Bid&Drawings
(514 Kb)

Project Description
(454 Kb)

Winning Bid
(96 Kb)

Installation
(3.69 Mb)

INSTALLATION OF LARGE WOOD HABITAT STRUCTURES AT THE DEDAMPIERRE RESTORATION PROJECT

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Call for Bids

INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the

deDampierre RESTORATION PROJECT

CARMEL RIVER

MONTEREY COUNTY, CALIFORNIA

ERNESTO AVILA, GENERAL MANAGER

AUGUST 2002

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MONTEREY PENINSULA WATER MANAGEMENT DISTRICT
NOTICE INVITING SEALED BIDS FOR

INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the deDAMPIERRE RESTORATION PROJECT
CARMEL VALLEY, CALIFORNIA

NOTICE IS HEREBY GIVEN, that sealed bids will be received by the Board of Directors, Monterey Peninsula Water Management District, at the District office, 5 Harris Court, Bldg. G, P. O. Box 85, Monterey, California, 93942-0085, **until 4:00 p.m. on Friday, August 30**, **2002**, at which time they shall be publicly opened and read, for habitat enhancement work in the channel of the Carmel River consisting of the following items:

Work is located in the channel of the Carmel River across from the Little League baseball fields at the deDampierre Addition to Garland Park, located in Carmel Valley Village.

1. Divert channel flow - work to be done only if deemed necessary by the District Engineer
2. Transport ten (10) logs
3. A. Transport approximately 20 boulders (4-6 ton class)
   B. Supply 80 tons of rip-rap boulders (4-ton class)
   C. Supply and install cable anchors in 40 boulders
4. Install five (5) large wood and rock habitat structures
5. Excavate and install willow plantings (16 hours of backhoe time)

The District reserves the right to reject any and all bids or to waive any irregularities or informalities in any bid or in the bidding. No bidder shall withdraw his/her bid for sixty (60) calendar days after the date set by the District for the opening thereof. The District may, at its sole discretion, exclude certain portions of the work listed on the bid schedule from the contract. Award of a contract for work described in this bid is subject to District Board ratification.

Any bids received after the deadline for bid submittal shall be returned unopened. Each bid shall be accompanied by U.S. currency, certified check, cashiers check, or Contractor's bond in an amount not less than ten percent (10%) of the bid amount, and shall be made payable to the Monterey Peninsula Water Management District. In lieu of retention of ten percent (10%) of the amount of progress payments payable under the Contract, the Contractor may elect to substitute certain securities for moneys withheld as provided in the Contract. The Contractor also has the option, at his/her cost, to request the District to make payment of retentions earned, directly into an escrow account, pursuant to the terms of Section 22300, Public Contract Code.

Responses to this Call for Bids shall incorporate the general prevailing rates in the locality in which the work is to be performed as determined by the State Director of the Department of Industrial Relations. It shall be incumbent upon the successful bidder to pay not less than the minimum hourly wage required by the Schedule of Wage Determinations to be paid to the various laborers and mechanics employed directly upon the site of the work. If any change in the above rates is made, said changed rates shall apply to this public project without adjustment in bid price. A copy of said Schedule of Wage Determinations is on file at the District office.

This work shall be done in accordance with the Plans and Specifications contained in the Call for Bids, to which special reference is hereby made. The Contractor shall furnish all labor, supplies, equipment, and services required to perform the work, except as expressly stated in the Plans and Specifications. The Contractor shall hold a valid Class A, General Contractors License issued by the State of California.

Timing is of the essence in the conduct of this project. Upon authorization of a contract by the District Board of Directors, a notice of award will be sent to the successful bidder. The successful bidder will then have FIVE (5) working days to return a signed contract agreement, together with faithful performance bonds and any other required documentation. Work must begin within FIVE (5) calendar days from issuance of the notice to proceed by the District. The work is to be completed within TWENTY-ONE (21) calendar days from issuance of the notice to proceed. If the bidder fails or refuses to enter into a contract to do the work, then the bid guaranty accompanying the bid shall be paid to the District as liquidated damages (General Provisions Sect. 2.03).

The District Engineer's estimate for this work is $34,000. **There will be an optional field inspection of the project area on Friday, August 23, 2002, at 9:00 a.m.** Please meet at the deDampierre Addition to Garland Park (Little League baseball fields), located off Paso Hondo Drive in Carmel Valley Village. Paso Hondo Drive is located approximately 12 miles east of Highway 1 along Carmel Valley Road (if you reach Esquiline Road, you've gone too far). For further information, contact Larry Hampson at (831) 659-2543. Plans, Specifications, and bid forms may be secured at no charge from the Monterey Peninsula Water Management District, 5 Harris Court, Bldg. G Street, P. O. Box 85, Monterey, California, 93942-0085.

August 12, 2002
Date

Andrew M. Bell, District Engineer
Monterey Peninsula Water Management District

(Publication Dates: 8/16, 8/17, and 8/18/2002)

INSTRUCTIONS TO BIDDERS

BID SUBMITTAL - A sealed bid shall be made and submitted on the blank form provided without substitution or omission. The bid shall be sealed in an envelope marked "**INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the deDAMPIERRE RESTORATION PROJECT**." All bids received by mail shall be sealed in such envelope and be placed inside a mailing envelope. Any bid submitted by a partnership shall be signed by an authorized general partner; any bid submitted by a corporation shall be signed by an authorized corporate officer. Deviations shall cause the bid to be rejected.

BID PRICE - The bid price shall include everything necessary for the performance of the complete job, including but not limited to furnishing all materials, equipment, tools, superintendence, labor, and services except as expressly stated in the Specifications. Please note that the channel diversion item described in the specifications will be paid on a time and materials basis only if a diversion is deemed necessary and so ordered by the District Engineer.

TAXES - Bid prices shall include allowance for all federal, state, and local taxes.

CERTIFICATES - The following certificates shall be signed by the bidder and attached to the bid:

SECURITY FOR COMPENSATION CERTIFICATION
FAIR EMPLOYMENT PRACTICES CERTIFICATION
NONCOLLUSION AFFIDAVIT
CONTRACTOR'S and SUBCONTRACTOR'S EXPERIENCE QUALIFICATIONS

BID GUARANTY - Each bid shall be accompanied by either U.S. currency, certified check, cashier's check, or proposed Contractor's bond of a surety company acceptable to the District in an amount not less than ten percent (10%) of the bid amount for constructing the combined project, and shall be made payable to the Monterey Peninsula Water Management District.

BID AWARD - Bids shall be judged on the total amount bid on the Bid Schedule. The District reserves the right to reject all bids.

CONTRACT AGREEMENT

All contract documents required under this contract shall be submitted to MPWMD within five (5) calendar days after the Notice of Bid Award.

Bonds - The posting of a Faithful Performance Bond by the Contractor in the amount of one hundred percent (100%) of the total contract price as specified in Section 4 of the General Provisions shall be required as part of this project. A Material-and-Labor Bond shall also be required to be posted by the Contractor in the amount of one hundred percent (100%) of the total contract price as specified in Section 4 of the General Provisions. The Contractor has the option of substituting certain securities for a Faithful Performance Bond, pursuant to an escrow agreement. The Contractor shall inform the District in writing upon submittal of the bid of his intention to substitute securities for a Faithful Performance Bond.

Insurance - Proof of Workers' Compensation insurance and General Liability insurance is required (see "Section 5. Insurance" in the General Provisions).

TIME OF COMPLETION - Work shall commence within five (5) days of a Notice to Proceed. The work shall be completed within twenty-one (21) calendar days from commencement. Please note that liquidated damages of $250 per day may be assessed, should work extend beyond the time of completion (see section 11.08 of the General Provisions).

SPECIAL CONDITIONS - Please note that work is to be conducted in the channel of the Carmel River. In addition to usual laws and practices governing public works, certain provisions of the Federal Endangered Species Act also apply to this work. Please see the "Special Conditions" portion of this bid.

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT
MONTEREY COUNTY, CALIFORNIA

BID TO PROVIDE

INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the deDAMPIERRE RESTORATION PROJECT

Monterey Peninsula Water Management District
5 Harris Court, Bldg. G
P.O. Box 85
Monterey, California 93942-0085

Ladies and Gentlemen:

Pursuant to the foregoing Notice Inviting Sealed Bids, the undersigned hereby proposes and binds himself by the District, under this Bid, to execute in accordance with such award, a contract of which this Bid and the Plans and Specifications shall be a part, to furnish any and all labor, materials, equipment, and services necessary for satisfactory performance and completing the work set forth in said Plans and Specifications within the time hereinafter set forth and at the prices named in this bid as follows:

BID SCHEDULE *
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the deDAMPIERRE RESTORATION PROJECT

ITEM	WORK OR MATERIAL	QUANTITY	UNIT COST	TOTAL COST
1.	DIVERT CHANNEL FLOW**	1 EA	_____	_____
2.	TRANSPORT LOGS	10 EA	_____	_____
3.	TRANSPORT, SUPPLY, AND PREPARE RIP-RAP			
	A. TRANSPORT APPROXIMATELY 20 BOULDERS (4-6 TON CLASS)	20 EA	_____	_____
	B. SUPPLY RIP-RAP BOULDERS	80 TONS	_____	_____
	C. SUPPLY AND INSTALL CABLE ANCHORS IN RIP-RAP BOULDERS	40 EA	_____	_____
4.	INSTALL LARGE WOOD AND ROCK STRUCTURES	5 EA	_____	_____
5.	EXCAVATE AND INSTALL WILLOWS	16 HR	_____	_____
		TOTAL	$ _____	

*Upon award, this bid form shall be made a part of the Contract.
** Paid only if flow diversion is ordered by the District Engineer

The undersigned has examined the location of the proposed work and is familiar with the Specifications and the local conditions in the place where the work is to be done.

The undersigned has checked carefully all the above figures and understands that the District shall not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned understands that the District reserves the right to reject any or all bids, and to waive any irregularities or informalities in bids received. Award shall be made which, in the judgement of the District, is to the best interest of the District. It is agreed that this bid may not be withdrawn within a period of sixty (60) days after the date set for the opening thereof.

In accordance with the Specifications, the undersigned further agrees to so plan the work and prosecute it with such diligence that said work shall be started within FIVE (5) calendar days after written notice is received from the District to proceed with the work and be completed within TWENTY-ONE (21) consecutive calendar days after written notice is received from the District to proceed with the work.

The undersigned agrees, if awarded the contract, that there shall be paid by the undersigned and all subcontractors under him, to all laborers, workers, and mechanics employed in the execution of such contract or any subcontract thereunder, not less than the general prevailing rate of per diem wages, and rates for overtime and legal holidays in the locality in which the work is to be performed, as established by the State Director of the Department of Industrial Relations.

Bidder: _____Tax I.D. Number:_____

Business Address:_____

Contractor's License No.:_____Telephone:(___) _____

By: _____Dated: _____

Title: _____

SECURITY FOR COMPENSATION CERTIFICATION

TO: MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

I am aware of the provisions of Section 3700 of the Labor Code of the State of California which require every employer to be insured against liability for workmen's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I shall comply with such provisions before commencing the performance of the work of this Contract:

Date _____ _____

_____

_____

(Signature of Bidder)

Business Address:

_____

_____

_____

Place of Residence:

_____

_____

(This certificate must be signed by the successful bidder prior to the award of Contract.)

FAIR EMPLOYMENT PRACTICES CERTIFICATION

TO: MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

The undersigned, in submitting a bid for performing the following work by Contract, hereby certifies that he has or shall meet the standards of affirmative compliance with Fair Employment Practices requirements of the special provisions contained herein:

Installation of large wood habitat structures at the deDampierre Restoration Project in Carmel Valley, California.

Date _____ _____

(Signature of Bidder)

Business Address:

_____

_____

_____

Place of Residence:

_____

_____

(This certification must be signed by the successful bidder prior to the award of the Contract.)

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

State of California)
) ss.
County of _____)

_____ being first duly sworn, deposes and says that he or she is _____ of _____ the party making the foregoing bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true, and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

_____ _____
Signature Date:

The title of the affidavit provides that it is "to be executed by bidder and submitted with the bid."

CONTRACTOR'S EXPERIENCE QUALIFICATIONS

The bidder has been engaged in the contracting business, under the present business name for _____ years. Experience in work of a nature similar to that covered in the bid extends over a period of _____ years.

The bidder, as a contractor, has never failed to satisfactorily complete a contract awarded to him, except as follows:

_____

The following contracts have been satisfactorily completed in the last three years for the persons, firm or authority indicated, and to whom reference is made:

Year	Type of Work	Contract Amount	Location and for Whom Performed
_____	_____	_____	_____
_____	_____	_____	_____

Bidder _____

Signed _____

Title _____

Date _____

This form to be submitted with the bid.

SUBCONTRACTOR'S EXPERIENCE QUALIFICATIONS

The subcontractor has been engaged in the contracting business, under the present business name for _____ years. Experience in work of a nature similar to that covered in the bid extends over a period of _____ years.

The subcontractor has never failed to satisfactorily complete a contract awarded to him, except as follows:

_____

The following contracts have been satisfactorily completed in the last three years for the persons, firm or authority indicated, and to whom reference is made:

Year	Type of Work	Contract Amount	Location and for Whom Performed
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Signed _____

Title _____

Date _____

This form to be submitted with the bid.

CONTRACT AGREEMENT

This agreement, made and entered into this _____ day of _____ 20___, by and between the Monterey Peninsula Water Management District, Monterey County, State of California, hereinafter called the District and_____ hereinafter called the Contractor.

