

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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FILED
EPA REGION VIII
AT DENVER, CO

IN THE MATTER OF:)	COMBINED COMPLAINT AND
)	CONSENT AGREEMENT
Urban Drainage and Flood Control)	
District)	Docket No. CWA-08-2013-0025
2480 W. 26th Ave.)	
Denver, CO 80211-5304)	Simultaneous Commencement and
)	Conclusion of a Proceeding Pursuant to
Respondent)	Section 309(g)(1) of the Clean Water Act
_____)	and 40 C.F.R. § 22.13(b)

Complainant, the United States Environmental Protection Agency, Region 8 (EPA), and Respondent, the Urban Drainage and Flood Control District, by their undersigned representatives, hereby consent and agree as follows:

I. STATUTORY AUTHORITY

1. This Combined Complaint and Consent Agreement (Agreement) is issued pursuant to section 309(g)(1) of the Clean Water Act (Act), 33 U.S.C. § 1319(g)(1), and 40 C.F.R. § 22.13(b). Section 309(g)(1) of the Act authorizes the Administrator of the United States Environmental Protection Agency (EPA) to assess civil penalties for any violation of section 301(a) of the Act, 33 U.S.C. § 1311(a), which authority has been properly delegated to the Assistant Regional Administrator, Office of Enforcement, Compliance and Environmental Justice, Region 8. The Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties, Issuance of Compliance or Corrective Action Orders, and the Revocation, Termination or Suspension of Permits (Consolidated Rules), 40 C.F.R. Part 22, governs such proceedings. 40 C.F.R. § 22.13(b) provides that a proceeding subject to the Consolidated Rules may be simultaneously commenced and concluded by the issuance of a consent agreement and final order pursuant to 40 C.F.R. § 22.18(b)(2) and (3).

II. PARTIES BOUND

2. This Agreement shall apply to and be binding upon Complainant, upon Respondent, and its members, managers, officers, directors, agents, successors, and assigns. Any change in the ownership or legal status of Respondent or the business organization, structure or status of Respondent, including, but not limited to, any transfer of assets or real or personal property, shall not alter its responsibilities under this Agreement.

III. STATEMENT OF PARTIES

3. Respondent stipulates to the EPA's jurisdiction and venue over the matters contained in this Agreement; however, Respondent neither admits nor denies the specific factual allegations contained herein.

4. Respondent waives its right to a hearing before any tribunal to contest any issue of law or fact set forth in this Agreement, and waives its right to appeal the final order.

5. Each undersigned representative of a Party to this Agreement certifies that he or she is fully authorized by the applicable Party to execute this Agreement and to bind that Party to this Agreement.

6. This Agreement contains all terms of the settlement agreed to by the parties.

7. Complainant and Respondent agree that settlement of this matter is in the public interest, and that execution of this Agreement and issuance of a final order without further litigation and without adjudication of any issue of fact or law is the most appropriate means of resolving this matter.

IV. STATUTORY AND REGULATORY FRAMEWORK

8. The objective of the Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. 33 U.S.C. § 1251(a).

9. Section 301(a) of the Act, 33 U.S.C. § 1311(a), in pertinent part, prohibits the discharge of any pollutant by any person except in compliance with certain provisions of the Act, including section 404 of the Act, 33 U.S.C. § 1344.

10. The term “discharge of a pollutant” is defined in section 502(12)(A) of the Act, 33 U.S.C. § 1362(12)(A), to include, in pertinent part, “any addition of any pollutant to navigable waters from any point source.”

11. The term “pollutant” is defined in section 502(6) of the Act, 33 U.S.C. § 1362(6) to include, in pertinent part, “dredged spoil, . . . biological materials, . . . rock, sand. . .”.

12. The term “navigable waters” is defined in section 502(7) of the Act, 33 U.S.C. § 1362(7) to mean “the waters of the United States, including the territorial seas.”

13. The term “navigable waters,” as further defined in 40 C.F.R. § 110.1, “means the waters of the United States, including the territorial seas,” and includes, *inter alia*: “(a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (b) Interstate waters, including interstate wetlands; . . . ; (e) Tributaries of waters identified in paragraphs (a) through (d) of this section, including adjacent wetlands; and (f) Wetlands adjacent to waters identified in paragraphs (a) through (e) of this section”

14. The term “point source” is defined in section 502(14) of the Act, 33 U.S.C. § 1362(14) to include, in pertinent part, “any discernible, confined, and discrete conveyance, including but not limited to any . . . conduit, . . . rolling stock, . . .”.

15. The term “person” is defined in section 502(5) of the Act, 33 U.S.C. § 1362(5) to include, in pertinent part, “an individual, . . . association, . . . commission, . . .”.

16. Section 404 of the Act, 33 U.S.C. § 1344 establishes a permitting regime for the discharge of dredged or fill material into the navigable waters of the United States.

17. Pursuant to section 404(p) of the Act, 33 U.S.C. § 1344(p), compliance with a permit issued pursuant to section 404 shall be deemed compliance with other provisions of the Act, including section 301(a) of the Act, 33 U.S.C. § 1311(a).

18. Contrarily, a discharge of dredged or fill material into the navigable waters of the United States by any person without a permit issued pursuant to section 404 of the Act, or otherwise not in compliance with section 404, is prohibited under section 301(a) of the Act, 33 U.S.C. § 1311(a).

19. Pursuant to section 309(g)(1) of the Act, 33 U.S.C. § 1319(g)(1), any person who has violated section 301 of the Act, 33 U.S.C. § 1311, *inter alia*, may be assessed a class I or class II civil penalty.

V. GENERAL ALLEGATIONS

20. Respondent is and was at all relevant times an independent agency established by the Colorado state legislature for the purpose of assisting local governments in the Denver metropolitan area with multi-jurisdictional drainage and flood control problems. Respondent's office is located at 2480 W. 26th Avenue, Denver, Colorado 80211-5304.

21. Respondent is and was at all times relevant to this Agreement a "person" within the meaning of section 502(5) of the Act, 33 U.S.C. § 1362(5).

22. Piney Creek runs through Arapahoe County, Colorado, and is a perennial tributary to Cherry Creek, which flows into Cherry Creek Reservoir and thence to the South Platte River, a traditionally navigable water. Wetlands at the Site directly abut Piney Creek.

23. Piney Creek is and was at all relevant times a "navigable water" within the meaning of 40 C.F.R. § 110.1, and section 502(7) of the Act, 33 U.S.C. § 1362(7).

VI. FINDINGS OF FACT

24. On January 4, 2012, Respondent sent a letter to the Army Corps of Engineers (ACE) describing its intent to remove 35,000 to 40,000 cubic yards of sediment along Piney Creek. The letter inaccurately described the streambed as a concrete low flow channel and as a drainage facility. The letter stated that the sediment would be removed from the project site and did not include a description of any activities that would result in discharges to the streambed and adjacent wetlands.

25. The project site was located along Piney Creek approximately 250 feet upstream and 1,200 feet downstream of Tower Road in Centennial, Arapahoe County, Colorado.

26. On January 6, 2012, the ACE sent a letter to Respondent stating that based upon the information provided by Respondent in its January 4, 2012 letter, Respondent would not be required to obtain a permit from the ACE for the project.

27. On April 13, 2012, the ACE conducted a site inspection at the project site that revealed that dredged fill material had been deposited into the channel of Piney Creek and adjacent wetlands. The affected area covered 2.08 acres of wetlands and 1.01 acres of open water within the banks of Piney Creek.

28. This placement occurred during the project undertaken by Respondent to remove sediment from Piney Creek. The project also resulted in the excavation and redeposit of wetland vegetation. Respondent did not receive a permit from the ACE pursuant to Section 404 prior to conducting the sediment removal project.

29. The discharges of dredged and fill material described in paragraphs 27-28 resulted from the use of common earthmoving vehicles and equipment, which were operated by Respondent or persons acting on its behalf.

VII. VIOLATION

Violation of Section 301(a) of the Act, 33 U.S.C. § 1311(a)

30. Paragraphs 1 through 29 of this Agreement are re-alleged and incorporated herein by reference.

31. The releases of dredged and fill material referenced in Paragraphs 27-28 were at all relevant times “discharges of pollutants” within the meaning of section 502(12)(A) of the Act, 33 U.S.C. § 1362(12)(A).

32. The earthmoving vehicles and equipment referenced in Paragraph 29 were at all relevant times “point sources” within the meaning of section 502(14) of the Act, 33 U.S.C. § 1362(14).

33. The discharges of pollutants from point sources into Piney Creek and adjacent wetlands resulting from Respondent's activities constitute a violation of section 301(a) of the Act, 33 U.S.C. § 1311(a).

34. Section 309(g)(2)(A) of the Act, 33 U.S.C. § 1319(g)(2)(A), and 40 C.F.R. Part 19 authorize the assessment of a Class I civil penalty of up to \$16,000 for each violation, up to a maximum of \$37,500, for violations of section 301(a) of the Act, 33 U.S.C. § 1311(a), occurring after January 12, 2009.

VIII. TERMS OF SETTLEMENT

CIVIL PENALTY

35. Pursuant to section 309(g)(2)(A) of the Act, the nature of the violations, Respondent's agreement to perform a Supplemental Environmental Project (SEP) and other relevant factors, the EPA has determined that an appropriate civil penalty to settle this action is in the amount of three thousand, four hundred and fifty dollars (\$3,450).

36. Respondent consents to the issuance of this Agreement and consents for the purposes of settlement to the payment of the civil penalty cited in the foregoing paragraph and to the performance of the Supplemental Environmental Project, described below.

37. Payment is due within thirty (30) calendar days from the date the Regional Judicial Officer for the EPA signs the final order approving this Agreement. If the due date falls on a weekend or legal federal holiday, then the due date becomes the next business day. The date the payment is made is considered to be the date processed by the bank described below.

Payments received by 11:00 A.M. EST are processed on the same day; those received after 11:00 A.M. are processed on the next business day.

38. Payment shall be made by one of the following methods:

(a) Payment by cashier's or certified check:

A cashier's or certified check, including the name and docket number of this case, for \$3,450.00, payable to "Treasurer, United States of America," to:

If sent by U.S. Postal Service:

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Center
P.O. Box 979077
St. Louis, MO 63197-9000

If sent by common carrier (Fedex, DHL, UPS):

U.S. Environmental Protection Agency
Fines and Penalties
Government Lockbox 979077
1005 Convention Plaza
Mail Station SL-MO-C2-GL
St. Louis, MO 63101

(b) Wire Transfer:

Wire transfers should be directed to the Federal Reserve Bank of New York with the following information:

ABA: 02130004
Account: 68010727
SWIFT address: FRNYUS33
33 Liberty Street
New York, NY 10045

Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

(c) Online Payment:

This option is available through the Department of the Treasury.

www.pay.gov

Enter sfo 1.1 in the search field.

Open form and complete the required fields.

39. At the same time that the payment is made, notice that the payment has been made shall be provided to:

Richard Clark
Enforcement Specialist
Technical Enforcement Program (8ENF-W)
U.S. EPA Region 8
1595 Wynkoop
Denver, CO 80202-1129

Tina Artemis
Regional Hearing Clerk (8RC)
U.S. EPA Region 8
1595 Wynkoop
Denver, CO 80202-1129

If payment is made by cashiers or certified check, the notice shall include a copy of the check. If payment is made in any other manner, the notice shall include documentation demonstrating that the payment was made.

