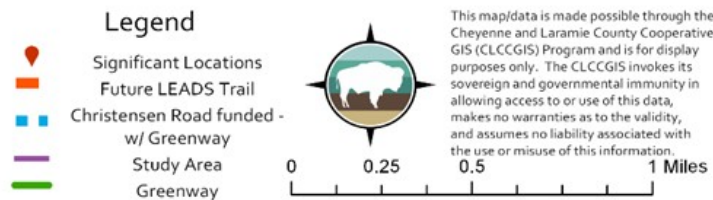
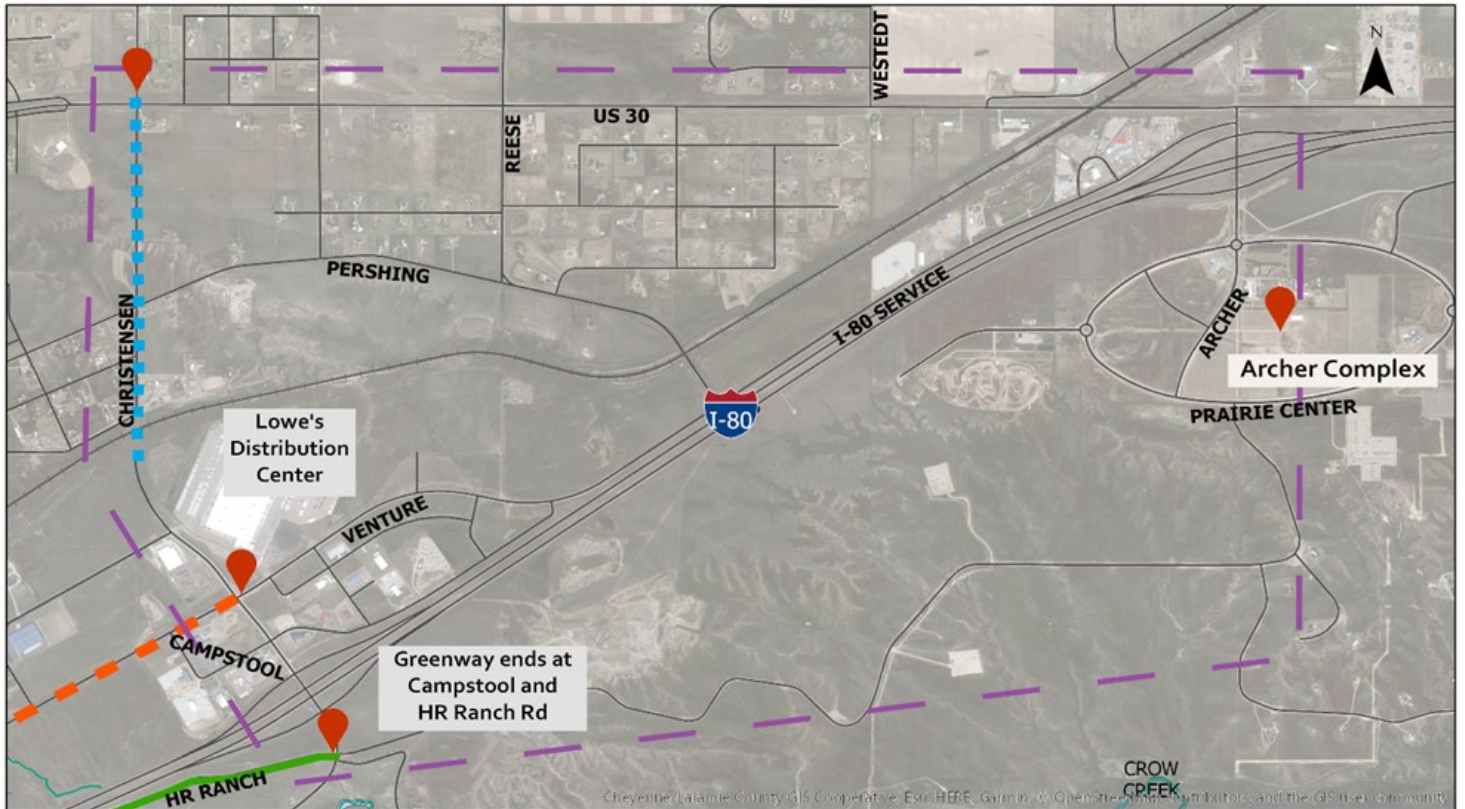


Archer Trail Connector Plan



Archer Trail Connector Plan



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This study was completed with assistance from the following individuals:

Steering Committee

- Amber Ash, Laramie County Commissioner
- Wayne Shenefelt, WYDOT
- Dave Bumann, Director Laramie County Public Works
- Richard Zita, City of Cheyenne Planning
- Lee Woofenden, Greenway Advisory Committee Member
- Jason Sanchez, Deputy Director City of Cheyenne Community Recreation and Events
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INTRODUCTION

The Cheyenne metropolitan area continues to expand to the east with the addition of housing and amenities. Within this growth area the Laramie County Archer Complex also continues to expand with the addition of the multi-purpose events facility that once open, will host events which will draw even more people to the complex. The Cheyenne MPO is looking toward the future of non-motorized transportation and recreation options in this area.

This plan explored options to connect the existing Greenway, that ends at the intersection of HR Ranch Road and Campstool Road, to the Archer Complex. This rural area offers beautiful views of rolling hills and the Crow Creek riparian area. This plan provides an opportunity to expand the Greater Cheyenne Greenway system to the Archer Complex – providing a non-motorized connection to this event space. Trail planning considered all potential user types including equestrians, bicyclists, walkers and joggers. Both pathways and on-street bicycle facilities were considered.

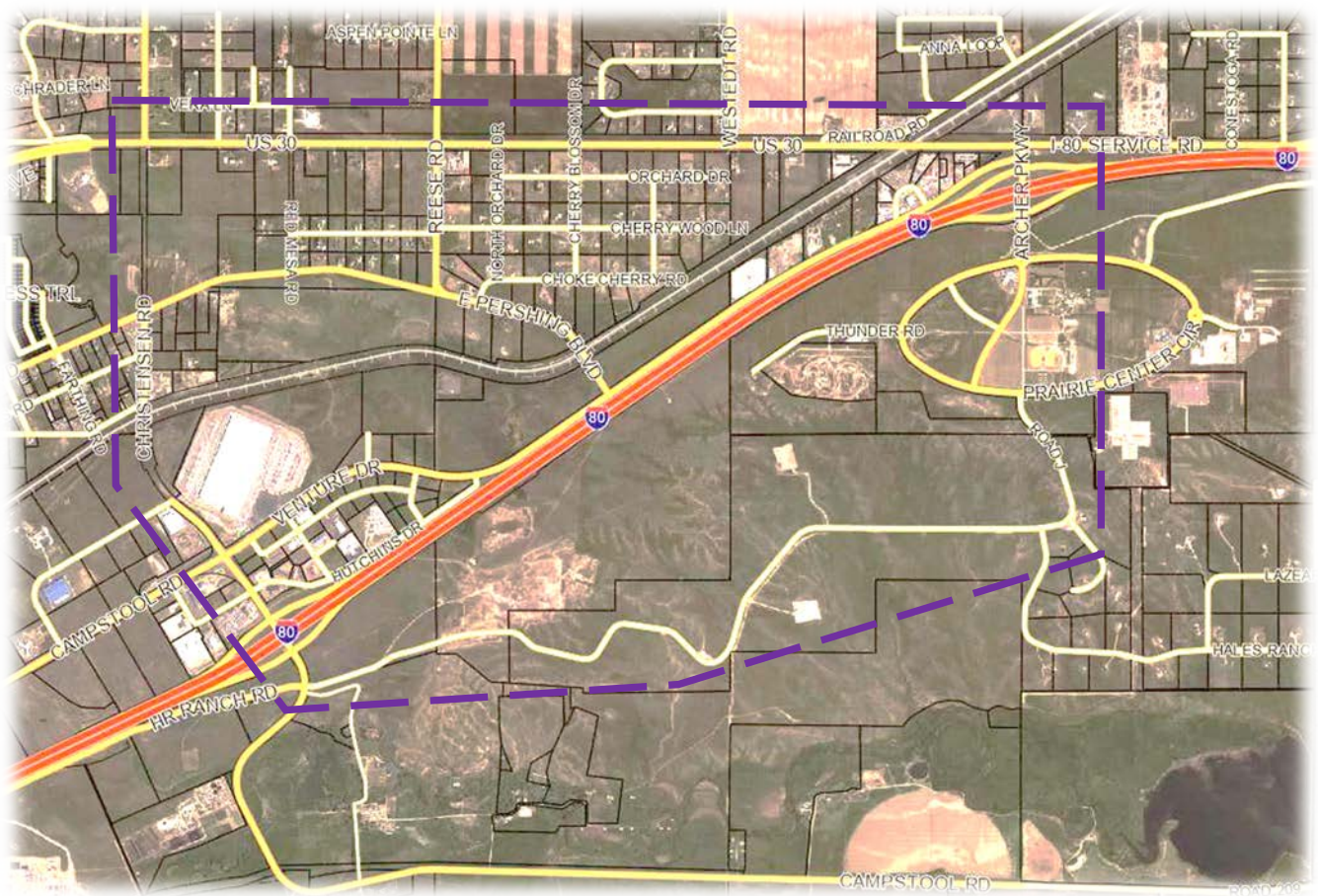


Figure 1: Archer Trail Plan Study Area – Indicated by purple dashed line

THE PROCESS

GAUGING INTEREST

A portion of the 2018 Laramie County Fair was held at the Archer Complex from July 30 – August 2. At various times during those dates, members of the consulting team and the steering committee greeted participants and visitors to the Fair and gave them a brief overview of the project. Paper surveys were handed out trying to identify if a trail between Campstool Road and the Archer Complex would be of interest and if so, how would it be used: biking, walking/running, or horseback riding. Additionally, “Draw Your Own Path” maps were used to generate interest in the Greenway/Trail network currently available in the vicinity as well as to generate interest in the proposed Archer Trail Connector. Also, an on-line survey was posted during this time period with links placed both on the MPO Facebook page and MPO homepage, as well as cards with the link handed out at the Fair for people to respond at their convenience.

This initial public engagement process showed that there is significant interest in developing a trail system in the area. Many nearby residents, as well as Archer Complex users, expressed an interest in having a trail for equestrian use as well as bicycling, jogging and walking. Additionally, public comments indicated that there is an interest for on-street bicycle facilities between Campstool Road and the Archer Complex.

TRAIL LOCATION CONSIDERATIONS

The Archer Trail will be located in a rural area. This area lends itself to a trail that is rural in nature; not a trail that follows alongside a roadway, but one that puts the trail user into the rural environment and embraces the topography of the area. For this reason, planning for the trail alignment needed to consider existing and planned future land use. Easements will be required for the trail where it is placed on private property.

Several trail locations were considered during the planning process. One of the largest landowners in the study area, the State Highway Commission, utilizes their land between Interstate-80 and HR Ranch Road for the Wyoming Department of Transportation Hereford Training Facility. This property serves multiple functions, including a training site for the Highway Patrol, shooting range, and an aggregate pit. Semi-truck traffic frequently accesses the site via two entrances, directly off of I-80 and off of HR Ranch Road. Figure 2 is a Google Earth image of the Hereford Training Facility’s access off of I-80. During the time of this study, semi-truck traffic would leave the interstate, turning directly onto the property at a gravel access road. **This access was provided for the duration of a WYDOT construction project on I-80 and will not be used following the end of that project. However, future WYDOT projects may use this access.** Because of this uncontrolled turning movement, it is unsafe to place a multi-use path along the north property line of the Hereford Training Facility. Not only is semi-truck traffic exiting and entering I-80 at high speeds, drivers would not be expecting multi-use path users in this area. For this reason, a trail along the north property line is not recommended. Also, discussions with WYDOT staff indicated that they are not in support of a multi-use path along the north side of HR Ranch Road at this time. Their preference is to keep path users as far away from the activities they have going on inside the fenced Hereford Training Facility as possible. The property access off of HR Ranch Road is

used by semi-truck traffic, creating a potential conflict between industrial traffic and trail users if the path were to be placed on the north side of HR Ranch Road. The State Highway Commission also owns a portion of land on the south side of HR Ranch Road. Discussions with WYDOT indicated that they would be supportive of providing an easement for trail use within their property on the south side of HR Ranch Road.



Figure 2: Hereford Training Facility Access to Interstate-80

The largest landowner in this area is the HR Land Company. Discussions with HR Land Company representatives indicated that their original development plans for this area included a trail that would utilize the existing electrical transmission line easement. They further indicated that this easement land could be considered an acceptable route for a pathway. The conceptual plans, included in Appendix A, show the Archer Trail being placed on HR Land Company property to get trail users from the south side of HR Ranch Road to the electrical transmission easement. The exact placement of this trail will need to be reviewed and approved by HR Land Company to ensure that its location is conducive to their development plans for this area.

TRAIL SURFACING CONSIDERATIONS

Comments received at the public meeting as well as from the on-line survey indicated that future trail users are interested in both a hard surface trail and a soft surface trail. A hard surface trail is less conducive to equestrians than a soft surface trail, but a soft surface trail is less conducive to wheel chairs and strollers. The 35% conceptual plans for the Archer Trail have been designed as a dual trail, both a soft and a hard surface, as show in Figure 3. The Director of Laramie County Public Works indicated during the planning process that Laramie County employees plow snow and maintain the Allison Draw Greenway, and will maintain the proposed Archer Connector Trail. During final design of the trail the proposed widths should be evaluated with proposed maintenance methods considered. At that time perhaps Laramie County Public Works will have the ability to remove snow from a concrete trail that is less than 10 feet wide, and the crusher fines trail can be widened beyond three feet to allow adequate space for equestrians to ride side by side. Two feet separation between the concrete trail and the soft surface trail is a minimum. Widening this separation is desirable to create a buffer between equestrians and other trail users.



