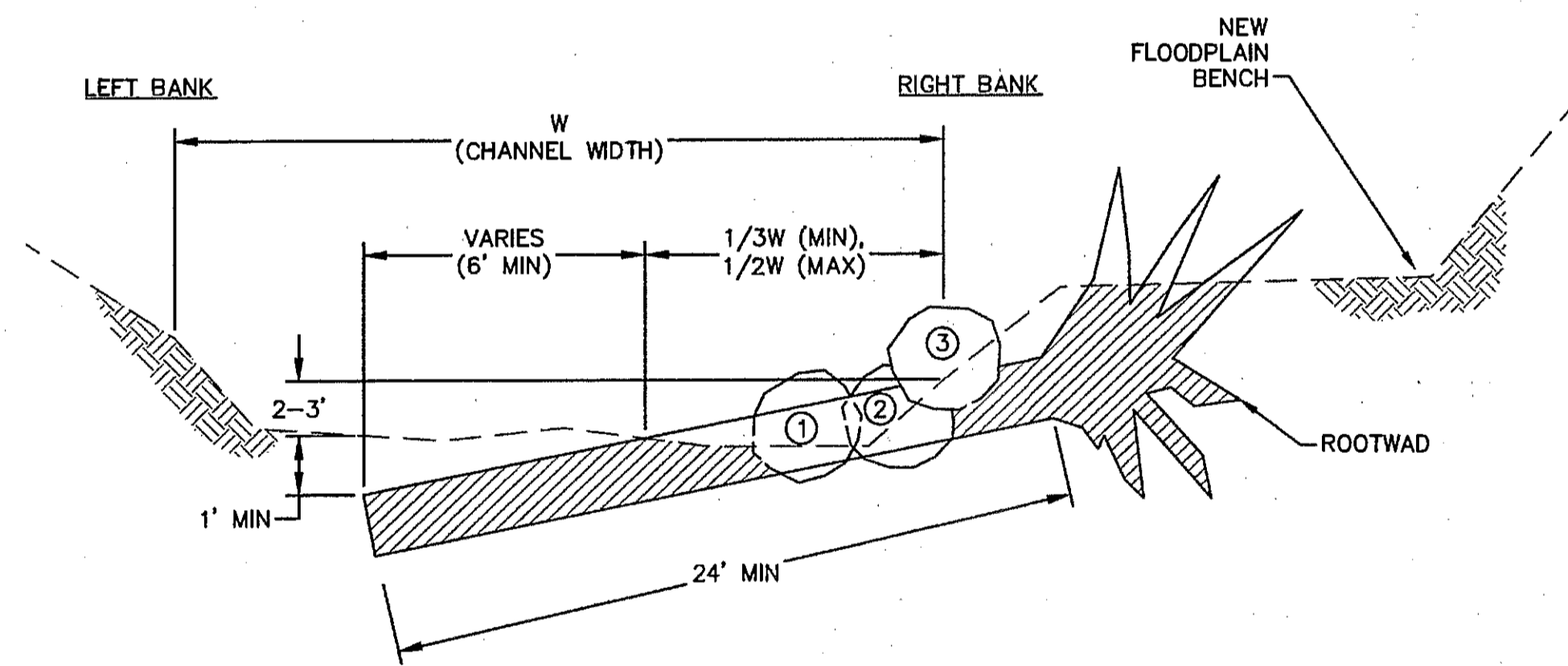
APPROVED  
DESIGNED  
R. BROWN  
J. BLONBERG  
DRAWN  
B. TANAKA  
INCHARGE  
A. BORGONOVO  
C063102  
SCALE  
AS SHOWN  
DATE  
NOV 2011  
SHEET

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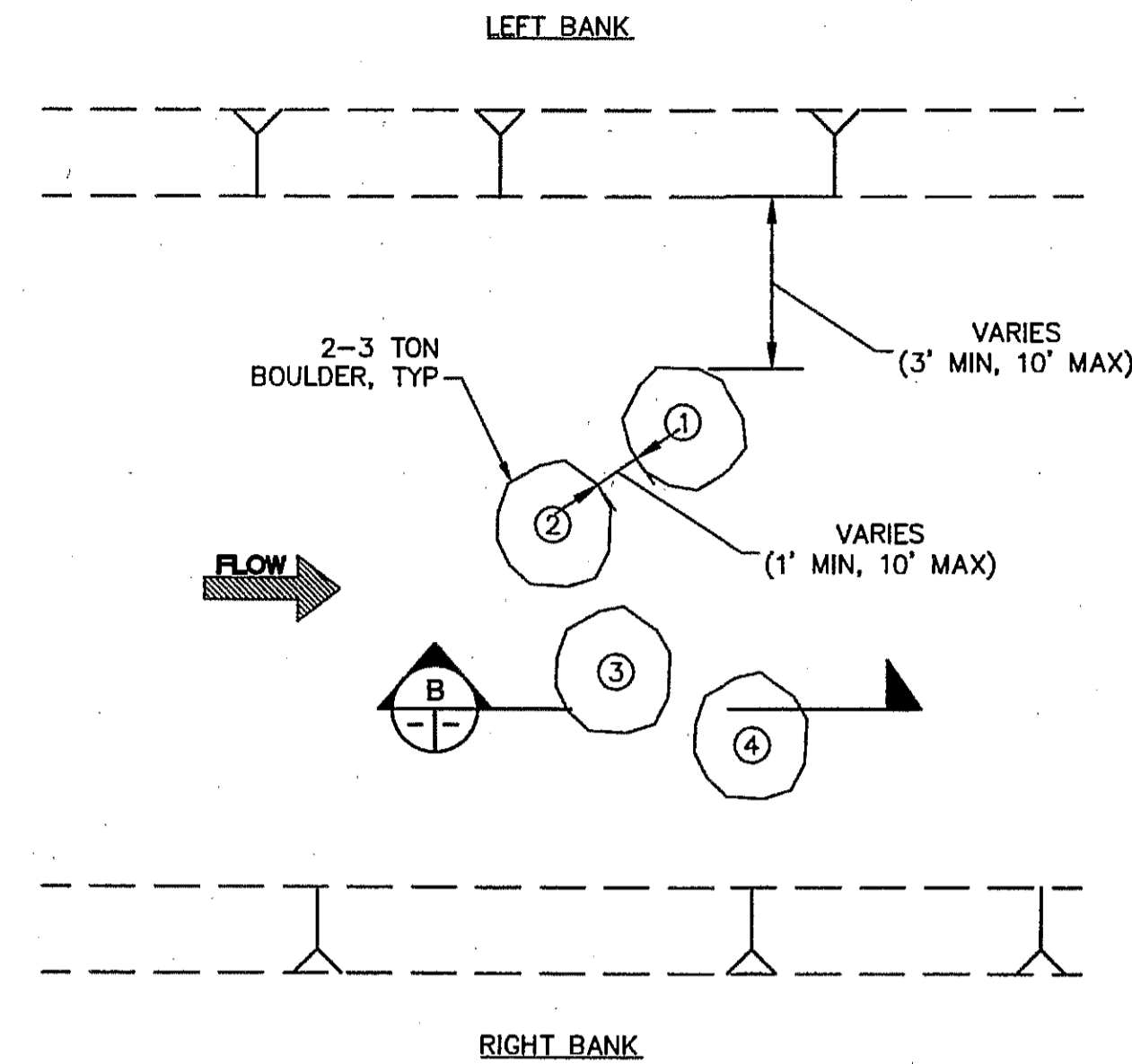
1 LOG STRUCTURE, TYPE 1  
PLAN SCALE: 1"=5'  
C04-C07



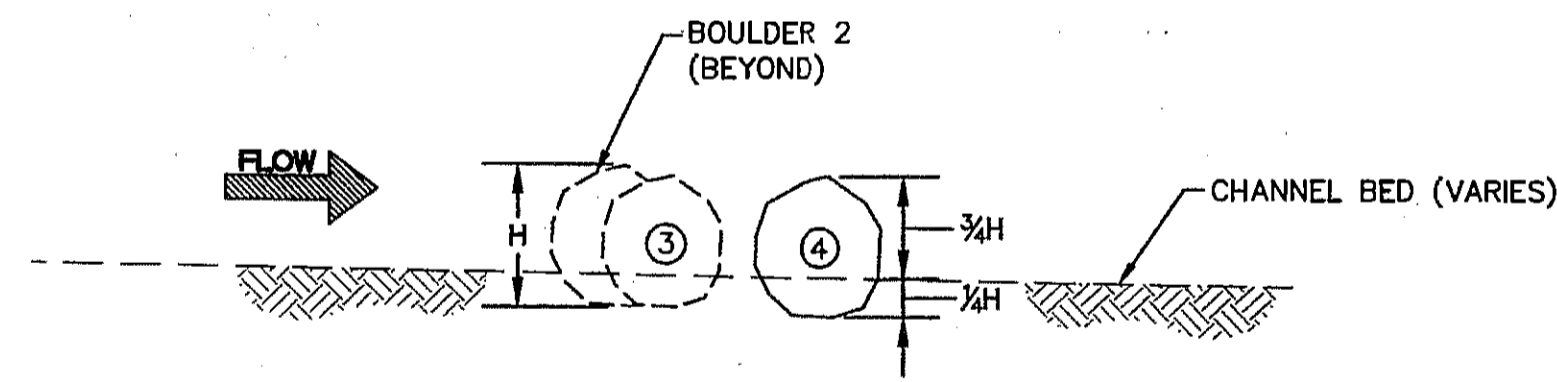
A LOG STRUCTURE, TYPE 1  
SECTION SCALE: 1"=5'

**NOTES**

- BOULDERS 1 AND 2 SHOWN BEYOND ROOTWAD.
- LOW PROFILE LOG DETAIL IS SCHEMATIC TO ILLUSTRATE GENERAL PLACEMENT OF MATERIALS. FIELD FIT AND ADJUST AS-NEEDED TO CONFORM TO SITE CONDITIONS AND ACHIEVE INTEGRATION OF MATERIALS.



2 BOULDER CLUSTER  
PLAN SCALE: 1"=5'  
C04-C07



B BOULDER CLUSTER  
PROFILE SCALE: 1"=5'  
C04-C07

**NOTES**

- BOULDER CLUSTER DETAIL IS SCHEMATIC TO ILLUSTRATE GENERAL CONFIGURATION AND SPACING OF MATERIALS. FIELD FIT AND ADJUST AS-NEEDED TO CONFORM TO SITE CONDITIONS AND ACHIEVE INTENDED FUNCTION.

