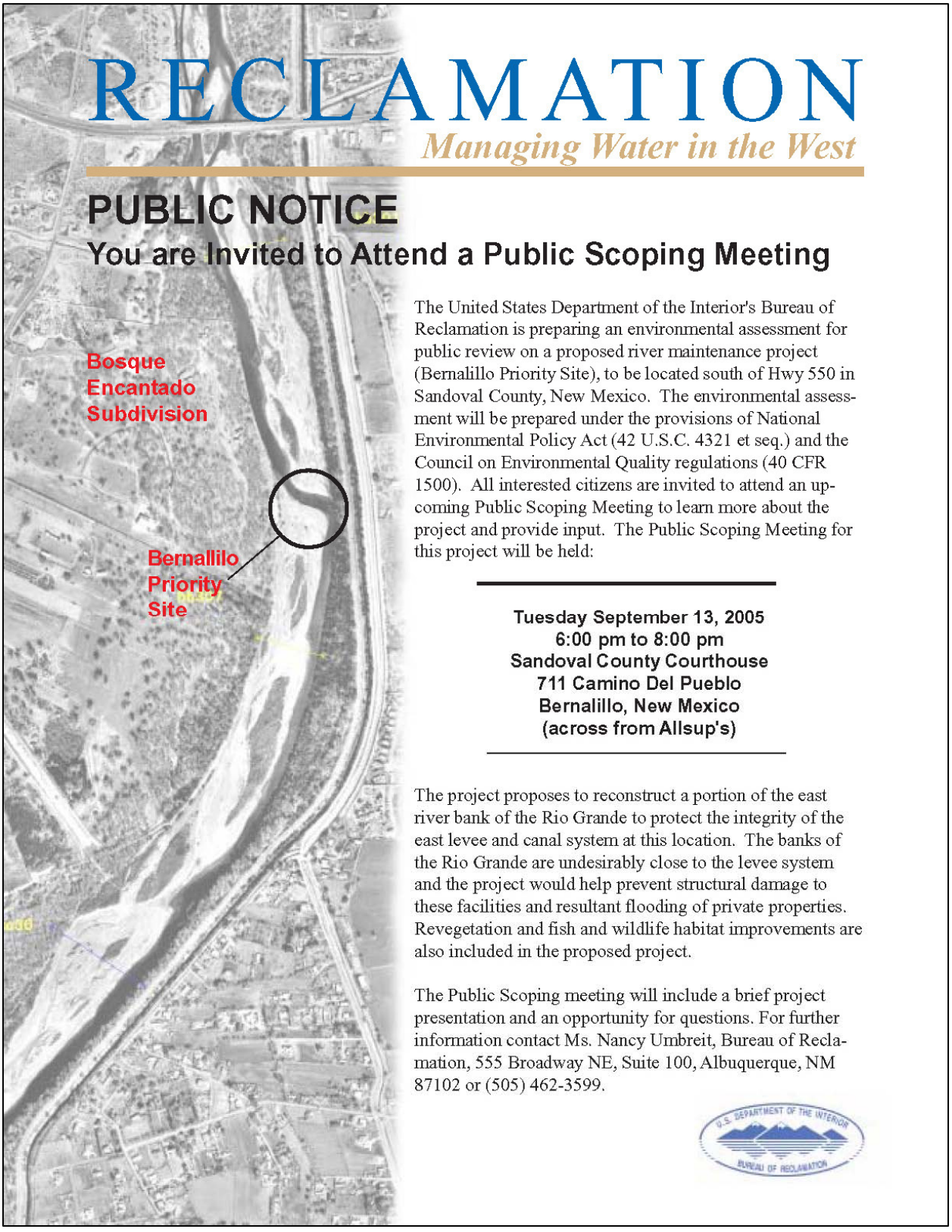
Appendix A

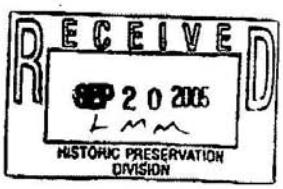
Public and Agency Correspondence

Public Scoping Meeting Announcement



Programmatic Agreement

075566



PROGRAMMATIC AGREEMENT
BETWEEN
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE NEW MEXICO STATE HISTORIC PRESERVATION OFFICE
AND THE US BUREAU OF RECLAMATION ALBUQUERQUE AREA OFFICE

REGARDING
ACTIVITIES OF THE MIDDLE RIO GRANDE
RIVER MAINTENANCE PROGRAM

WHEREAS, the US Bureau of Reclamation is authorized by the Flood Control Acts of 1948 (62 Stat. 1171) and 1950 (64 Stat. 163) for construction, repair and maintenance of its Middle Rio Grande facilities; and

WHEREAS, Reclamation's Middle Rio Grande Project facilities are routinely maintained, upgraded, or expanded at times in order for Reclamation to meet its mandated functions; and

WHEREAS, Reclamation has determined that certain of these activities may have an effect upon properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) and has consulted with the Advisory Council on Historic Preservation (the Council), and the New Mexico State Historic Preservation Officer (SHPO) pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act; and

WHEREAS, Reclamation will act as the lead agency for the purpose of compliance with Section 106 of the National Historic Preservation Act for all Reclamation activities regardless of land ownership of historic properties that may be affected by Reclamation activities; and

WHEREAS, Reclamation has jurisdiction over lands, easements, rights-of-way, and appurtenant facilities that could contain archaeological and other historic properties other than Reclamation's built facilities;

NOW, THEREFORE, the ACHP, Reclamation, and the SHPO agree that Reclamation's routine maintenance program will be administered in accordance with the following stipulations to satisfy Reclamation's Section 106 responsibilities for all individual actions under these programs.

Programmatic Agreement (cont.)

STIPULATIONS

I. MAINTENANCE ACTIVITIES. The following stipulations refer to all activities listed in Attachment A. Activities that will occur on tribal lands are exempted from this Agreement, and in such cases will follow the normal Section 106 process.

A. Those classes of activities listed in Attachment A (except root plowing, see D) will not require any cultural resources investigations or any additional consultation among the parties to this agreement, if those activities take place within the active river channel or along its banks, provided that such activities make use of existing access routes and staging areas. Reclamation will coordinate these activities with its cultural resources personnel without consultation with the SHPO.

B. The classes of activities listed in Attachment A (except root plowing, See D) have a low probability of affecting cultural resources since they are surface-disturbing activities taking place within the active floodplain or recently formed terraces (surfaces less than 50 years of age) providing such activities make use of existing access routes and staging areas. Reclamation will carry out these activities in consultation with its cultural resources personnel (who must meet the Secretary of Interior's professional standards), who will conduct a project review that will include a Class I (records and literature) search for known historic properties in the vicinity of the project. Reclamation's cultural resources personnel will determine whether a field survey or monitoring is necessary. Activities determined to not require field inventory or monitoring will be included in the annual report to the SHPO (See Stipulation III). Monitoring is defined here as directing maintenance activities away from an archaeologically sensitive area.

C. The classes of activities listed in Attachment A will require a Class III cultural resources survey and/or SHPO consultation prior to implementation if such activities involve surface-disturbance in previously undisturbed areas, including new access routes, storage yards, and staging areas, and if these activities occur on terraces older than 50 years (historic floodplains).

D. Root plowing. Consultation with SHPO on projects involving root plowing will be made on a case by case basis and will involve at minimum monitoring, by qualified Reclamation cultural resources staff, during removal and/or site condition assessment subsequent to removal activities.

II. DISCOVERIES

If any cultural resources are noted during maintenance activities, work will cease until the cultural resources can be evaluated. This procedure will include contacting Reclamation's cultural resources personnel and will include a field review by a qualified archaeologist as per the Secretary of the Interior's

Programmatic Agreement (cont.)

standards. If the resources are not sites, if the site has been determined not eligible, or the effects to the site have been previously mitigated, no additional consultation is required, and the maintenance activity can proceed. If it is a newly discovered site and cannot be avoided, the site will be recorded and evaluated for significance and effect according to 36 CFR 800.3 through 800.7. Should human remains be located, Reclamation will be responsible for consultation as stipulated under the Native American Graves Protection and Repatriation Act. Inadvertent discoveries will also be subject to New Mexico state preservation (4NMAC 10.12) and human remains laws (NM Stat. Ann. 18-6-1) where appropriate.

III. ANNUAL REPORT

On an annual basis, Reclamation's cultural resources personnel will review those portions of the maintenance program listed under Stipulation I A and B and submit a report to SHPO by December 1 of each year, beginning in 2005, and including information on all projects that required no further consultation. The SHPO will have 30 days to respond to the annual report.

IV. AMENDMENTS

Any party to this Programmatic Agreement may request that it be amended or modified, whereupon the parties will consult in accordance with 36 CFR 800.13 to consider such amendments. Any resulting amendments will be developed and executed in the same manner as the original document.

V. ENACTMENT AND PERIOD OF EFFECT

This programmatic agreement will take effect the day after it is accepted, by signature by the Council and will remain in effect until terminated as provided under Stipulation VII.

VI. DISPUTE RESOLUTION

Should any party to this agreement object within 30 days to any actions pursuant to this Agreement, Reclamation will consult with the objecting party to resolve the objection. Should an objection pertaining to this Agreement be raised by a member of the public, Reclamation shall notify the parties to this Agreement and take the objection into account, and consult with the objector. If Reclamation determines that the objection cannot be resolved, Reclamation will forward all documentation relevant to the dispute to the Council. Within 30 days, the council will either provide Reclamation with recommendations or notify Reclamation that it will comment pursuant to 36 CFR 800.6b, and proceed to comment. Reclamation will consider Council's comments in accordance with 36 CFR 800.6c(2). Any recommendation or comment provided by the council will be understood to retain only to the subject of the dispute, and Reclamation and SHPO's responsibilities will remain unchanged to carry out all actions under this Agreement that are not the subject of the dispute.

Programmatic Agreement (cont.)

VII. TERMINATION

Any party to this Programmatic Agreement may terminate it by providing 45 calendar days notice to the other parties with specific reasons for such withdrawal, provided that the parties are consulted during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

VIII. PERIODIC REVIEW OF AGREEMENT

The parties to this Agreement will meet or otherwise consult to review this Agreement and update as necessary at three year intervals, from the date this Agreement is enacted. This Programmatic Agreement will expire in 2020 unless it is renewed by the signatories.

Programmatic Agreement (cont.)

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ **Date:** _____
Executive Director

NEW MEXICO STATE HISTORIC PRESERVATION OFFICER

By: _____ **Date:** 9/18/05
New Mexico State Historic Preservation Officer

BUREAU OF RECLAMATION

By: _____ **Date:** 8/2/05
Area Manager, Albuquerque Office

Programmatic Agreement (cont.)

ATTACHMENT A
River Maintenance Activities

1. River Engineering Techniques

River engineering techniques include a variety of methods for influencing flow alignment, bank stabilization, and controlling and managing overbank flow. Every effort will be made to use the river restoration techniques described in Section 6 to the maximum extent possible before considering these techniques. River engineering activities will be incorporated only in cases when river restoration alone is not adequate for the protection of critical riverside facilities, or in-stream structures. All projects that include river engineering works would have river restoration components to provide a net positive effect on the ecosystem. River engineering works will require periodic maintenance.

Rock Vanes - These weir structures are intended to act as in-stream cover, deflect flows away from eroding bankline, and break up the secondary circulation cells which add to the stress in the near bank region.

Toe Revetment Plantings - These structures utilize a combination rock or riprap material and willow planting to protect an eroding bank. The rock or riprap material is placed at the toe of the bank while the plantings are placed along the top of the bank or on terraces along the bank.

Native Material Bank Stabilization-rock and/or Log Spurs - These structures are intended to provide bank stabilization and create in-stream cover through various alternatives of root wad and boulder placement, J-Hook and Rootwad Vanes, cross vanes, log revetments, and vegetation planting.

Groins/Bendway Weirs- Groins and Bendway Weirs are embankments or dikes projecting from the bank into the channel to regulate river flow alignments. Both may be perpendicular to the bank or angled either up or down stream in an "L" or "T" shape. These can be used in combination with bar reconstruction to move the channel away from a trouble spot along a safer alignment. Groins and Bendway Weirs could be used in all reaches except the Velarde Reach where the river is generally too narrow to make them practical. These are essentially the same structure as rock vanes but have larger top widths to enable heavy equipment to place the rock.

Training dikes- Training dikes are constructed more or less parallel to the channel to guide the flow. Most training dikes will be built in conjunction with revetment works or channel re-alignment/pilot channel projects and would most likely be used in the Middle Reach and below where the river banks are low.

Programmatic Agreement (cont.)

Freeboard dikes- Freeboard dikes are built to contain high flows with an adequate factor of safety to protect other works or facilities. Freeboard dikes are most often required in areas where there are no levees, development or farmland is at the river's edge.

Pilot channels/Pilot Cuts- Pilot channels are excavated to establish new river courses. Pilot channel may require stabilization with revetments or other works. Pilot channels will most likely be needed in areas where channel alignments are least defined and sediment plug formation is a problem. Pilot cuts encourage the river to move the sediment and reform the channel allowing for minimal disturbance as opposed to channel dredging. The excavations will not disturb surfaces greater than 40 years in age.

Revetments- A revetment is a facing placed on a riverbank to resist and prevent further erosion. Many types of materials and systems are available for revetting banks. Economic and feasibility of construction considerations, aquatic and riparian habitat, and aesthetic factors governs the choice of a particular revetment system. All types of bank stabilization work requires periodic maintenance. Rock riprap has generally been used in all reaches to revet banks. The use of native material revetment is currently being explored.

Windrows- Windrows are used alone or in conjunction with revetments to limit future bank erosion. Riprap is piled in a windrow on top of the bank along a desired alignment. When the bank erodes back to the windrow, the rock is undermined and drops down the bank controlling erosion. After the rock begins to drop down the bank, additional rock is required to redress and shape the bank. Windrows could be used in all reaches to stabilize bank erosion.

Permeable jetties- Steel or wood Kellner jacks (jetty jacks) have been previously used to stabilize the Rio Grande. The effectiveness of permeable jetties depends on an adequate supply of sediment being transported by the river and on site specific hydraulic conditions. Currently no jetty jack installations are planned for the Middle Rio Grande Project, however this item is left in for the remote possibility of future installations.

Curve shaping- The realignment of river banks may be necessary in all reaches. Curve alignments are determined by right-of-way considerations and hydraulic parameters. This activity could be a component of previously mentioned river training works techniques or may be used alone.

Stabilized soil, Manufactured revetment units, and Cellular confinement systems- The chemical treatment of soils makes them less susceptible to erosion. The most common soil treatment is soil cement. Soil and cement are mixed and compacted to make an erosion-resistant material. Soil cement cannot be constructed underwater. This technique would only be used in unusual circumstances. Several types of manufactured units are available for revetment construction. These units are typically made of concrete and are designed to be laid on the bank in interlocking patterns. The high cost of these systems would limit their use to very special cases. Plastic grid systems designed to limit movement of soils can be used to prevent erosion. These systems use a honeycomb cell

Programmatic Agreement (cont.)

sheet anchored to the bank to contain fill material. These systems may be practical in conditions where erosion potential is small.

2. Sediment Removal

Removal of sediment from the river channel by mechanical means may be needed to maintain flow capacity. Disposal of spoil material is an important consideration when planning these operations.

