

I-180 Enhancement Project - Bridge Section – Final Report

Cheyenne MPO



SEH No. ACHMPO0306.00

December 30, 2005



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Final Report

I-180 Enhancement Project Bridge Section

1.0 Introduction

Short Elliott Hendrickson, Inc. (SEH) is pleased to provide this report for the I-180 Corridor Enhancement Project. The purpose of this report is to provide modification alternatives for a decorative pedestrian rail on the bridges over the Union Pacific Railroad (UPRR) yard in downtown Cheyenne. UPRR has requested that a barrier be installed to prevent objects from being thrown off the bridge sidewalk into the railroad yard. Objects thrown from the bridge are a safety hazard for the workers in the yard and could also damage equipment.

1.1 Project Overview

A city's appearance can greatly affect its economic development as well as the quality of life for its residents. If a city invests in improving the appearance of public spaces, the returns can be tremendous. Businesses prefer to locate in cities with a high quality of life for their employees to enjoy. The City of Cheyenne has an opportunity to improve the appearance of the I-180 corridor. Located in the southern part of Cheyenne, I-180 is an important entrance to the city. This short segment of interstate highway connects I-80 to downtown Cheyenne. For many travelers exiting I-80 and those traveling north on US 85 it is their first impression of Cheyenne. By improving the appearance of this area, Cheyenne can enhance the quality of life for its residents living along the corridor, and provide a positive impression of Cheyenne for visitors.

I-180 is one of the shortest interstate highway segments in the country and one of the few interstates with traffic signals. Originally conceived as a controlled access ramp between I-80 and downtown Cheyenne, the highway was reclassified as an Interstate spur and designated as I-180 in 1969. Plans to construct an elevated highway were dropped in 1970 due to the high cost. The design of an at-grade roadway was completed by the Wyoming Highway Department (now the Wyoming Department of Transportation (WYDOT)) in the 1970's. Construction began on the first segment in 1977 and the final segment was opened in 1984.

This project has been divided into three sections, including South, Bridge, and Lincolnway. While the overall goal for each of the sections is to improve the appearance of the corridor,

each of these sections of the project has distinct challenges. Descriptions of these sections are provided below:

South Section: The south section is the longest of the three sections and extends from I-80 to the south end of the bridges over the Union Pacific Railroad yard. I-180 is at-grade with the surrounding landscape in this area. Small businesses and residences primarily occupy the adjoining land.

Bridge Section: The bridge section consists of the two I-180 bridges over the UPRR. The area under the bridge is a railroad yard on the UPRR mainline. The two bridges are each over 1,800 feet long and consist of 13 steel girder spans. Each has a sidewalk with a pedestrian rail. A combination of relatively flat terrain and high piers (needed to provide clearance for trains) make these bridges visible from many parts of Cheyenne.

Lincolnway Section: The Lincolnway section is located in downtown Cheyenne and includes the intersections of north and southbound I-180 with Lincolnway in addition to the small stretch of Lincolnway between these two intersections. Depot Square and the Union Pacific depot are located at the southwest corner of Southbound I-180 / Lincolnway. The north side of Lincolnway is adjoined by small businesses. A parking lot for UPRR employees occupies the area south of Lincolnway between the two bridges.

Figure 1. Site Map



Each section has distinctly different character and enhancement needs. This study focuses on the bridge section, and discusses the existing conditions, goals for the section, and recommended improvements to achieve the goals.

2.0 Existing Conditions

The existing pedestrian rail on each bridge is galvanized and is a standard type that has been used by WYDOT for many years. It consists of four rectangular steel tube rails mounted on square steel tube posts and backed with expanded metal. There is a 6'-0" clear sidewalk between the face of curb and the back of the concrete barrier rail.

Including the 1" thick grout pad under the base plate, the rail height is 3'-7". With the 6" high curb the total rail height is 4'-1". At this height, the rail does not deter pedestrians from

throwing objects from the bridge onto the rail yard. Because the expanded metal grating is on the back of the rail, the rails can also be used as steps to make climbing over the rail easy.

Each base plate is attached to the 1'-2" wide curb with four 5/8" diameter bolts that are welded to a steel anchorage cast into the bridge deck. Post and anchor spacing varies depending on the span lengths and distance between expansion devices. Each of the thirteen span bridges is divided into five continuous units of two to four spans. Span lengths vary from 102' to 230'. To avoid placing posts on the expansion devices or on curb joints, the post spacing varies from one continuous unit to the next.

