Hardin Spur Line
Feasibility Study

INTERSTATE ENGINEERING

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STUDY PURPOSE & BACKGROUND

This study was commissioned to examine the feasibility and develop cost estimates to rehabilitate or reconstruct the existing rail spur serving the Hardin Industrial Park. A goal of this project, if feasible, is to provide guidance for rail spur infrastructure development. The study will consider current and future land uses and potential rail users, with alternatives considered to serve both the specific needs of currently identified users, and to generally provide potential service to other future users. Phasing of spur improvements, if appropriate, will also be developed. The study was developed with significant involvement of land owners, the City of Hardin, The Two Rivers Authority, and the Burlington Northern Santa Fe Railway.

The existing rail spur is what remains of the old Chicago, Burlington &Quincy Railroad track that used to run between Hardin and Custer, Montana. The rail right-of-way has been abandoned north of County Road 157E (Boehs Road), with remaining right-of-way owned by the Burlington Northern Santa Fe (BNSF) Railway.

EXISTING CONDITIONS

The existing rail spur consists of just less than 11,000 feet of track from the turnout at the BNSF main line track in the City of Hardin to its terminus just north of the Cenex Harvest States (CHS) asphalt plant in the Hardin Industrial Park. The spur has a west connection to the main line, but the east connection was removed some time ago and the right-of-way abandoned. A siding of approximately 1,900 feet in length exists along the east side of the spur and provides service to the Farmers Union elevator. Figure 1 shows the location of the rail spur.

The spur crosses two streets with at-grade crossings; the Railroad Avenue (US 87) crossing just north of the main line track, and the Sugar Factory Road crossing within the Hardin Industrial Park. The spur passes underneath Interstate 90 about midway along its length. Both at-grade crossings are marked with signs, but neither have lights, bells, gates, or other protection.

The spur is in poor condition at present. Constructed of relatively light rail, many ties are rotting or missing, and the condition of the ballast is questionable. Existing rail is not “true”, which limits travel speed on the spur. One bridge exists along the spur at this time. The bridge spans Whitman Coulee with six 14 foot spans for a total length of 84 feet. The bridge is a timber structure and, based on a cursory inspection appears to be serviceable and without structural problems. Figure 2 shows current typical conditions along the spur track.

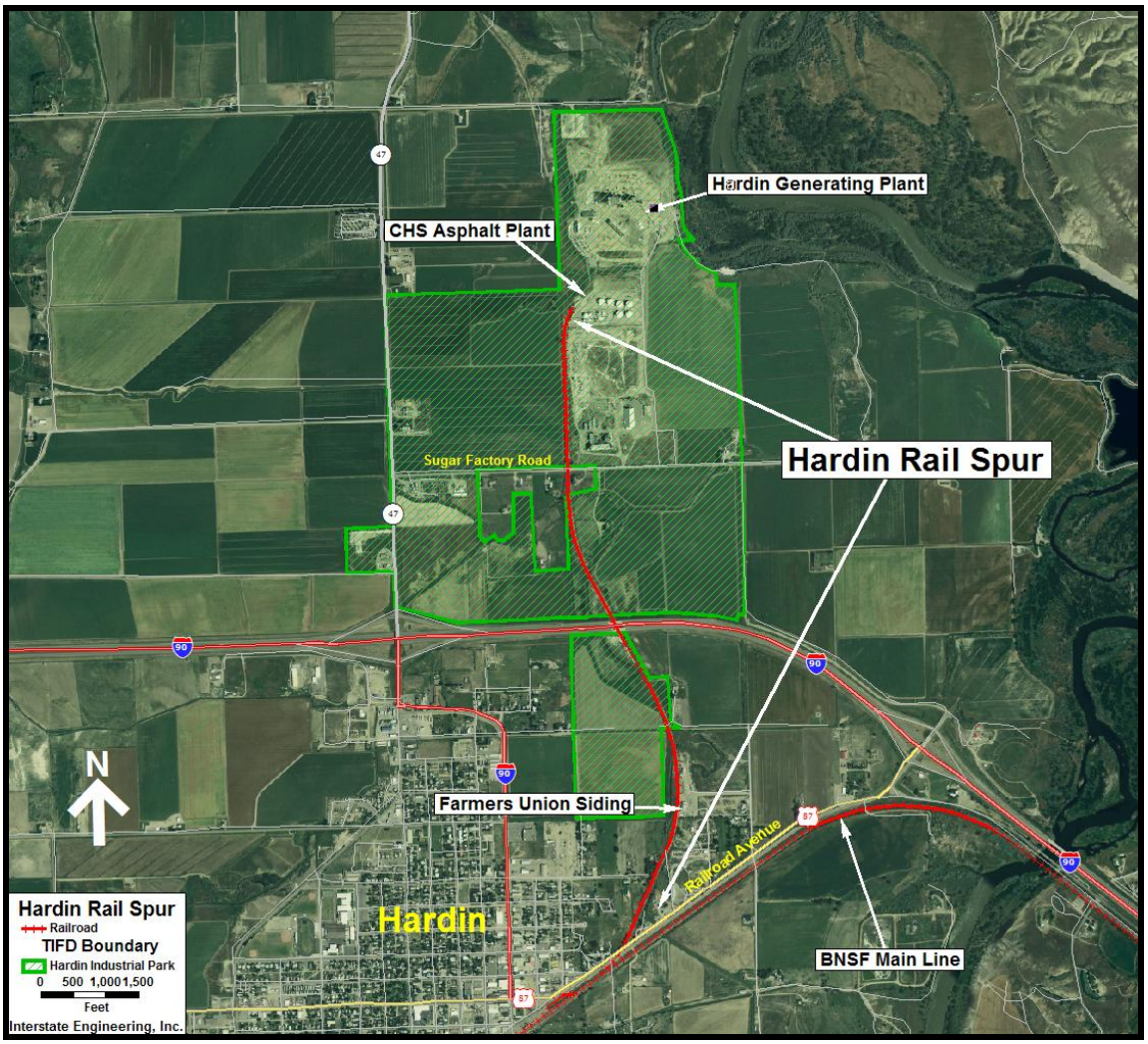

Figure 1 – Vicinity Map

Figure 2 – Existing Spur Typical Conditions

IMPROVEMENT OBJECTIVES

The City of Hardin and the Two Rivers Authority desire to improve the spur track to serve current and anticipated users within the Hardin Industrial Park. While the CHS asphalt operation is the only current user within the industrial park, potential users currently identified include the Hardin Generating Plant and a proposed coal-to-liquids plant. At anticipated full production, the coal-to-liquids operation would require delivery of up to 2.5 unit trains of coal each week. To provide rail service for delivery of coal and export of product, the existing spur will need to be reconstructed. In addition to reconstruction of the existing spur, construction of a new easterly connection to the BNSF main line track is also required for the proposed coal-to-liquids operation.

To accommodate unit train delivery of coal, adequate storage must be provided off of the main line. With unit coal trains running about 6,900 feet in length, storage of over 7,000 feet is required either on private property or on the spur track itself. The potential storage length on the spur right-of-way north of Sugar Factory Road is only about 5,400 feet, inadequate for storage of unit coal trains. However, south of Sugar factory Road, the potential exists for storage of up to 7,600 feet without blocking any at-grade crossings (6,800 feet on the east main line connection). Figure 3 shows potential storage lengths along the existing spur right-of-way.

