

Appendix B  
**Amended Consent Decree**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

SIERRA CLUB,  
Plaintiff,  
v.

Case No.: 5:11-cv-06392-HRL  
Case No.: 5:15-cv-01896-HRL  
Judge: Hon. Howard R. Lloyd

LEHIGH SOUTHWEST CEMENT COMPANY,  
and HANSON PERMANENTE CEMENT, INC.  
Defendants.

**AMENDED CONSENT DECREE**  
**Date Lodged: February 22, 2016**  
**Date Entered May 11, 2016**

**I. RECITALS**

1. On December 19, 2011, Plaintiff Sierra Club (“Plaintiff” or “Sierra Club”) filed a Complaint for Declaratory and Injunctive Relief and for Civil Penalties in this federal Clean Water Act case against Defendants Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. (“Defendants”) pertaining to Defendants’ quarry, cement plant and associated facilities, located in Santa Clara County, California. Sierra Club and Defendants are collectively referred to herein as “Parties,” and individually referred to as “Party.”

2. The Complaint alleges that Defendants have, and continue to, discharge pollutants from the quarry pit into Permanente Creek without an authorizing national pollutant discharge elimination system (“NPDES”) permit and in violation of their storm water discharge permit.

3. The Complaint also alleges that Defendants have caused fill, including but not limited to mining wastes, overburden and sediment, to enter the bed and banks of Permanente Creek, and that such fill degrades, and continues to degrade, the water quality, habitat and natural function of the Creek.

4. Defendants deny all of Plaintiff’s allegations and claims in the Complaint.

5. The Parties, through their authorized representatives and without either adjudication of Plaintiff’s claims or admission by Defendants of any alleged wrongdoing have

United States District Court  
For the Northern District of California

1 chosen to resolve in full Plaintiff’s Complaint through settlement and avoid the cost and  
2 uncertainties of further litigation.

3 6. The Parties’ original Consent Decree was entered by the Court on June 18, 2013  
4 (Docket No. 86). This Amended Consent Decree modifies several of Defendants’ creek  
5 restoration requirements set forth in the original Consent Decree in response to agency  
6 comments. This Amended Consent Decree has been negotiated in good faith, will avoid further  
7 litigation among the Parties, and is fair, reasonable and in the public interest.

8 NOW, THEREFORE, with the consent of the Parties, IT IS HEREBY ADJUDGED,  
9 ORDERED AND DECREED as follows:

10 **II. JURISDICTION AND VENUE**

11 7. This Court has subject matter jurisdiction in this matter pursuant to 33 U.S.C. §  
12 1365(a)(1)(A) (citizen suit provision of the Clean Water Act) and 28 U.S.C. § 1331 (federal  
13 question statute). The relief required is authorized pursuant to 28 U.S.C. §§ 2201 and 2202  
14 (declaratory judgment), and 33 U.S.C. §§ 1319 and 1365 (Clean Water Act).

15 8. Venue in the Northern District of California is proper pursuant to 33 U.S.C. §  
16 1365(c)(1) (Clean Water Act citizen suit provision) because Defendants’ discharges are located  
17 in this District. Venue also lies in the Northern District of California, pursuant to 28 U.S.C.  
18 § 1391(b) and (e), because the property that is the subject of this action is in Santa Clara County,  
19 California, and because Defendants’ Facility is located in Santa Clara County, California.

20 9. Plaintiff and Defendants consent to this Court’s jurisdiction to enter and enforce  
21 this Amended Consent Decree, and consent to venue in this judicial district.

22 **III. APPLICABILITY**

23 10. The provisions of this Amended Consent Decree apply to and are binding on  
24 Plaintiff and Defendants, any of their respective successors and/or assigns, officers, agents,  
25 servants, and employees, and any other entities who are in active concert or participation with  
26 Plaintiff or Defendants.

27 11. No transfer of ownership or operation of the Facility shall relieve Defendants of  
28 their obligation to comply with the terms of this Amended Consent Decree. Moreover, prior to

1 any transfer of ownership or operation, the transferee shall provide written confirmation to the  
2 Court and Plaintiff acknowledging the terms of the Amended Consent Decree and consenting to  
3 be bound by its terms.

4 12. Defendants shall provide a copy of this Amended Consent Decree to all officers,  
5 employees, agents, performance guarantors, consultants and contractors whose duties include the  
6 implementation of any provision of this Amended Consent Decree.

7 **IV. DEFINITIONS**

8 13. Terms used in this Amended Consent Decree that are defined in the federal Clean  
9 Water Act, 33 U.S.C. §§ 1251, *et seq.*, (“CWA”), or in regulations issued pursuant thereto, shall  
10 have the meanings assigned to them therein, unless otherwise provided in this Decree.

11 Whenever the terms set forth below are used in this Amended Consent Decree, the following  
12 definitions shall apply:

13 (a) “Applicable chronic water quality standard for Selenium” means 5 micrograms per  
14 liter (µg/l) of total Selenium.

15 (b) “Complaint” shall mean the Complaint filed by Sierra Club in this action on  
16 December 19, 2011.

17 (c) “Amended Consent Decree” or “Decree” shall mean this Amended Consent Decree  
18 and the exhibits attached hereto.

19 (d) “Creek” shall mean Permanente Creek.

20 (e) “Day” shall mean a calendar day unless expressly stated to be a business  
21 day. In computing any period of time under this Decree, where the last day would fall on a  
22 Saturday, Sunday or federal holiday, the period shall run until the close of business of the next  
23 business day.

24 (f) “DFW” shall mean the California Department of Fish and Wildlife.

25 (g) “DFW Restoration Manual” shall mean the California Department of Fish &  
26 Wildlife’s California Salmonid Stream Habitat Restoration Manual, 4<sup>th</sup> Edition (Vols. One and  
27 Two, 2010), attached hereto as Exhibit A.

28 (h) “Effective Date” shall mean the date this Decree is entered by the Court.

1 (i) “Facility” shall mean Defendants’ Permanente quarry, cement plant and associated  
2 works and property, located in Santa Clara County, California.

3 (j) “Field Engineering Description” shall mean the Field Engineering Description dated  
4 February 2, 2016 and attached hereto as Exhibit B.

5 (k) “Final treatment system” shall mean a water pollution abatement system and  
6 associated flow modulation facilities designed, constructed and operated to achieve continuous  
7 compliance with all NPDES permit limits, and all water quality standards applicable to  
8 Permanente Creek, for all discharges to Permanente Creek from the Facility, including quarry pit  
9 water and process waters currently associated with Pond 4A (quarry pit and primary crusher  
10 washdown), Ponds 9 & 11 (cement plant process waters in Pond 11 that flow through Pond 9),  
11 and Pond 20 (cement plant truck wash), and only excluding authorized storm water discharges  
12 from Pond 9 (after Pond 11 no longer flows to Pond 9), Pond 13, Pond 20 (after truck wash  
13 water no longer flows to Pond 20), and Pond 30. To the extent Defendants’ future NPDES  
14 permit contains an effluent limit for nickel that differs from the water quality standard for nickel,  
15 such NPDES nickel effluent limit shall control.

16 (l) “Interim treatment system” shall mean a water pollution abatement system and  
17 associated flow modulation facilities designed, constructed and operated to treat up to 24,000  
18 gallons per hour of the quarry pit water currently associated with Pond 4A (quarry pit and  
19 primary crusher washdown) for the primary purpose of substantially reducing Selenium in the  
20 quarry pit water prior to discharge. Operation of this interim treatment system is also intended to  
21 inform the final design and successful operation of the final treatment system.

22 (m) “Meet and confer” shall mean to communicate at the same time in person, by phone,  
23 or through any video or other virtual electronic method.

24 (n) “NPDES” shall mean National Pollutant Discharge Elimination System.

25 (o) “Parties” shall mean Plaintiff and Defendants.

26 (p) “Quarry pit water” shall mean that surface and ground water that is pumped by  
27 Defendants to facilitate quarry mining.

28 (q) “Reach” shall mean that length of Permanente Creek that has been assigned a

1 numerical value from 1 to 22, originally designated as such by URS, as shown in the April 27,  
2 2015 Permanente Creek Restoration Plan, Draft 70% Design drawings, prepared by Waterways  
3 Consulting, Inc. (“Restoration Plan Drawings”) set forth as Exhibit C.

4 (r) “Regional Water Board” shall mean the San Francisco Bay Regional Water Quality  
5 Control Board.

6 (s) “Section” shall mean a portion of this Amended Consent Decree identified by a  
7 Roman numeral.

8 (t) “EPA” shall mean the United States Environmental Protection Agency  
9 and any of its successor departments or agencies.

10 (u) “Work”, as that term is used in Section X, shall mean all activities necessary to  
11 satisfy the Permanente Creek restoration obligations described in Section VI of this Decree,  
12 including but not limited to design, contracting, permitting, construction and monitoring  
13 activities.

14 **V. DISCHARGE TREATMENT**

15 14. No later than August 1, 2013, Defendants shall supplement their November 30,  
16 2011 application for an individual NPDES permit for the Facility by submitting an amended  
17 Report of Waste Discharge, or procedurally similar document, to the Regional Water Board that  
18 includes requirements no less stringent than those set forth in Paragraphs 15 through 32 below.

19 A. Interim Quarry Pit Water Discharge Compliance

20 15. No later than August 1, 2013, Defendants shall execute one or more contracts for  
21 the engineering, procurement, and construction of the interim treatment system. No later than  
22 January 17, 2014, Defendants shall commence construction of the interim treatment system.

23 16. No later than October 1, 2014, Defendants shall have installed and commenced  
24 operation of the interim treatment system.

25 17. Beginning no later than October 1, 2014, and continuing no later than September  
26 30, 2017, Defendants shall direct all quarry pit water to the interim treatment system.  
27 Defendants shall treat no less than 24,000 gallons per hour of quarry pit water with the interim  
28 treatment system, except at those times when only flows less than 24,000 gallons per hour are

1 available from the flow modulation facilities, in which case Defendants shall treat all lesser  
2 flows. Beginning no later than December 1, 2014, Defendants shall either remove, on a  
3 continuous basis, at least 50 percent of the total Selenium from the totality of such quarry pit  
4 water flow to be treated, or achieve a concentration of no greater than 10  $\mu\text{g/l}$  of total Selenium  
5 in such quarry pit water flow to be treated when the concentration of total Selenium in the quarry  
6 pit water entering the interim treatment system is 20  $\mu\text{g/l}$  or less, prior to its discharge into  
7 Permanente Creek. Notwithstanding the above, Defendants shall operate the treatment system at  
8 all times to maximize the reduction of Selenium in the quarry pit discharge.

9       18. To determine the flow rates described above, Defendants shall use automatic,  
10 continuous flow measuring equipment with continuous data logging to monitor the total gallons  
11 per hour of quarry pit water entering the interim treatment system. Defendants shall also monitor  
12 the total gallons per hour of all quarry pit water treated by the interim treatment system and  
13 discharged to Permanente Creek, and the total gallons per hour of any quarry pit water that is not  
14 treated by the interim treatment system and discharged to Permanente Creek.

15       19. Beginning on October 1, 2014, and continuing through September 30, 2017,  
16 Defendants shall monitor, on no less than a weekly basis, the total Selenium in the untreated  
17 quarry pit water at the inlet to the interim treatment system, and at the outlet from the interim  
18 treatment system. The inlet and outlet samples shall be taken at the same time, and shall consist  
19 of a composite of twelve equal aliquots collected evenly over a 24-hour period. Data generated  
20 from this monitoring shall be used to assess compliance with Paragraph 17 on a weekly basis.

21       20. No later than March 31, 2015, Defendants shall provide Plaintiff with a report  
22 summarizing the performance of the interim treatment system since October 1, 2014, including  
23 but not limited to the measured concentration of total Selenium in the water discharged from the  
24 interim treatment system to Permanente Creek.

25       21. No later than June 30, 2015, Defendants shall provide Plaintiff with a report  
26 summarizing what additional treatment facilities or operational changes, if any, are necessary to  
27 ensure that quarry pit water treated by the interim treatment system will comply with the  
28 applicable chronic water quality standard for Selenium. If the water discharged from the interim

1 treatment system is in compliance with the applicable chronic water quality standard for  
2 Selenium at that time, no additional treatment facilities or operational changes must be identified  
3 by Defendants, and in that case, after June 30, 2015 Defendants shall comply with such standard,  
4 in lieu of the 50 percent removal requirement set forth in Paragraph 17.

5 22. No later than December 31, 2015, Defendants shall have installed and shall  
6 commence operation of additional treatment facilities, if any, necessary to ensure that quarry pit  
7 water treated by the interim treatment system will comply with the applicable chronic water  
8 quality standard for Selenium.

9 23. No later than March 31, 2016, the water discharged from the interim treatment  
10 system shall comply with the applicable chronic water quality standard for Selenium, in lieu of  
11 the 50 percent removal requirement set forth in Paragraph 17, unless compliance with the  
12 applicable chronic water quality standard for Selenium was achieved by June 30, 2015 pursuant  
13 to Paragraph 21.

14 24. No later than September 5, 2014, and continuing no later than September 30,  
15 2017, Defendants shall not discharge process-related waters from Pond 11 into Pond 9, and  
16 Defendants shall have installed and commenced operation of treatment facilities for the  
17 discharge of water from Pond 11 to Pond 4A and shall attain and maintain compliance with the  
18 Regional Water Board's discharge limitations applicable to such discharge.

19 25. Defendants shall provide to Plaintiff on a quarterly basis, in .pdf electronic  
20 format, all monitoring results from the interim treatment facility and Pond 11 discharges to Pond  
21 4A from the previous calendar quarter, within 30 days of the last day of each calendar quarter,  
22 including but not limited to the results of all flow and Selenium monitoring.

23 B. Final Facility Discharge Compliance

24 26. No later than August 1, 2016, Defendants shall execute contract(s) for  
25 engineering, procurement, and construction of the final treatment system. No later than February  
26 1, 2017, Defendants shall commence construction of the final treatment system.

27 27. Beginning no later than September 30, 2017, Defendants shall have installed and  
28 commenced operation of the final treatment system.



1           28.     Beginning no later than September 30, 2017, Defendants shall not discharge any  
2 quarry pit water, or any process water, or stormwater mixed with process water, from the Facility  
3 into Permanente Creek unless such discharge is treated by the final treatment system and is in  
4 compliance with all applicable NPDES permit effluent limits, and all applicable receiving water  
5 quality standards, including but not limited to the applicable chronic Selenium and chronic  
6 toxicity standards.

7           29.     Compliance with the chronic toxicity standard shall be determined by EPA's  
8 whole effluent toxicity (WET) test, based on: (1) survival and reproduction of Ceriodaphnia  
9 (water flea) (EPA/821/R-02/013 (Test Method 1002.0), (2) survival and growth of pimephales  
10 promelas (fathead minnow), EPA/821/R-02/013, Test Method 1000.0 (2002), and (3) growth of  
11 Selenastrum (algae), EPA/821/R-02/012, Test Method 1003.0 (2002). If Defendants' NPDES  
12 permit requires a different method for determining compliance with the chronic toxicity water  
13 quality standard, Defendants' compliance with the chronic toxicity water quality standard shall  
14 be determined by such method.

15           30.     For the first six months of operation of the final treatment system, compliance  
16 sampling and analysis for conventional constituents and metals, including Selenium, shall take  
17 place on no less than a weekly basis. To determine compliance with the chronic toxicity  
18 standard, sampling and analysis shall take place on no less than a monthly basis consistent with  
19 Paragraph 29 immediately above.

20           31.     Beginning on the seventh month of operation of the final treatment system, and  
21 continuing thereafter, Defendants' compliance with all applicable water quality standards and  
22 effluent limits shall be determined by the monitoring requirements in Defendants' individual  
23 Facility NPDES permit.

24           32.     Defendants shall provide to Plaintiff on a quarterly basis, in .pdf electronic  
25 format, all monitoring results required by this Decree and Defendants' NPDES permit, from the  
26 previous calendar quarter within 30 days of the last day of each calendar quarter.

27  
28

**VI. CREEK RESTORATION**

A. Permanente Creek Restoration.

33. The Parties agree that the objectives of the Permanente Creek restoration requirements set forth below include the following:

- Increase quantity and quality of resident rainbow trout habitat through creation of pools, increased channel complexity and cover, and by fish passage through and between reaches consistent with a geomorphically stable, self-sustaining channel unless DFW Restoration Manual hydraulic design criteria cannot be met due to (1) the gradient of the reach, or (2) bedrock grade controls confirmed by the independent geologist;
- Improve riparian habitat, including improvement to channel and stream bank stability and ecological/geomorphic function;
- Remove mining-related fill and sediments in the bed, banks and adjacent slopes;
- Remove or alter man-made structures so as to improve riparian habitat;
- Layback creek banks and adjacent hill slopes to provide stable slopes sufficient to prevent fill from entering the creek;
- Require restoration that is no less stringent than any restoration that is approved or required by any agency, including but not limited to the Santa Clara County Planning Department, the DFW, and the Regional Water Board, and that is to be performed in a period of time no greater than any restoration that is approved or required by any agency, including but not limited to the Santa Clara County Planning Department, the DFW, and the Regional Water Board.

34. Reaches 19-20-21. Defendants shall improve holding and rearing habitat for the resident trout population during summer low-flow periods and improve cover during high flows as follows. Defendants shall create four (4) woody debris installations within each Reach (for a total of 12 installations). Wood type, size, location and installation criteria for implementation of each installation shall comply with DFW and Regional Water Board permit or other approval requirements.

35. Reaches 17-18. Defendants shall excavate and permanently export overburden and mining-related sediment from the creek bed, banks, and from upland slopes (to the extent upland slope materials pose a risk of entering the creek), sufficient to establish approximate pre-disturbance creek alignment and slopes, and to facilitate above-grade flows, as generally depicted in the Restoration Plan Drawings. Defendants shall provide for enhanced ecological function and resident trout passage consistent with a geomorphically stable, self-sustaining

**United States District Court**  
For the Northern District of California

1 channel. Defendants shall follow the hydraulic design criteria in the DFW Restoration Manual  
 2 unless such criteria cannot be met due to the gradient of the reaches, or bedrock grade controls  
 3 confirmed by the independent geologist as described below, in which case the stream simulation  
 4 criteria in the DFW Restoration Manual, revised as necessary with off-site analogs, shall apply.

5 Defendants shall reconstruct the channel at a lowered profile and alignment within the  
 6 “grading envelope” as depicted in the Restoration Plan Drawings and Field Engineering  
 7 Description. Defendants shall remove all material to the lower limit of the potential design  
 8 channel invert shown in the Restoration Plan Drawings, subject to the criteria in the Field  
 9 Engineering Description. If Defendants assert they have excavated to bedrock prior to reaching  
 10 the lowest elevation at any location within the “grading envelope,” an independent professional  
 11 geologist will assess Defendants’ assertion and make the final determination of the existence and  
 12 extent of any such bedrock. Pursuant to the time periods in Paragraph 46, Plaintiff and  
 13 Defendants shall mutually agree to an independent professional geologist from a list of up to  
 14 three candidates proposed by each party. If the Parties cannot agree they shall submit the matter  
 15 to the Court for the Court to select an appropriate independent professional geologist. Prior to  
 16 the commencement of construction Defendants shall contract with the independent professional  
 17 geologist to reasonably perform the work described in this Decree, and the costs of such work  
 18 shall be borne by the Defendants.

19 In particular, Defendants shall layback and re-grade the north overburden slope to  
 20 provide a stable slope no steeper than 2:1 (50% grade) and shall remove sufficient material to  
 21 move the north toe of the slope at least 25 feet northward from its current location and elevation.  
 22 In the immediate vicinity of Pond 4A and the associated interim and final treatment facilities,  
 23 Defendants shall move the north toe of the slope at least 16 feet northward from its current  
 24 location and elevation for a length of no more than 160 feet. Defendants shall establish an  
 25 enlarged creek channel and flood plain as depicted in the Restoration Plan Drawings, the  
 26 horizontal dimensions of which shall be determined by the extent of excavation within the  
 27 “grading envelope.” The course of the Creek shall follow exposed bedrock, and/or large  
 28 boulders, cobbles, sands and gravels not sourced from limestone-containing mine wastes or

1 overburden. Defendants shall either create a berm along both reaches at the toe of the north  
 2 slope, parallel to the creek (but set-back above the 100-year flood high water line) or install other  
 3 structures (*e.g.*, benches along the north slope) to prevent overburden and sediment from entering  
 4 the Creek.

5 As depicted in the Restoration Plan Drawings, Defendants shall remove the relic concrete  
 6 structure, and shall cut back a portion of what is referred to as the “old concrete crusher  
 7 foundation,” that currently resides, in part, within Permanente Creek, to match the natural  
 8 direction and slope of the Creek, leaving a benign portion of the foundation buried within the  
 9 Creek bank. Work on the “old concrete crusher foundation” will be performed using reasonable  
 10 methods and equipment, including but not limited to small equipment with materials and spoils  
 11 lowered and raised via a Constant Rate Descender or equivalent. Should Defendants encounter  
 12 an unexpected condition while performing the required work on the “old concrete crusher  
 13 foundation,” which precludes completion of the work prescribed herein, Defendants shall meet  
 14 and confer with Plaintiff regarding said condition. If the Parties are unable to agree upon the  
 15 appropriate course of action, Defendants may invoke the dispute resolution provisions of this  
 16 Decree.

17 36. Reaches 14-15-16. Defendants shall improve holding and rearing habitat for the  
 18 resident trout population during summer low-flow periods and improve cover during high flows  
 19 as follows. Defendants shall create four (4) woody debris installations within each Reach (for a  
 20 total of 12 installations). Wood type, size, location and installation criteria for implementation of  
 21 each installation shall comply with DFW and Regional Water Board permit or other approval  
 22 requirements.

23 37. Reach 13. Defendants shall remove the dam infrastructure at Pond 13 and the  
 24 associated impounded fine sediments. Within this area Defendants shall establish a new,  
 25 enlarged creek channel that includes increased channel complexity and a restored flood plain  
 26 with restored vegetation as depicted in the Restoration Plan Drawings, the horizontal dimensions  
 27 of which shall be determined by the extent of excavation within the “grading envelope.”  
 28 Defendants shall provide for enhanced ecological function and resident trout passage consistent

1 with a geomorphically stable, self-sustaining channel. Defendants shall follow the hydraulic  
2 design criteria in the DFW Restoration Manual unless such criteria cannot be met due to the  
3 gradient of the reach, or bedrock grade controls confirmed by the independent geologist, in  
4 which case the stream simulation criteria in the DFW Restoration Manual, revised as necessary  
5 with off-site analogs, shall apply.

6 Defendants shall reconstruct the channel at a lowered profile and alignment within the  
7 "grading envelope" as depicted in the Restoration Plan Drawings and incorporated Field  
8 Engineering Description. Defendants shall remove all material to the lower limit of the potential  
9 design channel invert shown in the Restoration Plan Drawings, subject to the criteria in the Field  
10 Engineering Description. If Defendants assert they have excavated to bedrock prior to reaching  
11 the lowest elevation at any location within the "grading envelope," an independent professional  
12 geologist will assess Defendants' assertion and make the final determination of the existence and  
13 extent of any such bedrock consistent with Paragraph 35 above. The course of the Creek shall  
14 follow exposed bedrock, and/or large boulders, cobbles, sands and gravels not sourced from  
15 limestone-containing mine wastes or overburden. A new, enlarged creek channel upstream of  
16 Pond 13 with consistent characteristics will be constructed as necessary to conform to the  
17 conditions depicted in the Restoration Plan Drawings.

18 38. Reaches 11-12. Defendants shall remove the half-culvert immediately  
19 downstream of Pond 13, including the removal of all artificial fill and metal structures within the  
20 valley floor in this Reach as generally depicted on the Restoration Plan Drawings. Defendants  
21 shall also remove the existing aggregate rock pile and associated rock pile infrastructure, all  
22 culverts, riprap, and the road on top of the creek (concrete ramp), and set back the road to  
23 provide more room for a natural streambed and banks. Defendants shall narrow the road and  
24 accompanying vehicle barrier to a reduced total width no greater than 20 feet at any point,  
25 measured from the toe of the inside slope to the top of the creek-side vehicle barrier. The vehicle  
26 barrier height shall not exceed two (2) feet, and the slope of the creek-side vehicle barrier shall  
27 be no steeper than 1.5h to 1v (67% slope). Runoff from the road shall be controlled pursuant to  
28 DFW and Regional Water Board requirements. Defendants shall establish an enlarged creek

1 channel that contains the features set forth in the Restoration Plan Drawings, the horizontal  
 2 dimensions of such channel shall be determined by the extent of excavation within the “grading  
 3 envelope.” Defendants shall provide for enhanced ecological function and resident trout passage  
 4 consistent with a geomorphically stable, self-sustaining channel. Defendants shall follow the  
 5 hydraulic design criteria in the DFW Restoration Manual unless such criteria cannot be met due  
 6 to the gradient of the reaches, or bedrock grade controls confirmed by the independent geologist  
 7 as described below, in which case the stream simulation criteria in the DFW Restoration Manual,  
 8 revised as necessary with off-site analogs, shall apply.

9 Defendants shall reconstruct the channel at a lowered profile and alignment within the  
 10 “grading envelope” as depicted in the Restoration Plan Drawings and incorporated Field  
 11 Engineering Description. Defendants shall remove all material to the lower limit of the potential  
 12 design channel invert shown in the Restoration Plan Drawings, subject to the criteria in the Field  
 13 Engineering Description. If Defendants assert they have excavated to bedrock prior to reaching  
 14 the lowest elevation at any location within the “grading envelope,” an independent professional  
 15 geologist will assess Defendants’ assertion and make the final determination of the existence and  
 16 extent of any such bedrock consistent with Paragraph 35 above. The course of the Creek shall  
 17 follow exposed bedrock, and/or large boulders, cobbles, sands and gravels not sourced from  
 18 limestone-containing mine wastes or overburden.

19 39. Reaches 8-9-10. Defendants shall improve channel stability and enhance  
 20 ecological function throughout reaches 8, 9 and 10 by sufficiently setting back the road and  
 21 associated slopes to provide more room for a natural streambed and banks as depicted in the  
 22 Restoration Plan Drawings. Defendants shall narrow the road and accompanying vehicle barrier  
 23 to a reduced total width no greater than 20 feet at any point, measured from the toe of the inside  
 24 slope to the top of the creek-side vehicle barrier. The vehicle barrier height shall not exceed two  
 25 (2) feet, and the slope of the creek-side vehicle barrier shall be no steeper than 1.5h to 1v (67%  
 26 slope). Runoff from the road shall be controlled by DFW and Regional Water Board  
 27 requirements. Defendants shall establish an enlarged creek channel that contains the features set  
 28 forth in the Restoration Plan Drawings. Defendants shall provide for enhanced ecological

1 function and resident trout passage through these reaches consistent with a geomorphically  
2 stable, self-sustaining channel. Defendants shall follow the hydraulic design criteria in the DFW  
3 Restoration Manual unless such criteria cannot be met due to the gradient of the reaches, or  
4 bedrock grade controls confirmed by the independent geologist as described herein, in which  
5 case the stream simulation criteria in the DFW Restoration Manual, revised as necessary with  
6 off-site analogs, shall apply.

7 Defendants shall remove the culverts identified as Culverts 7 and 9 in the Restoration  
8 Plan Drawings and restore the area with a naturalized channel as depicted in the Restoration Plan  
9 Drawings. With respect to fish passage, Defendants shall follow the hydraulic design criteria in  
10 the DFW Restoration Manual unless such criteria cannot be met due to the gradient of the  
11 reaches, or bedrock grade controls confirmed by the independent geologist as described herein,  
12 in which case the stream simulation criteria in the DFW Restoration Manual, revised as  
13 necessary with off-site analogs, shall apply.

14 Defendants shall remove the alluvial fan of gravel deposited on the floodplain located  
15 upstream of the culvert crossing as depicted in the Restoration Plan Drawings. Defendants shall  
16 remove the gravel from the channel and banks located in the ephemeral drainage from a storage  
17 area as depicted in the Restoration Plan Drawings and take all other necessary measures to  
18 prevent further mining-related sediment and material from reaching Permanente Creek in the  
19 future from this drainage. Defendants shall revegetate the floodplain and ephemeral channel  
20 with native vegetation.

21 40. Reaches 6-7. Defendants shall plant native riparian vegetation and trees on the  
22 southern bank along the concrete channelized portion of Permanente Creek to provide improved  
23 shading and reduce vegetation growth within the concrete channel, thereby improving sediment  
24 transport and enhancing fish passage.

25 41. Reaches 2-5. Nothing in this Amended Consent Decree is intended to preclude  
26 measures that Defendants may take in Reaches 2 - 5 to improve fish passage or make other  
27 Permanente Creek habitat improvements, or that other parties may take downstream therefrom.

28

1           42.     After completing the required restoration construction work in each reach,  
2 Defendants shall revegetate the Creek banks and disturbed areas with native vegetation including  
3 willows, alders, elderberries, blackberries, rushes, and sedges. Defendants shall incorporate  
4 willow fascines along the edges of banks and spillways where high bank shear stress is expected.

5           43.     By no later than July 1, 2013, Defendants shall correctly and permanently stake  
6 all reach boundaries and stations identified herein at locations adjacent to the Creek that will not  
7 be disturbed by the restoration activities. The stakes shall be permanently labeled by applicable  
8 number and their location recorded using a professional “sub-foot” GPS. By no later than  
9 September 1, 2013, Defendants shall provide to Plaintiff a plan view topographic map (in hard  
10 copy and electronic format) showing the professional “sub-foot” GPS locations of all stakes, the  
11 current thalweg and bank slope toes of the Creek, and all other current features such as road  
12 dimensions and pond and culvert locations referred to in this Decree.

13 B.     Permanente Creek Restoration Permitting and Performance Deadlines.

14           44.     The Parties anticipate that approvals will be required prior to the implementation  
15 of the Creek restoration work required above, including but not limited to approvals from:

- 16         • U.S. Army Corps of Engineers (Section 404 permit)
- 17         • California Regional Water Quality Control Board, San Francisco Region (NPDES  
18           permits and Section 401 certification)
- 19         • California Department of Fish & Wildlife (Section 1602 Streambed Alteration  
20           Agreement, California Endangered Species Act permits, if necessary)
- 21         • U.S. Fish & Wildlife Service and National Marine Fisheries Service (Section 7  
22           Endangered Species Act consultation)
- 23         • Santa Clara County (Reclamation Plan amendment and grading or other County-required  
24           permits)

25 Applicable environmental review processes (*e.g.*, CEQA and/or NEPA) must also be satisfied  
26 prior to proceeding with any creek restoration activities that require permits or approvals. The  
27 Parties agree to meet and confer to the extent any material change to a requirement in this Decree  
28 needs to be made in the course of the environmental analysis or permitting process. Any change  
to the Restoration Plan Drawings or associated text required in writing by any agency shall be



1 incorporated automatically into this Decree. Any other changes to the Restoration Plan  
2 Drawings or associated text shall be not be effective unless approved by both Parties and  
3 incorporated into this Decree by stipulation or motion.

4 45. To ensure a timely permit application and approval process with respect to the  
5 creek restoration work required above, Defendants shall complete the tasks below by the  
6 following deadlines:

7 (a) June 1, 2013: Notify all pertinent agencies of all restoration requirements, design and  
8 permitting milestones, and anticipated transmittal of Conceptual Restoration Plan (30% design  
9 level) by October 7, 2013. Request agency meeting and/or meetings to be calendared in  
10 November 2013 through January 2014.

11 (b) September 10, 2013: Complete Conceptual Restoration Plan, submit to Plaintiff for  
12 review and comment.

13 (c) October 7, 2013: Submit Conceptual Restoration Plan to all pertinent agencies.

14 (d) November 2013 through January 2014: Participate in agency meetings regarding  
15 Conceptual Restoration Plan and permitting. To the extent one or more agency meetings do not  
16 take place by January 2014, the Parties shall meet and confer to determine whether subsequent  
17 deadlines can and should be modified. If the Parties cannot agree, then Defendants may invoke  
18 the dispute resolution provisions of this Decree.

19 (e) July 30, 2014: Complete Draft Restoration Plan (70% design level) and permit  
20 applications, submit to Plaintiff for review and comment.

21 (f) March 30, 2016: Submit Nationwide Permit Pre-construction Notification to the U.S.  
22 Army Corps of Engineers under Section 404 of the federal Clean Water Act (33 U.S.C. § 1344).  
23 The Parties understand that the Army Corps of Engineers has confirmed that a Nationwide  
24 Permit is appropriate for this restoration project.

25 (g) April 29, 2016: Submit Notice of Preparation and Initial Study to the County of Santa  
26 Clara for environmental review of the restoration project under the California Environmental  
27 Quality Act (“CEQA”).

28 (h) Within sixty (60) days of certification of environmental review by the County of

1 Santa Clara under CEQA, submit all necessary permit and approval applications to appropriate  
 2 governmental agencies (*e.g.*, Army Corps of Engineers, Santa Clara County, DFW, California  
 3 Regional Water Quality Control Board, San Francisco Region). This submission shall include  
 4 all conditions reasonably calculated to be necessary to secure approval.

5 46. Defendants shall complete all restoration work within five (5) consecutive  
 6 construction seasons immediately after receipt of all necessary permits and approvals (*e.g.*, if all  
 7 permits and approvals are received by December 2017, the work must be completed by  
 8 December 2022), provided that if any condition of any permit or approval requires a shorter or  
 9 longer timeframe for completion of all the restoration work, the Parties shall request a  
 10 modification of the deadline set forth in this paragraph accordingly. Defendants shall notify  
 11 Plaintiff within seven days of receipt of all such permits and approvals, whereafter the Parties  
 12 shall have 30 days in which to identify and mutually agree on an independent professional  
 13 geologist as set forth in Paragraph 35. If on the 30th day the Parties have not reached an  
 14 agreement, within ten days of such date the Parties shall submit the matter to the Court for the  
 15 Court to select an appropriate independent professional geologist. In addition, within thirty (30)  
 16 days of receipt of all such permits and approvals, Defendants shall provide Plaintiff with a  
 17 schedule that describes the commencement and completion dates for all restoration activities in  
 18 each Reach for each construction season.

19 47. This Decree shall not relieve Defendants of their obligation to comply with all  
 20 applicable federal, state and local laws, regulations and permits. To the extent there is any  
 21 conflict between any provision in this decree and any other applicable requirement, the most  
 22 stringent requirement shall apply.

23 C. Alternative Permanente Creek Restoration.

24 48. Should any regulatory agency not provide one or more legally necessary  
 25 approvals to conduct the actions specified in Section VI.A., or place one or more unexpected  
 26 conditions on the approval of any given action, Paragraphs 49 - 52 shall apply.

27 49. For purposes of this Section, “unexpected conditions” shall mean: (i) one or more  
 28 conditions placed by a regulatory agency on the approval to undertake a creek restoration activity

1 in addition to the conditions specified in Paragraph 45(h), (ii) such conditions exceed the costs  
 2 specified in subparagraph (b) below, and (iii) Defendants are unwilling to expend the additional  
 3 costs of such conditions.

4 (a) For purposes of this Section, the total estimated cost to Defendants of the Permanente  
 5 Creek restoration project is approximately ten (10) million dollars in 2013 dollars. This  
 6 estimated cost shall be adjusted annually consistent with the Engineering News-Record  
 7 construction cost index for the Bay Area or, if unavailable, an equivalent cost index. The Parties  
 8 agree that the estimated total cost of the project is projected to be allocated within the Reaches of  
 9 Permanente Creek as follows:

10 **Reaches 6 – 7:** Three percent (3%) of total project cost

11 **Reaches 8 – 13:** Fifty-seven percent (57%) of total project cost

12 **Reaches 14 - 21:** Forty percent (40%) of total project cost

13 (b) Unexpected conditions occur if the cost of the conditions of approval exceed the  
 14 following amounts:<sup>1</sup>

15 **Reaches 6 – 7:** Conditions cause the cost of creek restoration actions in these reaches to  
 16 exceed ten percent (10%) of the total project cost, as adjusted.

17 **Reaches 8 – 13:** Conditions cause the cost of creek restoration actions to exceed the total  
 18 project cost by twenty percent (20%) of the total estimated cost, as adjusted.

19 **Reaches 14 – 21:** Conditions cause the value of creek restoration actions to exceed the  
 20 total project cost by twenty percent (20%) of the total estimated cost, as adjusted.

21 50. For purposes of this Section, if Defendants believe any unexpected conditions will  
 22 be or have been placed upon the approval or authorization to undertake one or more Creek  
 23 restoration activities, Defendants shall notify Plaintiff within thirty (30) days of becoming aware  
 24 of such unexpected conditions. The Parties shall meet and confer regarding any unexpected  
 25 conditions.

26 \_\_\_\_\_  
 27 <sup>1</sup> These percentages were derived by multiplying the allocated percentage by reach group times  
 28 fifty percent. Thus, for Reaches 8-13, 57% allocation x 50% cost buffer = 28.5% of the total  
 estimated cost of the restoration project.

1           51. In the event any unexpected conditions become final, within thirty (30) days of  
 2 such event, Defendants shall notify Plaintiff and provide Plaintiff with a written demonstration  
 3 explaining why the conditions are unexpected. The Parties shall meet and confer within fourteen  
 4 (14) days of such notice. If Plaintiff does not agree that unexpected conditions have been  
 5 imposed, Defendants may invoke the dispute resolution provisions of this Decree. If Plaintiff  
 6 agrees unexpected conditions have been imposed, the Parties may stipulate to an alternative  
 7 method of achieving the purposes of this Decree and present it to the Court for approval.  
 8 Otherwise, without a stipulated agreement, and in lieu of implementing the relevant Creek  
 9 restoration actions required by this Decree, for the affected reaches, Defendants shall pay the  
 10 value of the project cost specified in Paragraph 49(a) above, plus the additional value specified in  
 11 Paragraph 49(b) above, as follows: Defendants shall pay the funds to the Rose Foundation for  
 12 Communities and the Environment (“Rose Foundation”), 1970 Broadway, Suite 600, Oakland,  
 13 California 94612, to be held in a separate Permanente Creek restoration account. Such funds  
 14 shall be subject to the condition that they only be distributed by the Rose Foundation after a  
 15 competitive application process, and that such funds, after satisfying any Rose Foundation  
 16 administrative costs,<sup>2</sup> shall only be used for the purpose of Permanente Creek restoration, unless  
 17 such restoration activity is unavailable, in which case, the funds shall be used for other local  
 18 watershed restoration projects, including those on Stevens Creek.

19           52. In the event any regulatory agency does not provide a legally necessary approval  
 20 to conduct an action specified in Section VI.A, either by actual notice or constructively through  
 21 inaction, the Parties shall meet and confer within fourteen (14) days of such event or extended  
 22 period of inaction. If Plaintiff disagrees that a necessary approval has not been provided,  
 23 Defendants may invoke the dispute resolution provisions of this Decree. If Plaintiff agrees that a

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24 <sup>2</sup> Rose Foundation administrative costs shall not exceed the following amounts: for funds paid of  
 25 \$500,000 or less, administrative costs shall not exceed ten percent of the total funds paid; for  
 26 funds greater than \$500,000 but no more than \$1,500,000, administrative costs shall not exceed  
 27 eight percent of the total funds paid; for funds greater than \$1,500,000 but no more than  
 28 \$3,000,000, administrative costs shall not exceed seven percent of the total funds paid; and for  
 funds greater than \$3,000,000, administrative costs shall not exceed six percent of the total funds  
 paid.

1 necessary approval has not been provided, the Parties may stipulate to an alternative method of  
 2 achieving the purposes of this Decree and present it to the Court for approval. Otherwise,  
 3 without a stipulated agreement, and in lieu of implementing the relevant creek restoration actions  
 4 required by this Decree, for the affected reaches, Defendants shall pay the value of the project  
 5 cost specified in Paragraph 49(a) above, plus the additional value specified in Paragraph 49(b)  
 6 above, to the Rose Foundation in the same manner and for the same purposes as specified in  
 7 Paragraph 51 above.

## 8 **VII. REPORTING REQUIREMENTS**

9 53. All reports shall be submitted to the persons designated in Paragraph 96 of this  
 10 Decree.

11 54. The reporting requirements of this Decree do not relieve Defendants of any  
 12 reporting obligation required by the CWA or its implementing regulations, or by any other  
 13 federal, state or local law, regulation, permit or other requirement.

14 55. Any information provided pursuant to this Decree may be used by Plaintiff in any  
 15 proceeding to enforce the provisions of this Decree and as otherwise permitted by law.

## 16 **VIII. SITE INSPECTIONS**

17 56. Defendants shall provide access to Plaintiff to inspect the interim and final  
 18 treatment systems and related facilities, and to Permanente Creek and adjacent lands, at such  
 19 intervals and times sufficient for Plaintiff to assess compliance with the terms of this Decree. At  
 20 a minimum, access shall be provided to Plaintiff to inspect the interim and final treatment  
 21 systems during construction and within six (6) months of the completion of construction of such  
 22 systems. At a minimum, access shall also be provided to Plaintiff to inspect any Creek  
 23 restoration work within five (5) days of the commencement of work in any Reach, at thirty (30)  
 24 day intervals during restoration work in any Reach, and within six (6) months of the completion  
 25 of any work in any Reach.