WITNESSETH: That the District and Contractor have mutually covenanted and agree, and by these presents do covenant and agree with each other as follows:

1. That for and in consideration of the covenants and agreements hereinafter contained on the part of the District, and the sums of money hereinafter designated to be paid to the Contractor by the District in the manner and form as hereinafter provided in the attached Specifications, the Contractor hereby covenants and agrees with the District to furnish all labor, tools, appliances, equipment, plant and transportation, and any and all other expenses necessary or incidental to the performance of certain work hereinafter specified, for the Monterey Peninsula Water Management District, State of California, all as more particularly as set forth in these Specifications filed in the District Office, and identified by the signatures of the parties to the Agreement.

   This Agreement specifically includes all items of work described in the Bid, all in accordance with the Specifications. All terms and conditions contained in any of the component parts of this contract shall apply to the above designated schedule.

2. Time of Performance. In accordance with the Specifications, the undersigned further agrees to so plan the work and to prosecute it with such diligence that said work shall be commenced within FIVE (5) consecutive calendar days from Notice to Proceed. The work shall be completed within TWENTY-ONE (21) consecutive calendar days from receipt of the Notice to Proceed.

3. Payments. Final payment shall be made by check to Contractor for work performed at the times and in the manner provided in the Specifications and General Provisions.

4. Component Parts. This Contract shall consist of the following documents, each of which is on file in the office of the District Secretary and all of which are incorporated herein and made a part herein and made a part hereof by reference thereto:

Bid Form
Contractor's Experience Qualifications
Subcontractor's Experience Qualifications, if any
Security for Compensation Certification
Fair Employment Practices Certification
Non-Collusion Affidavit
Contract Agreement
Construction Specifications
Construction Drawings
General Provisions
Addenda, if any

5. Wage Scale. Reference is hereby made to the wage scale established by the State Director of the Department of Industrial Relations which is hereby specified as the rate of prevailing wage to paid workers on this project, and the provisions of Article 2, Chapter 1, Part 7, Division 2 (commencing with Section l770) of the Labor Code shall be complied with. A copy of the prevailing wage rates is on file and may be inspected at the District office.

   It is further agreed that no person shall be hired by the undersigned or any subcontractor under him, who is a not a Citizen of the United States, unless the undersigned or any subcontractor has verified the person's right to live and work in the United States as stipulated in Section 121 of the U.S. Immigration Reform and Control Act (P.L. 99-603).

6. Hours of Labor. The Contractor shall forfeit, as penalty to the District, fifty dollars ($50) for each worker employed in the execution of the Contract by him or by the subcontractor, for each calendar day during which any worker is required or permitted to labor more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week, in violation of the provisions of Article 3, Chapter l, Page 7, Division 2 (commencing with Section l8l0) of the Labor Code of the State of California.

7. Apprentices. In accordance with the provisions of Section 1777.5 of the Labor Code, and in accordance with the rules and procedures of the California Apprenticeship Council, properly indentured apprentices shall be employed in the prosecution of the work. The number so employed shall be as set forth in the certificate issued by the appropriate joint apprenticeship committee unless a certificate of exemption has been issued by the Division of Apprenticeship Standards. Willful failure by the Contractor to comply with said Section l777.5 shall result in his being denied the right to bid on a public works contract for a period of six months from the date the determination is made.

   Information relative to number of apprentices, identifications, wages, hours of employment and standards of working conditions shall be obtained from the Director of the Department of Industrial Relations, who is the Administrative Officer of the California Apprenticeship Council.

8. Trenching. Trenching shall be done in accordance with Sections 6705, 6706, 6707 of the Labor Code.

9. Workers' Compensation Insurance. In accordance with the provisions of Article 5, Chapter 1, Part 7, Division 2 (commencing with Section l860) and Chapter 4, Part 1, Division 4 (commencing with Section 3700) of the Labor Code of the State of California, the Contractor is required to secure the payment of compensation to his employees and shall for that purpose obtain and keep in effect adequate Workers' Compensation Insurance. Proof of such insurance coverage shall be provided to the District prior to commencement of any work on this project.

The undersigned Contractor is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and shall comply with such provisions before commending the performance of the work in this Contract.

10. Security for Compensation. Contractor hereby stipulates that the provisions of Section l775 of the Labor Code of the State of California shall be complied with. Contractor further agrees to secure the payment of compensation to his employees in accordance with the provisions of Section 3700 of the Labor Code of the State of California.

11. Discrimination. Attention is directed to Section 1735 of the Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every contractor for public works violating this section is subject to all penalties imposed for a violation of this chapter."

In connection with the performance of work under this Contract, the Contractor agrees as follows:

(a) The Contractor shall not willfully discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, or sex of such persons. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, or sex. Such action shall include, but not be limited to, the following: Upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants to employment, notices setting forth the provisions of this Fair Employment Practices section.

(b) The Contractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, advising the said labor union or worker's representative of the Contractor's commitments under this section, and shall post copies of the notices in conspicuous places available to employees and applicants to employment.

(c) The Contractor shall permit access to his records of employment, employment advertisements, application forms, and other pertinent data and records by the Fair Employment Practices Commission, the awarding authority or any other appropriate agency of the State of California designated by the awarding authority, for the purposes of investigation to ascertain compliance with the Fair Employment Practices section of this Contract.

(d) A finding of willful violation of the Fair Employment Practices section of this Contract or of the Fair Employment Practices Act shall be regarded by the awarding authority as a basis for determining the Contractor to be not a "responsible bidder" as to future contract for which such Contractor may submit bids, for revoking the Contractor's prequalification rating, if any, and for refusing to establish, reestablish or renew a prequalification rating for the Contractor.

The awarding authority shall deem a finding of willful violation of the Fair Employment Practices Act to have occurred upon receipt of written notice from the Fair Employment Practices Commission that it has investigated and determined that the Contractor has violated the Fair Employment Practices Act and has issued an order under Labor Code Section l426 or obtained an injunction under Labor Code Section l429.
Upon receipt of such written notice from the Fair Employment Practices Commission, the awarding authority shall notify the Contractor that unless he demonstrates to the satisfaction of the awarding authority within a stated period that the violation has been corrected, his prequalification rating shall be revoked at the expiration of such period.

(e) The Contractor agrees that should the awarding authority determine that the Contractor has not complied with the Fair Employment Practices section of this Contract, then pursuant to Labor Code Sections l735 and l775 the Contractor shall, as a penalty to the awarding authority, forfeit for each calendar day or portion thereof, for each person who was denied employment as a result of such non-compliance, the penalties provided in the Labor Code for violation of prevailing wage rates. Such moneys may be recovered from the Contractor. The awarding authority may deduct any such damages from any moneys due the Contractor.

(f) Nothing contained in this Fair Employment Practices section shall be construed in any manner of fashion so as to prevent the awarding authority or the State of California from pursuing any other remedies that may be available by law.

(g) Prior to awarding the Contract, the Contractor shall certify to the awarding authority that he has met or shall meet the following standards for affirmative compliance, which shall be evaluated in each case by the awarding authority.

(1) The Contractor shall provide evidence, as required by the awarding authority, that he has notified all supervisors, foremen and other personnel officers in writing of the content of the anti-discrimination clause and their responsibilities under it.

(2) The Contractor shall provide evidence, as required by the awarding authority, that he has notified all sources of employees' referrals (including unions, employment agencies, advertisements, Department of Employment) of the content of the anti-discrimination clause.

(3) The Contractor shall file a basic compliance report, as required by the awarding authority. Willfully false statements made in such reports shall be punishable as provided by law. The compliance report shall also spell out the sources of the work force and who had the responsibility for determining who to hire, or whether or not to hire.

(4) Personally, or through his representatives, the Contractor shall, through negotiations with the unions with whom he has agreements, attempt to develop an agreement which shall:

a. Spell out responsibilities for nondiscrimination in hiring, referral, upgrading and training.

b. Otherwise implement an affirmative anti-discrimination program in terms of the unions' specific areas of skill and geography to the end that qualified minority workers shall be available and given an equal opportunity for employment.

(5) The Contractor shall notify the contracting agency of opposition to the anti-discrimination clause by individuals, firms or organizations during the period of its prequalification.

(h) The Contractor shall include the provisions of the foregoing paragraphs 1 through 5 in every first-tier subcontract so that such provisions shall be binding upon each subcontractor.

12. Contract Sum. The contract sum is the total amount payable by District to Contractor for the performance of the work encompassed by the Contract documents. The contract sum is _____ dollars, ($_____), unless modified in accordance with the Contract.

13. Any dispute as to the interpretation or application of this Contract Agreement, or of any of its component parts as listed in paragraph 4 above, shall be resolved by a court of competent jurisdiction. Applicable law shall be that of the State of California. Venue shall be in the County of Monterey, and any action shall be filed, administered and heard at the Superior Court, Monterey Branch Courthouse, 1200 Aguajito Road, Monterey.

14. This contract is binding upon the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, District Board of Directors has caused these presents to be executed by its officers, thereunto duly authorized, and Contractor has subscribed same, all on the day and year first above written.

_____
Contractor

By_____

Title_____

Date _____

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

By_____

Title_____

Date_____

CONSTRUCTION SPECIFICATIONS - SPECIAL CONDITIONS

1. CLEANUP WORK

a. During construction, the Contractor shall keep the worksite, areas adjacent to the worksite and access roads in an orderly condition, free and clear from debris and discarded materials. Care shall be taken to prevent spillage when hauling is being done. Any spillage or debris resulting from the Contractor's operations shall be immediately removed.

b. Upon completion of the work the Contractor shall remove from the worksite, areas adjacent to the worksite and access roads all plant, building, debris, unused material, and other material belonging to the Contractor or used under the Contractor's direction during construction. The Contractor shall repair all damage caused by the Contractor to a condition that equals or exceeds the condition at the start of the work.

c. The Contractor shall repair any damage caused by the project work to private access roads and adjacent landscaped areas. Repair work shall restore damaged areas to the original condition. Such repairs shall be made in a timely manner and shall be inspected by the District Engineer prior to completion of contract work.

4. Areas used to temporarily store equipment, rip-rap and/or other construction materials shall be returned to a pre-project condition. The Contractor shall identify such areas to the District Engineer, who shall review and approve the location. All areas outside of the river channel that are disturbed or compacted by heavy equipment shall be returned to pre-project conditions. All rip-rap and/or other materials inadvertently covered over at temporary storage site(s) shall be excavated and removed from the temporary storage site.

2. QUANTITIES OF WORK AND MATERIALS

The quantities listed in the bid schedule for which unit prices are requested are estimates only. See clause title "Quantity Variations" of these Special Conditions.

3. QUANTITY VARIATIONS

a. Where the quantity of work shown for an item in the bid schedule, including any modifications thereof, is estimated, no adjustment of the contract price nor of the performance time shall be made for overruns or underruns which are within 20 percent of the estimated quantity of any such item.

b. For overruns of more than 20 percent, the District Engineer shall re-estimate the quantity for the item, establish an equitable contract price for the overrun of more than 20 percent, adjust contract performance time equitably, and modify the contract in writing; accordingly, this clause to thereafter be applicable to the total re-estimated item quantity.

c. For underruns of more than 20 percent, the District Engineer shall determine the quantity for the item, establish an equitable contract price therefore, adjust contract performance time equitably, and modify the contract in writing accordingly.

4. **WEATHER**

a. The District Engineer may order suspension of the work in whole or in part, commencing with the day after receipt of the Notice to Proceed by the Contractor, due to weather or the effects of weather at the site, for such time as he considers it unfavorable for satisfactory prosecution of the work.

b. When the District Engineer orders suspension under (a) of this clause, the contract completion date shall be extended a full calendar day for each calendar day during suspension of the work if:

1. All work is suspended (work of an emergency, protective or maintenance nature may be performed at any time); and

2. The hours lost in any workday of the authorized work week through suspension equal one-half or more of an authorized workday.

c. If the District Engineer orders suspension of work as provided in (a) of this clause and the hours lost in the work day immediately preceding a non-work day equal one-half or more of the hours in an authorized work day, the contract completion date shall be extended a full calendar day for each non-work day during suspension of the work.

d. When the District Engineer orders any suspension of the work under this clause, the Contractor shall not be entitled to any cost or damages resulting from such suspension.

e. When the contract completion date is extended under this clause, the contract shall be modified in writing accordingly.

5. NON-COMPLIANCE WITH CONTRACT REQUIREMENTS

a. The District Engineer may order suspension of the work in whole or in part for such time as he deems necessary because of the failure of the Contractor to comply with any of the requirements of this contract, and the completion date shall not be extended on account of any such suspension of the work.

b. When the District Engineer orders any suspension of the work under (a) of this clause, the Contractor shall not be entitled to any costs or damages resulting from such suspension.

c. The rights and remedies of the District provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

6. SHUTDOWN OF WORK DUE TO HIGH FLOWS IN RIVER

The work contained in this contract is to be performed in the Carmel River, and thus is subject to the continuance of flows within the stream channel. If, in the opinion of the District Engineer, in consultation with the California Department of Fish and Game, the flows within the banks of the river exceed allowable levels, the work contained in this contract shall be immediately ended. The District Engineer shall determine the actual amount of work performed by the Contractor, and shall utilize the clause entitled "Quantity Variations" to determine if an adjustment in contract price is necessary due to the cancellation of the remaining work.

When the District Engineer orders a cancellation of the work under this clause, the Contractor shall not be entitled to any costs or damages resulting from such cancellation, except those previously covered under this clause.