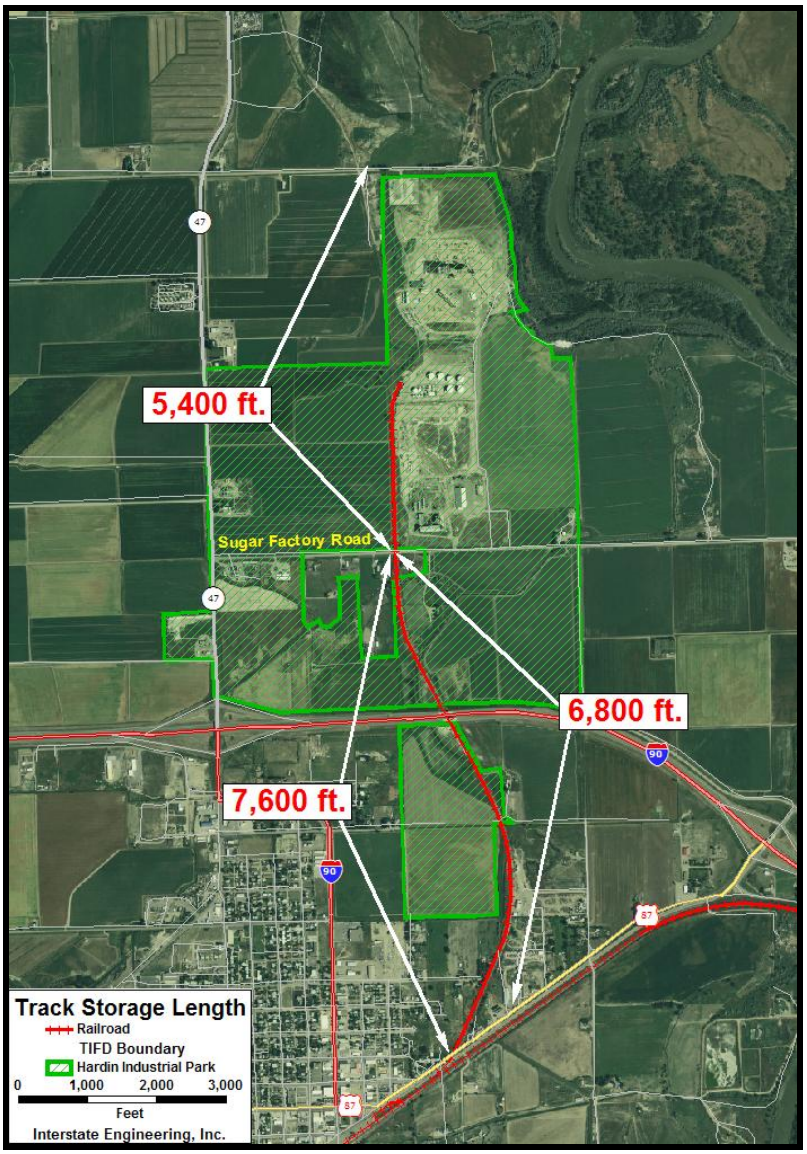

Figure 3 – Potential Track Storage

To provide adequate storage and still be able to provide rail service into the Hardin Industrial Park, the option of providing two parallel spur tracks was considered. While not necessary for current needs, it was determined that reconstruction of the existing spur should anticipate construction of a second, parallel spur track to meet future needs of both storage and spur traffic demands. This consideration is particularly important at the I-90 underpass and at locations of future turnouts as they cannot be placed within a curve.

FUTURE POTENTIAL SPUR TRACK CUSTOMERS

While current use of the spur track is minimal (CHS asphalt plant), the establishment of the Hardin Industrial Park creates potential for significant use of the spur. With the creation of the Hardin Industrial Park, almost $10 million worth of public infrastructure improvements have been completed to-date. Improvements bring City water and wastewater services to the lands within the industrial

park, as well as paved streets with excellent highway access. Improvements are sized to support heavy industrial development and the industrial park is attracting some potential developers.

The Hardin Generating Station, a 119 MW coal burning power plant, was the first development within the industrial park. Located in the northern end of the industrial park, the power plant is situated adjacent to the spur right-of-way (the track along this portion has been removed). Without rail access, the generating station currently uses trucks to ship coal to the facility. Over 50 trucks a day supply coal to the facility. Managers at the Hardin Generating Station have indicated a desire to receive coal via rail, citing reliability and cost as factors.

During design and construction of infrastructure improvements, a company named Rocky Mountain Ethanol owned property occupied by the old sugar factory. Located adjacent to the railroad spur just north of Sugar Factory Road, Rocky Mountain Ethanol had planned to purchase the spur line and develop it as a means of raw material delivery and product shipping. Unfortunately, the development never materialized and the land still awaits development.

More recently, New World Energy has expressed a strong interest with developing a coal-to-liquids facility west of the railroad spur on land owned by Robert Koyama. Plans for development of this facility *require* rail access to meet their ultimate requirement for delivery of 2.5 unit trains of coal each week and shipment of 40-50 cars of product each week. Representatives of New World Energy have indicated that they will need a double-track spur connection to the BNSF mainline in addition to a loop track facility on their property. New World Energy and the Hardin Generating Station have both expressed a desire to include an easterly connection to the BNSF mainline as part of any spur reconstruction. Without the easterly mainline connection, shipment of raw materials and finished product become more problematic and potentially more costly.

In addition to currently identified potential rail customers within the Hardin Industrial Park, it is certainly reasonable to expect that the existence of a usable rail spur may attract other development that would desire rail access. It is also reasonable to expect that other users may not require unit trail deliveries, but instead may want "odd-lot service"…delivery or pick up of less than full unit trains. Currently, a siding approximately 3,900 feet long exists within Hardin along the BNSF mainline. The siding starts about 1,800 feet from the westerly wye of the existing spur track. The siding currently serves about 10 industries taking about 600 cars per year. The existing Hardin siding is shown in Figure 4.

The existing siding is not currently long enough to reliably handle odd-lot trains. Because a unit-length train cannot clear the mainline track, sometimes cars destined for Hardin cannot be delivered since trains may not be able to stop due to mainline traffic demands. If a stop cannot be made, the cars must be routed to Forsyth, then to Sheridan, WY to make another delivery attempt. To obtain reliable delivery of odd-lot cars, the siding will need to be lengthened/extended.

Over 650 acres of developable land is within the Hardin Industrial Park north of I-90. With current development desiring rail access and potential developers requiring rail access, reconstruction of the spur track will provide needed transportation infrastructure to the industrial park.

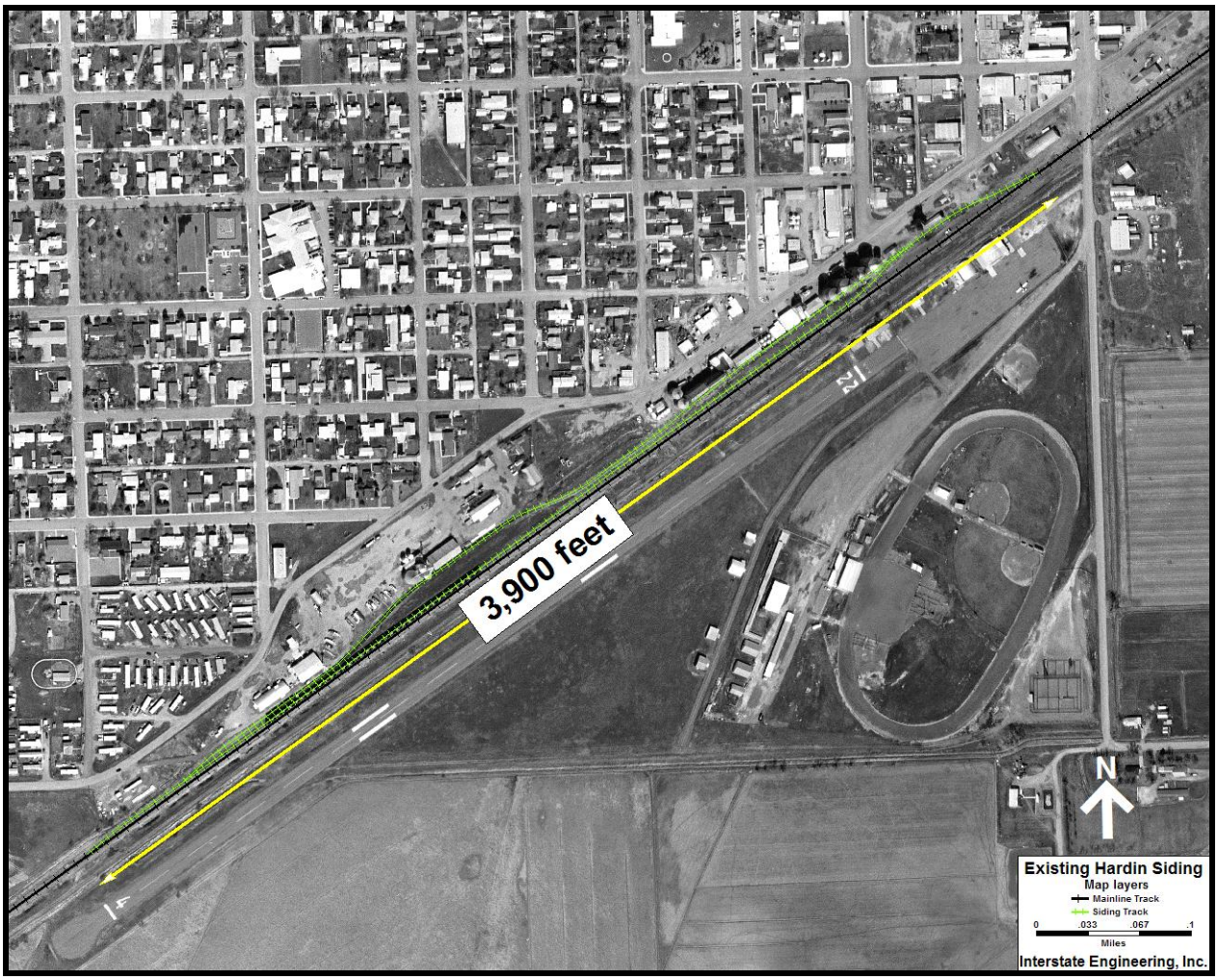

Figure 4 – Hardin Siding

SPUR TRACK OWNERSHIP & OPERATIONS

The existing spur track is owned and operated by the BNSF. With reconstruction improvements, several options exist for continued ownership:

