



September 2013

Fox Farm Road Corridor Plan, Volume I

Prepared for: Cheyenne Metropolitan Planning Organization 2101 O'Neil Avenue Cheyenne, WY 82001



Prepared by: **AVI Professional** Corporation 1103 Old Town Lane Cheyenne, WY 82009





Fox Farm Road Corridor Plan

Resolutions

- City of Cheyenne
- Laramie County

RESOLUTION NO. 5550

WHEREAS, the limits of the Fox Farm Road Corridor Plan study area is bounded by Walterscheid on the west, I-80 to the north, Jefferson Road to the south, and east to College

ENTITLED: "A RESOLUTION ADOPTING THE FOX FARM CORRIDOR PLAN"

Drive and the unplated lands further east; and

WHEREAS, Fox Farm Road is a vital east west minor arterial in the Cheyenne urban area running south of and parallel to I-80; and

WHEREAS, Fox Farm Road is experiencing infill of commercial and residential development and will likely experience increased development pressures within the coming decades; and

WHEREAS, Fox Farm Road west of U.S. 85 is a paved urban section with curb, gutter and sidewalk, with no bicycle facilities which is maintained by the City and contains mostly commercial development; and

WHEREAS, Fox Farm Road east of U.S. 85 is a paved rural road maintained by Laramie County which is currently experiencing drainage issues, operational concerns for heavy trucks due to intersection design, and safety concerns for cyclists and pedestrians due to the lack of those facilities; and

WHEREAS, Burlington Trail currently is a rural unpaved road and requires initial planning in preparation for paving, improving drainage, and provision for non-motorized facilities from Campstool Road to S. Industrial Road; and

WHEREAS, future road network planning is needed as urban development continues east of College Drive; and

WHEREAS, the Cheyenne MPO retained A.V.I. p.c. on December 15, 2010 to produce the Fox Farm Road Corridor Plan and on January 1, 2012 to produce the Fox Farm Corridor Plan, Phase II; and

WHEREAS, the plan has been a collaborative effort involving the general public, the Laramie County Planning and Public Works Departments, Wyoming Department of Transportation, Federal Highway Administration, South Side Community Development Association, South Side Water and Sewer District, Cheyenne Light Fuel and Power, Holly Frontier Refinery and the City of Cheyenne; and

WHEREAS, public input was obtained through the MPO website Fox Farm Road Project Page, Public Open Houses held in March and November of 2011 and May of 2013, over a dozen one-on-one meetings with area stakeholders, and two web-based and one paper surveys conducted; and

WHEREAS, the Fox Farm Road Corridor Plan recommends a future land use plan that guides development in a publicly approved direction; and

WHEREAS, the Fox Farm Road Corridor Plan recommends infrastructure improvements that are intended to provide improved intersection designs with Fox Farm Road at Walterscheid, S. Greeley Highway, Avenue C/Morrie Avenue and College Drive; provide drainage improvement recommendations within the project boundaries; and enhance pedestrian and bicycle safety along the corridor; and

WHEREAS, the City of Cheyenne Planning Commission held a Public Hearing on October 21, 2013, accepted public comments, and recommended that the Governing Body of the City of Cheyenne approve the Fox Farm Road Corridor Plan; and

WHEREAS, the Laramie County Planning Commission held a Public Hearing on October 24, 2013, accepted public comments, and recommended that the Laramie County Board of Commissioners approve the Fox Farm Road Corridor Plan; and

WHEREAS, the Cheyenne MPO Citizen's Advisory and Technical Committees reviewed the Plan and recommended adoption; and

WHEREAS, the Fox Farm Road Corridor Plan provides guidance for redevelopment, drainage improvements, intersection improvements, multimodal road cross-sections along the Fox Farm Corridor, preliminary design for the Burlington Trail, and a conceptual roadway network for the unplated lands east of College Drive.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF CHEYENNE, WYOMING, that the Fox Farm Road Corridor Plan dated October 2013, prepared by A.V.I. p.c., is hereby adopted as a guide for future improvements to the corridor with the following conditions:

- 1. That the intersection of Fox Farm and Avenue C be further reviewed and analyzed over time so as to determine a final design that improves the overall function of the intersection and corridor for all users, including trucks. The ability to continue to service large trucks in the area is important. The final intersection design should however balance the safety of truck drivers using the corridor, students using the existing Safe Routes to School pathway to Arp Elementary School, and residents of the Fox Farm neighborhood.
- 2. That the buffered bike lanes proposed on Fox Farm Road be re-analyzed prior to construction so that the safety of bicyclists is considered and adequate separation is provided to other modes from truck traffic on this corridor.
- 3. The Governing Body hereby reserves the right to deviate from the Fox Farm Road Corridor Plan.

PRESENTED, READ, AND ADOPTED THIS 9th day of December , 2013

Attest:

Carol Intle Roles
Carol Intlekofer, City Clerk

RESOLUTION NO. 19/1/9 - 04

ENTITLED: A RESOLUTION ADOPTING THE FOX FARM CORRIDOR PLAN

- WHEREAS, Wyoming State Statutes §18-5-201 to 18-5-208 authorize Laramie County, in the promotion of public health, safety, morals and general welfare of the county, to regulate the use of land in unincorporated Laramie County; and
- WHEREAS, the limits of the Fox Farm Road Corridor Plan study area are Walterscheid on the west, I-80 to the north, Jefferson Road to the south, and east to College Drive and the unplatted lands further east, and;
- WHEREAS, Fox Farm Road is a vital east-west collector and minor arterial in the Chevenne urban area, running south of, and parallel to, I-80; and
- WHEREAS, Fox Farm Road is experiencing infill of commercial and residential development and will likely experience increased development pressures within the coming decades; and
- WHEREAS, Fox Farm Road west of U.S. 85 is a paved urban section with curb, gutter and sidewalk, with no bicycle facilities, which is maintained by the City and contains mostly commercial development; and
- WHEREAS, Fox Farm Road east of U.S. 85 is a paved rural road maintained by Laramie County and is currently experiencing drainage issues, operational concerns for heavy trucks due to intersection design, and safety concerns for cyclists and pedestrians due to the lack of those facilities; and
- WHEREAS, Burlington Trail currently is a rural unpaved road and requires initial planning in preparation for paving, improving drainage, and provision for non-motorized facilities from Campstool Road to S. Industrial Road; and
- WHEREAS, future road network planning is needed as urban development continues east of College Drive; and
- WHEREAS, the Cheyenne MPO retained A.V.I. P.C. on December 15, 2010 to produce the Fox Farm Road Corridor Plan, and on January 1, 2012 to produce the Fox Farm Corridor Plan, Phase II: and
- WHEREAS, the plan has been a collaborative effort involving the general public, the Laramie County Planning and Public Works Departments, Wyoming Department of Transportation, Federal Highway Administration, South Side Community Development Association, South Side Water and Sewer District, Cheyenne Light Fuel and Power, Holly Frontier Refinery and the City of Cheyenne; and
- WHEREAS, public input was obtained through the MPO website Fox Farm Road Project Page, Public Open Houses held in March and November of 2011 and May of 2013, numerous one-on-one meetings with area stakeholders, and two web-based and one paper surveys conducted; and
- WHEREAS, the residents that attended the public meetings had concerns regarding the Fox Farm Corridor, specifically the lack of lighting, the lack of adequate pedestrian facilities, the number of trucks in the area and the lack of a signal at College and Fox Farm Road; and
- WHEREAS, the Fox Farm Road Corridor Plan recommends a future plan that provides guidance for development of the corridor with a respect for future land uses; and
- WHEREAS, the Fox Farm Road Corridor Plan provides options for infrastructure improvements that are intended to improve intersection designs with Fox Farm Road at Walterscheid, S. Greeley Highway, Avenue C/Morrie Avenue and College Drive; provide



COPY OF RECORD

future drainage improvements within the project boundaries, and enhance pedestrian and bicycle safety along the corridor; and

WHEREAS, the Cheyenne MPO Citizen's Advisory and Technical Committees reviewed the Plan and recommended adoption by the MPO Policy Committee; and

WHEREAS, the City of Cheyenne Planning Commission held a Public Hearing on October 21, 2013, accepted public comments, and recommended that the Governing Body of the City of Cheyenne approve the *Fox Farm Road Corridor Plan*; and

WHEREAS, the Laramie County Planning Commission held a Public Hearing on October 24, 2013, accepted public comments, and accepted the plan, recommending that the Laramie County Board of Commissioners approve the Fox Farm Road Corridor Plan with conditions; and

WHEREAS, the Fox Farm Road Corridor Plan provides guidance for redevelopment, drainage improvements, intersection improvements, multimodal road cross-sections along the Fox Farm Corridor, preliminary design for the Burlington Trail, and a conceptual roadway network for the unplatted lands east of College Drive.

NOW THEREFORE BE IT RESOLVED BY THE GOVERNING BODY OF LARAMIE COUNTY, WYOMING, that the Governing Body adopts the Fox Farm Road Corridor Plan and agrees to use the Plan as guidance for the future development of the Fox Farm Road Corridor with the following conditions:

- 1. That the intersection of Fox Farm and Avenue C be further reviewed and analyzed over time so as to determine a final design that improves the overall function of the intersection and corridor for all users, including trucks. The ability to continue to service large trucks in the area is important. The final intersection design should however balance the safety of truck drivers using the corridor, students using the existing Safe Routes to School pathway to Arp Elementary School, and residents of the Fox Farm neighborhood.
- That the buffered bike lanes proposed on Fox Farm Road be re-analyzed prior to construction so that the safety of bicyclists is considered and adequate separation is provided to other modes from truck traffic on this corridor.

PRESENTED, READ AND ADOPT	ΓΕ D this <u>/9</u>	lay of November, 2013.				
BOARI	BOARD OF LARAMIE COUNTY COMMISSIONERS					
Troy Th	nompson, Chairpe	erson				
ATTEST: All All All All All Debra K. Lathrop, Laramie County Clerk	Date	11-22-13				
Approved as to form: Mark T. Voss, Laramie County Attorney	Date	11-12-13				

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Acknowledgements

Lead Agencies:

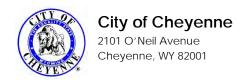


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Numerous agencies, local associations and individuals devoted their time to the development of this document, including but not limited to:

City of Cheyenne Metropolitan Planning Organization

Technical Advisory Committee Citizens Advisory Committee Fox Farm Road Steering Committee

City of Cheyenne

City Council
Engineering Services
Long Range Planning Commission
Public Works Department
Urban Planning Office

Laramie County

County Commissioners
Planning Commission

South Cheyenne Community Development Association

U.S. Department of TransportationFederal Highway Administration

Introduction

Fox Farm Road between Walterscheid Blvd. and College Drive is classified as a collector. Over the past couple of decades new businesses and developments in and around the area have resulted in an increase of traffic volumes along the Fox Farm corridor. The Fox Farm Road Corridor Study was initiated by Cheyenne Metropolitan Planning Organization (MPO) to develop transportation recommendations to assist the community in preparing for anticipated growth and redevelopment, as well as, to better serve the needs of the Fox Farm Road Corridors pedestrians, vehicle, bicycle, transit users, and redevelopment opportunities within the area.

The MPO tasked AVI, Professional Corporation to conduct the study. The key objectives included:

- The establishment of a conceptual multi-modal transportation and streetscape plan for the corridor with a greater detail study of up to 35% design for the major intersections of Walterscheid Blvd., South Greeley Highway, Morrie/ Avenue C, and College Drive.
- Identify short and long term recommendations to provide increased safety for vehicles, freight traffic, transit users, bicyclists, and pedestrians with consideration of construction costs and facility maintenance.
- Develop a conceptual land use plan for the corridor area.

The boundaries of the Fox Farm Road project are from Derr Avenue to College Drive (east and west), and I-80 to E. Jefferson Road (north to south). The plan also includes conceptual future alignments for the extension of Fox Farm Road, Allison Road, and College Drive into the unplatted land east of College. Additionally, the study included Burlington Trail Road, located between Campstool Road and South Industrial Road). Figure 1 depicts the study area and vicinity.

The primary purpose of this project is to create a planning document which promotes revitalization, safety, and complete streets, while being sensitive to current function, property owners, maintenance and construction costs. After discussion with the key members of the County, City, and MPO staff, the goals of the project were the following:

- Create a realistic guide document for the future development of the corridor and surrounding area.
- Develop a priority list of future roadway and infrastructure improvement projects.
- Develop intersection alternatives and improvements along Fox Farm Road at Avenue C, Walterscheid Blvd., College Drive, and the intersection of South Industrial Road at College Drive.
- Review options for bicycle, pedestrian, transit, industrial freight, and passenger vehicle use on Fox Farm Road.

The project was reviewed with oversight by a steering committee comprised of the following agencies or representative organizations:

- The Cheyenne Metropolitan Planning Organization
- Cheyenne Urban Planning
- City Engineering
- Laramie County Public Works
- South Cheyenne Community Development Association/ Holly Frontier
- South Cheyenne Water and Sewer District
- Cheyenne Light, Fuel, and Power
- Cheyenne Transit
- Cheyenne Trails and Bicycle Specialist
- Cheyenne Health Clinic
- WYDOT District
- WYDOT Planning
- FHWA



Figure 1 Fox Farm Road Corridor Study Vicinity Map

Snapshot

The Snapshot section of the Fox Farm Corridor Plan provides a summary of the existing roadway and planning area.

History

Fox Farm Roads likely beginning was similar to many other roadways. A jurisdiction would establish roads along section lines, giving access to previously remote areas and creating firebreaks. According to records researched at the Wyoming Department of Transportation, the first formal construction project for Fox Farm Road was begun on December 1, 1971 and

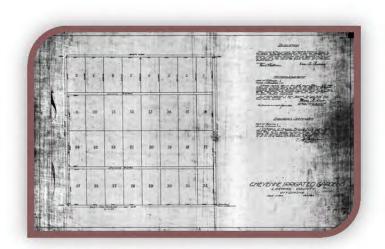


Figure 2 1923 Cheyenne Irrigated Gardens Plat



Figure 3 Fox Farm Road (Derr Avenue to Walterscheid Blvd.)

completed on September 8, 1972 under Wyoming Project No. SU-S-1109(2). This east section of Fox Farm was given route status as Wyoming Highway 221.

The constructed roadway was comprised of 2-12' drive lanes, 2-8' shoulders with roadway ditches approximately 12' on the south and 26' on the north. A short section of pavement located approximately 268' west of the intersection of centerlines College Drive, Fox Farm was constructed with an additional 2' of curb and gutter along with the 8' shoulders, and the 12'

drive lanes.

This east section (i.e. east of South/ North Greeley Highway) of Fox Farm was decommissioned in 2009 by the State of Wyoming Commissioners and given to Laramie County, Wyoming. All state route marker signs have been removed, and the route no longer appears on the Wyoming Official State Highway Map.

No formal construction records were found for the west section (i.e. west of South/ North Greeley Highway) of Fox Farm Road - County



Figure 4 Fox Farm Road (North side of road at Walterscheid Blvd. looking east along the south property line of SpringHill Suites)

Road 117. Today, this section is under the jurisdictional control of the City of Cheyenne.

Based on the Cheyenne - Laramie County Cooperative GIS Database Search / Interactive Mapping Site, the first recorded plat of the area was the Cheyenne Irrigated Gardens in October of 1923 (Figure 2). Other platting continued with the Prosser and Allison Tracts in 1930, Clear View Tracts in 1931, and Rose Ella Addition in 1955. For the most part, the early plats divided the land surrounding Fox Farm into approximately 330' x 640' (4 acre±) tracts.

The Fox Farm Road Corridor plan area is

not known to be a part of any historic districts at the present time. Additionally, the Wyoming State Historic Preservation Office (SHPO) website was reviewed for all the National Register listings in the area of the study and none were found.

Please note that if federal funds are used on any future projects or if a federal agency is part of the planning and implementation, a Section 106 Study will be required to determine potential impacts to any historic properties. Properties in the area of any construction impacts will be identified and evaluated based on the Secretary of Interior's Standards and Guidelines for identification. Several determinations can be made in the evaluation including the following:

- No historic properties affected
- Historic property adversely affected
- Historic property not adversely affected

Existing Corridor

Today the Fox Farm corridor has a very unique character with a variety of adjacent property uses, form, function, and look. Land use varies along the corridor and is comprised of urban residential, urban commercial, urban residential, rural residential, and industrial.

Corridor is comprised of mainly two types of segments. The first is the west segment (Derr Avenue to South Greeley Highway) which is urban in character and the second is the east segment (South Greeley Highway to College Drive) rural. The urban segment contains curb and gutter with some sidewalk, while the rural section contains roadside ditches only. Fox Farm Road's current roadway section is comprised mainly of asphalt surfacing with two driving lanes



Figure 5 Fox Farm Road (West side of Fox Farm Road looking East toward South/ North Greeley Highway



Figure 6 Fox Farm Road (East side of South/ North Greeley Highway looking West.

and paved shoulders. The only exceptions are areas east and west of the South Greeley corridor and Avenue C/ Morrie Avenue where concrete pavement has been installed. Pedestrian facilities cover a range of conditions throughout the corridor from attached sidewalks of varying widths to no sidewalk.

The pavement width varies along the corridor. On the western section of Fox Farm Road from Derr Avenue to Walterscheid Blvd, the pavement width from top back of curb to top back of curb is typically 43' with a 3.5' and 4' attached sidewalk on the south and north side of the roadway, respectively. The one exception is the south side of Fox Farm between Derr Ave. and Walterscheid where there are no sidewalks (Figure 3).

To the east of Walterscheid Blvd., the pavement narrows to 36' and there are generally 6' attached sidewalks on the north and south side of the roadway with the exception of the property frontage at SpringHill Suites where the sidewalk is detached using a 8' tree lawn (Figure 4) pavement begins to widen on the south side of the road as you head east on the corridor at the main entrance to the Holiday Inn. The width transitions to approximately 58' from top back of curb

to back of curb with 6' attached sidewalks on each side of the roadway (Figure 5).

The section of Fox Farm Road east of South Greeley Highway has been widened to approximately 63' from top back of curb to top back of curb with 4.5' and 5.5' attached sidewalks extended approximately 250' east of the intersection of North/ South Greeley

The remainder of the corridor extending east to College Drive has a pavement width of 40' with no sidewalk or curb and gutter. A representative photo is shown in Figure 6.

Fox Farm Road does not extend beyond the intersection of College Drive. It currently zoned as Light Industrial and Agricultural. The western edge is used as rural industrial and the majority to the east is used as ranch and grazing land. Currently three primary landowners hold the majority of land east of College Drive.

Transit

The South Route for the Cheyenne Transit Program covers Fox Farm Road. The program runs from 6:00 am - 7:00 pm, Monday thru Friday and 10 am - 5 pm on Saturday. Based on the current route map and on-site observation there are six transit stops within the project study area. Five are located directly on Fox Farm. However, the route does not run the entire length of the corridor. It is broken into two segments; the eastern half runs south on Morrie Avenue with a stop at Teton and continues east on Fox Farm Road with stops on the south between Avenue C and College Drive at Avenue C-1, Avenue C-4, and Avenue D. The western side of the route runs westerly with stops on the north side of Fox Farm Road with stops between South/ North Greeley Highway and Walterscheid at 300 West Fox Farm between the Holliday Inn and Comfort Inn Suites and Derr Avenue. This leaves a section of Fox Farm between Morrie/ Avenue C to South/ North Greeley without transit service. The distance between the two stop is approximately one mile (Figure 7). The main constraint of the Transit System in this area is related to continuity of pedestrian access. First, the only sidewalks on the corridor are near the intersection of South/ North Greeley and the west segment of Fox Farm. The East segment of Fox Farm relegates pedestrians to use the ditches along the roadway or the paved shoulder with the exception of a new north south path at Avenue C and Morrie Avenue. Second, the furthest east bus stop at Avenue D is primarily used for the Cheyenne Health Clinic on the north side of street while the bus stop is located on the south.

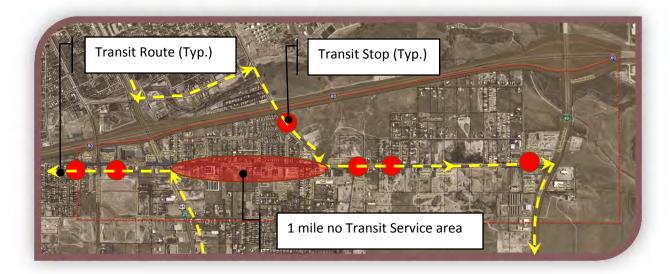


Figure 7 Transit Route and Transit Stops Fox Farm Road

Bicycle Transportation

No formal bicycle facilities are delineated on Fox Farm Road. Bicycle traffic shares the roadway with motor vehicles. Based on observation, bicycles use the un-striped paved shoulders and travel lanes.

The August 2011 Cheyenne On-street Bicycle Plan and Greenway Plan Update identified Fox Farm Road to become a part of the proposed bikeway network. The recommendation was for bike lanes to be installed as a part of future roadway paving or construction projects.

Utilities

Based on observed surface and underground locates at (4) four intersections on Fox Farm Road the following utilities have been identified:

- Cheyenne Light, Fuel and Power: Overhead electric, underground gas
- Bresnan Communications: Overhead cable/phone
- Century Link: Underground phone, fiber optic
- BOPU: Underground water, sewer, and storm sewer
- South Cheyenne Water and Sewer District: Underground water and sewer.

Given the proximity of utilities to the existing roadway, as well as, the limited right-of-way width of 80 feet, any modification to the intersections or roadway will affect the utilities within the corridor. Future coordination will be paramount to the success of any implementation of road projects.

One of the many unique characteristics of this corridor is the fact that the water and sewer infrastructure are under two jurisdictional entities, City of Cheyenne Board of Public Utilities and the South Cheyenne Water and Sewer District.

The majority of the corridor is served by the district and is comprised of water lines on the corridor ranging size from 6" to 12". The sanitary sewer system is comprised of 8" lines throughout the area. The South Cheyenne Water and Sewer District is funded by Laramie County mill levies. In the last three years (2010 – 2012) the district received 5.28, 5.13, and 5.76 mills (Laramie County, Wyoming).

The City of Cheyenne Board of Public Utilities provides services to a limited number of areas within this corridor area. The water system has an 8" line extending and looping onto itself at Morrie Avenue and South House Avenue. Additionally a 12" line has been installed in Walterscheid Blvd and loops back to the north at Parsely Blvd. Sanitary Sewer capacity appears to be limited to an 8" line east of Walterscheid Blvd. and on South House, and a 10" line on Morrie Avenue. The approximate boundary of the district and areas served by the BOPU are illustrated in Figure 8.

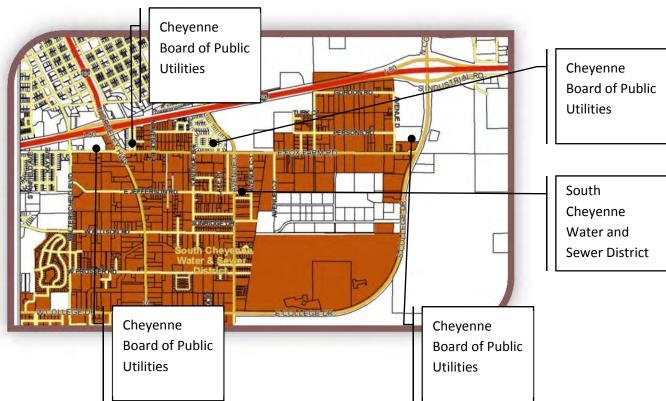


Figure 8 BOPU and South Cheyenne Water and Sewer District

Uniquely the SCWSD acquires water from the BOPU and wastewater treatment is gravity fed to the Dry Creek Water Reclamation Facility owned and operated by the BOPU. Obviously, future development available to the area will be dependent on the capacity of the water and sewer infrastructure. Two areas of concern from a development standpoint are related to two segments of 6" Ductile Iron constructed in 1960. The first is a five-hundred (500) foot section on Fox Farm Road between Avenue C-4 and Energy Drive north of the new Niobrara Energy Park recently constructed. The second is a seven-hundred eighty (780) foot section beginning at North Avenue D and extending west.

Freight/ Truck Routes

Based on interpretation of observed existing traffic volumes and assuming the definition of a truck is defined as a minimum of three axles, the percentage of trucks along the corridor is generally about 2% - 6%. The east segment of Fox Farm Road from South/ North Greeley Highway to College Drive is the primary truck route used for multiple industrial businesses and the Holly Frontier Refinery via Morrie Avenue. Based on conversations with representatives of Holly Frontier, drivers are encouraged to use two designation truck routes other than Fox Farm Road. The first utilizes Morrie Avenue, East 1st Street, Warren Avenue, 5th Street to the signalized intersection of North Greeley/ US85, then to off/ on ramp of I-80 east/ west. The second route

utilizes Morrie Avenue, East 5th Street, Campstool Road, Campstool Way, College Drive, I-80 Westbound/ Eastbound on/ off ramp (Figure 9).

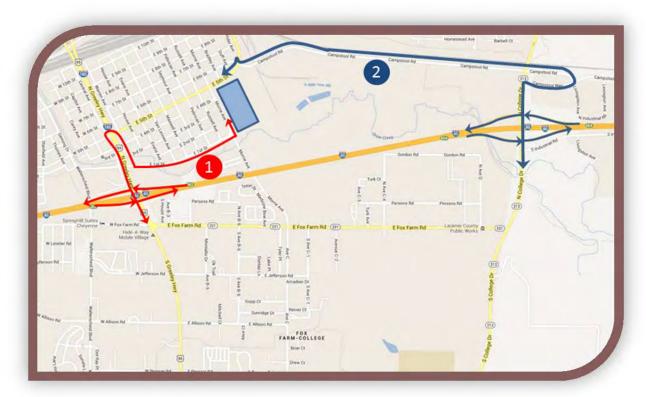


Figure 9 Holly Frontier Designated Truck Routes

Drainage

The site is located north and south of two primary drainage conveyances (Crow Creek and Allison Draw) and one tributary drainage area (Henderson and East Lincolnway Basin). The entire Crow Creek contributory drainage area of approximately 336 square miles, Allison Draw has an area about 18 square miles, and the Henderson/ East Lincolnway Basin is about 4.7 square miles (CH2M Hill, November 1988). Although the current Fox Farm Corridor is outside the floodplain or floodway, future extensions of Fox Farm and Allison Road to the east will abut and cross portions of the designated floodplain. Furthermore, Burlington Trail Road is within the Special Flood Hazard Area of the City/ County 100 Year Floodplain. The applicable current Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency (FEMA) are 56021C1357F, 56021C1376F, and 56021C1094F. Both Crow Creek and Allison Draw are essentially rural basins but are continuing the process of urbanization while the Henderson Basin is heavily urbanized with much of the basin fully developed. The topography in and around the study area generally slopes east to southeast. The drainage basin and floodplain are map Figure 10 ((CLCCGIS)) illustrates the corridor, basic basin drainage basins, floodplain, special flood hazard area, and points of discharge into the drainage way from the corridor

area. The special flood hazard areas are revised periodically, and the floodplains and floodways shown in this document were current during the time of this study.

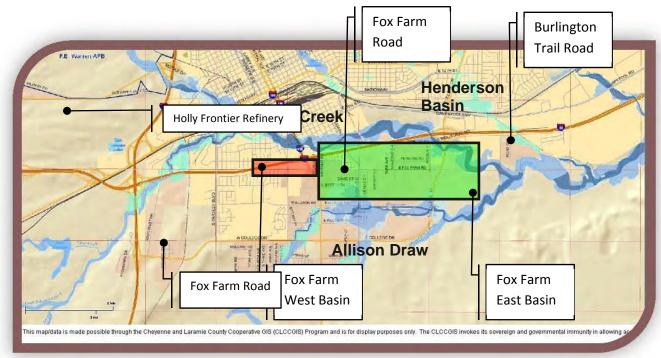


Figure 10 Drainage Bain and Floodplain Map

Storm water tributaries to the roadway corridor are conveyed by two primary methods. The first on the west segment is by way of curb and gutter and storm sewer and the second on the east segment by way of swales, ditches, and corrugated metal culverts (CMP). The operational condition of these existing storm water conveyance elements vary dramatically along the corridor from good to poor. Observations taken during several site visits found the west segment in good operational condition while the east segment of the corridor appears to be operating in an average to poor condition. Observations along the east corridor include the following (Figure 11, Figure 12):

- Near to full blockage of culverts (> 50%)
- Minor blockage of culverts (< 50%)
- Culverts without flared end sections
- Smashed or bent culverts and flared end sections
- Shallow culverts
- Shallow, small, or nonexistent ditches
- Channel erosion
- Overgrown vegetation within ditches

- Steep side slopes within ditch sections
- Roadway storm water runoff entering private property
- Private property storm water runoff discharged into the Fox Farm Corridor

Drainage sub-basins have been delineated along the Fox Farm Road and are illustrated in the appendix A and Figure 8 and 9 of this report. Preliminary runoff values were calculated using AutoCAD 2013, Hydraflow Hydrographs software and intensity versus duration precipitation curves from the City of Cheyenne. The table below summarizes the runoff values for each of the drainage basins for the full range of storm events (5, 25, and 100 year storms).

Table 1 Design Storm Flows

Pasin Designation	Q (Cubic Feet/ Second)				
Basin Designation	5 Year Storm Event	25 Year Storm Event	100 Year Storm Event		
F1	74.3	119.1	157.7		
F2	37.4	60.1	79.5		
F3	96.1	154.4	204.4		
Right-of-way (North)	5.0	8.0	10.6		
Right-of-way (South)	3.6	5.8	7.7		

Typical culvert and ditch capacities were calculated to compare to the basin run-off values above. Culvert capacities were based on 18" CMP culverts using a slope of 0.5% and 0.5' of upstream head with normal tail water conditions. Ditch capacities were calculated based on a "V" ditch section, 4:1 side slopes, 1' of depth, grass lined conditions. The typical capacity of the culverts is 7.3 cfs while the ditches have a capacity of 8.0 cfs. Based on those conveyances, it is clear the culverts can carry the run-off generated from most of the existing roadway and right-of-way storm events but, will not convey the offsite run-off.



Figure 11 Fox Farm Existing Drainage Constraints (West)

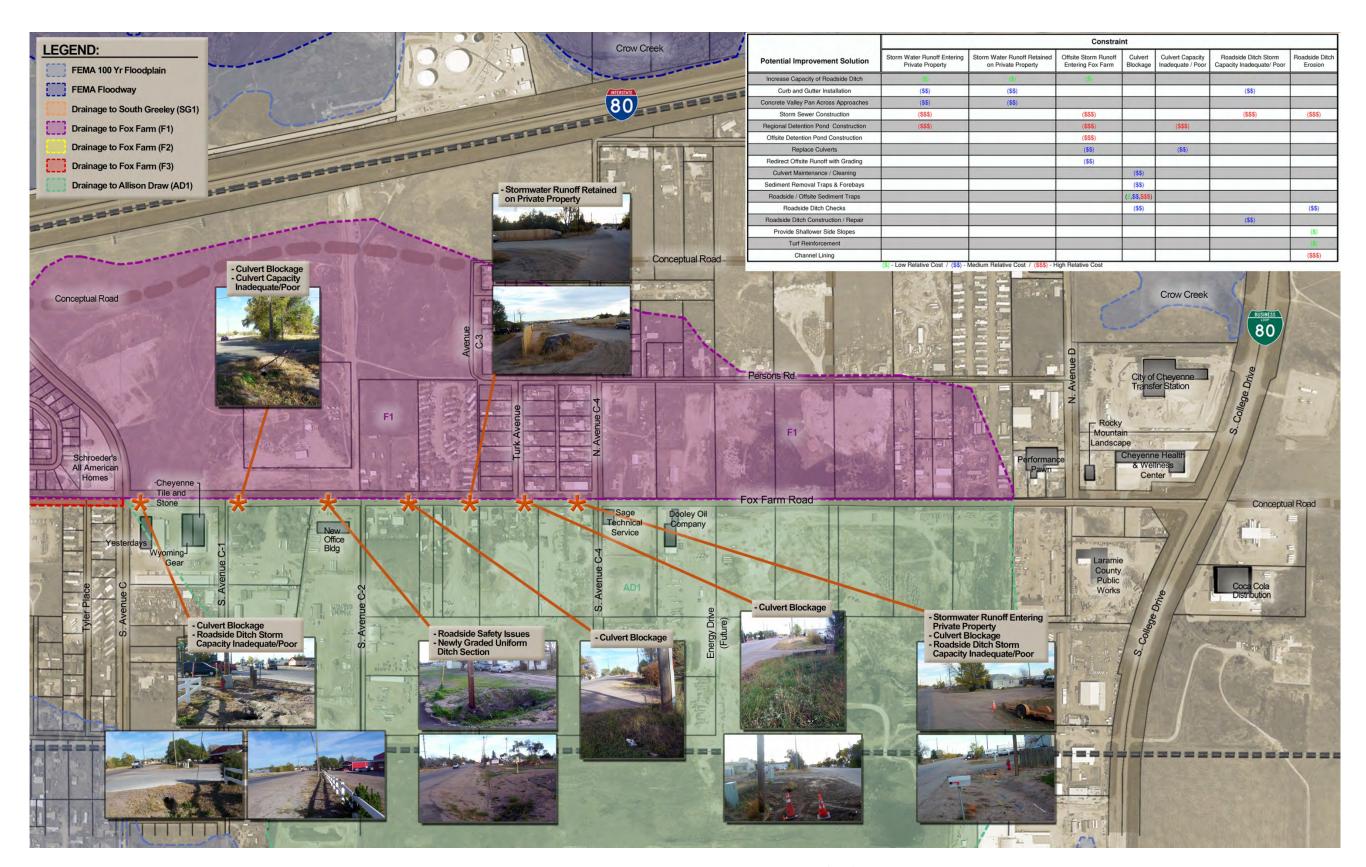


Figure 12 Fox Farm Road ExistingDrainage Constraints (East)

Environmental

Potential environmental considerations were reviewed for possible impacts to future improvement within the corridor. A cursory review and consultation with staff of the Wyoming Department of Environmental Quality (WYDEQ) and available documentation revealed one historic landfill and seven construction/ demolition landfills in the area which could potentially impact future construction and redevelopment in the area (Inberg-Miller Engineers, 2005).

The historic landfill was known as the Wilson Pit Landfill and operated by the City of Cheyenne Public Works Department from October 1944 to May 1946. It is a mined out, 4 acre gravel pit, located at the southeast corner of the intersection of Fox Farm Road and Avenue C-1 (Prosser Tract 1, Tract 16 and 17).

The seven other construction/ demolition landfills found in the area are all backfilled gravel pits which carry some degree of risk of contamination or impact to future redevelopment. They are listed below and shown in Figure 13 along with the Wilson Pit Landfill mentioned above:

- 1. Wilson Pit Landfill
- 2. Allison Pit also known as Read-Allison Pit and James E. Simon Pit (East of Avenue C: WYDEQ/SHWD #20.525)
- 3. McCard Construction (217 South Avenue C-2: WYDEQ/SHWD #30.060)
- 4. Clearview Tract (1507 East Fox Farm Road: WYDEQ/SHWD #30.050)
- 5. Cheyenne South Pit (500' north of the intersection of Avenue C-2, and Fox Farm Road: WYDEQ/SHWD #30.010)
- 6. Will Krukenberg (212 Avenue C-4: WYDEQ/SHWD #na)
- 7. Louis A. Gehrig (Tract 30, Cheyenne Irrigated Gardens: WYDEQ/SHWD #30.025)
- 8. Cook-McCann Concrete (northwest corner of Avenue C-2 and Fox Farm Road: WYDEQ/SHWD #30.025)

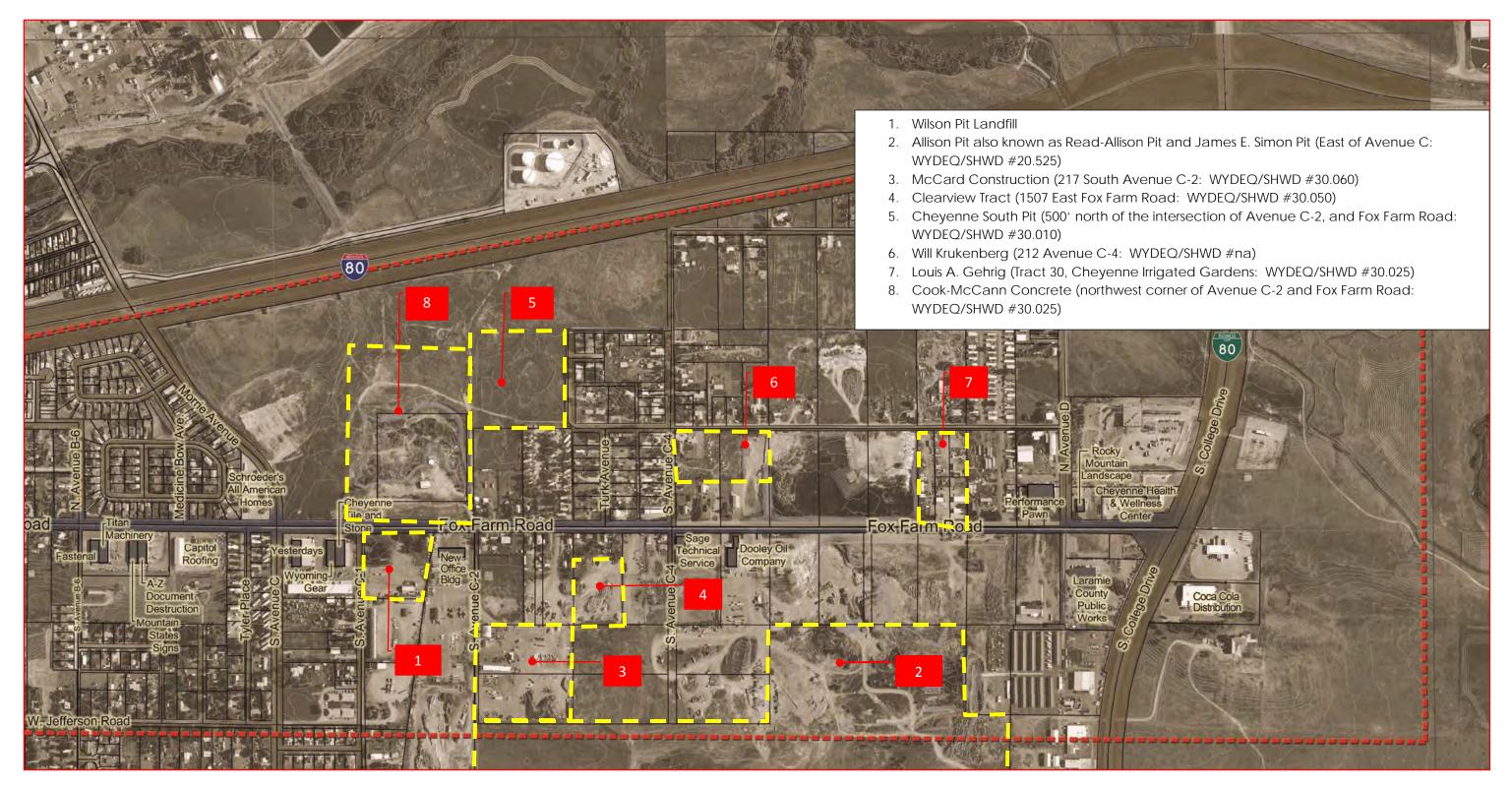


Figure 13 Historic Landfill and Construction/ Demolition Landfills in Fox Farm Road Corridor Study Area

Current Traffic Conditions

Traffic volume, speed, and classification data were collected for this project on average weekdays at various times during 2011, 2012, and 2013. Peak hour counts were collected at the key intersections along Fox Farm Road and College Drive during the morning and evening peak hours. Noon peak hour counts were evaluated when they were available. Peak hour and daily traffic volumes, speeds, laneage, and traffic control are contained in Figure 14. Regarding vehicle classification, a truck was defined as a vehicle having three or more axels. The percentage of trucks varies along the corridors between 2% and 6%.

To evaluate the performance of the intersections within the study area, the Level of Service (LOS) was calculated using Synchro software. This software package utilizes criteria described in the Highway Capacity Manual (Board, 2010). LOS is a measure used to describe operational conditions at an intersection with categories ranging from A to F based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as, for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. Acceptable intersection operation based on the City standards (Cheyenne, Cheyenne Unified Development Code-Article3. Impact Studies, 2012) is a LOS C or better. All of the intersections are currently operating at LOS C or better during the weekday peak hours. Please see Figure 14 for additional information.

Traffic Safety

Crash data was obtained for key intersections along the corridor for the most recent three-year period. The data and crash rates are summarized in Table 2 (3) Three Year Crash Summary for Key Intersections. The highest number of crashes over the three-year period (25) occurred at Fox Farm Road / South Greeley Highway. Crash rates ranged from 0.1 at College Drive / Industrial Lane to 0.87 at Fox Farm Road / Avenue C. Based on the 2011 Annual Crash Report for the Cheyenne Urban Area (Organization, 2012), crash rates ranged from 1.78 to 1.17 for the top 10 highest signalized intersection crash locations in the Cheyenne Urban Area during the years 2002 through 2011. Crash rate is number of crashes per million entering vehicles. The South Greeley Highway and Fox Farm Road intersection ranked number ten in the ten highest signalized intersection crashes in 2011at a total of thirteen (13) crashes. The highest intersection was the Dell Range Blvd. and Converse with twenty-nine (29) total crashes in 2011.

The following observations were made about the crash data:

- Fox Farm Road / Walterscheid Boulevard. There are no significant crash patterns at this intersection.
- Fox Farm Road / South Greeley Highway. Based on the crash data from 2005 to 2010 a total of fifty-one (51) total crashes were reported at the intersection. Of the fifty-one (51),

- sixteen (16) were injury related and thirty-five (35) were property damage only (PDO) crashes.
- Fox Farm Road / Avenue C. A majority of the crashes at this intersection are a function of the narrow intersection geometric layout width. All four approaches have a single lane and the intersection is controlled by stop signs on each approach. The intersection geometry combined with the number of large trucks which causes confusion for motorists. Some motorists stop in unusual locations to accommodate the turning trucks which contribute to the crashes. (Board, 2010)
- Fox Farm Road / College Drive. The significant crashes were the angle type involving eastbound versus southbound vehicles. Based on the crash reports and discussions with citizens at the open houses, motorists on the eastbound approach have difficulty distinguishing between the southbound through and right turning vehicles when the right turning vehicle is a large truck. The right turning truck can hide the southbound through vehicle causing crashes and near misses. Another issue was discovered through discussions with citizens at the open houses involving eastbound and northbound vehicles that have caused near misses, but no crashes. Based on discussions with citizens at the open houses, the combination of the skewed eastbound approach causes motorists to look more than 90° to the right and the two northbound through lanes makes it difficult for the eastbound motorist to judge the gaps in the northbound traffic.
- College Drive / Industrial Road. There are no significant crash patterns at this intersection.
- College Drive / Campstool Way. All of the crashes at this intersection are rear end which is a function of the intersection being signalized.

A summary of the crash data is shown in Table 2.

Table 2 (3) Three Year Crash Summary for Key Intersections

	Fox Farm Road at				Collge Drive at		
Туре	Walterscheid Blvd.	South Greeley/ North Greeley	Avenue C	College Drive	South Industrial Road	Campstool Way	
			Number o	of Crashes			
Approach Turn	1	4					
Angle	2	4	1				
Rear End	2	11	4	1	1	9	
Pedestrian		1					
Head-on			2				
Other	2	5	3	1	1		
Total	7	25	10	2	2	9	
Rate	0.51	0.75	0.87	0.52	0.10	0.35	

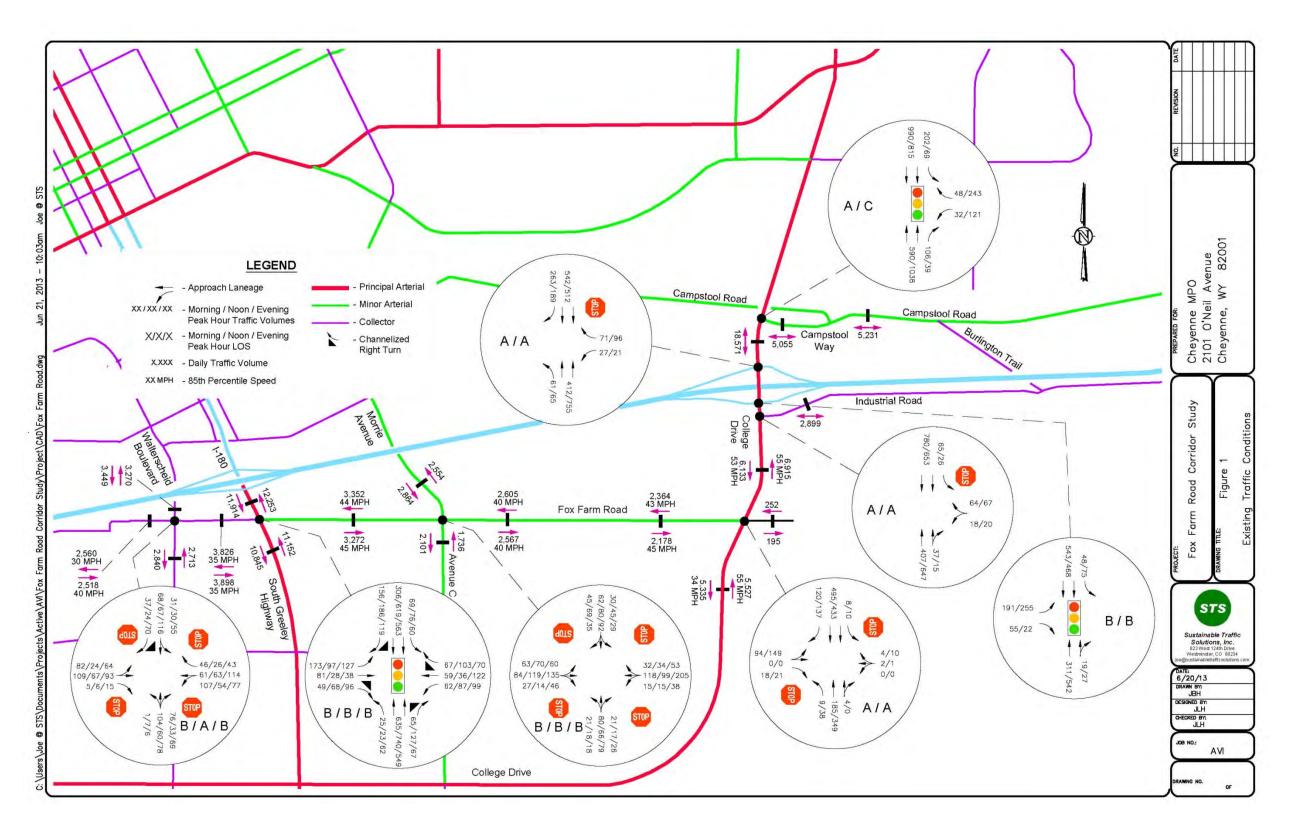


Figure 14 Existing Traffic Conditions

Existing Land Use and Zoning

The Fox Farm corridor has been in existence for many years and started as a WYDOT controlled roadway. As access to public infrastructure in the area has increased over time so has the ability to have denser commercial and residential developments to provide a mix of lot sizes and development types. This has led to many grandfathered uses and a variety of lot sizes and scattered zoning. The land use types found within the corridor are civic uses, residential uses, service business, retail businesses, child care, automobile service, moderate industrial recycling and agricultural.

The following zoning uses are currently within the corridor:

City Zoning:	County Zoning:
Public	CB
■ MR-2	MR
■ HR-2	PUD
CB	MU
PUD	■ []
	■ A-2

See Figure 15 for the current zoning and land use configuration in the area.



Figure 15 Existing Land Use and Zoning

Structure

The structure is the process and planning context phase of the project. It provided an avenue for a collaborative effort to define the opportunities and constraints of the corridor, as well as, frame the key planning considerations which shaped the plan.

The Fox Farm Road Corridor Plan relied heavily upon extensive public and stakeholder participation. The process involved open house format meetings with residents, business owners, developers, land owners, as well as, project Steering Committee, Planning



Commission, Cheyenne Metropolitan Planning Organization Technical Advisory Committee, Cheyenne Metropolitan Planning Organization Citizen Advisory Committee, Individual Landowner/ Business meetings, and a Holly Frontier Freight/ Truck Route Survey. Table 3 shows a matrix of all the avenues used and dates in the structure process of the project.





Table 3 Public Outreach Matrix

ACTIVITY	DATE(S)
South Cheyenne Community Showcase	February 26, 2011
Public Open House (3)	March 29, 2011; November 16, 2011; and May 28, 2013
Steering Committee (5)	March 9, 2011, July 6, 2011, February 22, 2012, November 1, 2012, and April 10, 2013
Laramie County Planning Commission Work Session (Land Use)	August 25, 2011
Individual One-on-one Meetings w/ Land and Business Owners	June 21, 2012 (Ms. Read) April 13, 2012, June 22, 2012 (Mr. Lummis) October 24, 2012 (Mr. Hales) May 22, 2012 (Diamond Shamrock) June 25, 2013 (Taco Johns International)
MPO Technical Advisory Committee (2)	August 15, 2012 and May 15, 2013
MPO Citizen Advisory Committee	May 16, 2013
Federal Highway Administration and WYDOT	June 26, 2013
Holly Frontier Freight/ Truck Route Survey	July 17-19, 2013

South Cheyenne Community Showcase

The project structure began at the South Cheyenne Community Showcase conducted at Laramie County Community College on February 26, 2011. The project was introduced to the public at a booth which displayed an overall aerial photograph with project limits and was manned by AVI and the MPO. Both paper and an electronic comment card were available for attendees.

