WYDOT Jackson-Wilson Snake River Bridge Project

Wildlife Sub-Group Meeting #2

25 April 2019 / 8 AM - 12 PM / Teton County Public Works

ATTENDEES

Nick Hines (Facilitator)
Chris Colligan (Greater Yellowstone Coalition)
Jack Koehler (Friends of Pathways)
Amy Ramage (Teton County)
Ross MacIntyre (River Hollow HOA)
Gary Fralick (Wyoming Game and Fish)
Doug McWhirter for ~~Aly Courtemanch~~ (Wyoming Game and Fish)
Bob Hammond (Wyoming Department of Transportation)

Additional Attendees
Hank Doering (WYDOT Project Development)
Keith Compton (WYDOT D3 District Engineer)
Ted Wells (WYDOT D3 District Construction Engineer)
Stephanie Harsha (WYDOT D3 Public Relations Specialist)
Darin Kaufman (WYDOT D3 District Traffic Engineer)
Meg Mordahl (WYDOT NEPA Coordinator)
Lee Potter (FHWA)
John Mobeck (Jackson Hole Wildlife Foundation)

AGENDA

Old Business

1. Recap of Last Meeting
    a. Target Species to Cross

        Moose was identified as the target species, due to the size of crossings recommended and then would allow other wildlife to use.

    b. Teton County Wildlife Crossing Master Plan

        It was agreed that as a subgroup we would try to follow the recommendations in the Wildlife Crossing Plan.

Wildlife Sub-group Recommendations and Updates:

1. Provided Spreadsheet and Crossing locations to Stakeholder Group

The group discussed four priority options and pros and cons. There is agreement that a shared use option would be most cost-effective option for this project. The Greater Yellowstone Coalition (GYC) recommended that dimensions need to be a minimum of 15 feet in height and 40 feet long, even though moose prefer overpasses above underpasses. GYC brought up that this project location has critical moose habitat (most critical habitat in Teton County). This site is the highest priority for wildlife crossings in Teton County. WGFD discussed how historic moose populations were 800-1,000 animals and is currently down to 250-350 animals. GYC mentioned the average cost of a moose collision is $44,500.

The following recommendations were made:

- Fencing limits determined, identified below under New Business.
- Priority 1 - WY 22 - between 22/390 intersection and Snake River. This location remains the groups highest priority option. They are not willing to make this a multi-use structure at this location. Therefore they have eliminated the extension of the Snake River Bridge on the west side of the river. Preference is for the largest (width and height) structure that this location will accommodate. The groups preference is to put in an arched culvert or possibly a simple span bridge. They want it to be a separate structure. Want to keep it as narrow in length as possible to save on cost and improve openness ratio. Shortening the structure could possibly put it in the highway clear zone (area for vehicles to recover if they run off the road) and would likely require the addition of more guardrail. They also wanted the structure to optimize hydrology, access for turn lanes, and structure height (15' prefered).
- Priority 2 - East of Snake River Bridge - The group recommends that we extend the Snake River Bridge on the east end to accommodate wildlife crossing.
- Priority 3 - WY 22 crossing structure West of WY 390 / WY 22 intersection - The County plans on putting in a pathway underpass at this location. The group recommends a multi-use structure to accommodate pedestrians and wildlife. The optimal size discussed was a 12'x20' precast box. At this time crossing under Hwy 22 is not part of this project. If the County decides to fund this box, they could enter into

an agreement with WYDOT to have it constructed concurrently with this project.

- Priority 4 - Wy 390 Crossing - It was recommended to look at a multi-use crossing, that would be used for wildlife, pedestrians and vehicular access to the boat ramp. If this multi-use structure is completed then the existing pedestrian underpass on WY390 would be removed and the pathway realigned to the new location for crossing under WY390. WYDOT will evaluate the additional cost and provide it to the group. If this option moves forward it will be the responsibility of the County to fund this new structure and additional incurred costs to the project. At this time crossing under Hwy 390 is not part of this project. If the County decides to fund this multi-use structure, they could enter into an agreement with WYDOT to have it constructed concurrently with this project. If a new crossing is not pursued, at a minimum the current pathway crossing will be kept open with the addition of fencing to keep wildlife off the highway, but allow wildlife to use the pedestrian crossing.
- The group recommend improving access under the West side of the bridge to facilitate pedestrian passage under the bridge who walk on the levee south of the bridge.

New Business

1. Maps of Wildlife Vehicle Collisions (WVC) - were presented and reviewed.
2. Fencing lengths - Teton County Wildlife plan recommends minimum of 3 miles of fencing from wildlife structures.