Arroyo Plug Grading and Removal- Sediment deposited in the river channel at the mouths of tributary arroyos sometimes must be removed by excavation. In many arroyos the sediment deposits are sand size material, are readily washed away during high flows, and provide a sediment supply for the river. Below Cochiti Dam additional sediment supply is needed and arroyo sediments can provide some sediment enrichment. Very large arroyo plugs can diminish channel capacity or deflect flows excessively into riverside facilities, only in these instances would Reclamation undertake arroyo plug removal or grading. Most arroyo deposits would remain untouched. Because of regulation by dams, mainstem flow is often inadequate to remove arroyo plugs containing large gravel or cobble sized materials that might otherwise be removed naturally. Arroyo plugs are usually excavated or graded by dozers or scrapers. Spoil material may be destabilized or relocated within the river channel to be naturally redistributed by the river to provide a sediment source to enrich the sediment load.

Dredging/Sediment settling basins - Dredging includes all underwater excavation of bottom material. Dredging may be done by machines scooping the bottom material up in buckets (bucket dredging) or by pumping a solid/water mixture and discharging through pipes (hydraulic dredging). Hydraulic dredging often requires the construction of settling ponds where the discharged solids are separated from the water. Construction of settling ponds usually requires building up embankments or dikes to contain the dredged material and overflow structures to carry away the water. Size of settling ponds depends on quantity of material to be discharged and the type and size of the solids to be settled out. In open water areas, silt curtains may be used to diminish or limit turbidity effects caused by dredging. Dredging would be used to construct or maintain channels in areas where sediment is depositing. Reclamation only has plans for bucket dredging in areas where active flows are routed around job site with a coffer dam and local fish seining is performed.

3. Vegetation Management

Vegetation Management has a variety of components and objectives; 1) restoring native tree species, 2) removal of exotic species, 3) reduction of net depletions (i.e. evapotranspiration), and 4) maintaining floodway capacity; 5) or reservoir storage.

Historically, vegetation management activity was concentrated where river bars were mown annually to prevent growth of woody vegetation. Under our current mowing

Programmatic Agreement (cont.)

program, Reclamation is evaluating its effectiveness in meeting river restoration/maintenance goals. Until further analysis and studies are performed, the mowing of native riparian vegetation on river bars is temporarily postponed. This program is currently being re-evaluated based on current geomorphic, hydrologic, and environmental conditions. Vegetation management will also likely be needed as the Elephant Butte Reservoir pool recedes, and salt cedar grows on the exposed delta.

Transect Brushing - Vegetation may be trimmed to create a clear line of sight along a transect as part of Reclamation's data collection program for river channel monitoring.

Mowing- Vegetation may be cut with mowers. Mowing controls development of woody and perennial species while minimizing disturbance to grasses and forbs.

Root plowing- A root plow is a large blade that is pulled through the ground beneath the surface by a tractor to destroy underground rootstocks. Root plowing would ordinarily be used to eliminate exotic woody species such as salt cedar and Russian olive trees. Vegetative debris could be piled and left within the cleared area, stacked and burned within the cleared area, or removed to an offsite location.

Clearing of Understory Vegetation - This activity would involve the removal of deadfall and/or exotic species vegetation beneath a native species vegetation canopy.

4. Levee Maintenance

Reclamation regularly maintains the levee system in the Socorro, Bosque del Apache, San Marcial and Elephant Butte Reaches. In other areas, Reclamation may perform levee maintenance on an intermittent, occasional or emergency basis at the request of the Middle Rio Grande Conservation District. Levee failure caused by bank erosion at less than flood flows is also a Reclamation responsibility. Levee maintenance includes raising levee heights, reinforcing by widening levee bases, filling and repairing washouts, stabilization with revetments or groins, drainage improvements, grading, shaping, and road graveling.

A potential alternative for reaches below Cochiti Dam is to relocate the levees, irrigation canals, and riverside drains in selected locations. This option may increase the available floodplain width.

5. Access and Construction Requirements

Haul roads and operating areas- Access construction may require clearing, placement of fill, grading, installation of culvert pipes, and graveling.

Stockpiles- Sites for stockpiling material may require clearing, grading, and fencing. Material may be stockpiled for a particular construction project or may be stored for unspecified maintenance. Stockpiles may be in place temporarily or permanently.

Programmatic Agreement (cont.)

Cofferdams/Inflatable water bladders- Cofferdams or inflatable water bladders are sometimes needed to divert water temporarily during construction operations.

Borrow areas for fill material- Fill material for bank shaping or embankment construction may be imported from borrow areas off site or excavated from adjacent bars or islands. Fill material will only be imported from areas having existing cultural clearance.

Spoil areas- Excess material excavated or dredged from the river channel is disposed in designated spoil areas.

Storage yards- Temporary storage of equipment, material and supplies is often needed at a location convenient to a job site. Storage areas may require clearing, grading, graveling, drainage, and fencing.

6. River Restoration Techniques

Bioengineering and habitat enhancement techniques will be utilized to address river maintenance objectives while restoring ecological function and integrity of the riverine ecosystem. The following activities utilize the fluvial processes of the Rio Grande, native vegetation, and ecological perspectives to address river system concerns. Combinations of these activities will most likely be employed in maintenance and rehabilitation designs.

Terrace and Overbank Lowering (Re-establish floodplain hydrologic connectivity) - This type of work would allow for the expansion of the active floodplain and to provide low surfaces along the river's banks for the establishment of Riparian habitat. The new floodplain/lowered surface would be located in areas where the channel is relatively incised and the potential for overbank flows is minimal. The lowered surfaces would be inundated at higher discharges providing refuge for aquatic organisms, restoration of native riparian vegetation, and re-establishment of a river channel/floodplain hydrologic interaction.

Channel Widening/Bank Destabilization - Widening the main river channel via vegetation clearing and bank terracing to initiate native species regeneration. For bank destabilization, jetty removal, clearing vegetation via rootplowing and bank lowering along the bankline would most likely occur.

Woody Debris Snags and Boulder Placements - Woody debris snags and boulders would be placed at locations within the river channel or along river banks to provide aquatic habitat in itself or in association with other techniques. Woody debris snags and boulders could be placed individually or in groupings. Boulder placement would most likely occur in the upstream river channel reaches, e.g., Velarde and Espanola.

Programmatic Agreement (cont.)

High Flow Side Channels - Provide backwater and slower velocity areas for aquatic and terrestrial species and increase the potential for overbank flooding and native species regeneration. The activity would most likely involve pilot channel excavation, inner channel terracing, and bank material removal or de-stabilization on surfaces less than 40 years of age.

Removal of Lateral Confinements - In areas where the river channel is constricted, the removal and/or relocation of confining terraces, levee, low flow channel, and jetties could be performed for floodplain expansion.

Vegetation planting and natural re-generation - Restoration of native riparian habitat mosaic, including salt grass, shrub, and bosque communities via planting or through re-establishing hydrologic connectivity. Potential methods include individual pole and willow whips, willow bundles/mats, or other planting methods. Vegetative plantings may also be incorporated in re-establishing floodplain terraces.

Gradient Restoration Facilities (GRF'S) - Gradient restoration facilities are low head grade control structures with fish passage aprons. These structures are utilized to halt channel degradation, reduce upstream velocities, trap finer sediments, and increase water surface elevations. Diverse velocities and flow depths will be created over the fish passage apron. Downstream sediment transport is not permanently reduced as sediment is only trapped by the GBF until an upstream equilibrium channel slope is attained. The amount of sediment deposited upstream of the GRF's is only a few percent of the annual sediment load. Fish passage aprons will be designed with the most current silvery minnow criteria available. Currently the apron design mimics natural riffles in the Rio Grande.

Increasing the Sand Load to Channel Reach - Mechanically introducing sand into the river channel in reaches where the sediment transport capacity of the sand load is in excess to the available sediment supply and the channel is degrading and the river is becoming gravel bedded. This activity may assist in raising the river bed, changing gravel substrate to sand, increase channel width, and decrease the average depth. The activity may involve either moving river terrace sediment deposits with land based equipment or even possibly hauling of sediment materials from upland areas for placement in the river channel.

Oxbow Re-establishment - Re-establishing a flow source to an Oxbow to serve as a wetland for wildlife habitat and vegetation enhancement. These areas will be designed to provide backwater and side channel habitat adjacent and connected to the river channel for silvery minnow habitat and restoration of native riparian vegetation.

Deformable Bankline(s) - A deformable bankline consists of a stone toe sized to be mobile at the five-year return interval flood event, and native vegetation plantings. The stone toe is required to temporarily stabilize the bank to allow planted vegetation to become established. The rock utilized in the toe will be wrapped in biodegradable fabric to ensure stability during the first three to five years. After the fabric degrades and the

Programmatic Agreement (cont.)

toe becomes mobile by subsequent events, the vegetation/soil interaction and natural fluvial processes will control the bank shape. Deformable banklines can also be comprised of fabric encapsulated soils as opposed to stone dependant on its location in the floodplain and stability criteria. Deformable banklines will most often be established on barren banks, when riverside facilities will not be threatened by a migrating bend or on newly created banks through activities such as channel re-alignment and terrace lowering.

Non-Native Vegetation Clearing and Floodplain Expansion - Mechanical clearing of exotic species vegetation adjacent to the river channel to promote native species regeneration within the floodplain and also expanding the floodplain. This includes creating paths for river waters to inundate the cleared area during peak spring runoff flows. These areas will be designed to provide backwater and side channel habitat adjacent and connected to the river channel for silvery minnow habitat and restoration of native riparian vegetation.

Rock Weirs - Varying types of rock weir structures would be utilized for bed control and raising the river bed/water surface elevation. They are Vortex and "W" rock weirs and cross vanes. These structures are intended to alleviate excessive bank erosion, create grade stabilization, create instream cover and diversity of velocity and depth across the width of the river channel. Both structures allow for fish passage and may trap finer sediments upstream of the structures. The apex of Vortex rock weirs is pointing upstream while the apexes of "W" rock weirs are pointing both upstream and downstream.

Channel Avulsions - Realignment of the river channel along a new route to promote new habitat development involving vegetation clearing, partial blocking of the old river channel, and pilot channel excavation. The old river channel will develop into a backwater area, providing refuge for aquatic species. Additionally, as sediments are deposited in the old channel, a low floodplain will evolve, allowing new age classes of native vegetation to establish.

Channel Realignment/Pilot Channel Work - Relocation of the river channel away from an existing riverside facility that is threatened by erosion and/or to bring the channel to an equilibrium slope and planform. Channel realignment may incorporate deformable banks to establish the new channel pattern and allow for natural fluvial process to shape the banks.

Culvert and Low Water Crossings - Installation of culverts and low water crossings within the berm and levee systems to provide water to disconnected areas of the floodplain for habitat improvement.

River Bar/Island Enhancement - River bars can be enhanced from a habitat standpoint by various combinations of exotic species vegetation clearing, plantings, lowering, pilot channel work, and creation of high flow side channels. This activity can also be used in

Programmatic Agreement (cont.)

conjunction with other techniques to expand the active floodplain, dissipate stream energy, and reduce sheer stress along vulnerable banklines.

Jetty/Snag Removal - Perform the removal of jetty jacks from areas where their function is no longer necessary as means to establish new banklines or where the jetties have been moved into the main river channel as a result of erosional processes and may pose a hazard.

Nursery Habitat Inlets- Inlets can be excavated from either a bank or an island. These created drift zones are ideal habitat for juvenile and larval fish. Ongoing Reclamation research indicates these naturally formed habitats also retain silvery minnow eggs. As the inlet fills with sediment over time it will regenerate a healthy Riparian and retain hydrologic connection to the river.

Comment Letter 1

ORIGINAL

GOVERNOR
Bill Richardson

DIRECTOR AND SECRETARY
TO THE COMMISSION
Bruce C. Thompson

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way
Post Office Box 25112
Santa Fe, NM 87504
Phone: (505) 476-8008
Fax: (505) 476-8124

Visit our website at www.wildlife.state.nm.us
For basic information or to order free publications: 1-800-862-9310.

STATE GAME COMMISSION
Guy Riordan, Chairman
Albuquerque, NM

Dr. Tom Arvas, Vice Chairman
Albuquerque, NM

Alfredo Montoya
Alcalde, NM

David Henderson
Santa Fe, NM

W. H. "Dutch" Salmon
Silver City, NM

Peter Pino
Zia Pueblo, NM

Leo Sims
Hobbs, NM

RECEIVED BOR
ALBUQUERQUE AREA OFFICE
OFFICIAL FILE COPY
NOV '05
Class PRJ 2.00
Prj GF
Cntr # 5002214
Fldr # 3911.9
Date Initial To
11/04 AM 185

November 1, 2005

Nancy Umbreit
Bureau of Reclamation
Albuquerque Area Office
555 Broadway NE, Suite 100
Albuquerque, NM 87102

Re: Bernalillo Priority Site Draft EA
NMGF No. 10439

Dear Ms. Umbreit,

Thank you for the opportunity to review this document. The Department of Game and Fish (Department) agrees that, as long as the proposed mitigations are successful, this project should not result in significant impacts to wildlife or sensitive habitats. The Department is concerned, however, that the 3-5 year window proposed for re-vegetation, reclamation, and monitoring may not be sufficient. Unpredictable weather and/or hydrologic conditions may delay successful revegetation. Additionally, recent efforts along the Middle Rio Grande Bosque have shown that species such as Salt Cedar and Russian Olive will require repeated treatments over several years to achieve desired levels of control. We recommend that the Bureau modify their planned monitoring program to clearly provide for evaluation of the success of the reclamation efforts, and, if necessary, provide for the extension of the time frame to successfully establish viable native vegetation, and control noxious species.

Thank you for the opportunity to review and comment on your project. If you have any questions please contact Steve Anderson, Northwest Area Habitat Specialist, at (505) 222-4708 or stephen.anderson@state.nm.us.

Sincerely,

Lisa Kirkpatrick

Lisa Kirkpatrick, Chief
Conservation Services Division

LK/sa
xc: Susan McMullin, New Mexico Ecological Services, USFWS
Brian Gleadle, NW Area Operations Chief, NMGF
Steve Anderson, NW Area Habitat Specialist

Response to Comment Letter 1

Reclamation appreciates the comments and suggestions provided by NMDGF for this project. The proposed revegetation monitoring period associated with the Bernalillo Priority Site project will be for a minimum of 3 to 5 years. If revegetation success is not satisfactory, Reclamation will take the necessary actions to rectify the problem(s) and will extend the monitoring period accordingly.