Public Open Houses

The next structure component involved open house style forums for stakeholder and public comment and input. Three open house style public meetings were conducted during the project. AVI led the public involvement process with assistance and contributions from all the team members. The meetings were advertised through various media including newspaper, web, elementary school flyers, mail flyers, and variable message board signs placed on Fox Farm Road.

First Open House

The first public meeting was conducted on March 29, 2011 from 4:00 p.m. to 7:00 p.m. in the gymnasium at Arp Elementary School. The site was selected due to its proximity to the corridor study. Seventy-two (72) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Obtain and listen to initial feedback from the public on problems, concerns, and desires for the future development and transportation components of the area.
- Identify and begin involvement of interested stakeholders.
- Provide a platform to begin work with the Steering Committee.

Planning and Engineering consultants from AVI, Jovi Plans and Sustainable Traffic Solutions were present to receive public comment. The MPO and Laramie County Planning staff members were an asset in fielding questions, gathering comments, and directing citizens to the different areas within the open house.

The open house was organized into three different stations to prompt input for the corridor and planning components. Those stations were Traffic, Site Issues, and Zoning/ Land Use. Information and input from the public at those stations was collected by way of three different avenues. Those were; direct communication with a team member (i.e. consultant, MPO staff member, and Laramie County Planning staff member), having the public write comments on Post-it® notes and placing them on large planning area maps, and filling out a written survey. The primary purpose of the three different communication avenues was to create the most comfortable environment for individuals to convey information to the team. "Something to think

about" prompts were listed at each of the individual station tables to also prompt input. The questions from the Zoning and Land Use Table were as follows:

What are your thoughts in regard to Land Use and Zoning?

- What type of development or land uses would you like to see in the area and corridor?
- Do you prefer industrial, residential, retail, office, manufacturing, or other?
- Do the zoning areas surprise you?

The overview of the station results were as follows:

Traffic Station

The Fox Farm Traffic station received the following five primary areas of concerns:

- Inadequate width of the Fox Farm Road for turning movements on and off the corridor and at key intersections.
- Lack of pedestrian facilities and connections with surrounding neighborhoods and greenway paths.
- Speeding on the corridor
- Lack of landscaping,
- Lack of lighting along the corridor.

Site Issues and Concerns

At the Site Issue station, there were many of the same comments about traffic along the corridor, but there was much more concern with the overall look of the corridor, as well as, lack of maintenance of the roadways within the area. There was also discussion about drainage concerns in the area.

Current Zoning and Land Use Station

The Current Zoning and Land Use station brought a lot of attention to the need for a location for people to gather in the area. The suggestions included a larger school site, parks, tennis courts, swimming pool, skating park, and connecting trails and greenways. Another interesting idea that resulted from the meeting was that there was a positive response overall to commercial activities and increased density if this helps bring in more commercial/office type uses. Respondents also made it clear that they would like to see industrial use stay south of Fox Farm Road. There are many large lot areas that are vacant or underutilized at this time for an area that has water and sewer.

Of the Seventy-two (72) persons signed in as attending the public open house Fifty-five (55) written comments were returned or approximately Seventy-six point four (76.4%) return. Of the

survey respondents, eight-one point eight percent (81.8%) of them either owned or rented property within the area of the study and twenty five point five percent (25.5%) classified themselves as route users. A complete summary of comments, exhibits, sign in sheets, and comment cards are enclosed in Appendix B.

Second Open House

The second public meeting was conducted on November 16, 2011 from 4:00 p.m. to 7:00 p.m. in the gymnasium at Arp Elementary School. The site was selected due to its proximity to the corridor study and the excellent turnout we had received at the previous open house. Advertisement of the meeting was accomplished through various media including newspaper, City of Cheyenne Metropolitan Planning Organization (i.e. MPO)/ City of Cheyenne Website, and Variable Message Signs placed on Fox Farm Road. Fifty-five (55) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Have the public review the new land use plan for the corridor. The Study team wanted to verify what it had heard at the initial meeting so that future traffic volumes could be represented correctly on design drawings.
- The consultants presented different road options based on the direction of public comment from the first meeting and provided visual diagrams of what could be done along the corridor.
- Four key intersection design options were also presented for public discussion and responses.
- A master drainage conception was presented to show possible ways to help with drainage concerns within the study.

Planning and Engineering consultants from AVI, Jovi Plans, and Sustainable Traffic Solutions were present to receive public comment from the citizens that participated in the open house style meeting. MPO and Laramie County Planning staff members assisted in fielding questions, gathering comments, and directing citizens to the different areas of the open house. The open house was organized into three different stations each one with its own design component and consultant to gather input from the attendees. It was set up to allow the public to review the Conceptual Land Use Plan, move to the Transportation and Roadway Station (i.e. road corridor options and intersection conceptual alternatives), and finally Drainage Component Station (i.e. existing conditions and conceptual alternative plans). Breaking the public into smaller groups allowed more one on one conversations and interactions with people. This was an attempt to ensure the public in attendance were allowed to speak freely and get to know the people working on the corridor plan. A separate place was provided for the public to write comments and to answer a written survey.

Results for the written survey information were entered into the computer system by the consultants after the open house or the public had the option of entering the survey electronically through the Survey Monkey® web link. The link was provided on the bottom of the comment card and the Cheyenne Metropolitan Planning Organization website. The overview of the station results were as follows:

Land Use Station

The Land Use station was primarily a review of the input the consultants received and applied from the first public meeting, meetings with the steering committee and the Laramie County/ City of Cheyenne Planning Commissions. The Land Use Plan was very well received with only one person asking for their parcel to be changed.

In order to coordinate the Laramie County Land Use Regulations and City of Cheyenne UDC zones, an overlay district might make sense. This would synchronize the different regulations and help distinguish the mixed-use residential and mixed-use business land use types since Laramie County only has a single Mixed Use Zone. An example of the overlay ordinance is illustrated in the Shape portion of report (Foundation 2 Overlay District).

Transportation and Roadway

The Transportation and Roadway Station encompassed the introduction of roadway design components, intersection conceptual alternatives, and truck turning movements of standard intersection versus a roundabout.

Most of the discussion in this area entailed accommodating large trucks, which utilize the intersection of Avenue C/ Morrie Avenue with Fox Farm Road. It was indicated that a majority of truck movement was from southbound Morrie Avenue to eastbound on Fox Farm Road and from westbound Fox Farm Road to northbound Morrie. It was indicated that the traffic was due to the interstate traffic accessing the Holly Frontier Corporation site formerly known as Frontier Refinery. The truck traffic discussion prompted the demonstration of the large width required to turn a semi-truck at a standard four-way intersection and that a properly sized roundabout can facilitate a safer and more convenient movement.

Particular comments were received regarding the importance of the placement of a signal at College Drive and Fox Farm Road. It was reiterated that the intersection was unsafe for vehicles entering College Drive from westbound to northbound. Although the traffic crash data shows this intersection to be the second lowest in crashes out of the four primary intersection on the corridor (i.e. South Greeley (24), Avenue C (10), College Drive (8), and Walterscheid Blvd. (7)).

Reviewing the reported crash data from 1/2007 to 12/2009, it appears that only one crash was related to a movement from westbound Fox Farm to northbound College. The primary unsafe perception appears to stem from ghosting issues related to turning movements from Fox Farm to

northbound College. Due the skew of the intersection and the transition from two travel lanes to a single lane on southbound College and one travel lane to two travel lanes on northbound College, cars are either hidden behind each other or imperceptible as to whether they are turning onto Fox Farm or proceeding on College through the intersection.

Some discussion was spent on the intersection at South Greeley Highway related to the possible incorporation of access control medians being placed on the west and east side of Fox Farm Road. Proponents expressed that it would make the turning movements more defined and safer. For instance, it was indicated that it is very common for traffic proceeding from northbound South Greeley to eastbound on Fox Farm Road to directly cross into the south approach of the Diamond Shamrock instead of using the west approach off South Greeley. Opponents to the use of the median expressed concern of preventing traffic exiting from the south approach of the Diamond Shamrock from entering eastbound Fox Farm Road. Additionally, a resident of South House Avenue expressed the concern that we should provide a left turn bay for the eastbound to northbound movement off Fox Farm Road.

Finally, general comments were received regarding the importance of street lighting, curb and gutter, and sidewalks to be incorporated into future roadway improvements on the corridor.

Drainage Station

In the first public meeting drainage was one of the topics of concern therefore, for the second public meeting AVI developed a Drainage Constraints map and Conceptual Potential Drainage Opportunities Map. The constraints map summarized existing drainage-related issues along the Fox Farm Road Corridor. Site photographs were provided of an approximate location within an overall aerial layout. This provided a visual referenced to the location and type of drainage constraint. Drainage areas, which contribute storm water runoff onto the Fox Farm Road Corridor, were also outlined on the exhibit for reference and scale of the amount of storm runoff contributing to the area. A summary table of the typical constraints and potential solution types were shown with relative costs (Figure 11 Fox Farm Existing Drainage Constraints (West), Figure 12 Fox Farm Road Existing Drainage Constraints (East)).

The second exhibit developed was the Conceptual Potential Drainage Opportunities. The layout outlined long-range broad type master planning opportunities for improving the drainage along the corridor. The exhibit summarized five (5) separate conceptual drainage conveyance paths to modify and improve conveyance runoff off of Fox Farm Road and into Allison Draw and/or Crow Creek drainages. The master plan level solutions looked at different routing of storm water and regional storm water detention areas (See Figure 14).

Public discussion and concerns were expressed regarding offsite discharge and conveyance problems, as a result of, the Deerhaven subdivision located off of Montalto Drive. Several attendees cited standing water, inadequate to poor drainage ditches, and a perception that

runoff volume from the subdivision has increased on East Jefferson Road since the completion of the this stage of development. Other comments stated that some drainage from Fox Farm Road is being conveyed to private property. Specifically, it was noted that an existing culvert at the intersection of Avenue D and Fox Farm Road appears to convey storm water runoff from the north side of Fox Farm Road directly onto private property.

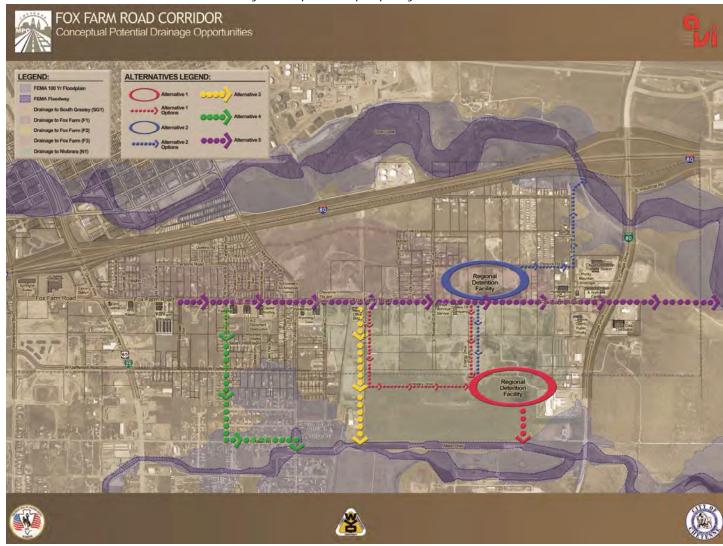


Figure 16 Conceptual Drainage Opportunities

Thirty-one (31) participants provided written survey comments or a 56.3% response rate. Of the survey respondents, eighty three point nine percent (83.9%) of them either owned or rented property within the area of the study while sixteen point one percent (16.1%) were route users. A complete summary of comments, exhibits, sign in sheets, and comment cards are enclosed in Appendix B.

Third Open House

The third public meeting was conducted on May 28, 2013 from 4:00 p.m. to 6:00 p.m. in the gymnasium at Arp Elementary School. Advertisement of the meeting was accomplished through various media including newspaper, City of Cheyenne Metropolitan Planning Organization (i.e. MPO)/ City of Cheyenne Website, post card mailings, and Variable Message Signs placed on Fox Farm Road. Fifty-two (52) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Have the public review and comment on the conceptual land use plan for the corridor.
 This included a revised conceptual land use map of portions east of College Drive.
- Review and comment on a proposed rural and urban cross section (i.e. with and without curb and gutter, respectively).
- Three key intersections with preferred designs and one intersection with two options were presented for public discussion and responses.
- A proposed conceptual plan, intersection modifications, and greenway extension were visually presented for public input and consideration.
- Three alternatives for modifications to the intersection of South Industrial Road at College
 Drive were presented for public comment.

Planning and Engineering consultants from AVI and Sustainable Traffic Solutions were present to receive public comment from the citizens that participated in the open house style meeting. MPO and Laramie County Planning staff members fielded questions, gathered comments, and directed citizens to the different areas of the open house.

The open house was organized into two duplicate stations with three different design components as follows: Land Use, Conceptual Typical Sections and Intersection Options, Burlington Trail Road, and South Industrial Road. A separate tabled area was also used for the public to write comments and to answer the written survey.

Results for the written survey information were entered into the computer system by the consultants after the open house or the public had the option of entering the survey electronically through the Survey Monkey® web link. The link was provided on the Cheyenne Metropolitan Planning Organization website.

Twenty-seven (27) participants of the fifty-two (52) listed on the sign-in sheet provided written survey comments or a 51.9% response rate. The written survey responses were entered and the results are included in the following charts by the category that they relate to. Of the survey respondents, fifty-five point five percent (55.5%) of them either owned or rented property within the area of the study and twenty-nine point six percent (29.6%) were route users. A complete summary of comments, exhibits, sign in sheets, and comment cards are enclosed in Appendix B.

Steering Committee

The second structure component of the project involved enlisting the use of the Steering Committee. The committee was comprised of the following staff and key stakeholders from the MPO/City/County/WYDOT and other agencies:

- Tom Mason, Cheyenne Metropolitan Planning Organization
- Nancy Olson, Cheyenne Metropolitan Planning Organization
- James Sims, Cheyenne Metropolitan Planning Organization
- Matt Ashby, City of Cheyenne
- Brandon Cammarata, City of Cheyenne
- Doug Vetter, City of Cheyenne
- Nathan Beauheim, City of Cheyenne
- Mark Escobedo, City of Cheyenne
- Gary Kranse, Laramie County Planning
- Abby Yenco, Laramie County Planning
- John Shepard, Laramie County Planning
- Barbara Kloth, Laramie County Planning
- Don Beard, Laramie County
- Dennis Auker, Laramie County School District #1
- Mel Wilkenfield, South Cheyenne Community Development Association/ Holly Frontier
- Jim Rish, South Cheyenne Water and Sewer District
- Jef McMann, Cheyenne Light, Fuel, and Power
- Joe Dougherty, Cheyenne Transit
- Jeff Wiggins, Cheyenne Trails and Bicycle Specialist
- Amanda Brinkman, Cheyenne Health Clinic
- Randy Griesbach, WYDOT District
- Kevin McCoy, WYDOT Planning
- Jeff Purdy, Federal Highway Administration

The Steering Committee met five (5) times throughout the course of the project to guide the work efforts of the consultant team, review project information, provide insight, discuss public and stakeholder involvement, and collaborate to make decisions about the plan direction and recommendations. Meeting minutes and agenda of the meetings can be found in Appendix B.

Planning Commission

The third structure component of the project involved utilizing a working session of the Laramie County Planning Commission and a joint public forum meeting of the City of Cheyenne and Laramie County Planning Commissions.

The primary purpose of the working session of the Laramie County Planning Commission was to convey the comments received from the first open house and collaborate on the development of the Conceptual Land Use plan for the corridor. The efforts of the group yielded the development of a commercial/ industrial zoning overlay to be used on some of the frontage properties along Fox Farm Road.

The joint meeting of the commissions allowed both jurisdictional entities to work in partnership for the development of the vision of the corridor. The latest recommended intersections and typical cross sections were presented to the group with interaction in the formal framework of the meeting.

One-on-one Meetings

The fourth type of structure component involved one-on-one individual meetings. Two types of one-on-one meetings were required for the project. The first were the landowners east of College Drive. Their purpose was to discuss the future land use and alignment options east of College Drive. The meetings took place individually via phone or person to person with the following individuals: Mr. Del Lummis, Mr. Sloan Hales, and Ms. Christine Read. Those meetings/discussions resulted in determining which roadways became the primary connections to the east (Fox Farm Road, Allison Road, or College) and where they should be aligned to best fit their future development requirements and desires. Several options were explored including: Fox Farm Road as the primary east west route and Allison Road teeing into Fox Farm (Figure 18), Allison Road as the primary east west route and Fox Farm road extending east and south teeing back to Allison Road (Figure 20), East College Drive as the primary east west route with Fox Farm Road teeing into Allison Road and then Allison teeing into College Drive (Figure 19).

The second type of one-on-one meetings was with some of the local businesses along the corridor. Big "D" Oil Company located at 100 North Greeley Highway; Diamond Shamrock located at 115 North Greely Highway; Taco Johns at 101 South Greeley Highway; and Leighton Enterprises, LLC at 100 South Greeley Highway. There were specifically solicited for input on the project due to potential impacts related to altering access into their respective business.

AVI conveyed to them that one type of improvement being looked at was the use of access control or safety medians at key locations which are prone to weaving or unsafe turning movements. The local businesses expressed concerns over removing any existing access approaches, but were understanding as to the need of using some type of safety measures. The majority of these safety concerns are at the high turning volume intersection of Fox Farm Road at North and South Greeley Highway (U.S-85). This area's geometric configuration and topography (i.e. sharp angle, steep vertical grades, and close access proximity to the roadway's intersection point) is inherently more prone to crashes. The examples cited to business were as follows:

- Some of the traffic traveling on northbound South Greeley Highway which turns east onto Fox Farm Road cross over three lanes of traffic to access the Diamond Shamrock station entrance on Fox Farm.
- Vehicles exiting the businesses near the intersection make unsafe left turns onto Fox Farm Road and/ or South Greeley Highway which require them to maneuver and avoid multiple conflicting traffic movements (Figure 17, looking east on Fox Farm Road toward South/ North Greeley). At the time this photo was taken three (3) consecutive cars exited within a few minutes of each other and narrowly avoided crashes with opposing traffic.



Figure 17 Fox Farm Road Looking East towards South/ North Greeley Highway at the Exxon Station

Besides concerns over removing accesses, the primary concern of Taco John's International representatives at this location was not to eliminate the westbound Fox Farm Road left turn movement into the north approach of the Taco John's location. Taco John's estimates that approximately seventy-five percent (75%) of the peak lunch hour business traffic use at this location originates from westbound Fox Farm Road entering from the Fox Farm approach. The Taco John's group fully understood and agreed to need to install a safety median on South Greeley south of Fox Farm Road intersection to control the conflicting left turn movements between vehicles turning left into Taco Johns and westbound Fox Farm Road.

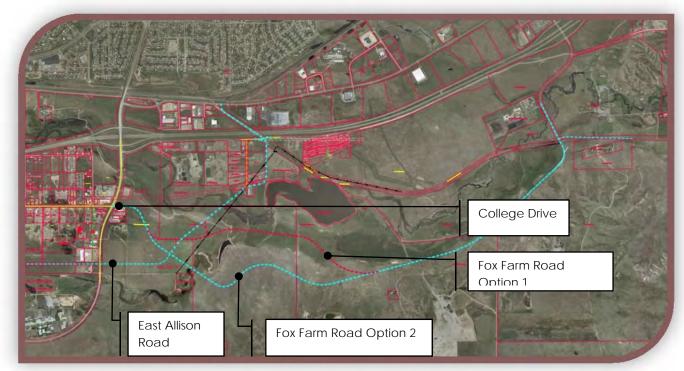


Figure 18 Conceptual Roadway Alignments East of College Drive (Fox Farm Road Primary Route)

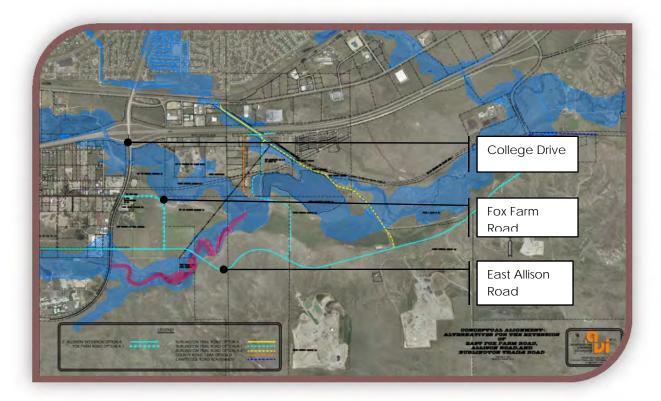


Figure 20 Conceptual Roadway Alignments East of College Drive (East Allison Primary Route)

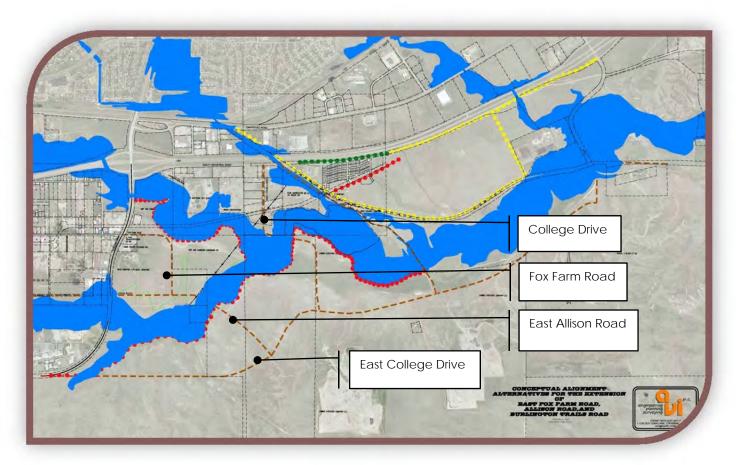


Figure 19 Conceptual Roadway Alignments East of College Drive (East College Drive Primary Route)

Cheyenne Metropolitan Planning Organization (Committee Meetings)

The fifth type of structure component involved presenting developmental increments and soliciting input from the established Cheyenne Metropolitan Planning Organizations Technical Committee and Citizen's Advisory Committee.

Holly Frontier Truck Route Survey

Once the public involvement process began for Fox Farm Road, it became very apparent that truck traffic/freight traffic was a large part of the users of the corridor. The corridor's location adjacent to the Holly Energy Partners refinery, industrial parcels along the corridor, and access to both I-80 and US-85 all contribute to increased freight use.

Due to its size and proximity to the corridor, Holly Energy Partners became a logical choice to obtain valuable data for the size of trucks, frequency of use, and verification of the truck routes used. AVI contacted Holly Energy Partners about the proposal to collect data for the truck routes and found the staff very helpful and without their support the collection would have not been possible. After contacting Holly Energy Partners early in the corridor study, it was conveyed by Stu Fishbeck that Holly Energy Partners do not directly hire drivers nor have control over ingress and egress routes. Mr. Fishbeck indicated that in fact drivers were encouraged not to use Fox Farm Road for freight/ truck routes. The refinery designates or encourages independent drivers to use the following truck routes:

- Morrie Avenue to East 1st to Warren Avenue or Central Avenue then North Greeley/ I-180 (North or South) via East 5th Avenue (R1)
- Campstool Road to Campstool Way to North College Drive to I-80 East or West (R3).

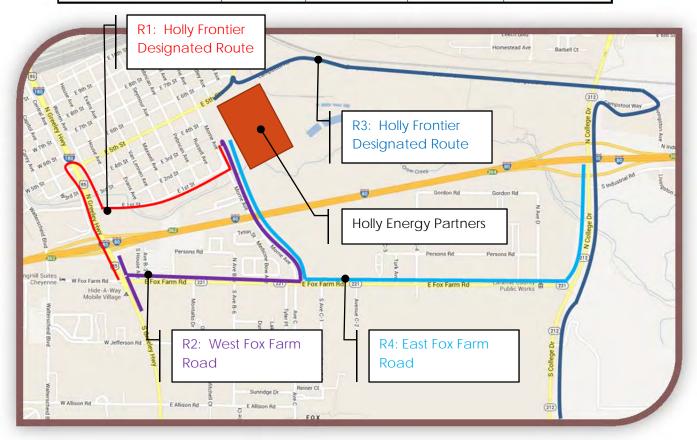
Truck Survey comment cards were collected and distributed at two locations at the refinery from July 17 to July 19, 2013. The first was at the unmanned loading docks off of Morrie Avenue and the second was the manned Gate 7 off of Campstool Road. Results for the written survey information were entered electronically through the Survey Monkey® web link for analysis.

The truck route survey provided valuable data from a primary users' group which was lacking from the public outreach process. Three primary conclusions can be drawn from the data.

First, despite the existing roadway typical section and width constraints for trucks due to inadequate width for turning on and off the corridor, sixty-two percent (62.9%) of all the refinery freight traffic uses Fox Farm Road for access to or from the refinery. This is likely due to the fact drivers perceive the travel time and ease of access to either U.S. 85 or I-80 is less than the other routes available to the freight traffic. However, using GIS data generated from ©2013 Google Map ,the East 1st Avenue route is actually less than or equal in distance to I-80 and U.S. 85 while the travel times are only 1 to 5 minutes more. See the following Table 4 Truck Route Distance and Travel Times Map:

Table 4 Truck Route Distance and Travel Times Map

	I	-80	U.S. 85		
Route	Distance (miles)	Travel Time (minutes)	Distance (miles)	Travel Time (minutes)	
R2: West Fox Farm	1.6	4	1.4	3	
R4: East Fox Farm	2.3	6	-	-	
R1: East 1st Avenue	1.3	5	1.4	8	
R3: Campstool Road	5.5	12	2.3	6	



Second, it can be inferred that the lack of width on Fox Farm (limited turning ability of freight truck turning) discourages larger freight traffic from using the corridor. Based on the survey results seventy-two point nine (72.9%) of all the freight trucks are conventional combination (i.e. 5 to 6 axle) semi-tractor trailer and twenty-seven point one (27.1%) of the freight trucks are

larger combination (i.e. 6-7 axles) w/ tractor and pup. Furthermore, sixty-two point nine percent (62.9%) of all the refinery freight traffic uses the Fox Farm Corridor for access. Increasing the width of the primary intersections and roadway will likely increase the truck freight traffic on the corridor which would include both conventional semi-tractor trailer and larger tractor and pup combinations.

Third, based on the additional written comments, a significant number of freight truck users' (29/70) or forty one point four percent (41.4%) perceive the intersection of Fox Farm Road at Morrie Avenue C as unsafe, operationally impaired or generally inadequate for them to use.

Shape

The Shape section contains a set of foundations which help frame the boundary of the plan. The Four Foundations are listed below and detailed in the following chapter:

Foundation 1 Conceptual Land Use Foundation 2 Overlay District Foundation 3 Redevelopment Plan Foundation 4 Market Analysis.

Foundation 1 Conceptual Land Use

AVI and Orion Planning Group collaborated to develop a Proposed Conceptual Land Use Plan with the purpose to guide future development and provide a basis for generating trip generation rates and future volumes for traffic analysis of proposed intersection and lane configurations. The final version of the Conceptual Land Use Plan was developed through all the elements of the Structure process previously discussed. See Figure 22 Proposed Conceptual Land Use Plan.

Foundation 2 Overlay District

During the public open house process, there was a lot of interest in increasing densities in certain corridor areas to help bring additional commercial retail and office to the area. One idea that came out of the plan was to create an overlay district that would use the 2006 Plan Cheyenne document and would give developers incentives in the way of increased residential density or commercial square footage based upon the development pattern called out in Plan Cheyenne.

A version of a possible overlay district zone ordinance using the County MU zone below. If this is something the County wants to pursue it should be vetted out with current developers of projects to see if this would be a stimulant to additional growth along the corridor.

4-2-111 DISTRICT MU - MIXED USE

Mixed use developing areas are to be used for a mix of residential and commercial uses. This district is intended to encourage rehabilitation and reuse of existing buildings in the established areas of the community.

a. Uses by Right

- i. Medium density residential
- ii. Mixed use residential developments
- iii. Family child care homes
- iv. Home occupations
- v. Churches, temples or other places of worship
- vi. Offices
- vii. High density residential
- viii. The retail sale of goods when the use is proposed in a building and the sale and storage of equipment and supplies are conducted within the building.
- ix. Child care facilities
- x. Assisted living facilities

b. Uses Requiring Board Approval

The following uses may be permitted by the Board:

- . Food service facilities
- ii. Bars, cocktail lounges and liquor stores
- iii. Other uses similar to those permitted in this district
- iv. Entertainment facilities

c. Minimum Property Area

- Single-family: 7,000 square feet per unit Down to 5,000 if in Fox Farm Corridor Study as MUR
- ii. Townhouse/duplex: 3,500 square feet per unit Down to 2,500 if in Fox Farm Corridor Study as MUR
- iii. Multi-family: 1,860 square feet per unit Down to 1,500 if in Fox Farm Corridor Study as MUR

d. Maximum Building Coverage

i. Single-family: 60 percent of property area

- ii. Townhouse and duplexes: 50 percent of property area
- iii. Multi-family: 50 percent of property area 75% for Fox Farm MUR
- iv. Total building and parking areas shall not exceed 60 percent of the total property area for nonresidential uses. This should be adjusted to 90% for areas in the Fox Farm Corridor Study that are described as MUC.

Best Management Practices for storm water management and open space design are encouraged. Characteristics such as community open space, pocket parks and connectivity to regional trails, including the Greater Cheyenne Greenway, are encouraged.

e. Setbacks

- i. The minimum setback from all front property lines shall be twenty-five (25) feet for all principal structures. (20' for residential for MUR and 10' for commercial for MUC)
- ii. The minimum distance from a side property line shall be five (5) feet for all principal structures.
- iii. The minimum rear yard setback shall be twenty (25) feet for all principal structures. (20' for residential for MUR and 10' for commercial for MUC)
- iv. Accessory structures shall conform to section 2-2-118 of this regulation.

f. Height

- i. The maximum building height shall be thirty-five (35) feet.
- ii. Board approval is required for buildings over thirty-five (35) feet in height.

g. Site Design

All areas, including areas from right-of-way line to property line that are not covered by buildings, sidewalks, and parking area, shall be landscaped.

h. Parking

Parking requirements shall be in conformance with these regulations.

i. Site Plan

A County-approved site plan shall be required in accordance with section 2-2-133 of these regulations. Screening is required in conformance with site plan requirements for outdoor storage areas of items and equipment which are not for

immediate use, sale or lease. Screening for outdoor storage areas shall be located behind the setback line.

Foundation 3 Redevelopment Plan

The boundary of the redevelopment area is South Greeley Highway, College Drive, Interstate 80, Jefferson Road, and College Drive. The focus of this foundation is the overall assessment of the study area based on the following parameters:

- Natural Hazards
- Environmental Contamination Properties
- Public Infrastructure
- Survey and Assessments of Properties, Buildings, and Structures

Natural Hazards

The survey showed discernible properties that would be susceptible to the effects of natural hazards within the study area and are listed in Appendix C.

Environmental Contamination Properties

A cursory review and consultation with staff of the Wyoming Department of Environmental Quality (WYDEQ) and available documentation revealed one historic landfill and seven construction/ demolition landfills in the area which could potentially impact future construction



Figure 21 Potential Property Contamination Area (Wilson Pit Landfill)

and redevelopment in the area (Inberg-Miller Engineers, 2005). See Figure 13 Historic Landfill and Construction/ Demolition Landfills in Fox Farm Road Corridor Study Area.

The highest probability of the need for a business or Laramie County to cleanup a property due to environmental contamination is the historic refuse dump site. This historic landfill was known as the Wilson Pit Landfill and operated by the City of Cheyenne Public Works Department from October 1944 to May 1946. It is a mined out, 4 acre gravel pit, located at the southeast and southwest corner of the intersection of Fox Farm Road and Avenue C-1 (Prosser Tract 1: Figure 21 Potential

Property Contamination Area (Wilson Pit Landfill)).

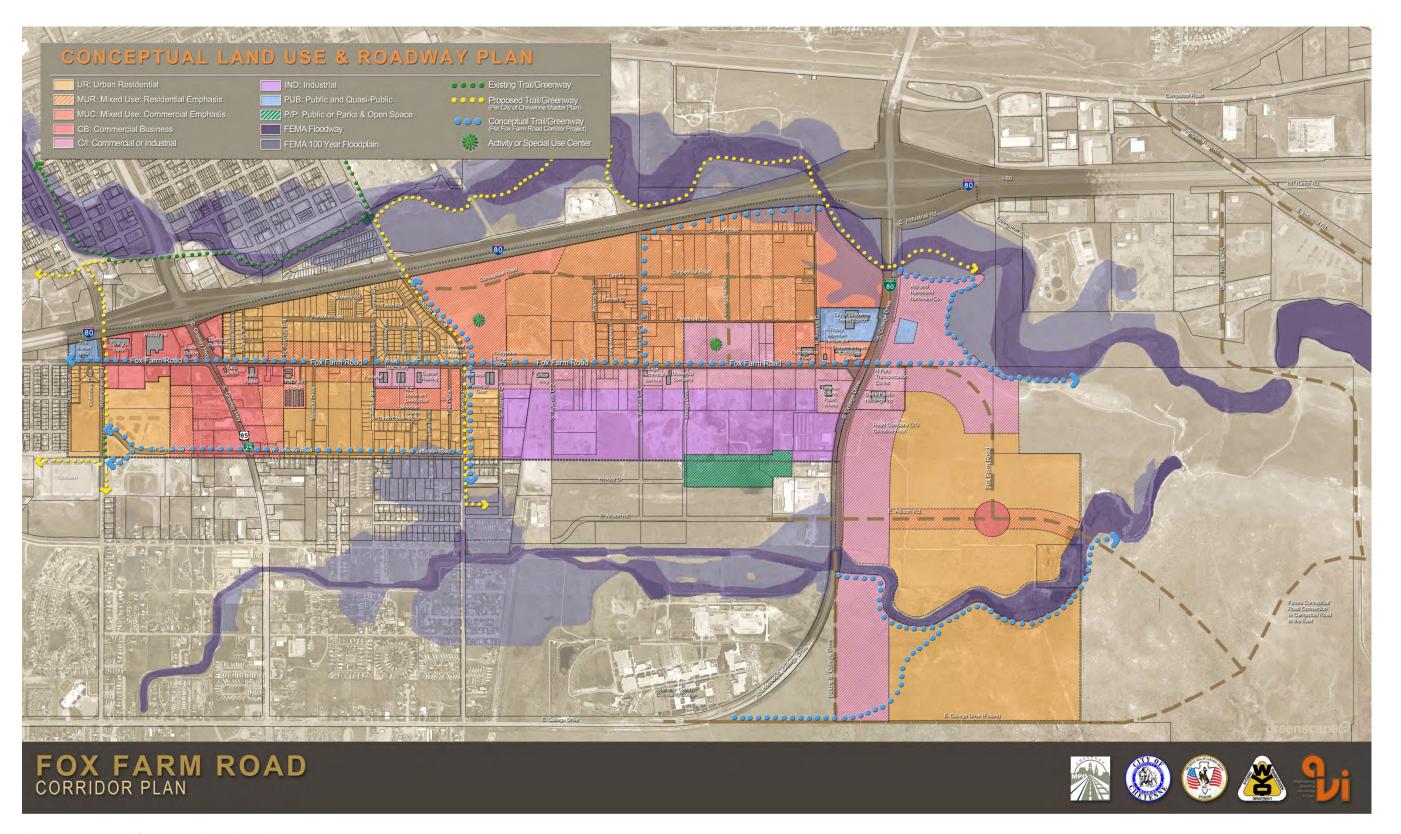


Figure 22 Proposed Conceptual Land Use Plan

We recommend that any individual, business, or unit of the government wishing to develop in this area conduct an environmental investigation and apply for the Voluntary Remediation Program (i.e. VRP) at the State of Wyoming Department of Environmental Quality, Solid Waste Division. The VRP outlines a process that guides owners or potential developers of contaminated sites to decisions about required remedial activities and put contaminated sites back into productive reuses. Developers with properties accepted under the VRP and follow the state requirements, can receive release from future environmental liability. Please consult the VRP website for further information: http://deq.state.wy.us/volremedi/index.asp.

Public Infrastructure Assessment

Roadway infrastructure in the redevelopment area was inventoried by on-site observation and evaluated based on the following rating scale:

- Asphalt Roads
 - o A level for a new road;
 - o B level for needing crack seal;
 - o C level needing mill/overlay;
 - o D level reconstruction.
- Gravel Roads
 - o 3 good gravel roads with drainage;
 - o 2 roads needing additional gravel with drainage;
 - o 1 needed gravel and no drainage.

Table 5 Roadway Intersection Assessment

Street Name	Surfacing Type	Urban/Rural Section	City/County Jurisdiction	ROW Width	Roadway Width	Rating
Walterscheid Blvd N of Fox Farm Road	Asphalt	Urban	City	90′	34′	А
Walterscheid Blvd S of Fox Farm Road	Asphalt	Urban	City	75′	30′	А
N Greeley Highway	Asphalt	Urban	County	195′	90′	А
W Jefferson Road	Asphalt	Urban	City		32′	Α
Fox Farm Road between Walterscheid Blvd and Greeley Highway	Asphalt	Urban	City	80′	Avg. 44′	А
S Greeley Highway between Fox Farm Road and Jefferson Road	Asphalt	Urban	County	90′	75′	А
S House Ave	Asphalt	Urban	City	60′	36′	В
Avenue B-3	Gravel	Rural	City	30′	16′	2
Vaughn Ct	Gravel	Rural	County	52′	Avg. 28'	1

N Avenue B-4	Crovol	Dural	County	30′	20′	
Persons Road	Gravel Asphalt/Gravel	Rural Urban	County	75'	36'	2 A/2
			City/County		28'	
Borough St	Asphalt	Urban	City	50′		A
Queens Rd	Asphalt	Urban	City	50′	28′	A
Southern View Dr	Asphalt	Urban	City	50′	28′	A
N Avenue B-6	Asphalt	Urban	City	80′	36′	A
Montalto Drive	Asphalt	Urban	County	52′	Avg. 29'	A
OK Trail	Gravel	Rural	County	40′	12′	1
S Avenue B-6	Gravel	Rural	County	40′	Avg. 25'	3
David Ct	Gravel	Rural	County	50′	30′	2
Dunlap Lane	Gravel	Rural	County	30′	16′	1
Lake Place	Gravel	Rural	County	60′	24′	2
Tyler Place	Asphalt	Urban	County	42′	30′	В
S Avenue C	Asphalt	Urban	County	75′	36′	Α
Sierra Madre St	Asphalt	Urban	City	60′	36′	Α
Snake River Ave	Asphalt	Urban	City	65′	36′	Α
Absaroka St	Asphalt	Urban	City	60′	36′	Α
Bear River Ave	Asphalt	Urban	City	60′	36′	Α
Owl Creek Ave	Asphalt	Urban	City	60′	36′	В
Medicine Bow Ave	Asphalt	Urban	City	65′	36′	А
Teton St	Asphalt	Urban	City	60′	36′	Α
Targhee Ave	Asphalt	Urban	City	60′	36′	А
Wasatch St	Asphalt	Urban	City	60′	36′	Α
Morrie Ave	Asphalt	Rural	City	95′	36′	А
Fox Farm Road						
from Greeley Hwy	Asphalt	Rural	County/City	80′	42′	Α
to Morrie						
S Avenue C-1	Asphalt	Rural	County	50′	36′	А
Avenue C-2	Gravel	Rural	County	30′	30′	3
Energy Drive	Under	-	County	-	-	-
	Construction					
Turk Ave	Asphalt	Rural	County	62′	40′	В
Turk Ct.	Gravel	Rural	County	30′	20′	2
N Avenue C-4	Gravel	Rural	County	50′	20′	3
Persons Rd	Gravel	Rural	County	60′	25′	3
Avenue C-3	Gravel	Rural	County	65′	Avg. 22.5'	2
Bennet Ct	Gravel	Rural	County	60′	30′	2
Gordon Rd	Gravel	Rural	County	50′	20′	3
Avenue D	Gravel	Rural	County	60′	25′	3
Fox Farm Rd from	Asphalt	Rural	County	60′	42′	В
Morrie to College	'					
Dr						
S College Dr N of						
Fox Farm to S	Asphalt	Rural	County	190′	90′	Α
Industrial Rd	'		,			
S College Dr S of						
Fox Farm to State	Asphalt	Rural	County	210′	90′	Α
Labs Building	ı '		_	i	1	

Survey of Condition Assessment for Properties, Buildings and Structures

Walterscheid Boulevard to South Greeley Highway

This section of Fox Farm Road is not a key area for redevelopment. Most of the property is developed with newer businesses or vacant property. There are a couple of parcels off of South Greeley Highway that could be easily developed due to the fact that the existing parcels are underutilized or to bring the property back to a vacant state would be fairly inexpensive. The area surrounding the vacant and underutilized parcels is primarily community business in nature or multifamily both of which could continue with redevelopment in the area.

South Greeley Highway to Morrie/Avenue C

Development along this section of Fox Farm Road has been primarily in the area of Multi-Family Residential and Apartments. Additional redevelopment could occur along this stretch of Fox Farm Road with the land uses of office, specialty retail, storage and additional residential units. The large residential with a single family home north of Fox Farm Road between N Avenue B-4 and N Avenue B-6 lead themselves to redevelopment into neighborhood type offices. They have enough space at about a half an acre to have standalone medical/dental/insurance offices that can meet the building, parking and landscaping requirements of the City or County. In general the lots to the south of Fox Farm that can be redeveloped are much larger in nature than those to the north, and would allow for more specialty and industrial retail than we see in other areas along the corridor. Their size also allows for the opportunity for multi-family residential units.

Morrie/Avenue C to College Drive

The redevelopment of the south side of this section of the corridor is occurring simultaneously with this study. The extension of Energy Drive to Allison Road has opened up additional lands for Industrial/Commercial Lots. The lots are generally two and half plus (2.5+) acres which allow companies with large equipment of storage needs to site along the corridor. The area to the north of this section is primarily residential in nature and areas not adjacent to Fox Farm Road would be excellent opportunities for additional residential type uses. The size of most of the lots also will allow for redevelopment to be creative in its uses of infrastructure to create additional residential units. As additional residential units populate this area there will be more demand for neighborhood business and on the north side adjacent to Fox Farm Road would be an ideal place for parcel redevelopment to serve all the residents in the area.

Foundation 4 Market Analysis

Purpose of Market Analysis

- Provides a "reality check" for the planning process
- Ensures that land use programming is grounded in market and economic reality (thereby increasing the likelihood of success)
- Provides an accurate and independent "story" to tell potential private sector audiences

Trade Area Identification

- Based on influence of: physical barriers; location of possible competition; proximity to population and/or employment concentrations; zoning; market factors; drive times; spending and commuting patterns, etc.
- For purposes of market demand parameters, the trade area was estimated to be Laramie County.
- As the planning process moves forward, expanded trade areas may exist for certain land uses, e.g., regional retail, employment centers.

Potential Market Demand

Residential

- Demand for residential units in Laramie County is a function of projected household growth, estimated at approximately 1.5% annually over the next 20 years.
- Based on this level of growth, Laramie County could accommodate approximately 13,300 new housing units over the next 20 years – 9,000 ownership units and 4,300 rental units. This gross unit demand is further allocated into approximate income-qualified rent and home price groups. (Table 6).

Table 6
Residential Unit Demand by Income, Rent and Price Range
Fox Farm Road Corridor Trade Area (Laramie County)

Residential Demand Analysis			Households	2010	37,576			
Laramie County Trade Area 2010-2030 Demand Estimates				2020	43,608	Annı	ual Growth Rate	1.5%
				2030	50,609			
			Household Growth (2010-30)		13,033	Adjust for 2nd homes,		
					demo	olition, vacancy	2.0%	
		Adjusted Unit Requirement		13,294		% Rental	32%	
				Trade Area Demand from Nev			New Household	s (10-yr)
Household		Supportable	Current	New				Total
Income Range	Approximate	Home Price	Households in	Households by		Estimated %	Total Rental	Ownership
(2010 dollars)	Rent Range	Range	Income Bracket	Income Bracket	Total Units	Rental	Units	Units
up to \$15K	up to \$375	up to \$75K	16%	15%	1,994	90%	1,795	199
\$15-25K	\$375 - \$625	\$75 to \$100K	10%	9%	1,196	70%	838	359
\$25-35K	\$625 - \$875	\$100 to \$150K	10%	9%	1,196	50%	598	598
\$35-50K	\$875 - \$1,000	\$150 to \$200K	16%	15%	1,994	25%	499	1,496
\$50-75K	\$1,000+	\$200 to \$250K	18%	19%	2,526	10%	253	2,273
\$75-100K	\$1,000+	\$250 to \$350K	12%	13%	1,728	10%	173	1,555
\$100-150K	\$1,000+	\$350 to \$500K	12%	13%	1,728	5%	86	1,642
\$150K and up	\$1,000+	\$500K and up	6%	7%	931	5%	47	884
Totals			100%	100%	13,294	32%	4,287	9,007

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker | Cunningham.

■ Table 6 shows a reasonable attainable capture rate for single family detached units in the Fox Farm Corridor (the Corridor) for households earning at least \$15,000 per year. This analysis assumes that detached homes will account for approximately 70 percent of all ownership demand, with the balance coming in the form of attached products (condominiums, townhomes, rowhouses, lofts, etc.). As shown, over the next 20 years, approximately 185 new single family detached units could be accommodated in the Corridor, assuming a relatively modest 3% capture rate.

Table 7
Single Family Detached Demand by Price Point
Fox Farm Road Corridor

Annual Household Income Range	Approximate Home Price Range	Trade Area For- Sale Demand (Incomes \$15K+)	Estimated % Single Family Detached	Single Family Detached Demand	Fox Farm Road Corridor Attainable Capture Rate	Fox Farm Road Corridor Attainable Capture (units)
\$15-25K	\$75 to \$100K	359	70%	251	3%	8
\$25-35K	\$100 to \$150K	598	70%	419	3%	13
\$35-50K	\$150 to \$200K	1,496	70%	1,047	3%	31
\$50-75K	\$200 to \$250K	2,273	70%	1,591	3%	48
\$75-100K	\$250 to \$350K	1,555	70%	1,089	3%	33
\$100-150K	\$350 to \$500K	1,642	70%	1,149	3%	34
\$150K and up	\$500K and up	884	70%	619	3%	19
Totals		8,807	70%	6,165	3%	185

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker Cunningham.

■ Table 7 shows a reasonable attainable capture rate for single family attached units (condominiums, townhomes, rowhouses, lofts, etc.) in the Corridor for households earning at least \$15,000 per year. This analysis assumes that attached homes will account for approximately 30 percent of all ownership demand. As shown, over the next 20 years, approximately 528 new single family attached units could be accommodated in the Corridor, assuming a 20% capture rate.

Table 8
Single Family Attached Demand by Price Point
Fox Farm Road Corridor

Annual Household Income Range	Approximate Home Price Range	Trade Area For- Sale Demand (Incomes \$15K+)	Estimated % Single Family Attached	Single Family Attached	Fox Farm Road Corridor Attainable Capture Rate	Fox Farm Road Corridor Attainable Capture (units)
\$15-25K	\$75 to \$100K	359	30%	108	20%	22
\$25-35K	\$100 to \$150K	598	30%	179	20%	36
\$35-50K	\$150 to \$200K	1,496	30%	449	20%	90
\$50-75K	\$200 to \$250K	2,273	30%	682	20%	136
\$75-100K	\$250 to \$350K	1,555	30%	467	20%	93
\$100-150K	\$350 to \$500K	1,642	30%	493	20%	99
\$150K and up	\$500K and up	884	30%	265	20%	53
Totals		8,807	30%	2,642	20%	528

Note: Assumes Townhome/Condo development stabilizes at 25% of all ownership demand

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker Cunningham.

- While condominium-type construction has been adversely impacted nationally by the mortgage lending crisis and over-building, the low-maintenance and potentially pedestrian-friendly aspects of attached housing should grow in share as it finds appeal among an aging Baby Boomer population as well as young professionals. This absorption could take the form of loft condominiums within upper floor commercial buildings, as well as in new townhome or rowhouse construction on underutilized parcels scattered throughout the Corridor.
- Table 8 shows a reasonable attainable capture rate for rental apartments in the Corridor for households earning at least \$15,000 per year. As shown, over the next 20 years, approximately 499 new rental apartment units could be accommodated in the Corridor, assuming a 20% capture rate.

Table 9
Rental Apartment Demand by Price Point
Fox Farm Road Corridor

Annual Household Income Range	Approximate Rent Range	Trade Area Rental Demand (Incomes \$15K+)	Fox Farm Road Corridor Attainable Capture Rate	Fox Farm Road Corridor Attainable Capture (units)
\$15-25K	\$375 - \$625	838	20%	168
\$25-35K	\$625 - \$875	598	20%	120
\$35-50K	\$875 - \$1,000	499	20%	100
\$50-75K	\$1,000+	253	20%	51
\$75-100K	\$1,000+	173	20%	35
\$100-150K	\$1,000+	86	20%	17
\$150K and up	\$1,000+	47	20%	9
Totals		2,493	20%	499

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker Cunningham.