   The group agreed that wildlife fencing was critical to the success of the wildlife crossings. The stakeholder group determined that the fencing should run north on WY 390 to approximately RM 0.4 (at Raven Haven Rd). Fencing will run East along WY 22 to approx RM 3.3 (near the guardrail and near the irrigation ditch). This will allow a straight area with good sight distances for the wildlife to cross. Wildlife fencing would run West on WY 22 to approx. RM 4.9 (near Wenzel Lane). The fencing will run along the ROW easement, with exceptions for pathway or environmental concerns. There was discussion about fencing around Stilson. The group felt that would prohibit the use of tree habitat in the southeast corner of the Stilson area.

Alternatives to fencing?

Fencing is the most cost-effective approach. It was recommended to use the 8’ woven wire fence. Disadvantages of buck and rail were discussed and it was determined to be not as effective.

3. Fencing End Treatments
   a. Colorado Examples

Briefly showed fence end treatments utilized by CDOT.

Electromagnetic endmats were discussed. Some of the disadvantages were discussed and overall it did not seem to be effective for this area and will not be incorporated in the design. Lighting and signing could be incorporated into the design.

4. “Wildlife Things to Consider” handout

Brief discussion on the above handout.

WYDOT requested clarification on what we are trying to accomplish. Riparian corridor connectivity is needed between north and south areas of habitat. Crashes need to be minimized, and the moose herds need to be preserved. Per WGFD, fencing is problematic; however, it is a necessary component. The focus should be on extending the bridge to encourage moose to use the river corridor. The river corridor (east of Hwy 390) will stay intact longer than the area west of Hwy 390, which has been and will continue to be more prone to development and encroachment.

Preserving river riparian corridor should be a need of the project. Community may need to make sacrifices. Ex: restrict use from December through April annually. WYDOT recommended fencing around Stilson. The rest of the group felt that would prohibit the use of tree habitat. Length and location of fencing was discussed and described above.

WYDOT pointed out the size of entire riparian corridor in comparison with the small project area. How critical is it to include underpasses on this project?

- Pathway at Emily's Pond Fencing around pathway?

  Fencing will be located on right-of-way line as much as possible (may have to jog around pathway, etc.). The group would like to move the pathway in line with Emily Steven's Road and put fencing parallel with the highway. Discussions need to take place between the County and landowner (conservation trust) on whether the pathway can be moved.

Project Milestones:

- ✓ Preliminary Plans issued - October 3, 2018
- ✓ Stakeholder Meeting (#1) - December 18, 2018
- ✓ Wildlife Subgroup Meeting (#1) - January 16, 2019
- ✓ Stakeholder Meeting (#2) - January 29, 2019
- ✓ First Public Meeting - February 21, 2019
- ✓ Stakeholder Meeting (#3) - April 24, 2019
- ✓ Wildlife Subgroup Meeting (#2)- April 25, 2019
- ❑ Stakeholder Meeting (#4) - scheduled June 12, 2019
- ❑ Wildlife Subgroup Meeting (#3) - scheduled June 11, 2019
- ❑ Need all Bridge recommendations by July 1, 2019
- ❑ Need all Wildlife recommendations by September 1, 2019
- ❑ Grading Plans - expected Nov 2019
- ❑ Stakeholder Meeting - expected Nov/Dec 2019
- ❑ Right-of-way/Engineering Plans - expected July 2020
- ❑ Stakeholder Meeting - expected July/August 2020
- ❑ Right-of-way/Engineering Plans - expected Oct 2020
- ❑ Final Plans - expected April 2021
- ❑ Project Letting late 2022 or early 2023
- ❑ Construction Spring 2023

WYDOT SNAKE RIVER BRIDGE REPLACEMENT AND HWY 22/390 INTERSECTION RECONSTRUCTION PROJECT - WILDLIFE CROSSINGS OPTIONS

PREPARED BY WILDLIFE STAKEHOLDER SUB-COMMITTEE 1/16/2019

PRIORITY 1
JUST EAST OF INTERSECTION
MOOSE POND AREA

GOLD
simple span bridge

PROS	CONS
recommended best structure for openness ratio	high cost
ideal to maximize roadway permeability	bridges require more maintenance than buried structures
	guardrail - expensive and maintenance intensive

SILVER
bottomless arch culvert 65' bottom

PROS	CONS
channeling waterway is added benefit	cost
crosses riparian corridor this culvert (low water)	large structure - more traffic control to install
eliminates need for other deep culvert for water	
better for water road	
better stabilize than smaller culvert	

SILVER
extend bridge to west

PROS	CONS
combining with levee access removes approach	further cost than ideal location
removes conflict point on road, cost to build approach	human/wildlife conflicts - mixed use area under bridge
widens overall riparian corridor	levee impacts?

