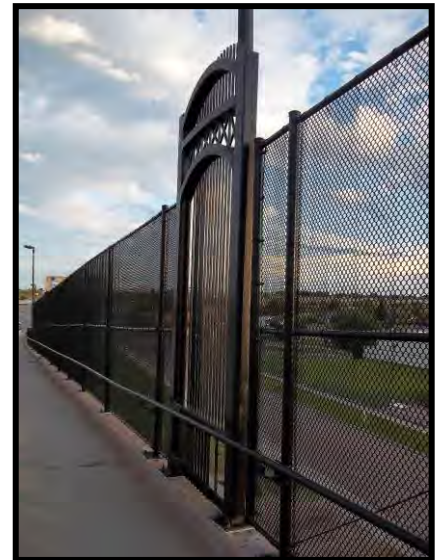


INTERCHANGE ENHANCEMENT DESIGN GUIDE

NOVEMBER, 2011



PREPARED FOR:



**CHEYENNE METROPOLITAN
PLANNING ORGANIZATION**

PREPARED BY:

NOLTE
BEYOND ENGINEERING

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FOREWORD

The intent of this guide is to provide a prototypical catalog of enhancement for interstate roadway and bridge projects to be constructed in the Cheyenne Urban Area. The guide will also serve to assist the City of Cheyenne with maintaining uniform and consistent enhancements throughout the City's area of jurisdiction.

The guide will additionally be utilized by design consultants as it will also contain several examples of past enhancement construction plans including the specifications and detailed design drawings to assist the design consultant in maintaining the consistency of enhancements.

These guidelines are intended to be amended to reflect changed conditions, public preferences, and incorporate improved methods or technology. Persons who wish to suggest modifications for future editions are invited to notify the Cheyenne Metropolitan Planning Organization (MPO) office.

The reader shall note that some figures in this document are plan element excerpts, electronics, and images that have been duplicated with permission from plans developed by WYDOT, Nolte Associates, Inc., Ayres Associates, Inc., and AVI, P.C.

SECTION 1 – INTRODUCTION

PURPOSE, OBJECTIVE, AND APPLICATION

The purpose of this guide is to set forth guidelines for aesthetic enhancements primarily for interstate interchanges. It was intended to assist in the implementation of the principles for Regional Gateways and Interstate Corridors outlined in the Plan Cheyenne Regional Master Plan by Clarion, LSA, EDAW, AVI, City of Cheyenne, Laramie County and the Metropolitan Planning Organization.

The objective of this document was to create a reference encyclopedia of previously utilized aesthetic enhancements in the Cheyenne Urban Area. In addition, a comprehensive list of planting materials for non-irrigated and minimal irrigated areas was developed in a joint effort between Nolte Associates, Inc., Cheyenne Botanic Gardens, and the Cheyenne Parks Division. A professional designer should determine when or how these guidelines will apply to a specific project.

DEFINITIONS AND REFERENCES

Except as specifically defined herein, all words in this document shall have the customary dictionary definitions. Where there is more than one definition for a term, the first one listed is the recommended definition.

At the end of many of the definitions, there are notations in brackets. These refer to the source of the definition and should be interpreted as follows:

- (CC) *Cheyenne City Code*. August 2005. Copyright Matthew Bender, Inc. Accessed 3 January 2006. Available from <http://municipalcodes.lexisnexis.com/codes/cheyenne/>; internet.
- (WS) Wyoming State Legislature. *Wyoming Statute*. 1 July 2005. Accessed 3 January 2006. Available from <http://legisweb.state.wy.us/statutes/statutes.htm>; internet.
- (MUTCD) US Department of Transportation, Federal Highway Administration. *The Manual on Uniform Traffic Control Devices*. 2003 ed. Accessed 3 April 2007. Available from <http://mutcd.fhwa.dot.gov/Signs/index.htm>; internet
- (MUTCD) US Department of Transportation, Federal Highway Administration. *The Manual on Uniform Traffic Control Devices*. 2009 ed. Available from <http://mutcd.fhwa.dot.gov/Signs/index.htm>; internet
- (Zoning Ordinance) The Cheyenne Zoning Ordinance. *Cheyenne City Code*, Title 17.
- (Subdivision Regulations) City/County Development Office. *The Cheyenne-Laramie County Subdivision/Development Regulations*. Adopted: 7 July 2000, City; 1 August 2000, County.
- (RDG) American Association of State Highway and Transportation Officials (AASHTO). *Roadside Design Guide (3rd Edition) 2006, with Updated Chapter 6*.
- (Green Book) American Association of State Highway and Transportation Officials (AASHTO). *A Policy on Geometric Design of Highways and Streets 2004, 5th Edition*.
- (4R) Wyoming Department of Transportation. *Guide for Interstate Highways 4-R, 3-R, 2-R, 1-R Criteria WYDOT Design Guide 2008*.

Abutment. An abutment is an end support of a bridge superstructure that transmits the loads from the superstructure of a bridge to the foundation.

Agency. Any board, commission, department, division, office or other organization of city government, including any elective officer, appointee, or person acting in the exercise of official duties (CC)

Bent. A bridge bent is an intermediate support comprised of upright piers and horizontal supports for a bridge superstructure.

Bridge Monument Foundation and Pillars. Aesthetic stone column and steel pillar enhancement features for areas adjacent to approach sections of the bridge ends and pedestrian sidewalks. Two pillar features have been designed and included in this guide: One, to fit the pedestrian; and a second, to fit vehicular traffic scale.

Bridge MSE Walls. Pre-cast wall retaining wall component system comprised of modular block, soil backfill, and geosynthetic reinforcing. MSE or mechanically stabilized earth refers to the soil constructed with artificial reinforcing behind a modular block retaining wall. The reinforcing elements used can vary but include steel or geosynthetics.

City. The City of Cheyenne, County of Laramie, State of Wyoming (CC)

Clearzone. A clearzone is the total roadside border area starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area. The desired minimum width is dependent upon traffic volumes and speeds and on the roadside geometry. Simply stated, it is an unobstructed, relatively flat area beyond the edge of the traveled way that allows a driver to stop safely or regain control of a vehicle that leaves the traveled way (RDG).

Girder. A girder is a support beam used in construction. In a bridge structure it is the term used to denote the main horizontal support of a superstructure which supports smaller beams.

Diamond Interchange. A common type of road junction which a grade-separated freeway crosses a minor road with a bridge and contains off-ramp and on-ramp roadways from the freeway aligned in the shape of a diamond.

Luminaire Pole. A luminaire pole is the exposed structural support system of a street light or raised source of light on the edge of a road. The two common types referred to in this guide are pedestrian and traffic luminaire. The pedestrian or traffic luminaire pole is intended to provide the appropriate amount of light and scale for each type of application.

Median. A raised separated traffic or channeling island between opposing or diverting traffic lanes. It can be median strip, a strip in the middle of a road, or narrow strip between roads that intersect at an acute angle. Some traffic islands may serve as refuge islands for pedestrians.

MPO. The City of Cheyenne Metropolitan Planning Organization. The MPO is responsible for developing transportation policies and coordinating the various federal, state, and local agencies involved in long-range transportation planning and project development.

Roadway. The portion of a highway improved, designed or ordinarily used for vehicular travel, exclusive of the sidewalk, berm or shoulder. (WS)

Superstructure. The primary elevated or suspended support system of bridge.

Roundabout Interchange. A common type of road junction which a grade-separated freeway crosses a minor road with a bridge and contains off-ramp and on-ramp roadways from the freeway aligned to direct traffic circularly around a central island after first yielding to the circulating traffic.

Signal Pole. The structural vertical and horizontal supports on which a traffic control signal is mounted.

State. The State of Wyoming. (CC)

Traffic Control Signal. Any device, whether manually, electronically, or mechanically operated, by which traffic is alternately directed to stop and permitted to proceed. (WS)

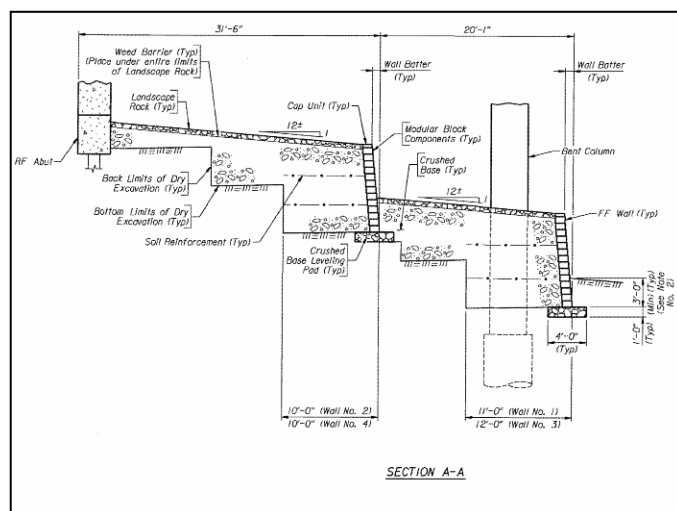
Veneer. A single non-structural external layer of masonry, typically brick, supported onto to inner structural element that may consist of wood or metal framing or masonry.

Wing walls. In a bridge wing walls are adjacent to the abutments and act as retaining walls. The wing walls can either be attached to the abutment or be independent. The soil and fill supporting the roadway and approach embankment are retained by the wing walls, which can be at a right angle to the abutment or at different angles.

WYDOT. The Wyoming Department of Transportation.

2.1 PRE-CAST WALL COMPONENT SYSTEM

Description: A Pre-cast wall retaining wall component system comprised of modular block, soil backfill, landscaping rock, and geosynthetic reinforcing. MSE or mechanically stabilized earth refers to the soil constructed with artificial reinforcing behind a modular block retaining wall. The reinforcing elements used can vary but include steel or geosynthetics. Although its use has been limited to areas under the structure from the bridge end abutment, the pre-cast wall component system can be used in a multitude of layouts and applications. The photo and plan section below illustrate its use at the Randall Avenue / I-25 interchange.



Approved Precast Modular Block Component Manufacturers:

1. Keystone™
2. Rockwood™
3. MESA™

Color: The Munsell Soil Color 10YR 5/3, a grayish-brown color, or approved equivalent.

Finish: Modular block components have a split-stone, rounded or tri-face finish and provide a maximum of ¾ inch horizontal setback per 8 inches of wall height with a capstone.

References:

Appendix A:

- 2.1.1 Example Special Provision 0251146, SP-500DR, Precast Wall Component System
- 2.1.2 Example Plan Sheets (0251146, Randall Avenue Interchange: B45 and B46)

2.2A DECK TEXTURING AND COLORING

Description: Concrete deck texturing and coloring. Exterior exposed portions of the concrete decks have been textured using a concrete form liner and then colored for enhancement. These areas are colored using a penetrating stain coloring agent applied to the surface. The photos below illustrate prior use at the Randall Blvd. / I-25 interchange project on the left and High Plains Interchange on the right.



Approved Penetrating Stain Manufactures or Approved Equal:

1. Silicone Acrylic Concrete Stain: H & C Stains, Cleveland , OH (P) 800.867.8246
2. Pigmented Concrete Sealer: Advanced Surfaces, Inc., Margate FL (P) 800.952.5980

Color: The Munsell Soil Color 10YR 5/3, a grayish-brown color, or approved equivalent.

Approved Rigid Form Liners or Approved Equal:

Manufacturer:

1. Custom Rock Formliner, St. Paul, MN
2. Scott System, Inc., Denver, CO

Product/ Finish:

Split Face Block #12013, 3/4 inch
Maximum relief
Split Face Block #127A, 1/2 inch
Maximum relief

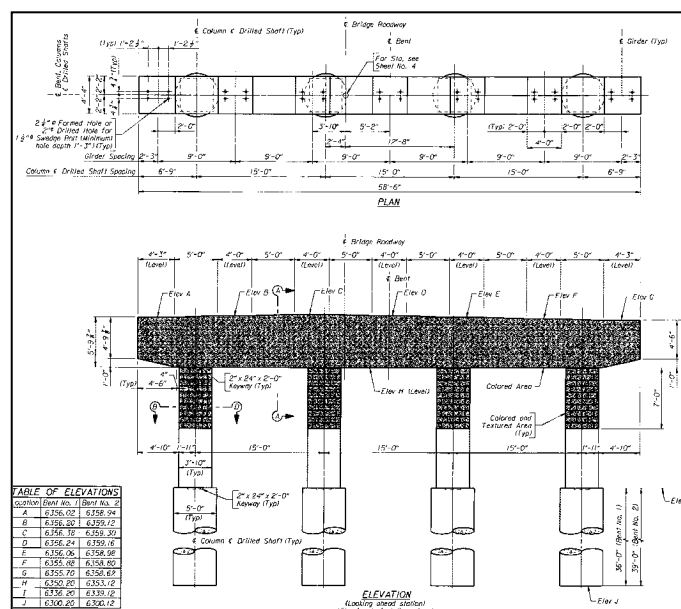
References:

Appendix A:

- 2.2.1 Special Provision 0251146, SP-600EZ, Coloring and Texturing Concrete Surfaces.