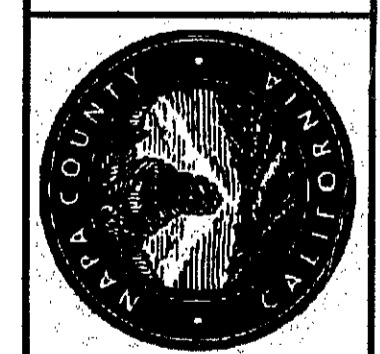
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PREPARED BY:  
**PWA**  
PHILIP WILLIAMS & ASSOCIATES, LTD.  
ENVIRONMENTAL HYDROLOGY  
500 MARINO STREET, SUITE 100  
SAN FRANCISCO, CALIFORNIA 94102  
PHONE (415) 252-3300 FAX (415) 252-3333

SHEET TITLE  
**DETAILS - LWD STRUCTURE TYPE 1  
& BOULDER CLUSTER**  
PROJECT  
**NAPA RIVER RESTORATION  
RUTHERFORD REACH 4:  
WEST (RIGHT) BANK**

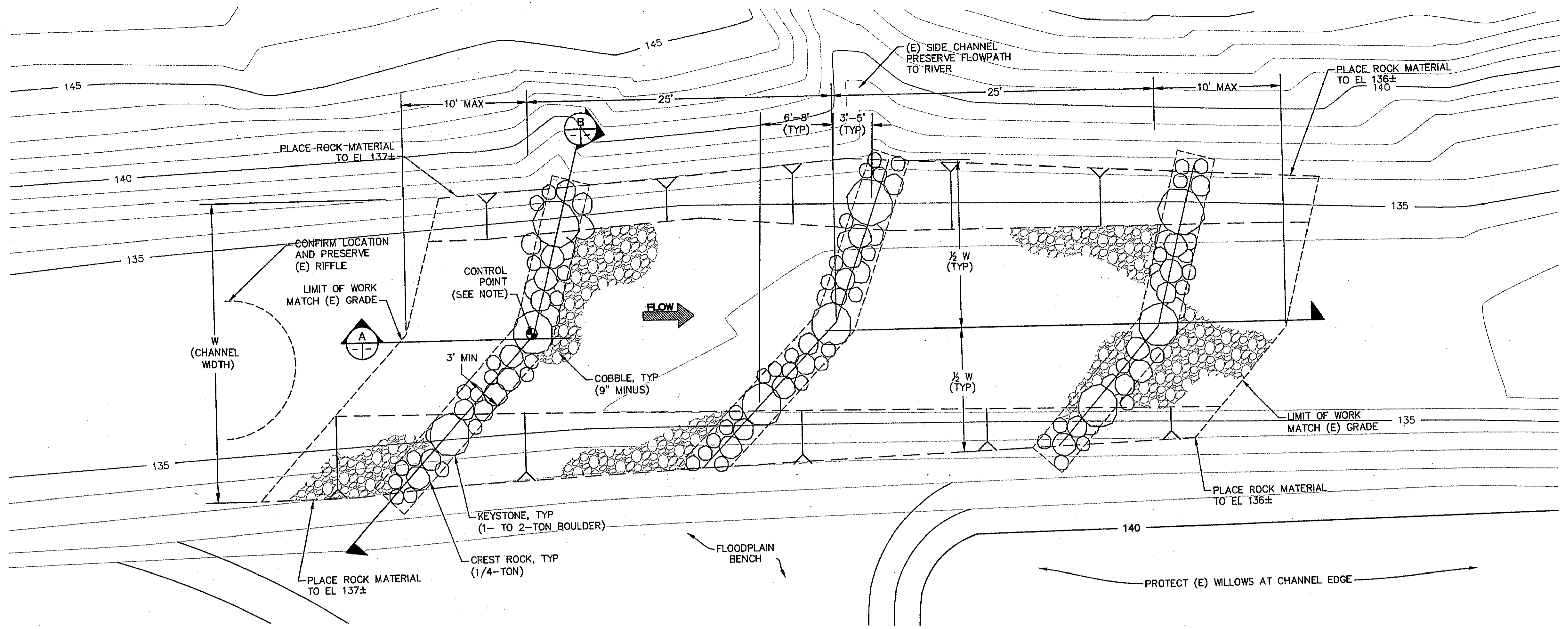
PREPARED FOR:  
**NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559**



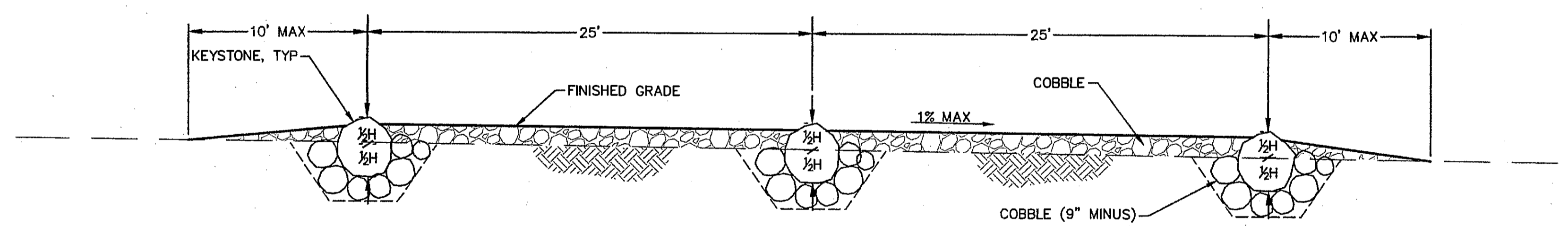
APPROVED  
DESIGNED  
R. BROWN  
J. BLOMBERG  
DRAWN  
S. STOLLER  
INCHARGE  
A. BORGONOVO  
C053102  
SCALE  
AS SHOWN  
DATE  
NOV 2011  
SHEET

**C26**  
26 OF 34

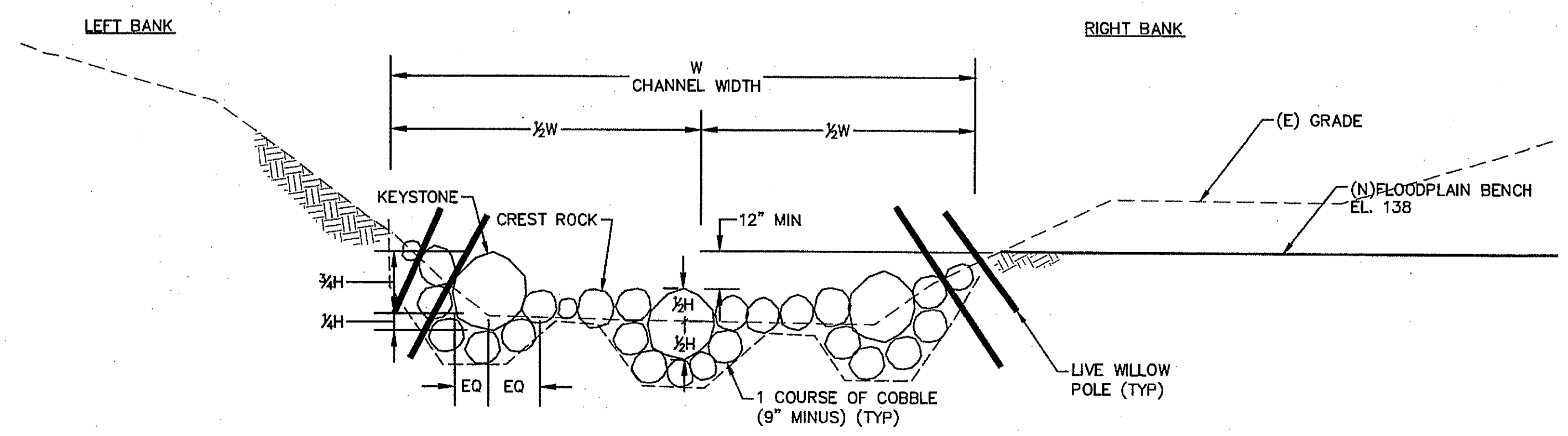




1 ROUGHENED CHANNEL RIFFLE DELETED  
 PLAN SCALE: 1"=5'



A ROUGHENED CHANNEL RIFFLE DELETED  
 PROFILE SCALE: 1"=5'



B ROUGHENED RIFFLE DELETED  
 SECTION SCALE: 1"=5'

SHEET NOTES

- EXISTING GROUND TOPOGRAPHY BASED ON SURVEY CROSS SECTIONS IN VICINITY OF THE ROUGHENED CHANNEL. POINTS CAN BE SUPPLIED UPON REQUEST.
- CONTROL POINT COORDINATES (FEET):  
 NORTHING: 1,932,955.3  
 EASTING: 6,443,275.1  
 ELEVATION: 135.8

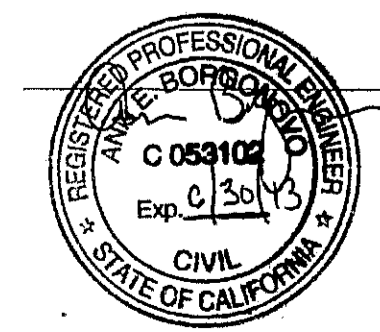
PREPARED BY:  
**PWA**  
 PHILIP WILLIAMS & ASSOCIATES, LTD.  
 ENVIRONMENTAL HYDROLOGY  
 500 HAVEN STREET, SUITE 200  
 SAN FRANCISCO, CA 94102  
 PHONE (415) 262-2305 FAX (415) 262-2303

SHEET TITLE: **DETAILS - ROUGHENED RIFFLE**  
 PROJECT: **NAPA RIVER RESTORATION RUTHERFORD REACH 4: WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY DEPARTMENT OF PUBLIC WORKS**  
 1195 Third St, Suite 201  
 Napa, CA 94559



APPROVED  
 DESIGNED: R. BROWN, J. BLOMBERG  
 DRAWN: S. STOLLER  
 INCHARGE: A. BORGONOVO, C053102  
 SCALE: AS SHOWN  
 DATE: NOV 2011  
 SHEET:



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SHEET NOTES

GENERAL STRUCTURAL NOTES:

I. GENERAL:

- A. DRAWINGS AND SPECIFICATIONS REPRESENT FINISHED STRUCTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO SHORING AND TEMPORARY BRACING. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO INSURE SAFETY OF ALL PERSONS AND STRUCTURES AT THE SITE AND ADJACENT TO THE SITE. OBSERVATION VISITS TO THE SITE BY THE ENGINEER OR CONSTRUCTION MANAGER SHALL NOT RELIEVE THE CONTRACTOR OF SUCH RESPONSIBILITY.
- B. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AT JOB SITE BEFORE COMMENCING WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER.
- C. OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
- D. DO NOT USE SCALED DIMENSIONS; USE WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDED, CONSULT THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- E. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR CALLED FOR ON THE DRAWINGS OR SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE CALLED FOR OR SHOWN.
- F. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY LICENSES AND PERMITS. THE CONTRACTOR SHALL CONFORM TO ALL STATE AND LOCAL LAWS GOVERNING THE WORK.
- G. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES BEFORE BEGINNING WORK. SPECIAL CARE SHALL BE TAKEN TO PROTECT UTILITIES THAT ARE TO REMAIN IN SERVICE DURING CONSTRUCTION.
- H. THE FOUNDATION BEARING SOIL SHALL BE OBSERVED BY OWNER'S GEOTECHNICAL ENGINEER.
- I. THE SCOPE OF WORK INCLUDES CLEAN UP NECESSARY TO LEAVE THE AFFECTED BUILDING IN A NEAT AND USABLE CONDITION.
- J. FILL WITHIN 3 FEET HORIZONTAL BEHIND THE WALL SHALL HAVE A PLASTICITY INDEX OF 25 OR LESS AND MEET THE CRITERIA FOR BERM CORE FILL.

