

5/19/09 BZ GT MJS
Cibola Restoration Recon
Lower Reach 0

- rabbitbrush dying - water table rising
- sand dune eroding
 - more deposition since 2005
- ~~valley~~ valley left lower?
 - ^{install} Valley Cross section to determine

Photo 1803 - former wetland soil exposed
lateral across pool/meander

soil features
- cross

trenches to link ditch to bottom
put main flow back in valley
drain ditch @ mult. pts.?
or wait until
sediment plug raised grade

Berm #1 - remove? or stay?
^{provide water to valley left}

Photo 1804 - *Gopher sign* (hole)

may need grade control structure in
old channel


- ~~side channel #1~~ Tributary Valley Left #2
- contribute same water but not much to the ditch
 - nick pt.
 - good cond. for an alluvial fan
 - Rabbitbrush monoculture

Bluegrass (Poa sp.)

Aerial Photos

1989? last flown

* go to State office and reorganize their files
time series if possible.
interbeam 14-15" deep bank full 20' ft.
ditch "BF1"

"BF2" Bankfull 31 ft. 3' deep
ditch $183 \times 0.6 = 120 \text{ ft}^2$ XS area 

Determine grade of ditch vs. nat. channel
(prob flatter)

ditch - ^{Rosgen} G channel

GPS loc. pinch point #1 @ Road Berm
BERM-09-1A (connect 2 channels?)
13 survey grade
16 main channel wider than ditch
grade control may be necessary
don't want to reactivate ^{old} gully
old main channel

another option

sequentially switch H₂O over
downstream (allow to green up)
then upstream

~~side channel #2~~ Tributary Valley Right #1

no defined channel lower down

Main Channel

enough capacity in main channel?

fairly wide floodplain

gullying from side channels going
thru sediment plug

however constricted so not

much wetland acreage potential
widens downstream - barge pt bar features

* estimate wetland gains (ac.) ^{connected} fld/pln.

~30'
floodplain channel

some headcutting valley right from road.
signs of flooding / water flow

* opportunities to sequester sand

in main from side channel #3 Trib Valley Left #1
check dams temporary

separate channel not a dam
sacrifice zone
sump for sand

side channel running parallel to
road + stream
→ filter dam potential

backed up pool

- clay water
- veg hasn't established

capture sediment

- will bury riparian veg / wetland species in short term
- resilient
- recolonize

more point of aggradation

- sand distribute thru valley

store water in sand

unwet adobe walls → permeable
rather than crusted tile

at least 3 square - Achnospletus purpureus
perennial ^{related to Labrador}

best guess for sand

at least 100 tons for clay

sand + clay \Rightarrow loam
 \downarrow more capacity for veg. growth
elk/cattle mix together
hoof action

some overbanking observed from
ditch to nat. channel
on top of redox zone
headcutting as H₂O transfers
to main channel

clay coming from side channels to ^{(H₂O) Valley Right}
north off the land surface #2+3
no sand
- from headcutting up valley

Work @ textured meanders
near berm so there's not much
of a grade shift

develop sequence of incised sections

will
cut off sediment accumulation to meadows
below springs

goal put more water on terrace

Photo 1805 - ditch VL (sand) \rightarrow plug
looking up at main channel VR (clay) \rightarrow grading

redo fence design to allow
flooding w/ sediment & remain
intact (Photo 1806-1808)

* Write up 1 page Rodent Survey idea
for submittal to NM6FD

* Send Ireland Pierce an email

* Send Bill L. - Meadow rule draft

* Purchase Trammals of NM

5/20/09 Cebolla Restoration Recon
BE, GT, MS, MJS

set base level on berm @ ⁱⁿ ~~Berm~~ -09-014
determine grade change

natural main channel : 13.2 ft.

ditch : 11.55 ft. vs

11.21 vs 100 ft.

.34 over 100ft
0.34% grade

ditch
widen to 30 ft. to dissipate energy
estab fldplm on both sides
10 ft on ea. side

match dimensions of nat. channel

more fill to plug ditch

water truck to compact fill

prob don't need to armor

"would the real thalweg please stand up"
B. E.

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armor w/ grade control structure

put manter in before cross
grade control in nat. channel

- ORD
- sed. accumulation in basin
below berm ^{sediment melting away}
- dig trench 18" ^{water rock} / then layer of rock
plug - 50 ft in ditch ^{on top} spill onto
compact in layers
use material from berm
rock free armor? Probably not

netgroat created

- protected by point bar
- dead water
- willows

Ditch Bank Height : 8.6 ft. - 9 ft.