BRONZE
smaller arch structure

PROS	CONS
cost	less effective open area
easier constructability, reduced traffic control	potentially not used by large animals
	might still need separate culvert for water xing

BRONZE
box culvert 12x20 or 16x16

PROS	CONS
cost	Too small for target species (moose, elk)
easier constructability, reduced traffic control	potentially not used by large animals
	might still need separate culvert for water
	challenging to maintain dry land adjacent to water
	openness ratio will be difficult under wide road near intersection

PRIORITY 2
EAST OF SNAKE RIVER
EMILY'S POND APPROACH AREA

GOLD
extend bridge to the east

PROS	CONS
higher effectiveness	cost
more effective open area	pathway will need to be moved
ancillary construction costs already accommodated in project	levee impacts?
widens overall riparian corridor	mixed use area - lots of human use

SILVER
box culvert 16x16

PROS	CONS
less cost than bridge	less effective than bridge opening
maybe simplifies fencing	higher ancillary const. costs
	may cause trespassing on south side private land
	groundwater/pond on north side

PRIORITY 3
WEST OF INTERSECTION
STILSON TO HIDDEN HOLLOW

GOLD
separate box culvert

PROS	CONS
ideal to maximize roadway permeability	cost
separates wildlife from humans	very close to other structures
	two structures on same leg (both and wildlife)
	Stilson is high human use area

SILVER
combined structure with pathway - larger arch

PROS	CONS
simplifies fencing	human/wildlife conflicts
cost sharing with pathways	lighting?
flexibility for accommodating future changes	cost for larger structure

PRIORITY 4
NORTH OF HWY 22/390 INTERSECTION
HWY 390 XING

GOLD
separate new crossing south of existing pathway structure

PROS	CONS
ideal to maximize roadway permeability	groundwater will be a problem
separates wildlife from humans	cost
	very close to other structures

SILVER
parallel box culvert directly adjacent to existing pathway box

PROS	CONS
smaller construction footprint	careful construction req'd to preserve existing box
separates wildlife from humans more than shared structure	might disrupt pathway access during construction
	adjacent human activity will lessen effectiveness

MULTI USE ARCH STRUCTURE (combine pathway, wildlife, wilson boat ramp access under road)

PROS	CONS
cost sharing with multiple uses/agencies	larger structure needed to accommodate all uses
removes Wilson boat ramp approach from hwy 390	cost
safety improvement (less conflict points)	requires side road construction, particularly on east side
might encourage boat trailer and bus parking at Stilson	wetland impacts?
	Boat Ramp users now must turn LT into Stilson
	human/wildlife conflicts
	would require lighting which could deter wildlife use
	may require grade of SRD to be raised

BRONZE
existing pathway box culvert

PROS	CONS
low cost (funnel fence)	10x12 box is small for target species (moose, elk)
no traffic control and other ancillary const. costs	human/wildlife conflicts
	structure has lighting which could deter wildlife use