Comment Letter 2

ORIGINAL

October 29, 2005
135 Rincon Valverde
Ponderosa, NM 87044

RECEIVED BOR
ALBUQUERQUE AREA OFFICE
OFFICIAL FILE COPY
OCT 31 '05
Class ENV.6.00
Prj MK
Cntr # 5002194
Fldr # 37624
Date 11/02 Initials gru To 185

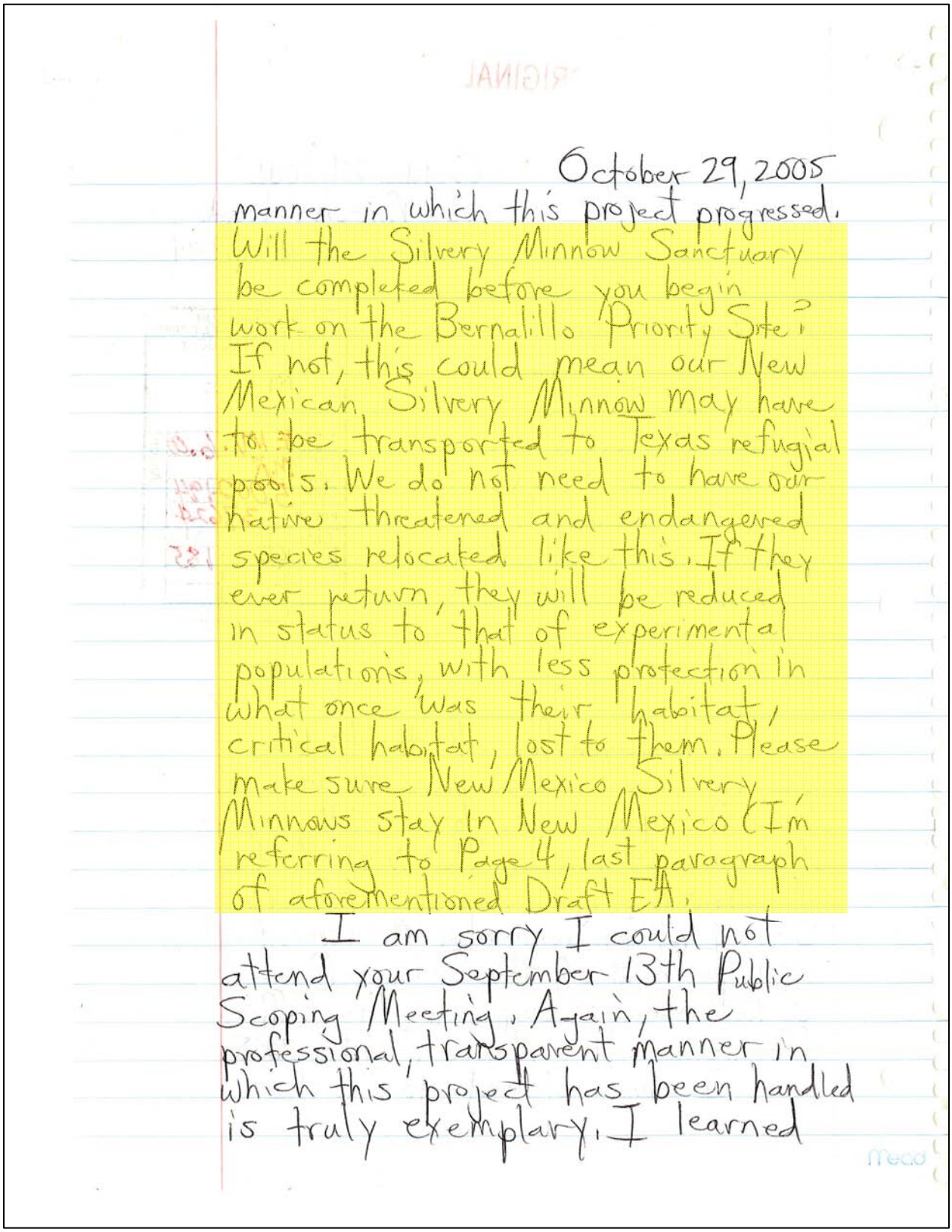
Ms Nancy Umbreit
United States Department
of the Interior
Bureau of Reclamation
Albuquerque Area Office
555 Broadway NE
Suite 100 (ALB-185)
Albuquerque, NM 87102

Dear Nancy,

Thank you for all the trouble you went to in attempting to provide me the opportunity to review Reclamation Managing Water In The West Middle Rio Grande Project Bernalillo Priority Site Draft Environmental Assessment US Department of the Interior Bureau of Reclamation Albuquerque Area Office Albuquerque, New Mexico October 2005.

I was pleased to see the

Comment Letter 2 (cont.)



October 29, 2005

manner in which this project progressed. Will the Silvery Minnow Sanctuary be completed before you begin work on the Bernalillo Priority Site? If not, this could mean our New Mexican Silvery Minnow may have to be transported to Texas refugial pools. We do not need to have our native threatened and endangered species relocated like this. If they ever return, they will be reduced in status to that of experimental populations, with less protection in what once was their habitat, critical habitat, lost to them. Please make sure New Mexico Silvery Minnows stay in New Mexico (I'm referring to Page 4, last paragraph of aforementioned Draft EA.

I am sorry I could not attend your September 13th Public Scoping Meeting. Again, the professional, transparent manner in which this project has been handled is truly exemplary. I learned

Comment Letter 2 (cont.)

October 29, 2005

much about flora and fauna involved and techniques used in the proposed action. The visuals were absolutely top quality. I cannot wait to share your hardcopy with fellow private citizen members of the Jemez Watershed Group in San Ysidro on November 30th.

I sent this regular method mailing because I wanted to be able to walk down the ridge road in the morning to my rural box and beat the postal pick up. I hope it will receive as much attention as certified mail and get to you in time.

Please place me on your scoping list for all Middle Rio Grande Projects the Bureau of Reclamation undertakes involving consultation with the Jemez, Zia, Sandia and Santa Ana Pueblos as I am in the same general watershed areas as these tribes.

Rebecca G. Perry-Piper

Rebecca G. Perry-Piper

Response to Comment Letter 2

Thank you for your comments. The proposed refugial pool will be managed to maintain those Rio Grande Silvery Minnow that happen to be within the active construction area. If necessary and based upon Service input, Reclamation would transport individual minnows from the project refugial pool into the nearby Rio Grande. Reclamation would not transport minnows to Texas refugial pools.

New Mexico Environment Department 401 Water Quality Certification

ORIGINAL

State of New Mexico
ENVIRONMENT DEPARTMENT
Surface Water Quality Bureau
Harold Runnels Building Room N2050
1190 St. Francis Drive - Zip 87505
P.O. Box 26110 - Zip 87502-6110
Santa Fe, New Mexico
Telephone (505) 827-0187
Fax (505) 827-0160
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

DERRITH WATCHMAN MOORE
DEPUTY SECRETARY

RECEIVED BOR
ALBUQUERQUE AREA OFFICE
OFFICIAL FILE COPY
DEC 0 1 '05
Class ENV-8.10
Prj RG
Cntr # 5002504
Fldr # 3925
Date 12/08 Initials 185
12/2 HG 180
Action

November 23, 2005

Ms. Nancy Umbreit
Bureau of Reclamation
555 Broadway NE, Suite 100
Albuquerque, New Mexico 87102-2352

Subject: Clean Water Act Section 401 Water Quality Certification for **NMED SWQB File SF044-05;** Bernalillo Priority Site Project, Bernalillo County, New Mexico.

Dear Ms. Umbreit,

The Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department has reviewed your application for authorization of the project indicated above under Sections 404 and 401 of the federal Clean Water Act. According to the application, this project involves realigning the river channel and modifying the adjacent floodplain to increase channel stability and improve aquatic habitat. This project does not involve the use of concrete or asphalt.

The U.S. Army Corps of Engineers (USACE) will regulate this project under an individual permit (USACE Action #2005-00209). In addition, a State Water Quality Certification is required by Section 401 of the federal Clean Water Act in order to ensure that your project will comply with the state water quality standards (*Standards for Interstate & Intrastate Surface Waters*, New Mexico Water Quality Control Commission, 20.6.4 NMAC: 7/17/2005). According to these standards the Rio Grande is designated for the following uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat, and secondary contact.

This is only a partial list of standards for the Rio Grande. For a complete list of the water quality standards that apply to your project, refer to the following sections of the *Standards for Interstate & Intrastate Surface Waters*, New Mexico Water Quality Control Commission, 20.6.4 NMAC: 7/17/2005.

20.6.4.8 *Antidegradation Policy and Implementation Plan*
20.6.4.13 *General Standards*
20.6.4.900 *Standards Applicable to Attainable or Designated Uses*
20.6.4.106 *The main stem of the Rio Grande from Alameda bridge (Corrales bridge) upstream to the Angostura diversion works…*
20.6.4.13.J *Turbidity shall not exceed 10 NTU over background turbidity when the background turbidity is 50 NTU or less, or increase more than 20 percent when the background turbidity is more than 50 NTU. Background turbidity shall be measured at a point immediately upstream of the turbidity-causing activity. However, limited-duration activities necessary to accommodate dredging, construction or other similar activities and that cause the criterion to be exceeded*

1

NF

New Mexico Environment Department 401 Water Quality Certification (cont.)

may be authorized provided all practicable turbidity control techniques have been applied and all appropriate permits and approvals have been obtained.

20.6.4.11.E.5 *...A continuous zone of passage through or around the mixing zone shall be maintained in which the water quality meets all applicable criteria and allows the migration of aquatic life presently common in surface waters of the state with no effect on their populations.*

These standards are available on the web at: www.nmenv.state.nm.us/swqb/Standards/20.6.4NMAC.pdf.

401 Water Quality Certification with Conditions:

Pursuant to Section 401 of the Clean Water Act and 40 Code of Federal Regulations Part 121, the SWQB hereby issues a 401 Water Quality Certification for USACE Action #2005-00209. This certification is subject to conditions to ensure that the project will comply with state water quality standards and the Antidegradation Policy. Therefore, this Certification is not valid unless the following conditions are adhered to:

1. Any work in a channel below the ordinary high water mark must be limited to low flow periods. Avoid working in these channels during the spring runoff and summer monsoon season.

2. When working in a stream channel, flowing water must be temporarily diverted around the work area to minimize sedimentation and turbidity problems.

3. Water turbidity must be monitored downstream and near construction activities. The applicant must ensure that a continuous zone of passage through or around the mixing zone is maintained in which the water quality meets all applicable criteria and allows the migration of aquatic life presently common in surface waters of the state with no effect on their populations.

4. Prior to beginning construction, erosion control measures such as silt fences and straw bales must be installed to prevent the movement of disturbed soil or other contaminants into surface water. The erosion control measures must be inspected and maintained on a regular basis to ensure they are working properly. These erosion control measures must be maintained until the disturbed areas are permanently vegetated.

5. Temporary protective mats are required for heavy equipment working in wetlands, to minimize impacts to soil and vegetation. Protective mats are also recommended for use on stream banks and riparian areas.

6. Temporary access roads must be restored to pre-project conditions.

7. All areas that are disturbed because of the project must be replanted with native vegetation and protected until the area is no longer subject to erosion into surface water. The native plant species must be appropriate for the moisture conditions of the affected area, whether it be wetland, riparian, or upland.

8. All heavy equipment used in the project area must be cleaned before the start of the project and inspected daily for leaks. Equipment must be steam cleaned before working in the water. Leaking equipment must not be used in or near any watercourse. Park equipment outside of channel when not in use.

9. Spill clean-up materials such as booms and absorbent pads must be available on-site at all times during construction. Report all spills immediately to the SWQB as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203 NMAC). For non-emergencies, call (505) 428-2500 during normal business hours or (505) 428-6535 for voice mail twenty-four hours a day. For emergencies only, call (505) 827-9329 twenty-four hours a day. (NM Department of Public Safety)

2

New Mexico Environment Department 401 Water Quality Certification (cont.)

10. Fuel, oil, hydraulic fluid, or substances of this nature must not be stored within the normal floodplain, and must have secondary containment systems to prevent spills if the primary storage container leaks. Refuel equipment at least 100 feet from surface water.

11. A copy of this 401 certification must be kept at the project site during all phases of construction. All contractors involved in your project must be provided a copy of this certification and made aware of the conditions prior to starting construction.

12. The SWQB must be notified at least five days before starting construction, to allow time to schedule monitoring or inspections.

Violations of State water quality standards could lead to penalties under the New Mexico Water Quality Act. Section 74-6-10.1 B of the Act states, "Any person who violates any provision of the New Mexico Water Quality Act other than Section 74-6-5 NMSA 1978 or any person who violates any regulation, water quality standard, or compliance order adopted pursuant to that act shall be assessed civil penalties up to the amount of ten thousand dollars ($10,000) per day for each violation."

The SWQB specifically reserves the right to amend or revoke this 401 Certification at any time to ensure compliance with water quality standards. If you have any questions regarding this 401 Water Quality Certification please feel free to contact Neal Schaeffer of my staff at (505) 476-3017. Thank you for your cooperation.

Sincerely,

Marcy Leavitt, Chief
Surface Water Quality Bureau

ML: NS

xc: NMED District I Manager, Albuquerque
William M. Oberle, U.S. Army Corps of Engineers
Jim Herrington, Wetlands, Region 6, USEPA
Lisa Kirkpatrick, NM Department of Game and Fish
Joy Nicholopoulos, U.S. Fish and Wildlife Service
401 Certification File SF044-05

3

Pueblo of Sandia Water Quality Letter

ORIGINAL

Governor
Stuwart Paisano
Lt. Governor
Lawrence R. Gutierrez

PUEBLO of SANDIA
481 Sandia Loop Road
Bernalillo, New Mexico 87004

(505) 867-3317
Fax (505) 867-9235

www.sandiapueblo.nsn.us

December 13, 2005

Nancy Umbreit
U.S. BUREAU OF RECLAMATION
555 Broadway NE, Suite 100
Albuquerque, NM 87102-2352

The Pueblo of Sandia is in receipt of your letter, dated October 24, 2005 and application to the U.S. Army Corps of Engineers (Corps), Individual Permit application, # 2005-00209 dated October 3, 2005 requesting authorization to proceed, as the duly authorized agent of the Pueblo of Sandia, with dredge and fill operations associated with the placement of dredged and fill material as the Middle Rio Grande Bernalillo Priority Site project in which channel modifications north of the Pueblo will be conducted. As part of your Section 404 application, you concurrently applied for Water Quality Certification from the Pueblo under Section 401 of the CWA for the above referenced project. Your application was deemed complete by the Pueblo's staff on December 12, 2005.

The Pueblo of Sandia environment department has reviewed and visited the proposed project site and hereby certifies, pursuant to Section 401 of the CWA, that the project will comply with all applicable provisions of Section 303 (Water Quality Standards and Implementation Plans) of the CWA. This certification is contingent upon compliance of the Bureau of Reclamation with the requirements of the "authorization to proceed" under the CWA Section 404 Individual Permit that will be issued by the U.S. Army Corps of Engineers and the Bureau of Reclamation's compliance with the general and specific conditions of this Water Quality Certification as listed in Attachment A. Any failure by the Bureau of Reclamation to maintain compliance with these requirements may result in revocation of this Water Quality Certification.

Pueblo of Sandia Water Quality Letter (cont.)

If you have any questions or concerns, please contact Alex Puglisi, environment director or Scott Bulgrin, water quality officer of my staff at (505) 867-4533.

Sincerely,

Stuwart Paisano
Governor

SJB/jaf

Enclosure

Cc: William M. Oberle, U. S. Corps of Engineers Regulatory Specialist
Susan MacMullin, U.S. Fish & Wildlife Service Field Supervisor
Jim Herrington, U.S. Environmental Protection Agency Region 6 -Wetlands
Mike Ferguson, Pueblo of Sandia lands director
Alex Puglisi, Pueblo of Sandia
Scott Bulgrin, Pueblo of Sandia

H:/MyDocuments.jaf/2005ScottBulgrin.jaf/05SJB101.jaf

Pueblo of Sandia Water Quality Letter (cont.)