Hole digging to find thalweg

1.5 ft. no change in sand
bedrock met

90 ft. thru berm b/w ditch and
nat. channel

40 ft. wide
20 ft wide bottom ^{15 ft fldplm within}
cut-off ^{if would it be smaller at 50 ft wide?}
3 pipes x 13 x 30 = 1500 cu. yds
to more

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need 500 cu ft rock for ORD

Bankfull @ Juniper Terrace
2 1/2 ft deep

O-C valley right lower
than valley left
gravel starts showing up in ditch
sand perched in areas

V-notch meander

create sandpile
overbanking signs
although flow currently goes down
road.

* Add Rolling Dips to master map
Need Valley X S - right angles
too slope to the slope

option flow
water splitter

sill 2' underneath bank
promote overbanking

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sand would remain in ditch
to fill gully/basin

- distribute flood flows / sand
- add 30-40 acres of wetland
- V-notch + next upstream meander.
water wants to access valley right
→ pushed by alluvial fan
more reason to relocate road
- * - Install neg plot to track S's
- R Issues w/ flipping channel upstream
 - arch site
 - road
 - lots of earth work → lift
 - moving water around berm

Best option → flow splitter
@ V-notch

promote overbanking

Side Channel #3 (by V-notch)
Trib. Valley Left #1
- hydric (wetland) soils exposed
on banks

- potential induced meandering
- * - determine how much Q
watershed acreage it contributes. Do for other
side channels

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* Determine total acreage of Ceballos watershed
already delineated as a 12.5 HVC?

run
grades out

300ft ditch to transfer H₂O to Valley Right

* GPS each sites ^{30 ft wide} plug in pond also? (w/ pond)

buried arch site in path of top slope
road route
- still significant?

top slope road route

what to do @ side channels?

below berm in ~~side channel #2~~
Trib Valley Right #1

"just like the bullet and pick
a crossing @ side channel"
B.Z

look for coarser fragments
high ground

4-wing - streambank stab for ephem.

cross @ 90° to flows

~~side channel #2~~ road crossing
Trib Valley Right #1

above ~~berm~~ 2' juniper in canyon / above
berm
Ponds patch @ VL

* GPS term



use contours

to spill out from pond
in dispersed rather than concentrated fashion
Cully on NE side of ~~side channel #2~~
Trib Valley Right #1

promote overbanking / ponding

- take pressure off of road / confine

- improve ~~catch~~ fringe for grazers

* GPS plug pond pt @ 3 junipers

* - Install neg plot to track changes

- create wetland area

- aggrading at base - functioning

- still would function w/ p^{ip}
structure

since less velocity

nd.
- cross at top of fan

- ideal spot → less dynamics

- plus a narrow width

- Data of Western wheatgrass (*Poa. smithii*)

- *stabinifera*

Abandoned irrigation ditches
 have negative ~~long~~ ^{lasting} effects

- capture stream
- gully

~~Original~~ ^{main} ~~carral~~ ^{Cibola} above springs - remove
 & add to rip pasture
 in path of new road

new road course follows tree slope
 avoid arch sites

Little Spring

N



take off L to
 allow to flow

- maintain some deep water
- for waterfall
- create more of a meander

Road above spring / carral (best choice)

permeable fill
 fabric / soil to cover ~~XXXX~~

If road has to be below carral / this spring box
 then extend the pipe → road then
 goes over

Little Spring

- level has dropped

- need to add new drinker

- ~~think~~ ^{maybe} use existing tank?

* start bringing out fencing tool + fence to make easy
 * ~~overall~~ Over entire area purchase ^{repairs} ~~studies~~

- remove old fences

- NMWA involvement?

- esp. w/ BLM purchase of inholding

Transmittal → BLM - REC FR COR 4 1994

* GPS all fence lines / note gaps etc. / ^{discuss} ^{if BLM}
 * Digitize expected with land creation ^{policy} ^{+ permitted} ^{on which} ^{could be} ^{removed}

Road follow existing road over
berm as go up side Channel
 Valley Right ^{#3} ~~#5~~

proposed
 option
 use existing
 berm
 w/ road

- keeps water spread out
- 3 ft of freeboard
- no sign of erosion
- do not clear out to store H₂O

install rolling dips where appropriate

* GPS / Digitize all Berms + roads
 categorize / prioritize keep / remove

lake filled basin
not a river carved valley (no terrace)

keep road tilted so self draining
side Channel ~~#4~~ Valley Right #2

Trubley grass (~~that~~ Trubley *M. richardsonii*)
good grass cover

300 ft x 1/3 ft = 100 yds of rock

use rock for tread / vehicles don't stick
stabilize grade in mud

1 pass thru w/ dozer
then install drainage

side channel ~~#4~~ Valley Right #2
off channel stock pond
- 3000 yds of material
- ~~precipitated~~ ~~precipitated~~ ~~precipitated~~
designed irrigation ditch
contoured @ constant grade

