

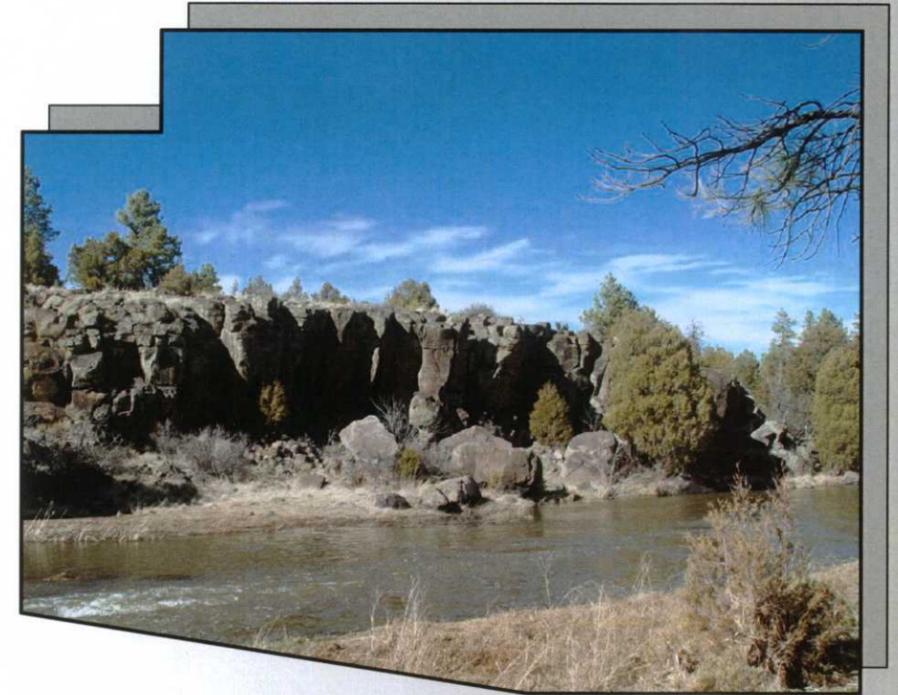
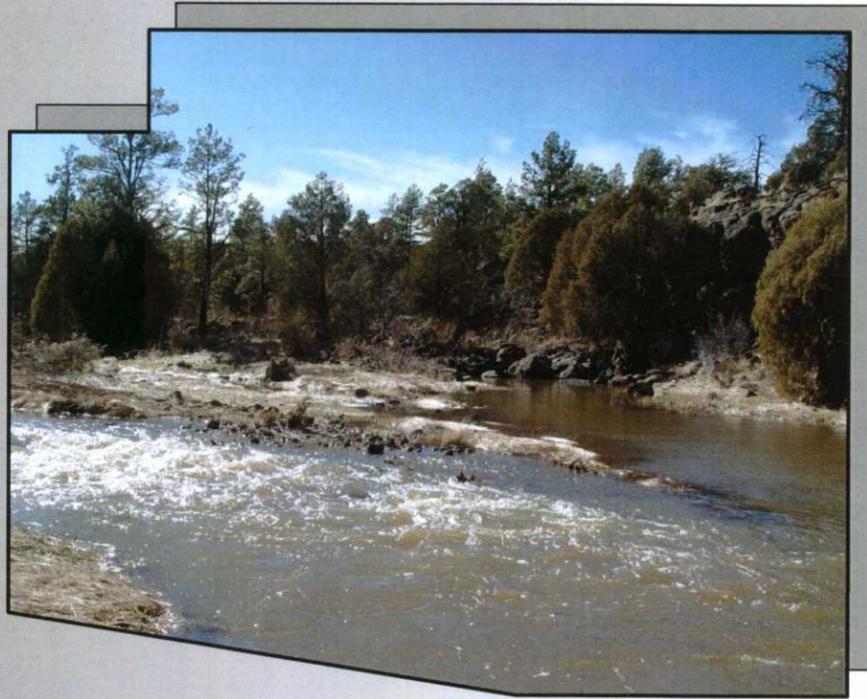
# DESIGN CONCEPT REPORT / 30% PROJECT PLANS

## SCOTT RANCH ROAD & BRIDGE PROJECT

ARIZONA  
260 TO PENROD ROAD

ADOT TRACS NO: 55673 01 C  
FEDERAL AID NO: HPP-SLW-(200)A

JULY 2009



# SCOTT RANCH ROAD & BRIDGE PROJECT

PREPARED BY:  
**IRONSIDE**  
Engineering & Development, Inc.



PREPARED FOR:  
**CITY OF SHOW LOW**



# **DESIGN CONCEPT REPORT**

**SCOTT RANCH ROAD  
SR-260 TO PENROD ROAD**

ADOT TRACS NO: 55673 01C  
FEDERAL NO: HPP-SLW-(200)A

**GLOBE DISTRICT -CITY OF SHOW LOW, NAVAJO COUNTY, AZ**

**JULY 2009**

PREPARED FOR:

**CITY OF SHOW LOW**

550 N. 9<sup>TH</sup> PLACE  
SHOW LOW, AZ 85901

PREPARED BY:

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401 S. WHITE MOUNTAIN ROAD  
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**EXECUTIVE SUMMARY**

Scott Ranch Road & Bridge [ADOT TRACS No. SS673 01C; Federal Aid No. HPP-SLW-(200)A] is a proposed low speed urban collector and associated bridge project located in the City of Show Low (COSL), Arizona. The proposed roadway will connect State Route 260 (SR-260, White Mountain Road), a designated principal arterial, to Penrod Road, a minor arterial. The design concept presented herein is a culmination of years of planning and the recent intensive study coincident with the preparation of this Design Concept Report (DCR). The DCR study has been initiated by the COSL (“Sponsor”) and has been co-sponsored by Navajo County.

Recent sub-regional and community transportation studies have identified, and emphasize, the need for sub-regional roadway network improvements to meet the current and future traffic demands in the White Mountain area. The purpose of this project is to provide a much needed east-west connection between SR-260 and Penrod Road. Show Low Creek, between Show Low Lake and US-60, has historically been a major geographical barrier with no east-west connection for approximately 5 miles along the creek. In a major storm event, the US-60 Bridge would become impassable, forcing traffic to detour a minimum of one hundred miles. A new bridge crossing would provide a much needed creek crossing in the event of a forest fire evacuation. The construction of Scott Ranch Road, and the associated bridge crossing, will aid in alleviating the deteriorating level of service on SR-260 and significantly improve the quality of service, for both local and intra-regional travelers, by serving as an effective SR-260 by-pass route.

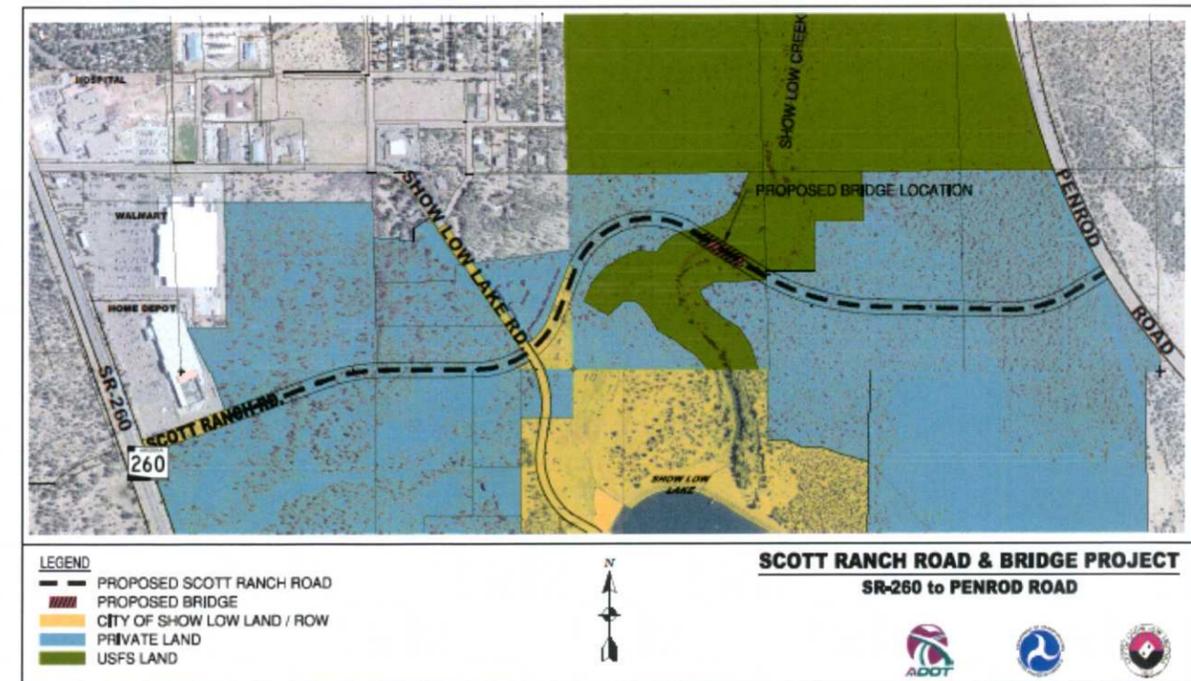
Scott Ranch Road, as proposed, is classified as a low speed urban collector in rolling terrain with a design speed of 40 miles per hour. The recommended alternative, referred to as “Alternative #1”, consists of approximately 1.28 miles of new two lane roadway and a 350 linear feet (LF), 3 span bridge, AASHTO girder bridge crossing Show Low Creek. Notable benefits associated with Alternative #1 include utilization of existing COSL right of way, and minimizing the bridge length and corresponding bridge construction cost. The majority of the proposed roadway west of Show Low Creek will include curb & gutter and sidewalks. East of the creek, the proposed roadway section will include ribbon curb, roadside ditches and a 10’ wide detached multi-use path. A segment east of the creek is also proposed to contain the previously mentioned curb & gutter sections. The estimated construction cost for the project is \$8,488,907 as presented on the detailed cost estimate in Appendix B.

The Northern Arizona Council of Governments (NACOG) currently lists this project as a High Priority Project (HPP) under the current Transportation Improvement Program (TIP). The project is also included in the current State Transportation Improvement Program (STIP). The COSL has programmed \$200,000 a year for design and construction. As co-sponsor, Navajo County has programmed \$1,000,000 for design and construction. Federal funding for construction in the amount of \$1,750,000 is currently programmed for this project. Construction is tentatively scheduled to begin in mid 2010.

A combination of newly dedicated right-of-way from private land owners and a new roadway easement from the United States Forest Service (USFS) will be required to complete the project. The recommended alternative reasonably minimizes the impact on USFS land and utilizes existing COSL right-of-way. A 700 LF section of Scott Ranch Road was constructed and dedicated to the COSL during the development of commercial properties at the intersection of Scott Ranch Road and SR-260. The existing section contains two travel lanes and a continuous left turn lane. The proposed right-of way width is 100’ with a total of 12.66 acres required from 6 private parties, in addition to approximately 1.36 acres of roadway easement required from the USFS.

The Federal Highway Administration (FHWA) is the lead federal agency on this project with the Arizona Department of Transportation (ADOT), USFS, and Navajo County being participating agencies with the City of Show Low. ADOT will conduct design reviews and administer the construction for this project.

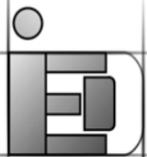
Ironside Engineering & Development Inc. (IED) has been retained by the COSL to prepare the DCR, preliminary plans, and reports. The project team consists of IED, Logan Simpson Design, Inc. (Environmental Sub-consultant), T.Y. Lin International (Bridge Design Sub-consultant) and Terracon (Geotechnical Sub-consultant). Supporting technical reports and documentation will accompany future stage submittals in accordance with ADOT’s local government project development process.



**FIGURE E1 – RECOMMENDED ALTERNATIVE**



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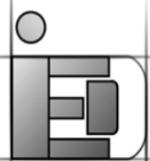
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## 1.0 INTRODUCTION

### 1.1 Forward

The Scott Ranch Road & Bridge [ADOT TRACS No. SS673 01C; Federal Aid No. HPP-SLW-(200)A] Design Concept Report has been prepared to evaluate alternative alignments and design concepts for the proposed new roadway described herein. This report is intended to identify and examine a recommended alternative that most effectively links SR-260 to Penrod Road.

#### 1.1.1 AASHTO Classification

Scott Ranch Road as proposed is classified as an urban collector in accordance with the American Association of State and Highway Transportation Officials (AASHTO) 2004 edition of "A Policy on Geometric Design of Highways and Streets", commonly referred to as the AASHTO "Green Book". The existing corridor is semi-rural, however, near-term urbanization is anticipated subsequent to project development.

#### 1.1.2 Posted Speed Limit

The proposed posted speed limit is 35 miles per hour (mph) for the entire length of the project. This is 5 mph lower than the design speed of 40 mph.

#### 1.1.3 Major Traffic Generators

Traffic attracted to the COSL for its commercial and tourism trade, through trips bound for other parts of the region, and internal circulation, combine to create a substantial cumulative demand on the existing local and regional roadway networks.

Areas surrounding the intersection of Scott Ranch Road and SR-260 are occupied by several major commercial retailers and the regional hospital for the White Mountain region. The combination of these factors make the area bordering Scott Ranch Road a popular destination for both local and regional travelers. Regional populace is scattered with numerous towns and communities widespread throughout the region. Residents of these communities regularly commute into Show Low for work, goods and services. Additionally, the White Mountains provide an abundance of outdoor recreational opportunities, including nearby Show Low Lake, resulting in significant traffic demands associated with recreation and tourism.

### 1.2 Purpose and Need for Project

The COSL is the principal economic hub of the White Mountain Region of Southern Navajo and Apache Counties. Growth projections for the White Mountain area predict a high rate of growth in the foreseeable future with the COSL being the commerce center for this projected growth. According to the *Southern Navajo/Apache County Sub-Regional Transportation Plan* prepared in 2007, the population in the southern Navajo/Apache County sub-region is aggressively estimated to more than quadruple between the years 2006 and 2030. In order to effectively accommodate the anticipated growth, the region's transportation network will need to be expanded and upgraded. Transportation improvement needs have been identified in the 2007 *Southern*

*Navajo/Apache County Sub-Regional Transportation Plan*, which recognizes Scott Ranch Road as a key element of the region's transportation improvement plan.

The proposed Scott Ranch Road and Bridge project fulfills several of the region's transportation improvement needs with one multi-faceted project. Presented below is a listing of needs that form the basis of this project.

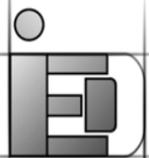
The 2007 *Southern Navajo/Apache County Sub-Regional Transportation Plan* identifies the need to increase capacity in the SR-260/ Penrod Road corridor(s) between the COSL and the Town of Pinetop-Lakeside. The Sub-Regional Plan identifies Penrod Road improvements as the most appropriate means of improving this capacity. Connecting SR-260 and Penrod Road via Scott Ranch Road will provide alternative routes and assist in alleviating the deteriorating level of service on SR-260 in the vicinity of the project. Additionally, construction of Scott Ranch Road will enhance intra-regional travel into and out of the project area.

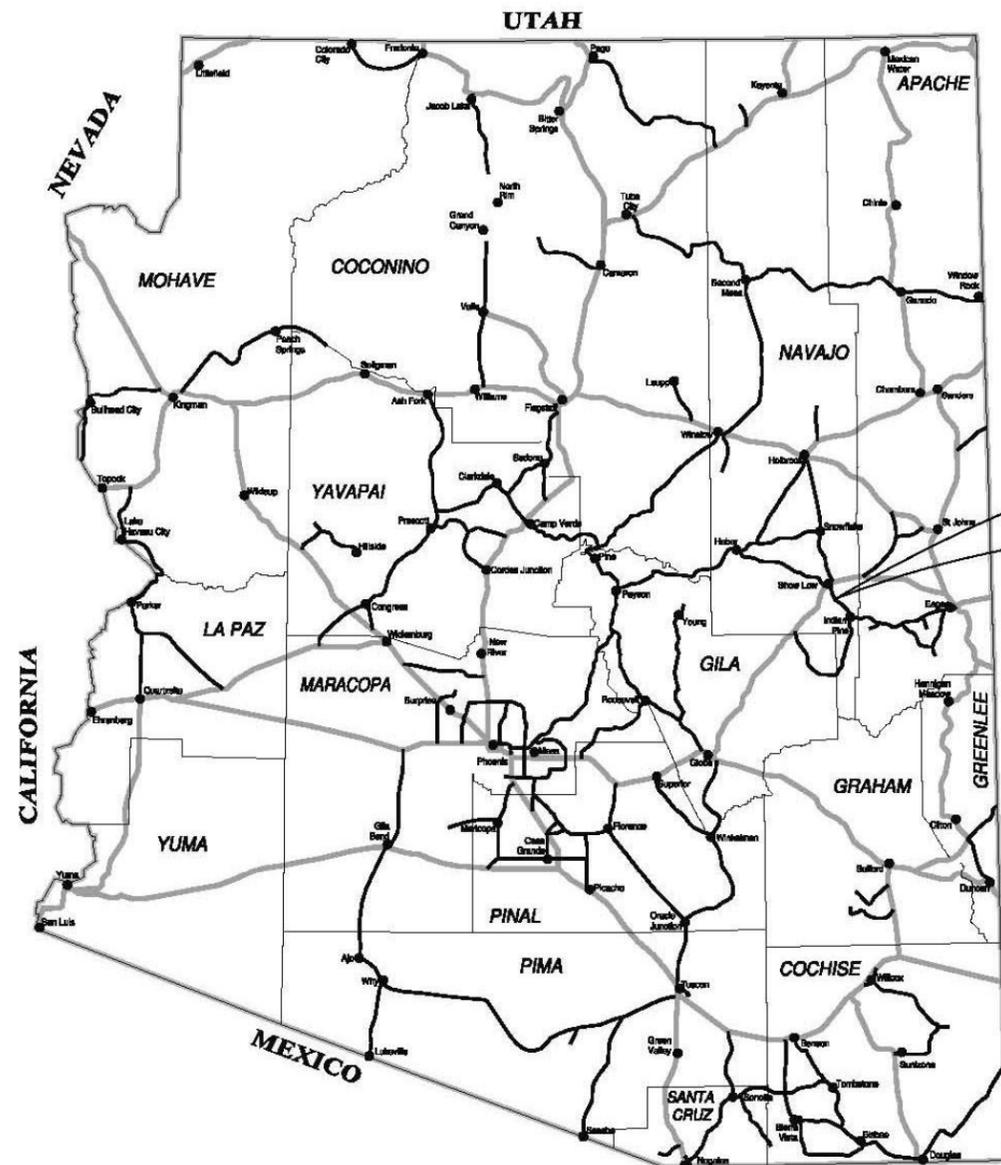
Show Low Creek, between Show Low Lake and US-60, has historically been a geographical barrier. Currently, there is no creek crossing for approximately eight miles along the creek in this area. The nearest creek crossing is located at US-60, approximately four miles from the proposed Scott Ranch Road crossing, and provides only limited flood protection for traversing the creek. In a major storm event the US-60 Bridge would become impassable, and without Scott Ranch Road all traffic would be forced to detour a minimum of one hundred miles. The construction of Scott Ranch Road and Bridge will provide a higher degree of flood protection for both local and regional travelers crossing Show Low Creek.