26 57. Plaintiff shall provide Defendants written notice of the date of any requested  
 27 inspection at least five (5) days in advance of any inspection, and the requested inspection shall  
 28 take place on that date unless Defendants propose a different date in which case the Parties shall

1 meet and confer to determine the best date for an inspection within a period no greater than  
2 fourteen (14) days after Plaintiff's notice.

3 **IX. STIPULATED PENALTIES**

4 58. In any calendar month in which Defendants violate any provision of this Decree,  
5 Defendants shall pay all accrued stipulated penalties to the Rose Foundation as specified in  
6 Paragraph 61 below within ten (10) days after the end of such month, without written demand  
7 from Plaintiff, except for penalties due under Paragraph 59(d). Stipulated penalties due under  
8 Paragraph 59(d) shall be due and payable to the Rose Foundation within 25 months of the  
9 violation if mandatory minimum penalties have not been paid to the State of California for the  
10 same violation. To the extent Defendants believe their non-compliance is due to a force majeure  
11 event, the funds shall be paid into an escrow account until such issue is resolved.

12 59. Defendants shall pay stipulated penalties for each failure to comply with the  
13 interim and final treatment system terms of this Decree as follows:

14 (a) For each failure to meet the obligation to install and operate the interim treatment  
15 system after October 1, 2014, as specified in Section V, Paragraph 16, per violation per day:

- 16 (1) 1st through 30th day after deadline - \$1,000/day
- 17 (2) 31st through 60th day after deadline - \$2,000/day
- 18 (3) Beyond 60th day - \$5,000/day

19 (b) For each failure to meet the obligations to install and operate the final treatment  
20 system after September 30, 2017, as specified in Section V, Paragraph 27, per violation per day:

- 21 (1) 1st through 30th day after deadline - \$1,000/day
- 22 (2) 31st through 60th day after deadline - \$2,000/day
- 23 (3) Beyond 60th day - \$5,000/day

24 (c) For each failure to comply with any interim discharge limit in Paragraph 17, \$3,000  
25 per violation per week up to fifteen weeks, and \$10,000 per week after the fifteenth week, and  
26 for each failure to comply with any interim discharge limit in Paragraph 23 of this Decree,  
27 \$3,000 per violation per day;

28 (d) For each failure to comply with any discharge (effluent) limit set forth in the NPDES

1 Permit applicable to the final treatment system, \$3,000 per violation per day unless mandatory  
2 minimum penalties of the same or greater amounts for the same discharge limit are paid by  
3 Defendants to the State of California within 24 months of the violation.

4 60. Defendants shall pay stipulated penalties for each failure to comply with the  
5 stream restoration terms of this Decree as follows:

6 (a) For each day that Defendants fail to submit all necessary permit and approval  
7 applications to all appropriate agencies pursuant to Paragraph 45(h).

8 (1) 1st through 30th day after deadline - \$1,000/day

9 (2) 31st through 60th day after deadline - \$2,000/day

10 (3) Beyond 60th day - \$5,000/day

11 (b) For each day that Defendants fail to complete the restoration work described in  
12 Section VI within the time period required by this Amended Decree or in any applicable permit  
13 or approval:

14 (1) 1st through 30th day after deadline - \$1,000/day

15 (2) 31st through 60th day after deadline - \$2,000/day

16 (3) Beyond 60th day - \$5,000/day

17 61. Defendants shall pay the stipulated penalty funds to the Rose Foundation in the  
18 same manner and for the same purposes as specified in Paragraph 51 above.

19 62. During any period of dispute resolution where a stipulated penalty may run,  
20 Defendants may request that the Court reduce or eliminate any such penalty that accrued during  
21 the dispute resolution period if the Court deems that, although Defendants did not prevail in the  
22 dispute, the Defendants pursued the dispute in good faith and not for purposes of delay.

23 63. Stipulated penalties are not the Plaintiff's exclusive remedy for violations of this  
24 Decree. Plaintiff reserves its right to pursue any other remedies to which it is entitled, which  
25 may include, but are not limited to, additional injunctive relief or statutory penalties for  
26 Defendants' violations of the Decree or the Clean Water Act. The obligation to pay stipulated  
27 penalties under this Decree shall not relieve Defendants from any obligation to pay penalties for  
28 violations of any term or condition of any permit issued under the Act, including any NPDES

1 permit. Any amounts paid by Defendants as stipulated penalties may be asserted by Defendants  
2 in response to any action requesting the imposition of additional civil penalties.

### 3 **X. PERFORMANCE GUARANTEE**

4 64. In order to ensure the full and final completion of the Work required in Section  
5 VI, Defendants shall establish and maintain an irrevocable performance guarantee, initially in the  
6 amount of \$12 million, to ensure the completion of such Work after issuance of a Work  
7 Takeover Notice and determination of Work Takeover as provided for below. The performance  
8 guarantee shall state it is for the exclusive benefit of the U.S. District Court, Northern District, to  
9 fund the actions required by Section VI of this Decree, immediately upon issuance of Plaintiff's  
10 Work Takeover determination.

11 65. The Parties agree that the irrevocable surety bond set forth in Exhibit D, is an  
12 acceptable form of performance guarantee for the Work to be performed as required in Section  
13 VI.

14 66. Within ten (10) days of entry of this Decree, Defendants shall execute or  
15 otherwise finalize all instruments and other documents required in order to make the selected  
16 performance guarantee(s) legally binding in a form substantially identical to the documents  
17 attached hereto as Exhibit D, and such performance guarantee(s) shall thereupon be fully  
18 effective.

19 67. In the event that Plaintiff determines at any time that a performance guarantee  
20 provided by Defendants pursuant to this Section is no longer sufficient, whether due to an  
21 increase in the estimated cost of completing the Work required in Section VI or for any other  
22 reason, or in the event that Defendants become aware of information indicating that the  
23 performance guarantee is insufficient, whether due to an increase in the estimated cost of  
24 completing the Work required or for any other reason, Defendants, within thirty (30) days after  
25 receipt of notice of Plaintiff's determination or, as the case may be, within thirty (30) days after  
26 any Defendant becoming aware of such information, shall obtain and present to Plaintiff for  
27 approval a proposal for a revised performance guarantee. Within thirty (30) days after receiving  
28 Defendants' revised performance guarantee proposal, or within sixty (60) days after Plaintiff's



1 insufficiency determination notice, Plaintiff shall provide to Defendants its determination of the  
2 additional amount of performance guarantee that is necessary to ensure completion of the Work  
3 required by Section VI. Defendants may dispute this determination pursuant to the dispute  
4 resolution provisions of this Decree, but only after they have provided the additional amount of  
5 performance guarantee consistent with Plaintiff's insufficiency determination.

6 68. In the event Plaintiff determines that Defendants have (1) ceased implementation  
7 of any portion of the Work, or (2) are seriously or repeatedly deficient or late in their  
8 performance of the Work, Plaintiff may issue a written notice ("Work Takeover Notice") to  
9 Defendants. Any Work Takeover Notice issued by Plaintiff will specify the grounds upon which  
10 such notice was issued and will provide Defendants a period of ten (10) days within which to  
11 cure the circumstances giving rise to Plaintiff's issuance of such notice. Within five (5) days of  
12 receipt of a Work Takeover Notice, Defendants shall establish the Permanente Creek Restoration  
13 escrow account to which performance guarantee funds shall be deposited if a Work Takeover is  
14 determined as described in Paragraph 69. Funds deposited into the Permanente Creek  
15 Restoration escrow account shall be accessible by the Court-appointed trustee described in  
16 Paragraph 69.

17 69. If, after expiration of the ten-day cure period specified above, Defendants have  
18 not remedied to Plaintiff's satisfaction the circumstances giving rise to Plaintiff's issuance of the  
19 relevant Work Takeover Notice, Plaintiff may at any time thereafter notify the Court,  
20 Defendants, and Defendants' Guarantor in writing (which writing may be electronic) that all or  
21 any portion(s) of the Work will be completed with performance guarantee funds ("Work  
22 Takeover"). Within fourteen (14) days of such notice to the Court, Defendants, and Defendants'  
23 Guarantor, Defendants' Guarantor shall convey all funds held as a performance guarantee to the  
24 Permanente Creek Restoration escrow account. Plaintiff shall provide to the Court the names of  
25 three (3) potential trustees from which the Court may select one trustee to take all necessary  
26 measures to complete the unfinished Work required by Section VI of this Decree using the  
27 performance guarantee funds deposited in the Permanente Creek Restoration escrow account.  
28

**United States District Court**  
 For the Northern District of California

1           70. If Plaintiff triggers a Work Takeover, and actions are undertaken to complete the  
 2 Work required in Section VI, the Defendants fully release Plaintiff, any Court-appointed trustee,  
 3 any independent contractor, and any of their respective officers, employees, agents, successors,  
 4 or assigns from any and all claims and demands, either at law or in equity, as to the sufficiency  
 5 of actions taken to complete the Work required in Section VI.

6           71. When Defendants believe they have completed all Work required by this Decree,  
 7 they may notify Plaintiff of their determination, which determination shall include sufficient  
 8 evidence of such completion. If Defendants receive written notice from Plaintiff that the Work  
 9 has been fully and finally completed in accordance with the terms of this Consent Decree,  
 10 Defendants may thereafter release, cancel, or discontinue the performance guarantee. Only after  
 11 Plaintiff provides such notice may Defendants release, cancel, or discontinue any performance  
 12 guarantee. In the event of a dispute, Defendants may release, cancel, or discontinue the  
 13 performance guarantee(s) required hereunder only in accordance with a final judicial decision  
 14 resolving such dispute pursuant to the dispute resolution provisions of this Decree.

15  
 16 **XI. FORCE MAJEURE**

17           72. For the purposes of this Decree, a “force majeure event” is defined as any event  
 18 arising from causes beyond the reasonable control of Defendants or any entity controlled by  
 19 Defendants (including, without limitation, Defendants’ contractors and subcontractors, and any  
 20 entity in active participation or concert with Defendants with respect to the obligations to be  
 21 undertaken by the Defendants pursuant to this Decree), that delays or prevents or can reasonably  
 22 be anticipated to delay or prevent compliance with the obligations of this Decree, despite  
 23 Defendants’ best efforts to meet such deadlines. The requirement that Defendants exercise  
 24 “best efforts” to meet the deadlines includes using best efforts to avoid any force majeure event  
 25 before it occurs, and to use best efforts to mitigate the effects of any force majeure event as it is  
 26 occurring, and after it has occurred, such that any delay is minimized to the greatest extent  
 27 possible.  
 28

1           73.     Without limitation, unanticipated or increased costs or changed financial  
2 circumstances shall not constitute a force majeure event. The absence of any regulatory approval  
3 shall not constitute a force majeure event, unless Defendants demonstrate that, as appropriate to  
4 the approval: (a) they made timely and complete applications for such approval(s) to meet the  
5 deadlines set forth in Sections V and VI of this Decree; (b) they reasonably complied with all  
6 requirements to obtain such approval(s); (c) they diligently sought such approval, (d) they  
7 diligently and timely responded to all requests for additional information, and (e) without such  
8 approval, Defendants will be required to act in violation of law to meet one or more of the  
9 obligations set forth in this Decree.

10           74.     If any event occurs which causes or may cause a delay by Defendants in meeting  
11 any deadline in this Decree, whether or not attributable to a force majeure event, Defendants  
12 shall notify Plaintiff in writing within ten (10) days of the time Defendants first knew, or within  
13 thirty (30) days of when Defendants reasonably should have known that the event is likely to  
14 cause a delay. Defendants shall be deemed to have notice of any circumstance of which its  
15 contractors or subcontractors had or reasonably should have had notice, provided that  
16 those contractors or subcontractors were retained by Defendants to implement, in whole or in  
17 part, the requirements of this Decree. Within fifteen (15) days thereafter, Defendants shall  
18 provide in writing to Plaintiff a report containing: (a) an explanation and description of the  
19 reasons for the delay; (b) the anticipated length of the delay; (c) a description of the activity(ies)  
20 that will be delayed; (d) all actions taken and to be taken to prevent or minimize the delay; (e) a  
21 timetable by which those measures will be implemented; and (f) a schedule that fully describes  
22 when Defendants propose to meet any deadlines in this Decree which have been or will be  
23 affected by the claimed force majeure event. Defendants shall include with any notice their  
24 rationale and all available documentation supporting its claim that the delay was or will be  
25 attributable to a force majeure event.

26           75.     If Plaintiff agrees that the delay has been or will be caused by a force majeure  
27 event, the Parties may stipulate to an extension of the deadline for the affected activity(ies) as is  
28 necessary to complete the activity(ies). Plaintiff shall take into consideration, in establishing any

1 new deadline(s), evidence presented by Defendants relating to weather, outage schedules and  
2 remobilization requirements. In the event the Parties cannot agree to the length of the extension,  
3 Defendants may invoke the dispute resolution procedures set forth in this Decree.  
4 Notwithstanding the foregoing, if Plaintiff finds that a force majeure event may delay  
5 Defendants' compliance with the terms of this Decree for more than six (6) months, Plaintiff  
6 may seek further relief from the Court to fulfill the purposes of this Decree.

7       76. If Plaintiff does not agree that the delay or anticipated delay has been or will be  
8 caused by a force majeure event, it will notify Defendants in writing of this decision within  
9 twenty (20) days after receiving Defendants' report alleging a force majeure event, and will not  
10 extend the deadline for any activity identified in this Decree. If Defendants seek review of this  
11 decision, the matter shall be resolved through the dispute resolution procedures set forth in this  
12 Decree.

13       77. At all times, Defendants shall have the burden of proving that any delay was  
14 caused by a force majeure event (including proving that Defendants had given proper notice and  
15 had made "best efforts" to avoid and/or mitigate such event), and of proving the duration and  
16 extent of any delay(s) attributable to such event.

17       78. Failure by Defendants to fulfill in any way the notification and reporting  
18 requirements of this Section shall constitute a waiver of any claim of a force majeure event as to  
19 which proper notice and reporting was not provided.

20       79. Any extension of one deadline based on a particular incident does not necessarily  
21 constitute an extension of any subsequent deadline(s) unless agreed to by the Parties or directed  
22 by this Court.

23       80. If Defendants fail to perform an activity by a deadline in this Decree due to a  
24 force majeure event, Defendants may only be excused from performing that activity or activities,  
25 and paying stipulated penalties for such failure, for that period of time excused by the force  
26 majeure event.

27  
28

**XII. DISPUTE RESOLUTION**

1  
2 81. Plaintiff and Defendants may invoke the dispute resolution procedures of this  
3 Section to the extent provided for in this Decree. The dispute resolution procedures of this  
4 Section shall be the exclusive mechanism to resolve such disputes with respect to such  
5 provisions of this Decree.

6 82. To invoke dispute resolution, a Party must provide written notice to the other  
7 party within thirty (30) days of the occurrence of the disputable event. The notice shall include  
8 all reasons the Party has for raising the disputed issue. Within thirty (30) days of receiving  
9 written notification, the other Party shall provide a written response and the Parties shall  
10 thereafter meet and confer within ten (10) days of such response. Failure of any party to fulfill  
11 this notification or response requirement shall constitute a waiver of the Party's right to dispute  
12 the issue(s).

13 83. If the Parties cannot resolve a dispute within fifteen (15) days of the Parties' meet  
14 and confer process above, the disputed issue shall be deemed to have been withdrawn unless the  
15 Party that raised the dispute files a petition or application with the Court to have the Court  
16 resolve the issue. Such petition or application shall include a description of the matter in dispute  
17 (but shall only rely on matters previously disclosed in writing in the dispute resolution process,  
18 unless information that was unavailable at the time of the filing of the initial dispute has come to  
19 light), the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any,  
20 within which the dispute must be resolved to ensure orderly implementation of this Decree. The  
21 other Party shall have thirty (30) days from receipt of any petition or application to file a  
22 response.

23 84. In judicial proceedings on any dispute under this Section, the disputing Party shall  
24 carry the burdens of proof and persuasion.

25 85. The invocation of dispute resolution procedures under this Section shall not  
26 extend, postpone or affect in any way any obligation under this Decree not directly in dispute,  
27 unless the other Party or the Court agrees otherwise. Stipulated penalties with respect to the  
28 disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the

1 dispute as provided in this Section. Notwithstanding the stay of payment, stipulated penalties  
2 shall accrue from the first day of noncompliance with any applicable provision of this Decree  
3 until or unless no violation is established. In the event that the Defendants do not prevail on the  
4 disputed issue, stipulated penalties shall be assessed and paid as provided in Section IX.

5 86. If Defendants’ invoke the dispute resolution provisions of this Decree, Defendants  
6 shall pay Plaintiff’s costs if Plaintiff substantially prevails, including reasonable attorney and  
7 expert witness fees, associated with such dispute.

8  
9 **XIII. FEES AND COSTS**

10 87. Defendants agree that, pursuant to Section 505(d) of the Clean Water Act, 33  
11 U.S.C. §1365(d), Plaintiff is both eligible and entitled to recover its reasonable costs of litigation  
12 in this action, including attorney and expert witness fees. Defendants and Plaintiff have resolved  
13 payment of Plaintiff’s reasonable costs of litigation in this action through August 12, 2013.  
14 Plaintiff expressly reserves its right to petition the Court for recovery of additional costs and fees  
15 incurred after it signs this Amended Decree, and Defendants reserve their right to oppose any  
16 such petition.

17 **XIV. MUTUAL RELEASE AND COVENANT NOT TO SUE**

18 88. This Decree constitutes a complete and final release of all civil claims for  
19 violations alleged in the Complaint through the effective date of this Decree.

20 89. Nothing in this Decree shall be construed to create any rights in or grant any  
21 cause of action to any person not a Party to this Decree. The preceding sentence shall not be  
22 construed to waive or nullify any rights that a person not a signatory to this Decree may have  
23 under applicable law, including any regulatory agency with jurisdiction over Defendant’s  
24 activities at the Facility. Plaintiff expressly reserve all rights, defenses, claims, demands, and  
25 causes of action that it might have against Defendants with respect to any matter, transaction, or  
26 occurrence relating to the Facility that is not addressed in this Decree. Defendants expressly  
27 reserve all rights and defenses that they may have to any claim, demand, or cause of action  
28 relating to the Facility that is not addressed in this Decree. The Parties expressly reserve all

1 rights, defenses, claims, demands, and causes of action which each Party may have against any  
 2 person not a Party to this Decree with respect to any matter, transaction, or occurrence relating to  
 3 the Facility. Nothing in this Decree shall be construed as a waiver of any privilege by a Party.

4 90. For the duration of this Decree, Plaintiff covenants not to sue Defendants, their  
 5 officers, employees, agents, successors, or assigns for matters alleged in the Complaint. Nothing  
 6 herein shall prevent Plaintiff from seeking any legal or equitable remedy to enforce the  
 7 requirements of this Decree. This covenant not to sue does not pertain to any matters not alleged  
 8 in the Complaint.

9 91. This Decree shall not be used to establish the liability of Defendants in any action,  
 10 except to enforce the provisions of this Decree.

#### 11 **XV. MISCELLANEOUS PROVISIONS**

12 92. **Severability.** In the event that any one of the provisions of this Decree is held by  
 13 a Court to be unenforceable, the validity of the enforceable provisions shall not be adversely  
 14 affected.

15 93. **Construction.** The language in all parts of this Decree, unless otherwise stated,  
 16 shall be construed according to its plain and ordinary meaning.

17 94. **Choice of Law.** This Decree shall be governed by the laws of the United States.

18 95. **Third Party Beneficiary.** This Decree and its attachments are made for the sole  
 19 benefit of the Parties, and no other person or entity shall have any rights or remedies under or by  
 20 reason of this Decree unless otherwise expressly provided for therein.

21 96. **Notices.** Any notices or documents required or provided for by this Decree shall  
 22 be sent by U.S. Mail, postage prepaid, and addressed as follows or, in the alternative, shall be  
 23 sent by electronic mail transmission to the email addresses listed below:

24 **For Plaintiff Sierra Club:**

25 Reed Zars  
 26 Attorney at Law  
 27 910 Kearney Street  
 28 Laramie, Wyoming 82070  
 Tel: (307) 745-7979  
 E-mail: reed@zarslaw.com

United States District Court  
For the Northern District of California

1 George E. Hays  
Attorney at Law  
2 236 West Portal Avenue #110  
San Francisco, CA 94127  
3 Tel: (415) 566-5414  
E-mail: georgehays@mindspring.com  
4

**For Defendants:**

5 Kari Saragusa, President, Region West  
6 Greg Knapp, Director Environmental Region West  
Lehigh Hanson, Inc.  
7 12667 Alcosta Blvd., Suite 400  
San Ramon, CA 94583  
8 Tel: (925) 244-6500  
Email: KSaragusa@lehighcement.com  
9 Email: Greg.Knapp@hanson.biz

10 With copies sent to:

11 Ana N. Damonte  
Regional Counsel  
12 Lehigh Hanson, Inc.  
12667 Alcosta Blvd, Suite 400  
13 San Ramon, CA 94583  
Tel: (925) 244-6542  
14 Email: Ana.Damonte@LehighHanson.com

15 Nicole E. Granquist  
Downey Brand LLP  
16 621 Capitol Mall, 18th Floor  
Sacramento, CA 95814-4601  
17 Tel: 916-444-1000  
E-mail: [ngranquist@downeybrand.com](mailto:ngranquist@downeybrand.com)

18 Each Party shall promptly notify the other of any change in the above-listed contact information.

19 97. **Termination of Decree.** This Decree shall remain an enforceable order of the  
20 Court until Plaintiff agrees, or the Court determines in response to a petition by Defendants, that  
21 (a) Defendants have satisfied in full all requirements of this Decree, (b) Defendants have  
22 installed all treatment systems and have demonstrated compliance with all applicable NPDES  
23 permit limits for at least twelve (12) consecutive months, (c) Defendants have completed all  
24 required creek restoration work, and (d) Defendants have paid any stipulated penalties due under  
25 this Decree.  
26  
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28



1           98.     **Negotiated Agreement.** This Decree shall be deemed to have been drafted  
2 equally by the Parties, and shall not be interpreted for or against any Party on the ground that any  
3 such party drafted it.

4           99.     **Full Settlement.** This Decree constitutes a full and final settlement of this matter.  
5 The Parties expressly understand and agree that each Party has freely and voluntarily entered into  
6 this Decree with and upon advice of counsel.

7           100.    **Integration Clause.** This Decree and the attachments contain all of the final  
8 terms and conditions agreed upon by the Parties relating to the matters covered by the Decree,  
9 and supersede any and all prior and contemporaneous agreements, negotiations, correspondence,  
10 understandings, and communications of the Parties, whether oral or written, respecting the  
11 matters covered by this Decree.

12           101.    **Modification.** This Decree may be amended or modified only by a writing  
13 signed by the Parties or their authorized representatives, and then by order of the Court.

14           102.    **Counterparts.** The Decree may be executed in one or more counterparts which,  
15 taken together, shall be deemed to constitute one and the same document. An executed copy of  
16 this Decree shall be valid as an original.

17           103.    **Authority.** The undersigned representatives of Plaintiff and Defendants are  
18 authorized to execute this Decree on behalf of the Party or Parties whom he/she represents.

19           104.    **Electronic or Facsimile Signatures.** Telecopy, pdf, and/or facsimile copies of  
20 original signatures shall be deemed to be originally executed.

21                           **XVI. NOTICE OF AMENDED DECREE**

22           105.    Pursuant to 33 U.S.C. § 1365(c)(3) and 40 C.F.R. § 135.5, this Decree shall be  
23 lodged with the Court and simultaneously presented to the United States for review and comment  
24 for a period not to exceed forty-five (45) days.

25           106.    After the review period, the Decree may be entered by the Court. If the Decree is  
26 not entered by the Court, the Parties shall retain all rights they had in this litigation before the  
27 lodging of the Decree.


28

1 107. The Parties agree to cooperate in good faith to obtain prompt review of this  
2 Decree by the United States and the Court. If the United States or the Court comment on the  
3 Decree, and as a consequence the Decree is not entered, the Parties agree to discuss such  
4 comments and attempt to make such revisions as necessary to obtain entry of the Decree.

5 **XVII. FINAL JUDGMENT**

6 108. Upon approval and entry of this Decree by the Court, this Decree shall constitute  
7 a final judgment between the Plaintiff and Defendants.

8  
9 **SO ORDERED, THIS** 11th **DAY OF** May, 2016.

10  
11   
12 **UNITED STATES DISTRICT COURT JUDGE**  
13 **MAGISTRATE**  
14 **HOWARD R. LLOYD**

**United States District Court**  
For the Northern District of California

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1 FOR PLAINTIFF:

2 *Wendy Stevens*  
3 Sierra Club Representative

*February 9, 2016*  
Dated

4  
5 Approved as to form:

6  
7 *Reed Zars*  
8 Reed Zars  
9 Attorney at Law  
10 910 Kearney Street  
Laramie Wyoming 82070  
Tel: (307) 745-7979  
E-mail: reed@zarslaw.com

*2/9/2016*  
Dated

11  
12 *George E. Hays*  
13 George E. Hays  
14 Attorney at Law  
236 West Portal Avenue, #110  
San Francisco, CA 94127  
Tel (415) 566-5414  
E-mail: georgehays@mindspring.com

*2/9/2016*  
Dated

United States District Court  
Northern District of California

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1 **FOR DEFENDANTS:**

2

3

4 Kari Saragusa, President, Region West  
5 Lehigh Hanson, Inc.  
6 12667 Alcosta Blvd., Suite 400  
7 San Ramon, CA 94583  
8 Tel: (925) 244-6500  
9 Email: KSaragusa@lehighcement.com

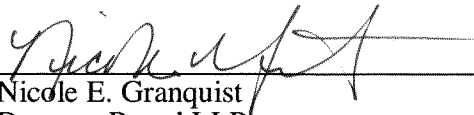
\_\_\_\_\_  
Dated

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8 Approved as to form:

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9

10   
11 Nicole E. Granquist  
12 Downey Brand LLP  
13 621 Capitol Mall, 18th Floor  
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\_\_\_\_\_  
February 19, 2016  
Dated

United States District Court  
For the Northern District of California

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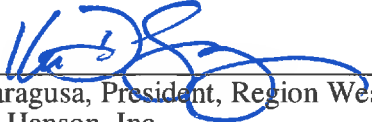
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1 **FOR DEFENDANTS:**

2

3

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12667 Alcosta Blvd., Suite 400  
5 San Ramon, CA 94583  
6 Tel: (925) 244-6500  
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February 19<sup>th</sup> 2016  
Dated

7

Approved as to form:

8

9

10

Nicole E. Granquist  
Downey Brand LLP  
11 621 Capitol Mall, 18th Floor  
12 Sacramento, CA 95814-4601  
13 Tel: 916-444-1000  
E-mail: ngranquist@downeybrand.com

Dated

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**United States District Court**  
For the Northern District of California

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**EXHIBITS To Amended Consent Decree**

*Sierra Club v. Lehigh Southwest Cement*, 5:11-cv-06392-HRL

- Exhibit A: California Department of Fish & Wildlife’s California Salmonid Stream Habitat Restoration Manual, 4<sup>th</sup> Edition (Vols. One and Two, 2010) (cover page and table of contents only attached here, due to size constraints; complete document available on date of lodging at: <http://www.dfg.ca.gov/fish/resources/habitatmanual.asp>).
- Exhibit B: Field Engineering Description dated February 1, 2016.
- Exhibit C: Waterways Permanente Creek Restoration Plan, April 27, 2015 Draft 70% Design Submittal drawings.
- Exhibit D: Irrevocable surety bond.

**United States District Court**  
For the Northern District of California

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**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

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*FOURTH EDITION*

**Prepared by:**

**GARY FLOSI, SCOTT DOWNIE, JAMES HOPELAIN,  
MICHAEL BIRD, ROBERT COEY, and BARRY COLLINS**

**State of California  
The Resources Agency  
California Department of Fish and Game  
Wildlife and Fisheries Division**

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**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

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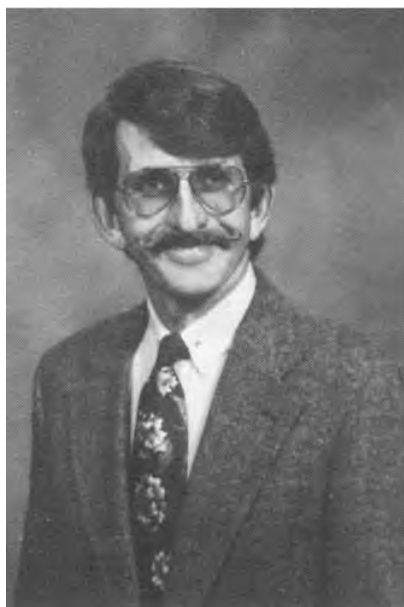
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DEDICATION

*to*

**Tim Curtis**

*1944 - 1996*



The authors of the third edition of the *California Salmonid Stream Habitat Restoration Manual* wish to dedicate their work to **Tim Curtis**. Tim served with distinction with the California Department of Fish and Game as a fishery biologist, program supervisor, and patient mentor from 1971 to 1996. He was a pioneer in the Department's modern salmonid habitat restoration program and a contributing author to the second edition of this manual. Tim died much too young at age fifty-one, October 19, 1996, after a courageous battle with brain cancer.

Tim was a friend and motivational guide to all he came near. Although his life was brief he left his creative, inspirational mark on many. The third edition of this manual is part of his living legacy passed on through the present authors, and as such will continue to help improve the health of a resource he loved: the salmon and steelhead of California.



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## CALIFORNIA SALMONID STREAM HABITAT RESTORATION MANUAL

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### PREFACE

The first edition of this manual, written by Gary Flosi and Forrest Reynolds, and published in 1991, formally synthesized and described the Department of Fish and Game's approach and technical methods for anadromous salmonid habitat restoration. From 1991 through 1994 the first edition was broadly distributed and used as a "standard methods" text by many habitat restoration and resource inventory workers. As a result, many suggestions for improvement of the manual were received by the authors.

The second edition, by Flosi and Reynolds was supported by a team that included the authors of this third edition, and was published in October of 1994. The second edition included a number of revisions: 1) a reorganization of sections for project planning and project implementation; 2) the just then recently revised stream channel classification system developed by David Rosgen; 3) a new monitoring and evaluation section; 4) a listing of all databases used for resource inventory and analysis as presented in the manual; 5) a protocol for a large woody debris inventory; 6) a description of required environmental review processes and permits; 7) an expanded and updated listing of sensitive species; and 8) numerous editorial changes to text and data forms.

The third edition, like the second, incorporates changes recently developed in the practice of stream habitat inventory and restoration. The authorship list has changed with this edition to more accurately reflect the contributions of the writing team members. The manual is presented in binder form in this edition to more easily and economically incorporate future additions and developments as they evolve.

This fourth edition incorporates all changes, corrections, and revisions of this manual up to July 2010. The manual continues in binder form in this edition to easily and economically incorporate future additions and developments as they evolve.

The authors anticipate the continued widespread distribution and use of this manual will promote the implementation of the restoration techniques discussed. Additionally, in an effort to develop common methods for data collection and data storage of information, the authors encourage all anadromous salmonid resource assessment professionals to utilize protocols and database structures presented in this manual.

Readers should also be aware that computer data entry and data summary programs are available upon request for all data collection protocols presented in this manual. Updates to this manual are available on line at <http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp>.

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**CALIFORNIA SALMONID STREAM  
 HABITAT RESTORATION MANUAL**

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**TABLE OF CONTENTS**

**VOLUME I**

<b>PREFACE</b> .....	ii
<b>ACKNOWLEDGEMENTS</b> .....	xvii
<b>FOREWORD</b> .....	xviii
 <b>PART I. SALMON AND STEELHEAD HABITAT RESTORATION IN CALIFORNIA</b>	
DEVELOPMENT OF CALIFORNIA’S FISH HABITAT RESTORATION PROGRAM.....	I-1
ORGANIZATION AND FUNDING OF CALIFORNIA’S FISH HABITAT RESTORATION PROGRAM.....	I-3
FISHERY RESTORATION PLANNING OBJECTIVES.....	I-4
 <b>PART II. PRELIMINARY WATERSHED ASSESSMENT</b>	
PRELIMINARY WATERSHED ASSESSMENT .....	II-1
WATERSHED OVERVIEW.....	II-1
Tools and Supplies.....	II-2
Instruction for Completing the Watershed Overview Work Sheet.....	II-2
WATERSHED OVERVIEW WORK SHEET.....	II-7
MAPS AND THEIR USE.....	II-8
AERIAL PHOTO INTERPRETATION: HISTORICAL SEQUENCE.....	II-9
HISTORICAL STREAM SURVEY REVIEW.....	II-10
WATER.....	II-10
RIPARIAN ZONE.....	II-11
SEDIMENT SOURCES.....	II-12
Mass Wasting.....	II-13
Surface Erosion.....	II-13
Stream and Channel Erosion.....	II-14
HYDROGRAPHS.....	II-14
REFERENCES.....	II-17
 <b>PART III. HABITAT INVENTORY METHODS</b>	
HABITAT INVENTORY METHODS.....	III-1
HABITAT INVENTORY FIELD PREPARATION.....	III-1
Tools and Supplies Needed for Two Person Crew.....	III-2
STREAM CLASSIFICATION SYSTEM.....	III-2
Stream Channel Type Definitions.....	III-3
Stream Type Delineation Criteria.....	III-3
STREAM CHANNEL TYPE DESCRIPTIONS AND STRUCTURE	
SUITABILITY.....	III-8
Stream Channel Types.....	III-8

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**CALIFORNIA SALMONID STREAM  
 HABITAT RESTORATION MANUAL**

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STREAM CHANNEL TYPE WORK SHEET.....	III-22
Instructions for Completing the Stream Channel Type Work Sheet.....	III-23
STREAM CHANNEL TYPE WORK SHEET (Form).....	III-26
HABITAT TYPING.....	III-27
Definition of Habitat Types.....	III-29
Level I Habitat Types:.....	III-29
Level II Habitat Types:.....	III-29
Level III and Level IV Habitat Types:.....	III-29
Level IV Habitat Type Descriptions:.....	III-30
Instream Shelter.....	III-43
Instream Shelter Complexity.....	III-43
Instructions for Completing the Habitat Inventory Data Form.....	III-44
HABITAT INVENTORY DATA FORM.....	III-48a
LARGE WOODY DEBRIS (LWD).....	III-49
STREAM AND RIPARIAN INVENTORY.....	III-49
Background.....	III-49
LWD INVENTORY METHODOLOGY.....	III-50
Equipment list:.....	III-50
Stream selection.....	III-50
Training.....	III-51
Inventory Procedure.....	III-51
LWD INVENTORY FORM KEY.....	III-53
LWD INVENTORY FORM.....	III-55
ESTIMATE CALIBRATION FORM.....	III-56
REFERENCES.....	III-57

**PART IV. FISH SAMPLING METHODS**

FISH SAMPLING METHODS.....	IV-1
STREAM BANK OBSERVATION.....	IV-2
UNDERWATER OBSERVATION.....	IV-3
Tools and Supplies Needed.....	IV-3
Instructions for Completing the Stream Bank or Underwater Observation Field Form.....	IV-4
STREAM BANK OR UNDERWATER OBSERVATION FIELD FORM.....	IV-6
SALMON SPAWNER SURVEYS.....	IV-7
Tools and Supplies Needed.....	IV-7
Instructions for Completing the Daily Salmon Spawning Stock Survey Field Form.....	IV-8
DAILY SALMON SPAWNING STOCK SURVEY FIELD FORM.....	IV-11
ELECTROFISHING.....	IV-12
Instructions for Completing the Electrofishing Field Form.....	IV-12
ELECTROFISHING FIELD FORM.....	IV-16
ELECTROFISHING FIELD FORM SUPPLEMENTAL PAGE.....	IV-17
REFERENCES.....	IV-18

---



---

**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

---



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**PART V. WORKING WITH THE DATA**

WORKING WITH THE DATA.....	V-1
DATA ENTRY.....	V-1
DATA SUMMARY AND ANALYSIS.....	V-2
Data Summary.....	V-2
Data Analysis.....	V-15
GIS FORMAT.....	V-15
Software.....	V-16
Data.....	V-16
Analytical Tools.....	V-16
STREAM REPORTS.....	V-16
DATA MANAGEMENT.....	V-17
Data Storage.....	V-17
Data Distribution.....	V-17
RECOMMENDATIONS.....	V-17
Interpreting Physical Habitat and Biological Inventories and Relating this Information to Critical Habitat Needs.....	V-17
Salmonid Habitat Requirements and Suggestions for Instream Structures to Enhance Critical Habitat.....	V-20
Chinook Salmon.....	V-20
Coho Salmon.....	V-21
Steelhead.....	V-22
Coast Cutthroat Trout.....	V-23
Resident Trout.....	V-23

**PART VI. PROJECT PLANNING AND ORGANIZATION**

PROJECT PLANNING AND ORGANIZATION.....	VI-1
Permits That May Be Required.....	VI-2
FISH HABITAT RESTORATION CATEGORIES.....	VI-3
Upslope Watershed Treatments.....	VI-3
Riparian Zone Treatments.....	VI-3
Instream Habitat Improvements.....	VI-4
Artificial Propagation.....	VI-4
Watershed Stewardship Training.....	VI-5
INSTREAM STRUCTURE SUITABILITY BY STREAM TYPE.....	VI-5
PROJECT RECOMMENDATION DEVELOPMENT FROM HABITAT INVENTORY DATA.....	VI-6
PROJECT SITE LAYOUT.....	VI-11
Using Basic Hydraulic Analysis For In Channel Design.....	VI-11
Surveying the Longitudinal and Cross Sectional Profiles.....	VI-12
Analysis of Longitudinal Profile.....	VI-14
Analysis of Cross Sectional Profiles.....	VI-15
REFERENCES.....	VI-17

---



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**CALIFORNIA SALMONID STREAM  
 HABITAT RESTORATION MANUAL**

---



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**PART VII. PROJECT IMPLEMENTATION**

PROJECT IMPLEMENTATION.....	VII-1
SELECTION OF STABLE SITES.....	VII-1
Gradient.....	VII-1
Stream Width.....	VII-2
Substrate.....	VII-2
Stream Order.....	VII-2
Reach Length.....	VII-2
Channel Sinuosity.....	VII-2
Bank Stability.....	VII-3
Bank Morphology.....	VII-3
HYDRAULIC IMPACTS.....	VII-3
SELECTION OF MATERIALS.....	VII-6
Basic Structural Materials.....	VII-7
Gabions.....	VII-7
Logs.....	VII-7
Root Wads.....	VII-7
Boulders.....	VII-8
Miscellaneous Structural Materials.....	VII-9
Geotextile Fabric.....	VII-9
Wire Fencing.....	VII-9
Concrete.....	VII-10
Wire Rope.....	VII-10
ANCHORING TECHNIQUES.....	VII-10
Cabling to Boulders or Bedrock Using Polyester Resin Adhesive.....	VII-10
Cabling to Logs and Root Wads.....	VII-11
Cabling Logs and/or Root Wads to Boulders or Bedrock.....	VII-12
Log Pinning With Rebar.....	VII-16
Stream Bank Anchors Using Rebar.....	VII-17
Bedrock and Boulder Anchors Using Threaded Rebar.....	VII-18
Threaded Rebar and Cable Anchor to Boulder or Bedrock.....	VII-19
Expansion Bolts.....	VII-20
Trenching.....	VII-21
Deadman.....	VII-22
Unanchored Large Woody Debris.....	VII-23
INSTREAM HABITAT IMPROVEMENTS.....	VII-24
Cover Structures.....	VII-24
Divide Logs.....	VII-25
Digger logs.....	VII-26
Spider Logs.....	VII-27
Log, Root Wad, and Boulder Combinations.....	VII-28
Bolder Structures.....	VII-29
Boulder, weirs.....	VII-29
Vortex Bolder Weir.....	VII-32
Boulder Clusters.....	VII-34
Single and Opposing Boulder Wing-Deflectors.....	VII-35

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**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