II. DEMOLITION AND CONSTRUCTION SHORING:

- A. SEE DRAWINGS OTHER THAN STRUCTURAL FOR EXTENT AND LOCATION OF ALL DEMOLITION WORK.
- B. ALL SHORING METHODS AND SEQUENCING OF DEMOLITION SHALL BE SPECIFIED BY A LICENSED STRUCTURAL ENGINEER TO BE RETAINED BY THE CONTRACTOR.

III. DESIGN BASIS:

- A. APPLICABLE CODE: CALIFORNIA BUILDING CODE (CBC), 2009 EDITION.
- B. SOILS:
  - HULTGREN-TILLIS ENGINEERS
  - PROJECT NO. 720.01
  - DATED FEBRUARY 24, 2009
  - SOIL TYPE: S<sub>4</sub>

IV. MATERIALS:

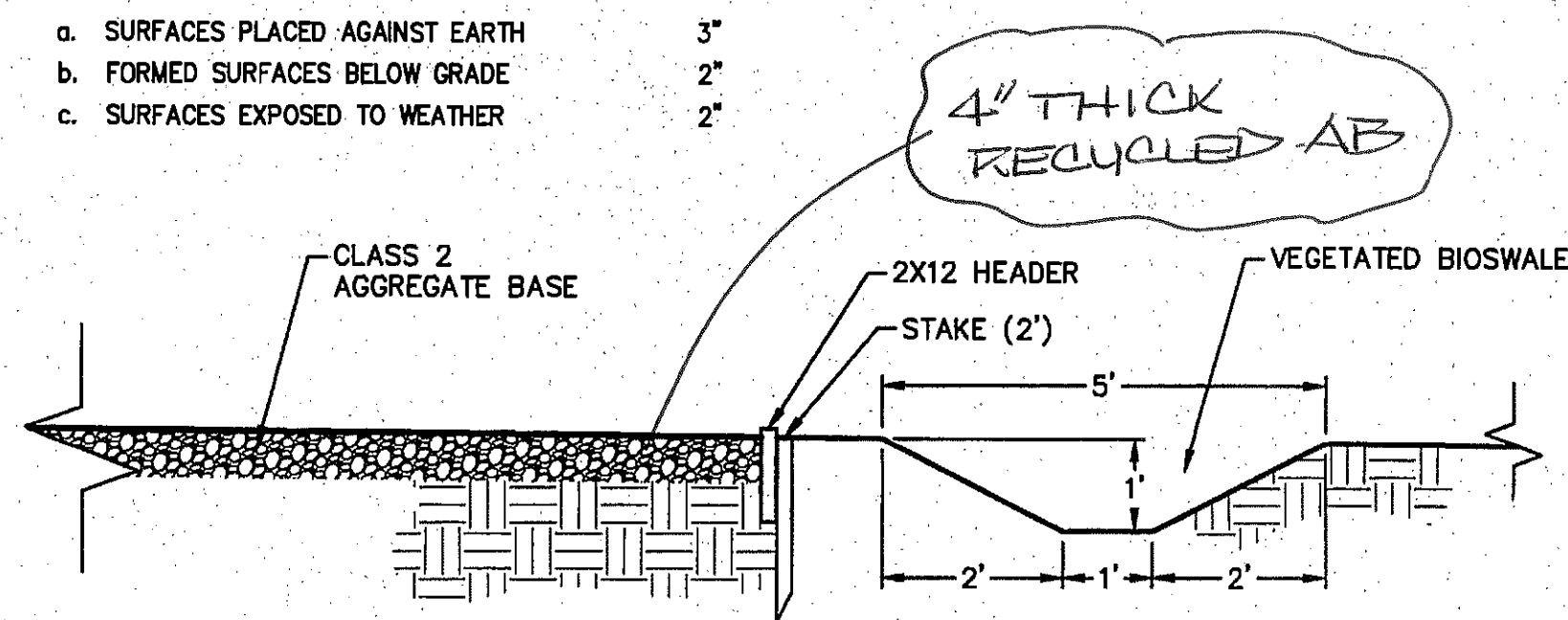
A. CONCRETE

1. REINFORCING STEEL:
  - a. BARS: ASTM A615, GRADE 60.
  - b. ALL CONCRETE SHALL BE REINFORCED UNLESS SPECIFICALLY MARKED "NOT REINFORCED".
2. CONCRETE CLASSES: SEE SPECIFICATIONS FOR REQUIREMENTS.

CLASS	USE	WT	STRENGTH	SLUMP	MAXIMUM AGGREGATE	MAXIMUM WATER/CEMENT RATIO
A	RETAINING WALL & FOOTING	145 PCF	3000 PSI	30"±D"	1"	0.50

3. MINIMUM CONCRETE COVER FOR REINFORCING STEEL:

- a. SURFACES PLACED AGAINST EARTH 3"
- b. FORMED SURFACES BELOW GRADE 2"
- c. SURFACES EXPOSED TO WEATHER 2"



2 ROUND POND SHOP PAVING & BIOSWALE TYPICAL SECTION NOT TO SCALE

V. SPECIAL INSPECTION

THE FOLLOWING WORK REQUIRES TESTS AND/OR INSPECTIONS. FOR SPECIFIC REQUIREMENTS, SEE SPECIFICATIONS. INSPECTIONS SHALL BE MADE IN ACCORDANCE WITH CBC 1704 BY A CERTIFIED SPECIAL INSPECTOR RETAINED BY THE OWNER.

1. FOOTING EXCAVATION.
2. SOIL COMPACTION.
3. REINFORCING STEEL.
4. CONCRETE.

SPECIAL INSPECTION REPORTS SHALL BE SUBMITTED TO THE OWNER, ENGINEER, STRUCTURAL ENGINEER, ETC.

VI. STRUCTURAL OBSERVATION

THE STRUCTURAL ENGINEER SHALL PERFORM STRUCTURAL OBSERVATIONS THROUGHOUT THE PROJECT.

VII. CONTRACTOR SUBMITTALS

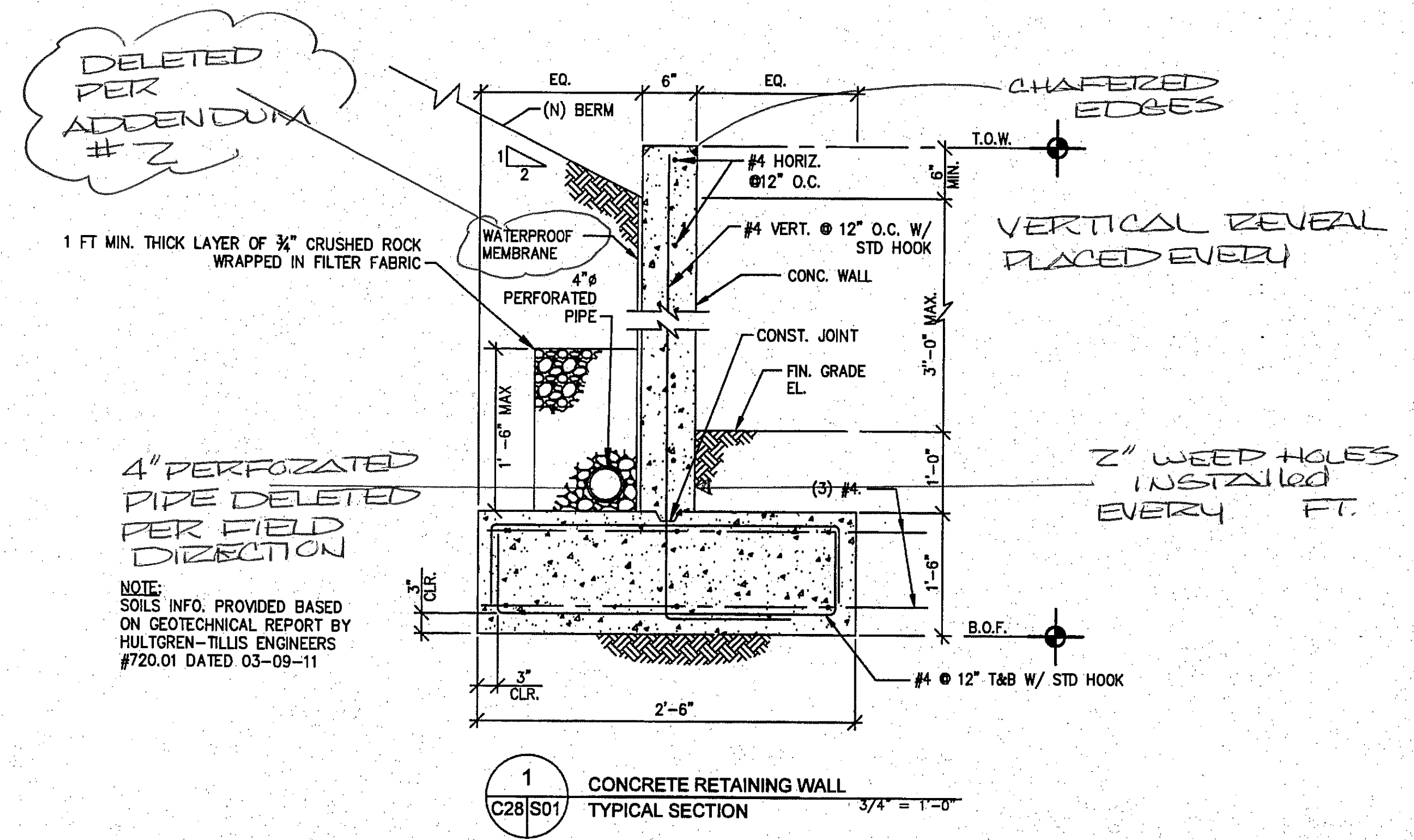
A PARTIAL LISTING OF REQUIRED STRUCTURAL SUBMITTALS FOLLOWS. CONSULT THE SPECIFICATIONS FOR A COMPLETE LISTING OF SUBMITTAL REQUIREMENTS. ALL SUBMITTALS SHALL BE ISSUED FOR REVIEW AS COMPLETE SUBMITTALS. THE LIST BELOW INDICATES WHAT CONSTITUTES A COMPLETE SUBMITTAL. IF SUBMITTALS ARE ISSUED AS PARTIAL SUBMITTALS, ALL SHEETS ISSUED MORE THAN ONCE MUST HAVE ALL CHANGES CLOUDED (INCLUDING NEW SHEETS); OTHERWISE, PARTIAL SUBMITTALS WILL NOT BE REVIEWED.