40. In the event payment is not received by the specified due date, interest on the late payment shall accrue from the date of the final order, not the due date, at a rate established by the Secretary of the Treasury pursuant to 31 U.S.C. § 3717, and will continue to accrue until payment in full is received (e.g., on the 1st late day for the first payment, 30 days of interest accrues).

41. In addition, a handling charge of fifteen dollars (\$15) shall be assessed on the 31st day from the date of the final order, and subsequent 30-day period that the payment, or any portion thereof, remains unpaid. In addition, a six percent (6%) per annum penalty shall be assessed on any unpaid principal amount if payment is not received within 90 days of the due date (e.g., the 121st day from the date the final order is signed). Payments are first applied to handling charges, 6% penalty interest, late interest, and any balance is then applied to the outstanding principal amount. Further, Respondent shall be subject to the fees, costs, and nonpayment penalty set forth in section 311(b)(6)(H) of the Act, 33 U.S.C. § 1321(b)(6)(H).

42. Respondent agrees that the penalty shall never be claimed as a federal or other tax deduction or credit.

SUPPLEMENTAL ENVIRONMENTAL PROJECT

43. Respondent shall complete the following supplemental environmental project, which the parties agree is intended to secure significant environmental or public health protection and improvements.

44. Not more than thirty (30) days after receiving a copy of the final order approving this Consolidated Complaint and Consent Agreement signed by the Regional Judicial Officer, Respondent shall undertake a channel and bank stabilization project in Piney Creek. The SEP will be located upstream of the site of the violation and will partially address the source of the sediment that has been depositing in Piney Creek, and reduce the sediment load collecting downstream. The project will improve water quality and create conditions conducive to wetland establishment along Piney Creek.

45. The SEP is more specifically described in the Removal and Restoration Plan, Mitigation Plan, and Supplemental Environmental Project, attached hereto as Exhibit A and incorporated herein by reference.

46. The total expenditure for the SEP shall be not less than \$14,400. Respondent shall include documentation of the expenditures made in connection with the SEP as part of the SEP Completion Report.

47. Respondent hereby certifies that, as of the date of this Agreement, Respondent is not required to perform or develop the SEP by any federal, state or local law or regulation; nor is Respondent required to perform or develop the SEP by any other agreement, grant or as injunctive relief in this or any other case. Respondent further certifies that it has not received, and is not presently negotiating to receive, credit in any other enforcement action for the SEP.

48. Respondent shall submit a SEP Completion Report to the EPA commensurate with the final monitoring report as set forth on page 9 of the Supplemental Environmental Project plan, Exhibit A, attached hereto. The Completion Report shall contain the following information:

- (a) A detailed description of the SEP as implemented;
- (b) A description of any operating problems encountered and the solutions thereto;
- (c) Itemized costs of goods and services used to complete the SEP documented by copies of invoices, purchase orders or cancelled checks that specifically identify and itemize the individual costs of the goods and services;
- (d) Certification that the SEP has been fully implemented pursuant to the provisions of this Agreement; and
- (e) A description of the environmental and public health benefits resulting from implementation of the SEP (with a quantification of the benefits and pollutant reductions, if feasible).

49. Respondent shall submit the SEP Completion Report and any additional reports required by the SEP plan, Exhibit A, in accordance with the schedule and requirements recited therein, to Richard Clark at the address provided in paragraph 39, above.

50. In the SEP Completion Report, Respondent must certify that the report is true and complete by including the following statement signed by one of its officers:

I certify that I am familiar with the information in this document and that, based on my inquiry of those individuals responsible for obtaining the information, it is true and complete to the best of my knowledge. I know that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

51. Within thirty (30) days of receipt of the SEP Completion Report described in paragraph 48, above, the EPA will notify the Respondent, in writing, that:

- (a) It has satisfactorily completed the SEP and the SEP report; or

- (b) There are deficiencies in the SEP as completed or in the SEP report and that the EPA will give Respondent thirty (30) days to correct the deficiencies; or
- (c) Respondent has not satisfactorily completed the SEP or the SEP report and the EPA will seek stipulated penalties under paragraph 53, below.

52. If the EPA exercises option (b) or (c), above, Respondent may object in writing to the deficiency notice within ten (10) days of receiving the notice. The parties will have thirty (30) days from the EPA's receipt of Respondent's objection to reach an agreement. If the parties cannot reach an agreement, the EPA will give Respondent a written decision on its objection. Respondent will comply with any requirement that the EPA imposes in its decision. If Respondent does not complete the SEP as required by the EPA's decision, Respondent will pay stipulated penalties to the United States under paragraph 53, below.

53. If Respondent violates any requirement of this Agreement relating to the SEP, Respondent must pay stipulated penalties to the United States as follows:

- (a) Except as provided in subparagraph b, below, if Respondent did not complete the SEP satisfactorily according to the requirements of this Agreement, Respondent must pay a penalty to the United States in the amount of \$14,400.
- (b) If Respondent did not complete the SEP satisfactorily, but the EPA determines that Respondent made good faith and timely efforts to complete the SEP and certified, with supporting documents, that it spent at least 90 percent of the amount set forth in paragraph 42, Respondent will not be liable for any stipulated penalty under subparagraph a, above.
- (c) If Respondent did not timely submit the SEP Completion Report required under paragraph 48, above, Respondent may be subject to penalties in the following amounts for each day after the report was due until it submits the report:

<u>Penalty per violation per day</u>	<u>Period of violation</u>
\$100	1st through 14th day
\$150	15th through 30th day
\$250	31st day and beyond

IN THE MATTER OF: Urban Drainage and Flood Control District, Docket No.

**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, REGION 8**
Complainant

8/15/2013
Date

Eddie A. Sierra
for Andrew M. Gaydosh
Assistant Regional Administrator
Office of Enforcement, Compliance, and
Environmental Justice

**URBAN DRAINAGE AND FLOOD CONTROL
DISTRICT**
Respondent

8/13/13
Date

Paul A. Hindman
Paul A. Hindman
Executive Director
Urban Drainage and Flood Control District

EXHIBIT A

*Consultants in
natural
resources and
the environment*

Denver • Boise • Durango • Western Slope



ERO Resources Corp.
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**REMOVAL AND RESTORATION PLAN, MITIGATION PLAN,
AND SUPPLEMENTAL ENVIRONMENTAL PROJECT**

**PINEY CREEK AT FARMS SEDIMENT REMOVAL
ARAPAHOE COUNTY, COLORADO**

CORPS FILE NO. NWO-2012-51-DEN

Prepared for—

Urban Drainage and Flood Control District
2480 West 26th Avenue, Suite 156-B
Denver, Colorado 80211

For submission to—

U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 300
Denver, Colorado 80202-2466

Prepared by—

ERO Resources Corporation
1842 Clarkson Street
Denver, Colorado 80218
(303) 830-1188

ERO Project #5192

May 17, 2013

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**REMOVAL AND RESTORATION PLAN, MITIGATION PLAN, AND SUPPLEMENTAL
ENVIRONMENTAL PROJECT**

**PINEY CREEK AT FARMS SEDIMENT REMOVAL
ARAPAHOE COUNTY, COLORADO**

CORPS FILE NO. NWO-2012-51-DEN

MAY 17, 2012

Background and Summary of Project

In November 2011, the Urban Drainage and Flood Control District (District) and Southeast Metro Stormwater Authority determined it was necessary to remove sediment along a 1,400-linear-foot stretch of Piney Creek in Arapahoe County. The proposed project included removing sediment along Piney Creek from an existing vertical hard basin drop structure and trail crossing upstream of Tower Road to approximately 1,200 linear feet downstream of Tower Road (Fig. 1).

Based on correspondence with the Corps, the District undertook the project believing the work did not require authorization under Section 404 of the Clean Water Act. On April 13, 2012, the Corps notified the District that at least some project activities undertaken to that date required a Department of the Army permit. The District stopped work upon notification.

As part of a settlement agreement with the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA), Urban Drainage and Flood Control District (District) is implementing three activities along Piney Creek to compensate for impacts associated with the project. The activities include a removal and restoration plan, mitigation plan, and supplemental environmental project.

The removal of the fill has already been completed, along with some restoration of the site that was impacted by the haul road and excavation activity. Further planting will occur this spring in the completion of the restoration effort. Work that has occurred consisted of removing the dredged and excavated material stockpiled in Piney Creek, regrading the access route to preconstruction contours, and removing the temporary riprap check structure placed for erosion-control purposes, and generally restoring grades in the channel and adjacent wetlands as closely as possible to preconstruction conditions.

The mitigation plan will mitigate for remaining adverse effects on the aquatic ecosystem, including the loss of shrub cover along the channel. The supplemental environmental project

will partially offset the cash fine and will consist of reducing sediment in Piney Creek by stabilizing a reach of channel and bank upstream of the sediment removal project area.

Each of the activities is described below in sections that generally follow EPA Region 8 Clean Water Act Section 404 Enforcement: Removal/Restoration Plans and Habitat Mitigation/Monitoring Proposals guidelines.

Removal and Restoration Plan

Subsequent to receiving the notice from the Corps to stop work, and in consultation with the Corps, the District documented the physical conditions that were present in the sediment removal project area prior to and following the project. The information was used to determine the types and extent of regulated areas disturbed by the project. The assessment of pre-construction conditions was used by the Corps and the District to develop a removal and restoration plan for the area. The following summary of conditions is based on a report prepared by ERO Resources Corporation (ERO) on behalf of the District that includes details of the physical conditions and methods used to determine them (ERO 2012).

Physical Conditions

On April 20 and 23, 2012, ERO delineated wetlands and waters of the U.S. not impacted by the fill. Based on the delineation conducted on April 20 and 23, 2012, a Landiscor August 2009 aerial photograph, and a Google Earth May 5, 2011 aerial photograph, wetland and open water boundaries prior to the disturbance were estimated. This included observing wetland vegetation within the disturbed areas and estimating the elevation of adjacent undisturbed wetlands. The boundaries of waters of the U.S., including adjacent wetlands, prior to the disturbance are shown on Figure 2.

Streams and Open Water

Piney Creek is shown on the Parker U.S. Geological Survey (USGS) topographic quadrangle (Figure 1) as an intermittent stream that flows to Cherry Creek, which has a surface connection to the South Platte River. The Corps has previously determined that the South Platte River is a jurisdictional water of the U.S. The Piney Creek channel is 90 to 200 feet wide in the project area.

Wetlands

Piney Creek contains large benches of adjacent wetlands throughout the project reach. Wetlands had developed along the accumulated sediment in the project area. A total of 3.97 acres of wetlands were mapped as occurring in the project area prior to project activities.

Vegetation

Wetlands in the project area are dominated by broadleaf cattail (*Typha latifolia*, obligate wetland species); sandbar willow (*Salix exigua*, obligate wetland species); reed canarygrass (*Phalaroides arundinacea*, facultative wetland species); redtop (*Agrostis* sp.); curly dock (*Rumex crispus*, facultative wetland species); switchgrass (*Panicum virgatum*, facultative species); and Torrey's rush (*Juncus torreyi*, facultative wetland species).

Soils

The Natural Resource Conservation Service (NRCS) mapped the soils in the project area as Bresser loamy sand, terrace, 0 to 3 percent slopes (NRCS 2012). This complex occurs along stream terraces with a typical profile of loamy sand to sand clay loam soils. Field observations indicated the soils in the project area are sandy loam to sandy clay loam. The soils met the sandy redox hydric soil indicator.