In addition, the cobra head lights currently mounted on the bridges are difficult to maintain, do a poor job of illuminating the sidewalk, and have a dated appearance. However, WYDOT is currently designing a new lighting system for the bridges with mongoose heads mounted on black poles. These lights have a simpler appearance and spread light more evenly to help illuminate the sidewalk.

Figure 2. Existing Bridge Rail



3.0 Alternatives

To help prevent objects from being thrown from the bridges onto the railroad yard from the sidewalk, WYDOT had proposed the installation of a chain link fence that is approximately 8' tall. However, the City would like to install a pedestrian rail that performs the same function and is more aesthetically pleasing. SEH has developed three alternatives for the pedestrian rail that would be approximately the same height as the fence proposed by WYDOT. Descriptions of the three alternatives are below:

Alternative A: Alternative A is a rather economical fence option that consists mostly of standard chain link fence materials and is attached to the existing railing along the walkways. The rounded arched top lends some refinement and borrows from local architectural heritage. At a few locations along the walkway, some interpretive information kiosks could be

incorporated into the fence to shed some light onto the rich railroad heritage of Cheyenne. Alternative A is shown in Figure 3.

Figure 3. Bridge Rail Alternative A



Alternative B: Alternative B is more ornamental and requires removal of the existing railings. It has perhaps a more formal and urban look. Vertical pickets are 1 ½ inches apart. The posts are double posts and the hand rails are 42 inches above the walkway. Similar to Alternative A, interpretive information kiosks could be incorporated into the fence. Figure 4 illustrates Alternative B.

Figure 4. Bridge Rail Alternative B



Alternative C: Alternative C borrows visual cues from the rich railroad heritage of Cheyenne. The fence has a bridge truss work like appearance. Alternative C is illustrated in Figure 5.

Figure 5. Bridge Rail Alternative C



4.0 Stakeholders Meeting

On October 6, 2003, a stakeholders meeting was held to present entry enhancement concepts for the entire I-180 Corridor Enhancement Project by SEH and FLMA and gather ideas from interested parties. The following people were in attendance:

Name	Firm
Mike Wright	Union Pacific Railroad
Larry Wessel	Union Pacific Railroad
Ron Naro	Union Pacific Railroad
Martin Matsen	Cheyenne MPO
Matt Ashby	Cheyenne MPO
Jay Gould	WYDOT - District Engineer
Gene Legerski	WYDOT - Traffic Program
Joel Meena	WYDOT - Traffic Program
Gregg Fredrick	WYDOT - Bridge Program
John A. Winkler	United Transportation Union
John T. Goodier	Cheyenne Art in Public Places
Alvin Wiederspahn	Downtown Development Authority
Larry Bressler	Cheyenne Historical Preservation Board
Paula Qualls	South Cheyenne Community Development Association
Frank Miltenberger	FMLA
Doug Wellock	SEH

The following is a summary of the discussions regarding the bridge section of the enhancement project:

- Ron Naro said that the important issue is safety. A fence is needed to protect employees from thrown objects. Objects thrown from the bridges have been a major problem in the past. In addition, there has also been a suicide attempted by jumping off one of the bridges. Mr. Naro said that the UPRR and WYDOT had reached an agreement to install a chain link fence to prevent objects from being thrown from the bridges.
- Jay Gould asked if splashboards are needed on this bridge. Ron Naro replied that splashboards are required only on new bridges where there are switching operations. The concrete barrier on this bridge helps the splash problem.
- Gregg Fredrick pointed out that visibility from bridges with splashboards is poor. The bridge over the UPRR in Wamsutter is an example. Splashboards will block the view from the bridge.

-
- Alvin Wiederspahn asked if an overhang is needed on the fence. Ron Naro replied that an overhang will help prevent objects from being thrown onto the yard. Mr. Wiederspahn said that the existing bridge is a nice structure, a great gateway to downtown, and provides a good vista of downtown buildings. It is important to preserve the view.
 - Gregg Fredrick said that painting or staining the existing concrete barrier rail, as shown in one of the pedestrian rail alternatives, could become a maintenance problem. He asked if the concrete barrier rail could be replaced with a steel two tube type rail to open up the view from the bridge. Ron Naro said that not using concrete rail may require splashboards. The UPRR requires a pedestrian fence, not splashboards.
 - Jay Gould pointed out that the City of Cheyenne removes snow from the bridge with deicing chemicals, plowing is used as a last resort. This also reduces the need for splashboards.
 - Gregg Fredrick said that the top tube on the existing pedestrian rail is thin. This will make it difficult to extend the rail higher as shown in Alternative A.
 - Interpretative signs mounted on the pedestrian fence, as shown in Alternative A and B, were discussed. Joel Meena was concerned that parking on the bridge may become a problem if interpretative signs are put on the bridge. Drivers may stop to read the signs. He suggested that if the signs are used, they should be mounted low to avoid distracting motorists.
 - The UPRR is putting up new light towers in their yard. Ron Naro said that a high fence will not be required on the entire bridge, only the area over the active tracks. This is about 1,300 feet on each bridge.
 - According to Jay Gould, maintenance of existing lights on the bridge has been a problem. Expansion couplings in the conduit have failed in the past.
 - Following the discussion at the stakeholders meeting, the MPO selected Alternative B as their preferred alternative from the presented concepts. Since the bridges would have to be modified to accommodate the proposed interpretive information kiosks, it was recommended that they be excluded from future plans.