 As with single family attached ownership housing, new apartments could be created from rehabbing existing commercial space, built on smaller scattered-site underutilized lots, or developed on larger underutilized tracts as part of a residential mix.

Retail

- Demand for new retail space is determined by future retail spending potential of projected new households, as well as by some recapturing of retail spending that is currently lost to nearby communities or areas (referred to as "leakage" or "retail void").
- Based on these factors, Laramie County could accommodate approximately 1.4 million square feet of new retail space over the next 20 years (See Table 9).

Table 10
Retail Demand
Fox Farm Road Corridor Trade Area (Laramie County)

Retail Category	Estimated 2012 Household Retail Demand	Estimated 2012 Retail Sales (Supply)	Estimated 2012 Retail Void (Leakage)	Estimated Retail Sales/s.f.	New Retail Space Needed to Recapture Void/Leakage	Annual Household Growth Rate (2012-2032)	Net New Household Retail Demand	New Retail Space Needed for Household Growth	Total 20-Year New Trade Area Retail Demand (s.f.)
Furniture & Home Furnishings	\$27,145,456	\$28,542,248	\$0	\$200	0	1.5%	\$9,415,537	47,078	47,078
Electronics & Appliance	\$30,928,601	\$23,521,896	\$7,406,705	\$250	29,627	1.5%	\$10,727,740	42,911	72,538
Bldg Materials, Garden Equipment	\$127,578,451	\$155,183,857	\$0	\$300	0	1.5%	\$44,251,224	147,504	147,504
Food & Beverage (Grocery)	\$181,751,159	\$141,259,956	\$40,491,203	\$375	107,977	1.5%	\$63,041,299	168,110	276,087
Health & Personal Care	\$74,533,509	\$39,732,294	\$34,801,215	\$350	99,432	1.5%	\$25,852,321	73,864	173,296
Clothing and Accessories	\$61,089,473	\$33,089,476	\$27,999,997	\$225	124,444	1.5%	\$21,189,190	94,174	218,619
Sporting Goods,Hobby, Book, Music	\$28,968,732	\$25,044,375	\$3,924,357	\$225	17,442	1.5%	\$10,047,950	44,658	62,099
General Merchandise	\$179,498,547	\$277,402,985	\$0	\$300	0	1.5%	\$62,259,970	207,533	207,533
Miscellaneous Stores	\$36,601,558	\$151,444,743	\$0	\$200	0	1.5%	\$12,695,434	63,477	63,477
Foodservice & Drinking Places	\$134,509,517	\$169,487,763	\$0	\$350	0	1.5%	\$46,655,299	133,301	133,301
Total	\$882,605,003	\$1,044,709,593	\$114,623,477		378,921		\$306,135,964	1,022,610	1,401,531

Source: Claritas, Inc.; Urban Land Institute; and Ricker Cunningham.

 Assuming a market capture rate of 15%, the Corridor could accommodate approximately 210,000 square feet of new retail space over the next 20 years.

Employment

- Demand for new employment space is derived from two primary sources: expansion of existing industry; and the relocation of new companies into the market. Laramie County employment growth is estimated at 1.5% annually over the next 20 years.
- Based on these factors, Laramie County could accommodate approximately 3.9 million square feet of new employment (office, industrial, flex) space over the next 20 years (See Table 10).

Table 11 Employment Demand Fox Farm Road Corridor Trade Area (Laramie County)

					Estimated %			Estimated 20
					in Office and			
	2012	Growth Rate	2032	Net New		Net New	Sq Ft per	
Industry Category	Employees	2012-2032	Employees	Employees	Space	Employees	Employee	Demand
Agriculture/Forestry/Fishing/Extraction	923	1.5%	1,243	320	60%	192	300	57,626
Utilities and Construction	4,204	1.5%	5,662	1,458	60%	875	300	262,472
Manufacturing	1,656	1.5%	2,230	574	60%	345	300	103,391
Wholesale Trade, Transportation and Warehousing	4,571	1.5%	6,156	1,585	60%	951	300	285,385
Retail Trade	6,935	1.5%	9,340	2,405	60%	1,443	300	432,979
Finance/Insurance/Real Estate	6,421	1.5%	8,648	2,227	60%	1,336	300	400,888
Professional/Scientific/Education Services	2,743	1.5%	3,694	951	60%	571	300	171,256
Accommodations and Food Service	4,429	1.5%	5,965	1,536	60%	922	300	276,520
Health Care and Social Assistance	4,910	1.5%	6,613	1,703	60%	1,022	300	306,550
Administration, Support, Waste Management, Remediation	2,591	1.5%	3,490	899	60%	539	300	161,766
Educational Services	536	1.5%	722	186	60%	112	300	33,465
Arts, Entertainment, Recreation	831	1.5%	1,119	288	60%	173	300	51,883
Public Administration	17,633	1.5%	23,749	6,116	60%	3,670	300	1,100,897
Other	4,673	1.5%	6,294	1,621	60%	973	300	291,754
Totals	63,056	3.0%	84,927	21,871	60%	13,123	300	3,936,832

 Assuming a market capture rate of 20%, the Corridor could accommodate approximately 787,000 square feet of new employment space over the next 20 years.

Market Demand Summary

Table 12 summarizes potential Corridor land use absorption over the next 20 years.

Table 12
Summary of Market Demand
Fox Farm Road Corridor

	Fox Farm Road Corridor					
Trade Area Demand		t Share	20-Year Absorp	20-Year Absorption (Units/SF)		ption (Acres)*
(20 Year)	Low	High	Low	High	Low	High
6,165	2%	4%	123	247	31	62
2,642	18%	22%	476	581	59	73
2,493	18%	22%	449	548	37	46
11,300			1,048	1,376	128	180
1,401,500	13%	17%	182,195	238,255	17	22
3,936,800	18%	22%	708,624	866,096	65	80
5,338,300			890,819	1,104,351	82	101
	6,165 2,642 2,493 11,300 1,401,500 3,936,800	(20 Year) Low 6,165 2% 2,642 18% 2,493 18% 11,300 1,401,500 13% 3,936,800 18%	(20 Year) Low High 6,165 2% 4% 2,642 18% 22% 2,493 18% 22% 11,300 1,401,500 13% 17% 3,936,800 18% 22%	Trade Area Demand (20 Year) Market Share Low 20-Year Absord Low 6,165 2% 4% 123 2,642 18% 22% 476 2,493 18% 22% 449 11,300 1,048 1,401,500 13% 17% 182,195 3,936,800 18% 22% 708,624	Trade Area Demand (20 Year) Market Share Low 20-Year Absorption (Units/SF) 6,165 2% 4% 123 247 2,642 18% 22% 476 581 2,493 18% 22% 449 548 11,300 1,048 1,376 1,401,500 13% 17% 182,195 238,255 3,936,800 18% 22% 708,624 866,096	Trade Area Demand (20 Year) Market Share Low 20-Year Absorption (Units/SF) 20-Year Absorptio

Source: Ricker Cunningham.

* Absorption of Acres based on following densities and floor area ratios (FARs):

Single Family Detached: 4 units/acre Single Family Attached: 8 units/acre

Multi-Family: 12 units/acre

Retail: 25%

Employment (Office/Industrial): 25%

Based on the expected 20-year housing and employment growth rates shown herein, the Corridor could expect to reach build-out in approximately 30 to 35 years.

Implications for Fox Farm Corridor Land Use Plan

- The current anticipated land use mix appears to have a good balance of residential and non-residential uses. It will be critical to maintain this balance over the long-term.
- A unified vision for the Corridor will help to encourage potential market niche opportunities that might arise in the short-term.
- Near-term opportunities are more likely for higher-density housing (apartments) and small-scale service employment uses.
- Flexibility in land use categories will be necessary to accommodate unanticipated market opportunities. A greater emphasis on <u>quality</u> of development/redevelopment, rather than type and <u>quantity</u> of development/redevelopment, will ensure that the Corridor vision is protected and enhanced over time.

Foundation 5 Potential Funding Mechanisms

Keys to successful development/redevelopment in a revitalizing area such as the Fox Farm Corridor will be:

- A clear vision, tempered with market and economic reality
- A proactive strategy for reinvestment (public and private)
- Educated citizenry and implementers
- Calculated strategy to attract investment and remove barriers
- Quantifiable leveraged public investment
- Fiscally and economically responsible phasing plan
- Equalization of economic risk vs. reward
- On-going project support (political)
- The public sector (City of Cheyenne, Laramie County, Cheyenne MPO, etc.) will primarily play an important role in "readying the area for private investment" through infrastructure improvements, public planning and policy initiatives. From these initiatives and/or investments, private sector development and redevelopment can be leveraged.
- Funding mechanisms for public infrastructure could include loans and grants (e.g., Wyoming Business Council's Business Ready Community Program and Community Facilities Grant and Loan Program); Community Development Block Grant (CDBG) funds; revenue bonds; and general obligation bonds.
- One of the "truths" in corridor revitalization is that private investment will typically follow public investment. The types of public infrastructure recommended in the Corridor Plan will not only encourage new development on vacant and/or underutilized parcels, but redevelopment of existing sites and buildings. This new private investment represents the "leveraged" return to the public sector from their initial investments.
- Should the public sector decide to invest in upfront infrastructure to "ready the area for investment", then the private sector should be expected to assist in maintaining that infrastructure over the long term. This revenue stream for funding maintenance can be generated through impact fees or special districts in which private property owners are proportionately assessed for maintenance costs associated with the overall district.
- A public-private partnership for revitalization of the Fox Farm Corridor will likely take many forms and have many partners, responsibilities and funding alternatives. In the end, a successful partnership will ensure that both the public and private sectors will realize reasonable returns on their investments and the community will realize their long-term vision for this important transportation corridor.

Key Planning Considerations

The Snapshot, Structure, and Shape phase of the project provided a solid foundation for development of the complete corridor vision of the various stakeholders. The Fox Farm Corridor area has a mix of different land uses and potential growth areas overlaid with various industry

types. This diversity makes this area unique and primed for growth over the next couple of decades. The following structure considerations shape the corridor:

Transit and Non-motorized Transportation

- Provide a safe, accessible and continuous pedestrian connection along the entire corridor of Fox Farm Road
- Provide street lighting at intersections and non-motorized crossings where appropriate
- Provide for expanding transit stops along the corridor
- Provide buffered or bike lanes as recommended by the Cheyenne Area On-Street Bicycle Plan and Greenway Plan Update by Alta Planning + Design in 2012.
- Review options to expand the Greenway along Crow Creek

Traffic Safety and Operation

- Build a roadway cross section that enhances travel efficiency and accommodates all modes of transportation
- Provide peak hour intersection operations a LOS C as minimum level of service through horizon year 2035
- Provide the ability to mix pedestrian traffic with a high number of larger vehicles
- Plan for the ability for industrial/retail type business to be adjacent to or near residential development
- Attempt to maintain commercial, industrial, and residential access approaches
- Where appropriate, provide for proper turning widths at intersection (i.e. Industrial Area accommodate conventional combination (i.e. 5 to 6 axle) tractor semi-trailer and or larger combination (i.e. 6 -7 axles) w/ tractor and pup

Roadway Connectivity

- Review options to promote development in undeveloped open space
- Review existing roadways and provide additional or enhanced street connectivity

Dry and Wet Utilities

- Consult with wet and dry utility companies to provide enhanced or improved facilities to facilitate redevelopment
- Attempt to provide a dry utility corridor within the current road right-of-way

Cooperation

Multiple public agencies or wet utilities that have areas of jurisdiction in the area:
 Laramie County Government, City of Cheyenne, WYDOT, Board of Public Utilities, South
 Cheyenne Water and Sewer District

Build

The Snapshot, Structure, and Shape phase of the project provided a solid foundation for development of the Build portion of the plan. The build section of the plan encompasses the culmination of the foundation components and rationale behind the particular recommendations set forth in the plan.

The overall recommendations are specifically designed to address the modes of transportation, landscaping, and safety needs of the Fox Farm Road Corridor. All recommendations have been examined carefully to ensure practicality, functionality, and aesthetic appeal, sustainability, and successful implementation. The physical layout of the improvements are detailed in the following pages and can be found on the corridor plan and profile sheet in Appendix A. Detailed cost estimates are shown in Appendix C.

General Corridor Recommendations

Short Term

- Pedestrian and sidewalk improvements
- When practical, improve/ increase capacity of existing drainage conveyance,
- Explore opportunities, as area develops to provide roadway storm water detention / retention features / facilities.
- Develop, implement, and fund a drainage master plan for corridor.
- Update/ install strategic street lighting at key intersections (Walterscheid Blvd., Avenue C/ Morrie Avenue, and College Drive)
- Replace or upsize undersized and old portions of the water transmission main (i.e. 6" ductile iron pipe) on fox farm road as funding resources become available.
- Implement priority projects as funding resources become available or development becomes the catalyst

Long Term

- Implement reconstruction phased strategies along corridor.
- Storm sewer installation
- Replace or rehabilitate existing wet utility infrastructure as development occurs along the corridor
- Implement typical section(s)
- Install uniform roadway and pedestrian street lighting throughout corridor
- Reduce regulatory speed from Avenue "C" west to 30 mph
- Encourage holly frontier drivers to use alternate routes (education, policy, etc.)

 Investigate and develop possible funding mechanisms for the county for reimbursement, "impact fees", etc.

Roadway Concept Alternatives

The methodology employed to develop the conceptual roadway "typical" alternatives were evaluated using a multi-modal evaluation framework as a base. At intersections and other locations with unique design challenges (e.g. driveways, areas with limited sightline, etc), special designs and modifications may be needed to address issues of road geometry, adjacent land uses, traffic volumes and other characteristics. The Fox Farm Road Corridor Study evaluated conceptual improvement alternatives for the roadway segments and streetscape with the following governing parameters:

- What are the existing and future adjacent conditions and uses?
- How does the edge affect the streetscape?
- What variations can be made to create a more user friendly corridor?
- What movements and interactions will take place on the corridor?
- What is the corridor vision of the stakeholders?
- What can we do to add low maintenance streetscape to "soften" the corridor for non-motorized modes of transportation?
- Provide bike lanes west of south Greeley and buffered bike lanes east of south Greeley to align with the recommendation of the Cheyenne on-street bicycle plan and greenway plan update (Group, 2012)
- Required minimum city of Cheyenne unified development code (UDC) typical section for roadway classification (Cheyenne, City of Cheyenne Unified Development Code, 2013)
- Required minimum Laramie county land use regulations (LCLUR) typical section for roadway classification.

Design Criteria

Roadway Classification: Collector (West of South Greeley Highway), Minor Arterial (East of

South Greeley Highway.

Minimum Design Speed: 45 mph (Minor Arterial), 35 mph (Collector)

Lane Width: 11' - 12 ft

Clear Zone Width: 16 ft (ADT 2010=6037, AASHTO Roadside Design Guide

(Officials, Roadside Design Guide, 2011))

Stopping Sight Distance 305 ft

Crest Vertical Curve K = 44 (Stopping Sight Distance)

Sag Vertical Curve K = 64

Table 13 Ultimate Typical Section Jurisdictional Comparison

Description	Laramie County (Minor Arterial)	City of Cheyenne (Minor Arterial)	Laramie County (Collector)	City of Cheyenne (Collector)	2011 A <i>r</i> (1	
Travel Lane**	2 – 12′	2 – 4, 12′	2 – 12′	2 – 12′	10'-12'	2-12′
Turn Lanes	12'(2)	12'	12' (3)			
Parking/ Shoulder**	none	none	none	1 – 8′	6′	8′
Roadway Width	36' 44' Turn Lane	48' – 72'	36′	32'		-
Sidewalk/ Pedestrian Area	6'	6'	6'	6'	-	-
Parkway/ Tree Lawn	8'	8'	8′	8'	-	-
Bike Lane**	2-6'	2-6'	2 – 6′	n/a	-	-
Volume Capacity (ADT)	3,500 – 15,000	7,500–18,000	3,500 – 5,000	2,000 – 5,000	1,500- 2,000	Over 2,000

Footnotes:

- ** # -##' indicates total number of element within corridor cross section
- (1) (Officials, A Policy on Geometric Design of Highways and Streets, 2011)
- (2) Continuous as approved by the County
- (3) At Intersections locations only
- (4) (Cheyenne, City of Cheyenne Unified Development Code, 2013)
- (5) (County, 2011)

Cross Sectional Elements

Lane Widths

As shown in **Table 13** lane width requirements vary between the jurisdictional entities from ten to twelve (10 to 12) feet. According to AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) and our experience, smaller lane widths may be used in more constrained areas where truck and bus volumes are relatively low and where speeds are less

than 45 mph. Lane widths of eleven (11) feet are extensively used in urban arterial street designs while twelve (12) foot lanes are desirable on high speed, free flowing principal arterials.

After extensive discussion between the design team and Steering Committee, we recommend the use of eleven (11) foot wide travel lanes on Fox Farm Road. This width still accommodates larger design vehicles and increases the available tree lawn width which can be used for snow storage, pedestrian separation, and drainage.

Curbs

The type and location of curbs affect driver behavior and safety. Curbs serve many purposes including: drainage control, roadway edge delineation, delineation of pedestrian walkways, and access control. Although curbs are not considered fixed objects in the context of a clear zone obviously, they will have an effect on impacting or overriding car movements

After discussion within the design team and Steering Committee, we recommend the use of curb and gutter on Fox Farm Road from Avenue C to Walterscheid Blvd. and no curb and gutter from Avenue C to College Drive. The adjacent land comprised of mainly residential and commercial, as well as, its urban character make Avenue C to Waltersheid Blvd. the logical choice to incorporate curb and gutter. Curb and gutter will provide better access control and pedestrian delineation in the more urbanized area of the corridor. The area east of Avenue C is more industrial and based on the conceptual land plan and character of the area will likely remain that style of development. The non-curb section will appear wider due to the removal of the vertical element of the curb and accommodate easier access construction. However, both section types will likely require storm sewer conveyance due to the shallow capacity and shallow longitudinal profile.

Bicycle and Pedestrian Facilities

Based on observation, bicycle usage has become a larger part of the culture in Cheyenne. Furthermore, as a part of providing a more continuous, safe, and efficient bicycle system, the Cheyenne Area On-Street Bicycle Plan and Greenway Plan Update (Group, 2012) has recommended bicycle lanes west of South Greeley Highway and buffered bike lanes east of South Greeley Highway.

The plan recommends that a bike lane width be a minimum of four (4) feet when no curb and gutter is present, five (5) feet when adjacent to curb and gutter, and six (6) feet where right-of-way allows. The buffered bike lane recommended design is illustrated in Figure 22 contains a 2-3' buffered area adjacent to the traveled way with a 7' bike lane.

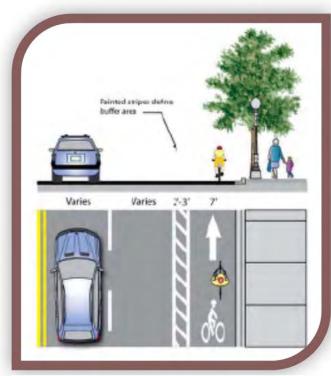


Figure 23 Buffered Bike Lane (Group, 2012)

However, due to the constrained right-of-width in the corridor, we recommend the use of 5' bike lane and 2' buffered area be incorporated into the typical section on Fox Farm Road.

Parking Lane

It should be note for reference that parking is not permitted on roadways which are classified as Minor Arterials.

However, providing parking is very important to accommodate in adjacent land use areas where adequate off-street parking facilities are not available or practical. Stakeholders in the area did not provide input to the design team that parking was a concern on the corridor and current industrial businesses appear to have adequate parking at the present time. If specific future businesses require off-street parking, the jurisdiction having authority will likely need to request additional right-of-way to accommodate such a request or have the business request a parking variance with their development.

Medians

The primary function of medians is safety. They separate traffic streams, guide turning movements at intersections, and provide access control to/ from minor access drives and intersections. It is very important that medians be delineated in a way that makes them visible and distinguishes them from the adjacent driving lanes. Curbed medians and traffic islands provide an added benefit by "softening" the urban roadway edge and subjectively enhance the aesthetic quality when utilizing a combination of the material types. Three types of medians are most common in the urban roadway environment: raised, flush, and two-way left-turn lanes.

Raised Medians

A raised median is used in urban streets where it is desirable to control or restrict mid-block left turns and cross maneuvers. Installing a raised median can result in the following benefits:

- Improve traffic safety
- Restrict left-turn and crossing maneuvers to specific locations or certain movements
- Increase capacity and reduce delays
- Provide a pedestrian refuge area (minimum of six (6) feet wide).

AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) recommends that intersection median turn lanes have a minimum medial separator of four (4) feet between turning lane and opposing traffic. Additionally, they recommend that with wider medians, consideration should be given to off-setting the left-turn lanes to provide maximum visibility between opposing traffic volumes.

Flush Medians

Flush medians are surface painted medians that can be traversed. Although they do not permit left-turn and crossing maneuvers by their striping configuration, they do not prevent left turns because the median can be easily crossed.

Two-way Left-turn Lanes

Two-way left-turn lanes (TWLTL) are flush medians that may be used for left turns by traffic from opposing directions on the street. AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) recommends the use of a TWLTL on arterials with numerous cross streets, commercial, residential drives, or where it is impractical to limit left turn movements.

The Fox Farm Corridor plan recommends the use of all three types of medians however, the only cross sectional element shown on the typical section is a continuous two-way left-turn lane. Throughout the course of the project all attempts were made to minimize the cross sectional width of the roadway but, it became impractical due to the numerous cross streets, commercial and residential approaches adjacent to the corridor which forced the use of the continuous left-turn lane.

Auxiliary Lanes (Speed-change Lanes)

City of Cheyenne Criteria (Cheyenne, City of Cheyenne Unified Development Code, 2013) Laramie County (County, 2011)

Left Turn Lane

A left-turn deceleration lane and taper are required for any access with a projected peakhour ingress turning volume greater than 10 vehicles per hour (vph). The taper length shall be included with the required deceleration length.

Right Turn Lane

A right-turn deceleration lane and taper is required for any access with a projected peak hour ingress turning volume greater than 25 vph. The taper length should be included within the deceleration length.

Table 14 Jurisdictional Deceleration Length Requirements

Design	Stop Condition	15 MPH Turns	Minimum
Speed	Decel	Decel	Decel Lane Taper Ratio
City of Cheye	nne and Laramie Co	ounty	
35	275	235	10:1
40	315	295	11.5:1
City of Cheye	nne		
50	435	350	13:1
Laramie Coun	ty		
30	235	185	8:1
50	435	405	15:1
AASHTO			
30	160	-	8:1 to 15:1
40	275	-	8:1 to 15:1
50	435	405	15:1

Careful consideration was given to the proposed conceptual alternatives to use the safest and most practical deceleration length on the corridor. Therefore, due to the proximity of access approaches, expected relatively lower speeds approaching intersections, a one-hundred sixty (160) foot deceleration length was applied to the auxiliary lane development. If specific site conditions did not allow development of full deceleration lane, it was omitted and so noted. Additionally, for the identical reasons as previously noted, a 100' minimum taper was utilized for all the auxiliary lanes with the corridor. For a twelve (12) foot lane this equates to approximately an 8.33:1 and for an eleven (11) foot lane it equates to approximately a 9.1:1.

The deceleration and taper lengths directly on College Drive were derived based on the AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) and WYDOT criteria using a 50 mph design speed. The deceleration length utilized was four hundred (400) foot with a 100' taper length.

Storage Lengths

All intersection storage lengths in the study were calculated based on future signalization, traffic volume, signal cycle length, and signal phasing assumptions developed by Sustainable Traffic Solutions, Inc.. The length in **Table 15 Storage Lengths Summary** below was used for the development of the intersection layouts.

Table 15 Storage Lengths Summary

Walterscheid Boulevard Storage Lengths

Movement	Minimum Turn E	Minimum Turn Bay Length (ft)				
Movement	AM	PM	Length			
Eastbound Left	72	65	70			
Westbound Left	87	75	90			
Northbound Left	15	26	60			
Southbound Left	59	67	70			

South Greeley Storage Lengths

Movement	Minimum Turn B	Recommended	
Movement	AM	PM	Length
Eastbound Left	242	171	240
Eastbound Right	129	123	130
Westbound Left	143	136	140
Westbound Right	111	102	110
Northbound Left	43	45	60
Northbound Right	217	204	220
Southbound Left	229	246	250
Southbound Right	89	79	90

Avenue C Storage Lengths

Movement	Minimum Turn B	Recommended	
Movement	AM	PM	Length
Eastbound Left	76	86	90
Westbound Left	59	65	70
Northbound Left	56	56	60
Southbound Left	90	94	100

College Drive - Storage Lengths

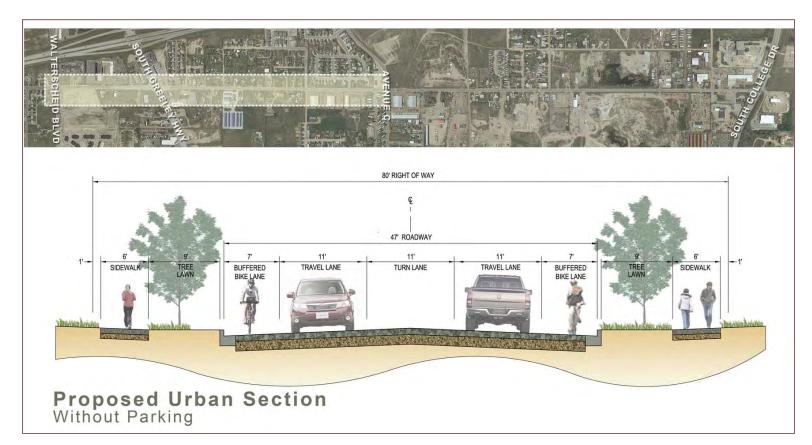
Mayamant	Minimum Turn B	Recommended	
Movement	AM	PM	Length
Eastbound Left	141	214	220
Eastbound Right	62	83	90
Westbound Left	56	69	70
Westbound Right	79	86	90
Northbound Left	101	113	113
Northbound Right	72	142	142
Southbound Left	62	111	111
Southbound Right	168	174	174

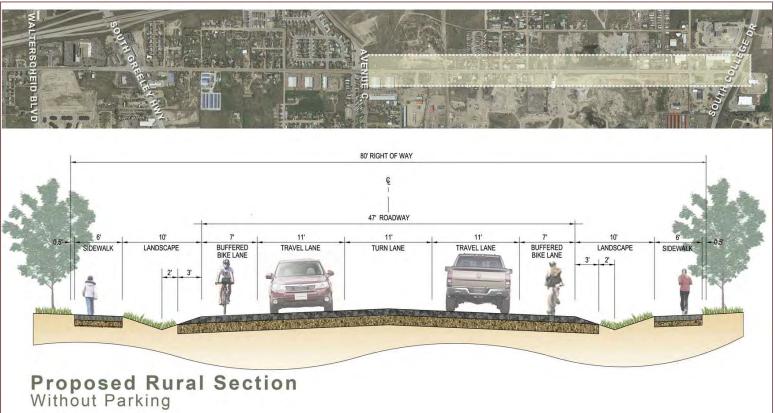
Provision for Utilities

As previously described in the study, numerous utilities are interlaced in the corridor area and are both underground and overhead. Obviously, utilities should desirably be located underground or at the edge of the right-of-way, when practical.

Based on the limited right-of-way width of 80 feet, we would recommend that new developments have dry utility facilities relocate within a new 8' utility easement adjacent to the corridor or be placed underground within the tree lawn area to be provided in the future typical section.

The following typical sections are recommended. Two types were developed for the Fox Farm Corridor, Proposed Urban without Parking and Proposed Rural without Parking (Figure 24 Recommended Typical Sections). Additionally, a proposed typical section was developed for Burlington Trails Road and is illustrated in Figure 24 Recommended Typical Sections.





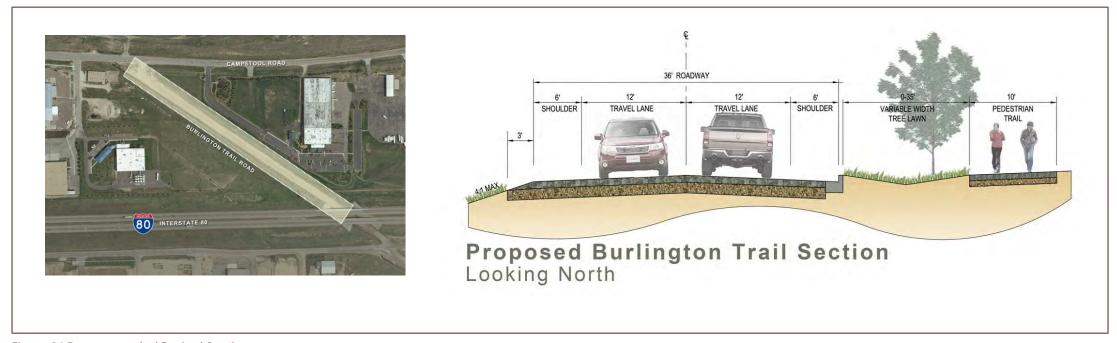


Figure 24 Recommended Typical Sections

Future Traffic Volume Conditions

Traffic volume projections were developed for Year 2035 by Sustainable Traffic Solutions, Inc. to estimate the impacts of the traffic growth on the corridors. For the purposes of projecting volumes, the study area was divided into the Fox Farm Road corridor and the College Drive corridor.

Projected traffic volumes for the Fox Farm Road corridor were developed based on the land use plan prepared by AVI (Figure 22 Proposed Conceptual Land Use Plan) and refined by the 20 year buildout projection that was prepared by Ricker | Cunningham (Shape, Table 12 Summary of Market Demand). This build-out plan contains projections for residential and non-residential development for 20 years. Considering that the horizon year is 2035, the 20 year projected buildout was multiplied by 1.25 to represent a 25 year build-out. The following table summarizes the expected level of development on the corridor in 25 years.

Table 16 Expected Level of Development 25 Year Horizon

Land Use	Units/ SF
Residential (Units)	
Single Family Detached (Ownership)	154
Single Family Attached (Ownership)	595
Multi-family (Rental)	561
Total	1,310
Non-residential (SF*1000)	
Retail	228
Employment (Office/ Industrial)	886
Total	1,114

The land use plan contained in Figure 22 was divided into planning areas to estimate the trip generation (Figure 25 Trip Generation Planning Areas). The planning areas were aggregated into zones that are separated by major roadways along the corridor so that the projected traffic could be distributed and assigned to the network.

A trip generation estimate was developed for each of the planning areas using rates contained in the Institute of Transportation Engineers (ITE) manual ((ITE), 2008). The estimates, contained in Table 17 and Table 18 include morning and evening peak hour volumes as well as daily volumes. Land uses contained in the table included the following:

- **Residential.** The residential land use was assumed to be single family detached (4 units / acre), single family attached (6 units / acre), and multi-family (6 units / acre).
- **Restaurant**. A 5,000 square foot restaurant was assumed in Planning Area C.
- Commercial / Retail. The commercial areas were divided into office, specialty retail, and storage. A Floor to Area Ratio (i.e. FAR) of 0.2 was assumed for each commercial use.
- Industrial. A general light industrial land use was assumed.

Projected peak hour volumes were developed for the key intersections along the Fox Farm Road and College Drive corridors as well as daily volumes for the links along the corridors using the following process.

- Background Traffic. The existing peak hour and daily volumes were inflated by 1.25% annually to estimate the growth in background traffic along the corridor. This rate is used by the MPO to estimate traffic growth in the Cheyenne metro area. To represent the regional nature of South Greeley Highway, the existing volumes were inflated by 2% annually on this corridor.
- Development Traffic. The Year 2035 estimated trips that are expected to be generated by new development / redevelopment along the corridors were distributed and assigned to the intersections based on projected volumes contained in PlanCheyenne (Clarion, 2006). A separate distribution was prepared for groups of zones that are separated by major roadways. The distribution is contained in Figure 26, 2035 Traffic Projections and Level of Service Analysis.
- Total Traffic. The background traffic was combined with the development traffic to estimate the Year 2035 total traffic. The Year 2035 peak hour and daily volumes are summarized in Figure 26. Traffic control and laneage recommendations are also shown in the drawing.

Realignment of South Industrial Road

The impact of conceptual realigning of Industrial Road so that it intersects the I-80 eastbound on-ramp was explored and is shown in Figure 27. The ramp would become two-way between College Drive and Industrial Road, and Industrial Road would be stop controlled at the ramp intersection.

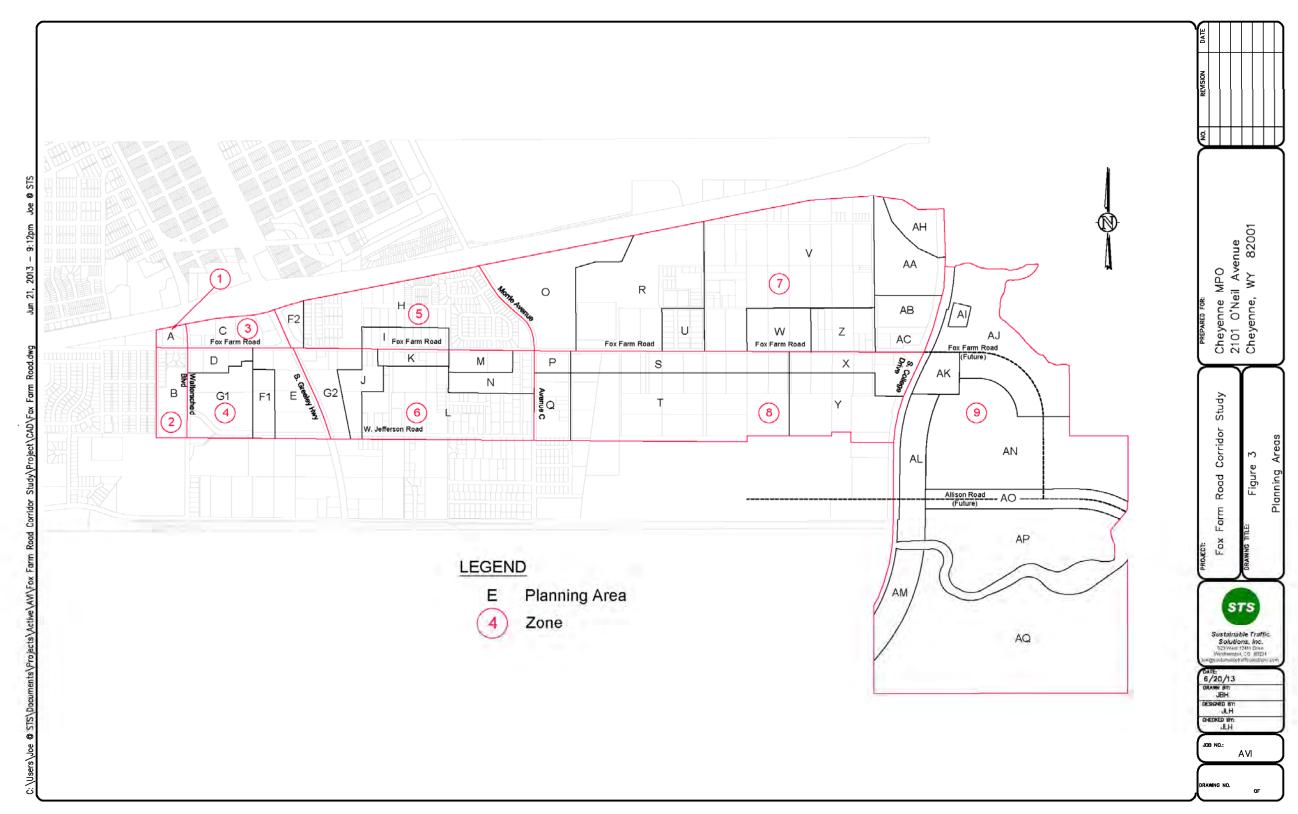


Figure 25 Trip Generation Planning Areas

Table 17 Planning Area Development Assumptions For Fox Farm Corridor

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Table 18 Planning Area Development Assumptions for the Area East of College Drive

	Planning			L			Average D	aily Trips		Mo	orning Pea	k Hour Tri	ps	Evening Peak Hour Trips						
Zone	Area	Size (Acres)	Description	ITE Code	% of Total	Acres	Units	Unit	Rate	Total	ln	Out	Rate	Total	ln	Out	Rate	Total	In	Out
	Al	2.25						No	New De	velopmer	nt or Rede	evelopmer	nt							
	AJ	57.04	Specialty Retail ¹	814	0.50	28.52	248	1000 Ft ² GLA	44.32	8,810	4,405	4,405	0.89	178	78	100	2.71	539	237	302
	Au	07.04	Industrial	110	0.50	28.52	62	1000 Ft ² GFA	6.97	433	216	216	0.92	57	50	7	0.97	60	7	53
	AK	8.75						No	New De	velopmer	nt or Rede	evelopmer	nt							
	AL	21.71	Specialty Retail ¹	814	0.50	10.85	95	1000 Ft ² GLA	44.32	3,352	1,676	1,676	0.89	68	30	38	2.71	205	90	115
	AL	21.71	Industrial	110	0.50	10.85	24	1000 Ft ² GFA	6.97	165	82	82	0.92	22	19	3	0.97	23	3	20
9	AM	13.98	Specialty Retail ¹	814	0.50	6.99	61	1000 Ft ² GLA	44.32	2,159	1,079	1,079	0.89	44	19	24	2.71	132	58	74
	7 (10)	10.00	Industrial	110	0.50	6.99	15	1000 Ft ² GFA	6.97	106	53	53	0.92	14	12	2	0.97	15	2	13
	AN	86.39	SFDH - 6	210	0.85	73.43	441	DU	9.57	4,216	2,108	2,108	0.75	330	83	248	1.01	445	280	165
	,	30.00	Apartment - 17	220	0.15	12.96	220	DU	6.65	1,465	732	732	0.51	112	22	90	0.62	137	89	48
	AO	21.46	Office ¹	710	0.50	10.73	93	1000 Ft ² GLA	11.01	823	412	412	1.55	116	102	14	1.49	111	19	92
			Apartment - 17	220	0.50	10.73	182	DU	6.65	1,213	606	606	0.51	93	19	74	0.62	113	74	40
	AP	61.82	SFDH - 6	210	0.85	52.55	315	DU	9.57	3,017	1,509	1,509	0.75	236	59	177	1.01	318	201	118
		· · · · ·	Apartment - 17	220	0.15	9.27	158	DU	6.65	1,048	524	524	0.51	80	16	64	0.62	98	64	34
	AQ	143.42	SFDH - 6	210	1.00	143.42	861	DU	9.57	8,235	4,118	4,118	0.75	645	161	484	1.01	869	548	322

Land Use Densities

Specialty Retail - Development covers 20% of the land (0.2 FAR)

Office - Development covers 20% of the land (0.2 FAR)

Industrial - Buildings cover 5% of the area

SFDH - 6 - Single family detached housing at 6 units/acre

Apartment 17 - Apartments at 17 units/acre

Trip Reductions

1. 20% - internal trip making

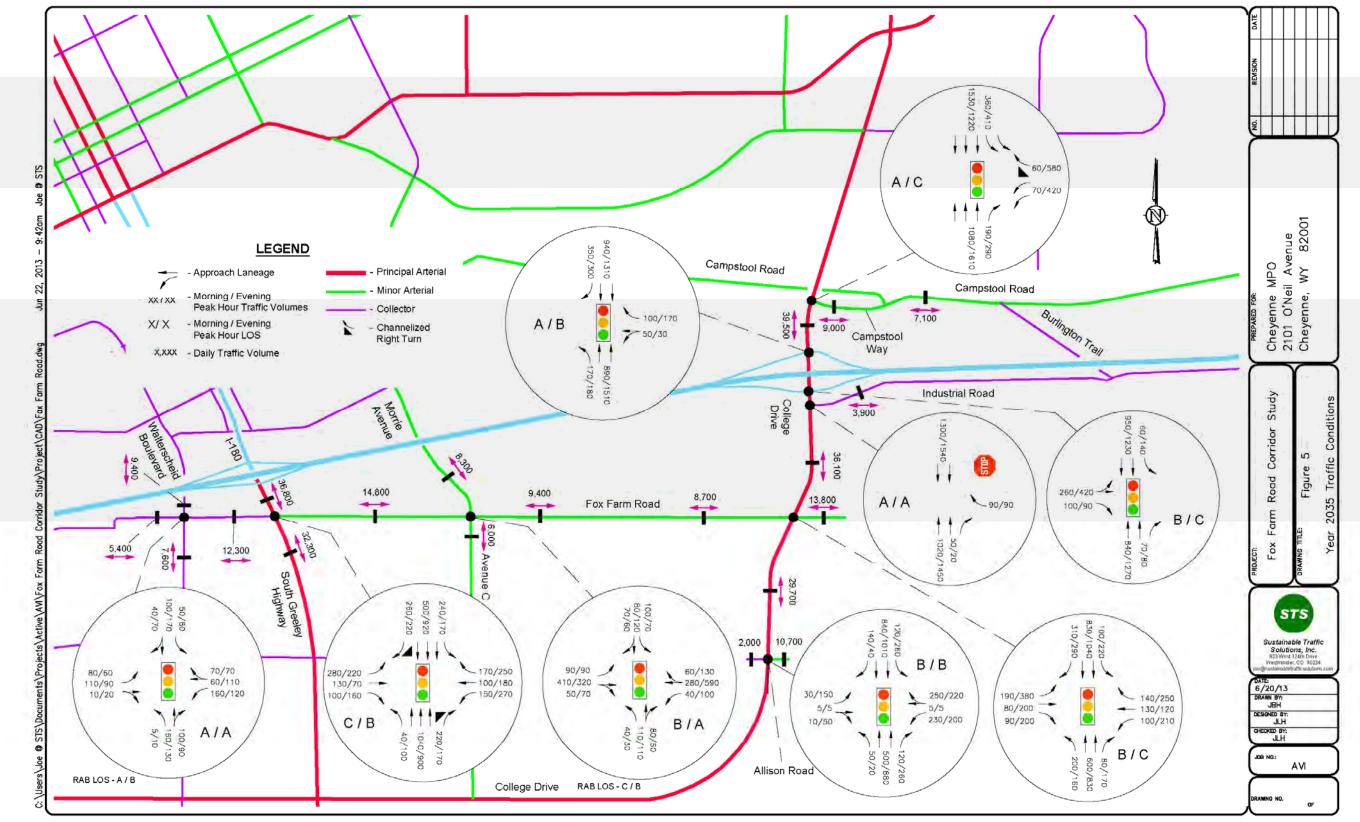


Figure 26, 2035 Traffic Projections and Level of Service Analysis

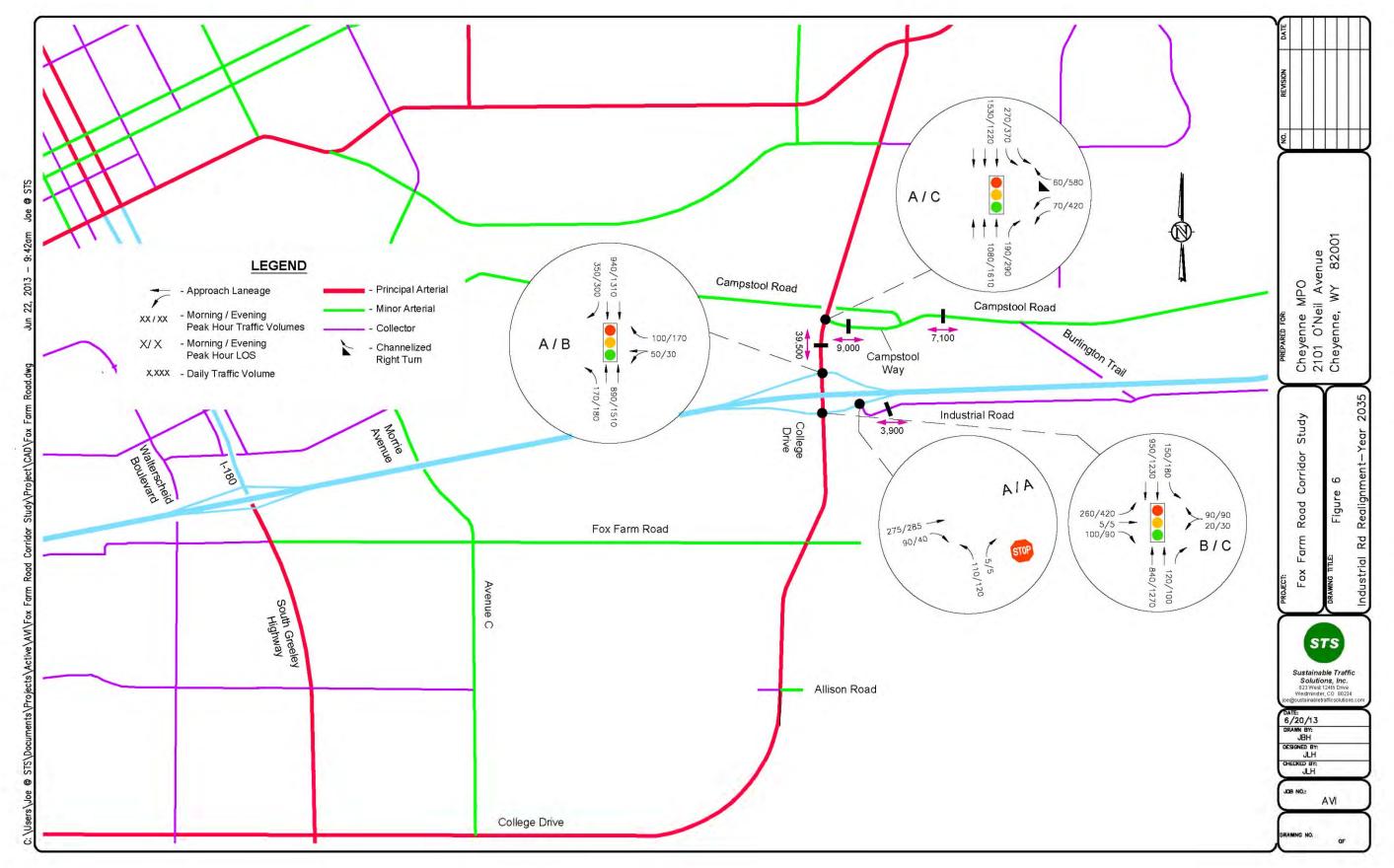


Figure 27, Traffic Projections and Level of Service Analysis for Conceptual Realignment of South Industrial Road

Proposed Short and Long Term Intersection Improvements

The following conceptual intersection improvements are recommended for the corridor based on various input from all stakeholders and the design team. The four primary corridor intersections reviewed included Fox Farm Road at Walterscheid Blvd.; South/ North Greeley Highway; Avenue C/ Morrie Avenue; and College Drive.

Walterscheid Blvd.

Upon review of the existing intersection and proposed traffic volume projections the following observations were noted as significant:

- Sidewalk missing from Derr Avenue to Walterscheid
- Intersection offset north and south for east and west bound traffic.
- All-way stop controlled with dedicated westbound left turn lane and southbound right turn lane and channelizing island
- Dry utility conflicts at southwest corner of the intersection will be impacted by any improvement
- Width, lack of pedestrian facilities, and configuration make the intersection unfriendly to pedestrians.
- Secondary access drive to the Fire Station at northwest corner is very close to the north leg of the intersection.

Conceptual Options and Recommended Alternative

Several different options were evaluated at this intersection including a single lane roundabout, standard intersection with channelizing island, standard intersection without channelizing island, and do nothing.

Anticipated traffic volumes eliminated the do nothing alternative option. Challenges due to the proximity of the residential driveways and garage accesses to the south of the intersection made the roundabout option require either a significant shift to the east or a reduced circulatory radius. The shift would require significant realignment of the south and north intersection legs, as well as, right-of-way acquisition. The reduced circulatory radius would likely impact the functionality and level of service of the intersection. Finally, the southbound channelizing free right-turn island was eliminated for traffic and pedestrian safety, and was not required to accommodate future traffic volumes. The recommended intersection is illustrated in Figure 29/ Appendix A and has the following added features not shown:

- Install signal when either warranted by level of service or crash history
- Install roadway lighting at intersection.









Figure 29 Existing Walterscheid Blvd. Intersection at Fox Farm Road

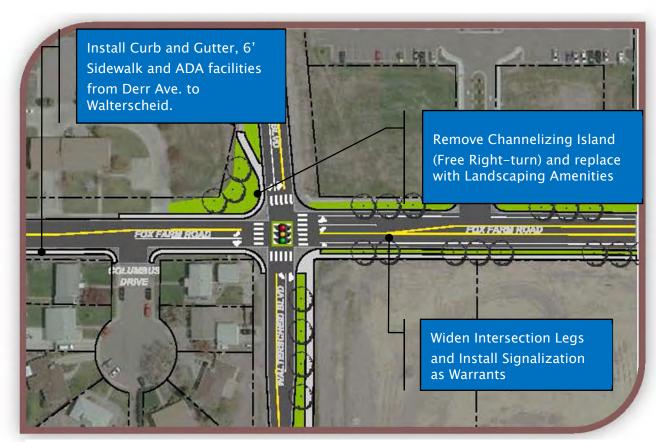


Figure 29 Recommended Intersection Alternative

South/ North Greeley Highway

Upon review of the existing intersection the following observations were noted as significant:

- Complex Signalized Intersection
- Four channelized right-turn lanes
- Approach access are very close to the existing intersection on all four legs
- High commercial land use
- Under direct jurisdiction of the State of Wyoming Department of Transportation
- Steep vertical profiles
- Large intersection and difficult to traverse as a pedestrian due to its size and complexity of traffic movements
- Observed opposing left turn cross maneuvers at approaches near the intersection and
- Observed unsafe cross maneuvers from traffic exiting the channelizing free-right turn.

