



# Restoration Implementation

NRCS Engineers



# Application, Ranking, Offers, Restoration – One engineer's opinion of timeline

- Engineering Schedule



Application phase, fast and furious, ~ 2 months



ACEP Team executes supplement (offers), ~ 6 months



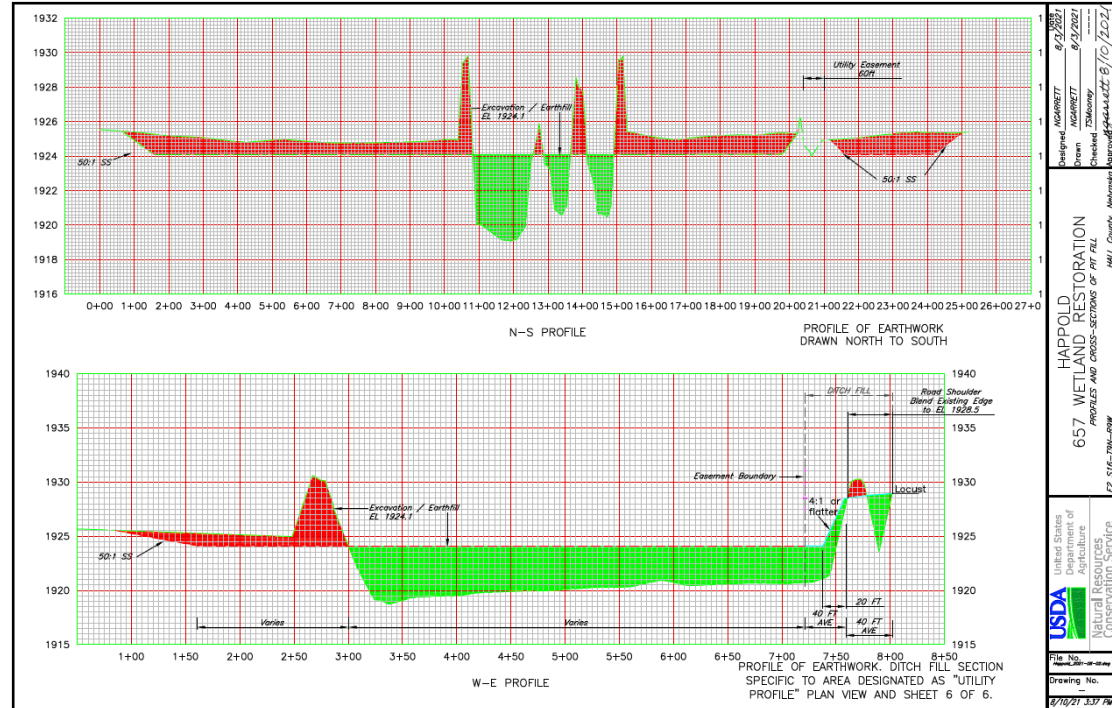
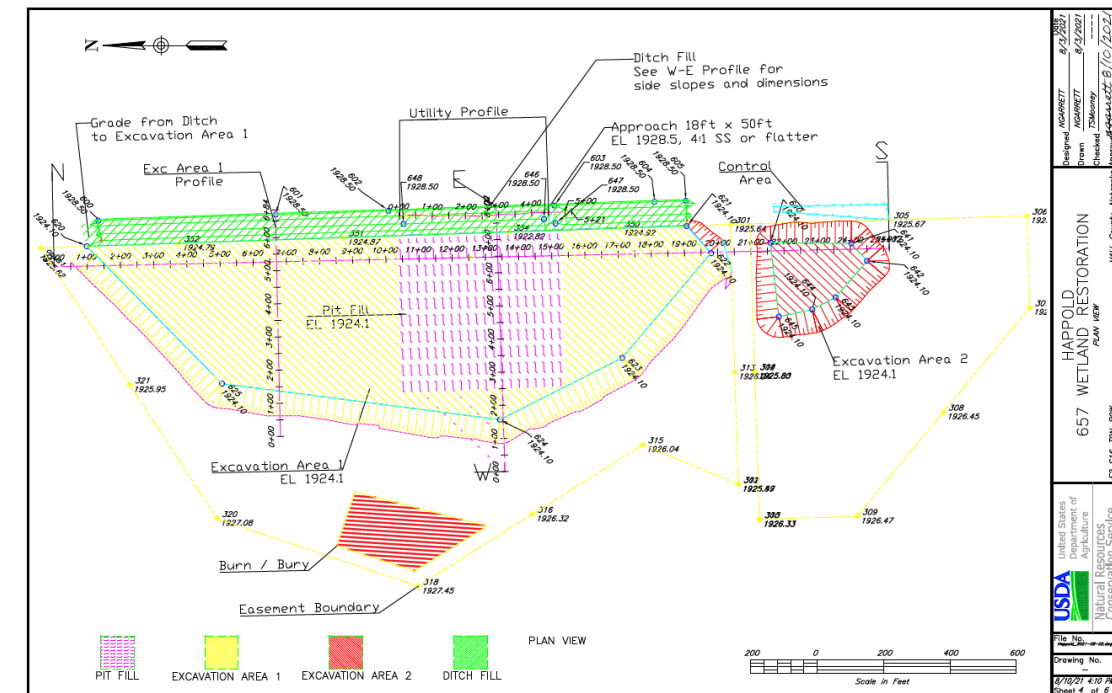
*ACEP Team works their magic and easement is closed ~ 1 1/2 yr*