5.0 Public Meeting

On April 28, 2004, a public meeting was held in the lobby of the historic train depot to receive input on the proposed improvements for the I-180 Corridor Enhancement Project. Displays illustrating the existing conditions and proposed improvements were exhibited. Personnel from SEH and the Cheyenne MPO were present to answer questions. Comment forms were developed to solicit input from the public on some issues related to the theme of the project. A copy of the comment form is contained in the Appendix. Thirty-five individuals took the opportunity to fill out a comment form.

Three questions were included on the comment form. The questions and the responses are summarized below:

Question 1:

The I-180 Corridor is an important entrance into downtown Cheyenne.

Strongly Agree Agree No Opinion Disagree Strongly Disagree

Response to this question was overwhelmingly positive. The majority (27 or 77%) of responses strongly agreed with the statement. Six questionnaires had the agree box checked (17%). There was one no opinion and one disagree.

Question 2:

I feel the theme of any artwork placed along the I-180 corridor should be:

Wildlife Western Railroad Other _____

Opinion on the theme of artwork was mixed. More than one theme was selected on several forms. Each selection was counted when summarizing the results. The most popular choice was the railroad theme with 18 selections or 35%. A western them was selected by 15 individuals (29%) and wildlife was the choice of 8 people (16%). Written comments suggested modern with a railroad or western theme, railroad history, obelisks similar to the depot tower, and leaving the open space as is.

Question 3:

In my opinion the fence on the bridge should be painted:

Black Green Red Other _____

The most popular choice for the fence color was green with 13 nominations (34%). Second was black with 10 selections or 26%. Red was checked on 4 forms. Suggestions in the other category included brown, light color, and natural rust. Concern about the need for maintenance of paint on the rail was mentioned.

Written comments were included on some of the comment sheets. Relevant comments are included below:

- Need to include camera ports in the fence.
- The current galvanized rail is still good after many years. No matter what kind of paint is used, it will fail within 5-10 years. Too many chemicals used on bridge to facilitate painting anything. Peeling paint is really ugly. Getting to fix it will be very difficult. Need to come up with a type of metal coating that will not require maintenance.
- Option on bridge fence is half radius or full round like pedestrian bridge.
- Change teal on bridge to match green on fence; do something with communicator tower – move to rail yard or camouflage.

- Put sidewalks next to road. Put tables in center of Greenway on sides of road. Widen center green strip and use tall trees. Put three rows of cedar next to West side of road. Winter wind break.
- People like to watch trains. Put cameras on light poles instead of tall fences.
- Just keep all of the lights working at all times.
- Remove the billboards in the railroad yard to improve the view.

6.0 Selected Alternative

The proposed pedestrian railing is shown in the conceptual drawings (see Figures 6 and 7). More detailed drawings are contained in the Appendix. Each panel has an upper and lower section. The lower section consists of two horizontal steel angles with expanded metal between them. The upper section of the rail consists of closely spaced ½” square vertical pickets and horizontal steel tubes. Posts are two 8” channels with the flanges oriented towards the center of the post. The channels share a common ¾” thick base plate and are connected by plates and expanded metal grating. The rail will be painted.

Figure 6. Selected Alternative - Side Elevation



The top of the rail is 8’6” above the top of the curb. With the 6” high curb the total rail height is 9’. No practical railing can completely eliminate the possibility of objects being thrown from the bridge. The rail is high enough to deter people from throwing objects from the bridge into the railroad yard, but it cannot completely eliminate this action. Also, because the expanded metal grating and pickets are on the sidewalk side of the rail, it will be difficult to climb the rail.