Hydrology

The main source of hydrology for all of the wetlands is surface and ground water. Hydrologic indicators in wetlands were soil saturation, sediment deposits, salt crust, drift deposits, and a successful FAC-neutral test.

Jurisdictional Areas Filled

Based on the wetland delineation, ERO determined that approximately 2.08 acres of wetlands and 1.01 acres of open water were impacted by project activities (Figure 3). Table 1 lists the impacted areas from each activity.

REMOVAL AND RESTORATION PLAN, MITIGATION PLAN, AND SUPPLEMENTAL ENVIRONMENTAL PROJECT
 PINEY CREEK AT FARMS SEDIMENT REMOVAL
 ARAPAHOE COUNTY, COLORADO
 CORPS FILE NO. NWO-2012-51-DEN

Table 1. Areas of Impact to Wetlands and Open Water.

Activity	Impacts to Wetlands (acres)	Impacts to Open Water (acres)
Excavated Sediment Downstream of Check Structure	1.44	0.71
Recontoured Bank	0.18	0.02
Excavated Channel Downstream of Tower Road	0.32	0.08
Placement of Dredged Material at Check Structure	0.03	0
Placement of Dredged Material along South Bank	0.06	0
Temporary Access Route	0.05	0.20
Total	2.08	1.01

Proposed and Actual Physical Conditions

In consultation with the Corps, the District removed the dredged and excavated material stockpiled in Piney Creek, regraded the access route along the channel to preconstruction contours, and removed the temporary riprap erosion-control check structure from the downstream end of the project area (Figure 4). Because the excavated channel created an eroded bank along the north side of Piney Creek, erosion-control blanket was placed along the bank to prevent further erosion. Both the north and south banks along the excavated channel were seeded with a native seed mix and planted with willow stakes. The top of the access route was also seeded with a native seed mix.

Monitoring/Measures of Success

The restored areas will be monitored as described in the Monitoring Plan section of this document. Restoration will be considered successful when wetlands similar in species composition, extent, and cover to adjacent undisturbed areas become established and self-sustaining adjacent to the low flow channel through the restored area.

Inspections and Schedule

The Corps and EPA have field reviewed the removal and restoration work undertaken by the District. Monitoring will begin with the 2013 growing season.

Mitigation Plan

In addition to restoring the project area to as close to preconstruction contours as possible, to offset the loss of shrub cover along Piney Creek, the District will plant 20 native plains cottonwood trees along the south bank of Piney Creek at, and in close proximity to, the project site. The trees will be a mix of 1-inch diameter, deep-planted ball-and-burlap trees and 6- to 8-foot long cottonwood poles. The trees will be planted at locations most likely to result in successful establishment and survival. The District will also plant 100 sandbar willow stakes along the banks of the project area. The District has developed a planting plan, specifications, and details for the proposed mitigation (Appendix A).

Goals of Mitigation

The goals of the mitigation plan are to replace the functions of sandbar willow shrubs removed by the project and to increase structural diversity of vegetation in the vicinity of the project area. The plantings will increase species diversity, increase habitat for birds and small mammals, and support food chain functions.

The trees and shrubs will be planted in the spring of 2013. The District expects that the plants will be well established after five years following planting. Monitoring will continue until the success criteria (defined below) have been met.

Success Criteria

The tree plantings will be considered successful when 100 percent of the trees have survived for five consecutive years without replacement or additional watering. The willow staking will be considered successful when 100 percent of the stakes (including vegetative shoots and volunteers) have survived five consecutive years without replacement.

Proposed Mitigation Site

The plantings will occur in and adjacent to the project area (Appendix A). Planting areas for the cottonwood trees are located on the south bank of Piney Creek. Specific planting locations will be determined based on microsite conditions such as depth to groundwater, suitable substrate, and slope.

Sandbar willow stakes will be planted on the north and south banks of the creek between Tower Road and the drop structure. Additional willows will be planted on the north bank just upstream of the drop structure.

The mitigation areas are located in dedicated open space maintained by the Arapahoe Parks and Recreation District. The area will continue to be managed as open space because it is in the 100-year floodplain, within which development is restricted. Residential communities surround the mitigation area, but most of the communities are at full build out and current uses and levels of use of the open space are anticipated to continue indefinitely.

Implementation Plan

The project consultant (ERO) will field stake the planting locations and will be present when trees are planted. ERO will also inspect the willow stakes after they have been installed. The District anticipates that the work will be initiated and completed on concurrent days.

Planting will occur as follows:

1. Trees delivered to site and willow stakes harvested from onsite source (1 day)
2. Plant trees and install willow stakes (1 day)
3. Inspect plantings (1 day)

At least a small backhoe or excavator will be necessary to dig the holes for the deep-planted cottonwoods. The equipment will access the planting areas from the south through uplands.

Following planting, the locations of trees and willow stakes will be documented and a figure with the locations will be included with the annual monitoring reports that will be submitted to the Corps and EPA.

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The District has successfully planted trees and installed willow stakes in similar settings throughout the Denver metropolitan area. Based on that experience, the District believes the proposed mitigation will be successfully implemented.

The District will submit an as-built report and maps of the mitigation and restoration project to EPA within six weeks of the completion of the site preparation and planting.

Maintenance During Monitoring Period

The District will maintain the compensatory mitigation site until the mitigation success criteria have been determined by the EPA to have been met without intervention in the form of irrigation, removal of undesirable vegetation, or replanting of desirable vegetation for a five consecutive year period or other time period determined by the EPA. The District will review the compensatory and mitigation site at least annually during the growing season and submit to EPA an annual monitoring report on the status and progress of the compensatory mitigation and restoration site including needed remedial actions. Any maintenance measures implemented will be reported to the EPA in the annual monitoring plan. The plantings may require some maintenance during the first one or two growing seasons, including replacement plantings and supplemental watering. Dead trees will be replaced until success criteria are met. Dead shrubs will be replaced unless they are offset by an equal amount of natural recruitment.

Monitoring

The trees and willows will be monitored as described in the Monitoring Plan section of this document.

Supplemental Environmental Project

The District is proposing to use a channel and bank stabilization project to partially offset the cash penalty assessed for the violation. The project is located upstream of the District's sediment removal project area and just downstream of Caley Avenue (Appendix B). The project will be authorized under the District's Regional General Permit and is anticipated to begin in June of 2013, although construction may be postponed to fall 2013 to avoid the summer storm season. The supplemental environmental project will partially address the source of sediment

that has been depositing in Piney Creek in the vicinity of Tower Road and elsewhere. It will improve water quality and create conditions conducive to wetland establishment.

The supplemental environmental project will be monitored as described in the Monitoring Plan section of this document. The District will review the site at least annually during the growing season and submit to EPA an annual monitoring report on the status and progress of the site including needed remedial actions. The success criteria for the project are those contained in the District's Regional General Permit for Channel Maintenance and Construction on Tributaries to the South Platte River (RGP-2006-186-DEN).

The success criteria are:

- At least 80 % of the mitigation site is vegetated, in wetlands at least 50 % of species will consist of species rated as facultative or wetter.
- Trees and shrubs, to include volunteer specimens, will have a survival rate of at least 85%. Species composition shall be representative of species planted.
- Those species shown on the Colorado Noxious Weed Inventory list-A shall be 100% eradicated. Those species shown on list-B shall be no more than 10% or less of the total cover in the mitigation area. The lists can be found at <http://www.ag.state.co.us/CSD/weeds/statutes/weedrules.pdf>.

Monitoring Plan

The restored area, mitigation plantings, and supplemental environmental project will be monitored annually for a minimum of 5 years to determine the success of the activities. The Compensatory Mitigation Rule requires a monitoring period of not less than 5 years (33 CFR Section 332.6(2)(b)). The District commits to no less than 5 years of monitoring for the project, but may request that the EPA waive the remaining monitoring requirements if the compensatory mitigation project has met the success criteria for 3 years. The Compensatory Mitigation Rule allows the EPA to waive or extend the monitoring period (33 CFR Section 332.6(2)(b)).

The District will monitor the areas annually. Successes, problems, and concerns will be discussed in an annual monitoring report. Permanent photo points will be established to document annual changes. The annual monitoring reports will be submitted to the EPA by

REMOVAL AND RESTORATION PLAN, MITIGATION PLAN, AND SUPPLEMENTAL ENVIRONMENTAL PROJECT
PINEY CREEK AT FARMS SEDIMENT REMOVAL
ARAPAHOE COUNTY, COLORADO
CORPS FILE NO. NWO-2012-51-DEN

December 31 of each year until monitoring is determined to be complete. The first annual report will be submitted in December 2013, after the first growing season following planting.

The mitigation success criteria for each activity will allow the EPA to objectively evaluate if the compensatory mitigation is developing as proposed and will provide the area and function intended. Annual monitoring and reporting on the progress of meeting the success criteria and any remedial measures taken will allow for the District and EPA to assess the expected stages of aquatic resource development and early identification of potential problems and development of appropriate adaptive management.

Monitoring Requirements

The annual monitoring report will have the following information:

- Permit number and county where the project is located;
- A discussion of successes, failures, and problems;
- A discussion of hydrology ensuring success of plantings;
- Percent of ground surface area that is vegetated, percent of the vegetated area that contains wetland species, a list of prevalent plant species;
- Maps and/or drawings as needed for illustration; and
- Photographs of the mitigation and restoration site (to be taken from the same location each year and submitted with each report).

Completion of Mitigation

When the District believes the restoration, mitigation, and supplemental environmental project activities have met their respective success criteria, the District will provide the final monitoring report to the EPA with a request for confirmation that monitoring is complete.

Long-term Management Plan

The District agrees that once activities have been completed, proper precautions will be taken to prevent domestic animals and human activity from adversely affecting them, and there will be no mowing or other detrimental effects to the planting areas.

The areas are intended to be self-sustaining once the success standards have been achieved. The District will be the party responsible for all long-term management of the plantings.

Contingency Measures

The District proposes that if, during the first 2 years after planting, the site conditions indicate that the success criteria are not likely to be achieved, they agree to undertake remedial actions after consulting with the Corps and EPA. Remedial actions may include replanting trees in new locations, replanting with peach-leaf willow instead of plains cottonwood, and reseeding in the supplemental environmental project area. The District believes that this is the most effective process for adaptive management and ensures that any needed corrections in the compensatory mitigation project are coordinated with the Corps and then implemented by the District.