Figure 3: Archer Trail Cross Section

A hard surface trail must be designed to meet the Americans with Disabilities Act (ADA) requirements for both vertical slope and cross slope. A hard surface trail can not exceed a vertical slope of more than 5%, nor a cross slope of more than 2%. Soft surface trails are not required to follow these same guidelines, however, if constructed as a compacted surface it can be accessible to wheelchairs. The 35% design of the Archer Trail includes several areas that require the hard surface portion of the trail to switch back and forth in order to achieve less than a 5% vertical slope. In many of these locations, the 35% design includes a soft surface trail that does not follow adjacent to the hard surface trail, but circumvents the switchbacks and follows directly up the existing slope. This allows for a more direct travel path for trail users who are able to travel on a steeper incline.

MULTI-USER CONSIDERATIONS

The Archer Trail will be available for use by multiple user types: equestrians, joggers, walkers, and bicyclists. The June 2012 *Cheyenne On-Street Bicycle Plan and Greenway Plan Update, Volume II*, by Alta Planning + Design, discusses managing multiple users in Section 3.1.2:

Differing surfaces suitable to each user group foster visual separation and clarity of where each user group should be. When trail corridors are constrained, the approach is often to locate the two different trail surfaces side by side with no separation.

Informing trail users of acceptable trail etiquette is a common issue when multiple user types are anticipated. Yielding the right-of-way is a courtesy and a yet necessary part of a safe trail experience involving multiple trail users. Trail right-of-way information should be posted at trail access points and along the trail. The message must be clear and easy to understand. Where appropriate, trail etiquette systems should instruct trail users to the yielding of cyclists to pedestrians and equestrians and the yielding of pedestrians to equestrians.

- *Cheyenne On-Street Bicycle Plan and Greenway Plan Update, Volume II*



It is recommended that a trail yield sign be installed at both ends of the Archer Connector Trail, on either side of any narrow crossing, such as a pedestrian bridge, as well as every 0.5 miles. The reoccurrence of the signs will serve as a reminder to trail users that they may encounter different types of users.

ARCHER TRAIL 35% CONCEPTUAL DESIGN

Appendix A contains plan and profile engineering drawings for the conceptual design of the Archer Trail. The conceptual plans use City of Cheyenne and Laramie County GIS aerial contour data. All vertical slopes at the centerline of the proposed path are less than 5% to meet ADA requirements for an accessible path. In areas of existing steep terrain, the path has been shown to switch back and forth to achieve the 5% maximum slope. During final design, consideration will need to be given to the vertical profile at the path centerline to ensure that the pathway can be constructed with a 2% cross slope and 5% maximum slope at the edges of the pathway along these switchback areas.

INTERSECTION OF HR RANCH ROAD AND CAMPSTOOL ROAD

The existing Greenway ends at the southwest corner of the HR Ranch Road and Campstool Road intersection. Consideration needs to be given to the safety of trail users when crossing Campstool Road. Because of the rural nature of this area, drivers are not expecting to encounter pedestrians at this intersection. It is recommended

that a pedestrian activated push button crossing flasher be installed for the crossing of Campstool Road. A painted crosswalk is also recommended. While the safest way for trail users to cross a roadway is via a grade separated crossing, that is not recommended at this intersection because the Archer Trail Connector is planned to be a multi-user trail, which includes equestrians. Underpass tunnels and pedestrian bridges over roadways, where the bridge will likely be fully enclosed, are not ideal for horses.

TRAIL BEGINS ON THE SOUTH SIDE OF HR RANCH ROAD

The west portion of the trail will be located along the southern right-of-way of HR Ranch Road. HR Ranch Road has an 80' right-of-way consisting of two travel lanes, a shoulder and a ditch section on both sides of the road. For the purpose of the 35% conceptual design the centerline of the dual pathway was placed along the southern right-of-way line of HR Ranch Road. This approach ensures that there will be adequate room for the ditch section along HR Ranch Road. The Archer Trail Plan study did not include a drainage analysis of the study area. During final design of the trail it may be possible to move the trail further inside the right-of-way if adequate conveyance is provided in the ditch. Any portion of the trail which falls outside of the right-of-way, on private property, will require a public access easement.

HR RANCH ROAD CROSSING & OIL SITE ACCESS ROAD CROSSING

At trail station 73+35 (plan and profile sheet 4), the trail crosses HR Ranch Road. At the 35% plan level this crossing location is merely conceptual. It is recommended that a crossing of HR Ranch Road take place at a roadway intersection; as an intersection provides the safest place for trail users to cross a roadway. Future development of the HR Land Company property may include a road network with an intersection in this vicinity where a crossing can ideally be located. From the crossing of HR Ranch Road, the trail continues north across HR Land Company land to the electrical transmission easement. Final design of the trail shall be coordinated with the future development of this land and public access easements will be required through this private property. A trail corridor is a great amenity for a neighborhood. The Archer Trail can be mutually beneficial for both Laramie County and HR Land Company if it is designed and located in such a way to blend well with a future subdivision development plan.

There are two existing active oil well locations within the Archer Trail plan study area. The trail will cross an access road to these oil-well sites at approximately trail station 120+60 (plan and profile sheet 7). It is recommended that stop signs be placed for trail users on either side of this access road to ensure trail users are alerted to the possibility of vehicle traffic crossing the pathway. The eastern oil well pad site began construction during the development of this plan. The approximate location of this site has been indicated in the plan sheets, but its exact location has not been surveyed, nor is it shown in the aerial image background on the plan sheets.

UNDERGROUND UTILITIES

There are many underground petroleum pipeline utility markers throughout the land proposed for the Archer Trail Connector. Neither utility locates, nor a topographic/utility survey was done for this conceptual design. Final design of the trail will require that these buried utilities be located to ensure that trail construction will not require removing material from on top of these utilities. A single gas pipe line has been included on the plan sheets, as this pipe line is included in the plat for the HR Ranch Subdivision.

EXISTING DRAINAGEWAYS

Two locations have been identified where the trail will cross significant drainageways. A drainage study was not done in conjunction with the Archer Trail Connector Plan. Therefore, these drainageways have not been analyzed in terms of capacity or total conveyance. The drainageway at trail station 103+50 (plan and profile sheet 6) has been shown as a location for a pre-fabricated pedestrian bridge. For the purposes of the estimate of probable construction cost, the bridge has been assumed to be a steel bridge with a wooden deck. The clear width of the bridge will be 12', and it is assumed to be 110' long. The bridge will require concrete abutments and wingwalls. Riprap for scour protection has also been included in the cost estimate. The drainageway at trail station 162+30 (plan and profile sheet 8) has been shown as a location for a low-flow culvert crossing. For the purposes of the estimate of probable construction cost, this crossing is assumed to be a triple 6'x6' concrete box culvert installation with railing and riprap for scour protection. The terrain in this location suggests that the existing ground has been cut by storm water flowing during large storm events to form a deep channel with steep side slopes. A box culvert installation may be more cost effective than a pedestrian bridge. A structure selection analysis should be done during final design of the Archer Trail.

There are many factors to consider when choosing a crossing type for a large drainageway. A pedestrian bridge must be designed so the design storm event will pass under the structure. A box culvert installation can be designed as a low-flow crossing, meaning that during smaller storm events the stormwater passes under the trail through the culvert(s). However, during a large storm event the flow overtops the culvert(s) and the trail. Low flow crossings can be less expensive than a pedestrian bridge because the structure doesn't need to be designed to handle the larger storm event, but primarily to keep the trail usable during smaller storm events. Consideration needs to be given to the height of the culvert; it is recommended that railings be installed over the culvert(s) at the trail crossing. Constructability should also be considered. A pedestrian bridge will be shipped to the site in long segments. A crane is necessary to lift the bridge off of the semi-truck and to place it on the abutments. The pedestrian bridge shown in the 35% plans is located approximately 900 feet north of HR Ranch Road and 600 feet south of the WAPA corridor access road. Provided that the ground is not saturated a semi-truck should be able to access the pedestrian bridge location. Box culverts are manufactured in smaller sections such that an excavator can lift a segment and set it into place. It is recommended that the soft surface trail be discontinued on either side of a low-flow crossing and be replaced with a wider hard surface trail. When a storm event overtops the low-flow structure it will likely wash away the soft surface trail aggregate. Similarly, a pedestrian bridge will have only one type of decking material. The soft surface and hard surface trails will be combined at the pedestrian bridge and low-flow crossing into a single trail for the length of the structures. Final design of the trail will need to include a full analysis of the drainage in the vicinity of the trail as well as determining the ideal crossing type at each drainageway location.

TRAILHEADS

The Archer Trail ends near the intersection of Prairie Center Circle and HR Ranch Road. The Overall Site Concept Plan in the Archer Fairgrounds Master Plan shows a trailhead at this location. The Overall Site Concept Plan is included in Appendix B. A trailhead in this location will ideally be designed to accommodate horse trailer parking as well as conventional parking. Keeping horse trailer parking separated from conventional parking will help to create an environment conducive to multiple types of trail users.

A trail of this length, nearly 3.5 miles, would benefit from having an additional trailhead near the intersection of HR Ranch Road and Campstool Road. Trailheads offer a convenient location for users to park vehicles in order access the trail. A trailhead also offers a destination for trail users. Trailheads should include a kiosk with a map showing an overview of the trail, including distances to cross roads and other trailheads. Signage alerting trail users to the multi user nature of the Archer Trail should also be located at the trailhead to remind users of the yield expectations of various users.

ESTIMATE OF PROBABLE CONSTRUCTION COSTS

The nearly 3.5-mile Archer Connector Trail, a dual 10-foot with Greenway and 3-foot wide soft surface trail will be an expensive trail to construct for several reasons:


- The terrain is very hilly and often exceed 5% slope, requiring the trail to switch back and forth to gain enough length to obtain the less than 5% slope required to meet ADA guidelines.
- To achieve the 5% maximum slope and construct the switchbacks, a lot of material must be excavated and moved to accommodate these design slopes. As a cost saving measure, the soft surface trail has been designed to continue up many of the slopes rather than to parallel the hard surface trail through the switchback areas, thereby reducing the amount of excavation needed.
- HR Land Company owns a very large portion of the property in the study area. They have indicated that they are willing to have the Trail constructed within the WAPA Easement. This easement area has two significant drainageways that need to be crossed. Structures to cross the drainageways will be expensive, but will certainly add interest to the trail.

The estimate of probable construction cost for the dual trail is \$2.6 million, in 2019 dollars, including engineering design costs for both the trail and the structures.

A fiscally constrained trail option was also explored. The fiscally constrained option eliminates the concrete Greenway path and includes a 10' wide soft surface trail. This option also provides a trail that meets ADA guidelines by keeping the trail to less than 5% slope. A soft surface trail can be constructed to be accessible to all users, including those in wheelchairs if the pathway material is compacted. A 10' wide trail is narrower than the dual trail and therefore involves less material being moved during construction.

The estimate of probable construction cost for a 10' wide soft surface trail is \$1.6 million, in 2019 dollars, including engineering design costs for both the trail and the structures.


An estimate of 12% of construction costs has been used to estimate engineering design costs. It is noted that this estimate is based on the soft surface trail construction costs and not the dual trail construction costs as trail surfacing material type will not impact the professional engineering design fees if both trail options are to be designed to meet ADA guidelines.