Reusing the anchor bolts from the existing pedestrian railing is not recommended. Rather than reuse the existing anchors, it is suggested that holes be drilled into the curb and the posts mounted on new anchors. It is unlikely that the four 5/8” diameter bolts spaced only 4” apart have sufficient capacity to resist the added wind load that the higher rail will cause. It will be very difficult and expensive to fabricate new rail to match the existing variable post spacing especially because, due to construction tolerance, the post spacing may not match the planned spacing. Each post base plate will be attached to the 1’-2” wide curb with four ¾” diameter rods set in epoxy resin grout.

Figure 7. Selected Alternative - Sidewalk View



7.0 Correspondence with WYDOT and UPRR

In order to allow the City to proceed with the planning and design of the pedestrian rail, the preferred alternative was presented to both WYDOT and UPRR for their review and approval. The correspondence with these two agencies is summarized below:

UPRR suggested that the proposed rail run the full length of the bridge in order to best protect the railroad employees and rail yard operations beneath. In addition, they commented that there was no need for a similar rail to be installed for the inside lanes of the bridges and that the existing concrete barriers on each side of the vehicle lanes were adequate in preventing snow and other objects from being pushed from the bridge deck.

WYDOT reviewed the conceptual drawings for the pedestrian railing and felt that from a structural standpoint it would have no adverse affects on the operation of the bridge. However, they did have a number of comments that should be addressed in the final railing design and details. These comments are summarized below:

- The sidewalk width should be maintained and meet all ADA requirements.
- Details for new anchorage and removal of the existing anchorage will be necessary.
- The vertical pickets should be welded to the front side of the horizontal rail elements to discourage pedestrians from climbing the railing.

- The final railing design will need to be coordinated with the current light redesign project.
- All structural issues should be coordinated with the bridge program.
- The project should be administered by WYDOT regardless of funding sources.
- There needs to be a formal agreement in place between WYDOT and the City of Cheyenne addressing what has been proceeding somewhat informally to this point.
- Funding sources should be identified before proceeding beyond the conceptual phase to help minimize costly redesigns.

Based on WYDOT comments, the conceptual rail design was altered to accommodate the vertical pickets in front of the horizontal rail elements. This will help to keep pedestrians from climbing on the railing. Copies of the correspondence with WYDOT and UPRR are included in the appendix for reference.

8.0 Cost Estimate

SEH has developed an estimation of probable construction costs to complete the project based on the conceptual design of the pedestrian rail. The estimated cost to design and construct the selected bridge rail alternative is approximately \$999,000 including a 15% contingency. Since the lighting on the bridge is already in the process of being redesigned by WYDOT, those costs were not included in the estimate. The probable construction costs are outlined below in Table 1:

Table 1. Probable Construction Costs

Item	Unit	Quantity	Unit Price	Cost
Mobilization	LS	1	\$66,000.00	\$66,000.00
Contract Bond	LS	1	\$7,300.00	\$7,300.00
Removal of Pedestrian Rail	LF	3842	\$5.00	\$19,210.00
Pedestrian Fence	LF	3842	\$165.00	\$633,930.00
Traffic Control	LS	1	\$10,000.00	\$10,000.00
Subtotal				\$736,440.00
Contingency	15%			\$110,000.00
Estimated Construction Cost				\$846,440.00
Preliminary Engineering	8%			\$67,700.00
Construction Engineering	10%			\$84,600.00
Total				\$998,740.00

9.0 Funding Options

Funding for the bridge section of the I-180 enhancement project will primarily come from two sources, the City of Cheyenne and WYDOT. WYDOT has agreed to contribute funds equivalent to the cost of installing standard chain link fences. WYDOT's estimate for construction on standard chain link fences in 1999 was roughly \$270,000. Assuming that WYDOT provides \$270,000 to the project, the City will need to contribute \$729,000 to construct the selected pedestrian rail. A breakdown of these costs is below in Table 2:

Table 2. Anticipated WYDOT Contribution

Item	Cost
Fence 2681lf x \$65.00	\$174,265
Railroad Insurance	\$2,500
Traffic Control	\$24,000
Mob. And Cont. Bond	\$24,000
PE & CE	\$45,000
Total	\$269,765

The UPRR is not expected to contribute to the rail project and the amount of money from private grants is expected to be minimal. Therefore, the City of Cheyenne would be responsible for the balance of the cost of the rail enhancements.