7. PERMIT REQUIREMENTS AND INTERPRETATION OF PLANS AND SPECIFICATIONS

This project operates under provisions of federal, state and local statutes. The District has obtained all applicable permissions and permits, with the following exception: **the Contractor shall be responsible for obtaining an encroachment permit from the Monterey Peninsula Regional Parks District (MPRPD) for the purposes of access and temporary storage of materials on MPRPD property. The Contractor shall be responsible for meeting all requirements of this permit. For additional information, please contact Tim Jensen, Special Projects and Planning Manager at (831) 372-3196**. The contractor shall comply with all applicable laws and ordinances for work in the riverbed of the Carmel River. The District Engineer or his designated substitute shall perform project supervision and inspection during the construction period. Additionally, the District Engineer or his designated substitute shall have final authority over interpretation of the Plans and Specifications.

8. PRESERVATION OF EXISTING VEGETATION

Live trees within the project area shall not be damaged or removed, except as specified in the Plans and Specifications. The Contractor shall be responsible for trimming of trees. The Contractor shall furnish equipment and labor for the removal of trees and limbs. Any trees removed to complete the work shall be transplanted to another location along the river as directed by the District Engineer.

9. THREATENED SPECIES

Two sensitive species, steelhead (*Onchorynchus mykiss*) and California red-legged frogs (*Rana aurora draytonii*), may be present in or near the work site. Both species are listed as threatened and are under the protection of the Federal Endangered Species Act (ESA). The Federal permits from the U.S. Army Corps of Engineers for this project includes protections to reduce or minimize potential impacts to these species and their habitats. A copy of the permit may be obtained from the District. All employees and subcontractors of the Contractor must be able to identify these threatened species and their habitats. MPWMD biologists will provide worker training at each site prior to commencement of construction. Failure to adhere to the conditions of the Federal permit may subject the Contractor to severe penalties up to and including a $50,000 fine and/or one year in jail if convicted of a violation of the ESA.

10. DUST CONTROL

The Contractor shall control dust from use of access roads to the site and from grading activities within the river bottom. Control methods may include the use of watering trucks, placement of decomposed granite or other suitable material. MPWMD shall provide a water connection . The cost of dust control shall be included in the price of labor, equipment, and materials for the work.

11. WORK IN THE LIVE STREAM

Work in the live stream is not permitted, except as directed in the Plans and Specifications and permits for the work. All equipment operators working in the channel of the river shall carry a copy of the Stream Alteration Agreement issued by the California Department of Fish and Game to MPWMD.

12. EXOTIC PLANT SPECIES

All materials and equipment brought into work sites shall be free of exotic plant species. Equipment shall be cleaned by the Contractor and inspected by the District Engineer prior to entering the work site.

CONSTRUCTION SPECIFICATIONS
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the
deDAMPIERRE RESTORATION PROJECT

1. DIVERT CHANNEL FLOW

1.1. SCOPE

A flow diversion may be ordered by the District Engineer. If no flow diversion is ordered by the District Engineer, this item shall not be included as a pay item. The work shall consist of the installation of a protective barrier, excavation, temporary maintenance, and (if necessary) the abandonment of a flow diversion.

1.2. PAYMENT

Payment for this item shall be the lump sum as established in the Bid Schedule B, Item No. 1. Such payment shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work.

1.3. ITEMS OF WORK AND CONSTRUCTION DETAILS

The items of work to be performed in conformance with this specification are:

a. Installation of Fish Migration Barriers. Prior to excavation of a diversion channel, MPWMD shall perform a site inspection and remove or fence off steelhead and California red-legged frogs (if any) at the project site. At the direction of the District Engineer, the Contractor shall build a migration barrier across the river channel at the upstream end of the diversion channel. The barrier shall consist of clean fifteen (15) cm (6-inch) imported rock or river cobbles (note: no sand, gravel, or cobbles less than two inches in diameter may be used in the migration barrier). The barrier shall be no less than 1.2 meters (4 feet) high and 1.2 meters (4 feet) wide and shall completely block the downstream migration of fish. The barrier shall be left in place during the construction period.

An additional rock barrier or culvert with riser and fish barrier screen shall be placed at the downstream end of the diversion to prevent upstream migration.

b. Excavation and grading. This item shall consist of the grading of an approach ramp to the river from the parking lot at west side of the baseball fields and excavation of approximately 190 meters (620 feet) of a diversion channel capable of carrying a flow of up to 3 cubic meters per second (approximately 100 cubic feet per second)..

The Contractor shall grade a short ramp into the river as shown on the plans in a location staked by the District Engineer. **Please note that equipment access to the river for this project is over a well-used public hiking trail. The Contractor shall post warning signs and maintain pedestrian access along the trail at all times. Upon completion of the project, the Contractor shall restore the trail to a pre-project condition. Restoration work may include grading and revegetation with native grasses and plants and is subject to review and approval by the Monterey Peninsula Regional Parks District.**

A flow diversion channel shall be excavated in the location as shown on the plans and as staked by the District Engineer. The minimum width at the bottom of the diversion channel shall be two (2) meters (6.5 feet). Side slopes shall be no steeper than 1.5:1 (horizontal to vertical). Culverts shall be installed and maintained to allow equipment access across the live stream.

The District Engineer shall provide grade stakes at approximately 30-meter (100-foot) intervals. The grade stakes shall show the minimum depth necessary to divert flow. The Contractor shall be responsible for maintaining the capacity of the channel. Over-excavation of the initial diversion may be necessary, due to siltation and subsidence of diversion side slopes. After flow diversion has been completed, a berm shall be maintained between the work site and the live channel to prevent stream flow from entering the work site and to prevent silt-laden water from entering the river.

c. Stockpile cobbles. After the flow diversion has been completed and the work site has been dewatered, the Contractor shall remove the top 15 to 25 cm. (6 to 12 twelve inches) of river cobbles from areas in the river bottom that will be impacted by heavy equipment and stockpile these for later placement.

c. Abandonment. After all work in the channel is completed, the Contractor shall replace the cobble layer in areas disturbed by heavy equipment and return the channel bottom to a pre-project condition. Prior to demobilization, MPWMD, in cooperation with other regulatory agencies, shall determine whether the flow diversion shall be filled in. If necessary, the Contractor shall reroute live stream flow to the pre-project condition, remove any installed culverts, and shall fill the diversion channel in with native channel bottom material (sand, gravel, and cobbles).

Fish migration barriers shall be notched or otherwise dismantled to allow fish migration after all work in the channel has been completed.

CONSTRUCTION SPECIFICATIONS
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the
deDAMPIERRE RESTORATION PROJECT

2. TRANSPORT LOGS

2.1. SCOPE

The work shall consist of the transport of up to ten (10) logs from the Big Creek lumber yard north of Davenport, California to the work site. For additional information concerning the logs, contact Bob Reynolds, Forester, Big Creek, 3564 Highway 1, Davenport, California, 95017, ph. (831) 457-5042 or (831) 229-3839.

2.2. PAYMENT

Payment for this item shall be the unit price as established in the Bid Schedule B, Item No. 2. Such payment shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work.

2.3. ITEMS OF WORK AND CONSTRUCTION DETAILS

Big Creek has donated 10 large (estimated weight of 4-6 tons) redwood and Douglas fir logs for this project. The redwood logs have a large rootball attached. The Douglas fir logs do not have a rootball attached. The logs are up to 13 meters (42 feet) long. No modification of the logs and/or rootball shall be allowed. The Contractor shall transport the logs from the Big Creek lumber yard to the work site.

Transport of the logs through the Carmel Valley Village area and into the work site shall occur during normal working hours (i.e., between 8 a.m. and 5 p.m., Monday through Friday). Failure to comply with this specification will be considered a serious violation of contract provisions and may subject the Contractor to fines and/or removal from the project for each infraction.

CONSTRUCTION SPECIFICATIONS
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the
deDAMPIERRE RESTORATION PROJECT

3. TRANSPORT, SUPPLY, AND PREPARE RIP-RAP BOULDERS

3.1. SCOPE

The work shall consist of the transport, supply, and preparation of rip-rap boulders to anchor large wood habitat structures.

3.2 PAYMENT

Payment for this item shall be the unit prices as established in the Bid Schedule B, Item No. 3A, 3B, and 3C. Payment for item 3B shall be based on the weight tags issued to the Contractor. Such payment shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work.

3.3. ITEMS OF WORK AND CONSTRUCTION DETAILS

The items of work to be performed in conformance with this specification are:

1. Rock transport. The Contractor shall transport approximately 100 tons of selected four-(4) to six-(6) ton rip-rap from a storage area located at the mid-Carmel Valley shopping area to the site. Approximately 20 boulders shall be transported from this site to the project site. The District Engineer shall mark boulders to be transported.

b. Rock supply. The Contractor shall deliver approximately 80 tons of rip-rap to the Project site. Each rock shall be in the four (4) to five (5) ton range.

c. Rock preparation. **Note: No work for this item may be completed in the riverbed.** Four threaded galvanized or stainless steel ¾-inch diameter (shank) cable anchors shall be attached to each boulder using the procedures described in the International Conference of Building Officials (ICBO) Evaluation Report ER-5193. Note that the embedded portion of the cable anchors must be completely threaded. Embedment depth for each anchor shall be 10 inches (min.). Each hole shall be thoroughly cleaned with water and dried with compressed air. Prior to insertion of cable anchors, the District Engineer shall inspect each hole for compliance with this specification. Cable anchors shall be affixed to the rock with Hilti HIT HY-150 adhesive or equivalent as shown in the Plans.

CONSTRUCTION SPECIFICATIONS
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the
deDAMPIERRE RESTORATION PROJECT

4. INSTALL LARGE WOOD AND ROCK STRUCTURES

4.1. SCOPE

The work shall consist of the installation of large wood in the streambank and attachment to rip-rap to anchor large wood habitat structures.

4.2 PAYMENT

Payment for this item shall be the unit price as established in the Bid Schedule B, Item No. 4. Such payment shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work.

4.3. ITEMS OF WORK AND CONSTRUCTION DETAILS

The items of work to be performed in conformance with this specification are:

a. Rock placement. Each rock shall be placed as shown in the Plans and shall be lifted into place at the streambank using a sling affixed to the cable anchors. Cable anchors that break or pull out of the rock shall be repaired by the Contractor as detailed in Item 3.3.c. Rock for each habitat structure shall be placed in the streambank and channel prior to placement of logs. The District Engineer shall stake the location for each log.

b. Placement and preparation of logs. Logs shall be placed on the rocks as shown in the Plans. One-inch holes shall be drilled approximately horizontally through the log to accommodate placement of a ¾-inch cable through the log as shown in the Plans.

c. Cable attachment. Two, ¾-inch diameter 6x19 class IWRC stainless steel (302/304 grade), wire ropes shall be attached to each rock as shown in the Plans. An extra heavy duty stainless steel wire rope thimble meeting Federal Specifications FF-T-276b Type III shall be attached to each cable end using a minimum of four (4) stainless steel drop-forged U-bolt type wire rope clips. Rope turn back from the thimble shall be eighteen (18) inches. The U-bolt section shall be placed on the dead end of the rope (saddle on the live end). Torque on each bolt shall be 130 foot-pounds. Cables shall fit snugly around the logs.

CONSTRUCTION SPECIFICATIONS
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the
deDAMPIERRE RESTORATION PROJECT

5. EXCAVATE AND INSTALL WILLOWS

5.1. SCOPE

The work shall consist of the excavation and backfill of a four (4)-foot deep holes. Backfill shall occur after placement of willow cuttings by the District.

5.2 PAYMENT

Payment for this item shall be the unit price as established in the Bid Schedule B, Item No. 5. Such payment shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work.

5.3. ITEMS OF WORK AND CONSTRUCTION DETAILS

The items of work to be performed in conformance with this specification are:

a. Excavation and Backfill. The Contractor shall excavate a four (4)-foot deep holes at locations directed by the District Engineer (generally on floodplain areas). The contractor shall backfill the holes as directed by the District Engineer.

b. Placement of Willow Cuttings. The District shall place willow cuttings in the trench.