ATTACHMENT A

Project Information
File No. 120502

1. **Applicant:**	U.S. Bureau of Reclamation
2. **Applicant's Agent:**	Same
3. **Project Name:**	Middle Rio Grande Bernalillo Priority Site Project
4. **Project Location:**	Rio Grande North of the Pueblo of Sandia's Reservation Boundary and Stretch of River
5. **Type of Project:**	Channel realignment activities and placement of bendway wier in Rio Grande at the Bernalillo Priority Site near Bernalillo, Sandoval County, New Mexico.
6. **Project Description:**	Bureau of Reclamation will be installing a series of bendway weirs, rootwad revetments, and splitting the existing flow of the Rio Grande into two channels. The project is designed to provide a longer-term solution for protection of the east levee and canal system at the Bernalillo Priority Site. The project area is located upstream of the Sandia Pueblo boundary to the U.S. Highway 550 Bridge. Construction phases include: access and staging, removal/disposal of jetty jacks and exotic vegetation, rootwds and debris piles, secondary channel excavation, channel diversion and dewatering, bendway weir installation, main channel re-alignment , berm removal, and vegetation planting. Construction is estimated to be completed in five months.
7. **Federal Agency/Permit:**	U. S. Corps of Engineers Individual Permit, No. 2005-00209.
8. **Other Required Regulatory Approvals:**	New Mexico Environment Department Clean Water Act Section 401 Water Quality Certification for Areas in the Rio Grande Outside of Pueblo's Jurisdiction.
9. **Receiving Water:**	Rio Grande North and on Pueblo's Stretch of the Rio Grande.
10. **Designated Beneficial Uses:**	Wildlife, Warmwater Aquatic Life, and Ceremonial Use (for Rio Grande segment).
11. **Impacted Waters of the United States:**	Sections of the Rio Grande north of the Pueblo of Sandia Boundary and the mainstem of the Rio Grande at the Pueblo's northern boundary.
12. **Dredge Volume:**	The total quantity of dredged and fill materials will be approximately

Pueblo of Sandia Water Quality Letter (cont.)

42,000 to 65,000 cubic yards or 7.53 acres.

13. Related Projects: None

14. Avoidance and Minimization Activities (Applicant proposed): The Applicant will implement Best Management Practices (BMPs) to avoid impairment of the Pueblo of Sandia's Water Quality Standards and *Standards for Interstate & Intrastate Surface Waters*, New Mexico Water Quality Control Commission 20.6.4 NMAC: 7/17/2005 to minimize undesirable impacts. Access paths will be pre-determined to avoid travel in wetted pools or flowing water.

15. Required Compensatory Mitigation:

1. The project will not cause further erosion in/on Pueblo lands. No construction materials, spoils, debris, or any other substances associated with this project that may adversely impact the Pueblo of Sandia's Water Quality Standards, shall be located in a manner which may result in a discharge or threatened discharge of pollutants to waters of the Pueblo;

2. All disturbed areas located outside of the planned crossings and access areas disturbed during the course of the project will be restored to their natural state including re-vegetation, if necessary, through seeding or plantings, and the removal of all debris (sidecastings, etc.) that may adversely impact the Pueblo of Sandia's Water Quality Standards, shall be located in a manner which may result in a discharge;

3. Any stockpiled soils will be kept out of the Rio Grande and Best Management Practices (BMPs) shall be implemented to prevent and reduce the discharge of pollutants and sediments from entering into waters of the United States. There will be no stockpiling of sediments that may have an adverse effect on the Rio Grande;

4. Any disturbance to native wetland, riparian or upland vegetation will be kept to a minimum extent necessary to perform the required work and shall occur only in the areas where work is performed. Any riparian or wetland areas impacted by the project on Pueblo of Sandia lands will be mitigated at a ratio of 2:1;

5. Water turbidity must be monitored downstream at the Pueblo of Sandia's Northern Boundary. These results shall be submitted to the Pueblo of Sandia Environment Department every two weeks throughout the project. Any deviation from this monitoring and reporting schedule must be submitted in writing to the Pueblo of Sandia Environment Department for consultation. The Bureau of Reclamation must ensure that a continuous zone of passage through or around the area of disturbance is maintained in which the water quality meets all applicable criteria of the Pueblo of Sandia's Water Quality Standards and allows migration of aquatic life presently found in the surface waters of the Pueblo with no effects on their populations.

6. The Pueblo of Sandia Environment Department shall be notified in advance of any modifications to the project that represents a significant alteration of proposed access activities described in the Applicant's request for certification. A timetable for the implementation of these changes, as well as a detailed description of the changes, shall be provided to the Department;

7. If any cultural artifacts and/or human remains be found, work will be suspended in the area of discovery until notification is provided to Mr. Sam Montoya, Language and Cultural Resources Manager, of my staff at (505) 771-3317;

Pueblo of Sandia Water Quality Letter (cont.)

8. All areas disturbed or damaged by the Bureau of Reclamation and all contractors employed by Bureau of Reclamation which are eroding or contributing sediment to the Rio Grande and may be adversely impacting the Pueblo of Sandia's Water Quality Standards, will be stabilized and restored in consultation with the Pueblo of Sandia Environment Department;

9. The Applicant shall restore all areas of **"Temporary Impacts"** to waters of the United States and all other areas of temporary disturbance that could result in a discharge or a threatened discharge to waters of the Pueblo. Restoration shall include grading of disturbed areas to pre-project contours and re-vegetation with native species. (This includes any constructed access routes crossing the Pueblo's boundary and Rio Grande not developed as permanent access for this project.);

10. The Bureau of Reclamation and all contractors employed by the Bureau of Reclamation will notify the Pueblo of Sandia Environment Department of any activities occurring during the nesting seasons of migratory bird species in the areas and will provide for the monitoring of these species, if necessary;

11. The Bureau of Reclamation will notify the Pueblo of Sandia's Environment Department upon completion of the project, activities associated with these conditions of certification, and the required compensatory mitigation; and

12. The Bureau of Reclamation and all contractors employed by the bureau of Reclamation, shall have copies of this certification and the U.S. Army Corps of Engineer's Authorization to Proceed for this project onsite at all times so they are familiar with all conditions set forth in these documents.

Pueblo of Sandia Water Quality Certification

ORIGINAL

Governor

Lawrence Gutierrez
Lt. Governor

Scott Paisano

PUEBLO of SANDIA
481 Sandia Loop Road
Bernalillo, New Mexico 87004

(505) 867-3317
Fax (505) 867-9235
www.sandiapueblo.nsn.us

January 5, 2006

Nancy Umbreit
U.S. BUREAU OF RECLAMATION
555 Broadway NE, Suite 100
Albuquerque, NM 87102-2352

Recently the Pueblo of Sandia issued a 401 Water Quality Certification for the Middle Rio Grande Bernalillo Priority Site Project, U.S. Army Corps of Engineers Individual Permit application, # 2005-00209. After reviewing the general and specific conditions of the certification's Attachment A, the Pueblo has changed the language in a few of the conditions to better reflect the Pueblo's concerns. This revised Attachment A should be inserted and followed for the above mentioned project.

Again, this certification is contingent upon compliance with the general and specific conditions as listed in Attachment A.

If you have any questions or concerns, please contact Alex Puglisi, environment director or Scott Bulgrin, water quality officer of my staff at (505) 867-4533.

Sincerely,

Lawrence Gutierrez
Governor

SJB/jaf

Enclosure

Cc: William M. Oberle, Regulatory Specialist, U. S. Corps of Engineers
Susan MacMullin, Field Supervisor, U.S. Fish & Wildlife Service
Jim Herrington, Wetlands, U.S. Environmental Protection Agency Region 6
Mike Ferguson, Pueblo of Sandia Lands Director
Alex Puglisi, Pueblo of Sandia
Scott Bulgrin, Pueblo of Sandia

H:/MyDocuments.jaf/2006ScottBulgrin.jaf/06SJB008.jaf

Pueblo of Sandia Water Quality Certification (cont.)

ATTACHMENT A
Revised 01/05

Project Information
File No. 120502

1. Applicant:	U.S. Bureau of Reclamation
2. Applicant's Agent:	Same
3. Project Name:	Middle Rio Grande Bernalillo Priority Site Project
4. Project Location:	Rio Grande North of the Pueblo of Sandia's Reservation Boundary and Stretch of River
5. Type of Project:	Channel realignment activities and placement of bendway wier in Rio Grande at the Bernalillo Priority Site near Bernalillo, Sandoval County, New Mexico.
6. Project Description:	Bureau of Reclamation will be installing a series of bendway weirs, rootwad revetments, and splitting the existing flow of the Rio Grande into two channels. The project is designed to provide a longer-term solution for protection of the east levee and canal system at the Bernalillo Priority Site. The project area is located upstream of the Sandia Pueblo boundary to the U.S. Highway 550 Bridge. Construction phases include: access and staging, removal/disposal of jetty jacks and exotic vegetation, rootwds and debris piles, secondary channel excavation, channel diversion and dewatering, bendway weir installation, main channel re-alignment , berm removal, and vegetation planting. Construction is estimated to be completed in five months.
7. Federal Agency/Permit:	U. S. Corps of Engineers Individual Permit, No. 2005-00209.
8. Other Required Regulatory Approvals:	New Mexico Environment Department Clean Water Act Section 401 Water Quality Certification for Areas in the Rio Grande Outside of Pueblo's Jurisdiction.
9. Receiving Water:	Rio Grande North and on Pueblo's Stretch of the Rio Grande.
10. Designated Beneficial Uses:	Wildlife, Warmwater Aquatic Life, and Ceremonial Use (for Rio Grande segment).
11. Impacted Waters of the United States:	Sections of the Rio Grande north of the Pueblo of Sandia Boundary and the mainstem of the Rio Grande at the Pueblo's northern boundary.

Pueblo of Sandia Water Quality Certification (cont.)

12. Dredge Volume: The total quantity of dredged and fill materials will be approximately 42,000 to 65,000 cubic yards or 7.53 acres.

13. Related Projects: None

14. Avoidance and Minimization Activities (Applicant proposed): The Applicant will implement Best Management Practices (BMPs) to avoid impairment of the Pueblo of Sandia's Water Quality Standards and *Standards for Interstate & Intrastate Surface Waters*, New Mexico Water Quality Control Commission 20.6.4 NMAC: 7/17/2005 to minimize undesirable impacts. Access paths will be pre-determined to avoid travel in wetted pools or flowing water.

15. Required Compensatory Mitigation:

1. The project will not cause further erosion in/on Pueblo lands. No construction materials, spoils, debris, or any other substances associated with this project that may adversely impact the Pueblo of Sandia's Water Quality Standards, shall not be located in a manner which may result in a discharge or threatened discharge of pollutants to waters of the Pueblo. Stockpiled construction materials, spoils and debris locations should be reviewed with the Pueblo of Sandia Environment Department;

2. All disturbed areas located outside of the planned crossings and access areas disturbed during the course of the project will be restored to their natural state. This shall include re-vegetation, if necessary, through seeding or plantings. All debris (sidecastings, etc.) that may adversely impact the Pueblo of Sandia's Water Quality Standards, shall not be located in a manner which may result in a discharge and shall be removed before termination of the project;

3. Any stockpiled soils will be kept out of the Rio Grande and Best Management Practices (BMPs) shall be implemented to prevent and reduce the discharge of pollutants and sediments from entering into waters of the United States. There will be no stockpiling of sediments that may have an adverse effect on the Rio Grande;

4. Any disturbance to native wetland, riparian or upland vegetation will be kept to a minimum extent necessary to perform the required work and shall occur only in the areas where work is performed. Any riparian or wetland areas impacted by the project on Pueblo of Sandia lands will be mitigated at a ratio of 2:1;

5. Water turbidity must be monitored downstream at the Pueblo of Sandia's Northern Boundary. These results shall be submitted to the Pueblo of Sandia Environment Department every two weeks throughout the project. Any deviation from this monitoring and reporting schedule must be submitted in writing to the Pueblo of Sandia Environment Department for consultation. The Bureau of Reclamation must ensure that a continuous zone of passage through or around the area of disturbance is maintained in which the water quality meets all applicable criteria of the Pueblo of Sandia's Water Quality Standards and allows migration of aquatic life presently found in the surface waters of the Pueblo with no effects on their populations.

6. The Pueblo of Sandia Environment Department shall be notified in advance of any modifications to the project that represent a significant alteration of proposed access activities described in the Applicant's request for certification. A timetable for the implementation of these changes, as well as a detailed description of the changes, shall be provided to the Department;

Pueblo of Sandia Water Quality Certification (cont.)

7. If any cultural artifacts and/or human remains be found, work will be suspended in the area of discovery until notification is provided to Mr. Sam Montoya, Language and Cultural Resources Manager, of my staff at (505) 771-3317;

8. All areas disturbed or damaged by the Bureau of Reclamation (or its contractors) which are eroding or contributing sediment to the Rio Grande and may be adversely impacting the Pueblo of Sandia's Water Quality Standards, will be stabilized and restored in consultation with the Pueblo of Sandia Environment Department;

9. The Applicant shall restore all areas of **"Temporary Impacts"** to waters of the United States and all other areas of temporary disturbance that could result in a discharge or a threatened discharge to waters of the Pueblo. Restoration shall include grading of disturbed areas to pre-project contours and re-vegetation with native species. (This includes any constructed access routes crossing the Pueblo's boundary and Rio Grande not developed as permanent access for this project.);

10. The Bureau of Reclamation and all contractors employed by the Bureau of Reclamation will notify the Pueblo of Sandia Environment Department of any activities occurring during the nesting seasons of migratory bird species in the areas and will provide for the monitoring of these species, if necessary;

11. The Bureau of Reclamation will notify the Pueblo of Sandia's Environment Department upon completion of the project, activities associated with these conditions of certification, and the required compensatory mitigation; and

12. The Bureau of Reclamation and all contractors employed by the bureau of Reclamation, shall have copies of this certification and the U.S. Army Corps of Engineer's Authorization to Proceed for this project onsite at all times so they are familiar with all conditions set forth in these documents.

Bernalillo 404 Permit

DEPARTMENT OF THE ARMY PERMIT

Permittee Bureau of Reclamation

Permit No. 2005 00209

Issuing Office Albuquerque District Corps of Engineers

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To discharge approximately 42,000 to 65,000 cubic yards (cu. yds.) of dredged and fill material during construction of bendway weir and channel realignment at the Bernalillo Priority Site. The permit is to place dredged and fill material as bendway weirs, woody debris piles, rootwad structures, for the realignment of the main channel and construction of a secondary channel at the Bernalillo Priority Site in the Rio Grande near Bernalillo, Sandoval County, New Mexico. The project will also include an upstream temporary diversion structure to divert water to the secondary channel and which will also be used as a low-water crossing and a temporary downstream berm to dewater the main channel during construction. Approximately 7.53 acres of permanent dredged and fill materials and 0.21 acre of temporary fill materials will be placed in waters of the United States. Details of the proposed project are provided below.

Channel Activities: The proposed project will construct a secondary channel to split the existing river flow into two channels at the upstream end of the existing 90-degree bend. Splitting the flow will spread the volume of water over a greater surface area, increasing the width to depth ratio of the river. The resulting decrease in depth and velocity will benefit juvenile and adult Rio Grande silvery minnow by increasing the total amount of preferred habitat conditions (<40 centimeter (cm) deep and <10 centimeters/second (cm/sec) water velocity).

The secondary channel will be approximately 780 feet (ft.) long x 50 to 110 ft. wide (at top) x 4 to 7 ft. deep. Water will flow through the secondary channel during all anticipated flows. The bed elevation is designed to be the same (within 6-inches) as the main (east) channel. The secondary channel is expected to see one-third of the total flow during high-flow, 5,000 cubic feet per second (cfs) conditions and approximately one-sixth of the total flow during low-flow (500 cfs) conditions. Additional excavated materials from construction of the secondary channel will be placed along the existing east bank line upstream of the bendway weirs and will be contoured to match the existing terrace. Approximately 22,222 cu. yds. (1.97 acre) of existing

ENG FORM 1721, NOV 86 EDITION OF SEP 82 IS OBSOLETE. *33 CFR 325 (Appendix A))*

1

Bernalillo 404 Permit (cont.)

substrate will be excavated to construct the secondary channel. The eastern (main) channel will follow a similar path as the existing channel, except that the 90-degree bend will be lengthened and moved away from the levee. An area approximately 400 ft. long x 150 ft. wide x 6 ft. deep will be excavated along the east side of the point bar. Approximately 2.4 acres of the existing main channel along the existing east bank will be filled with earthen materials from the construction of the secondary channel and replanted with native vegetation. The main channel is expected to develop a deep thalweg or pool feature on the outside of the bend, resulting in a maximum depth that is 1 to 2 ft. deeper than the secondary channel. See Sheets 3 to 7 of 14.