1. CONCRETE-MIX DESIGNS FOR ALL CONCRETE.
2. REINFORCING STEEL SHOP DRAWINGS.
3. CONSTRUCTION JOINT LAYOUT AND CONTROL JOINT LAYOUT.

VIII. TESTING:

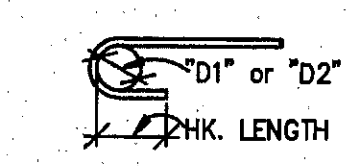
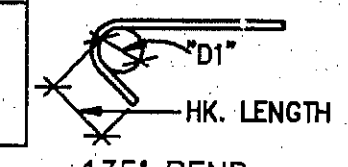
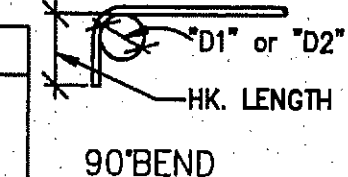
OWNER'S TESTING AGENCY SHALL PERFORM THE FOLLOWING TESTS AND SUBMIT APPROPRIATE REPORTS TO THE ARCHITECT AND THE COUNTY OF NAPA

- A. PERFORM CONCRETE TESTING FOR CONCRETE IN ACCORDANCE WITH ACI 318.
  1. MAKE AND CURE THREE SPECIMEN CYLINDERS ACCORDING TO ASTM C31 FOR EACH 150 CUBIC YARDS OF CONCRETE POURED AT SITE EACH DAY.
  2. RETAIN ONE CYLINDER FOR 7 DAY TEST AND TWO FOR THE 28 DAY TEST. TEST FOR SPECIFIED STRENGTH ACCORDING TO ASTM C39.



1 CONCRETE RETAINING WALL TYPICAL SECTION 3/4" = 1'-0"

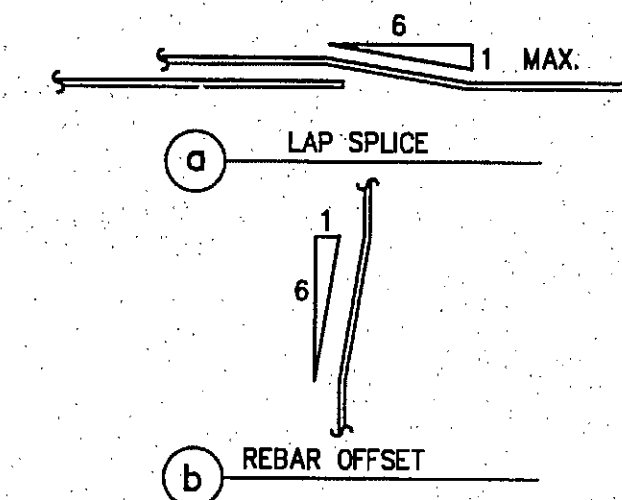
DIAMETER OF BENDS	
D1	1Ø" FOR #3 BARS 2" FOR #4 BARS 2Ø" FOR #5 BARS
D2	6d FOR #3 THRU #8 BARS



\*D1\* - FOR STIRRUPS, TIES AND WALL REINF. AT OP'GS.  
\*D2\* - FOR ALL OTHERS

STANDARD HOOKS TYPICAL DETAIL NTS

BAR SIZE	STANDARD HOOK LENGTHS	
	MAIN REINF.	STIRRUP & TIE HOOKS
#3	6"	4"
#4	8"	4"
#5	9Ø"	4Ø"
#6	11Ø"	5Ø"

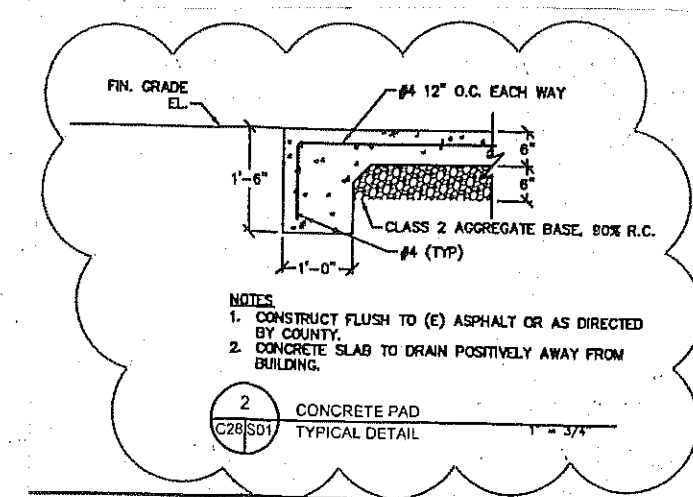


CONCRETE STRENGTH BAR SIZE	F <sub>c</sub> = 3000 PSI	
	CASE	OTHER BARS
#3	3'-6"	2'-8"
#4	4'-8"	3'-7"
#5	5'-9"	4'-5"
#6	6'-11"	5'-4"

NOTES:

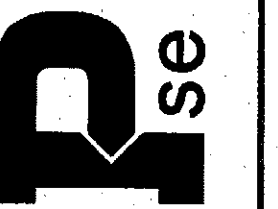
1. THE LAP SPlice LENGTHS ARE TO BE MULTIPLIED BY THE FACTOR(S) LISTED BELOW.
2. WHERE CLEAR SPACE BETWEEN BARS LAP SPliced AT ANY SECTION IS GREATER THAN 2 BAR DIAMETERS AND WHERE THE BAR COVER IS GREATER THAN ONE BAR DIAMETER, THE LAP SPlice MAY BE MULTIPLIED BY 67%.
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
4. SPlices OF HORIZONTAL REINFORCEMENT IN WALLS SHALL BE STAGGERED.

REBAR OFFSET AND LAP SPlice TYPICAL DETAIL NTS



2 CONCRETE PAD TYPICAL DETAIL

PREPARED BY:  
PARADIGM Structural Engineers, Inc.  
450 Sacramento Street, Fifth Floor  
San Francisco, California 94111  
415.262.9944 f  
415.262.9946 t  
paradigm.com



ROUND POND SHOP AREA  
STRUCTURAL DETAILS  
NAPA RIVER RESTORATION  
RUTHERFORD REACH 4

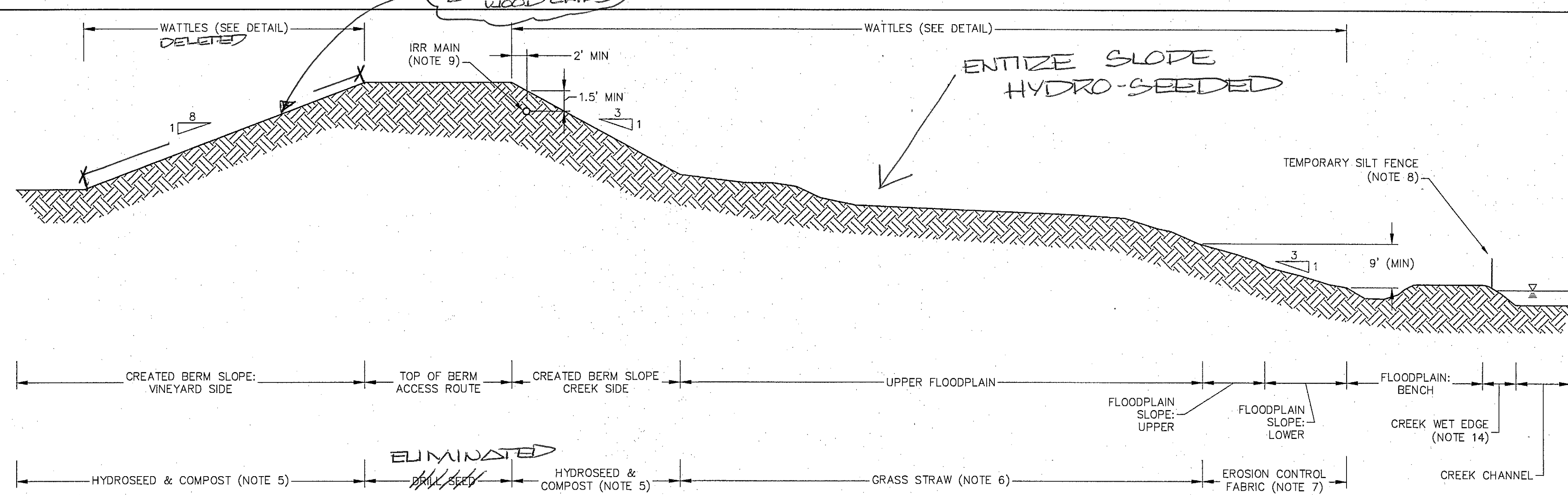
NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559