- push dirt back into hole
- use to plug gully upstream
- open ditch plug w/ point
- add water to meadow
- remove stock pond
- water would collect
- create headcut
- 1 day w/ dozer

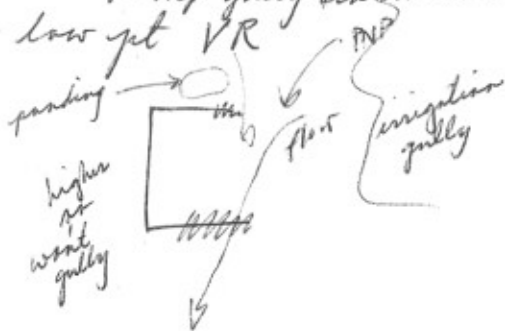
photo 1816
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Plug 3A on BPS
3/3

3 options for turn

upstream slopes back into ditch
plug n' point
capture sed.
dian water on meadow

- lots of response from meadows
- not gully in meadow below stock pond
- low yet VR



- may not turn to wetbank

* install wetbank / veg plot

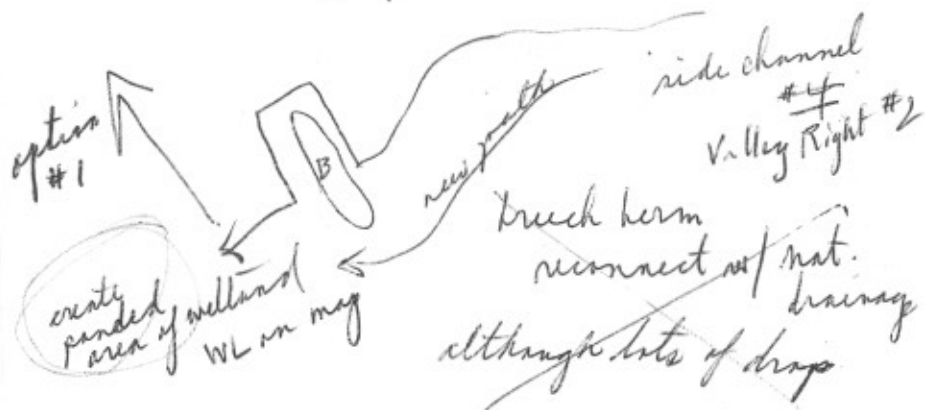
⊙ Tie road crossing side channel ~~#4~~ Valley Right #2
into road leading to stock pond
etc.

→ actually fire road goes along the top slope
not on aerial
reconnects w/ fence road
decommission / road paralleling
main road

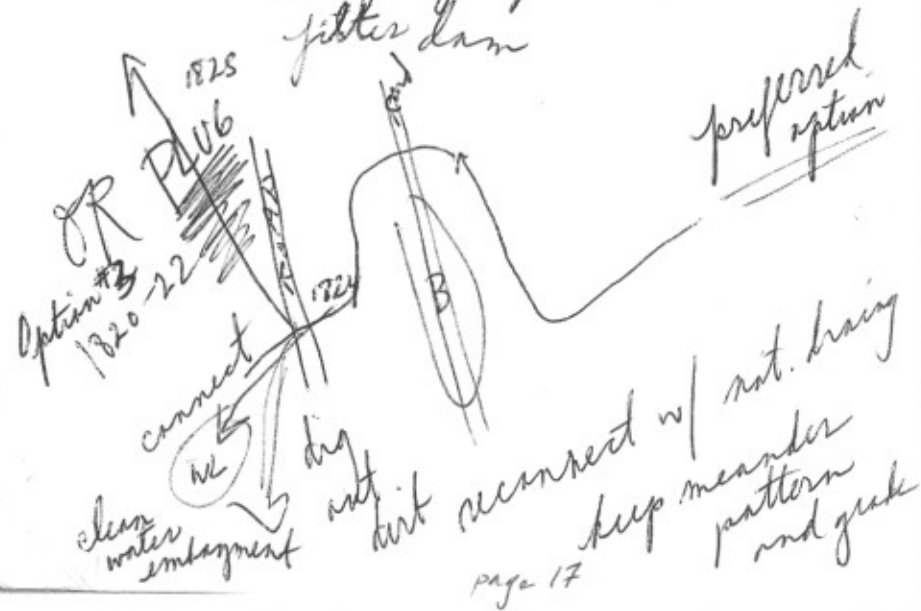
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create more water for permitted
sacrifice zone? where to locate?