1. Maintain existing BNSF ownership, or
2. Two Rivers Authority or City of Hardin buys spur track and siding, or
3. Two Rivers Authority or City of Hardin leases spur track (with or without option to buy).

Based on the current volume of use for the spur and siding track, it probably does not make economic sense for the TRA or City to own or lease/operate the spur and siding. With increased volume, ownership and or lease options become more attractive. Should the TRA/City decide they want to own/lease the spur and siding, they should consider utilizing a short line operator and would need to structure a lease carefully to handle legal liability issues.

While the BNSF has no interest on rehabilitating the spur based on current traffic and needs, the TRA or City may wish to examine legal and investment issues beyond the scope of this study before investing money on spur reconstruction.

POTENTIAL PROJECT PHASING

Future potential users within the industrial park demonstrate the ultimate need for a double-track spur to adequately serve demands and potentially provide storage for rail cars. With the timing of development in question, some sort of phased spur reconstruction seems realistic to enable costs to be incurred as the need develops. Any phased development of the spur track must, of course, be conducted with the ultimate project in mind to avoid unnecessary costs or constraints for future construction.

As development currently exists within the Hardin Industrial Park, only two current spur track users exist along its length; the CHS asphalt plant and the Farmers Union Elevator. Since rail spur demand at these facilities consists of low volume, infrequent use, reconstruction of the existing spur track is not necessary to meet the needs of existing users.

Since the Hardin Generating Station has expressed interest in rail access for coal shipments, and since they are an existing development within the industrial park, any initial reconstruction of the spur should consider their needs in terms of track design and connections. In addition to reconstruction of the existing spur track from the BNSF mainline to the Hardin Generating Plant, coal delivery will also require construction of track on-site. On-site track needs to be configured in such a manner so as to allow a unit trail (approximately 7,000 feet long) to be unloaded without blocking an at-grade roadway crossing. A loop track alternative was developed that will provide the required storage. The alternative is shown in Figure 5. The loop track alternative was developed using 7°30' curves, the maximum desired for industrial track, and would likely also require construction of a separate siding where it is adjacent to the spur track.

While the loop alternative does provide adequate storage for a unit train, construction of the loop alternative does not come without impacts. Constructed as shown in the figure, the loop track will cross Industrial Park Road. This crossing will need to be grade-separated (overpass or underpass) since it would be blocked during coal off-loading operations for long periods of time. An overpass (road over tracks) at this location will make access to the CHS asphalt plant difficult as it is located only about 500 feet away from the loop track crossing which will likely result with a grade differential between the property and the roadway. A roadway overpass will also make access problematic for the property immediately to the west of Industrial Park Road near the overpass (owned by RMP Montana Acquisition, Inc.). A roadway underpass, while less disruptive for land access due to its shorter transitions (less grade change for the road) is likely infeasible at this location due to the relatively high water table present throughout most of the industrial park.

Should the Hardin Generating Station make necessary on-site improvements to accept coal by rail, the spur track between the generating station and the BNSF mainline will need to be reconstructed to handle the unit trains. Coal deliveries will also benefit from construction of the missing easterly spur-to-mainline connection, but it would not be necessary to double-track the spur track with only the addition of the generating station rail traffic.

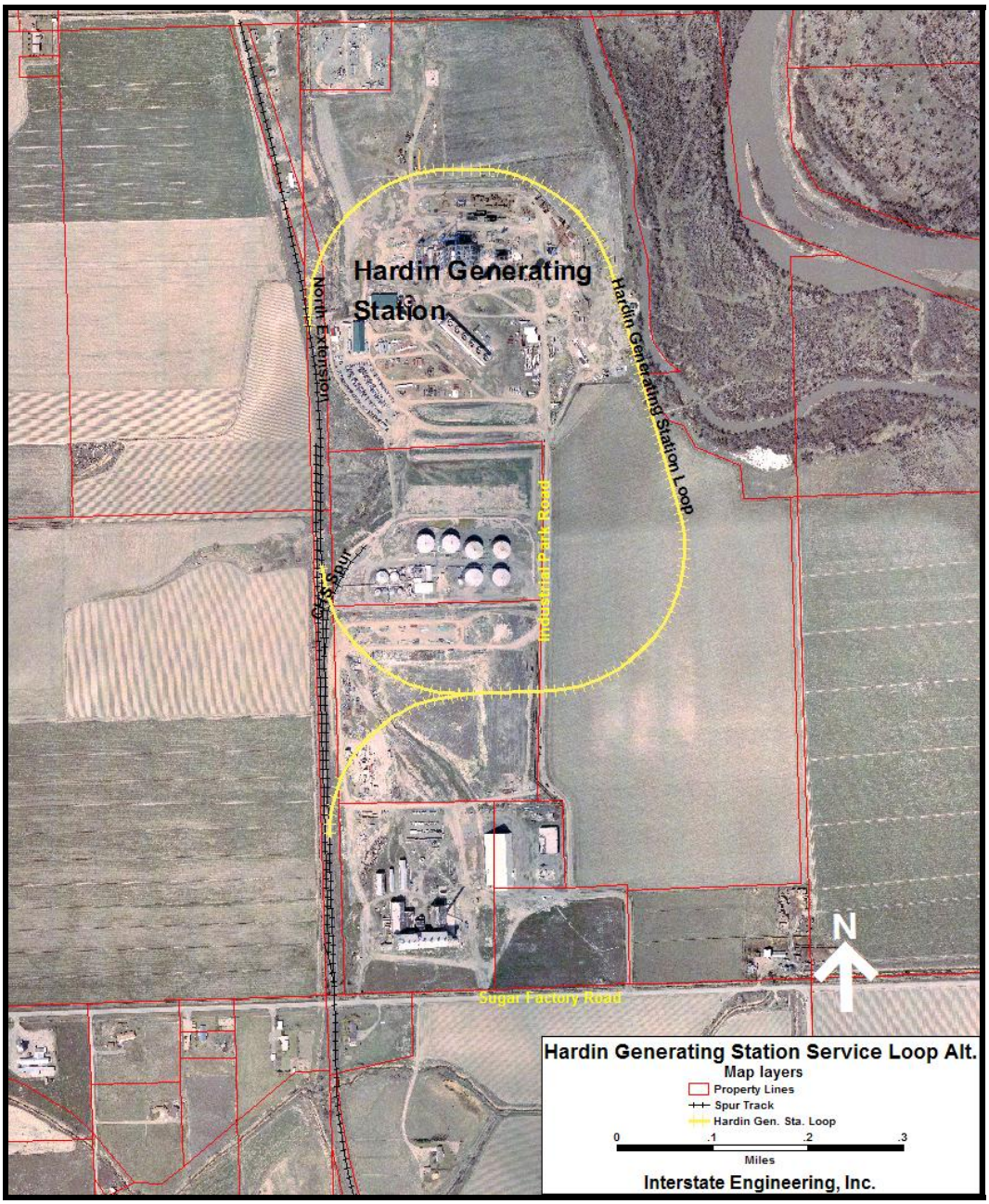

Figure 5 – Hardin Generating Station Loop Track Alternative

The development of the New World Energy coal-to-liquids project, with or without rail delivery of coal to the generating station, will trigger the need to reconstruct the spur as a double-track facility. The developer of the New World Energy project has made it clear that the volume of coal deliveries and product shipment will make operating from a single-track spur connection impossible. The developer has also stated that construction of an eastbound connection to the BNSF mainline track is also mandatory for development of the coal-to-liquids facility. The developer of the New World Energy project has provided a track layout necessary to serve that facility. The layout is shown in Figure 6.