Summit Healthcare (formerly Navopache Regional Medical Center) is the largest hospital facility in all of Navajo and Apache Counties. Constructing Scott Ranch Road will enhance emergency service response and travel times, and improve access to the regional emergency care facility. Access provided by Scott Ranch Road could prove to be invaluable in the face of a major disaster (i.e. flood, forest fire).

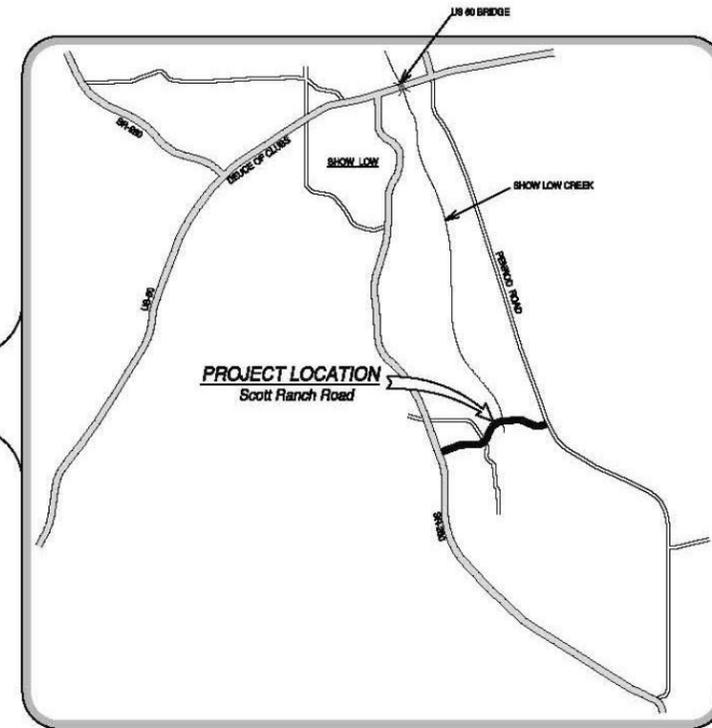
An existing segment of Scott Ranch Road extends 300 feet west of SR-260, with a larger segment that terminates approximately 700 feet east of SR-260 in the heart of the region's largest commercial center. Extending Scott Ranch Road will promote development in the project area and strengthen both the regional and local economies by providing direct access to this commercial hub.

In summary, the purpose of this project is to provide an east-west connection between SR-260 and Penrod Road, crossing Show Low Creek. The construction of Scott Ranch Road satisfies several local and regional transportation needs and has socio-economic benefits including, 1) increasing roadway capacity and improving the quality of service in the SR-260/Penrod Road corridor(s), 2) providing a creek crossing with a higher degree of flood protection than currently exists, 3) providing an alternate hospital access, 4) promoting regional and local economic growth, and 5) providing an additional fire evacuation route.



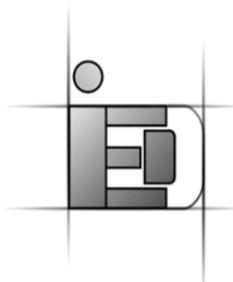


**Location Map**  
N.T.S.



**Vicinity Map**  
N.T.S.

**FIGURE 1.1 – LOCATION & VICINITY MAP**



### 1.3 Project Description (Recommended Alternative)

#### 1.3.1 Length of Project

The total length of the project is 6,766 LF (1.28 mi), measured from the existing terminus of Scott Ranch Road to the point of intersection with Penrod Road.

#### 1.3.2 Project Termini

The project's western terminus is the existing terminus of Scott Ranch Road, approximately 700 feet east of the signalized intersection of Scott Ranch Road and SR-260, adjacent to the existing Home Depot. The eastern terminus is the point of intersection with Penrod Road, approximately 4.2 miles south of US-60.

#### 1.3.3 Proposed Pavement Width

There are three roadway sections proposed for Scott Ranch Road:

1. Commercial Section 1 – This section will be utilized between SR-260 and Show Low Lake Road. It will accommodate one travel lane in each direction and a continuous left turn lane. Vertical curb and gutter will be used in this section, along with 5' sidewalks on both sides of the roadway.
2. Commercial Section 2 – This section will be utilized for the last 890 LF of Scott Ranch Road. This segment of roadway will accommodate one travel lane in each direction, a continuous left turn lane, a 10' sidewalk on the south side of the road, and contain vertical curb and gutter.
3. Non-Commercial Section – The 32' wide non-commercial section will accommodate the remaining areas of Scott Ranch Road, and will extend across the Show Low Creek bridge crossing. The non-commercial section will contain one travel lane in each direction with 8' shoulders; four feet paved, and four feet unpaved. This section will also include a detached 10' multi-use trail.

The proposed roadway sections are illustrated in Appendix C, and their locations along the corridor can be seen in Appendix D.

#### 1.3.4 Total Number of Proposed Lanes

Scott Ranch Road will provide one continuous travel lane in each direction for the entire length of the project. As previously mentioned, a continuous left turn lane is included in the areas containing the commercial section pavement width. Provisions will be made to accommodate additional turn lanes as required for future development of commercial parcels in the areas containing the non-commercial section.

#### 1.3.5 New Right of Way

The proposed right-of-way width for this project is 100'. The project will require right-of-way to be acquired from 6 private land owners and the USFS. A total of 12.66 acres of private land and 1.36 acres of USFS easement have been identified and described in this report. An exhibit illustrating the required right-of-way is presented in Appendix G.

#### 1.3.6 Curb, Gutter, Sidewalks, Trails and Medians

Commercial Section – 1 includes vertical curb & gutter and a 5' attached sidewalks on both sides of the road. Commercial Section – 2 includes vertical curb & gutter as well, but contains a 10' attached sidewalk on the south side of the road.

Ribbon curb and roadside ditches, along with a 10' wide detached paved trail on the south side of the road, are included in the Non-Commercial Section. The trail generally remains detached and meanders within the 100' right-of-way, with the exception of the segment that converges with the roadway at the bridge crossing.

#### 1.3.7 Striping, Marking and Signage

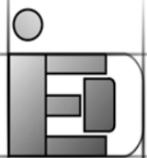
Striping, marking and signage will be in accordance with the 2003 Manual on Uniform Traffic Control Devices (MUTCD). The roadway will be designed to accommodate a two-way left turn lane throughout the areas containing the proposed commercial section; this segment of road will be striped accordingly and will remain consistent with the striping on the existing segment of Scott Ranch Road. For the segments where the non-commercial section is proposed, two normal solid yellow lines will be provided to indicate a two direction no passing zone.

#### 1.3.8 Drainage Improvements

Vertical curb and gutter, along with scuppers and catch basins, will provide pavement drainage in the segments containing either of the proposed commercial sections. Roadside ditches will be used to convey runoff to the drainage crossings where ribbon curb is proposed. Various culverts, including a two barrel concrete box culvert (STA 75+40±), and the bridge crossing Show Low Creek, account for all proposed drainage crossings. An estimated 700 LF of storm drain is anticipated to facilitate pavement drainage throughout the commercial sections of the project. Erosion protection will be provided as needed typically in the form of dumped riprap, at culvert inlets & outlets, storm drain outfalls and for steep channel linings. Proposed drainage improvements are discussed in greater detail in Section 4.6 of this report, and are illustrated on the plan & profile sheets presented in Appendix L.

#### 1.3.9 Utility Improvements

Utility providers, with facilities in the vicinity of the project, were contacted and notified of the potential development of this project. The COSL owns and operates sanitary sewer and storm drain facilities in Show Low Lake Road and may extend sewer service across the bridge in the future. The COSL also owns and operates a sewage lift station at the northeast corner of the proposed intersection of Show Low Lake Road. Due to the likelihood of near-term development in the project area, it was assumed that numerous utilities will be extended across the bridge in the future. The bridge will be designed to accommodate future utilities. Currently, there is no plan to extend utilities across Show Low Creek during bridge construction. Overhead power lines exist at both intersections of Show Low Lake Road and Penrod Road. Unisource Energy owns and operates high pressure gas lines near Penrod Road. The recommended alternative crosses these high pressure gas lines at STA 83+60±. Potholing will be required in order to determine if these utilities will require relocation with the recommended alignment.



### 1.3.10 Traffic Control

Traffic control requirements were reviewed at the following locations.

1. The intersection of Scott Ranch Road and Show Low Lake Road.
2. The intersection of Scott Ranch Road and Penrod Road.

Traffic control during construction will be required at the proposed intersections with Show Low Lake Road and Penrod Road. Show Low Lake Road will require short temporary closures during construction; however access to both sides of the proposed intersection can be obtained from SR-260. The proposed turn lane additions in Penrod Road should not necessitate construction detours.

Stop signs on all four approaches are proposed at the intersection of Show Low Lake Road. Left turn lanes and shared right turn lanes are provided on all 4 legs of the proposed intersection.

A stop sign at Penrod Road will accommodate initial traffic volumes, however this intersection is likely to warrant a traffic signal as future traffic volumes increase. Final design of this intersection should include provisions for a future traffic signal.

### 1.4 Project Objectives

The objectives of this project are as follows:

1. Construct an east-west connection between SR-260 and Penrod Road.
2. Construct a bridge crossing Show Low Creek, traversable in the 100-year storm event.
3. Provide a multi-use trail connection between SR-260 and Penrod Road.

### 1.5 Characteristics of the Corridor

#### 1.5.1 Existing Roadway Characteristics

A short segment of Scott Ranch Road currently exists, adjacent to Home Depot, extending east approximately 700 LF from the intersection of SR-260, a few hundred feet south of milepost number 346. The existing roadway consists of Maricopa Association of Governments (MAG) standard vertical curb and gutter with a sidewalk on the north side. The existing section includes one travel lane in each direction and a 2-way left turn lane. The total pavement width is 44' from back of curb to back of curb.

#### 1.5.2 Right of Way

The "Right-of-Way Exhibit" in Appendix G illustrates the existing COSL right-of-way, and the new right-of-way required for the recommended alternative. All right-of-way to be acquired must be acquired in compliance with Federal Law.

#### 1.5.3 Drainage

Several defined drainage paths exist within the roadway corridor, the most notable being Show Low Creek. Show Low Creek is a perennial stream with typical dry weather flow

rates controlled by the COSL and the Show Low/Pinetop-Woodland Irrigation Company. The 100-year peak discharge (13,320 cfs) near the proposed bridge crossing was taken from the most recent FEMA Flood Insurance Study (FIS) for Navajo County and Incorporated Areas (FIS #04017CV001A). This entire 100-year peak discharge is essentially conveyed through the Show Low Lake overflow spillway. The spillway is directed toward the proposed alignment and flows in very close proximity to the project. Spillway releases from Show Low Lake result in large turbulent flows in the spillway channel, however the spillway channel is comprised primarily of rock providing excellent erosion protection.

Existing runoff from the Home Depot and Wal-Mart commercial complexes is directed toward the proposed alignment and outfalls to a well defined unnamed drainage path south of the project. Runoff from this drainage path is conveyed under Show Low Lake Road via 2-36" CMP culverts. These culverts flow into a large CMU junction structure, transition to 3-48" CMP culverts, and ultimately discharge into the Show Low Lake spillway channel.

Two existing 18" diameter storm drain outfall pipes discharge toward the proposed alignment. The pipes drain a portion of the existing Mountain Park Apartments.

A major drainage path east of Show Low Creek conveys an estimated 100-year peak discharge of 430 CFS across the recommended alignment.

Runoff from the west side of Show Low Creek generally drains from north to south, while drainage east of the creek flows northerly.

#### 1.5.4 Structures

The only existing major drainage structures are the aforementioned spillway and CMP culverts and junction structure. The existing culverts are clearly identified on the plan & profile sheets in Appendix L.

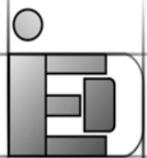
#### 1.5.5 Surrounding Topography and Terrain

The majority of the roadway corridor consists of undeveloped land in rolling terrain. Steep basalt bluffs line both sides of Show Low Creek and a portion of the spillway channel. The bluffs rise approximately 30' above the creek flow line in places. Basalt outcroppings are common in the project area.

Vegetation consists primarily of Ponderosa Pine, Alligator and Shaggy Bark Juniper, Oak and native rangeland grasses.

#### 1.5.6 Land Use

Existing land uses along the corridor include: Commercial, Multi-Family Residential, Agricultural and Recreational (Show Low Lake Camp Ground). Future land use is anticipated to be predominately commercial west of Show Low Lake Road and Mixed-Use Planned Unit Development (PUD) east of Show Low Lake Road.



## 2.0 Traffic and Accident Data

### 2.1 Traffic Analysis

As part of the *Southern Navajo/Apache County Sub-Regional Transportation Plan*, prepared by Wilson & Company, dated September 2007, individual community transportation plans were concurrently prepared and distributed to participating communities. The *Show Low Community Transportation Plan* is a stand-alone document that was derived from the Sub-Regional Transportation Plan and focuses exclusively on the COSL's transportation issues. The traffic projections presented in the *Show Low Community Transportation Plan* were assumed for this project.

IED prepared a traffic analysis report to assist in the preliminary roadway design. The traffic analysis report, dated July 2009, is included with the Stage II submittal, under a separate cover.

#### 2.1.1 Data Sources

Traffic Data was obtained from the aforementioned transportation planning documents and from the COSL Public Works Department.

#### 2.1.2 Traffic Data

The average daily traffic for Scott Ranch Road between Show Low Lake Road and Penrod Road, for the year 2030 is estimated to be 8,400 VPD. The future roadway network used to estimate this traffic volume assumes that additional sub-regional transportation improvements will be constructed by the year 2030. These improvements are identified as "Alternative A" in the *City of Show Low Community Transportation Plan*. Another scenario presented in the *Show Low Community Transportation Plan* estimates the traffic volume on the same segment of Scott Ranch Road to be 15,300 VPD. The latter scenario assumes that only currently committed and planned projects will be constructed. The COSL maintains a proactive Capital Improvement Program (CIP), thereby supporting the assumption that the Alternative A roadway network will be representative of the network associated with the design year ADT. Figure 2.1 summarizes the estimated traffic volumes, for each segment of Scott Ranch Road as estimated by Wilson & Company. The higher volume (8,400 VPD) was assumed for the entire roadway. Table 2.1 summarizes the traffic data utilized in the traffic analysis report.

#### 2.1.3 Operational Analysis

Level of service (LOS) analyses for the proposed roadway were conducted following the guidance in the Highway Capacity Manual utilizing the Highway Capacity Software v4.1e. Results of the analyses indicate the two lane highway will operate at level of service "C" for the design year traffic volume. Additionally, the proposed Show Low Lake Road all-way stop controlled intersection is predicted to operate at LOS "B" for the design year. The intersection of Scott Ranch Road and Penrod Road is predicted to operate at LOS "E" for the construction year peak hour. The COSL is currently planning to widen Penrod Road to four lanes at this location. A traffic signal should be included in Penrod Road widening plans, and accommodations for a future traffic signal conduits should be provided in the Scott Ranch Road design.