2.3 BENT TEXTURING AND COLORING

Description: Bent texturing and coloring. Portions of the concrete bent piers have been textured using a concrete form liner and then colored. Additionally, the bent caps or upper horizontal support of the bent has been colored for enhancement. These areas are colored using a penetrating stain coloring agent applied to the surface. The photo and plan below illustrate prior use at the Randall Avenue / I-25 interchange.



Approved Penetrating Stain Manufacturers or Approved Equal:

1. Silicone Acrylic Concrete Stain: H & C Stains, Cleveland, OH (P) 800.867.8246
2. Pigmented Concrete Sealer: Advanced Surfaces, Inc., Margate FL (P) 800.952.5980

Color: The Munsell Soil Color 10YR 5/3, a grayish-brown color, or approved equivalent.

Approved Rigid Form Liners or Approved Equal:

Manufacturer:

1. Custom Rock Formliner, St. Paul, MN
2. Scott System, Inc., Denver, CO

Product/ Finish:

Split Face Block #12013, 3/4 inch
Maximum relief
Split Face Block #127A, 1/2 inch
Maximum relief

References:

Appendix A:

2.2.1 Special Provision 0251146, SP-600EZ, Coloring and Texturing Concrete Surfaces.

2.4 STEEL GIRDER COLOR OPTIONS

Description: Structural steel girders have been top coat painted to enhance the bridge appearance. The girders are prepared using the Standard WYDOT specifications. The photo below illustrates the use at the Randall Avenue / I-25 interchange.



Color Options:

Gray tan top color for structural steel.

References:

Appendix A:

2.4.1 Section 501.4.1.24 Painting, *WYDOT Standard Specifications for Road and Bridge Construction 2010*.

2.5 DECORATIVE STREET AND PEDESTRIAN LIGHTING OPTIONS

Description: Enhanced decorative luminaire options have been utilized for both pedestrian and traffic scale lighting. Although not illustrated here, it is encouraged that whenever possible LED (light emitting diodes) should be used where appropriate to increase energy efficiency.

2.5A DECORATIVE PEDESTRIAN LIGHTING OPTIONS

The photos below illustrate pedestrian lighting used on the I-180 overpass, the Norris Viaduct bridge, and downtown Cheyenne on the right.



**I-180 Overpass Pedestrian
Luminaire**



**Norris Viaduct Pedestrian
Luminaire (Right)**



"Sternberg" (Downtown Only)

Manufactures or Approved Equal Luminaires and Poles:

1. Luminaire: Mongoose Close-in, 1-250 W, HPS (I-180 Overpass.)
2. Luminaire: Holophane Lyon GY-050HP-MC-2-B-S-21-N. Arm: Holophane Bishop's Crook 1BC90R15F-BK. Pole: Holophane Round Steel (Standard or custom as shown in foreground right).
3. "Sternberg" pole Model #4412 DFO with a single 16" opal globe. Each come equipped with a single 100 watt metal halide lamp.

Color: Powder coated black poles and luminaire heads.

References:

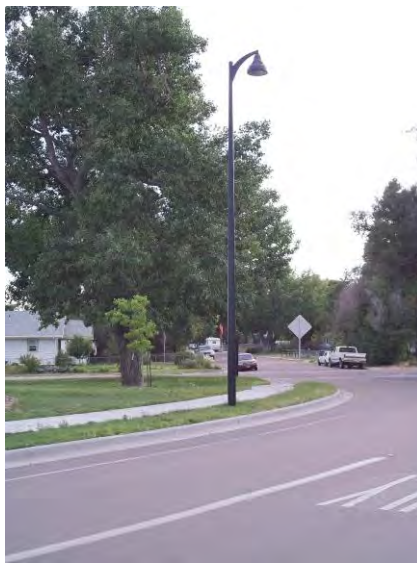
Spacing and placement of luminaires will depend on specific site conditions and needs.

2.5B DECORATIVE STREET LIGHTING OPTIONS

The photos below illustrate pedestrian lighting used on I-180, Norris Viaduct Bridge Replacement Project, and Carey Avenue/ Pioneer Avenue from left to right.



I-180 Traffic Luminaire



Norris Viaduct Traffic Luminaire



Downtown Standard

Street Lighting Options:

1. Luminaire: Mongoose Close-in, 1-250 W, HPS (I-180 Traffic Luminaire).
2. Luminaire: King Luminaire-Wilshire K809-HGFL-III-250-MOG-HPS-240(MT)-BK with KPL-20 Plumbizer. Arm: Stresscrete Style 120 Catalog Number K120-S-6. Pole: Stresscrete Octagonal Class C. Options include direct bury or baseplate (Norris Viaduct Traffic Luminaire).
3. Luminaire: Cheyenne Downtown Development Authority (DDA) Downtown Streetlight standard luminaries will be CLF&P's 33' black steel standard pole with 10' steel arm. Each will come equipped with a 250 watt high pressure sodium bulb



Sternberg "Option" (Single)

(Downtown Standard).

4. Luminaire: 2-1730CA/ OMPT/ 100MH277/ LO3-S/ BK Sternberg "Option" (Twin).
Double mounted luminaire with hexagonal base and 4" post (Sternberg "Option" (Twin)).
5. Luminaire: 1730CA/ OMPT/ 100MH277/ LO3-S/ BK Sternberg "Option" (Single).
Single mounted luminaire with hexagonal base and 4" post (Sternberg "Option" (Single)).

Color: Powder coated black poles and luminaire heads.

References:

1. Spacing and placement of luminaires will depend on specific site conditions and needs.
2. Appendix A:
 - 2.5.1 Sheet SC7158, Sternberg 2-1730CA/ OMPT (Twin)
 - 2.5.2 Sheet SC7157, Sternberg 1730CA (Single).

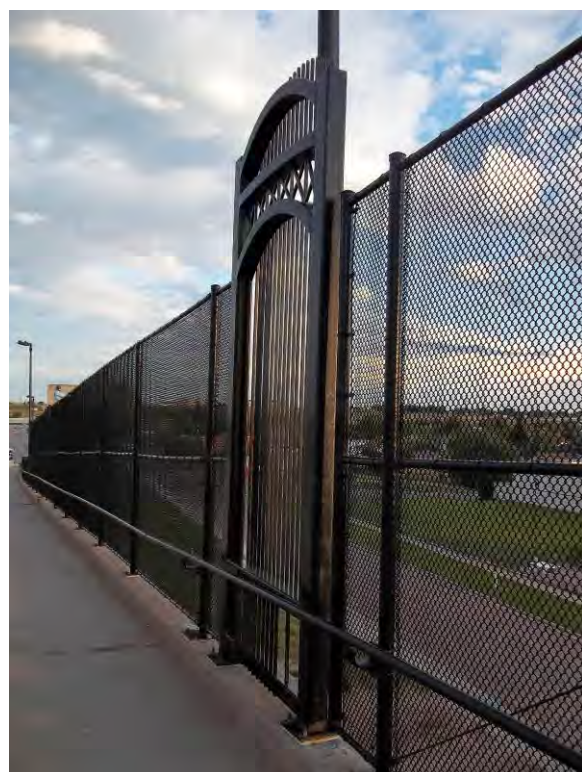
2.6 FENCING/ RAIL

2.6A PEDESTRIAN SAFETY RAIL

Description: The primary purpose of pedestrian safety rail provides a barrier fence to increase safety in elevated structures for sensitive areas such as a railroad or highway cross road. In addition to its inherent safety characteristic, it can also provide an attractive amenity to a bridge superstructure. The plans and photos on the following pages illustrate some of the pedestrian safety rail options at the High Plains Interchange / I-25 interchange, I-180 Overpass, and the Norris Viaduct Bridge projects. It should be noted that fences shown for the Norris Viaduct Bridge and the I-180 Bridge are not necessarily applicable for bridges over the interstate or other applications.



Norris Viaduct Pedestrian Safety Rail Option A



I-180 Overpass Pedestrian Safety Rail Option B

A third option that has not been constructed as of yet is the pedestrian safety rail for the High Plains Blvd. Overpass on Interstate 25. It is illustrated on the following page.



I-25 High Plains Interchange Pedestrian Fence Detail Option C

Summary of Pedestrian Safety Rail Options

PEDESTRIAN SAFETY RAIL TYPE	FENCE FABRIC TYPE	Height	Finish/Color	Special Features
OPTION A (NORRIS VIADUT): Mesh Wire Panel Fence w/ Concrete Stone Veneer Pilasters	McNicols "Lock Crimp" Wire Mesh with 3" Opening and 1/4" dia. wire or approved equal	7'-9" + 2'-8" concrete pedestrian barrier = 10' – 5"	Powder coated black as approved by Engineer	Intermediate Concrete Stone Veneer (Ashlar Pattern) Pilasters
OPTION B (I-180 OVERPASS): Intermittent Ornamental Steel Panels w/ Standard Industrial Type Fencing	3/4" Structural Steel Bar Pickets at 3" spacing and TS 6" x 5" x 0.3125" Posts in conjunction w/ standard industrial 2" x 2" mesh	12'-2"	Powder coated Federal Color Number 27038,	4' Intermittent Ornamental Panels
OPTION C (HIGH PLAINS INTERCHANGE): Ornamental Structural Steel Fence Panel System	9'-9" Panels made of 5/8" x 5/8" Structural Steel Bar Pickets at 2-7/8" spacing and 6" x 6" x 1/4" Posts.	9'-0"	Powder coated black RAL No. 9005 or approved equivalent.	Ornamental Structural Steel Fence

References:

OPTION A (NORRIS VIADUCT); Mesh Wire Panel Fence w/ Concrete Stone Veneer Pilasters:

1. Appendix A:
 - 2.6.1 Plan Sheets Project HP-4019-00(003), Sheets B23-B26

OPTION B (I-180 OVERPASS); Intermittent Ornamental Steel Panels w/ Standard Industrial Type Fencing:

2. Appendix A:
 - 2.6.2 Plan Sheets: Project I180017, Sheets B12-B14
 - 2.6.3 Special Provision: SP-500DV Pedestrian Railing
 - 2.6.4 Special Provision: SP-500DU Powder Coating

OPTION C (VANDEHEI INTERCHANGE); Ornamental Structural Steel Fence Panel System:

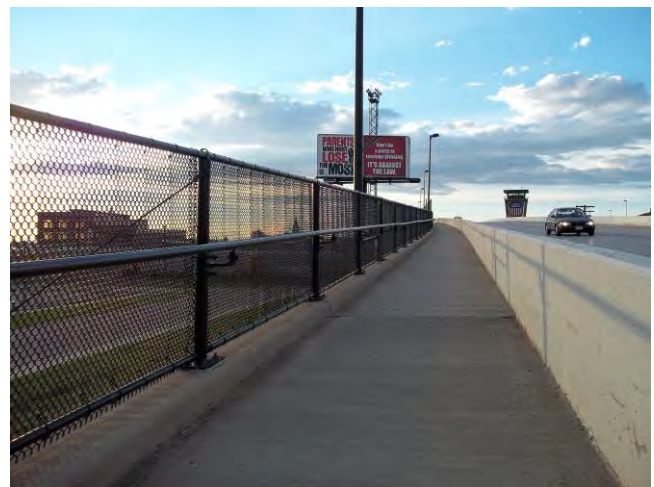
3. Appendix A:
 - 2.6.5 Plan Sheets: Project 0251147, Sheets B16-B24
 - 2.6.6 Special Provision: 0251147, SP-500HJ, Pedestrian Railing
 - 2.6.7 Pedestrian Railing, 0251147, SP-500HK, Powder Coating.

2.6B PEDESTRIAN RAIL

Description: Pedestrian safety rail provides a low height barrier fence for safety in areas of approach fill areas for elevated structures. The plans and photos on the following illustrate some of the pedestrian safety rail options at the I-180 Overpass, and the Norris Viaduct Bridge projects.