- **WRPO required to be obligated, 3 yrs after offer**

- Restoration completion, 3 yrs after Easement Closed

# Final Design Phase

- Construction Plans & Specs
  - What you want (Plan)
  - When you want it (Sequence)
  - How you want it (Specs)
  - How much of it (Quantities)





# Final Design Phase

- Final Deliverables
  - Construction Plans
  - Construction Specifications
  - Bid Packet

BID SCHEDULE					
EXAMPLE WETLAND RESTORATION					
BID ITEM	SPEC NO.	QUANTITY	UNITS	UNIT PRICE	TOTAL COST
Site Prep and Strct Removal, Pit Area	1, 8, 11	1	EA		
Land Clearing and Grubbing, Pit Area	2A	5.8	AC		
Site Preparation, Disking Exc Area 1	21, 23	11	AC		
Site Preparation, Disking Exc Area 2	21, 23	2.6	AC		
Excavation, Stripping Pit Area	21	2,900	CY		
Excavation, Stripping Ditch Fill	21	1,800	CY		
Excavation, Ditch Fill	21	1,000	CY	----	----
Excavation Area 1	21	33,300	CY	----	----
Excavation Area 2	21	3,300	CY	----	----
Earthfill, Stripping, Pit Area	23	3,600	CY		
Earthfill, Pit	23	29,000	CY		
Earthfill, Stripping, Ditch Fill	23	2,300	CY		
Earthfill, Ditch Fill	23	8,900	CY		
Seed / Seeding (Ditch Fill)	6, cpa8	3.4	AC		
LUMP SUM Total Bid * =					
* Project will be bid as lump sum and shall be based off of these planned quantities. Project construction must be completed by October 30, 2021.					
** Site Preparation includes Mobilization / Demobilization, removal and disposal of culverts and debris in excavation or earthfill areas, and site dewatering.					
*** Earthfill cubic yards are figured with 25% compaction. Borrow sources are shown as excavation on plan map. Excavation is subsidiary to earthfill where "zeroed" in bid schedule above.					
EARTHWORK ACTIVITIES NOTED ON PLANS AS "DITCH FILL" MUST BE COMPLETED BY OCTOBER 31, 2021.					
Company Name	Address	City	State		
Signature	Phone Number		Date		

Return completed, signed bid to nathan.garrett@usda.gov



Natural Resources Conservation Service  
2550 North Diers, Suite L  
Grand Island, NE 68803  
(308) 395-8588, ext. 3

<http://www.ne.nrcs.usda.gov>

September 28, 2017

## INVITATION FOR BIDS

<< Project Name >>

NameOf County, NE

Sealed proposals will be received at the Upper Big Blue NRD office, 319 E 25<sup>th</sup> Street York NE 68467, until 3:00 p.m., Tuesday, May 9, 2017. The project construction plans and specifications are included with this invitation and generally consist of a pond restoration consisting of site preparation / structure removal, excavation, earthfill, installation of principal spillway riser / pipe / trash rack, and critical area seeding.

The proposals shall be made on the enclosed bid schedule. The bid must be received by the deadline above and submitted in a sealed envelope with the structure name "<< Project Name >>".

The Upper Big Blue NRD reserves the right to accept or reject any and all bids submitted. The NRD cost share rate will be 75% of the low-bid lump sum total. The contractor's lump sum total bid is calculated by summing eligible line items. Line item costs are based on contractor's unit costs multiplied by planned quantities in the bid schedule. The landowner is required to obtain bids from three contractors to establish the maximum cost-share.

Any quantity adjustment above those in the bid schedule must receive approval from the Upper Big Blue NRD. The contractor is obligated to immediately notify the NRD or NRCS and owner/operator of construction problems in order to facilitate practical, functional, and cost-effective project modifications. These problems may be associated with differing site conditions, construction staking and measurements, conflicts between plan drawings and specifications, defective materials, or other issues.

Final payment will be authorized by the NRD and issued to the landowner as soon as the structure has received final inspection and certification from the NRCS. Landowner is responsible for paying contractor.

Submit bid to:

<< Project Name >>

Attn: Jack Wergin

Upper Big Blue NRD

319 E 25<sup>th</sup> Street

York, NE 68467

If you have any questions, please contact the NRD or NRCS office at the number listed above.