1/28/2019 22&390-Wildlife Crossings.dwg

TETON COUNTY PUBLIC WORKS

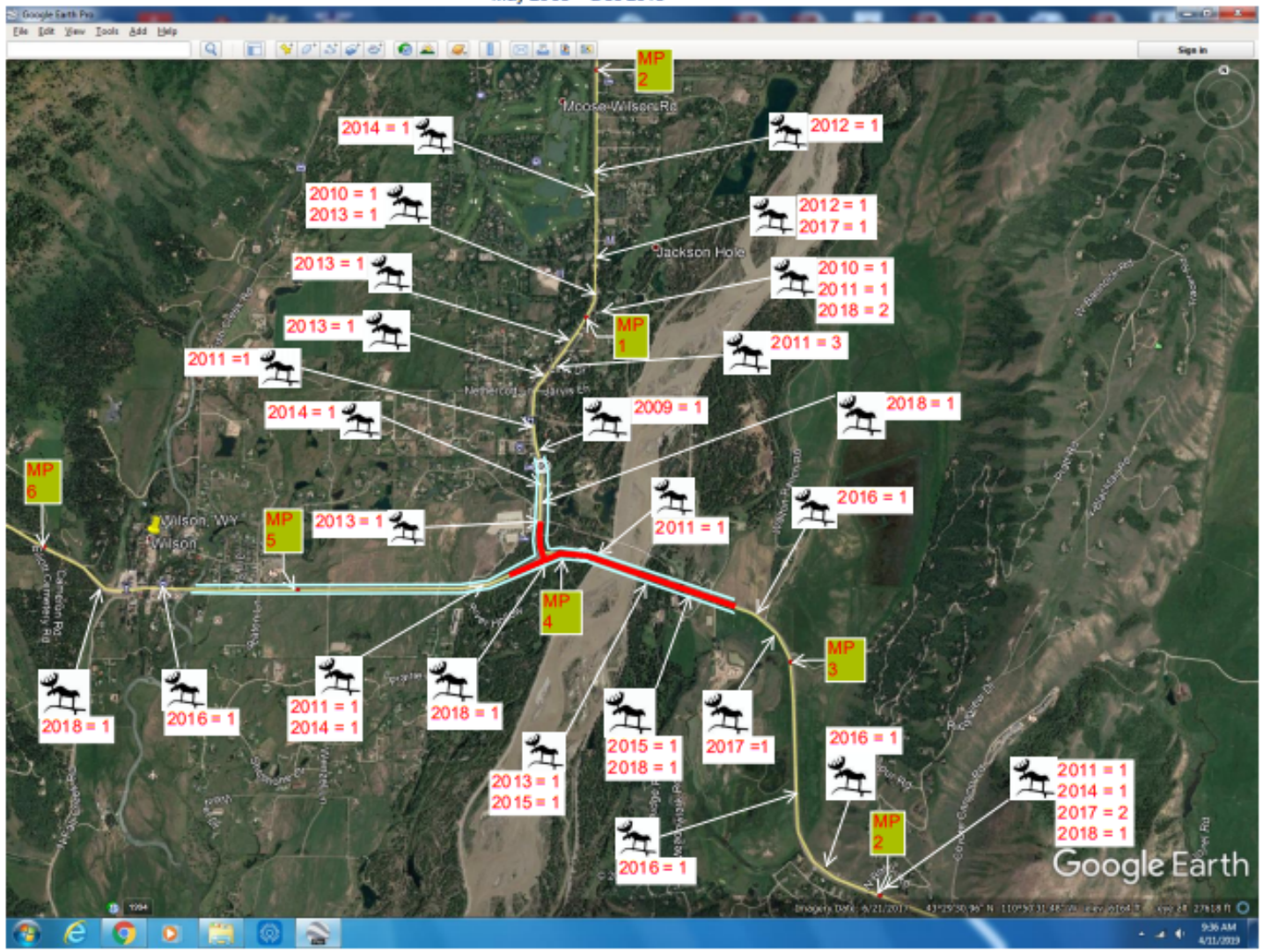
TETON COUNTY WYOMING

ENGINEERING

PROPOSED WILDLIFE UNDERPASSES

Moose-Vehicle Crashes_WY 22 (MP 2 - 6) & WY 390 (MP 0 - 2)

May 2008 - Dec 2018



Calender Year = #

= Number of Moose-Vehicle Crashes per location per year

Project Limits

Fence Limits

WYO 22 Snake River Bridge Replacement

Wildlife- vehicle Collision Mitigation

Feb 1, 2019

Issues/Concerns

1. Wildlife-vehicle collisions
2. Segmented habitat
3. Migration impedance
4. Separation of human activity from wildlife

Options

1. Do nothing
2. Fencing only
3. Extend SR Bridge to East, Fencing
4. Extend SR Bridge East and West, Fencing
5. Extend SR Bridge to East, Install Arch E of Int., Fencing
6. Extend SR Bridge to East, Install Arch E of Int., RCB on 390, Fencing
7. Extend SR Bridge to East, Install Arch E of Int., RCB on 390, RCB W of Int., Fencing
8. No SR Bridge Extension, Install Arch E of Int., RCB on 390, Fencing
9. Others?

Suggested Evaluation Criteria

1. Wildlife-Vehicle Collisions Mitigation – How much does the option improve the current situation. Consider:
    a. Where current collisions are happening; how many and of what species, within or outside of the project limts.
    b. Will the option be effective within the project limits
    c. Any unintended consequences beyond the project limits; could the option result in an increase in collisions off the end of the project.
    d. Other?
2. Habitat Connectivity – The degree to which the option will improve the critical habitat that may be segmented. Consider:
    a. Where the critical habitat located. Is it within or outside of the project limits, both sides of the highway, etc.
    b. How critical is the habitat to the survival of the heard
    c. How will future development in and outside of the project area effect this
    d. The time of day at which animals tend to move between habitats
    e. Does the option improve the connectivity of identified critical areas?
    f. Others?
3. Migration Impact – How well does the option address known impacted migration routes. Consider:
    a. Where are the known migration routes

b. How critical are the routes to the survival of the heard
c. The seasonal nature of the migration movement
d. Do, or have, the migration movements change over time; has or will development effect this in the future
e. How much does the option improve the identified migration routes over the existing conditions
f. Other?