Conceptual Options and Recommended Alternative

The goal of any proposed modification to this intersection was to improve operation and safety.

Current and anticipated traffic volumes present challenges with level of service and introduce added safety risk due to the proximity of commercial driveway accesses on all legs of the intersection. A multi-lane roundabout was considered at

some point in the conceptual process but, would impose significant drainage, access, operational challenges. This option could possibly be reevaluated in the future when drivers in the area become more accustomed to traversing multi-lane roundabouts. The recommendations are as follows:

- Remove channelizing free right-turn islands to the northeast and southwest for traffic and pedestrian safety
- Add raised safety medians to prevent opposing traffic cross maneuvers on the east and west side of the intersection
- Install added deceleration/ business access auxiliary lane on northbound North Greeley Highway
- Install added acceleration/ deceleration access auxiliary lane on the eastbound lane

The recommended alternative is illustrated in Figure 31 and Appendix A.

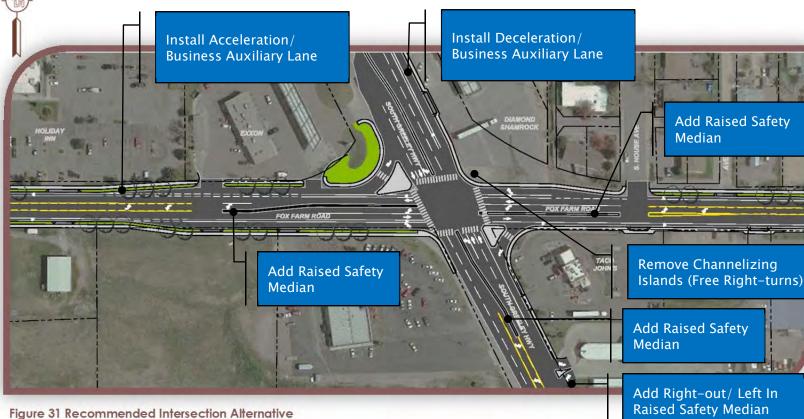












Avenue C/ Morrie Avenue

Upon review of the existing intersection and proposed traffic volume projections the following observations were noted as significant:

- All-way stop controlled
- Dry utility conflicts around intersection
- Lack of pedestrian facilities other than north south greenway connection
- Close proximity of Tyler Place to the southwest and business access on the northwest leg to the intersection
- Mobile home(s) off-street parking area
- Freight and large truck traffic is generated from Holly Energy Partners refinery directly north of the intersection.
- Existing concrete intersection with inadequate width and radii to accommodate large truck/ freight vehicles.

Conceptual Options and Recommended Alternative

Several different options were evaluated at this intersection including a single lane roundabout, standard intersection with all way stop, standard intersection with a two-way stop (north and south), a standard intersection with signalization, and do nothing.

The current traffic use and anticipated future volume removed the do

nothing alternative from consideration. Based on truck route survey conducted in conjunction with the study, seventy-two point nine percent (72.9%) of all the freight trucks using the Holly Energy Partners refinery are conventional combination (i.e. 5 to 6 axle) tractor semi-trailer and twentyseven point one percent (27.1%) of the freight trucks are larger combination (i.e. 6-7 axles) w/ tractor and pup. Furthermore, sixty-two point nine percent (62.9%) of all the refinery freight traffic uses the Fox Farm Corridor for access. Of those trucks which use the corridor, a significant number of freight truck users (29/70) or forty one point four percent (41.4%), perceive the intersection of Fox Farm Road at Morrie Avenue/ Avenue C as unsafe, operationally impaired or generally inadequate for them to use. The

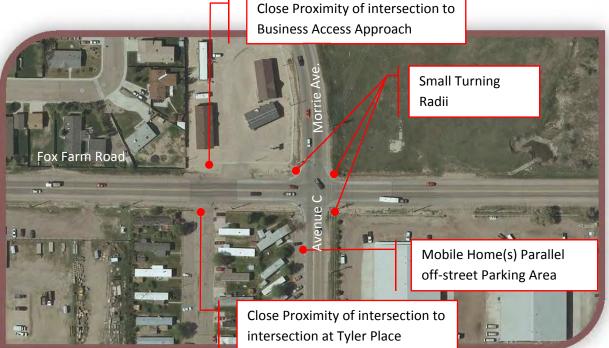
possible conceptual alternatives were narrowed to two and discussed below.

Standard Intersection Alternative. The premise for a standard intersection should be prefaced by the fact that according to the projections of Sustainable Traffic Solutions, Inc., this intersection will likely be warranted for a traffic signal in 5 years or less. This of course is predicated on development occurring within and adjacent to the corridor. With new developments like the Montalto Drive (e.g. residential), Niobrara Energy Park (e.g. light industrial), and general property redevelopment potential with the corridor study area this does not seem unrealistic.









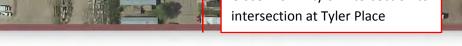


Figure 32 Existing Avenue C/ Morrie Avenue Intersection at Fox Farm Road

Based on responses from the Holly Energy Partner truck route survey, increasing the width of the intersections legs and roadway will likely increase the truck freight traffic on the corridor which would include both conventional semi-tractor trailer and larger tractor and pup combinations.

A major objective of traffic signal design is to maintain the free flow of traffic. This design requires that important decisions be made regarding assigning green time to vehicle movements (e.g. signal phasing). Exclusive phases such as left-turn arrows generally increase cycle lengths and add delay. In this particular case, the recommended future lineage has dedicated left turns on all intersection legs (Figure 26). Factors such as progression efficiency, pedestrian times, and clearance intervals also need to be incorporated into the design. These additional factors also lead to increased delays. Additionally, good design practice dictates that we minimize conflict points, reduce turning movements, eliminate or curtail driveway access near the intersection. A standard four way intersection conceptual layout is shown in Figure 33.

In a typical two lane roadway (i.e. two lanes in each direction) contains thirty-two vehicle conflict points (32). This is illustrated in Figure 34 where sixteen are crossing, eight (8) are diverging, and eight (8) are merging. The conceptual intersection proposed is a two-way left turn lane or three-lane roadway option. This theoretically eliminates the same direction to left turn rear-end (diverging) conflict which reduces the conflict thirty (30). See Figure 34.

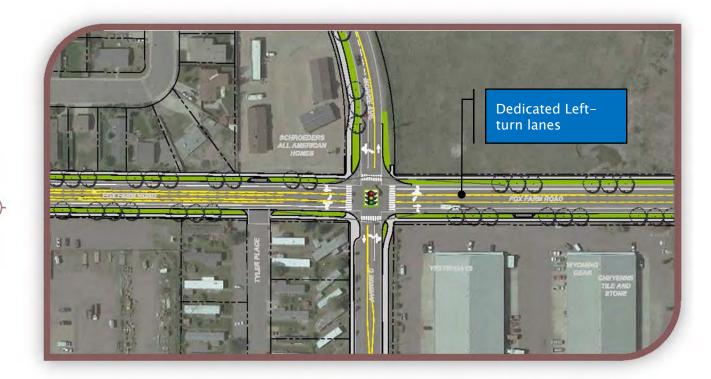


Figure 33 Conceptual Standard Intersection Alternative w/ Traffic Signal

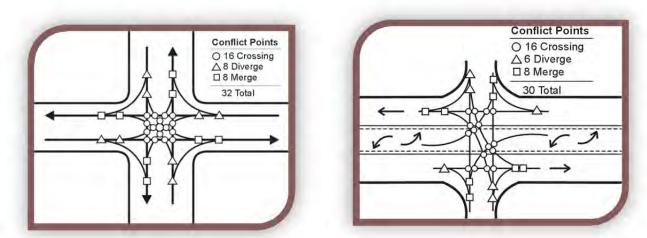


Figure 34 Standard Two Lane and Three Lane (Two-way Left Turn Lane) Intersection Conflict Points

This concept alternative illustrated in Figure 33 has the following added features not shown:

Install roadway lighting at intersection.

The level of service (LOS) analysis shows a LOS B (am) and LOS A (pm) based on future traffic projections completed by Sustainable Traffic Solutions (See Figure 26). Cost estimates for this

alternative including signalization in present value dollars is equal to approximately \$330,000. See Appendix D for additional information.

Roundabout Alternative. There are several design challenges related to the development of a roundabout due to the proximity of the mobile home trailer park in the southwest corner of the intersection that will require either a significant shift to the east and/or right-of-way acquisition. During the public outreach process, stakeholders believed trucks and emergency vehicles would have trouble traversing a roundabout. The major concern related to the larger vehicles negotiating too small a central radius and too high an interior island curb height. Some of the surrounding area roundabouts have such large height curbs that the trailer portion is dragged around the roundabout and the tires of the truck rub due to the height of the curb. Through proper design, roundabouts can easily accommodate emergency and large sized vehicles.

Other special design considerations for roundabouts include: overall size; entry angles; entry widths; flare lengths; speed constraints; truck movements; pedestrian and bike accommodation; signing and striping issues. Because the only movement allowed from entry and exit of a roundabout is a right turn, the vehicle conflict points are reduced to eight (8). See Figure 35. Thus occurrences of crashes that result in injury and property damage are

significantly reduced and are typically less severe than other types of collisions. Studies conducted by the U.S. Department of Transportation have shown that standard intersections converted to small/ moderate roundabouts have reduced total crashes by fifty-one (-51) percent, injury crashes by seventy-three

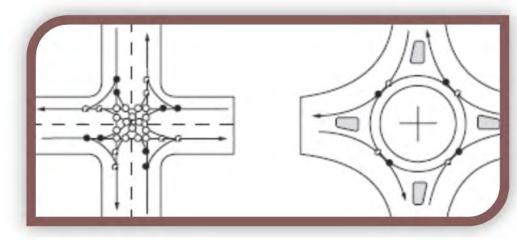


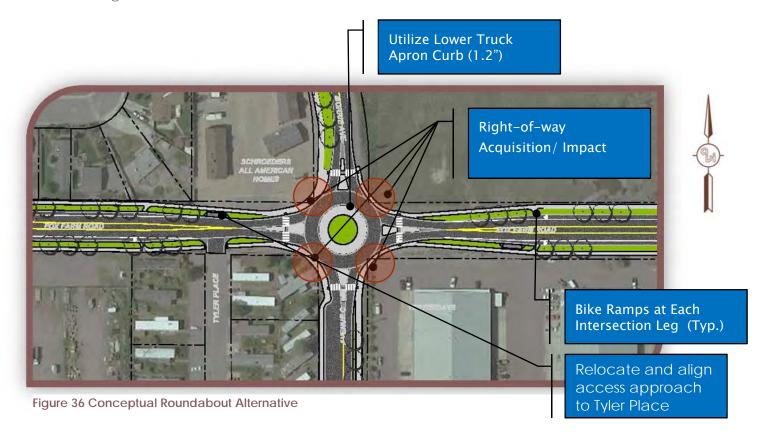
Figure 35 Vehicle Conflict Points Standard Two Lane Intersection and Roundabout

(-73) percent, and property damage crashes by thirty-two (-32) percent (Robinson, 2000).

Added benefits of the roundabout option include:

- No signal equipment to install and repair (i.e. savings on electrical and maintenance costs).
- Improved traffic flow and efficiency for intersections that handle left turns
- Eliminate the need for auxiliary storage lanes
- Slower traffic speeds.

The level of service (LOS) analysis shows a LOS C (am) and LOS B (pm) based on future traffic projections and analysis completed by Sustainable Traffic Solutions. See Figure 26. Cost estimates for this alternative in present value dollars is equal to approximately \$333,000 excluding right-of-acquisition. See Appendix D for additional information. The alternative is shown in Figure 36.



Additional features recommended in the alternative not illustrated in Figure 37 include the following:

- Install a 5' landscape buffer strip from the circulatory roadway to discourage pedestrians from crossing the central island
- Install roadway lighting at intersection.

Table 19 Conceptual Intersection Alternative Evaluation

Alternative	Construction Cost	Maintenance Cost	Reduced Injury and Property Damage Accidents	Reduced Right-of- Way Impact(s)	Level of Service*	Slower Traffic Speeds
Standard	\$\$\$	\$\$		✓	B/A √	
Roundabout	\$\$\$	\$ ~	✓		C/B	√

The right-of-way impacts as illustrated are as follows:

Southwest: 269 Square Feet
 Southeast: 121 Square Feet
 Northwest: 154 Square Feet
 Northeast: 101 Square Feet.

The roundabout options provide the most benefit based on the categories above. Although the standard intersection appears to provide a better level of service LOS as analyzed by Sustainable Traffic Solutions, Inc., roundabout analysis is greatly affected by the percentage of trucks. The software utilized assumes the trucks will have a negative impact in level of service. However, with the added special truck features (i.e. lower curb and increased radius) incorporated into the roundabout, the negative impact of trucks to level of service would logically be reduced. Additionally, it is highly unlikely that the peak am and pm traffic will coincide with the peak larger truck/ freight movements on the corridor.

A strong case exists for utilizing a roundabout option at this intersection based on the following reasons:

- Improved Safety (e.g. Reduce injury crashes). It should be noted that property damage crashes will likely increase until users become accustomed to traversing the roundabout but, serious crashes will be virtually eliminated compared to the signalized option.
- Projected need for signalization within five (5) years
- Possible reduction of truck volume in commercial/ residential area west of Avenue C (Other more industrial routes are better suited and available). Please reference Table 4 Truck Route Distance and Travel Times Map
- Reduced long term maintenance cost
- Improved traffic flow and efficiency
- Compatible with a recommended speed reduction west of Avenue C
- Accommodates multi-modal transportation

Please see Figure 36 and Appendix A for additional information and reference.

Since capital construction costs appear to be similar between the two options proposed, the final recommendation for this intersection is to leave both options open (i.e. Standard Intersection and Roundabout) and make a final determination when funding becomes available or redevelopment occurs. However, we would recommend that Laramie County request additional right-of-way (i.e. minimum of 20' x 20' Triangle) at the four right-of-way corners of the intersection when development or redevelopment occurs.

College Drive

Upon review of the existing intersection the following observations were noted as significant (Figure 37):

- Un-signalized Intersection Fox Farm Stop
- Posted Speed Limit on College Drive 50 mph
- Under direct jurisdiction of the State of Wyoming Department of Transportation
- Cheyenne Transit Stop near intersection encourages pedestrian movement at a mid-block cross due to lack of sidewalks and location of bus stop opposite to Cheyenne Health and Wellness facility
- Southbound and Northbound traffic hidden in "train" due to vertical and horizontal configuration and dual to single lane and single to double lane transitions, respectively
- Intersection skewed in excess of 10° (e.g. 25.24°)
- Eastbound to Southbound Acceleration lane would be required for peak hour volumes in excess of 50 (City of Cheyenne and Laramie County) and Posted Speed on adjacent street is greater than forty (40) mph.



The goal of any proposed modification to this intersection was to improve operation and safety. An attempt was made early on in the study to reconfigure the alignment however; three factors overrode the practicality of the alternative:

- Property alignment East of College Drive
- Proposed alignment of Future Fox Farm is in alignment with adjacent property owners plan
- Intersection currently appears to meet warrants for signalization.

The reconfiguration alternatives can be seen in detail in Appendix C (MPO Technical Committee Meeting 05-15-2013). Current crash history and operation problems put this intersection into a two tiered improvement recommendation (e.g. Short Term and Long Term). The short term recommendations (Prior to signalization) are as follows and shown in Figure 39:

- Widen the existing right-turn lane on southbound College Drive to Fox Farm Road to eliminate or improve the ghosting effect
- Restripe College Drive to move the single lane to two lane transition for both northbound and southbound traffic north of the intersection of Fox Farm Road









- Add pedestrian sidewalk from the Cheyenne Transit bus stop to the intersection of College Drive and Fox Farm Road (i.e. south side of Fox Farm Road)
- Add pedestrian sidewalk from College Drive to the Cheyenne Health and Wellness Clinic (north side)
- Add raised safety median to serve as a pedestrian refuge
- Add acceleration lane to eastbound Fox Farm Road to southbound College Drive
- Add channelizing median as a pedestrian refuge for the acceleration lane on southbound College Drive

The recommended interim alternative is illustrated in Figure 38.

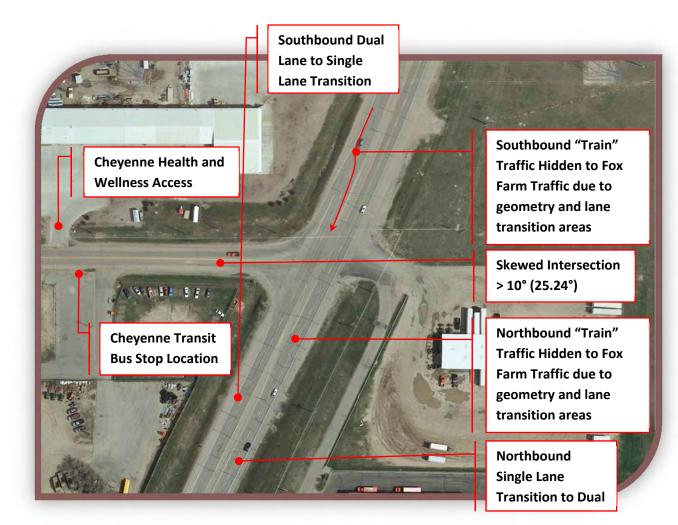


Figure 37 Existing College Drive Intersection at Fox Farm Road

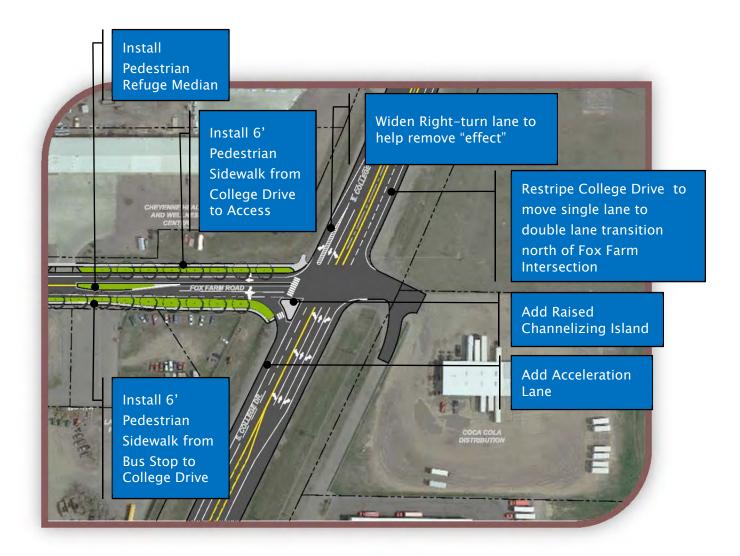


Figure 38 Recommended Interim Intersection Improvements

The long term recommendations (post signalization) are as follows and shown in Figure 40:

- Signalize Intersection
- Restripe College Drive to accommodate future demands
- Widen Fox Farm Road to include lane recommendations of eastbound dedicated thru
 lane, eastbound left turn lane, eastbound right turn lane, westbound lane, and buffered
 bike lanes
- Acquire right-of-way and construct East Fox Farm Extension and portion of roadway network
- Remove and relocate east business access to the east
- Add raised channelizing island on the East Fox Farm Road Extension as needed for pedestrian/ traffic.

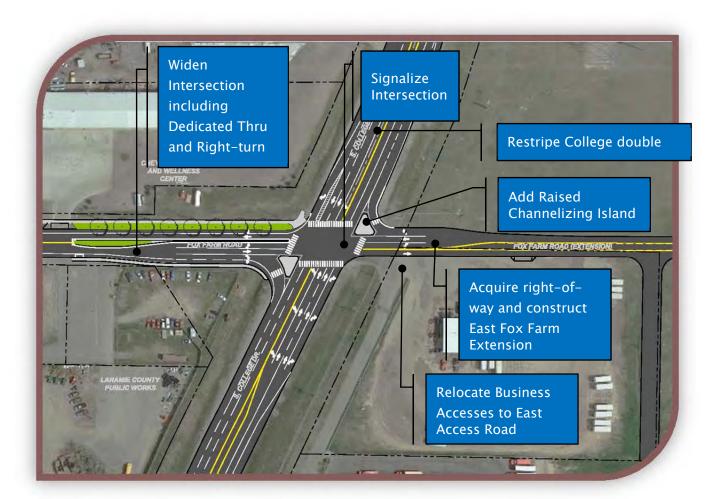


Figure 39 Recommended Long Term Intersection Improvements

Burlington Trail Road

Upon review of the existing intersection the following observations were noted as significant (Figure 40):

- Close proximity of a business access on north east side of Burlington Trails on Campstool Road (i.e. Sierra Trading Post)
- Major drainage way west of roadway
- I-80 bridge piers and structure dictate angle of skew of Burlington Trails Road
- Campstool Road posted speed limit at 45 mph
- Intersection of north Burlington Trail Road with Campstool road should be realigned to divide the Sierra Trading Post access and Cleveland Place Roadway
- Skew angle of intersection of Burlington Trails Road and South Industrial Road exceeds ten (10°) at forty four point thirty seven (44.37°).
- Observed heavy industrial/ freight truck traffic.

Conceptual Options and Recommended Alternative

The goal of any proposed modification to this intersection was to improve operation, safety, and add Greenway connection.

Current heavy industrial/ freight traffic guided the recommendation along with future development of the Greenway. The recommendations are as follows:

- Install added deceleration access auxiliary lane on the eastbound lane of Campstool Road
- Realign Burlington Trail Road to improve access on north and skew angle south
- Add drainage improvements to accommodate intersection realignment of Burlington Trail Road with South Industrial Road
- Add 10' concrete Greenway path on east side of Burlington Trail Road
- Add raised channelizing island and free right-turn onto South Industrial Road to accommodate WB-67 design vehicle.

The recommended alternative is illustrated in Figure 41 and Appendix A.









Figure 40 Existing Burlington Trail Road

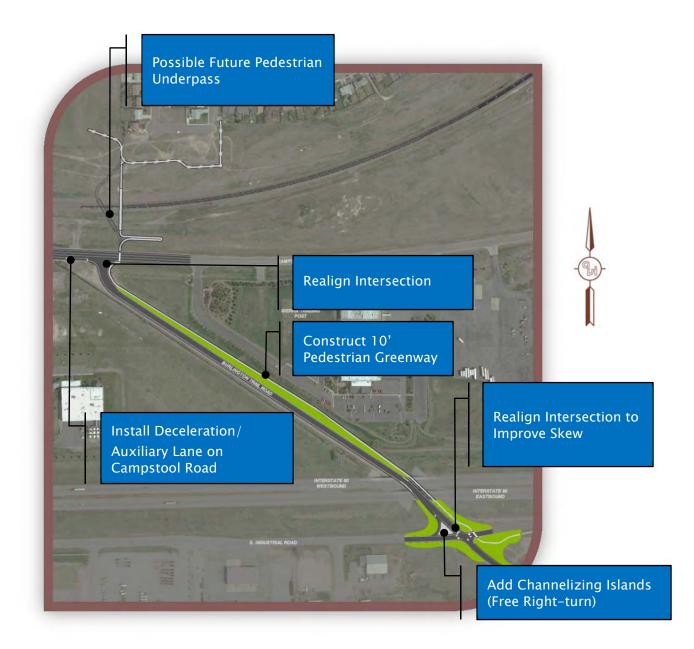


Figure 41 Recommended Alternatives for Burlington Trail Road

South Industrial Road

As a part of the scope of this study the design team was asked to investigate options to improve the operation of South Industrial Road on College Drive. Currently southbound traffic on College Drive turning left onto South Industrial Road stacks beyond the signalized off and on ramps of Eastbound I-80.

Several alternatives were evaluated including:

Do nothing

- Realign South Industrial Road south to separate the intersection with the on and off ramps of I-80
- Add access control median to prevent southbound traffic from turning left onto South Industrial Road (See Figure 42)
- Realign South Industrial Road and I-80 Eastbound On Ramp to utilize South Industrial Road and the primary access to the on ramp (Standard Intersection: See Figure 43)
- Realign South Industrial Road and I-80 Eastbound On Ramp to utilize South Industrial Road and the primary access to a flyover or underpass ramp (See Figure 45).





Figure 42 Access Control Median Installation Option

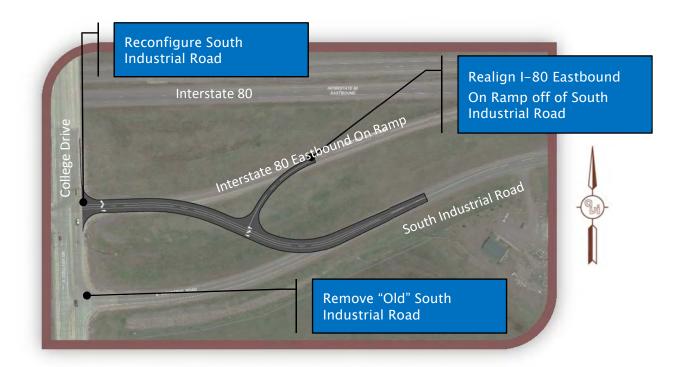


Figure 43 Realign Interstate I-80 Eastbound On Ramp and South Industrial Road

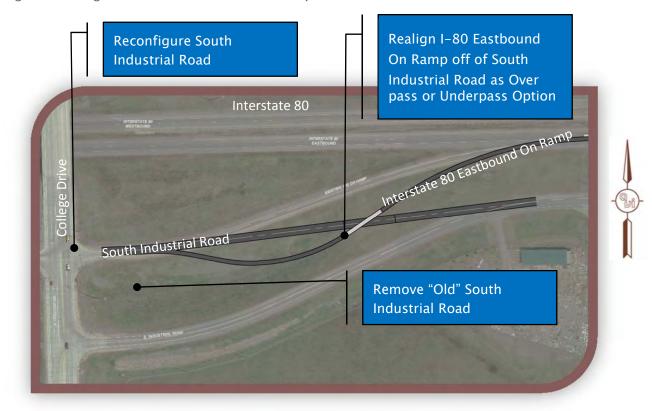


Figure 44 Realign Interstate I-80 Eastbound On Ramp and South Industrial Road (Bridge/Underpass Option)

After meeting directly with the local Federal Highway Administration representatives, WYDOT, and the MPO, and the surrounding property owner, no alternative satisfies the constraints of the group. Consequently, no recommendation can be given at this time. Further investigation will be required if operational issues or crashes occur at this location.

Landscape Concept

Using a simple, xeric palette of plants tolerant to the salts used in winter street maintenance, the landscape concept is designed for easy maintenance and an overall aesthetic that will enhance the Fox Farm Road corridor as a whole.



The pages herein decribe two general landsacpe treatements, urban and rural, as well as outline a suggested plant palette.

Urban Street Section

Proposed improvements between Walterscheid Blvd. and Avenue C include an "urban" street section comprised of a detached concrete sidewalk with a manicured tree lawn varying in width from 5' to 12'. Additional potential for planting exists in the enlarged portion of the median east of S. Greeley Hwy.













Tree lawns planted with drought and salt tolerant grass plus canopy trees

Large landscape rocks and cobble mulch used in tandem with native to semi-native plants

Colored concrete, cobble mulch, ornamental grasses and stone columns in medians



Proposed Intersection Improvements at Fox Farm Rd and Walterscheid Blvd



Proposed Intersection Improvements at Fox Farm Rd and South Greeley Highway

Rural Street Section

The area between Avenue C and S. College Drive is intended for the rural street section which will have a paved shoulder and vegetated swale adjacent to the roadway instead of curb and gutter. The swale will consist of a mix of grasses tolerant of drought and the salts typically used in snow removal.

Suggested Dryland Seed Mix:

40% Western Wheat Grass20% Green Needle Grass20% Blue Grama10% Buffalo Grass5% Little Bluestem5% Sideoats Grama



CAMPSTOOL POOL OF THE REAL PROAD Proposed Improvements to Burlington Trail Road Between Campstool Road and S. Industrial Road

Proposed Future Intersection Improvements at Fox Farm Rd and S. College Drive

Suggested Plant Palette



Ornamental Grasses and Perennials



Trees



Shrubs

Avenue C with Optional Roundabout

Avenue C has been designed with a standard intersection containing planted tree lawns to match the concept images on the previous page with an alternate for a roundabout. The center of the roundabout could be treated one of several ways as illustrated in herein.



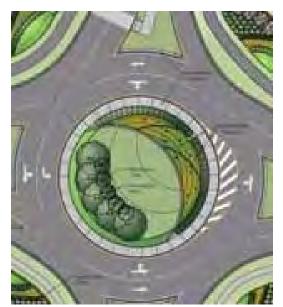
Proposed Intersection Improvements at Fox Farm Rd and Avenue C / Morrie Avenue – Standard Intersection



Proposed Intersection Improvements at Fox Farm Rd and Avenue C / Morrie Avenue – Roundabout



Mix of very xeric evergreens, grasses, and shrubs with different sized rock mulch and a colored concrete apron



Asymmetrical Planting with Native Grass



Hardscape and Sculpture, Very Minimal Planting



Native Planting and Large Boulders with Large Sculpture



Artistic Use of Hardscape and Minimal Planting

Summary of Corridor Recommendations

The overall recommendations are specifically designed to address all modes of transportation, landscaping, and safety needs of the Fox Farm Road Corridor. All recommendations have been examined carefully to ensure practicality, functionality, aesthetic appeal, sustainability, and successful implementation. The physical layout of the improvements are detailed on the following pages and can be found on the corridor plan and profile sheet in Appendix A. Detailed cost estimates are shown in Appendix C.

General Recommendations

Short Term

- Pedestrian and Sidewalk Improvements
- When Practical, Improve/Increase Capacity of Existing Drainage Conveyance,
- Explore Opportunities as Area Develops to Provide Roadway Storm water Detention/ Retention Features/ Facilities.
- Develop, Implement, and Fund a Drainage Master Plan for Corridor.
- Update/ Install Strategic Street Lighting at Key Intersections (Walterscheid Blvd., South Greeley, Avenue C/ Morrie Avenue, and College Drive)
- Replace or upsize undersized and old portions of the water transmission main (i.e. 6" ductile iron pipe) on Fox Farm Road as funding resources become available.
- Implement Priority Projects as funding resources become available or development becomes the catalyst

Long Term

- Implement Reconstruction Phased Strategies along Corridor.
- Storm Sewer Installation
- Replace or rehabilitate existing wet utility infrastructure as development occurs along the corridor
- Implement Typical Section(s)
- Install Uniform Roadway and Pedestrian Street Lighting throughout corridor
- Reduce regulatory speed from Avenue "C" west to 30 mph
- Encourage Holly Frontier Drivers to use Alternate Routes (Education, Policy, etc.)
- Investigate and Develop Possible Funding Mechanisms for the County for Reimbursement, "Impact Fees", etc.
- Develop roadway network connection from Avenue B3 to South House Avenue to eliminate South House Avenue dead-end
- Reserve right-of-way as development occurs at the intersection of Avenue C/ Morrie Avenue at Fox Farm Raod.

Priority Projects

Traffic Safety Improvement Projects

- Restripe College Drive to remove the single lane to double lane transitions north of Fox Farm Road.
- Widen College Drive Southbound dedicated right turn-lane onto Fox Farm Road
- Install roadway lighting intersection improvements
- Install raised safety median on Fox Farm Road east of South Greeley Highway

Pedestrian Improvement Projects

- Install 6' sidewalk and curb return radii on South side of Fox Farm Road from Derr Avenue to Walterscheid Blvd.
- Install sidewalk from East Cheyenne Transit Bus stop to College Drive on the south side and north side from College to the Cheyenne Health Clinic
- Install Pedestrian Refuge medians at College Drive and Mid-block at the Cheyenne Health Clinic

Freight/ Large Truck Improvements

- Widen intersection and enlarge turning radii on the north side and southeast corner of Avenue C/ Morrie Avenue on Fox Farm Road.
- Implement the reconstruction of Burlington Trail Road or phase as funding becomes available

Transit Improvements

- Relocate the College Drive/ Fox Farm Bus Stop to the east (i.e. Closer to the intersection of College Drive)
- As bus demand warrants, add additional westbound bus route onto Fox Farm Road

Drainage Improvements

Fund a master drainage improvement plan

Appendix A – Corridor Plan and Profile Sheets

FOX FARM ROAD CORRIDOR PLAN 10/35%

ENGINEER:

1103 OLD TOWN LANE, SUITE 101 CHEYENNE, WYOMING 82001 307.637.6017 FAX 307.632.9326 WWW.AVIPC.COM

LARAMIE COUNTY, WYOMING

ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WYOMING.

TOPOGRAPHIC SURVEY: PORTIONS OF THE TOPOGRAPHIC SURVEY, PLANIMETRICS, AND UTILITY INFORMATION DEPICTING EXISTING CONDITIONS WERE PROVIDED BY DATAMAP DIGITAL SERVICES, INC. AVI, PC. IS NOT RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SURVEY DATA SUPPLIED BY OTHERS.

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Vicinity Map/Project Extents, Cheyenne, WY

INDEX OF SHEETS

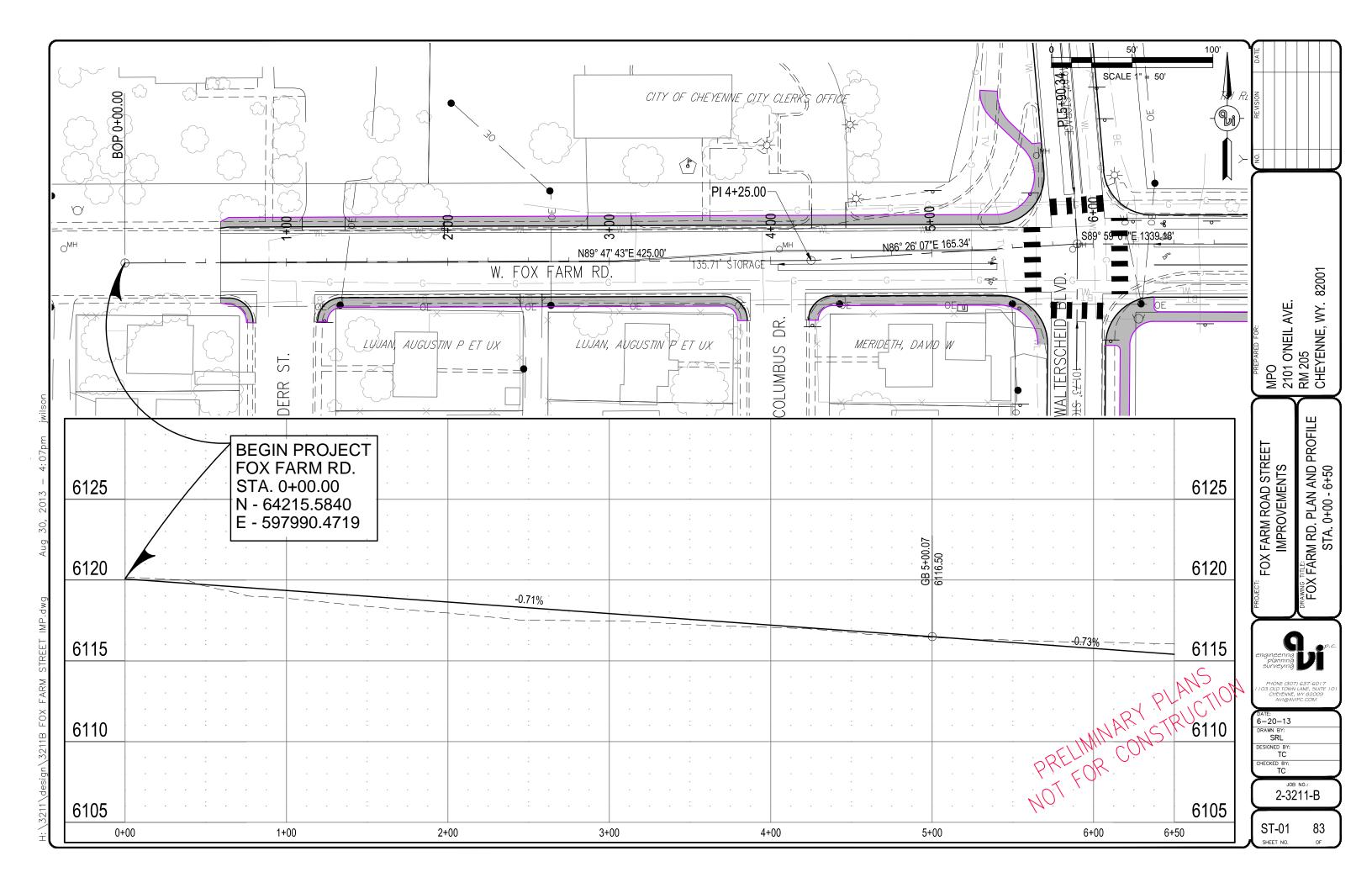
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PLAN & PROFILE WALTERSCHIED BLVD.
PLAN & PROFILE AVENUE C
PLAN COLLEGE DRIVE
PLAN & PROFILE BURLINGTON TRAIL
CROSS SECTIONS FOX FARM RD.
CROSS SECTIONS WALTERSCHIED BLVD.
CROSS SECTIONS AVENUE C
CROSS SECTIONS BURLINGTON TRAIL
CROSS SECTIONS BURLINGTON SIDEWALK

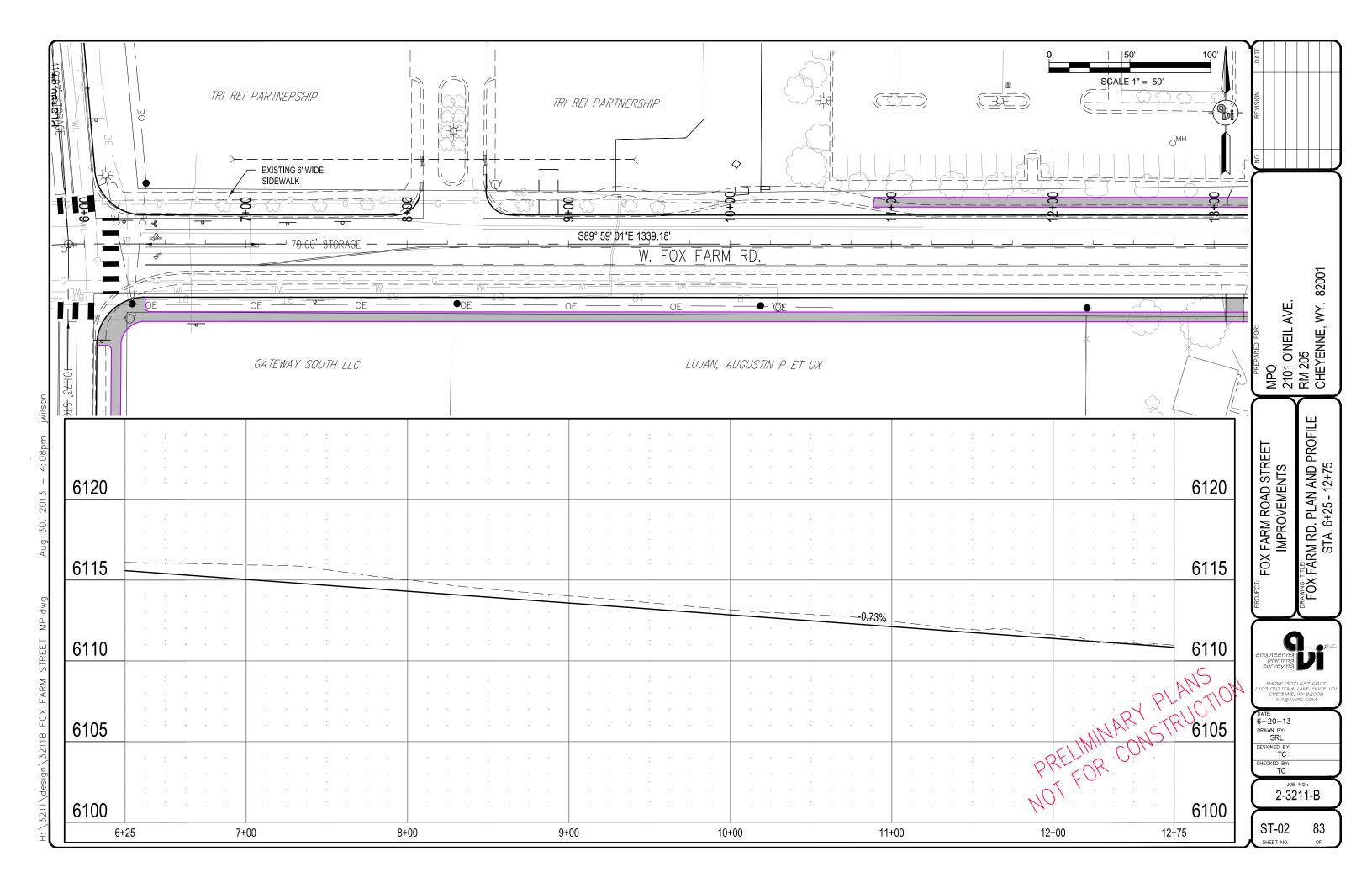
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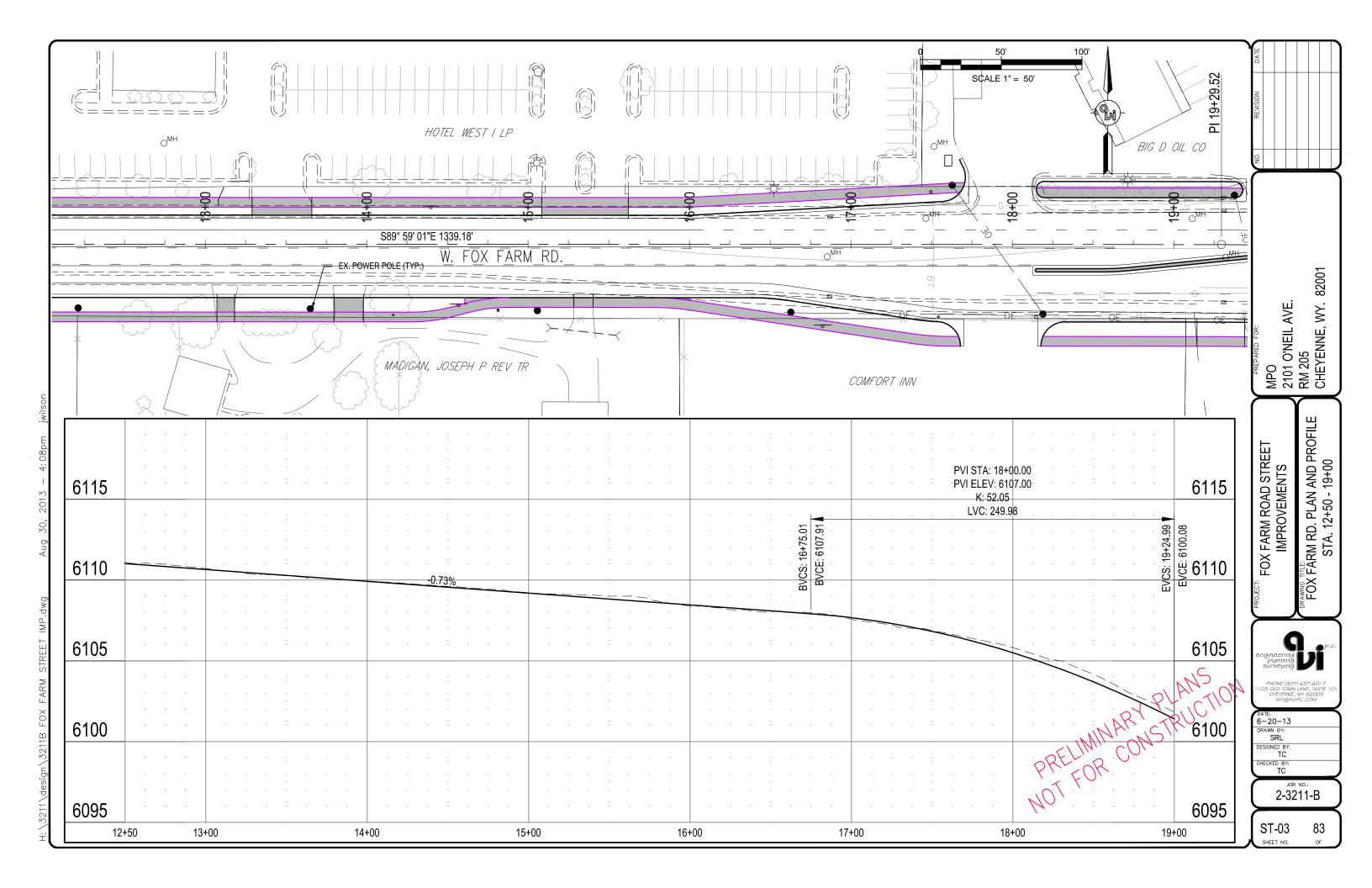
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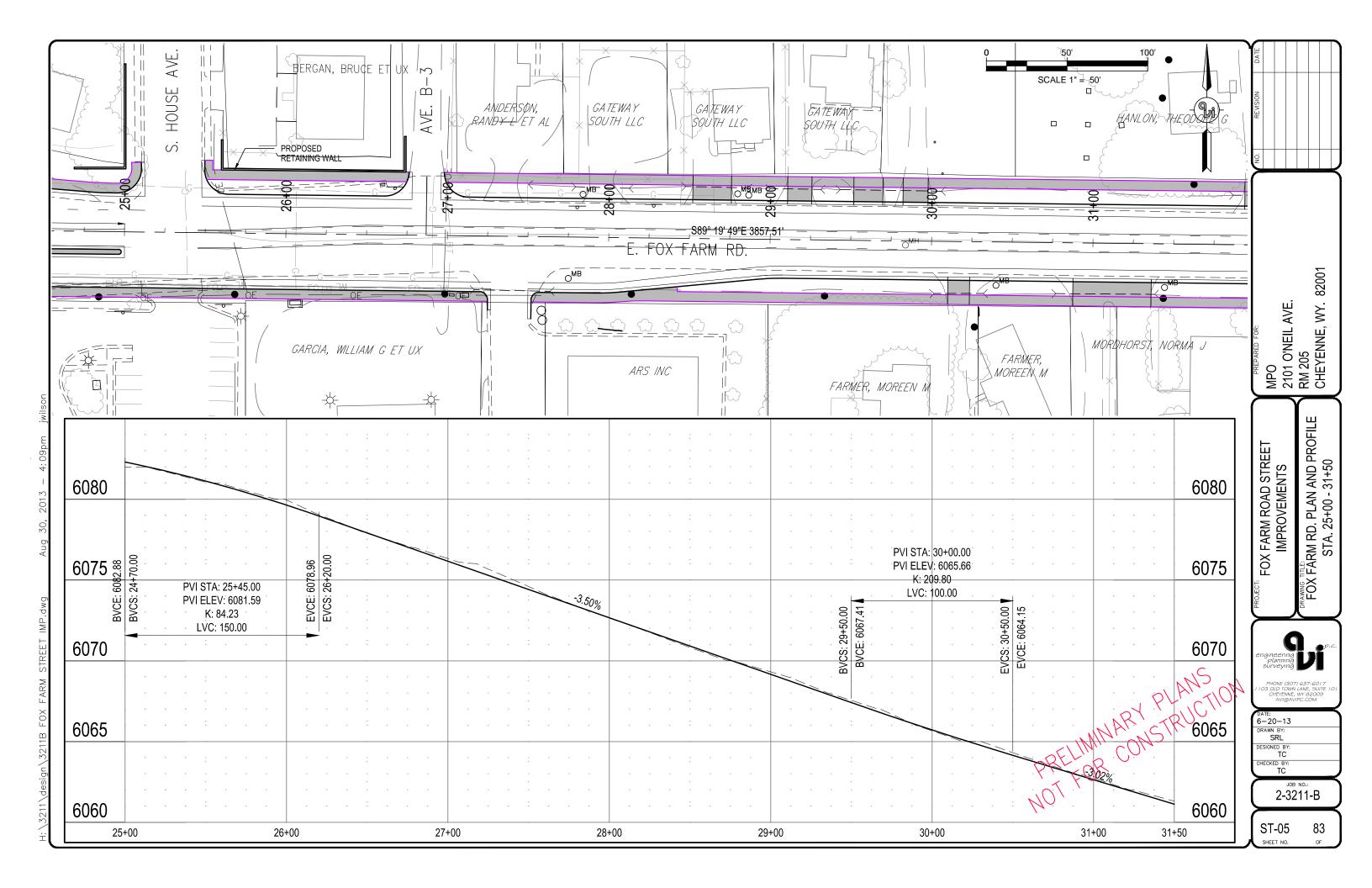
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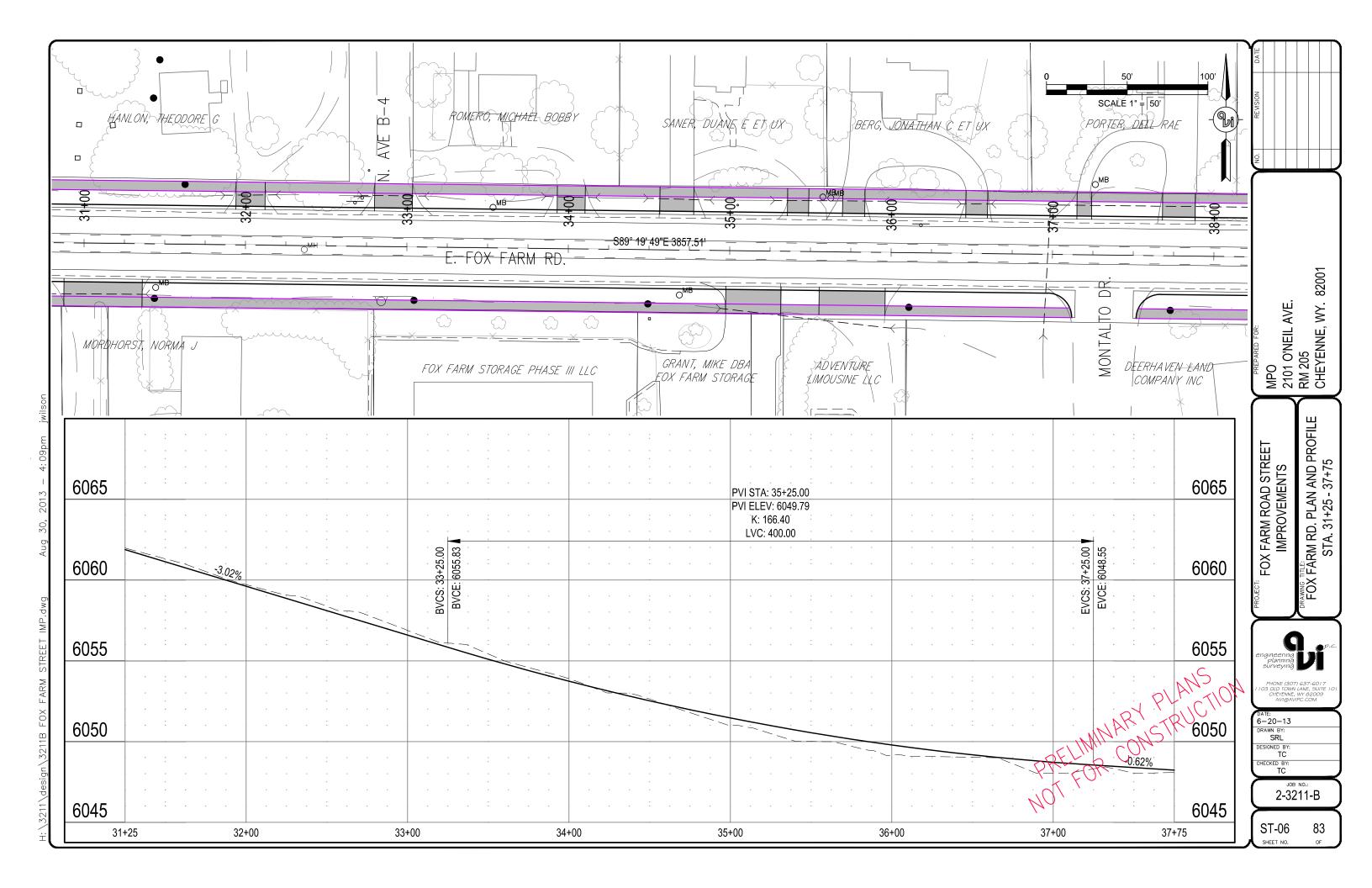