Sincerely,  
Nate Garrett, P.E.  
NRCS Area Engineer

Enclosures

Helping People Help the Land

An Equal Opportunity Provider and Employer





# Bid Opening

- Contracting
  - Low bid higher than the allocated funding (prelim cost estimate)
    - Engineers determine why and if the increase is justified, Team Lead requests current year money for additional overrun
  - Low bid higher than the easement acquisition cost (Rejection)



# Bid Acceptance

- Engineering sends Team Lead:
  - Request for CPC
  - Bids including low bid
  - Construction plans/specs



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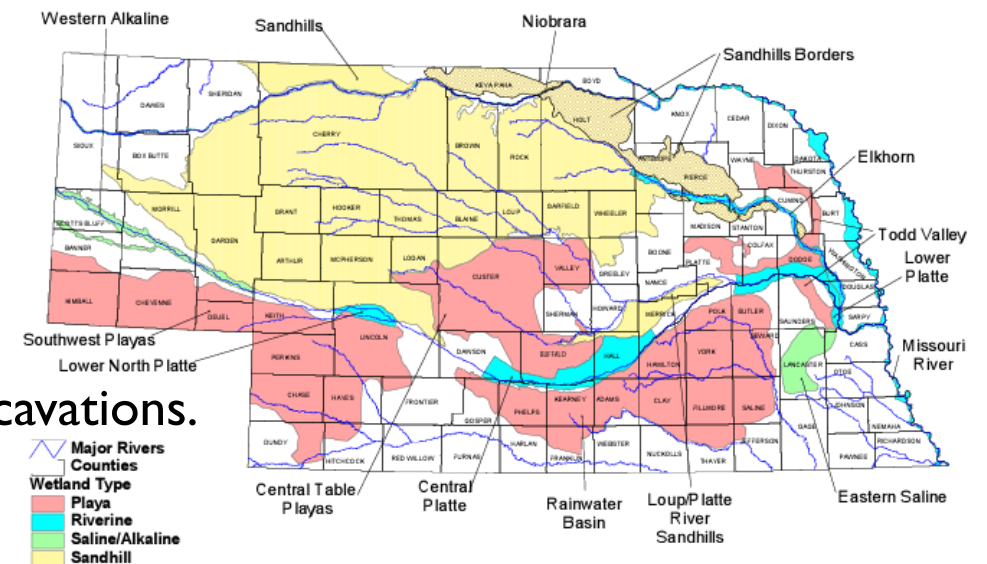


WRPO required to be obligated, 3 yrs after offer

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# Wetland Restoration Techniques

- **Sandhills Wetlands/Groundwater Interception**
  - Ditch Plugs
  - Berms
  - Water Control Structures
- **Streams / Rivers**
  - Sheet Pile Weir, Rock Chute, Articulated Concrete Mat
  - Meander Reconstruction
  - Slough Restoration
  - Bank Stabilization
  - Fish Passage
- **Playas**
  - Depression geometry intact? Pits or other excavations.
  - Runoff diverted away from depression?
  - Soils – Sediment, depth to Bt



Nebraska's Regional Wetland Complexes.