Norris Viaduct Pedestrian Rail Option A-1



I-180 Pedestrian Rail Option B-1

Summary of Pedestrian Rail Options

PEDESTRIAN SAFETY RAIL TYPE	FENCE FABRIC TYPE	Height	Finish/ Color	Special Features
OPTION A-1 (NORRIS VIADUT): Ornamental Structural Steel Fence Panel System	1" Square 14 Ga. Pickets w/ 3" Square 12 Ga. Posts 8'-0" Panels.	4'-0"	Powder coated black or as approved by Engineer	Ornamental Structural Steel Fence
OPTION B-1 (I-180 OVERPASS): Standard Industrial Type Fencing	Standard industrial 2" x 2" mesh w/ 2-1/2" Standard Posts.	4'-0"	Powder coated black, Federal Color Number 27038,	4' Intermittent Ornamental Panels

References:

OPTION A (NORRIS VIADUCT); Ornamental Structural Steel Fence Panel System:

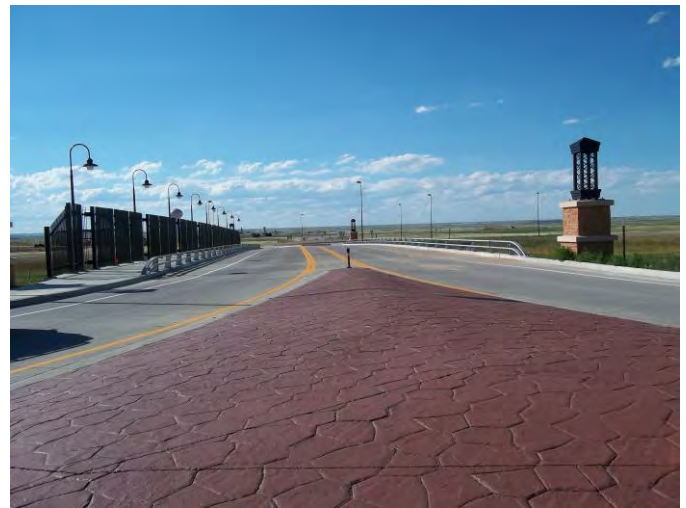
1. Appendix A:
 - 2.6.8 Plan Sheets Project 030015 (Norris Viaduct), Sheets 240-242

OPTION B (I-180 OVERPASS); Standard Industrial Type Fencing:

2. Appendix A:
 - 2.6.9 Plan Sheets: Project I180017, Sheets B12-B14
 - 2.6.10 Special Provision: I180017, SP-500DU Powder Coating.

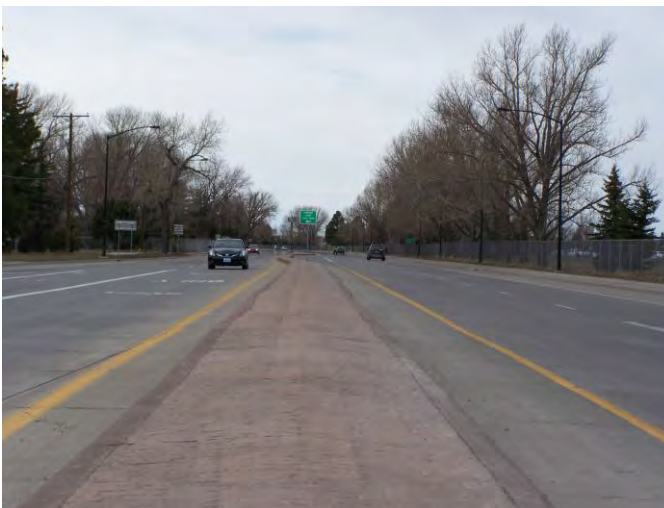
SECTION 3 - ROADWAY MEDIAN TEXTURING AND COLOR OPTIONS

Description: Various types of median textures and color options have been utilized on various projects adjacent to interchanges in Cheyenne. Some options included using texturing and penetrating stain coloring agent, monolithic concrete coloring and texturing, monolithic concrete color additive with alternating broom finishing, and exposed aggregate finishing. The various techniques can be utilized in the median, concrete islands, separated sidewalk buffers, etc. The photo and plans on the following pages illustrate the various types of texturing and coloring options that have been used to date.



West Pershing Blvd. (Left) and High Plains Interchange (Right) Median using Stamped Concrete and Penetrating Stain Coloring Agent

Texturing and Coloring Option A



Central Avenue Median using Stamped Concrete and Monolithic Concrete Coloring Additive
Texturing and Coloring Option B

INTERCHANGE ENHANCEMENT DESIGN GUIDE



12th Street (Left) and Vandehei Interchange (Right) Median using Monolithic Concrete Coloring Additive with Alternating Broom Finish



Proposed East Pershing Blvd. Median using Monolithic Concrete Coloring Additive with Exposed Aggregate Texturing and Coloring Option D

Summary of Roadway Median Texturing and Coloring Options

TEXTURING AND COLORING OPTION/ DESCRIPTION	Concrete Texture	Color
OPTION A (WEST PERSHING BLVD/ HIGH PLAINS BLVD.): Penetrating Coloring Agent and Stamped Concrete	Stamped Brick or Stone Pattern Approved by Engineer	1. H+C Stain: Red Terrazo Tile 2. Somay Products: Spanish Tile, or 3. Advanced Surfaces, Inc.: Naples Red
OPTION B (CENTRAL AVENUE): Monolithic Coloring Additive and Stamped Concrete	Stamped Brick Pattern "Patterned Concrete Sn Isidro Brick"	Solomon Colors: #338 Brown
OPTION C (12th STREET/ VANDEHEI INTERCHANGE): Monolithic Coloring Additive and Alternating Broom Finish	Alternating the direction of a light Broom Finish at abutting concrete panels.	1. Solomon Colors: #338 Brown, 2. Solomon Colors: #288, or 3. Davis Colors: Harvest Gold 5084.
OPTION D (EAST PERSHING BLVD): Monolithic Coloring Additive and Exposed Aggregate	Exposed Aggregate	Undetermined

References:

OPTION A (WEST PERSHING BLVD.): Penetrating Coloring Agent and Stamped Concrete:

1. Appendix A:
 - 3.1.1 SP-600EZ, Coloring and Texturing Concrete Surfaces

OPTION B (CENTRAL AVENUE): Monolithic Coloring Additive and Stamped Concrete:

2. Appendix A:
 - 3.1.2 Plan Sheets: WYDOT Standard Plans, 609-1A, Median Paving

OPTION C (12th STREET AND VANDEHEI INTERCHANGE): Monolithic Coloring Additive and Alternating Broom Finish:

3. Appendix A:
 - 3.1.3 SP-600MP, Special Item-LS-C (Ornamental Entry and Roundabout Enhancements

OPTION D (EAST PERSHING BLVD.): Monolithic Coloring Additive and Exposed Aggregate:

4. Website:
 - <http://www.cement.org/>
 - <http://www.exposedaggregateconcrete.com>

SECTION 4 - MONUMENT ENHANCEMENTS

Description: Two basic types of monument enhancements have been developed for use on interstate bridges and pedestrian applications. Although they are similar in design elements, they have distinctively different foundations and overall scale to accommodate their different applications. The bridge monument enhancement foundations include the use of “H” piling in order to meet a requirement from the WYDOT Bridge and Geology Programs. They required that the aesthetic monuments shall not be supported by the bridge nor be able to fully utilize the fill surrounding a bridge as structural fill. The pedestrian monument or pillar is a smaller scale and use a conventional spread footing foundation system. The scale and dimensions for the monuments should be reviewed for a specific project to ensure they are appropriate.

The pedestrian monument has been constructed on the I-180 Overpass project and West Lincolnway while the bridge enhancement monuments have been utilized on the I-25/ Highplains Blvd. Interchange Project. A combination of the two elements was developed for the Vandehei Interchange project. The photos and plan excerpts below illustrate the different types of monuments incorporated to date.



I-180 Overpass Pedestrian Monument/
Pillar



West Lincolnway Pedestrian
Monument and Light Pillar



I-25/ High Plains Blvd. Bridge
Monument/ Pillar



I-25/ Vandehei Interchange Enhancement Feature

References:

PEDESTRIAN MONUMENT OR PILLAR:

1. Appendix A:
 - 4.1.1 Project No. I180017, Pillar Details, B16-B17, B31-B32
 - 4.1.2 SP-600FD, Cast Stone Veneer
 - 4.1.3 SP-500DU, Powder Coating

BRIDGE ENHANCEMENT MONUMENT:

2. Appendix A:
 - 4.1.4 Randall Bridge Enhancement Plans, Sheet 1-5
 - 4.1.5 Special Provisions Randall Bridge Enhancement Plans: SP-04002 Bridge Enhancement Monuments (Added Section)

INTERCHANGE ENHANCEMENT FEATURE

3. Appendix A:
 - 4.1.6 Project STIM-E 1251164, Vandehei Interchange Ornamental Entry and Roundabout Enhancements Plans
 - 4.1.7 Special Provision 0251147, SP-600MP, Special Item LS-C (Ornamental Entry and Roundabout Enhancements)

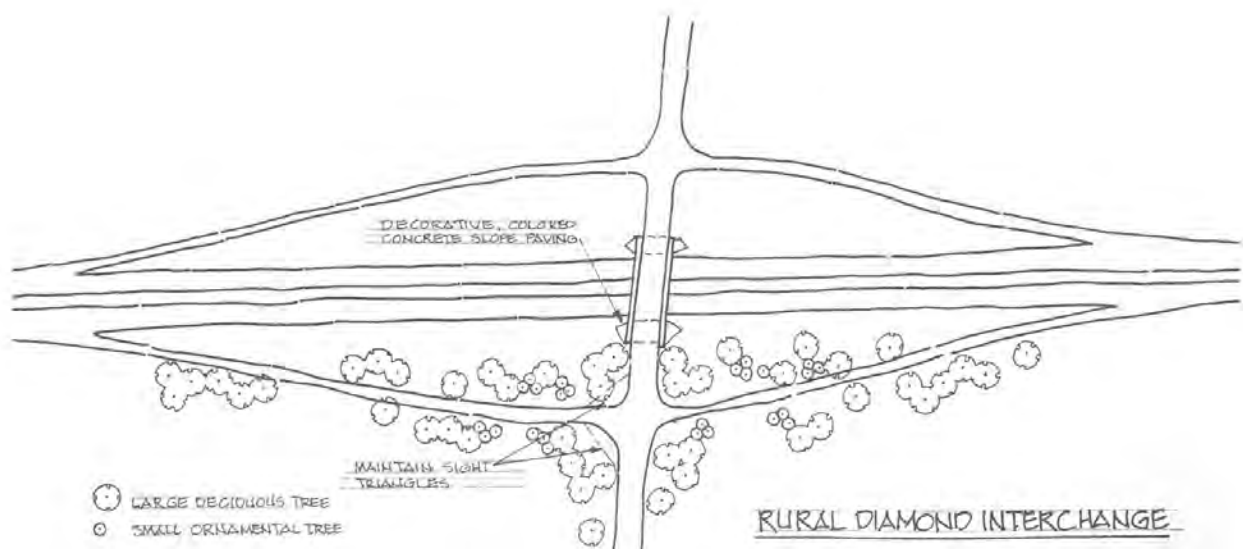
SECTION 5 - INTERCHANGE LANDSCAPING

Description: The purpose of this landscaping guide is to set forth the guidelines for placement and planting materials to be utilized as aesthetic enhancements for non-irrigated and irrigated areas adjacent to interchange roadway and bridge improvements. The guide is intended as a reference and should be designed by a landscaping professional.

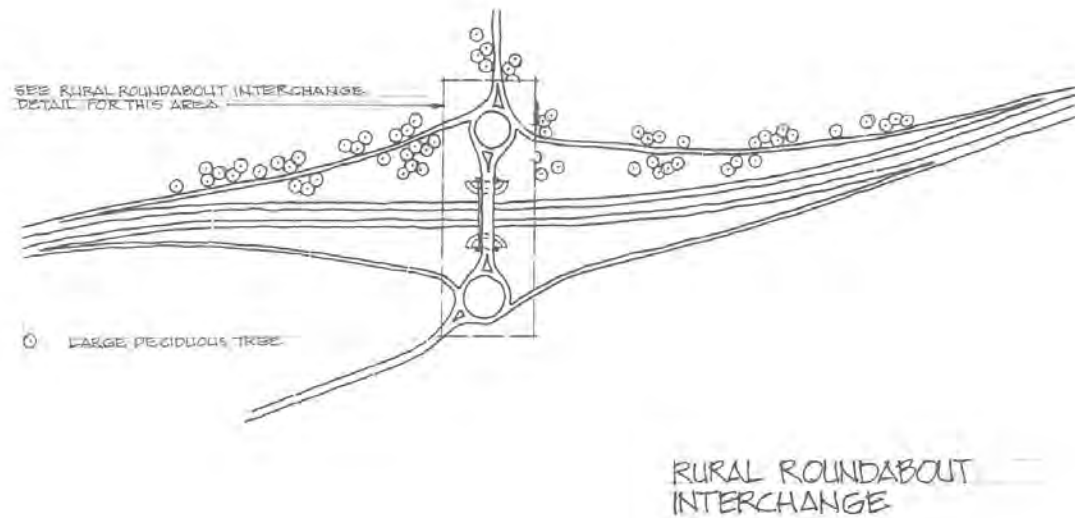
This section of the guide is outlined into two basic types of interchanges: Rural and Urban. Additionally, the planting lists at the end of this section outline the list of approved plants for use in non-irrigated areas and minimal irrigated areas. The list has been developed in a joint effort between Nolte Associates, Inc., Cheyenne Botanic Gardens, and the Cheyenne Parks Division.