 SUMMIT ENGINEERING	ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COSTS
DATE	MAY 2019
PROJECT STAGE	35% Design

ARCHER TRAIL CONNECTOR, 10' CONCRETE GREENWAY AND 3' SOFT SURFACE TRAIL
--

Description	Unit	Est. Qty	Est. Unit Cost	Est. Total Cost
CONTRACT BOND	LS	1	\$ 15,900.00	\$ 15,900.00
INSPECTIONS AND TESTING FOR QUALITY CONTROL	LS	1	\$ 34,000.00	\$ 34,000.00
MOBILIZATION	LS	1	\$ 40,009.00	\$ 40,009.00
TRAFFIC CONTROL	LS	1	\$ 4,000.00	\$ 4,000.00
CONSTRUCTION SURVEYING AND STAKING	LS	1	\$ 25,000.00	\$ 25,000.00
SEDIMENT, EROSION CONTROL, AND STORM WATER MANAGEMENT	LS	1	\$ 15,000.00	\$ 15,000.00
UNCLASSIFIED EXCAVATION (WASTE ON SITE)	CY	33000	\$ 9.00	\$ 297,000.00
CRUSHED BASE GRADING 'W'	TON	5257	\$ 35.00	\$ 183,995.00
RIPRAP d50 = 12"	CY	70	\$ 220.00	\$ 15,400.00
STRIPPING, STORING & REPLACEMENT OF TOPSOIL, 4"	CY	7330	\$ 8.00	\$ 58,640.00
STORM SEWER - 12" CMP	LF	20	\$ 70.00	\$ 1,400.00
STORM SEWER - 18" CMP	LF	138	\$ 80.00	\$ 11,040.00
STORM SEWER - 18" CMP FLARED END SECTIONS	EA	4	\$ 250.00	\$ 1,000.00
RCBC - 6'x6'x20'	EA	3	\$ 20,000.00	\$ 60,000.00
SEEDING, DRY LAND MIX	AC	10	\$ 1,500.00	\$ 15,000.00
COCONUT BLANKETS ON SLOPES > 2.5:1	SY	1000	\$ 4.50	\$ 4,500.00
SOFT SURFACE TRAIL, CRUSHER FINES (3' WIDE)	SF	51534	\$ 2.50	\$ 128,835.00
CONCRETE GREENWAY, 4" (10' WIDE)	SF	177220	\$ 4.50	\$ 797,490.00
CONCRETE GREENWAY, 6" (10' WIDE)	SF	200	\$ 5.50	\$ 1,100.00
CONCRETE ABUTMENTS FOR PEDESTRIAN BRIDGE	LS	1	\$ 27,000.00	\$ 27,000.00
CONCRETE WINGWALLS FOR PEDESTRIAN BRIDGE AND RCBC	LS	1	\$ 55,000.00	\$ 55,000.00
DETECTABLE WARNING PLATES (2' x 10')	EA	7	\$ 1,200.00	\$ 8,400.00
CROSSWALK	LS	1	\$ 750.00	\$ 750.00
PEDESTRIAN PUSH BUTTON WITH WARNING LIGHTS	EA	2	\$ 8,000.00	\$ 16,000.00
GREENWAY STOP SIGN	EA	2	\$ 300.00	\$ 600.00
TRAIL YIELD SIGN	EA	18	\$ 300.00	\$ 5,400.00
TRAILHEAD INFORMATION KIOSK	EA	2	\$ 2,800.00	\$ 5,600.00
GREENWAY FENCE NEAR STEEP SLOPES	LF	200	\$ 22.00	\$ 4,400.00
MODULAR BLOCK RETAINING WALL	LF	280	\$ 100.00	\$ 28,000.00
PREFABRICATED PEDESTRIAN BRIDGE (110' x 12')	LS	1	\$ 180,000.00	\$ 180,000.00
RAILING AT RCBC	LF	56	\$ 80.00	\$ 4,480.00

Sub Total	\$ 2,044,939.00
Engineering Design	\$ 150,000.00
15% Contingency	\$ 329,250.00
Structural Design by Bridge Supplier	\$ 20,000.00
TOTAL	\$ 2,544,189.00

 SUMMIT ENGINEERING	<u>ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COSTS</u>
DATE	MAY 2019
PROJECT STAGE	35% Design

FISCALLY CONSTRAINED OPTION: ARCHER TRAIL CONNECTOR, 10' SOFT SURFACE TRAIL

Description	Unit	Est. Qty	Est. Unit Cost	Est. Total Cost
CONTRACT BOND	LS	1	\$ 11,709.00	\$ 11,709.00
INSPECTIONS AND TESTING FOR QUALITY CONTROL	LS	1	\$ 7,000.00	\$ 7,000.00
MOBILIZATION	LS	1	\$ 23,653.00	\$ 23,653.00
TRAFFIC CONTROL	LS	1	\$ 4,000.00	\$ 4,000.00
CONSTRUCTION SURVEYING AND STAKING	LS	1	\$ 12,000.00	\$ 12,000.00
SEDIMENT, EROSION CONTROL, AND STORM WATER MANAGEMENT	LS	1	\$ 15,000.00	\$ 15,000.00
UNCLASSIFIED EXCAVATION (WASTE ON SITE)	CY	23310	\$ 9.00	\$ 209,790.00
RIPRAP d50 = 12"	CY	70	\$ 220.00	\$ 15,400.00
STRIPPING, STORING & REPLACEMENT OF TOPSOIL, 4"	CY	7330	\$ 8.00	\$ 58,640.00
STORM SEWER - 12" CMP	LF	20	\$ 70.00	\$ 1,400.00
STORM SEWER - 18" CMP	LF	138	\$ 80.00	\$ 11,040.00
STORM SEWER - 18" CMP FLARED END SECTIONS	EA	4	\$ 250.00	\$ 1,000.00
RCBC - 6'x6'x20'	EA	3	\$ 20,000.00	\$ 60,000.00
SEEDING, DRY LAND MIX	AC	10	\$ 1,500.00	\$ 15,000.00
COCONUT BLANKETS ON SLOPES > 2.5:1	SY	700	\$ 4.50	\$ 3,150.00
SOFT SURFACE TRAIL, CRUSHER FINES (10' WIDE)	SF	177220	\$ 2.50	\$ 443,050.00
CONCRETE ABUTMENTS FOR PEDESTRIAN BRIDGE	LS	1	\$ 27,000.00	\$ 27,000.00
CONCRETE WINGWALLS FOR PEDESTRIAN BRIDGE AND RCBC	LS	1	\$ 55,000.00	\$ 55,000.00
CROSSWALK	LS	1	\$ 750.00	\$ 750.00
PEDESTRIAN PUSH BUTTON WITH WARNING LIGHTS	EA	2	\$ 8,000.00	\$ 16,000.00
GREENWAY STOP SIGN	EA	2	\$ 300.00	\$ 600.00
TRAIL YIELD SIGN	EA	18	\$ 300.00	\$ 5,400.00
TRAILHEAD INFORMATION KIOSK	EA	2	\$ 2,800.00	\$ 5,600.00
GREENWAY FENCE NEAR STEEP SLOPES	LF	140	\$ 22.00	\$ 3,080.00
MODULAR BLOCK RETAINING WALL	LF	210	\$ 100.00	\$ 21,000.00
PREFABRICATED PEDESTRIAN BRIDGE (110' x 12')	LS	1	\$ 180,000.00	\$ 180,000.00
RAILING AT RCBC	LF	56	\$ 80.00	\$ 4,480.00

Sub Total	\$	1,210,742.00
12% Engineering Design	\$	145,290.00
15% Contingency	\$	203,410.00
Structural Design by Bridge Supplier	\$	20,000.00
TOTAL	\$	1,579,442.00

EXPANSION OF STUDY AREA

As the Archer Trail Plan progressed many comments were received that other routes to the Archer Complex needed to be explored rather than solely the HR Ranch Road/Campstool Road intersection to the Archer Complex.

- Potential trail users on the north side of I-80 were seeking a trail route to the Archer Complex.
- Road cyclists requested a safe on-street paved route to get from Campstool Road to the Archer Complex.

TRAIL ON THE NORTH SIDE OF I-80

During the development of this Plan the Christensen Road project was awarded for construction. Christensen Road improvements will include a 10' wide concrete Greenway path between the north side of Venture Drive and the south side of Dell Range Boulevard. Additionally, Cheyenne LEADS has developed a plan to construct a 10' wide trail on the north side of Campstool Road adjacent to their property, just east of Burlington Trail to Venture Drive.

A logical continuation of the trail system would be constructing a trail from the end of the Christensen Road Greenway at the northwest corner of Venture Drive and Christensen Road, heading east to Archer Parkway and then continuing south along the west side of Archer Parkway to the Archer Complex. This route would be, in part, adjacent to land owned by the Campstool Land Company. A representative of the Campstool Land Company has indicated that he would be in support of a trail easement through this property. Between Pershing Boulevard and Archer Parkway there are several businesses that cater to the Interstate semi-truck traffic generated by the interchange at I-80 and Archer Parkway, including Crete Carrier and Sapp Brothers Truck Stop, among others. Placing the trail on the north side of the I-80 Service Road is not recommended because of the potential conflict points between trail users and these business accesses. An alternative would be to place the trail on the north side of these business properties, adjacent to the UPRR ROW, and then to Archer Parkway. WYDOT has no current plans to widen or replace the Archer Parkway bridge over I-80. When this bridge is reconstructed WYDOT should be approached about making the bridge wide enough to provide for non-motorized and pedestrian accommodations on the bridge.

Connecting the Christensen Road Greenway to the Archer Complex will provide this connection for users who will access the trail from the north side of I-80. Figure 4 shows the potential trail alignment and locations recommended for shoulder widening to accommodate road bicyclists, as discussed in the next section of this report.

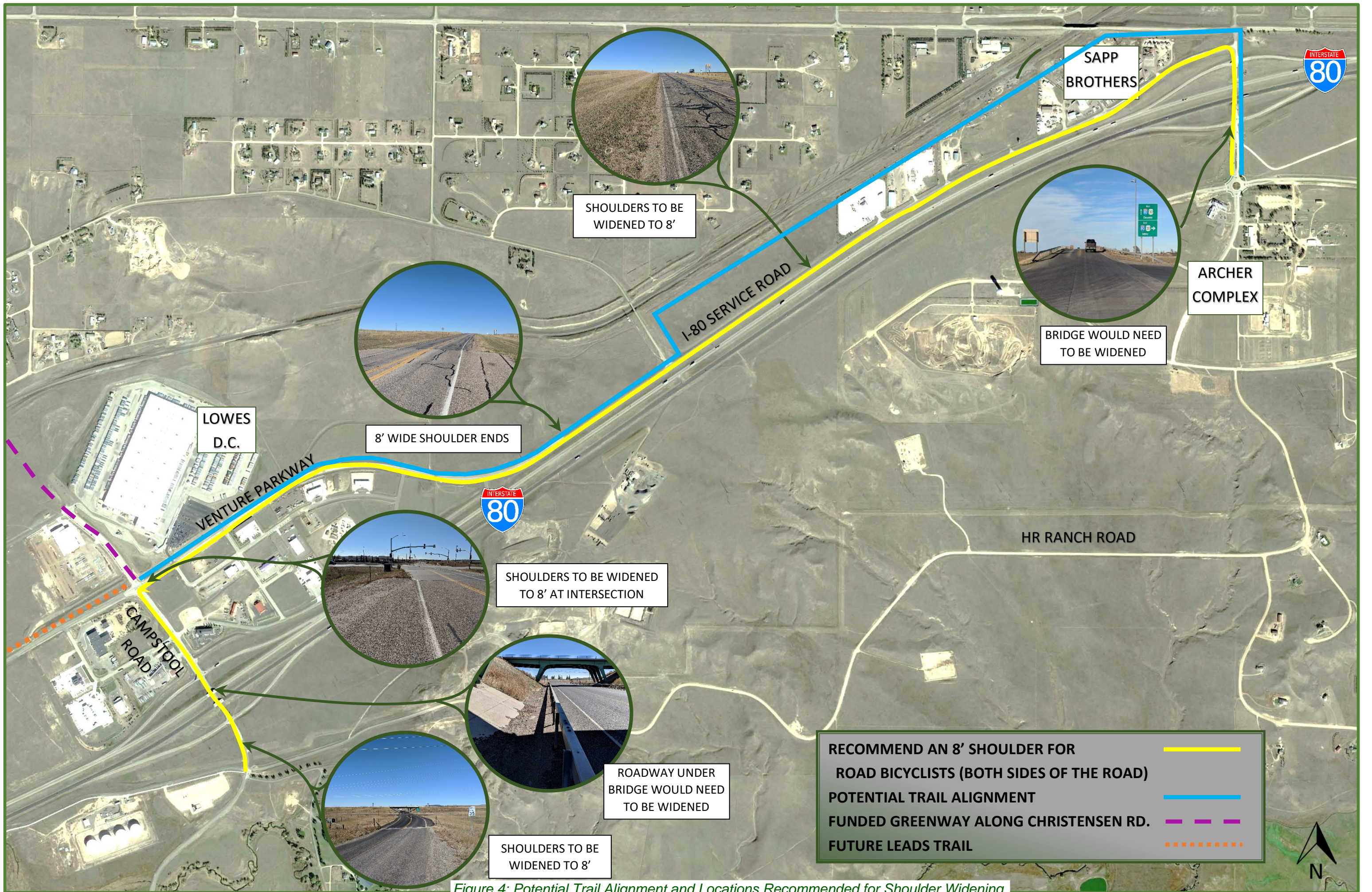


Figure 4: Potential Trail Alignment and Locations Recommended for Shoulder Widening

CONNECTION FOR ROAD CYCLISTS

Currently road cyclists who wish to access the Archer Complex must do so on roads with very narrow shoulders, alongside vehicles that are traveling at high speeds. Venture Boulevard east of Campstool Road has 8' wide shoulders, but the shoulder width narrows to less than 2' along the Interstate-80 Service Road to Archer Parkway. This service road is maintained by Laramie County. The recommendation of this plan is to widen the shoulders of the service road to provide adequate space for road bikers to travel on the shoulder. Similarly, widened shoulders to accommodate road cyclists are recommended on Archer Parkway between the I-80 Service Road and the Archer Complex. Currently there are very narrow shoulders on Campstool Road under the I-80 bridge and south to HR Ranch Road. Campstool Road between HR Ranch Road and the I-80 bridge is also recommended for widening the shoulders for road cyclists. WYDOT has no current plans to lengthen or replace the I-80 bridge at Campstool Road. When the bridge is reconstructed WYDOT should be approached about making the bridge longer to provide additional width under the bridge to accommodate wider shoulders. North of the I-80 bridge, Campstool was recently improved to include wide shoulders. The shoulder does narrow, however, at the intersection of Campstool Road and Venture Boulevard. Shoulder widening is recommended on both sides of these roadways as road cyclists are expected to travel in the same direction as adjacent vehicles, requiring bicycle accommodations on both sides of the road.