# Wet Meadows, Ditch Plugs





# Wet Meadows, Ditch Plugs



<https://sandhillstaskforce.org/project/awesome-project-1/>





# Water Control Structure







# Water Control Structure





# Water Control Structure, CMP Weir



Pipe  $Q \geq$  Channel  $Q$



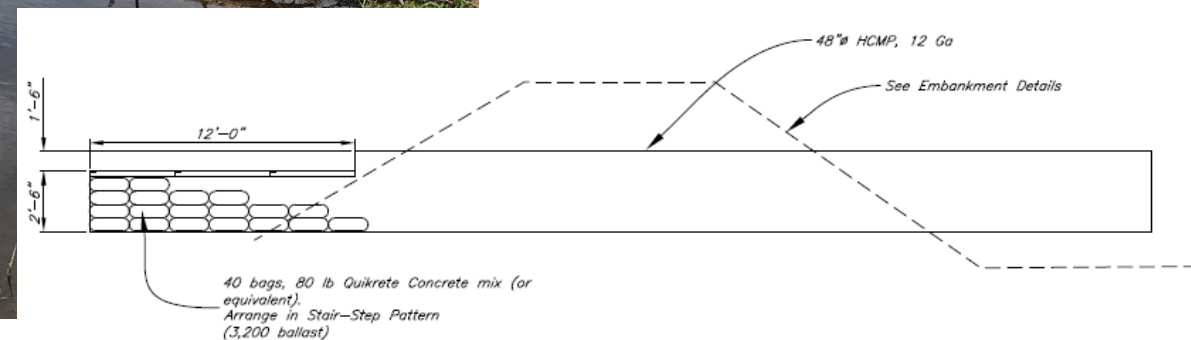


# Water Control Structure, CMP Weir





# Water Control Structure, CMP Weir





# Sheet Pile Weir





# Sheet Pile Weir, Cross Vane







# Block Vortex Weir





# Rock Chute





# Flexamat







# Flexamat



# Flexamat (1 year)







# Flexamat (5-year)







# Meander Reconstruction



# Meander Reconstruction (1-year)







# River Sloughs







# Playa Pitfill







# Playa Pitfill





# Playa Runoff Diversions







# Fish Passage / Roughened Channel







# Fish Passage / Fish Ladder





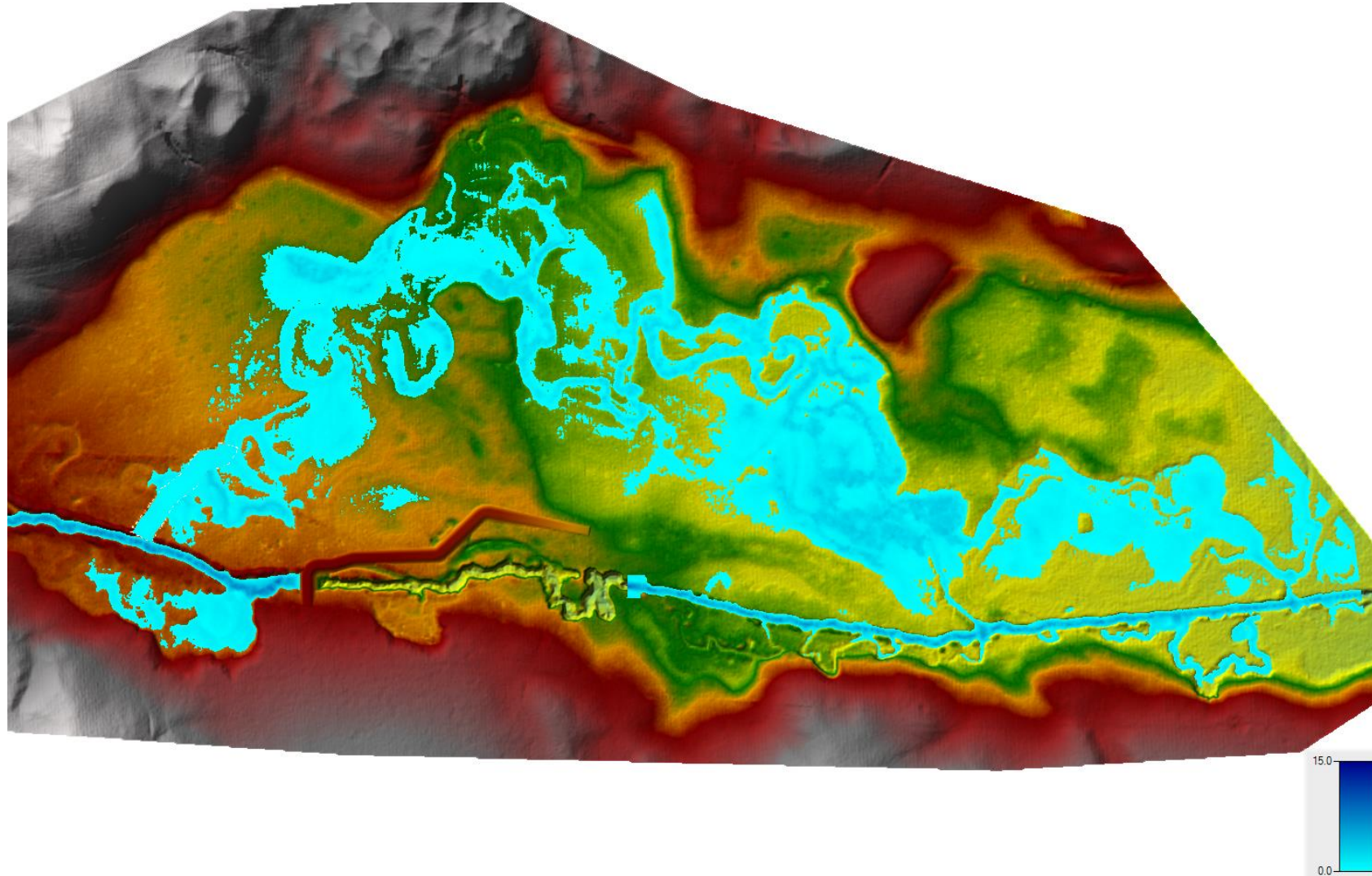


# Fish Passage / Fish Ladder





# Fish Passage / Flood Plain Modeling





# Carp Screen







# Sediment Removal







# Sediment Removal



7-25-2011



2/23/2011 (post-construction)