Data	Source	Value
Design Year 2030 ADT for Scott Ranch Road East of Show Low Lake Road	Show Low Community Transportation Plan	8,400
Construction Year 2010 ADT for Scott Ranch Road East of Show Low Lake Road	IED	5,000
Design Year 2030 ADT for Penrod Road South of Scott Ranch Road	Show Low Community Transportation Plan	40,000
Existing ADT on Penrod Road South of US60	City of Show Low Public Works Dept.	6,457
Scott Ranch Road Design Hour Traffic Factor (K)	IED	9%
Scott Ranch Road Directional Distribution Factor (D)	IED	60%
Scott Ranch Road Truck Factor (T)	IED	5%

TABLE 2.1 – TRAFFIC DATA

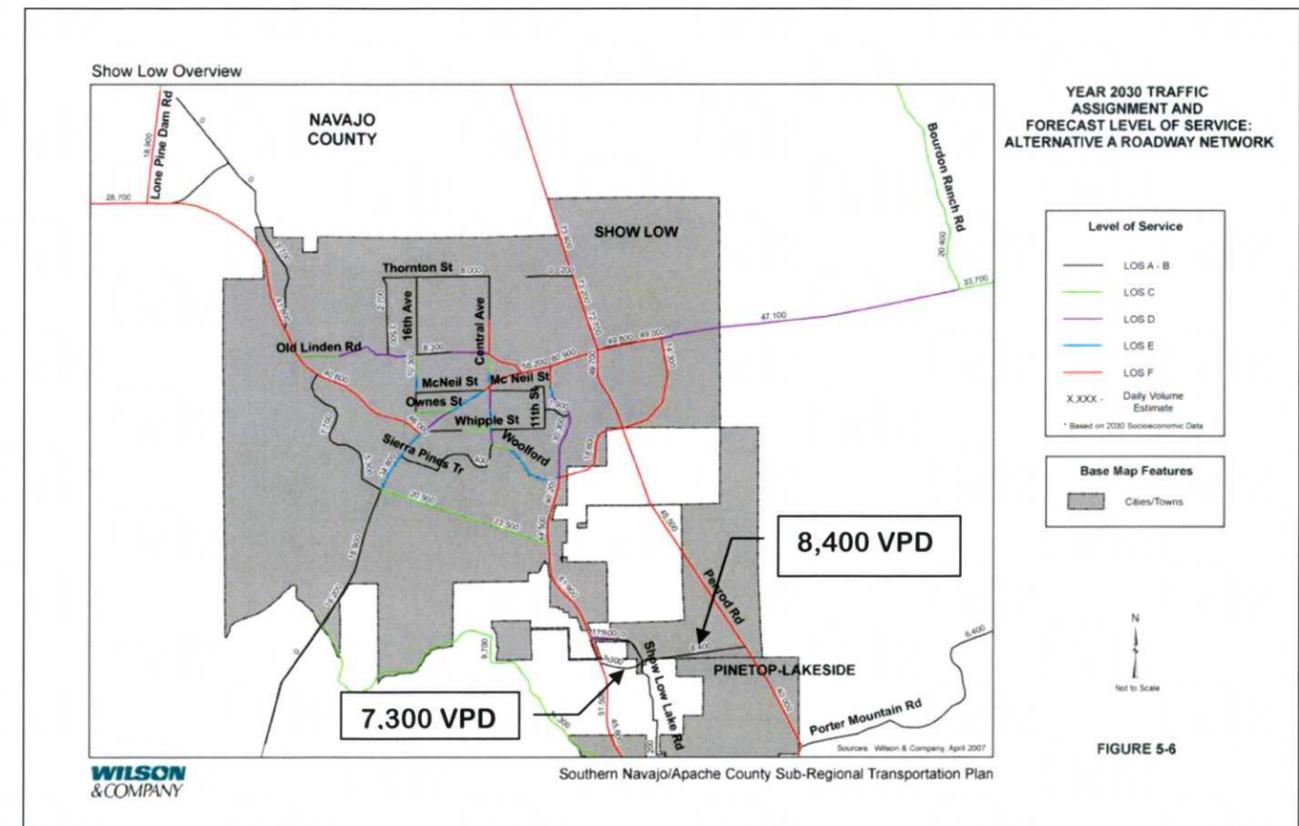
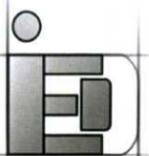


FIGURE 2.1 - YEAR 2030 TRAFFIC VOLUMES AND LEVELS OF SERVICE



## 2.2 Accident Analysis

The accident analysis presented herein reviewed traffic accident data for Penrod Road, near the proposed Scott Ranch Road intersection.

### 2.2.1 Data Source

Accident history and documentation were requested from the COSL Police Department and the Navajo County Sheriff's Department. IED is currently in the process of obtaining accident records from the Department of Public Safety (DPS).

### 2.2.2 Accident Data

The COSL Police Department reported no accidents on Penrod Road in the vicinity of the project. The Navajo County Sheriff's Department provided accident reports ranging from March 2005 to July 2007. Accidents appear to be scattered throughout the Penrod Road corridor and on Porter Mountain Road near the intersection of Penrod Road. There does not appear to be any correlation between accidents and existing Penrod Road design features.

Source	Sideswipe	Collision	Rollover	Rear End	Unknown	Animal	Total Injuries	Total Fatalities
Navajo County Sheriff's Dept.	1	1	1	1	4	1	1	0

TABLE 2.2 – ACCIDENT DATA

## 3.0 DESIGN CONCEPT ALTERNATIVES

### 3.1 Introduction

Throughout the conceptual design process, five build alternatives and the “Do Nothing” or “No-Build” alternative were developed and evaluated. The build alternatives are labeled Alternative #1 through Alternative #5, with Alternative #1 being selected as the recommended alternative. Alternatives were evaluated using the criteria presented in Section 3.3 of this report. Alternatives were ranked using a scoring system in matrix format. Each alternative was ranked from 1 through 5 for each of the 18 criteria, with 1 being the most desirable. Individual criteria were equally weighted; therefore the alternative with the lowest score is the recommended alternative. The Alternative Alignment Exhibit in Appendix E illustrates the horizontal alignments for each of the alternatives, the alignments are labeled and color coded. An alternative selection meeting was held on May 21, 2008 with representatives from The COSL, Navajo County and IED in attendance. Information regarding the social, economic and environmental characteristics of each alternative was made available by the project environmental consultant/team member Logan Simpson Design, Inc. Additionally, approximate bridge square foot costs were provided by T.Y. LIN International, and used to estimate bridge construction costs. The alternative evaluation table and scoring matrix are presented in Appendix F.

## 3.2 Design Concept Alternatives

### 3.2.1 Alternative #1 -RECOMMENDED (Blue)

Alternative #1 (Recommended) results in the most cost effective alternative primarily due to the shortest length of bridge. Other notable advantages of this alternative include narrower floodway width at the creek crossing and generally less potential impact to sensitive forest species and jurisdictional waters.

### 3.2.2 Alternative #2 (Red)

Desirable features associated with Alternative #2 included circumventing a significant drainage corridor on the east side of the project and relatively less earthwork required east of Show Low Creek. The estimated bridge length was somewhat longer than the recommended alternative but was significantly shorter than the other discontinued alternatives. The major drawbacks to this alternative were the potentially excessive impacts to USFS land, and the negative effect on land use potential.

### 3.2.3 Alternative #3 (Orange)

The most attractive element of Alternative #3 was the horizontal alignment at the intersection of Show Low Lake Road. The bridge length is among the longest of all the alternatives considered and there are notable potential impacts to the FEMA mapped floodway and potential jurisdictional waters.

### 3.2.4 Alternative #4 (Green)

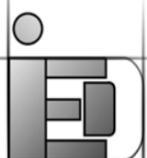
Alternative #4 closely followed a section line and had fewer horizontal curves. The major drawback to this alignment is the need for two separate bridge crossings. This alternative would require one bridge crossing the spillway and another crossing the creek channel. Additionally, this alignment impinges upon the existing Show Low Lake Campground.

### 3.2.5 Alternative #5 (Brown)

Alternative #5 was developed based on input gathered during the scoping process from the major land owner on the east side of Show Low Creek. (Freeport McMoran Copper & Gold, Inc. (FMM), formerly Phelps Dodge.) Representatives of FMM provided a desired conceptual alignment that did not meet engineering standards. At the request of the COSL, IED developed a feasible alignment that resembled the alignment requested by FMM. This alternative resulted in the longest bridge and had a high potential for impact to the FEMA floodway and potential jurisdictional waters.

### 3.2.6 “Do Nothing” Alternative

The “Do-Nothing” Alternative contradicts the findings of the aforementioned *Navajo/Apache County Sub-Regional Transportation Plan* and would be considered an inert response to a known transportation need. The sub-regional plan identifies the need for SR-260 bypass routes to relieve excess traffic from SR-260, and identifies Scott Ranch Road as a necessary and “committed” by-pass route. The “Do Nothing” Alternative would “do nothing” to improve the sub-regional transportation network nor promote economic growth; the opposite is true if the project is developed. There is no construction costs associated with “Do Nothing” Alternative. It is recommended that the “No-Build” alternative not be



considered as a viable alternative.

### **3.3 Evaluation of Alternatives**

#### **3.3.1 Land Use**

This criteria evaluates potential effects of the alternatives on the present and future land use surrounding the project.

#### **3.3.2 Right-of-Way**

This element evaluates the quantity and type of right-of-way required.

#### **3.3.3 Environmental**

The environmental aspect of each alternative was evaluated for obvious potential impacts to the existing environment.

#### **3.3.4 Cultural Resources**

Prehistoric and historic cultural resources elements were evaluated based on preliminary background research and surveys.

#### **3.3.5 Archeological**

This aspect of each alternative was evaluated based on any known archeological sites. The potential impacts to archeological sites was based on preliminary background research and surveys.

#### **3.3.6 Construction Cost**

This criteria evaluates each alternative based on the total estimated construction cost. Engineering judgment and local knowledge play a major role in construction cost estimating in the early stages of a project.

#### **3.3.7 Constructability**

This element considers the relative constructability or ease of construction for each alternative.

#### **3.3.8 Traffic Control**

This feature analyzes each alternative based on the traffic control requirements of each alternative. In particular, traffic control at intersections.

#### **3.3.9 Safety**

This evaluation criteria was used to rank the alternatives relative to safety and to help identify any potential safety issues.

#### **3.3.10 Capacity**

This component assesses the effects each alternative has on the roadway capacity.

#### **3.3.11 Level of Service**

The level of service for each alternative was evaluated for the projected design year (2030) traffic volume.

#### **3.3.12 Drainage**

This issue was evaluated for any potential negative drainage related impacts the development of this project may have on the surrounding area, and any potential constraints the existing drainage conditions may have on the development of the project.

#### **3.3.13 Earthwork**

This criteria estimated total and net earthwork volumes and the potential for rock excavation, for each alternative.

#### **3.3.14 Floodplains**

The floodplain element considered the potential impacts to the 100-year floodplain due to potential floodplain encroachments.

#### **3.3.15 Utilities**

Each alternative was evaluated for potentially costly conflicts with existing utilities as well as ease of accommodating future utilities.

#### **3.3.16 Structures**

This element reviews the effects of any major structures associated with each alternative. The bridge structure(s) crossing Show Low Creek is the most influential structure in this category.

#### **3.3.17 Socio-Economic Considerations**

This component evaluates the effects the project will have on the citizens and economies affected by this project.

#### **3.3.18 Design Exceptions**

This criteria evaluates any design exceptions that may be required for each alternative and the implications of these exceptions on the overall outcome of the project.

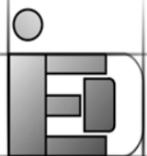
### **3.4 Recommended Alternative**

Alternative #1 was identified as being preferable to other alternatives as is evident in the distinct results of the scoring matrix. Alternative #1 is the recommended alternative.

## **4.0 MAJOR DESIGN FEATURES (Recommended Alternative)**

### **4.1 Introduction**

Attempting to maximize the project's potential, the design features of the recommended alternative were further examined. Of particular significance to this project is the proposed bridge crossing Show Low Creek. As with any new roadway and/or bridge project design opportunities and constraints abound. This section is intended to clearly identify the many design features



associated with this project and effectively convey the design intent and parameters used in the development of the recommended alternative.

#### 4.2 Design Controls

The design of Scott Ranch Road follows the general guidance of the 2007 ADOT Roadway Design Guidelines and the AASHTO 2004 edition of "A Policy on Geometric Design of Highways and Streets". Table 4.1 summarizes the design controls established for this project.

Design Guidelines	ADOT Roadway Design Guidelines, 2007
Roadway Classification	Urban Collector
Design Year	2030
Design Speed	40
ADT for Design Year	8,400 vpd
Design Vehicle	WB-50
Design Year Level of Service	LOS C
Typical Section	Non-Standard 3-Lane Section w/ Curb & Gutter Modified Typical Section UC (2-Lanes w/ Ribbon Curb)
Travel Lane Width	12'
Shoulder Width	4'
Number of Through Travel Lanes in each Direction	1
Terrain	Rolling
Superelevation	4% Maximum
Maximum Degree of Curve	10° 45'
Maximum Grade	8%
Cross Slope	2%
Access Control	Access will be allowed in accordance with the COSL's ordinances and permitting process.
Right-of-Way Width	100'

**TABLE 4.1 - DESIGN CONTROLS**

#### 4.3 Horizontal and Vertical Alignments

The horizontal alignment for the preliminary design is illustrated on the Conceptual Alignment Exhibit and in the plan & profile sheets in the appendices. The horizontal alignment consists of 5 horizontal curves and 6 tangents. Degree of curve varies from 10° 36' to 3° 28'. The horizontal alignment utilizes all of the COSL's existing right-of-way within the corridor. Every horizontal curve was designed with superelevation, with 4% being the maximum.

The roadway profile consists of 12 vertical curves. The vertical alignment was established with the goal of minimizing cut situations that would result in rock excavation in the anticipated shallow bedrock. Although the roadway is permitted to reach a maximum grade of 8% as established in the design criterion for this type of roadway, the maximum proposed slope of any vertical curve is 6%.

Snow and ice will be present on the roadway at times during the winter months. Special consideration, in accordance with current standards, has been given in the geometric design to account for the effects of reduced traction and for the accommodation of snow plowing equipment. Where practical, crowned roadway sections were utilized to minimize the potential for snow melt draining across warped or superelevated sections.

#### 4.4 Access Control

Initial access will be restricted for the entire length of the project. Future access will be granted in accordance with the COSL's ordinances and permitting process. No private driveways are included in the Stage II (30%) design; however driveways may be included in the final design.

#### 4.5 Right-of-Way

The COSL currently has one segment of dedicated right-of-way along the alignment and they intend to secure a continuous 100' wide right-of-way for the remainder of the project. It should be noted that the USFS does not dedicate right-of-way but rather grants an easement upon their approval of the project. Currently the planned uses of the USFS easement include roadway & non-motorized trail travel and water, sewer, electric and communications utilities. Table 4.2 summarizes the right of way requirements for this project. Land ownership and parcel mapping was derived from data obtained from the Navajo County Assessor's Office. A right-of-way exhibit is presented in Appendix G.

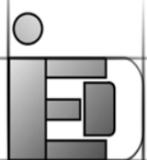
ASSESORS PARCEL #	OWNERSHIP	AREA [AC]
212-07-002C	MENHENNET FAMILY PARTERSHIP LLP 2/3 MENHENNET MARK M TRUSTEE 1/6 MENHENNET MARK M SUCCSOR TRUSTEE 1/6	2.19
212-07-001P	MENHENNET FAMILY PARTERSHIP LLP 2/3 MENHENNET MARK M TRUSTEE 1/6 MENHENNET MARK M SUCCSOR TRUSTEE 1/6	0.22
212-07-004A	MENHENNET FAMILY	0.76
212-07-004B	MENHENNET FAMILY	0.22
212-03-002H	MEHTATRACE PROPERTIES LLC	1.39
212-02-004	PHELPS DODGE CORP/FREEPORT-MCMORAN	2.38
212-02-005	PHELPS DODGE CORP/FREEPORT-MCMORAN	5.50
212-03-002K	CITY OF SHOW LOW	1.27
USFS	SITGREAVES NATIONAL FOREST	1.36

**TABLE 4.2 - RIGHT-OF-WAY SUMMARY**

#### 4.6 Drainage

##### 4.6.1 Introduction

Preliminary drainage analyses were conducted by IED to support the initial design presented in this DCR. Included in the preliminary analyses were drainage area delineations and peak flow estimates for the 100-year, 50-year and 10-year storm events. Additionally, a preliminary bridge hydraulic analysis was conducted to identify potential



impacts the bridge may have on the creek hydraulics. Final drainage and bridge hydraulics reports will be prepared and submitted at the time of final design. A preliminary drainage report is included with the 30% submittal.

Drainage improvements for the recommended alternative include catch basins, storm drain, corrugated metal pipe culverts with flared end sections, roadside ditches, curb and gutter, and a concrete box culvert located at STA 74+40±. Drainage easements outside the right-of-way may be required where drainage structures cannot be graded inside the right-of-way.

Perennial stream flow in Show Low Creek is controlled by COSL staff, along with the Show Low/Pinetop-Woodland Irrigation Company, at the Jaques Dam outlet works. Extreme storm events result in uncontrolled spillway releases which have the potential to inundate the creek valley.

#### 4.6.2 Watershed Description (Existing Conditions)

Scott Ranch Road falls entirely within the Show Low Creek watershed, a sub-watershed of the Little Colorado River Basin. The Show Low Creek Watershed drains approximately 75 square miles upstream of the proposed bridge crossing. Show Low Lake is a 186 surface acre lake located immediately upstream of the project that impounds Show Low Creek. The maximum storage capacity in the reservoir is approximately 6,200 acre feet.

Vegetation consists primarily of moderately dense stands of Ponderosa Pine trees, and Alligator and Shaggy Bark Juniper trees with large areas of open meadows with native rangeland grasses.