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Log Structures.....	VII-36
Log Weirs.....	VII-36
Upsurge Weirs.....	VII-42
Single and Opposing Log Wing-Deflectors.....	VII-43
Hewitt Ramps.....	VII-44
Placement of Imported Spawning Gravel.....	VII-46
Fish Screens.....	VII-46
<b>FISH PASSAGE.....</b>	<b>VII-47</b>
Obstructions.....	VII-48
Log Jams.....	VII-49
Beaver Dams.....	VII-49
Waterfalls and Chutes.....	VII-50
Landslides.....	VII-50
Human-Induced Obstructions.....	VII-51
Fishways.....	VII-51
Step-and-Pool Fishway.....	VII-52
Denil Fishway.....	VII-54
Alaskan Steep-pass.....	VII-55
Culverts.....	VII-56
Back-Flooding Weirs.....	VII-56
Culvert Baffles.....	VII-57
Washington Baffles.....	VII-57
Corrugated Metal Pipe (CMP) Steel Ramp Baffles.....	VII-60
<b>WATERSHED AND STREAM BANK STABILITY.....</b>	<b>VII-62</b>
Slide Stabilization.....	VII-62
Stream Bank Stabilization.....	VII-63
Boulder Stream Bank Stabilization Structures.....	VII-63
Boulder Riprap.....	VII-63
Boulder Wing-Deflectors.....	VII-66
Log Stream Bank Stabilization Structures.....	VII-67
Cribbing.....	VII-67
Live Vegetated Crib Wall.....	VII-68
Bank Armor.....	VII-69
Log Wing-Deflectors.....	VII-71
Tree Revetment.....	VII-73
Native Material Revetment.....	VII-74
Mulching.....	VII-75
Revegetation.....	VII-76
Transplanting.....	VII-76
Revegetation with Willow Sprigs.....	VII-76
Willow Wall Revetment.....	VII-78
Brush mattress.....	VII-79
Willow Siltation Baffles.....	VII-81
Planting Seedlings.....	VII-83
Checkdams.....	VII-86
Redwood Board Checkdams.....	VII-89

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**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

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Brush Checkdams.....	VII-90
Brush and Rock Checkdam.....	VII-90
Post Brush Checkdam.....	VII-91
Tree Checkdam.....	VII-93
Brush and Rock Mattress Headcut Repair.....	VII-94
Waterbars.....	VII-96
Exclusionary Fencing.....	VII-97
REFERENCES.....	VII-98
<b>PART VIII. PROJECT EVALUATION AND MONITORING</b>	
PROJECT EVALUATION AND MONITORING.....	VIII-1
Pre-Project Assessment and Data Collection.....	VIII-2
Historic Information.....	VIII-2
Pre-Project Information.....	VIII-2
Documentation Immediately Following Project Completion.....	VIII-3
Instructions for Completing the Project Site Completion Form.....	VIII-4
PROJECT SITE COMPLETION FORM.....	VIII-7
Post-Project Evaluation.....	VIII-8
Habitat Project Evaluation Forms.....	VIII-8
Equipment.....	VIII-9
Instructions for Completing the General Project Information Form.....	VIII-9
STREAM HABITAT ENHANCEMENT PROJECT EVALUATION	
GENERAL INFORMATION FORM.....	VIII-12
Instructions for Completing the Individual Structure or Site Form.....	VIII-13
STREAM HABITAT ENHANCEMENT PROJECT EVALUATION	
INDIVIDUAL STRUCTURE OR SITE FORM.....	VIII-17
Structure objective codes.....	VIII-18
Structure type codes.....	VIII-18
Construction method codes.....	VIII-20
SUMMARY.....	VIII-21
<b>APPENDIX A. POLICY AND REGULATIONS FOR SALMON AND STEELHEAD RESTORATION IN CALIFORNIA.....</b>	<b>A-1</b>
<b>APPENDIX B. COOPERATIVE FISH PRODUCTION IN CALIFORNIA.....</b>	<b>B-1</b>
<b>APPENDIX C. HYDROLOGIC BASIN PLANNING MAPS.....</b>	<b>C-1</b>
<b>APPENDIX D. AERIAL PHOTO SOURCES.....</b>	<b>D-1</b>
<b>APPENDIX E. LIST OF CALIFORNIA FISH SPECIES.....</b>	<b>E-1</b>
<b>APPENDIX F. STATE AND FEDERAL ENDANGERED AND THREATENED SPECIES ASSOCIATED WITH SALMONID HABITAT.....</b>	<b>F-1</b>

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**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

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<b>APPENDIX G.</b>	<b>CONVERSIONS, MEASUREMENTS, AND ABBREVIATIONS..</b>	<b>G-1</b>
<b>APPENDIX H.</b>	<b>THE MANNING ROUGHNESS COEFFICIENT.....</b>	<b>H-1</b>
<b>APPENDIX I.</b>	<b>COMPUTER PROGRAMS AND DATABASE STRUCTURES.....</b>	<b>I-1</b>
<b>APPENDIX J.</b>	<b>STREAM INVENTORY REPORT.....</b>	<b>J-1</b>
<b>APPENDIX K.</b>	<b>TOOLS.....</b>	<b>K-1</b>
<b>APPENDIX L.</b>	<b>TWO-PIN METHOD.....</b>	<b>L-1</b>
<b>APPENDIX M.</b>	<b>SPECIALTY INSTRUMENTS.....</b>	<b>M-1</b>
<b>APPENDIX N.</b>	<b>PERMITS, AGREEMENTS, AND ENVIRONMENTAL DOCUMENTS.....</b>	<b>N-1</b>
<b>APPENDIX O.</b>	<b>TEN PERCENT SAMPLING PROTOCOL FOR HABITAT TYPING INVENTORY SURVEYS.....</b>	<b>O-1</b>
<b>APPENDIX P.</b>	<b>CALIFORNIA SALMONID FISHES.....</b>	<b>P-1</b>
<b>APPENDIX Q.</b>	<b>GLOSSARY.....</b>	<b>Q-1</b>
<b>APPENDIX R.</b>	<b>FORMS.....</b>	<b>R-1</b>
<b>APPENDIX S.</b>	<b>FISH SCREEN CRITERIA.....</b>	<b>S-1</b>

***VOLUME II***

- PART IX. FISH PASSAGE EVALUATION AT STREAM CROSSINGS**
- PART X. UPSLOPE ASSESSMENT AND RESTORATION PRACTICES**
- PART XI. RIPARIAN HABITAT RESTORATION**
- PART XII. FISH PASSAGE DESIGN & IMPLEMENTATION**





## Field Engineering Description for Permanente Creek Restoration Plan.

February 1, 2016

1. General. The Permanente Creek Restoration Plan, Draft 70% Design drawings, ("Drawings") were developed with the goal of creating more natural conditions, while maintaining a relatively uniform profile gradient within the proposed limits of disturbance to improve channel stability and enhance ecological function. The Drawings were prepared without full knowledge of subsurface conditions, including the elevation of underlying bedrock or alluvial materials that would indicate the location of the pre-disturbance channel profile in Reaches 18-17 and 13-11. The design approach will employ field engineering and a field directed construction approach to maximize channel stability, while avoiding excavation into native bedrock. The final constructed geometry will be directed by the engineer in the field, pending subsurface conditions, as described below.
  - 1.1 The Rock Pile Area (Reaches 13-11) is expected to be constructed prior to the Material Removal Area. Experience gained from the field directed construction approach at the Rock Pile Area will be used to refine the design for the Material Removal Area.
2. Profile
  - 2.1 General. The finished grade elevation of the flowline will generally fall between the upper and lower limits shown on the drawings, defined there as the "grading envelope," except where the location of existing bedrock requires deviation. The lower limit of the envelope is the optimum "straight grade" uniform profile within the proposed limits of work. The upper limit of the envelope is a best-fit line between identified points of bedrock control, as estimated from recent subsurface investigations. The construction will attempt to follow the lower limit of the envelope, subject to the constraints set forth below.
  - 2.2 Bedrock.
    - A. General. The qualification of material as "bedrock" will be initially performed by the project geotechnical engineer. If the project geotechnical engineer determines that excavation to bedrock has occurred prior to reaching the lowest elevation at any location within the grading envelope, an independent professional geologist will assess and make the final determination of the existence and extent of any such bedrock. Where bedrock is encountered above the lower limit of the grading envelope, the profile will not be excavated into the bedrock. An inspection trench will be constructed across the channel, within the potential cross section limits (between the adjacent hill slopes), to ensure that bedrock is continuous. The channel alignment will follow the low point of the bedrock, to the extent that this is feasible while maintaining a geomorphically appropriate planform alignment, and while remaining within the lateral limits described below. Upstream of bedrock control points, the lower limit of the profile will be subject to the minimum design profile gradient, as specified below.
    - B. Minimum Design Profile Gradient. Upstream of bedrock controls, the minimum design profile grade will be set to 4%, to help maintain sediment transport continuity and channel stability.
    - C. The constructed profile gradient between bedrock outcrops will not exceed 12.0%.



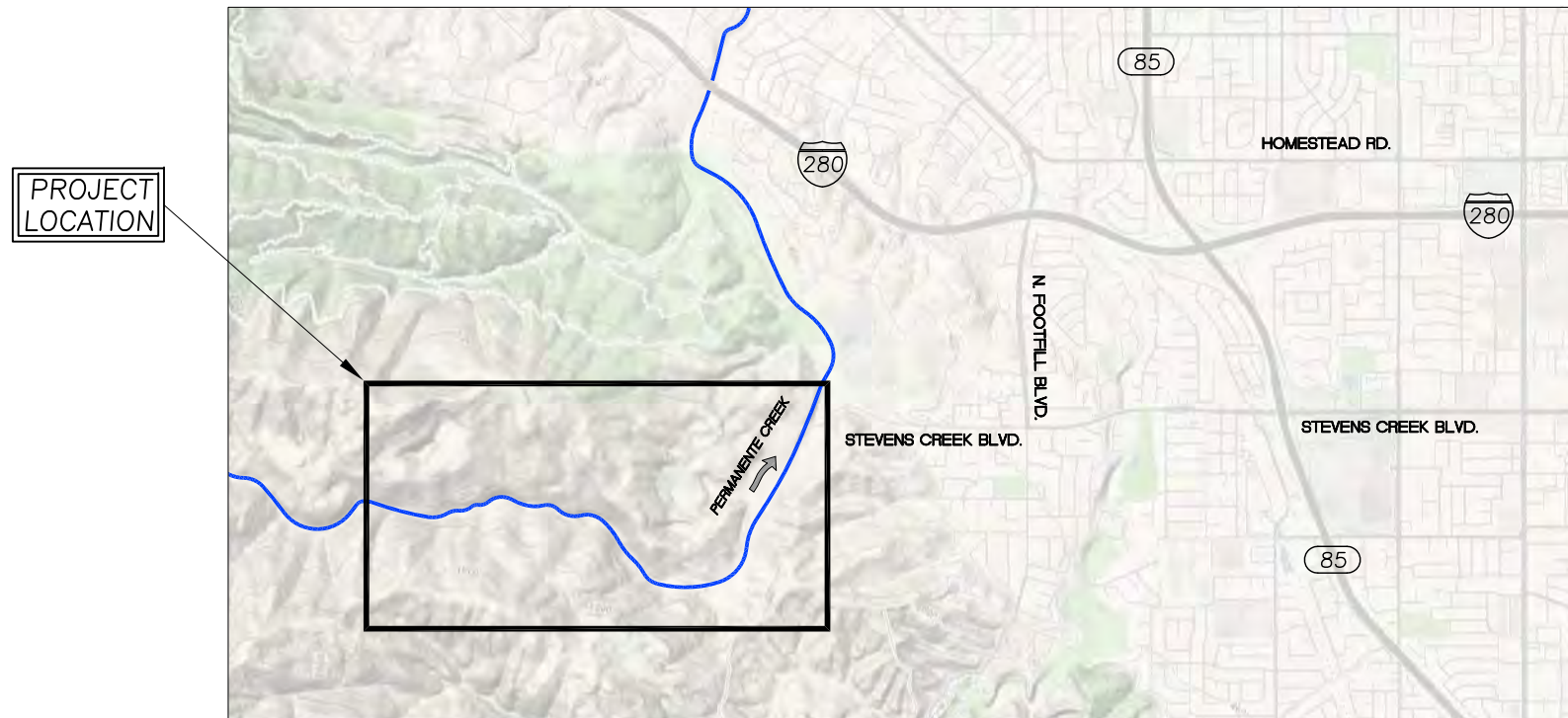
- 2.3** Alluvial materials. Where the original “pre-disturbance” streambed is identified by the presence of significant alluvial deposits, the design profile will not be constructed below the elevation of these deposits, provided the specified minimum and maximum profile grade criteria are met. Temporary excavations will not extend below the design profile any more than is necessary to construct the engineered streambed material shown on the design drawings.
- 3.** Cross Section geometry
- A. Active Channel. The low flow cross section geometry will be informed by regional analogs and refined based on the local profile gradient within each constructed reach. Cross section details will closely resemble the range of typical sections shown on the Drawings, except where influenced by the presence of bedrock as discussed above.
  - B. Floodplain. The floodplain widths will be maximized within the constraint of maintaining the stability of the adjacent hillside and the need to accommodate roads shown on the Drawings. The stable design slope of the adjacent hillside will be determined by the geotechnical engineer, and will likely vary between 2H:1V and 1.5H:1V, as shown on the Drawings. Exposed bedrock may allow for steeper slopes, subject to approval of the geotechnical engineer. Where the final design profile approaches the lower limit of the grading envelope, the stability of adjacent hillsides will dictate a narrower floodplain width. Slope benching may be incorporated to reduce slope length, control surface runoff and help protect slopes from surface erosion while vegetation becomes established.
  - C. Where bedrock outcrops constrain the floodplain width, upstream and downstream floodplains will transition rapidly to conform to those restrictions and then return to the standard floodplain widths as described above.

# PERMANENTE CREEK RESTORATION PLAN

## DRAFT 70% DESIGN SUBMITTAL

### SHEET INDEX

- C1 COVER SHEET
- C2 OVERVIEW
- C3 EXISTING CHANNEL PROFILE
- C4 SHEET LAYOUT OVERVIEW
- C5 CONCRETE CHANNEL SOUTHERN BANK PLANTING PLAN
- C6 CHANNEL WIDENING PLAN (1 OF 5)
- C7 CHANNEL WIDENING PLAN (2 OF 5)
- C8 CHANNEL WIDENING PLAN (3 OF 5)
- C9 SEDIMENT REMOVAL AREA AND CULVERT #8 PLAN
- C10 CULVERT #8 PROFILE AND SECTION
- C11 SEDIMENT REMOVAL AREA PROFILE AND SECTIONS
- C12 CHANNEL WIDENING PLAN (4 OF 5)
- C13 CHANNEL WIDENING PLAN (5 OF 5)
- C14 ROCK PILE AREA PLAN
- C15 ROCK PILE AREA SECTIONS
- C16 MATERIAL REMOVAL AREA PLAN (1 OF 2)
- C17 MATERIAL REMOVAL AREA PLAN (2 OF 2)
- C18 MATERIAL REMOVAL AREA SECTIONS (1 OF 2)
- C19 MATERIAL REMOVAL AREA SECTIONS (2 OF 2)
- C20 ACCESS AND STAGING PLAN (1 OF 2)
- C21 ACCESS AND STAGING PLAN (2 OF 2)
- C22 DEWATERING DETAILS
- C23 MISCELLANEOUS DETAILS
- C24 HABITAT LOG DETAILS AND ROCK SPECIFICATIONS
- C25 NOTES
  
- L1 RIPARIAN PLANTING SECTIONS (1 OF 3)
- L2 RIPARIAN PLANTING SECTIONS (2 OF 3)
- L3 RIPARIAN PLANTING SECTIONS (3 OF 3)

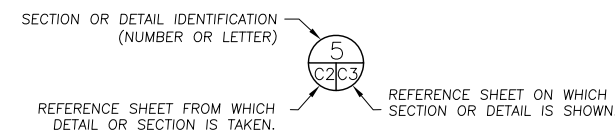


VICINITY MAP  
N.T.S. (GOOGLE)

### GENERAL NOTES

1. TOPOGRAPHIC MAPPING WAS PERFORMED BY:  
WATERWAYS CONSULTING, INC.  
509 SWIFT STREET, UNIT A  
SANTA CRUZ, CA 95060  
SURVEY DATES: JUNE THROUGH AUGUST 2013, FEBRUARY THROUGH MAY 2014, MARCH 2015.
2. ELEVATION DATUM: NAVD88 BASED ON A FIELD TIE TO SANTA CLARA VALLEY WATER DISTRICT BENCHMARK ID: BM198 WITH AN ELEVATION OF 478.22'.
3. HORIZONTAL DATUM: NAD83 CALIFORNIA STATE PLANE, ZONE 3.
4. AERIAL PHOTO SOURCE:  
AERIAL PHOTOMAPPING SERVICES  
2929 LARKIN AVENUE  
CLOVIS, CA 93612  
PHOTOGRAPH DATE: JUNE 20, 2013
5. ELEVATIONS AND DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF. CONTOUR INTERVAL IS 1 FOOT.
6. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES, IF SHOWN, WERE COMPILED FROM RECORD INFORMATION AND FROM FIELD TIES TO EXISTING BOUNDARY MONUMENTATION. THE LOCATION OF THESE LINES IS SUBJECT TO CHANGE, PENDING THE RESULTS OF A COMPLETE BOUNDARY SURVEY.
7. TREE DIMENSIONS: TRUNK DIAMETERS SHOWN REPRESENT DIAMETER AT BREAST HEIGHT (DBH), MEASURED IN INCHES. DBH IS MEASURED 4.5 FT ABOVE GROUND FOR SINGLE TRUNKS AND TRUNKS THAT SPLIT INTO SEVERAL STEMS CLOSE TO THE GROUND. EACH TRUNK IS SHOWN AT MULTI-STEM TREES. ONLY THE LABEL OF THE DBH OF THE LARGEST TRUNK IS SHOWN FOR DRAWING CLARITY. WHERE TREES FORK NEAR BREAST HEIGHT, TRUNK DIAMETER IS MEASURED AT THE NARROWEST PART OF THE MAIN STEM BELOW THE FORK. FOR TREES ON A SLOPE, BREAST HEIGHT IS REFERENCED FROM THE UPPER SIDE OF THE SLOPE. FOR LEANING TREES, BREAST HEIGHT IS MEASURED ON THE SIDE THAT THE TREE LEANS TOWARD. TREES WITH DBH LESS THAN 8" ARE TYPICALLY NOT SHOWN.  
  
12" P = 12" DBH PINE
8. TREE SPECIES ARE IDENTIFIED WHEN KNOWN. HOWEVER, FINAL DETERMINATION SHOULD BE MADE BY A QUALIFIED BOTANIST. REFER TO THE LEGEND FOR TREE SPECIES SYMBOLS.
9. SURVEYED TREES INCLUDE:
  - A. OAKS (QUERCUS SPP.) 5 INCHES OR LARGER DBH
  - B. ALL OTHER TREES 12 INCHES OR LARGER DBH
  - C. ALL MULTI-STEM TREES WITH A COMBINED DIAMETER OF 24 INCHES OR LARGER DBH

### SECTION AND DETAIL CONVENTION



### ABBREVIATIONS

AVG.	AVERAGE	NTS	NOT TO SCALE
CC	CONCRETE	O.C.	ON CENTER
CY	CUBIC YARDS	O.D.	RELATIVE COMPACTION
DBH	DIAMETER BREAST HEIGHT	RSP	ROCK SLOPE PROTECTION
DIA.	DIAMETER	SD	STORM DRAIN
E	EXISTING	SPK	SPIKE
E.G.	EXISTING GROUND	SQ.FT.	SQUARE FOOT
ELEV.	ELEVATION	TBD	TO BE DETERMINED
DI	DRAINAGE INLET	TYP	TYPICAL
FG	FINISHED GRADE	UNK	UNKNOWN
FT	FEET	WSE	WATER SURFACE ELEVATION
INV	INVERT	YR	YEAR
N	NEW		

### PROJECT DESCRIPTION

THESE DRAWINGS PROVIDE 70% LEVEL DESIGNS FOR THE CONSTRUCTION OF CHANNEL AND FLOODPLAIN ENHANCEMENTS ON PORTIONS OF PERMANENTE CREEK AT THE PERMANENTE QUARRY PROPERTY IN SANTA CLARA COUNTY, CALIFORNIA.

THE DESIGNS ARE SUBJECT TO CHANGE BASED ON RESOURCE AGENCY COMMENTS, ENVIRONMENTAL REVIEW AND PERMIT ISSUANCE.

### TREE REMOVAL NOTES

1. DBH IS THE DIAMETER MEASURED AT BREAST HEIGHT.
2. WILLOWS TO BE REMOVED SHALL BE SALVAGED PER DETAIL 2, SHT. C23. THIS INCLUDES ALL UNMAPPED WILLOWS. WILLOWS TO BE SALVAGED FOR TRANSPLANTING WILL BE FLAGGED IN THE FIELD BY THE PROJECT ARBORIST.
3. ALL OTHER TREES REMOVED DURING CONSTRUCTION SHALL BE SALVAGED WITH ROOTWADS INTACT AND INCORPORATED ON BENCHES AS FLOODPLAIN ROUGHNESS LOGS. BRANCHES SHALL BE PLACED ON FLOODPLAIN BENCHES AND ADJACENT UPPER BANK SLOPES AS SLASH.

### TREE ABBREVIATIONS

A	ALDER
B	BAY
BK	BUCKEYE
M	MAPLE
O	OAK
SYC	SYCAMORE
W	WILLOW

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WWW.WATERWAYS.COM

**wro**  
ENVIRONMENTAL CONSULTANTS  
LANDSCAPE ARCHITECTS AND PLANNERS  
2169 - C East Francisco Blvd.  
San Rafael, CA 94901  
(415) 454-8868 Phone  
(415) 454-0129 Fax

PREPARED AT THE REQUEST OF:  
**LEHIGH HANSON  
HEIDELBERG CEMENT  
GROUP**

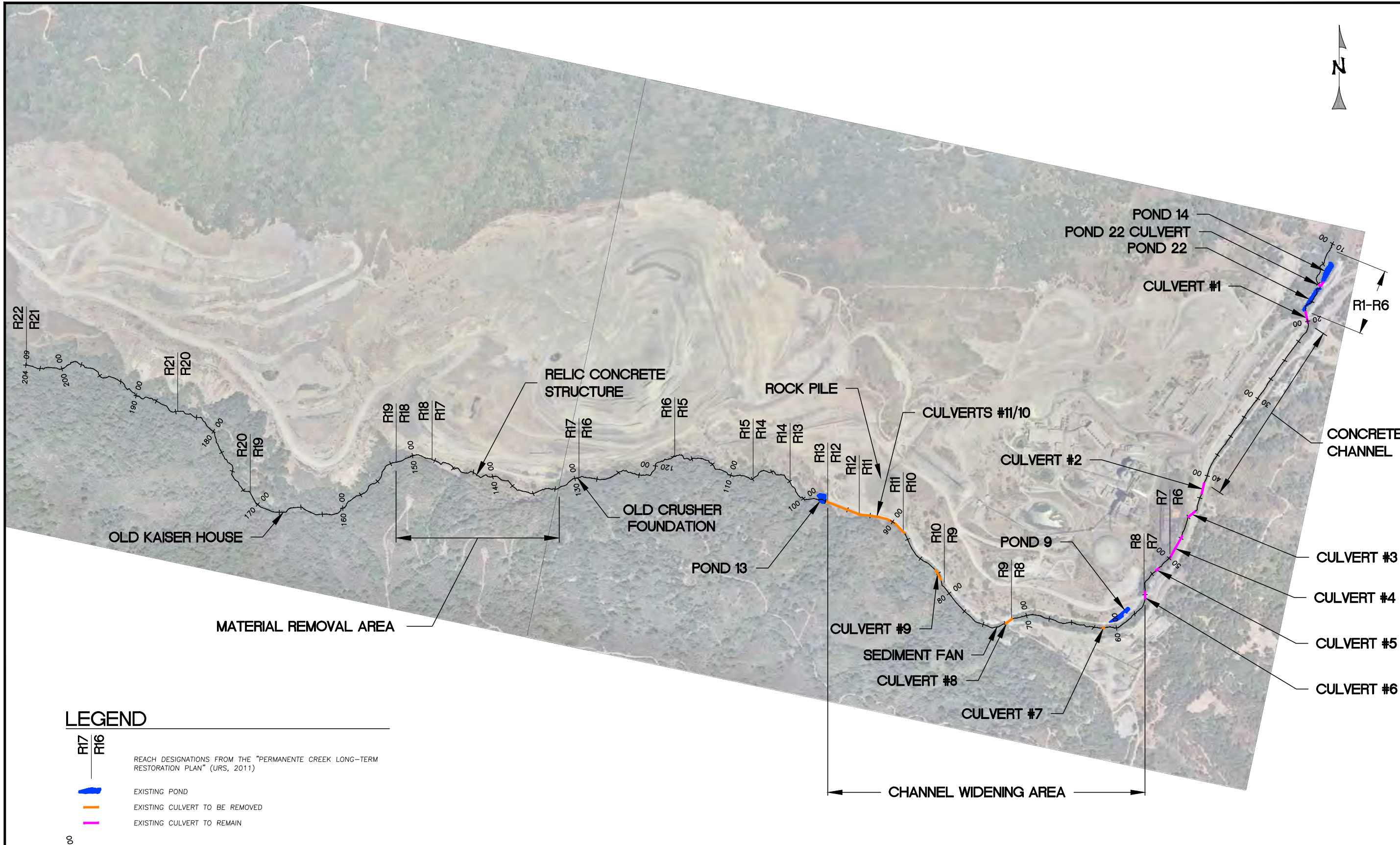
COVER SHEET

PERMANENTE CREEK RESTORATION PLAN  
70% DESIGN SUBMITTAL

DESIGNED BY:  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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

C1 OF 25



**LEGEND**

- R17  
R16 REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
- █ EXISTING POND
- █ EXISTING CULVERT TO BE REMOVED
- █ EXISTING CULVERT TO REMAIN
- THALWEG ALIGNMENT 2013

**PROJECT AREA OVERVIEW**  
SCALE: 1" = 500'

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**OVERVIEW**

**PERMANENTE CREEK  
RESTORATION PLAN**  
70% DESIGN SUBMITTAL

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DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS



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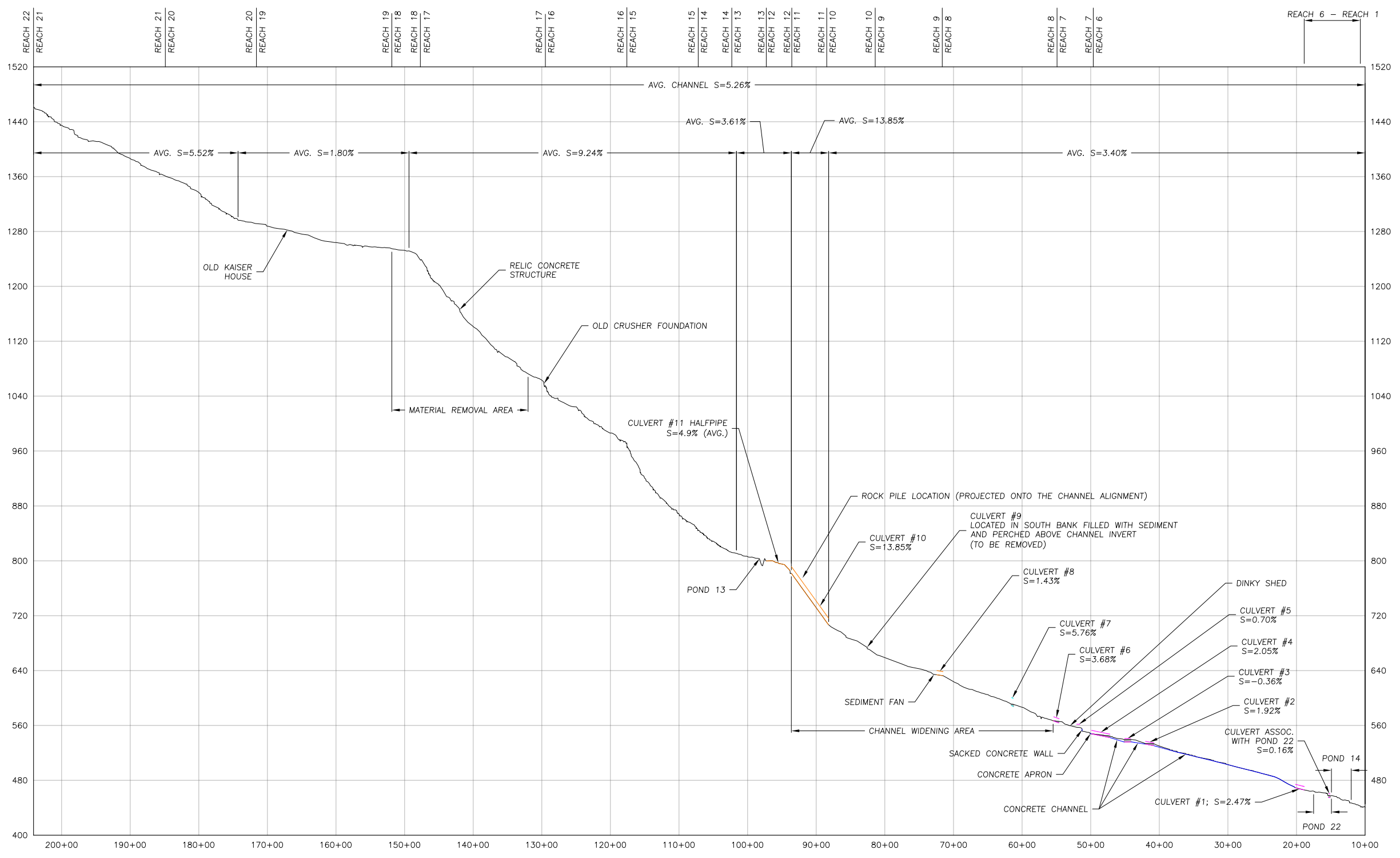
EXISTING  
CHANNEL  
PROFILE

PERMANENTE CREEK  
RESTORATION PLAN  
70% DESIGN SUBMITTAL

DESIGNED BY: B.M.S.  
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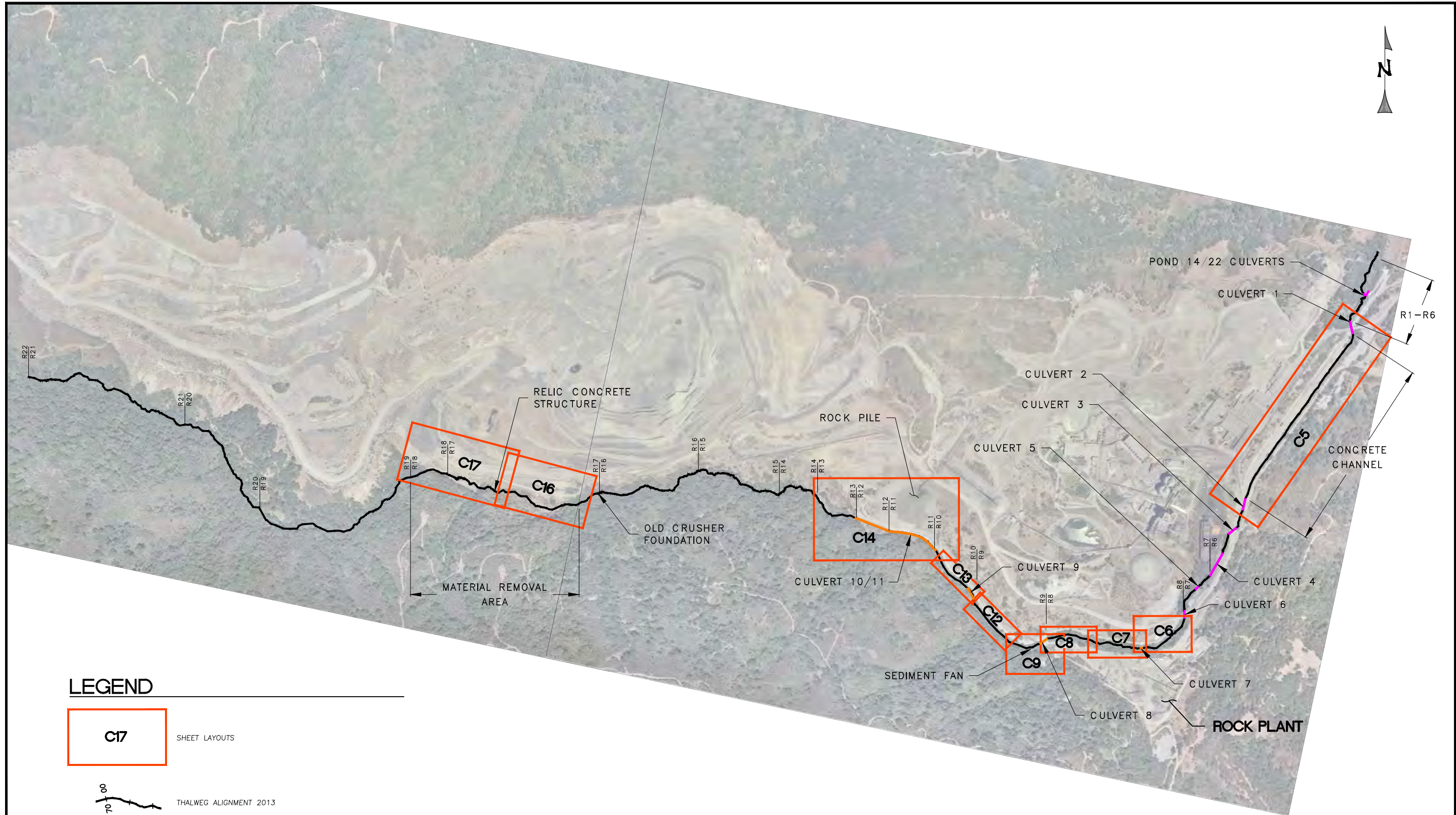
C3 3 OF 25



**EXISTING CHANNEL PROFILE**  
SCALE: H: 1" = 800'; V: 1" = 80'

**LEGEND**

- REACH 7  
REACH 6  
REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN



**LEGEND**

- C17 SHEET LAYOUTS
- THALWEG ALIGNMENT 2013
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN

**SHEET LAYOUT OVERVIEW**  
SCALE: 1" = 500'

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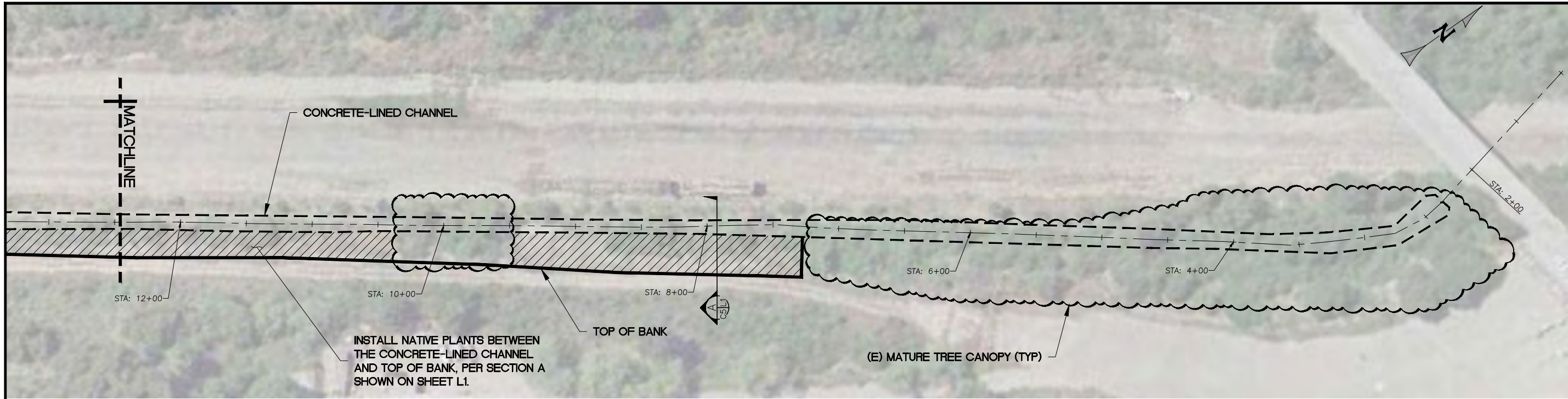
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**LEIGH HANSON HEIDELBERG CEMENT GROUP**

SHEET LAYOUT OVERVIEW

PERMANENTE CREEK RESTORATION PLAN  
70% DESIGN SUBMITTAL

DESIGNED BY: B.M.S.  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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**NOTES:**

1. ALL EXISTING NATIVE TREES AND SHRUBS SHALL BE PROTECTED IN PLACE. EXISTING PLANT SPECIES INCLUDE, BUT ARE NOT LIMITED TO, PRUNUS ILICIFOLIA, QUERCUS AGRIFOLIA, SALIX LAEVIGATA, SALIX LASIOLEPSIS, AND UMBELLULARIA CALIFORNICA. WEED CONTROL ACTIONS SHALL BE PERFORMED AROUND EXISTING OAK SEEDLINGS, AS DESCRIBED BELOW, TO ENCOURAGE ESTABLISHMENT.
2. A THREE-FOOT DIAMETER AREA SHALL BE CLEARED AND GRUBBED AT EACH PROPOSED PLANTING LOCATION AND AROUND EACH EXISTING OAK SEEDLING. CLEARING AND GRUBBING AROUND OAK SEEDLINGS SHALL OCCUR BY HAND-WEEDING TO AVOID ANY ROOT DISTURBANCE OR PLANT DAMAGE.
3. PLANTING EXCAVATION SHALL NOT OCCUR WITHIN THE DRIP LINE OF EXISTING SHRUBS, WITHIN TEN FEET FROM THE TRUNKS OF EXISTING ESTABLISHED TREES, OR WITHIN FIVE FEET OF EXISTING OAK SEEDLINGS.
4. A QUALIFIED RESTORATION SPECIALIST SHALL CONFIRM THE LOCATION OF PROPOSED PLANTS AND OAK SEEDLINGS PRIOR TO PLANTING AND WEED CONTROL TO CONFIRM AVOIDANCE OF EXISTING VEGETATION.
5. DEPENDING ON THE CONDITION OF EXISTING SOILS, SOIL EXCAVATED FOR PLANTING MAY REQUIRE AMENDMENT WITH GREEN WASTE COMPOST. EXCESS SOIL SHALL BE USED TO FORM A WATERING WELL AROUND THE INSTALLED PLANT.
6. THREE TO FOUR INCHES OF MULCH AND/OR WEED MATS SHALL BE PLACED IN THE CLEARED AND GRUBBED AREA AROUND EACH INSTALLED PLANT OR OAK SEEDLING FOR WEED CONTROL AND MOISTURE RETENTION.