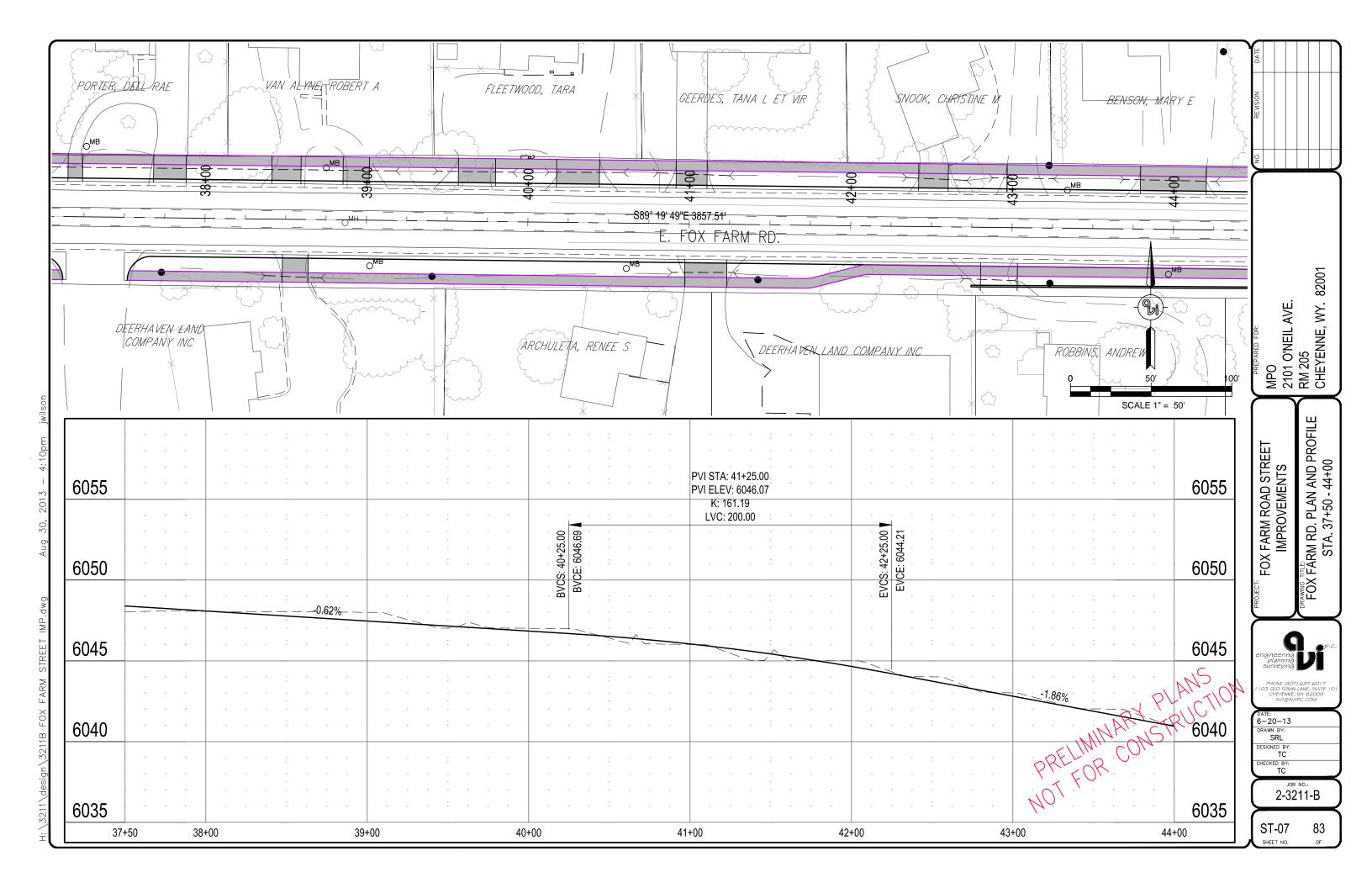


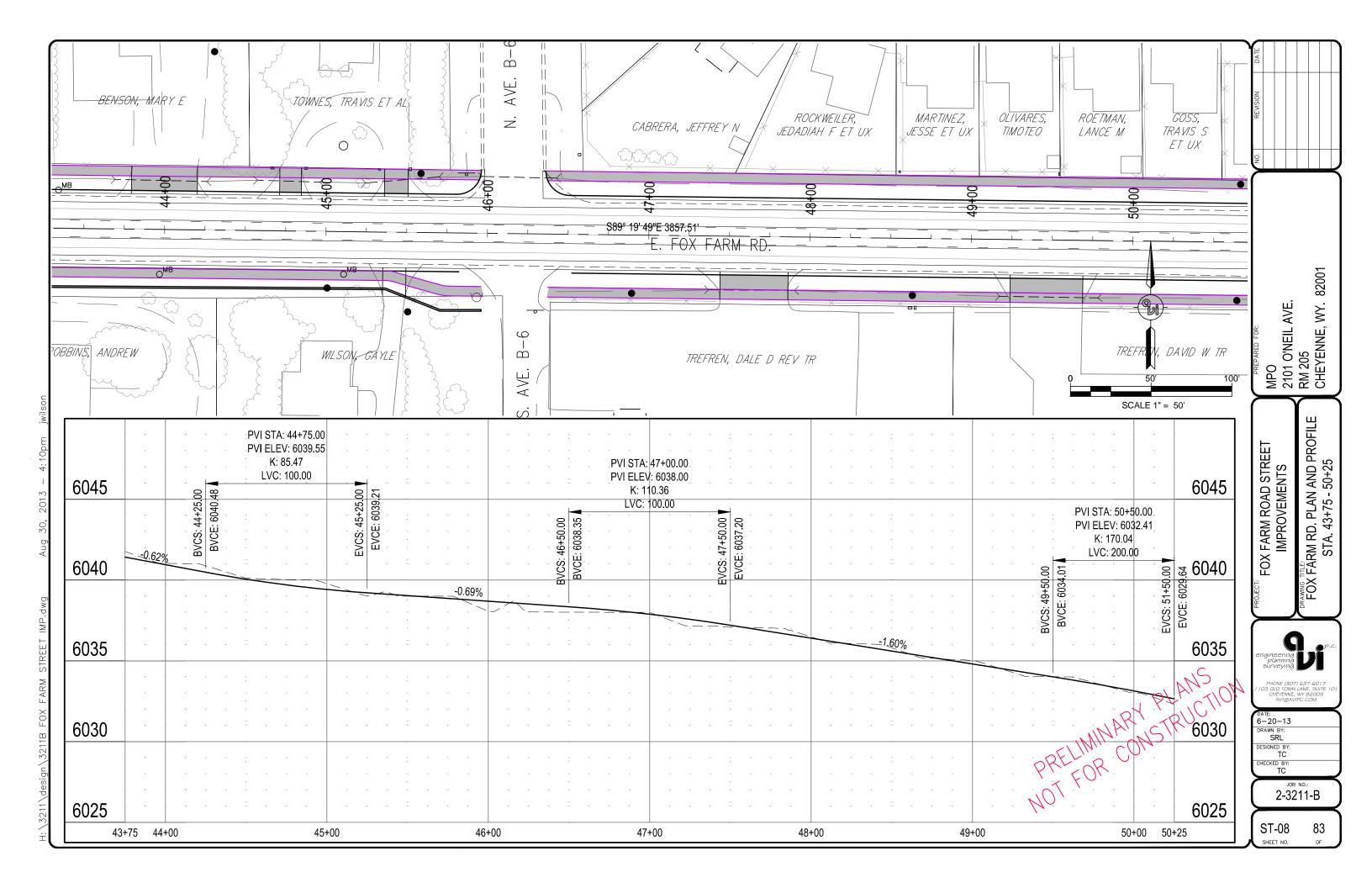


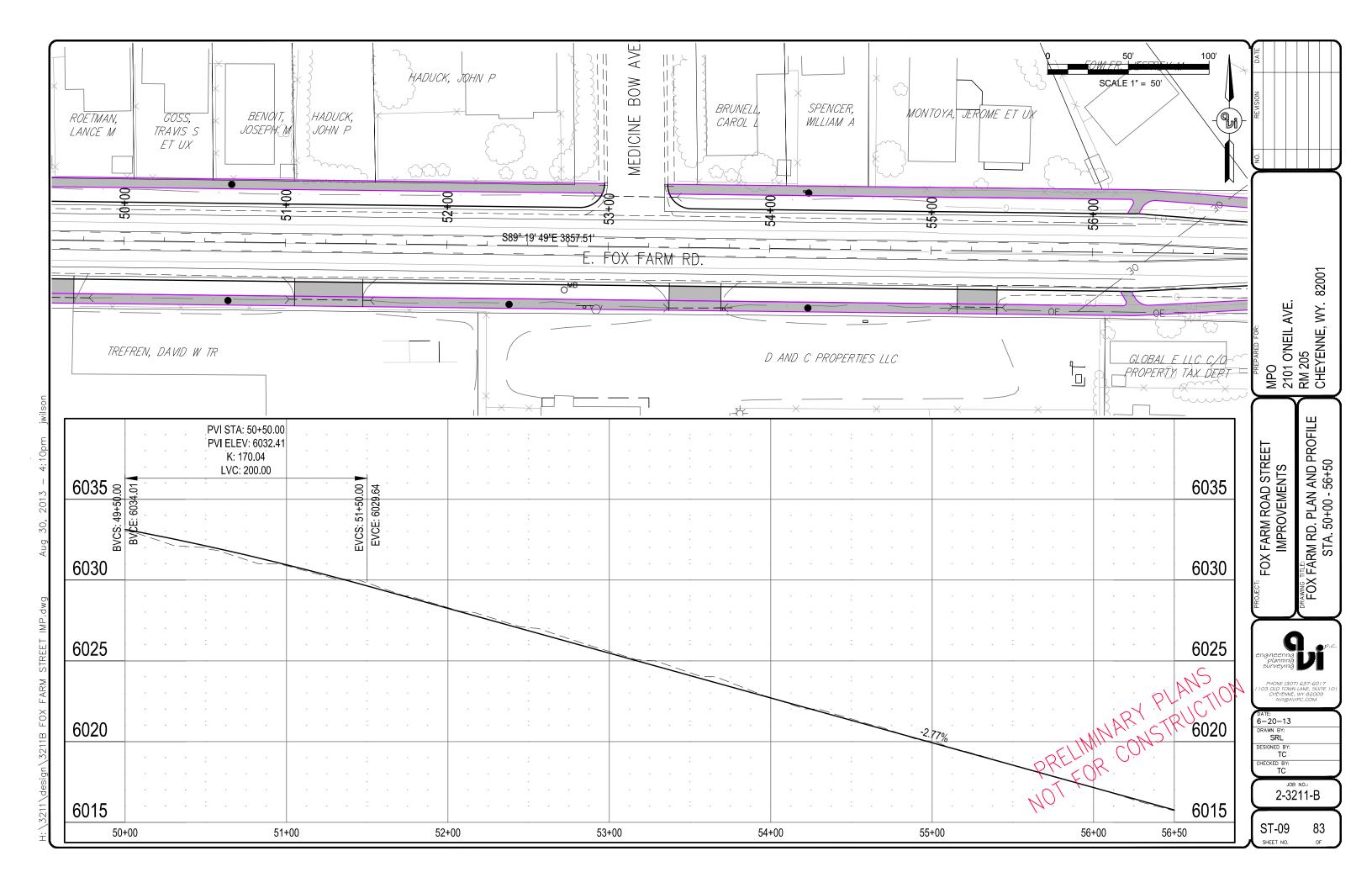


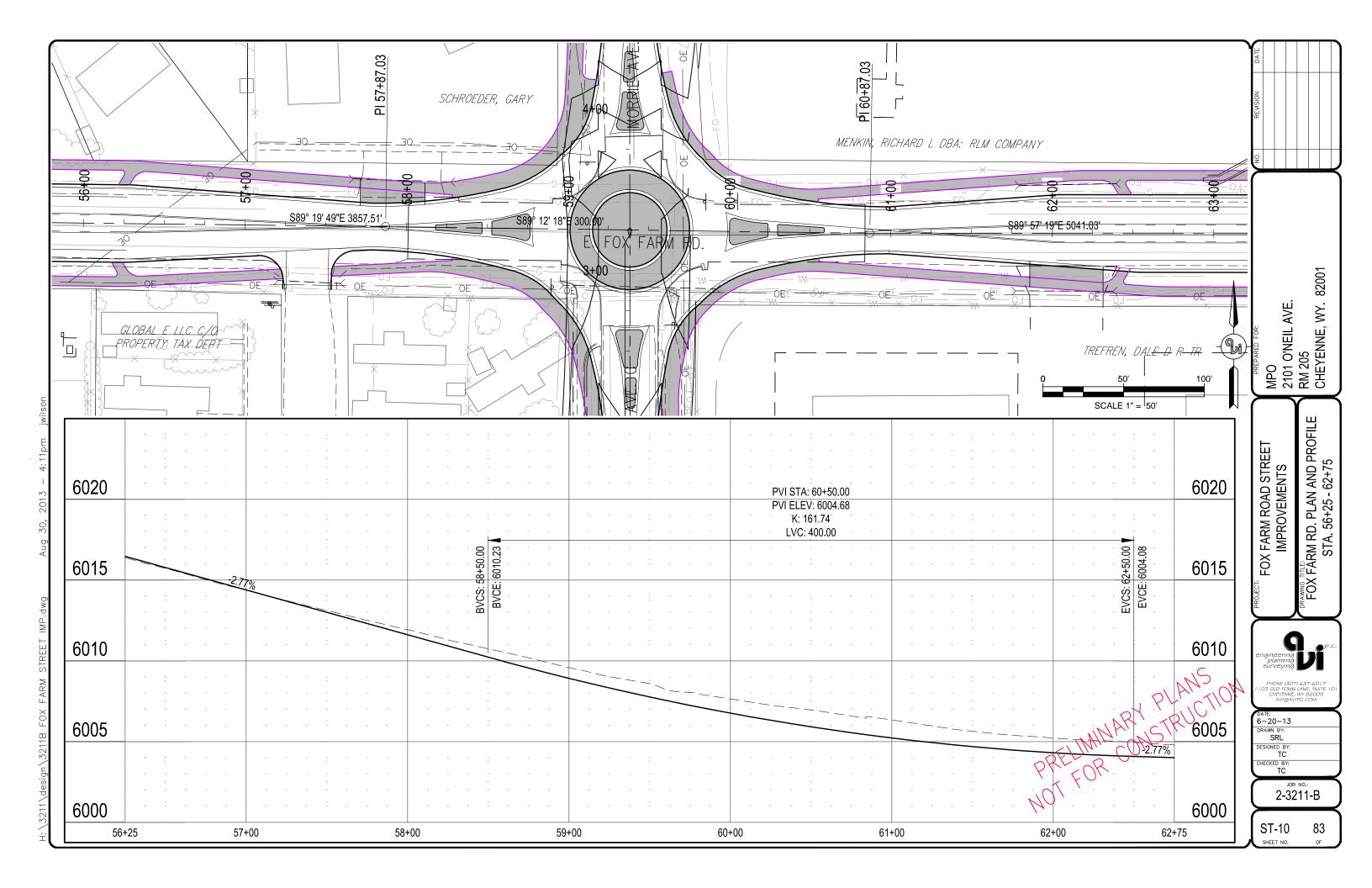


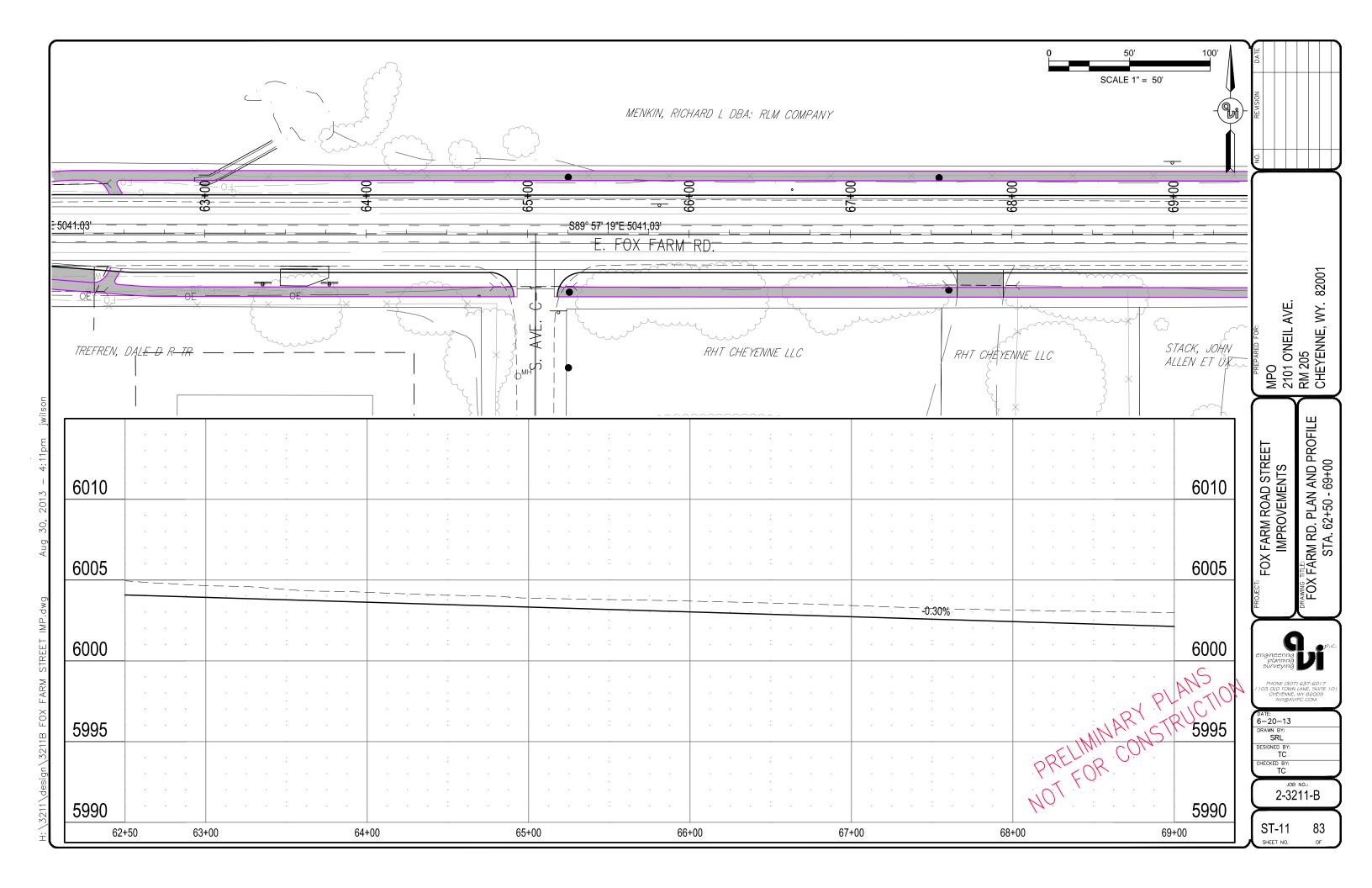


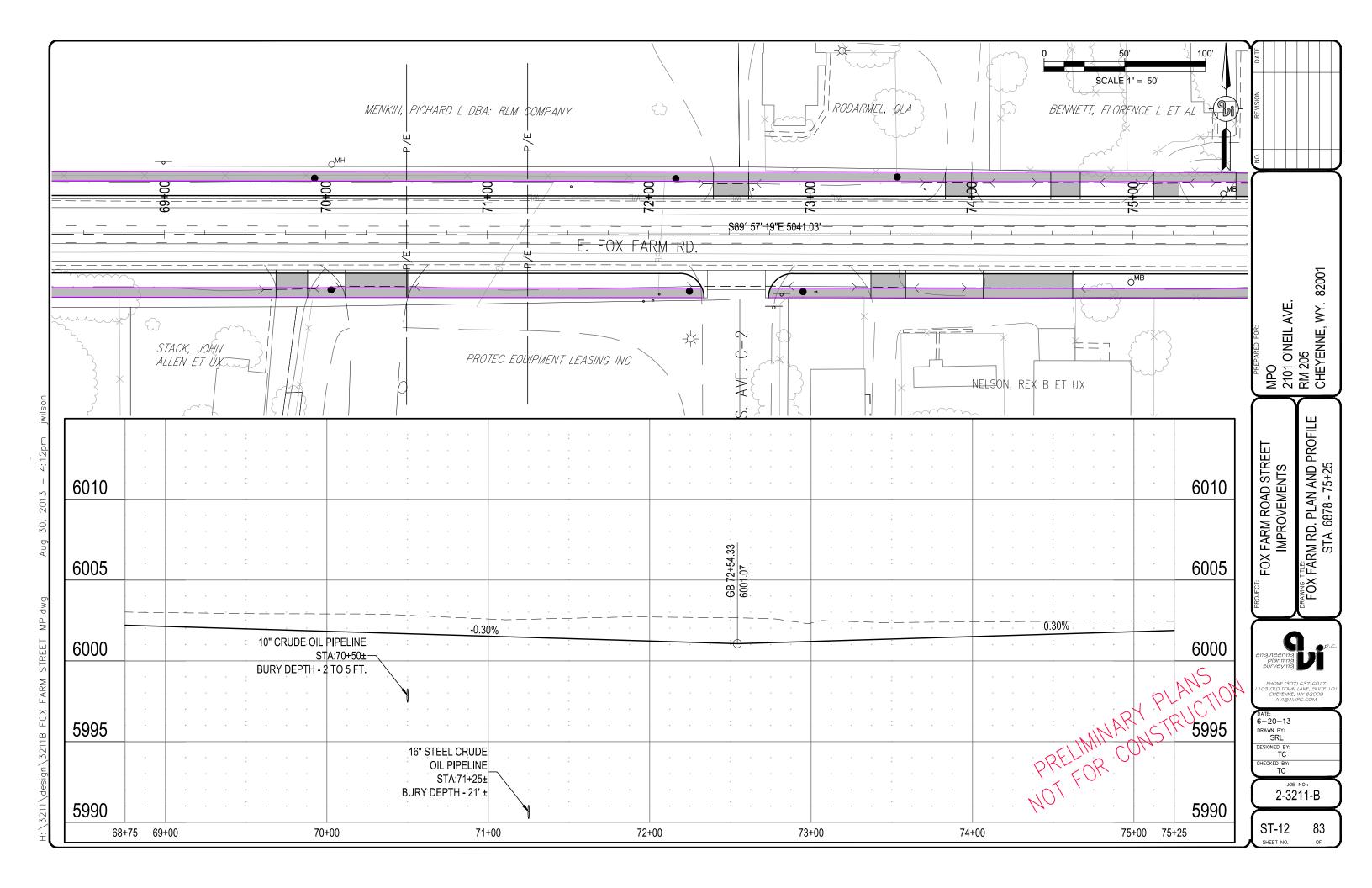


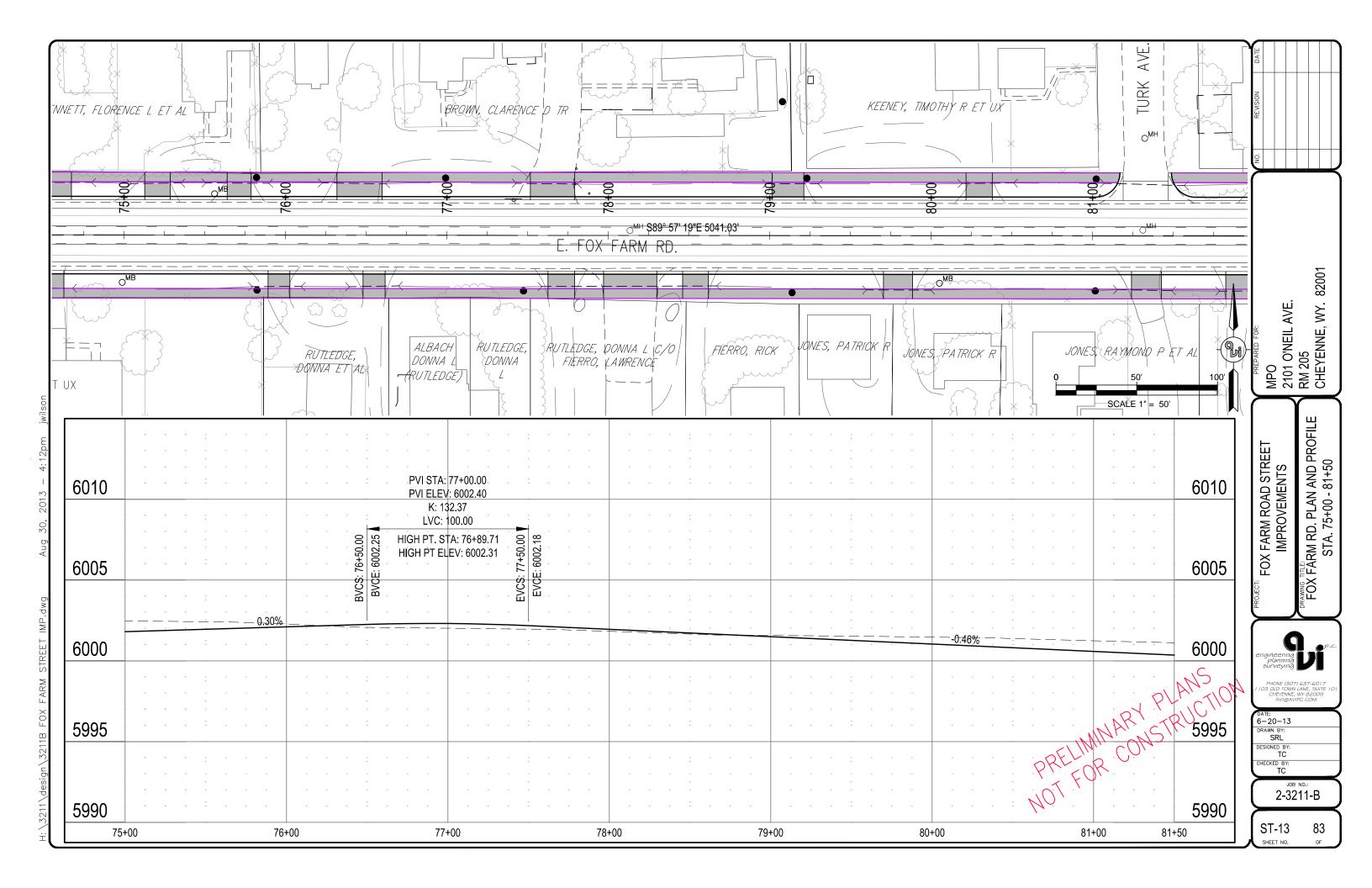


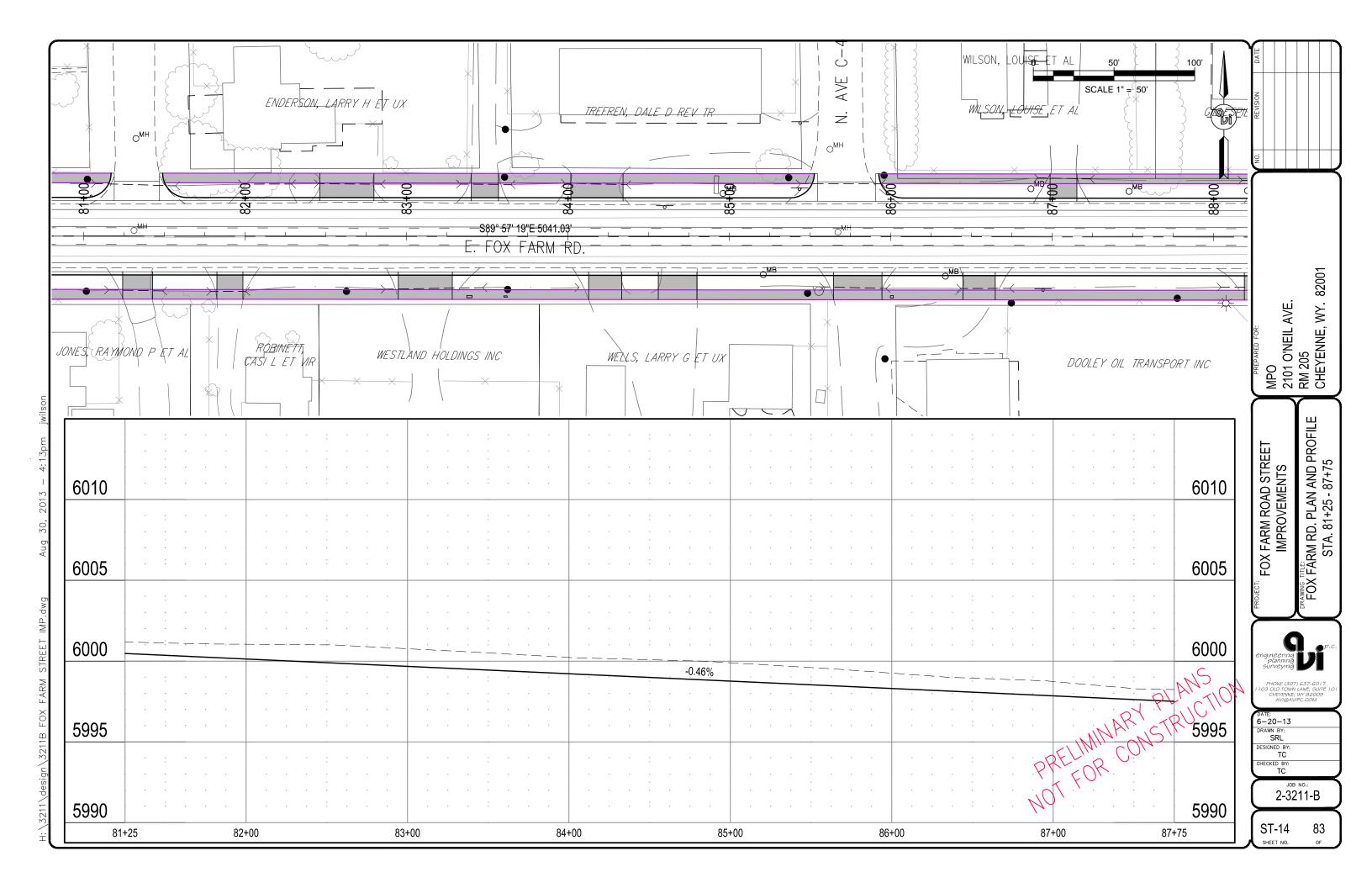


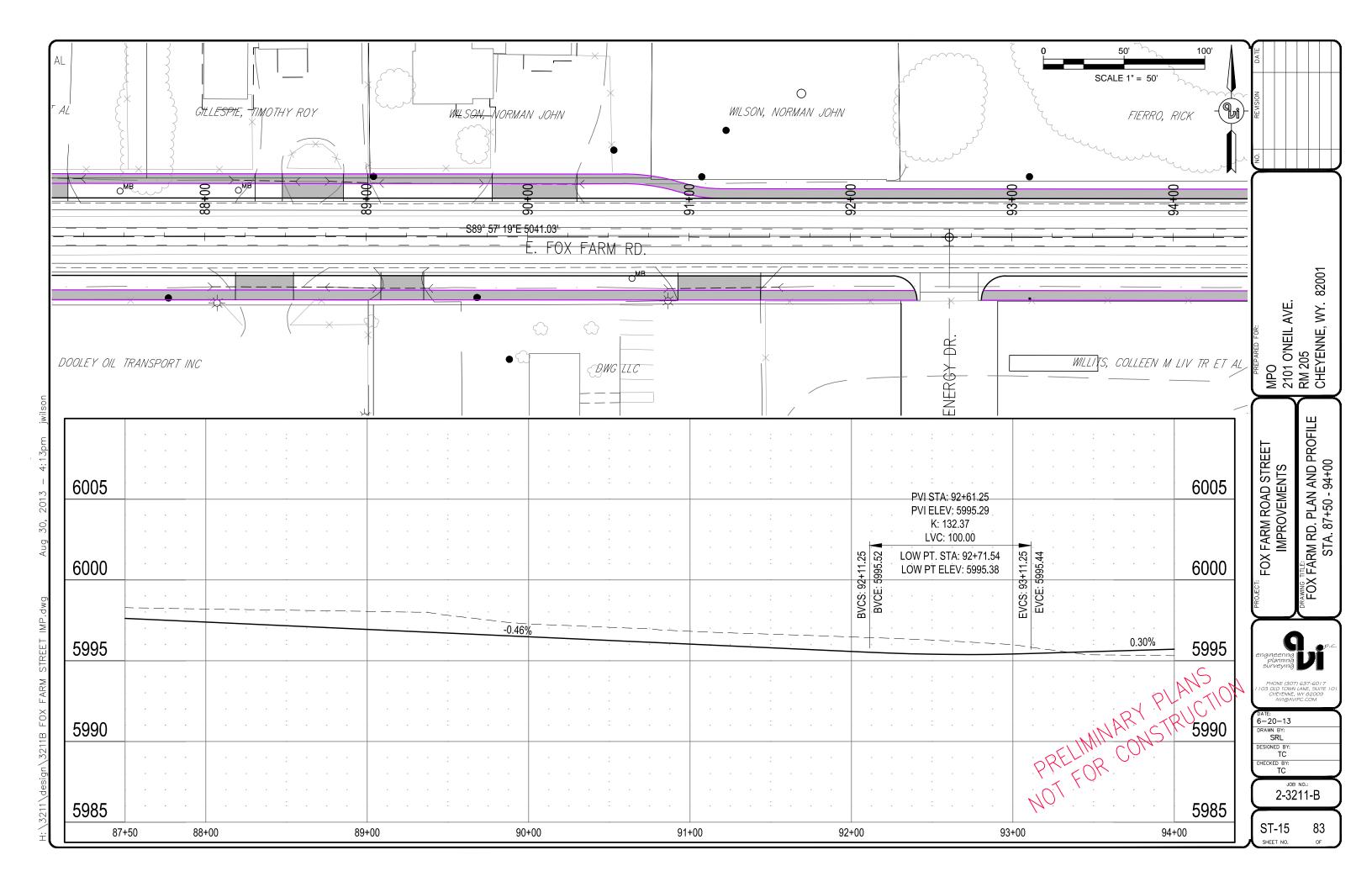


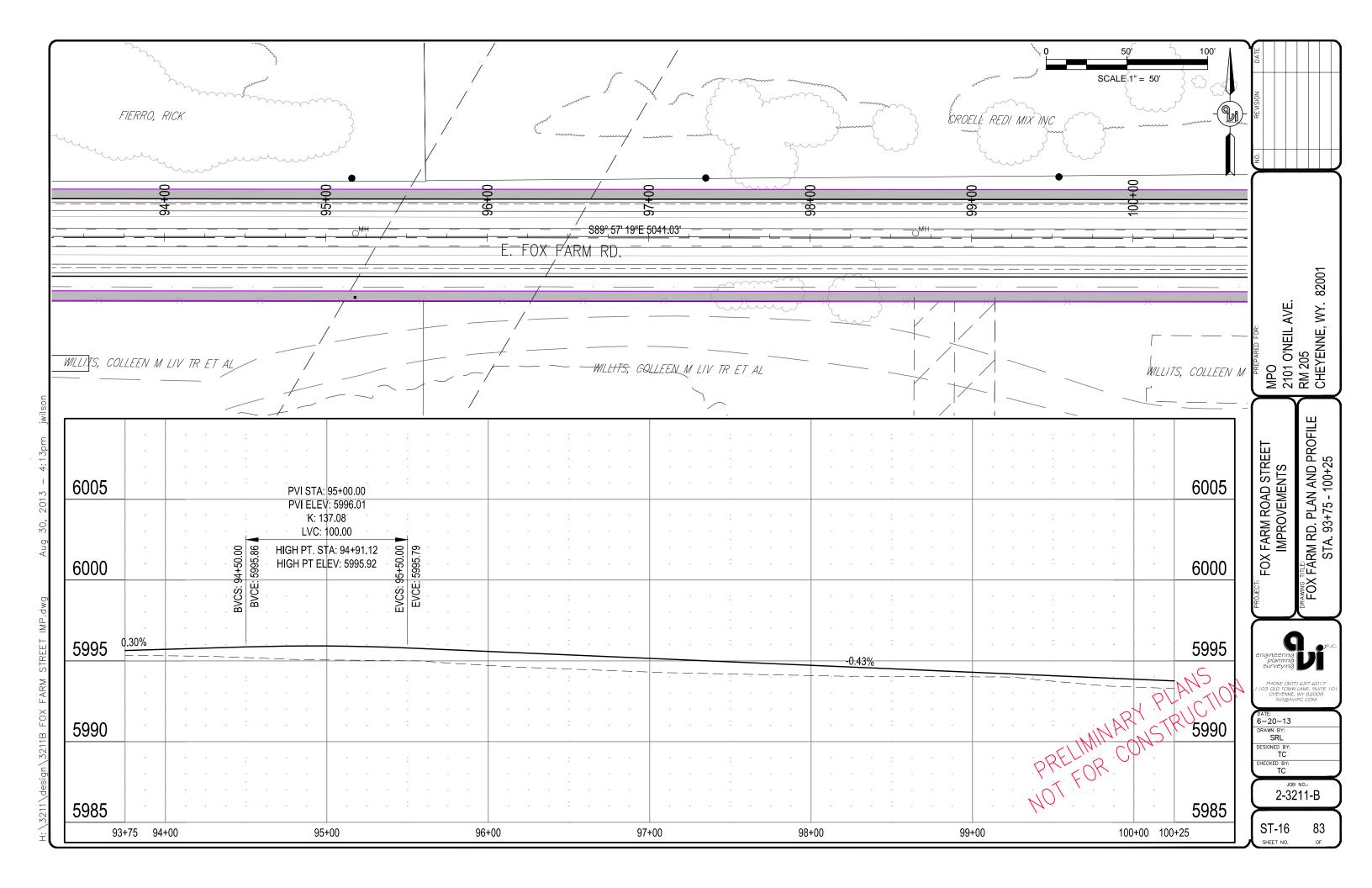


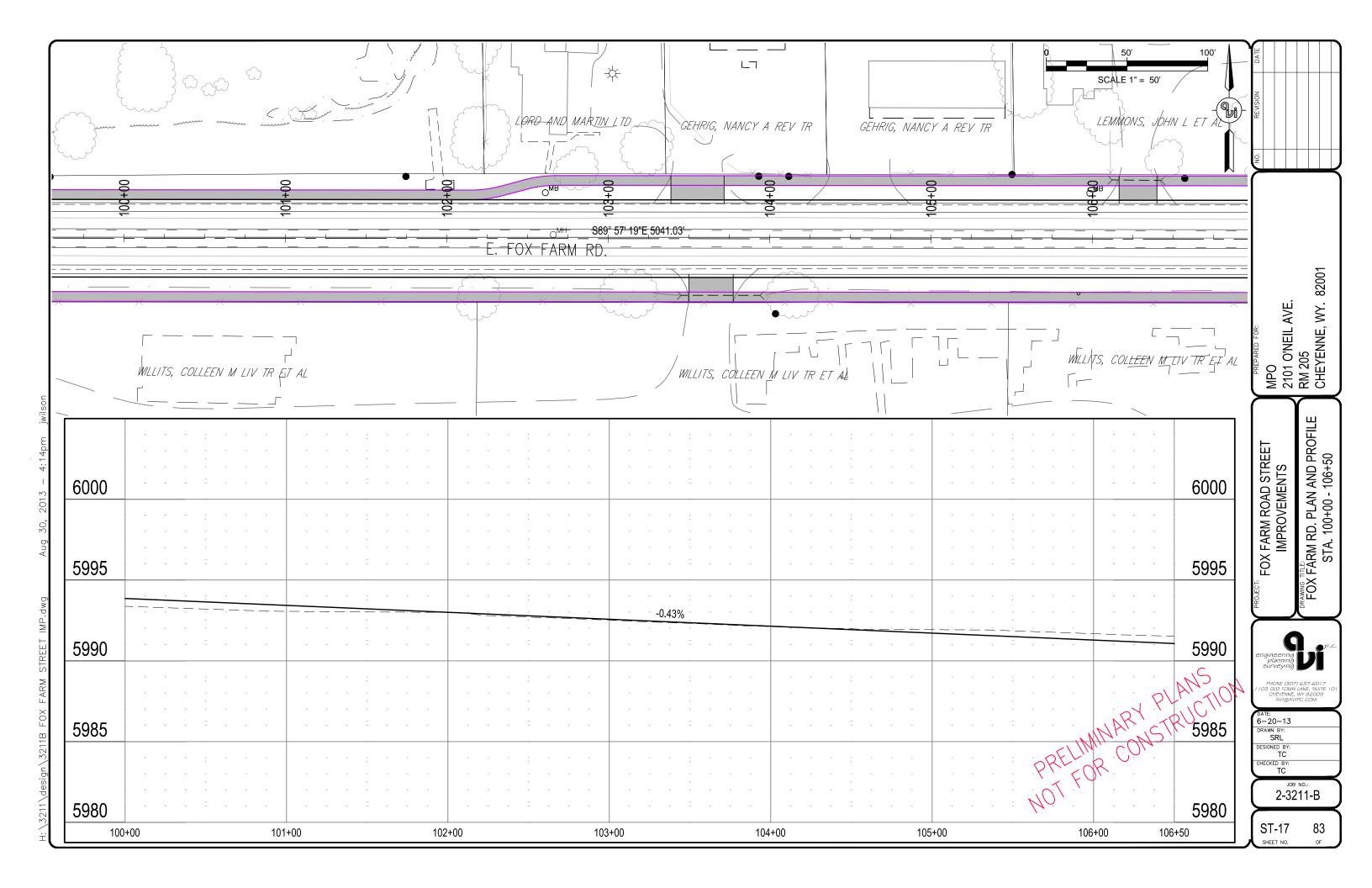


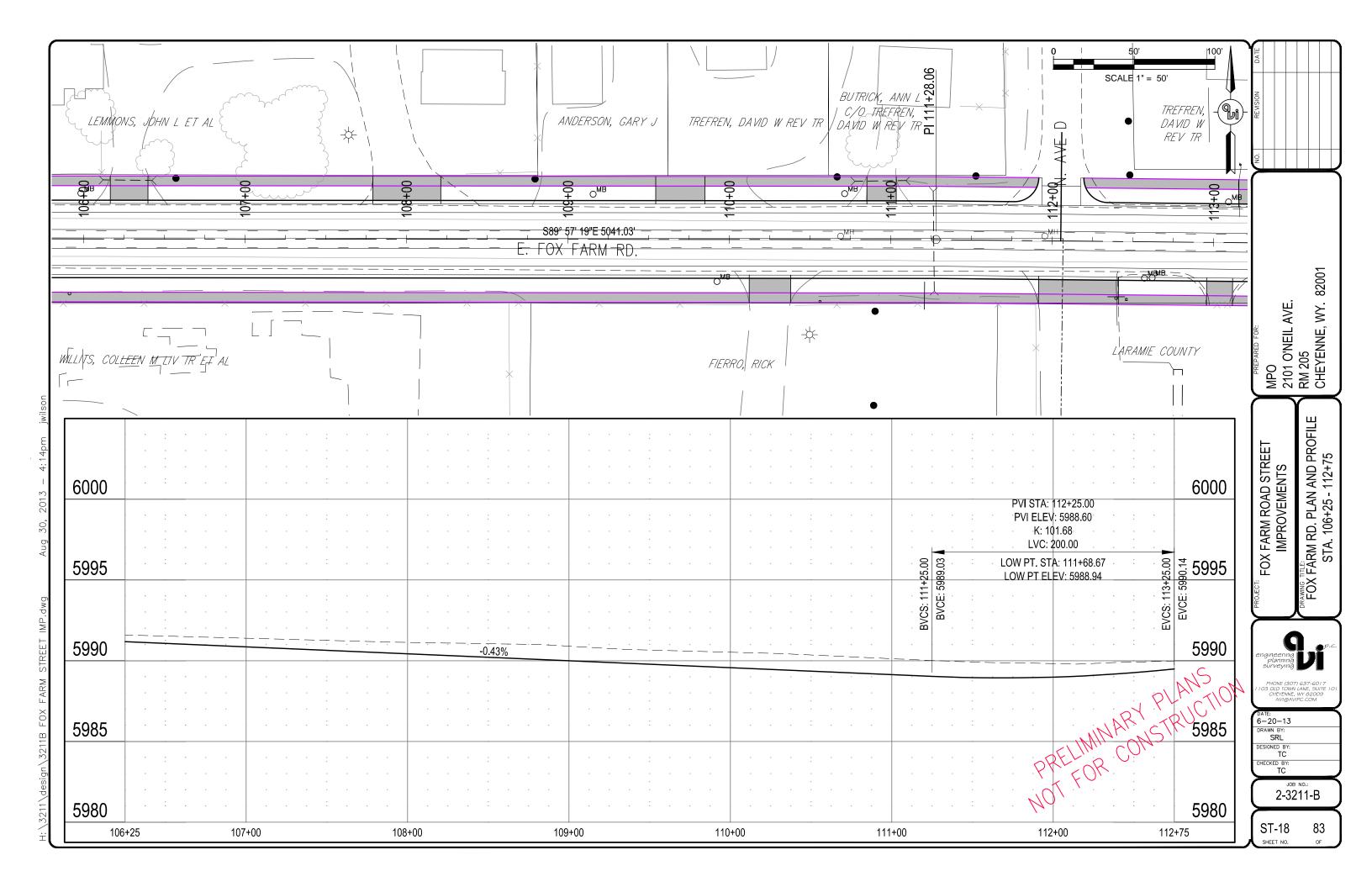


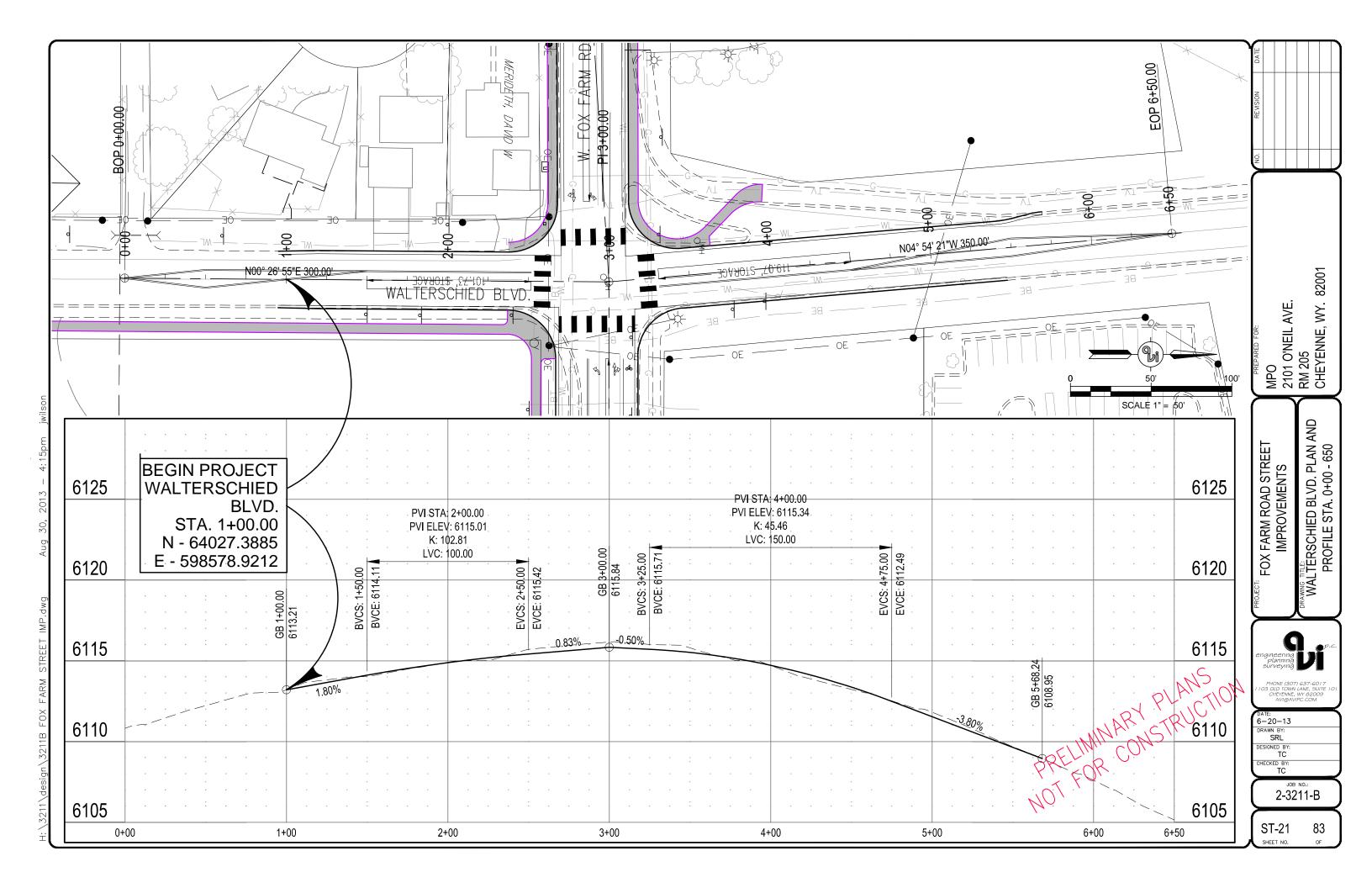


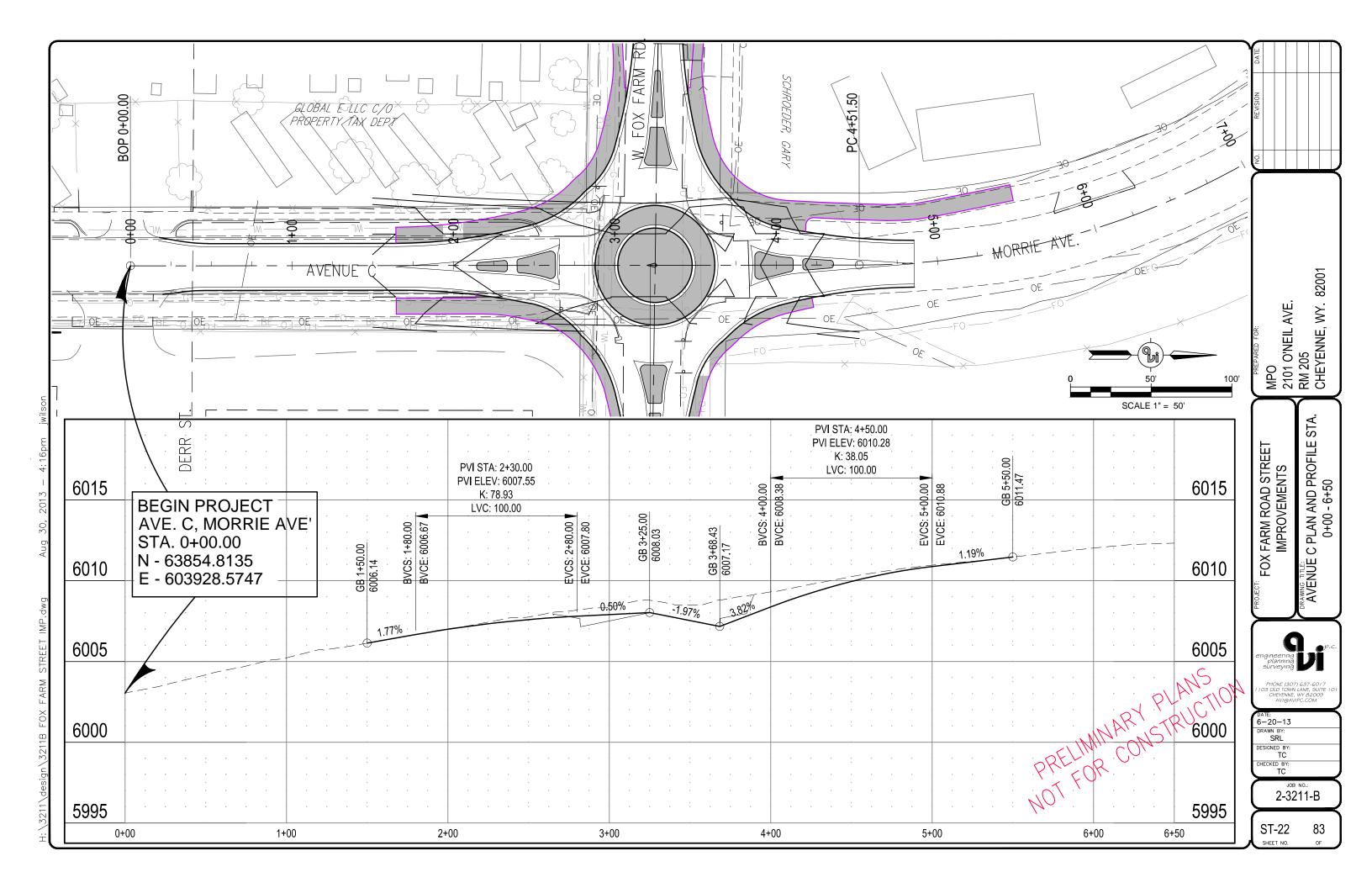


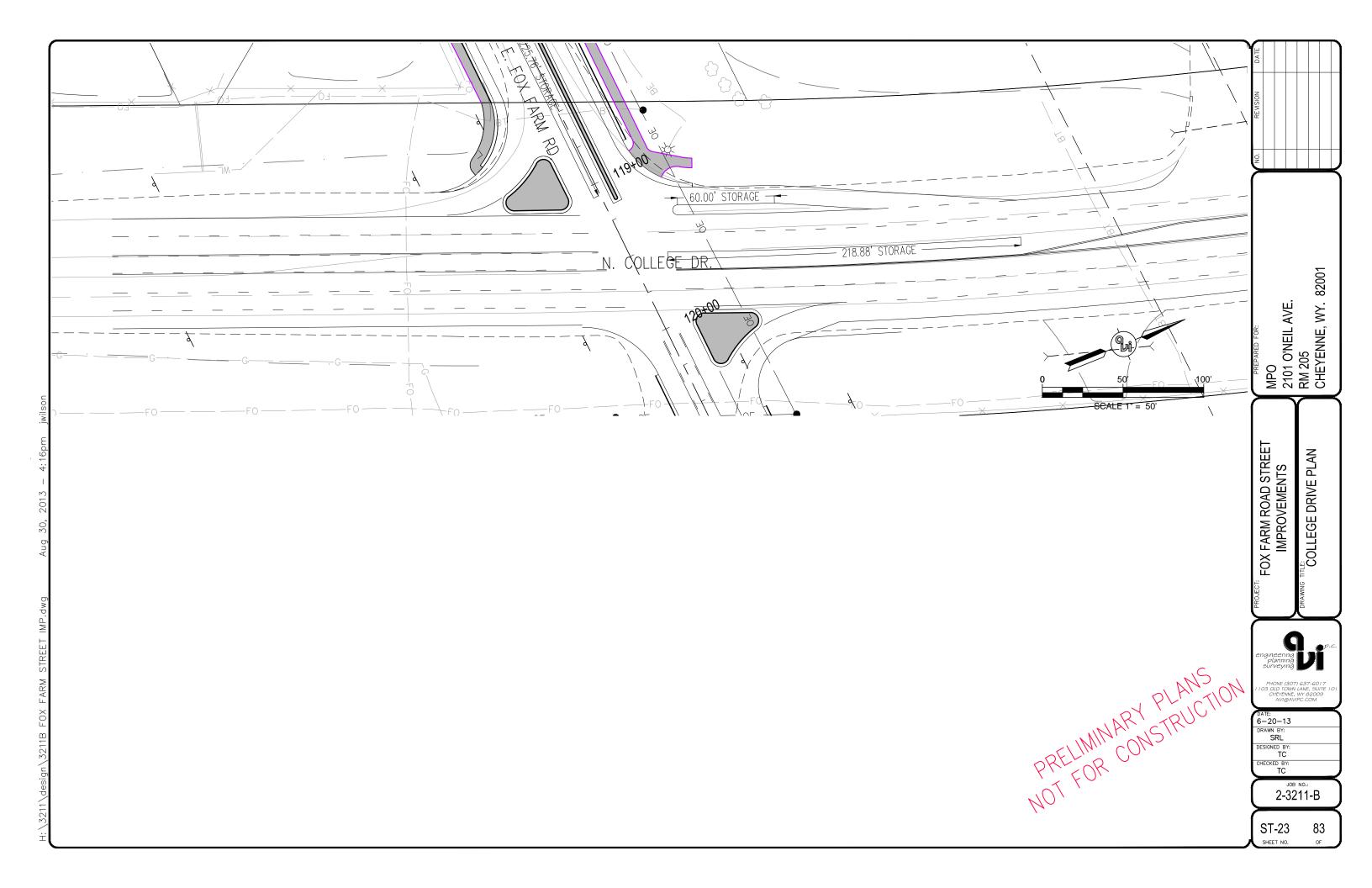


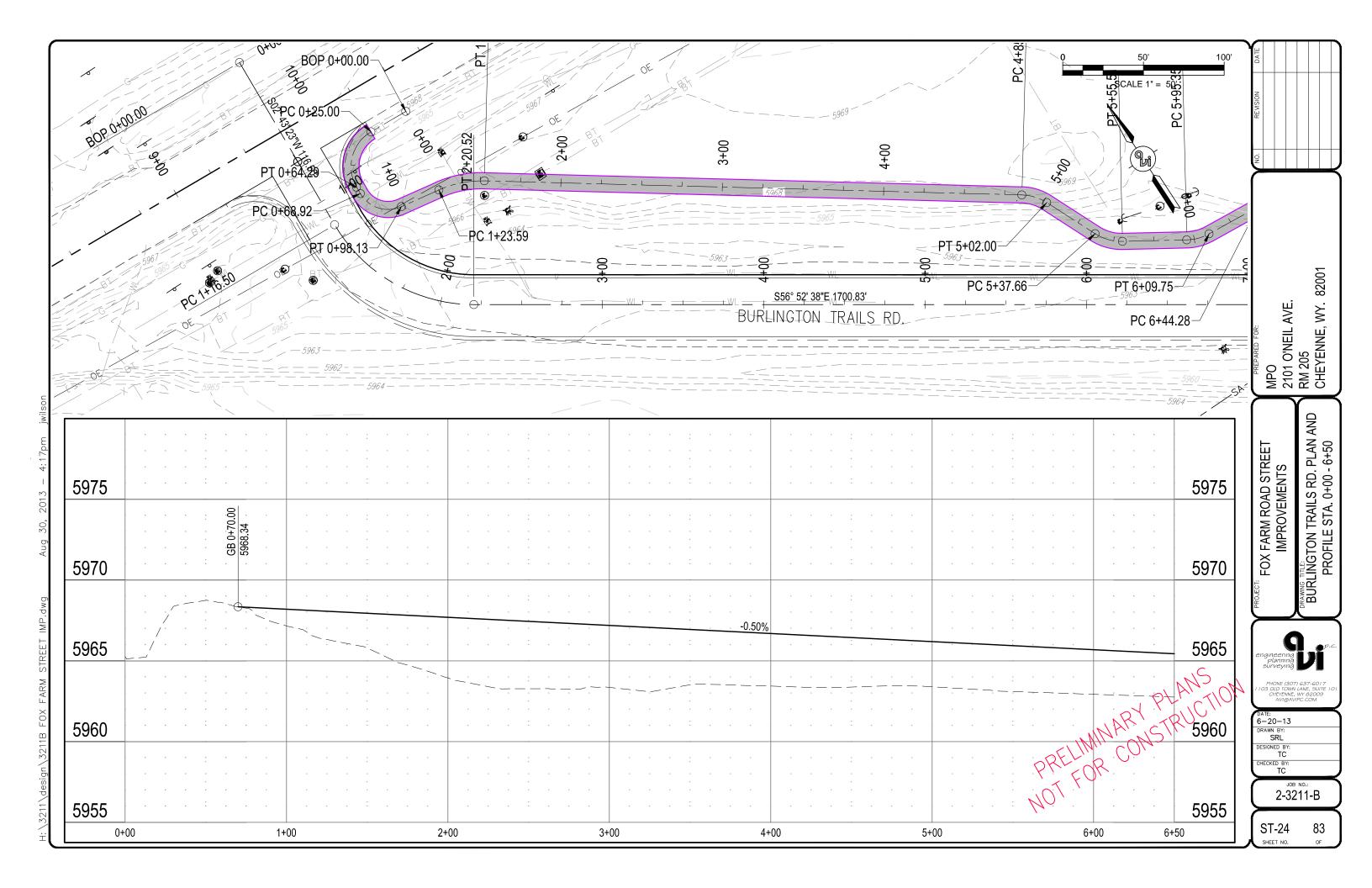


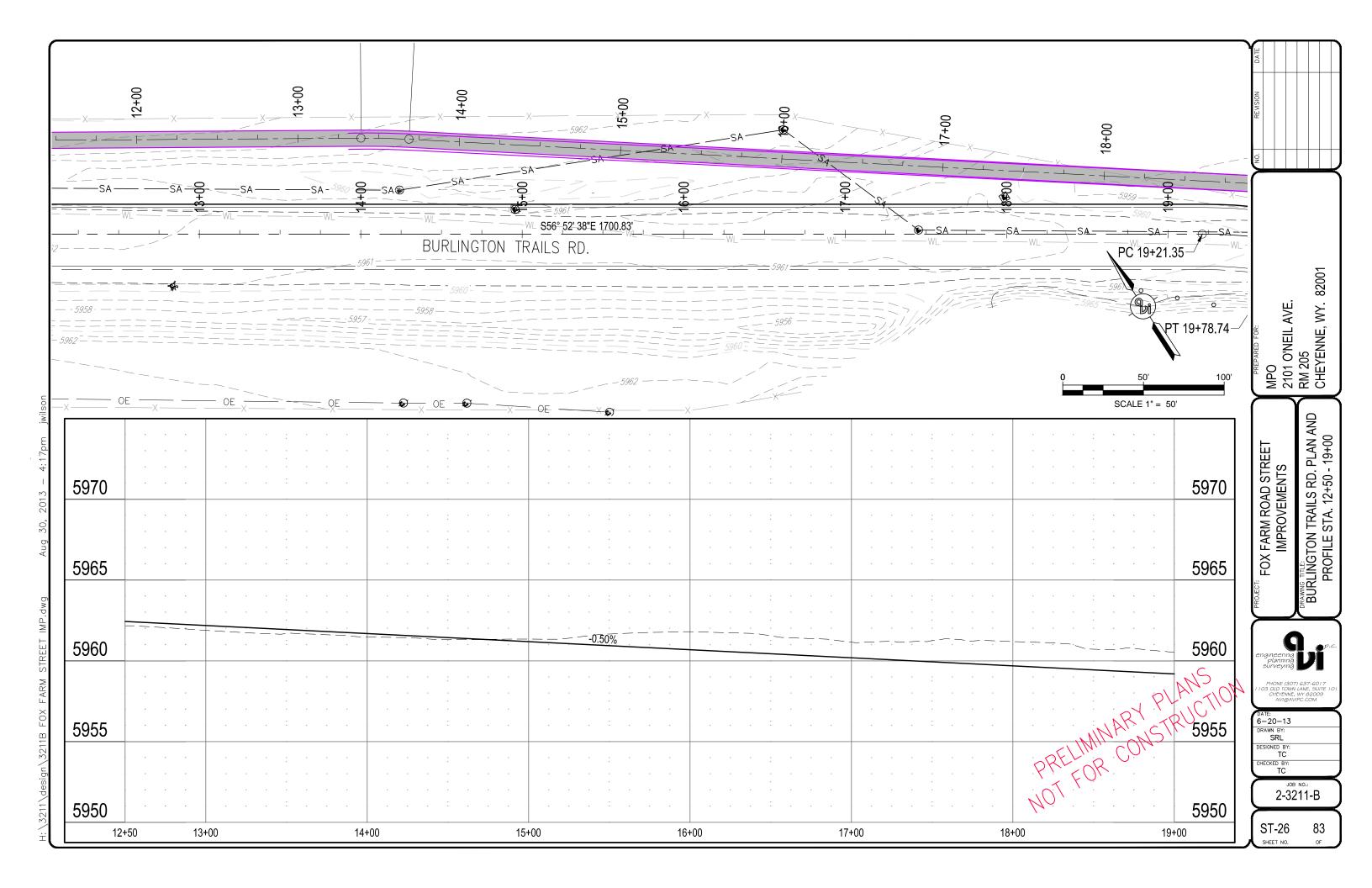


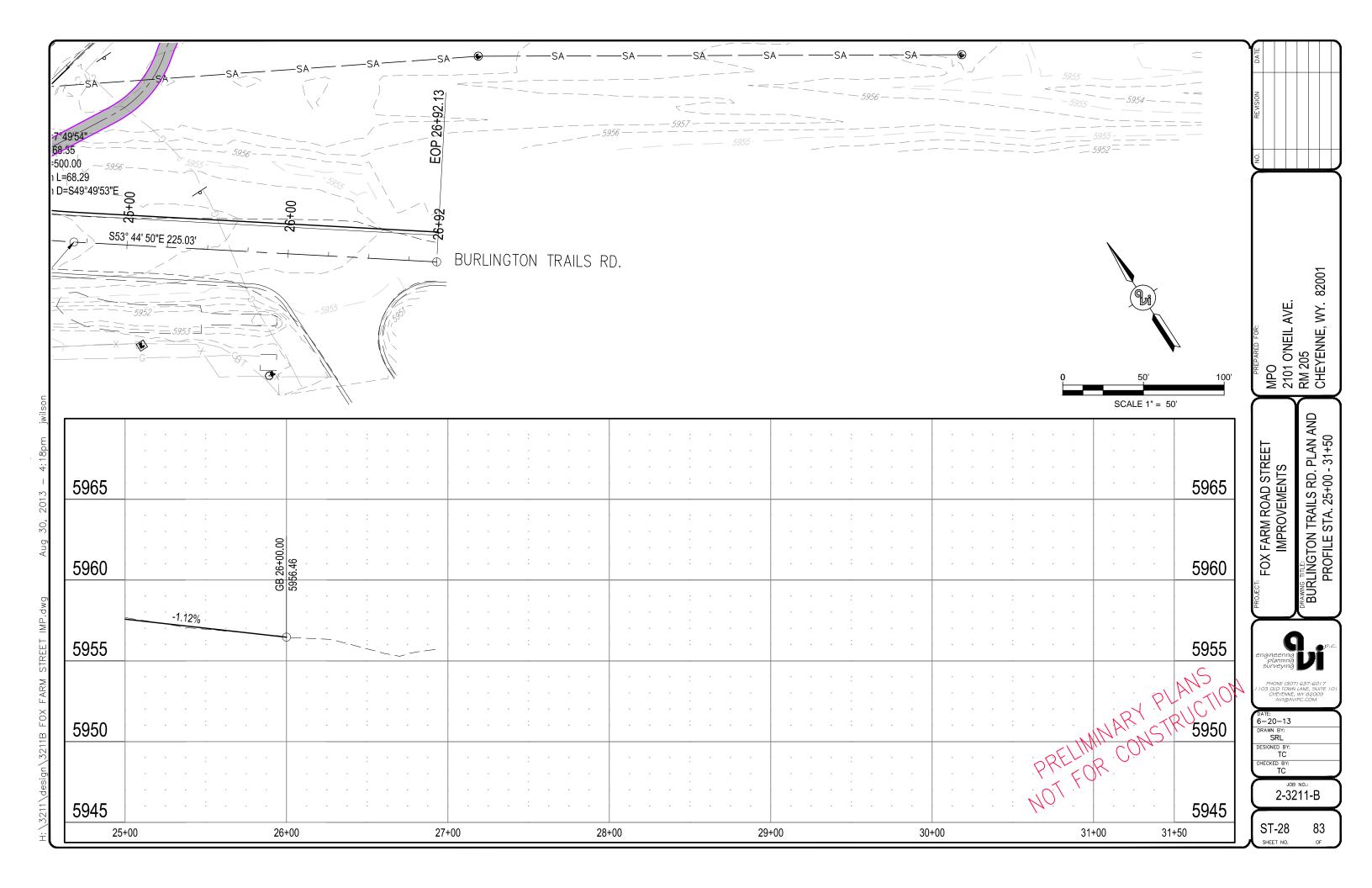


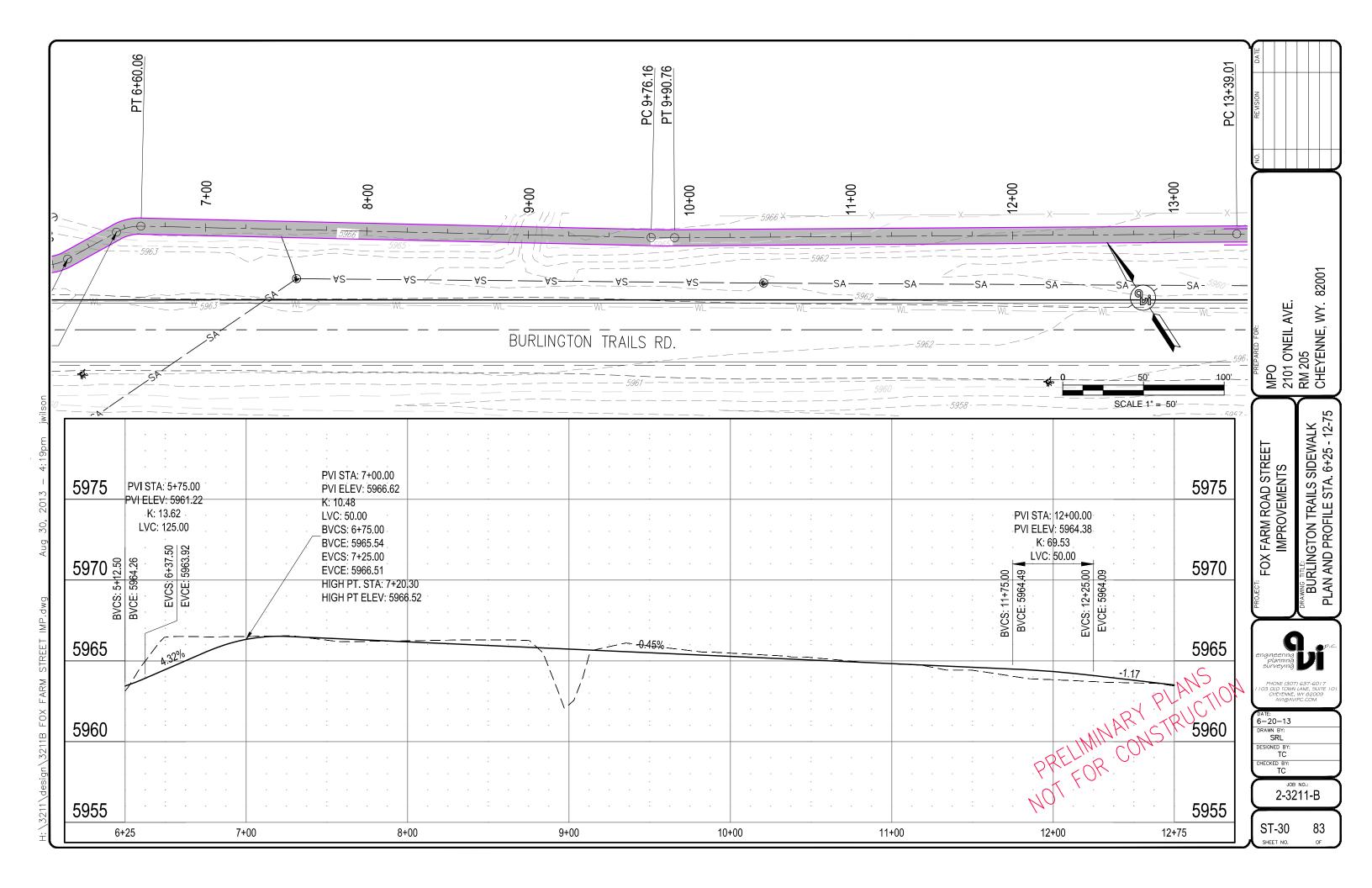


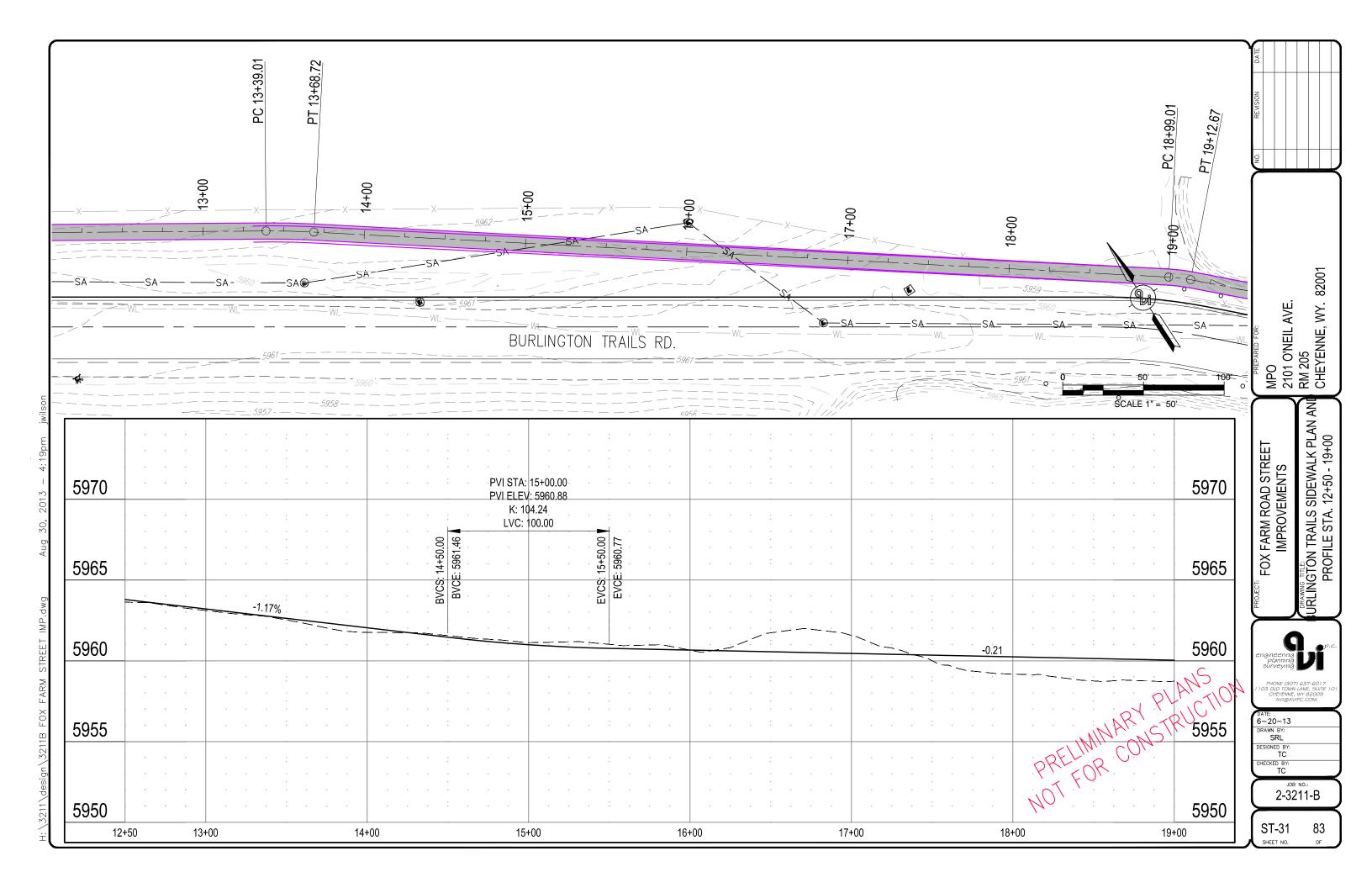


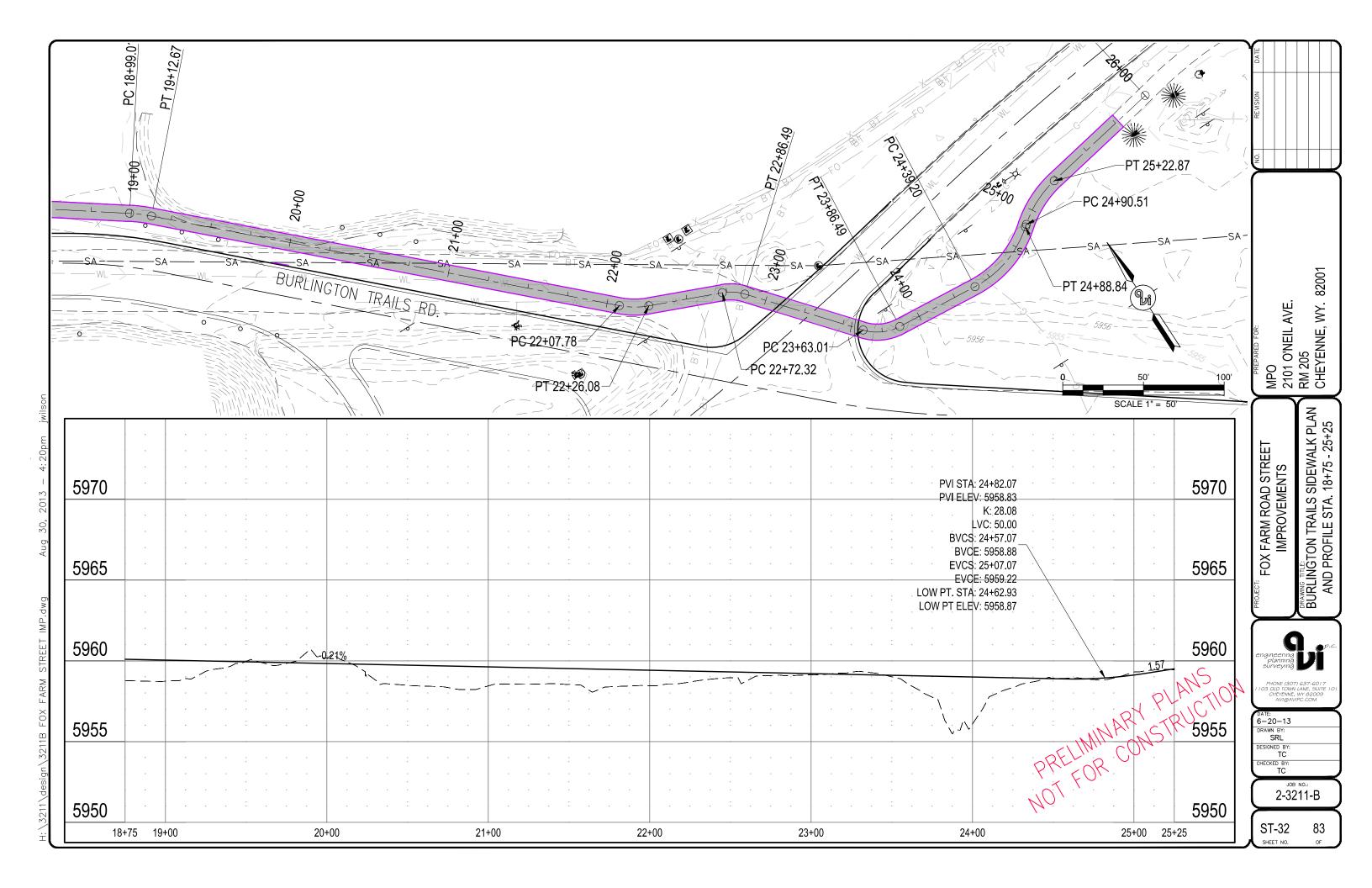


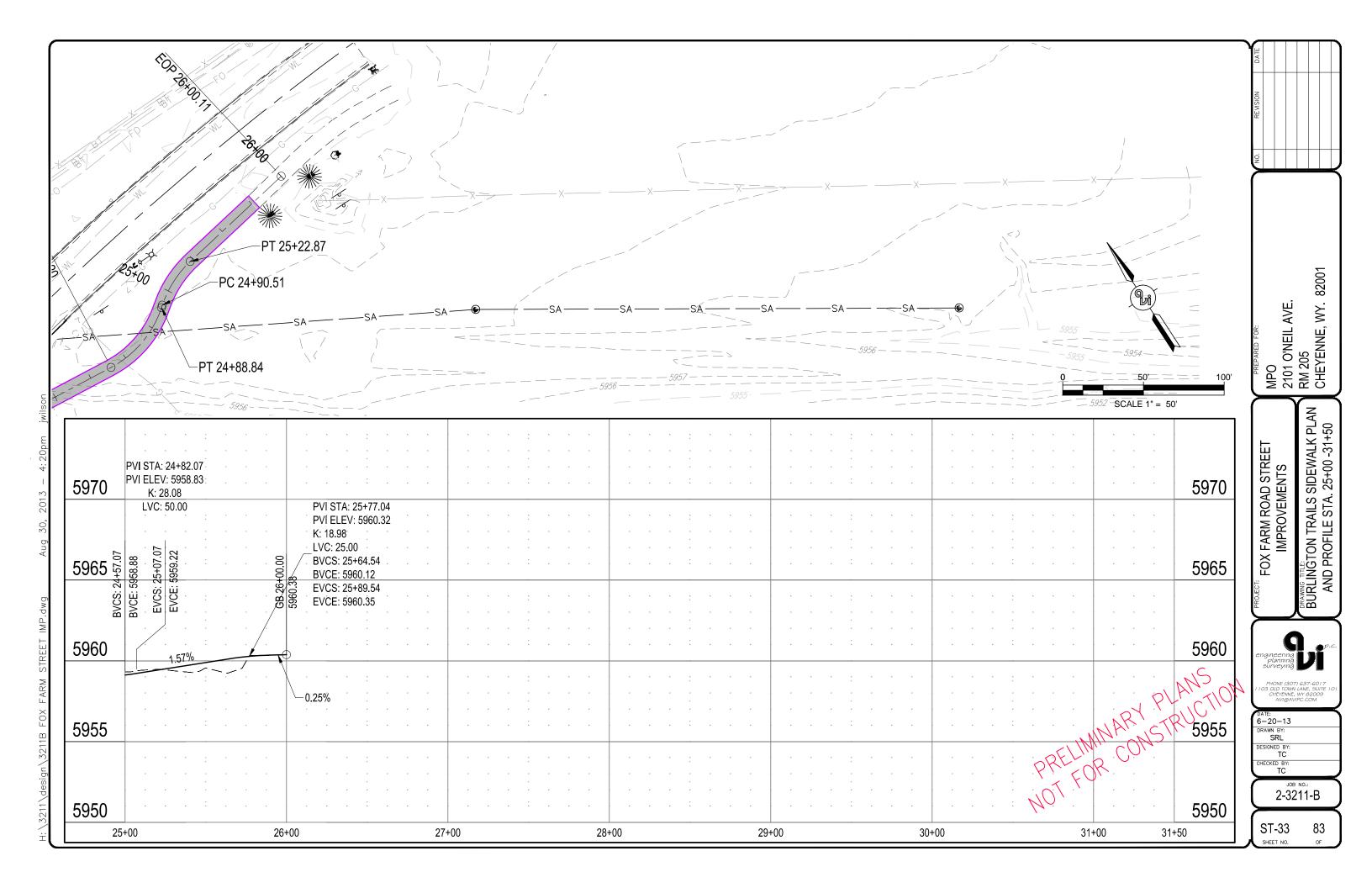


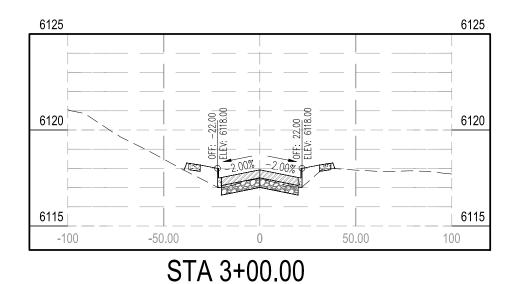


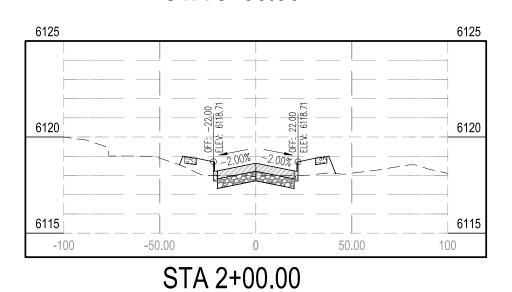


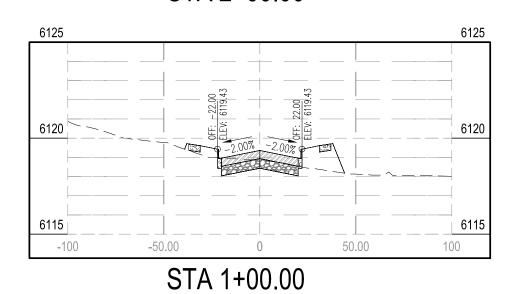


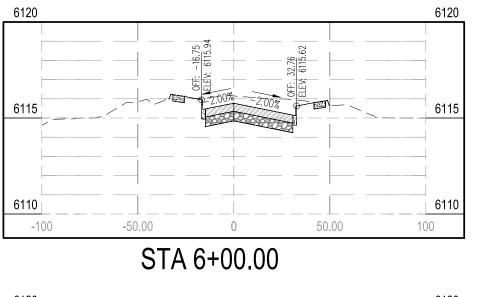


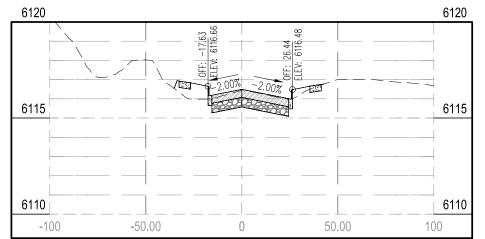




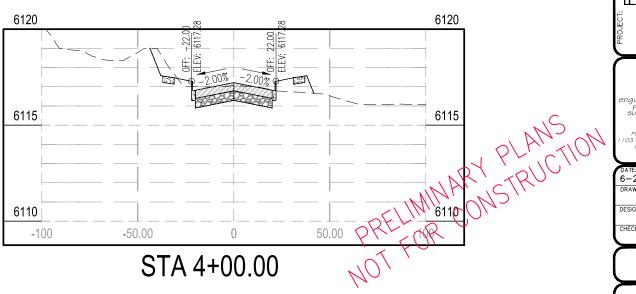








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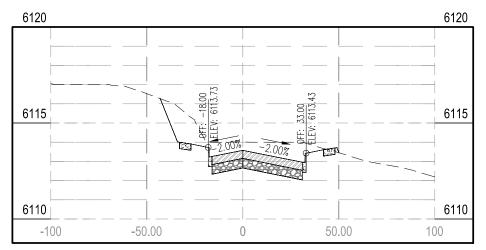


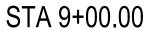
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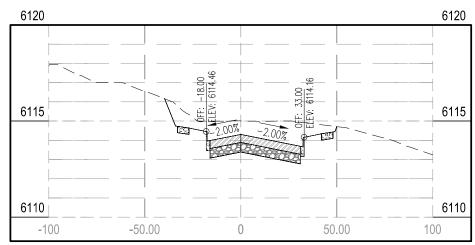
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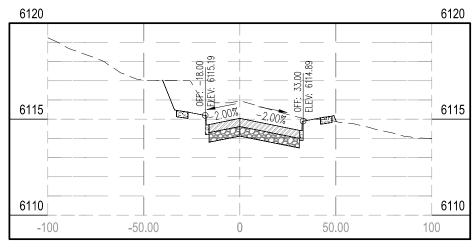
FOX FARM ROAD STREET IMPROVEMENTS