A preliminary geotechnical evaluation of the project area was conducted by Terracon Consulting Engineers & Scientists in March, 2008. The predominant soil type in the vicinity of the project is paiso stony clay loam, overlying basalt bedrock. It was assumed that the offsite soil conditions are consistent with the onsite soil conditions, as typical soil types in the area fall into the Paiso series. Paiso series soils correspond to Hydrologic Soils Group "D".

#### 4.6.3 Hydrology

Hydrologic analyses for this project were carried out following the general guidance of the ADOT, *Highway Drainage Design Manual, Hydrology 1993*. The Rational Method was used to estimate peak discharges for all but one of the drainage areas. The drainage area concentrating at STA 74+40± exceeded the recommended maximum tributary area for the Rational Method, therefore a rainfall-runoff model was developed using The United States Army Corps of Engineers (USACE) Hydrologic Engineering Center program, "Hydrologic Modeling System" (HEC-HMS) v. 3.3. The 100-year peak discharge for Show Low Creek was taken from the *Flood Insurance Study (FIS) for Navajo County and Incorporated Areas* (FIS #04017CV001A). The detailed study for this reach of Show Low Creek was conducted by AGK Engineers, Inc. in 1990. The 100-year peak discharge downstream of

Show Low Lake was estimated to be 13,320 CFS. IED estimated the 500-year peak discharge to be 1.7 times the 100-year peak discharge ( $Q_{500} = 1.7 * Q_{100}$ ) or 22,640 CFS.

#### 4.6.4 Roadway Hydraulics

This project lies entirely within the corporate limits of the COSL. The COSL's drainage requirements are outlined in code sections 12-3-5 and 12-4-F. These code sections include, but are not limited to, the following hydraulic design criteria:

- Culverts for streets shall be designed to convey the 50-year peak discharge without overtopping the roadway.
- The flow depth over the roadway (overtopping depth) shall be limited to 1.0' for the 100-year peak discharge.
- Street drainage shall be designed to provide for one "dry" lane of traffic in both directions for all collectors and arterials for the 10-year peak discharge.

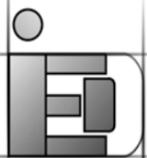
Scott Ranch Road is classified as a class 3 highway, according to the ADOT Roadway Design Guidelines. The minimum design storm frequency for the construction of a new class 3 highway is the 25-year storm event.

The COSL's more stringent overtopping criteria will be used for channel and culvert crossing design. Maximum allowable spread was assumed to be the width of the shoulder plus ½ the travel lane for the 10-year storm event, resulting in a total allowable spread of 10 ft.

The areas of roadway containing the proposed commercial sections will require scuppers and catch basins to drain the roadway. The scuppers, located approximately every 300', will drain into channels located behind the sidewalks. In locations where a channel could not be included within the right of way, catch basins will drain pavement runoff into a storm drain system. Approximately 700 LF of 24" storm drain is proposed west of Show Low Lake Road, with no storm drain being proposed east of Show Low Creek.

No stormwater retention/detention is proposed for this project. Increases in local runoff generated from the proposed paved areas are minimal with respect to the overall Show Low Creek drainage basin. Runoff will generally follow historic drainage paths. Due to the projects close proximity to Show Low Creek, size and relative location within the Show Low Creek watershed, the development of this project will not significantly increase peak discharges in Show Low Creek.

Drainage area delineations and corresponding peak discharge estimates are illustrated on the "Drainage Area Map" presented in Appendix I.



#### 4.6.5 Bridge Hydraulics

Due to the existing levels of flood protection provided by alternate routes crossing Show Low Creek, the COSL has requested the proposed bridge be designed to remain passable in the 100-year storm event. The preliminary bridge design for this project provides for the passage of the 500-year storm event. The bridge site topography drove the bridge profile design as opposed to minimum freeboard requirements. A hydraulic model of the creek channel and proposed bridge were developed using the United States Army Corps of Engineers (USACE) Hydraulic Engineering Center's River Analysis System (HEC-RAS) v4.0. A preliminary bridge hydraulic analysis was conducted to estimate the potential impacts to the existing FEMA base flood elevations(s). Results of the preliminary bridge hydraulic analysis indicate a maximum increase of less than one foot in the 100-year water surface elevation, upstream of the bridge.

A bridge scour analysis and the proposed scour countermeasures will be included in the final bridge hydraulics report to be prepared at the time of final design.

- anticipated subsurface soil conditions
- anticipated groundwater conditions
- potential foundation design and construction

The information presented in the report is based on a site visit and literature review of the project area. The site visit revealed a steep, nearly vertical in places, basalt bank of bedrock along the western bank of Show Low Creek. The eastern bank gently slopes upwards toward the east.

Based on the United States Department of Agriculture (USDA) Soil Survey for Holbrook-Show Low Area, performed in 1956, surface soils in the area of the proposed project consist of the Paiso Series of soils. These soils typically form gentle to strongly sloping landscapes. The parent material consists of basalts and volcanic cinders. The surface soil is generally non-calcareous, reddish-brown, slowly permeable to very slowly permeable, stony clay. When dry the soil is quite hard, but very sticky and plastic when wet. In some areas the sub-soil is calcareous. Basalt bedrock is typically 14" below the surface.

Based on the site reconnaissance and review of published data it is expected that excavations at the site will generally encounter shallow basalt bedrock. The basalt should have excellent bearing characteristics for shallow foundations. It appears the proposed bridge structures can be supported on a spread footing foundation system. Excavations into the fractured bedrock may encounter shallow groundwater associated with Show Low Creek, when the excavation extends to depths below current creek levels. The nearly vertical basalt outcrop on the western bank of the creek may need additional support, in the form of rock bolting, if the proposed bridge abutments are located within a distance less than the slope height from the edge of the face of the slope.

Onsite soils are expected to have significant expansion potential. This will affect lightly loaded structures and pavements. Chemical treatment of the subgrade soils may be necessary where native soils will support pavement or other lightly loaded structures.

#### 4.7 Section 404 of the Clean Water Act

Regulated under the Clean Water Act Section 404, waters of the United States are defined as encompassing navigable Waters, including tributaries and adjacent wetlands where dredge or fill material requires a permit from the USACE. A jurisdictional delineation of the project area was conducted. A jurisdictional waterway (Show Low Creek), and an adjacent wetland, were identified during the survey. Every effort will be made to have the least amount of impact on jurisdictional waters. The appropriate Section 404 permits, as determined by the jurisdictional delineation, will be acquired.

#### 4.8 Floodplain Considerations

The subject reach of Show Low Creek has delineated floodways at the proposed crossing and in the spillway channel adjacent to the proposed roadway. The proposed earth retaining structure on the south side of the road slightly encroaches into the floodway. The COSL owns the land adjacent to this proposed floodway encroachment and no adverse impacts will be realized by surrounding land owners. A map revision may be required in accordance with the National Flood Insurance Program floodplain management requirements. Due to bridge span considerations and constructability limitations, one or more bridge piers will be sited in the floodway. Results of the bridge hydraulic model indicate that small increases in the Base Flood Elevation (BFE) will result from bridge pier placement; however these small increases might be mitigated via channel modifications in the portions of the right overbank in the floodway fringe. If the effects of placing the bridge piers in the floodway cannot be effectively mitigated a map revision may be required. The United States Forest Service (USFS) should be made aware of this potential increase as it will impact the BFE's on USFS land outside the roadway/drainage easement.

#### 4.9 Geotechnical Considerations

A Preliminary Geotechnical Engineering Report dated March, 2008 was prepared by Terracon Consulting Engineers & Scientists (Terracon). The purpose of this report was to provide information and preliminary geotechnical engineering recommendations relative to:



#### 4.10 Pavement Design

The preliminary pavement design presented in this report has been provided by Terracon and is intended for planning purposes only. The final pavement section design(s) will be based upon data gathered from a full geotechnical investigation including subsurface exploration, laboratory testing and engineering analyses. The preliminary pavement structural section used in the development of the design concept includes 6" of asphalt concrete supported on 10" of aggregate base course. The following table summarizes the pavement design parameters utilized in the preliminary pavement thickness design.

Parameter	Estimated Value
Design ESAL's	5,334,582
Design Subgrade Resilient Modulus (psi)	5,818
Level of Reliability	90%
Combined Standard Error (S <sub>o</sub> )	0.35
Initial PSI	4.1
Terminal PSI	2.6
Pavement Layer Coefficient	
Asphalt Concrete (AC)	0.44
Aggregate Base Course (ABC)	0.14
Drainage Coefficient	1

**TABLE 4.3 – PAVEMENT DESIGN PARAMETERS**

#### 4.11 Earthwork

##### 4.11.1 Earthwork Estimate

The total estimated borrow for this project is 3,000 cubic yards. Borrow material will likely be in the form of manufactured aggregate base. Roadway cross sections at even stations are included in Appendix O.

##### 4.11.2 Potential Material Sources

There are several local material suppliers capable of providing borrow material.

##### 4.11.3 Retaining Structures

A retaining wall will be required at STA 41+00±. The structure will be built in accordance with ADOT Standard Drawings, Structures Section. The COSL intends to finish the wall with a façade that emulates the existing natural rock in the area. Approximately 100 LF of pedestrian guardrail will be required atop, and adjacent to, the retaining structure. A retaining structure will also be required on the north side of the easterly bridge approach.

#### 4.12 Constructability and Traffic Control

##### 4.12.1 General Information

The constructability aspects of this project are primarily associated with perennial creek flow, creek valley accessibility, and the close proximity to the existing Mountain Park Apartments. Traffic control required during construction will be isolated to the intersections of Show Low Lake Road and Penrod Road.

##### 4.12.2 Special Features

Prior to completion of the bridge, Show Low Creek will be impassable in the vicinity of the project. Steep bluffs on the west bank of the creek will likely limit access. The eastern bank is more accessible and will provide access into the creek valley.

Show Low Creek is a perennial stream with dry weather flow rates controlled by the COSL, in conjunction with the Show Low/Pinetop-Woodland Irrigation Company, at the Jaques Dam outlet works. Stream flow rates can be reduced to approximately 10 CFS during bridge construction. Additionally, storage capacity in Show Low Lake may be generated, by lowering the lake level, prior to commencement of bridge construction. While additional retention volume in the lake does not guarantee that flooding of the creek valley will not occur, it provides added flood protection. *"The history of flooding on streams in the City of Show Low indicates flooding may occur any season of the year, however, the majority of major flooding events occur during the winter months of December, January & February."* It should be noted that major flood events resulting in spillway releases, have historically occurred during these months.

##### 4.12.3 Seasonal Considerations

This project is located approximately 6,600 ft. above sea level and extreme weather conditions occur sporadically throughout the winter months.

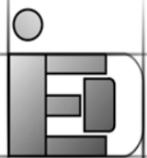
According to the ADOT Standard Specifications, Section 408-7.06 Asphaltic Concrete with nominal thicknesses greater than 1-1/2" shall only be placed when the ambient temperature is at least 45 degrees F and rising, and placement shall be stopped when the ambient temperature is 50 degrees F and falling. Design consideration must also be given to snow plowing equipment accessibility.

##### 4.12.4 Construction Traffic Control

A final traffic control plan shall be provided by the contractor prior to construction. A minimum of one lane shall remain open during construction to maintain access to residents and to accommodate emergency vehicles. The traffic control plan will be designed in accordance with the 2003 Manual on Uniform Traffic Control Devices (MUTCD), and 2003 ADOT Traffic Control Design Guidelines.

##### 4.12.5 Existing Pavement Removal

Show Low Lake Road will require widening to accommodate a left turn lane. The pavement in the proposed intersection will be removed in order to raise the profile of Show Low Lake Road. Also, pavement will be added to both sides of Penrod Road at the



proposed intersection to accommodate a left turn lane on the northbound approach. It is anticipated that the existing pavement will not be removed, but simply widened with additional pavement. The Removal Plans, included in Appendix N, illustrate the locations of the existing pavement that will most likely be removed.

**4.13 Intersections**

Two intersections were evaluated in the preliminary traffic impact analyses. The intersections along with their recommended traffic control improvements are discussed below.

**4.13.1 Scott Ranch Road & Show Low Lake Road**

Show Low Lake Road will be reconstructed for approximately 500 ft north and 430 ft south of Scott Ranch Road. The reconstruction will include modifying the vertical alignment and adding left turn lanes. A majority of the existing pavement will be utilized, except for 75 ft north and 260 ft south of Scott Ranch Road where the vertical alignment will be modified. Proposed traffic control at this intersection consists of a 4-way stop with left turn and shared right-turn/thru lanes at all four approaches. The length of storage, gap and taper for each left turn lane are listed in Table 4.4.

MOVEMENT	TAPER [FT]	GAP [FT]	STORAGE [FT]
NORTHBOUND LEFT TURN	150	60	165
SOUTHBOUND LEFT TURN	150	60	165
EASTBOUND LEFT TURN	240	90	230
EASTBOUND LEFT TURN	CONTINUOUS		

**TABLE 4.4 – SHOW LOW LAKE ROAD INTERSECTION TURN LANE GEOMETRY**

**4.13.2 Scott Ranch Road & Penrod Road**

The construction of Scott Ranch Road will result in a need for modifications to Penrod Road at this intersection. Right and left turn lanes will need retrofitting at the T-intersection with Penrod Road. The following table summarizes the turn lane geometry.

MOVEMENT	TAPER [FT]	GAP [FT]	STORAGE [FT]
NORTHBOUND LEFT TURN	270	90	285
SOUTHBOUND RIGHT TURN	90	90	180
EASTBOUND LEFT TURN	CONTINUOUS		
EASTBOUND RIGHT TURN	MAINLINE		

**TABLE 4.5 – PENROD ROAD INTERSECTION TURN LANE GEOMETRY**

**4.14 Utilities**

Minor utility relocations are anticipated. As previously mentioned all known utility providers with facilities in the immediate project area were notified of the potential development of this project. It is assumed that water, sewer, electric and communications utilities will be extended across Show Low Creek. A Utility Report, dated July 2009, submitted under a separate cover, is included with

the Stage II submittal.

**4.15 Structures**

The proposed bridge over Show Low Creek will be approximately 42'-10" wide and 320' to 410' long. The bridge will carry two 12' travel lanes with 8' shoulders, and one 1'-5" traffic barrier on each side. The bridge must provide pedestrian fencing on the barrier adjacent to sidewalk and with the City of Show Low requesting no fencing on the opposite side. The Bridge Selection Report (BSR), submitted under a separate cover for the Stage II submittal, will include a variety of span arrangements and structure types with specific costs for the bridge alternatives including:

- AASHTO girders (least expensive), maximum spans up to 130', no falsework required in the creek, common structure type in Arizona, least aesthetic opportunity
- Cast-in-place post tensioned box girders (moderately expensive), maximum spans up to 250', requires falsework, excellent opportunity for aesthetics;
- Steel girders/arches (expensive), maximum spans up to 250', no falsework required, with some opportunity for aesthetics with the use of parabolic arches.

The BSR includes a selection matrix with weighted criteria for the recommended alternative. Additional geotechnical, hydraulic, and site information will be required prior to finalizing the length of the bridge for final design.

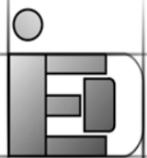
**4.16 Design Exceptions**

No design exceptions are anticipated for this project.

**4.17 Implementation**

NACOG currently has the Scott Ranch Road & Bridge project listed as a HPP under the current Transportation Improvement Program and the project has also been included in the current State Transportation Improvement Program. The COSL has programmed \$200,000 a year for design and construction. As co-sponsor, Navajo County has programmed \$1,000,000 for design and construction. Federal funding for construction in the amount of \$1,750,000 is currently programmed for this project with the balance of project financing to be provided by the project sponsor(s). HPP's typically require a minimum 20% local match. Federal funds are obligated 20% per year for five years starting in FY 2005. Federal funding will be available for reimbursement in October 2009. HPP's receive federal funding on a reimbursement basis only; the COSL will be reimbursed for funds previously spent. Construction is tentatively scheduled to begin in mid 2010.

The COSL is considering constructing this project in phases as funding becomes available. The initial phase would consist of the segment west of Show Low Lake Road and the later phases would include the bridge and roadway segments east of Show Low Lake Road. The tentative project schedule in Appendix A offers two alternate construction schedules. Alternate A represents the construction schedule if the entire project were constructed in one phase and Alternate B represents a possible construction schedule if the project was constructed in two phases.



ADOT's local government project development process is described in detail in the ADOT Local Government Projects Manual. The latest version dated October 2004 was used as a guide in the development of this report. A copy of the manual can be downloaded from ADOT's website from the following link.

[http://www.azdot.gov/highways/localgov/Projects\\_Manual/lgm\\_cover.pdf](http://www.azdot.gov/highways/localgov/Projects_Manual/lgm_cover.pdf)

## 5.0 SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS

The following information is a summary of the environmental considerations associated with the proposed project. The Environmental Assessment to be prepared for the project will disclose the anticipated project impacts and applicable mitigation measures.

### Potential Hazardous Materials Sites

A Preliminary Initial Site Assessment (PISA) for hazardous materials will be performed during the environmental analysis. The PISA will summarize the results of a review of applicable Environmental Protection Agency and Arizona Department of Environmental Quality databases as well as a field visit to the project area. The PISA will identify the presence of known hazardous materials concerns and recommend future hazardous materials investigations, if needed. If suspected hazardous materials are encountered during construction, work will cease at that location, and arrangements will be made for proper treatment of those materials.

If load bearing structures will be altered as a result of the project, asbestos testing may be required prior to modification of the structure. If existing roadway striping will be obliterated, or painted structures modified, lead based paint testing may be required. During the environmental analysis, coordination with the Arizona Department of Transportation Hazardous Materials Coordinator will be conducted to determine the need for these tests.