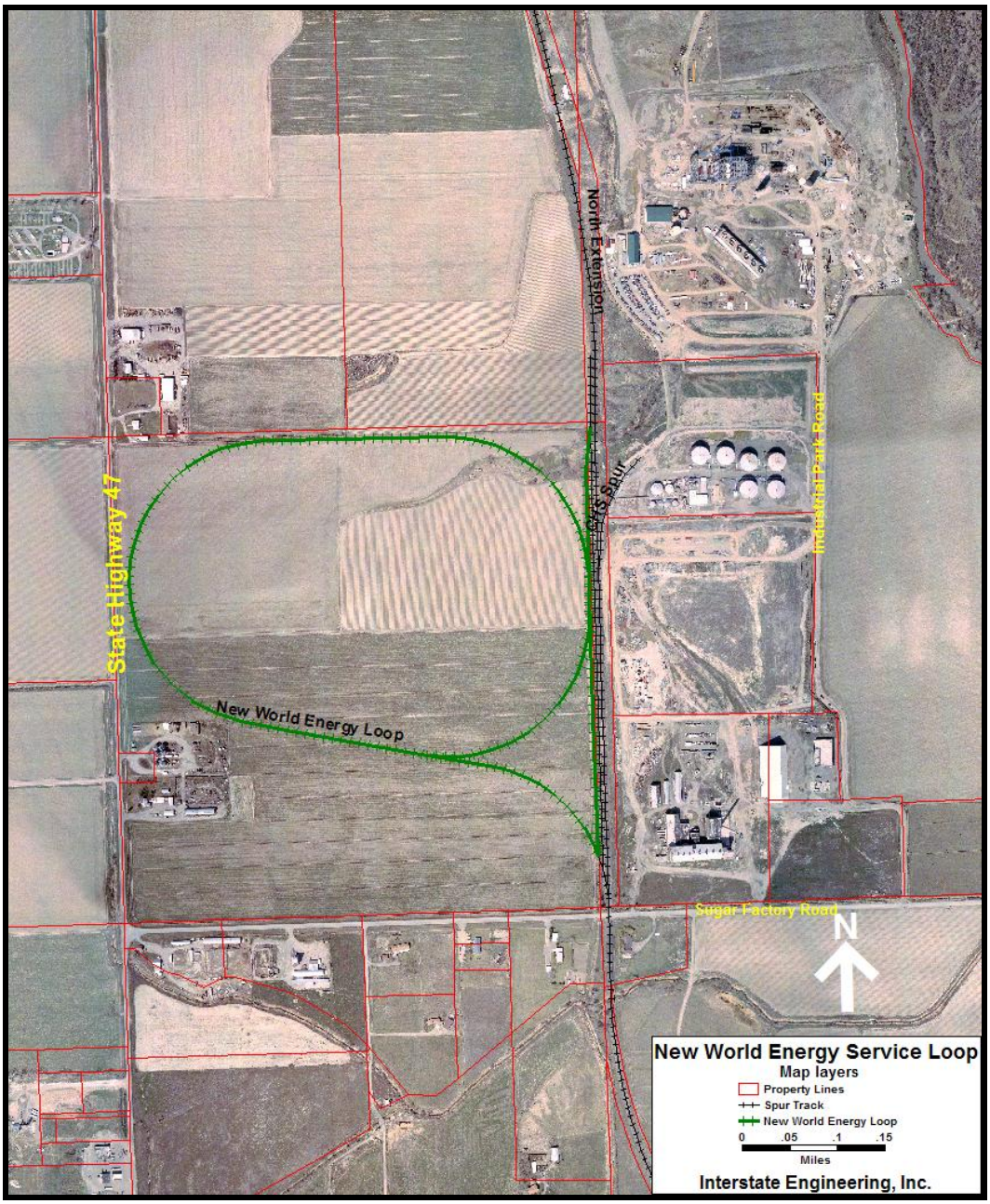

Figure 6 – New World Energy Loop Track

With just these two users in mind, it becomes obvious that a double-track spur will eventually be necessary, but that a single-track spur could be utilized as a first phase should the generating station proceed with coal delivery by rail before the coal-to-liquids plant is developed. In either case, the eastbound spur connection to the BNSF mainline will be desirable/necessary, and any single-track spur construction should be designed to eventually accommodate a second spur track.

DESIGN CRITERIA

Conceptual design for reconstruction of the spur track, construction of the easterly main line connection, and the north extension was conducted to meet the design criteria presented in the BNSF "Design Guidelines for Industrial Track Projects" document dated March, 2004. That document provides design standards for industrial trackage and unit train/loop facilities. Key design criteria having the greatest impact to this project are summarized below:

- Maximum degree of curve - 9°30' (603.80' radius), with a minimum tangent of 50 feet between reversing curves.
- No turnouts (switches) allowed in a curve.
- Maximum grade limited to 1.5%.
- Main line turnouts to be minimum new No. 11-136 lb.
- Spur turnouts to be minimum No. 9-112 lb.
- Minimum clearances:
    - 14'0" center-to-center spacing for any two tracks (not including main line).
    - 22'6" minimum vertical clearance under highway bridges.
    - 8'6" center-to-structure horizontal clearance under highway bridges.

DESIGN CONCEPT

Meeting the improvement objectives while staying within the design guidelines is not straight forward as it may appear. Several issues that impact cost of initial construction and design of the spur were identified:

1. Construction of the easterly main line connection using a 9°30' curve impacts existing private property and structures (buildings), and will require acquisition of right-of-way. In addition, using the design curve will result with the connection to the spur occurring in a curve (not allowed) and will impact the existing Farmers Union Elevator siding. See Figure 7.
2. Construction of the northerly extension of the spur within existing rights-of-way will require relocation of one or two residential structures and associated access drives that appear to encroach onto BNSF right-of-way. See Figure 8.

For purposes of this feasibility study, the following resolution of issues is proposed:

1. Rather than reconstructing the existing spur on its current alignment, construction of a single spur track will be positioned to allow construction of a second spur track without having to relocate the first track.
2. With the exception of the easterly connection to the BNSF mainline, sufficient right-of-way (100 ft.) exists along the entire length of the spur line to accommodate a double-track spur. We will assume that the BNSF right-of-way is cleared of all encroachments prior to spur construction at no cost to the project.
3. A total reconstruction/realignment of the existing spur line will be assumed where the new easterly mainline connection joins the spur track to create a tangent section to accommodate the wye, including realignment of the Farmers Union Elevator siding.