4. Wildlife- Human Act Separation – the degree to which the option separates the movement and activity of wildlife from surrounding activity and uses. Consider:
    a. Location of other activities relative to critical habitat and migration corridors
    b. Should there be a minimum separation between local activities and crossing locations/structures
    c. The impacts of the relative location of these activities to the anticipated use of a crossing location/structure
    d. Other?
5. Long term impact to the Heard(s) – Will the option being considered improve any identified long term impact to the larger heard(s). Consider:
    a. The size of the project area and importance of this area to the overall species in question.
    b. What are the impacts to all big game species that use the area? How does the option considered effect each.
    c. Any unintended consequences from utilizing a certain option
    d. Other?
6. Cost – This would be a comparison of the overall cost. This could also be reflected in a cost to benefit ratio determined by comparing the overall cost of the option to how well it satisfies all of the evaluation criteria.

See attached a mock up of a matrix for use in the evaluation of the different options.

2000058 Snake River Bridge 22/390

Crossing Location	Height (ft)	Height (m)	Width (ft)	Width (m)	Length (ft)	Length (m)	Area	Openness (area/length)	Notes
80' extension of Bridge (West Side)	13	4.0	40	12.2	67	20.4	60.8	3.0	Estimated height below girder. Openness will be higher due to one side being partially open Top width approx. 60 foot (18.2 m) Trapezoid Area (60.8m)
64' extension of Bridge (East Side)	12	3.7	10	3.0	67	20.4	38.7	1.9	Estimated height below girder. Openness will be higher due to one side being partially open Top width approx. 58 foot (17.9m) 24' side slope
Conspan (between 390 and river)	13.6	4.1	65	19.8	138	42.1	63.8	1.5	Area calc. used area of ellipse divided in half
390 Box	10	3.0	20	6.1	106	32.3	18.6	0.6	Not including wing walls on each end. Box height 12' - constructed height 10' with 2' natural bottom
22 West 390	10	3.0	20	6.1	130	39.6	18.6	0.5	Not including wing walls on each end. Box height 12' - constructed height 10' with 2' natural bottom

* Most WYDOT box culvert openness ratios are 1.1-1.2, with a minimum of 0.8

EXHIBIT "A"

Project 2000058
Jackson-Wilson
WYO 22 Bridge Replacement
Teton County
21-Jun-18

Item	CONSPAN 65' x 112' Priority No. 1 Cost	64' Bridge Extension Priority No. 2 Cost	RCB 20' X 12' X 94' Priority No. 3 Cost	RCB 20' x 12' 112' Priority No. 4 Cost	Total Cost
Estimated Construction Costs	$3,690,017.00	$1,397,270.00	$897,270.00	$993,270.00	$5,812,017.00
5% Contingency	$184,501.00	$69,864.00	$44,864.00	$49,664.00	$290,601.00
Construction Costs Total	$3,874,518.00	$1,467,134.00	$942,134.00	$1,042,934.00	$6,102,618.00
4% Inflation/Year for 5 Years	$839,426.00	$317,859.00	$204,116.00	$225,955.00	$1,322,150.00
10% Preliminary Engineering	$471,394.00	$178,499.00	$114,625.00	$126,889.00	$742,477.00
15% Construction Engineering	$707,092.00	$267,749.00	$171,938.00	$190,333.00	$1,113,715.00
Total Project Costs	$5,892,430.00	$2,231,241.00	$1,432,813.00	$1,586,111.00	$9,280,960.00

EXHIBIT "B"