5.1 PROTOTYPICAL RURAL INTERCHANGE LANDSCAPING LAYOUTS

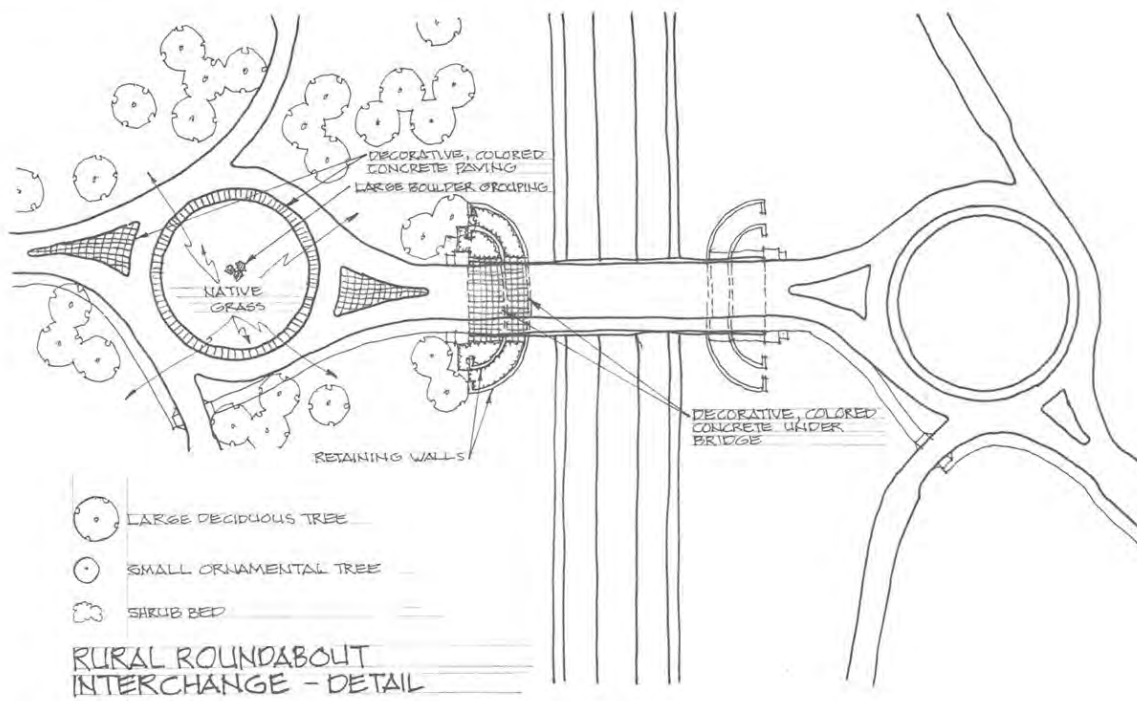
Discussion: Landscaping design for the rural Interchange should reflect a more “natural” informal appearance as illustrated in the following conceptual prototypical rural interchange layouts. (Please note that all the typical layouts are shown for only one side, the other side would reflect the same conceptual design style).



Prototypical Rural Diamond Interchange Layout



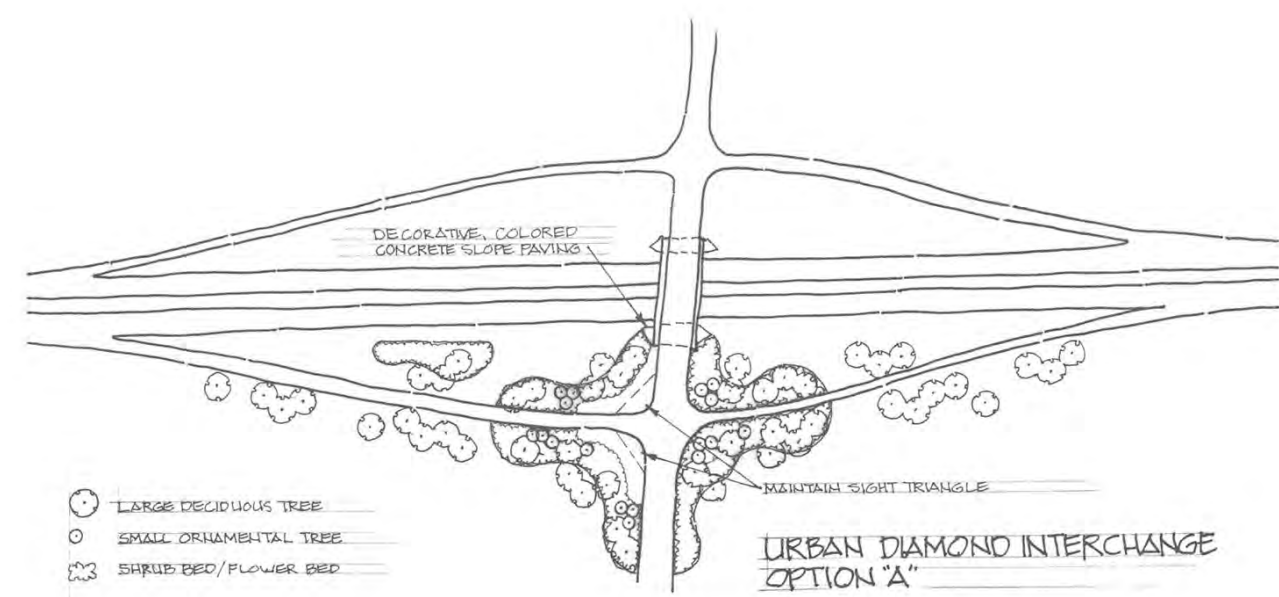
Prototypical Rural Roundabout Interchange



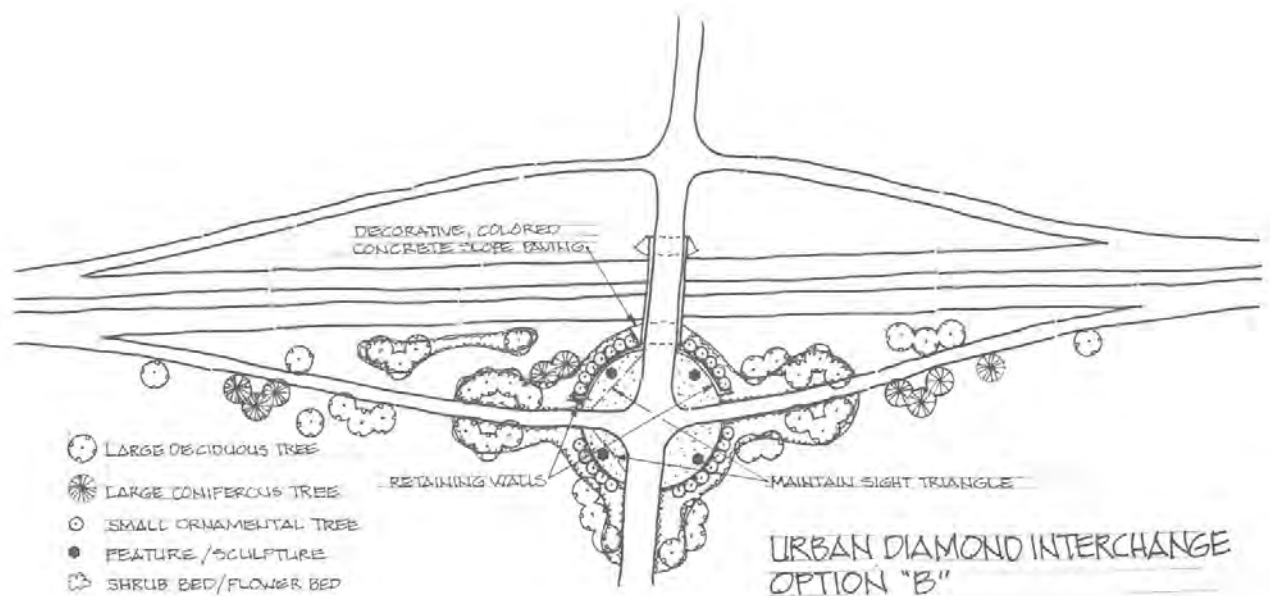
Prototypical Rural Roundabout Interchange Detail

5.2 PROTOTYPICAL URBAN DIAMOND INTERCHANGE LANDSCAPING LAYOUTS

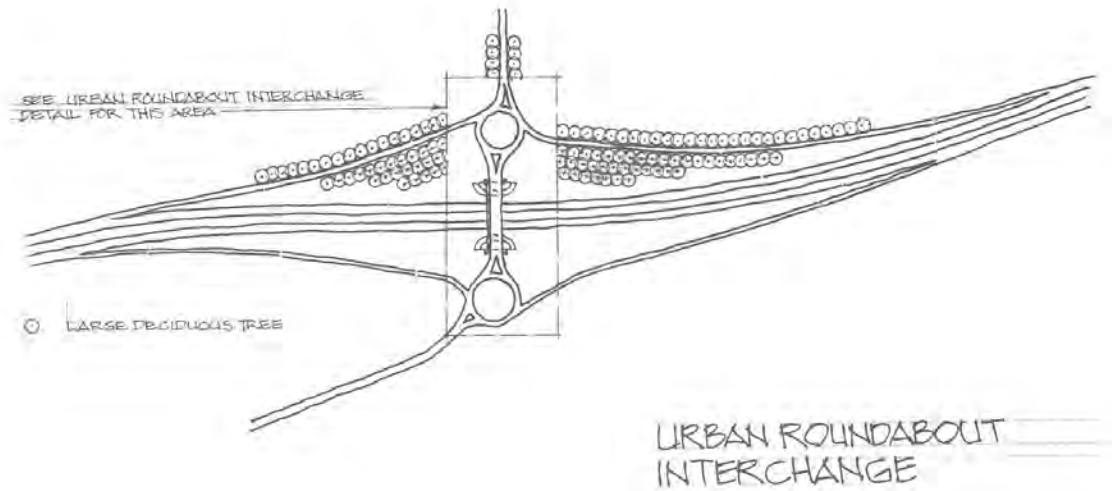
Discussion: Landscaping design for the urban Interchange should reflect a more structured purposeful appearance as illustrated in the following conceptual prototypical urban interchange layouts. (Please note that all the typical layouts are shown for only one side, the other side would reflect the same conceptual design style).