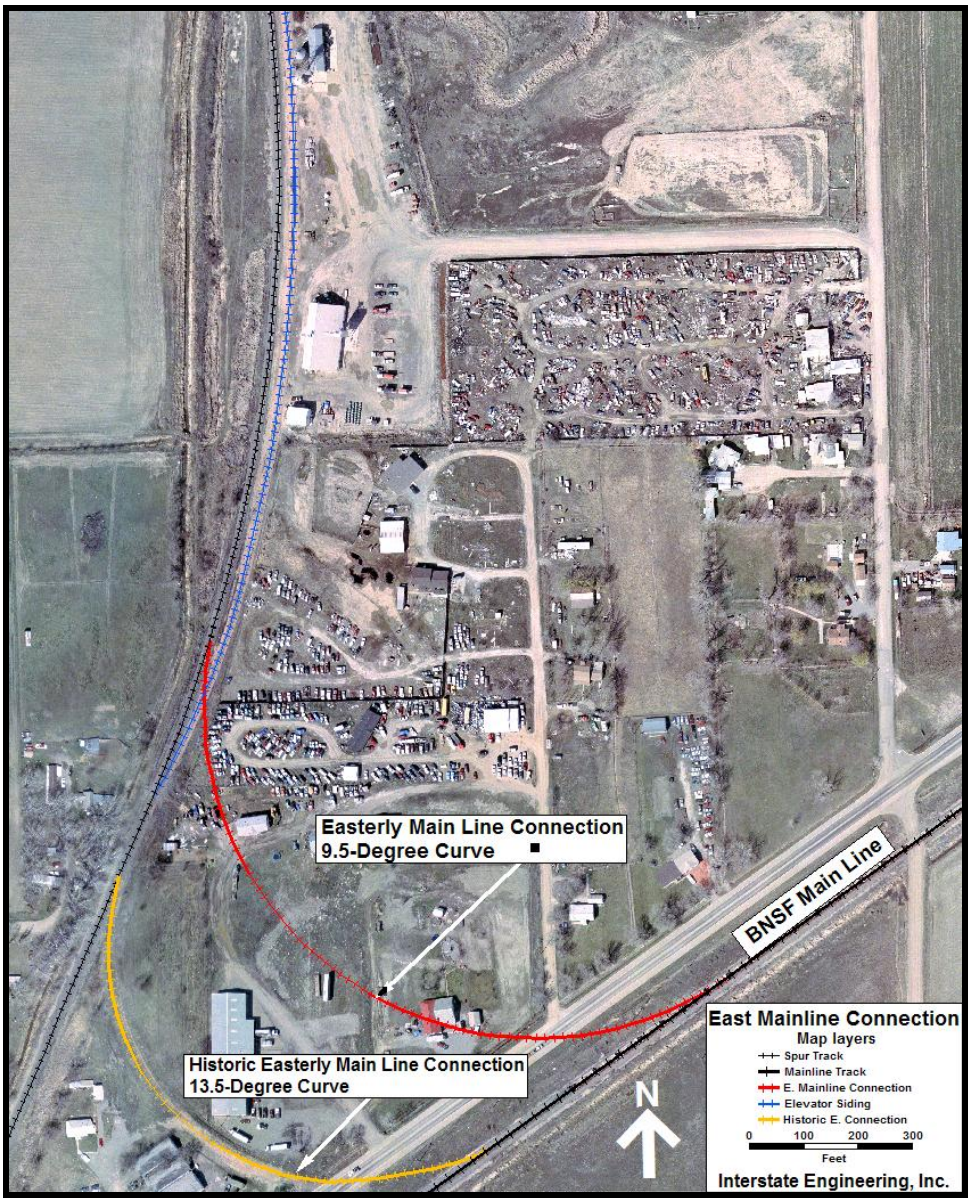

Figure 7 – East Main Line Connection Issues

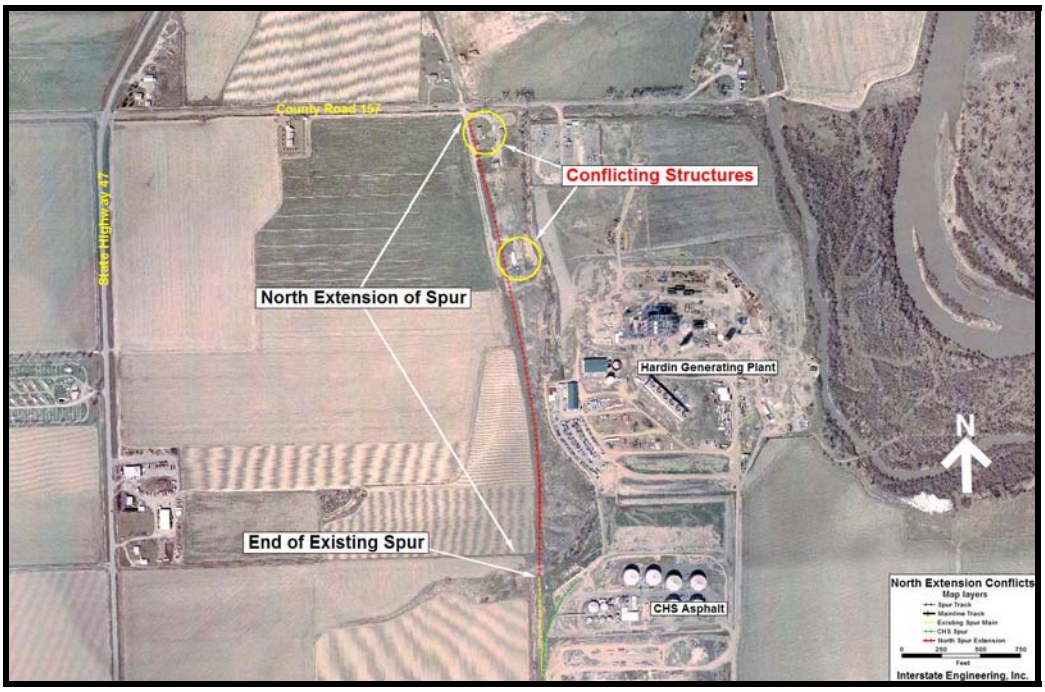

Figure 8 – Potential North Extension Conflicts

PRELIMINARY CONSTRUCTION COST ESTIMATE

To estimate costs, this project was separated into four main components:

1. Reconstruction of the existing spur as a single track (Phase I),
2. Addition of a second spur track (Phase II),
3. Construction of a new easterly connection to the BNSF main line, and
4. Construction of a new northerly extension of the spur to the end of existing right-of-way (at County Road 157) as a double-spur track.

For purposes of this estimate, no salvage value was credited for the existing rail or ties as these are currently property of the BNSF. There are currently 19 drainage or irrigation structures along the existing spur, and there used to be three additional structures when the northerly extension track existed. It is assumed that structures will be replaced with similarly sized new structures as part of this project. This is not the case, however, for the bridge that currently exists at the Whitman Coulee crossing. At this location, a double-cell concrete box culvert is assumed to replace the timber bridge. All drainage/irrigation structures will be installed from right-of-way to right-of-way to accommodate the future parallel track and to keep private irrigation structures beyond the right-of-way of the railway. Figure 9 shows existing drainage/irrigation structures. Structure information is tabulated in Table 1.

For purposes of spur reconstruction, it is assumed that all existing ballast and subballast will be removed. Existing subgrade will be reconditioned, widened (to accommodate second track) with imported material, and compacted. Due to poor soils generally found in the area, it was assumed that a geotextile separation fabric will be installed between the subgrade and subballast. It is assumed that the existing vertical alignment will be maintained, and that imported embankment will be required to widen the subgrade for the eventual addition of a second spur track. It was further assumed that all street/highway at-grade crossings would be fitted with protection consisting of signs, lights, bells, and gates.

The BNSF Economic Development branch provided track development costs based on their experience with other projects. Their costs are for new track, including right-of-way acquisition and may not be completely appropriate for use where track reconstruction is planned and right-of-way already exists. Table 2 shows per-mile costs used by the BNSF for new track development.

For purposes of this estimate, more detail is warranted. Quantities of major construction elements were estimated for each component of this project. Unit costs were estimated based on our past project experience and conversations with BNSF personnel and contractors. Engineering design and construction administration was estimated at 12% of construction cost, and a 20% contingency was added. The following sub-sections discuss construction elements of component and provide our preliminary estimate of design/construction cost. Details of the cost estimates are included.