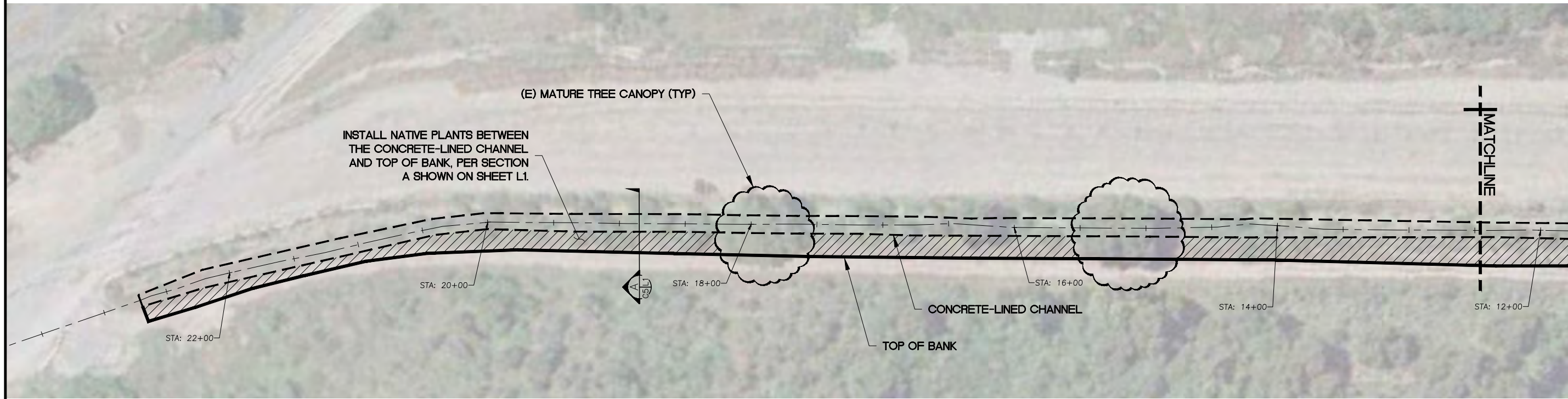
**CONCRETE-LINED CHANNEL SOUTHERN BANK PLANTING PLAN**

SCALE: 1" = 40'

**LEGEND**



PROPOSED REVEGETATION AREA = 0.55 ACRES



**CONCRETE-LINED CHANNEL SOUTHERN BANK PLANTING PLAN**

SCALE: H: 1" = 40'

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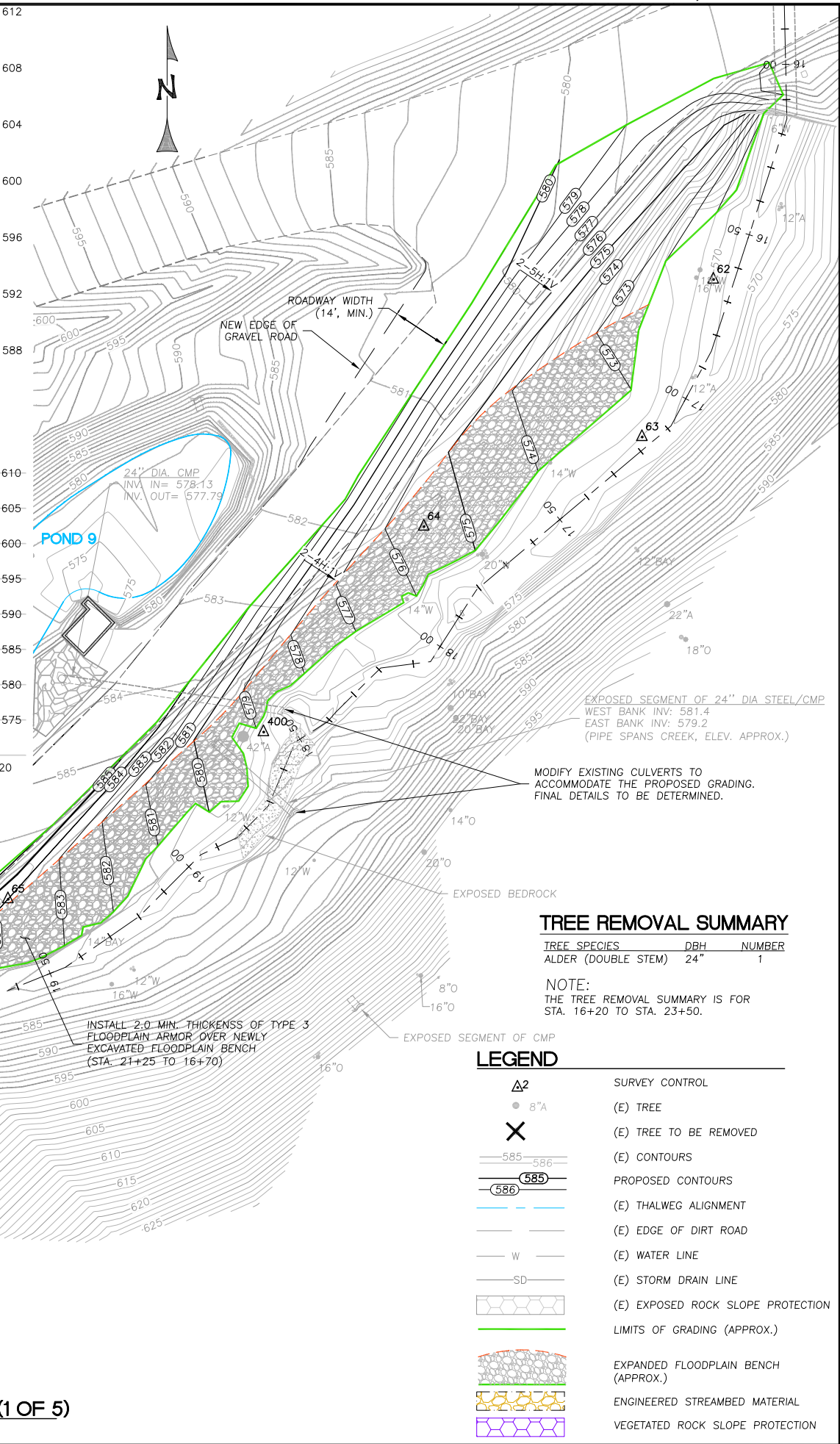
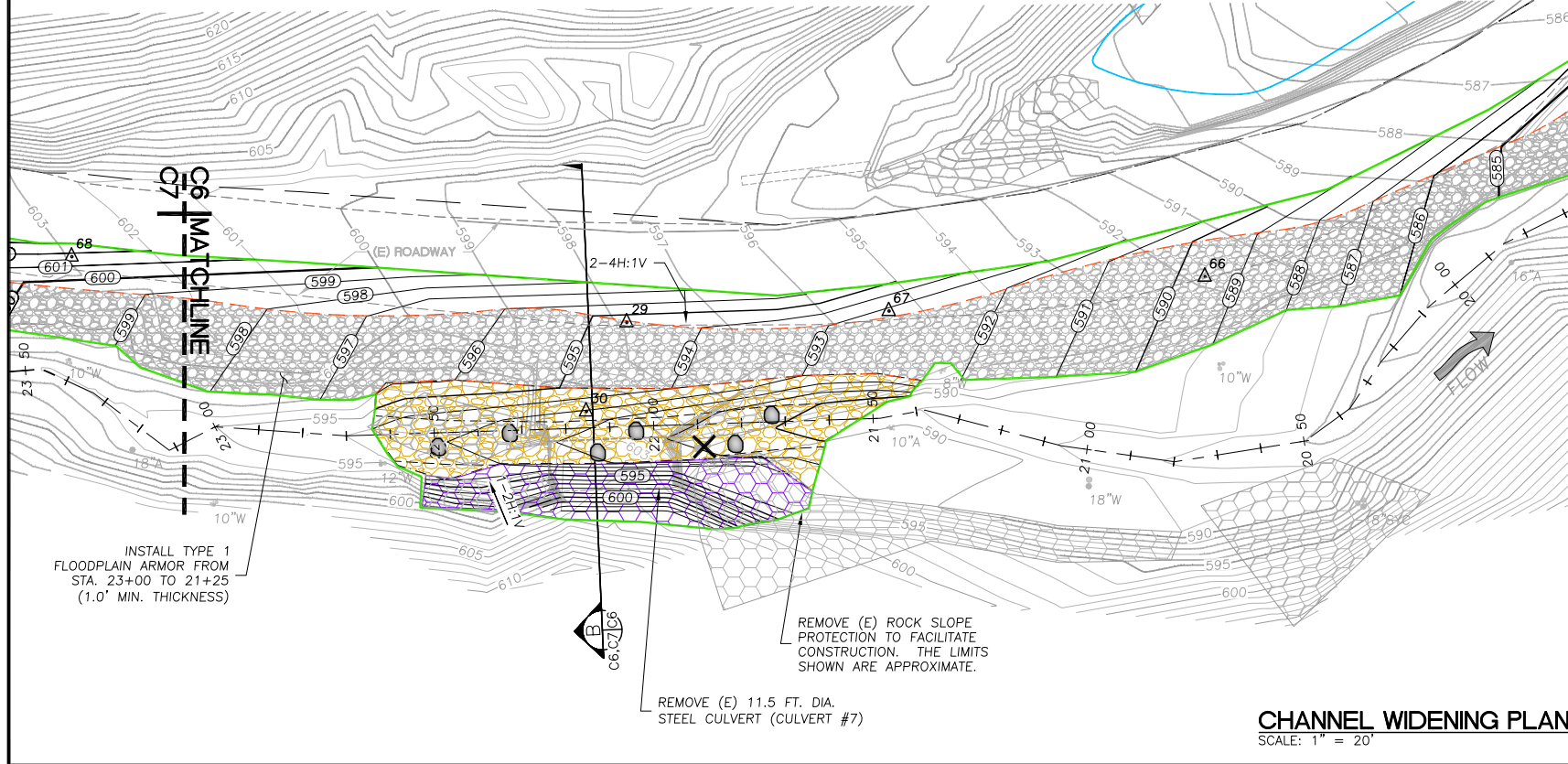
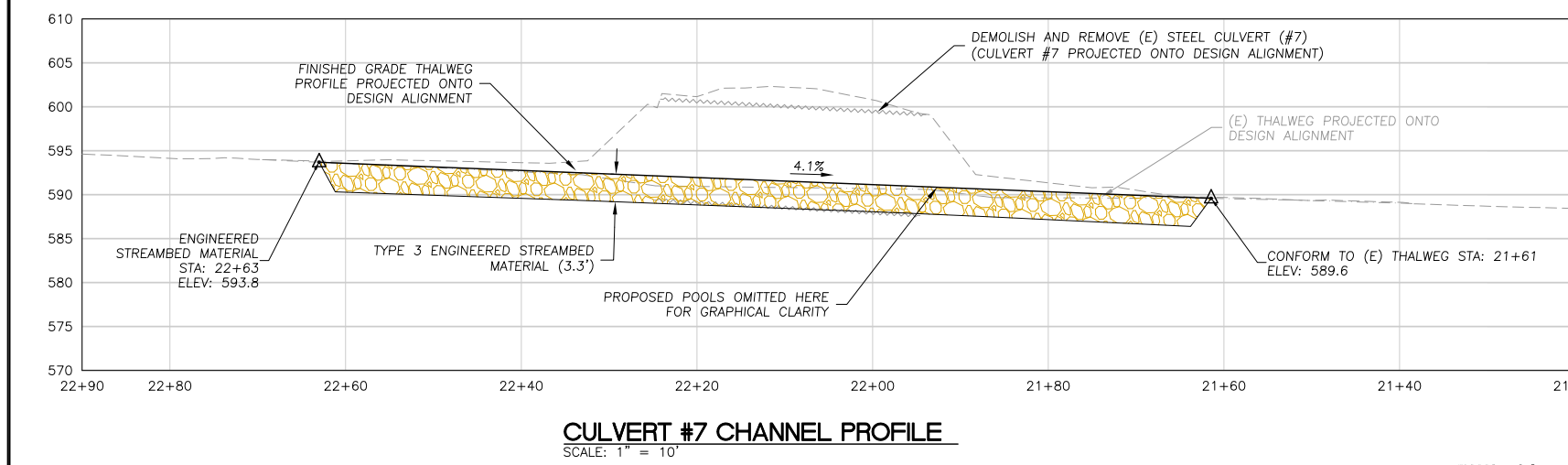
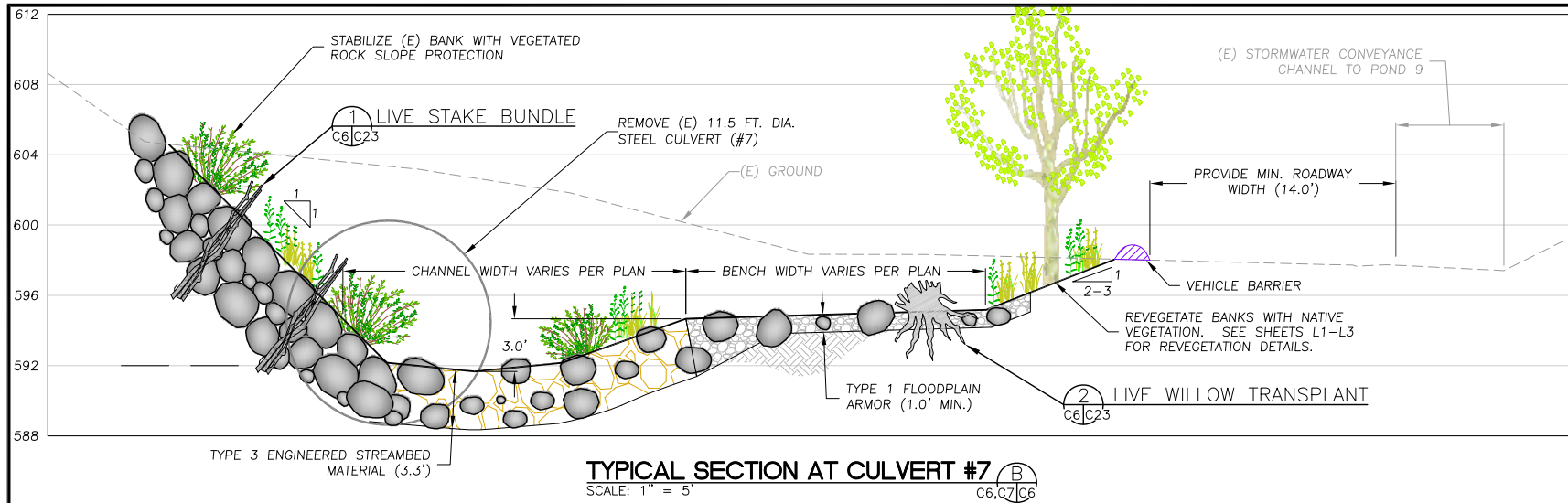
**CONCRETE  
 CHANNEL  
 SOUTHERN BANK  
 PLANTING PLAN**

**PERMANENTE CREEK  
 RESTORATION PLAN  
 70% DESIGN SUBMITTAL**

DESIGNED BY: B.M.Z.  
 DRAWN BY: B.M.Z.  
 CHECKED BY: M.W.W.  
 DATE: 04/27/15  
 JOB NO.: 13-016

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

**C5** 5 OF 25



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**CHANNEL WIDENING PLAN (1 OF 5)**

**PERMANENTE CREEK RESTORATION PLAN 70% DESIGN SUBMITTAL**

DESIGNED BY: B.Z.  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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6 OF 25



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 HEIDELBERG CEMENT  
 GROUP**

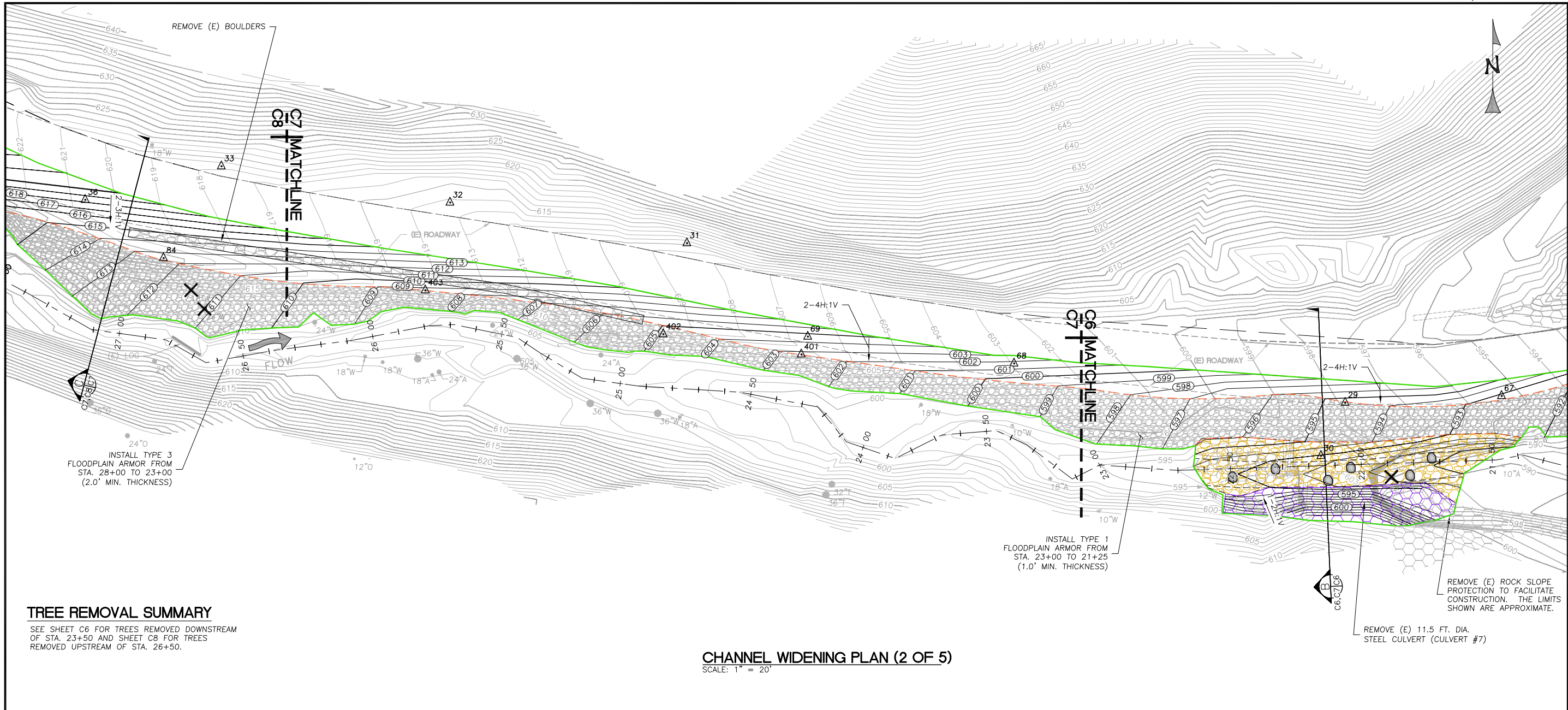
CHANNEL  
 WIDENING PLAN  
 (2 OF 5)

PERMANENTE CREEK  
 RESTORATION PLAN  
 70% DESIGN SUBMITTAL

DESIGNED BY: B.M.S.  
 DRAWN BY: B.M.S.  
 CHECKED BY: M.W.W.  
 DATE: 04/27/15  
 JOB NO.: 13-016

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

C7  
 OF  
 25



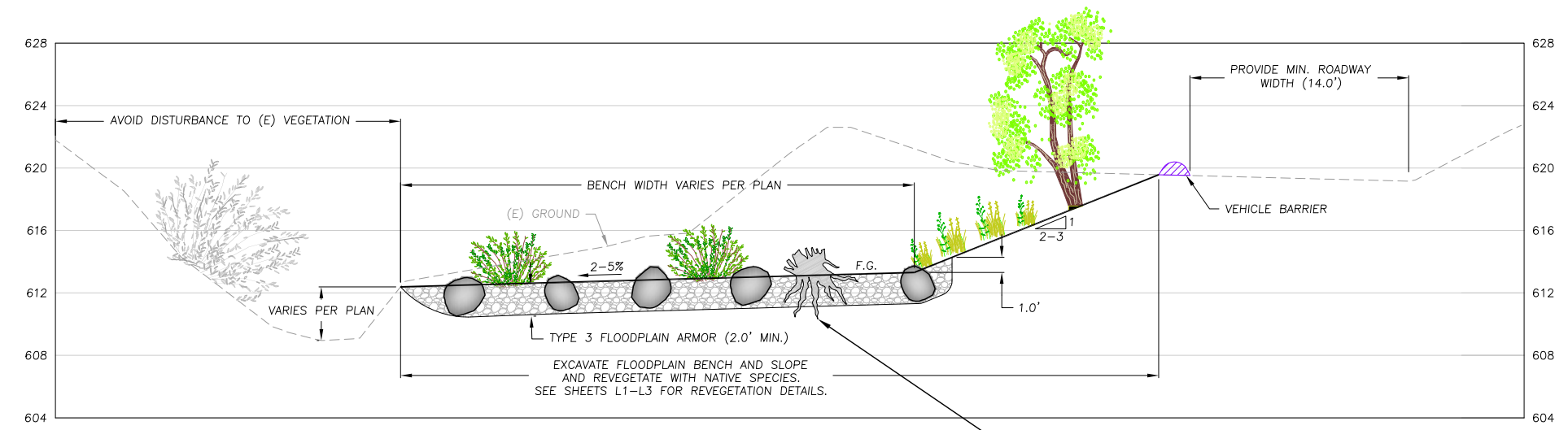
**TREE REMOVAL SUMMARY**

SEE SHEET C6 FOR TREES REMOVED DOWNSTREAM OF STA. 23+50 AND SHEET C8 FOR TREES REMOVED UPSTREAM OF STA. 26+50.

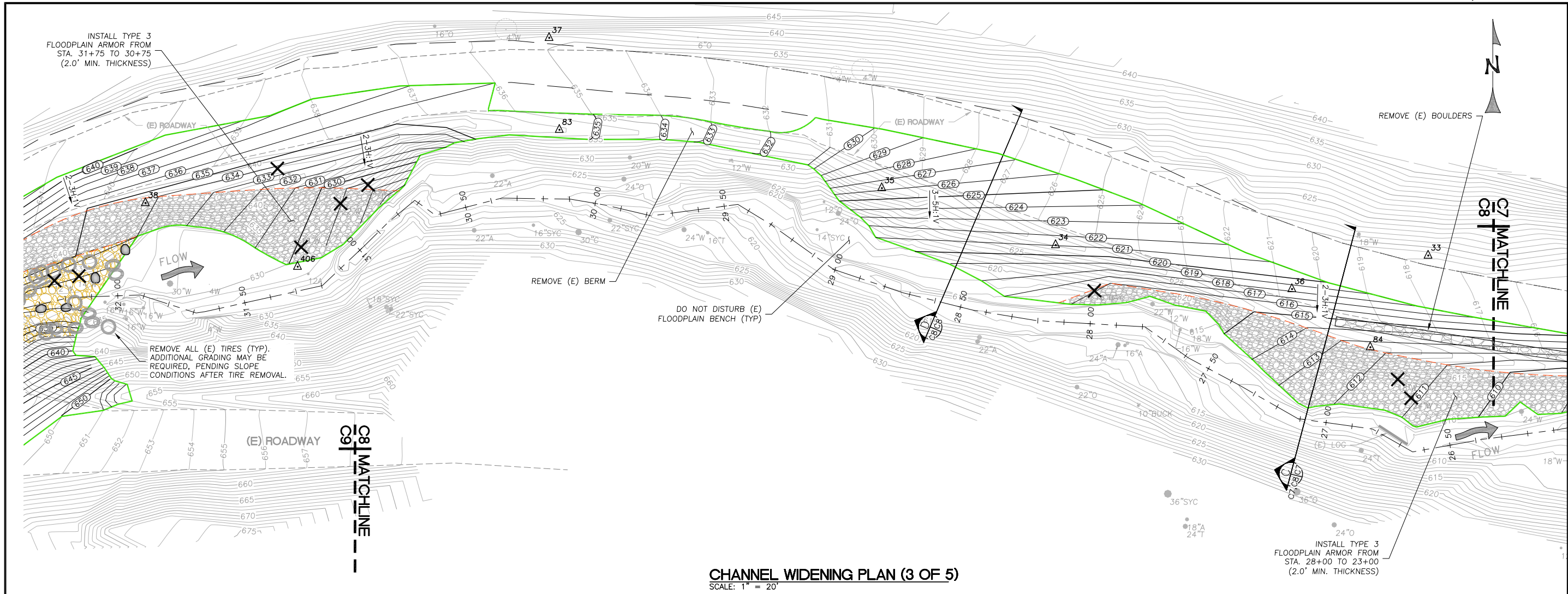
**CHANNEL WIDENING PLAN (2 OF 5)**  
 SCALE: 1" = 20'

**LEGEND**

- △2 SURVEY CONTROL
- 8"A (E) TREE
- X (E) TREE TO BE REMOVED
- 585—586 (E) CONTOURS
- (585)— (E) THALWEG ALIGNMENT
- (586)— PROPOSED CONTOURS
- (E) EDGE OF DIRT ROAD
- W (E) WATER LINE
- SD (E) STORM DRAIN LINE
- [Pattern] (E) EXPOSED ROCK SLOPE PROTECTION
- [Green Line] LIMITS OF GRADING (APPROX.)
- [Pattern] EXPANDED FLOODPLAIN BENCH (APPROX.)
- [Pattern] ENGINEERED STREAMBED MATERIAL
- [Pattern] VEGETATED ROCK SLOPE PROTECTION



**TYPICAL SECTION**  
 SCALE: 1" = 5'



**CHANNEL WIDENING PLAN (3 OF 5)**

SCALE: 1" = 20'

**TREE REMOVAL SUMMARY**

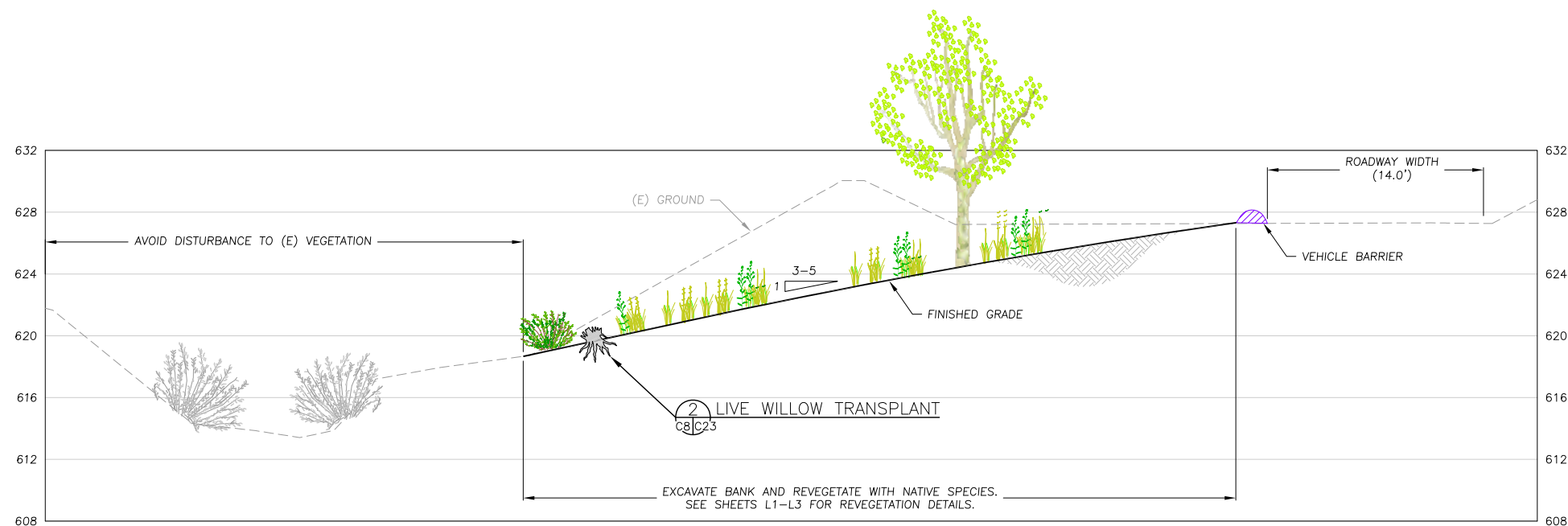
TREE SPECIES	DBH	NUMBER
WILLOW	14"	1
WILLOW	18"	2
WILLOW	24"	1
WILLOW	22"	1
OAK	10"	1
BAY	16"	1

**NOTES:**

- SEE SHEET C9 FOR TREES TO BE REMOVED UPSTREAM OF STA. 31+50. SEE SHEET C7 FOR TREES TO BE REMOVED DOWNSTREAM OF STA. 26+50.

**LEGEND**

- SURVEY CONTROL
- (E) TREE
- (E) TREE TO BE REMOVED
- (E) CONTOURS
- PROPOSED CONTOURS
- (E) THALWEG ALIGNMENT
- (E) EDGE OF DIRT ROAD
- (E) WATER LINE
- (E) STORM DRAIN LINE
- (E) EXPOSED ROCK SLOPE PROTECTION
- LIMITS OF GRADING (APPROX.)
- EXPANDED FLOODPLAIN BENCH (APPROX.)
- ENGINEERED STREAMBED MATERIAL
- VEGETATED ROCK SLOPE PROTECTION



**TYPICAL SECTION (D)**

SCALE: 1" = 5'

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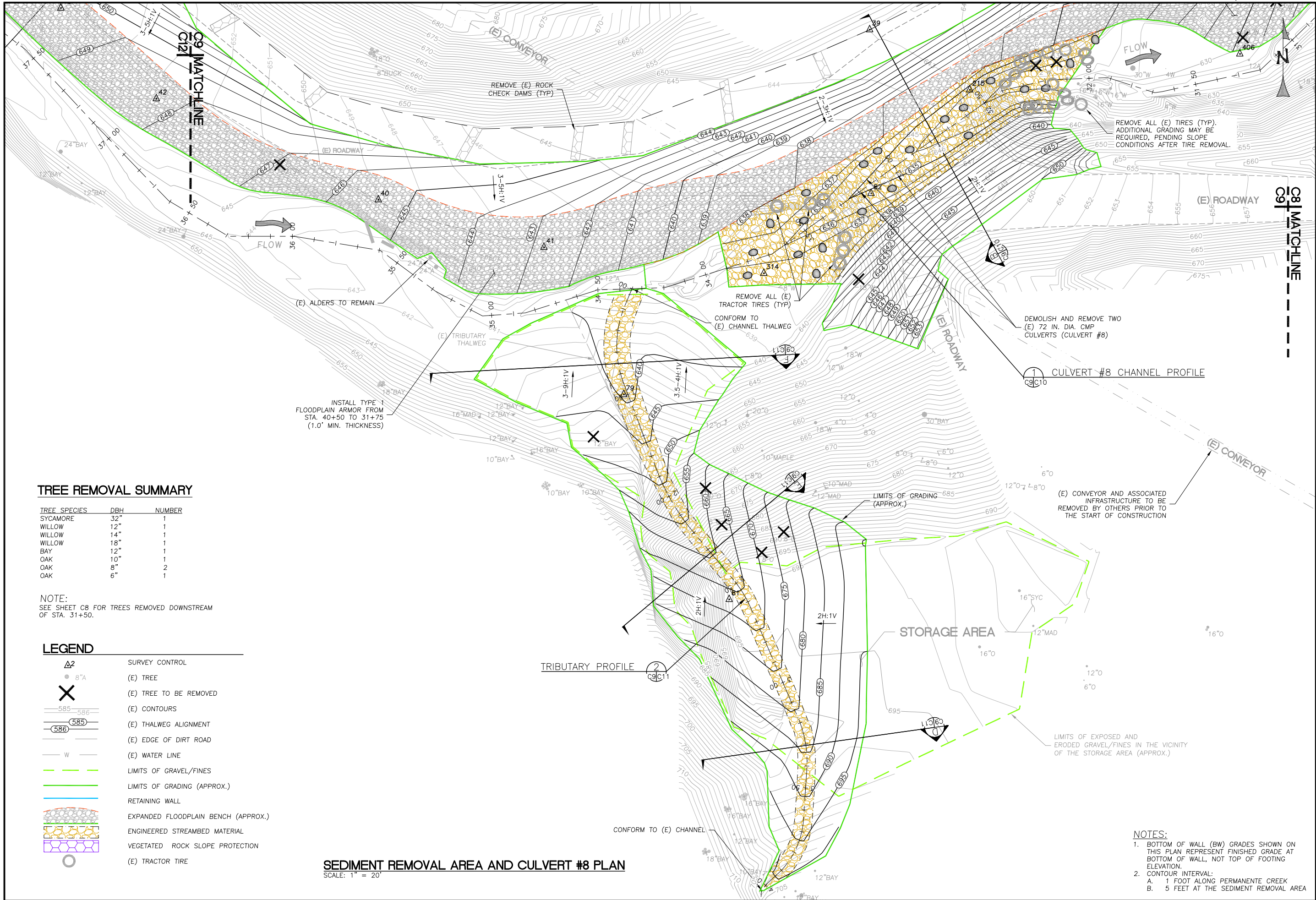
PREPARED AT THE REQUEST OF:  
**LEHIGH HANSON HEIDELBERG CEMENT GROUP**

CHANNEL WIDENING PLAN  
 (3 OF 5)

PERMANENTE CREEK RESTORATION PLAN  
 70% DESIGN SUBMITTAL

DESIGNED BY: B.M.S.  
 DRAWN BY: B.M.S.  
 CHECKED BY: M.W.W.  
 DATE: 04/27/15  
 JOB NO.: 13-016

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



**TREE REMOVAL SUMMARY**

TREE SPECIES	DBH	NUMBER
SYCAMORE	32"	1
WILLOW	12"	1
WILLOW	14"	1
WILLOW	18"	1
BAY	12"	1
OAK	10"	1
OAK	8"	2
OAK	6"	1

NOTE:  
SEE SHEET C8 FOR TREES REMOVED DOWNSTREAM OF STA. 31+50.

**LEGEND**

- SURVEY CONTROL
- (E) TREE
- (E) TREE TO BE REMOVED
- (E) CONTOURS
- (E) THALWEG ALIGNMENT
- (E) EDGE OF DIRT ROAD
- (E) WATER LINE
- LIMITS OF GRAVEL/FINES
- LIMITS OF GRADING (APPROX.)
- RETAINING WALL
- EXPANDED FLOODPLAIN BENCH (APPROX.)
- ENGINEERED STREAMBED MATERIAL
- VEGETATED ROCK SLOPE PROTECTION
- (E) TRACTOR TIRE

**SEDIMENT REMOVAL AREA AND CULVERT #8 PLAN**  
SCALE: 1" = 20'

- NOTES:**
- BOTTOM OF WALL (BW) GRADES SHOWN ON THIS PLAN REPRESENT FINISHED GRADE AT BOTTOM OF WALL, NOT TOP OF FOOTING ELEVATION.
  - CONTOUR INTERVAL:  
A. 1 FOOT ALONG PERMANENTE CREEK  
B. 5 FEET AT THE SEDIMENT REMOVAL AREA

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SEDIMENT REMOVAL AREA AND CULVERT #8 PLAN

PERMANENTE CREEK RESTORATION PLAN  
70% DESIGN SUBMITTAL

DESIGNED BY: B.Z.  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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C9 OF 25



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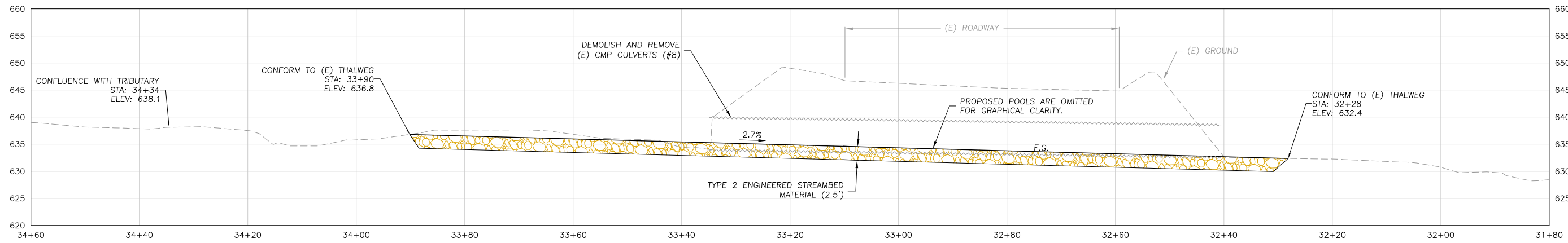
**CULVERT #8  
 PROFILE AND  
 SECTION**

**PERMANENTE CREEK  
 RESTORATION PLAN  
 70% DESIGN SUBMITTAL**

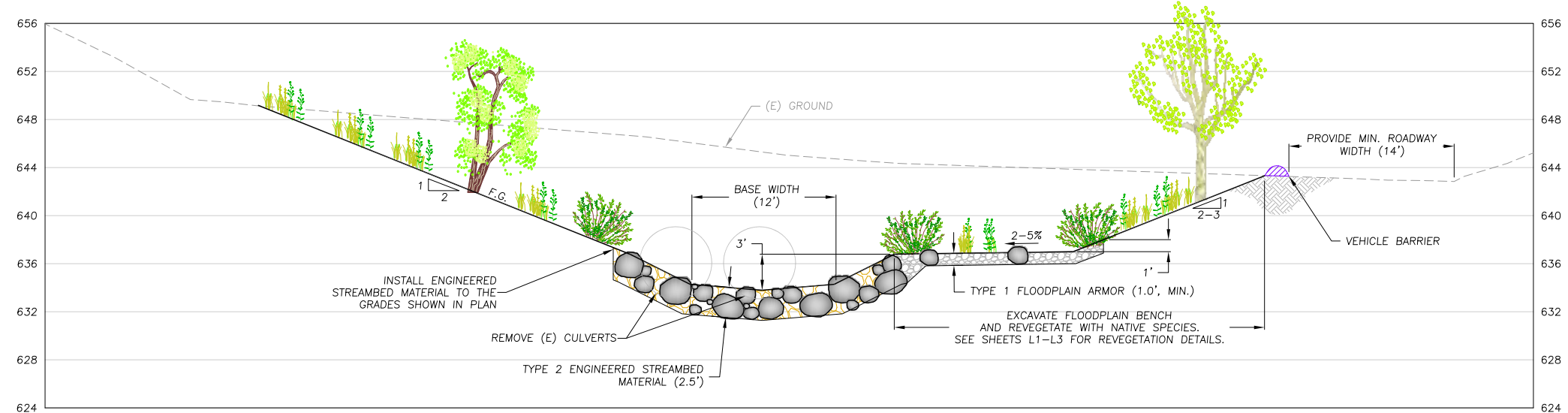
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 JOB NO.: 13-016

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C10 10 OF 25



**CULVERT #8 CHANNEL PROFILE**  
 SCALE: 1" = 10'



**CULVERT #8 SECTION**  
 SCALE: 1" = 6'

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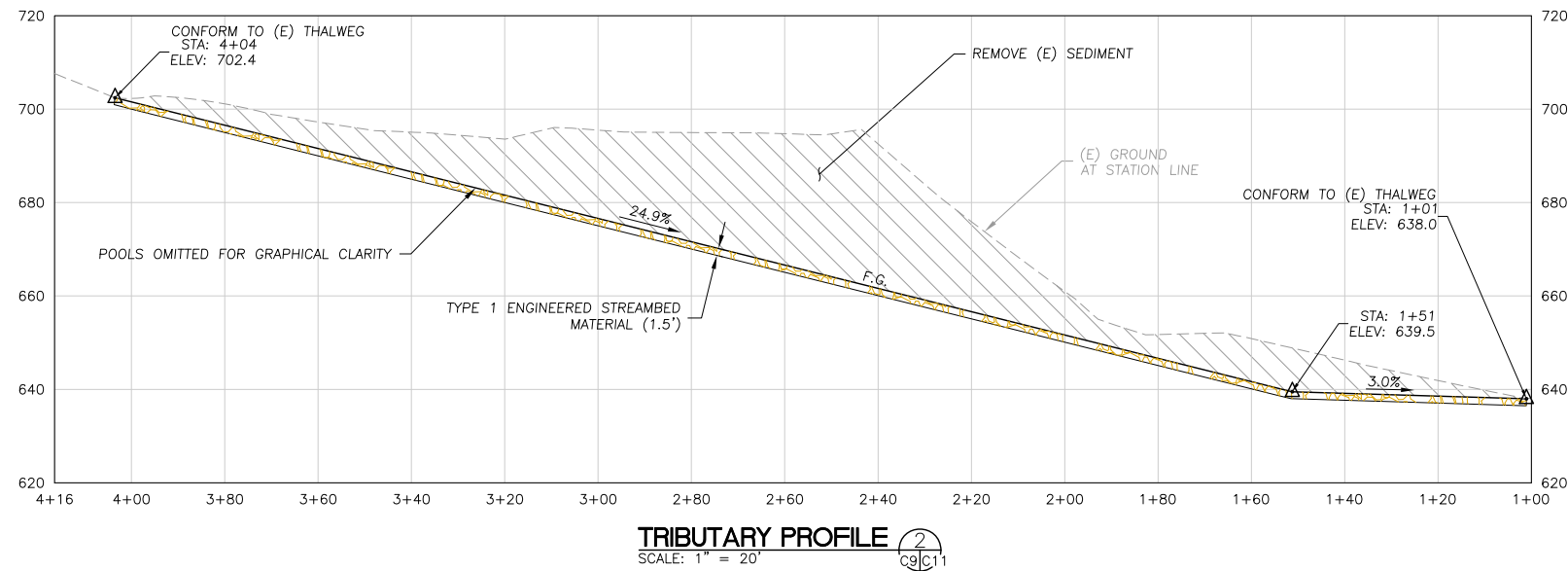
SEDIMENT  
 REMOVAL AREA  
 PROFILE AND  
 SECTIONS