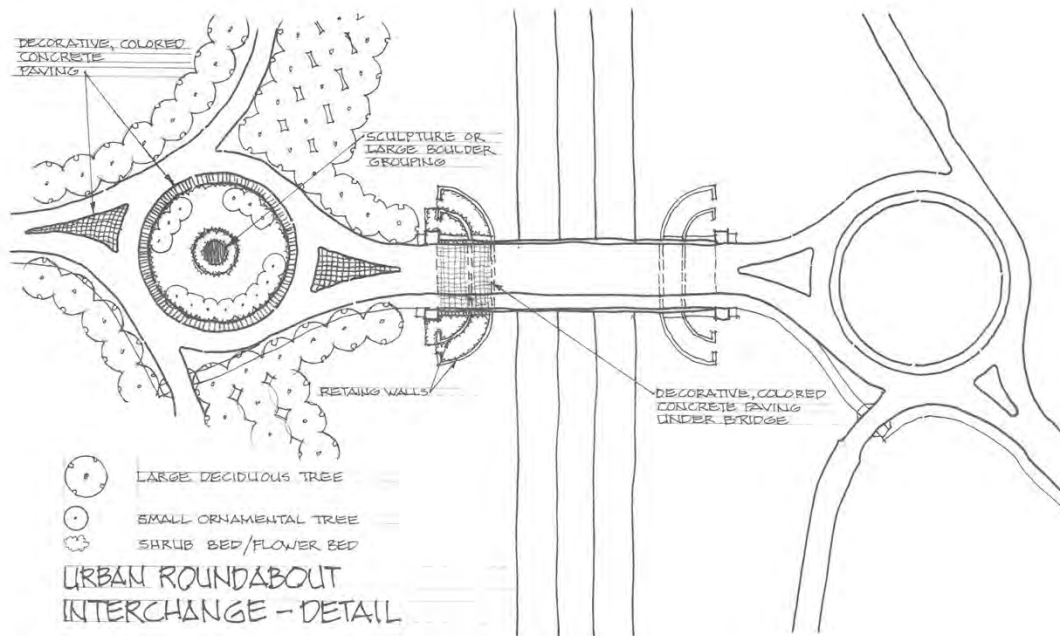
Prototypical Urban Diamond Interchange Option A



Prototypical Urban Diamond Interchange Option B



Prototypical Urban Roundabout Interchange Layout



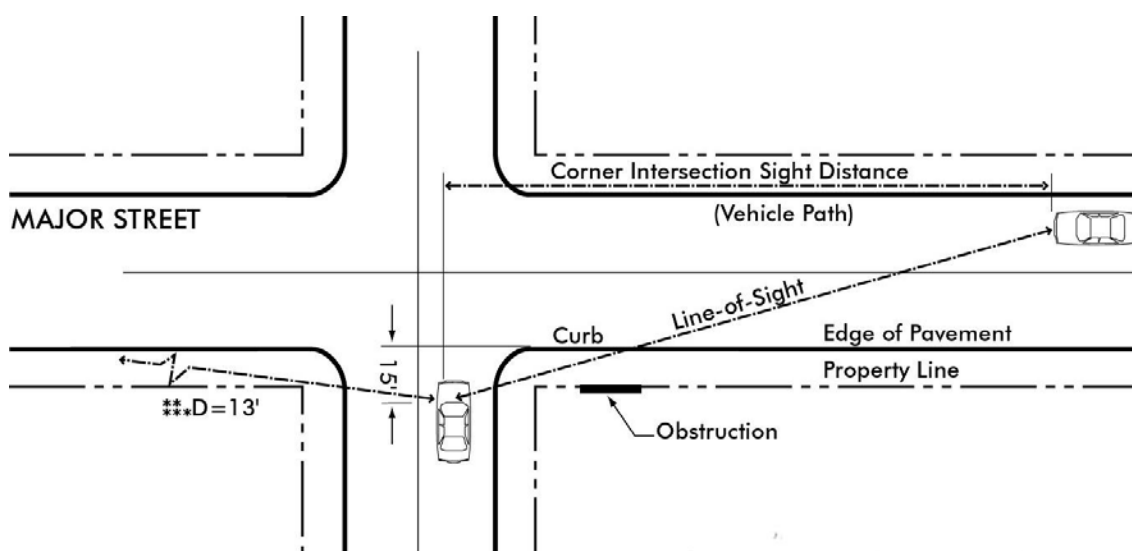
Prototypical Urban Roundabout Interchange Layout Detail

5.3 GENERAL DESIGN CONSIDERATION ELEMENTS FOR ALL INTERCHANGES

Drainage: To the extent possible tree and shrub plantings and “bioswales”/ stormwater swales and stormwater collection points should be co-located to take maximum advantage of natural precipitation.

Corner Sight Distance “Sight Triangles” and Clearzone: The Corner sight distance as defined by the 2007 *City of Cheyenne Road, Street, and Site Planning Design Standards* at “controlled intersections and driveways is the required distance necessary for a vehicle to make a right-through, or left-turn into and out of an intersection or driveway without requiring the vehicle making a through vehicular movement to adjust its travel speed by more than 15 percent of the posted speed limit. The sight distance triangle is to be determined by a diagonal line drawn fifteen feet back from the roadway along the centerline of the intersection or access to a point on the centerline of the closest lane in either direction.”

This triangular space is to be kept free from all obstructions to vision, including plant materials and vegetation, between the heights of 2.5 and 12 feet above the street grades. The required minimum Corner Sight Intersection Sight Distance is schematically shown below. Please consult Section 4.4.2 Corner Sight Distance at Controlled Intersections and Driveways, pg. 39 of the 2007 *City of Cheyenne Road, Street, and Site Planning Design Standards* for further requirements and additional information.



Corner Intersection Sight Distance City of Cheyenne Road, Street, and Site Planning Design Standards

Figure 4.5.

Clearzone: A clearzone as defined by 2002 AASHTO *Roadside Design Guide* (RDG) is the total roadside border area starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, and/or a clear run-out area. The desired minimum width is dependent upon traffic volumes and speeds and on the roadside geometry. Simply stated, it is an unobstructed, relatively flat area beyond the edge of the traveled way that allows a driver to stop safely or regain control of a vehicle that leaves the traveled way. Obviously, depending on the nature and type of the planting it may be possible to encroach in the clearzone area of the interchange ramps with some landscaping materials.

Since roadside safety policy, criteria, and technology is continuously changing, the designer is expected and shall research and incorporate the appropriate current design elements for clearzone and sight triangles into the final design layout. The following references are furnished for convenience:

References:

1. 2007 *City of Cheyenne Road, Street, and Site Planning Design Standards*, Section 4.4.2.
See Website: <http://cheyennecity.org>
2. WYDOT *Road Design Manual*, Latest Edition.
See Website:
http://www.dot.state.wy.us/wydot/engineering_technical_programs/manuals_publications
3. WYDOT 8-01 2008 *Guide for Interstate Highways 4R-3R-2R-1R Criteria*.
See Website:
http://www.dot.state.wy.us/wydot/engineering_technical_programs/manuals_publications/road_design_manual
3. 2002 AASHTO *Roadside Design Guide*, Latest Edition.
4. *Non-irrigated Planting Material List*, Section 5.4 *Interchange Policy Guide*, Nolte Associates, Inc. and Cheyenne Metropolitan Planning Organization, p 30.
5. *Minimal Irrigated Planting Material List*, Section 5.5 *Interchange Policy Guide*, Nolte Associates, Inc. and Cheyenne Metropolitan Planning Organization, p 33.

5.4 NON-IRRIGATED PLANTING MATERIAL LIST

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
<u>DECIDUOUS TREES</u>				
BL	Black Locust	Robinia pseudoacacia	2½"	balled and burlapped
WHB	Western Hackberry	Celtis occidentalis	2½"	balled and burlapped
<u>ORNAMENTAL & SMALL DECIDUOUS TREES</u>				
CH	Cockspur Hawthorn	Crataegus crus-galli	1½"	balled and burlapped
GO	Gambel Oak	Quercus gambelii	8' 0"	balled and burlapped
RH	Russian Hawthorn	Crataegus ambigua	1½"	balled and burlapped
TCH	Thornless Cockspur Hawthorn	Crataegus crus-galli 'inermis'	1½"	balled and burlapped
TM	Tartarian Maple	Acer tataricum	1½"	balled and burlapped
WH	Western Hawthorn	Crataegus succulenta	1½"	balled and burlapped
<u>EVERGREEN TREES</u>				
GGJ	Gray Glean Juniper	Juniperus scopulorum 'Cologreen'	15 gal	container
LPN	Limber Pine	Pinus flexilis	6'	balled and burlapped
PON	Ponderosa Pine	Pinus ponderosa	6'	balled and burlapped
PP	Pinon Pine	Pinus cembroides edulis	6'	balled and burlapped
RMJ	Rocky Mountain Juniper	Juniperus scopulorum	15 gal	container
<u>DECIDUOUS SHRUBS</u>				
BB	Buffaloberry	Shepherdia argentea	5 gal	container
CMM	Curlleaf Mountain Mahogany	Cercocarpus ledifolius	5 gal	container
CP	Cheyenne Privet	Ligustrum vulgare 'Cheyenne'	5 gal	container
CWSC	Creeping Western Sand Cherry	Prunus besseyi 'Pawnee Buttes'	5 gal	container
DFS	Dwarf Fragrant Sumac	Rhus aromatica 'Low Grow'	5 gal	container
DRS	Dwarf Russian Sage	Perovskia atriplicifolia 'Little Spire'	5 gal	container
FB	Fernbush	Chamaebatiaria millifolium	5 gal	container
GC	Golden Current	Ribes aureum	5 gal	container
NMP	New Mexican Privet	Forestiera neomexicana	5 gal	container
RB	Rabbitbrush	Chrysothamnus ssp.	5 gal	container

INTERCHANGE ENHANCEMENT DESIGN GUIDE

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
<u>DECIDUOUS SHRUBS (CONTINUED)</u>				
RMSS	Rocky Mountain Smooth Sumac	Rhus glabra cismontana	5 gal	container
RS	Russian Sage	Perovskia atriplicifolia	5 gal	container
SHS	Staghorn Sumac	Rhus typhina	5 gal	container
SPS	Siberian Peashrub	Caragana arborescens	5 gal	container
SSB	Saskatoon Serviceberry	Amelanchier alnifolia	5 gal	container
WSC	Western Sand Cherry	Prunus besseyi	5 gal	container
<u>EVERGREEN SHRUBS</u>				
ACG	Alpine Carpet Juniper	Juniperus communis 'Alpine Carpet'	5 gal	container
AJ	Arcadia Juniper	Juniperus sabina 'Arcadia'	5 gal	container
ASJ	Armstrong Juniper	Juniperus chinensis 'Armstrong'	5 gal	container
BJ	Buffalo Juniper	Juniperus sabina 'Buffalo'	5 gal	container
BMJ	Broadmoor Juniper	Juniperus sabina 'Broadmoor'	5 gal	container
BRJ	Blue Rug Juniper	Juniperus horizontalis 'Wiltonii'	5 gal	container
CCJ	Calgary Carpet Juniper	Juniperus sabina 'Calgary Carpet'	5 gal	container
CPJ	Compact Pfitzer Juniper	Juniperus media 'Pfitzeriana Compacta'	5 gal	container
GMJ	Green Mound Juniper	Juniperus procumbens 'Green Mound'	5 gal	container
HJ	Hughes Juniper	Juniperus horizontalis 'Hughes'	5 gal	container
OGJ	Old Gold Juniper	Juniperus media 'Old Gold'	5 gal	container
SMMP	Slowmound Mugo Pine	Pinus mugo 'Slowmound'	5 gal	container
TJ	Tammy Juniper	Juniperus sabina 'Tamariscifolia'	5 gal	container
<u>GROUNDCOVERS, ORNAMENTAL GRASSES & PERENNIALS</u>				
BAV	Blue Avena Grass	Helictotrichon sempervirens	1 gal	container
BF	Blue Flax	Linum perenne	1 gal	container
BLF	Blue Fescue	Festuca ovina glauca	1 gal	container
CM	Creeping Mahonia	Mahonia repens	1 gal	container
IRG	Indian Rice Grass	Oryzopsis hymenoides	1 gal	container
MY	Moonshine Yarrow	Achellia x 'Moonshine'	1 gal	container
NBF	Native Blanketflower	Gaillardia aristata	1 gal	container
PCF	Purple Coneflower	Echenacea purpurea	1 gal	container
PRCF	Prairie Red Coneflower	Ratibida columnifera pulcherrima	1 gal	container

INTERCHANGE ENHANCEMENT DESIGN GUIDE

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
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TURF GRASSES

BG	Buffaloegrass	Buchloe dactyloides	Seed or Sod
BGG	Blue Gramma Grass	Bouteloua gracilis	Seed
CWG	Crested Wheatgrass	Agropyron cristatum	Seed

(The top two are warm season grass. The wheatgrass is a non-native, cool season grass. Do not mix with the Buffaloegrass or Blue Gramma grasses.)