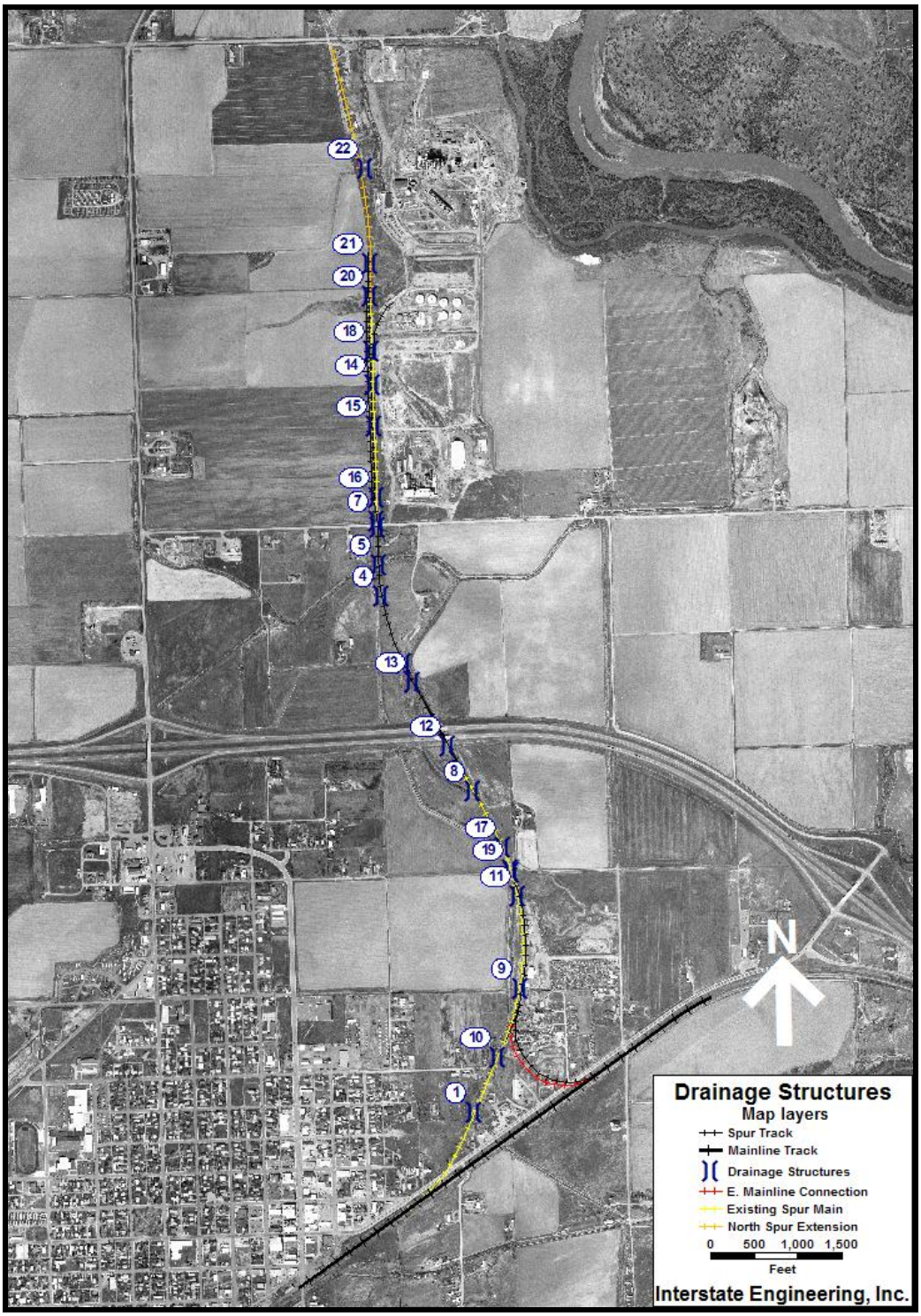

Figure 9 – Drainage/Irrigation Structure Inventory

Table 1 – Drainage/Irrigation Structure Inventory

Structure Number	Type	Size	Material
1	Bridge	20 ft. Span	Wood
2	Drainage	36 in.	Concrete
3	Irrigation	2~18 in.	Concrete
4	Irrigation	12 in.	W.I.P.
5	Bridge	84 ft. Span	Wood
6	Irrigation	18 in.	Concrete
7	Irrigation	24 in.	Concrete
8	Drainage	24 in.	Concrete
9	Drainage	36 in.	Concrete
10	Irrigation	18 in.	Concrete
11	Drainage	2~36 in.	Concrete
12	Irrigation	2~18 in.	Concrete
13	Drainage	18 in.	Concrete
14	Irrigation	24 in.	Concrete
15	Irrigation	12 in.	W.I.P.
16	Irrigation	24 in.	Concrete
17	Irrigation	18 in.	Concrete
18	Irrigation	12 in.	W.I.P.
19	Irrigation	12 in.	W.I.P.
20	Bridge (Hist.)	84 ft. Span	Wood
21	Irrigation (Hist.)	12 in.	W.I.P.
22	Drainage	2~48 in.	Concrete

Table 2 – BNSF Track Development Costs

ITEM	Cost per Mile	
Administration & Legal	$	50,000
Land, Structure, ROW Appraisal	$	300,000
Architecture & Engineering	$	50,000
Project Inspection	$	50,000
Site Work	$	1,500,000
Construction	$	200,000
Equipment	$	100,000
Miscellaneous	$	50,000
Subtotal	$	2,300,000
10% Contingency	$	230,000.0
TOTAL	$	2,530,000.0

Reconstruct Existing Spur (Phase I)

This portion of the cost estimate provides a cost estimate for reconstruction of the existing spur main. This element involves 10,980 lineal feet of track, replacement of 18 drainage/irrigation structures, and construction of a new double 8 ft. x 5 ft. concrete box culvert for Whitman Coulee. Also included are new No. 9 – 136 lb. turnouts for the Hardin Generating Station, for the existing CHS spur, and for the existing Farmers Union elevator siding (both ends). Turnouts are also included for double track cross-over locations associated with the New World Energy development. A new turnout was not included for the existing connection to the BNSF main line. New at-grade crossing protection for the Railroad Avenue (US 87) crossing is also included. For initial construction, it is assumed that protection at Railroad Avenue (US 87) will consist of gates, lights and bells. No additional protection at the Sugar Factory Road at-grade crossing is anticipated due to low exposure at this location, however costs of adding gates, lights, and bells are included. As part of Phase I construction, earthwork for the second spur track (Phase II) will also be completed.

Based on the work identified, we estimate it will cost approximately $6.21 million to provide new track for the extent of the existing spur. Costs include removal of existing track, ballast, and subballast, and replacement with reconditioned subgrade, new subballast, ballast, ties, and 136 lb. rail. Earthwork for the future second spur track is also included. Details of this cost estimate are attached to this letter.

Add Second Parallel Spur (Phase II)

This portion of the cost estimate provides a cost estimate for construction of a second, parallel spur track. This element also involves 10,980 lineal feet of track, but will not require any new or extended drainage structures. Included are new No. 9 – 136 lb. turnouts for the proposed coal-to-liquids plant and for the Hardin Generating Station. No additional protection at the Sugar Factory Road at-grade crossing is anticipated due to low exposure at this location.

Based on the work identified, we estimate it will cost approximately $4.04 million to provide a new second spur track for the extent of the reconstructed spur (Phase I). Costs include new subballast, ballast, ties, and 136 lb. rail. Details of this cost estimate are attached to this letter.

Construct New East Main Line Connection

This portion of the cost estimate provides a cost estimate for new construction of a connection between the existing spur track and the BNSF main line to the east. This element involves new construction and right-of-way acquisition for about 1,450 feet of track. Included in this cost estimate are construction of a No. 11 – 136 lb. turnout from the main line track. A No. 9 – 136 lb. turnout to connect to the spur track was included with the Phase I cost estimate. At-grade crossing protection (signs, lights, bells, and gates) for the Railroad Avenue (US 87) crossing and a single drainage crossing (36") is also anticipated within this segment.

It should be noted that this segment will require new right-of-way acquisition and compensation for loss of businesses/residences unless the BNSF allows a less-than-standard radius curve for this connection. Use of a 10° curve may allow construction without direct impacts to structures. Costs for right-of-way acquisition have been estimated at $100,000 per acre and may or may not reflect actual cost of acquisition of necessary rights-of-way. With approval for a design deviation for curvature, right-of-way impacts may be reduced. As currently anticipated, right-of-way will need to be acquired from five (5) different property owners as follows:

1. Jerry Killian – approximately 0.5 acres, including residence structure.
2. Mike D. Dimich & Sons – approximately 0.8 acres.
3. Juell and Donna Davisson – approximately 0.35 acres, including structure (industrial).
4. Joe and Beth Ann Donovan – approximately 0.25 acres.

Based on the work identified, we estimate it will cost approximately $1.41 million to provide a new spur connection to the existing BNSF main line in an easterly direction. Costs include embankment, subballast, ballast and rail/ties, right-of-way, turnout at the main line, and signalization crossing protection at a new at-grade crossing of Railroad Avenue (US 87). Details of this cost estimate are attached to this letter.

Northerly Extension of Spur

This portion of the cost estimate provides a cost estimate for new construction of a northerly double track extension of the existing spur track. The BNSF retains rights-of-way for the original track alignment of the CB&Q Railway north to the intersection with County Road 157. This is about 2,935 feet beyond the existing extent of the spur line. This extension will be useful for track storage, and for a potential connection for service to the Hardin Generating Plant.

This element includes new construction of about 2,935 feet of double spur track, and includes construction/restoration of drainage or irrigation structures. The original CB&Q rail line along this stretch included two drainageway crossings and one irrigation crossing. The drainageway crossings included a timber bridge 84 feet long consisting of six (6) fourteen (14) foot spans, and a crossing consisting of a twin 48" culvert installation. An irrigation crossing of 12" diameter also existed along this segment. For purposes of this estimate, the bridge will be replaced with a 5' x 8' reinforced concrete box culvert, and the other drainage crossing will be replaced with twin 48" concrete culverts. The irrigation crossing will be restored using a 15" concrete pipe.