TRAIL TIMING CONSIDERATIONS

Public comments during this planning process indicated that a trail route to the Archer Complex is desired. Furthermore, both an ADA route *and* an equestrian trail are desired. At the time of this report the existing Greenway is incomplete to this area. The HR Ranch Road Greenway is constructed from Burlington Trail to Campstool Road, but it will not connect to the Greater Cheyenne Greenway system until the South East Connector is constructed over the Union Pacific Railroad Tracks near College Drive. Similarly, the LEADS trail and Christensen Road Greenway have not yet been constructed to provide a connection to the Greater Cheyenne Greenway on the north side of I-80. At the time of this study WYDOT has not identified the replacement and/or widening of the Archer Parkway bridge over I-80 as a funded project. Upgrades to this bridge are key to getting non-motorized users to the Archer Complex.

When funding for the Archer Trail is obtained, the state of the existing connectivity should be reviewed to determine the type of surfacing. If an ADA route is available on the north side of I-80 then consideration can be given to constructing the Archer Trail, on the south side of I-80, as a soft surface trail rather than a dual trail as indicated in this plan. If an ADA route is provided via an alternate route, then reconsideration can also be given to the vertical slopes along the soft surface trail. Equestrian users can traverse a slope steeper than 5%. Constructing the trail with areas of steeper inclines could reduce the length of the trail and thus the cost to construct.

PLANNING FOR TRAIL NETWORKS IN SOUTHEAST CHEYENNE

There is currently a 10± mile trail network in the HR Ranch Subdivision for those residents to utilize as equestrian and hiking trails. The Sweetgrass Subdivision on the south side of College Drive, is currently under construction and is approximately seven miles southwest of the Archer Complex. The PUD for Sweetgrass indicates that at build-out, there will be nearly 7.5 miles of Greenway Trail (10'-12' wide), nearly 5.5 miles of Regional Trail (8'-10' wide), and 6 miles of Low Impact Trail (5'-8' wide). Additionally, the City of Cheyenne has developed construction plans for a soft surface trail to follow a portion of the historic CB&Q rail bed and make a loop to connect to the existing Greenway along HR Ranch Road, just east of Burlington Trail.

Seventy-five percent of the attendees at the Archer Trail Plan public meeting and on-line survey respondents indicated that a rural trail system between Laramie County Community College, the Sweetgrass Subdivision, HR Ranch and the Archer Complex is desired. It is recommended that the PlanCheyenne update include planning for a trail network in this area. Figure 5 shows an aerial image of the area between Laramie County Community College, Sweetgrass Development and HR Ranch, including existing and planned trails and Greenways.

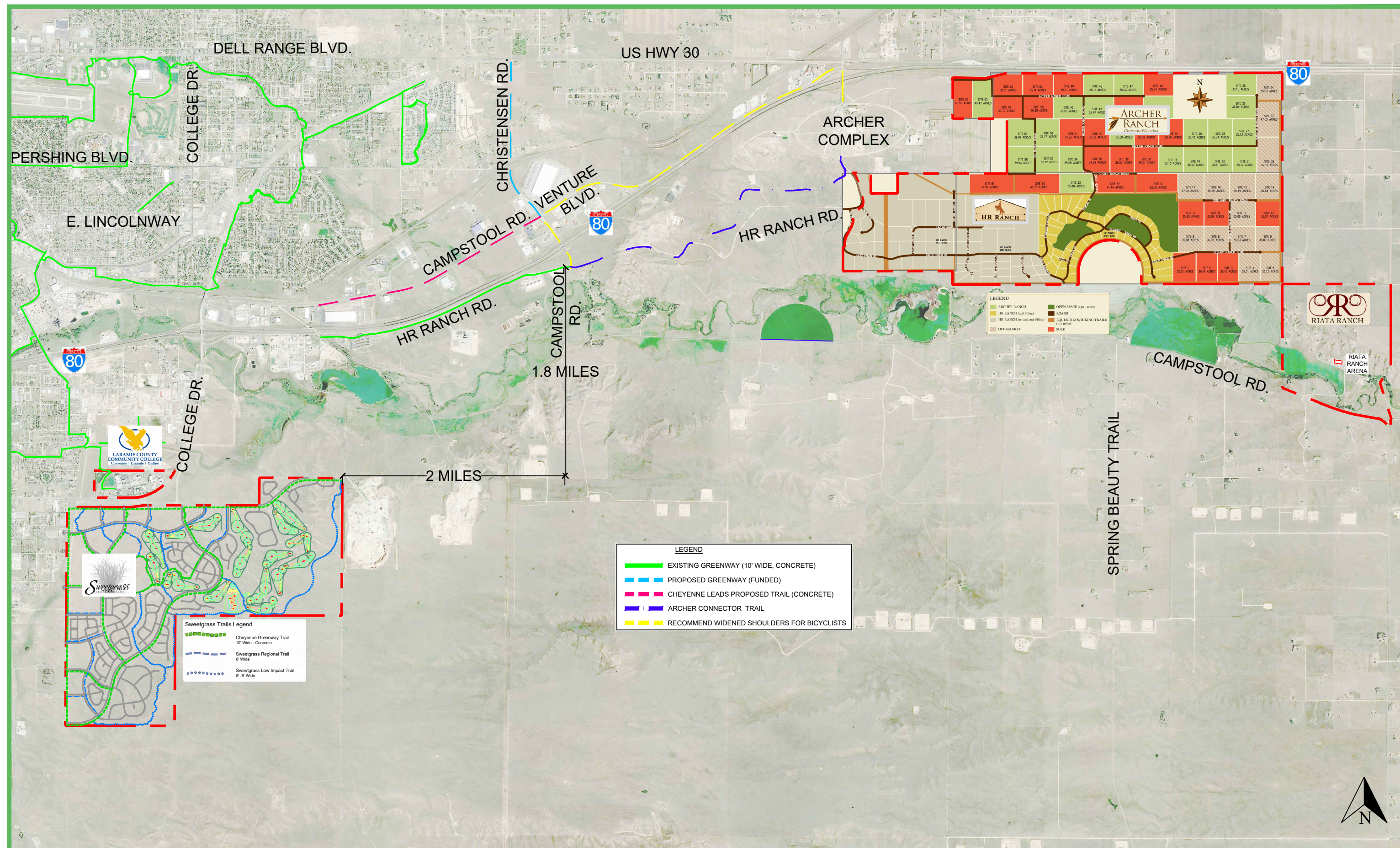


Figure 5: Aerial Image of Desired Trail Network, LCCC to Archer Complex

APPENDICES

Appendix A — 35% Conceptual Design Plans

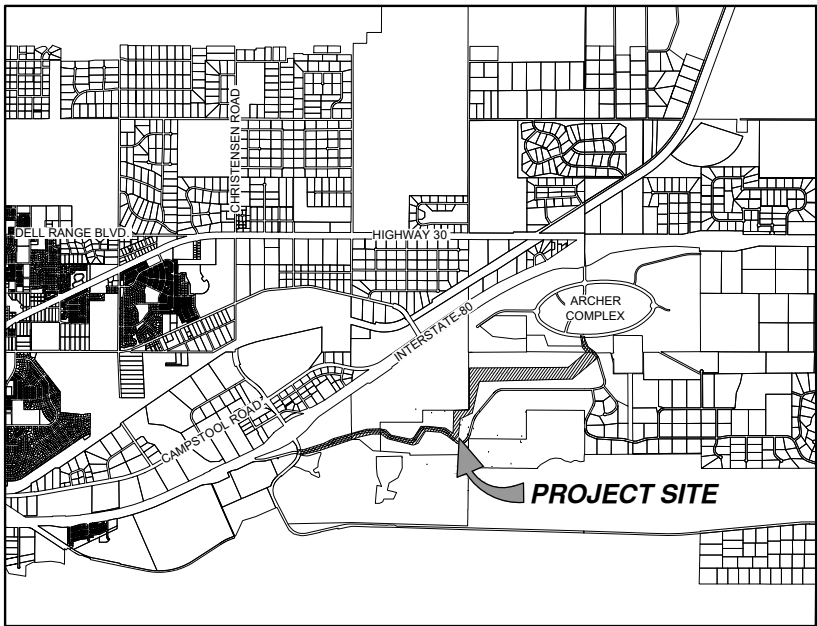
Appendix B— Overall Site Concept Plan from the Archer Fairgrounds Master Plan Document

Appendix C — Summary of Public Comments Received

ARCHER TRAIL CONNECTOR

35% DESIGN PLANS

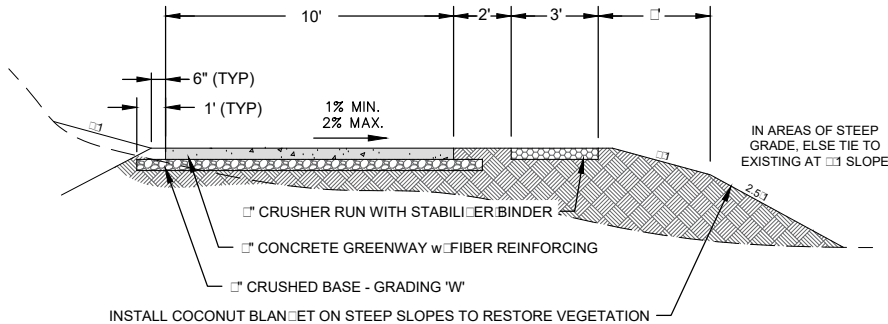
LARAMIE COUNTY, WYOMING



VICINITY MAP

DRAWING INDEX

- 1 TITLE AND TYPICAL SECTION
- 2-8 PLAN AND PROFILES




TYPICAL SECTION


- NOTES:
- 1. FULL WIDTH TRANSVERSE GREENWAY JOINT SPACING SHALL BE 10'-0" (SAWCUT).
 - 2. EXPANSION GREENWAY JOINT SPACING SHALL BE 150'. USE PREFORMED JOINT MATERIAL FULL DEPTH. GROUT AND SEAL WITH SILICON.
 - 3. ALL CONCRETE SHALL BE 5000PSI WITH FIBER REINFORCEMENT.
 - 4. CRUSHED BASE TO EXTEND 12" PAST EDGE OF PATH AND COMPACTED.
 - 5. MAX. LONGITUDINAL GRADE SHALL NOT EXCEED 5% PER ADA STANDARDS.

NOTES:

- AERIAL IMAGERY, PROPERTY LINES AND CONTOUR DATA PROVIDED BY THE CITY OF CHEYENNE, 2018.
- LAND OWNER INFORMATION IS ACCORDING TO THE COUNTY ASSESSORS OFFICE, APRIL 2018.