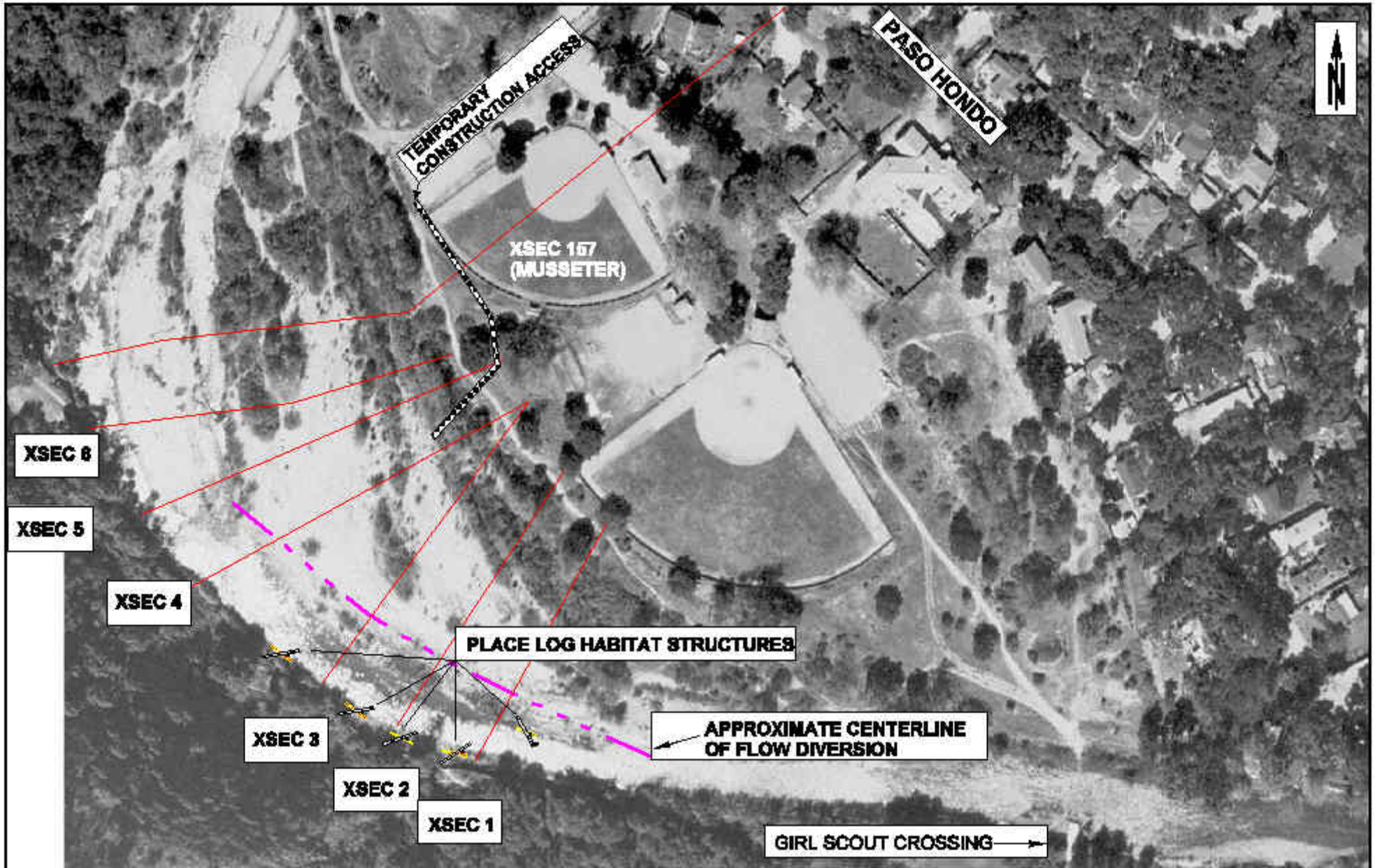
CONSTRUCTION DRAWINGS
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the
deDAMPIERRE RESTORATION PROJECT

The following drawings shall be included in the contract for work:

Cross-Sections
(see drawings - attached to contract)

Sections 1 through 3

Plan View
Installation of Large Wood Habitat Structures at deDampierre restoration Project Plan View (Scale 1:2000)
Log/Rock Deflector Detail
Cable Anchor and Wire Rope Details



Monterey Peninsula Water Management District
P.O. Box 85 Monterey CA 93942
● Ph. (831) 659-2543 ● FAX (831) 659-2598 ●
WWW.MPWMD.DST.CA.US

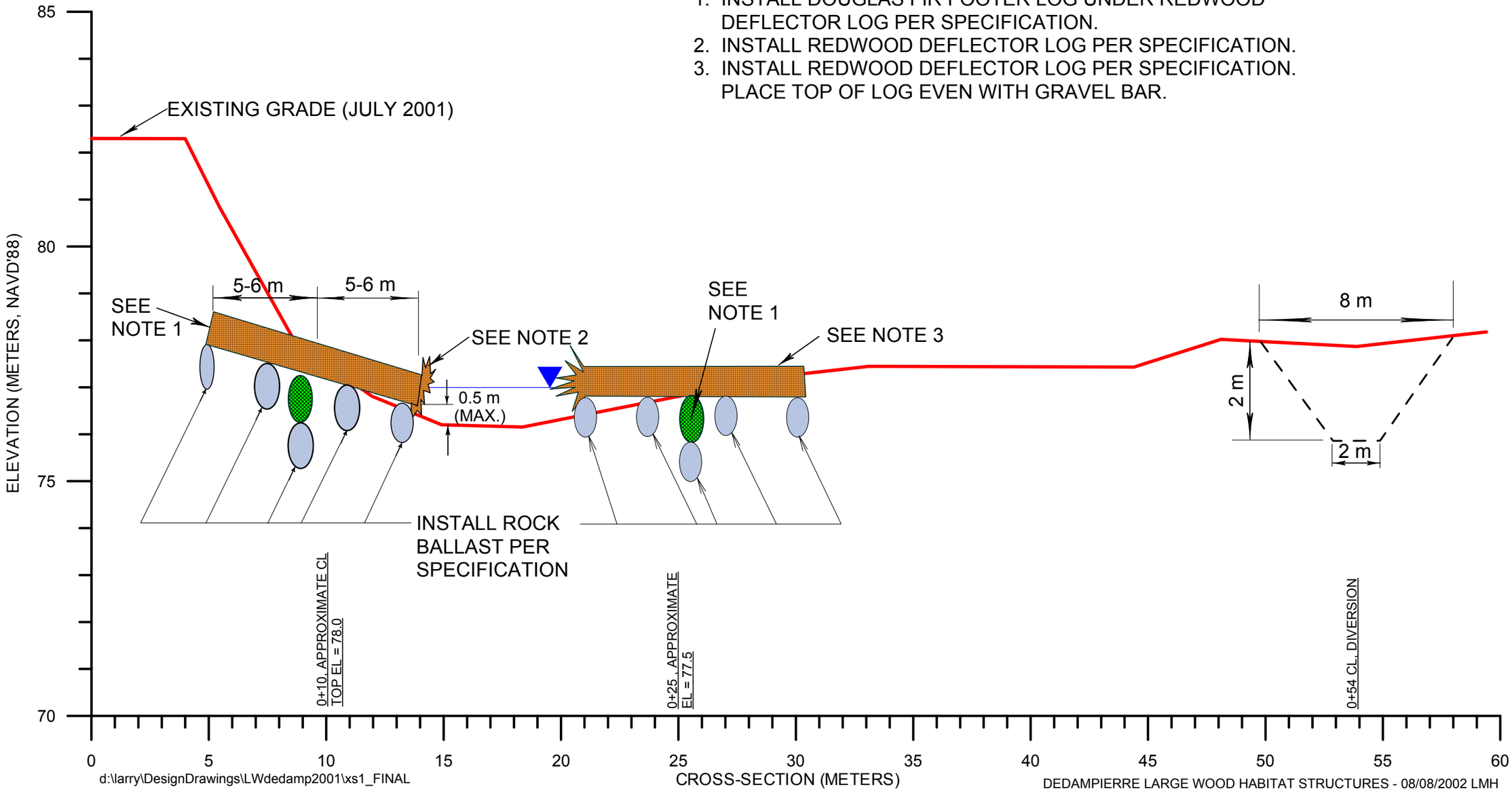
INSTALLATION OF LARGE WOOD HABITAT STRUCTURES AT DEDAMPIERRE RESTORATION PROJECT
PLAN VIEW SCALE 1: 2000

0m 20 40 60 80 100 120m

August 9, 2001

CROSS-SECTION AT STATION 1

NOTES:
1. INSTALL DOUGLAS FIR FOOTER LOG UNDER REDWOOD DEFLECTOR LOG PER SPECIFICATION.
2. INSTALL REDWOOD DEFLECTOR LOG PER SPECIFICATION.
3. INSTALL REDWOOD DEFLECTOR LOG PER SPECIFICATION. PLACE TOP OF LOG EVEN WITH GRAVEL BAR.



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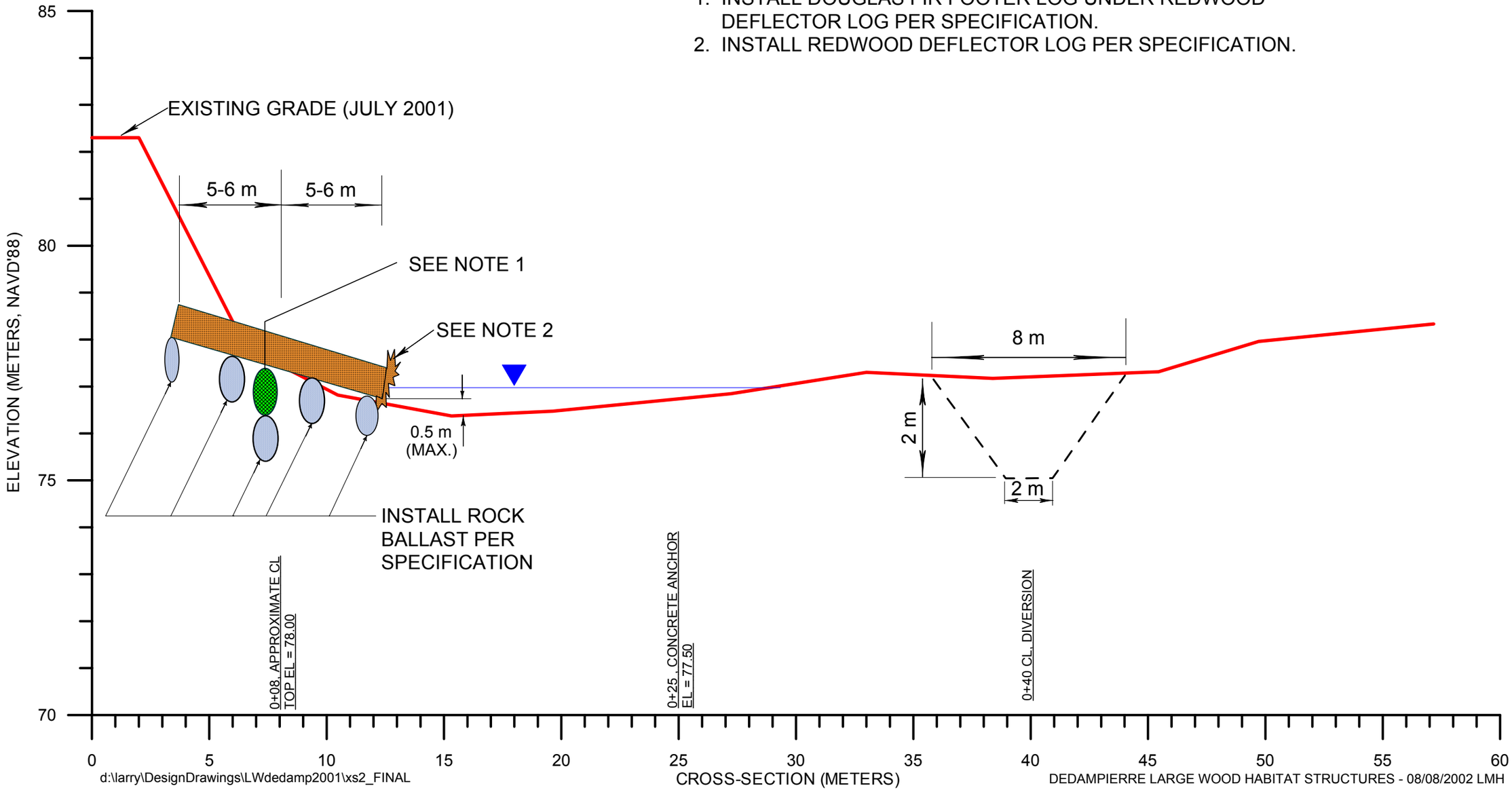
DEDAMPIERRE LARGE WOOD HABITAT STRUCTURES - 08/08/2002 LMH

CROSS-SECTION AT STATION 2

NOTES:
1. INSTALL DOUGLAS FIR FOOTER LOG UNDER REDWOOD DEFLECTOR LOG PER SPECIFICATION.
2. INSTALL REDWOOD DEFLECTOR LOG PER SPECIFICATION.