Project 2000058
Jackson-Wilson
WYO 22 Bridge Replacement
Teton County
19-Apr-18

Item	CONSPAN 65' x 138' Priority No. 1 Cost	64' Bridge Extension Priority No. 2 Cost	RCB 20' X 12' X 130' Priority No. 3 Cost	RCB 20' x 12' 106' Priority No. 4 Cost	Total Cost
Estimated Construction Costs	$4,483,270.00	$1,397,270.00	$1,090,270.00	$962,270.00	$6,767,270.00
5% Contingency	$224,164.00	$69,864.00	$54,514.00	$48,114.00	$338,364.00
Construction Costs Total	$4,707,434.00	$1,467,134.00	$1,144,784.00	$1,010,384.00	$7,105,634.00
4% Inflation/Year for 5 Years	$1,019,879.00	$317,859.00	$248,021.00	$218,903.00	$1,539,456.00
10% Preliminary Engineering	$572,731.00	$178,499.00	$139,281.00	$122,929.00	$864,509.00
15% Construction Engineering	$859,097.00	$267,749.00	$208,921.00	$184,393.00	$1,296,764.00
Total Project Costs	$7,159,141.00	$2,231,241.00	$1,741,007.00	$1,536,609.00	$10,806,363.00

EXHIBIT "C"

Project 2000058
Jackson-Wilson
WYO 22 Bridge Replacement
Teton County
19-Apr-18

Item	80' Bridge Extension Priority No. 1 Cost	64' Bridge Extension Priority No. 2 Cost	RCB 20' X 12' X 130' Priority No. 3 Cost	RCB 20' x 12' 106' Priority No. 4 Cost	Total Cost
Estimated Construction Costs	$1,650,270.00	$1,397,270.00	$1,090,270.00	$962,270.00	$3,933,270.00
5% Contingency	$82,514.00	$69,864.00	$54,514.00	$48,114.00	$196,664.00
Construction Costs Total	$1,732,784.00	$1,467,134.00	$1,144,784.00	$1,010,384.00	$4,129,934.00
4% Inflation/Year for 5 Years	$375,413.00	$317,859.00	$248,021.00	$218,903.00	$894,762.00
10% Preliminary Engineering	$210,820.00	$178,499.00	$139,281.00	$122,929.00	$502,470.00
15% Construction Engineering	$316,230.00	$267,749.00	$208,921.00	$184,393.00	$753,704.00
Total Project Costs	$2,635,247.00	$2,231,241.00	$1,741,007.00	$1,536,609.00	$6,280,870.00

TOTAL ESTIMATED QUANTITIES - EXHIBIT "A"

ITEM NO.	ITEM	UNIT	QUANTITIES ROADWAY (CODE 04)	UNIT PRICE	CONSPAN 65' x 112' PRIORITY NO. 1 AMOUNT	64' Bridge Extension PRIORITY NO. 2 AMOUNT	RCB 20' X 12' X 94' PRIORITY NO. 3 AMOUNT	RCB 20' x 12' 112' PRIORITY NO. 4 AMOUNT	PRIORITY 1 THRU 4 AMOUNT	
109.04000	FORCE ACCOUNT WORK	$$	$10,000	$1.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	
109.08000	MOBILIZATION	LS	LUMP SUM	$1.00	$315,000.00	$119,000.00	$77,000.00	$85,000.00	$497,000.00	10%
607.50100	FENCE DEER	FT	10120	$7.00	$70,840.00	$70,840.00	$70,840.00	$70,840.00	$70,840.00	
607.72000	GATES DEER	EA	21	$800.00	$16,800.00	$16,800.00	$16,800.00	$16,800.00	$16,800.00	
607.72200	DEER RAMPS	EA	6	$4,000.00	$24,000.00	$24,000.00	$24,000.00	$24,000.00	$24,000.00	
607.80500	BRACE PANELS (DEER)	EA	27	$315.00	$8,505.00	$8,505.00	$8,505.00	$8,505.00	$8,505.00	
607.90500	END PANELS (DEER)	EA	75	$375.00	$28,125.00	$28,125.00	$28,125.00	$28,125.00	$28,125.00	
615.01024	CATTLE GUARD (HEAVY DUTY) 24 ft	EA	6	$14,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	
615.02024	CATTLE GUARD (MEDIUM DUTY) 24 ft	EA	2	$17,000.00	$34,000.00	$34,000.00	$34,000.00	$34,000.00	$34,000.00	
615.02042	CATTLE GUARD (MEDIUM DUTY) 42 ft	EA	2	$28,000.00	$56,000.00	$56,000.00	$56,000.00	$56,000.00	$56,000.00	
703.03110	TEMPORARY TRAFFIC CONTROL	LS	LUMP SUM	$1.00	$221,000.00	$84,000.00	$54,000.00	$59,000.00	$348,000.00	7%
999.25000	STRUCTURE ITEMS	LS	LUMP SUM	$1.00	$2,821,747.00	$862,000.00	$434,000.00	$517,000.00	$4,634,747.00	
					$3,690,017.00	**$1,397,270.00**	**$897,270.00**	**$993,270.00**	**$5,812,017.00**	