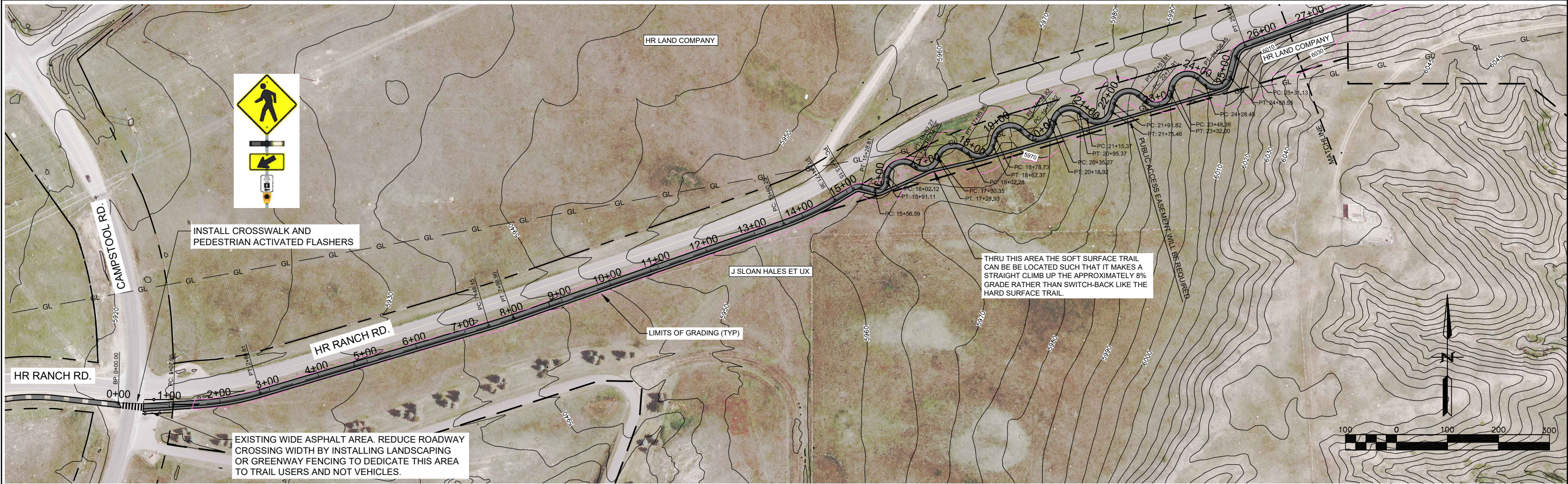
SUMMIT ENGINEERING, LLC



ARCHER TRAIL CONNECTOR

35% DESIGN
TYPICAL TRAIL SECTION

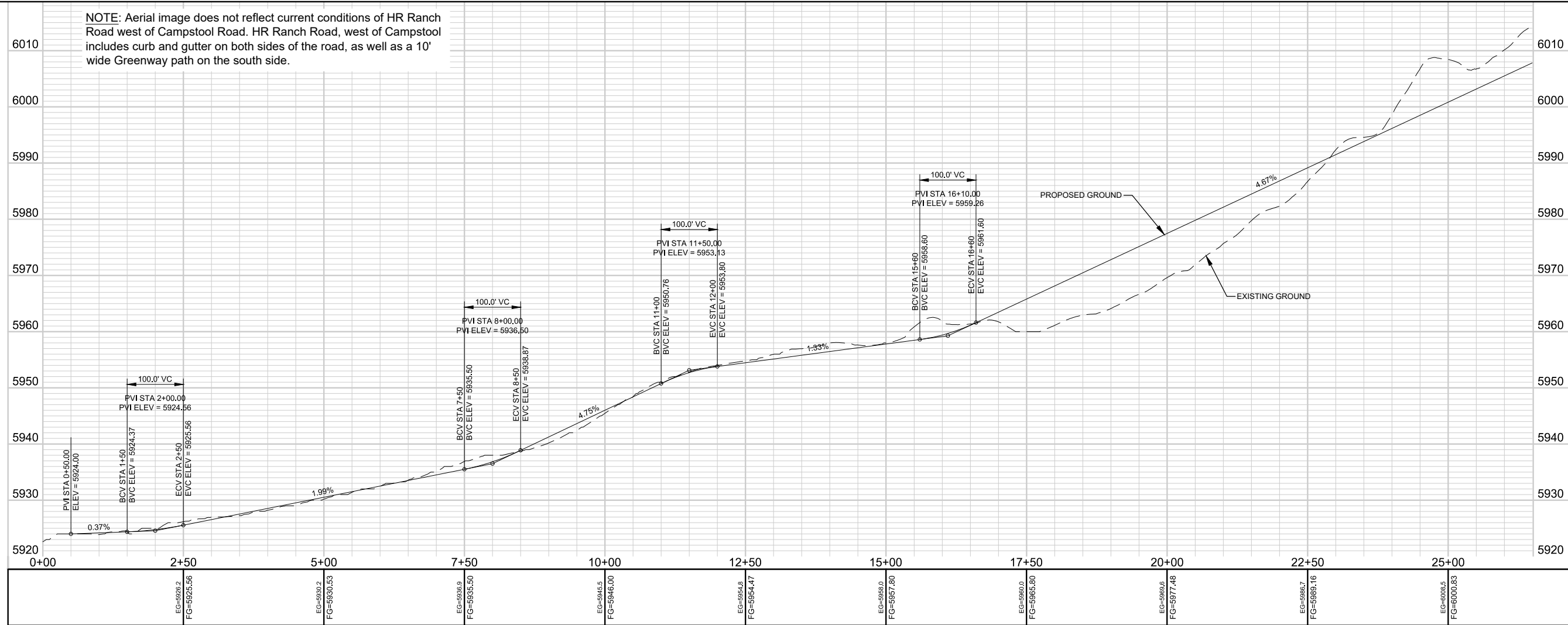
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- NOTES:
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CHEYENNE MPO



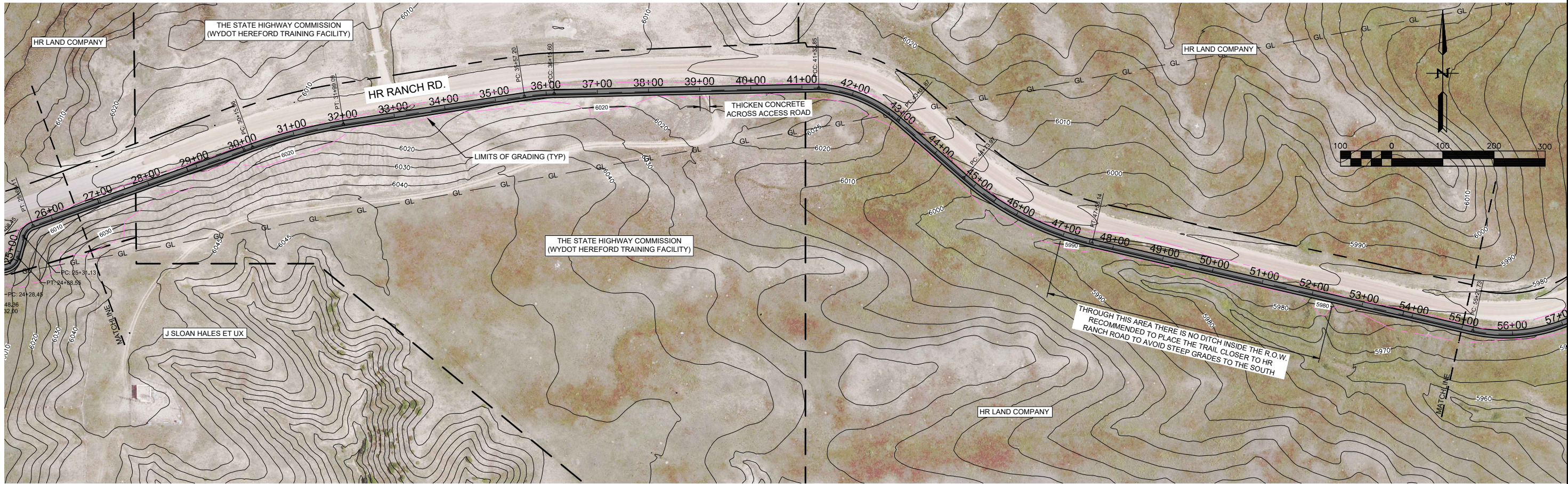
ARCHER TRAIL CONNECTOR

35% DESIGN
PLAN AND PROFILE

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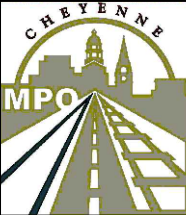
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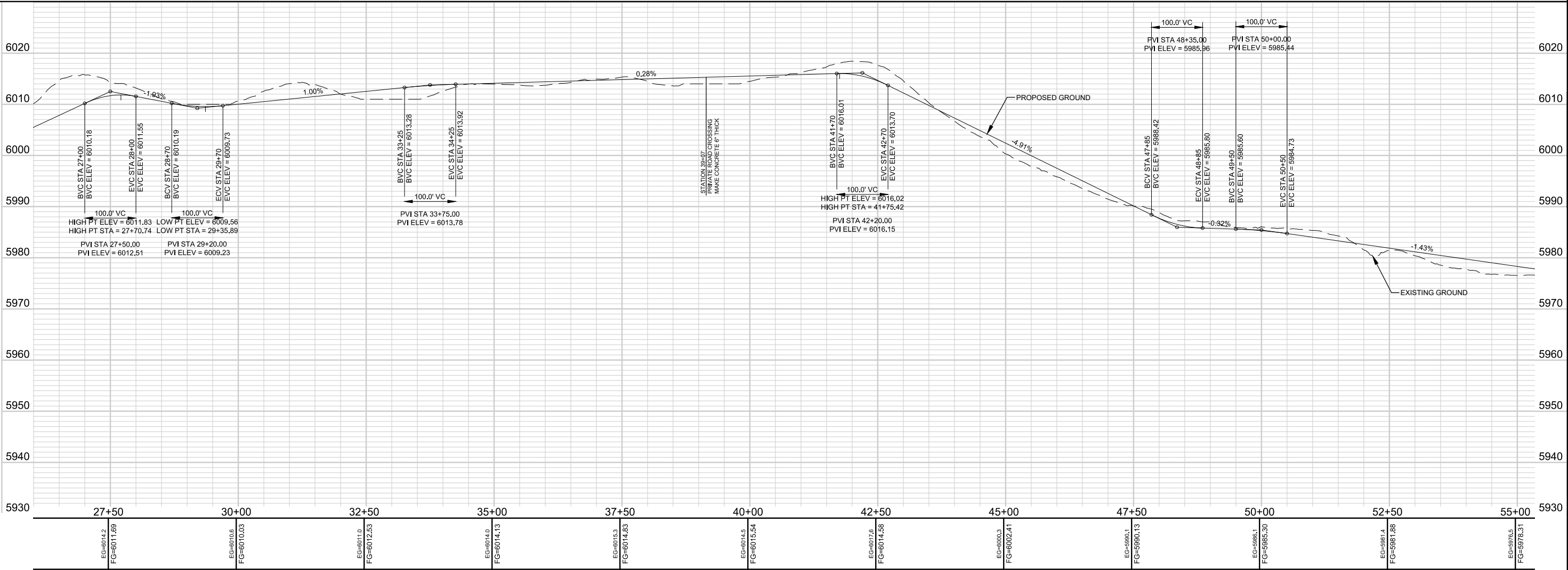
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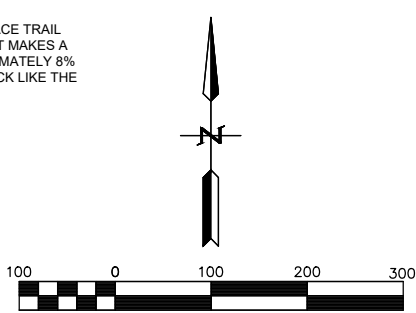
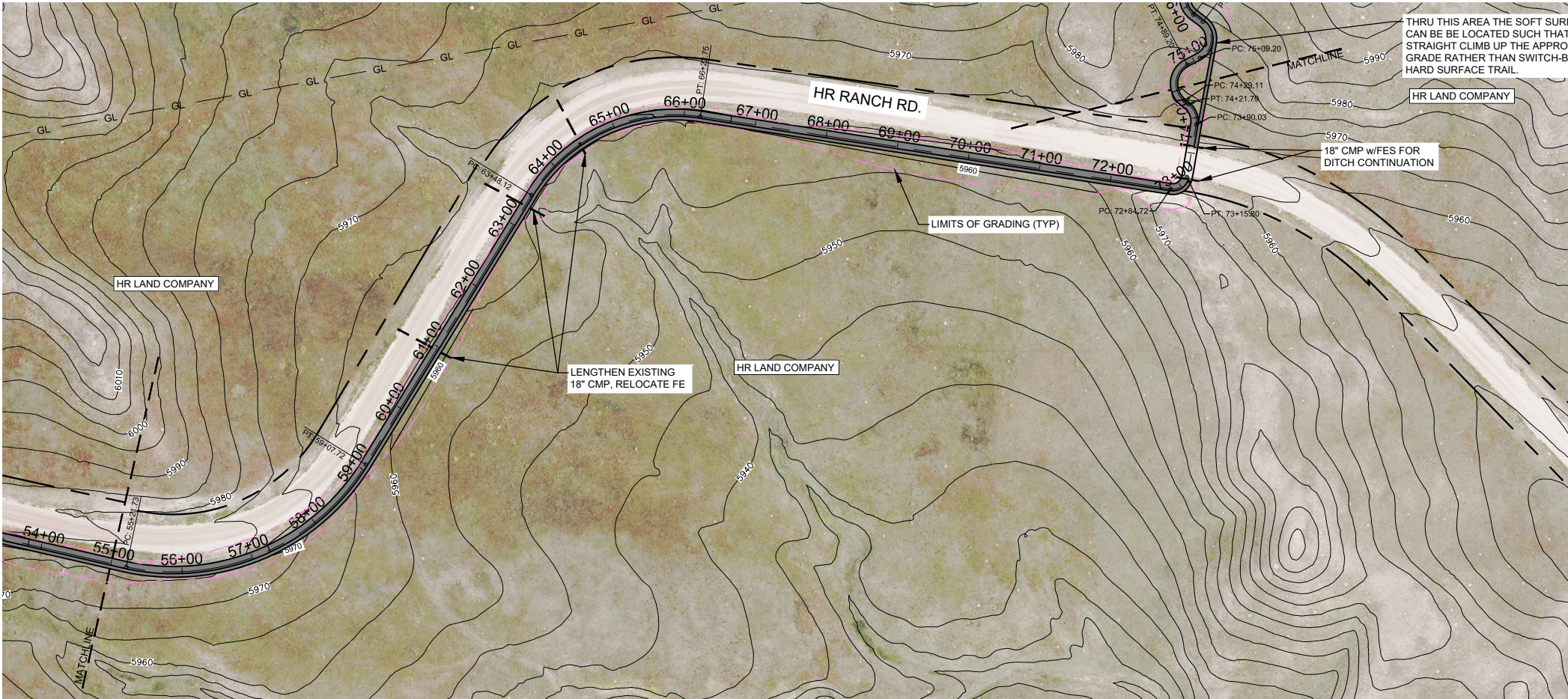
ARCHER TRAIL CONNECTOR