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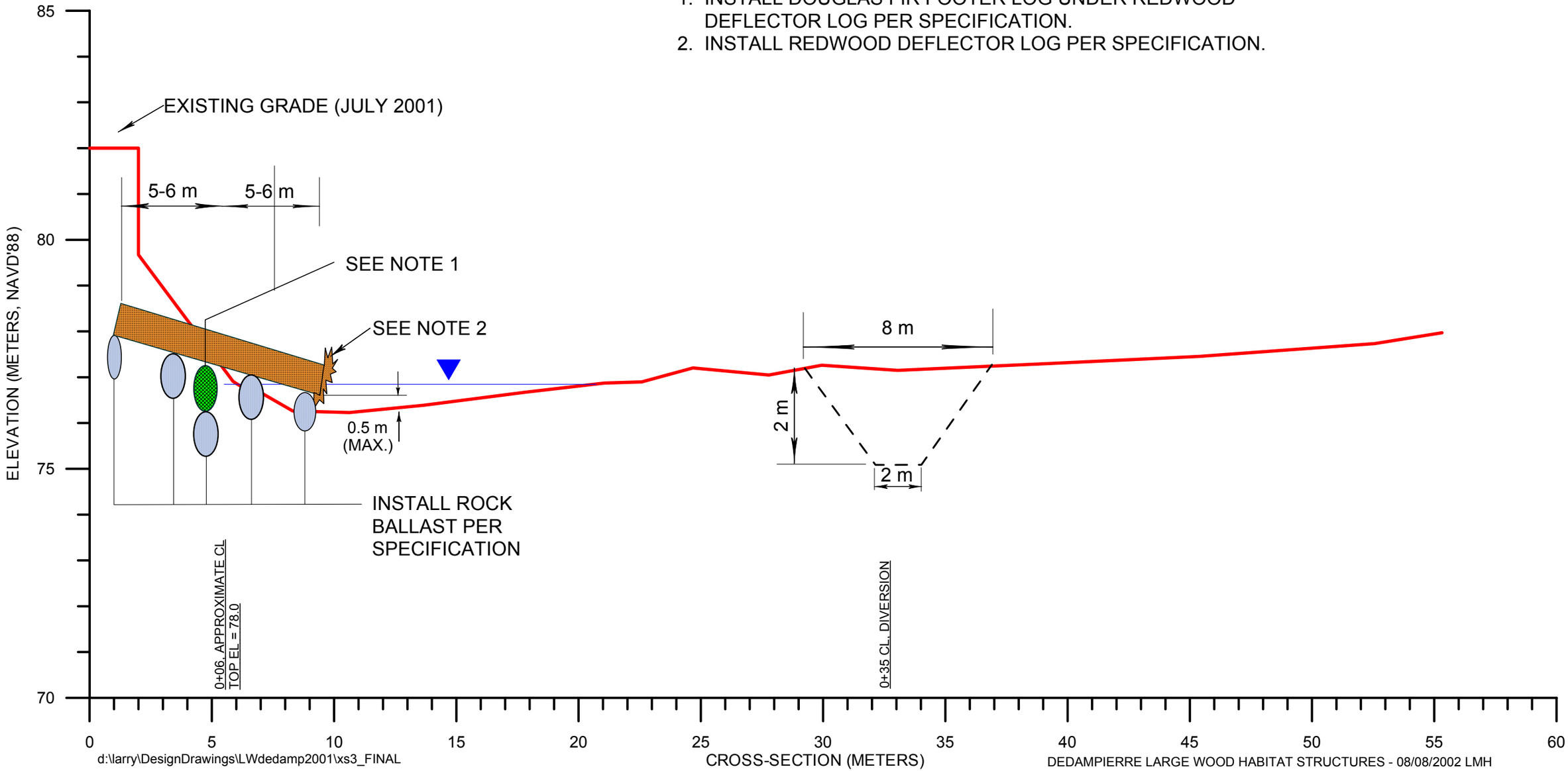
DEDAMPIERRE LARGE WOOD HABITAT STRUCTURES - 08/08/2002 LMH

CROSS-SECTION AT STATION 3

NOTES:
1. INSTALL DOUGLAS FIR FOOTER LOG UNDER REDWOOD DEFLECTOR LOG PER SPECIFICATION.
2. INSTALL REDWOOD DEFLECTOR LOG PER SPECIFICATION.



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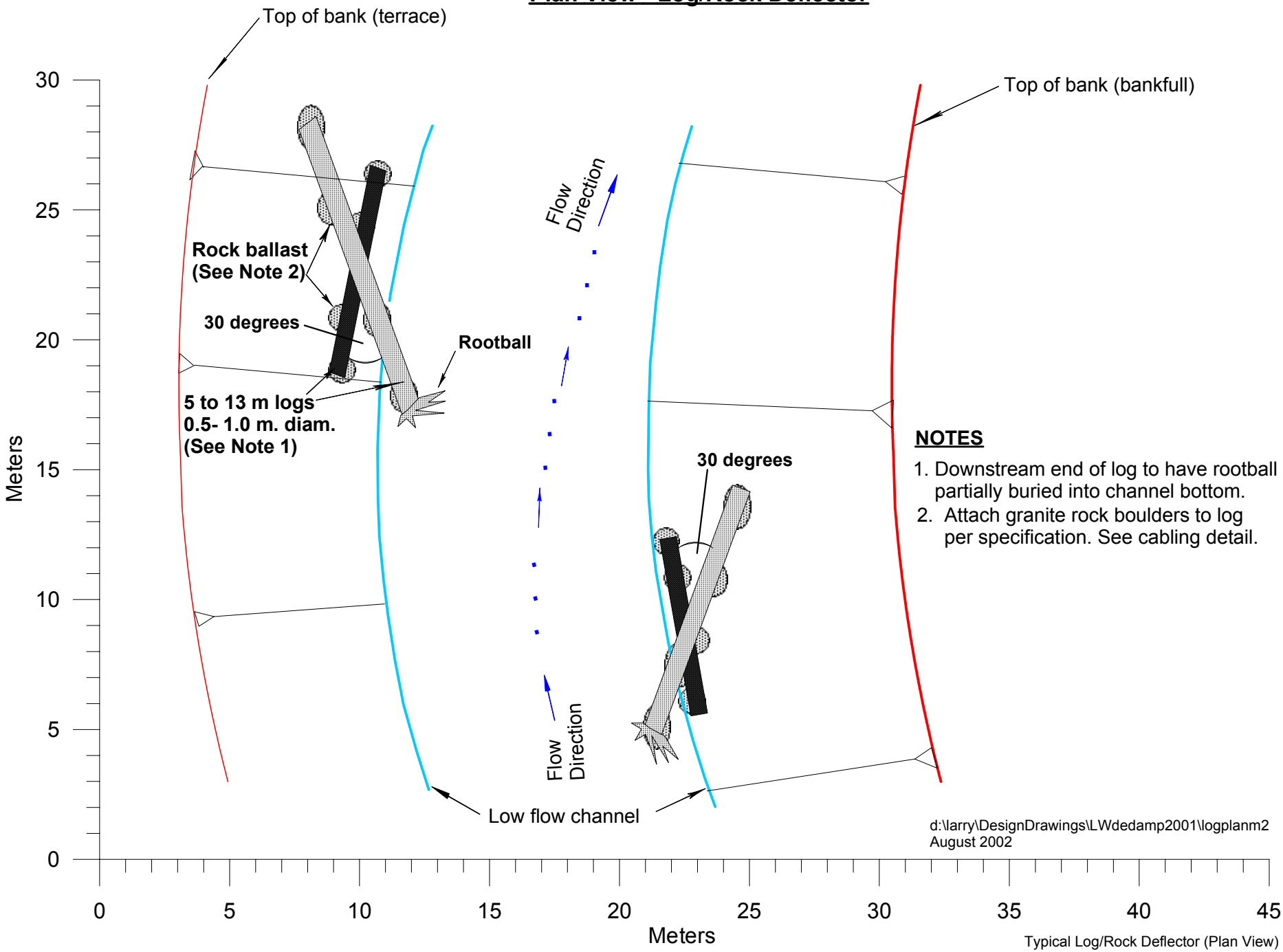
DEDAMPIERRE LARGE WOOD HABITAT STRUCTURES - 08/08/2002 LMH

Plan View - Log/Rock Deflector



NOTES

1. Downstream end of log to have rootball partially buried into channel bottom.
2. Attach granite rock boulders to log per specification. See cabling detail.

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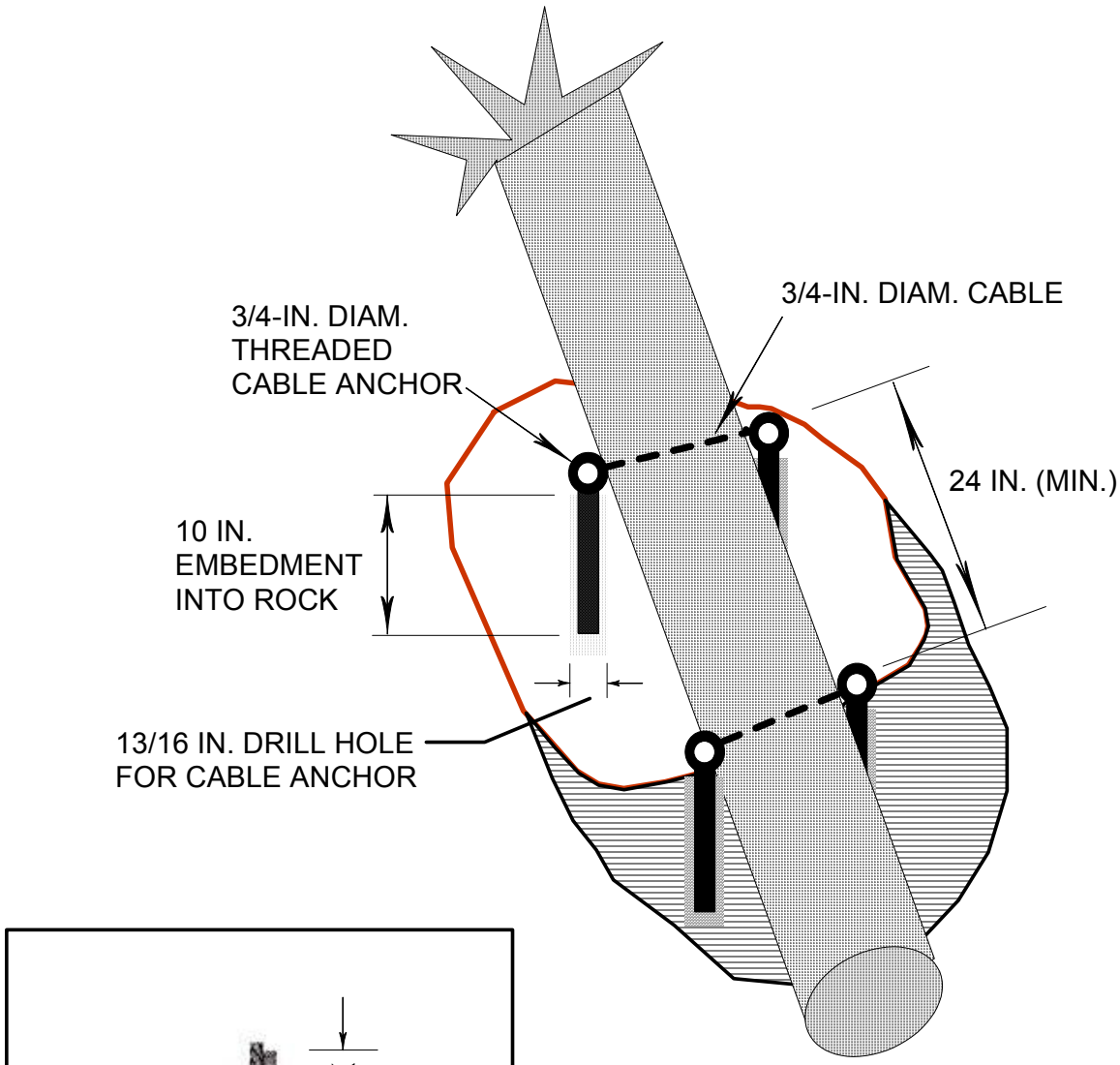
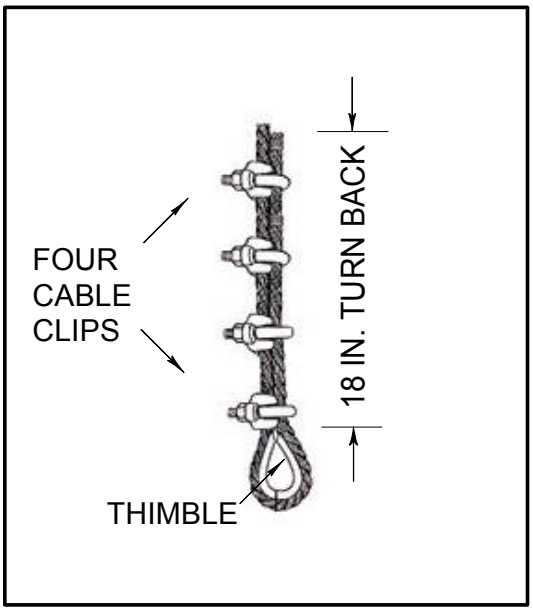
August 2002

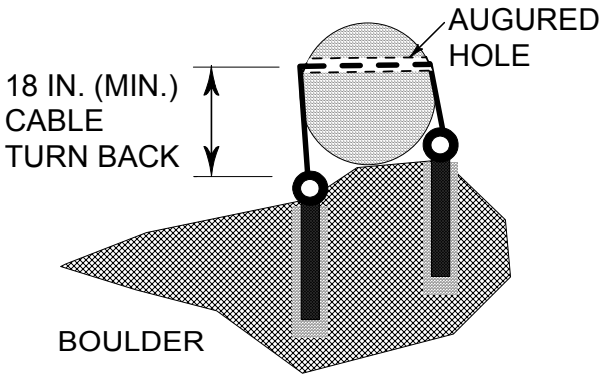
Typical Log/Rock Deflector (Plan View)

CABLE ANCHOR AND WIRE ROPE DETAILS





CABLE DETAIL



PROJECT TO INSTALL LARGE WOOD HABITAT STRUCTURES IN THE CARMEL RIVER USING CALIFORNIA DEPARTMENT OF FISH AND GAME GRANT FUNDS

The Monterey Peninsula Water Management District (MPWMD), in cooperation with the University of California at Santa Cruz (UCSC), Big Creek lumber company, the California Department of Fish and Game (CDFG), and the Monterey Peninsula Regional Parks District proposes to install engineered large wood habitat structures into the active portion of the channel along approximately 400 lineal feet of the deDampierre Restoration Project in the Carmel River (see **Figures 1 and 2)**. This reach of the river underwent significant lateral bank erosion during 1995 and 1998 after winter peak flows of 16,000 cubic feet per second (cfs) and 14,500 cfs, respectively. The stream migrated laterally 200 feet during this period, resulting in the loss of streamside vegetation and several acres of adjacent mature riparian forest and oak-covered terrace deposits.

This project will benefit steelhead (*Oncorhychus mykiss*) and other sensitive aquatic species found in the Carmel River such as California red-legged frogs (*Rana aurora draytonii*) and Western pond turtles (*Clemmys marmorata*). UCSC and Big Creek are donating five large redwood logs with rootballs attached and five Douglas Fir logs for this project. CDFG is providing a grant from proposition 13 funds for the California Coastal Salmon Recovery Plan. The Regional Parks District has approved placement of the structures at the deDampierre Addition to Garland Park and MPWMD will provide design, construction management, and monitoring.