5.5 MINIMAL IRRIGATED PLANTING MATERIAL LIST

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
<u>DECIDUOUS TREES</u>				
BO	Burr Oak	Quercus macrocarpa	2½"	balled and burlapped
PRL	Purple Robe Locust	Robinia pseudoacacia 'Purple Robe'	2½"	balled and burlapped
SLH	Skyline Honeylocust	Gleditsia triacanthos inermis 'Skyline'	2½"	balled and burlapped
SMH	Shademaster Honeylocust	Gleditsia triacanthos inermis 'Shademaster'	2½ "	balled and burlapped
THN`	Turkish Hazelnut	Corylus columna	2½ "	balled and burlapped
WHB	Western Hackberry	Celtis occidentalis	2½"	balled and burlapped

ORNAMENTAL & SMALL DECIDUOUS TREES

AM	Amur Maple	Acer ginnala	1½"	balled and burlapped
CH	Cockspur Hawthorn	Crataegus crus-galli	1½"	balled and burlapped
DH	Downy Hawthorn	Crataegus mollis	1½"	balled and burlapped
GO	Gambel Oak	Quercus gambelii	8' 0"	balled and burlapped
RH	Russian Hawthorn	Crataegus ambigua	1½"	balled and burlapped
TCH	Thornless Cockspur Hawthorn	Crataegus crus-galli 'inermis'	1½"	balled and burlapped
TM	Tartarian Maple	Acer tataricum	1½"	balled and burlapped
WA	Wafer Ash	Ptelea trifoliata	1½"	balled and burlapped
WH	Western Hawthorn	Crataegus succulenta	1½"	balled and burlapped

EVERGREEN TREES

AP	Austrian Pine	Pinus nigra	6'	balled and burlapped
GGJ	Gray Gleam Juniper	Juniperus scopulorum 'Cologreen'	15 gal	container
LPN	Limber Pine	Pinus flexilis	6'	balled and burlapped PON
	Ponderosa Pine	Pinus ponderosa	6'	balled and burlapped
PP	Pinon Pine	Pinus cembroides edulis	6'	balled and burlapped
RMJ	Rocky Mountain Juniper	Juniperus scopulorum	15 gal	container
WF	White Fir	Abies concolor	6'	balled and burlapped

DECIDUOUS SHRUBS

AWP	Abbotswood Potentilla	Potentilla fruticosa 'Abbotswood'	5 gal	container
BB	Buffaloberry	Shepherdia argentea	5 gal	container
CC	Chokecherry	Prunus virginiana	5 gal	container

INTERCHANGE ENHANCEMENT DESIGN GUIDE

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
<u>DECIDUOUS SHRUBS (CONTINUED)</u>				
CMM	Curlleaf Mountain Mahogany	Cercocarpus ledifolius	5 gal	container
CPL	Common Purple Lilac	Syringa vulgaris	5 gal	container
CWL	Common White Lilac	Syringa vulgaris alba	5 gal	container
CWSC	Creeping Western Sand Cherry	Prunus besseyi 'Pawnee Buttes'	5 gal	container
DFS	Dwarf Fragrant Sumac	Rhus aromatica 'Low Grow'	5 gal	container
DNB	Dwarf Ninebark	Physiocarpus opulifolius 'Nanus'	5 gal	container
DRS	Dwarf Russian Sage	Perovskia atriplicifolia 'Little Spire'	5 gal	container
GC	Golden Current	Ribes aureum	5 gal	container
GDP	Gold Drop Potentilla	Potentilla fruticosa 'Gold Drop'	5 gal	container
GFP	Gold Finger Potentilla	Potentilla fruticosa 'Gold Finger'	5 gal	container
JP	Jackman Potentilla	Potentilla fruticosa 'Jackmanii'	5 gal	container
KP	Klondike Potentilla	Potentilla fruticosa 'Klondike'	5 gal	container
LP	Lodense Privet	Ligustrum vulgare 'Lodense'	5 gal	container
NMP	New Mexican Privet	Forestiera neomexicana	5 gal	container
PC	Peking Cotoneaster	Cotoneaster lucidus	5 gal	container
PSP	Prairie Snow Potentilla	Potentilla fruticosa 'Prairie Snow'	5 gal	container
RLB	Redleaf Barberry	Berberis thunbergii 'Atropurpurea'	5 gal	container
RMSS	Rocky Mountain Smooth Sumac	Rhus glabra cismontana	5 gal	container
RS	Russian Sage	Perovskia atriplicifolia	5 gal	container
SC	Spreading Cotoneaster	Cotoneaster divaricatus	5 gal	container
SBP	Snow Bird Potentilla	Potentilla fruticosa 'Snow Bird'	5 gal	container
SGP	Sutter's Gold Potentilla	Potentilla fruticosa 'Sutter's Gold'	5 gal	container
SHS	Staghorn Sumac	Rhus typhina	5 gal	container
SPS	Siberian Peashrub	Caragana arborescens	5 gal	container
SS	Shadblow Serviceberry	Amelanchier canadensis	5 gal	container
WSC	Western Sand Cherry	Prunus besseyi	5 gal	container
<u>EVERGREEN SHRUBS</u>				
ACG	Alpine Carpet Juniper	Juniperus communis 'Alpine Carpet'	5 gal	container
AJ	Arcadia Juniper	Juniperus sabina 'Arcadia'	5 gal	container
ASJ	Armstrong Juniper	Juniperus chinensis 'Armstrong'	5 gal	container

INTERCHANGE ENHANCEMENT DESIGN GUIDE

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
<u>EVERGREEN SHRUBS (CONTINUED)</u>				
BJ	Buffalo Juniper	Juniperus sabina 'Buffalo'	5 gal	container
BMJ	Broadmoor Juniper	Juniperus sabina 'Broadmoor'	5 gal	container
BRJ	Blue Rug Juniper	Juniperus horizontalis 'Wiltonii'	5 gal	container
BSJ	Blue Star Juniper	Juniperus squamata 'Blue Star'	5 gal	container
	Not hardy			
BTMP	Big Tuna Mugo Pine	Pinus mugo 'Big Tuna'	5 gal	container
CCJ	Calgary Carpet Juniper	Juniperus sabina 'Calgary Carpet'	5 gal	container
CPJ	Compact Pfitzer Juniper	Juniperus media 'Pfitzeriana Compacta'	5 gal	container
GMJ	Green Mound Juniper	Juniperus procumbens 'Green Mound'	5 gal	container
HJ	Hughes Juniper	Juniperus horizontalis 'Hughes'	5 gal	container
MMP	Mops Mugo Pine	Pinus mugo 'Mops'	5 gal	container
OGJ	Old Gold Juniper	Juniperus media 'Old Gold'	5 gal	container
RCJ	Repanda Common Juniper	Juniperus communis 'Repanda'	5 gal	container
SMMP	Slowmound Mugo Pine	Pinus mugo 'Slowmound'	5 gal	container
TJ	Tammy Juniper	Juniperus sabina 'Tamariscifolia'	5 gal	container
WBMP	White Bud Mugo Pine	Pinus mugo 'White Bud'	5 gal	container
<u>GROUNDCOVERS, ORNAMENTAL GRASSES & PERENNIALS</u>				
BAV	Blue Avena Grass	Helictotrichon simpervirens	1 gal	container
BBI	Blue Bearded Iris	Iris x germanica 'Full Tide'	1 gal	container
BBRI	Blue Bearded Repeat Iris	Iris X germanica 'Steller Lights'	1 gal	container
BF	Blue Flax	Linum perenne	1 gal	container
BLF	Blue Fescue	Festuca ovina glauca	1 gal	container
CM	Creeping Mahonia	Mahonia repens	1 gal	container
DL	Daylily	Hemerocallis sp.	1 gal	container
HRDL	Happy Returns Daylily	Hemerocallis 'Happy Returns'	1 gal	container
I	Iris	Iris sp.	1 gal	container
IRG	Indian Rice Grass	Oryzopsis hymenoides	1 gal	container
LMSD	Lavender Mist Sun Daisy	Osteospermum 'Lavender Mist'	1 gal	container
MY	Moonshine Yarrow	Achellia x 'Moonshine'	1 gal	container
NBF	Native Blanketflower	Gaillardia aristata	1 gal	container
PCF	Purple Coneflower	Echenacea purpurea	1 gal	container
PRCF	Prairie Red Coneflower	Ratibida columnifera pulcherrima	1 gal	container
RD	Raspberry Daylily	Hemerocalis 'Little Business'	1 gal	container

INTERCHANGE ENHANCEMENT DESIGN GUIDE

KEY	COMMON NAME	BOTANIC NAME	SIZE	COMMENTS
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GROUNDCOVERS, ORNAMENTAL GRASSES & PERENNIALS (CONTINUED)

SDL	Stella de Oro Daylily	Hemerocallis 'Stella de Oro'	1 gal	container
SFA	Santa Fe Aster	Machaeranthera	1 gal	container
WBRI	White Bearded Repeat Iris	Iris X germanica 'Immortality'	1 gal	container
YBRI	Yellow Bearded Repeat Iris	Iris X germanica 'Summer Olympics'	1 gal	container

TURF GRASSES

BG	Buffaloegrass	Buchloe dactyloides	Seed or Sod
BGG	Blue Gramma Grass	Bouteloua gracilis	Seed
CWG	Crested Wheatgrass	Agropyron cristatum	Seed

***(The top two are warm season grasses. The wheatgrass is a non-native, cool season grass.
Do not mix with the Buffaloegrass and Blue Gramma grasses.)***

SECTION 6 – SAMPLE COOPERATIVE AGREEMENT

Description: Enclosed in this section of the guide is an example of a Cooperative Agreement. The standard type agreement is normally processed through the Local Government Coordinator and designated government representative. The purpose of this section is to provide a general format of a typical Cooperative Agreement and should not be used as a content reference.

Risk Review

By: BS
Date: 1-22-10

CITY CONTRACT #5512
**COOPERATIVE AGREEMENT
BETWEEN THE
WYOMING DEPARTMENT OF TRANSPORTATION
AND THE
CITY OF CHEYENNE**

Approved as to
form only:

Sam White
Date: Jan. 29, 2010

Federal Project STP-E 13.83 I251164
Cheyenne Marginal-Vandehi Interchange
Laramie County

1. **Parties.** The parties to this Agreement are the Wyoming Department of Transportation, hereinafter referred to as "WYDOT", whose address is 5300 Bishop Blvd., Cheyenne, Wyoming 82009, and the Governing Body of the City of Cheyenne, hereinafter referred to as the "City" whose address is 2101 O'Neil Avenue, Cheyenne, Wyoming 82001.
2. **Purpose.** The City and WYDOT desire to participate in the Federally funded, WYDOT administered Surface Transportation On-System Enhancements Program. WYDOT has heretofore designated the location and the City has approved the location for the construction of the enhancements in the City of Cheyenne which involve tower monuments, landscaping, welcome sign, coloring and texturing concrete, and decorative lighting, as shown on the attached map, dated January 4, 2010, marked Exhibit "A", and which by this reference is hereby made a part of this Agreement; and WYDOT, the City, and the traveling public shall derive a benefit and advantage by reason of having the enhancements constructed. All work covered by this Agreement shall meet American Disability Act (ADA) standards.
3. **Term of Agreement.** This Agreement shall commence upon the day and date last signed and executed by the duly authorized representatives of the parties to this Agreement and shall remain in full force and effect until terminated. This Agreement may be terminated, without cause, by either party upon 30 days written notice, which notice shall be delivered by hand or certified mail.
4. **Responsibilities of the Parties and General Conditions of the Survey Work, Preliminary Engineering, Right-of-way Acquisition, Utility Adjustments, Letting, Construction Engineering, Construction and Maintenance:**
 - a. Survey work will be performed by WYDOT or their Consultant. The work of performing the survey for this project will be performed under the immediate direction, control and supervision of WYDOT in accordance with the requirements specified by WYDOT and agreed to by the City.
 - b. Preliminary Engineering will be performed by the City, or their Consultant, who will complete engineering investigations, environmental studies and develop design plans for the tower monuments, landscaping, and welcome sign, in accordance with the

design criteria provided by WYDOT, which will be included in the final design plans.

- c. Right-of-Way Acquisition will be performed by WYDOT or their Consultant. WYDOT will acquire all necessary rights-of-way and provide any relocation assistance necessary to construct the work shown on Exhibit "A". In accordance with W.S. 1-26-801(a), the City shall be responsible for acquiring rights-of-way by condemnation proceedings with the understanding any settlements reached out of court must be justified and supported. WYDOT will assist the City in condemnation proceedings by preparing exhibits and displays. At its request, the City shall be provided a copy of the right-of-way plans and cost estimates when Federal acquisition approval is requested. The City agrees to reimburse WYDOT for the total cost needed to clear the right-of-way not paid with Federal Aid funds. Under the terms of this Agreement, if right-of-way acquisition is not required for this project, all references to such acquisition herein is considered null and void.
- d. Utility Adjustments will be performed by WYDOT. Arrangements will be made by separate agreement(s) with the affected utility owner(s) and are not covered by this Agreement. Utility relocation costs will be pro-rated according to the most recent State, County or Municipal policies and regulations. The City shall, by ordinance or regulation, control utility line encroachments and crossings in a manner that provides for a degree of protection to the roadway at least equal to the protection provided by the *State's Utility Accommodation Regulations*. Costs for reimbursable utility work not owned by the City are not shown and will be in addition to the identified costs. Under the terms of this Agreement, if utility adjustments are not required for this project, all references to such adjustments herein are considered null and void.
- e. The letting of this project will be performed by WYDOT. The City shall be given the opportunity to approve final design plans and estimates prior to the advertisement for bids by WYDOT. Likewise, the City shall be asked to concur in the award of this project to the lowest qualified bidder. As a result of signing the letter of concurrence, the City agrees to the amended costs shown on Exhibit "B" to match the actual amount bid, as well as make proportionate changes in the match and overmatch amounts. Said concurrence letter shall become part of this Agreement.
- f. Construction Engineering for this project will be performed by and under the immediate direction, control and supervision of WYDOT or their Consultant in accordance with the plans and specifications. The City shall designate a qualified project representative, at no cost to WYDOT, capable of and authorized to make timely decisions concerning the construction of the project.
- g. Upon completion and acceptance of the project by WYDOT and the City, the City shall return, within 30 days of WYDOT Resident Engineer's request, WYDOT's Form LP-3E, Acceptance Certificate, or any other required WYDOT documents. Once this Acceptance Certificate has been completed, all National Pollutant

Discharge Elimination System (NPDES) General Permits related to the project will be transferred to the City. The City shall then be responsible for all storm water runoff on the project and storm water monitoring until a Notice of Termination (NOT) can be submitted for the project by the City. In the event petroleum contaminated soil or water is encountered on this project, the required work associated with mitigation of the contamination will become part of this project.