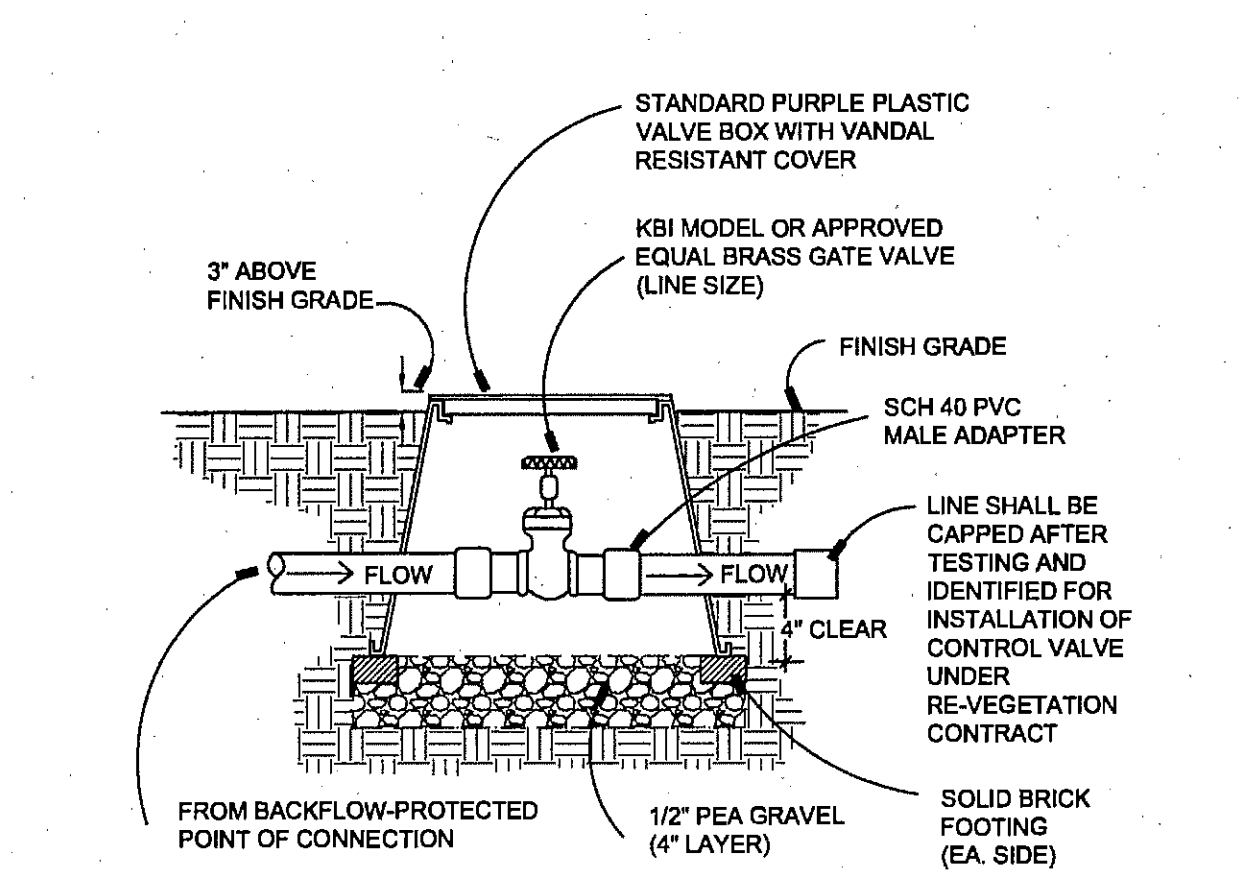
APPROVED  
DESIGNED J. YOKOYAMA  
DRAWN J. YOKOYAMA  
INCHARGE A. BORGONOV  
SCALE AS SHOWN  
DATE 01/2011  
SHEET

S01

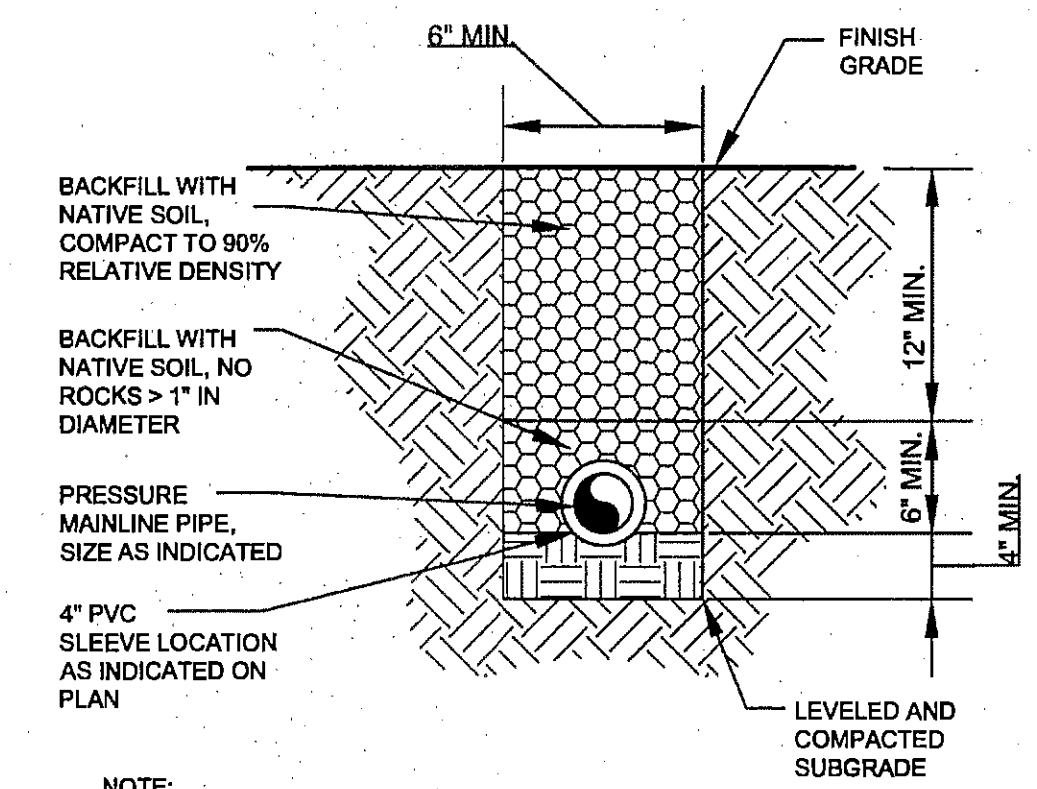




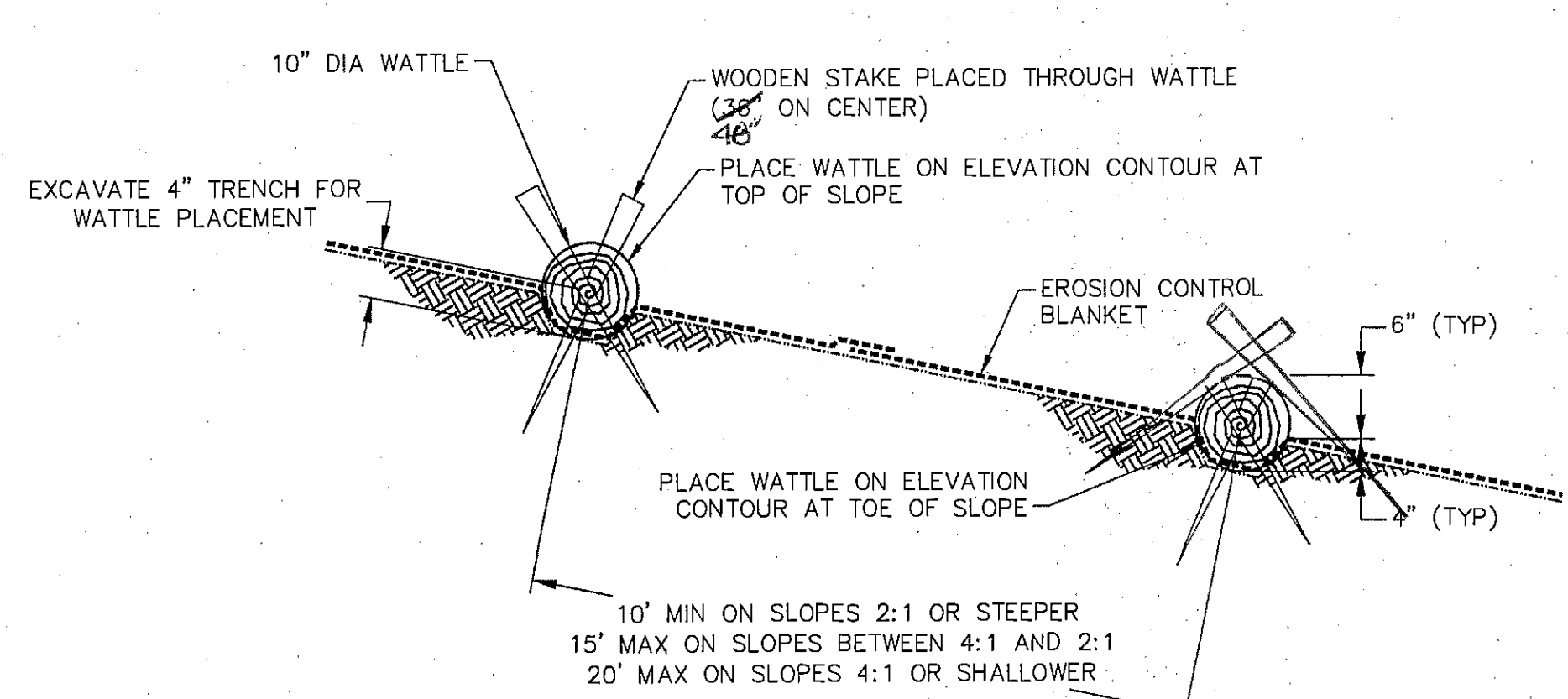
SEEDING & EROSION CONTROL PLAN  
SCHEMATIC SECTION (NOTE 2) NTS



MANUAL ISOLATION VALVE  
NOT TO SCALE  
(c) Restoration Resources, 2010



MAIN LINE TRENCHING  
NOT TO SCALE  
(c) Restoration Resources, 2010



WATTLE DETAIL - SECTION VIEW  
NOT TO SCALE  
(c) Restoration Resources, 2010

APPENDUM #1 ITEM 10: Sheet R01, Erosion Control Seeding Mixes and Rates

Disregard:  
The information listed in the 'Seeding Method' column of the application table.

Replace with:  
Seeding method shall be hydroseeded for all habitat type seed mixes and areas.