For the most part, this portion of the spur corridor remains relatively unobstructed. Two residential structures exist along this alignment that may impede construction. The structures and their associated access drives (shown in Figure 6) may be located on BNSF right-of-way and may need to be removed/relocated. Costs for removal of structures are not included in this estimate.

Based on the work identified, we estimate it will cost approximately $1.41 million to provide a double track northerly extension from the existing spur line to County Road 157. Costs include embankment, subballast, ballast and rail/ties, and drainage structures. Costs also include a turnout for the Hardin Generating Plant.

Total Project Costs

The four components of this estimate will result with a new double-track spur line to the north extent of the Hardin Industrial Park and a new easterly connection with the BNSF main line track. The new main line connection will enable the industrial park to send/receive shipments both east and west on the BNSF main line.

Total cost of all three components is $13.06 million. Without the northern extension, the Hardin spur can be reconstructed as a single track spur with an easterly connection to the BNSF main line for $7.61 million, including engineering, construction, and construction administration.

It should be noted that these construction cost estimates are preliminary and are not based on final engineering. With final engineering, cost of structures or specific components of the project may change (specifically right-of-way). Cost estimate details are shown in Table 3.

Table 3 – Cost Estimate Details

HARDIN INDUSTRIAL PARK RAIL SPUR
Combined Project Elements

PRELIMINARY COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Total Price	Notes
101	Bonding, Insurance	1	LS	$ 485,698	$ 485,698	Estimated at 5% of Total Bid
102	Mobilization/Demobilization (5% max.)	1	LS	$ 485,698	$ 485,698	Estimated at 5% of Total Bid
103	Traffic Control	1	LS		$ 5,500	
104	Erosion Control & BMP's	1	LS		$ 13,000	Includes SWPPP permit & fees
105	Seeding & Site Restoration	8.0	Ac	$ 6,000	$ 48,000	20' both sides of track
106	Remove Existing Rail & Ties	11,180	LF	$ 15	$ 167,700	
107	Unclassified Excavation (ballast & subballast)	10,400	CY	$ 6	$ 62,400	
108	Embankment	21,995	CY	$ 12	$ 263,940	
109	Subgrade Preparation	49,500	SY	$ 4	$ 198,000	
110	Geotextile Fabric	62,690	SY	$ 1	$ 62,690	Separation fabric under subballast
111	Sub-Ballast	10,465	CY	$ 12	$ 125,580	
112	New Ballast, Ties, and Rail	26,585	LF	$ 150	$ 3,987,750	Placement on prepared sub-ballast
113	#11 Turnout	1	EA	$ 200,000	$ 200,000	
114	#9 Turnout	14	EA	$ 150,000	$ 2,100,000	
115	15" Concrete Culvert	600	LF	$ 30	$ 18,000	Replacement of all previous
116	18" Concrete Culvert	840	LF	$ 40	$ 33,600	Replacement of all previous
117	24" Concrete Culvert	480	LF	$ 50	$ 24,000	Replacement of all previous
118	36" Concrete Culvert	440	LF	$ 80	$ 35,200	Replacement of all previous
119	48" Concrete Culvert	240	LF	$ 100	$ 24,000	Replacement of all previous
120	Single 5' x 8' RCBC	120	LF	$ 1,000	$ 120,000	Replacement for previous bridge crossing
121	Double 5' x 8' RCBC	120	LF	$ 2,000	$ 240,000	Replacement for previous bridge crossing
122	Signalize Grade Crossing	3.0	EA	$ 250,000	$ 750,000	Railroad Avenue crossing
123	ROW Acquisition	1.9	Ac	$ 100,000	$ 190,000	
124	Unclassified Excavation for Widening	12,200	CY	$ 6	$ 73,200	Subgrade over-excavation for widening
125					$ -	
126					$ -	
127					$ -	
128					$ -	
129					$ -	
130					$ -	
131					$ -	
132					$ -	
133					$ -	
134					$ -	
135					$ -	
136					$ -	
				SUBTOTAL CONSTRUCTION:	$ 9,713,956	
				ENGINEERING & CONST. ADMIN:	$ 1,165,675	Calculated at 12% of Construction
				TOTAL DESIGN & CONSTRUCTION:	$ 10,879,630	
				CONTINGENCY (20%):	$ 2,175,926	
				GRAND TOTAL:	**$ 13,055,556**	

Table 3 – Cost Estimate Details (cont.)

HARDIN INDUSTRIAL PARK RAIL SPUR

Reconstruction of Existing Spur Track (Single Track- Phase I)

PRELIMINARY COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Total Price	Notes
101	Bonding, Insurance	1	LS	$ 230,889	$ 230,889	Estimated at 5% of Total Bid
102	Mobilization/Demobilization (5% max.)	1	LS	$ 230,889	$ 230,889	Estimated at 5% of Total Bid
103	Traffic Control	1	LS	$ 2,500	$ 2,500	For At-grade Crossing Construction
104	Erosion Control & BMP's	1	LS	$ 10,000	$ 10,000	Includes SWPPP Permit & Fees
105	Seeding & Site Restoration	5	Ac	$ 6,000	$ 30,000	10' Both Sides of single track
106	Remove Existing Rail & Ties	11,180	LF	$ 15	$ 167,700	Includes 200' for Farmer's Union Siding
107	Unclassified Excavation	10,400	CY	$ 6	$ 62,400	Excavation/Removal Of Ballast & Sub-Ballast Material
108	Embankment	4,275	CY	$ 12	$ 51,300	Compacted Fill Material & Widening
109	Subgrade Preparation	25,000	SY	$ 4	$ 100,000	Scarify & Recompact Subgrade
110	Geotextile Fabric	29,300	SY	$ 1	$ 29,300	Separation Fabric Under Subballast - Single Track
111	Sub-Ballast	4,900	CY	$ 12	$ 58,800	6" Thickness for 24' Width (single track)
112	New Ballast, Ties, and Rail	11,200	LF	$ 150	$ 1,680,000	Placement on Prepared Subballast+ 200 LF(Item 106)
113	#11 Turnout		EA	$ 200,000	$ -	Reuse Existing at BNSF Mainline
114	#9 Turnout	7	EA	$ 150,000	$ 1,050,000	Install for existing and potential users (estimated)
115	15" Concrete Culvert	480	LF	$ 30	$ 14,400	Replacement of All Existing
116	18" Concrete Culvert	840	LF	$ 40	$ 33,600	Replacement of All Existing
117	24" Concrete Culvert	480	LF	$ 50	$ 24,000	Replacement of All Existing
118	36" Concrete Culvert	360	LF	$ 80	$ 28,800	Replacement of All Existing
119	48" Concrete Culvert		LF	$ 100	$ -	
120	Single 8' x 5' RCBC		LF	$ 1,000	$ -	
121	Double 8' x 5' RCBC	120	LF	$ 2,000	$ 240,000	Whitman Coulee Structure
122	Signalize Grade Crossing	2	EA	$ 250,000	$ 500,000	Railroad Avenue Crossing- Contingent Item SFR
123	ROW Acquisition		Ac	$ 100,000	$ -	
124	Unclassified Excavation for Widening	12,200	CY	$ 6	$ 73,200	Subgrade over-excavation for widening
125					$ -	
126					$ -	
127					$ -	
128					$ -	
129					$ -	
130					$ -	
131					$ -	
132					$ -	
133					$ -	
134					$ -	
135					$ -	
136					$ -	
				SUBTOTAL CONSTRUCTION:	$ 4,617,778	
				ENGINEERING & CONST. ADMIN:	$ 554,133	Calculated at 12% of Construction
				TOTAL DESIGN & CONSTRUCTION:	$ 5,171,911	
				CONTINGENCY (20%):	$ 1,034,382	
				GRAND TOTAL:	**$ 6,206,293**	

Table 3 – Cost Estimate Details (cont.)