The project area is centered at approximately River Mile (RM, measured from the ocean) 13.5. The site is located across from the deDampierre Little League fields near Carmel Valley Village. Elements of the project include:

1) Transport of approximately 10 large logs (30 to 40 feet long) and 50 tons of rock to the project site.
2) Grading and excavation in the channel bottom to divert streamflow and shape the streambank.
3) Placement of log and boulder habitat structures in the channel bottom and streambank.
4) Installation of native riparian vegetation in an adjacent gravel bar.

The estimated cost of the project, including MPWMD staff time, is approximately $40,000. The California Department of Fish and Game has approved a grant under the California Coastal Salmon Recovery Plan of up to approximately $69,000 to reimburse MPWMD for a portion of the project cost. MPWMD will provide in-kind services for environmental review, permit acquisition, design, contract management, and construction management. In-stream work is scheduled to be completed in the fall of 2002.

Construction Activities

Most construction activities will be in the active channel, which is approximately the area of the 10-year runoff event (about 9,400 cfs), with a staging and preparation area in the adjacent floodplain area. Ten large wood logs will be anchored to the streambank in the perennial portion of the stream. Native riparian vegetation will be installed in the large wood habitat structures and in an adjacent floodplain. Monitoring data will be collected for a minimum of three years, including stability, steelhead population, riparian vegetation growth, and numbers of benthic macroinvertebrates.

Installation of logs and planting of floodplain areas will require hiring and directing an independent contractor. Equipment necessary to install logs, anchor materials, and plant vegetation will include a small excavator, loader, and backhoe. In addition, logs and anchor materials will be trucked in to the site, as this material is not available in this reach. Because work will occur while flow is present, a small diversion channel and culvert crossing capable of handling 5-15 cubic feet per second will be necessary to maintain flow through the project area.

Steelhead are present in the channel at the worksite and will be relocated prior to the start of construction. Surveys for California red-legged frogs will be conducted a few days prior to the start of construction. If any frogs are found, they will be relocated to appropriate nearby sites.

Prior to log installation, existing slopes that are steeper than 2:1 will be graded or filled with material skimmed from a nearby gravel bar. Logs 30-40 feet long will be placed a minimum of 15 feet into the streambank and anchored with four to six-ton boulders. Logs in the streambank will be placed at a slight dip to provide scouring action at various flow levels. A footer log will be placed at the toe of the streambank, parallel to flow, to support the "digger" log and encourage additional scour. Large rocks attached to the logs will prevent or slow movement of the logs through the river at high flows. Together, the log and rock structures will provide shade and cover at most flows to steelhead young-of-the-year, smolts, and migrating adults.

Where appropriate, native riparian cuttings will be placed during log and rock installation. Vegetation placed in this fashion is less likely to wash out during winter flows, as it is possible to place cuttings in protected areas (e.g., the downstream side of a log) or to place the cutting deep enough to resist scour. In addition to planting vegetation during log installation, MPWMD will revegetate disturbed floodplain areas by excavating shallow trenches and planting native riparian vegetation. Vegetation near the streamside will provide shade and food (in the form of insects) directly to the stream. Additional riparian plantings in floodplain areas will provide a larger seed source for trees in the riparian corridor and additional terrestrial habitat.

Construction work is scheduled for October 2002, when the river is at its lowest flow. The project should take about three or four weeks and will involve transport trucks to haul logs of up to 40 feet long and rock of up to seven tons each into the project area. Heavy construction equipment, such as an excavator, a loader, and a backhoe, will be used to divert river flow away from the project area, place the habitat structures, and plant riparian cuttings.

MPWMD proposes to monitor the site for a number of parameters including: benthic population,

substrate size and cobble embeddedness, aquatic species (primarily steelhead), terrestrial species (primarily avian), topographic information, and flow information. A database for most of these parameters has already been established. Monitoring for benthics has not previously been carried out.

It is proposed to monitor project performance utilizing the California Stream Bioassessment Procedure, as described in the Protocol Brief for Biological and Physical/Habitat Assessment in Wadeable Streams issued by the California Department of Fish and Game Water Pollution Control Laboratory, Aquatic Bioassessment Laboratory and revised May 1999. Benthic Macroinvertebrates (BMI) will be sampled in appropriate riffles as described in the Anon-point source sampling design@ above and below the project at a point in time immediately prior to and immediately after implementation of the project. The two sites will also be sampled on an annual basis for a period of ten years. The sampling will be conducted by District staff with valid Scientific Collecting Permits who have been trained in the methodology by Department staff. This monitoring will give an direct indication of the water quality and aquatic habitat health.

The Carmel River Steelhead Fishery and MPWMD River Restoration Projects

Status of the Carmel River Steelhead Fishery

MPWMD fisheries biologists have estimated that the Carmel River could support about 3,500 steelhead adults upstream of San Clemente Dam. In 1984, at the request of concerned citizens, MPWMD began a program to restore and stabilize degraded habitat along the river, with a focus on improving steelhead habitat. An extended drought in the late 1980s severely impacted the run and caused the steelhead in the Carmel River to be considered a Aremnant@ run. In 1991, only one returning adult was counted at the San Clemente Dam fish ladder at RM 18.6, although it is possible a few more made it up into the system to spawn (counts were performed manually by turning water off to the ladder and counting fish in the ladder).

Because of local efforts to revive the run and a series of wet years between 1995 and 2000, adult counts at the San Clemente Dam fish ladder have increased to an annual run that has ranged from about 400 to 900 between 1995 and 2001. MPWMD has completed several fishery enhancement projects including spawning gravel injection, a fish rearing facility at Sleepy Hollow, riffle modifications and modifications to the San Clemente Dam fish ladder.

Steelhead were listed as a threatened species under the protection of the Federal Endangered Species Act in 1998 by the National Marine Fisheries Service. Several local efforts to protect and restore the steelhead fishery are currently in progress, including development of additional water supplies, introduction of spawning gravels, an artificial rearing channel, improvements to fish passage, and the organization of a watershed council.

MPWMD River Restoration Projects

MPWMD has regularly incorporated fishery enhancement features into restoration projects along the Carmel River. In particular, MPWMD has used techniques such as replication of a natural pool-riffle sequence, placement of spawning-sized material on the channel bottom, installation of streamside related vegetation, and more recently, has incorporated large wood into streambank erosion protection.

In 1992, MPWMD completed the deDampierre Restoration Project, which was designed to restore streambanks, reduce bank instability, enhance aquatic habitat, and restore riparian vegetation along 6,000 lineal feet of the active channel. High flows in 1993, 1995, and 1998 damaged most of the erosion protection installed on the streambanks and caused significant bank erosion, channel meandering, and aquatic habitat destruction. In 2002, several areas within the original deDampierre project remain in a somewhat degraded condition due to a lack of cover. The installation of large wood habitat structures will provide cover and a focal point for flows to scour the channel bottom and create a deep pool.

Large Wood Management-- Past and Present

Historically, large wood was routinely removed from stream systems for a variety of reasons. An influential bulletin published by CDFG in 1954, The Life Histories of the Steelhead Rainbow Trout by Leo Shapovalov and Alan Taft, recommended Aremoval of log jams and debris clogging stream channels@ to improve spawning habitat (p. 269). Agencies conducting channel maintenance projects regularly removed or significantly altered large wood to improve channel capacity and reduce the threat of flooding and erosion from logjams.

In the Carmel River drainage basin, especially during periods of high flows, significant volumes of large wood enter the main stem from both upland and stream side areas. Prior to MPWMD=s involvement in the management of the river, various agencies and property owners routinely carried out channel clearing activities, often with heavy construction equipment. Between 1990 and 1998, MPWMD carried out channel clearing activities in the lower 15.5 miles with handtools, such as chainsaws and loppers. The primary focus of this activity was to reduce bank erosion during relatively low flows (less than the 10-year flow).

Although no comprehensive surveys of large wood in the Carmel River have been conducted, it is likely that the current volume of large wood is less than what would be expected if no removal or modification had been completed. If left alone, large pieces weighing several tons may remain in the channel bottom or overbank areas for several years. Large wood in the stream bottom presents both an opportunity to increase the complexity of aquatic habitat and a challenge for agencies responsible for channel maintenance in the urbanized portion of the river (from the ocean to approximately Camp Steffani).

Since the listing of steelhead as a threatened species, more attention has been focused on the role of large wood in providing habitat for all life stages of the steelhead. Today, most fisheries biologists agree that large wood plays a key role as a structural element in establishing and maintaining pools and providing unique stream features. Recent modification of MPWMD=s channel maintenance guidelines and projects to install large wood habitat structures should provide additional large wood

to the river system.