### Section 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303) restricts the use of any publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site that either is on or is eligible for listing on the National Register of Historic Places. Preliminary research has identified two potential Section 4(f) properties: a proposed trail and an historic property. Potential Section 4(f) properties will be identified during the environmental analysis and will be addressed in the Environmental Assessment.

### Wetlands or Riparian Areas

A Section 404 Jurisdictional Delineation was been completed to determine the boundaries of any potential wetland sites within the project area. One wash, Show Low Creek, and an adjacent wetland, were identified in the survey.

### Scenic or Historic Routes

The project area is not located on a designated scenic road, byway, or historic route.

### Cultural Resources Impacts

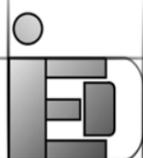
A Class I inventory consisting of a records search and literature review was completed for all of the proposed project alternatives as part of the environmental analysis for this project. The purpose of the Class I inventory was to determine the extent of previous cultural surveys and to identify known cultural resources that potentially would be impacted by the project. No previous survey or known cultural sites were identified in any of the alternative alignments.

A Class III cultural resources survey has been conducted for the preferred alternative. The Class III survey incorporates the research from the Class I inventory and a systematic, pedestrian survey to identify prehistoric and historic cultural resources. The survey resulted in the identification and evaluation of one cultural site within the project area. The newly recorded prehistoric site is considered National Register of Historic Places (NRHP)-eligible under Criterion C (design/construction) and Criterion D (information potential), and avoidance of the site is recommended during all project-related ground-disturbing activities. If avoidance is not possible, the site should be subjected to an appropriate data recovery program. Consultation with applicable agencies and tribes under Section 106 will also be completed during the environmental clearance process. Specific cultural resources requirements and mitigation measures will be addressed in the Environmental Assessment.

### Biological Resource Impacts

A Biological Review will be completed for the project. The Biological Review will evaluate the US Fish and Wildlife Service's list of endangered, threatened, proposed, and candidate species potentially occurring in Navajo County, and will determine the presence of suitable habitat for any other special status species within or near the project area. A preliminary review of the US Fish and Wildlife Service's list of endangered, threatened, proposed, and candidate species potentially occurring in Navajo County revealed that there is no suitable habitat for special status species within or near the project area. In addition, the Arizona Game and Fish Department will be contacted to determine the presence of wildlife of special concern within or near the project area. Because the project area crosses lands managed by the Apache-Sitgreaves National Forests (ASNFs), Management Indicator Species and Migratory Bird Treaty Act reports will be completed to document impacts, if any, to these species. Any biological concerns and mitigation measures will be identified and addressed in the Environmental Assessment.

In addition, the project area will be surveyed for the presence of Arizona Department of Agriculture's listed protected native plants on non federal lands. Protected native plants may be present within the project area; any potential impacts will be determined during the environmental analysis and will be addressed in the Environmental Assessment. If protected native plants will be



impacted by the project; the Arizona Department of Agriculture will need to be notified at least 60 calendar days before any vegetation removal occurs.

### Social and Economic Impacts

The project area falls within the jurisdictional boundaries of the City of Show Low, the ASNFs, and private landowners. Residential and commercial properties, including a Housing and Urban Development Section 8 (subsidized housing for low-income tenants) residential complex are located within and adjacent to the proposed project area. A hospital is also located near the proposed project. Potential impacts to existing and future land use adjacent to the project area will be discussed with the City of Show Low and any affects will be addressed in the Environmental Assessment.

Potential right-of-way acquisitions, pedestrian/bicycle/vehicular traffic impacts, as well as possible effects on minority, low income (Section 8 residential complex), elderly, or female head of household populations, will be identified during environmental analysis and will be documented in the Environmental Assessment. Additionally, the environmental document will disclose potential impacts to community services, community cohesion/neighborhood continuity, and access changes.

### Prime and Unique Farmland

Based on a review of the online United States Department of Agriculture Natural Resource Conservation Service (NRCS) Soil Survey database, no prime or unique farmland data is available for the project area and adjacent land is not being used for agricultural production. However, coordination with the ASNFs and will be made to determine if their soil databases indicate soil types that may be considered prime or unique farmland, this analysis will be documented in the Environmental Assessment.

### Air and Noise

Because of the attainment status of the project limits for environmental pollutants, no quantitative air quality analysis will be conducted. However, operation of equipment during construction will result in a temporary, localized deterioration of air quality. A qualitative air quality analysis and a discussion of Mobile Source Air Toxics to address air quality impacts for Clean Air Act criteria pollutants will be included in the Environmental Assessment. Because a residential complex, constituting noise-sensitive receptors, is located adjacent to the project limits a quantitative noise analysis and mitigation will be required. Impacts on air and noise will be investigated and addressed in the Environmental Assessment.

### Visual Resources

The visual setting of the project area is dominated by a pine and juniper woodland, bisected by

Show Low Creek. Scattered development consists of commercial buildings at the junction of SR-260 and the existing Scott Ranch Road at the western edge of the project limits, a residential complex located at the southern end of Show Low Lake Road at the midpoint of the project limits, and the two lane paved Penrod Road at the eastern edge of the project. Distant views include pine forest and upstream and downstream views of Show Low Creek. Construction of Scott Ranch Road will result in a high level of change to the visual character of the project area.

The project area is located within an area managed by the ASNFs. The Forest Service has established a Visual Management System (VMS) in 1974 to inventory, evaluate, and manage scenic resources. Visual quality objectives (VQO) are assigned to the landscape to describe the degree of acceptable alteration of the natural landscape. The VQO classifications are Preservation, Retention, Partial Retention, Modification, and Maximum Modification. Preservation allows for ecological changes only, while Maximum Modification allows for landscape changes that may dominate the natural landscape character.

The VMS process has been updated as the Scenery Management System (SMS), which has been incorporated into respective Forest Management Plans. Full adoption of the SMS is to occur as each National Forest revises its land and resource management plan. For Forests not currently undergoing the forest plan revision process, or for those requiring extensive time for revision, application of the SMS will occur at the sub-Forest or project level.

Discussion will be held with the ASNFs to determine the status of their adoption of the SMS and to determine how to address their visual resource management objectives and any quantitative measurements or documentation required. Impacts on visual resources will be addressed in the Environmental Assessment.

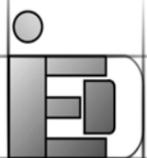
## **6.0 ITEMIZED COST ESTIMATE (Recommended Alternative)**

### **6.1 General**

The total estimated cost for construction is \$8,488,907 and final design fees are estimated to be \$678,915 with a total estimated project cost of \$9,168,019.

### **6.2 Unit Cost Sources**

Unit costs were derived from a combination of recent bid tabulations for local and similar projects and local engineering knowledge.



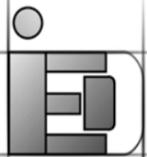
## 7.0 REFERENCES

- American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 2004
- American Association of State Highway and Transportation Officials, Roadside Design Guide, 3<sup>rd</sup> ed. 2006
- Arizona Department of Transportation, Bridge Group, Bridge Hydraulics Guidelines
- Arizona Department of Transportation, Highway Drainage Design Manual, Hydraulics, January 2006
- Arizona Department of Transportation, Highway Drainage Design Manual, Hydrology, 1993
- Arizona Department of Transportation, Local Government Section, Local Government Projects Manual, October 2004
- Arizona Department of Transportation, Roadway Engineering Group, Roadway Design Guidelines, January 2007
- Arizona Department of Transportation, Traffic Engineering Group, Traffic Engineering Policies, Guides and Procedures
- Arizona Department of Transportation, United States Forest Service, Guidelines for Highways on National Forest Land, September 1994
- City of Show Low, Trails Master Plan, August 2008
- City of Show Low, City Code, August 19, 2008
- Federal Emergency Management Agency, Flood Insurance Study for Navajo County Arizona and Incorporated Areas, Preliminary September 28, 2007
- Transportation Research Board, Highway Capacity Manual (HCM2000), 2000
- URS Corp., Dam Safety Emergency Action Plan for Jaques Dam, July 2004
- Wilson & Company, Southern Navajo/Apache County Sub Regional Transportation Plan Final Report, September 2007
- Wilson & Company, Show Low Community Transportation Plan, September 2007

## 8.0 APPENDICES



## ***Appendix A – Project Schedule***



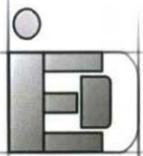
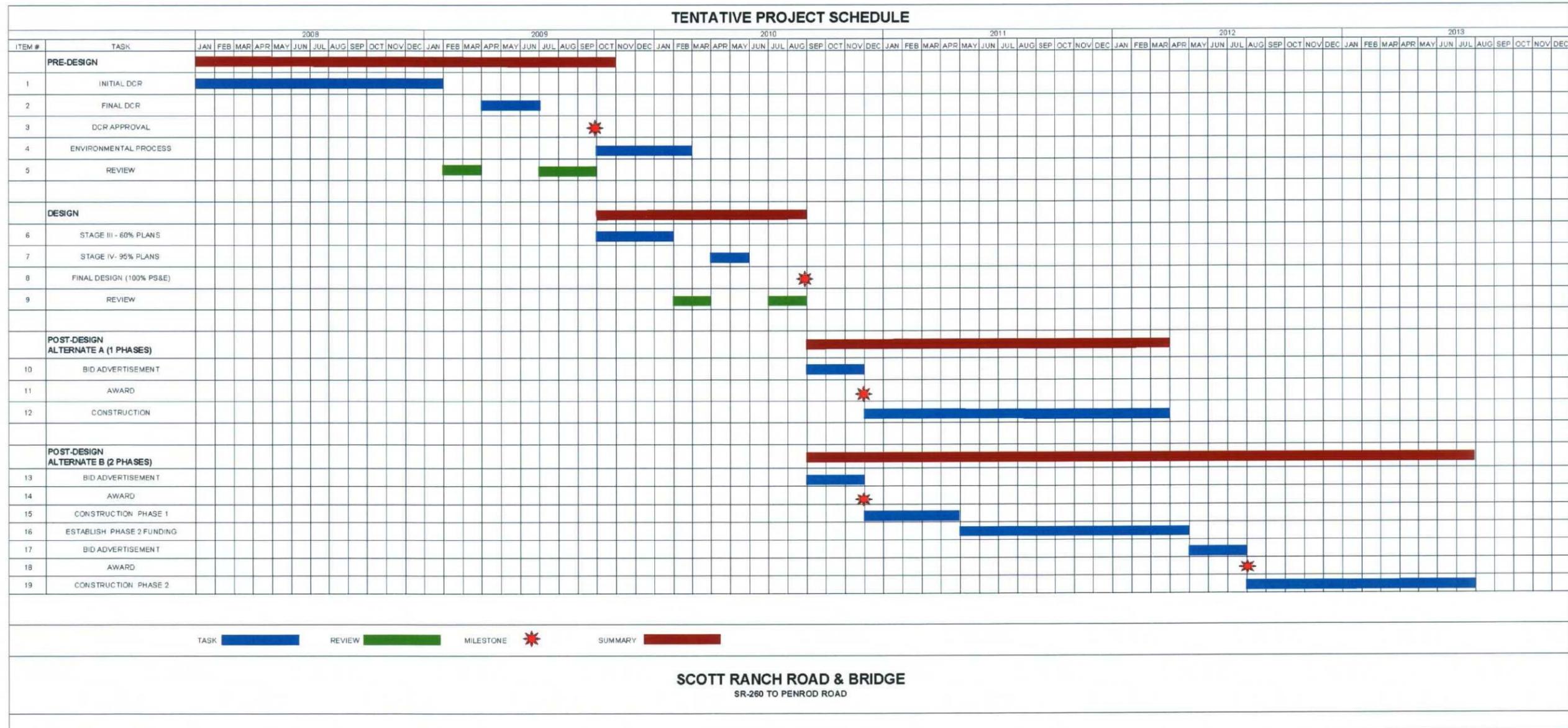
*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

A-1

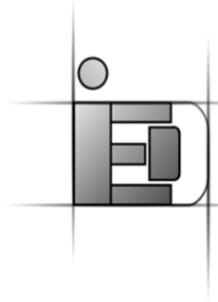
*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*



**TENTATIVE PROJECT SCHEDULE**

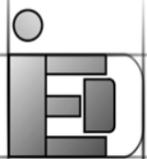


**Appendix B – Detailed Cost Estimate**





## ***Appendix C – Typical Sections***



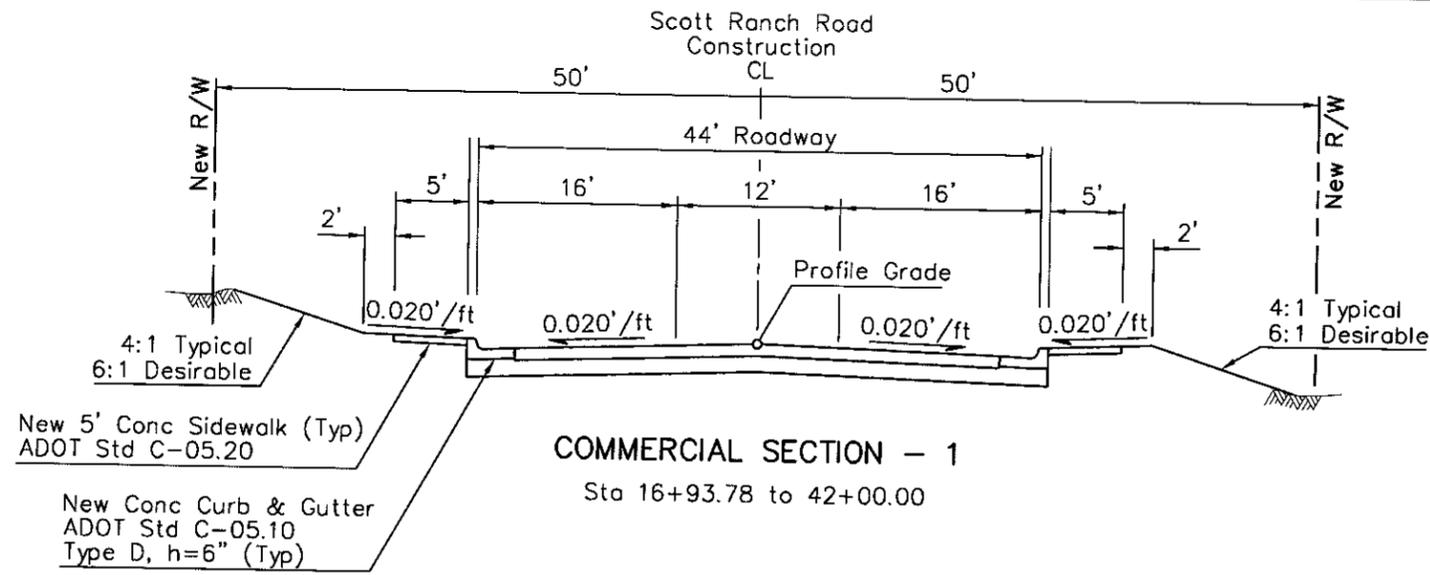
*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

C-1

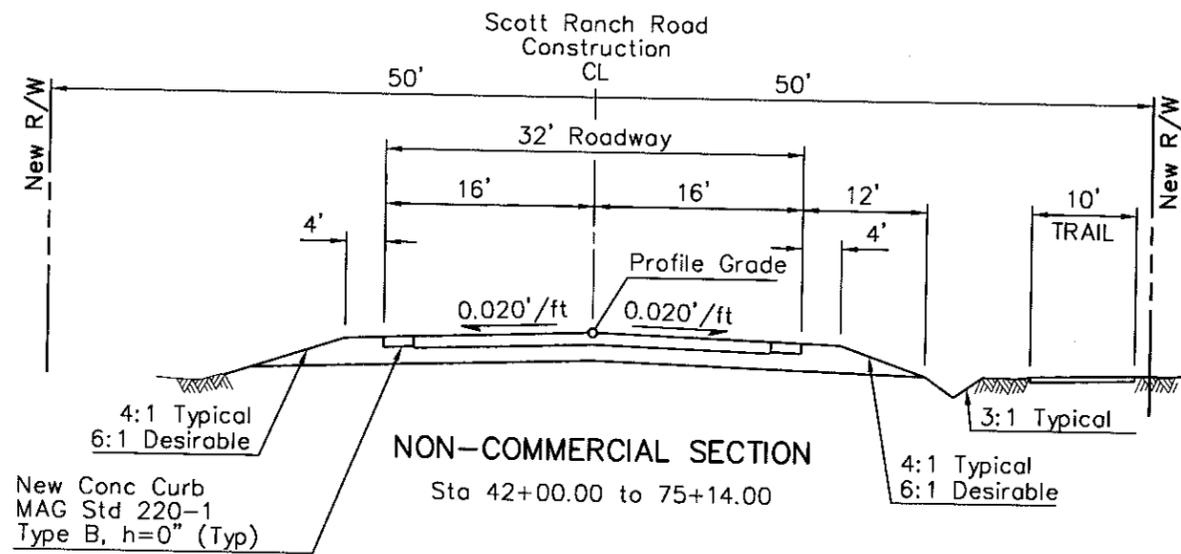
*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*