35% DESIGN

PLAN AND PROFILE



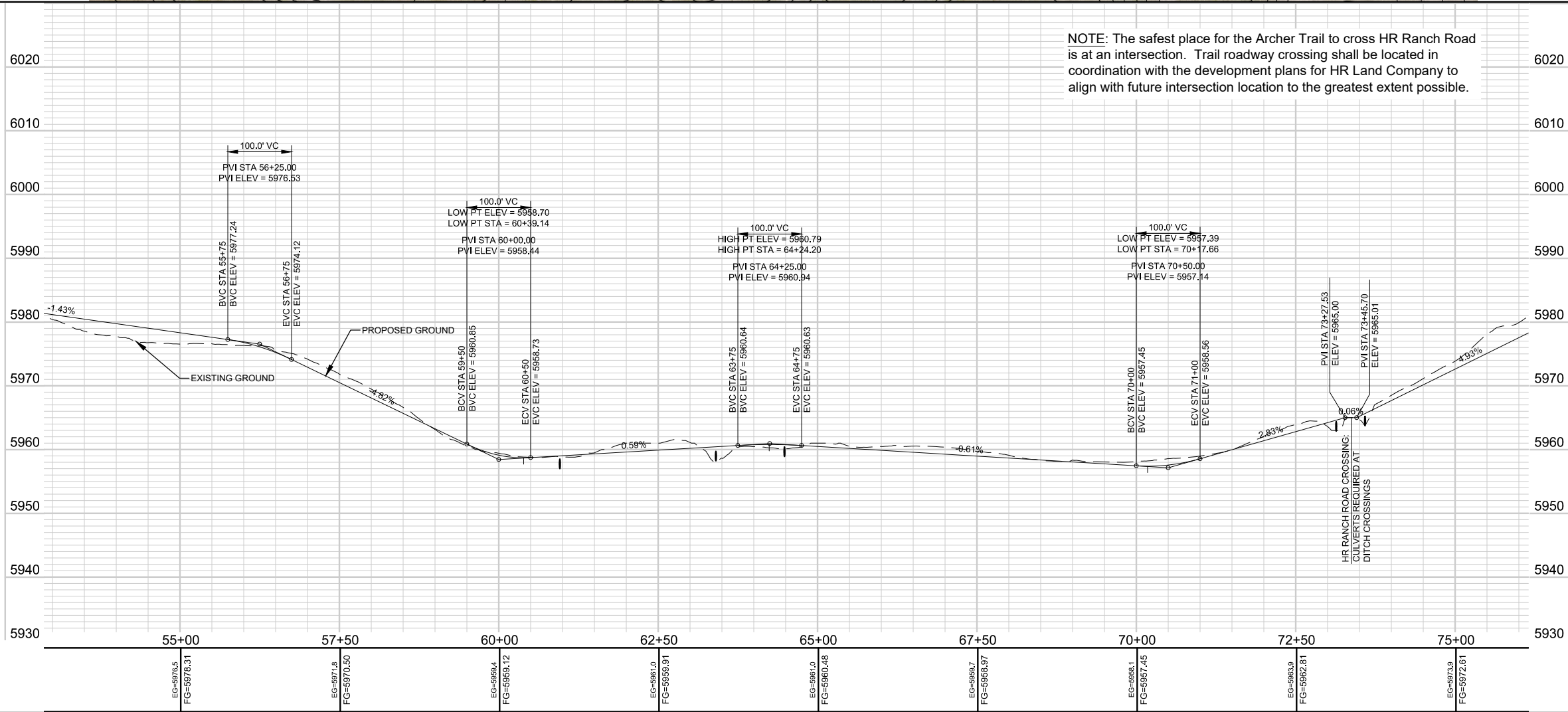
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CHEYENNE MPO

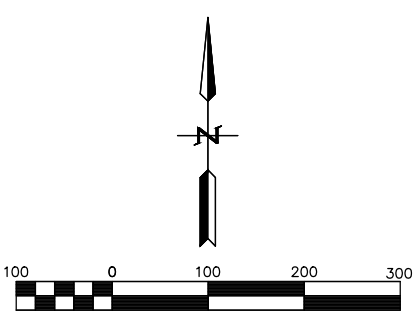
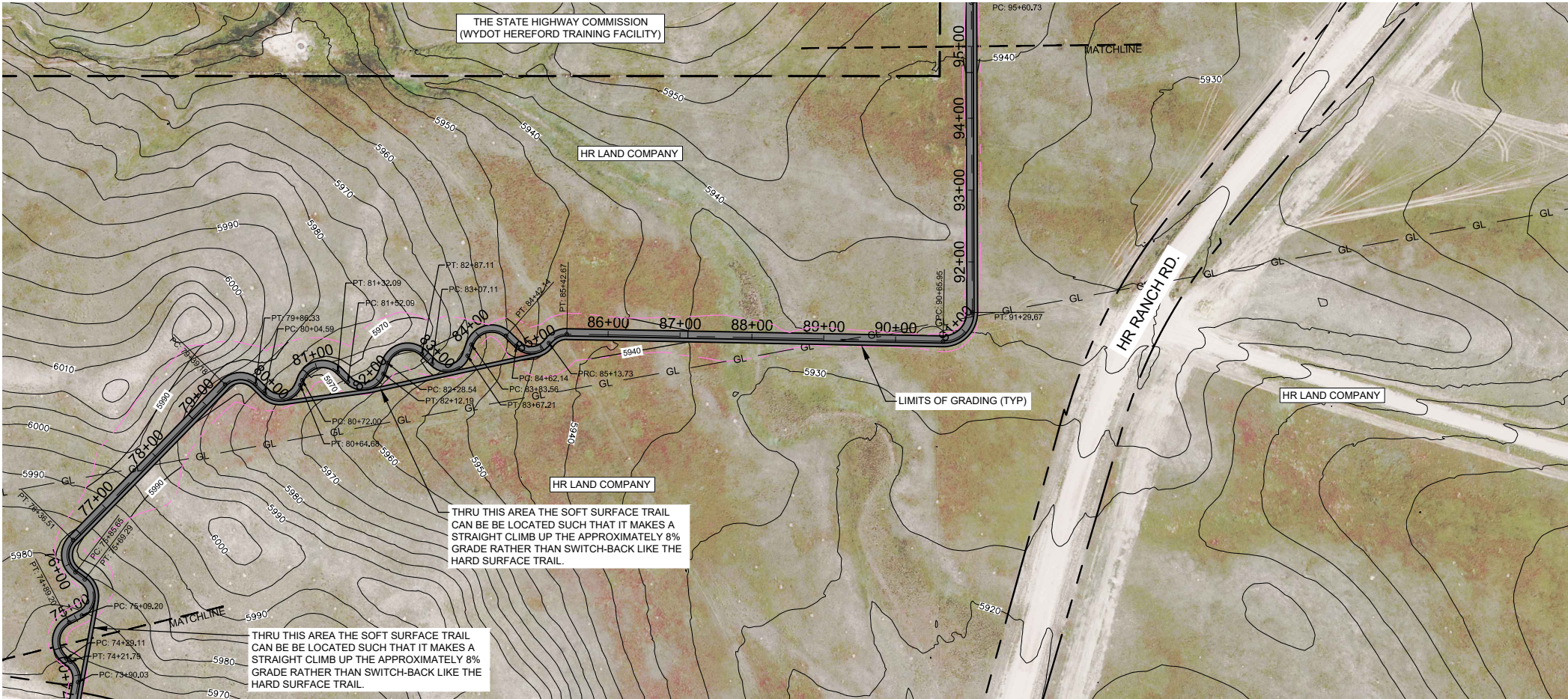


ARCHER TRAIL CONNECTOR


35% DESIGN PLAN AND PROFILE


DRAWING 4 OF 9

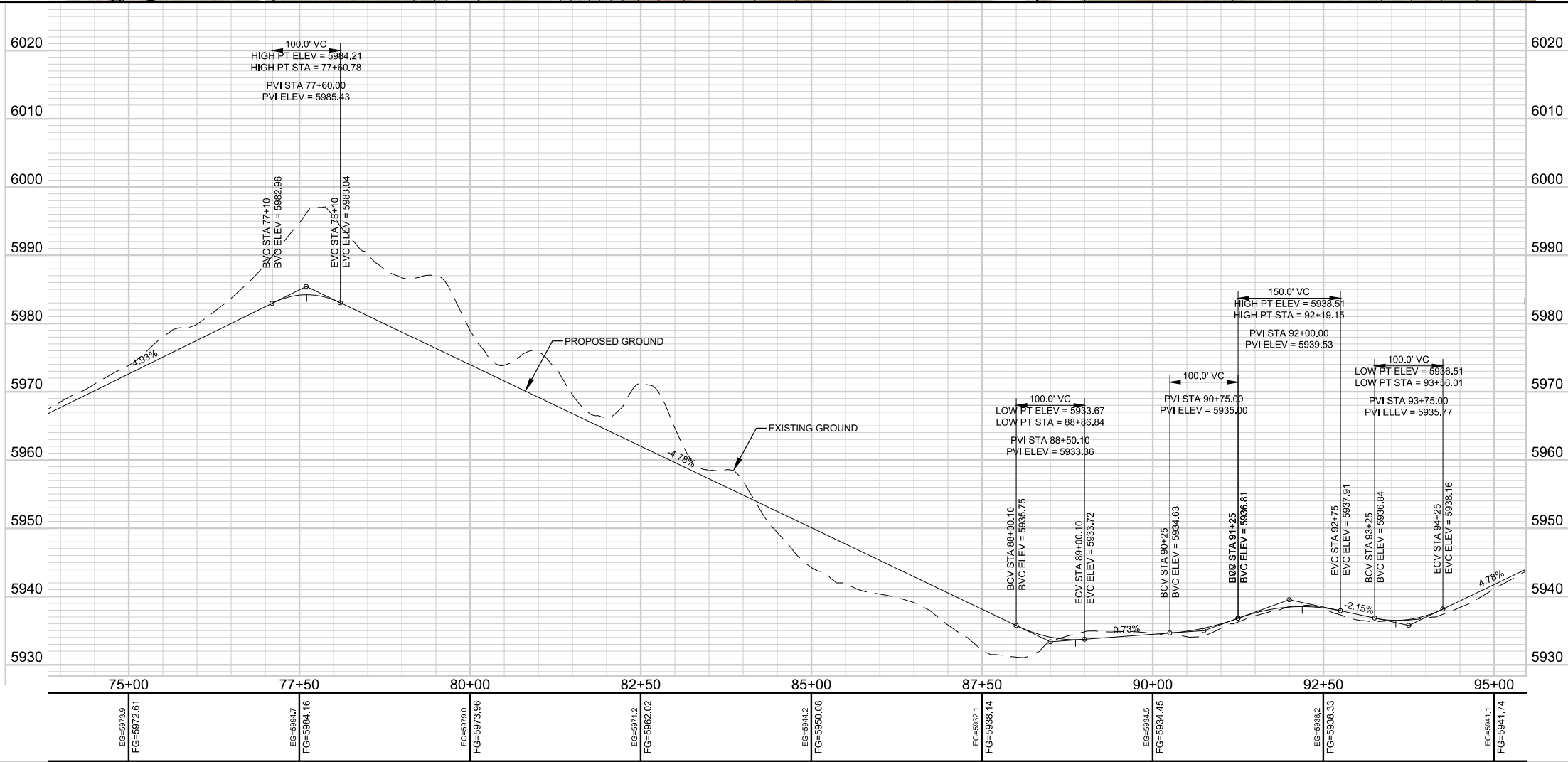
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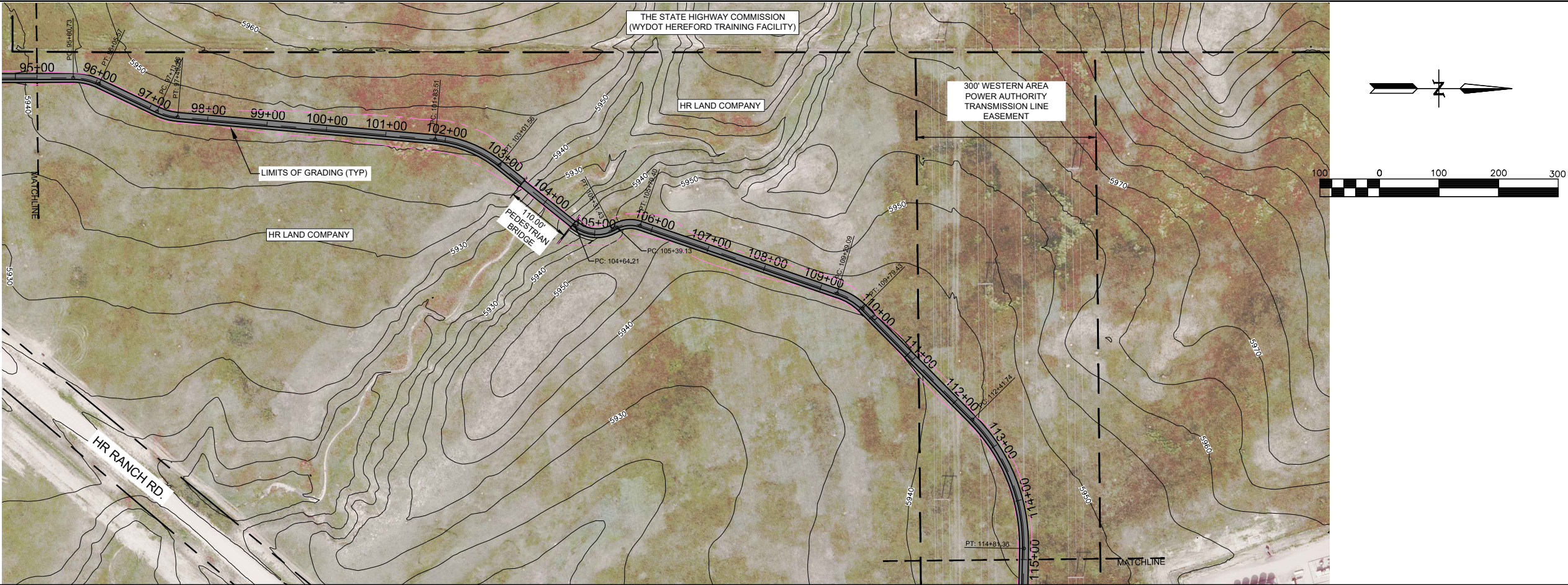