- h. Upon completion and acceptance of this project, the City shall maintain, at its sole expense, the tower monuments, landscaping, welcome sign, and decorative lighting in compliance with all applicable Federal and State standards and regulations. Maintenance shall include all repairs necessary to keep the improvement in its original constructed condition. The City also agrees not to permanently close or abandon the route without written consent of WYDOT.

5. Participation of Project Costs:

- a. The City agrees to match the project costs at the rate of 33 percent of the cost of survey work, preliminary engineering, right-of-way acquisition, utility adjustments, letting, construction and construction engineering as shown on Exhibit "B" and which by this reference is hereby made part of this Agreement. The City agrees to reimburse to WYDOT any funds above those authorized by WYDOT and matched by the City necessary to build this project.
- b. It is understood by the parties that the above-mentioned percentages may vary slightly during the life of this Agreement, as dictated by the *Federal Notices on Sliding Scale Rates of Federal Aid Participation in Public Lands States*. It is further understood by the City that the estimated costs may vary as the project plans are developed and let to contract and that the City shall reimburse WYDOT for the total amount not paid with Federal funds.
- c. The costs shown on the Exhibit "B" are estimates only and the City understands that the final costs may be higher or lower. Rates may vary for the life of this project based on federal reviews and approval. If the actual costs go over by 20 percent of the total estimated costs, both parties must agree and sign an amendment for the additional costs.
- d. The City agrees to pay their portion of indirect costs through the current Indirect Cost Allocation Plan (ICAP) rate as approved by the Federal Highway Administration (FHWA). The ICAP rate is developed by WYDOT and approved by the FHWA on an annual basis with the new rate taking effect every October 1. The current rate is 8.23 percent. The ICAP rate will be charged on total direct costs on this project, as shown on the attached Exhibit "B".

- e. Both parties agree should enhancement funding not be approved in the highway bill during the upcoming legislature, this Agreement will be amended to clarify enhancement funding responsibilities for this project.
- 6. **Reimbursement:** The City hereby agrees to reimburse WYDOT for its share of actual costs incurred to the project, less previous payments, within 30 days after billing. Billing will occur on a monthly basis unless otherwise agreed upon between the parties.
- 7. **Abandonment of Project:** Should the City abandon the project at any time, or if the project is not let to construction within two years of the completion of the design or prior to the completion, due to the delay or actions by the City, the City shall reimburse WYDOT for the entire cost, including any Federal Aid portion of the work completed at the time of abandonment.
- 8. **General Provisions:**
 - a. **Amendments.** Either party may request changes in this Agreement. Any changes, modifications, revisions or amendments to this Agreement which are mutually agreed upon by and between the parties to this Agreement shall be incorporated by written instrument, executed and signed by all parties to this Agreement.
 - b. **Americans with Disabilities Act.** The City shall not discriminate against a qualified individual with a disability and shall comply with the Americans with Disabilities Act, P.L. 101-336, 42 U.S.C. 12101, *et seq.*, and/or any properly promulgated rules and regulations related thereto.
 - c. **Applicable Law and Venue.** The construction, interpretation and enforcement of this Agreement shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming shall have jurisdiction over this Agreement and the parties, and the venue shall be in the First Judicial District, Laramie County, Wyoming.
 - d. **Assignment/Agreement Not Used as Collateral.** Neither party shall assign nor otherwise transfer any of the rights or delegate any of the duties set forth in this Agreement without the prior written consent of the other party. The City shall not use this Agreement, or any portion thereof, for collateral for any financial obligation without the prior written permission of WYDOT.
 - e. **Audit/Access to Records.** The City shall provide free access to any pertinent, books, documents, and papers to the State of Wyoming, the Federal Grantor Agency, the Comptroller General of the United States, the United States Department of Labor, or any of their duly authorized representatives for the purposes of inspection, audit and copying. The City shall provide proper facilities for such access and inspection. The City shall keep copies of these records for at least three years after final payment and settlement. Allocated funds are Wyoming Department of Transportation, Federal Highway Administration (WYDOT, FHWA), federal dollars under the Catalog of

Federal Domestic Assistance (CFDA) Program #20.205, Highway Planning and Construction.

- f. **Availability of Funds.** Each payment obligation of WYDOT is conditioned upon the availability of government funds which are appropriated or allocated for the payment of this obligation. If funds are not allocated and available for the continuance of the services performed by the City, this Agreement may be terminated by WYDOT at the end of the period for which the funds are available. WYDOT will notify the City at the earliest possible time of the services which will or may be affected by a shortage of funds. No penalty shall accrue to WYDOT in the event this provision is exercised, and WYDOT will not be obligated or liable for any future payments due or for any damages as a result of termination under this section. This provision shall not be construed to permit WYDOT to terminate this Agreement in order to acquire similar services from another party.
- g. **Compliance with Law.** The City shall keep informed of and comply with all applicable, Federal, State and local laws and regulations in the performance of this Agreement.
- h. **Entirety of Agreement.** This Agreement, consisting of seven pages, and Exhibit "A" and Exhibit "B" consisting of one page each, represents the entire and integrated Agreement between the parties and supercedes all prior negotiations, representations and agreements, whether written or oral.
- i. **Human Trafficking.** If required by 22 U.S.C. 7104(g) and 2 CFR Part 175, this Agreement may be terminated without penalty if a private entity that receives funds under this Agreement:
 - (i) Engages in severe forms of trafficking in persons during the period of time that the award is in effect;
 - (ii) Procures a commercial sex act during the period of time that the award is in effect; or
 - (iii) Uses forced labor in the performance of the award or subawards under the award.
- j. **Indemnification.** Each party to this Agreement shall assume the risk of any liability arising from its own conduct. Neither party agrees to insure, defend nor indemnify the other.
- k. **Kickbacks.**
 - (i) The City shall comply with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in the Department of Labor Regulations (29 CFR, Part 3). This Act provides that the City is prohibited from inducing by any means, any person employed in the construction, completion, or repair of public

work, to give up any part of the compensation to which he is otherwise entitled.

- (ii) The City certifies and warrants that no gratuities, kickbacks or contingency fees were paid in connection with this Agreement, nor were any fees, commissions, gifts, or other considerations made contingent upon the award of this Agreement.
- (iii) No staff member of the City shall engage in any contract or activity which would constitute a conflict of interest as related to this Agreement.
- (iv) If the City breaches or violates this warranty, WYDOT may, at its discretion, terminate this Agreement without liability to WYDOT, or deduct from the agreement price or consideration, or otherwise recover, the full amount of any commission, percentage, brokerage, or contingency fee.

- l. **Nondiscrimination.** The City shall comply with the Civil Rights Act of 1964, the Wyoming Fair Employment Practices Act (Wyo. Stat. § 27-9-105 *et seq.*), the Americans with Disabilities Act (ADA), 42 U.S.C. 12101, *et seq.* and the Age Discrimination Act of 1975. The City shall not discriminate against any individual on the grounds of age, sex, color, race, religion, national origin or disability in connection with the performance of this Agreement. In reference to Title VI Policy, WYDOT's Civil Rights Program is responsible for initiating and monitoring Title VI activities, preparing required reports and other WYDOT responsibilities as required by 23 Code of Federal Regulation (CFR) 200 and 49 Code of Federal Regulation 21.
- m. **Notices.** All notices arising out of, or from, the provisions of this Agreement shall be in writing and given to the parties at the address provided under this Agreement, either delivered by hand or certified mail.
- n. **Prior Approval.** This Agreement shall not be binding upon either party unless this Agreement is approved as to form by the Attorney General or his representative.
- o. **Severability.** Should any portion of this Agreement be judicially determined to be illegal or unenforceable, the remainder of this Agreement shall continue in full force and effect, and either party may renegotiate the terms affected by the severance.
- p. **Sovereign Immunity.** The State of Wyoming and WYDOT do not waive sovereign immunity by entering into this Agreement, and the City does not waive governmental immunity, except to the extent necessary for the parties to pursue a contract action to clarify or enforce the written terms of the agreement, and each specifically retains all immunities and defenses available to them as sovereigns or governmental entities pursuant to Wyo. Stat. § 1-39-101 *et seq.*, and all other state law. Designations of venue, choice of law, enforcement actions, and similar provisions should not be constructed as a waiver of sovereign immunity. The parties agree that any ambiguity in this Agreement shall not be strictly construed, either against or for either party, except that any ambiguity as to sovereign immunity shall be construed in favor of sovereign immunity.

q. **Third Party Beneficiary Rights.** The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Agreement shall not be construed so as to create such status. The rights, duties and obligations contained in this Agreement shall operate only between the parties to this Agreement and shall inure solely to the benefit of the parties to this Agreement. The provisions of this Agreement are intended only to assist the parties in determining and performing their obligations under this Agreement.

r. The terms of this Agreement, and any amendments thereto, shall be binding upon and inure to the parties hereto, their administrators and successors.

9. **Signatures.** In witness whereof, the parties to this Agreement, either personally or through their duly authorized representatives, have executed this Agreement on the day and date set out below and certify that they have read, understood, and agreed to the terms and conditions of this Agreement.

The effective date of this Agreement is the day and date last signed and executed by the duly authorized representatives of the parties to this Agreement shown below.

ATTEST:

Carol Intlekofer 2/9/10
Carol Intlekofer, City Clerk

(SEAL)

Approved as to form:

By: (refer to Page 1)
Daniel E. White, Cheyenne City Attorney

ATTEST:

Sandra J. Scott
Sandra J. Scott, Secretary
Transportation Commission of Wyoming

(SEAL)

Approved as to form:

By: Douglas J. Moench
Douglas J. Moench
Senior Assistant Attorney General
State of Wyoming

CITY OF CHEYENNE, WYOMING:

By: Richard L. Kaysen
Richard L. Kaysen, Mayor
2/9/10
Date

WYOMING DEPARTMENT OF TRANSPORTATION:

By: B. Patrick Collins
For Del McOmie, P.E., Chief Engineer
3/1/10
Date

Date agreement prepared: 1-6-10

EXHIBIT "A"

January 4, 2010

CHEYENNE MARGINAL VANDEHEI INTERCHANGE LARAMIE COUNTY

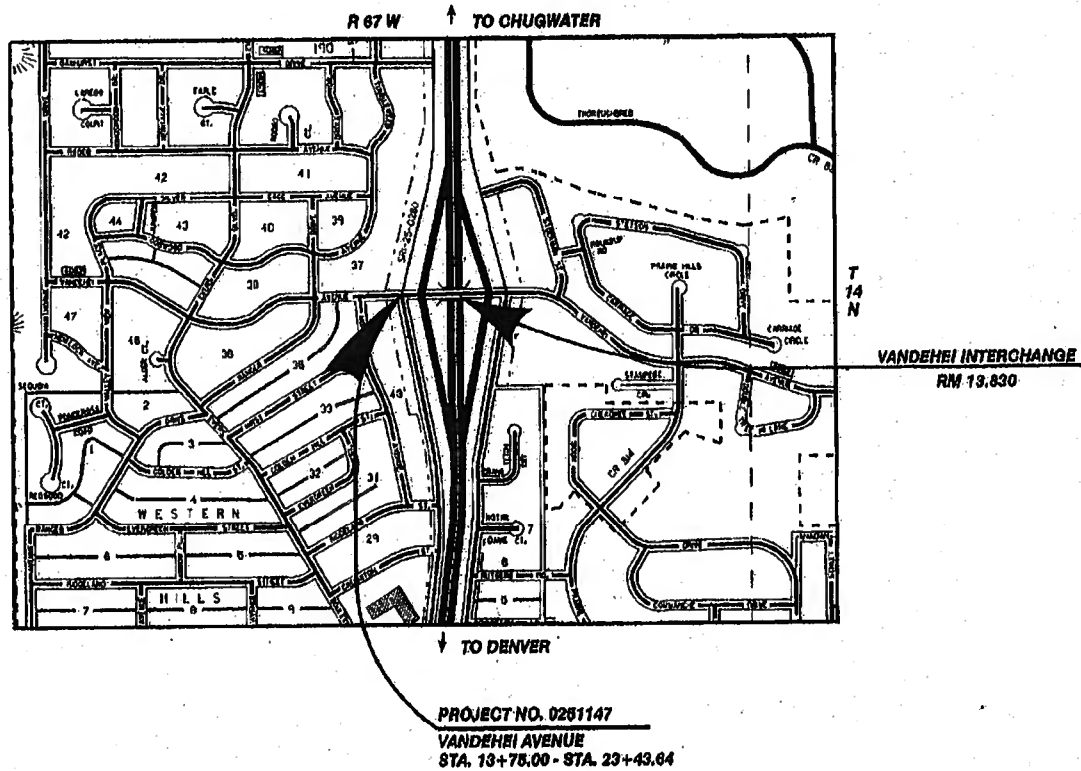


EXHIBIT "B"

Federal Project STP-E 13.83 I251164
Cheyenne Marginal-Vandehei Interchange
Laramie County

January 5, 2010

Costs were prepared by WYDOT.