Responsible Parties

Applicant:

Paul Hindman
Urban Drainage and Flood Control District
2480 W. 26th Ave., Ste 156-B
Denver, CO 80211
Ph: 303-455-6277

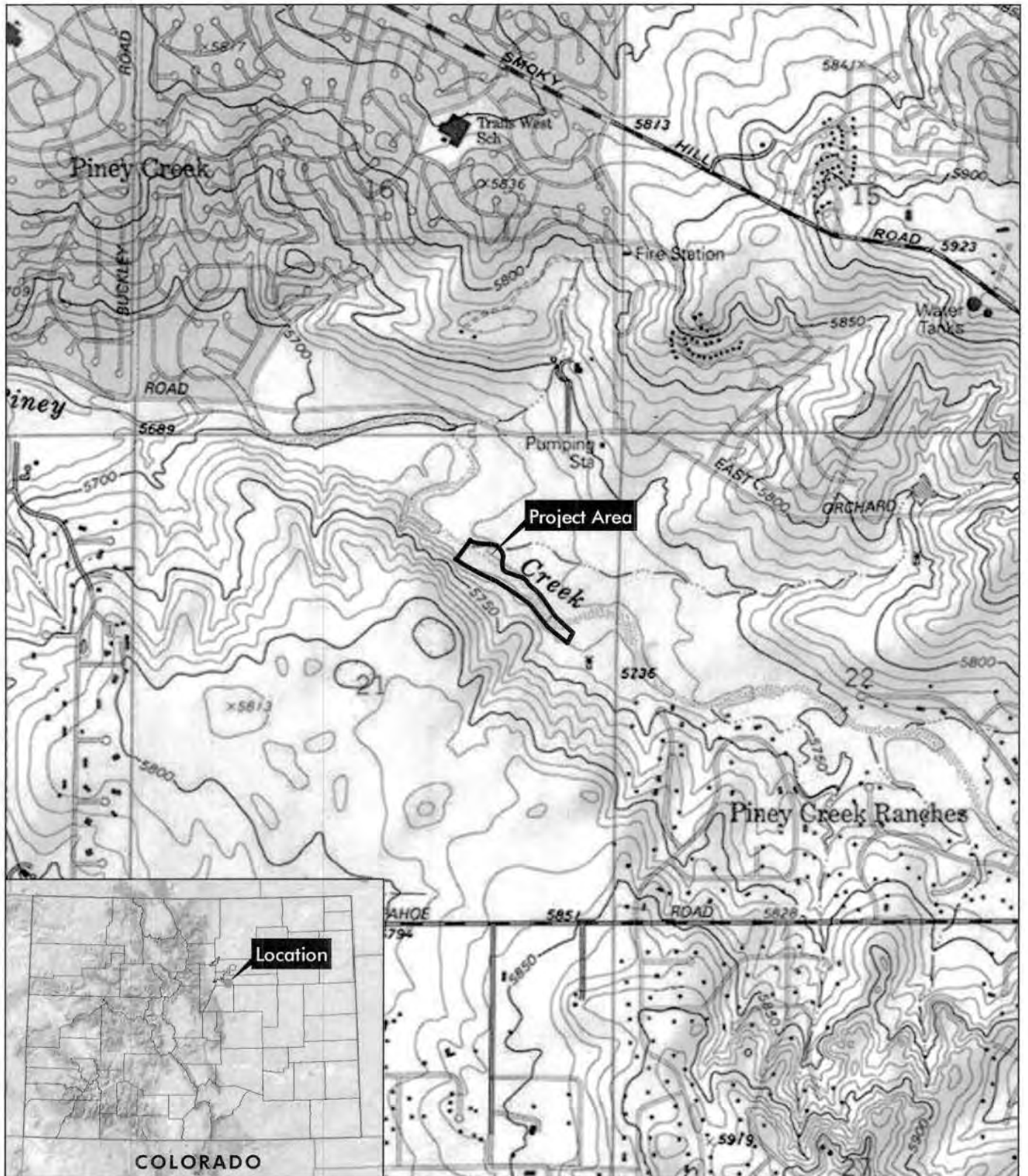
Mitigation Plan Prepared by:

Mary L. Powell
ERO Resources Corporation
1842 Clarkson Street
Denver, Colorado 80218
Ph: 303-830-1188

References

ERO Resources Corporation. 2012. Piney Creek at Farms Sediment Removal, Arapahoe County, Colorado. Corps File No. NWO-2012-51-DEN. April 26, 2012. Submitted to U.S. EPA Region 8.

FIGURES



Piney Creek at Farms Sediment Removal

Section 21, T5S, R66W; 6th PM
 UTM NAD 83: Zone 13N; 519132mE, 4383953mN
 Latitude, Longitude: 39.605109°N, 104.777141°W
 USGS Parker, CO Quadrangle
 Arapahoe County, Colorado

**Figure 1
 Vicinity Map**



Prepared for: UDFCD
 File: 5192 figure 1.mxd [WH]
 April 2012



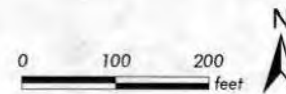


Piney Creek at Farms Sediment Removal

- Data Point
- ◻ Wetland
- ◻ Open Water/Ordinary High Water Mark
- ▭ Project Area

Image Source: Landiscor®, August 2009

Figure 2
Wetlands and Open Water
Prior to March 2012



Prepared for: UDFCD
File: 5192 figure 2.mxd (WH)
April 2012

ERO
ERO Resources Corp.



Piney Creek at Farms Sediment Removal

- | | | | |
|--|---------------------------------------|--|---------------------------------|
| | Wetland | | Access Route |
| | Open Water/Ordinary High Water Mark | | Placement of Dredged Material |
| | Area of Excavated Channel | | Placement of Excavated Material |
| | Area of Excavated Sediment | | Re-contoured Bank |
| | Image Source: Landiscor®, August 2009 | | Project Area |

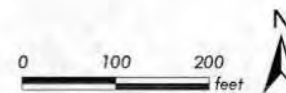


Figure 3
Actions Completed in
Waters of the U.S.

Prepared for: UDFCD
 File: 5192 figure 3.mxd (WH)
 April 2012



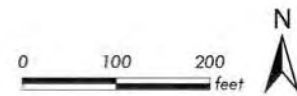


Piney Creek at Farms Sediment Removal

- Willow Stake (100) □ Area of Impact
- ▨ Native Wetland Seed Mix
- Erosion Control Blanket
- ▧ Tree Planting Zone (20, combination poles and deep-planted)

Image Source: Microsoft UC-G, 2012

**Figure 4
Restoration Activities**



Prepared for: UDFCD
File: 5192 figure 4.mxd (WH)
January 2013



Appendix A

**Piney Creek Downstream of Tower
Cottonwood Planting and Willow Staking**

Specifications and Details

Installing Cottonwood Pole Cuttings or Deep-Planted Trees

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This work consists of furnishing all plants, labor, materials, and equipment and performing all work necessary and incidental to installing cottonwood pole cuttings or deep-planted trees in accordance with landscape plans, other contract documents, and on-site instructions. Cottonwood pole cuttings must be cut, or cottonwood trees obtained from growers, in early spring before the buds leaf out (usually before April 15th).

PART 2 - MATERIALS

2.01 COTTONWOOD POLE CUTTINGS AND TREES

- A. Cottonwood Pole Cuttings – Cottonwood poles will be between 6 to 8 feet long and between 1 and 2 inches in diameter. All side branches are trimmed. The terminal bud must remain undisturbed.
- B. Cottonwood Trees – Cottonwood trees will be 1-inch diameter ball-and-burlap trees obtained from a commercial grower.

PART 3 - EXECUTION

3.01 CUTTING POLES

- A. Cottonwood pole cuttings will be pruned from live cottonwood trees at an approved harvest site. Cutting must be done before the buds leaf out (usually before April 15th). Cuttings can also be obtained from cottonwood trees cut down, as long as cuttings are harvested the same day the tree is cut.
- B. Pole cuttings will be cut from the ends of branches 1" to 2" in diameter with smooth undamaged bark. Do not use branches with thick, cracked bark because these will not re-sprout effectively. The best cuttings are those from trees under 18" in diameter.
- C. Cuts must be clean, without striping the bark or splitting the wood.
- D. The cuts will be at a 45-degree angle to identify the root end of the cutting.
- E. Donor cottonwood trees will be selected at random at the harvest site to avoid creating large areas of cut plants.
- F. The cutting will be trimmed of all side branches. The terminal bud must remain intact.

- G. The harvesting site will be left clean and tidy. Large unused material will be cut up to 2 foot lengths and evenly distributed around the site.

3.02 TRANSPORTATION

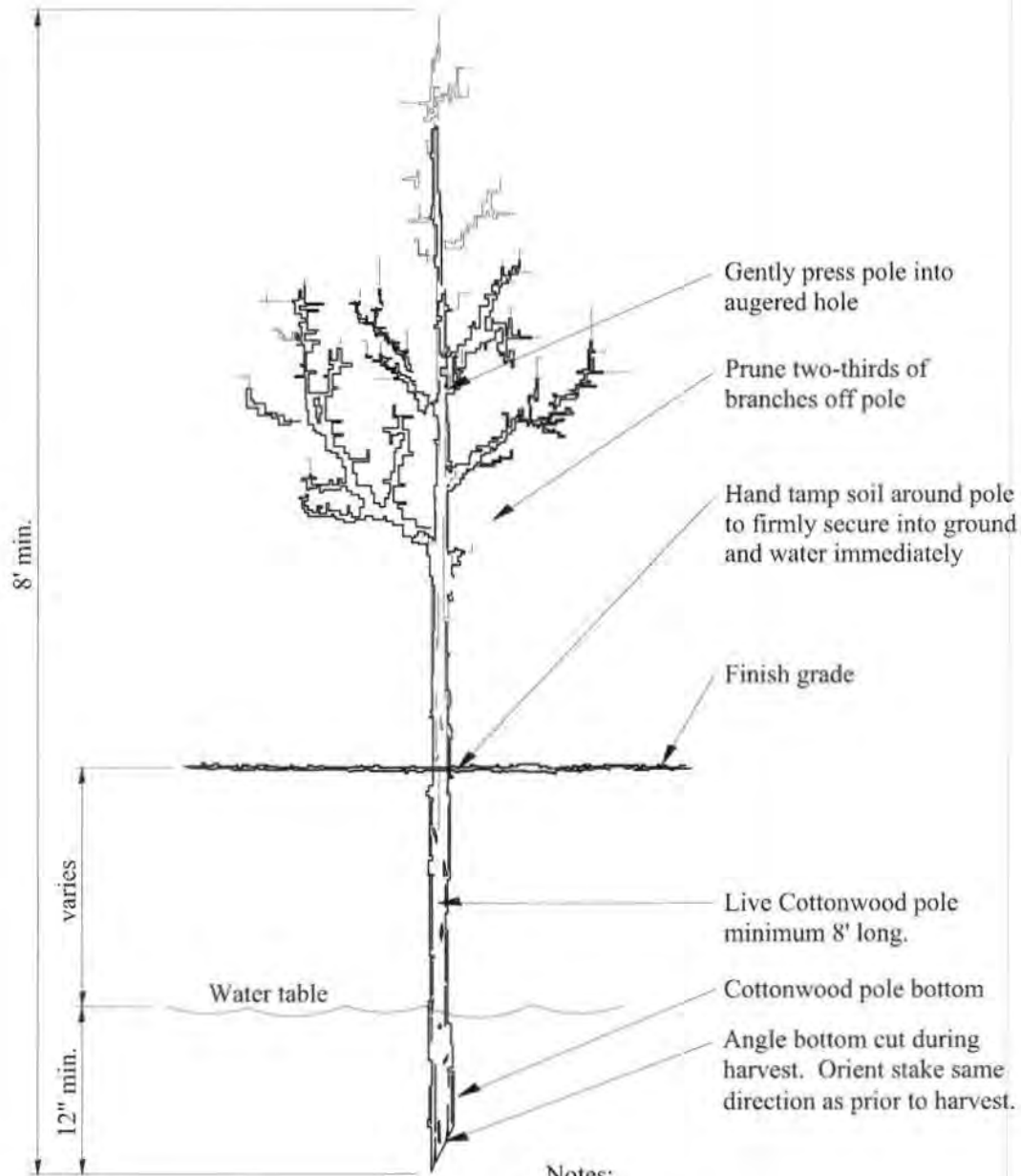
- A. Immediately after cutting, all cottonwood poles will be placed in water so that the cut ends are covered with water, and the poles shall be stored in a cool location. Plants will be stored in containers with water at least one foot deep. The containers will be continuously shaded and protected from the wind. Cuttings will be protected from drying at all times.
- B. During transportation, the cuttings will be placed in containers with water at least one foot deep in an orderly fashion to prevent damage and to facilitate handling.
- C. Cottonwood trees will be covered with a tarp when being transported from the grower.
- D. Upon arrival at the construction site, cuttings and trees will be inspected for acceptability. Cuttings will be collected from sources that have been approved before beginning cutting operations. Only healthy, undamaged material will be accepted.