10.0 Recommendations

The following recommendations are being made based on the analysis performed:

SEH recommends that the City of Cheyenne obtain a formal cost sharing agreement with WYDOT to identify the amount to be contributed towards the project by WYDOT. Similarly, it is suggested that the funding for the project be secured before proceeding with the final design for the bridge rail. This will help to minimize potential expenses associated with any plan modifications.

SEH recommends that the color of the pedestrian rail be chosen to match the light poles that will be installed on the bridge. This will help to create uniformity amongst the many bridge details.

Appendix

WYDOT and UPRR Correspondence
Detailed Drawings of the Selected Alternative
Open House Comment Form



RECEIVED

FEB 08 2005

SEH

Richard M. Hartman
Special Representative to the President

February 7, 2005

Mr. Joseph L. Henderson
Short Elliott Hendrickson, Inc.
1375 Walnut Street, Suite 211
Boulder, CO 80302-5263

Re: SEH No. ACHMPO0306.00

Dear Mr. Henderson:

I am responding to your letter of December 14, 2004, regarding the proposed bridge railing for the I-180 Bridge in Cheyenne, Wyoming. I appreciate your and the other stakeholders' patience while waiting for a response from the appropriate Union Pacific Railroad officials with regards to the proposed concept and design. Following is Union Pacific Railroad's response to the questions regarding the proposed pedestrian rail.

WHAT ARE THE LIMITS REQUIRED BY UPRR OF THE PEDESTRIAN RAIL ALONG THE LENGTH OF THE BRIDGE?

The rail should run the full length of the bridge in order to protect railroad employees and rail yard operations beneath the bridge.

IS A SIMILAR RAIL REQUIRED FOR THE INSIDE LANES OF THE BRIDGE?

No. It would appear that pedestrians would be separated and restricted from the inside lane by the two traffic lanes.

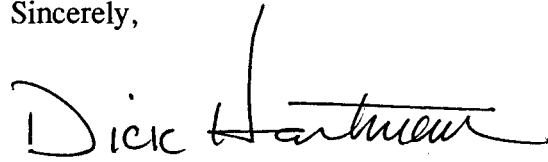
WILL THE EXISTING CONCRETE BARRIER ON EACH SIDE OF THE VEHICLE LANES SATISFY REQUIREMENTS FOR THE SOLID BARRIER TO PREVENT SNOW AND OTHER OBJECTS FROM BEING PUSHED FROM THE BRIDGE DECK INTO THE RAILROAD YARD?

Yes, Union Pacific would insist that if these barriers were every moved or replaced, that a similar barrier in height and length be replaced to prevent snow and other objects from being pushed into the yard.

Union Pacific Railroad approves of the preferred alternative and encourages the City and the Wyoming Department of Transportation to proceed with the necessary planning, designing, and funding of the proposed bridge railing. This project was a key element of the agreement between the City and Union Pacific Railroad during the negotiations concerning 15th Street and the Cheyenne Depot Plaza. Protecting our employees and rail yard operations continues to be a high priority of our safety efforts in Cheyenne.

Thank you for your time and assistance. If you have further questions, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Dick Hartman". The signature is written in a cursive style with a large, prominent "D" and "H".

Richard M. Hartman

Cc: Mr. Joe Whalen, General Superintendent Transportation Services, UP
The Honorable Jack Spiker, Mayor of Cheyenne
Mr. Tom Mason, Director, Cheyenne Metropolitan Planning Organization
Mr. Martin Matsen, Cheyenne Metropolitan Planning Organization
Mr. Bob Bradshaw, Cheyenne Projects Director

RECEIVED

JAN 11 2005

SEH

Dave Freudenthal, Governor

John Cox, Director



Department of Transportation

5300 BISHOP BOULEVARD

CHEYENNE, WYOMING 82009-3340

January 7, 2005

Conceptual Railing
Bridges over UPRR
I-180, M.P. 9.37
Structure Nos. EAI and EAJ
Laramie County

Mr. Joseph L. Henderson, P.E., P.T.O.E.
Short Elliott Hendrickson, Incorporated
1375 Walnut Street, Suite 211
Boulder, CO 80302-5263

Dear Mr. Henderson:

The Bridge Program has reviewed the conceptual drawings for the pedestrian railing to be installed on the above-referenced structures, and from a structural standpoint, this railing will not have an adverse affect on the operation of these bridges.