ARCHER TRAIL CONNECTOR

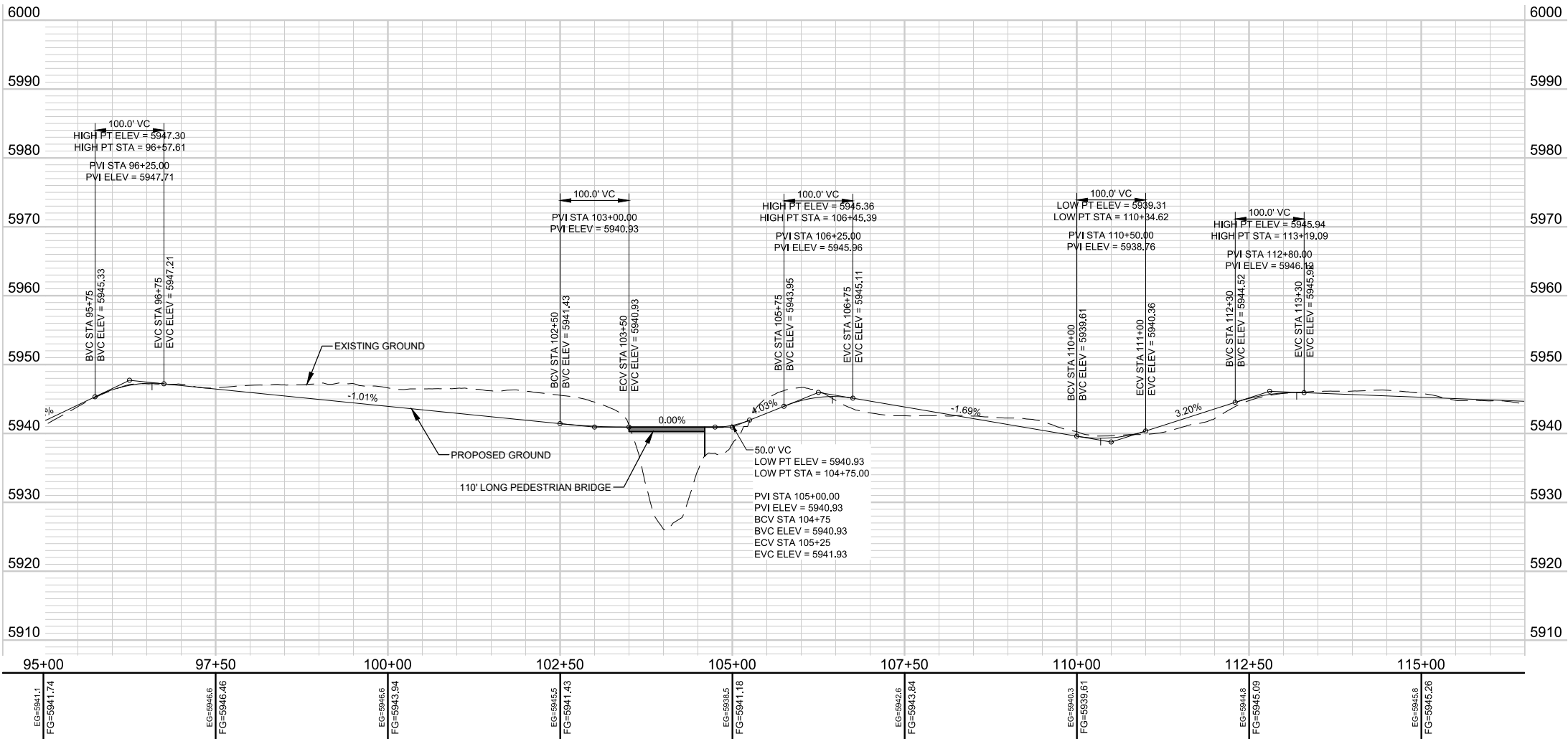
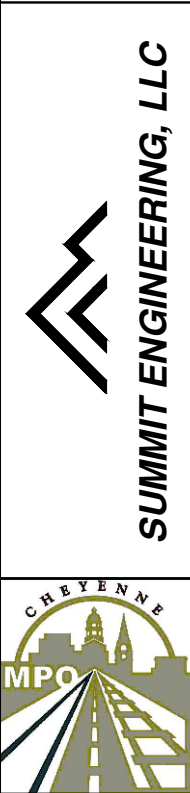
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PLAN AND PROFILE

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5 OF **9**

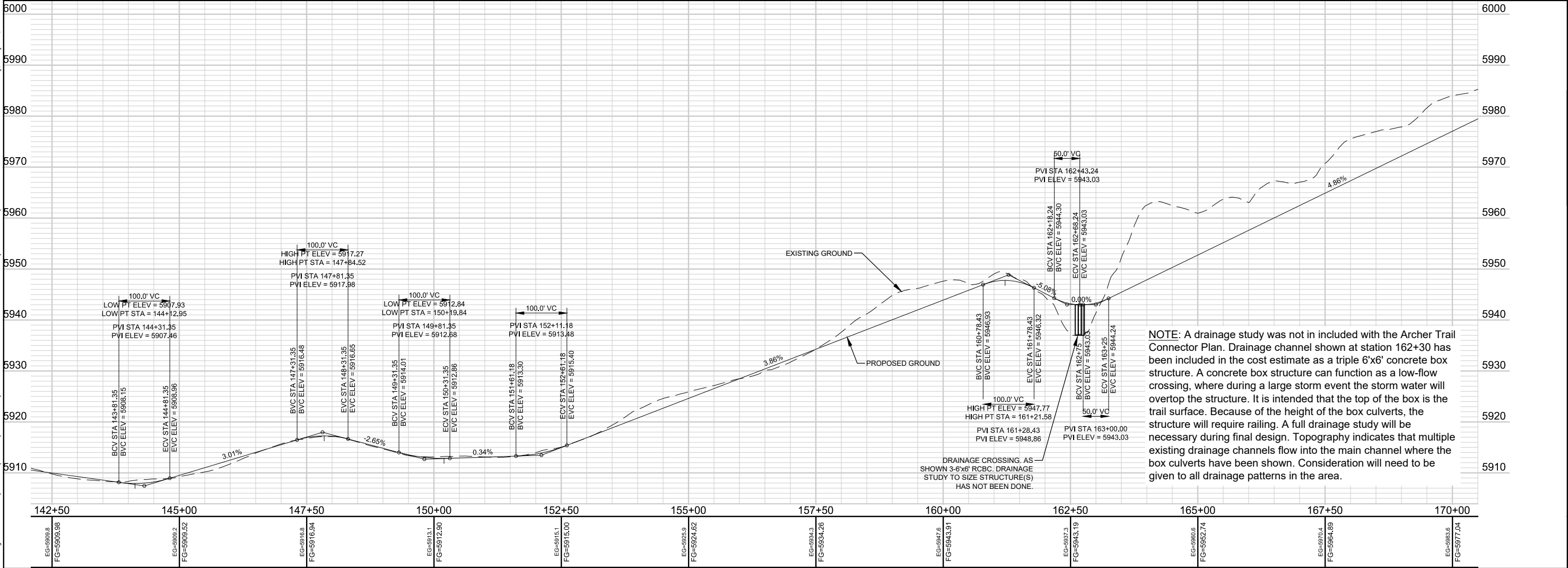
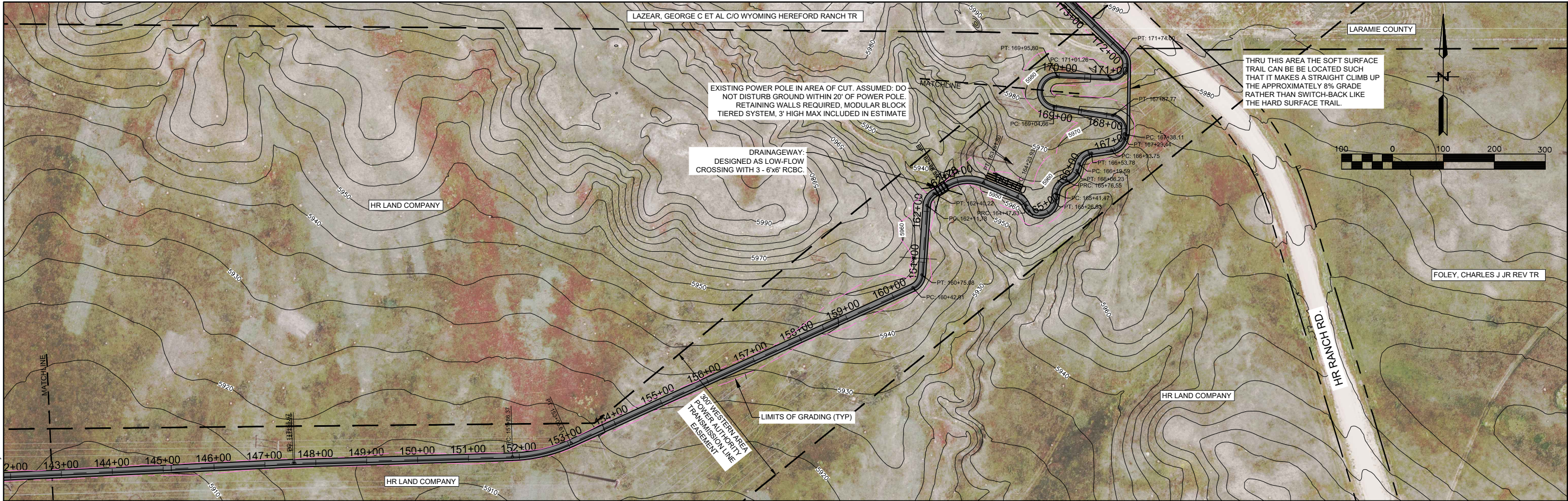
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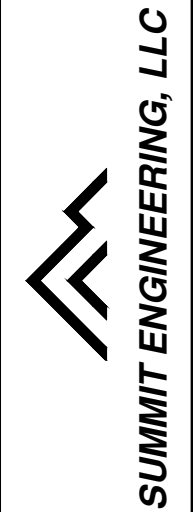
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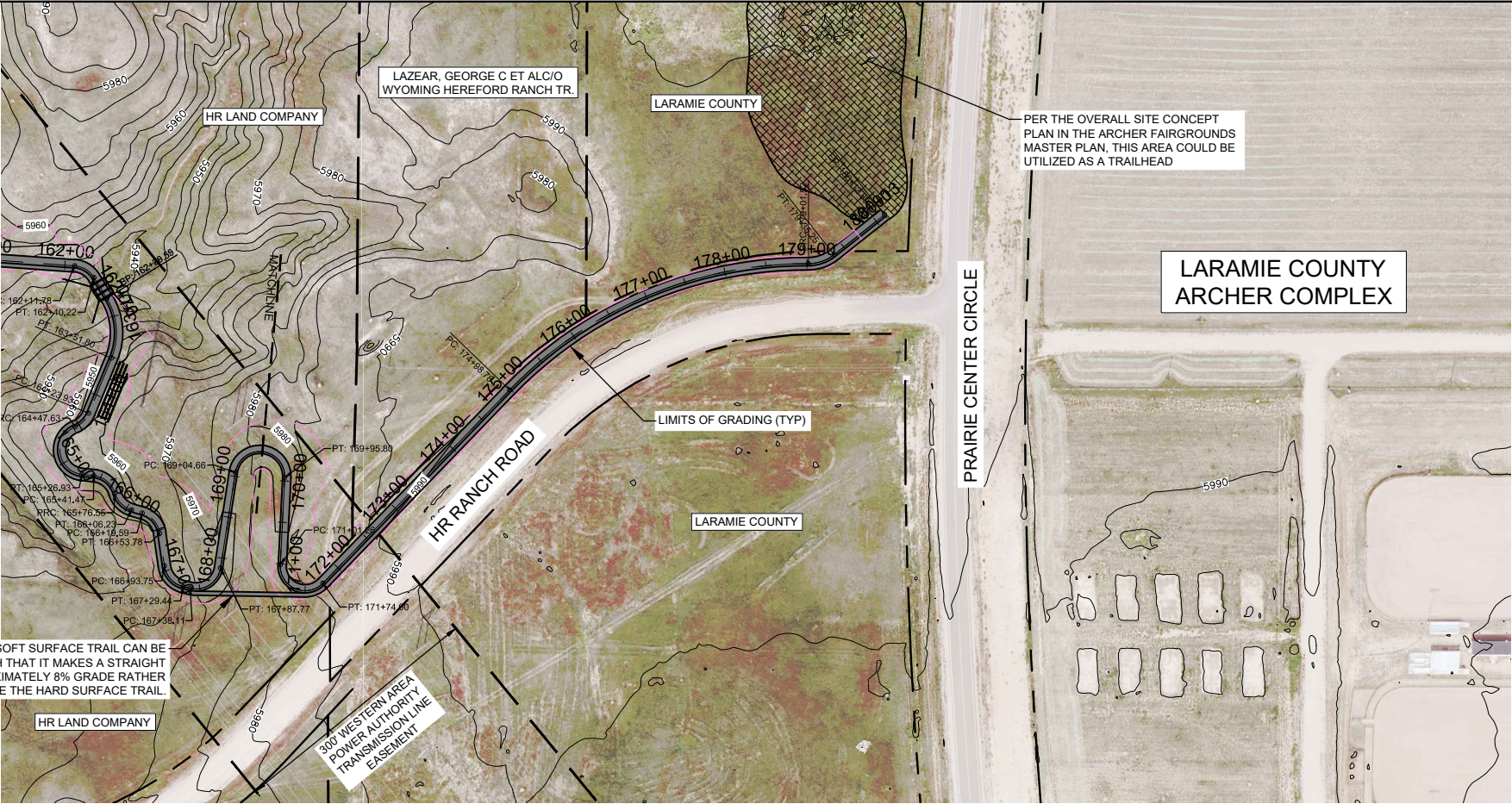


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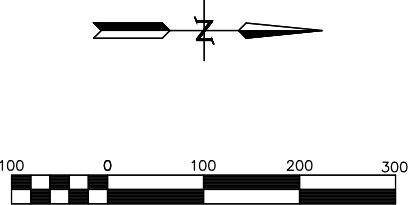
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THRU THIS AREA THE SOFT SURFACE TRAIL CAN BE LOCATED SUCH THAT IT MAKES A STRAIGHT CLIMB UP THE APPROXIMATELY 8% GRADE RATHER THAN SWITCH-BACK LIKE THE HARD SURFACE TRAIL.