PER CCO 8 CHANGE HYDRO STRAW TO CELLULOSE FIBER PLUS ADD PLANTZES (EXCULFIED)

SHEET NOTES

- THIS SHEET SHOWS MINIMUM EROSION CONTROL MEASURES THAT ARE REQUIRED. INSTALL ADDITIONAL MEASURES AS NEEDED FOR SEDIMENT AND EROSION CONTROL AND SWPPP COMPLIANCE.
- THE SECTION SHOWS DESIGNATION OF SEEDING & EROSION CONTROL ZONES FOR GRADED AREAS. SEED ALL DISTURBED AREAS PER TABLE.
- UPON COMPLETION OF THE WORK RESTORE STAGING AREA(S) AND ACCESS ROUTES BY SEEDING (PER TABLES) AND APPLYING GRASS STRAW PER NOTE 6.
- SEE SEED MIX TABLES FOR SPECIES, QUANTITIES AND APPLICATION METHOD BY HABITAT ZONE.
- APPLY SEED, HYDROSTRAW AND MYCORRHIZAE USING HYDROSEEDING MACHINE - SEE SPECS. AFTER HYDROSEEDING, APPLY UNIFORM 2-INCH MINIMUM LAYER OF ORGANIC COMPOST ON BERM SIDE SLOPES.
- APPLY CERTIFIED WEED-FREE NATIVE GRASS STRAW AT A RATE OF 1.5-TONS PER ACRE. APPLY BY HAND IN AREAS WHERE EXISTING VEGETATION OR TERRAIN PROHIBIT VEHICULAR ACCESS; STRAW MAY BE BLOWN AS DEFINED IN THE WRITTEN SPECIFICATIONS ONTO THE SOIL SURFACE IN THOSE AREAS WHICH ARE ACCESSIBLE.
- INSTALL BIODEGRADABLE EROSION CONTROL FABRIC. SECURE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, AND THE SPECS (USE MOST STRINGENT REQUIREMENTS).
- INSTALL AND MAINTAIN SILT FENCE ALONG THE TOP OF THE ACTIVE CHANNEL BANK DURING BENCH GRADING. INSTALLATION LOCATIONS SHALL BE VERIFIED BY ENGINEER. REMOVE BY OCTOBER 15TH.
- INSTALL IRRIGATION MAINS WHERE SHOWN ON SHEETS R02 TO R05. IRRIGATION MAINS SHALL BE LOCATED AT LEAST 2- FEET FROM DRIVABLE PORTION OF BERM AND WITH 18-INCHES MINIMUM COVER. BACKFILL TRENCH TO 90% RELATIVE COMPACTION. MAINLINE SHALL BE SLEEVED UNDER ALL VEHICLE ACCESS CROSSINGS.
- POC LOCATIONS WILL BE CONFIRMED BY OWNERS.
- DISTURBED AREAS WILL BE PLANTED UNDER SEPARATE REVEGETATION CONTRACT. IN THE EVENT THAT CONTRACT SCHEDULES OVERLAP, COOPERATE AND COORDINATE WITH REVEGETATION CONTRACTOR AS NEEDED.
- DRILL SEED ON BERM TOP ONLY.
- LIMITS OF FLOODPLAIN SLOPE VARY. PRIOR TO SEEDING AND INSTALLATION OF EROSION CONTROL FABRIC, CONTRACTOR SHALL STAKE LIMIT OF FLOODPLAIN BENCHES AND SLOPES AND VERIFY WITH OWNERS' REPRESENTATIVE. EROSION CONTROL FABRIC SHALL BE INSTALLED ON ALL DISTURBED OR CUT FLOODPLAIN SLOPES TO A MINIMUM VERTICAL DIMENSION OF 9- FEET. THE VERTICAL EXTENT OF EROSION CONTROL FABRIC SHALL BE MEASURED FROM THE NEW FLOODPLAIN BENCH ELEVATION.
- WHERE DIRECTED BY THE OWNERS' REPRESENTATIVE, GRADE WET EDGE TO 3:1 AND PLACE LIVE POLE PLANTING.
- ALL EROSION CONTROL WORK AND SEEDING SHALL BE COMPLETED BY OCTOBER 15TH.
- GRASSY DRAINAGE SWALE IDENTIFIED ON SHEET R05 PAGE 34 SHALL BE SEEDDED WITH "FLOODPLAIN SLOPE: UPPER" SEED MIX.

EROSION CONTROL SEEDING MIXES AND RATES (NOTE 11)

Habitat Type	Biological Name / Common Name	Seeding Method	lbs / ac	lbs. Req.
<b>Habitat Type: Berm Top and Access Route (Note 12) Acres 4.56</b>				
	<i>Hordeum brachyantherum</i> / Meadow Barley	Drill Seed	10	46
	<i>Vulpia microstachys</i> / Small Fescue	Drill Seed	14	64
<b>Habitat Type: Created Berm Side Slope Acres 5.62</b>				
	<i>Bromus carinatus</i> / California Brome	Hydroseed	3	17
	<i>Elymus glaucus</i> / Blue Wildrye	Hydroseed	3	17
	<i>Eschscholzia californica</i> / California Poppy	Hydroseed	4	22
	<i>Festuca idahoensis</i> / Idaho Fescue	Hydroseed	3	17
	<i>Hordeum brachyantherum</i> / Meadow Barley	Hydroseed	3	17
	<i>Lupinus bicolor</i> / Miniature Lupine	Hydroseed	4	22
	<i>Trifolium wildenowii</i> / Tomcat Clover	Hydroseed	4	22
	<i>Vulpia microstachys</i> / Small Fescue	Hydroseed	8	45
<b>Habitat Type: Staging Area Acres 1.41</b>				
	<i>Triticum X Elymus "Regreen" / Sterile Wheat</i>	Broadcast Seed	26	37
	<i>Eschscholzia californica</i> / California Poppy	Broadcast Seed	4	6
	<i>Lupinus bicolor</i> / Miniature Lupine	Broadcast Seed	4	6
	<i>Trifolium wildenowii</i> / Tomcat Clover	Broadcast Seed	4	6
<b>Habitat Type: Upper Floodplain Woodland Acres 3.67</b>				
	<i>Bromus carinatus</i> / California Brome	Broadcast Seed	8	29
	<i>Elymus glaucus</i> / Blue Wildrye	Broadcast Seed	8	29
	<i>Grindelia camporum</i> / Gum Plant	Broadcast Seed	5	18
	<i>Hordeum brachyantherum</i> / Meadow Barley	Broadcast Seed	8	29
	<i>Melica californica</i> / California Melic	Broadcast Seed	8	29
	<i>Vulpia microstachys</i> / Small Fescue	Broadcast Seed	8	29
<b>Habitat Type: Floodplain Slope: Upper Acres 1.35</b>				
	<i>Elymus glaucus</i> / Blue Wildrye	Broadcast Seed	8	11
	<i>Festuca idahoensis</i> / Idaho Fescue	Broadcast Seed	8	11
	<i>Hordeum brachyantherum</i> / Meadow Barley	Broadcast Seed	8	11
	<i>Leymus triticoides</i> / Creeping Wildrye	Broadcast Seed	8	11
<b>Habitat Type: Floodplain Slope: Lower Acres 1.19</b>				
	<i>Hordeum brachyantherum</i> / Meadow Barley	Broadcast Seed	8	10
	<i>Leymus triticoides</i> / Creeping Wildrye	Broadcast Seed	9	10
<b>Habitat Type: Lower Floodplain Bench Acres 0.35</b>				
	<i>Leymus triticoides</i> / Creeping Wildrye	Broadcast Seed	10	4

PREPARED BY: **PWA**  
PHILIP WILLIAMS & ASSOCIATES, LTD.  
ENVIRONMENTAL HYDROLOGY  
550 KINGSBORO STREET, SUITE 100  
NAPA, CALIFORNIA 94950  
PHONE (415) 252-3300 FAX (415) 252-3301

RESTORATION RESOURCES  
3888 CINCINNATI AVENUE  
ROCKLIN, CA 95765  
PHONE (916) 408-2888  
FAX (916) 408-2889  
WWW.RESTORATION-RESOURCES.NET  
CA LIC. #429252

EROSION CONTROL PLAN & IRRIGATION DETAILS  
PROJECT: NAPA RIVER RESTORATION RUTHERFORD REACH 4: WEST (RIGHT) BANK

PREPARED FOR:  
NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559

APPROVED  
DESIGNED R. SWIFT, L. PIPER  
DRAWN L. PIPER  
INCHARGE R. SWIFT, PRESIDENT  
SCALE  
DATE APRIL 2011  
SHEET

REGISTERED LANDSCAPE ARCHITECT  
PHILIP WILLIAMS & ASSOCIATES, LTD.  
No. 1313  
5-31-13  
NAPA, CALIFORNIA  
Date  
STATE OF CALIFORNIA

R01  
30 OF 34



THOMPSON  
ELLEN

EMMOLO  
VINEYARDS

CARPY  
CONOLLY  
LLC

EMMOLO  
VINEYARDS

THOMPSON  
ELLEN

MATCH LINE  
SEE WINDOW ABOVE FOR REACH 4 CONTINUATION

REACH 4 PROPOSED  
GRADING CONTOURS

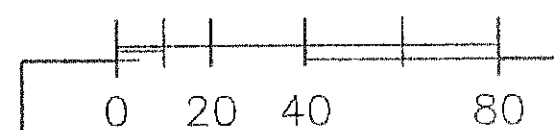
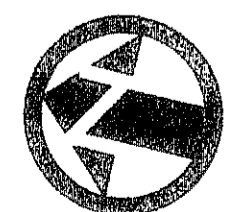
REACH 4  
LIMIT OF  
GRADING

2" MAINLINE

"T" OFF TO  
ISOLATION  
VALVES 1 1/2"  
MAINLINE

SHADED AREA IS NOT IN  
CONTRACT (EAST BANK)

STATION MARKER



NOTES:

POC SHALL PROVIDE MINIMUM 60 GPM @ 60 PSI. CONTRACTOR TO VERIFY PRIOR TO IRRIGATION SYSTEM INSTALLATION.

GATE VALVE IDENTIFICATION: *Dr* = VALVE FOR FUTURE DRIP SYSTEM  
~~*Dr*~~ = VALVE FOR FUTURE HOSE BIB SYSTEM **ELIMINATED**

POC LOCATIONS WILL BE CONFIRMED BY OWNERS.

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	MANUFACTURER / MODEL	DETAIL	REMARKS
	MANUAL ISOLATION VALVE (GATE VALVE)	1 1/2" KBI MODEL OR APPROVED EQUAL BRASS GATE VALVE AS PER DETAIL	-	SIZED ACCORDING TO PIPE SIZE. SET IN BOX WITH A 1/2" PAINTED WOOD MARKER POST <b>UT POST</b>
	PVC MAINLINE PIPE (SIZE AS INDICATED)	AS APPROVED	-	1 1/2" - 2" PVC SCH 40
	PVC SLEEVING	AS APPROVED	-	TWICE THE DIAMETER OF PIPE SEE PLAN FOR LOCATIONS UNDER LEVEE ROAD PVC SCH 40



PREPARED BY:  
**PWA**  
PETER WILLIAMS & ASSOCIATES, LTD.  
ENVIRONMENTAL HYDROLOGY  
100 ANASANY STREET, SUITE 200  
ROCKLIN, CA 95765  
PHONE (916) 222-2000 FAX (916) 222-2009

**RESTORATION**  
RESOURCES  
3888 CINCINNATI AVENUE  
ROCKLIN, CA 95765  
TEL 916-408-2980  
FAX 916-408-2989  
WWW.RESTORATIONRESOURCES.COM  
CA LIC. #42922

SHEET TITLE  
IRRIGATION PLAN -  
STA 155+50 TO STA 169+15  
PROJECT NAPA RIVER RESTORATION  
RUTHERFORD REACH 4;  
WEST (RIGHT) BANK

PREPARED FOR:  
NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559



APPROVED  
DESIGNED R. SWIFT, L. PIPER  
DRAWN L. PIPER  
INCHARGE R. SWIFT, PRESIDENT  
SCALE 1" = 40'  
DATE APRIL 2011  
SHEET

R02



**CARPY  
CONOLLY  
LLC**

**NOTES:**

POC SHALL PROVIDE MINIMUM 60 GPM @ 60 PSI. CONTRACTOR SHALL VERIFY PRIOR TO IRRIGATION SYSTEM INSTALLATION.