3.03 COTTONWOOD POLE INSTALLATION

- A. For cottonwood poles, using a mechanized post hole digger or backhoe "Stinger" attachment, create a vertical hole approximately 3 to 4 feet deep. The hole must be deep enough to reach the water table throughout the growing season. Insert the pole or whip into the hole so that at least 1 foot of the pole or stake extends into the water table.
- B. The root-end of pole will be tamped into the pilot hole to a minimum depth of 2 feet, or until the root-end of the pole meets groundwater, whichever is deeper.
- C. Soil will be placed in any spaces around the cuttings and tamped into place to remove any air pockets.

3.04 DEEP-PLANTED COTTONWOOD TREE INSTALLATION

- A. For deep-planted cottonwood trees, using a backhoe, excavate a hole 1.5 times the diameter of the root ball and deep enough to extend to the water table (depth will vary).
- B. Remove all twine and wire from the top half of the rootball sides. Cut burlap from the top of the ball. Remove wire baskets.
- C. Place rootball within moist soil layer on the water table.
- D. Fill planting pit with 2/3 natural soil (excavated material) and 1/3 organic matter.

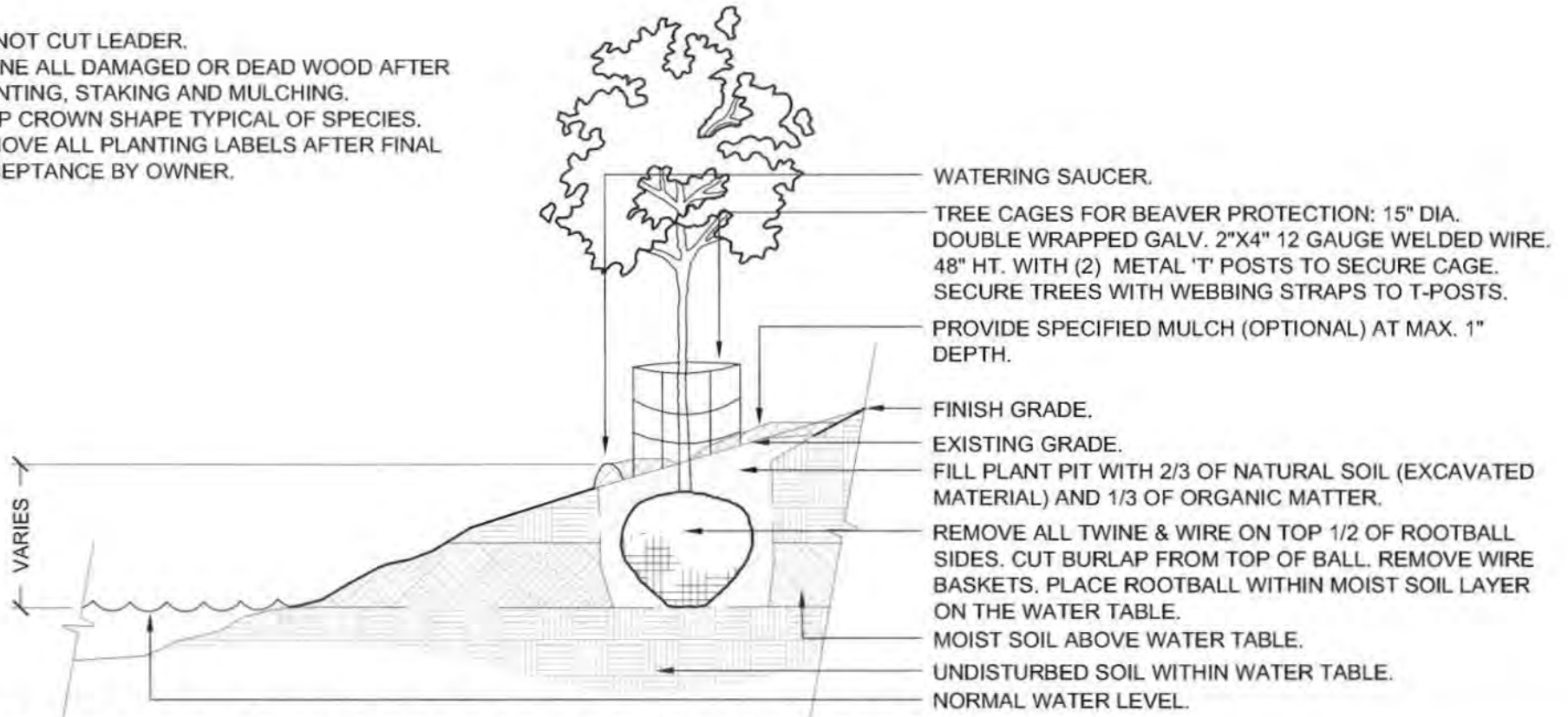


Notes:

1. Determine ground water elevation prior to planting Cottonwood poles.
2. Only plant Cottonwood poles when dormant (before leaves bud out)

NOTE:

1. DO NOT CUT LEADER.
2. PRUNE ALL DAMAGED OR DEAD WOOD AFTER PLANTING, STAKING AND MULCHING.
3. KEEP CROWN SHAPE TYPICAL OF SPECIES.
4. REMOVE ALL PLANTING LABELS AFTER FINAL ACCEPTANCE BY OWNER.



1

DEEP TREE PLANTING FOR B&B COTTONWOOD SPECIES

N.T.S.

329350-20

Installation of Live Willow Stakes

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This work consists of furnishing all plants, labor, materials, and equipment and performing all work necessary and incidental to installing live sandbar willow cuttings for the stabilization of soil and riprap in accordance with other contract documents and on-site instructions. These shrubs must be cut in early spring before the buds leaf out (usually before April 15th).

PART 2 - MATERIALS

2.01 LIVE WILLOW CUTTINGS

- A. Live Willow Cuttings - Willow stakes will be approximately 3 to 4 feet long and between ½ and 1 inches in diameter. All side branches are trimmed.

PART 3 - EXECUTION

3.01 CUTTING

- A. Willow cuttings will be pruned from live willow plants at an approved harvest site. Cutting must be done before the buds leaf out (usually before April 15th).
- B. Willow cuttings will be cut from branches ½ " to 1" in diameter with smooth undamaged bark. Do not use branches with thick, cracked bark because these will not re-sprout effectively.
- C. Cuttings will be cut about one foot from the ground. Cuts must be clean, without stripping the bark or splitting the wood.
- D. The cuts will be at a 45-degree angle to identify the root end of the cutting and to allow rapid regeneration of the donor live willow.
- E. No more than 50 percent of each donor live willow plant will be harvested and no more than 50 percent of plants at the harvest site will be used as donors. Donor live willow plants will be selected at random at the harvest site to avoid creating large areas of cut plants.
- F. The cutting will be trimmed of all side branches and the top will be cut off so that the cutting is approximately 3 to 4 feet in length.
- G. The harvesting site will be left clean and tidy. Large unused material will be cut up to 2 foot lengths and evenly distributed around the site.

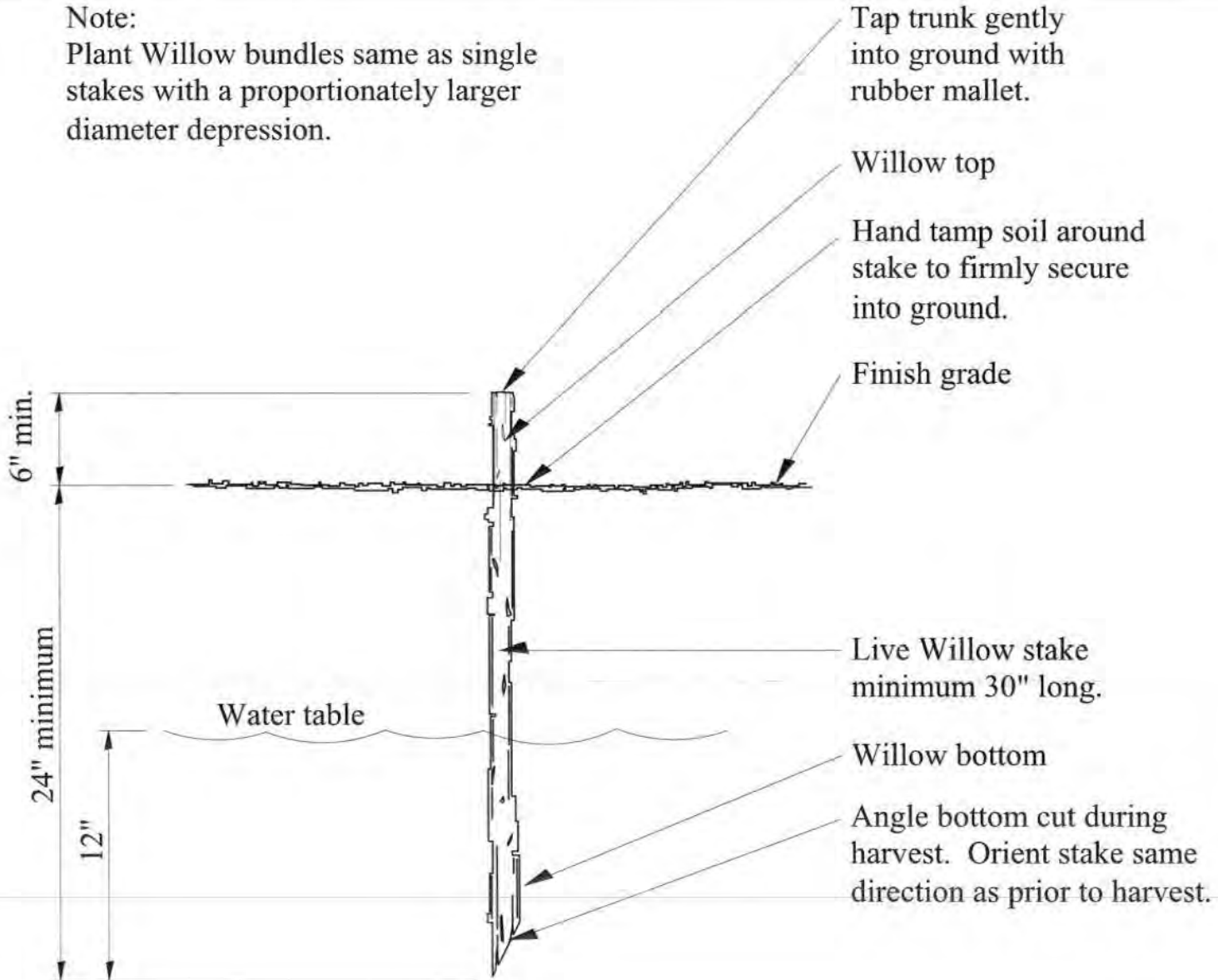
3.02 TRANSPORTATION

- A. Immediately after cutting, all live stakes will be placed in water so that the cut ends are covered with water, and the cuttings shall be stored in a cool location. Plants will be stored in containers with water at least one foot deep. The containers will be continuously shaded and protected from the wind. Cuttings will be protected from drying at all times.
- B. During transportation, the cuttings will be placed in containers with water at least one foot deep in an orderly fashion to prevent damage and to facilitate handling.
- C. Upon arrival at the construction site, cuttings will be inspected for acceptability. Cuttings will be collected from sources that have been approved before beginning cutting operations. Only healthy, undamaged material will be accepted.