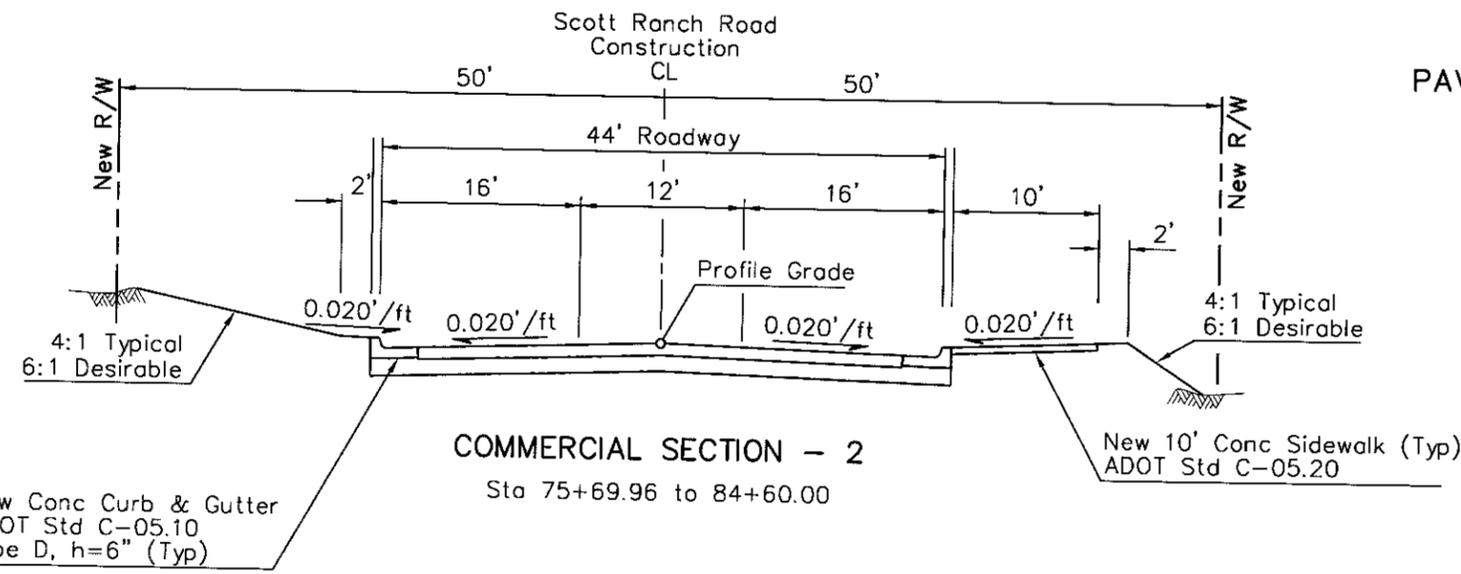
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			



**COMMERCIAL SECTION - 1**  
Sta 16+93.78 to 42+00.00



**NON-COMMERCIAL SECTION**  
Sta 42+00.00 to 75+14.00



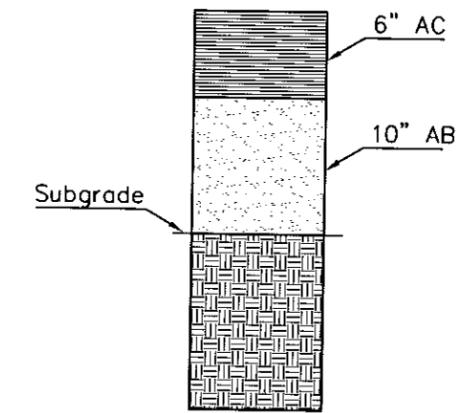
**COMMERCIAL SECTION - 2**  
Sta 75+69.96 to 84+60.00

**DESIGN DATA**

Design Speed = 40 MPH

**LENGTH OF PROJECT**

Sta 16+93.78 to 84+60.00 = 6766.22' - 1.28 Miles



Total Thickness = 16"

**SECTION NO. 1**  
**PAVEMENT STRUCTURAL SECTION**

**LEGEND**

- EXISTING**
- PAVEMENT
  - ADJACENT PROPERTY LINE
  - INDEX CONTOUR
  - INTERMEDIATE CONTOUR
- PROPOSED**
- PAVEMENT
  - RIP-RAP
  - REMOVE EXIST. PAVEMENT
  - RIGHT-OF-WAY
  - CENTERLINE
  - CULVERT
- ADDITIONAL FEATURES IDENTIFIED ON PLANS

DESIGN	J. OWENS	01/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	01/09		
CHECKED				
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ, 85801 (928) 532-0880</small>			DESIGN SHEET	SHEET 1 OF 2
ROUTE	SCOTT RANCH ROAD			
TRACS NO.	SS673 01C	APPENDIX C		OF

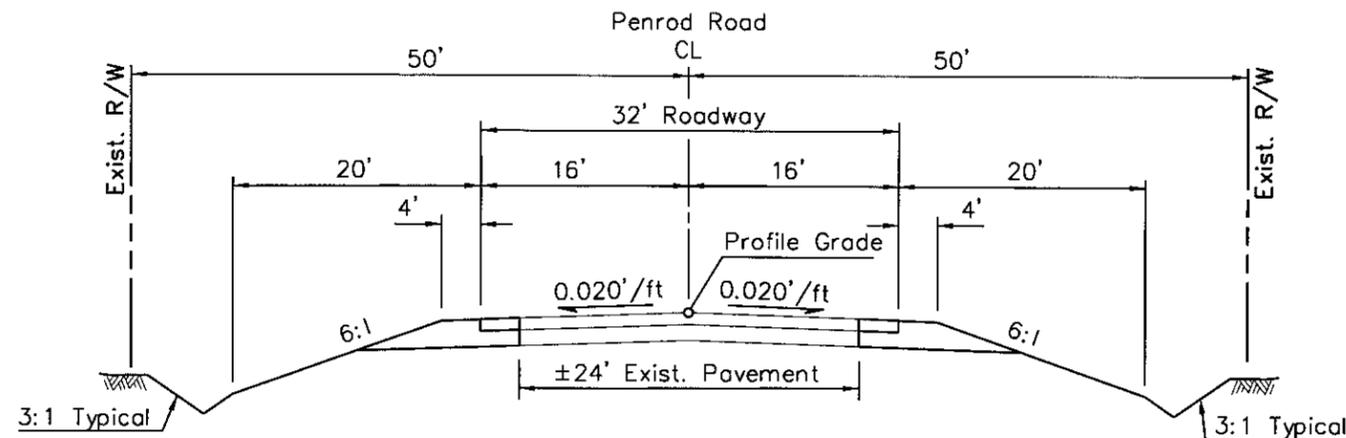
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

**DESIGN DATA**

Design Speed = 55 MPH

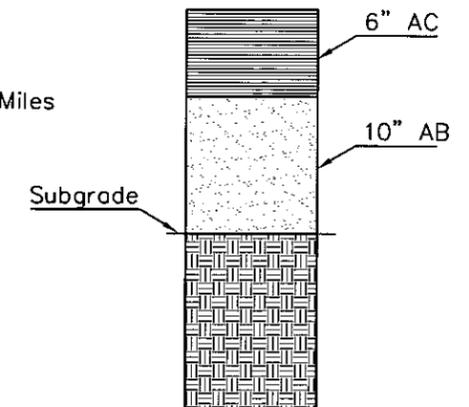
**LENGTH OF PROJECT**

Sta 6+96.19 to 16+79.00 = 982.81' - ±0.19 Miles



**PENROD ROAD SECTION**

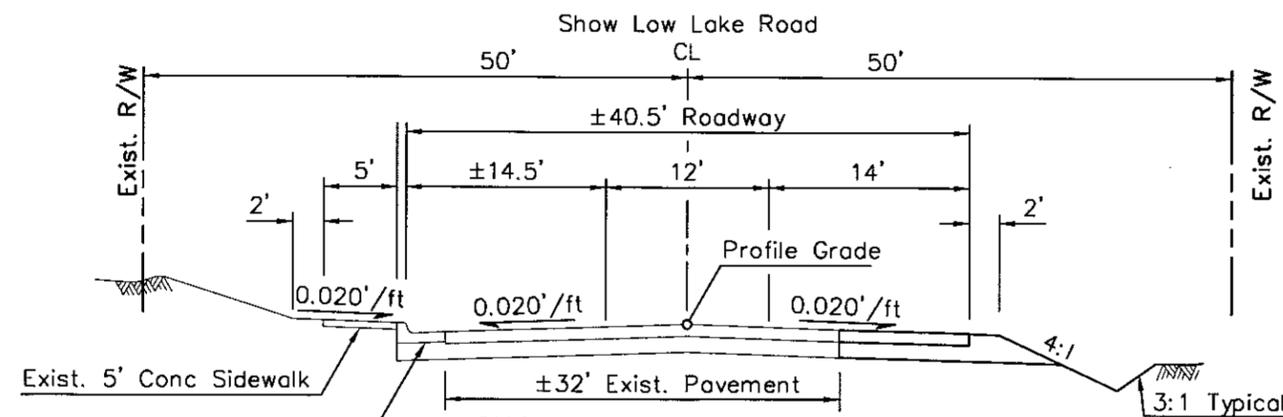
Sta 6+96.19 to 16+79.00



Total Thickness = 16"

**SECTION NO. 2**

**PAVEMENT STRUCTURAL SECTION**



**SHOW LOW LAKE ROAD - 1**

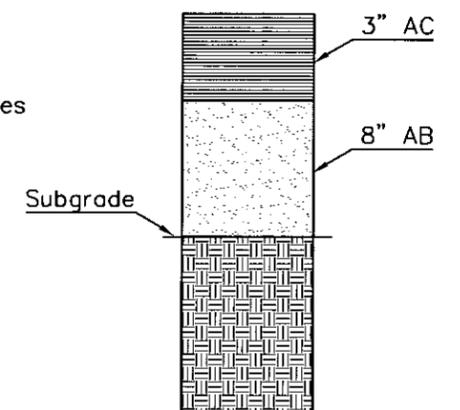
Sta 5+00.00 to 10+59.35

**DESIGN DATA**

Design Speed = 35 MPH

**LENGTH OF PROJECT**

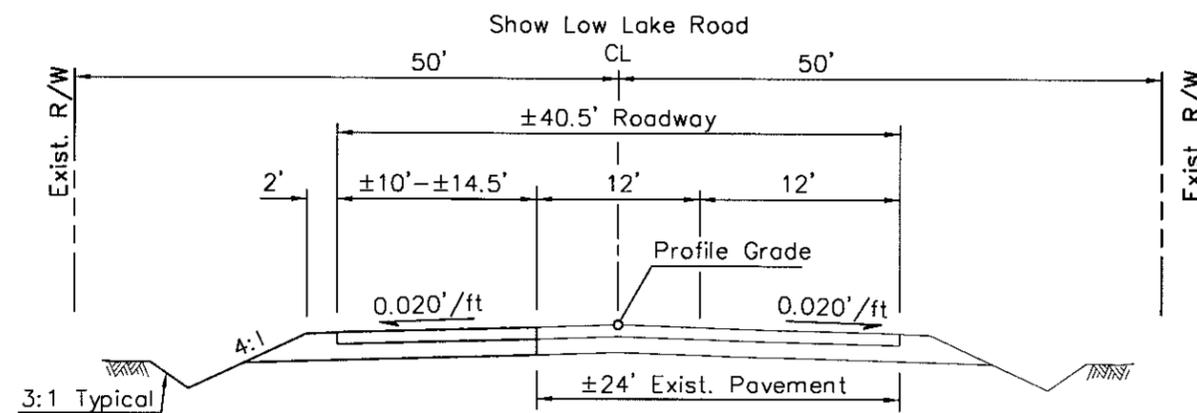
Sta 5+00 to 14+26.88 = ±927' - ±0.18 Miles



Total Thickness = 11"

**SECTION NO. 3**

**PAVEMENT STRUCTURAL SECTION**

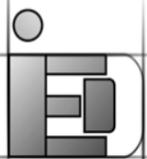


**SHOW LOW LAKE ROAD - 2**

Sta 10+59.35 to 14+26.88

DESIGN	J. OWENS	01/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	01/09		
CHECKED				
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			DESIGN SHEET	SHEET 2 OF 2
ROUTE	PENROD ROAD & SHOW LOW LAKE ROAD		APPENDIX C	OF
TRACS NO.	SS673 01C			

## ***Appendix D – Road Section Exhibit***

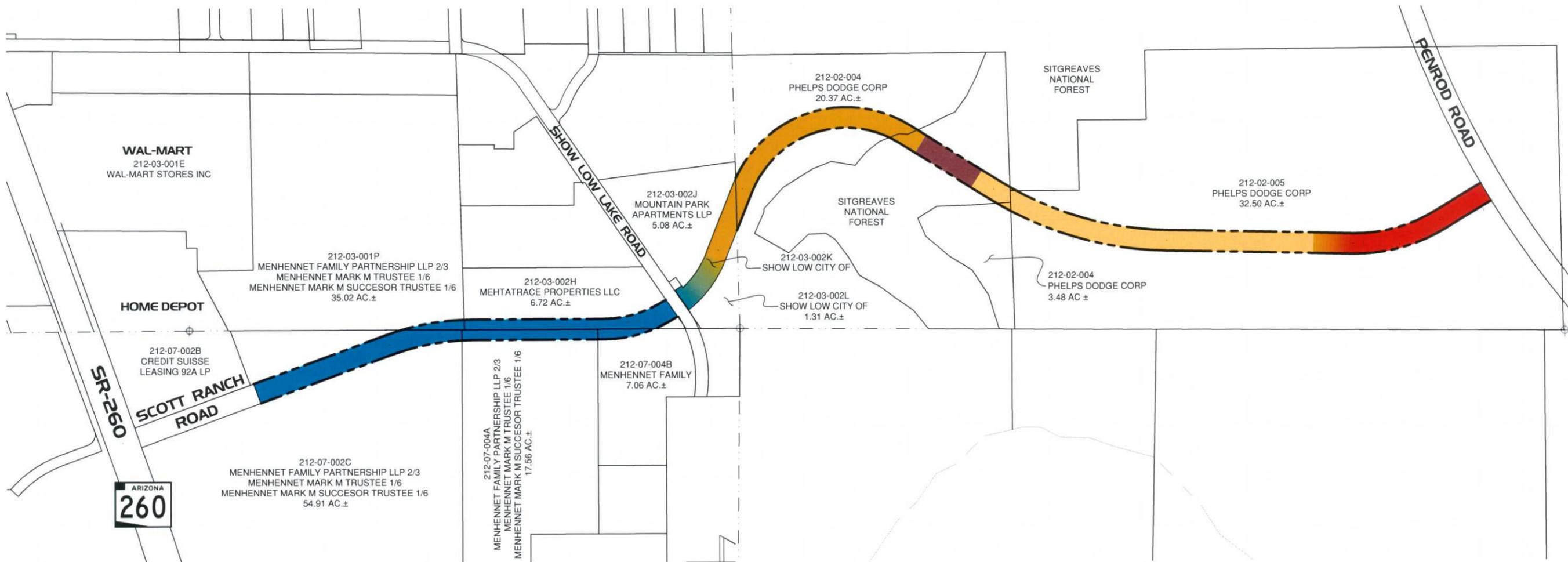
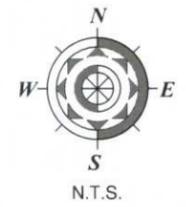


*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

*D-1*

*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*



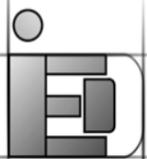


NOTE:  
PARCEL INFORMATION WAS TAKEN FROM  
NAVAJO COUNTY ASSESSORS OFFICE.