GATE VALVE IDENTIFICATION: Dr = VALVE FOR FUTURE DRIP SYSTEM  
~~VALVE FOR FUTURE HOSE BIB SYSTEM ELIMINATED~~

POC LOCATIONS WILL BE CONFIRMED BY OWNERS.

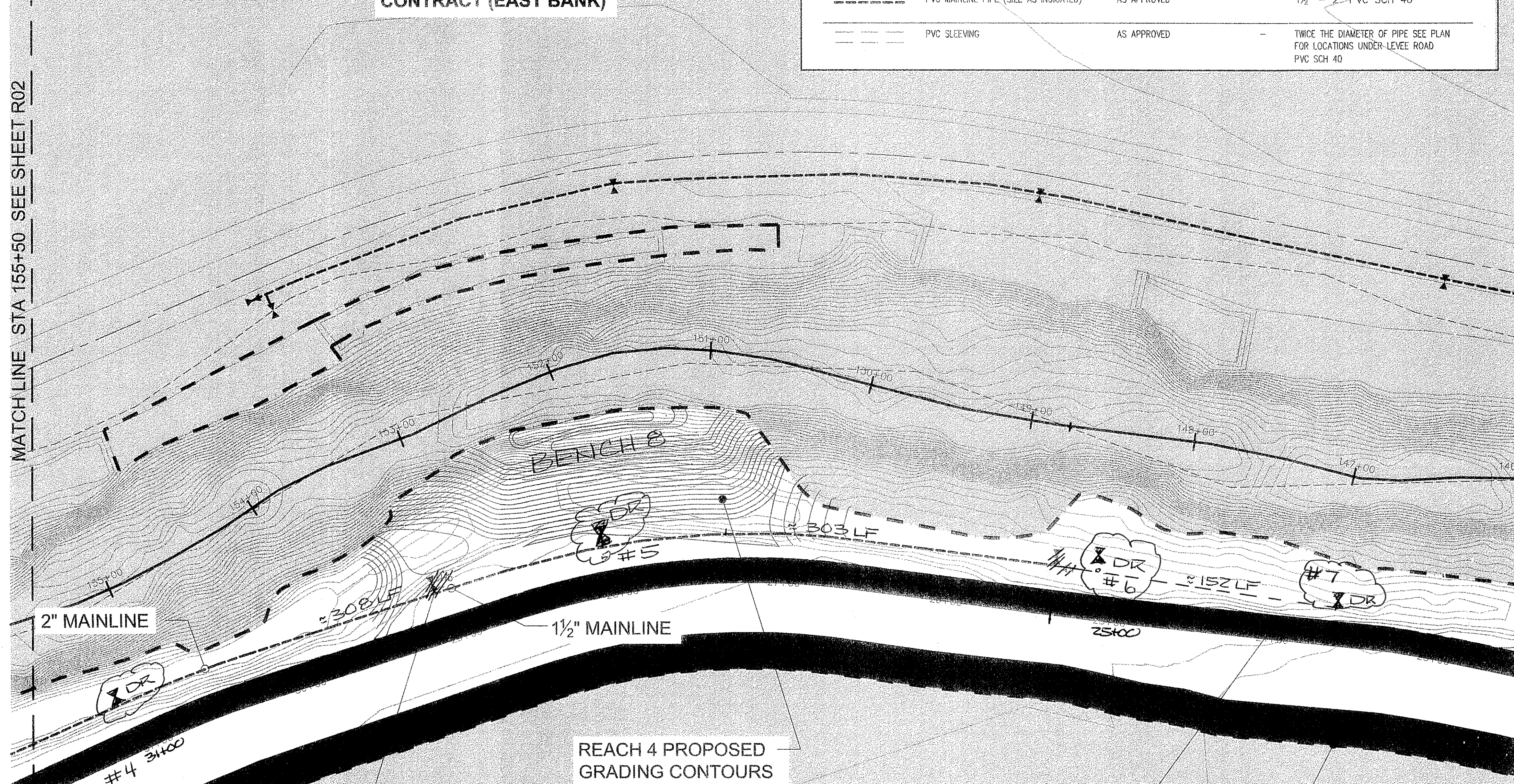
**IRRIGATION LEGEND**

SYMBOL	DESCRIPTION	MANUFACTURER / MODEL	DETAIL	REMARKS
	MANUAL ISOLATION VALVE (GATE VALVE)	1 1/2" KBI MODEL OR APPROVED EQUAL BRASS GATE VALVE AS PER DETAIL	-	SIZED ACCORDING TO PIPE SIZE SET IN BOX WITH 1/4" PAINTED WOOD MARKER POST
	PVC MAINLINE PIPE (SIZE AS INDICATED)	AS APPROVED	-	1 1/2" - 2" PVC SCH 40
	PVC SLEEVING	AS APPROVED	-	TWICE THE DIAMETER OF PIPE SEE PLAN FOR LOCATIONS UNDER-LEVEL ROAD PVC SCH 40

**SHADED AREA IS NOT IN CONTRACT (EAST BANK)**

MATCH LINE STA 155+50 SEE SHEET R02

MATCH LINE STA 146+00 SEE SHEET R04



"T" OFF TO ISOLATION VALVE  
1 1/2" MAINLINE

REACH 4 PROPOSED GRADING CONTOURS

STATION MARKER

REACH 4 LIMIT OF GRADING

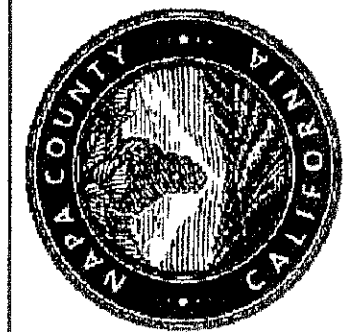
**EMMOLO  
VINEYARDS**

PREPARED BY:  
**PWA**  
PHILIP WILLIAMS & ASSOCIATES, LTD.  
ENVIRONMENTAL HYDROLOGY  
500 GARDEN STREET, SUITE 200  
SAN FRANCISCO, CA 94102  
PHONE (415) 362-2300 FAX (415) 362-2303

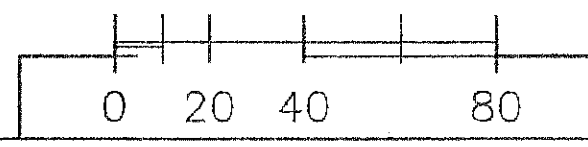
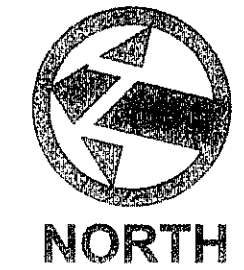
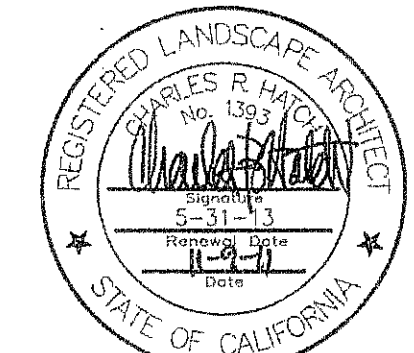
**RESTORATION  
RESOURCES**  
3888 CINCINNATI AVENUE  
ROCKLIN, CA 95756  
TEL 916 408 2860  
www.restorationresources.net  
CA LIC. #429252

SHEET TITLE  
**IRRIGATION PLAN -  
STA 146+00 to STA 155+50**  
PROJECT **NAPA RIVER RESTORATION  
RUTHERFORD REACH 4:  
WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94559**



APPROVED  
DESIGNED R. SWIFT, L. PIPER  
DRAWN L. PIPER  
INCHARGE R. SWIFT, PRESIDENT  
SCALE 1" = 40'  
DATE APRIL 2011  
SHEET



**R03**



**HONIG  
VINEYARD  
LLC**

**CARPY  
CONOLLY  
LLC**

NOTES:  
 POC SHALL PROVIDE MINIMUM 60 GPM @ 60 PSI. CONTRACTOR SHALL VERIFY PRIOR TO IRRIGATION SYSTEM INSTALLATION.  
 GATE VALVE IDENTIFICATION: Dr = VALVE FOR FUTURE DRIP SYSTEM  
~~Dr = VALVE FOR FUTURE HOSE BIBB SYSTEM ELIMINATED~~  
 POC LOCATIONS WILL BE CONFIRMED BY OWNERS.