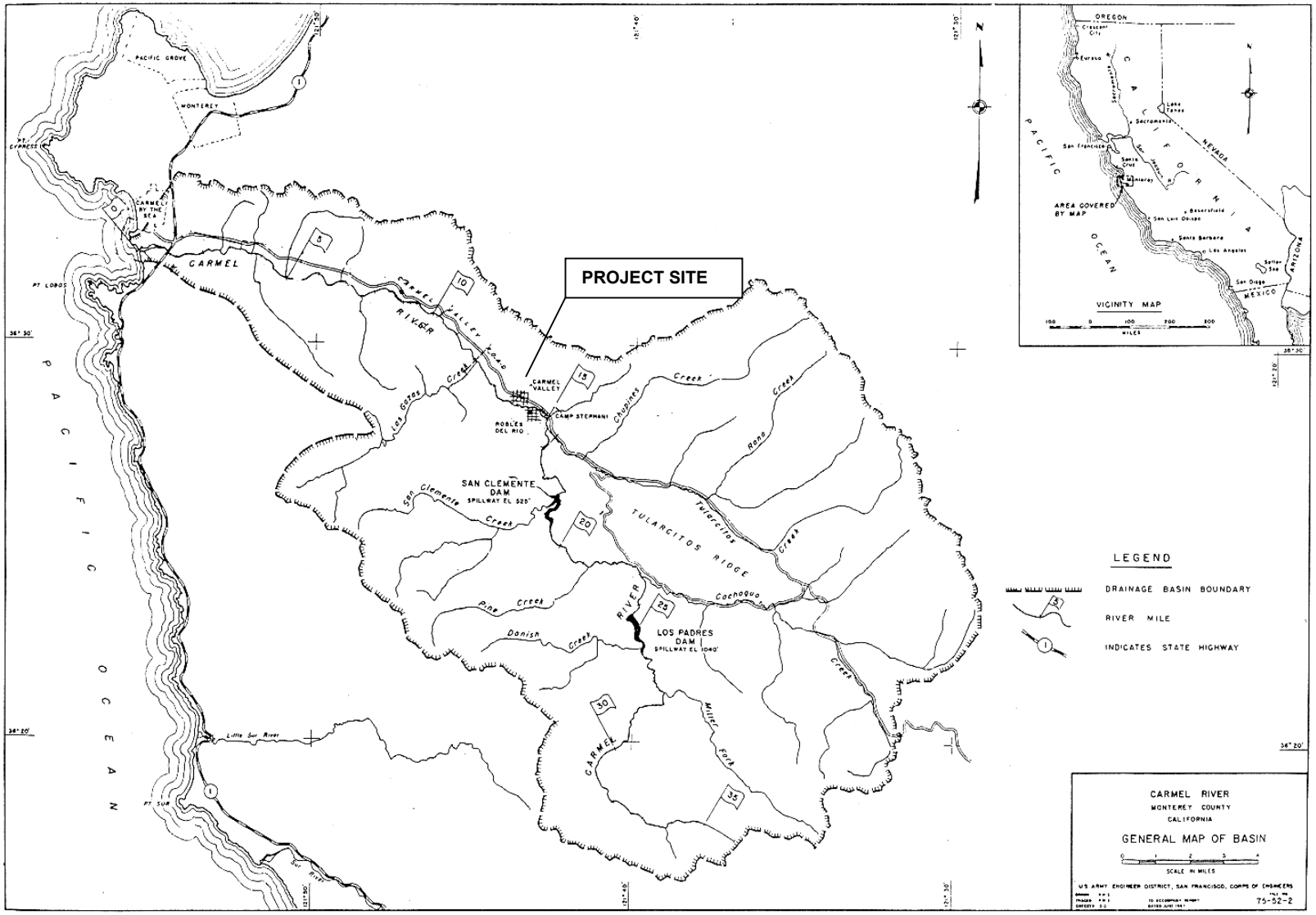


Figure 1. Carmel River Watershed

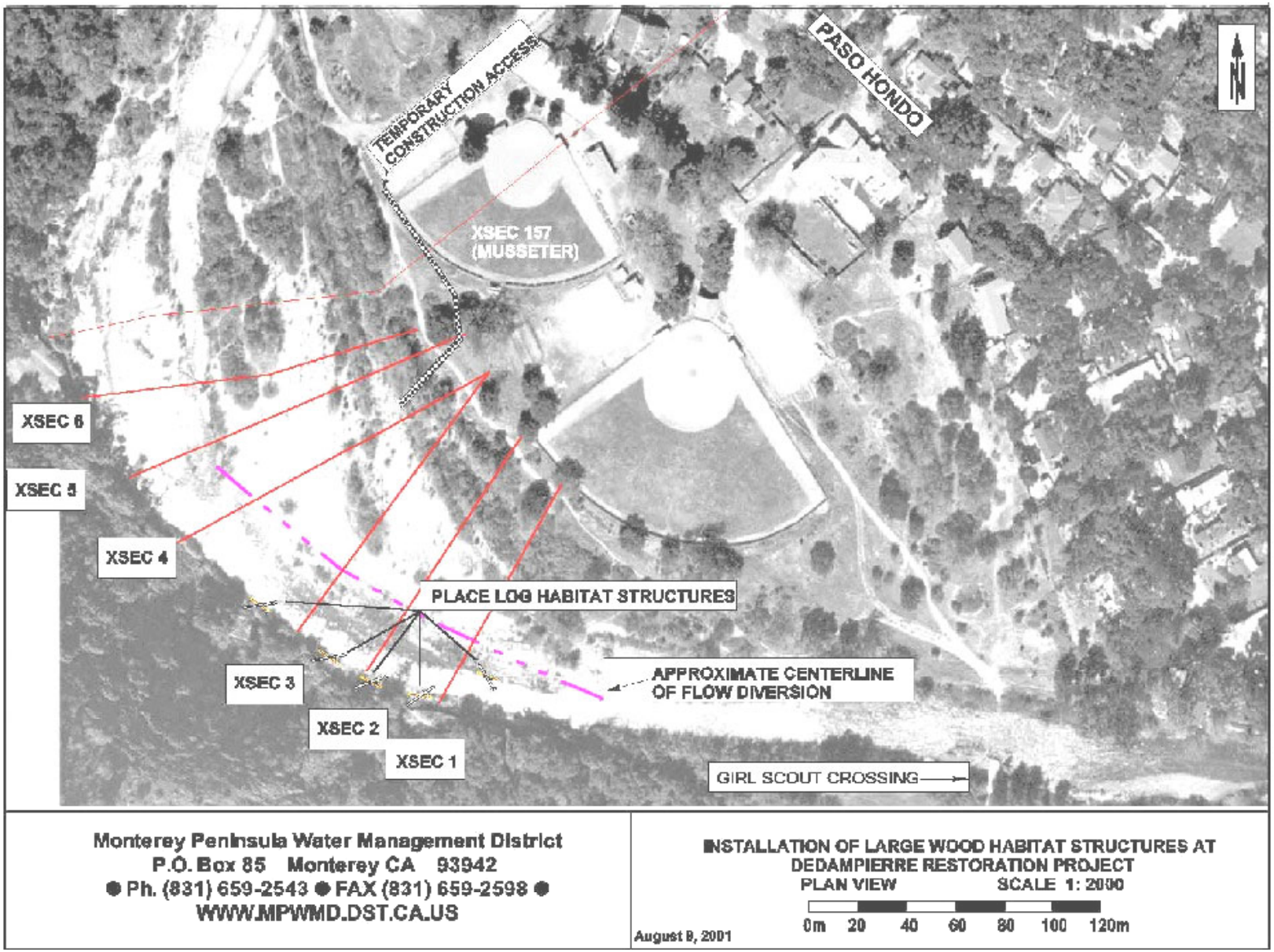

TEMPORARY CONSTRUCTION ACCESS
PASO HONDO
XSEC 157 (MUSSETER)
XSEC 6
XSEC 5
XSEC 4
PLACE LOG HABITAT STRUCTURES
XSEC 3
APPROXIMATE CENTERLINE OF FLOW DIVERSION
XSEC 2
XSEC 1
GIRL SCOUT CROSSING
N
Monterey Peninsula Water Management District
P.O. Box 85 Monterey CA 93942
● Ph. (831) 659-2543 ● FAX (831) 659-2598 ●
WWW.MPWMD.DST.CA.US
INSTALLATION OF LARGE WOOD HABITAT STRUCTURES AT DEDAMPIERRE RESTORATION PROJECT
PLAN VIEW SCALE 1: 2000
0m 20 40 60 80 100 120m
August 9, 2001

Figure 2

BID SCHEDULE *
INSTALLATION of LARGE WOOD HABITAT STRUCTURES at the deDAMPIERRE RESTORATION PROJECT

ITEM	WORK OR MATERIAL	QUANTITY	UNIT COST	TOTAL COST
1.	DIVERT CHANNEL FLOW**	1 EA	_____	1,500
2.	TRANSPORT LOGS	10 EA	_____	5,000
3.	TRANSPORT, SUPPLY, AND PREPARE RIP-RAP			
	A. TRANSPORT APPROXIMATELY 20 BOULDERS (4-6 TON CLASS)	20 EA	_____	4,000
	B. SUPPLY RIP-RAP BOULDERS	80 TONS	37.50	3,000
	C. SUPPLY AND INSTALL CABLE ANCHORS IN RIP-RAP BOULDERS	40 EA	_____	10,900
4.	INSTALL LARGE WOOD AND ROCK STRUCTURES	5 EA	_____	18,000
5.	EXCAVATE AND INSTALL WILLOWS	16 HR	_____	1,600
			TOTAL	$ 44,000.00

*Upon award, this bid form shall be made a part of the Contract.
** Paid only if flow diversion is ordered by the District Engineer

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Download Log Installation .PDF


OCTOBER 31, 2002

Monterey Peninsula Water Management District

Installation of Large Wood Habitat Structures at the deDampierre Restoration Project

Work benefits sensitive aquatic species found in the Carmel River such as steelhead (*Oncorhychus mykiss*), California red-legged frogs (*Rana aurora draytonii*), and Western pond turtles (*Clemmys marmorata*).

The Monterey Peninsula Water Management District in cooperation with the University of California at Santa Cruz, Big Creek Lumber Company, the California Department of Fish and Game, and the Monterey Peninsula Regional Parks District installed five large wood habitat structures along 400 lineal feet of the Carmel River.

UC SANTA CRUZ

BIG CREEK

MONTEREY PENINSULA REGIONAL PARK DISTRICT

CALIFORNIA DEPARTMENT FISH & GAME

THREATENED SPECIES

Using state of the art electro fishing equipment, an MPWMD crew (shown above) made four passes through the site prior to the beginning of construction. A total of 160 steelhead were captured and relocated.

California red-legged frog
(*Rana aurora dratonii)*

MPWMD found evidence of California red-legged frogs (CRLF) at the site in late spring 2002. Prior to the start of construction in October, Dawn Reis lead a team of biologists who conducted four night-time surveys during which ten adult CRLF and two juveniles were found and relocated. Inspections were also conducted prior to each day's activities.

STEELHEAD (*Oncorhynchus mykiss*)

This 1994 MPWMD file photo shows an adult netted out of the 70-foot high San Clemente Dam fish ladder. The returning adult population plummeted to a low of one fish counted in the ladder in 1991. Efforts by local fishermen and resource agencies have brought the run back from near extinction. Recent counts have been averaging between 600 and 1,000 adults annually. Estimates of the historical run range from 4,000 to 20,000 adults. MPWMD estimates that the perennial portion of the main stem up to Los Padres Dam at River Mile 25 currently supports between one and two fish per lineal foot (including all life phases), or 100,000 to 200,000 fish. Steelhead were listed as a Federally threatened species in 1998.

CATCH AND RELEASE PROGRAM

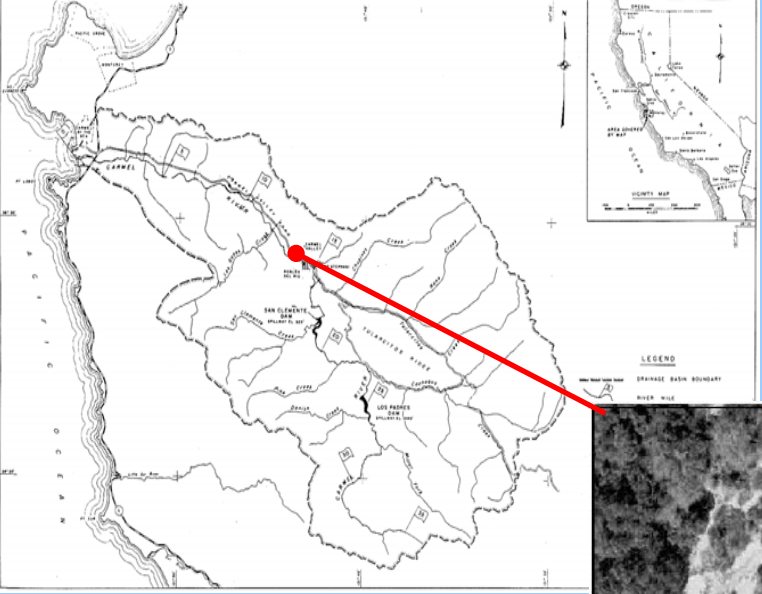
Photo courtesy of the Carmel River Steelhead Association

Fishermen are eager to restore the steelhead fishery. Organizations such as the Carmel River Steelhead Association routinely volunteer their time for summer rescues, monitoring, and habitat enhancement. Cal Trout, the California Sportfishing Protection Alliance, and the Sierra Club are also actively involved with advocating for the protection and enhancement of the steelhead fishery.

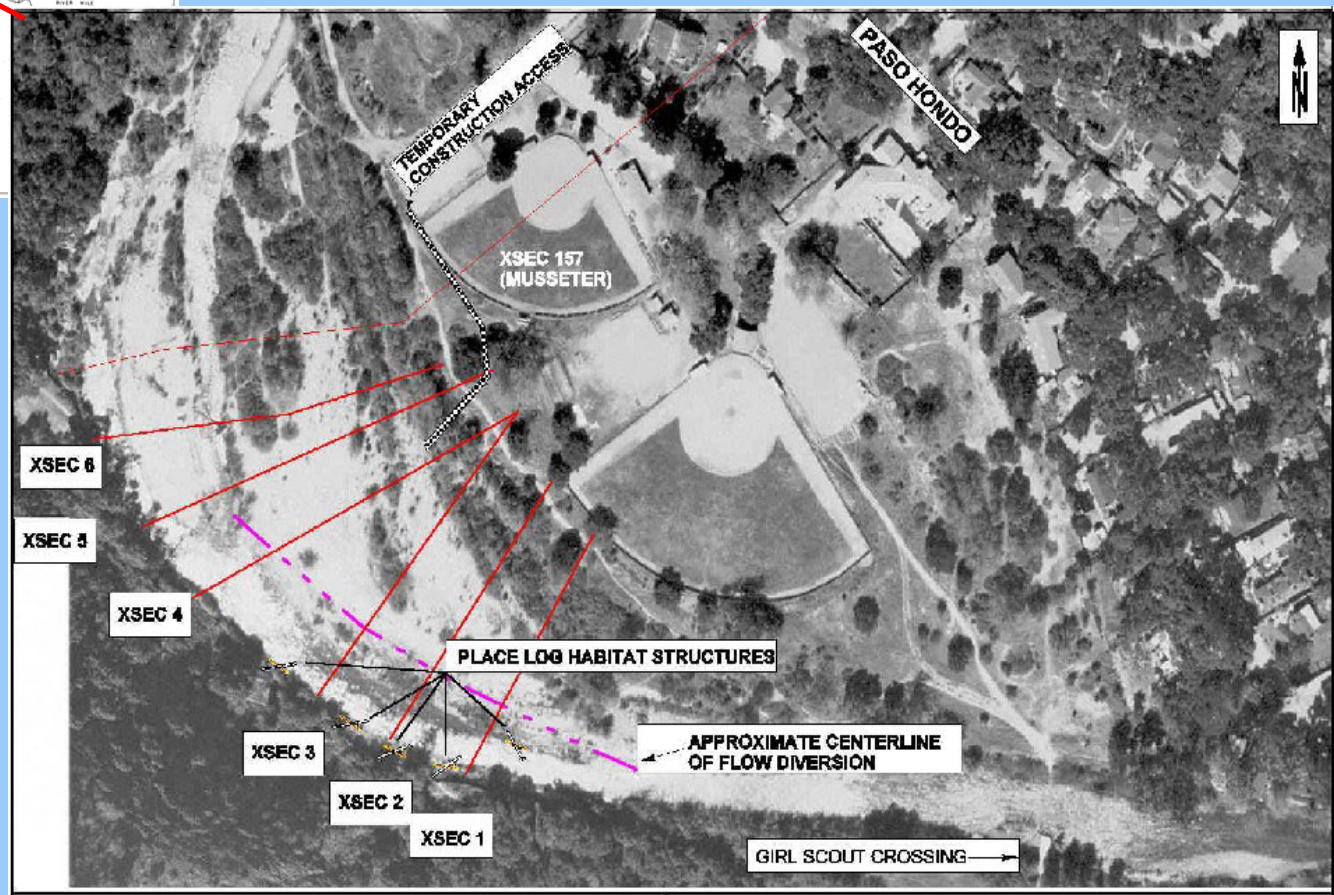
LEFT: Nick Larson, an avid young fisherman holds up a 26-inch steelhead caught in Garland Park in the spring of 2001 under CDFG's catch and release program.

PROJECT LOCATION

The project area is centered at approximately River Mile 13.5 (measured from the Pacific Ocean), across from the deDampierre Little League fields near Carmel Valley Village.



The Carmel River is located about 100 miles south of San Francisco in a Mediterranean climate. It hosts the largest remaining steelhead run on the West Coast south of San Francisco. The river begins in the Ventana Wilderness at nearly 5,000 feet, flows for 20 miles through narrow canyons, then crosses a wide (up to 1/2 – mile) alluvial valley for the last 16 miles before emptying into the Pacific Ocean. Drainage area at the mouth is 255 square miles. Winter flows can peak at over 16,000 cfs. In summer, the lower eight miles often go dry.