- LEGEND**
- NON-COMMERCIAL SECTION
  - COMMERCIAL SECTION - 1
  - COMMERCIAL SECTION - 2
  - BRIDGE SECTION
  - SECTION LINES
  - EXISTING PROPERTY BOUNDARY / RIGHT OF WAY
  - PROPOSED RIGHT OF WAY

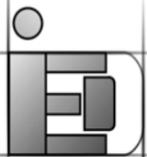
**ROAD SECTION EXHIBIT**  
SCOTT RANCH ROAD AND BRIDGE PROJECT  
SR-260 TO PENROD ROAD

## ***Appendix E – Alternative Alignment Exhibit***



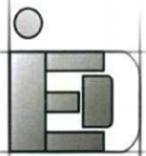


## ***Appendix F – Alternative Evaluation Data***



## Appendix F – Alternative Evaluation Table

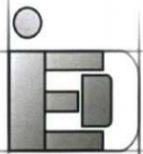
Evaluation Criteria	Alternative #1 [Recommended]	Alternative #2	Alternative #3	Alternative #4	Alternative #5
	Blue	Red	Orange	Green	Brown
Land Use	<u>West of SLLR</u> Alignment centered on private property line. Direct access to most commercial parcels. <u>East of SLLR</u> Small narrow tract of private land between ROW and USFS.	<u>West of SLLR</u> Direct access to fewer commercial parcels than blue or brown. <u>East of SLLR</u> Alignment skewed to private/USFS property line. Minimally promotes private land development.	<u>West of SLLR</u> Direct access to fewer commercial parcels than blue or brown. <u>East of SLLR</u> Intersection with Penrod Road close to USFS boundary.	<u>West of SLLR</u> Alignment centered on private property line. <u>East of SLLR</u> Impinges on existing Show Low Lake Campground.	<u>West of SLLR</u> Alignment centered on private property line. <u>East of SLLR</u> Desireable for private land development. Most area of USFS land impacted.
Right of Way	Less area of USFS land impacted compared to other alternatives, except green & orange.	Large area of USFS land impacted.	Less area of USFS land impacted compared to other alternatives, except green.	Least area of USFS land impacted. Utilizes COSL maximum amount of COSL owned land. Follows section line.	Largest area of USFS land impacted.
Environmental					
Cultural Resources					
Archeological					
Construction Costs	1	2	3	5	4
Constructability					
Safety	Horizontal curves at bridge approaches.	Most horizontal curves.	Tangent intersection with SLLR.	Multiple bridges and straight alignment.	Long tangent sections at bridge approaches.
Traffic Control	Traffic control required at intersections of SLLR and Penrod Road.	Same as blue	Same as blue. Tangent intersection at SLLR.		
Capacity	Same all alternatives.	Same all alternatives.	Same all alternatives.	Same all alternatives.	Same all alternatives.
Level of Service	Same all alternatives.	Same all alternatives.	Same all alternatives.	Same all alternatives.	Same all alternatives.
Drainage	Relatively smaller offsite drainage areas compared to orange & brown.	Alignment circumvents major drainage corridor east of SLLR. Small offsite drainage areas relative to other alternatives.	Alignment is generally perpendicular to contours.	Crosses spillway channel and creek channel.	Alignment is generally perpendicular to contours.
Earthwork	Less rock excavation anticipated due to relatively short bridge.	Less rock excavation anticipated due to relatively short bridge. Generally less cross slope. Relatively less cut in steep grade.	Relatively higher cut in steep grade.	Rock excavation anticipated with bridge crossings.	Same as orange.
Floodplains	Minimal Impact. Narrowest floodplain width compared to other crossings	Very wide floodplain and floodway.	Relatively wide floodplain and floodway.	Alignment crosses mapped floodplains at two locations. Only the spillway channel crossing would impact water surface elevations.	Same as orange.
Utilities	Alignment crosses existing high pressure gas lines and overhead powerlines near Penrod Road.	Minimal impact on utilities.	Same as red.	Same as blue.	Same as blue.
Structures	Shortest total length of bridge.	Relatively short total length of bridge. Box culvert avoided.	Long total bridge length.	Multiple bridges required.	Longest total length of bridge.
Socio-Economic Considerations	Direct access to most commercial parcels west of SLLR.	Direct access to fewer commercial parcels than blue or brown. Limited land development potential east of SLLR.	Direct access to fewer commercial parcels than blue or brown.	Direct access to fewer commercial parcels than blue or brown. Less access to developable land east of SLLR.	Direct access to most commercial parcels west of SLLR. Preferable to land owner east of SLLR.
Design Exceptions	No design exceptions.	No design exceptions.	No design exceptions.	No design exceptions.	No design exceptions.



### Appendix F – Alternative Scoring Matrix

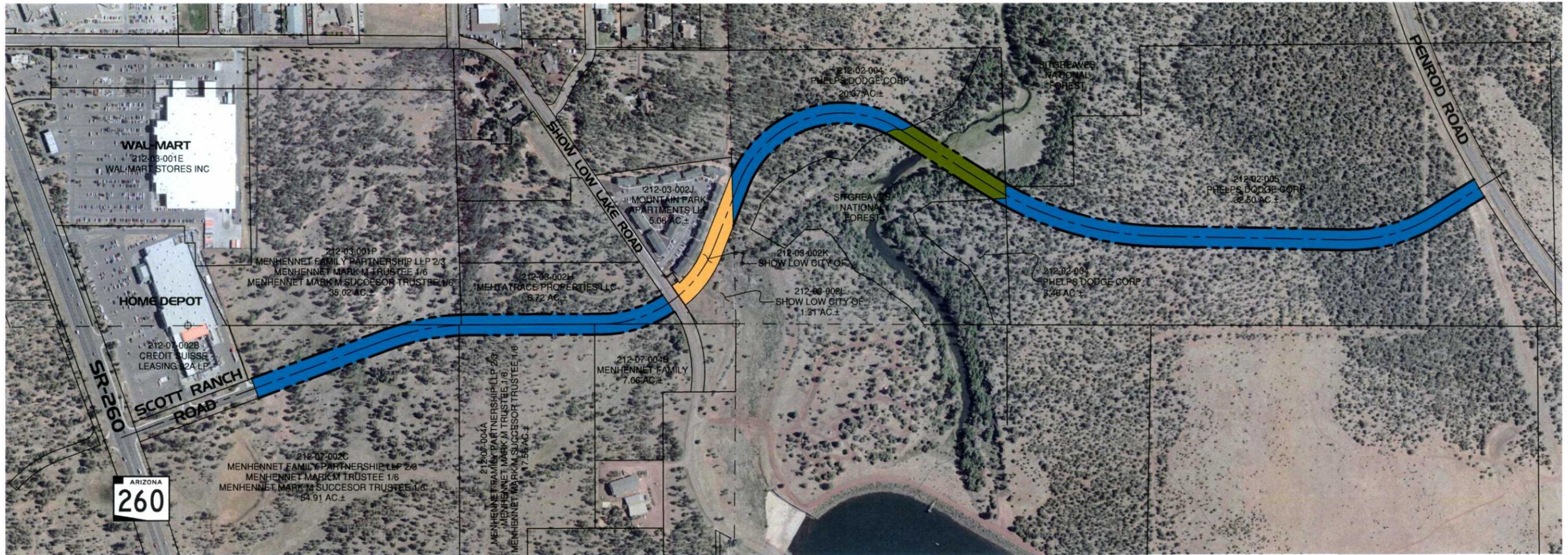
Evaluation Criteria	Alternative #1 [Recommended]	Alternative #2	Alternative #3	Alternative #4	Alternative #5
	Blue	Red	Orange	Green	Brown
Land Use	2	5	3	4	1
Right of Way	2	5	4	1	3
Environmental	1	2	3	5	4
Cultural Resources	1	1	1	1	1
Archeological	1	1	1	1	1
Construction Costs	1	2	3	5	4
Constructability	1	3	3	4	2
Safety	4	3	1	5	2
Traffic Control	3	3	2	1	3
Capacity	1	1	1	1	1
Level of Service	1	1	1	1	1
Drainage	2	1	3	4	3
Earthwork	2	1	4	5	3
Floodplains	1	2	3	5	4
Utilities	2	1	1	2	2
Structures	1	2	3	5	4
Socio-Economic Considerations	3	4	2	5	1
Design Exceptions	1	1	1	1	1
<b>Totals</b>	<b>30</b>	<b>39</b>	<b>40</b>	<b>56</b>	<b>41</b>

Each alternative was ranked from 1 through 5 for each of the 18 criteria, with 1 being the most desirable.



## ***Appendix G – Right-of-Way Exhibit***





**LEGEND**

- CITY OF SHOW LOW
- PRIVATE
- USFS
- SECTION LINES
- EXISTING PROPERTY BOUNDARY / RIGHT OF WAY
- PROPOSED 100' RIGHT OF WAY

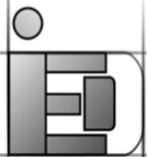
NOTE:  
PARCEL INFORMATION WAS TAKEN FROM  
NAVAJO COUNTY ASSESSORS OFFICE.

PARCEL #	OWNERSHIP	ACRES ±
212-07-002C	MENHENNET FAMILY PARTNERSHIP LLP 2/3 MENHENNET MARK M TRUSTEE 1/6 MENHENNET MARK M SUCCESSOR TRUSTEE 1/6	2.19
212-07-001P	MENHENNET FAMILY PARTNERSHIP LLP 2/3 MENHENNET MARK M TRUSTEE 1/6 MENHENNET MARK M SUCCESSOR TRUSTEE 1/6	0.22
212-07-004A	MENHENNET FAMILY PARTNERSHIP LLP 2/3 MENHENNET MARK M TRUSTEE 1/6 MENHENNET MARK M SUCCESSOR TRUSTEE 1/6	0.76
212-07-004B	MENHENNET FAMILY	0.22
212-03-002H	MEHTATRACE PROPERTIES LLC	1.39
212-02-004	PHELPS DODGE CORP/FREEPORT-MCMORAN	2.38
212-02-005	PHELPS DODGE CORP/FREEPORT-MCMORAN	5.50
212-03-002K	CITY OF SHOW LOW	1.27
USFS	SITGREAVES NATIONAL FOREST	1.36
<b>TOTAL ACREAGE</b>		<b>15.29</b>



**RIGHT OF WAY EXHIBIT**  
SCOTT RANCH ROAD AND BRIDGE PROJECT  
SR-260 TO PENROD ROAD

## ***Appendix H – FEMA Floodplain Exhibit***

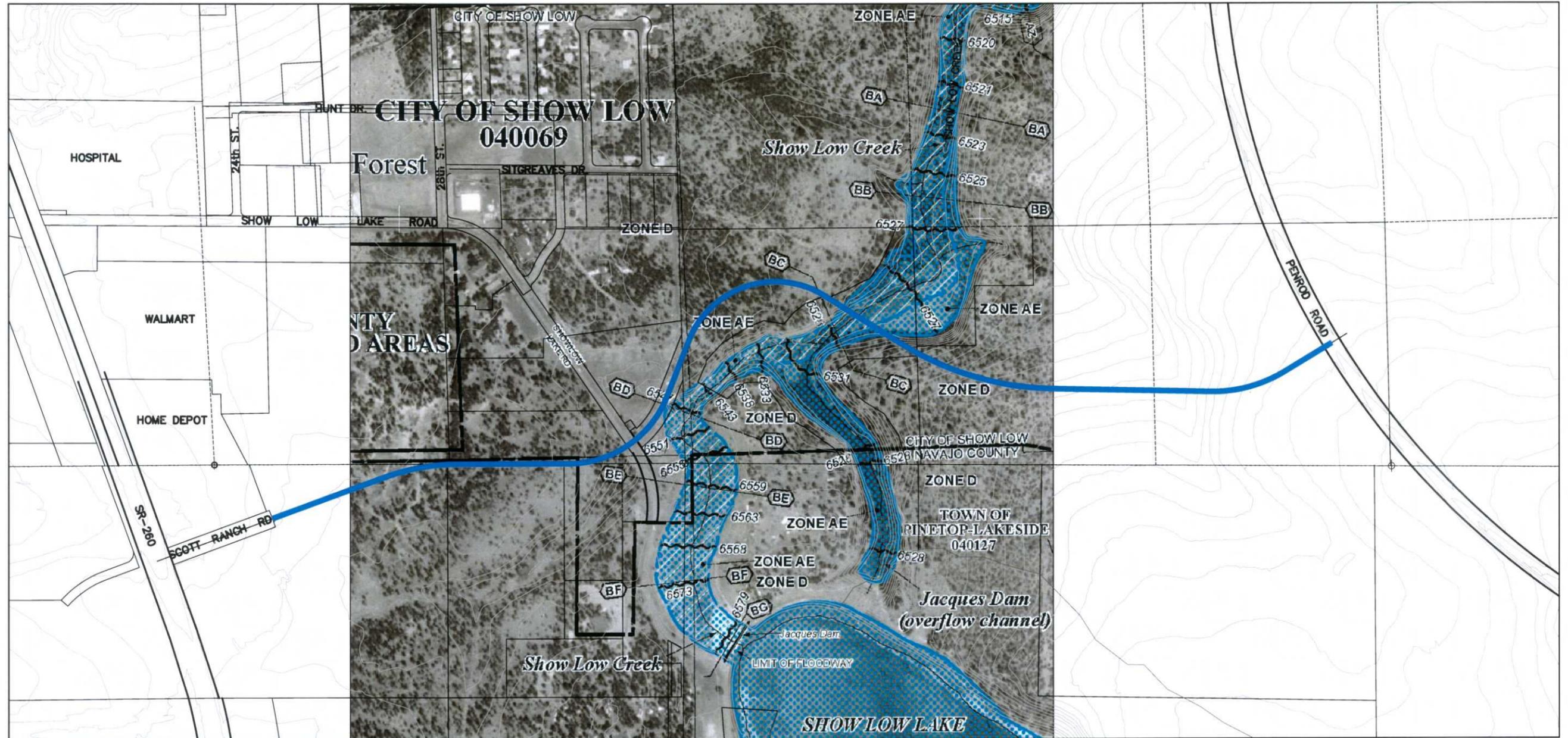


*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

*H-1*

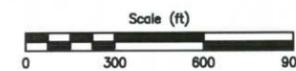
*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*





**LEGEND**

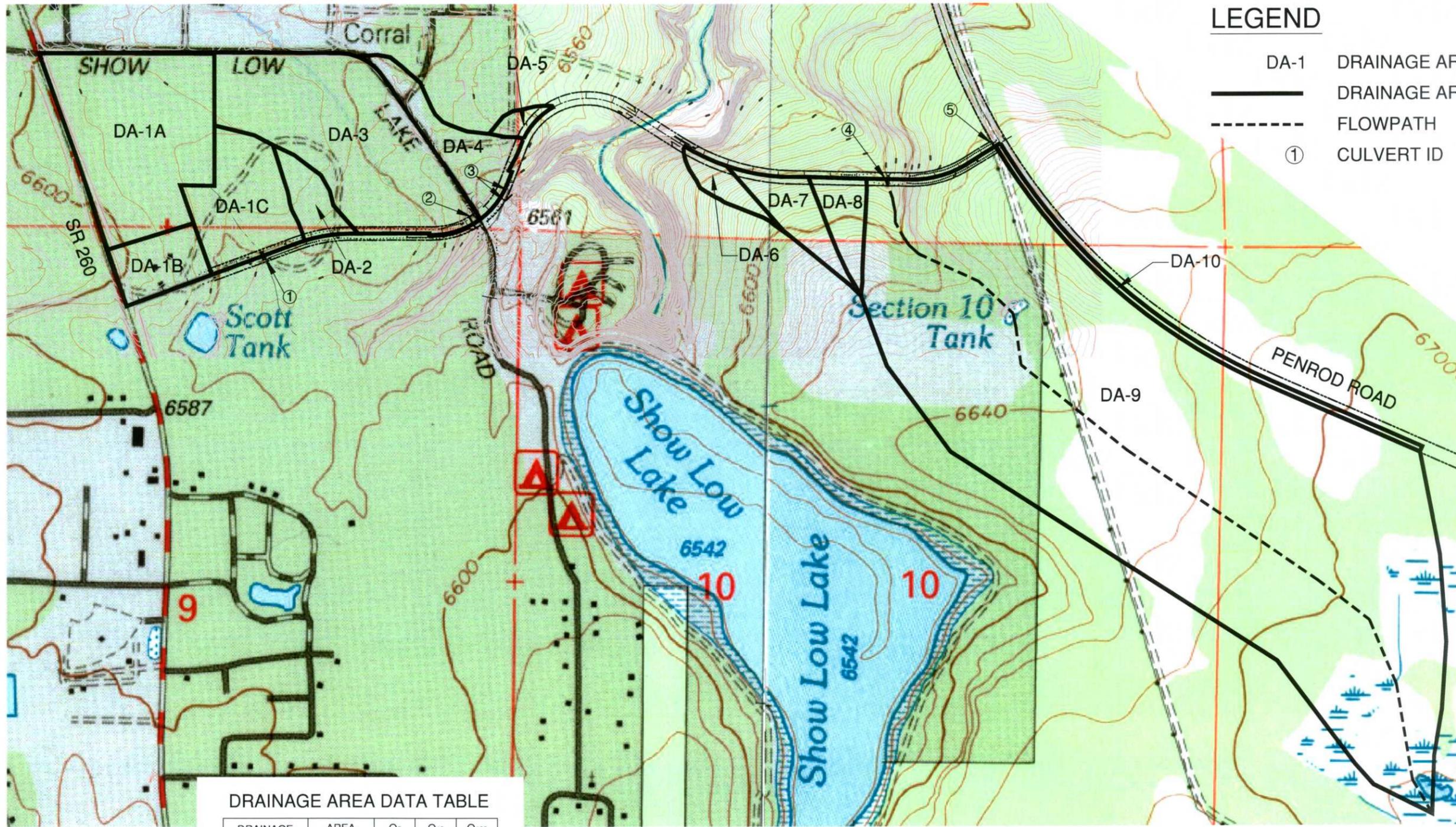
 ALTERNATIVE #1 BLUE ALIGNMENT (RECOMMENDED)



**FEMA FLOODPLAIN EXHIBIT**  
**SCOTT RANCH ROAD & BRIDGE PROJECT**  
**SR-260 TO PENROD ROAD**

## ***Appendix I – Drainage Area Map***





**LEGEND**

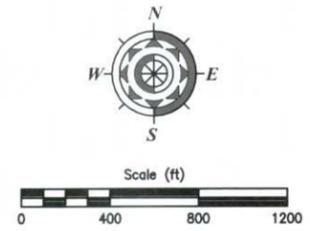
- DA-1 DRAINAGE AREA ID
- DRAINAGE AREA BOUNDARY
- - - FLOWPATH
- ① CULVERT ID

**DRAINAGE AREA DATA TABLE**

DRAINAGE AREA ID	AREA [ACRES]	Q <sub>2</sub> [CFS]	Q <sub>10</sub> [CFS]	Q <sub>100</sub> [CFS]
DA-1A	33	110	128	211
DA-1B	7	23	30	46
DA-1C	14	19	20	46
DA-2	5	6	9	18
DA-3	37	48	50	100
DA-4	9	25	26	47
DA-5	2	3	4	9
DA-6	3	4	6	12
DA-7	6	8	12	24
DA-8	5	6	10	19
DA-9	216	111	250	430
DA-10	4	3	6	13