There are, however, several issues that need to be addressed in the final railing design and details, among which are the following:

- The clear sidewalk width should be maintained and the railing should meet all ADA requirements.
- Neither the post spacing nor the anchor bolt anchor bolt arrangement of the new railing matches that of the existing. If this is the case, details for new anchorage and removal of the existing anchorage will be necessary.
- The ½" vertical pickets appear to be welded to the back side of the horizontal rail elements. This provides easy access for pedestrians to climb the railing.
- WYDOT is in the preliminary design stage for upgrading the lighting on this structure. The final railing design will need to be coordinated with this effort as WYDOT will need access to the poles and conduits for maintenance activities.

Other more specific design and detailing issues may arise during the process of developing final plans for this proposal.

Mr. Joseph L. Henderson, P.E., P.T.O.E.
Structure Nos. EAI and EAJ
January 7, 2005
Page 2

The final design and details shall meet all WYDOT requirements and be approved by the Bridge Program prior to the project being advertised. We will make our design and detailing requirements available to you once the design begins.

There may be operational concerns as well as construction and funding issues associated with this proposal. These will be forwarded to you from the District Engineer, Mr. Jay Gould.

Sincerely,



Gregg C. Fredrick, P.E.
State Bridge Engineer

GCF/slj

cc: Jay S. Gould, P.E., District Engineer, WYDOT, Laramie
Michael N. Gostovich, P.E., State Traffic Engineer, WYDOT, Cheyenne

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THE

STATE OF WYOMING

Dave Freudenthal, Governor

John F. Cox, Director

Department of Transportation

3411 SOUTH 3RD STREET

LARAMIE, WYOMING 82070

January 10, 2005

Marten Matsen
Cheyenne MPO
City of Cheyenne
2101 O'Neil
Cheyenne, WY 82001

RE: Viaduct Bridge Rail

Dear Mr. Matsen:

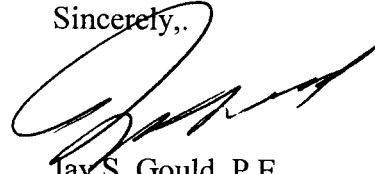
I have received copies of the correspondence between SEH and our bridge program concerning the design of the proposed decorative bridge rail for WYDOT's viaducts on Central and Warren Avenues in downtown Cheyenne and have a few comments.

- 1) All issues related to the structural design must be coordinated through our bridge program so we have no structural concerns late in the design process.
- 2) Regardless of funding sources the project should be let and administered by WYDOT.
- 3) We need a formal agreement in place between WYDOT and the City of Cheyenne addressing what has been proceeding somewhat informally to this point. I have a concern that a set of plans is being developed without the viability of funding present. WYDOT does not have the capability of funding nor does the City, that I am aware of and a completed design years in front of the ability to fund construction may lead to an expensive modification of the plans if not a complete redesign due to changing statutes, standards or regulations. The development of a concept is good but going beyond that stage is risky.
- 4) One of the goals outlined by the U.P.R.R. was to install a fence so that anyone contemplating suicide would not be able to do so from these structures. I believe some of the horizontal members within the proposed rail would allow individuals to scale the fence, as has occurred within the decorative rail placed on the TREX projects in Colorado.
- 5) As I have verbalized previously, a written response to the proposed concepts must be obtained from the UPRR. Those outlined in the letter from SEH to Dick Hartman must be approved formally prior to proceeding any further in the design process.

The City is continuing with the development of enhancements to the community that will only provide a better environment of its citizens and I will support that, but I did want to point out the pitfalls that may be encountered if we proceed too rapidly.