PERMANENTE CREEK  
 RESTORATION PLAN  
 70% DESIGN SUBMITTAL

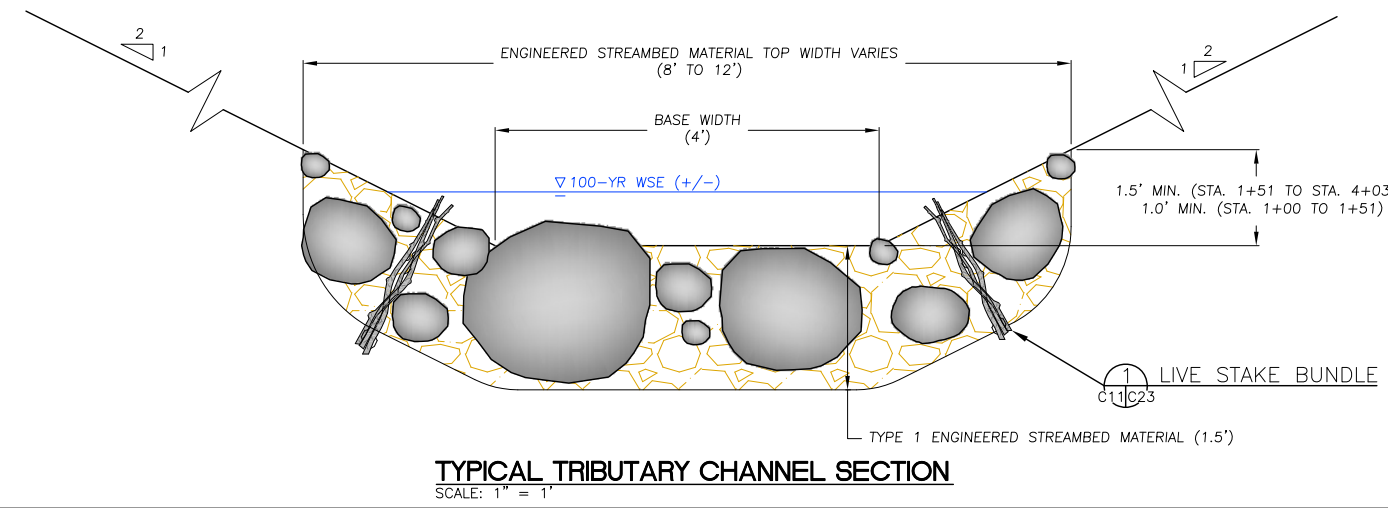
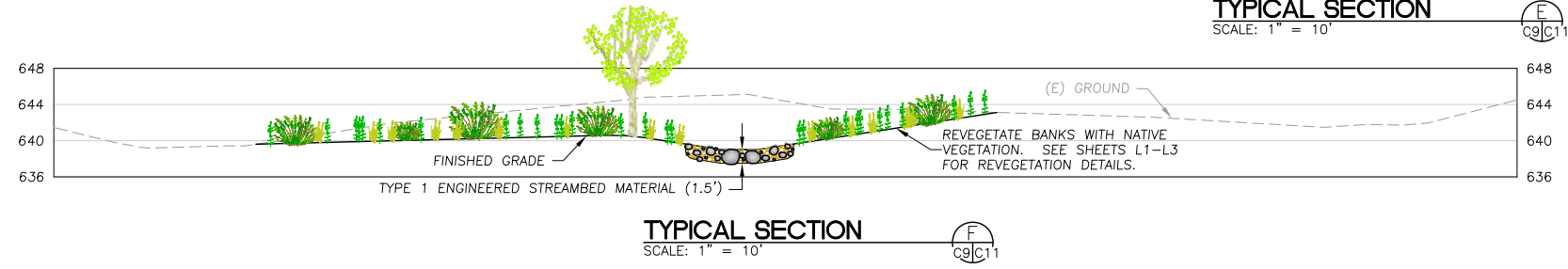
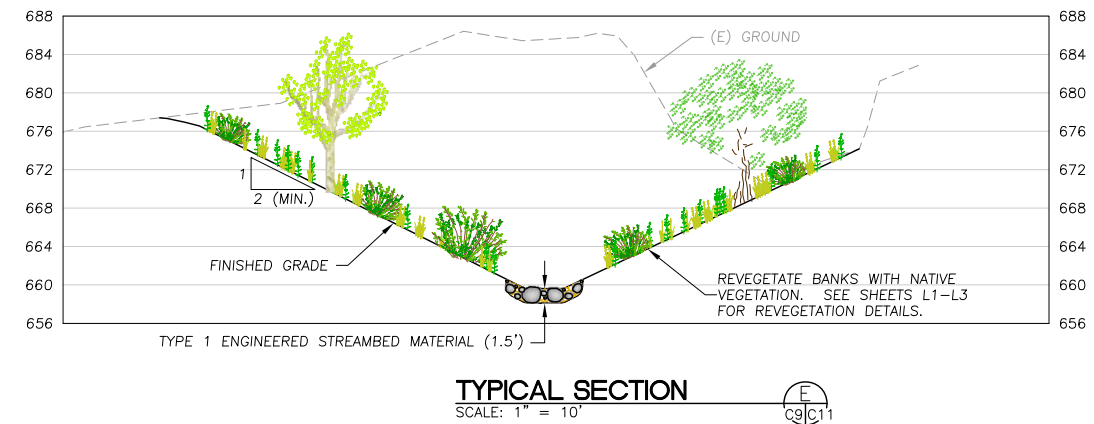
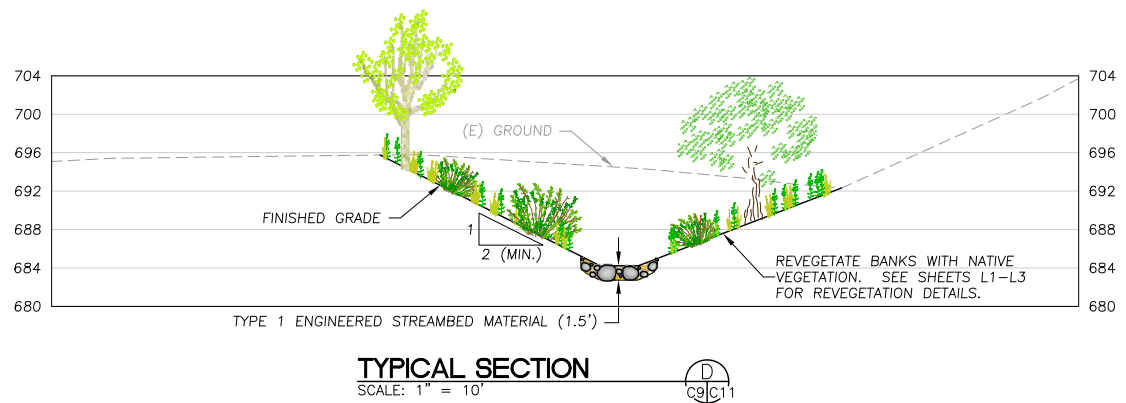
DESIGNED BY: B.Z.  
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 CHECKED BY: M.W.W.  
 DATE: 04/27/15  
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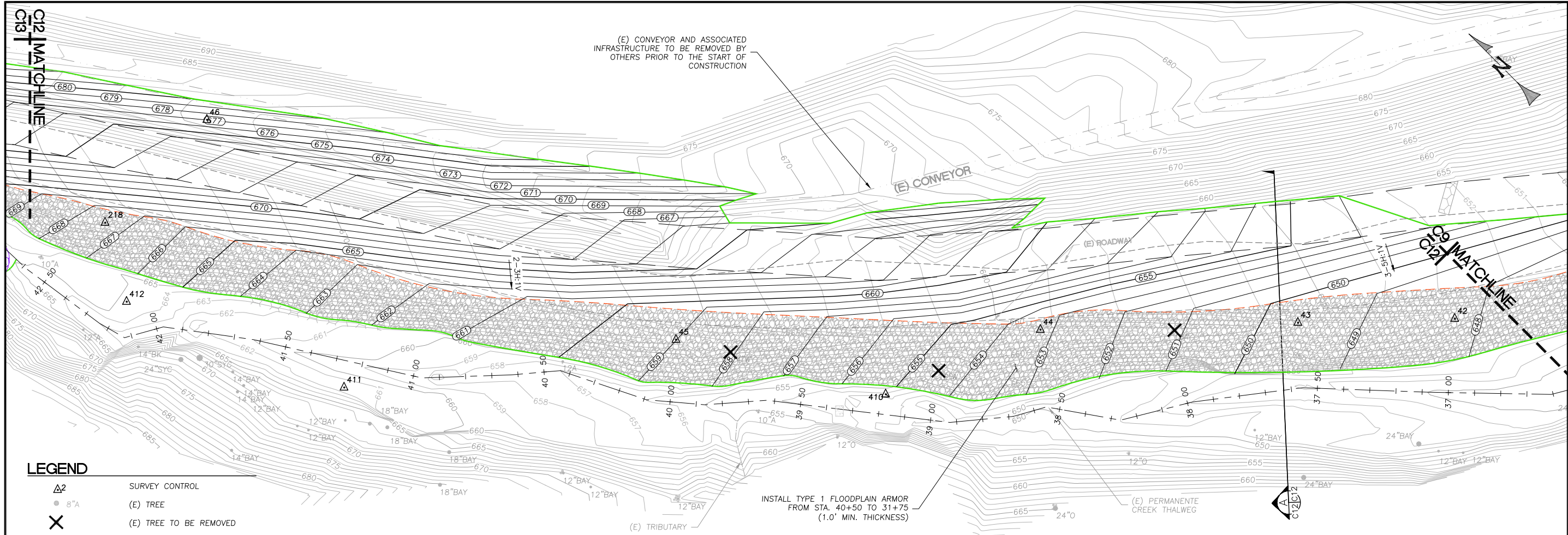
BAR IS ONE INCH ON  
 ORIGINAL DRAWING.  
 ADJUST SCALES FOR  
 REDUCED PLOTS

C11 OF 25



**NOTE:**  
 1. FINISHED GRADES SHOWN ARE APPROXIMATE. ALL IMPORTED FILL SHALL BE REMOVED FROM THE CHANNEL BED AND BANKS.  
 2. CONFORM ENGINEERED STREAMBED MATERIAL TO THE EXISTING CHANNEL AT THE UPSTREAM AND DOWNSTREAM END AS DIRECTED BY THE ENGINEER.



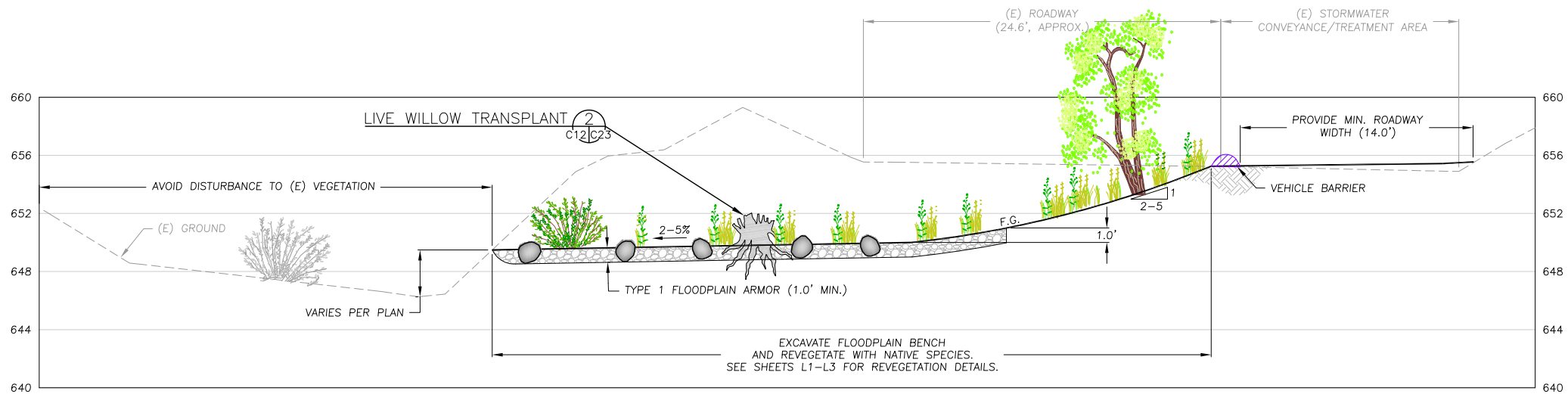


- LEGEND**
- △2 SURVEY CONTROL
  - 8" A (E) TREE
  - X (E) TREE TO BE REMOVED
  - 585-586 (E) CONTOURS
  - 585 (E) PROPOSED CONTOURS
  - 586 (E) THALWEG ALIGNMENT
  - (E) EDGE OF DIRT ROAD
  - W (E) WATER LINE
  - SD (E) STORM DRAIN LINE
  - (E) EXPOSED ROCK SLOPE PROTECTION
  - LIMITS OF GRADING (APPROX.)
  - EXPANDED FLOODPLAIN BENCH (APPROX.)
  - ENGINEERED STREAMBED MATERIAL
  - VEGETATED ROCK SLOPE PROTECTION

**TREE REMOVAL SUMMARY**

TREE SPECIES	DBH	NUMBER
ALDER	18"	1
WILLOW	12"	1
WILLOW	24"	1

**CHANNEL WIDENING PLAN**  
SCALE: 1" = 20'



**TYPICAL SECTION**  
SCALE: 1" = 5'

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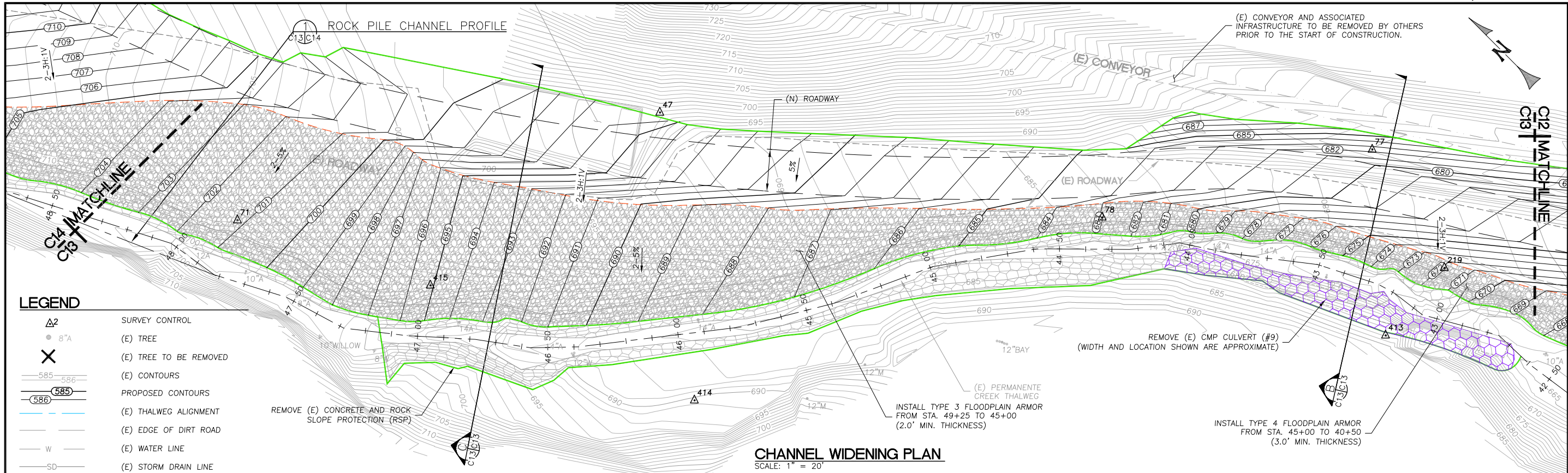
PREPARED AT THE REQUEST OF:  
**LEHIGH HANSON HEIDELBERG CEMENT GROUP**

**CHANNEL WIDENING PLAN (4 OF 5)**

**PERMANENTE CREEK RESTORATION PLAN 70% DESIGN SUBMITTAL**

DESIGNED BY: B.Z.  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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

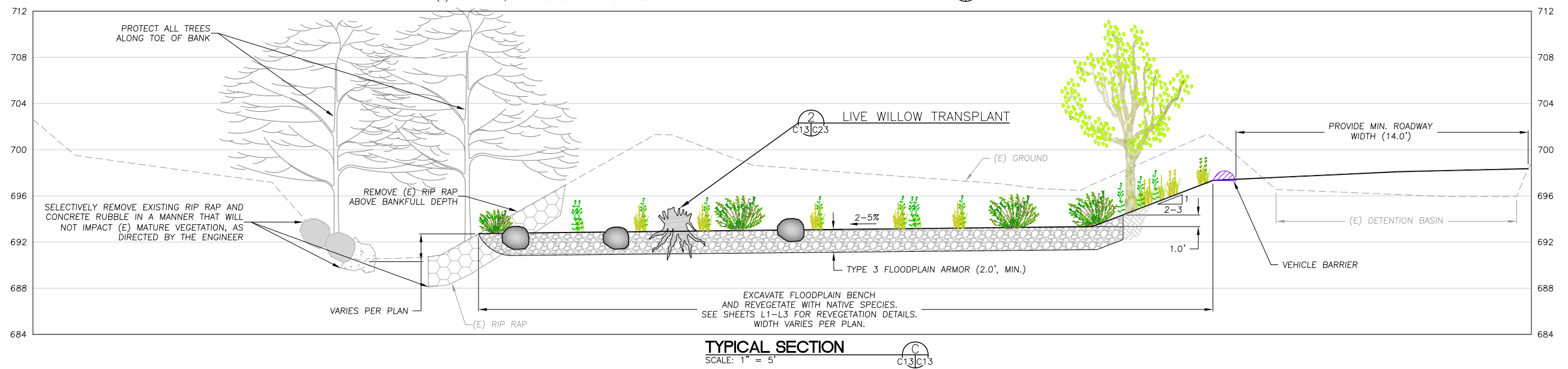
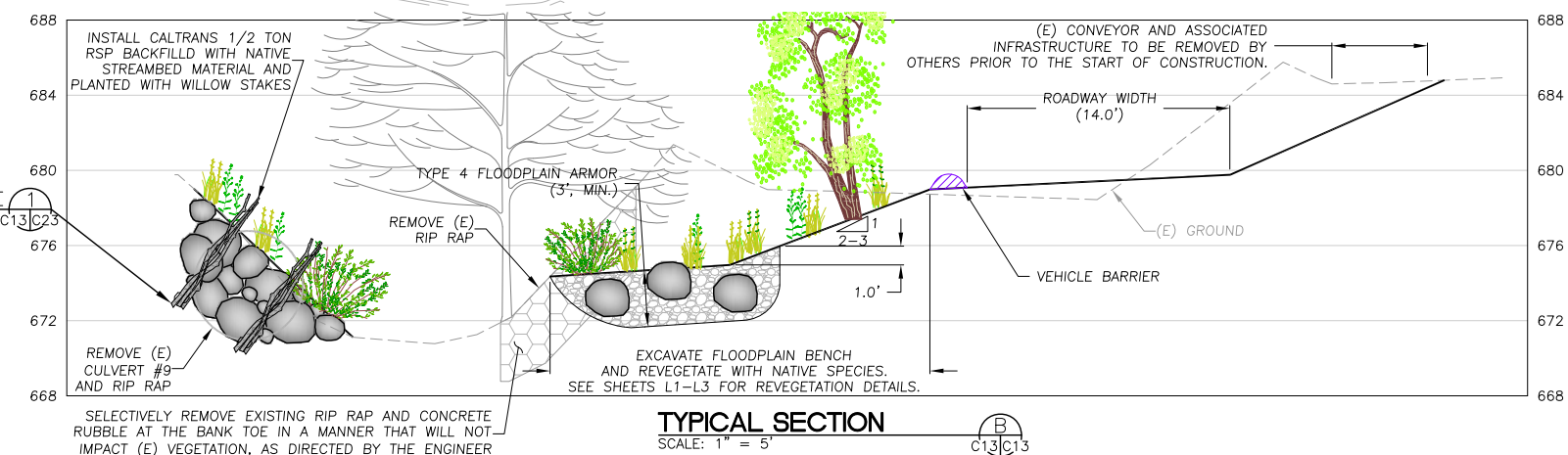


**LEGEND**

- △2 SURVEY CONTROL
- 8" A (E) TREE
- ✕ (E) TREE TO BE REMOVED
- 585-586 (E) CONTOURS
- 585 PROPOSED CONTOURS
- 586 (E) THALWEG ALIGNMENT
- (E) EDGE OF DIRT ROAD
- W (E) WATER LINE
- SD (E) STORM DRAIN LINE
- (E) EXPOSED ROCK SLOPE PROTECTION
- LIMITS OF GRADING (APPROX.)
- EXPANDED FLOODPLAIN BENCH (APPROX.)
- VEGETATED ROCK SLOPE PROTECTION

**TREE REMOVAL SUMMARY**

TREE SPECIES	DBH	NUMBER
NONE	N/A	N/A



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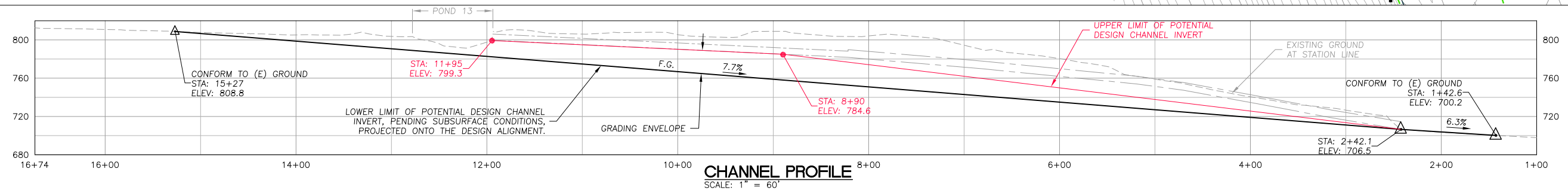
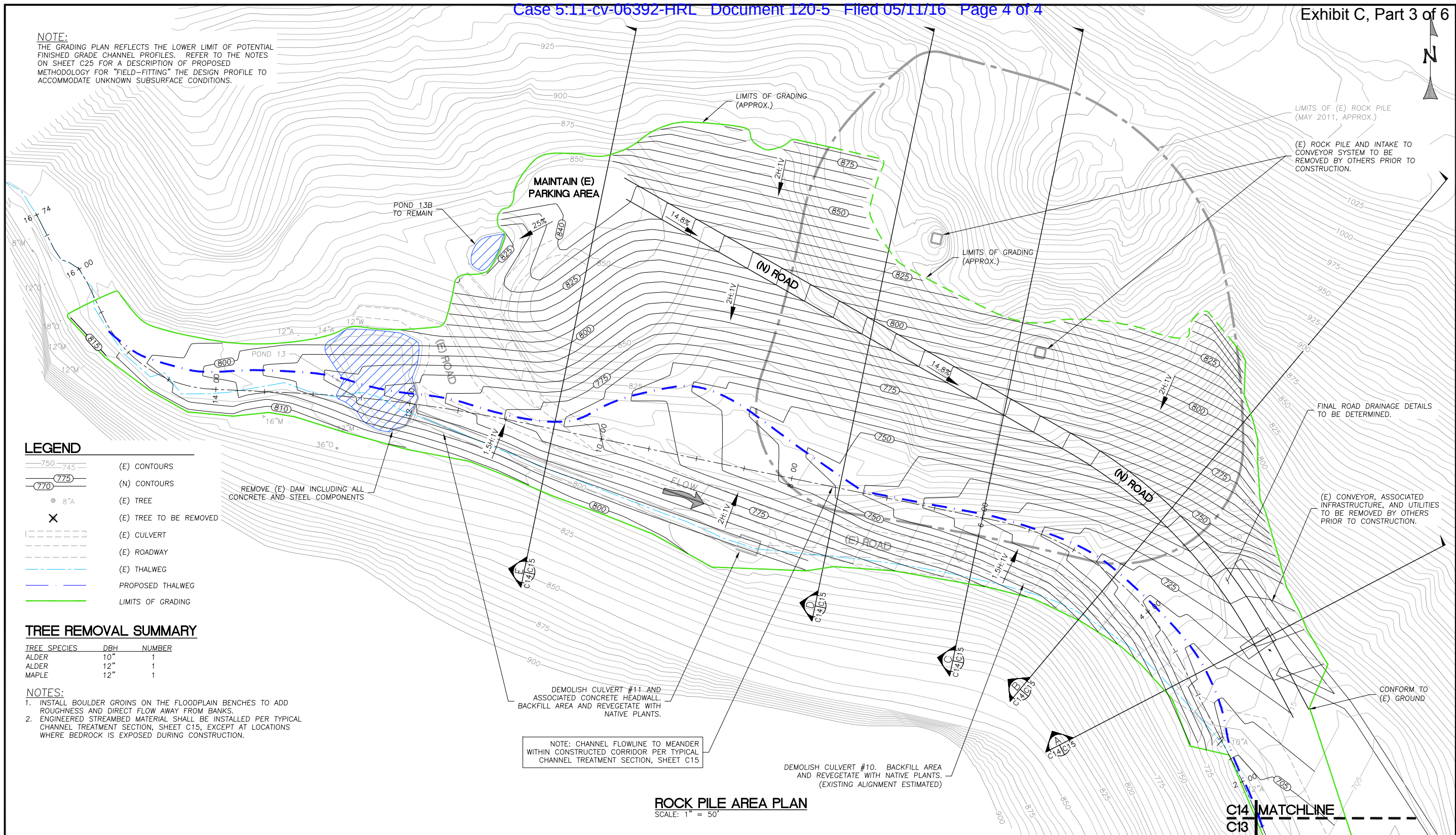
**CHANNEL WIDENING PLAN**  
**(5 OF 5)**

**PERMANENTE CREEK RESTORATION PLAN**  
**70% DESIGN SUBMITTAL**

DESIGNED BY: B.Z.  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS  
0 1" 13 OF 25

**NOTE:**  
THE GRADING PLAN REFLECTS THE LOWER LIMIT OF POTENTIAL FINISHED GRADE CHANNEL PROFILES. REFER TO THE NOTES ON SHEET C25 FOR A DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" THE DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUBSURFACE CONDITIONS.



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PREPARED AT THE REQUEST OF:  
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**ROCK PILE AREA PLAN**

**PERMANENTE CREEK RESTORATION PLAN**  
70% DESIGN SUBMITTAL

DESIGNED BY: B.Z.  
DRAWN BY: B.R.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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

C14 14 OF 25



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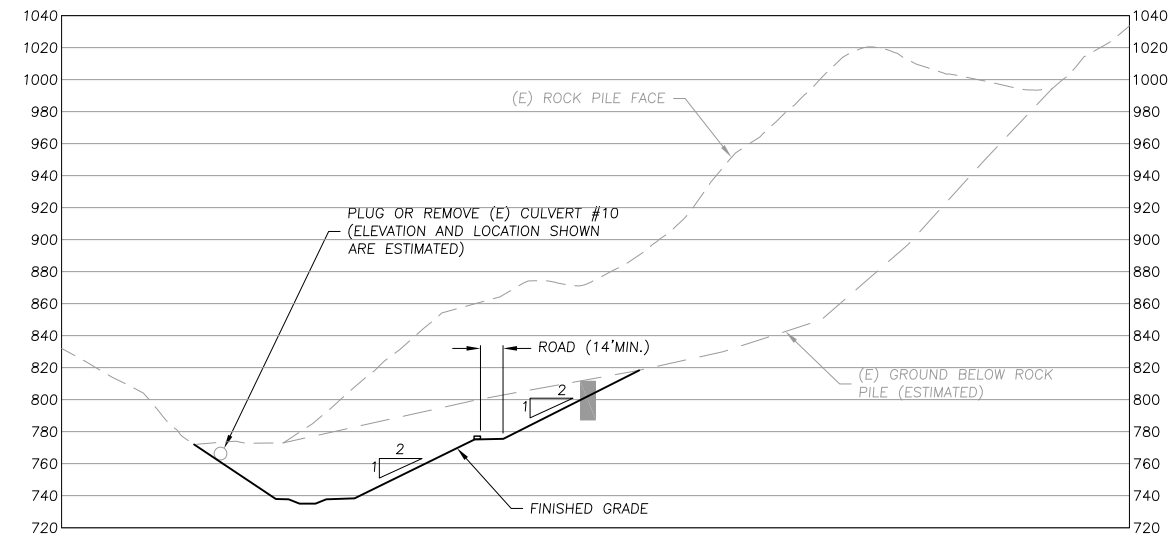
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 GROUP**

**ROCK PILE  
 AREA  
 SECTIONS**

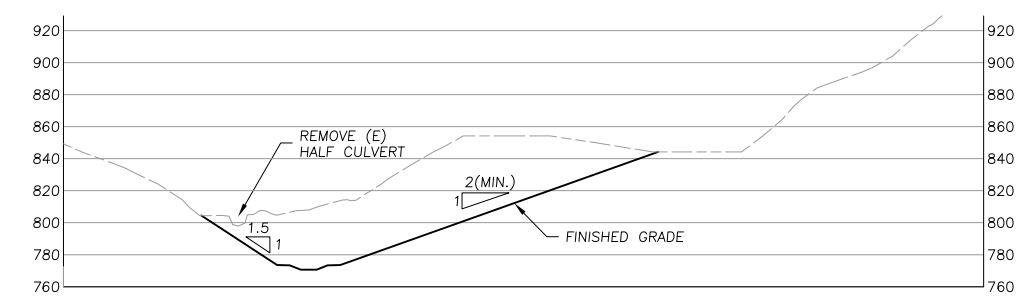
**PERMANENTE CREEK  
 RESTORATION PLAN  
 70% DESIGN SUBMITTAL**

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 CHECKED BY: M.W.W.  
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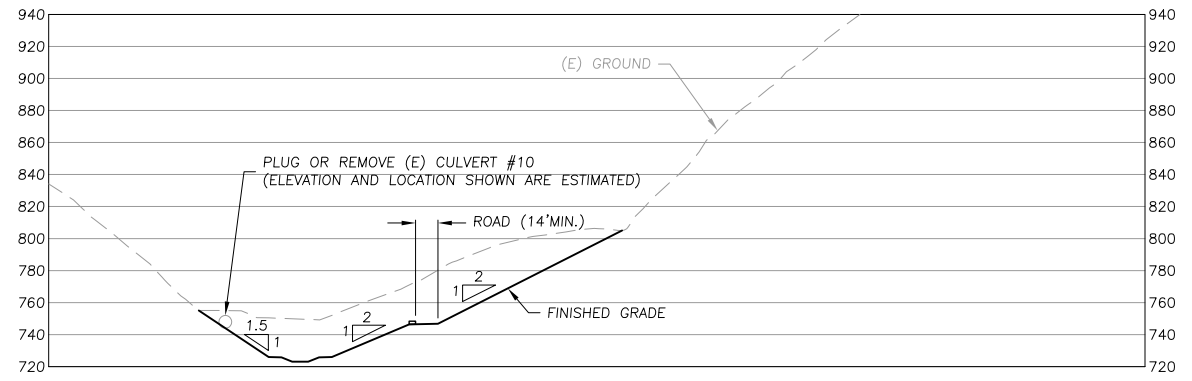
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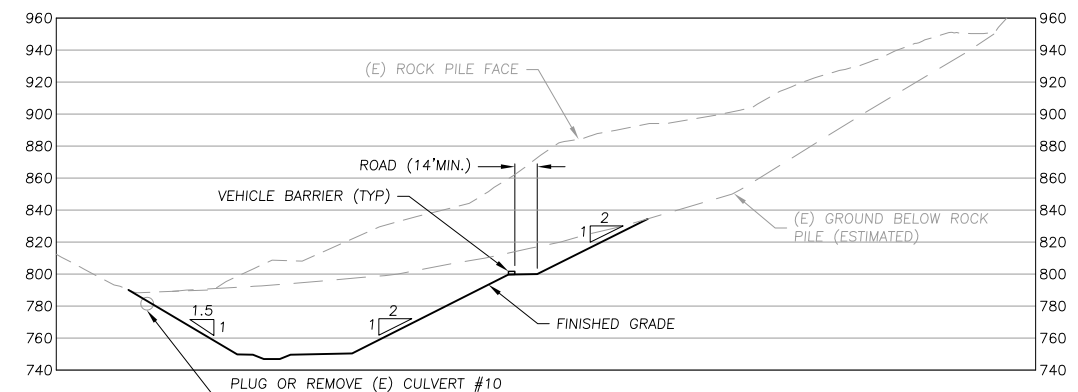
**TYPICAL SECTION C**  
 SCALE: 1" = 60'



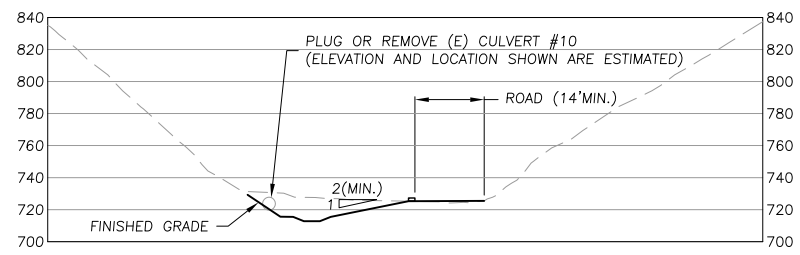
**TYPICAL SECTION E**  
 SCALE: 1" = 60'



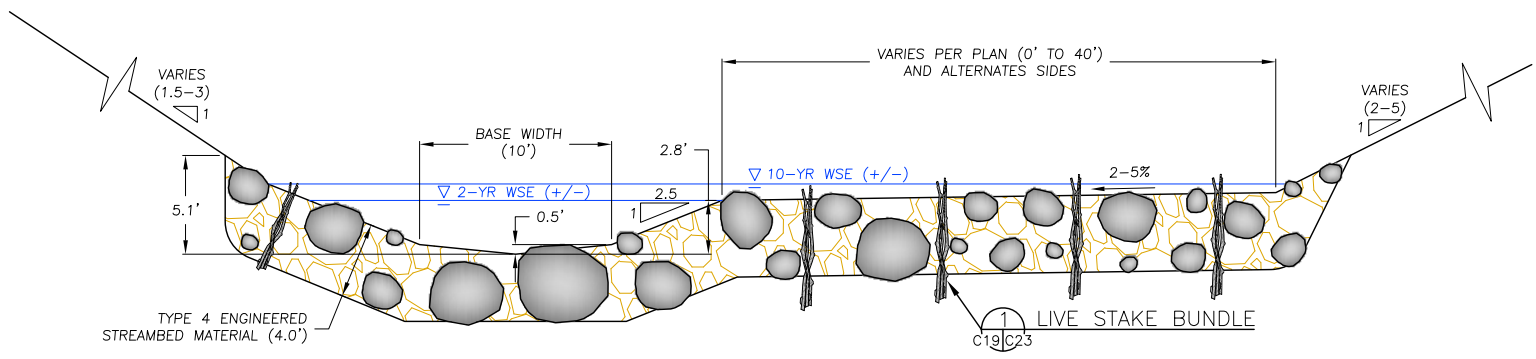
**TYPICAL SECTION B**  
 SCALE: 1" = 60'



**TYPICAL SECTION D**  
 SCALE: 1" = 60'



**TYPICAL SECTION A**  
 SCALE: 1" = 60'



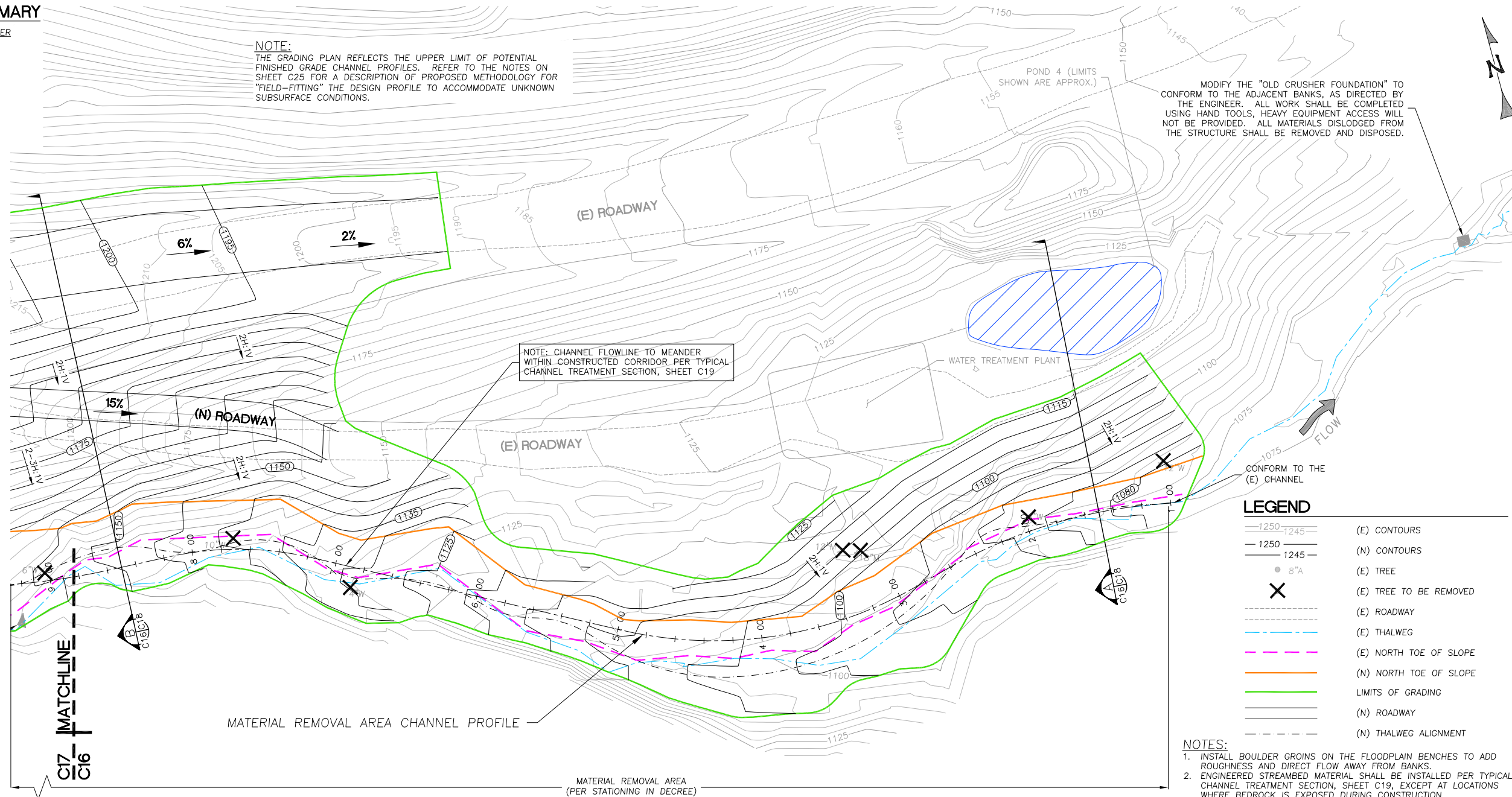
**TYPICAL CHANNEL TREATMENT SECTION**  
 SCALE: 1" = 5'

**TREE REMOVAL SUMMARY**

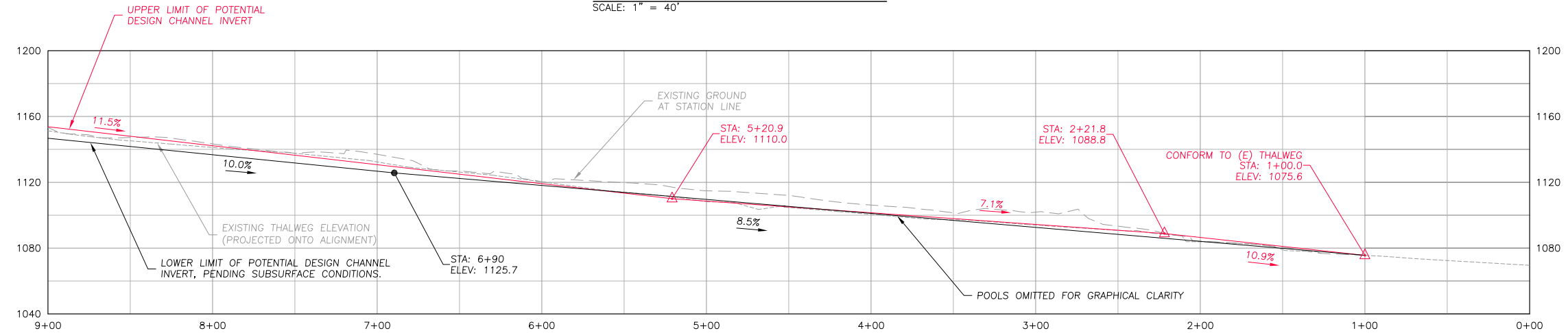
TREE SPECIES	DBH	NUMBER
MADRONE	12"	1
MADRONE	18"	1
WILLOW	4"	1
WILLOW	6"	2
WILLOW	10"	1
WILLOW	12"	1

**NOTE:**  
THE GRADING PLAN REFLECTS THE UPPER LIMIT OF POTENTIAL FINISHED GRADE CHANNEL PROFILES. REFER TO THE NOTES ON SHEET C25 FOR A DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" THE DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUBSURFACE CONDITIONS.

MODIFY THE "OLD CRUSHER FOUNDATION" TO CONFORM TO THE ADJACENT BANKS, AS DIRECTED BY THE ENGINEER. ALL WORK SHALL BE COMPLETED USING HAND TOOLS, HEAVY EQUIPMENT ACCESS WILL NOT BE PROVIDED. ALL MATERIALS DISLODGED FROM THE STRUCTURE SHALL BE REMOVED AND DISPOSED.