**IRRIGATION LEGEND**

SYMBOL	DESCRIPTION	MANUFACTURER / MODEL	DETAIL	REMARKS
	MANUAL ISOLATION VALVE (GATE VALVE)	1 1/2" KBI MODEL OR APPROVED EQUAL BRASS GATE VALVE AS PER DETAIL	-	SIZED ACCORDING TO PIPE SIZE "T" POST SET IN BOX WITH 1/2" PAINTED WOOD MARKER POST
	PVC MAINLINE PIPE (SIZE AS INDICATED)	AS APPROVED	-	1 1/2" - 2" PVC SCH 40
	PVC SLEEVING	AS APPROVED	-	TWICE THE DIAMETER OF PIPE SEE PLAN FOR LOCATIONS UNDER LEVEL ROAD PVC SCH 40

SHADED AREA IS NOT IN CONTRACT (EAST BANK)

REACH 4 PROPOSED GRADING CONTOURS

REACH 4 LIMIT OF GRADING

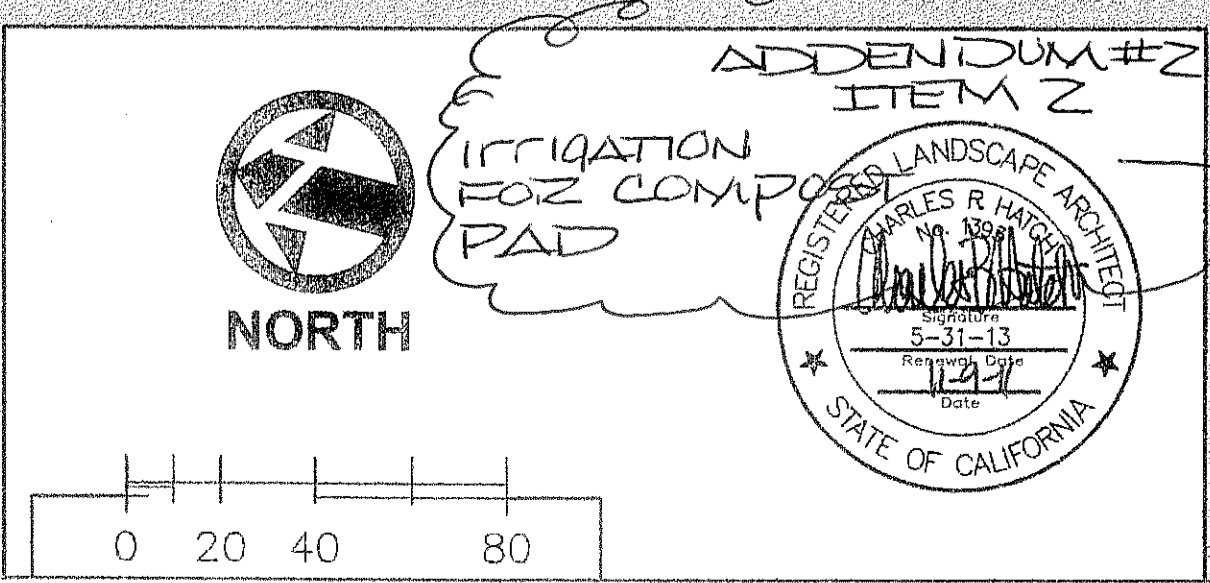
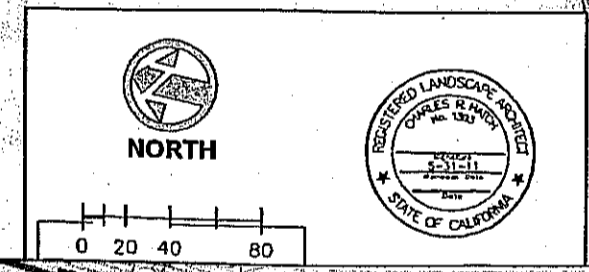
STATION MARKER

**EMMOLO  
VINEYARDS**

**MEE ERIKA  
MTR**

ADDENDUM #2

4/16/12  
ADD THREE (3) ISOLATION VALVES FOR COUNTY ADJUNCTION



MATCHLINE STA 146+00 SEE SHEET R03

MATCHLINE STA 134+00 SEE SHEET R05

PREPARED BY:  
**PWA**  
 PHILIP WILLIAMS & ASSOCIATES, LTD.  
 ENVIRONMENTAL HYDROLOGY  
 300 GARDEN STREET, SUITE 500  
 SAN FRANCISCO, CA 94102  
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**RESTORATION  
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 3888 CHICHNATI AVENUE  
 ROCKLIN, CA 95765  
 TEL: 916.408.2950  
 www.restorationresources.net  
 CALIC #429252

IRRIGATION PLAN -  
 STA 134+00 TO STA 146+00  
 PROJECT NAPA RIVER RESTORATION  
 RUTHERFORD REACH 4:  
 WEST (RIGHT) BANK

PREPARED FOR:  
 NAPA COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 1195 Third St, Suite 201  
 Napa, CA 94559



APPROVED  
 DESIGNED R. SWIFT, L. PIPER  
 DRAWN L. PIPER  
 INCHARGE R. SWIFT, PRESIDENT  
 SCALE 1" = 40'  
 DATE APRIL 2011  
 SHEET



**HONIG  
VINEYARD  
LLC**

NOTES:  
 POC SHALL PROVIDE MINIMUM 60 GPM @ 60 PSI. CONTRACTOR SHALL VERIFY PRIOR TO IRRIGATION SYSTEM INSTALLATION.  
 GATE VALVE IDENTIFICATION: Dr = VALVE FOR FUTURE DRIP SYSTEM  
 Hd = VALVE FOR FUTURE HOSE BIBB SYSTEM  
 POC LOCATIONS WILL BE CONFIRMED BY OWNERS.

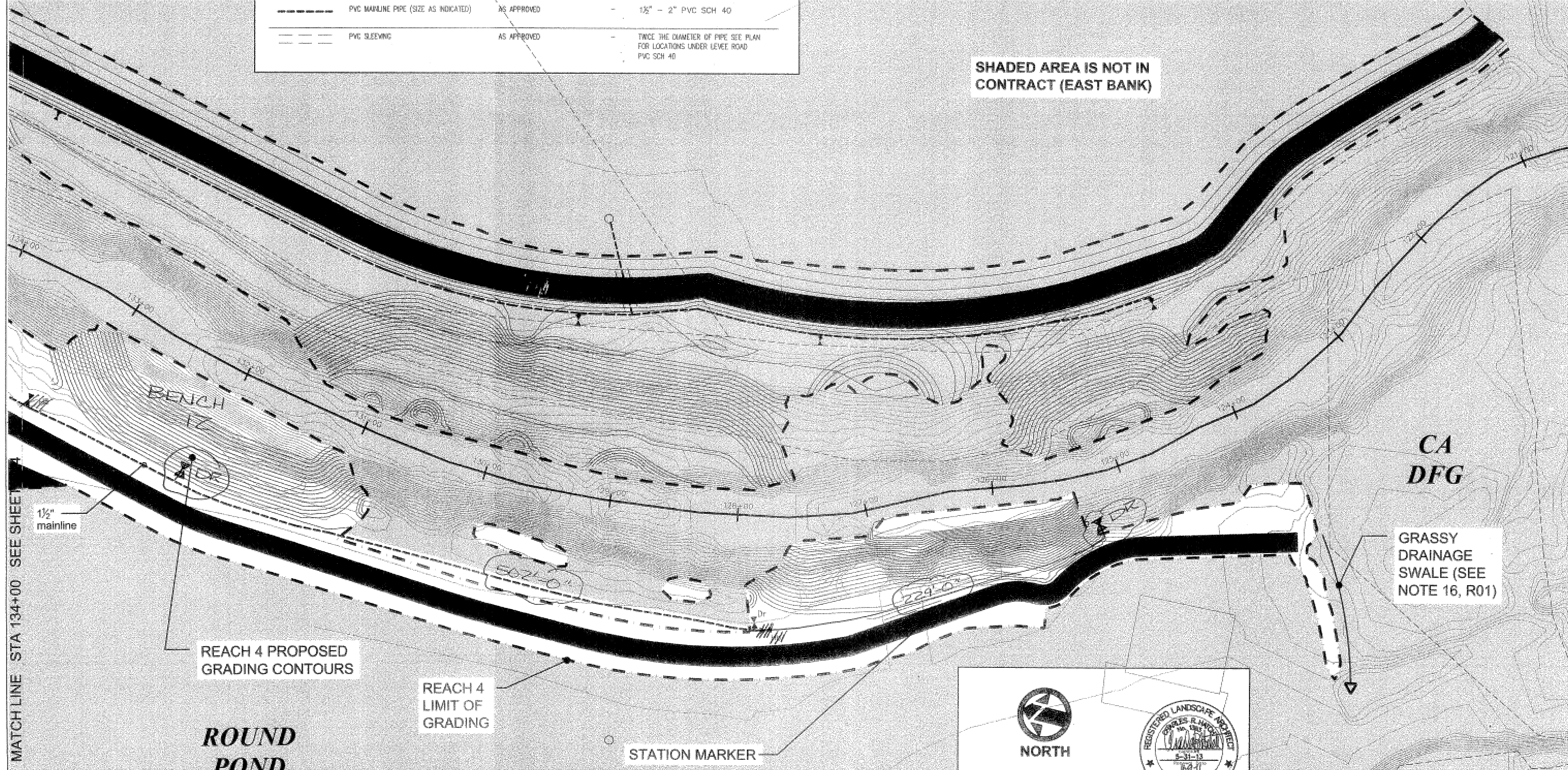
ELIMINATED FROM CONTRACT

**IRRIGATION LEGEND**

SYMBOL	DESCRIPTION	MANUFACTURER / MODEL	DETAIL	REMARKS
	MANUAL ISOLATION VALVE (GATE VALVE)	1 1/2" KBI MODEL OR APPROVED EQUAL BRASS GATE VALVE AS PER DETAIL	-	SIZED ACCORDING TO PIPE SIZE. SET IN BOX WITH A MARKER POST. <i>T. FOST</i>
	PVC MAINLINE PIPE (SIZE AS INDICATED)	AS APPROVED	-	1 1/2" - 2" PVC SCH 40
	PVC SLEEVING	AS APPROVED	-	Twice the diameter of pipe. See plan for locations under levee road. PVC SCH 40

**ROUND  
POND**

SHADED AREA IS NOT IN CONTRACT (EAST BANK)



MATCH LINE STA 134+00 SEE SHEET 4

**ROUND  
POND**

REACH 4 PROPOSED GRADING CONTOURS

REACH 4 LIMIT OF GRADING

STATION MARKER

GRASSY DRAINAGE SWALE (SEE NOTE 16, R01)

CA  
DFG

**NORTH**

REGISTERED LANDSCAPE ARCHITECT  
 CHARLES R. HICKS  
 6-31-13  
 STATE OF CALIFORNIA

PREPARED BY:  
**PWA**  
 PRAIRIE WILLOW & ASSOCIATES, LTD.  
 ENVIRONMENTAL & LANDSCAPE ARCHITECTS  
 1000 RIVERVIEW DRIVE, SUITE 200  
 NAPA, CA 94959  
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 FAX: 707.255.1101  
 WWW.PWA-CA.COM

**RESTORATION  
RESOURCES**  
 3888 CECILIANI AVENUE  
 REDWOOD CITY, CA 94063  
 TEL: 650.406.8800  
 WWW.RESTORATIONRESOURCES.COM  
 CA LIC. #429222

SHEET TITLE  
**IRRIGATION PLAN -  
STA 124+60 to STA 134+00**  
 PROJECT  
**NAPA RIVER RESTORATION  
RUTHERFORD REACH 4;  
WEST (RIGHT) BANK**

PREPARED FOR:  
**NAPA COUNTY  
DEPARTMENT OF PUBLIC WORKS  
1195 Third St, Suite 201  
Napa, CA 94959**

APPROVED

DESIGNED	R. SWIFT, L. PAPER
DRAWN	L. PAPER
CHECKED	R. SWIFT, PRESIDENT
SCALE	1" = 40'
DATE	APRIL 2011
SHEET	