<u>Item</u>		<u>Cost</u>	
Estimated Construction Costs	=	\$207,890.00	
10% Preliminary Engineering	=	20,789.00	
10% Construction Engineering	=	<u>20,789.00</u>	
Total Direct Costs	=	249,468.00	[1]
Indirect Cost Allocation Plan (ICAP) (249,468.00) (0.0823)	=	20,531.00	[2]
Total Project Costs = [1] + [2]	=	<u>\$269,999.00</u>	[3]
<u>Funding:</u>			
WYDOT's Federal Aid Match: (269,999.00) (0.6700)	=	180,899.00	[4]
City's Match Portion: (269,999.00) (0.3300)	=	<u>89,100.00</u>	[5]
Total Project Costs = [4] + [5]	=	<u>\$269,999.00</u>	

NOTE: All costs shown are rounded to the nearest even dollar.

The above figures are for estimating purposes only and are subject to revision throughout the life of this project.

Federal funding is provided through CFDA# 20.205, Highway Planning and Construction.

CONTRACT #5512
**AMENDMENT NUMBER ONE
TO THE COOPERATIVE AGREEMENT
BETWEEN THE
WYOMING DEPARTMENT OF TRANSPORTATION
AND THE
CITY OF CHEYENNE**

Approved as to
form only:

Paul White

Date: Aug 2, 2010

Federal Project STP-E 13.83 I251164
Cheyenne Marginal-Vandehei Interchange
Laramie County

1. **Parties.** This Amendment is made and entered into by and between the Wyoming Department of Transportation (WYDOT), whose address is 5300 Bishop Boulevard, Cheyenne, Wyoming 82009; and the City of Cheyenne (City), whose address is 2101 O'Neil Avenue, Cheyenne, Wyoming 82001.
2. **Purpose of Amendment.** This Amendment shall constitute the First Amendment to the Agreement between WYDOT and the City. The purpose of this Amendment is to add additional funding to this project and adjust minimum and maximum participation for the City.

The original Agreement dated March 1, 2010 provided for the construction of enhancements in the City of Cheyenne which involved tower monuments, landscaping, welcome sign, coloring and texturing concrete and decorative lighting for the total Agreement amount of \$269,999.

Amendment Number One provides for adding additional funding and adjusting minimum and maximum participation for the City, increasing the Agreement amount by \$199,936 for a total project cost of \$469,935.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto and shall remain in full force and effect through the term of the Agreement, unless terminated at an earlier date pursuant to the provisions of the Agreement, or pursuant to federal or state statute or rule or regulation.
4. **Special Provisions.** Same Terms and Conditions. With the exception of items explicitly delineated in this Amendment, all terms and conditions of the original Agreement between WYDOT and the City, including but not limited to sovereign immunity, shall remain unchanged and in full force and effect.
5. **General Provisions.** Entirety of Agreement. This Amendment, consisting of two pages, and Exhibit "B", consisting of one page; and the Original Agreement consisting of seven pages, and Exhibit "A" and Exhibit "B", consisting of one page each, represents the entire and integrated Agreement between the parties and supersedes all prior negotiations, representations, and agreements, whether written or oral.

6. **Signatures.** In witness thereof, the parties to this Amendment through their duly authorized representatives have executed this Amendment, known as Amendment Number One to the Original Agreement between WYDOT and the City, on the days and dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment as set forth herein.

The effective date of this Amendment is the date of the signature last affixed to this page.

Attest:

Carol Intlekofer
Carol Intlekofer, City Clerk

Governing Body of the City of Cheyenne:

Richard L. Kaysen
Richard L. Kaysen, Mayor

Date

8/24/10

Attest:

Sandra J. Scott
Sandra J. Scott, Secretary
Transportation Commission of Wyoming

Wyoming Department of Transportation:

Del McOmie
Del McOmie, P.E., Chief Engineer

Date

9-20-10

Approved as to form:

By: Douglas J. Moench
Douglas J. Moench
Senior Assistant Attorney General
State of Wyoming

Date agreement revised: 8-2-10

EXHIBIT "B"

Federal Project STP-E 13.83 I251164
Cheyenne Marginal-Vandehei Interchange
Laramie County

July 30, 2010

<u>Item</u>		<u>Cost</u>	
Estimated Construction Costs	=	\$417,500.00	
1% Preliminary Engineering	=	4,175.00	
3% Construction Engineering	=	<u>12,525.00</u>	
Total Direct Costs	=	434,200.00	[1]
Indirect Cost Allocation Plan (ICAP) (434,200.00) (0.0823)	=	35,735.00	[2]
Total Project Costs = [1] + [2]	=	<u>\$469,935.00</u>	[3]
<u>Funding:</u>			
WYDOT's Federal Aid Maximum Participation:	=	379,935.00	[4]
City's Minimum and Maximum Participation:	=	<u>90,000.00</u>	[5]
Total Project Costs = [4] + [5]	=	<u>\$469,935.00</u>	

NOTE: All costs shown are rounded to the nearest even dollar.

The above figures are for estimating purposes only and are subject to revision throughout the life of this project.

Federal funding is provided through CFDA# 20.205, Highway Planning and Construction.

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D. White
Date: 12/5/2011

RESOLUTION NO. 5333

ENTITLED: "A RESOLUTION ACKNOWLEDGING RECEIPT OF AND SUPPORTING THE RECOMMENDATIONS IN THE INTERCHANGE ENHANCEMENT DESIGN GUIDEBOOK PREPARED BY TOM COBB, P.E., AND NOLTE ASSOCIATES, INC. FOR THE CHEYENNE METROPOLITAN PLANNING ORGANIZATION."

WHEREAS, the Cheyenne Metropolitan Planning Organization (MPO) had programmed in its FY '09 Unified Planning Work Program to prepare an *Interchange Enhancement Design Guidebook* document for the Cheyenne urban area; and

WHEREAS, the Cheyenne MPO began work on the *Interchange Enhancement Design Guidebook* at the request of WYDOT; and

WHEREAS, the Cheyenne MPO hired Tom Cobb, P.E. and Nolte Associates, Inc. to prepare the *Interchange Enhancement Design Guidebook*; and

WHEREAS, the *Interstate Enhancement Design Guidebook* provides a comprehensive snapshot of interchange enhancement design concepts recently used in the Cheyenne urban area; and

WHEREAS, the *Interstate Enhancement Design Guidebook* includes detailed design specifications for various interstate enhancement projects as well as other design ideas from other projects completed in the community; and

WHEREAS, the *Interstate Enhancement Design Guidebook* will serve as a resource for future projects and the designs included in the Guide will be used only after additional detailed analysis is completed by a qualified design professional; and

WHEREAS, the City of Cheyenne Planning Commission held a Public Meeting on October 17, 2011, and accepted public comments, and recommended the approval of *Interchange Enhancement Design Guidebook* to the City Governing Body; and

WHEREAS, the *Interchange Enhancement Design Guidebook* is a design document to guide and assist WYDOT and the City in implementing unique and distinctive interstate and roadway enhancement design concepts in the community; and

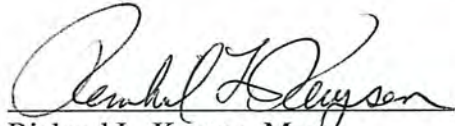
WHEREAS, the Cheyenne MPO's Technical Committee has reviewed the *Interstate Enhancement Design Guidebook* and has recommended its approval

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF CHEYENNE, WYOMING:

THAT, the City of Cheyenne Governing Body hereby acknowledges receipt of and supports the recommendations in the "*Interchange Enhancement Design Guidebook*" dated November, 2011 prepared by Tom Cobb, P.E. and Nolte Associates, Inc.

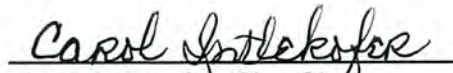
BE IT FURTHER RESOLVED, that the Governing Body recommends that the "*Interchange Enhancement Design Guidebook*" be used as a resource and guideline for future design and construction of community interstate and highway enhancement design projects in the Cheyenne urban area as funding becomes available.

PRESENTED, READ AND ADOPTED THIS 28th DAY OF November, 2011.


Richard L. Kaysen, Mayor

(Seal)

ATTEST:


Carol Intlekofer, City Clerk

RESOLUTION NO. 11115-08

ENTITLED: "A RESOLUTION ACKNOWLEDGING RECEIPT OF AND APPROVING THE INTERCHANGE ENHANCEMENT DESIGN GUIDEBOOK PREPARED BY TOM COBB, P.E., AND NOLTE ASSOCIATES, INC. FOR THE CHEYENNE METROPOLITAN PLANNING ORGANIZATION."

WHEREAS, the Cheyenne Metropolitan Planning Organization (MPO) had programmed in its FY '09 Unified Planning Work Program to prepare an *Interchange Enhancement Design Guidebook* document for the Cheyenne urban area; and

WHEREAS, the Cheyenne MPO began work on the *Interchange Enhancement Design Guidebook* at the request of WYDOT; and

WHEREAS, the Cheyenne MPO hired Tom Cobb, P.E. and Nolte Associates, Inc. to prepare the *Interchange Enhancement Design Guidebook*; and

WHEREAS, the *Interstate Enhancement Design Guidebook* provides a comprehensive snapshot of interchange enhancement design concepts recently used in the Cheyenne urban area; and

WHEREAS, the *Interstate Enhancement Design Guidebook* includes detailed design specifications for various interstate enhancement projects as well as other design ideas from other projects completed the community; and

WHEREAS, the *Interstate Enhancement Design Guidebook* will serve as a resource for future projects and the designs included in the Guide will be used only after additional detailed analysis is completed by a qualified design professional; and

WHEREAS, the Laramie County Planning Commission held a Public Meeting on October 27, 2011, and accepted public comments, and recommended the approval of *Interchange Enhancement Design Guidebook* to the Board of County Commissioners of Laramie County; and

WHEREAS, the *Interchange Enhancement Design Guidebook* is a design document to guide and assist WYDOT and the County in implementing unique and distinctive interstate and roadway enhancement design concepts in the community; and

WHEREAS, the Cheyenne MPO's Technical Committee has reviewed the *Interstate Enhancement Design Guidebook* and has recommended its approval

C.M.P.O.
GUTHRIE

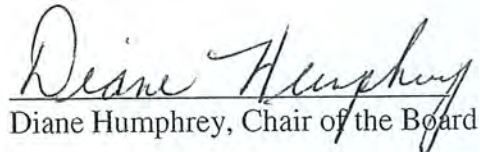
COPY OF RECORD

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS, LARAMIE COUNTY, WYOMING:

THAT, the Board of County Commissioners for Laramie County hereby acknowledges receipt of and approves the "*Interchange Enhancement Design Guidebook*" dated November, 2011 prepared by Tom Cobb, P.E. and Nolte Associates, Inc.

BE IT FURTHER RESOLVED, that the Board of County Commissioners' of Laramie County recommends that the "*Interchange Enhancement Design Guidebook*" be used as a resource and guideline for future design and construction of community interstate and highway enhancement design projects in the Cheyenne urban area as funding becomes available.

PRESENTED, READ AND ADOPTED THIS 15th DAY OF Nov., 2011.


Diane Humphrey, Chair of the Board

(Seal)

ATTEST:


Debbye Balcaen Lathrop, County Clerk