Bendway Weirs: Thirteen of the seventeen bendway weirs will be constructed below the 500 cfs elevation (low-flow) to protect the eastern levee from erosion. The remaining four weirs will only be constructed if they are required by onsite conditions. The weirs will create scours at the end of each weir which will develop a new thalweg. Eight weirs will be constructed at the 90-degree bend and a minimum of five weirs will be constructed behind the new bankline (See Sheets 3 to 6 of 14). The weir angle will be set at 20-degrees to promote pool development and to locate the scour away from the outer bankline. The weir height is designed to be level with the 500 cfs elevation at the bankline and slope down one foot below the 500 cfs stage at the toe. Each weir will be approximately 75 ft. in length x 4 ft. wide (at the base) x 4 ft. high from the bank into the main channel (see Sheets 8 and 9 of 14). Weirs will be constructed of 12-inch diameter rock riprap. Total rock riprap for the bendway weirs will be approximately 621 cu. yds. (0.0964 acre). Excavated alluvial materials will be placed over and between each pair of weirs. Dimensions of the alluvial fill will be approximately 75 ft. long x 100 ft. wide x 4 ft. deep. Total discharge of alluvial fills below the 500 cfs elevation will be approximately 14,430 cu. yds. or 2.239 acres.

Rootwads: A total of 24 to 40 rootwads will be used as added bank stabilization (see Sheets 3 to 6 of 14). Rootwads placed on the upstream end of the project to protect the east bank against erosion caused by island deflection. The rootwads placed downstream will protect against erosion caused by eddies behind the last weir and against flows directed at this bankline from the eastern channel. Rootwads will be constructed in two layers using 10-foot long (minimum) trees with a 10-inch diameter trunk and a root diameter of 3 to 4 ft. each. Excavated fill materials from the secondary channel construction area will be placed over the rootwad structures to secure them into the east bank. Dimensions of rock/earthen fill materials will be approximately 115 ft. long x 12 ft. wide x 3 ft. deep in the lower layer of the upstream structures and 115 ft. long x 12 ft. wide x 1 ft. deep in the upper layer. Total fill materials for the upstream rootwads (estimated at 20) will be 4,084 cu.yds. (1.268 acres). The downstream rootwads will be 48 ft. long x 12 ft. wide x 3 ft. deep on the lower layer and 48 ft. long x 12 ft. wide x 1 ft. deep on the upper layer. Total downstream fill materials for the downstream rootwads (estimated at 20) will be 1,705 cu. yds. of rock/earthen fill (0.528 acre). See

2

Bernalillo 404 Permit (cont.)

Sheet 10 of 14 for cross section and plan view of the rootwad structures.

Debris Piles: One mid-channel bar woody debris pile and 9 side bar woody debris piles will be constructed as bank stabilization along the secondary channel and island (see Sheets 3 to 6 of 14). The mid-channel woody debris pile will be constructed at the upper point on the island to ensure split flow and protect the tip from erosion. The dimensions are approximately 5 ft. long x 2.5 ft. wide x 0.8 ft. deep below the 500 cfs elevation (see Sheet 11 of 14). The nine side bar woody debris piles will be placed along the secondary channel to encourage some scour and deposition around a naturalized in-stream structure. Woody debris piles will be constructed of logs with a length of 10 ft. and minimum diameter of 6-inches. Total log and earthen fill materials below the 500 cfs elevation for the debris piles will be approximately 9.69 cu. yds. (0.0015 acre). See Sheet 12 of 14 for cross section and plan views of the debris pile structures.

Dewatering and Construction Operations: A temporary earthen berm will be built in the main channel to divert the flowing water into the secondary channel. The berm will also be used as a roadway for hauling excavated materials from the point bar/island to the existing eastern bankline. Dimensions will be approximately 155 ft. long x 24 ft. wide x 6 ft. high. An earthen plug may be placed at the downstream end of the main channel to prevent water from backing up into it and to minimize any effect on the Rio Grande silvery minnow. Dimensions will be approximately 220 ft. long x 24 ft. wide x 6 ft. high. Both the berm and the earthen plug will be covered with river cobbles to prevent erosion and reduce turbidity. After installation of the rootwads and bendway weirs, a new main channel will be realigned by excavation and the excavated materials used as fill materials between and on top of the weirs and rootwads. The two berms will be removed to allow water into the main channel after completion of construction. A total of 1,998 cu. yds. of cobbles and earthen fill materials will be placed as temporary fill materials below the 500 cfs river elevation (0.21 acre).

Island Construction: From the existing point bar along the west bank, the secondary channel will be excavated working from downstream to upstream. Access to the point bar will utilize the top of the Arroyo Venada levee (or the arroyo channel, if necessary), an existing dirt road and access ramp along the west bank to the project area (see Sheets 1 and 3 of 14). The construction of the secondary channel will create an in-channel island on which non-native vegetation will be removed and be replaced with native vegetation to provide habitat for the Southwestern willow flycatcher. A temporary berm of material will be left at the downstream end to prevent water from backing up into the new channel during construction. The temporary berm will be removed after excavation is completed and before the diversion of the main channel is constructed.

The project will be constructed in accordance with the attached drawings, entitled, "Channel Realignment and Bendway Weir Construction,

3

Bernalillo 404 Permit (cont.)

Bernalillo Priority Site, Bernalillo, Sandoval County, NM, Application by Bureau of Reclamation, Application No. 2005 00209," sheets 1 through 14 of 14, dated November 2005.

Project Location: Rio Grande near Bernalillo, Sandoval County, New Mexico

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2012. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

After a detailed and careful review of all of the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps of Engineers, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

1. If a bald eagle is observed within 0.25-mile up- or downstream of the site in the morning prior to construction activity start or following breaks in construction activity, the construction crew will be required to suspend all activity until the bird leaves of its own volition or the Bureau of Reclamation biologist, in consultation with the U.S. Fish and Wildlife Service, determines that the potential for harassment is minimal. If a bald eagle arrives during construction or is observed beyond the 0.25-mile limit, construction need not be interrupted.

2. The permittee shall limit clearing and grubbing activities during the April through August migratory bird nesting season. If construction should prove necessary during the nesting season, the areas shall be surveyed, and when occupied, avoided until nesting is complete.

4

Bernalillo 404 Permit (cont.)

3. The permittee shall obtain a Biological Opinion for the project from the U.S. Fish and Wildlife Service and comply with its terms and conditions. The permittee shall submit a signed copy of the Biological Opinion to the Corps of Engineers upon receipt from the U.S. Fish and Wildlife Service.

4. Temporary staging areas and other disturbed areas will be revegetated with native vegetation.

5. Best Management Practices (BMPs) including silt curtains or similar erosion control devices will be used to control turbidity and minimize sedimentation in the project area.

6. Existing maintenance yards shall be used, to the extent practicable, to store and service construction equipment. Construction equipment will be cleaned prior to use and inspected daily. Petrochemical fuels and lubricants will be stored outside the floodplain and within an impervious secondary containment system. Any spills will be contained and disposed of at an approved upland disposal site. No equipment refueling will be performed within 100 feet of a water of the United States. A spill kit will be kept onsite.

7. Any poured concrete will be contained in forms and/or placed behind/in cofferdams to prevent discharge into the watercourse. Appropriate measures will be used to prevent wastewater from concrete batching, vehicle wash-down, or aggregate processing from entering the waterway.

8. During construction, an open channel for fish passage shall be maintained at normal flow levels.

9. The permittee shall employ the refugial pool system during construction as described in their application and environmental assessment. The permittee shall continue to coordinate site visits with the U.S. Fish and Wildlife Service to evaluate the refugial pool management and to determine if any Rio Grande silvery minnows present should be removed from the project area.

10. A mitigation and monitoring plan formatted according to the Albuquerque District, Corps of Engineers' guidelines will be submitted by February 28, 2006 for approval. A report on the success of the revegetation activities shall be included as part of the annual mitigation monitoring report to the Corps of Engineers, the U.S. Fish and Wildlife Service and other members of the Middle Rio Grande Endangered Species Act Collaborative Program Habitat Restoration Committee.

11. Any construction in the river channel below the ordinary high water mark will be performed during low flow conditions.

5

Bernalillo 404 Permit (cont.)

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6

Bernalillo 404 Permit (cont.)

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Connie L. Rupp (PERMITTEE) 1/19/06 (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Jean E. Manger 1/26/06 (DATE)

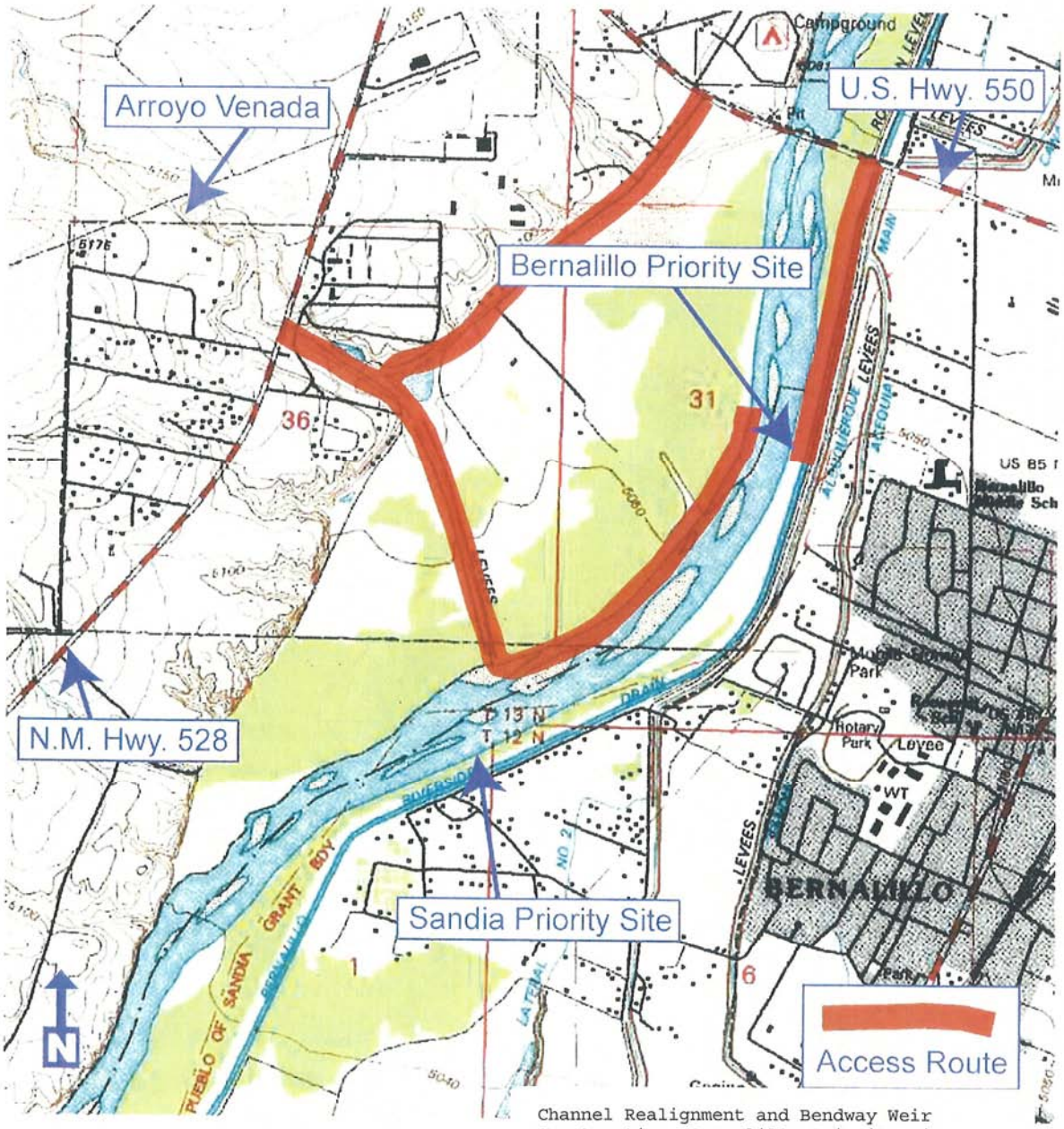
Jean E. Manger
Acting Chief, Regulatory Branch
(for the DISTRICT ENGINEER)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

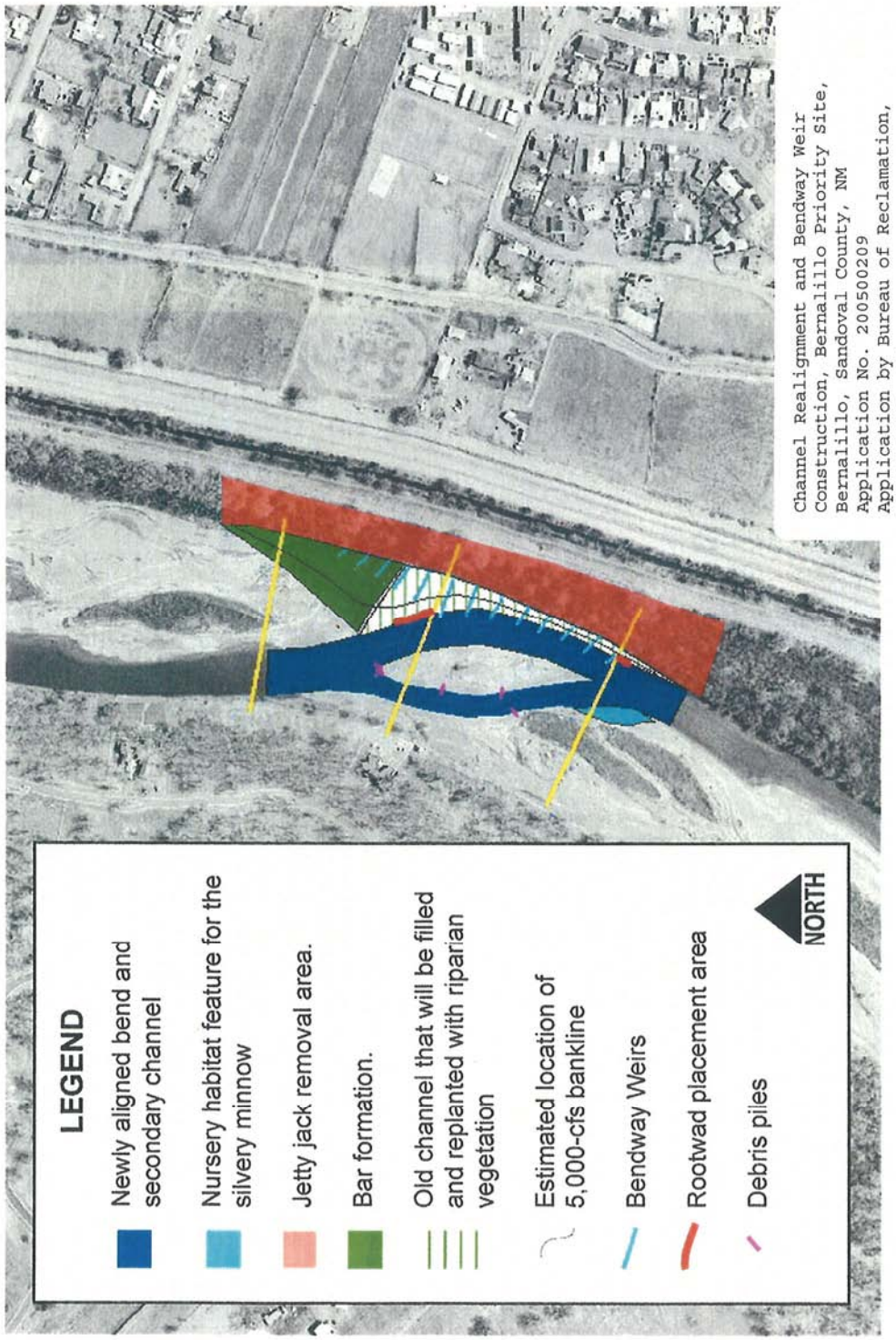
(TRANSFERREE) (DATE)