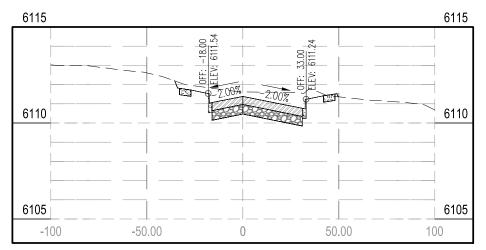




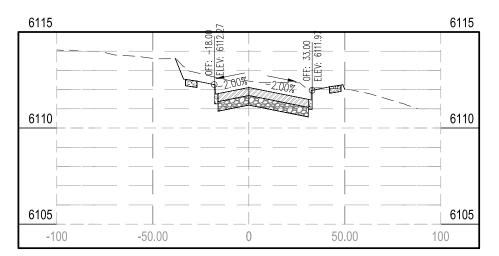
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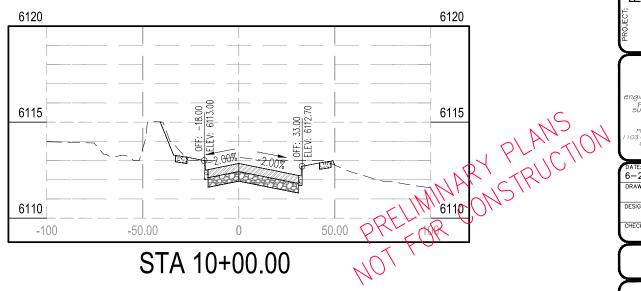
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STA 10+00.00

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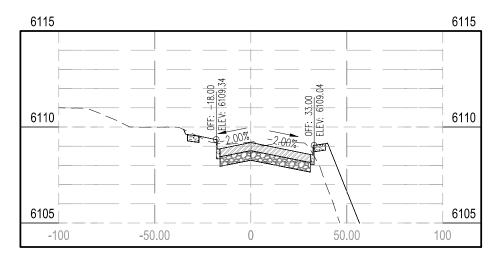


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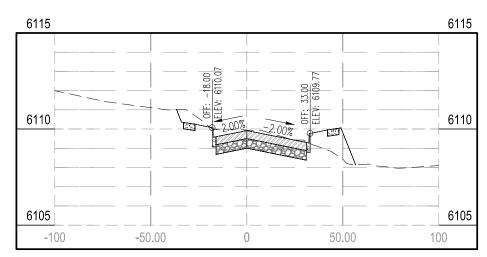
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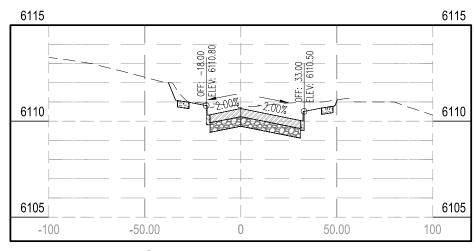
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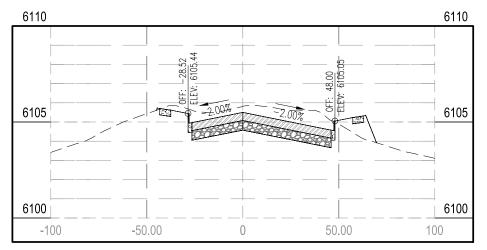
STA 15+00.00



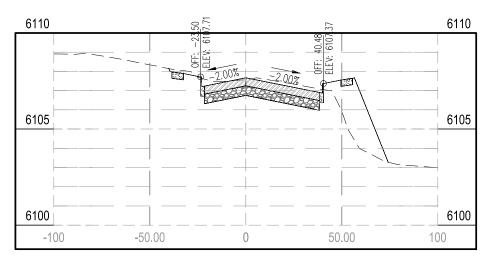
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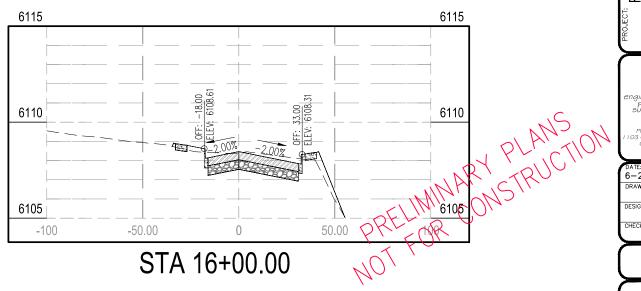
STA 13+00.00



STA 18+00.00



STA 17+00.00



STA 16+00.00

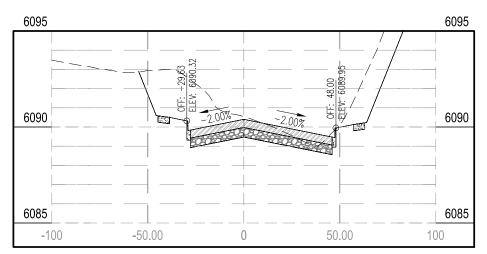
MINIC INTE: FOX FARM RD. CROSS SECTIONS STA. 13+00 - 18+00 FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

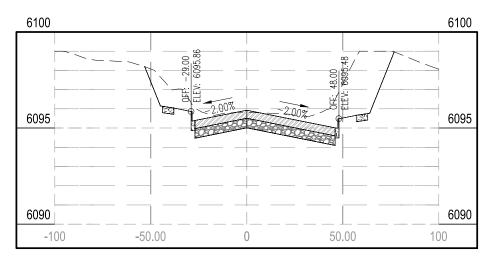
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
TC

2-3211-B

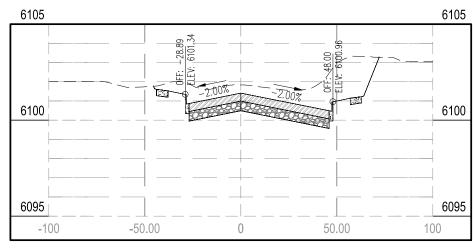
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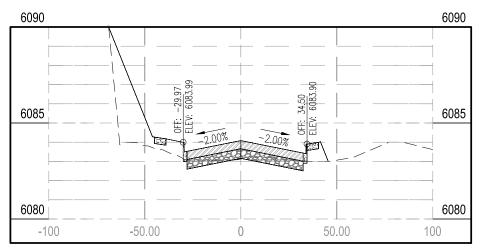
STA 21+00.00



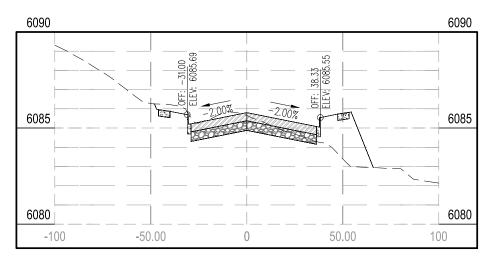
STA 20+00.00



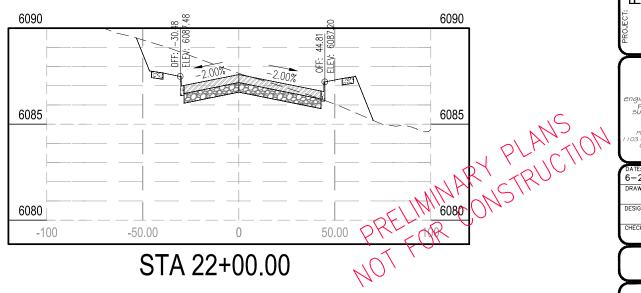
STA 19+00.00



STA 24+00.00



STA 23+00.00



STA 22+00.00

MINIC TITE: FOX FARM RD. CROSS SECTIONS STA. 19+00 - 24+00 PHONE (307) 637-601' 103 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