TOTAL ESTIMATED QUANTITIES - EXHIBIT "B"

ITEM NO.	ITEM	UNIT	QUANTITIES ROADWAY (CODE 04)	UNIT PRICE	CONSPAN 65' x 138' PRIORITY NO. 1 AMOUNT	64' Bridge Extension PRIORITY NO. 2 AMOUNT	RCB 20' X 12' X 130' PRIORITY NO. 3 AMOUNT	RCB 20' x 12' 106' PRIORITY NO. 4 AMOUNT	PRIORITY 1 THRU 4 AMOUNT	
109.04000	FORCE ACCOUNT WORK	$$	$10,000	$1.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	
109.08000	MOBILIZATION	LS	LUMP SUM	$1.00	$383,000.00	$119,000.00	$93,000.00	$82,000.00	$578,000.00	10%
607.50100	FENCE DEER	FT	10120	$7.00	$70,840.00	$70,840.00	$70,840.00	$70,840.00	$70,840.00	
607.72000	GATES DEER	EA	21	$800.00	$16,800.00	$16,800.00	$16,800.00	$16,800.00	$16,800.00	
607.72200	DEER RAMPS	EA	6	$4,000.00	$24,000.00	$24,000.00	$24,000.00	$24,000.00	$24,000.00	
607.80500	BRACE PANELS (DEER)	EA	27	$315.00	$8,505.00	$8,505.00	$8,505.00	$8,505.00	$8,505.00	
607.90500	END PANELS (DEER)	EA	75	$375.00	$28,125.00	$28,125.00	$28,125.00	$28,125.00	$28,125.00	
615.01024	CATTLE GUARD (HEAVY DUTY) 24 ft	EA	6	$14,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	
615.02024	CATTLE GUARD (MEDIUM DUTY) 24 ft	EA	2	$17,000.00	$34,000.00	$34,000.00	$34,000.00	$34,000.00	$34,000.00	
615.02042	CATTLE GUARD (MEDIUM DUTY) 42 ft	EA	2	$28,000.00	$56,000.00	$56,000.00	$56,000.00	$56,000.00	$56,000.00	
703.03110	TEMPORARY TRAFFIC CONTROL	LS	LUMP SUM	$1.00	$268,000.00	$84,000.00	$65,000.00	$58,000.00	$405,000.00	7%
999.25000	STRUCTURE ITEMS	LS	LUMP SUM	$1.00	$3,500,000.00	$862,000.00	$600,000.00	$490,000.00	$5,452,000.00	
					$4,483,270.00	**$1,397,270.00**	**$1,090,270.00**	**$962,270.00**	**$6,767,270.00**	

TOTAL ESTIMATED QUANTITIES - EXHIBIT "C"

ITEM NO.	ITEM	UNIT	QUANTITIES ROADWAY (CODE 04)	UNIT PRICE	80' Bridge Extension PRIORITY NO. 1 AMOUNT	64' Bridge Extension PRIORITY NO. 2 AMOUNT	RCB 20' X 12' X 130' PRIORITY NO. 3 AMOUNT	RCB 20' x 12' 106' PRIORITY NO. 4 AMOUNT	PRIORITY 1 THRU 4 AMOUNT	
109.04000	FORCE ACCOUNT WORK	$$	$10,000	$1.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	
109.08000	MOBILIZATION	LS	LUMP SUM	$1.00	$141,000.00	$119,000.00	$93,000.00	$82,000.00	$336,000.00	10%
607.50100	FENCE DEER	FT	10120	$7.00	$70,840.00	$70,840.00	$70,840.00	$70,840.00	$70,840.00	
607.72000	GATES DEER	EA	21	$800.00	$16,800.00	$16,800.00	$16,800.00	$16,800.00	$16,800.00	
607.72200	DEER RAMPS	EA	6	$4,000.00	$24,000.00	$24,000.00	$24,000.00	$24,000.00	$24,000.00	
607.80500	BRACE PANELS (DEER)	EA	27	$315.00	$8,505.00	$8,505.00	$8,505.00	$8,505.00	$8,505.00	
607.90500	END PANELS (DEER)	EA	75	$375.00	$28,125.00	$28,125.00	$28,125.00	$28,125.00	$28,125.00	
615.01024	CATTLE GUARD (HEAVY DUTY) 24 ft	EA	6	$14,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	
615.02024	CATTLE GUARD (MEDIUM DUTY) 24 ft	EA	2	$17,000.00	$34,000.00	$34,000.00	$34,000.00	$34,000.00	$34,000.00	
615.02042	CATTLE GUARD (MEDIUM DUTY) 42 ft	EA	2	$28,000.00	$56,000.00	$56,000.00	$56,000.00	$56,000.00	$56,000.00	
703.03110	TEMPORARY TRAFFIC CONTROL	LS	LUMP SUM	$1.00	$99,000.00	$84,000.00	$65,000.00	$58,000.00	$235,000.00	7%
999.25000	STRUCTURE ITEMS	LS	LUMP SUM	$1.00	$1,078,000.00	$862,000.00	$600,000.00	$490,000.00	$3,030,000.00	
					$1,650,270.00	**$1,397,270.00**	**$1,090,270.00**	**$962,270.00**	**$3,933,270.00**	