7

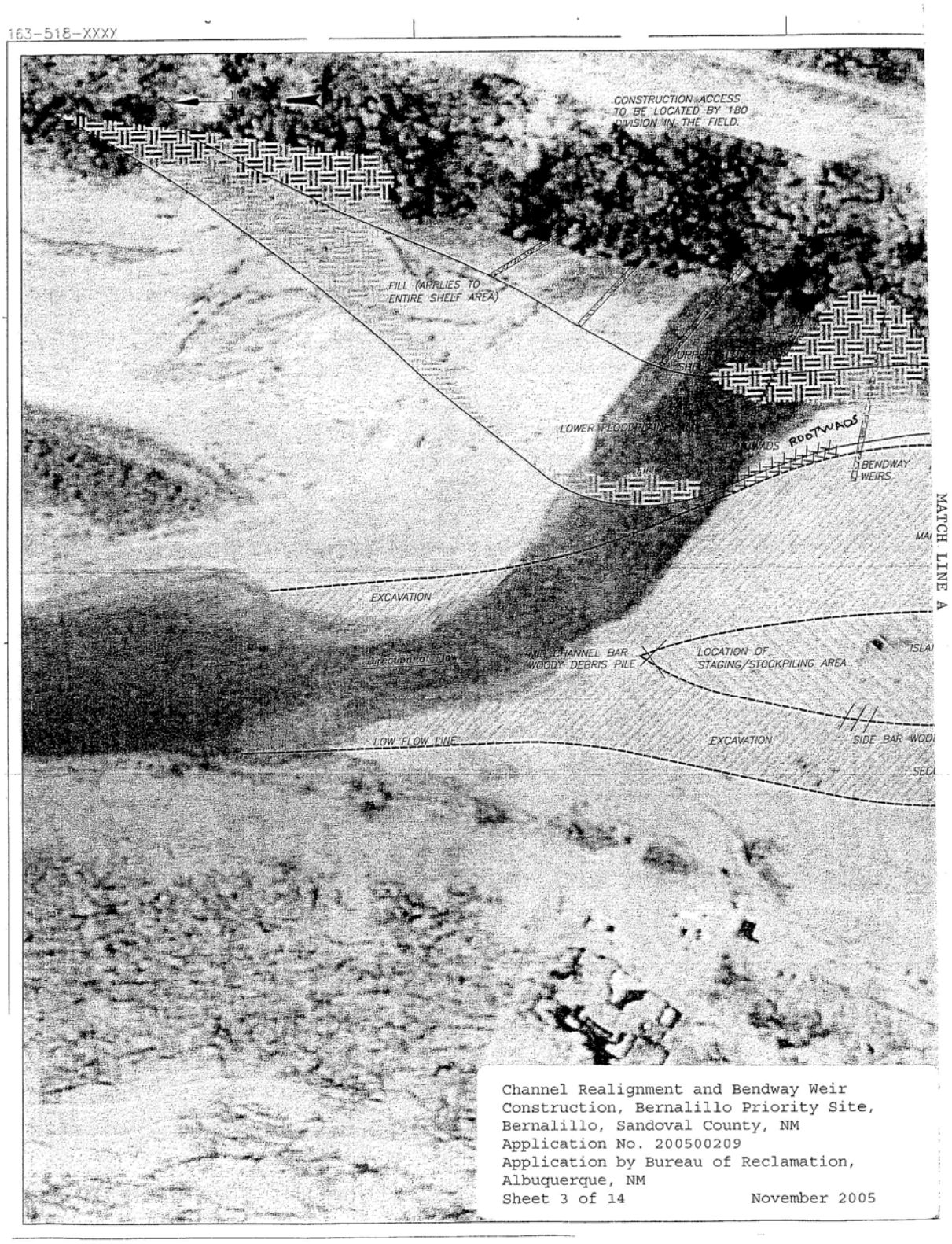
Bernalillo 404 Permit (cont.)



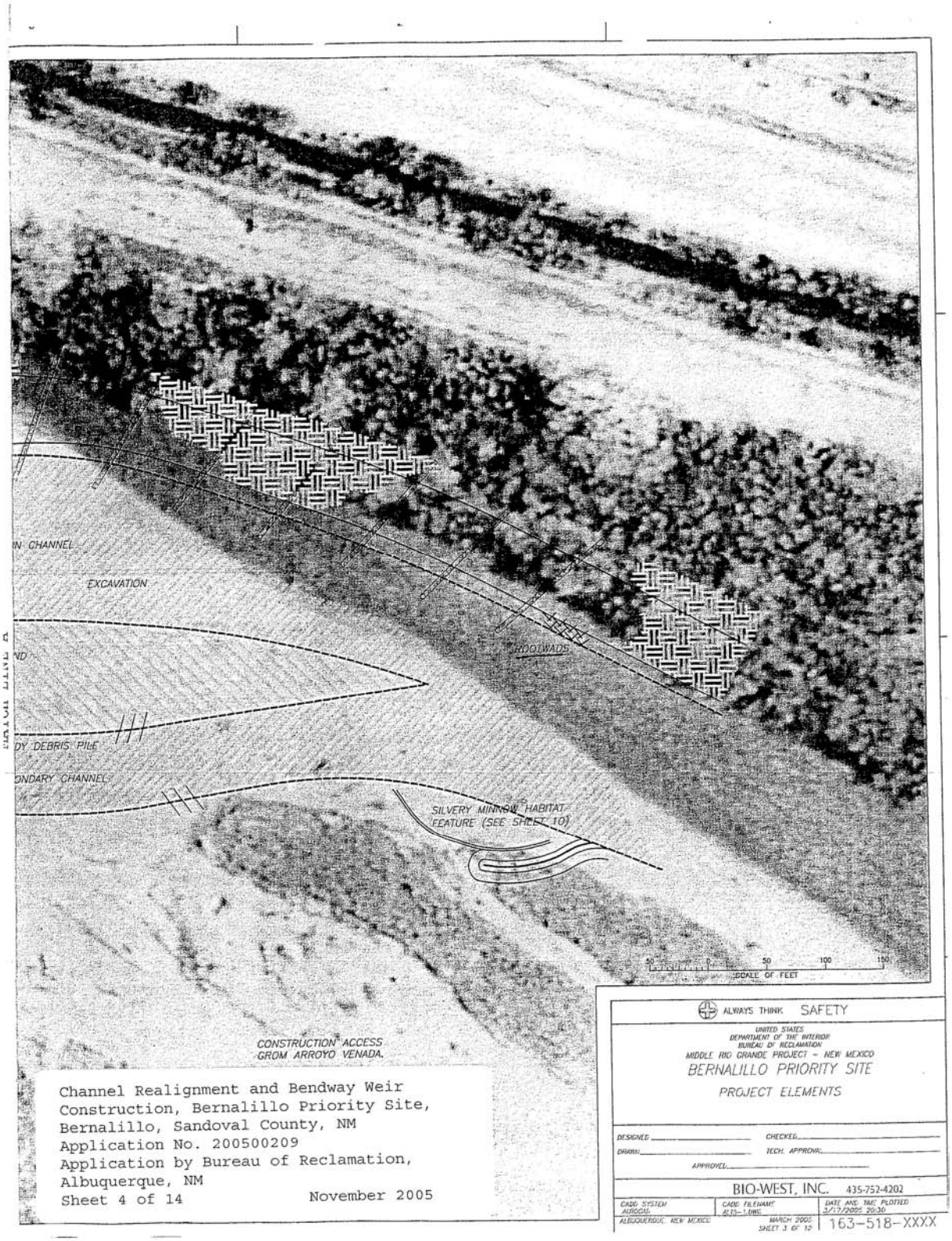
Bernalillo 404 Permit (cont.)



Bernalillo 404 Permit (cont.)

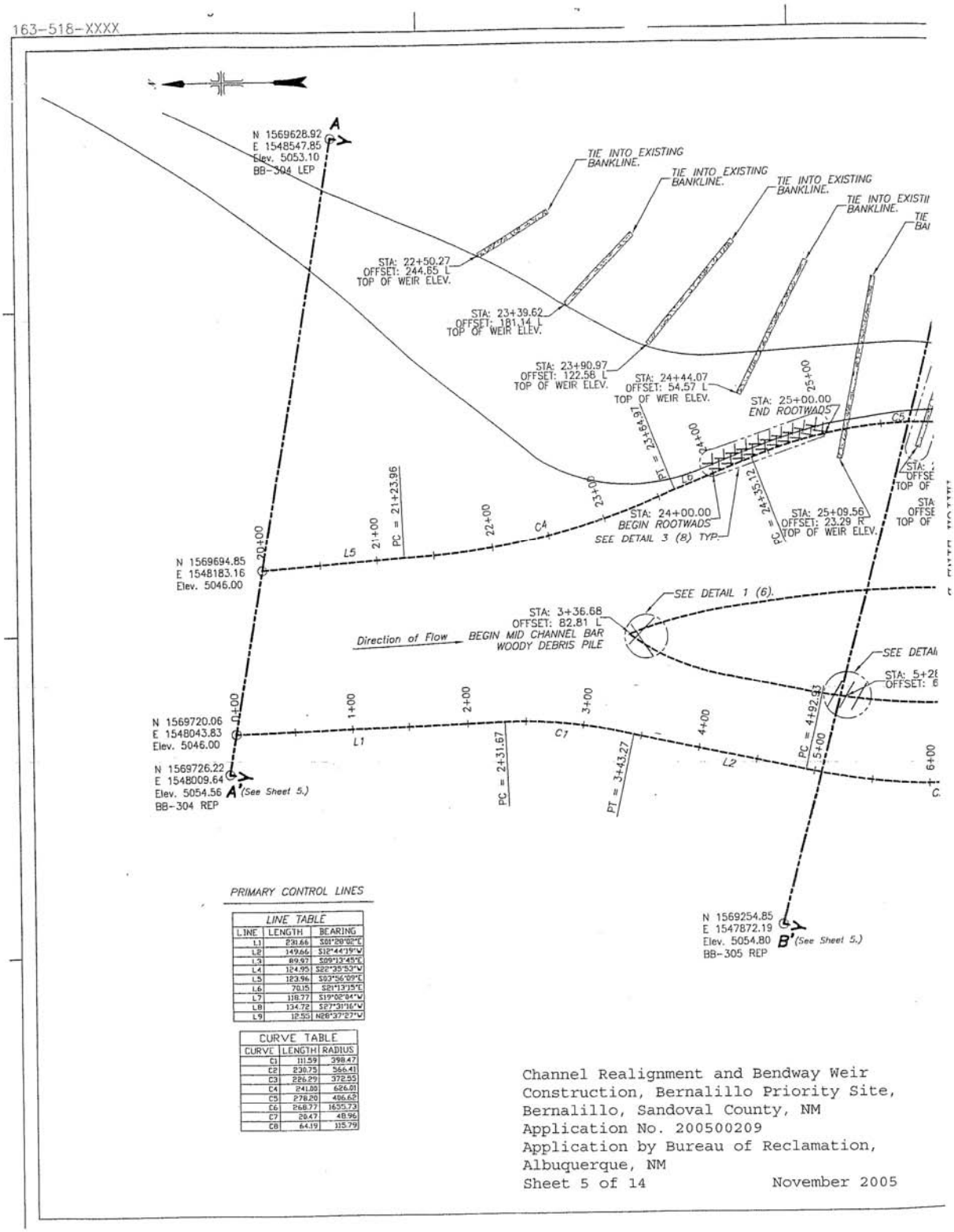


Bernalillo 404 Permit (cont.)

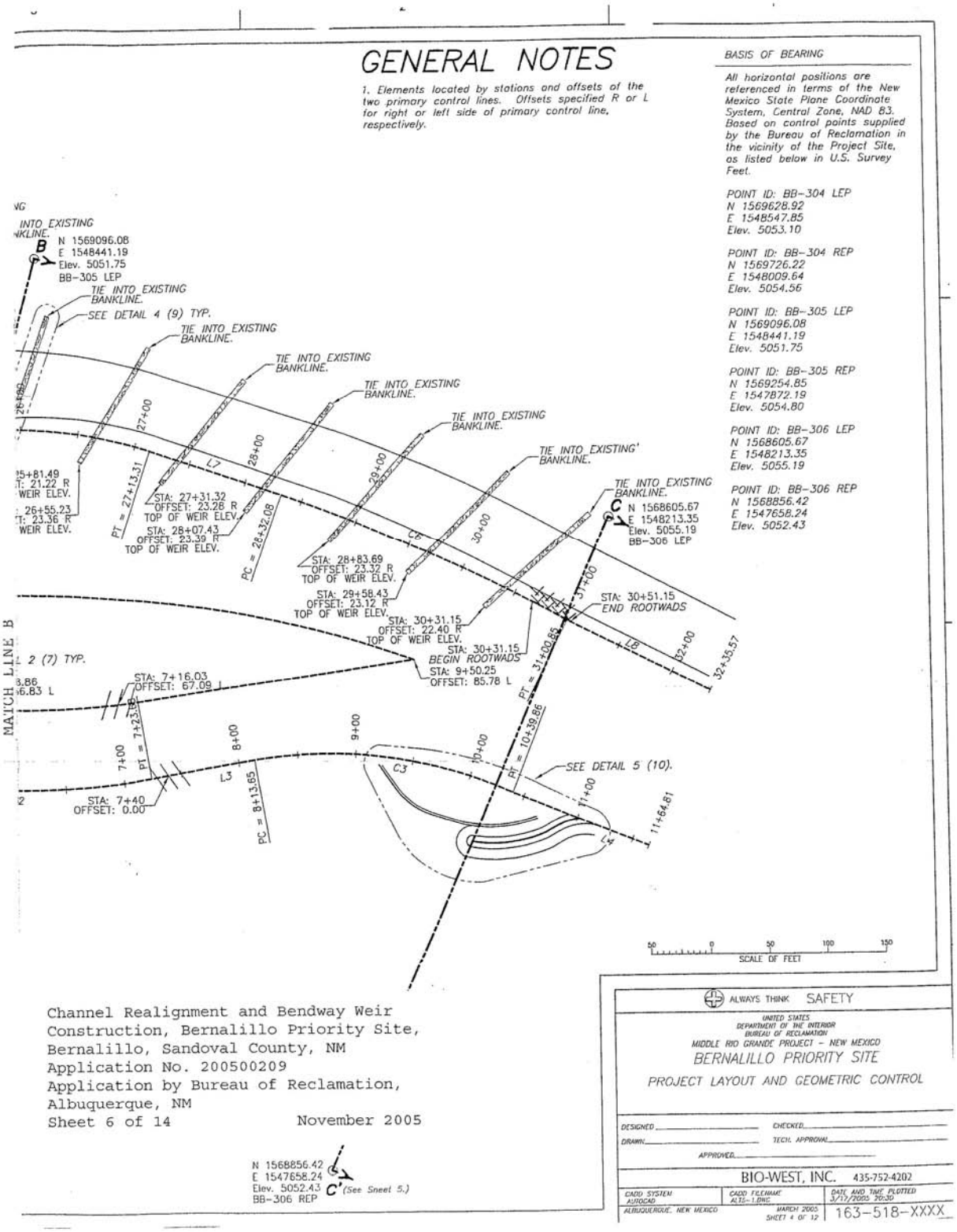


Channel Realignment and Bendway Weir Construction, Bernalillo Priority Site, Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation, Albuquerque, NM
Sheet 4 of 14 November 2005