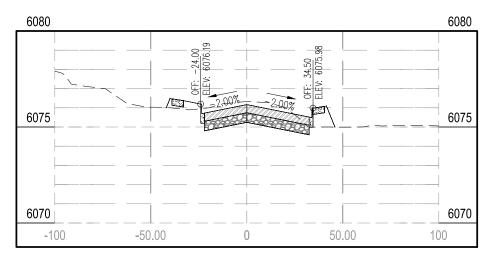
FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

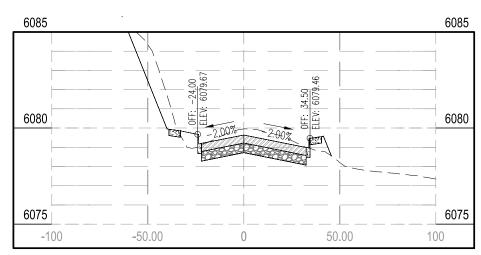
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
TC

2-3211-B

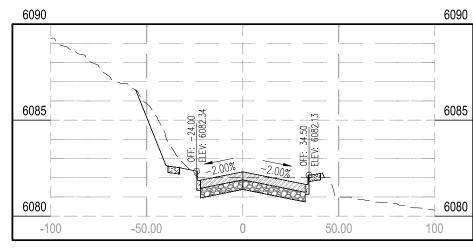
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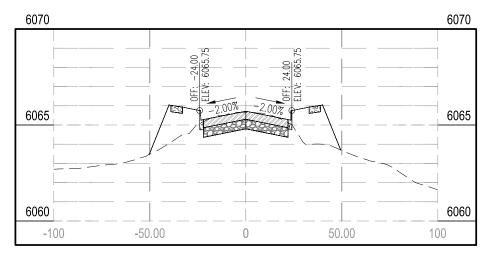
STA 27+00.00



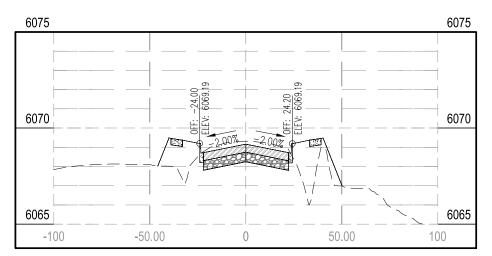
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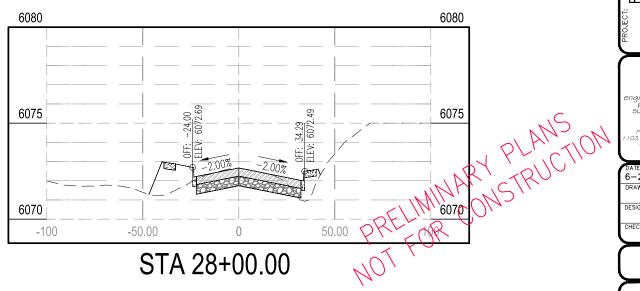
STA 25+00.00



STA 30+00.00



STA 29+00.00



STA 28+00.00

FOX FARM RD. CROSS SECTIONS STA. 25+00 - 30+00 FOX FARM ROAD STREET IMPROVEMENTS

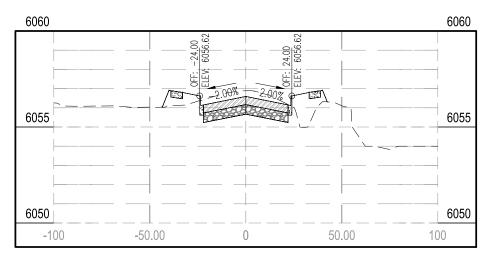
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

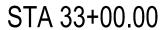
PHONE (307) 637-601' 103 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

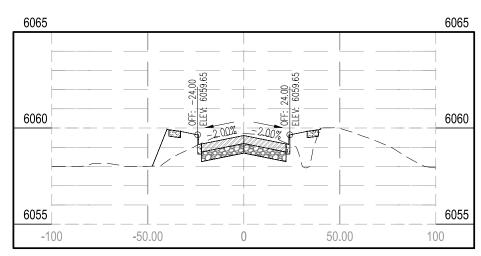
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

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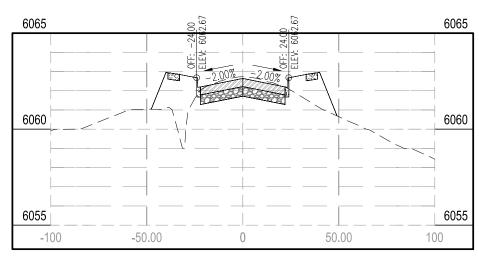
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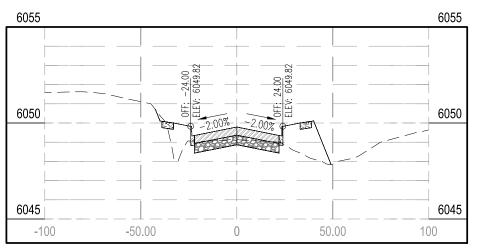




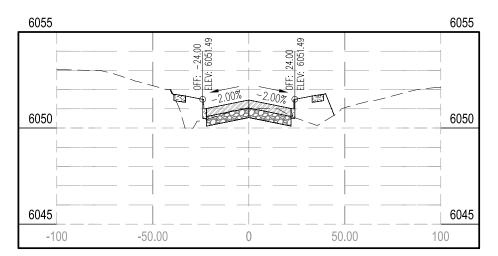
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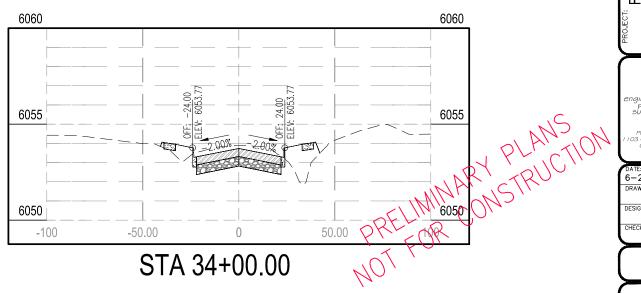
STA 31+00.00



STA 36+00.00



STA 35+00.00



STA 34+00.00

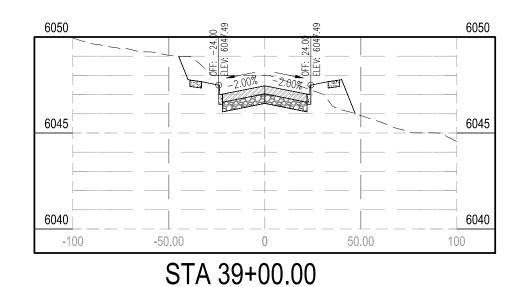
MINIC INTE: FOX FARM RD. CROSS SECTIONS STA. 31+00 - 36+00 FOX FARM ROAD STREET IMPROVEMENTS

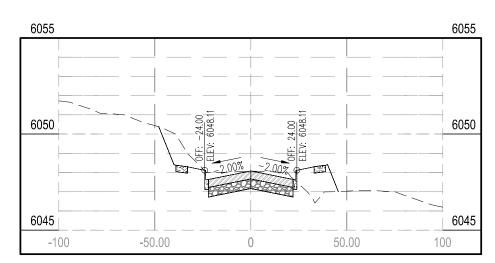
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

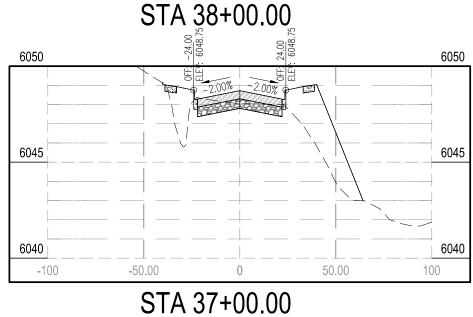
PHONE (307) 637-601' 103 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

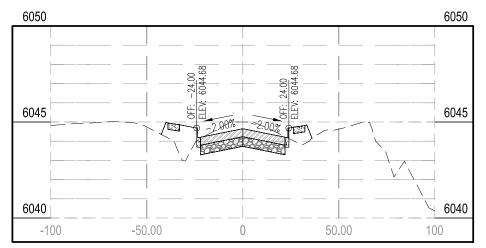
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

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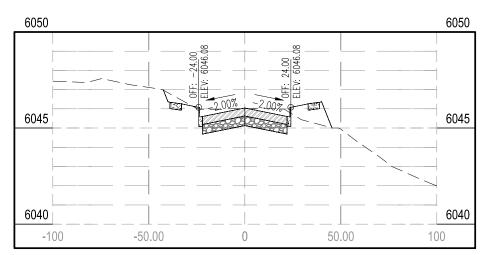




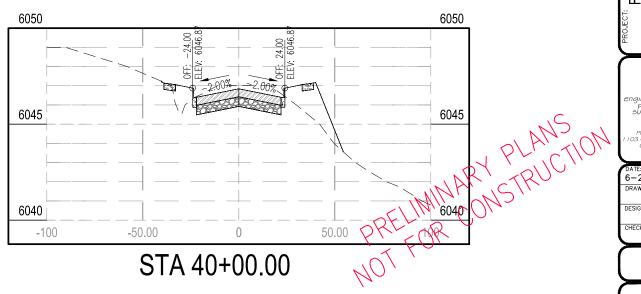




STA 42+00.00



STA 41+00.00



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FOX FARM ROAD STREET IMPROVEMENTS

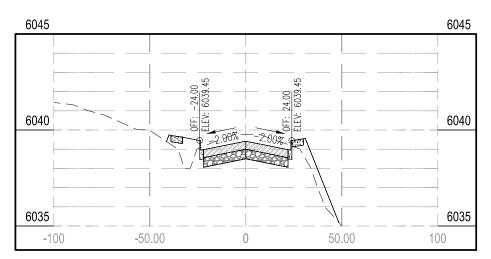
FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

DATE:
6-20-13
DRAWN BY:
SRL
DESIGNED BY:
TC
CHECKED BY:
TC

ов No.: 2-3211-В

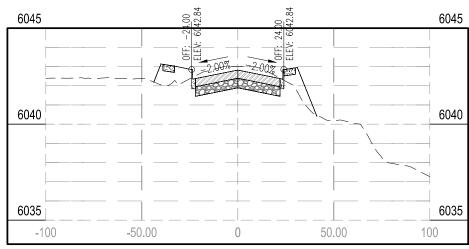
XS-07 83

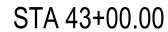


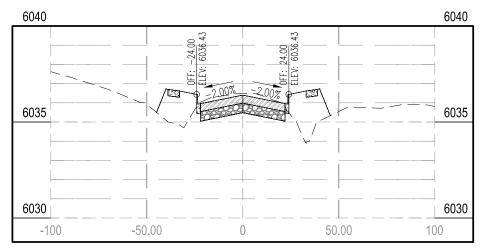
STA 45+00.00



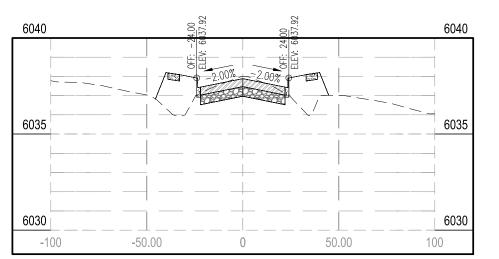
STA 44+00.00

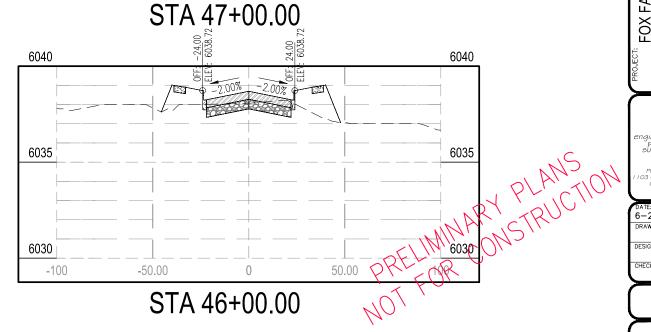






STA 48+00.00





STA 46+00.00

-50.00

-100

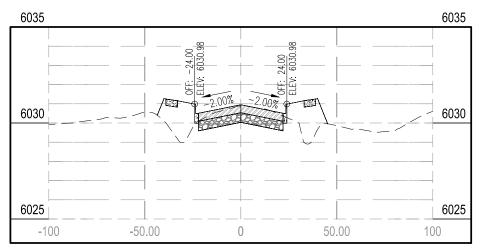
FOX FARM RD. CROSS SECTIONS STA. 43+00 - 48+00 FOX FARM ROAD STREET IMPROVEMENTS

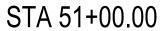
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

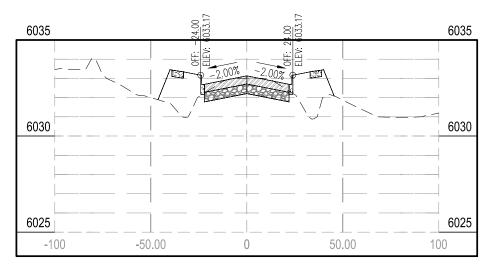
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

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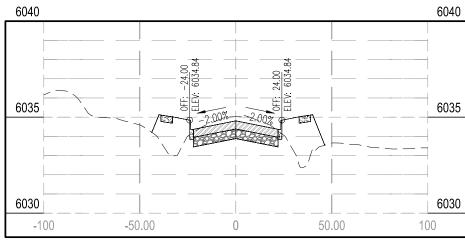
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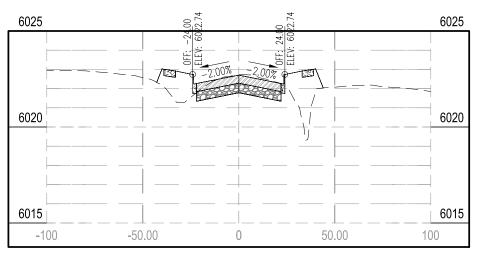




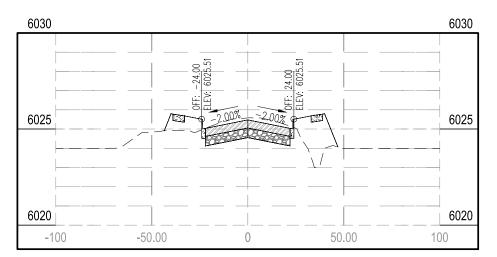
STA 50+00.00



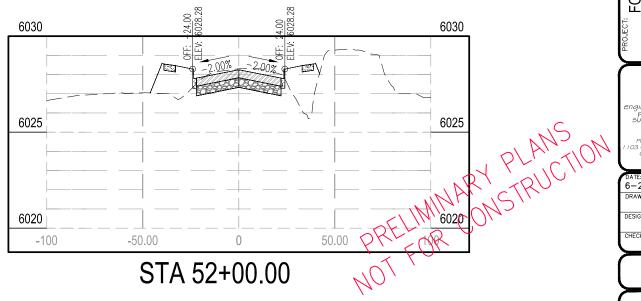
STA 49+00.00



STA 54+00.00



STA 53+00.00



PROJECT: FOX FARM ROAD STREET IMPROVEMENTS
DRAWING TILE: FOX FARM RD. CROSS SECTIONS STA. 49+00 - 54+00

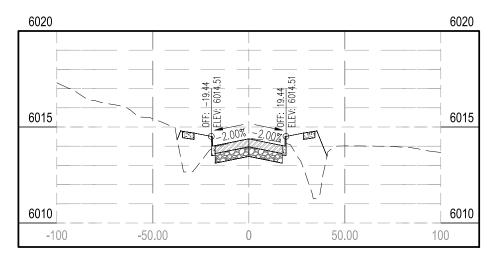
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

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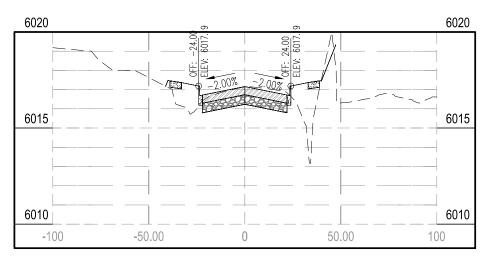
DATE:
6-20-13
DRAWN BY:
SRL
DESIGNED BY:
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CHECKED BY:
TC

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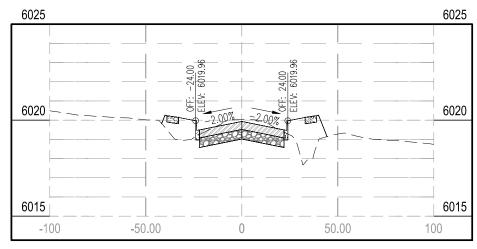
XS-09 83 SHEET NO. OF



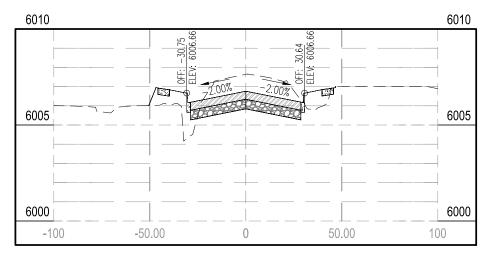
STA 57+00.00



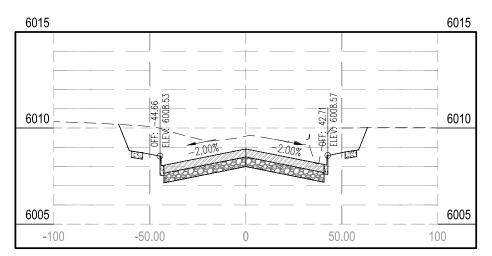
STA 56+00.00



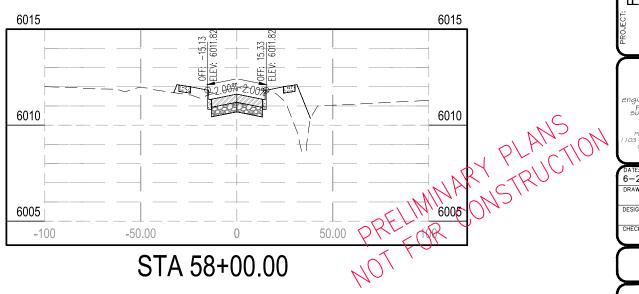
STA 55+00.00



STA 60+00.00



STA 59+00.00



STA 58+00.00

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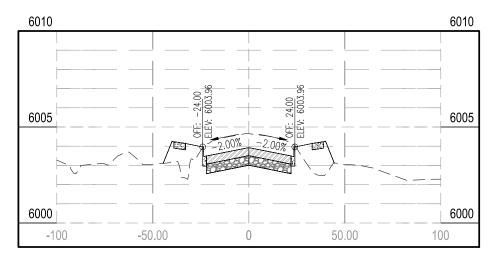
FOX FARM RD. CROSS SECTIONS STA. 55+00 - 60+00

FOX FARM ROAD STREET IMPROVEMENTS

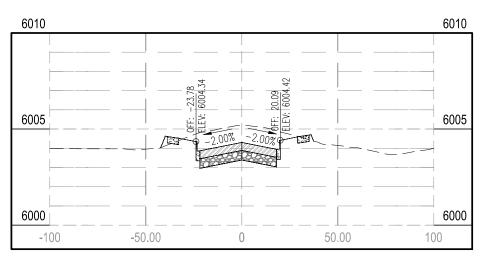
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

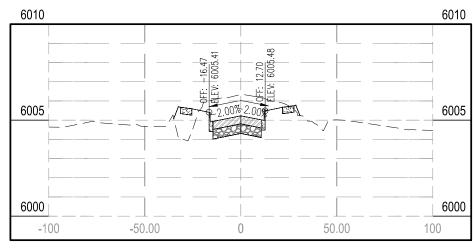
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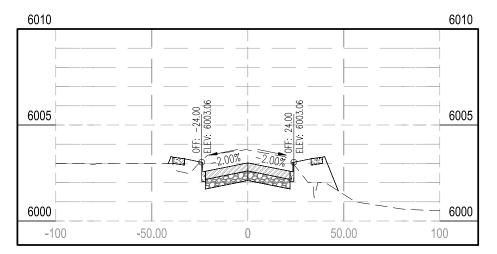
STA 63+00.00



STA 62+00.00



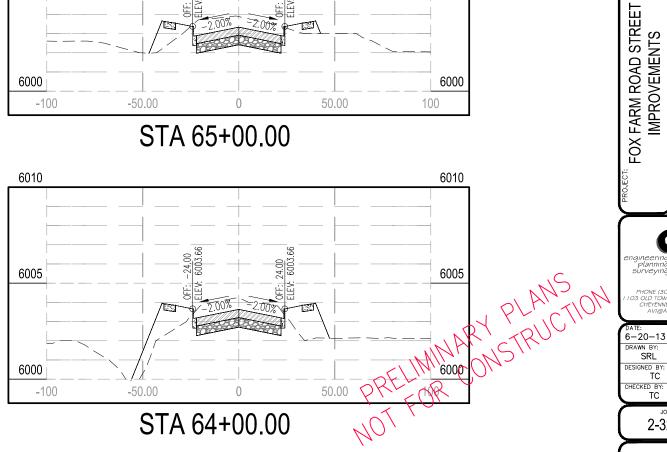
STA 61+00.00



STA 66+00.00



STA 65+00.00



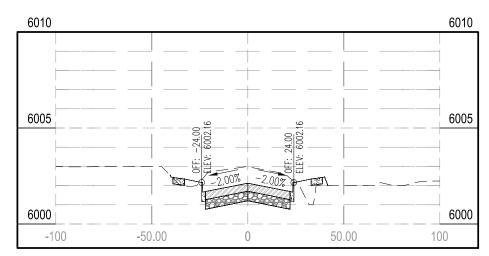
STA 64+00.00

MINIC INTE: FOX FARM RD. CROSS SECTIONS STA. 61+00 - 66+00 PHONE (307) 637-601 03 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

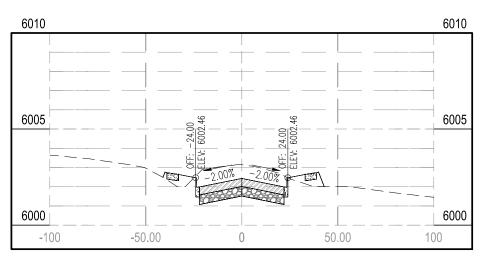
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

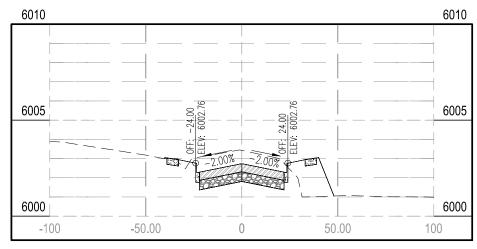
2-3211-B



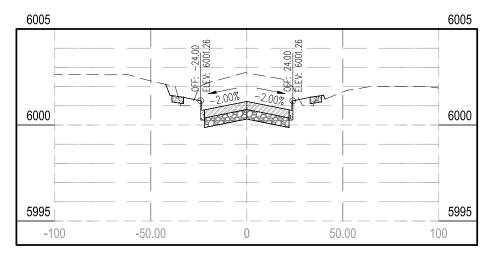
STA 69+00.00



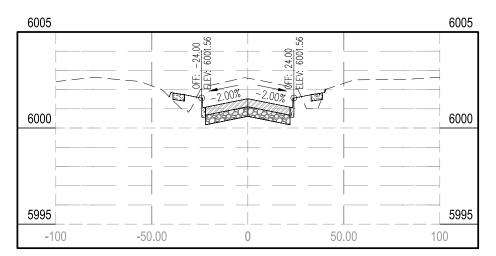
STA 68+00.00



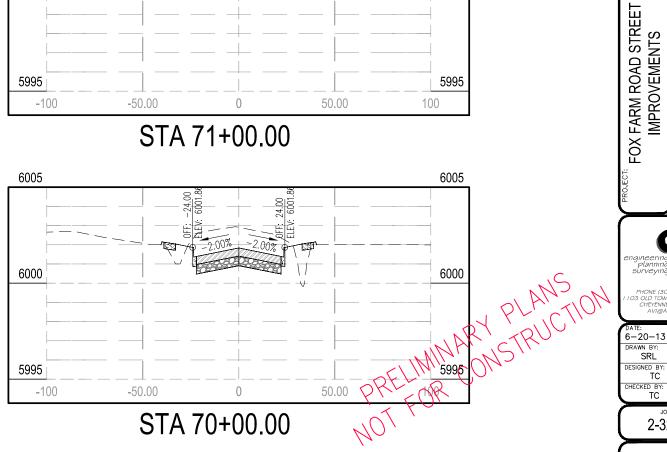
STA 67+00.00



STA 72+00.00



STA 71+00.00



STA 70+00.00

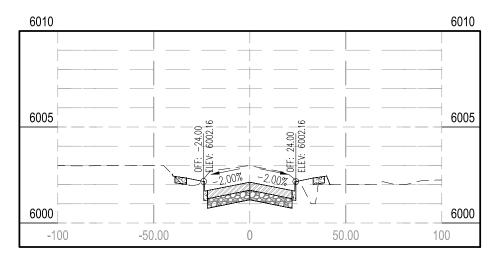
FOX FARM RD. CROSS SECTIONS STA. 67+00 -72+00

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

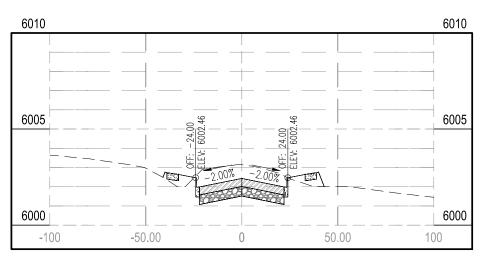
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

2-3211-B

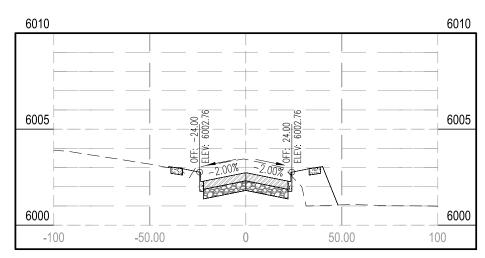
XS-12



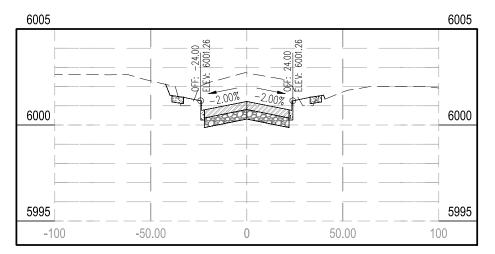
STA 69+00.00



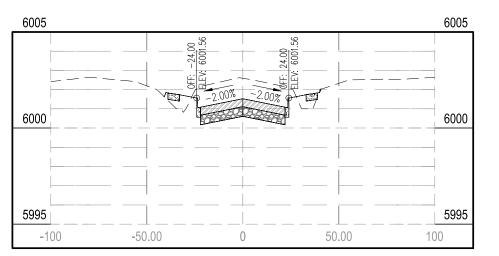
STA 68+00.00



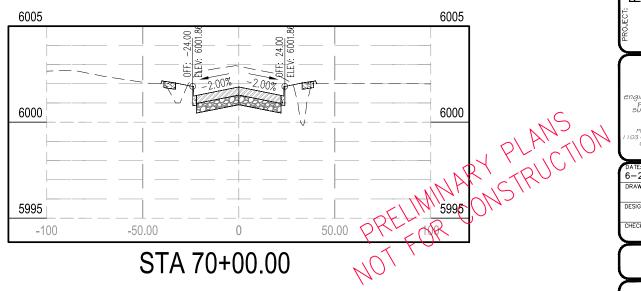
STA 67+00.00



STA 72+00.00



STA 71+00.00



STA 70+00.00

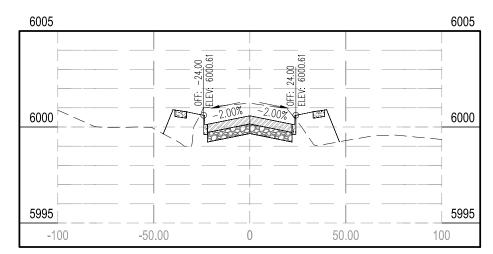
MINIC INTE: FOX FARM RD. CROSS SECTIONS STA. 73+00 - 78+00 FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

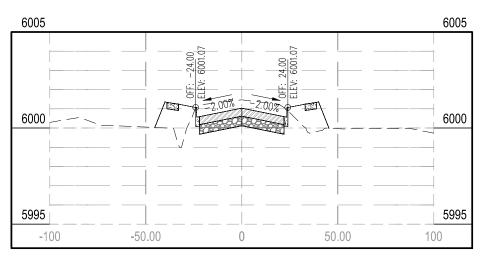
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY: TC CHECKED BY: TC

2-3211-B

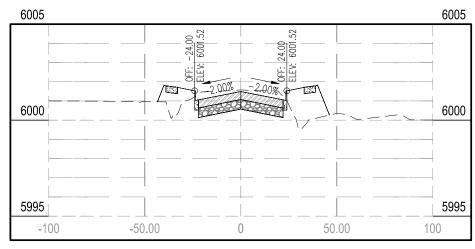
XS-13



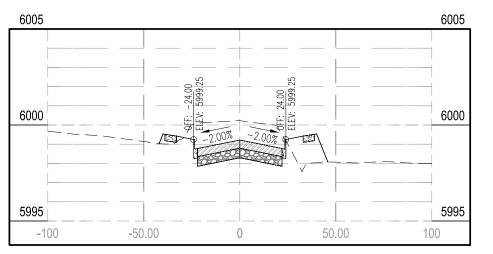
STA 81+00.00



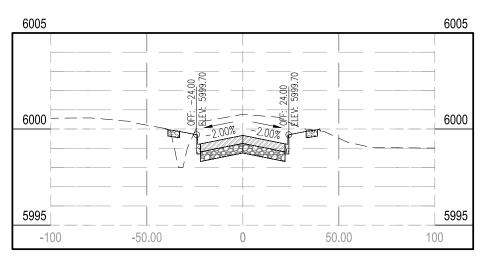
STA 80+00.00



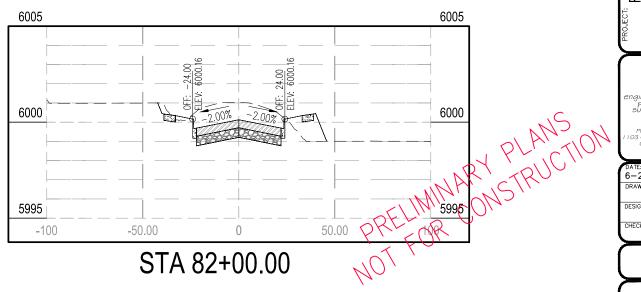
STA 79+00.00



STA 84+00.00



STA 83+00.00



STA 82+00.00

MINIC INTE: FOX FARM RD. CROSS SECTIONS STA. 79+00 - 84+00 FOX FARM ROAD STREET IMPROVEMENTS

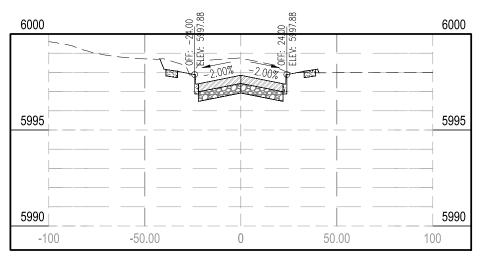
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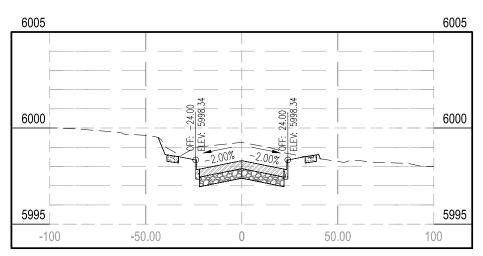
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
TC

2-3211-B

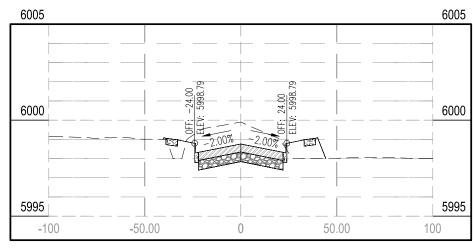
XS-14



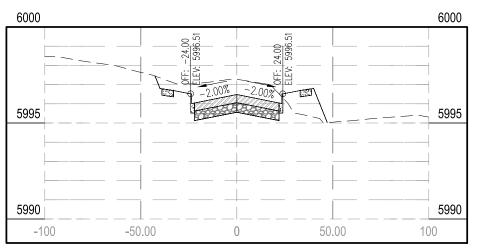
STA 87+00.00



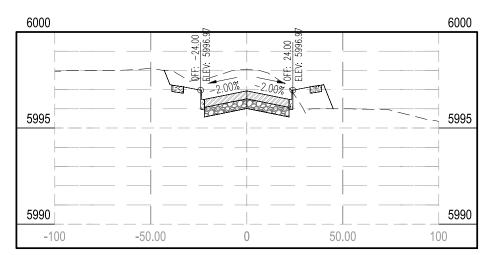
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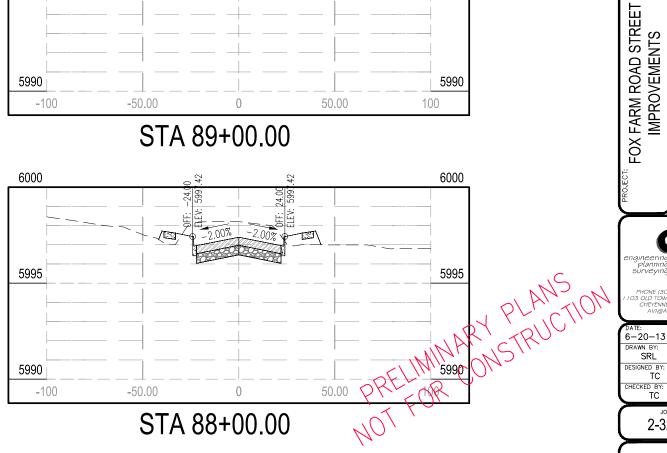
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STA 90+00.00



STA 89+00.00



STA 88+00.00

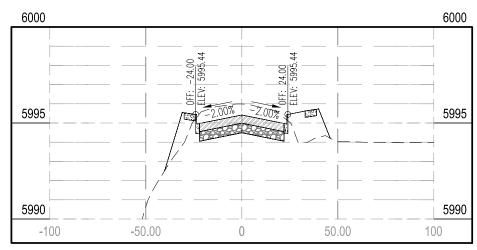
FOX FARM RD. CROSS SECTIONS STA. 85+00 - 90+00 PHONE (307) 637-601: 103 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

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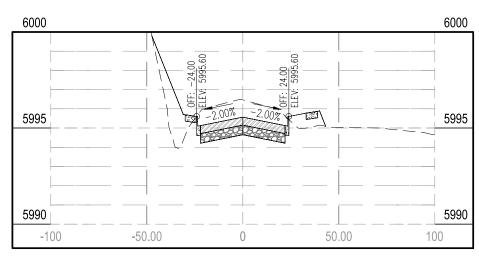
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
TC

2-3211-B

83



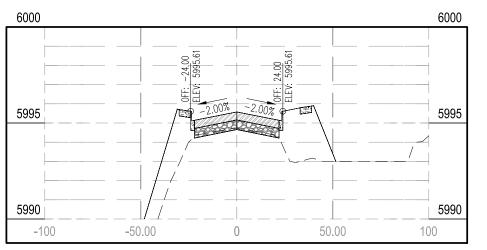
STA 93+00.00



STA 92+00.00



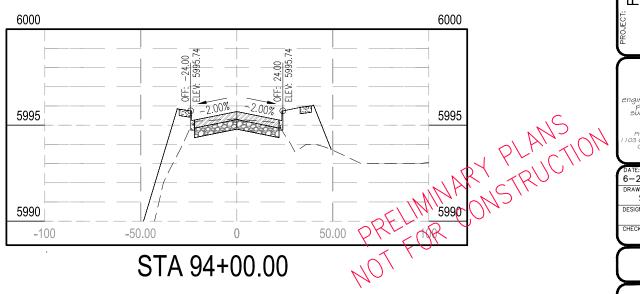
STA 91+00.00



STA 96+00.00



STA 95+00.00



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FOX FARM RD. CROSS SECTIONS STA. 91+00 - 96+00

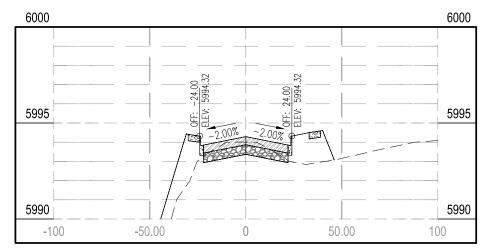
FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

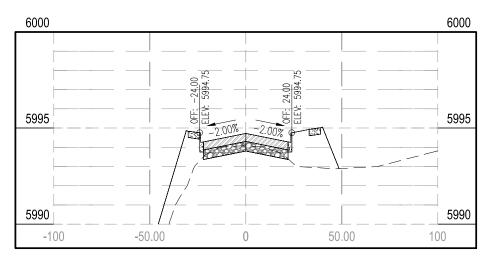
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TC
CHECKED BY:
TC

2-3211-B

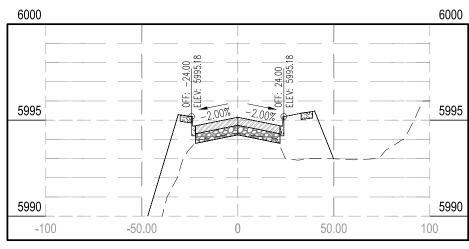
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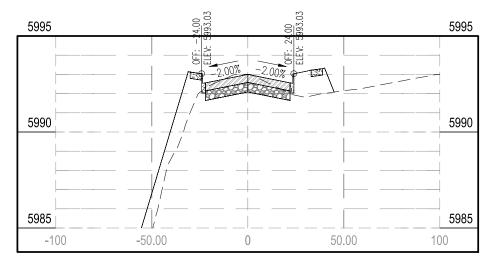
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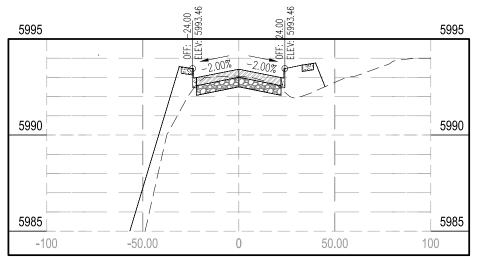
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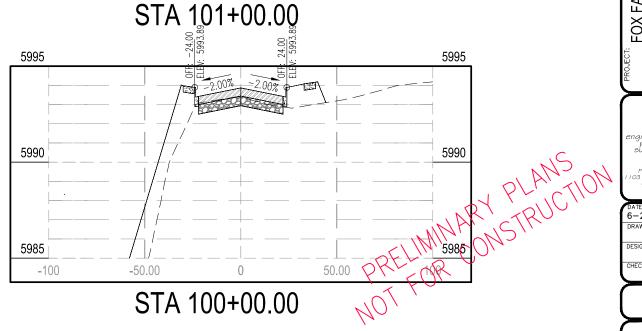


STA 97+00.00



STA 102+00.00





PROJECT: FOX FARM ROAD STREET
IMPROVEMENTS
BRAWING TITE:
FOX FARM RD. CROSS SECTIONS
STA. 97+00 - 102+00

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DATE:
6-20-13

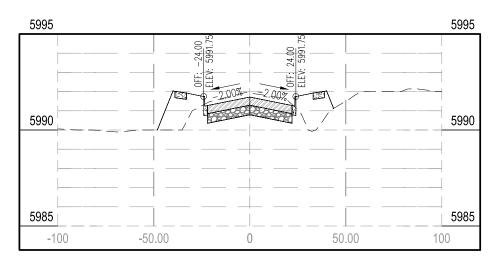
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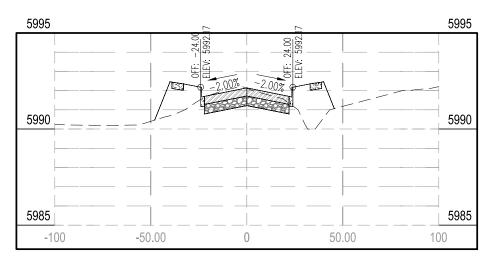
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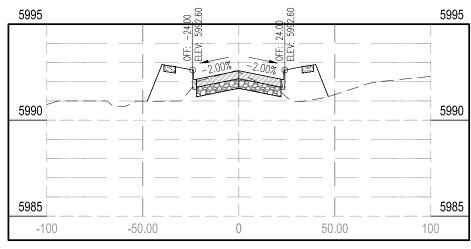
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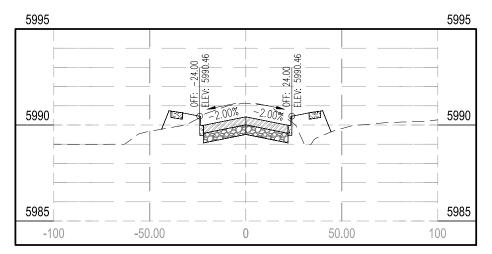
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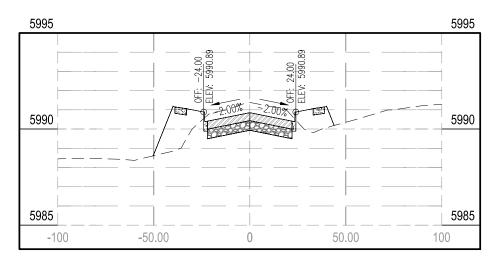
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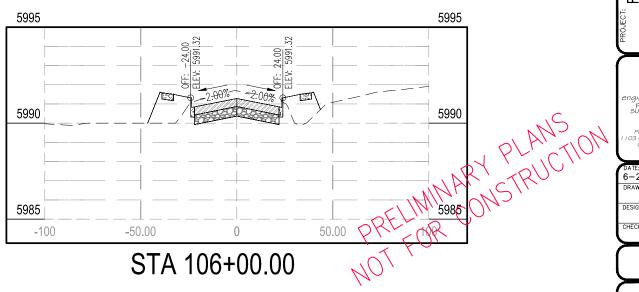
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STA 107+00.00



STA 106+00.00

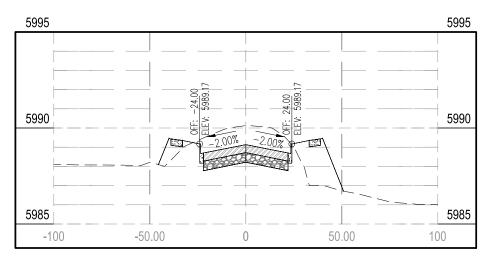
MNG TITLE: FOX FARM RD. CROSS SECTIONS STA. 103+00 - 108+00 FOX FARM ROAD STREET IMPROVEMENTS PHONE (307) 637-601: 03 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

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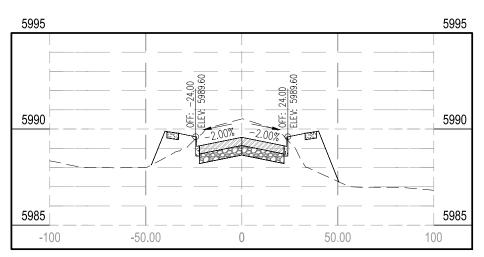
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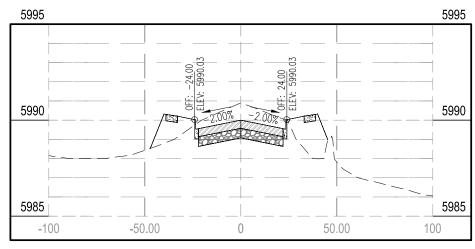
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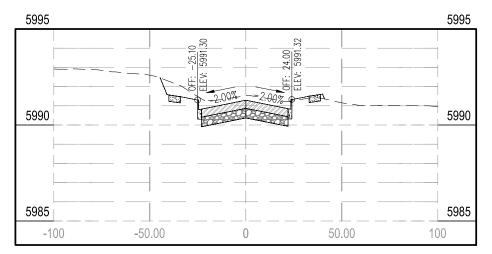
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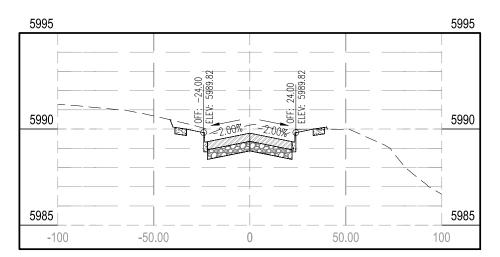
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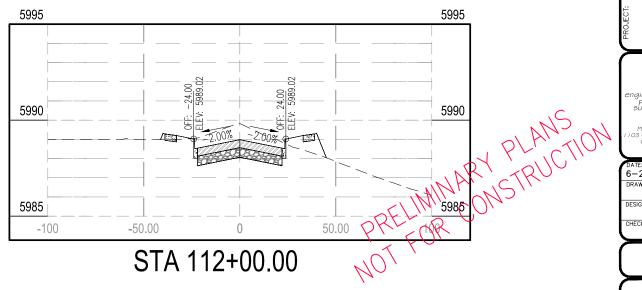
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STA 112+00.00

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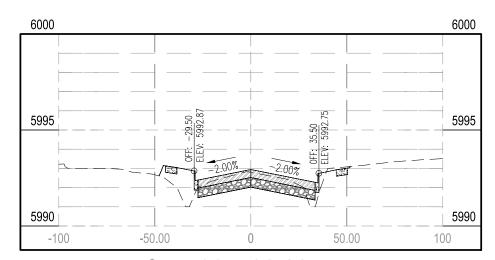
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PHONE (307) 637-601: 03 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

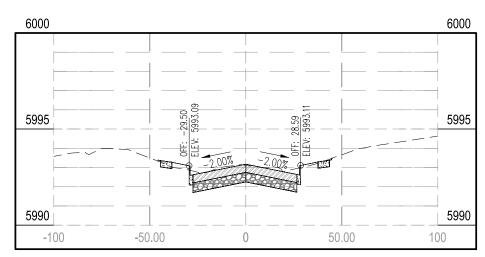
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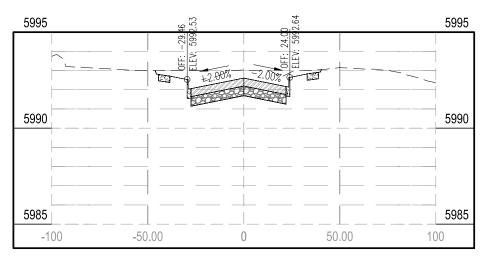
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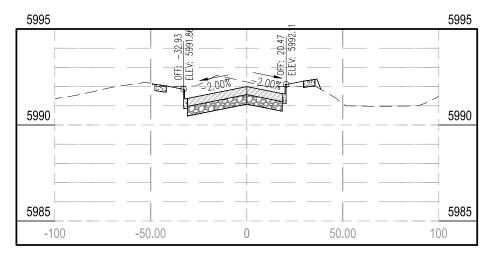
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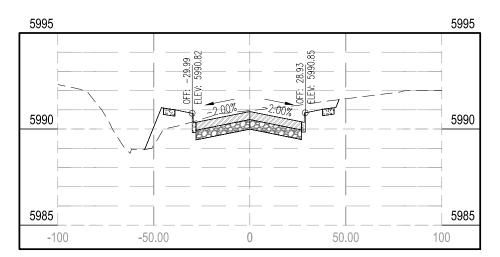
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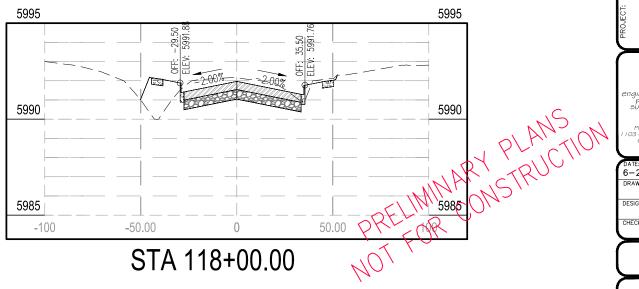
STA 115+00.00



STA 120+00.00



STA 119+00.00



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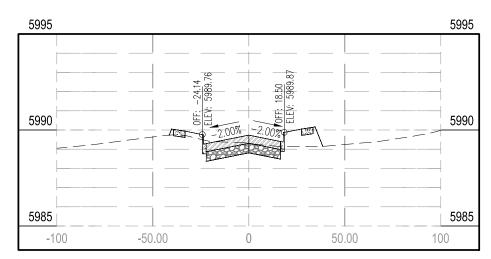
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