**MATERIAL REMOVAL AREA PLAN**  
SCALE: 1" = 40'



**MATERIAL REMOVAL AREA CHANNEL PROFILE**  
SCALE: 1" = 40'

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**LEHIGH HANSON HEIDELBERG CEMENT GROUP**

**MATERIAL REMOVAL AREA PLAN (1 OF 2)**

**PERMANENTE CREEK RESTORATION PLAN 70% DESIGN SUBMITTAL**

DESIGNED BY: B.M.Z.  
DRAWN BY: B.M.S.  
CHECKED BY: M.W.W.  
DATE: 04/27/15  
JOB NO.: 13-016

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

**LEGEND**

- (E) CONTOURS
- (N) CONTOURS
- (E) TREE
- (E) TREE TO BE REMOVED
- (E) ROADWAY
- (E) THALWEG
- (E) NORTH TOE OF SLOPE
- (N) NORTH TOE OF SLOPE
- LIMITS OF GRADING
- (N) ROADWAY
- (N) THALWEG ALIGNMENT

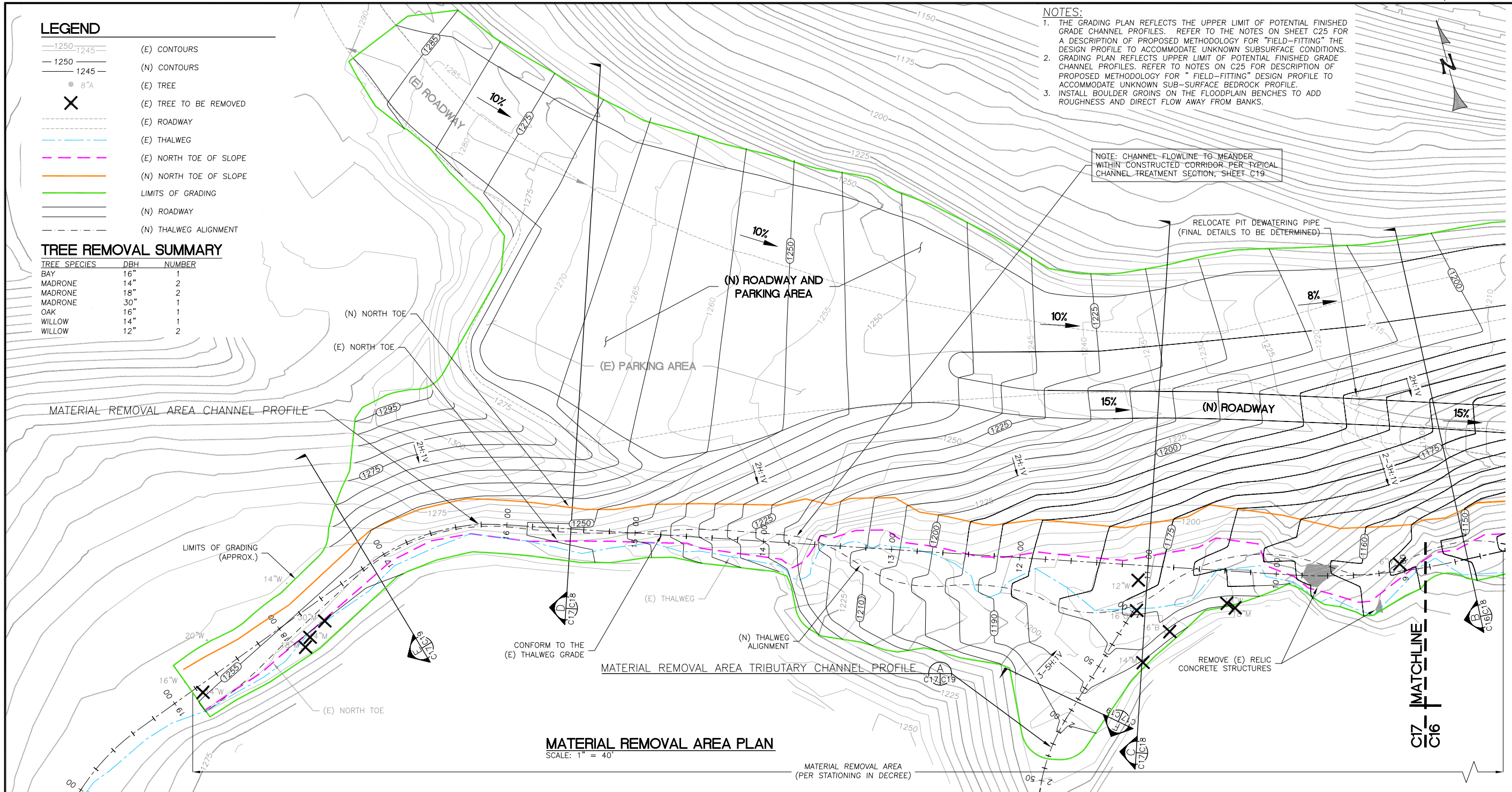
**TREE REMOVAL SUMMARY**

TREE SPECIES	DBH	NUMBER
BAY	16"	1
MADRONE	14"	2
MADRONE	18"	2
MADRONE	30"	1
OAK	16"	1
WILLOW	14"	1
WILLOW	12"	2

**NOTES:**

1. THE GRADING PLAN REFLECTS THE UPPER LIMIT OF POTENTIAL FINISHED GRADE CHANNEL PROFILES. REFER TO THE NOTES ON SHEET C25 FOR A DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" THE DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUBSURFACE CONDITIONS.
2. GRADING PLAN REFLECTS UPPER LIMIT OF POTENTIAL FINISHED GRADE CHANNEL PROFILES. REFER TO NOTES ON C25 FOR DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUB-SURFACE BEDROCK PROFILE.
3. INSTALL BOULDER GROINS ON THE FLOODPLAIN BENCHES TO ADD ROUGHNESS AND DIRECT FLOW AWAY FROM BANKS.

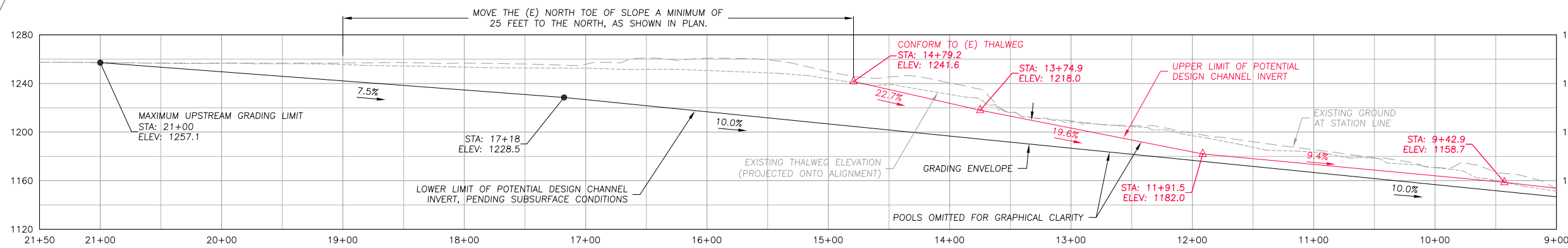
NOTE: CHANNEL FLOWLINE TO MEANDER WITHIN CONSTRUCTED CORRIDOR PER TYPICAL CHANNEL TREATMENT SECTION, SHEET C19



**MATERIAL REMOVAL AREA PLAN**

SCALE: 1" = 40'

MATERIAL REMOVAL AREA (PER STATIONING IN DECREE)



**MATERIAL REMOVAL AREA CHANNEL PROFILE**

SCALE: 1" = 50'

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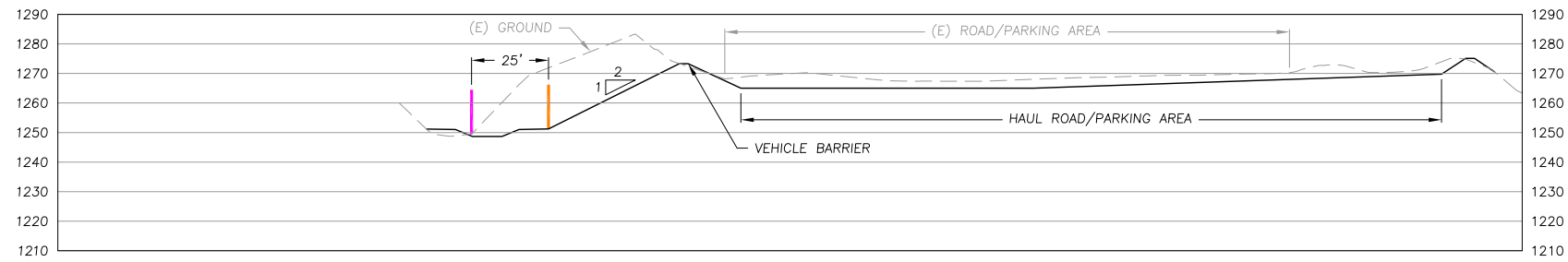
**MATERIAL REMOVAL AREA PLAN (2 OF 2)**

**PERMANENTE CREEK RESTORATION PLAN 70% DESIGN SUBMITTAL**

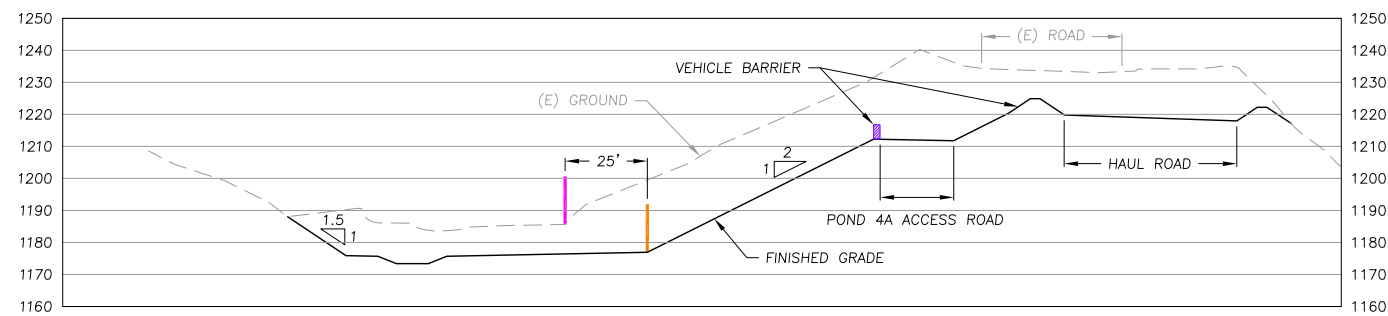
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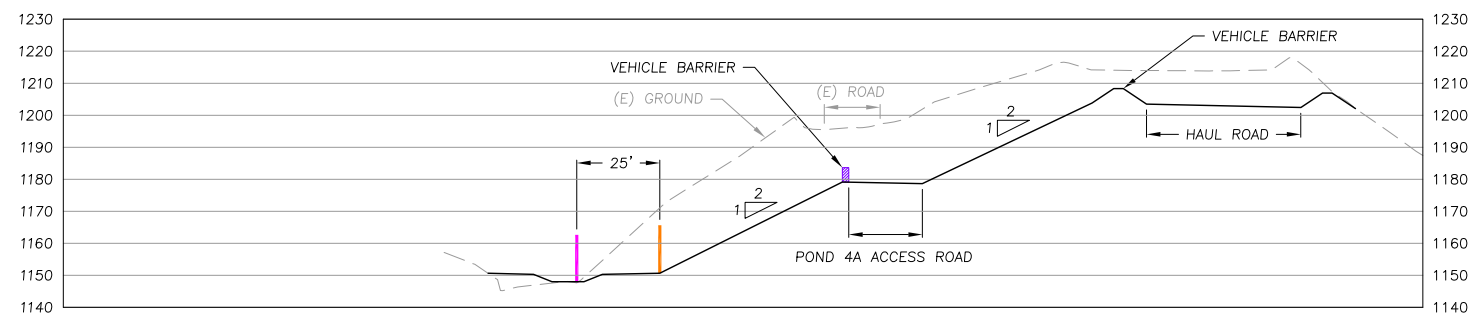
C17 OF 25



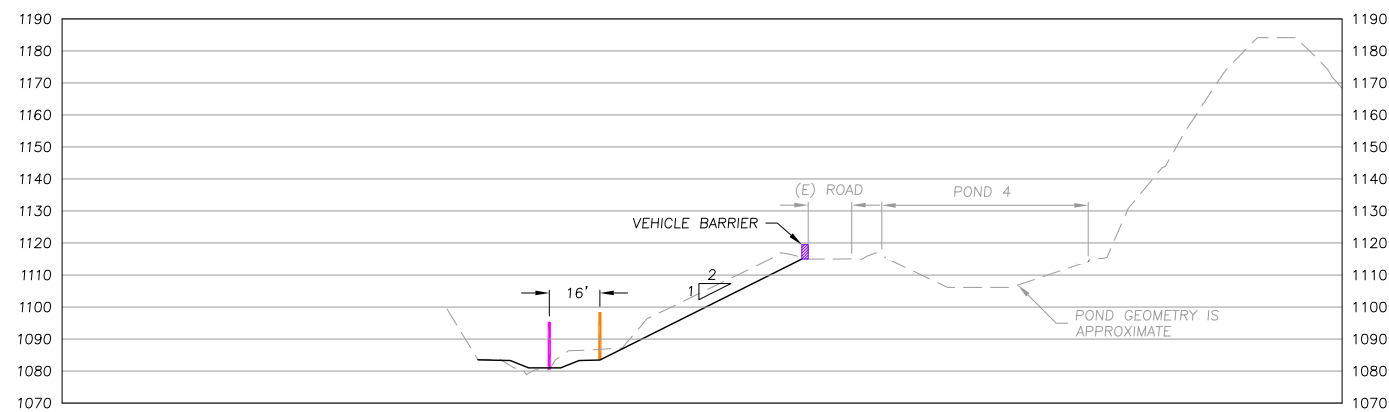
**TYPICAL SECTION D**  
SCALE: 1" = 30'



**TYPICAL SECTION C**  
SCALE: 1" = 30'



**TYPICAL SECTION B**  
SCALE: 1" = 30'



**TYPICAL SECTION A**  
SCALE: 1" = 30'

**LEGEND**

- | (E) NORTH SLOPE TOE
- | PROPOSED NORTH SLOPE TOE



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GROUP**

**MATERIAL  
REMOVAL AREA  
SECTIONS (1 OF  
2)**

**PERMANENTE CREEK  
RESTORATION PLAN  
70% DESIGN SUBMITTAL**

DESIGNED BY: B.M.Z.  
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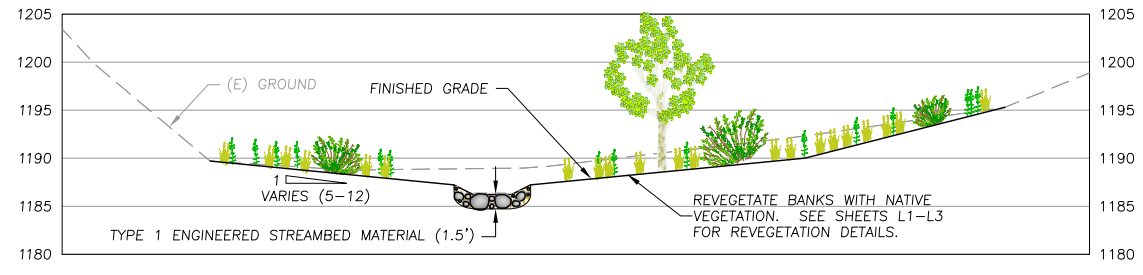
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MATERIAL REMOVAL AREA SECTIONS (2 OF 2)

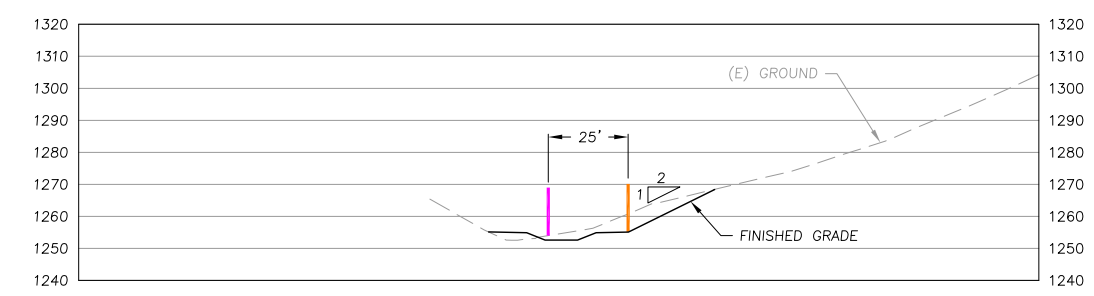
PERMANENTE CREEK RESTORATION PLAN  
 70% DESIGN SUBMITTAL

DESIGNED BY: B.Z.  
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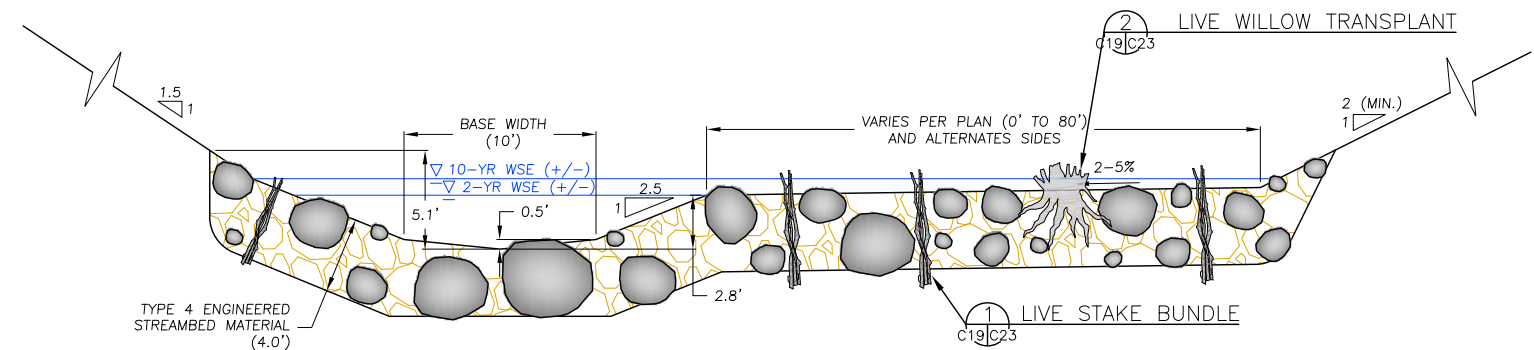
**TYPICAL SECTION F**  
 SCALE: 1" = 10'



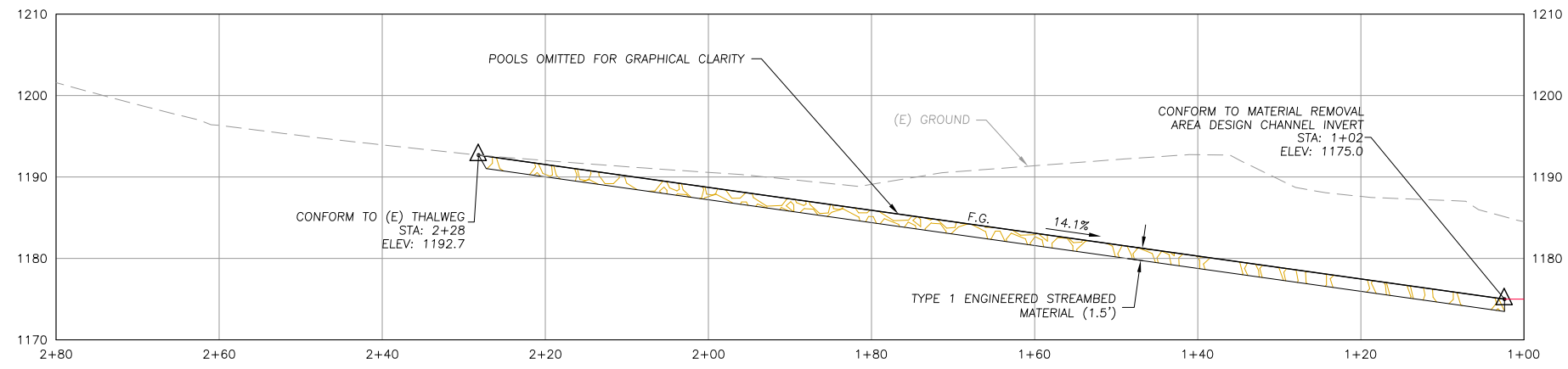
**TYPICAL SECTION E**  
 SCALE: 1" = 30'

**LEGEND**

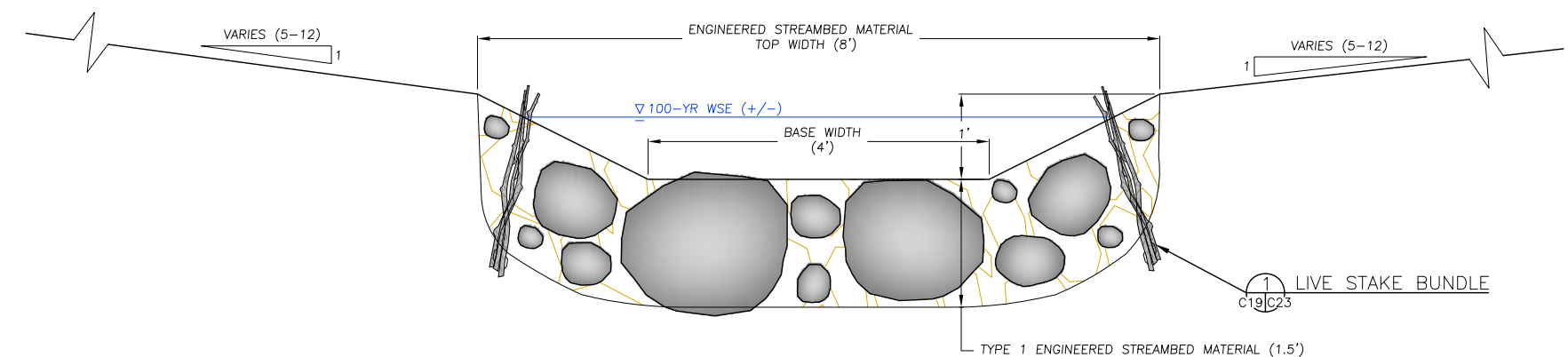
- (E) NORTH SLOPE TOE
- PROPOSED NORTH SLOPE TOE



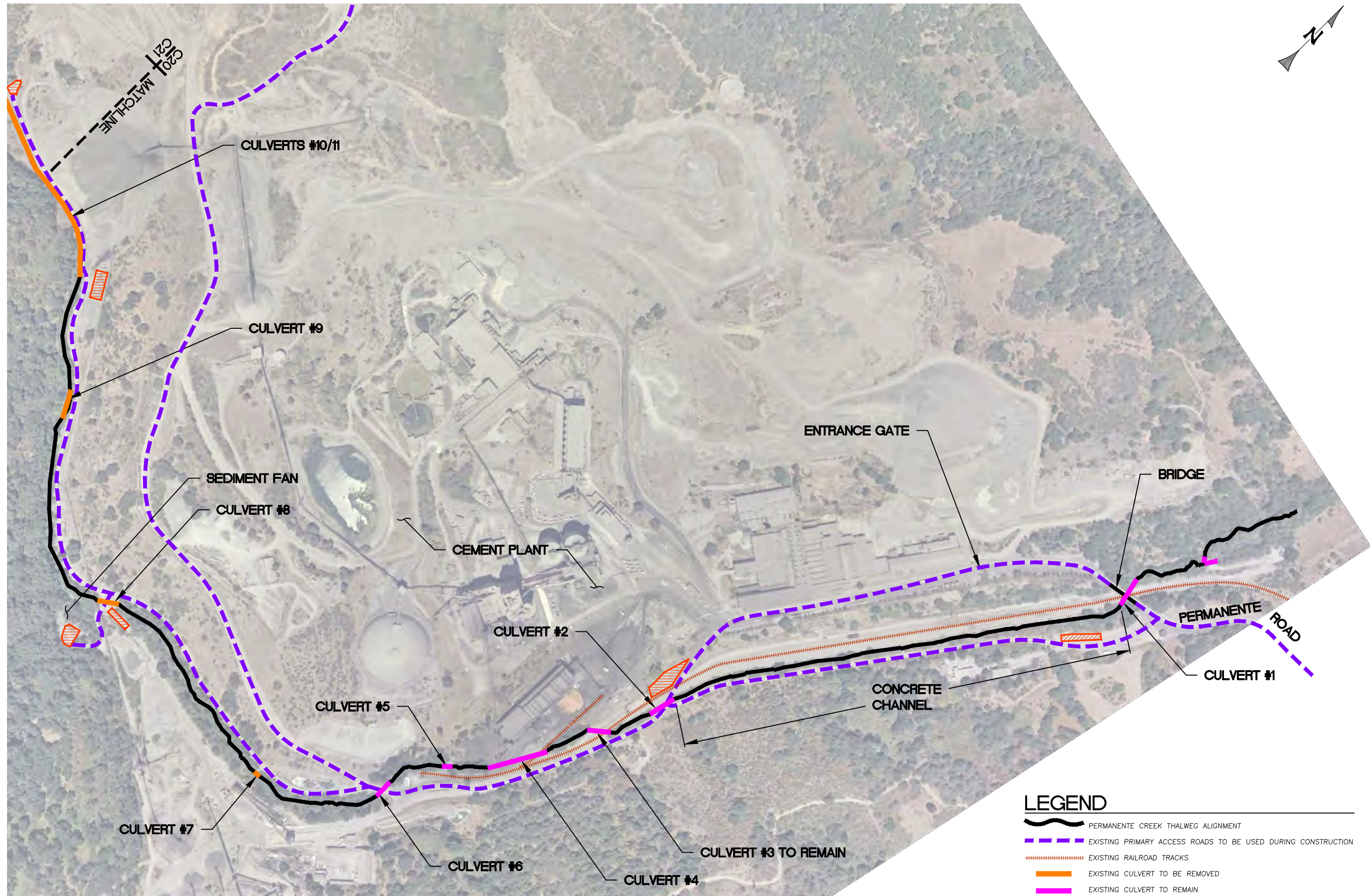
**TYPICAL CHANNEL TREATMENT SECTION**  
 SCALE: 1" = 5'



**MATERIAL REMOVAL AREA TRIBUTARY CHANNEL PROFILE A**  
 SCALE: 1" = 10'



**TYPICAL TRIBUTARY CHANNEL TREATMENT SECTION**  
 SCALE: 1" = 1'

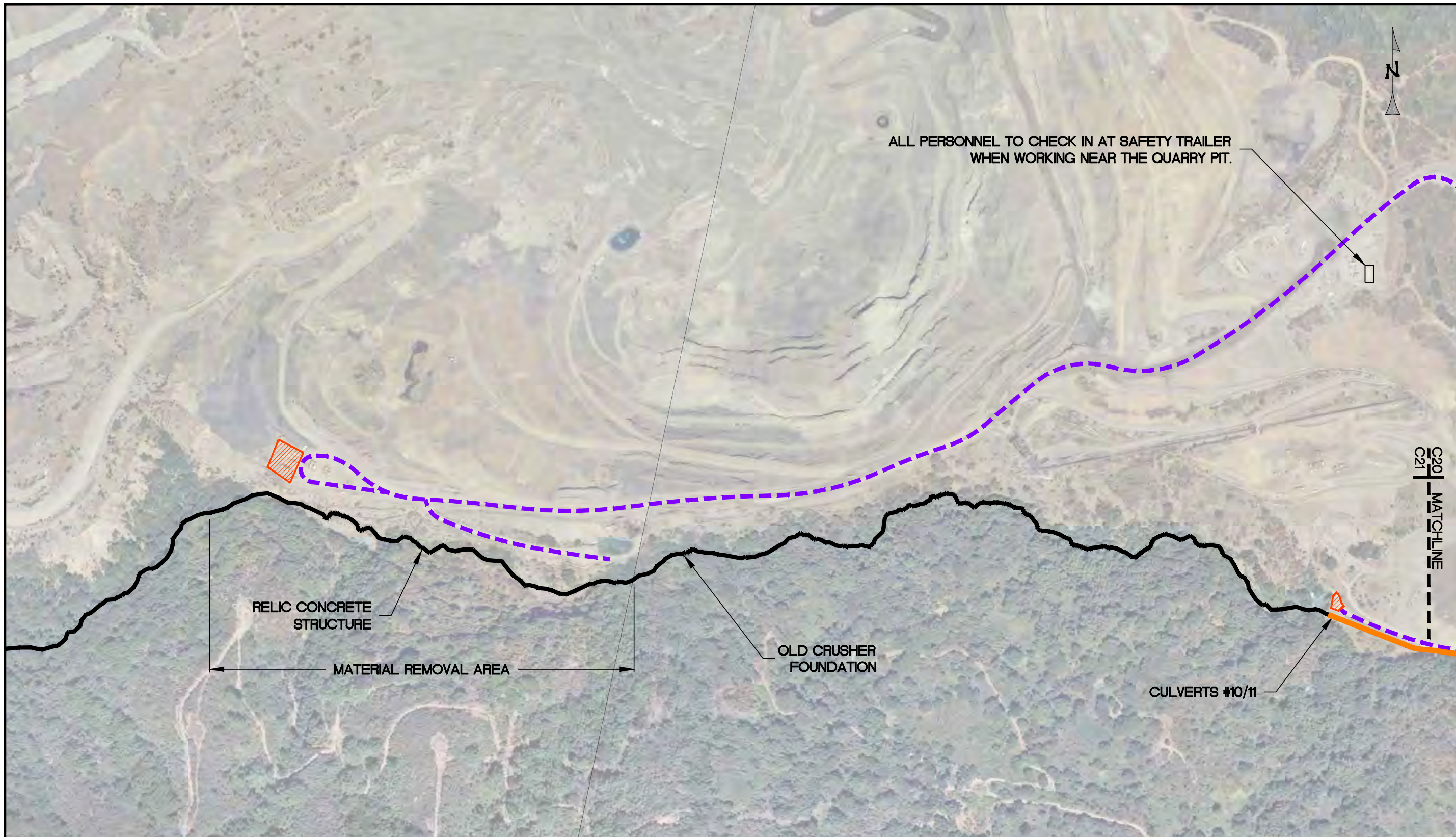


**LEGEND**

	PERMANENTE CREEK THALWEG ALIGNMENT
	EXISTING PRIMARY ACCESS ROADS TO BE USED DURING CONSTRUCTION
	EXISTING CULVERT TO BE REMOVED
	EXISTING CULVERT TO REMAIN
	STAGING AND STOCKPILE AREAS
	EXISTING RAILROAD TRACKS

**ACCESS AND STAGING PLAN**  
SCALE: 1"=200'

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PREPARED AT THE REQUEST OF: LEHIGH HANSON HEIDELBERG CEMENT GROUP	
ACCESS AND STAGING PLAN (1 OF 2)	
PERMANENTE CREEK RESTORATION PLAN 70% DESIGN SUBMITTAL	
DESIGNED BY: B.M.S. DRAWN BY: B.M.S. CHECKED BY: M.W.W. DATE: 04/27/15 JOB NO.: 13-016	BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 
C20	20 OF 25



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 GROUP

ACCESS AND STAGING PLAN  
 (2 OF 2)

PERMANENTE CREEK RESTORATION PLAN  
 70% DESIGN SUBMITTAL

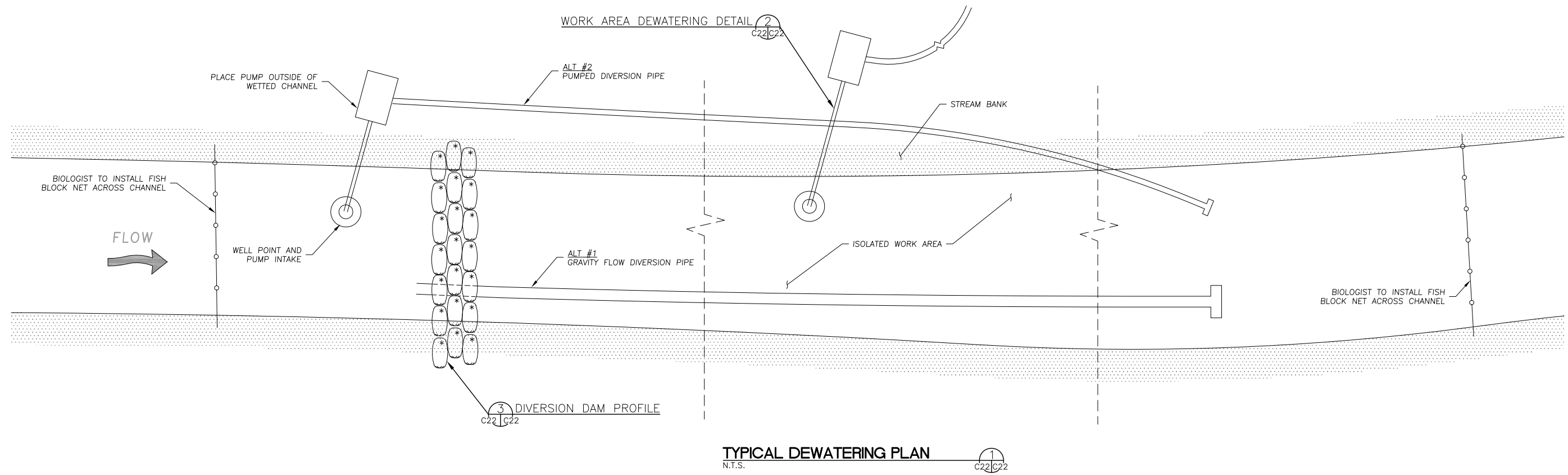
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C21 21 OF 25

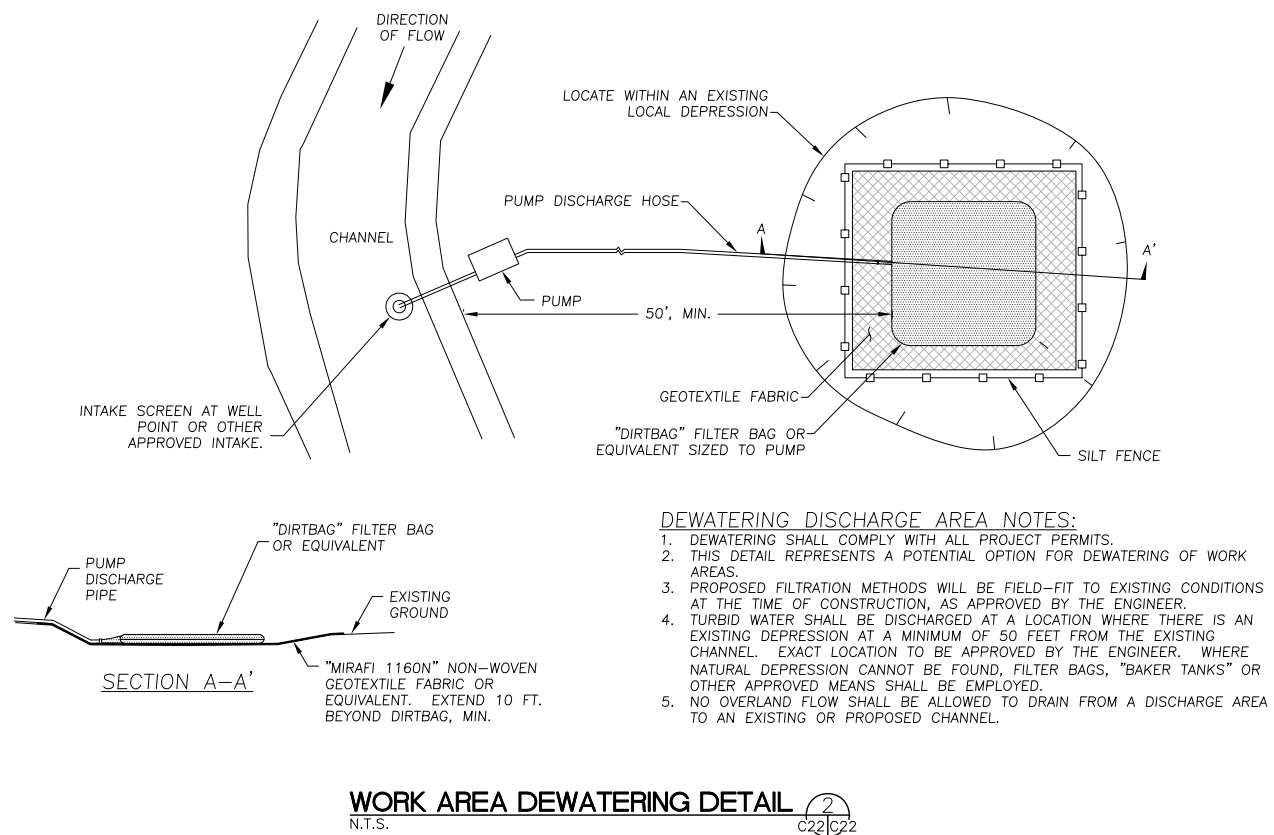
- LEGEND**
- PERMANENTE CREEK THALWEG ALIGNMENT
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  - EXISTING RAILROAD TRACKS
  - EXISTING CULVERT TO BE REMOVED
  - EXISTING CULVERT TO REMAIN
  - STAGING AND STOCKPILE AREAS

**ACCESS AND STAGING PLAN**  
 SCALE: 1" = 200'

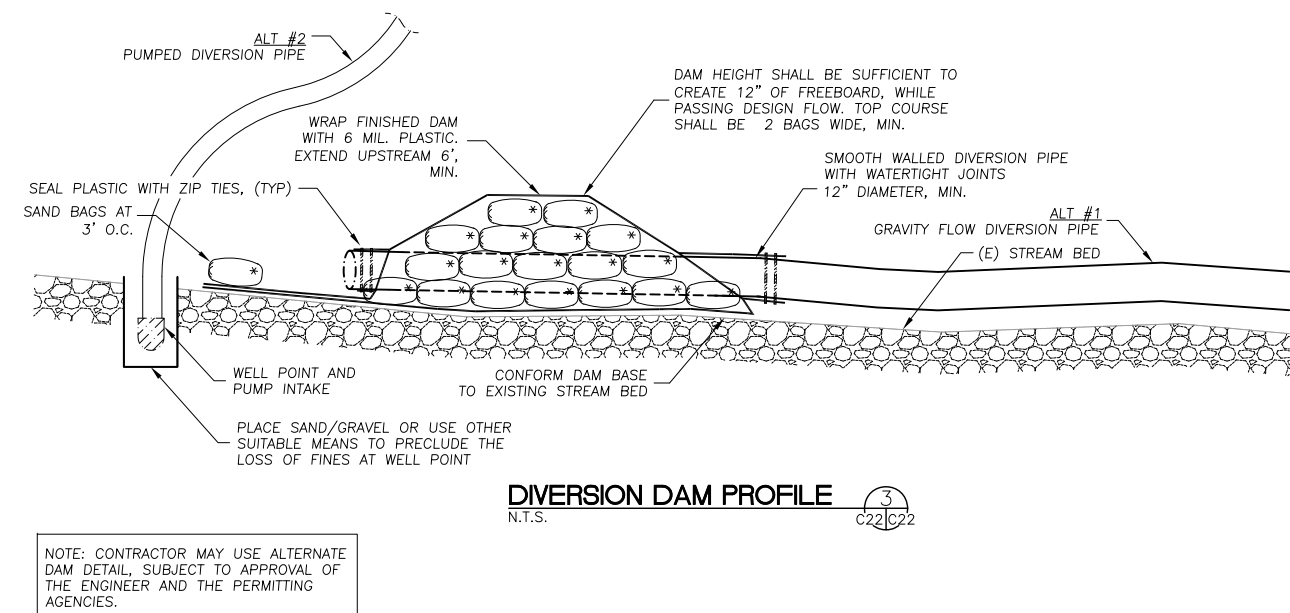


**DIVERSION NOTES**

1. THE DIVERSION PLAN SHOWN IS SCHEMATIC. CONTRACTOR SHALL SUBMIT A SITE DIVERSION/DEWATERING PLAN FOR APPROVAL BY THE ENGINEER. THE BASIC REQUIREMENTS OF THE DIVERSION PLAN ARE SPECIFIED IN THE SPECIAL PROVISIONS.
2. THE TYPICAL DEWATERING PLAN SHOWN DEPICTS TWO SEPARATE TYPES OF DIVERSION STRUCTURES TO BE INSTALLED AND MAINTAINED DURING CONSTRUCTION. THESE STRUCTURES MAY BE USED SEPARATELY OR IN TANDEM AS NECESSARY TO MEET WATER QUALITY REQUIREMENTS.
3. DIVERSION PIPES MAY BE RELOCATED DURING CONSTRUCTION.