3.03 INSTALLATION

- A. Using a piece of rebar, create a vertical hole approximately 1 to 2 feet deep. The hole must be deep enough to reach the water table throughout the growing season. Insert about $\frac{2}{3}$ of the stake into the hole so that the stake is in contact with the water table.
- B. The root-end of cuttings will be tamped into the pilot hole to a minimum depth of 2 feet, or until the root-end of the cutting meets groundwater, whichever is deeper.
- C. The top of the stake should protrude a minimum of 6". Dead blow hammers or rubber mallets will be used to tamp in the cuttings and used in such a manner that they do not cause the wood to split.
- D. Soil will be placed in any spaces around the cuttings and tamped into place to remove any air pockets.

Note:
Plant Willow bundles same as single stakes with a proportionately larger diameter depression.



Installing Cottonwood Pole Cuttings or Deep-Planted Trees

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This work consists of furnishing all plants, labor, materials, and equipment and performing all work necessary and incidental to installing cottonwood pole cuttings or deep-planted trees in accordance with landscape plans, other contract documents, and on-site instructions. Cottonwood pole cuttings must be cut, or cottonwood trees obtained from growers, in early spring before the buds leaf out (usually before April 15th).

PART 2 - MATERIALS

2.01 COTTONWOOD POLE CUTTINGS AND TREES

- A. Cottonwood Pole Cuttings – Cottonwood poles will be between 6 to 8 feet long and between 1 and 2 inches in diameter. All side branches are trimmed. The terminal bud must remain undisturbed.
- B. Cottonwood Trees – Cottonwood trees will be 1-inch diameter ball-and-burlap trees obtained from a commercial grower.

PART 3 - EXECUTION

3.01 CUTTING POLES

- A. Cottonwood pole cuttings will be pruned from live cottonwood trees at an approved harvest site. Cutting must be done before the buds leaf out (usually before April 15th). Cuttings can also be obtained from cottonwood trees cut down, as long as cuttings are harvested the same day the tree is cut.
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- C. Cuts must be clean, without striping the bark or splitting the wood.
- D. The cuts will be at a 45-degree angle to identify the root end of the cutting.
- E. Donor cottonwood trees will be selected at random at the harvest site to avoid creating large areas of cut plants.
- F. The cutting will be trimmed of all side branches. The terminal bud must remain intact.

- G. The harvesting site will be left clean and tidy. Large unused material will be cut up to 2 foot lengths and evenly distributed around the site.

3.02 TRANSPORTATION

- A. Immediately after cutting, all cottonwood poles will be placed in water so that the cut ends are covered with water, and the poles shall be stored in a cool location. Plants will be stored in containers with water at least one foot deep. The containers will be continuously shaded and protected from the wind. Cuttings will be protected from drying at all times.
- B. During transportation, the cuttings will be placed in containers with water at least one foot deep in an orderly fashion to prevent damage and to facilitate handling.
- C. Cottonwood trees will be covered with a tarp when being transported from the grower.
- D. Upon arrival at the construction site, cuttings and trees will be inspected for acceptability. Cuttings will be collected from sources that have been approved before beginning cutting operations. Only healthy, undamaged material will be accepted.

3.03 COTTONWOOD POLE INSTALLATION

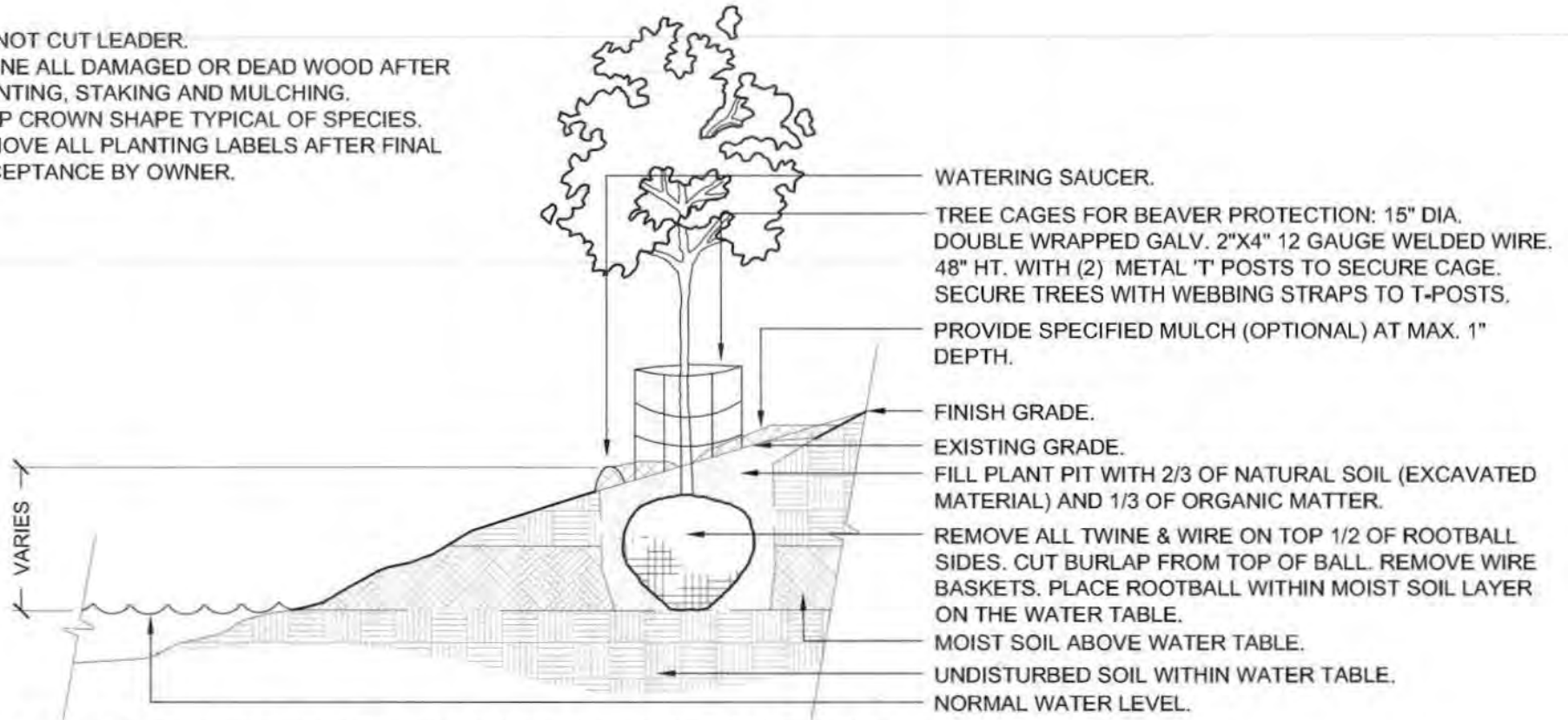
- A. For cottonwood poles, using a mechanized post hole digger or backhoe "Stinger" attachment, create a vertical hole approximately 3 to 4 feet deep. The hole must be deep enough to reach the water table throughout the growing season. Insert the pole or whip into the hole so that at least 1 foot of the pole or stake extends into the water table.
- B. The root-end of pole will be tamped into the pilot hole to a minimum depth of 2 feet, or until the root-end of the pole meets groundwater, whichever is deeper.
- C. Soil will be placed in any spaces around the cuttings and tamped into place to remove any air pockets.

3.04 DEEP-PLANTED COTTONWOOD TREE INSTALLATION

- A. For deep-planted cottonwood trees, using a backhoe, excavate a hole 1.5 times the diameter of the root ball and deep enough to extend to the water table (depth will vary).
- B. Remove all twine and wire from the top half of the rootball sides. Cut burlap from the top of the ball. Remove wire baskets.
- C. Place rootball within moist soil layer on the water table.
- D. Fill planting pit with 2/3 natural soil (excavated material) and 1/3 organic matter.

NOTE:

1. DO NOT CUT LEADER.
2. PRUNE ALL DAMAGED OR DEAD WOOD AFTER PLANTING, STAKING AND MULCHING.
3. KEEP CROWN SHAPE TYPICAL OF SPECIES.
4. REMOVE ALL PLANTING LABELS AFTER FINAL ACCEPTANCE BY OWNER.



1

DEEP TREE PLANTING FOR B&B COTTONWOOD SPECIES

N.T.S.

329350-20

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PART 2 - MATERIALS

2.01 LIVE WILLOW CUTTINGS

- A. Live Willow Cuttings - Willow stakes will be approximately 3 to 4 feet long and between ½ and 1 inches in diameter. All side branches are trimmed.

PART 3 - EXECUTION

3.01 CUTTING

- A. Willow cuttings will be pruned from live willow plants at an approved harvest site. Cutting must be done before the buds leaf out (usually before April 15th).
- B. Willow cuttings will be cut from branches ½ " to 1" in diameter with smooth undamaged bark. Do not use branches with thick, cracked bark because these will not re-sprout effectively.
- C. Cuttings will be cut about one foot from the ground. Cuts must be clean, without stripping the bark or splitting the wood.
- D. The cuts will be at a 45-degree angle to identify the root end of the cutting and to allow rapid regeneration of the donor live willow.
- E. No more than 50 percent of each donor live willow plant will be harvested and no more than 50 percent of plants at the harvest site will be used as donors. Donor live willow plants will be selected at random at the harvest site to avoid creating large areas of cut plants.
- F. The cutting will be trimmed of all side branches and the top will be cut off so that the cutting is approximately 3 to 4 feet in length.
- G. The harvesting site will be left clean and tidy. Large unused material will be cut up to 2 foot lengths and evenly distributed around the site.