FENCE SUMMARY
2000058

STATION	-	STATION	FT	EA						
			FENCE DEER	CATTLE GUARD (MEDIUM DUTY) 24 FT	CATTLE GUARD (HEAVY DUTY) 24 FT	CATTLE GUARD (MEDIUM DUTY) 42 FT	GATES DEER	DEER RAMPS	BRACE PANELS (DEER)	END PANELS (DEER)
LEFT										
750+00.00	-	764+53.00	1443				2	1	1	9
1+30.00	-	6+56.00	680				2			14
766+26	-	776+12.00	1177				4	1	1	11
785+21	-	803+00.00	1802	2		2	3	1	8	11
SUBTOTAL			**5102**	**2**	**0**	**2**	**11**	**3**	**10**	**45**
RIGHT										
749+33.00	-	776+12.00	2655		2		5	2	6	14
3+90.00	-	8+36.00	461				2			7
785+26.00	-	803+00.00	1798		4		3	1	10	8
SUBTOTAL			**4914**	**0**	**6**	**0**	**10**	**3**	**16**	**29**
TOTAL			**10016**	**2**	**6**	**2**	**21**	**6**	**26**	**74**
FOR ESTIMATE			**10120**	**2**	**6**	**2**	**21**	**6**	**27**	**75**

STRUCTURE SUMMARY - EXHIBIT "A"
2000058

ITEM	UNIT	CONSPAN 65' X 112' (1) STA 773+00 PRIORITY NO. 1	BRIDGE OVER SNAKE RIVER BRIDGE EXTENSION OF 64' PRIORITY NO. 2	RCB 20' X 12' X 94' STA 760+10 PRIORITY NO. 3	RCB 20' X 12' X 112' STA 3+90 PRIORITY NO. 4	FOR ESTIMATE
		TOTAL	TOTAL	TOTAL	TOTAL	
STRUCTURE ITEMS	LS	$2,821,747.00	$862,000.00	$434,000.00	$517,000.00	$4,634,747.00

(1) MATERIAL COST = $821,747; INSTALL COST = $ 2,000,000 (INCLUDES AN ESTIMATE FOUNDACTION COST OF $ 753,000)

STRUCTURE SUMMARY - EXHIBIT "B"
2000058

ITEM	UNIT	CONSPAN 65' X 138' (1) STA 767+70 PRIORITY NO. 1	BRIDGE OVER SNAKE RIVER BRIDGE EXTENSION OF 64' PRIORITY NO. 2	RCB 20' X 12' X 130' STA 762+30 PRIORITY NO. 3	RCB 20' X 12' X 106' STA 3+30 PRIORITY NO. 4	FOR ESTIMATE
		TOTAL	TOTAL	TOTAL	TOTAL	
STRUCTURE ITEMS	LS	$3,500,000.00	$862,000.00	$600,000.00	$490,000.00	$5,452,000.00

(1) MATERIAL COST = $1,000,000; INSTALL COST = $ 2,500,000 (INCLUDES AN ESTIMATE FOUNDACTION COST OF $ 928,000)

STRUCTURE SUMMARY - EXHIBIT "C"
2000058

ITEM	UNIT	BRIDGE OVER SNAKE RIVER BRIDGE EXTENSION OF 80' PRIORITY NO. 1	BRIDGE OVER SNAKE RIVER BRIDGE EXTENSION OF 64' PRIORITY NO. 2	RCB 20' X 12' X 130' STA 762+30 PRIORITY NO. 3	RCB 20' X 12' X 106' STA 3+30 PRIORITY NO. 4	FOR ESTIMATE
		TOTAL	TOTAL	TOTAL	TOTAL	
STRUCTURE ITEMS	LS	$1,078,000.00	$862,000.00	$600,000.00	$490,000.00	$3,030,000.00