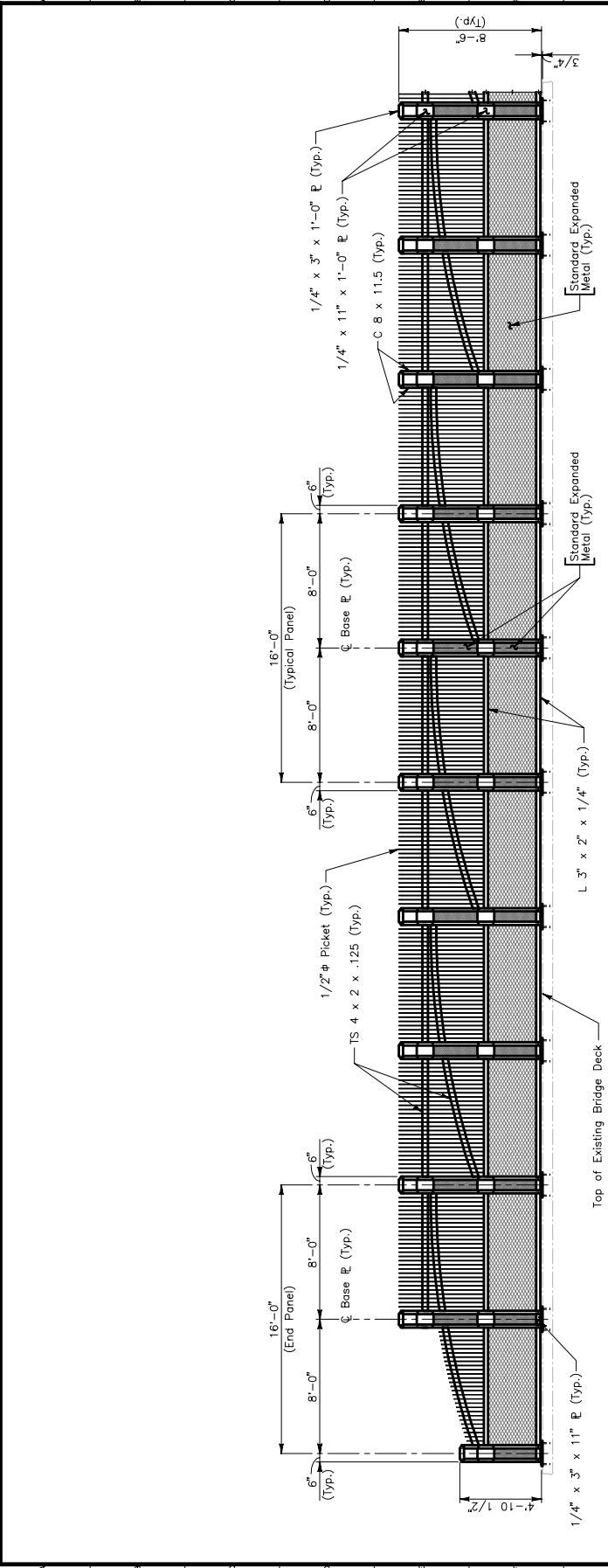
I will be happy to discuss these points with you so we can proceed with a plan that will be beneficial to both the City and WYDOT.

Sincerely,

A handwritten signature in black ink, appearing to read "Jay S. Gould". The signature is fluid and cursive, with a large initial "J" and "S".

Jay S. Gould, P.E.
District Engineer

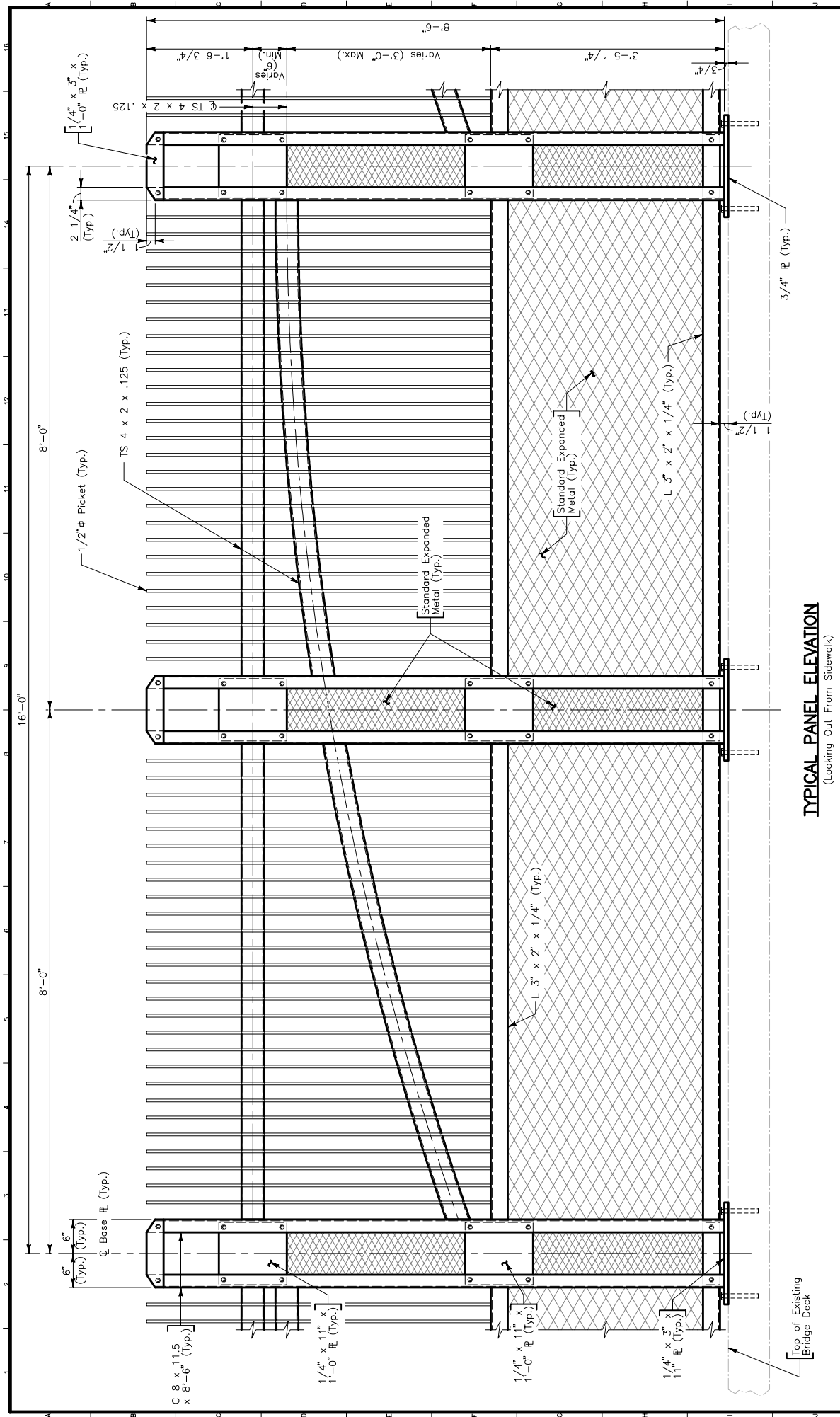
pc: Greg Frederick, P.E., Bridge
Del McOmie, P.E., Chief Engineer
Doug Wellock, P.E., SEH, Cheyenne
Tom Mason, Cheyenne MPO
Ken Lewis, P.E., City of Cheyenne
file