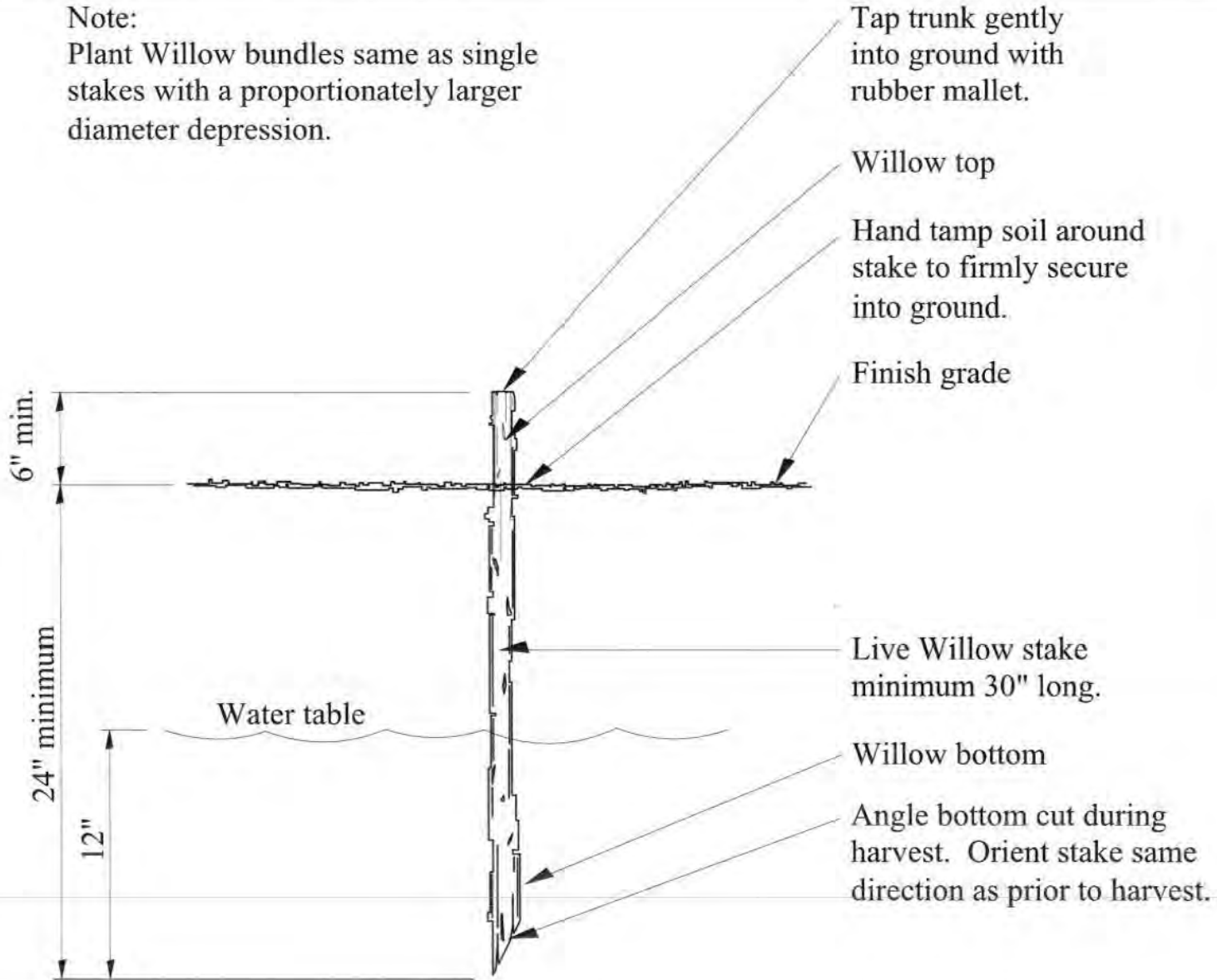
3.02 TRANSPORTATION

- A. Immediately after cutting, all live stakes will be placed in water so that the cut ends are covered with water, and the cuttings shall be stored in a cool location. Plants will be stored in containers with water at least one foot deep. The containers will be continuously shaded and protected from the wind. Cuttings will be protected from drying at all times.
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- C. Upon arrival at the construction site, cuttings will be inspected for acceptability. Cuttings will be collected from sources that have been approved before beginning cutting operations. Only healthy, undamaged material will be accepted.

3.03 INSTALLATION

- A. Using a piece of rebar, create a vertical hole approximately 1 to 2 feet deep. The hole must be deep enough to reach the water table throughout the growing season. Insert about $\frac{2}{3}$ of the stake into the hole so that the stake is in contact with the water table.
- B. The root-end of cuttings will be tamped into the pilot hole to a minimum depth of 2 feet, or until the root-end of the cutting meets groundwater, whichever is deeper.
- C. The top of the stake should protrude a minimum of 6". Dead blow hammers or rubber mallets will be used to tamp in the cuttings and used in such a manner that they do not cause the wood to split.
- D. Soil will be placed in any spaces around the cuttings and tamped into place to remove any air pockets.

Note:
Plant Willow bundles same as single stakes with a proportionately larger diameter depression.



Appendix B

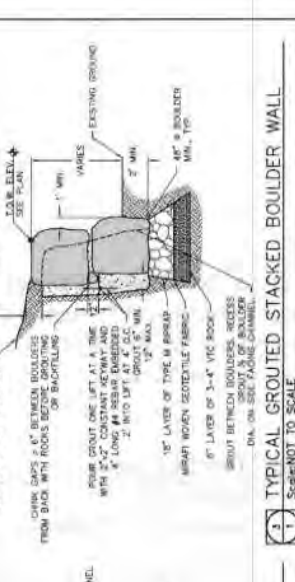
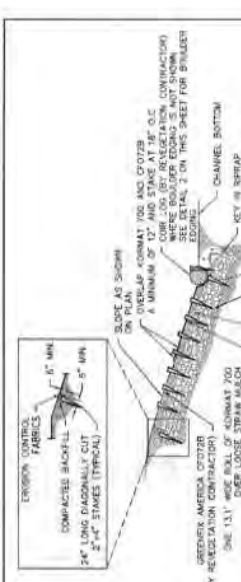
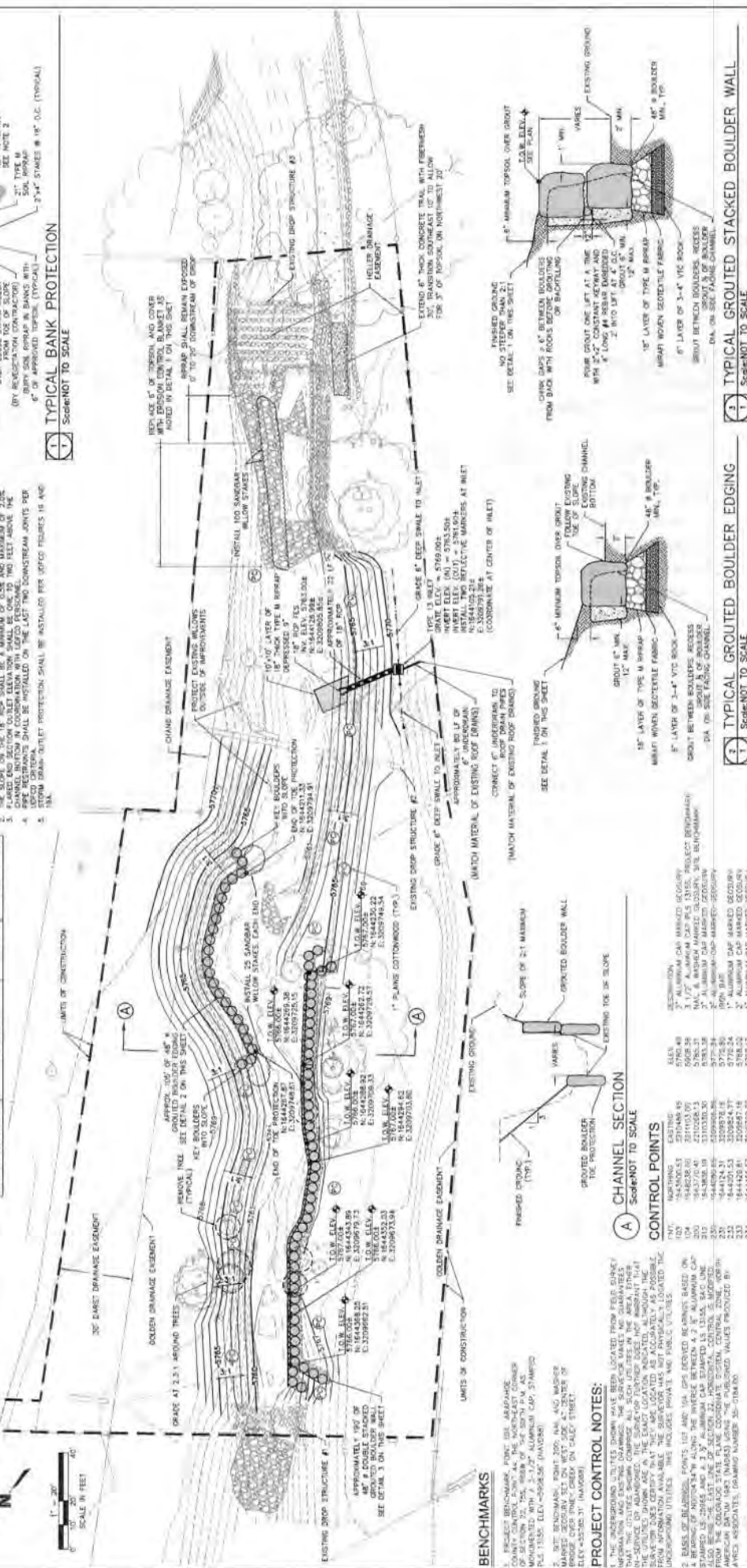
**Piney Creek Downstream of Caley Avenue
Stream Bank Stabilization SEP**

Plan Sheet and Costs

WETLAND SEED MIX		
COMMON NAME (VARIETY)	SCIENTIFIC NAME	SEEDS/LB
WESTERN WHEATGRASS (ARISEA)	ARISEA CANADENSIS	110,000
PRairie CORYDORUS	SPARGANNA PECTINATA	175,000
YELLOW INDIGOBUE (HELIOPSIS)	HELIOPSIS SCUTELLARIA	175,000
POPPLE (ALNUS)	ALNUS INCANA	175,000
RED BASTARD CANNONBALL	FRAXINUS VIRGINIANA	175,000
AMERICAN SLO GRASS	BECKMANNIA ERICHONNIMI	175,000
TOTAL		1,000,000

UPLAND SEED MIX		
COMMON NAME (VARIETY)	SCIENTIFIC NAME	SEEDS/LB
BLUE GRASS (MONOCULTURE)	POA TRIVIALIS	200,000
LITTLE BLUESTEM (CAMPER)	POA CLOVATA	200,000
PRairie SANDBERG	POA PRATIENSIS	200,000
SEEDCAT GRASS (MONOCULTURE)	POA TRIVIALIS	200,000
WESTERN WHEATGRASS (ARISEA)	ARISEA CANADENSIS	175,000
TOTAL		1,000,000

- GENERAL NOTES:**
- PLANT CONTINUOUS PLANTING LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL WORK IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS TO DETERMINE SPECIES TO BE PLANTED. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES.
 - NEWLY INSTALLED RIPRAP SHALL BE PLACED IN 18" BELOW CHANNEL BOTTOM DOWNSTREAM OF EXISTING DROP #2 AND 24" BELOW CHANNEL BOTTOM DOWNSTREAM OF THE EXISTING DROP #1.
 - ALL TREES SHALL BE PROTECTED UNLESS NOTED FOR REMOVAL.
 - TYPICAL BANK PROTECTION TO BE USED UNLESS OTHERWISE NOTED FOR REMOVAL.
 - SEED MIX SHOWN ON THIS SHEET SHALL BE INSTALLED IN THE BOTTOM TWO VERTICAL FEET OF THE CHANNEL. THE REMAINING SEED MIX SHALL BE USED EXCEPT WHERE ELSE NOTED.
 - LIMITS OF EROSION CONTROL ELEMENTS.
- SOIL DRAIN NOTES:**
- STORM DRAIN LOCATION, COORDINATES AND ELEVATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. THE DRAIN SHALL BE A MINIMUM OF 18" WIDE AND SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW CHANNEL BOTTOM DOWNSTREAM OF THE EXISTING DROP #2 AND 24" BELOW CHANNEL BOTTOM DOWNSTREAM OF THE EXISTING DROP #1.
 - ALL SOIL DRAINS SHALL BE INSTALLED IN THE BOTTOM TWO VERTICAL FEET OF THE CHANNEL. THE REMAINING SEED MIX SHALL BE USED EXCEPT WHERE ELSE NOTED.
 - LIMITS OF EROSION CONTROL ELEMENTS.