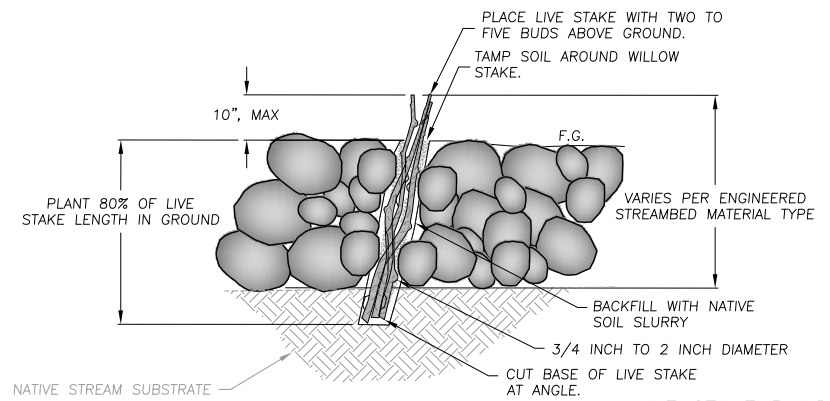


- DEWATERING DISCHARGE AREA NOTES:**
1. DEWATERING SHALL COMPLY WITH ALL PROJECT PERMITS.
  2. THIS DETAIL REPRESENTS A POTENTIAL OPTION FOR DEWATERING OF WORK AREAS.
  3. PROPOSED FILTRATION METHODS WILL BE FIELD-FIT TO EXISTING CONDITIONS AT THE TIME OF CONSTRUCTION, AS APPROVED BY THE ENGINEER.
  4. TURBID WATER SHALL BE DISCHARGED AT A LOCATION WHERE THERE IS AN EXISTING DEPRESSION AT A MINIMUM OF 50 FEET FROM THE EXISTING CHANNEL. EXACT LOCATION TO BE APPROVED BY THE ENGINEER. WHERE NATURAL DEPRESSION CANNOT BE FOUND, FILTER BAGS, "BAKER TANKS" OR OTHER APPROVED MEANS SHALL BE EMPLOYED.
  5. NO OVERLAND FLOW SHALL BE ALLOWED TO DRAIN FROM A DISCHARGE AREA TO AN EXISTING OR PROPOSED CHANNEL.



NOTE: CONTRACTOR MAY USE ALTERNATE DAM DETAIL, SUBJECT TO APPROVAL OF THE ENGINEER AND THE PERMITTING AGENCIES.





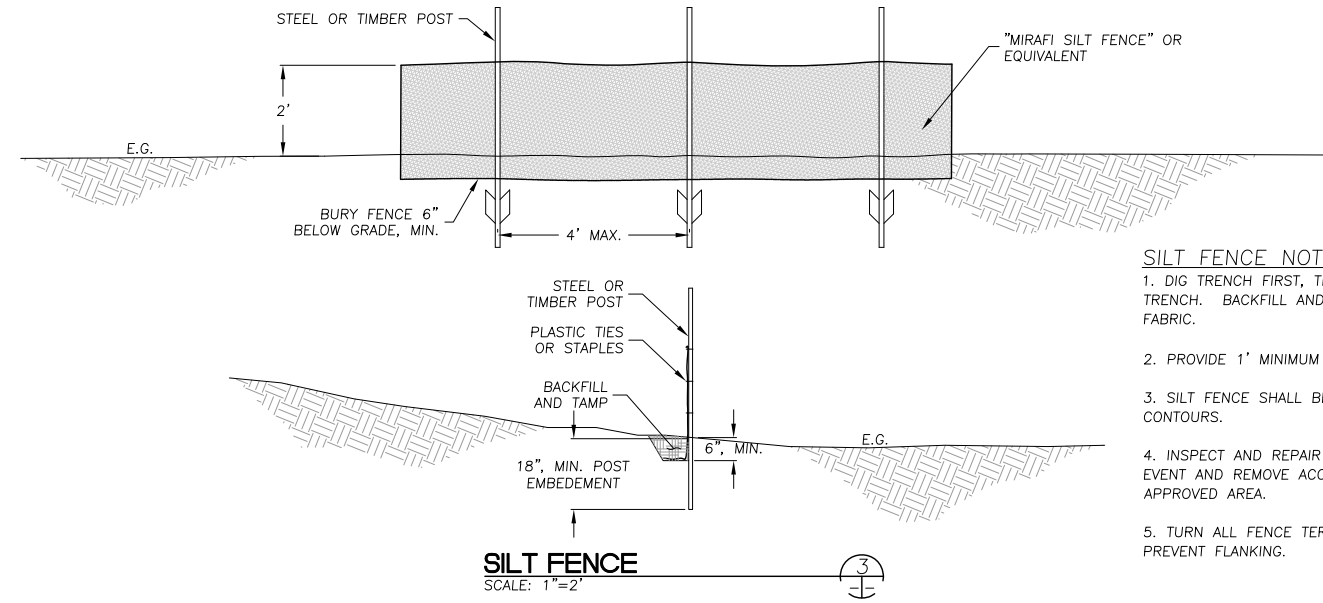
**LIVE STAKE BUNDLE**

N.T.S.



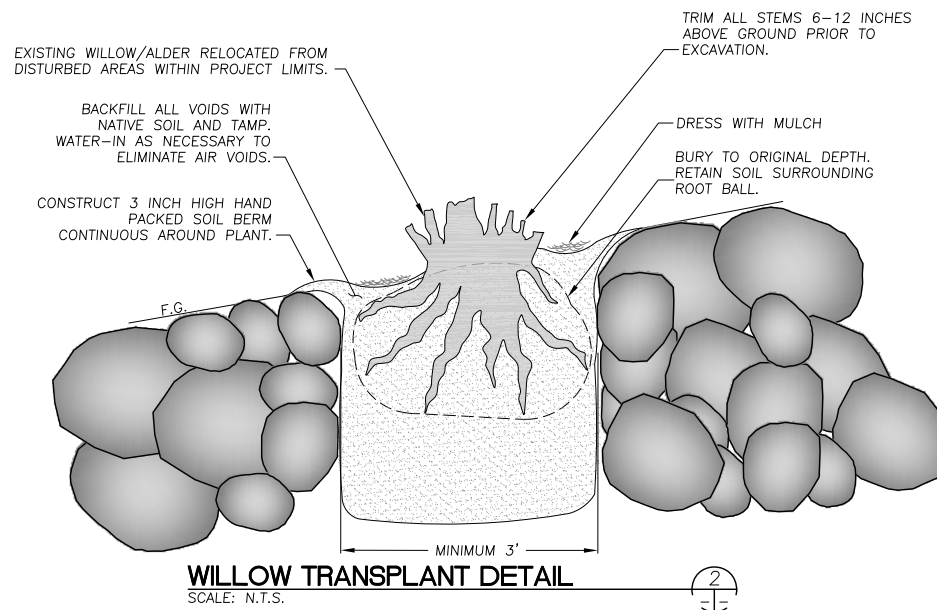
**LIVE STAKE BUNDLE NOTES:**

1. LIVE STAKE BUNDLES TO BE INSTALLED WITHIN ENGINEERED STREAMBED MATERIAL ON EXCAVATED FLOODPLAINS AND WITHIN FLOODPLAIN ARMOR AT 7' ON-CENTER SPACING.
2. LIVE STAKE BUNDLES SHALL CONTACT NATIVE SOIL.
3. LIVE STAKE BUNDLES TO CONSIST OF LIVE STAKES 3/4"-2" IN DIA. AT THE BASAL END.
4. TOP ENDS OF STAKES SHALL BE BLUNT AND BASAL ENDS SHALL BE ANGLED AT 45 DEGREES.
5. PLACE LIVE STAKE BUNDLES COINCIDENT WITH THE ENGINEERED STREAMBED MATERIAL AND FLOODPLAIN ARMOR.
6. AFTER PLACEMENT, BACKFILL AND WATER-JET ALL VOIDS AROUND LIVE STAKE BUNDLES TO REMOVE AIR POCKETS.
7. AFTER INSTALLATION CLEANLY CUT EACH STAKE TO LEAVE 10" EXPOSED, MAX.



**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. TURN ALL FENCE TERMINATIONS UPSLOPE TO PREVENT FLANKING.



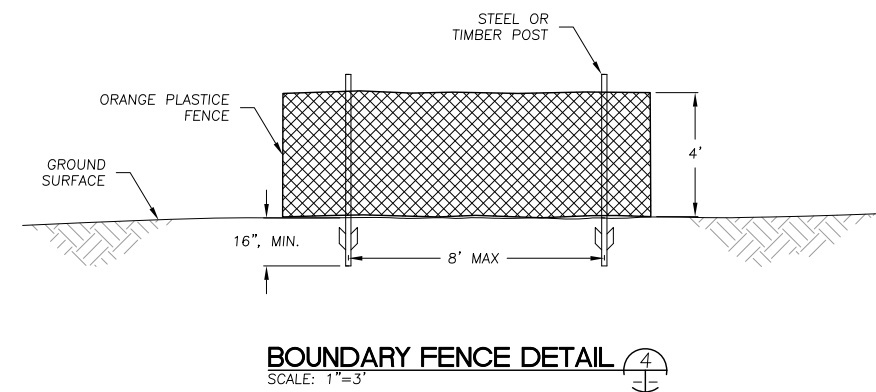
**WILLOW TRANSPLANT DETAIL**

SCALE: N.T.S.



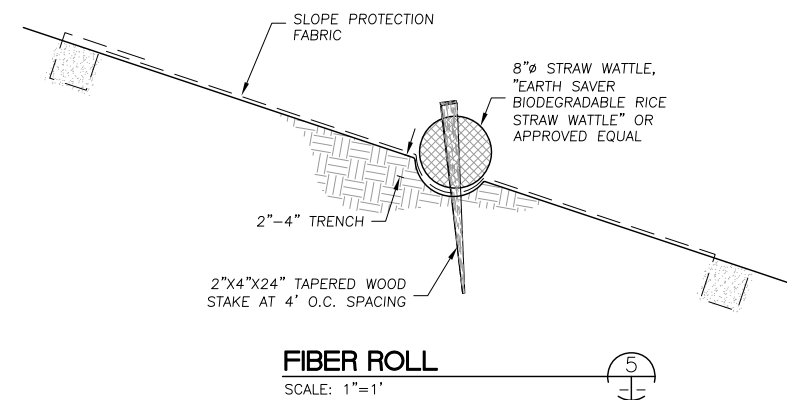
**WILLOW TRANSPLANT NOTES:**

1. SALVAGE:
  - 1.1. LIVE SHRUBS TO BE SALVAGED FOR TRANSPLANTING WILL BE FLAGGED IN THE FIELD BY THE ENGINEER.
  - 1.2. PRIOR TO REMOVAL, LOP BRANCHES TO 6-12 INCHES ABOVE THE ROOT CROWN, USING SHARP, CLEAN TOOLS.
  - 1.3. REMOVE THE ROOTWAD AND A MINIMUM EIGHTEEN INCH LAYER (AT SIDES AND BASE) OF ROOTS AND SOIL FROM THE GROUND AND EITHER TRANSPORT DIRECTLY TO THE PROPOSED LOCATION FOR INSTALLATION, OR STORE AS OUTLINED BELOW. PERFORM SALVAGE AND RELOCATION IN SUCH A MANNER AS TO MINIMIZE HANDLING AND ASSOCIATED DISTURBANCE TO THE SOIL BOUND BY THE ROOTS.
  - 1.4. IMMEDIATELY COVER LIVE SHRUBS WITH A SINGLE LAYER OF SATURATED BURLAP TO PREVENT DESICCATION OF THE ROOTS, AND PLACED UNDER SHADE COVERING IF THE LIVE SHRUB IS NOT PLANTED WITHIN FIFTEEN MINUTES OF SALVAGE. CONTRACTOR SHALL MAINTAIN SATURATION OF THE BURLAP AND SOIL MASS UNTIL PLANTED.
  - 1.5. DO NOT STACK LIVE SHRUBS ON TOP OF ONE ANOTHER DURING STORAGE.
  - 1.6. IN NO EVENT SHALL SALVAGED ROOTWADS BE STORED FOR PERIODS EXCEEDING 72 HOURS, WITHOUT PRIOR WRITTEN PERMISSION OF THE ENGINEER.
2. INSTALLATION
  - 2.1. PLACE LIVE SHRUBS AT FLOODPLAIN LOCATIONS FLAGGED IN THE FIELD BY THE ENGINEER.
  - 2.2. PLACE THE EXCAVATED ROOTWAD IN A PRE-PREPARED HOLE. FILL THE HOLE WITH WATER IMMEDIATELY PRIOR TO PLANTING. SCARIFY THE SIDES OF THE PLANTING HOLE PRIOR TO PLANTING.
  - 2.3. REMOVE BURLAP PRIOR TO PLANTING. BACKFILL THE HOLE HALF WAY WITH NATIVE SOIL AND JET WITH WATER TO REMOVE VOIDS AFTER PLACEMENT. CONTINUE TO ADD SOIL AND WATER UNTIL THE SATURATED BACKFILL MATERIAL COVERS THE TOP OF THE ROOT CROWN TO THE APPROXIMATE ORIGINAL DEPTH OF SOIL, PRIOR TO SALVAGE.



**BOUNDARY FENCE DETAIL**

SCALE: 1"=3"



**FIBER ROLL**

SCALE: 1"=1"



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PREPARED AT THE REQUEST OF:  
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MISCELLANEOUS DETAILS

PERMANENTE CREEK RESTORATION PLAN  
 70% DESIGN SUBMITTAL

DESIGNED BY: B.M.S.  
 DRAWN BY: M.W.W.  
 CHECKED BY: M.W.W.  
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C23  
 23 OF 25

**ROCK SPECIFICATIONS**

THERE SHALL BE THREE CLASSES OF ROCK SPECIFIED ON THIS PROJECT;  
 (1) - ENGINEERED STREAMBED MATERIAL  
 (2) - FLOODPLAIN ARMOR  
 (3) - ROCK SLOPE PROTECTION (R.S.P.)

ALL IMPORTED ROCK SHALL CONFORM TO THE FOLLOWING QUALITY REQUIREMENTS:

- 1) ROCK SHALL BE RESISTANT TO WEATHERING AND WATER ACTION AND FREE OF ORGANIC OR OTHER UNSUITABLE MATERIAL. DO NOT USE SHALE, ROCK WITH SHALE SEAMS, OR OTHER FISSILE OR FISSURED ROCK THAT MAY BREAK INTO SMALLER PIECES IN THE PROCESS OF HANDLING AND PLACING.
- 2) ROCK SHALL BE SUB-ROUNDED TO SUB-ANGULAR IN SHAPE.
- 3) ROCK SHALL BE GRANITE OR HAVE A SPECIFIC GRAVITY EQUAL TO OR GREATER THAN THAT OF GRANITE.
- 4) COLOR AND TEXTURE SHALL BE CONSTANT THROUGHOUT THE STOCKPILE.

SAMPLES OF ALL IMPORTED ROCK SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL, PRIOR TO STOCKPILING ON SITE.

INDIVIDUAL ROCK CLASSES AND PLACEMENT METHODS ARE FURTHER DEFINED AS FOLLOWS:

**1 - ENGINEERED STREAMBED MATERIAL**

ENGINEERED STREAMBED MATERIAL SHALL CONSIST OF SANDS, GRAVELS, COBBLES, AND BOULDERS FREE OF ORGANIC MATTER, AND MEETING THE FOLLOWING GRADATION SPECIFICATIONS (REFER TO DRAWINGS FOR TYPE LOCATIONS):

**TYPE 1 GRADATION:**

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
18"	100
12"	60-85
8"	40-60
4"	25-40
0.6"	10-20
No. 4	5-10

**TYPE 2 GRADATION:**

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
30"	100
24"	60-85
12"	40-60
4"	25-40
0.6"	10-20
No. 4	5-10

**TYPE 3 GRADATION:**

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
40"	100
30"	60-85
16"	40-60
8"	25-40
4"	15-25
0.6"	10-15
No. 4	5-10

**TYPE 4 GRADATION:**

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
48"	100
36"	60-85
20"	40-60
10"	25-40
4"	15-25
0.6"	10-15
No. 4	5-10

A) ENGINEERED STREAMBED MATERIAL SHALL BE PLACED TO THE LINES, GRADES AND DEPTHS SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. UNIFORMLY DISTRIBUTE LARGE STONES TO PRODUCE THE REQUIRED GRADATION OF ROCK. PREVENT CONTAMINATION OF ROCK MATERIALS BY EXCAVATION AND/OR EARTH MATERIALS.

B) FOLLOWING PLACEMENT, ROCK SURFACE SHALL BE JETTED WITH WATER TO IMPROVE COMPACTION AND EMBED THE FINES WITHIN THE MIX. JETTING SHALL START AT THE UPSTREAM LIMITS OF PLACEMENT AND PROGRESS DOWNSTREAM. JETTING SHALL CONTINUE UNTIL THE TURBIDITY LEVELS OF RUNOFF PRODUCED FROM THE JETTING PROCESS HAVE REACHED AN ACCEPTABLE LEVEL AS DETERMINED BY THE ENGINEER. ALL SEDIMENT-LADEN RUNOFF GENERATED BY THE JETTING OPERATIONS SHALL BE PUMPED TO A SETTLING TANK OR SIMILAR DEVICE TO REDUCE TURBIDITY TO ACCEPTABLE LEVELS, IN COMPLIANCE WITH PERMIT CONDITIONS, PRIOR TO DISCHARGE TO THE CREEK.

**2 - FLOODPLAIN ARMOR**

FLOODPLAIN ARMOR MATERIAL SHALL CONSIST OF SANDS, GRAVELS, COBBLES, AND BOULDERS FREE OF ORGANIC MATTER, AND MEETING THE FOLLOWING GRADATION SPECIFICATIONS (REFER TO DRAWINGS FOR TYPE LOCATIONS):

**TYPE 1 GRADATION:**

TYPE 1 FLOODPLAIN ARMOR SHALL COMPLY WITH THE ENGINEERED STREAMBED MATERIAL TYPE 1 GRADATION.

**TYPE 2 GRADATION:**

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
24"	100
18"	60-85
12"	40-60
6"	25-40
3"	10-25
No. 4	5-15
No. 10	0-5

**TYPE 3 GRADATION:**

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
30"	100
24"	60-85
18"	40-60
6"	25-40
3"	10-25
No. 4	5-15
No. 10	0-5

**TYPE 4 GRADATION:**

TYPE 4 FLOODPLAIN ARMOR SHALL COMPLY WITH THE ENGINEERED STREAMBED MATERIAL TYPE 4 GRADATION.

A) FLOODPLAIN ARMOR MATERIAL SHALL BE PLACED TO THE LINES, GRADES AND DEPTHS SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. UNIFORMLY DISTRIBUTE LARGE STONES TO PRODUCE THE REQUIRED GRADATION OF ROCK. PREVENT CONTAMINATION OF ROCK MATERIALS BY EXCAVATION AND/OR EARTH MATERIALS.

B) FOLLOWING PLACEMENT, ROCK SURFACE SHALL BE JETTED WITH WATER TO IMPROVE COMPACTION AND EMBED THE FINES WITHIN THE MIX. JETTING SHALL START AT THE UPSTREAM LIMITS OF PLACEMENT AND PROGRESS DOWNSTREAM. JETTING SHALL CONTINUE UNTIL THE TURBIDITY LEVELS OF RUNOFF PRODUCED FROM THE JETTING PROCESS HAVE REACHED AN ACCEPTABLE LEVEL AS DETERMINED BY THE ENGINEER. ALL SEDIMENT-LADEN RUNOFF GENERATED BY THE JETTING OPERATIONS SHALL BE PUMPED TO A SETTLING TANK OR SIMILAR DEVICE TO REDUCE TURBIDITY TO ACCEPTABLE LEVELS, IN COMPLIANCE WITH PERMIT CONDITIONS, PRIOR TO DISCHARGE TO THE CREEK.

**3 - ROCK SLOPE PROTECTION**

A) ROCK SLOPE PROTECTION SHALL CONFORM TO SECTION 72-2.02 MATERIALS OF THE STANDARD SPECIFICATIONS FOR 1/2 TON ROCK.

B) BACKFILL MATERIAL CONSISTING OF GRANULAR NATIVE STREAMBED MATERIAL SHALL BE USED TO BACKFILL VOIDS WITHIN THE ROCK SLOPE PROTECTION. IF GRANULAR NATIVE MATERIAL IS NOT AVAILABLE CONTRACTOR SHALL BLEND SAND, GRAVELS, AND NATIVE SOILS TO THE SATISFACTION OF THE ENGINEER FOR USE IN BACKFILLING THE RSP VOIDS.

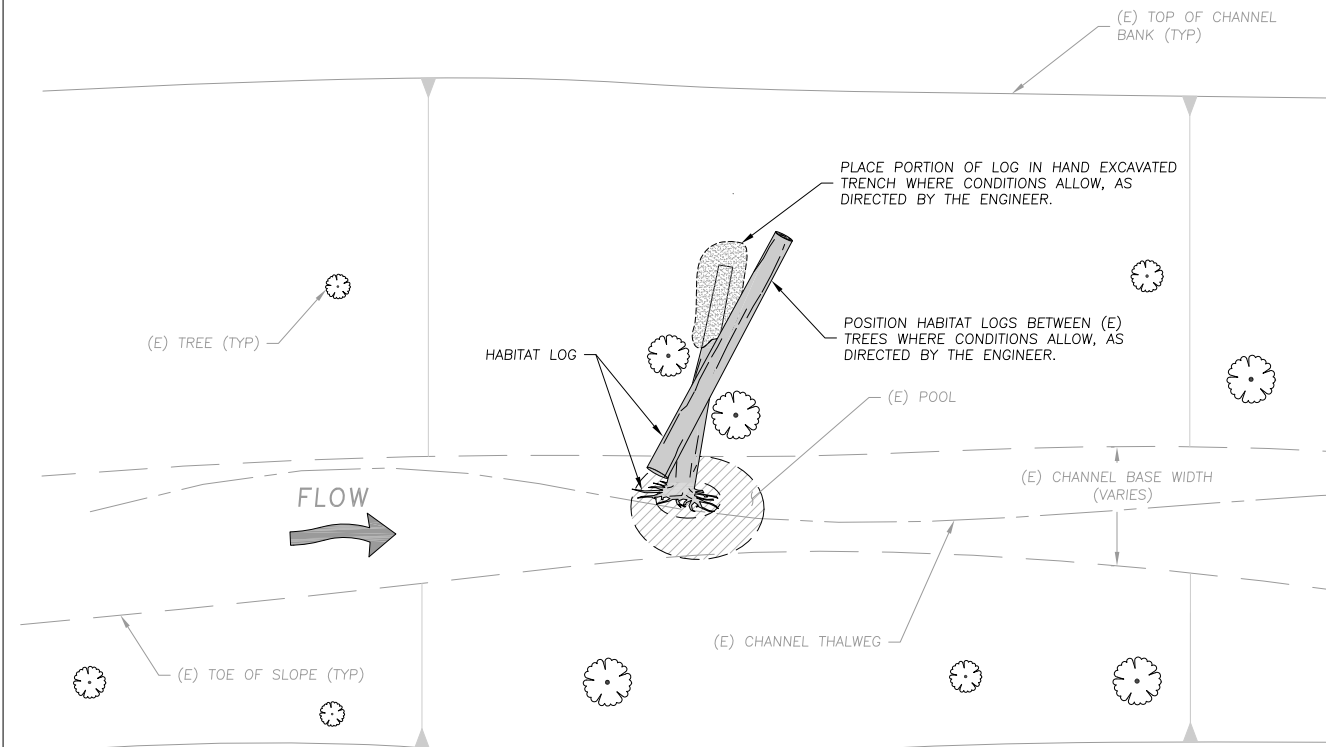
C) BACKFILL MATERIAL SHALL BE PLACED TO MATCH THE FINISHED SURFACE OF THE RSP AND WATER JETTED TO FILL ALL VOIDS, AS DIRECTED BY THE ENGINEER.

**ROCK SLOPE PROTECTION FABRIC**

1. GEOTEXTILE FABRIC SHALL BE PLACED BELOW ROCK SLOPE PROTECTION.
2. GEOTEXTILE FABRIC SHALL BE NON-WOVEN, GEOTEX 1601, AS MANUFACTURED BY SYNTHETIC INDUSTRIES; OR MIRAFI 1160N, AS MANUFACTURED BY TC MIRAFI; OR APPROVED EQUAL.

**INSTALLATION**

1. PREPARE SURFACE TO RECEIVE THE GEOTEXTILE TO A RELATIVELY SMOOTH CONDITION, FREE OF OBSTRUCTIONS, DEPRESSIONS, DEBRIS, AND SOFT OR LOW DENSITY POCKETS OF MATERIAL.
2. PLACE AND SECURE A LAYER OF GEOTEXTILE FABRIC BELOW THE FIRST ROCK LAYER. AT THE TIME OF INSTALLATION, THE GEOTEXTILE SHALL BE REJECTED IF IT HAS DEFECTS, RIPS, HOLES, FLAWS, DETERIORATION, OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORTATION, OR STORAGE.
3. PLACE GEOTEXTILE WITH THE LONG DIMENSION PARALLEL TO FLOW AND LAID SMOOTH AND FREE OF TENSION, STRESS, FOLDS, WRINKLES, OR CREASES.



**HABITAT LOG PLAN**  
SCALE: 1" = 5'

**HABITAT LOG NOTES:**

**1. GENERAL**

- 1.1. PLACE TWO HABITAT LOGS AT FOUR LOCATIONS PER REACH IN REACHES R14 TO R16 AND R19 TO R21 (SEE SHEET C2 FOR REACH LOCATIONS).
- 1.2. HABITAT LOGS SHALL BE LOCALLY SOURCED FROM EXISTING LIVE AND DEAD TREES. TREES TO BE SALVAGE WILL BE FLAGGED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE PROJECT ENGINEER AND ARBORIST. SALVAGE DOWNED TREES WHERE POSSIBLE, PREFERABLY WITH THE ROOTWAD INTACT. IF DOWNED LOGS ARE NOT AVAILABLE, THE PROJECT ARBORIST WILL IDENTIFY TREES TO BE FELLE. LOGS SHALL BE OAK, WILLOW, OR ALDER.
- 1.3. LOCATIONS FOR HABITAT LOG PLACEMENT WILL BE DETERMINED BY THE ENGINEER AND FISHERIES BIOLOGIST AT THE TIME OF CONSTRUCTION. FINAL LOCATIONS SHALL BE BASED ON LOCAL GEOMORPHIC CONDITIONS AND THE AVAILABILITY OF EXISTING POOLS AND SUITABLE LOGS, MEETING THE CRITERIA BELOW.
- 1.4. INCORPORATE HABITAT LOGS INTO EXISTING POOLS WHEN LOCALLY AVAILABLE.

**2. LOG PLACEMENT AND DIMENSIONS**

- 2.1. HABITAT LOG DESIGNS ARE SHOWN CONCEPTUALLY DUE TO THE INHERENT VARIABILITY OF MATERIAL PROPERTIES. THE DESIGN REQUIRES THAT THE ENGINEER OBSERVE INSTALLATION OF THE HABITAT LOGS TO ENSURE THE INTENT OF THE DESIGN IS MET. OBSERVATIONS WILL INCLUDE LOG SELECTION, PLACEMENT, AND ANCHORING STABILIZATION.
- 2.2. HABITAT LOGS SHALL BE A MINIMUM OF 12 FT. IN LENGTH AND 1 FT. IN DIAMETER, ALONG THE LENGTH OF THE LOG.
- 2.3. POSITION HABITAT LOGS BETWEEN EXISTING TREES WITH A PORTION OF THE LOG BURIED IN A TRENCH WHERE CONDITIONS ALLOW. CABLING WILL NOT BE EMPLOYED THEREFORE, LOGS MAY BE MOBILIZED DURING LARGE FLOODING EVENTS.

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**NOT FOR CONSTRUCTION**

PREPARED AT THE REQUEST OF:  
**LEHIGH HANSON**  
**HEIDELBERG CEMENT**  
**GROUP**

**HABITAT LOG**  
**DETAILS AND**  
**ROCK**  
**SPECIFICATIONS**

**PERMANENTE CREEK**  
**RESTORATION PLAN**  
**70% DESIGN SUBMITTAL**

DESIGNED BY: B.M.Z.  
 DRAWN BY: B.M.Z.  
 CHECKED BY: M.W.W.  
 DATE: 04/27/15  
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**GENERAL NOTES CONTINUED**

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE MAY 2010 EDITION OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS, ISSUED BY THE DEPARTMENT OF TRANSPORTATION (HEREAFTER REFERRED TO AS "STANDARD SPECIFICATIONS").
2. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER OR A DESIGNATED REPRESENTATIVE SHALL MONITOR THE CONSTRUCTION PROCESS, AS NECESSARY, TO ENSURE PROPER INSTALLATION PROCEDURES.
3. EXISTING UNDERGROUND UTILITY LOCATIONS:
  - A. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL CONTACT ALL UTILITIES COMPANIES WITH REGARD TO WORKING OVER, UNDER, OR AROUND EXISTING FACILITIES AND TO OBTAIN INFORMATION REGARDING RESTRICTIONS THAT ARE REQUIRED TO PREVENT DAMAGE TO THE FACILITIES.
  - B. LOCATIONS SHOWN ARE COMPILED FROM INFORMATION SUPPLIED BY THE APPROPRIATE UTILITY AGENCIES AND FROM FIELD MEASUREMENTS TO ABOVE GROUND FEATURES READILY VISIBLE AT THE TIME OF SURVEY. LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND DEPTH OF UNDERGROUND UTILITIES.
  - C. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCATION AND/OR PROTECTION OF ALL EXISTING AND PROPOSED PIPING, UTILITIES, TRAFFIC SIGNAL EQUIPMENT (BOTH ABOVE GROUND AND BELOW GROUND), STRUCTURES, AND ALL OTHER EXISTING IMPROVEMENTS THROUGHOUT CONSTRUCTION.
  - D. PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION, CONTRACTOR SHALL DISCOVER OR VERIFY THE ACTUAL DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES AND POTHOLE THOSE AREAS WHERE POTENTIAL CONFLICTS ARE LIKELY OR DATA IS OTHERWISE INCOMPLETE.
  - E. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT EXISTING UTILITIES DURING CONSTRUCTION OPERATIONS, AND SHALL BE SOLELY RESPONSIBLE FOR THE COST OF REPAIR/REPLACEMENT OF ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CONTRACTOR TO CALL UNDERGROUND SERVICE ALERT (1-800-642-2444) TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO COMMENCING CONSTRUCTION.
  - F. UPON LEARNING OF THE EXISTENCE AND/OR LOCATIONS OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE CITY BY TELEPHONE AND IN WRITING.
  - G. UTILITY RELOCATIONS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT FACILITIES WILL BE PERFORMED BY THE UTILITY COMPANY, UNLESS OTHERWISE NOTED.
12. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, HE SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE FULLY INFORMED OF AND TO COMPLY WITH ALL LAWS, ORDINANCES, CODES, REQUIREMENTS AND STANDARDS WHICH IN ANY MANNER AFFECT THE COURSE OF CONSTRUCTION OF THIS PROJECT, THOSE ENGAGED OR EMPLOYED IN THE CONSTRUCTION AND THE MATERIALS USED IN THE CONSTRUCTION.
14. ANY TESTS, INSPECTIONS, SPECIAL OR OTHERWISE, THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR THESE PLANS, SHALL BE DONE BY AN INDEPENDENT INSPECTION COMPANY. JOB SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN OFFICIAL INSPECTION. OBSERVATION AND TESTING SERVICES ARE REQUIRED BY THE GEOTECHNICAL ENGINEER AS OUTLINED IN THE GEOTECHNICAL REPORT. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE WORK IS COORDINATED WITH THE GEOTECHNICAL ENGINEER AND THAT REQUIRED TESTS AND INSPECTIONS ARE PERFORMED.
15. PROJECT SCHEDULE: PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL PROVIDE ENGINEER A DETAILED CONSTRUCTION SCHEDULE FOR APPROVAL. THE CONTRACTOR SHALL NOT BEGIN ANY CONSTRUCTION WORK UNTIL THE PROJECT SCHEDULE AND WORK PLAN IS APPROVED BY THE ENGINEER. ALL CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE ENGINEER SO THAT THE QUALITY OF WORK CAN BE CHECKED FOR APPROVAL. THE CONTRACTOR SHALL PURSUE WORK IN A CONTINUOUS AND DILIGENT MANNER TO ENSURE A TIMELY COMPLETION OF THE PROJECT.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, PERMITTING, INSTALLATION, AND MAINTENANCE OF ANY AND ALL TRAFFIC CONTROL MEASURES DEEMED NECESSARY.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GENERAL SAFETY DURING CONSTRUCTION. ALL WORK SHALL CONFORM TO PERTINENT SAFETY REGULATIONS AND CODES. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAINTAINING ALL WARNING SIGNS AND DEVICES NECESSARY TO SAFEGUARD THE GENERAL PUBLIC AND THE WORK, AND PROVIDE FOR THE PROPER AND SAFE ROUTING OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE CONSTRUCTION OF THIS PROJECT.
18. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTION LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL. NEITHER THE PROFESSIONAL ACTIVITIES OF CONSULTANT NOR THE PRESENCE OF CONSULTANT OR HIS OR HER EMPLOYEES OR SUB-CONSULTANTS AT A CONSTRUCTION SITE SHALL RELIEVE THE CONTRACTOR AND ITS SUBCONTRACTORS OF THEIR RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND APPLICABLE HEALTH OR SAFETY REQUIREMENTS OF ANY REGULATORY AGENCY OR OF STATE LAW.
19. THE CONTRACTOR SHALL MAINTAIN A CURRENT, COMPLETE, AND ACCURATE RECORD OF ALL AS-BUILT DEVIATIONS FROM THE CONSTRUCTION AS SHOWN ON THESE DRAWINGS AND SPECIFICATIONS, FOR THE PURPOSE OF PROVIDING THE ENGINEER OF RECORD WITH A BASIS FOR THE PREPARATION OF RECORD DRAWINGS.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SITE IN A NEAT AND ORDERLY MANNER THROUGHOUT THE CONSTRUCTION PROCESS. ALL MATERIALS SHALL BE STORED WITHIN APPROVED STAGING AREAS.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF ALL SURVEY MONUMENTS OR PROPERTY CORNERS. DISTURBED MONUMENTS SHALL BE RESTORED BACK TO THEIR ORIGINAL LOCATION AND SHALL BE CERTIFIED BY A REGISTERED CIVIL ENGINEER OR LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

**DEMOLITION NOTES**

1. THE REMOVAL OF EXISTING IMPROVEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 15 OF THE STANDARD SPECIFICATIONS.
2. EXISTING IMPROVEMENTS, ADJACENT PROPERTY, TREES AND PLANTS, UTILITIES AND OTHER FACILITIES THAT ARE NOT REMOVED SHALL BE PROTECTED FROM INJURY OR DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS IN ACCORDANCE WITH SECTION 15.1 OF THE STANDARD SPECIFICATIONS.

**EARTHWORK NOTES**

1. GRADING SUMMARY:  
 TOTAL CUT VOLUME = 420,000 CY  
 TOTAL FILL VOLUME = 5,000 CY

THE ABOVE QUANTITIES ARE APPROXIMATE IN-PLACE VOLUMES CALCULATED AS THE DIFFERENCE BETWEEN EXISTING GROUND AND THE PROPOSED FINISH GRADE, PREPARED FOR PERMITTING PURPOSES ONLY. EXISTING GROUND IS DEFINED BY THE TOPOGRAPHIC CONTOURS AND/OR SPOT ELEVATIONS ON THE PLAN. PROPOSED FINISH GRADE IS DEFINED AS THE DESIGN SURFACE ELEVATION OF EARTH TO BE CONSTRUCTED, AS SHOWN ON THE DRAWINGS. THE QUANTITIES HAVE NOT BEEN FACTORED TO INCLUDE ALLOWANCES FOR BULKING, CLEARING AND GRUBBING, SUBSIDENCE, SHRINKAGE, OVER EXCAVATION, AND RECOMPACTION, UNDERGROUND UTILITY AND SUBSTRUCTURE SPOILS AND CONSTRUCTION METHODS. QUANTITIES ARE SUBJECT TO CHANGE, PENDING EXCAVATION AND INSPECTION OF SUBSURFACE CONDITIONS AT THE "ROCK PILE" AND "OVERBURDEN REMOVAL" AREAS, WHICH WILL ULTIMATELY DETERMINE FINISH GRADE AT THESE TWO AREAS.

THE CONTRACTOR SHALL PERFORM AN INDEPENDENT EARTHWORK ESTIMATE FOR THE PURPOSE OF PREPARING BID PRICES FOR EARTHWORK. THE BID PRICE SHALL INCLUDE COSTS FOR ANY NECESSARY IMPORT AND PLACEMENT OF EARTH MATERIALS OR THE EXPORT AND PROPER DISPOSAL OF EXCESS OR UNSUITABLE EARTH MATERIALS.

2. ALL EXCESS SOILS SHALL BE REMOVED TO AN APPROVED DUMP SITE OR DISPOSED OF ON SITE AT A LOCATION TO BE APPROVED BY THE ENGINEER, IN A MANNER THAT WILL NOT CAUSE EROSION,
3. CLEARING AND GRUBBING, SUBGRADE PREPARATION AND EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 19 OF THE STANDARD SPECIFICATIONS, THESE DRAWINGS, AND THE TECHNICAL SPECIFICATIONS.
4. UNSUITABLE SOIL OR MATERIALS, NOT TO BE INCLUDED IN THE WORK INCLUDE:
  - A. ORGANIC MATERIALS SUCH AS PEAT, MULCH, ORGANIC SILT OR SOD.
  - B. SOILS CONTAINING EXPANSIVE CLAYS.
  - C. MATERIAL CONTAINING EXCESSIVE MOISTURE.
  - D. POORLY GRADED COURSE MATERIAL, PARTICLE SIZE IN EXCESS OF 6 INCHES.
  - E. MATERIAL WHICH WILL NOT ACHIEVE SPECIFIED DENSITY OR BEARING.
5. FINE GRADING ELEVATIONS AND SLOPES NOT SHOWN SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO OBTAIN DRAINAGE IN THE DIRECTION INDICATED. ALL FINAL GRADING SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
6. THE TOP 6" OF SUBGRADE UNDER ALL PAVED SURFACES SUBJECT TO VEHICULAR USE SHALL BE COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION, IN ACCORDANCE WITH ASTM-D1557 STANDARD. ALL OTHER FILL TO BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DENSITY AS DETERMINED BY ASTM-D1557 AND SO CERTIFIED BY TESTS AND REPORTS FROM THE ENGINEER IN CHARGE OF THE GRADING CERTIFICATION.
7. FILL MATERIAL SHALL BE SPREAD IN LIFTS OF APPROXIMATELY 8 INCHES, MOISTENED OR DRIED TO NEAR OPTIMUM MOISTURE CONTENT AND RECOMPACTED. THE MATERIALS FOR ENGINEERED FILL SHALL BE APPROVED BY A REGISTERED GEOTECHNICAL ENGINEER. ANY IMPORTED MATERIALS MUST BE APPROVED BEFORE BEING BROUGHT TO THE SITE. THE MATERIALS USED SHALL BE FREE OF ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS.
8. ALL CONTACT SURFACES BETWEEN ORIGINAL GROUND AND RECOMPACTED FILL SHALL BE EITHER HORIZONTAL OR VERTICAL. ALL ORGANIC MATERIAL SHALL BE REMOVED AND THE REMAINING SURFACE SCARIFIED TO A DEPTH OF AT LEAST 12 INCHES, UNLESS DEEPER EXCAVATION IS REQUIRED BY THE ENGINEER.

**GENERAL EROSION CONTROL NOTES**

1. A DETAILED EROSION AND SEDIMENT CONTROL PLAN WILL BE PREPARED BY THE ENGINEER, PRIOR TO FINALIZATION OF THE CONSTRUCTION DOCUMENTS.
2. CONTRACTOR SHALL BE FAMILIAR WITH THE CONDITIONS OF APPROVAL OF ALL REQUIRED PROJECT PERMITS AND SHALL IMPLEMENT ALL REQUIRED BMP'S PRIOR TO COMMENCING GRADING OPERATIONS
3. CONTRACTOR SHALL UTILIZE ONLY THE APPROVED HAUL ROADS AND ACCESS POINTS (AS SHOWN ON THE DRAWINGS) FOR TRANSPORT OF MATERIALS AND EQUIPMENT.
4. BETWEEN OCTOBER 15 AND APRIL 15, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION, SUCH PROTECTION MAY CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.
5. A STANDBY CREW SHALL BE AVAILABLE AT ALL TIMES FOR EMERGENCY WORK THAT MAY BE REQUIRED DURING THE RAINY SEASON (OCTOBER 15 THROUGH APRIL 15). NECESSARY MATERIALS SHALL BE AVAILABLE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES.
6. CONSTRUCT TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE ENGINEER TO CONTROL DRAINAGE WHICH HAS BEEN AFFECTED BY GRADING AND/OR TRENCHING OPERATIONS.
7. CONSTRUCT AND MAINTAIN EROSION CONTROL MEASURES TO PREVENT THE DISCHARGE OF EARTHEN MATERIALS TO THE CREEK FROM DISTURBED AREAS UNDER CONSTRUCTION AND FROM COMPLETED CONSTRUCTION AREAS.
8. INSTALL ALL PROTECTIVE DEVICES AT THE END OF EACH WORK DAY WHEN THE FIVE-DAY RAIN PROBABILITY EQUALS OR EXCEEDS 50 PERCENT AS DETERMINED FROM THE NATIONAL WEATHER SERVICE FORECAST OFFICE: WWW.SRH.NOAA.GOV.
9. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM SEDIMENT CONTROL MEASURES.
10. THE CONTRACTOR IS RESPONSIBLE TO KEEP IN FORCE ALL EROSION CONTROL DEVICES AND TO MODIFY THOSE DEVICES AS SITE PROGRESS DICTATES.
11. THE CONTRACTOR SHALL MONITOR THE EROSION CONTROL DEVICES DURING STORMS AND MODIFY THEM IN ORDER TO PREVENT PROGRESS OF ANY ONGOING EROSION.
12. THE CONTRACTOR SHALL CONTACT THE ENGINEER IN THE EVENT THAT THE EROSION CONTROL PLAN AS DESIGNED REQUIRES ANY SUBSTANTIAL REVISIONS.