HARDIN INDUSTRIAL PARK RAIL SPUR
Construction of Second Spur Track (Phase II)

PRELIMINARY COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Total Price	Notes
101	Bonding, Insurance	1	LS	$ 150,183	$ 150,183	Estimated at 5% of Total Bid
102	Mobilization/Demobilization (5% max.)	1	LS	$ 150,183	$ 150,183	Estimated at 5% of Total Bid
103	Traffic Control	1	LS	$ 2,500	$ 2,500	For at-grade crossing construction
104	Erosion Control & BMP's	1	LS	$ 1,500	$ 1,500	Includes SWPPP permit & fees
105	Seeding & Site Restoration		Ac	$ 6,000	$ -	
106	Remove Existing Rail & Ties		LF	$ 15	$ -	Removed during Phase I
107	Unclassified Excavation		CY	$ 6	$ -	Removed during Phase I
108	Embankment		CY	$ 12	$ -	Embankment for 2nd track constructed with Phase I
109	Subgrade Preparation	24,500	SY	$ 4	$ 98,000	Clear, scarify & recompact subgrade
110	Geotextile Fabric	17,100	SY	$ 1	$ 17,100	Separation fabric under subballast - single track
111	Sub-Ballast	2,850	CY	$ 12	$ 34,200	6" thickness for 14' width (remainder for double track)
112	New Ballast, Ties, and Rail	11,000	LF	$ 150	$ 1,650,000	Second track
113	#11 Turnout		EA	$ 200,000	$ -	
114	#9 Turnout	6	EA	$ 150,000	$ 900,000	Install for existing and potential users
115	15" Concrete Culvert		LF	$ 30	$ -	Replaced during Phase I
116	18" Concrete Culvert		LF	$ 40	$ -	Replaced during Phase I
117	24" Concrete Culvert		LF	$ 50	$ -	Replaced during Phase I
118	36" Concrete Culvert		LF	$ 80	$ -	Replaced during Phase I
119	48" Concrete Culvert		LF	$ 100	$ -	Replaced during Phase I
120	Single 8' x 5' RCBC		LF	$ 1,000	$ -	
121	Double 8' x 5' RCBC		LF	$ 2,000	$ -	Replaced during Phase I
122	Signalize Grade Crossing		EA	$ 250,000	$ -	Signalized during Phase I
123	ROW Acquisition		Ac	$ 100,000	$ -	
124	Unclassified Excavation for Widening		CY	$ 6	$ -	Base for 2nd track prepared with Phase I
125					$ -	
126					$ -	
127					$ -	
128					$ -	
129					$ -	
130					$ -	
131					$ -	
132					$ -	
133					$ -	
134					$ -	
135					$ -	
136					$ -	
				SUBTOTAL CONSTRUCTION:	$ 3,003,667	
				ENGINEERING & CONST. ADMIN:	$ 360,440	Calculated at 12% of Construction
				TOTAL DESIGN & CONSTRUCTION:	$ 3,364,107	
				CONTINGENCY (20%):	$ 672,821	
				GRAND TOTAL:	**$ 4,036,928**	

Table 3 – Cost Estimate Details (cont.)

HARDIN INDUSTRIAL PARK RAIL SPUR
New East Connection to Main Line

PRELIMINARY COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Total Price	Notes
101	Bonding, Insurance	1	LS	$ 52,294	$ 52,294	Estimated at 5% of Total Bid
102	Mobilization/Demobilization (5% max.)	1	LS	$ 52,294	$ 52,294	Estimated at 5% of Total Bid
103	Traffic Control	1	LS	$ 3,000	$ 3,000	For at-grade crossing construction
104	Erosion Control & BMP's	1	LS	$ 1,500	$ 1,500	Includes SWPPP permit & fees
105	Seeding & Site Restoration	1.5	Ac	$ 6,000	$ 9,000	20' both sides of track
106	Remove Existing Rail & Ties		LF	$ 15	$ -	
107	Unclassified Excavation (ballast & Sub-Ballast)		CY	$ 6	$ -	
108	Embankment	4,350	CY	$ 12	$ 52,200	Imported material for embankment (Est.)
109	Subgrade Preparation		SY	$ 4	$ -	
110	Geotextile Fabric	3,900	SY	$ 1	$ 3,900	Separation fabric under sub-ballast
111	Sub-Ballast	650	CY	$ 12	$ 7,800	6" thickness for 24' width
112	New Ballast, Ties, and Rail	1,450	LF	$ 150	$ 217,500	Placement on prepared sub-ballast
113	#11 Turnout	1	EA	$ 200,000	$ 200,000	Connection to BNSF main line
114	#9 Turnout		EA	$ 150,000	$ -	Provided during Phase I spur construction
115	15" Concrete Culvert		LF	$ 30	$ -	
116	18" Concrete Culvert			$ 40	$ -	
117	24" Concrete Culvert			$ 50	$ -	
118	36" Concrete Culvert	80	LF	$ 80	$ 6,400	Assumed new drainage structure
119	48" Concrete Culvert			$ 100	$ -	
120	Single 8' x 5' RCBC		LF	$ 1,000	$ -	
121	Double 8' x 5' RCBC		LF	$ 2,000	$ -	
122	Signalize Grade Crossing	1	EA	$ 250,000	$ 250,000	Railroad Avenue crossing
123	ROW Acquisition	2	Ac	$ 100,000	$ 190,000	Land costs only…no structure acquisition costs
124					$ -	
125					$ -	
126					$ -	
127					$ -	
128					$ -	
129					$ -	
130					$ -	
131					$ -	
132					$ -	
133					$ -	
134					$ -	
135					$ -	
136					$ -	
				SUBTOTAL CONSTRUCTION:	$ 1,045,889	
				ENGINEERING & CONST. ADMIN:	$ 125,507	Calculated at 12% of Construction
				TOTAL DESIGN & CONSTRUCTION:	$ 1,171,396	
				CONTINGENCY (20%):	$ 234,279	
				GRAND TOTAL:	**$ 1,405,675**	

Table 3 – Cost Estimate Details (cont.)

HARDIN INDUSTRIAL PARK RAIL SPUR
New North Extension to County Road 157 - Double Track

PRELIMINARY COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Total Price	Notes
101	Bonding, Insurance	1	LS	$ 52,553	$ 52,553	Estimated at 5% of Total Bid
102	Mobilization/Demobilization (5% max.)	1	LS	$ 52,553	$ 52,553	Estimated at 5% of Total Bid
103	Traffic Control		LS		$ -	
104	Erosion Control & BMP's	1	LS	$ 1,500	$ 1,500	Includes SWPPP permit & fees
105	Seeding & Site Restoration	1.5	Ac	$ 6,000	$ 9,000	10' both sides of double track
106	Remove Existing Rail & Ties		LF	$ 15	$ -	
107	Unclassified Excavation		CY	$ 6	$ -	
108	Embankment	13,370	CY	$ 12	$ 160,440	Estimated 3' fill for 41' width
109	Subgrade Preparation		SY	$ 4	$ -	
110	Geotextile Fabric	12,390	SY	$ 1	$ 12,390	Separation fabric under subballast
111	Sub-Ballast	2,065	CY	$ 12	$ 24,780	
112	New Ballast, Ties, and Rail	2,935	LF	$ 150	$ 440,250	Placement on prepared subballast
113	#11 Turnout		EA	$ 200,000	$ -	
114	#9 Turnout	1	EA	$ 150,000	$ 150,000	Hardin Generating Plant
115	15" Concrete Culvert	120	LF	$ 30	$ 3,600	Replacement of all previous
116	18" Concrete Culvert		LF	$ 40	$ -	
117	24" Concrete Culvert		LF	$ 50	$ -	
118	36" Concrete Culvert		LF	$ 80	$ -	
119	48" Concrete Culvert	240	LF	$ 100	$ 24,000	Replacement of previous
120	Single 8' x 5' RCBC	120	LF	$ 1,000	$ 120,000	Replacement for previous bridge crossing
121	Double 8' x 5' RCBC		LF	$ 2,000	$ -	
122	Signalize Grade Crossing		EA	$ 250,000	$ -	
123	ROW Acquisition		Ac	$ 100,000	$ -	
124					$ -	
125					$ -	
126					$ -	
127					$ -	
128					$ -	
129					$ -	
130					$ -	
131					$ -	
132					$ -	
133					$ -	
134					$ -	
135					$ -	
136					$ -	
				SUBTOTAL CONSTRUCTION:	$ 1,051,067	
				ENGINEERING & CONST. ADMIN:	$ 126,128	Calculated at 12% of Construction
				TOTAL DESIGN & CONSTRUCTION:	$ 1,177,195	
				CONTINGENCY (20%):	$ 235,439	
				GRAND TOTAL:	**$ 1,412,634**	