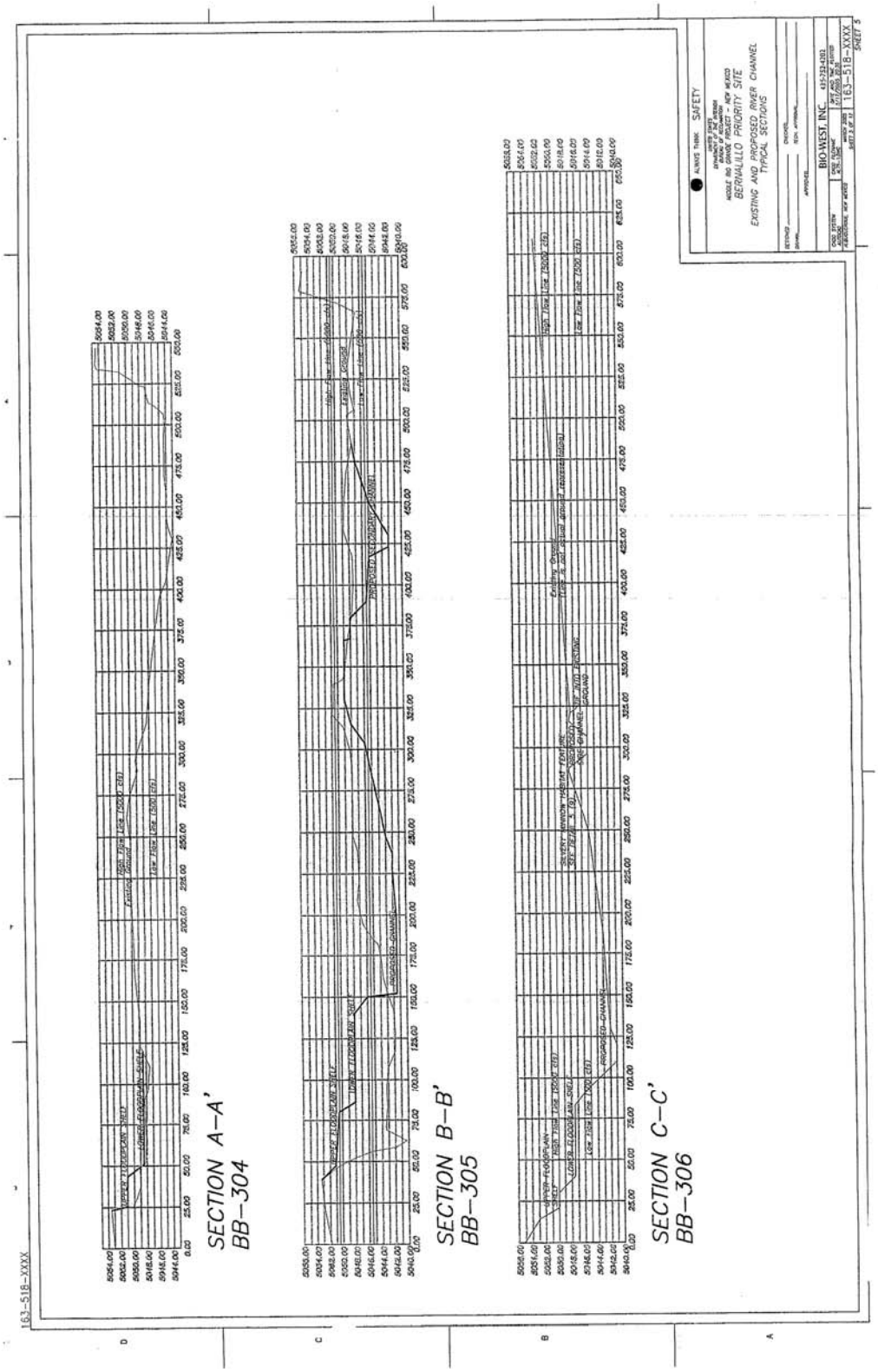
Bernalillo 404 Permit (cont.)



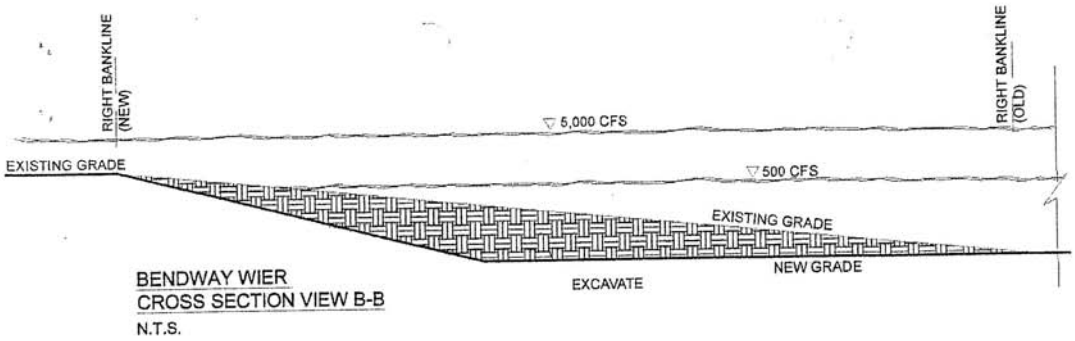
Bernalillo 404 Permit (cont.)



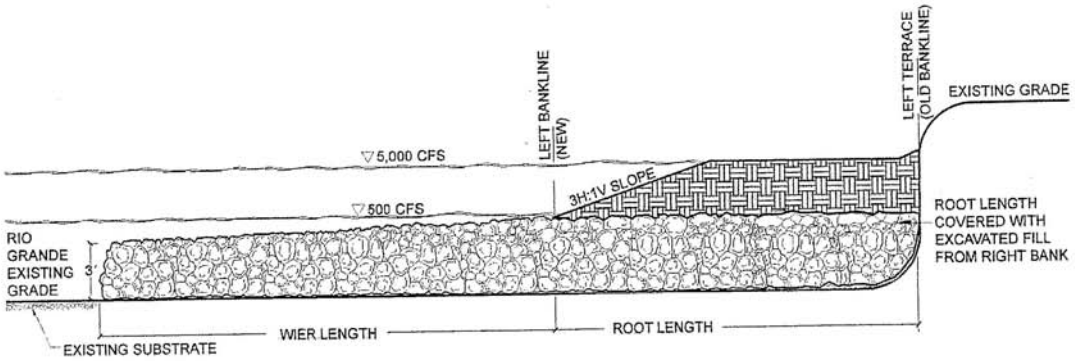
Bernalillo 404 Permit (cont.)



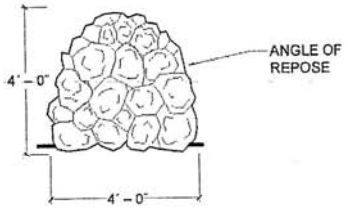
Bernalillo 404 Permit (cont.)



BENDWAY WIER
CROSS SECTION VIEW B-B
N.T.S.



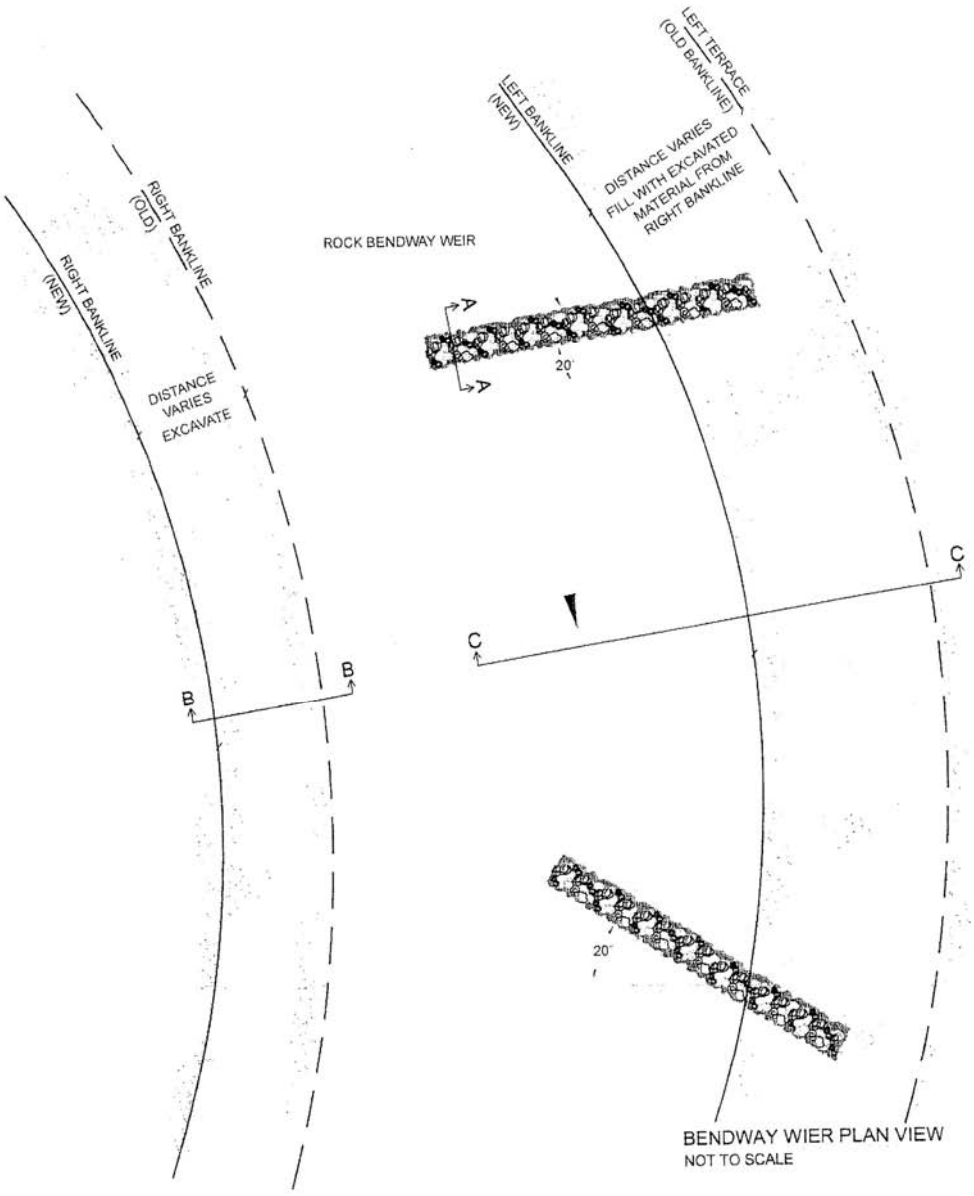
BENDWAY WIER
CROSS SECTION VIEW C-C
N.T.S.



BENDWAY WIER
CROSS SECTION VIEW A-A
N.T.S.

Channel Realignment and Bendway Weir
Construction, Bernalillo Priority Site,
Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation,
Albuquerque, NM
Sheet 8 of 14 November 2005

Bernalillo 404 Permit (cont.)



Channel Realignment and Bendway Weir
Construction, Bernalillo Priority Site,
Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation,
Albuquerque, NM
Sheet 9 of 14 November 2005

Bernalillo 404 Permit (cont.)

NOTES:

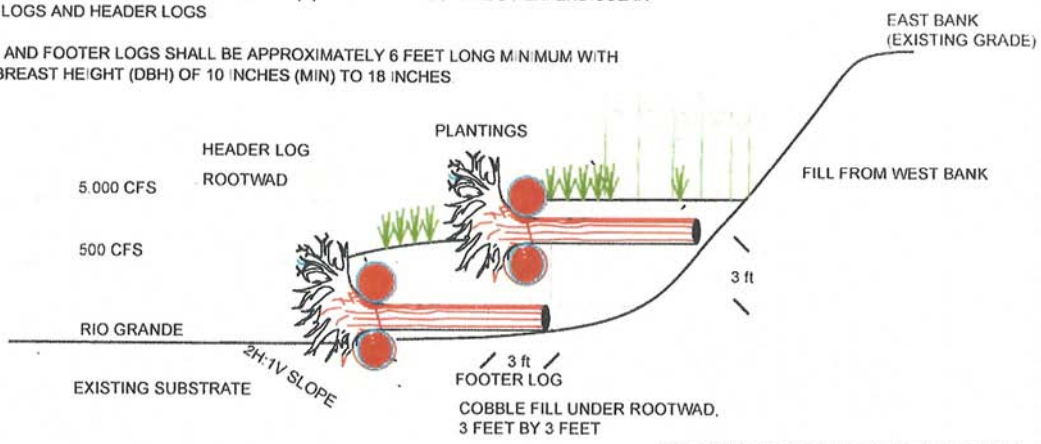
1. ROOTWADS SHALL BE APPROXIMATELY 10 FEET LONG (MIN) WITH A DIAMETER OF THE TRUNK AT BREAST HEIGHT (DBH) GREATER THAN 10 INCHES AND HAVE A ROOT DIAMETER OF 3 FEET TO 4 FEET. PLACE ROOTWADS ON THE OUTSIDE BANK OF CHANNEL

2. ENGINEER SHALL APPROVE PROPOSED LAYOUT OF ROOTWADS BEFORE ACTUAL INSTALLATION OF FOOTER LOGS AND BOULDERS ON ALL BANK REVETMENT LOCATIONS

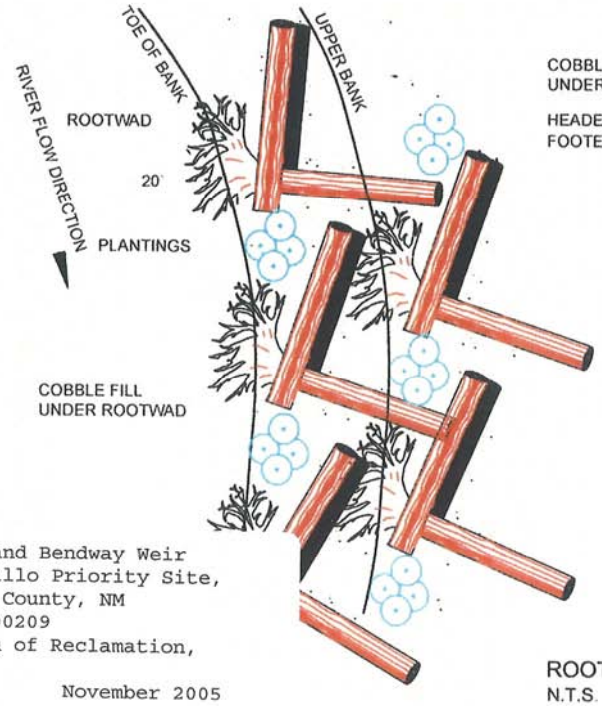
3. SEPARATE EACH ROOTWAD BY DISTANCE APPROXIMATELY EQUAL TO 1 TO 1.5 TIMES THE DIAMETER OF ONE ROOTWAD