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PLAN VIEW SCALE 1: 2000
0m 20 40 60 80 100 120m
August 9, 2001

LOG DONATION

These redwood and Douglas fir logs were removed by the Big Creek lumber company from the University of California at Santa Cruz to make way for the Physical Sciences Building. Big Creek, located in Davenport, stored the logs for two years after Marty Gingras (pictured on top of the fir logs) and Jennifer Nelson, biologists with the California Department of Fish and Game, negotiated with Big Creek and UCSC to use the logs in habitat restoration along the Central Coast of California. In addition to donating the logs, which were valued at $10,000, Big Creek Lumber Company donated labor to take the logs to the Carmel River.

UC SANTA CRUZ

BIG CREEK

This reach of the river underwent significant bank erosion during 1995 and 1998 after winter peak flows of 16,000 cubic feet per second (cfs) and 14,500 cfs, respectively. The stream migrated laterally up to 200 feet during this period, resulting in the loss of streamside vegetation and several acres of adjacent mature riparian forest and oak-covered landslide and terrace deposits. The 700-foot long pool that remained was homogenous, covered with large cobbles, and nearly devoid of streamside cover.

PROJECT SITE - MAY 2002

TEMPORARY ROCK DIVERSION DAMS

The low rock dam in the foreground, made of clean cobble and boulders found on site, prevents fish from entering a diversion channel (between the two dams), but allows algae and moss to pass through. A second dam, made from finer material found on site, diverts most of the flow from the main stem into the diversion channel. Flows ranged from about 5 to 8 cubic feet per second (cfs) during construction. Six fish were relocated out of the diversion at the end of the project.

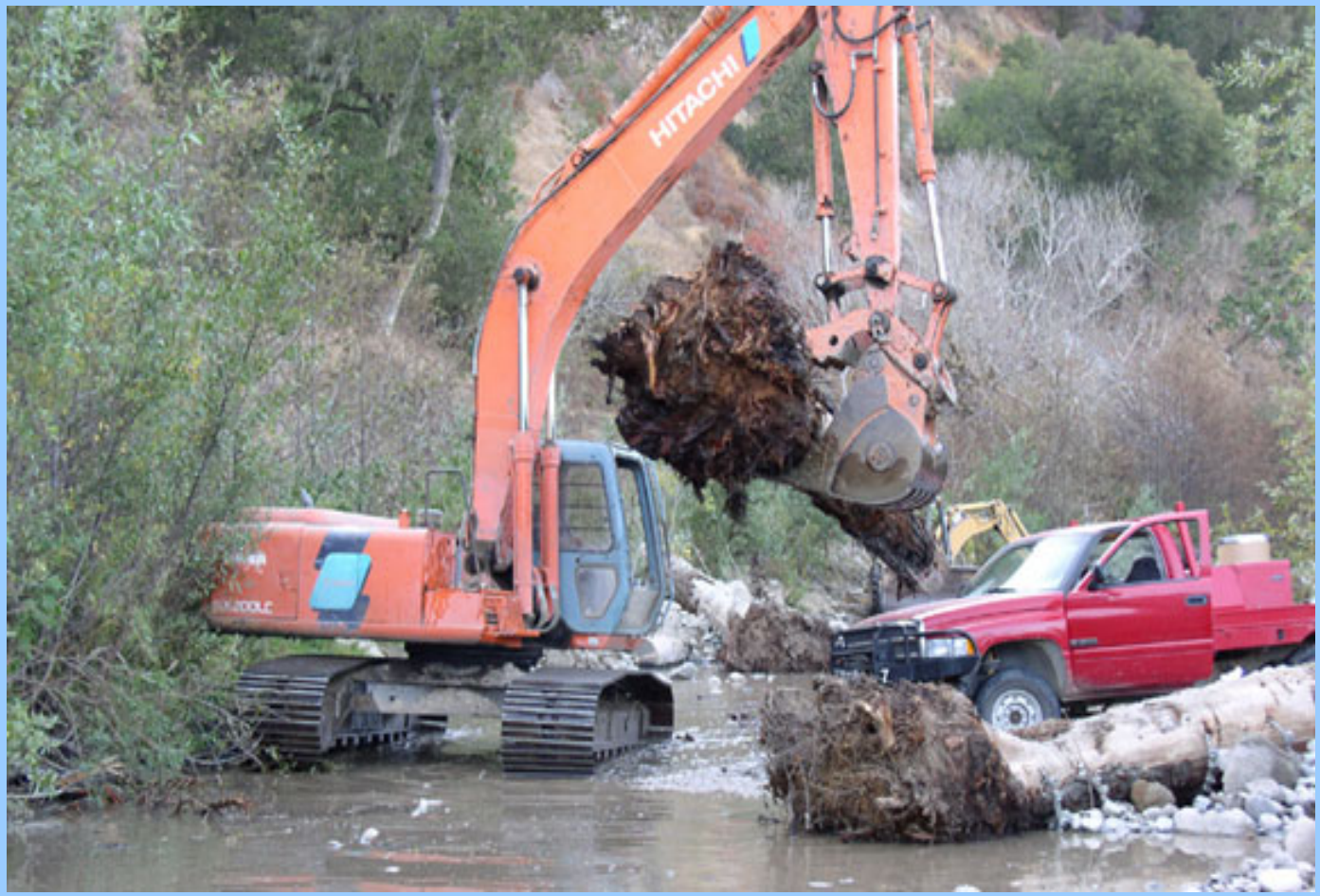
DIVERSION CHANNEL

Flow diversion reduced the volume of water in the work site (out of the picture to the left) and prevented sediment-laden water from moving downstream, except during initial diversion and backfill operations. A small crossing for vehicle access to the worksite can be seen just above the 24-inch culvert. Willow cuttings lining the left side of the diversion trench were laid immediately prior to backfilling. Placing cuttings down to groundwater level during low flows eliminates the need for irrigation during summer months. This reach of the river maintains perennial flow.

AFTER DIVERSION

Before construction of a diversion, flow covered the cobbles up to the grass seen to the left of Thomas Christensen (examining the underside of one of the cobbles). Main stem surface flow ceased completely 2,000 feet downstream (flow went subsurface), which reduced concerns about sediment impacts from construction. By diverting flow, the contractor was able to pump subsurface water out of construction areas.

SITE CONDITIONS – OCTOBER 2002



BIG LOGS

LIMITED ROOM

HIGH WATER TABLE

UNEVEN BOTTOM

Work started in early October 2002, during the lowest flow period. An estimated ½ cfs infiltrated through the coarse alluvium. Work space in the channel bottom varied from about 30 to 60 feet wide. The Contractor (Carmel Valley Construction) estimated that the logs weighed up to eight tons. Large cobbles and small boulders made travel in the channel bottom a bumpy adventure for the excavator.

PREPARING BOULDERS

Will Drew uses an impact drill to make 7/8-inch holes, which were thoroughly cleaned with brush and water and air dried before anchor placement. Bolts were chosen over gluing cable directly into the boulders to fasten logs, as failure of the attachment system could not be tolerated. Hilti HY-150 adhesive was rated at 20,000 pound breaking strength for this application, which required custom work to extend the threaded portion of the anchor bolts (lower left, visible as dark portion of bolt). Bolts, four per boulder, were spaced two feet apart (below). Curing time for the glue ranged from about two to four hours.

HAULING BOULDERS

One of the contract requirements was to pick each boulder up to test the strength of rock anchor bolts. Carrying boulders in the fashion shown at left bent the steel hooks used to lift the boulders as the loader bounced over large cobbles in the stream bottom. The contractor opted to haul boulders in the loader bucket and lift each boulder into place with an excavator, using the four hoisting chains shown at left.

PLACING

BOULDERS

Four to six-ton boulders were individually surveyed into place to provide a line of support and to anchor the logs. Here, the excavator is moving a boulder by hooking on to one of the four ¾-inch cable anchors inserted in each rock.

SETTING FOOTER LOG

A footer log was installed to encourage scour along the toe of the streambank. Although not visible in this photo, the footer log is anchored with four large boulders similar to the ones shown in the previous photo. Willow cuttings placed behind the footer log will be protected from scour during high flows.

DRILLING HOLES FOR CABLING

Will Drew augurs through a redwood log. Cable is passed through the hole, around the log, through cable anchors glued into the boulder and clamped. Redundancy in the anchoring system (two cables per boulder) was a precaution made necessary by the potential cost of failure – one log loose in the river could cause a bridge washout or severe bank erosion.

LOG CABLED IN PLACE

As indicated by the green paint on the end of this log, the diameter is 2.25 feet. The largest diameter log was nearly 3.25 feet at the equivalent of breast height (the logs never were vertical during the project). Logs were anchored to boulders using eight ¾-inch stainless steel cables (two per boulder). Willow cuttings at the lower right were placed behind the log prior to backfilling.

ROOTBALL PLACEMENT

Setting an eight-ton log and rootball in the right place requires experience and patience. Here, Gerry Paddock, the owner of Carmel Valley Construction, deftly places a 38-foot long log and rootball on top of four boulders. The log was placed at a 30 degree horizontal angle to flow. The log was also angled vertically to place ½ of the rootball below the existing riverbed and the end of the log several feet up the bank. This orientation encourages bottom scour at the rootball and in the middle of the channel during frequent flows (1 to 3-year return), which range from about 1,000 cfs to 3,000 cfs at this location.

NUDGING the ROOTBALL into PLACE

The pump at the left is pumping about 250 gallons per minute or about 0.5 cfs. Channel bottom material was so coarse that water pumped out here infiltrated the alluvium approximately 300 feet downstream, before flowing back into the main stem.

TIGHTENING CABLE CLAMPS

Will Drew checks the four ¾-inch cable clamps placed on each cable. Torque was specified at 130 foot-pounds. Proper cabling was critical to the success of this project.

PLANTING NATIVE SEEDLINGS

Here, MPWMD river workers Matt Lyons and Mark Bekker plant gooseberry, sycamore, buckeye, and alder seedlings in areas disturbed by grading. Rains just one week after installation and close proximity to water mean that these plants, if they can survive winter flows in the first few years, are unlikely to need supplemental irrigation during the dry season.

PLANTING CUTTINGS IN THE FLOODPLAIN

Digging a hole for a three-inch diameter willow or cottonwood cutting with a four-yard excavator bucket may seem like overkill, but the power of an excavator is needed to dig up the large cobble and boulders in the floodplain adjacent to the logs. The largest particle dug up during this project was in the one-ton range. Even a large backhoe with a three-foot wide bucket is not as effective as this excavator. Note the depth of the hole (about five feet), which allows the cuttings access to water year-round.

DIVERSION CHANNEL (slight return)

The US Fish and Wildlife Service has encouraged MPWMD to create backwater areas capable of supporting California red-legged frogs in their various life stages. Here, the downstream 100 feet of the diversion channel was left unfilled in an attempt to create a backwater area. Flow in the main stem is from left to right along the vegetation in the center of the picture, although at flows in excess of 500 cfs, the low area in the foreground is likely to be completely inundated. This area will be monitored to see how effective this technique is at creating backwater habitat.

FINISHED PROJECT- OCTOBER 31, 2002

Work was completed one day before expiration of the permits on November 1, 2002. One week later, 10 inches of rain fell in the upper watershed, causing the river to flow at 400 cfs through this site. At last check, the logs were functioning as intended, causing scour near the rootballs and helping to sort gravels for steelhead spawning. Several young-of-the-year were spotted in deep areas near the logs.

WINTER SCOURING ACTION

Here, flow of 500 cfs is moving from left to right and scouring the channel bottom near the rootball (upper center of photo) and under the log. A hydraulic jump can be seen on the downstream side of the log. At higher flows, the jump is drowned out and becomes a standing wave. Controlled energy dissipation is important in this reach, where chronic bank erosion threatens structures downstream, close to the banks.

MPWMD plans to resurvey the channel bottom during the summer of 2003 to document scouring effects.

ESTIMATED PROJECT COSTS

	BUDGET	ACTUAL
Construction*	$ 62,550	$ 45,500
Environmental Consultant*	4,000	5,000
Legal advertising*	0	1,000
Biological sampling*	2,300	2,300
Total reimburseable costs*	**$ 68,550**	**$ 53,800**
MPWMD in-kind Services	6,400	6,400
TOTAL COSTS	**$ 75,950**	**$ 60,260**

*These costs will be reimbursed by grant funding from the California Department of Fish and Game

A NOTE ABOUT PROJECT DESIGN

John Steinbeck wrote this about the Carmel River: "In the winter it becomes a torrent, a mean little fierce river, …" (Cannery Row, 1945). This river is close to an urban setting without truly being an urban river. More than half of the riverfront is in private hands. The value of real estate along the river is staggering – perhaps as much as $1 billion (more than 400 individual properties, three world-class golf courses, several schools, churches, parks, and commercial areas). In addition, public and private infrastructure crosses the river at many locations.

The Carmel River has historically exhibited high stream power – enough to wash out the middle support for two 80-foot spans of the CALTRANS-maintained Highway 1 bridge in 1995. This was at the end of the river, where channel slope is two to three feet per thousand. For comparison, the channel slope is about 10 feet per thousand at the project site.

This project was based on design recommendations contained in California Salmonid Stream Habitat Restoration Manual (California Department of Fish and Game, 1998). Force analysis used the maximum measured velocity (18 fps) at a bridge just upstream of the project. Boulders anchored to the logs provide a factor of safety of two against sliding. Part of the design, some of which is redundant, could have been downsized and still met applicable minimum standards. However, the risk of failure (logs coming loose) far outweighed the cost of additional hardware.