**DIVERSION NOTES**

1. GENERAL
  - 1.1. DIVERSION SYSTEMS SHALL BE INSTALLED TO DEWATER THE INDIVIDUAL PROJECT AREAS TO FACILITATE IN-STREAM CONSTRUCTION AND TO REDUCE THE POTENTIAL IMPACTS TO WATER QUALITY DOWNSTREAM OF THE PROJECT SITES.
  - 1.2. THE CONTRACTOR SHALL CONFIRM THAT A FAVORABLE LONG TERM WEATHER FORECAST (1 WEEK MIN.) IS OBSERVED PRIOR TO PLACEMENT OF DIVERSION STRUCTURE.
  - 1.3. PRIOR TO PLACEMENT OF DIVERSION STRUCTURE, FISH SHALL BE REMOVED FROM THE DIVERTED REACH, IN ACCORDANCE WITH SECTION 2.
  - 1.4. DIVERSION SYSTEM INSTALLATION SHALL NORMALLY BEGIN IN THE DOWNSTREAM AREA AND CONTINUE IN AN UPSTREAM DIRECTION. THE FLOW SHALL BE DIVERTED ONLY WHEN THE DIVERSION CONSTRUCTION IS COMPLETE.
  - 1.5. FOLLOWING ENGINEER'S APPROVAL OF THE COMPLETED WORK, DIVERSION SHALL BE REMOVED IMMEDIATELY, IN AN UPSTREAM DIRECTION.
2. FISH REMOVAL
  - 2.1. FISH SHALL BE REMOVED FROM THE DIVERTED REACHES BY A QUALIFIED FISHERIES BIOLOGIST, LICENSED FOR SUCH ACTIVITIES BY THE NATIONAL MARINE FISHERIES SERVICE AND THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE.
  - 2.2. BLOCK NETS SHALL BE PROVIDED AND INSTALLED BY THE FISHERIES BIOLOGIST. BLOCK NETS SHALL BE MAINTAINED BY THE CONTRACTOR BOTH UPSTREAM AND DOWNSTREAM OF THE WORK AREA, THROUGHOUT THE PERIOD OF CONSTRUCTION. MAINTENANCE INCLUDES PERIODIC REMOVAL OF ACCUMULATED DEBRIS, AS NECESSARY TO ENSURE FUNCTION. BLOCK NETS SHALL BE REMOVED BY THE FISHERIES BIOLOGIST AFTER THE DIVERSION IS REMOVED AND THE IN CHANNEL WORK AREA IS RE-WATERED.
3. DIVERSION SYSTEM
  - 3.1. THE CONTRACTOR SHALL INSTALL A TEMPORARY SEALED SANDBAG DAM TO CAPTURE AND DIVERT STREAM FLOW UPSTREAM OF THE PROJECT SITE. THE DAM AND METHOD OF SEALING SHALL BE PLACED AT AN APPROPRIATE DEPTH TO CAPTURE SUBSURFACE STREAM FLOW, AS NEEDED TO DEWATER THE STREAMBED.
  - 3.2. THE CONTRACTOR SHALL MAINTAIN THE DIVERSION DAM DURING THE COURSE OF CONSTRUCTION WORK.
  - 3.3. THE DIVERSION STRUCTURE SHALL BE CONSTRUCTED AS SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD.
  - 3.4. IN THE EVENT OF A SIGNIFICANT STORM, THE CONTRACTOR SHALL BE PREPARED TO TAKE NECESSARY MEASURES TO INSURE SAFE PASSAGE OF STORM WATER FLOW THROUGH THE PROJECT AREA, WITHOUT DAMAGE TO EXISTING STRUCTURES, OR INTRODUCTION OF EXCESSIVE SEDIMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL B.M.P.'S.
4. DEWATERING OF CONSTRUCTION AREAS
  - 4.1. ANY DEWATERING ACTIVITIES WHICH MAY BE REQUIRED FOR CONSTRUCTION PURPOSES SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT RESULT IN AN EXCEEDANCE OF ANY WATER QUALITY REQUIREMENTS ESTABLISHED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD.
  - 4.2. DISCHARGE OF WATER FROM THE DEWATERED CONSTRUCTION SITE, EITHER BY GRAVITY OR PUMPING, SHALL BE PERFORMED IN A MANNER TO PREVENT EXCESSIVE TURBIDITY FROM ENTERING THE RECEIVING WATERWAYS AND TO PREVENT SCOUR AND EROSION OUTSIDE OF THE CONSTRUCTION SITE. PUMPED WATER SHOULD BE PRE-FILTERED WITH SAND/GRAVEL PACK AROUND SUMPS FOR SUBSURFACE FLOWS AND A SILT FENCE OR HAY BALES AROUND PUMPS FOR SURFACE FLOW. PUMPED WATER SHALL BE DISCHARGED INTO ISOLATED LOCAL DEPRESSIONS, FILTER BAGS, SETTLING (BAKER) TANKS, OR TEMPORARY SEDIMENT BASINS, AS NECESSARY TO MEET WATER QUALITY REQUIREMENTS. WHERE WATER TO BE DISCHARGED INTO THE CREEK WILL CREATE EXCESSIVE TURBIDITY, THE WATER SHALL BE ROUTED THROUGH A SEDIMENT INTERCEPTOR OR OTHER FACILITIES TO REMOVE SEDIMENT FROM WATER.
  - 4.3. CONTRACTOR SHALL SUPPLY ALL NECESSARY PUMPS, PIPING, FILTERS, SHORING, AND OTHER TOOLS AND MATERIALS NECESSARY FOR DEWATERING.



500A SWIFT ST.  
 SAN JOSE, CA 95128  
 PH: (831) 212-9519 FAX: (888) 819-6847  
 WWW.WATERWAYS.COM

**PRELIMINARY**

**NOT FOR CONSTRUCTION**

**PREPARED AT THE REQUEST OF:**

**LEHIGH HANSON  
 HEIDELBERG CEMENT  
 GROUP**

**NOTES**

**PERMANENTE CREEK  
 RESTORATION PLAN**

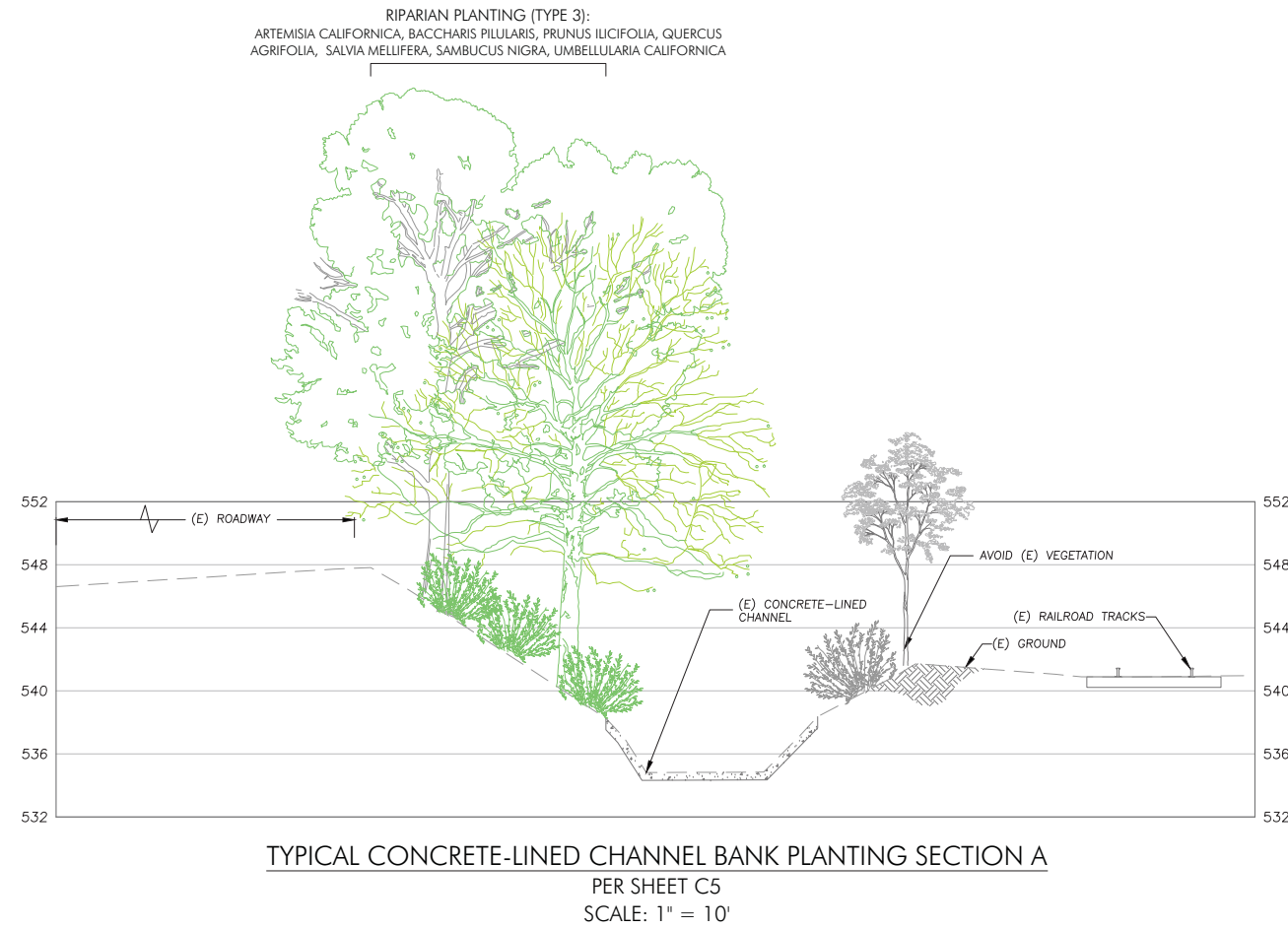
**70% DESIGN SUBMITTAL**

DESIGNED BY:  
 DRAWN BY: B.M.S.  
 CHECKED BY: M.W.W.  
 DATE: 04/27/15  
 JOB NO.: 13-016

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

C25

25 OF 25



**RIPARIAN PLANT LEGEND - TYPE 1**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING (OC FEET)	ELEVATION RANGE
ACE MAC	ACER MACROPHYLLUM	BIG LEAF MAPLE	16" DEEPOT	25	+2.7' AND ABOVE
ACE CAL	AESCULUS CALIFORNICA	CALIFORNIA BUCKEYE	16" DEEPOT	15	+2.7' AND ABOVE
ALN RUB	ALNUS RHOMBIFOLIA	WHITE ALDER	16" DEEPOT	20	+2.7' TO +5.0'
BAC PIL	BACCHARIS PILLULARIS	COYOTE BRUSH	1 GAL	8	+4.0' AND ABOVE
HET ARB	HETEROMELES ARBUTIFOLIA	TOYON	1 GAL	8	+4.0' AND ABOVE
QUE AGR	QUERCUS AGRIFOLIA	COAST LIVE OAK	16" DEEPOT, 5 GAL	12	+4.0' AND ABOVE
ROS CAL	ROSA CALIFORNICA	CALIFORNIA WILD ROSE	16" DEEPOT, 1 GAL	6	+4.0' AND ABOVE
RUB URS	RUBUS URSINUS	CALIFORNIA BLACKBERRY	1 GAL	5	+4.0' AND ABOVE
SAL LAE	SALIX LAEVIGATA	RED WILLOW	POLE CUTTINGS, 16" DEEPOT	12	+2.7' TO +6.0'
SAL MEL	SALVIA MELLIFERA	BLACK SAGE	1 GAL	5	+5.0' AND ABOVE
SAM NIG	SAMBUCUS NIGRA SSP. CAERULEA	BLUE ELDERBERRY	16" DEEPOT, 1 GAL	10	+4.0' AND ABOVE

NOTES:  
 1. RELATIVE ELEVATION DATUM: THALWEG OF STREAM = 0  
 2. Q2 WATER LINE IS APPROXIMATELY 2.7' ABOVE THALWEG

**RIPARIAN PLANT LEGEND - TYPE 2**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING (OC FEET)	ELEVATION RANGE
ACE MAC	ACER MACROPHYLLUM	BIG LEAF MAPLE	16" DEEPOT	25	+2.3' AND ABOVE
ARB MEN	ARBUTUS MENZESII	PACIFIC MADRONE	16" DEEPOT	12	+5.0' AND ABOVE
ART CAL	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	1 GAL	3	+4.0' AND ABOVE
BAC PIL	BACCHARIS PILLULARIS	COYOTE BRUSH	1 GAL	8	+4.0' AND ABOVE
QUE AGR	QUERCUS AGRIFOLIA	COAST LIVE OAK	16" DEEPOT, 5 GAL	12	+4.0' AND ABOVE
SAL LAE	SALIX LAEVIGATA	RED WILLOW	POLE CUTTINGS, 16" DEEPOT	12	+2.3' TO +6.0'
SAL MEL	SALVIA MELLIFERA	BLACK SAGE	1 GAL	5	+6.0' AND ABOVE
SAM NIG	SAMBUCUS NIGRA SSP. CAERULEA	BLUE ELDERBERRY	16" DEEPOT, 1 GAL	10	+4.0' AND ABOVE

NOTES:  
 1. RELATIVE ELEVATION DATUM: THALWEG OF STREAM = 0  
 2. Q2 WATER LINE IS APPROXIMATELY 2.7' ABOVE THALWEG

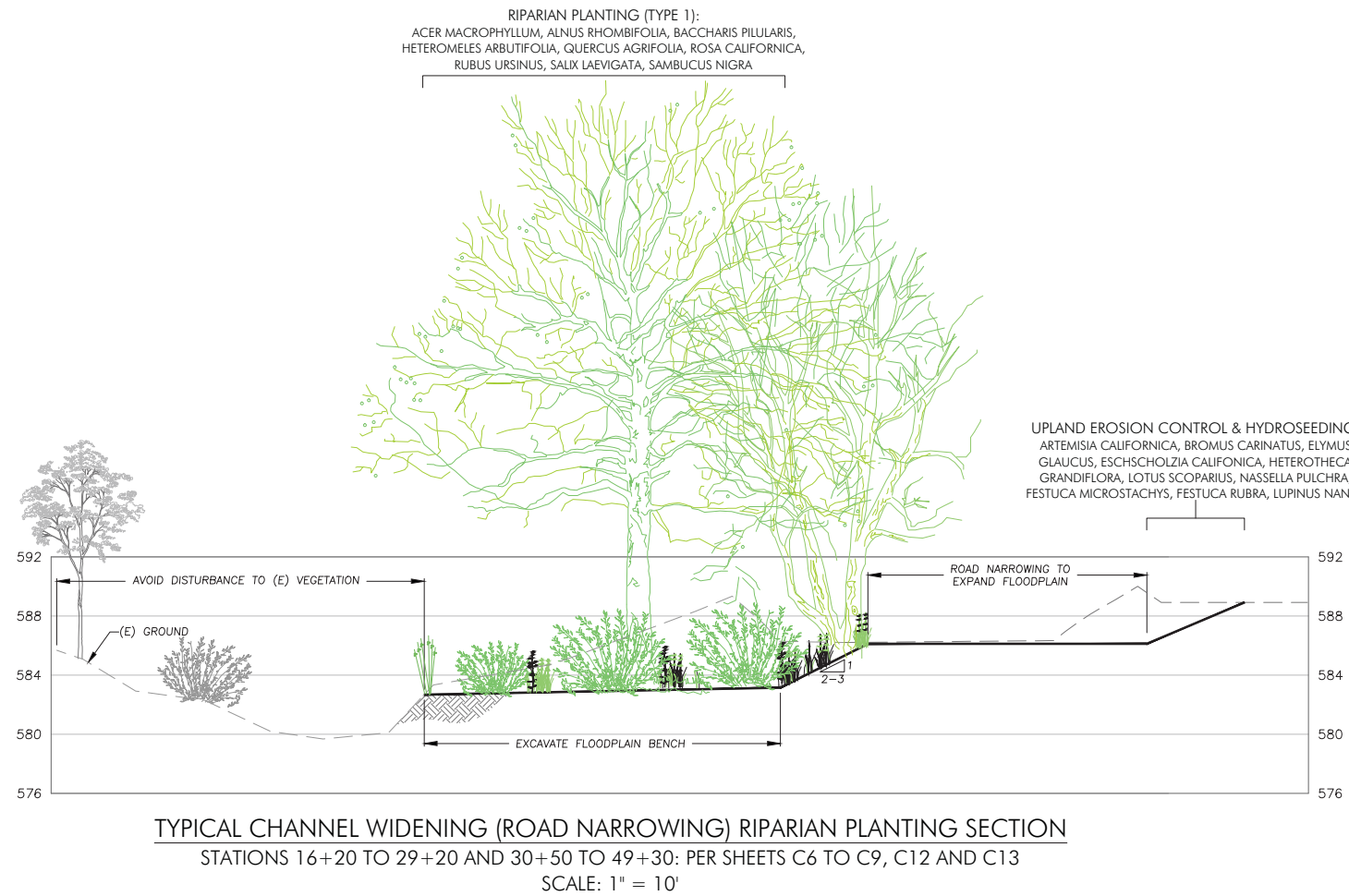
**RIPARIAN PLANT LEGEND - TYPE 3**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING (OC FEET)	ELEVATION RANGE
ART CAL	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	1 GAL	3	+4.0' AND ABOVE
BAC PIL	BACCHARIS PILLULARIS	COYOTE BRUSH	1 GAL	8	+4.0' AND ABOVE
PRU ILI	PRUNUS ILICIFOLIA	HOLLYLEAF CHERRY	2 GAL	10	+4.0' AND ABOVE
QUE AGR	QUERCUS AGRIFOLIA	COAST LIVE OAK	16" DEEPOT, 5 GAL	12	+4.0' AND ABOVE
SAL MEL	SALVIA MELLIFERA	BLACK SAGE	1 GAL	5	+6.0' AND ABOVE
SAM NIG	SAMBUCUS NIGRA SSP. CAERULEA	BLUE ELDERBERRY	16" DEEPOT, 1 GAL	10	+4.0' AND ABOVE
UMB CAL	UMBELLULARIA CALIFORNICA	CALIFORNIA BAY	16" DEEPOT, 1 GAL	12	+4.0' AND ABOVE

NOTES:  
 1. RELATIVE ELEVATION DATUM: THALWEG OF STREAM = 0  
 2. Q2 WATER LINE IS APPROXIMATELY 2.7' ABOVE THALWEG

**UPLAND HYDROSEED MIX**

BOTANICAL NAME	COMMON NAME	RATE OF APPLICATION PLS. LBS / ACRE
ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	0.5
BROMUS CARINATUS	CALIFORNIA BROME	12.0
ELYMUS GLAUCUS	BLUE WILDRIE	10.0
ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	1.5
HETEROTHECA GRANDIFLORA	TELEGRAPH WEED	0.5
LOTUS SCOPARIUS	DEERWEED	3.0
NASSELLA PULCHRA	PURPLE NEEDLEGRASS	5.0
FESTUCA MICROSTACHYS	THREE WEEKS FESCUE	5.0
FESTUCA RUBRA	RED FESCUE	5.0
LUPINUS NANUS	LUPINE	4.0
<b>TOTAL</b>		<b>47.5</b>



**UPLAND EROSION CONTROL & HYDROSEEDING:**  
 ARTEMISIA CALIFORNICA, BROMUS CARINATUS, ELYMUS GLAUCUS, ESCHSCHOLZIA CALIFORNICA, HETEROTHECA GRANDIFLORA, LOTUS SCOPARIUS, NASSELLA PULCHRA, FESTUCA MICROSTACHYS, FESTUCA RUBRA, LUPINUS NANUS

NOTE: WHEREVER POSSIBLE, EXISTING TREES IN THE CHANNEL WIDENING AREA THAT CAN BE SAVED WILL BE FLAGGED BY A BIOLOGIST FOR PROTECTION PRIOR TO GRADING.



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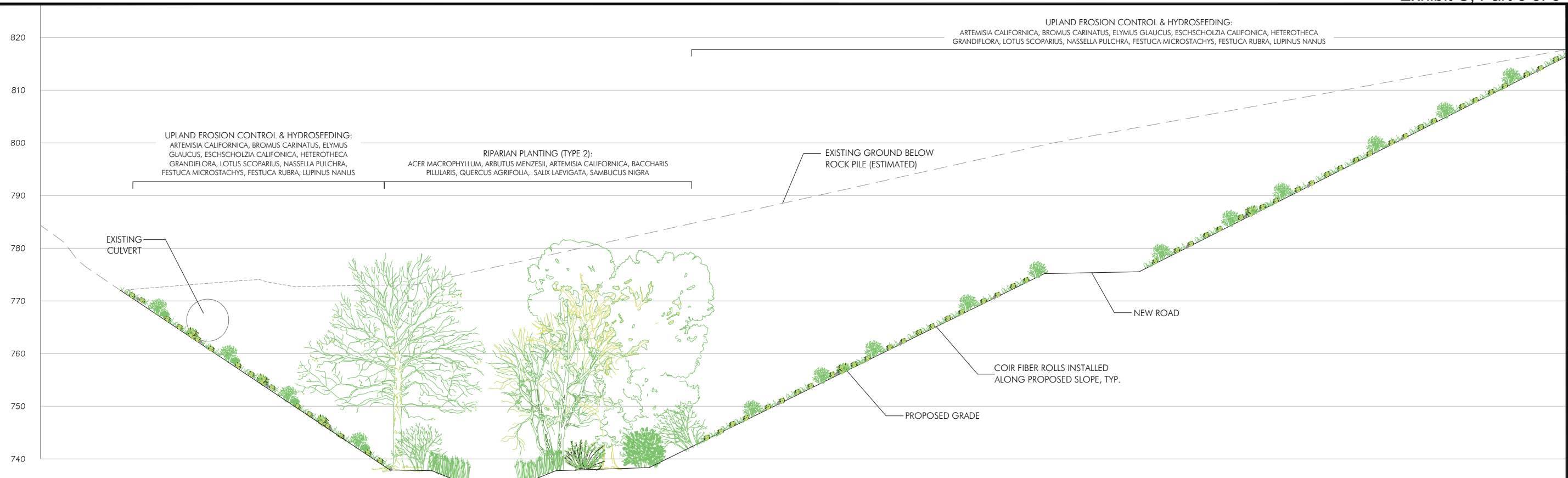
PREPARED AT THE REQUEST OF:  
**LEIGH HANSON HEIDELBERG CEMENT GROUP**

**RIPARIAN PLANTING SECTIONS**

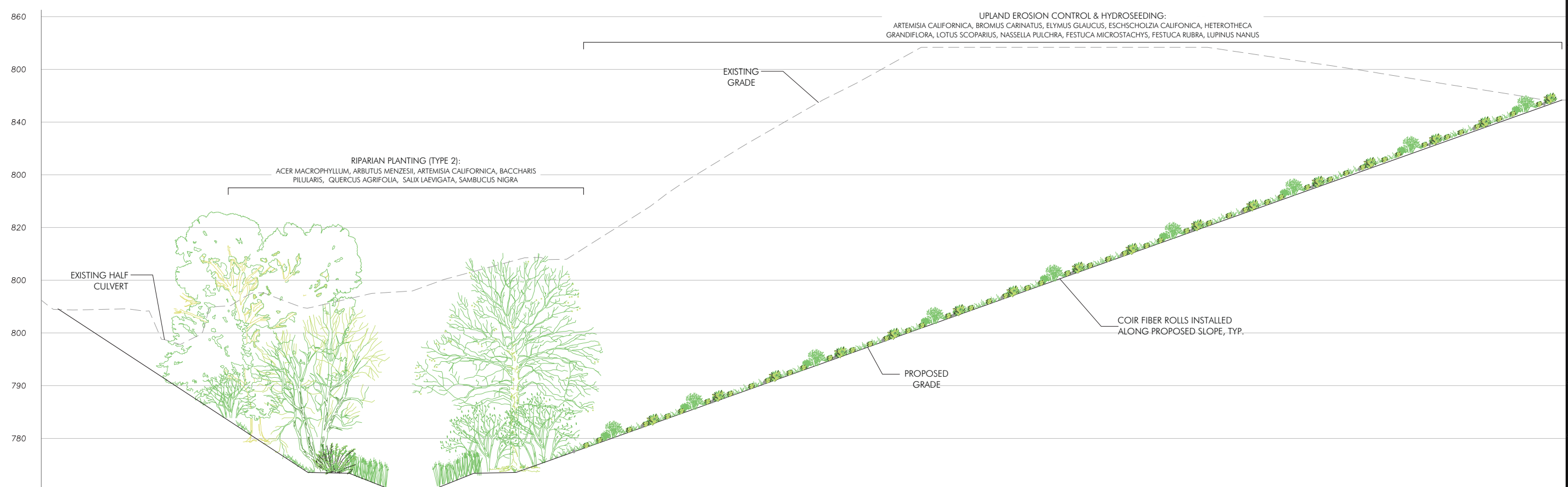
**PERMANENTE CREEK RESTORATION PLAN 70% SUBMITTAL**

DESIGNED BY: CES,GMG  
 DRAWN BY: CES,GMG  
 CHECKED BY: MWS  
 DATE: 04/27/15  
 JOB NO.: 16143-5

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



**ROCK PILE AREA SECTION C**  
 PER SHEET C14 AND C15  
 SCALE: 1" = 10'



**ROCK PILE AREA SECTION E**  
 PER SHEET C14 AND C15  
 SCALE: 1" = 10'

**wra**  
 ENVIRONMENTAL CONSULTANTS  
 2169-G East Francisco Blvd.  
 San Rafael, CA 94901  
 (415) 454-8868 Phone  
 (415) 454-0129 Fax

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 CONSTRUCTION**

PREPARED AT THE REQUEST OF:  
**LEHIGH HANSON  
 HEIDELBERG CEMENT GROUP**

**RIPARIAN  
 PLANTING  
 SECTIONS**

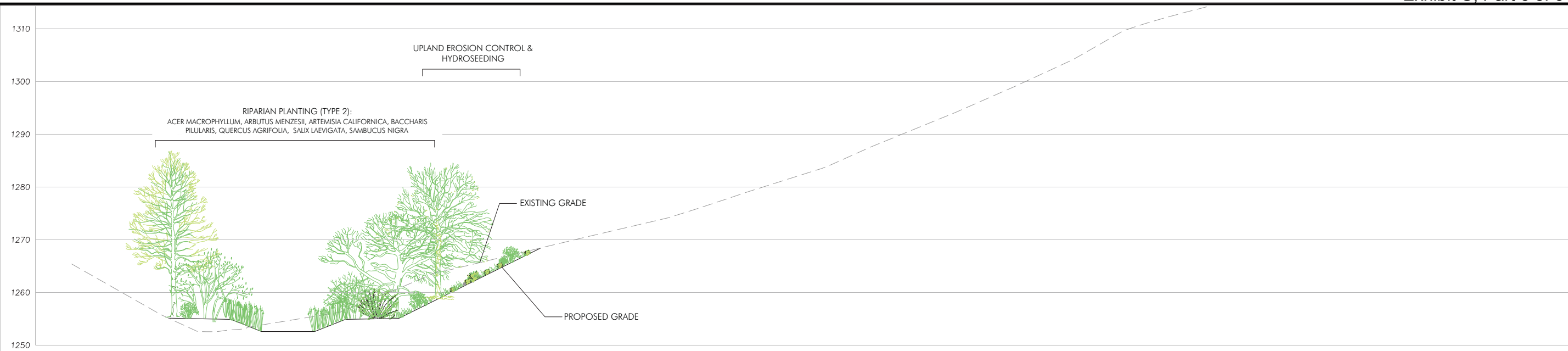
**PERMANENTE CREEK  
 RESTORATION PLAN  
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DESIGNED BY:  
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 DATE: 04/27/15  
 JOB NO.: 16143-5

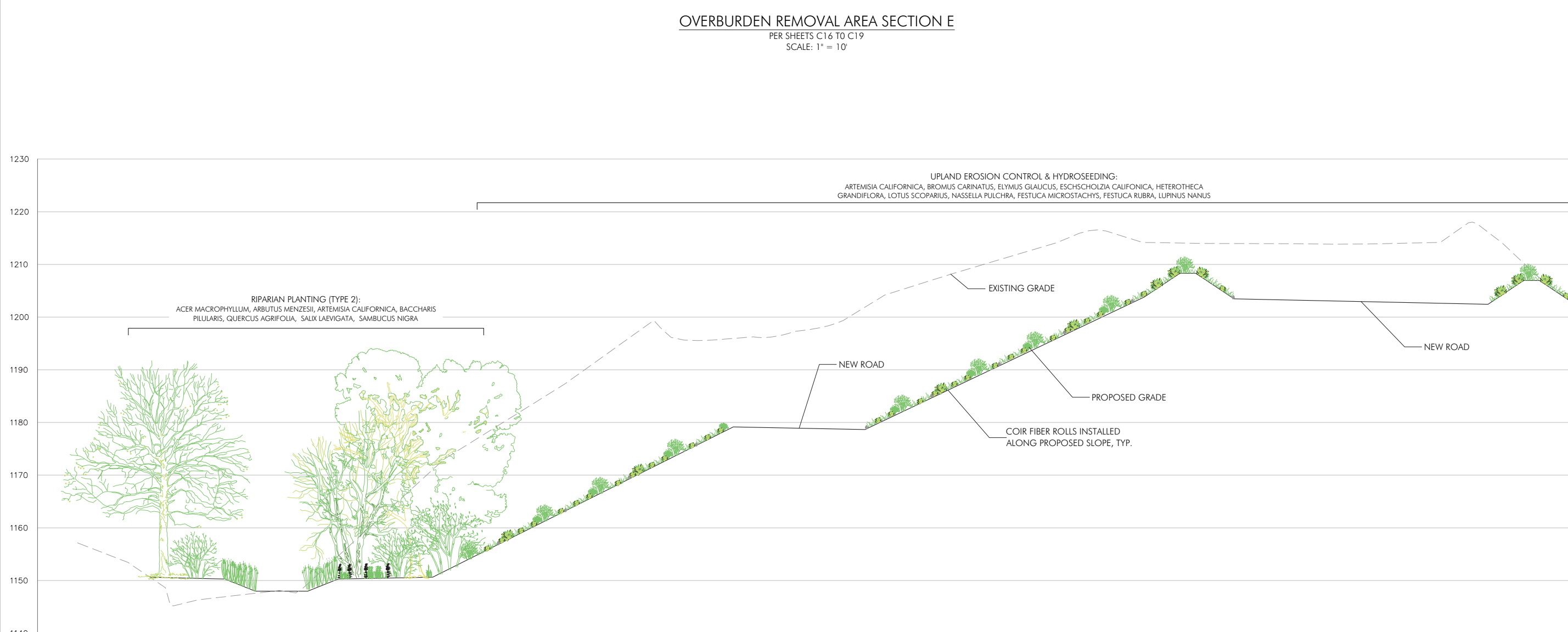
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

0 1" 2

**L2** OF 3



**OVERBURDEN REMOVAL AREA SECTION E**  
 PER SHEETS C16 TO C19  
 SCALE: 1" = 10'



**OVERBURDEN REMOVAL AREA SECTION B**  
 PER SHEETS C16 TO C19  
 SCALE: 1" = 10'



**PRELIMINARY  
 NOT FOR  
 CONSTRUCTION**

PREPARED AT THE REQUEST OF:  
**LEHIGH HANSON  
 HEIDELBERG CEMENT GROUP**

**RIPARIAN  
 PLANTING  
 SECTIONS**

**PERMANENTE CREEK  
 RESTORATION PLAN  
 70% SUBMITTAL**

DESIGNED BY:  
 DRAWN BY: CES,GMG  
 CHECKED BY: MWS  
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 JOB NO.: 16143-5

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

Exhibit D -- including March 1, 2016 Surety Rider

**PERFORMANCE GUARANTEE**

**Bond No. 09098099**

KNOW ALL MEN BY THESE PRESENTS, that we, Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc., as Principal, and Fidelity and Deposit Company of Maryland, licensed to do business in the State of California, as Surety, are held and firmly bound unto The United States District Court for the Northern District of California (Obligee), in the penal sum of Twelve million and no/100 Dollars (\$12,000,000.00) lawful money of the United States of America (Surety Bond), for the payment of which sum, well and truly to be made, the Principal and Surety do bind themselves, their heirs, executors, administrators, and successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the above bounden Principal has entered into a certain written Consent Decree with the **Sierra Club**, lodged with the Court on the **24th day of April, 2013**, which Consent Decree is made a part hereof and incorporated herein by reference, except that nothing said therein shall alter, enlarge, expand, or otherwise modify the term of the bond as set out below.

IN PARTICULAR, the Principal and Surety agree to convey all Surety Bond funds to the Permanente Creek Restoration escrow account within fourteen (14) days of Sierra Club providing notice of a Work Takeover pursuant to Paragraph 70 of the Consent Decree.

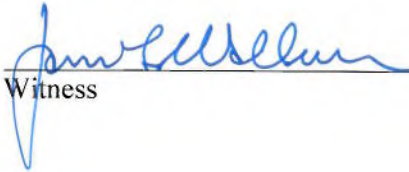
NOW, THEREFORE, if Principal, its executors, administrators, successors and assigns shall promptly and faithfully perform the Consent Decree, according to the terms, stipulations or conditions thereof, then this obligation shall become null and void, otherwise to remain in full force and effect. This bond is executed by the Surety and accepted by the Obligee subject to the following express condition:

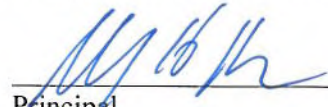
Notwithstanding the provisions of the Consent Decree, the term of this bond shall apply from **June 28, 2013** until **June 27, 2014**, and will automatically renew for subsequent terms of one (1) year, subject to revision pursuant to Paragraph 68 of the Consent Decree. Such annual renewal shall include an adjustment to the value of the original penal sum above by the percentage increase or decrease in construction costs as set forth in the applicable Engineering News-Record construction cost index for the Bay Area or, if unavailable, a comparable cost index. In the event the Surety elects not to renew the bond, the Surety must provide Principal and Obligee written notice their intent to non-renew the bond no less than sixty (60) days prior to the expiration date of the bond. Principal shall provide a replacement performance guarantee acceptable to Sierra Club, as set forth in the Consent Decree, prior to the expiration date of the bond.

The liability of the Surety under this bond and all Continuation Certificates issued in connection therewith shall not be cumulative and shall in no event exceed the amount as set forth in this bond or in any additions, riders, or endorsements properly issued by the Surety as supplements thereto.

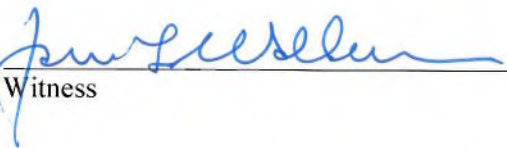
Sealed with our seals and dated this **29th day of August, 2013.**

**Lehigh Southwest Cement Company**

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Principal

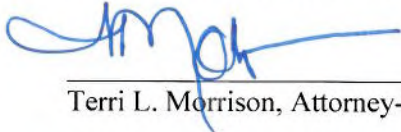
**Hanson Permanente Cement, Inc.**

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Principal

**Fidelity and Deposit Company of Maryland**

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Terri L. Morrison, Attorney-in-Fact

Fidelity and Deposit Company of Maryland  
1400 American Lane, Tower 1, 18<sup>th</sup> Floor  
Schaumburg, IL 60196  
847-605-6000  
Matthew Cook, Zurich Commercial Surety  
Matthew.cook@zurich.com



CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT -- including March 1, 2016 Surety Rider

No. 5907

State of Texas

County of Harris

On August 29, 2013 before me, Mary Pena, Notary

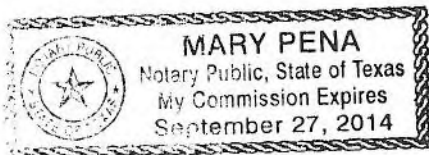
DATE

NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared \_\_\_\_\_

NAME(S) OF SIGNER(S)

personally known to me - OR -  proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Mary Pena  
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- INDIVIDUAL
- CORPORATE OFFICER

- TITLE(S) \_\_\_\_\_
- PARTNER(S)  LIMITED  GENERAL
  - ATTORNEY-IN-FACT
  - TRUSTEE(S)
  - GUARDIAN/CONSERVATOR
  - OTHER: \_\_\_\_\_

\_\_\_\_\_  
TITLE OR TYPE OF DOCUMENT

\_\_\_\_\_  
NUMBER OF PAGES

SIGNER IS REPRESENTING:

NAME OF PERSON(S) OR ENTITY(IES)  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
DATE OF DOCUMENT

\_\_\_\_\_  
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT Exhibit D -- including March 1, 2016 Surety Rider

No 5907

State of Texas

County of Dallas

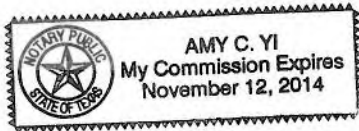
On 9-3-2013 before me,

Amy Yi, Notary Public  
NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared Michael Hyer & James Wallmann

NAME(S) OF SIGNER(S)

personally known to me - OR -  proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

[Signature]  
SIGNATURE OF NOTARY

**OPTIONAL**

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

**CAPACITY CLAIMED BY SIGNER**

**DESCRIPTION OF ATTACHED DOCUMENT**

- INDIVIDUAL
- CORPORATE OFFICER

- PARTNER(S)  LIMITED
- ATTORNEY-IN-FACT  GENERAL

- TRUSTEE(S)
- GUARDIAN/CONSERVATOR
- OTHER: \_\_\_\_\_

\_\_\_\_\_  
TITLE OR TYPE OF DOCUMENT

\_\_\_\_\_  
NUMBER OF PAGES

**SIGNER IS REPRESENTING:**

NAME OF PERSON(S) OR ENTITY(IES)

\_\_\_\_\_  
DATE OF DOCUMENT

\_\_\_\_\_  
SIGNER(S) OTHER THAN NAMED ABOVE

Exhibit D -- including March 1, 2016 Surety Rider

**EXTRACT FROM BY-LAWS OF THE COMPANIES**

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

**CERTIFICATE**

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 29<sup>th</sup> day of August, 2013.



*Geoffrey Delisio*

Geoffrey Delisio, Vice President

Exhibit D -- including March 1, 2016 Surety Rider

SURETY RIDER

To be attached to and form a part of Fidelity and Deposit Company of Maryland

Bond No. 09098099

Type of Bond: Performance Guarantee Bond

dated June 28, 2013 effective (MONTH-DAY-YEAR)

executed by Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. as Principal. (PRINCIPAL)

and by Fidelity and Deposit Company of Maryland as Surety.

in favor of The United States District Court for the Northern District of California (OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing the bond detail as follows:

Consent Decree is amended globally to read: Amended Consent Decree

Paragraph two (2) - lodged with the court date amended to read: February 22, 2016

Paragraph three (3) - Work Takeover pursuant to paragraph to read: 69

Paragraph five (5) - subject to revision pursuant to paragraph to read: 67

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider March 1, 2016 is effective (MONTH-DAY-YEAR)

Signed and Sealed March 1, 2016 (MONTH-DAY-YEAR)

Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. (PRINCIPAL)

By: [Signature] Ana W. Demonte (PRINCIPAL)

Fidelity and Deposit Company of Maryland

By: [Signature] Melissa Haddick (ATTORNEY-IN-FACT) (SURETY)

Exhibit D -- including March 1, 2016 Surety Rider

ZURICH AMERICAN INSURANCE COMPANY  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND  
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **THOMAS O. MCCLELLAN, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Terri L. MORRISON, Sandra PARKER, Gina A. RODRIGUEZ, Melissa HADDICK and Tannis MATTSON, all of Houston, Texas, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings, EXCEPT bonds on behalf of Independent Executors, Community Survivors and Community Guardians.** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 19th day of June, A.D. 2013.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND



*Eric D. Barnes*

By: \_\_\_\_\_

Secretary  
Eric D. Barnes

*Thomas O. McClellan*

\_\_\_\_\_  
Vice President  
Thomas O. McClellan

State of Maryland  
County of Baltimore

On this 19th day of June, A.D. 2013, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **THOMAS O. MCCLELLAN, Vice President, and ERIC D. BARNES, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

*Maria D. Adamski*

\_\_\_\_\_  
Maria D. Adamski, Notary Public  
My Commission Expires: July 8, 2015



Exhibit D -- including March 1, 2016 Surety Rider

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 13<sup>th</sup> day of March, 2016.



*Geoffrey Delisio*

Geoffrey Delisio, Vice President