4. ORIENT ROOTWAD PERPENDICULAR TO PRIMARY VELOCITY VECTORS. TO DO THIS: (A) PLACE ALL FOOTER LOGS AND HEADER LOGS 20 DEGREES UPSTREAM TO THE LINE PERPENDICULAR TO THE STREAM'S FLOW LINE, AND (B) PLACE ALL ROOTWADS PERPENDICULAR TO THE FOOTER LOGS AND HEADER LOGS

5. HEADER LOGS AND FOOTER LOGS SHALL BE APPROXIMATELY 6 FEET LONG MINIMUM WITH A DIAMETER AT BREAST HEIGHT (DBH) OF 10 INCHES (MIN) TO 18 INCHES



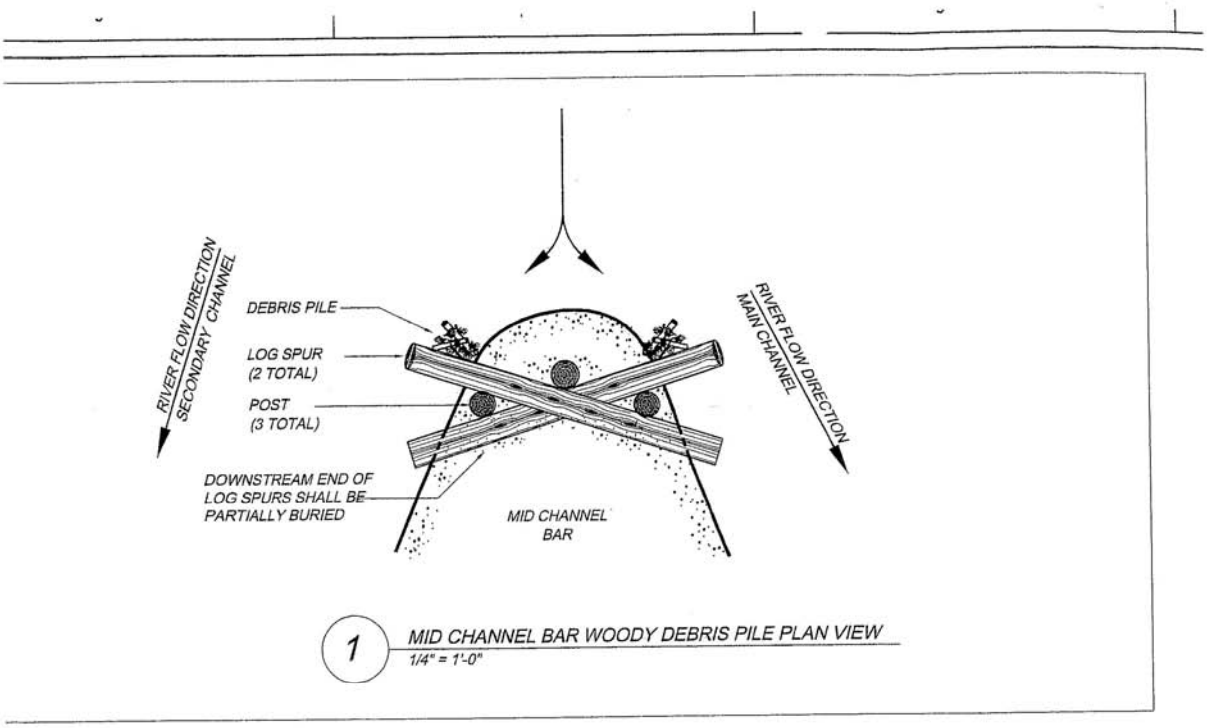
ROOTWAD CROSS SECTION VIEW
N.T.S.

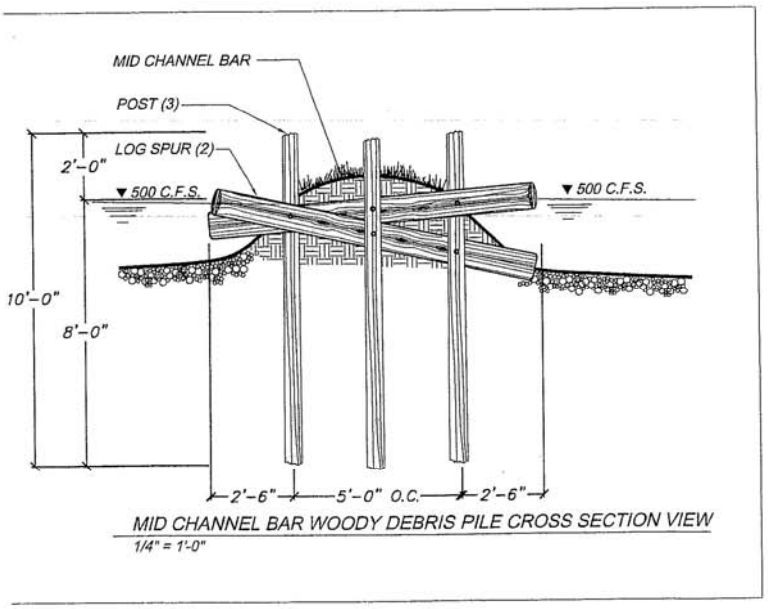


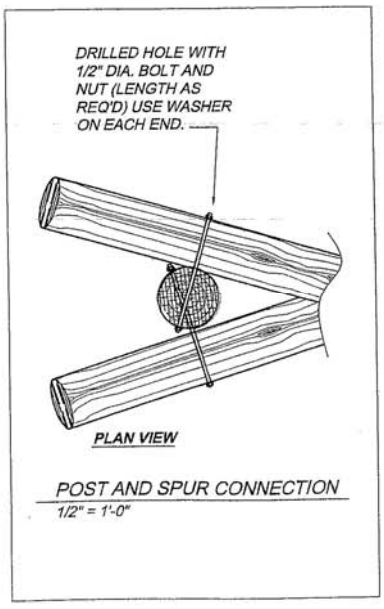
Channel Realignment and Bendway Weir Construction, Bernalillo Priority Site, Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation, Albuquerque, NM
Sheet 10 of 14 November 2005

ROOTWAD PLAN VIEW
N.T.S.

Bernalillo 404 Permit (cont.)

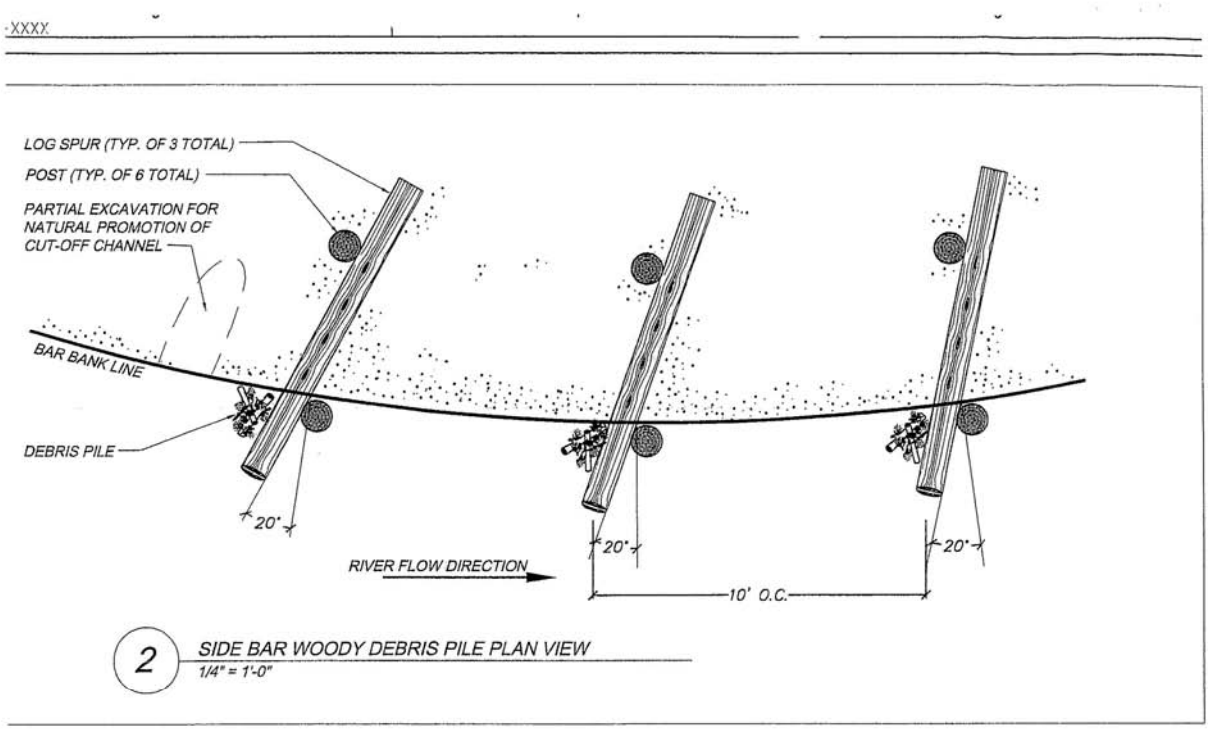


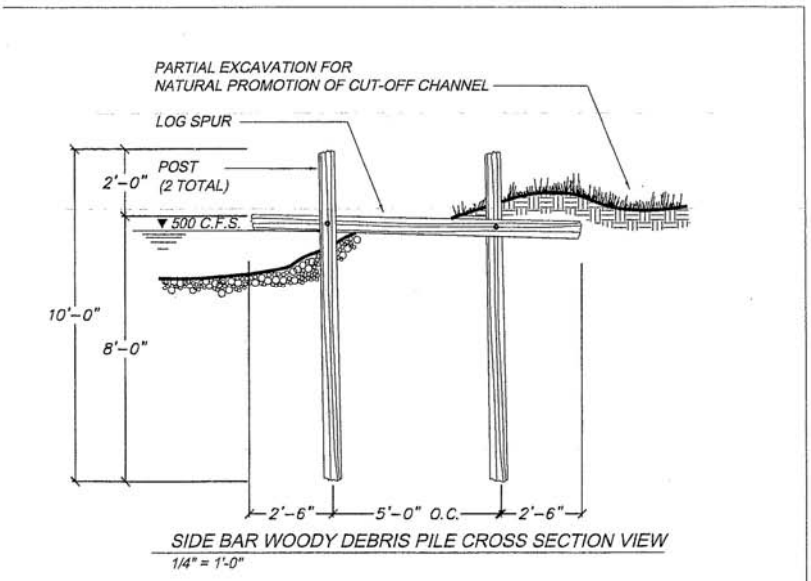


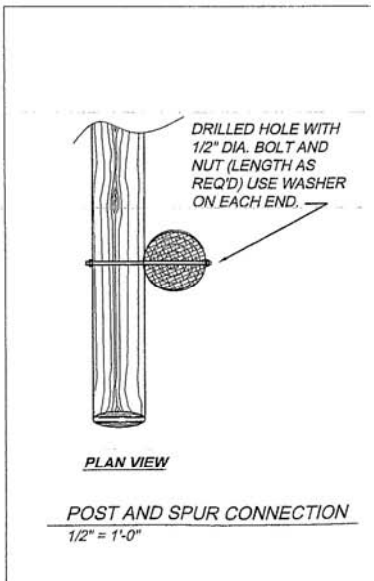


Channel Realignment and Bendway Weir
Construction, Bernalillo Priority Site,
Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation,
Albuquerque, NM
Sheet 11 of 14 November 2005

Bernalillo 404 Permit (cont.)

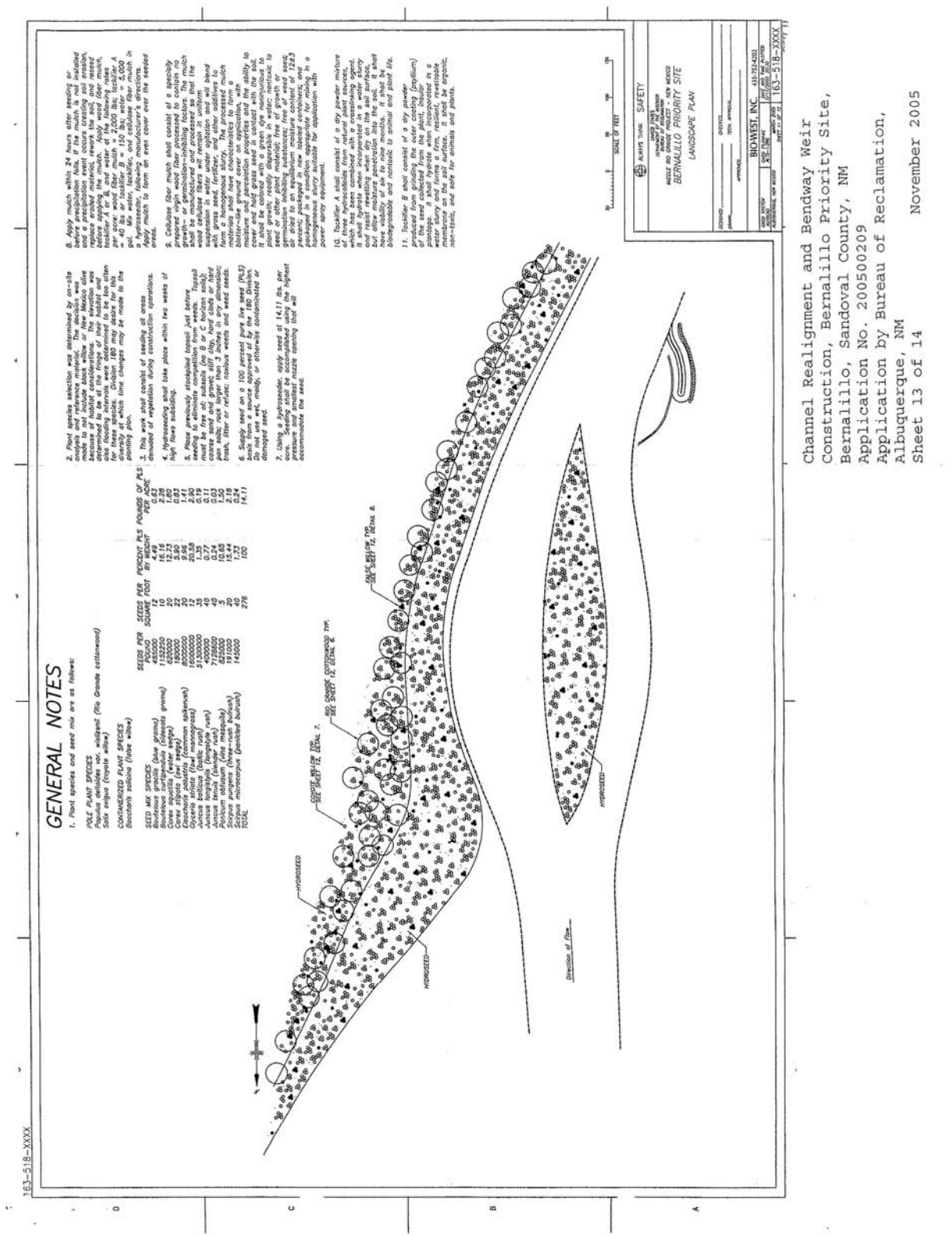






Channel Realignment and Bendway Weir
Construction, Bernalillo Priority Site,
Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation,
Albuquerque, NM
Sheet 12 of 14 November 2005

Bernalillo 404 Permit (cont.)



Channel Realignment and Bendway Weir
Construction, Bernalillo Priority Site,
Bernalillo, Sandoval County, NM
Application No. 200500209
Application by Bureau of Reclamation,
Albuquerque, NM
Sheet 13 of 14 November 2005

Bernalillo 404 Permit (cont.)