PARTIAL ELEVATION

Notes:
See Dwg. No. B2 and B3 for Typical Panel Details.

Computer File Information		Sheet Revisions		Cheyenne Metropolitan Planning Organization		As Constructed		PEDESTRIAN RAILING DETAILS		Project No./Code	
Creation Date:	3/7/04	Initials:	DWS	 Short & Sweet Engineering Inc. Suite 230 1500 W. 10th Ave. Cheyenne, WY 82001 Tel: (307) 635-2483 Fax: (307) 635-6411		No Revisions:		Designer: D.I. WELLOCK		I-80 BRIDGE	
Last Modification Date:	2/21/05	Initials:	DWS			Revised:		Detailer: D.W. SUNDEEN		RAILING ENHANCEMENT	
Full Path:	P:\I-80 PEDESTRIAN RAILING					Void:		Structure Numbers		Sheet No.	
Drawing File Name:	ELEVATION.dwg							Sheet, Subject:		Sheet Number	
Acad Ver:	2000							BRIDGE, Subject, Sheets:		B1 of 2	
Scale:	1"=10'									1	



TYPICAL PANEL ELEVATION
(Looking Out From Sidewalk)

Computer File Information		Sheet Revisions		As Constructed		PEDESTRIAN RAILING DETAILS		Project No./Code	
Creation Date:	3/1/04	Initials:	DWS	No Revisions:		Designer:	D.I. WELLOCK Structure	1-80 BRIDGE	Sheet Number
Last Modification Date:	2/21/05	Initials:	DWS	Revised:		Detailer:	D.W. SUNDEEN Numbers	RAILING	
Full Path:	P:\1-80 PEDESTRIAN RAILING			Void:				ENHANCEMENT	B2 of 2
Drawing File Name:	PANEL ELEV.dwg								
Acad Ver:	2000	Scale:	1/2"=1'	Units:	English	Sheet Subject:	BRIDGE		2

Cheyenne Metropolitan Planning Organization

Sheet & Bent: Heintzschken Inc.
 2340 23rd Street
 Cheyenne, Wyoming 82009-6110
 Phone: (307) 633-5441
 Fax: (307) 633-5441

SEH



COMMENTS ON I-180 ENHANCMENT
PUBLIC MEETING
APRIL 28, 2004

The I-180 Corridor is an important entrance into downtown Cheyenne.

Strongly Agree Agree No Opinion Disagree Strongly Disagree

I feel the theme of any artwork placed along the I-180 corridor should be:

Wildlife Western Railroad Other _____

In my opinion the fence on the bridge should be painted:

Black Green Red Other _____

Other Comments

Mail Comments to:

Cheyenne MPO
2101 O'Neil Ave.
Cheyenne, WY 82001