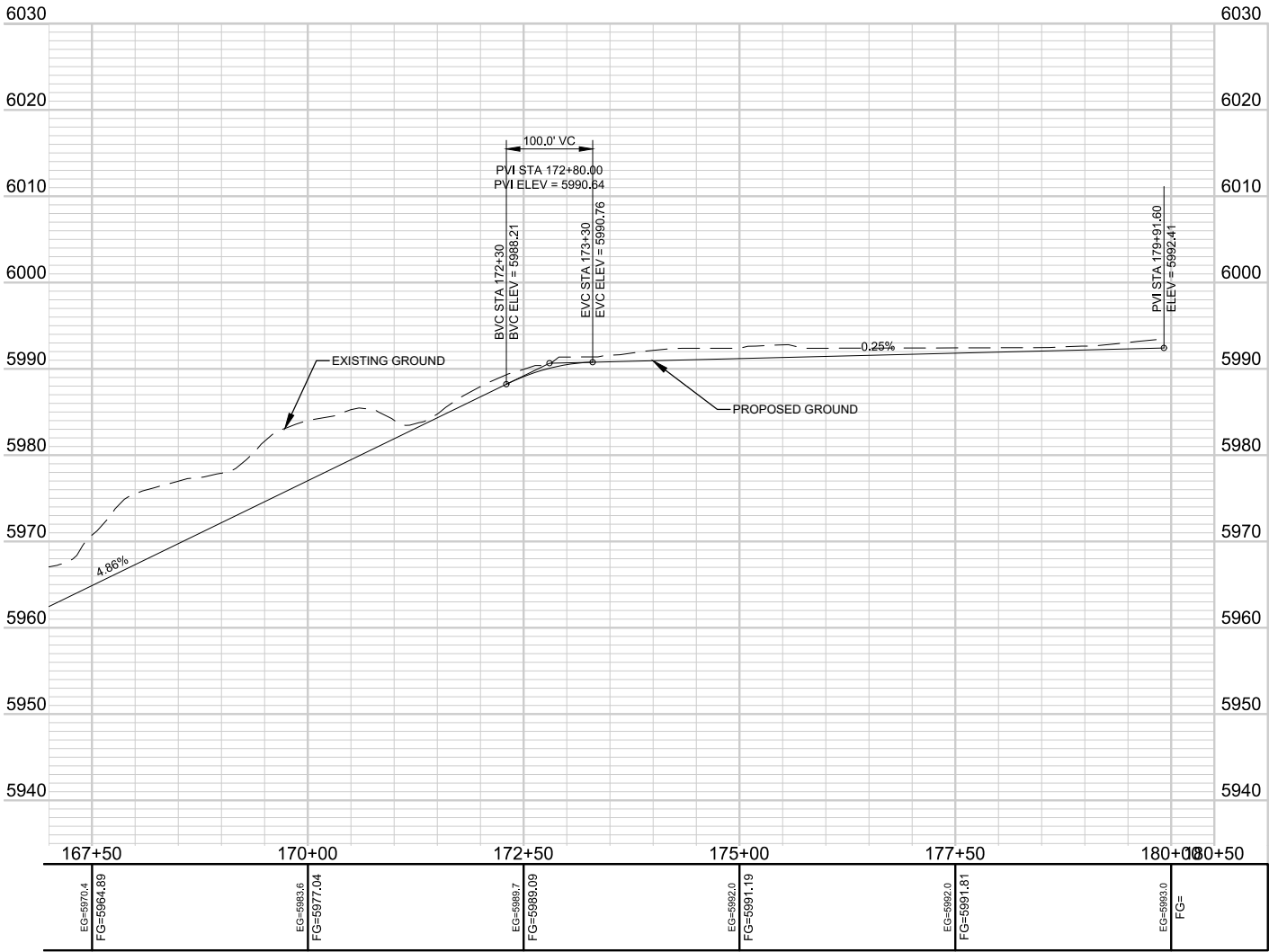
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ARCHER TRAIL CONNECTOR

35% DESIGN
PLAN AND PROFILE





OVERALLSITE CONCEPT



image created by BHA

Archer Trail Connector and On-Street Bicycle Facilities Plan

Summary of Comments Received (On-Line Survey and Public Open House) & Recommendation

The Archer Trail Connector and On-Street Bicycle Facilities Plan has completed the first phase of public involvement: we have brought the idea of the trail and on-street bicycle facilities to the public and asked for feedback on:

- (1) type of trail surface desired
- (2) user groups interested in using the trail, bicyclists, walkers/joggers, equestrians
- (3) if on-street bicycle facilities are desired along the I-80 Frontage Road and Highway 30 between Campstool/Christensen Road and the Archer Complex.

Public involvement was accomplished by:

- (1) On-line survey
- (2) MPO Facebook Page discussion
- (3) Public Open House

What Did We Hear?

- YES – The majority of respondents would like to see a path on the south side of I-80 to connect the existing Greenway to Archer Complex.
- SOFT vs. HARD? – It was a tied decision: let's consider a dual trail.
- BICYCLE FACILITIES ON THE NORTH SIDE OF I-80? – Concern with heavy truck traffic, consider a separate trail, not just a wider shoulder for bicyclists.
- HIGHWAY 30 FACILITIES? – Yes, the majority of folks would like to see both a Greenway and wide shoulders for bicycles on Highway 30 between Christensen Road and Archer Road.
- PLANNING FOR TRAILS ARCHER TO LCCC? – Yes, it is beneficial to plan this now before the land gets built out. 75% of Respondents were in favor of trails in this area.

-- RECOMMENDATIONS--

- The plan will show a dual trail between HR Ranch/Campstool Intersection and Archer Complex. Discussion in the Report: Because funding for these projects is not available at this time, the report will recommend that a dual trail be constructed from HR Ranch Road/Campstool Road to Archer Complex – but it will further state that *if* a hard surface trail is constructed on the *north* side of I-80 between Campstool and Archer Road then the trail on the *south* side of I-80 should be a soft surface trail.
- Because of concerns with heavy truck traffic the report will recommend a trail, not just a wider shoulder for bicyclists along the I-80 Frontage Road. Additional recommendation are for wider shoulders when the I-80 Frontage Road is reconstructed and wider shoulders when the Campstool Road/I-80 bridge is reconstructed – to allow for bicycles.
- Extend the Greenway east from Christensen Road to Archer Road. Also, recommend wide shoulders for bicycles on Highway 30 between Christensen Road and Archer Road.
- When it is reconstructed, Archer Road should be expanded to allow for a Greenway path on the west side between Highway 30 and the Archer Complex, this includes the Archer Road/I-80 bridge.
- The PlanCheyenne Update should include a discussion on the trail system from Archer Complex to LCCC.

Summary of Comments/Questions Asked:

1. Do you see a trail connection between the intersection of HR Ranch Road & Campstool Road and the Archer Complex as a valuable addition to the Greater Cheyenne trail system?

Yes = 73% No = 27%

Comments:

FOR:

- Will allow kids to get to fairgrounds on bicycles.
- As the city grows as well as the Archer Complex, it's going to be important to have a trail connecting the area before it's too late.
- Live in Archer Ranch and would love to have a close place for strollers and bicycles and horses
- I live east of the Archer Complex. It would be great to expand the greenway to the east of Cheyenne so we wouldn't have to drive all the way into town to ride bicycles on pavement.
- We live in the Archer area and there currently isn't a safe way to bike into town. This would be a VERY welcome addition to those of us that live east of town. Thank you!

AGAINST:

- Is there enough demand? Funding? How to pay for maintenance?

- I support additional trail systems but think more in town bike Lanes/trail systems would see much higher use than this specific addition.
- Needless expense for the minimum use it would receive.
- There is too much oil field traffic here – would not use

2. Would you prefer a soft surface trail, or a hard surface trail between the intersection of HR Ranch Road & Campstool Road and the Archer Complex? A soft surface trail can be used by bikes, horses, and walkers/joggers; concrete is not ideal for horses but can be used by bikes and walkers/joggers.

I would prefer a soft surface trail = 49%

I would prefer a hard surface trail = 50%

Several comments were received at the public meeting asking for a dual trail/half soft and half hard

3. A soft surface trail could be used by equestrians (horse and rider) as well as walkers, joggers, and bicyclists. Do you have any concerns about a trail that would accommodate each of these user types together on the same trail?

Comments:

- Want ADA access
- Need to clean up after horses / horse waste
- Need signs showing who has the right of way
- Hard trail with a narrow dirt path right next to it would be best in my opinion. That would also keep horse poop off the main trail

4. On-street bicycle facilities are being explored to connect the intersection of Campstool Road & HR Ranch Road to the Archer Complex. The route would provide wide shoulders along both sides of Campstool Road to Venture Boulevard, Venture Boulevard to Archer Road via the Interstate 80 Frontage Road, and Archer Road to the Archer Complex. This route would provide wide shoulders along both sides of Campstool Road to Venture Boulevard, Venture Boulevard to Archer Road via the Interstate 80 Frontage Road, and Archer Road to the Archer Complex. Do you see these on-street bicycle facilities as a valuable addition to the Greater Cheyenne Bicycle Facility Network?

Yes = 57%

No = 43%

Comments:

- I love road biking. There are currently limited directions to do in which the shoulder is wide enough to accommodate bikes. I would love to add another route to my repertoire.
- This route is already commonly used by cyclists in the area. The additional facilities would make it safer for cyclists due to motorists' limited visibility coming up the hill, and due to the many semis pulling in and out of the truck stop and/or parking on the side of I-80 Frontage Road near that location. The intersection of Archer Rd. and Frontage Road can be hazardous for cyclists due to inattentive and/or impatient motorists and trucks turning into or off of Archer Rd., and with traffic entering or exiting the

interstate. The road is also very rough (potholes and broken pavement) on Frontage Rd. near the truck stop and at the intersection with Archer Rd. I ride through this area frequently.

- I'd rather have a separate trail.
- Traffic and speed limits dangerous for bikes. Much better to utilize trail system adjacent to paved roads.
- Too many semi-trucks for shoulder riding.

5. With the construction of Christensen Road a 10' wide concrete Greenway will be built from Venture Boulevard to Highway 30. What type of non-motorized facilities would you like to have planned from Christensen Road, headed east toward Archer Road and ultimately to the Archer Complex? This location is shown as both a purple and an orange line on the map.

Greenway Path = 37%

On-Street Bicycle Facilities = 10%

Both Greenway and On-Street Bicycle Facilities = 34%

Don't care to see non-motorized facilities in this area = 19%

6. As Cheyenne continues to grow to the south and to the east additional recreational trails are being considered. Would you be in favor of a trail connection between the Archer Complex and Laramie County Community College?

Yes = 75%

No = 21 Responses = 25%

Comments:

FOR:

- Trail systems improve quality of life and make the community attractive to new businesses.
- It would be great for the students to have access to the pathway.
- I live near Archer Complex and I could use this to commute to LCCC in nice weather.
- Gives youth a direct access between fair and other activities and the college.

AGAINST:

- More important to connect trails inside town first.
- Money can be better spent elsewhere on facilities that will be more widely used.

7. What type of surfacing would you prefer for a trail between the Archer Complex and Laramie County Community College?

Hard = 47%

Soft = 30 %

I am not interested in a trail between Archer Complex and LCCC = 23%

8. Additional Comments:

- I wish more of the Greenway was soft surface instead of concrete. Even asphalt is better to jog on.
- The city needs to expand the Transit program to outlying city suburbs like Saddle Ridge for our elderly and disabled citizens before spending more money on things for our able-bodied citizens.
- I'd like an honest conversation to take place regarding trail connections to and from the east industrial park as it relates to the City's insistence on sidewalk requirements in addition to trails. Trails are much more appropriate for these large industrial lots. Sidewalks are a waste of money. Put available funds towards a trail system
- A connector here would benefit the college community and serve future residents of the proposed Sweetgrass development. It is very much needed. It would also help to pave Burlington Trail between Industrial and Campstool Road (near Sierra Trading Post) and complete the pavement on Burlington Trail to Campstool Rd. near HR Ranch Road.
- A bike/pedestrian trail is better situated on North side of Venture Dr. Connect Green way to Christensen through Saddle Ridge or along Pershing, and from HWY 30 along Christensen. Then on the new Overpass to Campstool/Venture, east along a trail system to Sapp Brothers and such, then south to Archer. This way it is safe and ADA accessible, and inclusive of more people and businesses.
- I would like to see updates and expansion to the greenway but at this current time, expansion to the southeast of town is not where focus should be given.
- I'm all for development, but that's an awful long way for something that won't be utilized. Maybe put some \$ into trails and activities at the Belvoir instead?