fence road dike/berm



OR keep berm
redirect flow towards east
and install grade control
above & below
fix gully upstream
filter dam



Next Berm GPSed as NEAT BERM

- about to fail
- needs to be fixed

lacustrine sediments on terrace

Fill back up area w/ sand
to create large wetland feature

Photos of clay backup area 1827 + 1828

Peay's Locations

- upstream
- above headcut ^{high}
- backed up area
- intact wetland
- meadows

Reach

0, 4, 5	
VR2 or VR1	

add Perimeter (P) placemarks on map
1832 + 31

sand deposition builds dikes
creating pools of water
esp. w/ clay bottom
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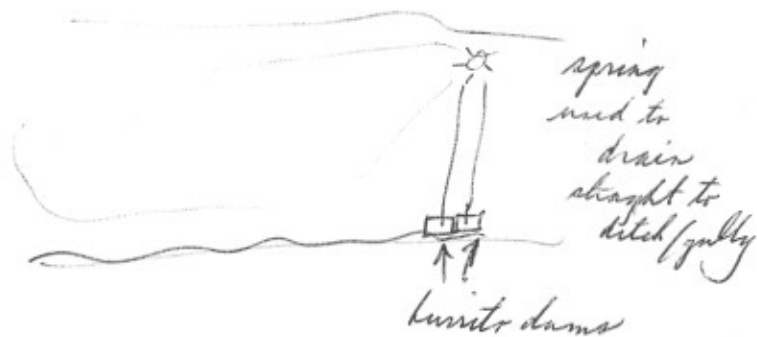


Photo 1835 Ant hill built above ground
- sign of saturation

- muskrats - keystone species
- became overpopulated?
- keep open water in hemimarsh
- burned before for this season
→ waterfowl + rail habitat
- meadow walls missing
montane role in riparian Mtns.

Travertine Ditch

Photos 1836 + 37

remove berm and allow to flow back + forth

- * start species list for Cebolla
 - include wetland indicator status
 - * Send Bill Z. + Gene Wetland Delineation Arid Lands Hupp.
 - Restoration Recon 5/21/09 BZ, GT, MTS
- Priority tasks

- Clarify tasks → make billing easier
→ ^{attract} ~~escalate~~ tasks by funding source
- * acquire grazing plan for Cebolla
 - not snowmelt dominated - winter / late season (keep stubble for ^{fill} meadows / ^{flora})
 - hi intensity for short period of time
 - if snowmelt dom. → need stubble for overwinter / spring
 - minimize frost heave
 - Meadow #5 use as model / control and monitor (spring)
 - grazing same areas going up and down BUT only once in ea. riparian pasture
- OR - graze pasture in May and then recover in June

OR - don't graze cienaga until fully developed

- spread fence b/w Stonehouse and Spring
↳ located from stream crossing to cattleguard near campground
- install cattleguard

- when to use Stonehouse?

- Ciballa
3-4 Riparian pastures
- separated by fences + cattleguards
 - Δ fencing standards
 - for creek crossings
 - like Valle Vidal mini-expl.
 - 18" off bottom

V-match concerns

- tortured meanders
- lots of sheer stress
- smooth out meander
- ~~dig to~~ substrate easily eroded

one shot

mobilization / detrit 6K

⊙ make as efficient as possible

Designate names for things

"Lake Ciballa" = ponded area

Old Lake Ciballa →

sawmill

* Determine length of roads to be created
" " decommission

RD = have to be higher than landsurface to mark

~~BOZ. suspension~~

to continuous ripping

- avoid areas where waterbars installed

- allow natural recolonization

* Change ⊙ Side Channel 1-5

to VL 1-2 ... 3

VR 1 ... 2 ... 3

(upstream)

(downstream)

amend notes and map!

During Veg Surveys

- add categories of
 - Sand
 - Clay
 - Rock
 - Depositional /
 - Litter: persistent / unpersistent

XS - 8 locations

perm monumented

300ft either side long pro

Ternada Technique

Mammal Survey Locations

Big Spring

Reach 0 - where going to get flooded

Reach 5 -

overall for whole project area

from upland to riparian

herps as well?

#0: density and species richness
↑ as a result of treatments

find what's here & what's missing
habitat comp. missing
potential species reintro

Next Recan

- check out Reaches 2-7
- check ~~conditions~~ map

* send Steve QAPP

* Piezoe info on map

* Email BLM for fence line shapefile

* old XS or greenline data

* Road corridors
^{potential}
- ^{Steve Carson} modify ^{exact} locations