URBAN DRAINAGE AND FLOOD CONTROL DISTRICT SOUTHEAST METRO STORMWATER AUTHORITY

PINEY CREEK DOWNSTREAM OF CALEY AVENUE STREAM BANK STABILIZATION PROJECT

PROPOSED IMPROVEMENTS

PROPOSED SHEET 1

REVISIONS

NO.	DATE	DESCRIPTION
1	08-28-2023	ISSUED FOR PERMIT

OLSSON ASSOCIATES

8800 Teale Mountain Drive
Golden, CO 80403
TEL: 303.237.2073
FAX: 303.237.2060

DATE: 08/28/23 11:04 AM
DRAWN: J. HARRIS
CHECKED: J. HARRIS
SCALE: AS SHOWN
PROJECT: PINEY CREEK DOWNSTREAM OF CALEY AVENUE STREAM BANK STABILIZATION PROJECT
SHEET: 1 OF 1

Piney Creek Stabilization Project
 Engineer's Opinion of Probable Construction Costs
 Olsson Project No. 012-2040
 Date: November 30, 2012

Item No.	Item Description	Unit	Quantity	Unit Cost	Item Cost
1	Mobilization	LS	1	\$ 11,000	\$ 11,000
2	Construction Surveying	LS	1	\$ 3,250	\$ 3,250
3	Erosion Control	LS	1	\$ 23,000	\$ 23,000
4	Diversion Piping and Water Control	LS	1	\$ 30,000	\$ 30,000
5	Clearing and Grubbing	LS	1	\$ 2,250	\$ 2,250
6	Tree Removal	EA	6	\$ 250	\$ 1,500
7	Excavation (On-Site)	CY	110	\$ 5	\$ 550
8	Excavation (Export)	CY	485	\$ 20	\$ 9,700
9	Type M Soil Riprap	CY	1,147	\$ 50	\$ 57,346
10	Grouted Stacked Boulder Wall (48" Dia., >36" Tall)	LF	160	\$ 300	\$ 48,000
11	Grouted Boulder Edging (48" Dia.)	LF	105	\$ 200	\$ 21,000
12	CDOT Type 13 Inlet	EA	1	\$ 3,250	\$ 3,250
13	18" RCP	LF	30	\$ 50	\$ 1,500
14	18" RCP FES	EA	1	\$ 900	\$ 900
15	6" Underdrain (Match Existing Roof Drain Material)	LF	80	\$ 40	\$ 3,200
16	Concrete Trail (6" Thick with Fibermesh)	SY	21	\$ 50	\$ 1,050
17	Topsoil (Imported)	CY	257	\$ 20	\$ 5,133
18	Soil Preparation and Fine Grading	AC	0.32	\$ 3,000	\$ 955
				Subtotal	\$ 223,584
				Contingency (20%)	\$ 45,000
				Total Estimated Cost =	\$ 268,584

BID SCHEDULE

**PINEY CREEK BANK STABILIZATION DOWNSTREAM OF CALEY AVENUE
CONTRACT NO. 00-00.00**



BID ITEM NO.	DESCRIPTION OF BID ITEM	PAY UNIT	QUANTITY	UNIT PRICE	TOTAL COST OF BID ITEM
1	Mobilization	LS	1	6,290 ²⁵	6,290 ²⁵
2	Construction Surveying	LS	1	3,450 ⁰⁰	3,450 ⁰⁰
3	Erosion Control	LS	1	7,010 ⁰⁰	7,010 ⁰⁰
4	Diversion Piping and Water Control	LS	1	14,886 ⁰⁰	14,886 ⁰⁰
5	Clearing and Grubbing	LS	1	5,650 ⁰⁰	5,650 ⁰⁰
6	Tree Removal	EA	7	280 ⁰⁰	1,960 ⁰⁰
7	Excavation (On-Site)	CY	132	8 ⁵⁰	1,122 ⁰⁰
8	Excavation (Export)	CY	442	29 ²⁵	12,928 ⁵⁰
9	Type M Soil Riprap	CY	1108	53 ⁵⁰	59,278 ⁰⁰
10	Grouted Stacked Boulder Wall (48" Dia., >36" Tall)	LF	190	257 ⁰⁰	48,830 ⁰⁰
11	Grouted Boulder Edging (48" Dia.)	LF	105	187 ⁵⁰	19,687 ⁰⁰
12	CDOT Type 13 Inlet	EA	1	4,220 ⁰⁰	4,220 ⁰⁰
13	18" RCP	LF	22	79 ⁵⁰	1,749 ⁰⁰
14	18" RCP FES	EA	1	1,077 ⁰⁰	1,077 ⁰⁰
15	6" Underdrain (Match Existing Roof Drain Material)	LF	80	16 ⁰⁰	1,280 ⁰⁰
16	Concrete Trail (6" Thick with Fibermesh)	SY	21	103 ⁰⁰	2,163 ⁰⁰
17	Topsoil (Imported)	CY	257	43 ²⁵	11,115 ²⁵
18	Soil Preparation and Fine Grading	AC	0.32	6,200 ⁰⁰	1,984 ⁰⁰

Total Bid = 204,681⁰⁰

Two Hundred four thousand Six Hundred Eighty One and ⁰⁰/₁₀₀

Dale C. [Signature]

Piney Creek Stabilization Project
Plantings Engineer's Opinion of Probable Construction Costs
Olsson Project No. 012-2040
Date: November 30, 2012

Item No.	Item Description	Unit	Quantity	Unit Cost	Item Cost
1	Mobilization	LS	1	\$ 1,250	\$ 1,250
2	KoirMat 700	SY	729	\$ 10	\$ 7,287
3	CFO72B	SY	810	\$ 5	\$ 4,052
4	Coir Log	LF	415	\$ 13	\$ 5,395
5	Tree Planting (1-Inch Plains Cottonwood)	EA	12	\$ 200	\$ 2,400
6	Sandbar Willow Live Stakes	EA	200	\$ 5	\$ 1,000
7	Upland Seeding	AC	0.92	\$ 1,500	\$ 1,385
8	Wetland Seeding	AC	0.09	\$ 4,000	\$ 358
9	Straw Mulch	AC	0.61	\$ 1,500	\$ 908
				Subtotal	\$ 24,035
Contingency (20%)					\$ 5,000
				Total Estimated Cost =	\$ 29,035

Submitted by: Arrowhead Landscaping, Inc.
15650 East 144th Avenue
Brighton, CO, 80601

Date: 2/5/2013

BID SCHEDULE - PLANTINGS
PINEY CREEK BANK STABILIZATION DOWNSTREAM OF CALEY AVENUE
CONTRACT NO. 00-00.00



BID ITEM NO.	DESCRIPTION OF BID ITEM	PAY UNIT	QUANTITY	UNIT PRICE	TOTAL COST OF BID ITEM
1	Mobilization	LS	1	2000.00	2000.00
2	KoirMat 700	SY	712	9.25	6586.00
3	CFO72B	SY	810	6.75	5467.50
4	Coir Log	LF	385	16.00	6160.00
5	Tree Planting (1-Inch Plains Cottonwood)	EA	14	160.00	2240.00
6	Sandbar Willow Live Stakes	EA	150	3.00	450.00
7	Upland Seeding	AC	0.92	2178.00	2003.76
8	Wetland Seeding	AC	0.09	5227.20	470.45
9	Straw Mulch	AC	0.61	2178.00	1328.58

Total Bid = \$26706.29

U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 8
1595 Wynkoop Street, Denver, CO 80202-1129

PUBLIC NOTICE OF PROPOSED ADMINISTRATIVE PENALTY ASSESSMENT AND OPPORTUNITY TO COMMENT ON CLEAN WATER ACT CONSENT AGREEMENT

Purpose of Public Notice

The purpose of this notice is to announce the United States Environmental Protection Agency's (EPA's) intention to enter into a Combined Complaint and Consent Agreement with:

Urban Drainage and Flood Control District
2480 W. 26th Avenue, Suite 156-B
Denver, Colorado 80211-5304

for alleged violations of the Clean Water Act (CWA) on Piney Creek and its adjacent wetlands, Arapahoe County, Colorado, and to give the public the opportunity to comment on the proposed consent agreement.

Process Information

Under the CWA, EPA is authorized to issue orders assessing civil penalties for violations of the CWA. 33 U.S.C. § 1319(g). EPA may issue such an order after the commencement of an administrative penalty proceeding. As required by law, EPA is hereby providing public notice of the proposed consent agreement. 33 U.S.C. § 1319(g)(4)(A) and 40 C.F.R. § 22.45(b).

Administrative enforcement proceedings are conducted under EPA's Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation, Termination or Suspension of Permits (Consolidated Rules), 40 C.F.R. part 22. The procedures through which the public may submit written comment on a proposed consent agreement and participate in a proceeding are set forth in 40 C.F.R. § 22.45. The proposed consent agreement has been entered into by the parties for the purpose of simultaneously commencing and concluding this matter as authorized by 40 C.F.R. § 22.13(b) and executed pursuant to 40 C.F.R. § 22.18(b)(2) and (3). The deadline for submitting public comment on a proposed consent agreement is forty (40) days after the date of public notice.

Case Summary.

The case against the Urban Drainage and Flood Control District (Respondent), Docket No. **CWA-08-2013-0025** was filed on August 15, 2013. The complaint that initiated this case was combined with a consent agreement with a proposed penalty of \$3,450 for unpermitted discharges of dredged or fill material into Piney Creek, near Centennial, Arapahoe County, Colorado. The unpermitted discharges occurred in April 2012, during sediment removal work in Piney Creek that was being conducted by the Urban Drainage and Flood Control District, approximately 250 feet upstream and 1,200 feet downstream of Tower Road. Piney Creek is, and was at all relevant times, a water of the United States. In addition to payment of the civil penalty, the Respondent has agreed to conduct a supplemental environmental project to reduce the discharge of sediment into Piney Creek from areas upstream of the Tower Road site.

Further Information and Comments

Persons wishing to receive a copy of any documents filed in these proceedings, comment upon the proposed consent agreement, or otherwise participate in any of the proceedings should contact the Regional Hearing Clerk, Tina Artemis, U.S. Environmental Protection Agency, Region 8 (8RC), 1595 Wynkoop Street, Denver, Colorado 80202-1129, telephone: 303.312.6765. Written comments on this proposed consent agreement must be directed to the Regional Hearing Clerk by the deadline set forth above in this public notice. For technical questions, contact Dick Clark, Technical Enforcement Program, at clark.richard@epa.gov, the same EPA

address above, or 303.312.6748. Persons with legal questions may contact Linda Kato, Legal Enforcement Program, at kato.linda@epa.gov, or 303.312.6852.

The case docket for this proceeding is located in the EPA - Region 8 office identified above and the file will be open for public inspection during normal business hours. Written comments submitted by the public are available as part of the case docket, subject to provisions of law restricting public disclosure of confidential information. In order to provide opportunity for public comment, no final order assessing a penalty in these proceedings will be issued prior to **40 calendar days after publication of this notice.**

August 13, 2013
Date of Publication