> FOX FARM RD. CROSS SECTIONS STA. 115+00 - 120+00

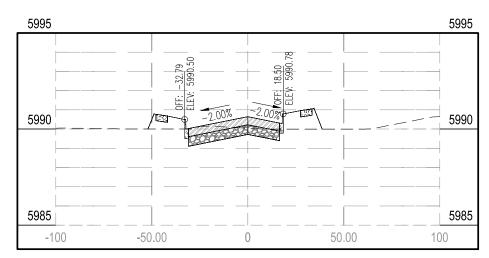
FOX FARM ROAD STREET IMPROVEMENTS

2-3211-B

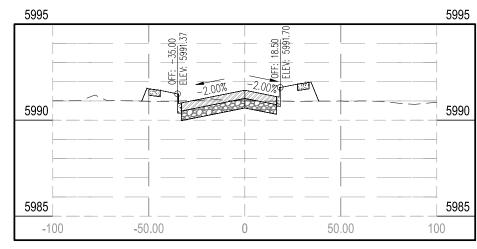
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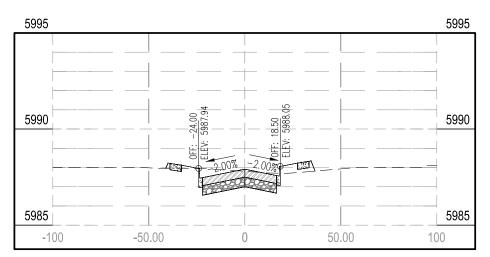
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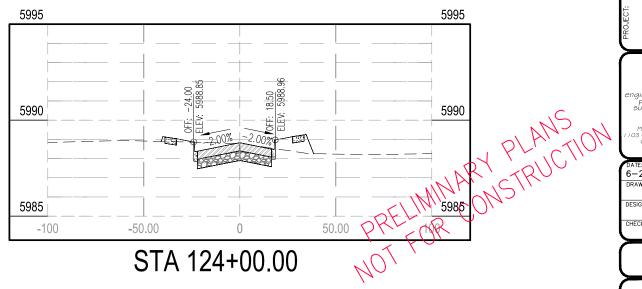
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STA 121+00.00



STA 125+00.00



STA 124+00.00

WING TITLE: FOX FARM RD. CROSS SECTIONS STA. 121+00 - 125+00 FOX FARM ROAD STREET IMPROVEMENTS

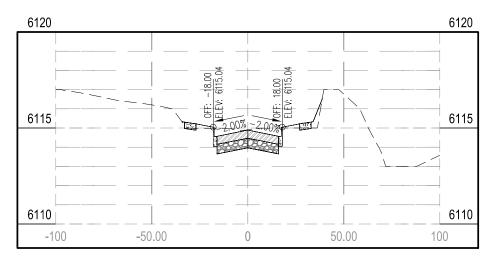
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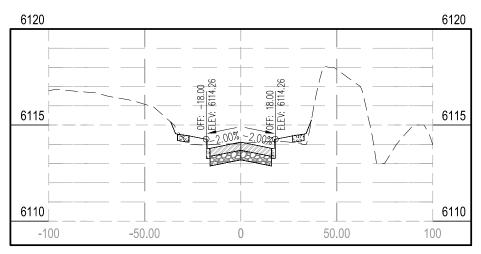
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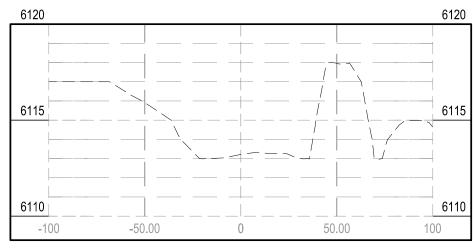
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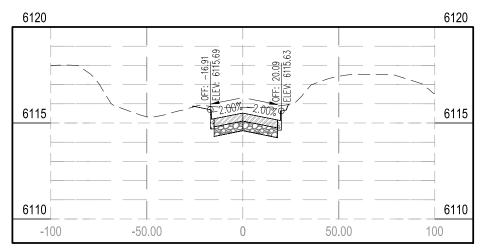
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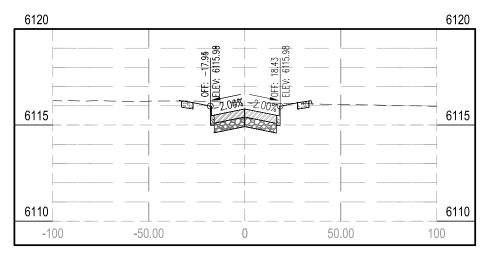
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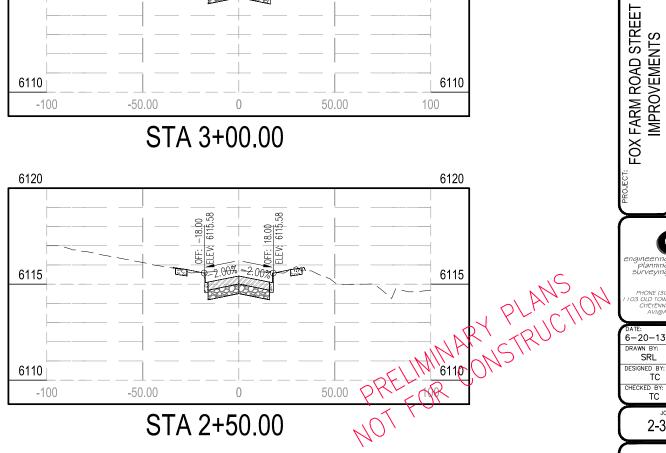
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STA 3+50.00



STA 3+00.00



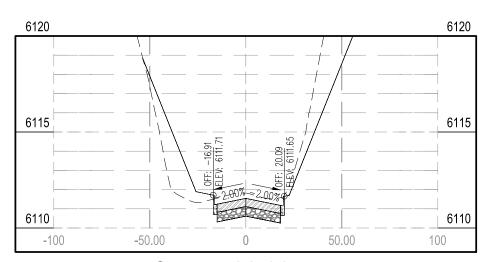
WALTERSCHIED BLVD. CROSS SECTIONS STA. 1+00 - 3+50

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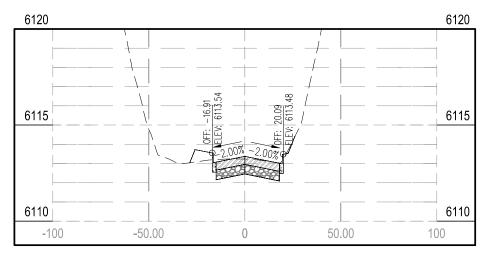
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2-3211-B

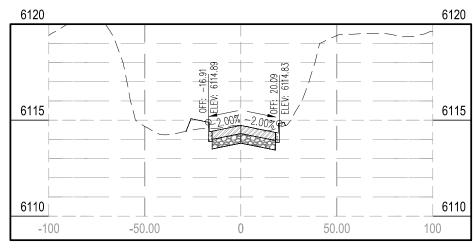
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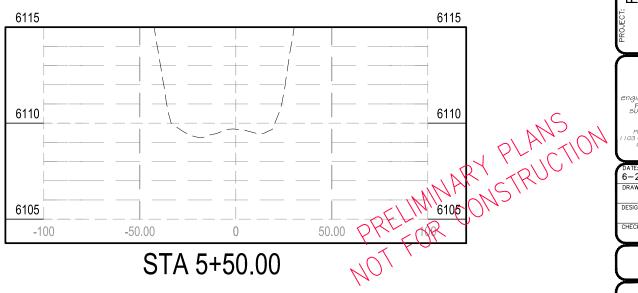
STA 5+00.00



STA 4+50.00



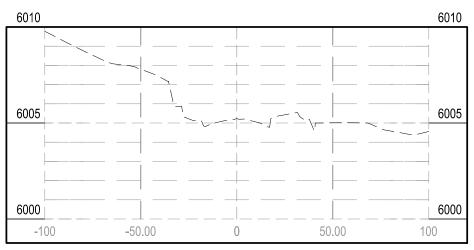
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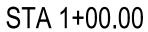


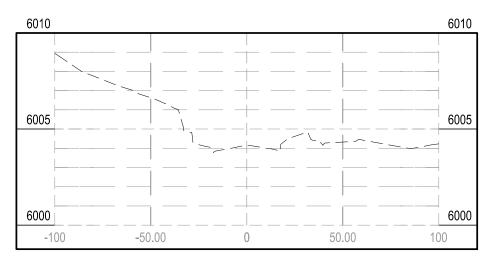
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001 WALTERSCHIED BLVD. CROSS SECTIONS STA. 4+00 - 5+50 FOX FARM ROAD STREET IMPROVEMENTS DATE:
6-20-13
DRAWN BY:
SRL
DESIGNED BY:
TC
CHECKED BY:
TC

2-3211-B

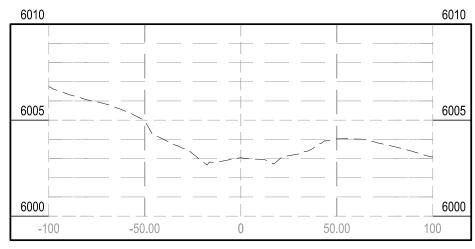
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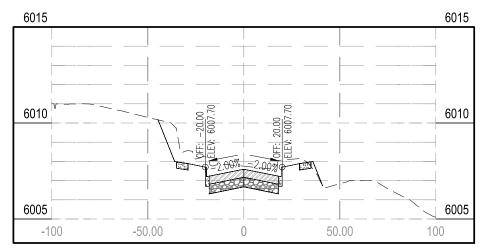




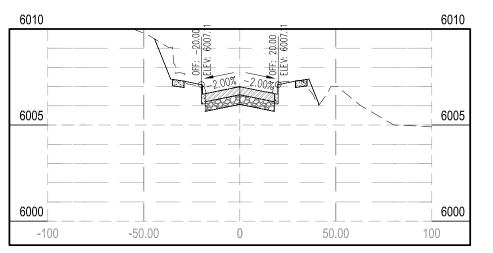
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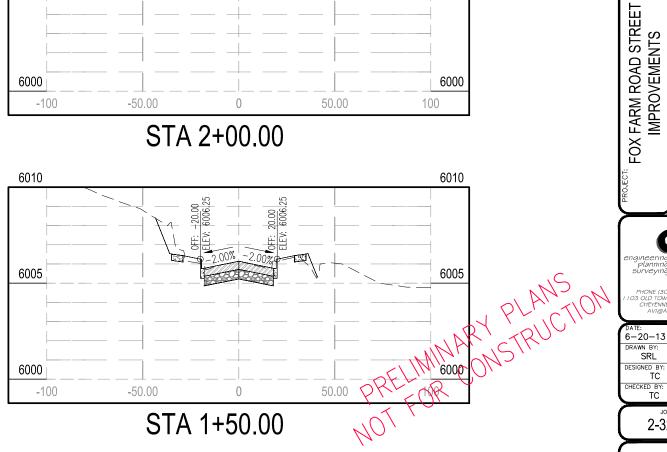
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STA 2+50.00



STA 2+00.00



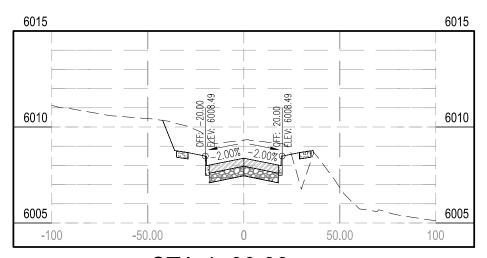
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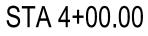
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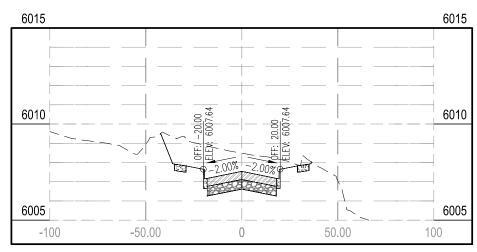
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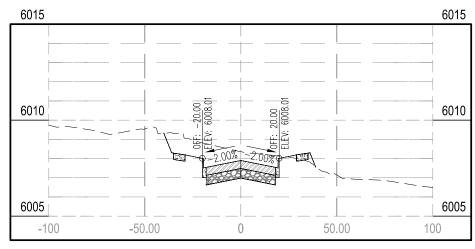
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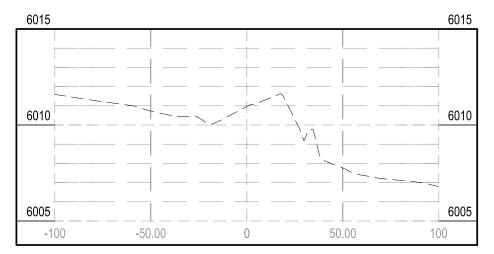




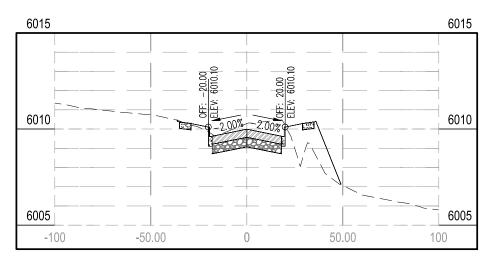
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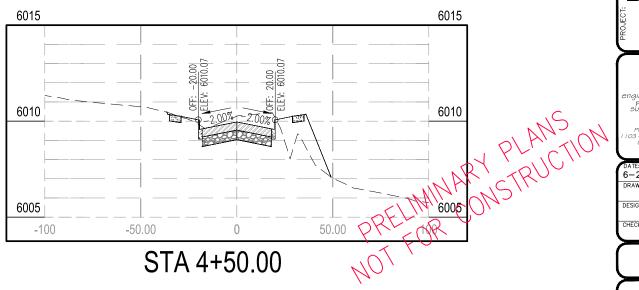
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STA 5+00.00



STA 4+51.50



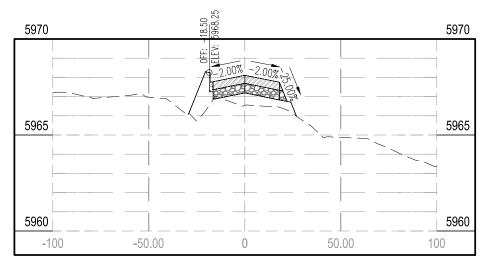
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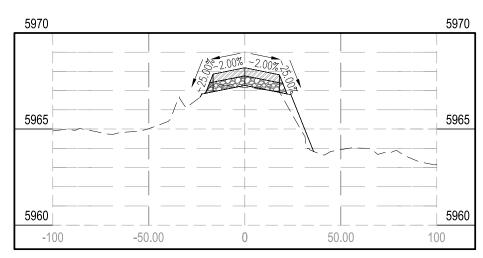
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AVENUE C CROSS SECTIONS STA. 3+00 - 5+00

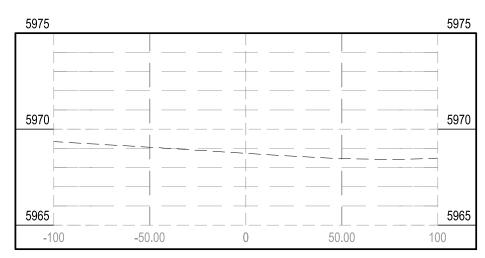
FOX FARM ROAD STREET IMPROVEMENTS



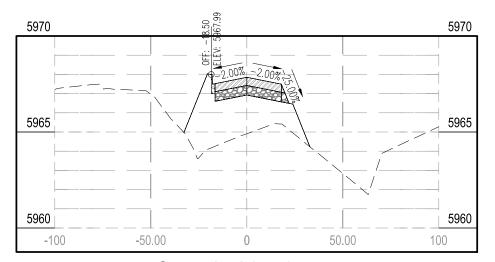
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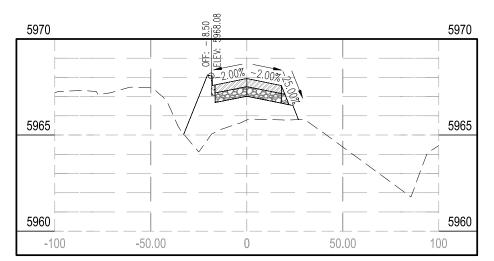
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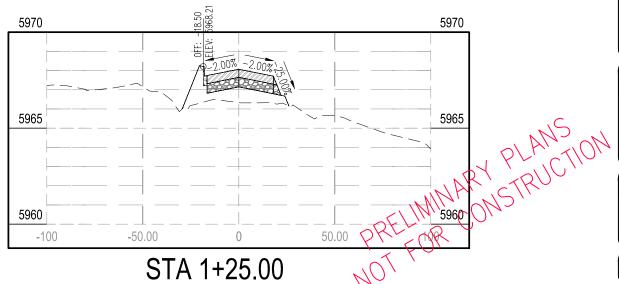
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STA 1+68.51



STA 1+50.00



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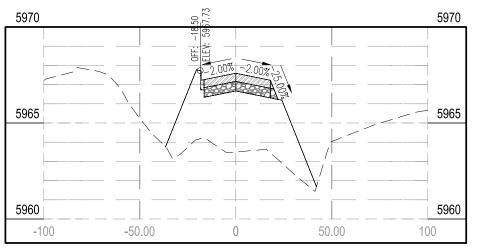
FOX FARM ROAD STREET IMPROVEMENTS

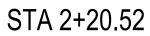
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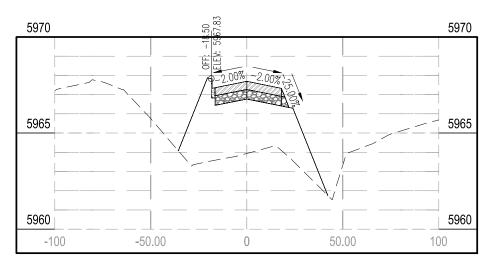
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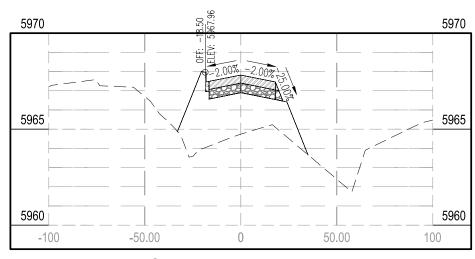
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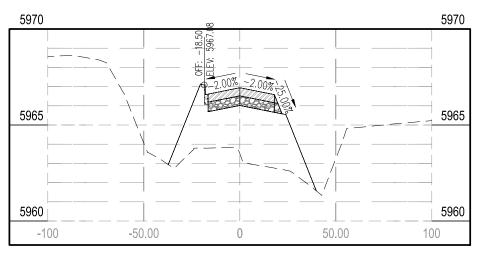




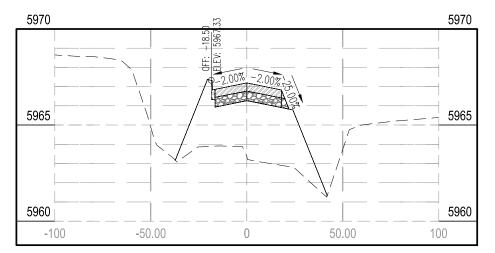
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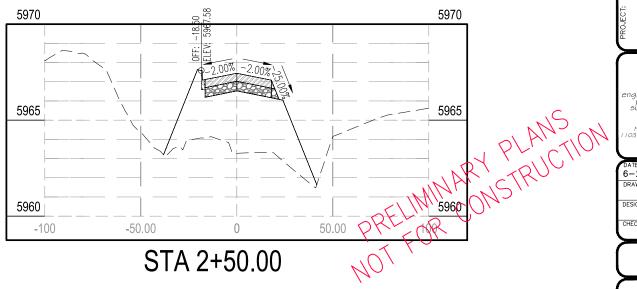
STA 1+75.00



STA 3+50.00



STA 3+00.00



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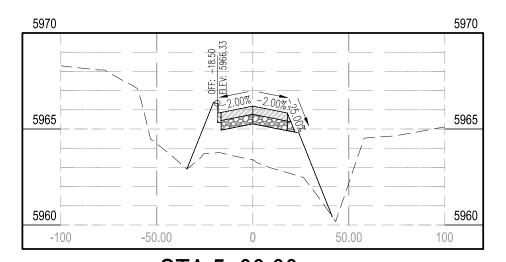
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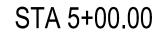
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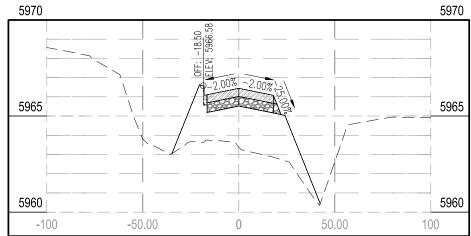
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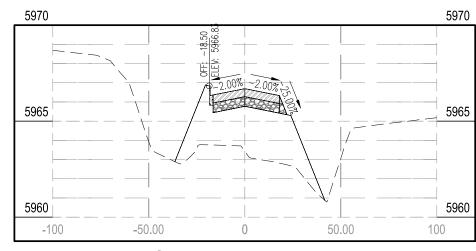
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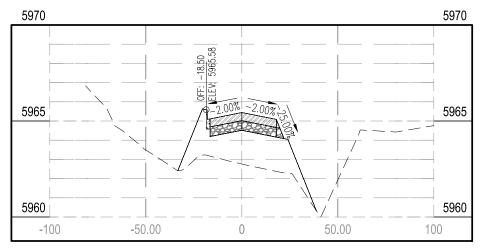




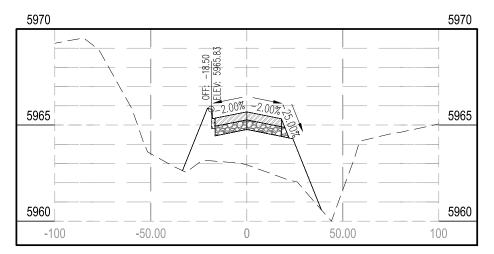
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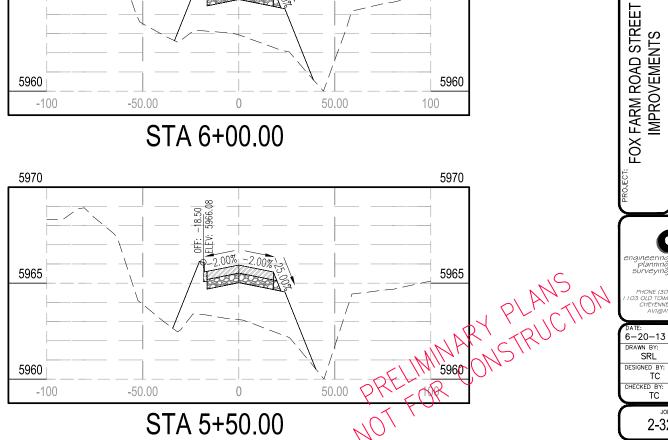
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STA 6+50.00



STA 6+00.00



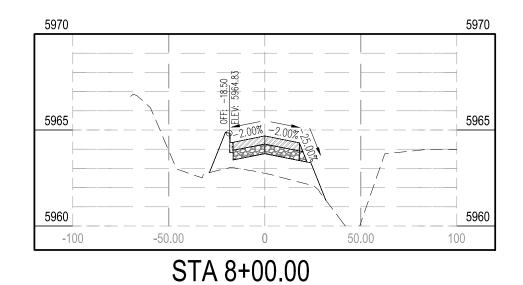
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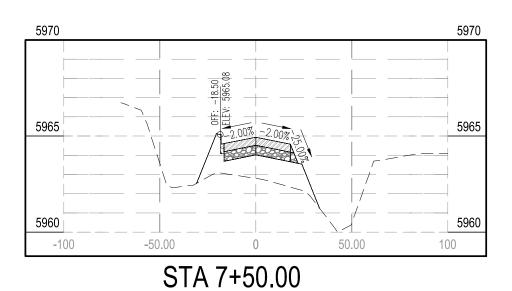
BURLINGTON TRAILS RD. CROSS SECTIONS STA. 4+00 - 6+50 PHONE (307) 637-601' 103 OLD TOWN LANE, SUIT CHEYENNE, WY 82009 AVI@AVIPC.COM

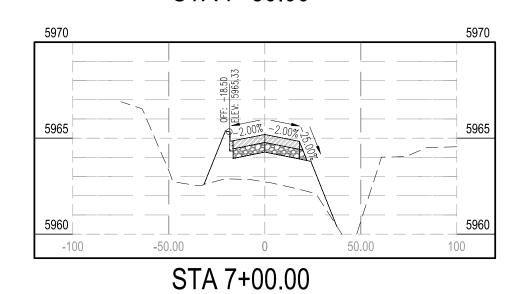
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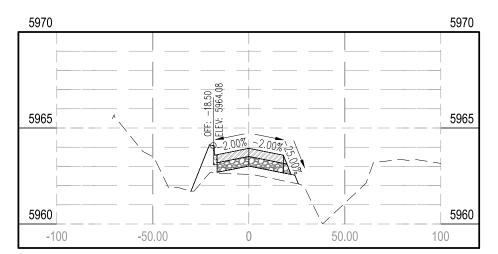
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CHECKED BY:
TC

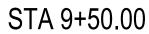
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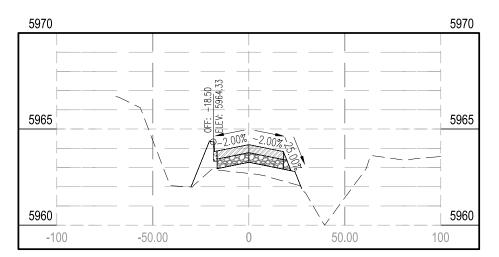




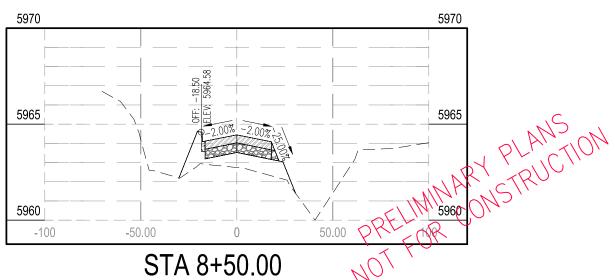








STA 9+00.00



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BURLINGTON TRAILS RD. CROSS SECTIONS STA. 7+00 - 9+50

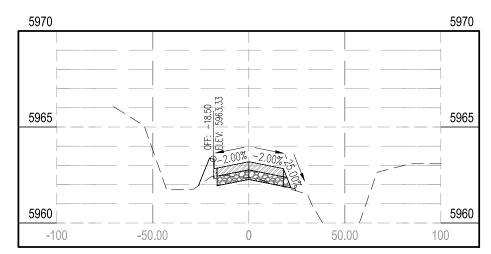
FOX FARM ROAD STREET IMPROVEMENTS

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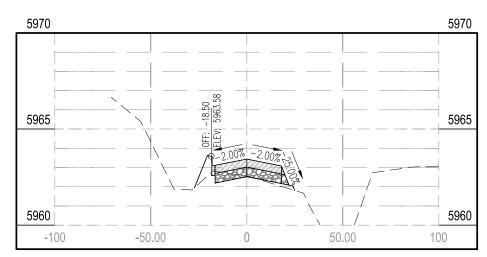
DATE:
6-20-13
DRAWN BY:
SRL
DESIGNED BY:
TC
CHECKED BY:
TC

ов NO.: 2-3211-В

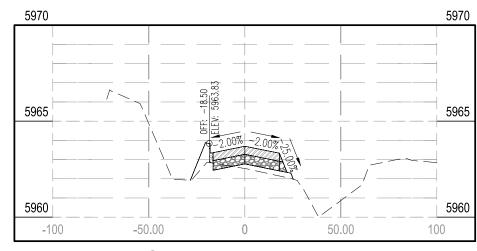
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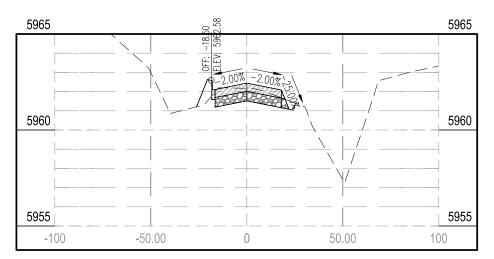
STA 11+00.00



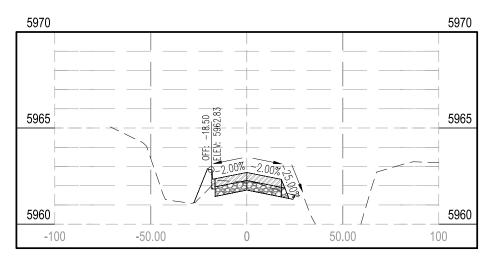
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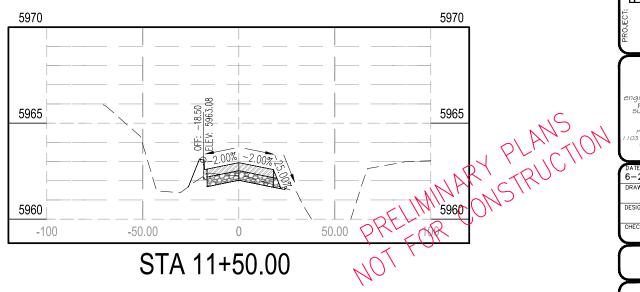
STA 10+00.00



STA 12+50.00



STA 12+00.00



STA 11+50.00

BURLINGTON TRAILS RD. CROSS SECTIONS STA. 10+00 - 12+50 FOX FARM ROAD STREET IMPROVEMENTS

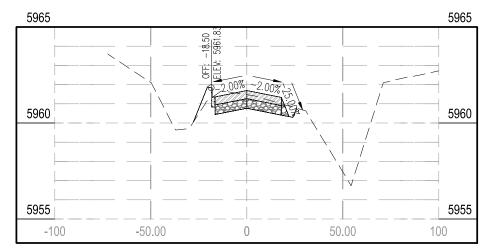
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

PHONE (307) 637-6017 03 OLD TOWN LANE, SUITI CHEYENNE, WY 82009 AVI@AVIPC.COM

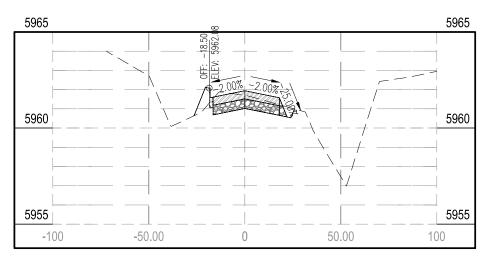
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
TC

2-3211-B

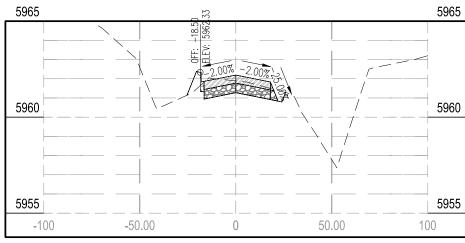
XS-30



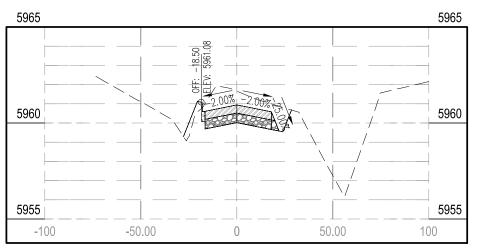
STA 14+00.00



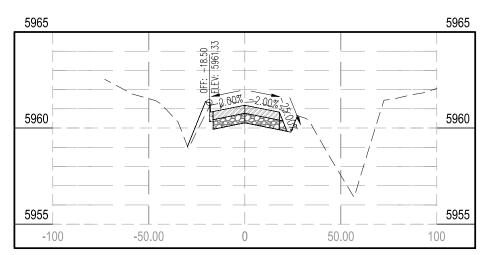
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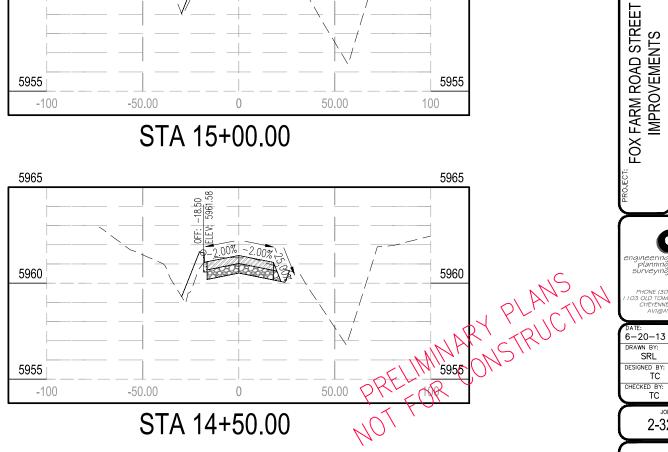
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STA 15+50.00



STA 15+00.00

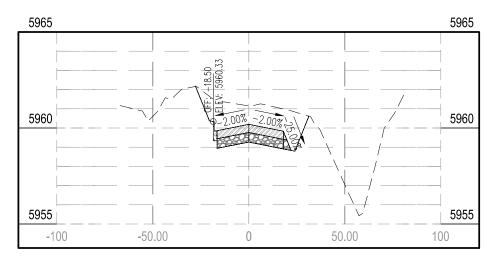


PHONE (307) 637-6017 103 OLD TOWN LANE, SUITE CHEYENNE, WY 82009 AVI@AVIPC.COM DATE: 6-20-13 DRAWN BY: SRL

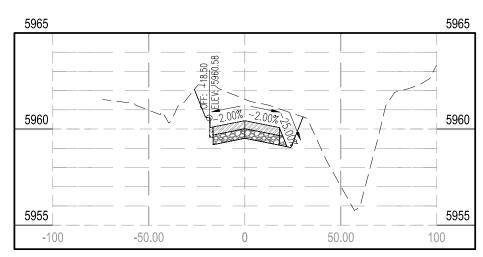
MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

BURLINGTON TRAILS RD. CROSS SECTIONS STA. 13+00 - 15+50

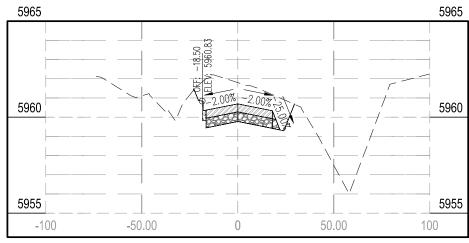
DESIGNED BY:
TC
CHECKED BY:
TC 2-3211-B



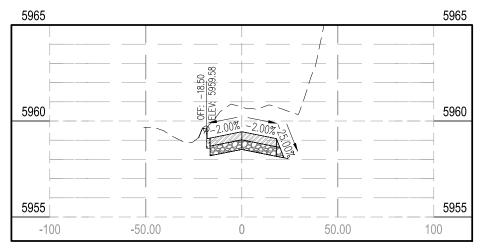
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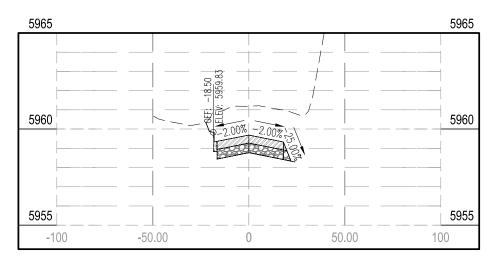
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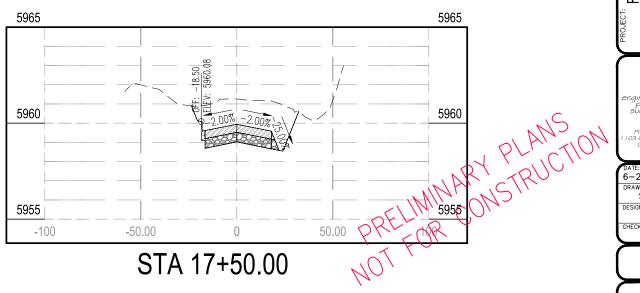
STA 16+00.00



STA 18+50.00



STA 18+00.00



STA 17+50.00

FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

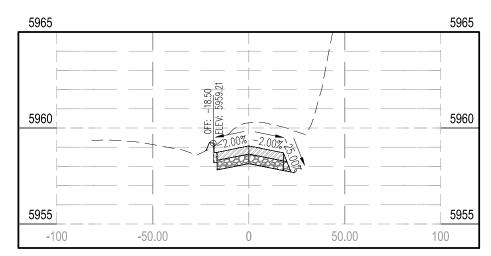
BURLINGTON TRAILS RD. CROSS SECTIONS STA. 16+00 - 18+50

PHONE (307) 637-6017 103 OLD TOWN LANE, SUITE CHEYENNE, WY 82009 AVI@AVIPC.COM

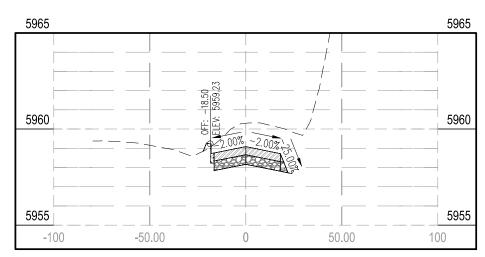
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
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2-3211-B

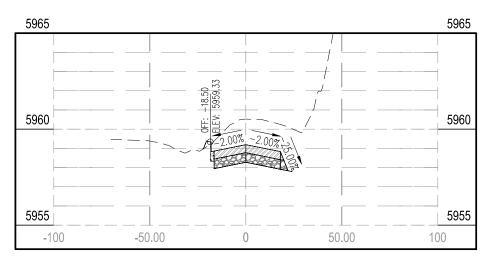
XS-32



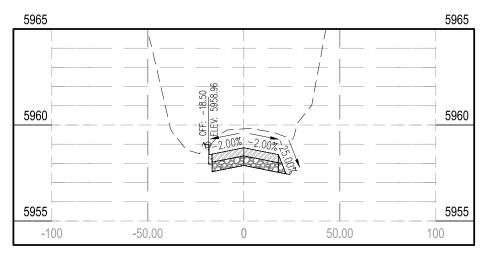
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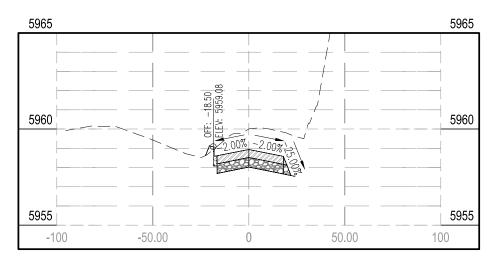
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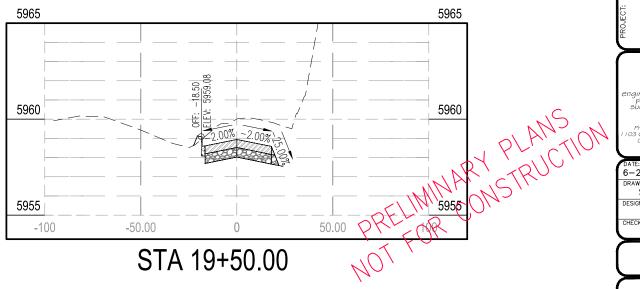
STA 19+00.00



STA 19+75.00



STA 19+50.04



STA 19+50.00

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BURLINGTON TRAILS RD. CROSS SECTIONS STA. 19+00 - 19+75

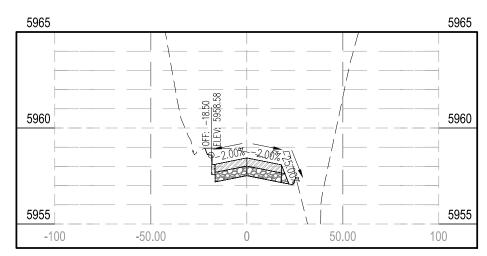
FOX FARM ROAD STREET IMPROVEMENTS

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

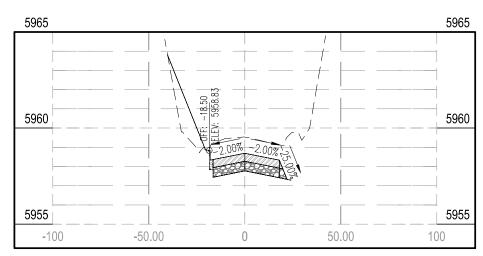
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
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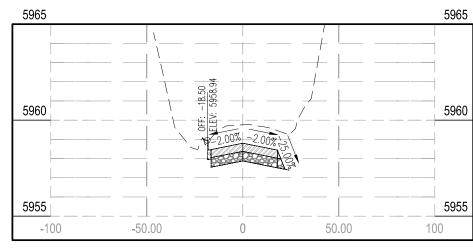
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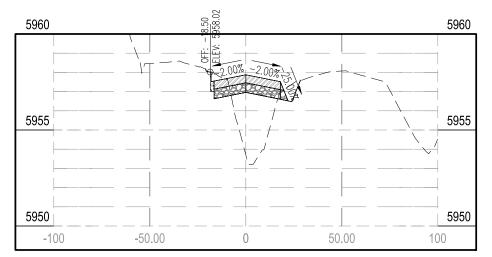
STA 20+50.00



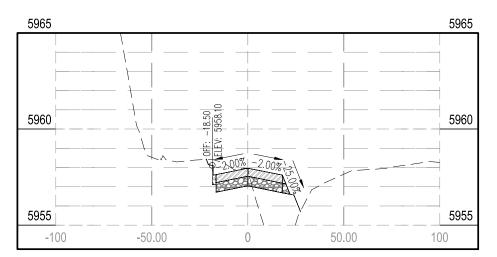
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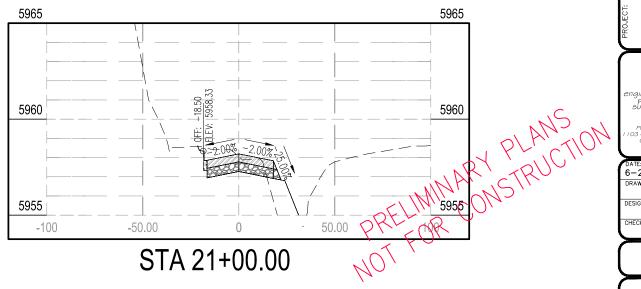
STA 19+78.74



STA 22+00.00



STA 21+50.00



STA 21+00.00

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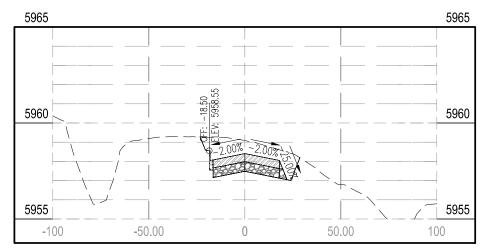
BURLINGTON TRAILS RD. CROSS SECTIONS STA. 19+78.74 - 22+00 FOX FARM ROAD STREET IMPROVEMENTS

PHONE (307) 637-6017 103 OLD TOWN LANE, SUITE CHEYENNE, WY 82009 AVI@AVIPC.COM

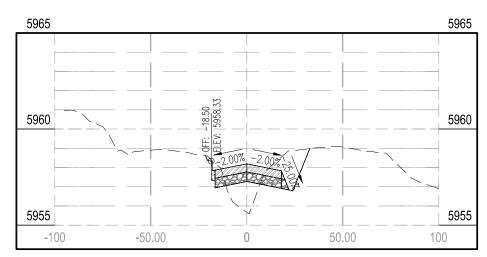
DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
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CHECKED BY:
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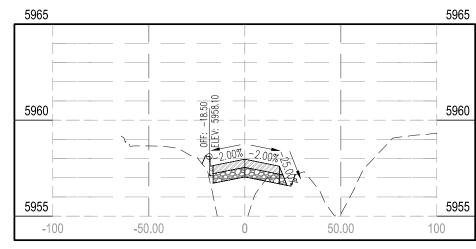
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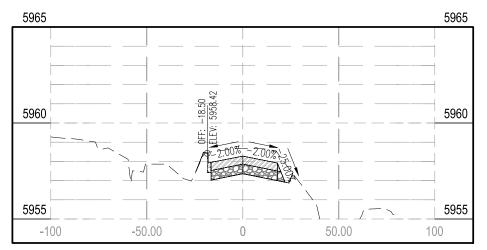
STA 23+50.00



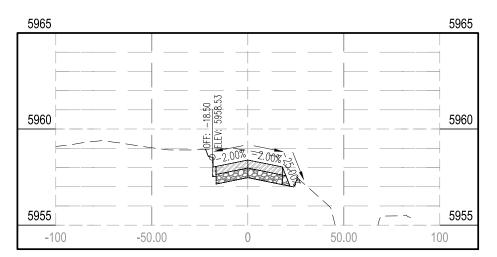
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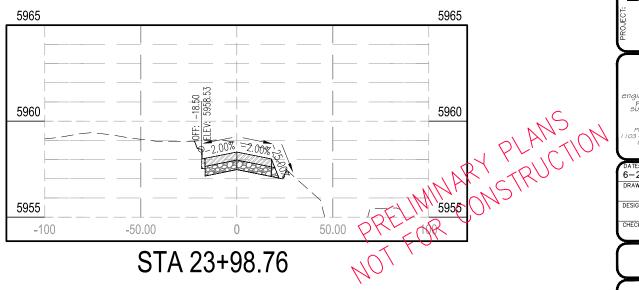
STA 22+50.00



STA 24+25.00



STA 24+00.00



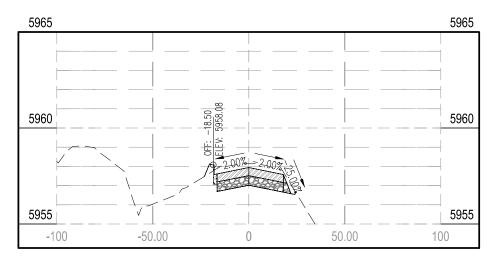
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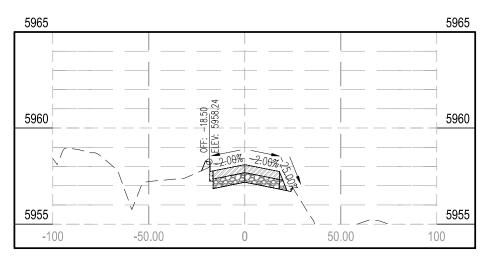
BURLINGTON TRAILS RD. CROSS SECTIONS STA. 22+50 - 24+25 FOX FARM ROAD STREET IMPROVEMENTS

DATE: 6-20-13 DRAWN BY: SRL DESIGNED BY:
TC
CHECKED BY:
TC

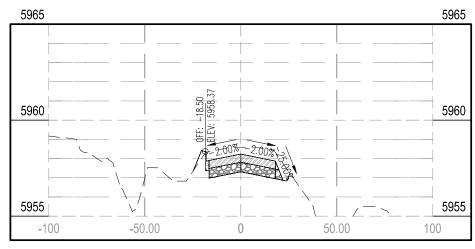
2-3211-B



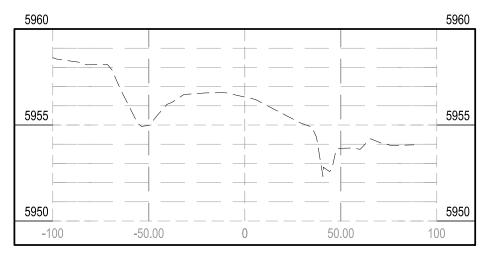
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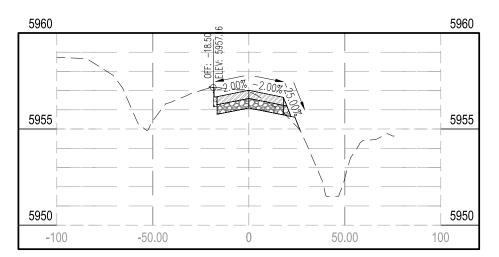
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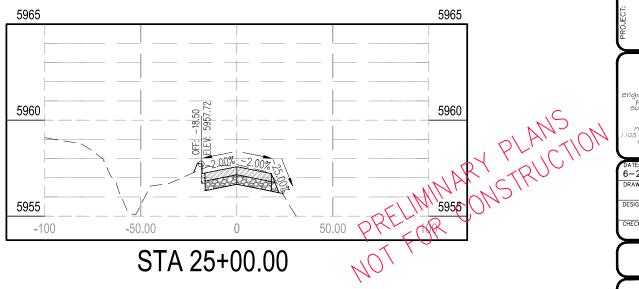
STA 24+32.93



STA 26+00.00



STA 25+50.00



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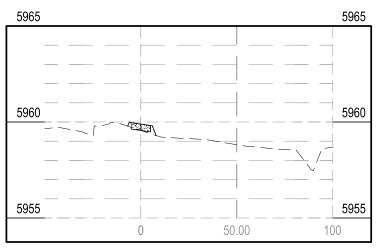
BURLINGTON TRAILS RD. CROSS SECTIONS STA. 24+32.93 - 26+00

FOX FARM ROAD STREET IMPROVEMENTS

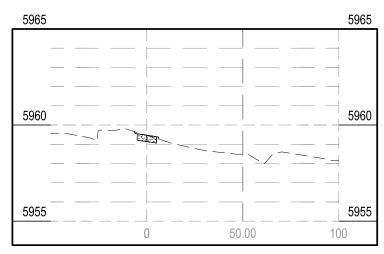
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6-20-13
DRAWN BY:
SRL
DESIGNED BY:
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CHECKED BY:
TC

ов No.: 2-3211-В

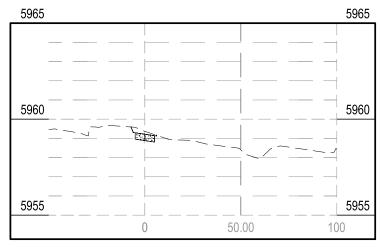
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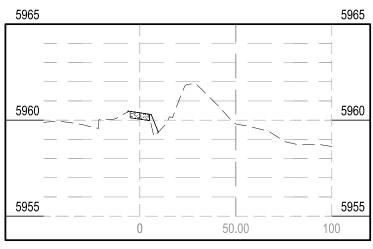
STA 25+50.00



STA 25+22.87



STA 25+06.69



STA 26+00.00

FOX FARM ROAD STREET IMPROVEMENTS

BURLINGTON TRAILS SIDEWALK CROSS SECTIONS STA. 25+06.69 - 26+00

MPO 2101 O'NEIL AVE. RM 205 CHEYENNE, WY. 82001

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6-20-13
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XS-49