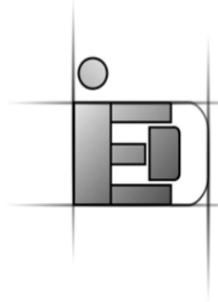
**CULVERT SCHEDULE**

CULVERT ID	APPROXIMATE STATION	Q <sub>2</sub> [CFS]	Q <sub>10</sub> [CFS]	Q <sub>100</sub> [CFS]	DESCRIPTION
1	21+00	152	178	303	(6) 36" CULVERT
2	37+50	48	50	100	(2) 36" CULVERT
3	41+00	25	26	47	(2) 30" CULVERT
4	75+40	111	250	430	(2) 4'x8' BOX CULVERT
5	84+10	3	6	13	(1) 24" CULVERT



**EXHIBIT A - DRAINAGE AREA MAP**  
 SCOTT RANCH ROAD AND BRIDGE PROJECT  
 SR-260 TO PENROD ROAD

**Appendix J – Intersection Traffic Volumes**

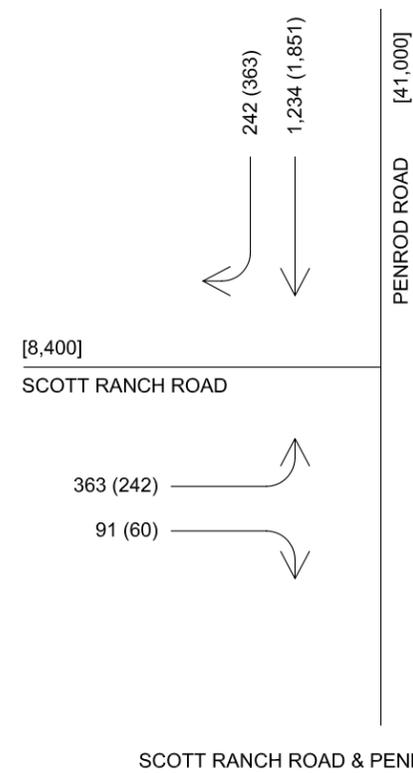
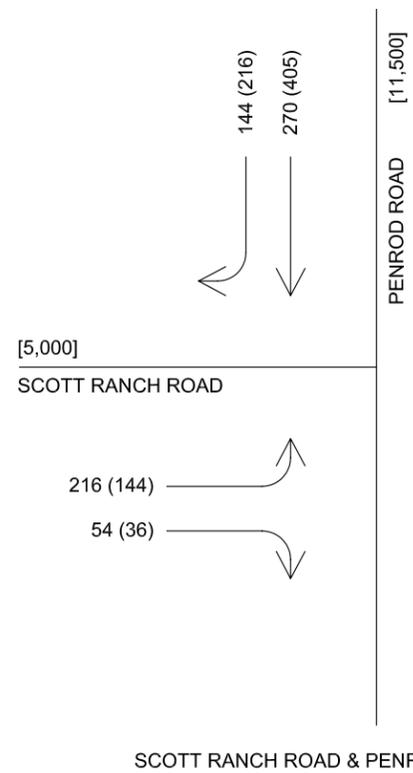
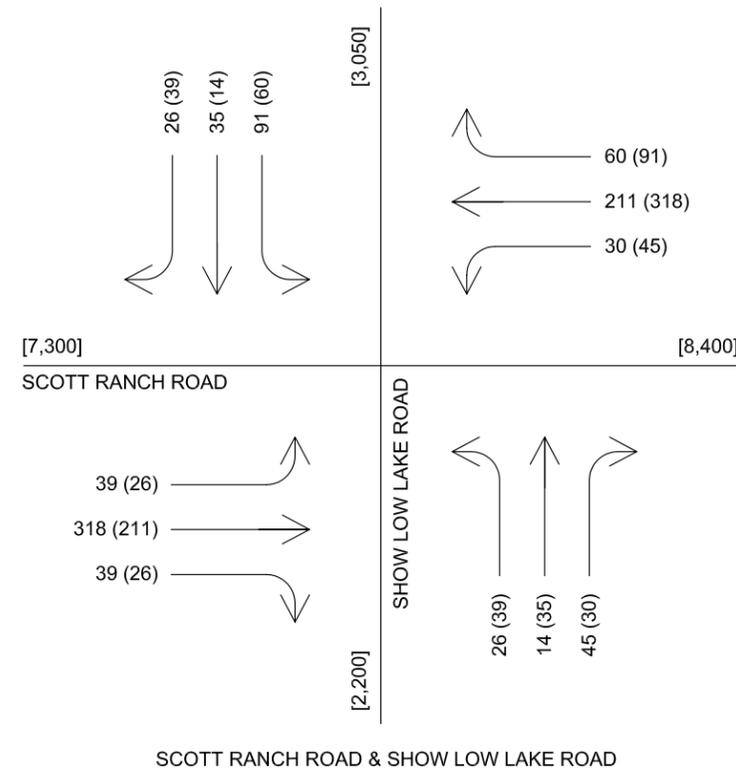
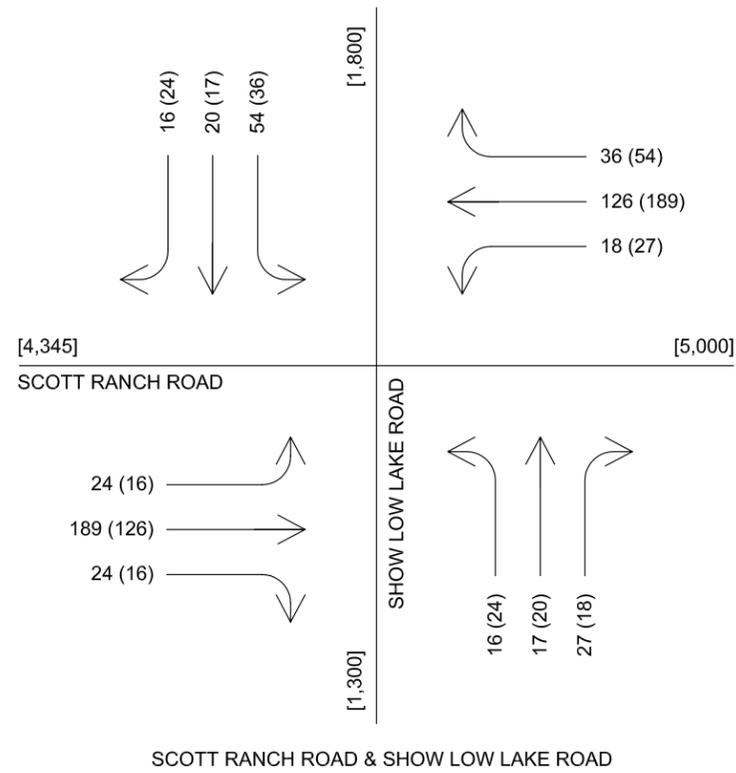


CONSTRUCTION YEAR (2010)

DESIGN YEAR (2030)

LEGEND

- 36 AM PEAK HOUR TRAFFIC VOLUME, VEH/HR
- (54) PM PEAK HOUR TRAFFIC VOLUME, VEH/HR
- [1000] AADT TRAFFIC VOLUME, VEH/HR



**INTERSECTION TRAFFIC VOLUMES**  
**SCOTT RANCH ROAD AND BRIDGE PROJECT**  
**SR-260 TO PENROD ROAD**

## ***Appendix K – COSL Trails Master Plan***



*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

*K-1*

*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*



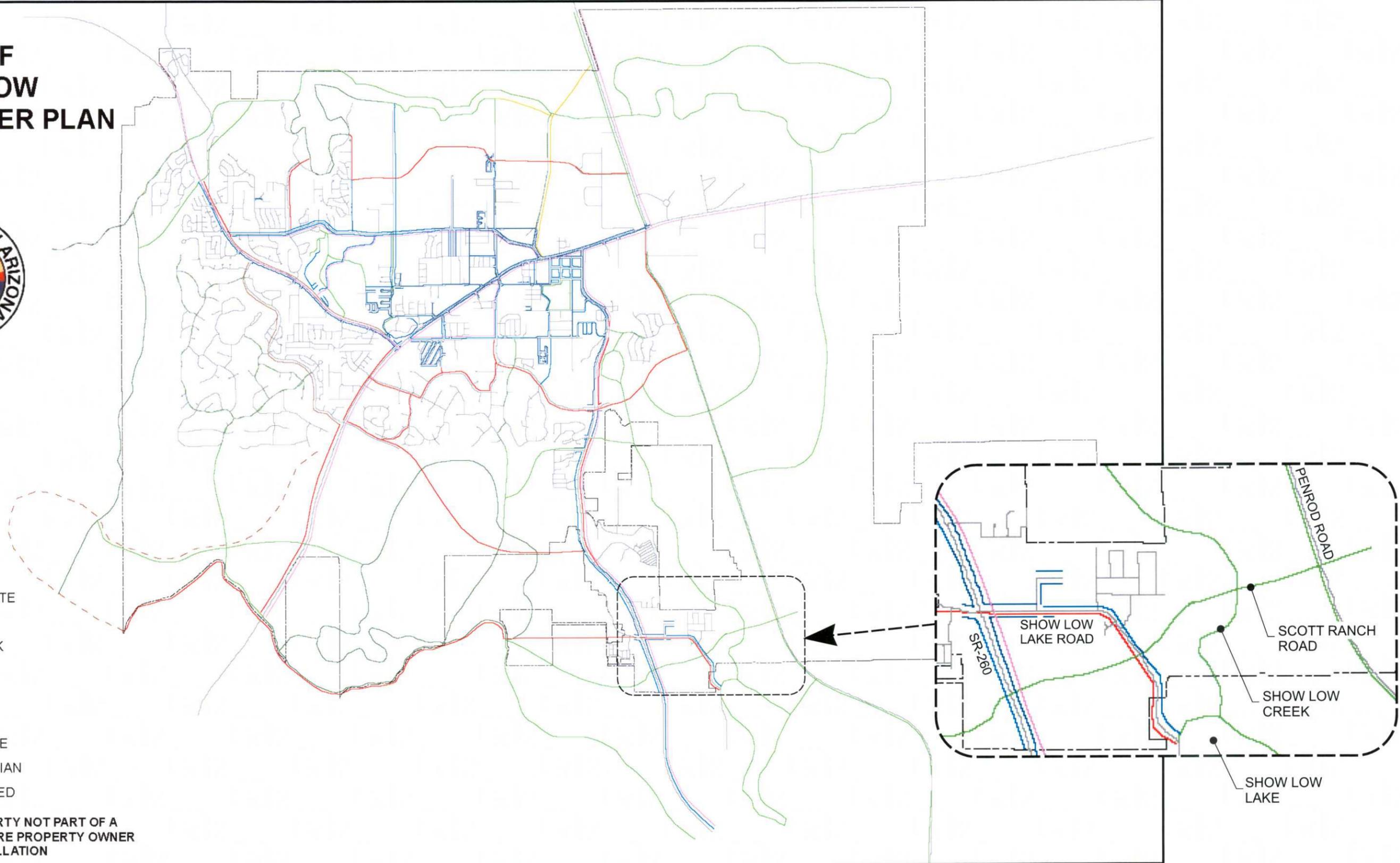
# CITY OF SHOW LOW TRAILS MASTER PLAN



## LEGEND

- PROPOSED BIKE ROUTE
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- EXISTING TRAIL
- PROPOSED TRAIL
- EXISTING MULTI-USE
- PROPOSED MULTI-USE
- - - PROPOSED EQUESTRIAN
- PROPOSED MOTORIZED

\* TRAILS ON PRIVATE PROPERTY NOT PART OF A DEVELOPMENT WILL REQUIRE PROPERTY OWNER APPROVAL PRIOR TO INSTALLATION



## ***Appendix L – Plan & Profile Sheets***



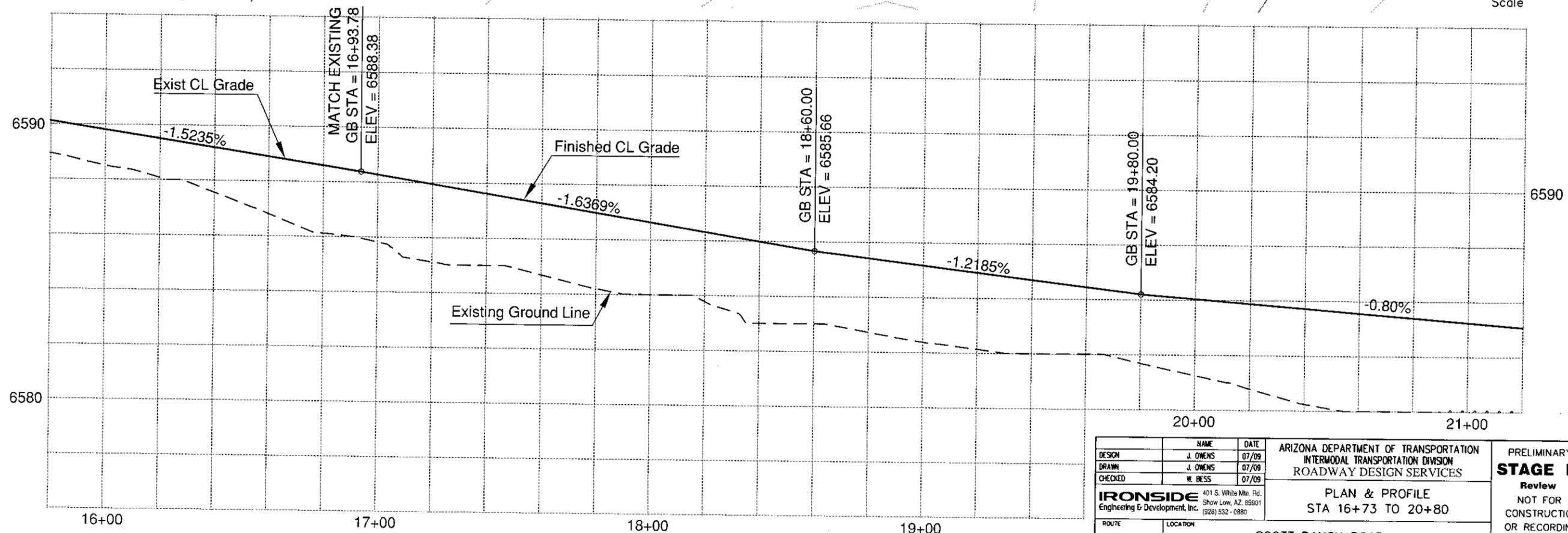
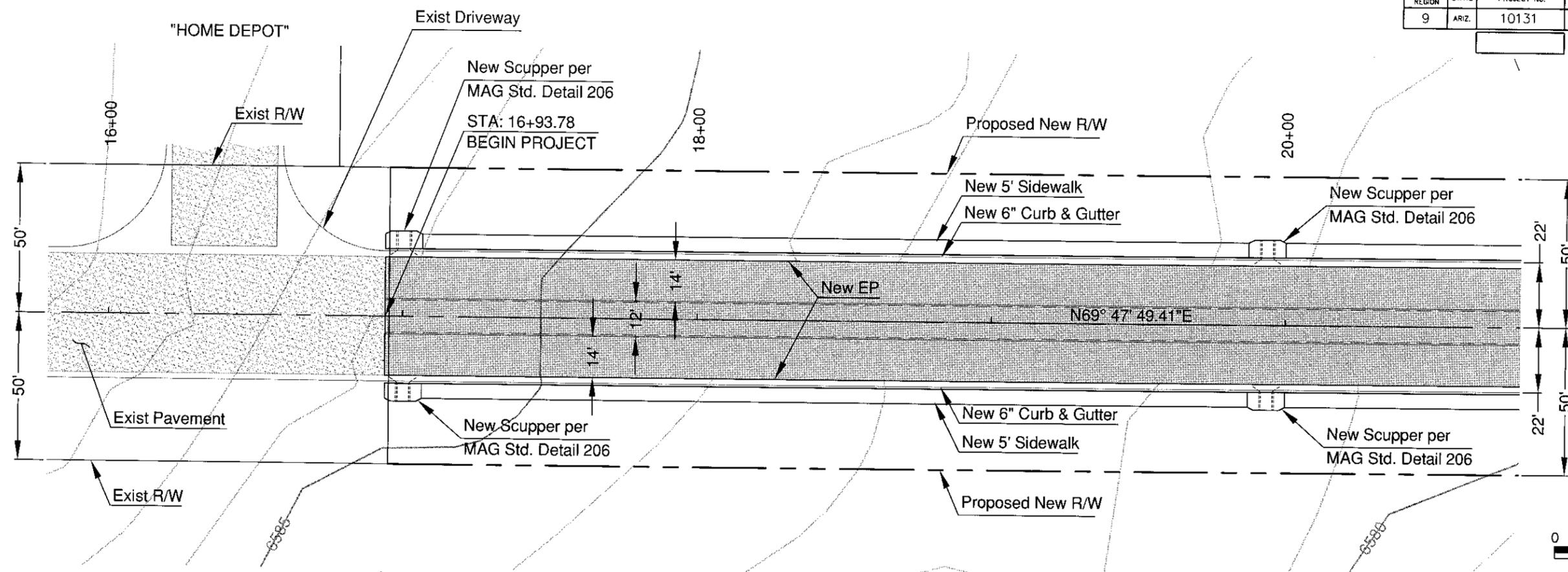
*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

*L-1*

*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*



F.M.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING SHEET 1 OF 18
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86091 (928) 532-0880			PLAN & PROFILE STA 16+73 TO 20+80	
ROUTE	SCOTT RANCH ROAD			TRACS NO. SS673 01C
				APPENDIX L
				OF

SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE REVISIONS

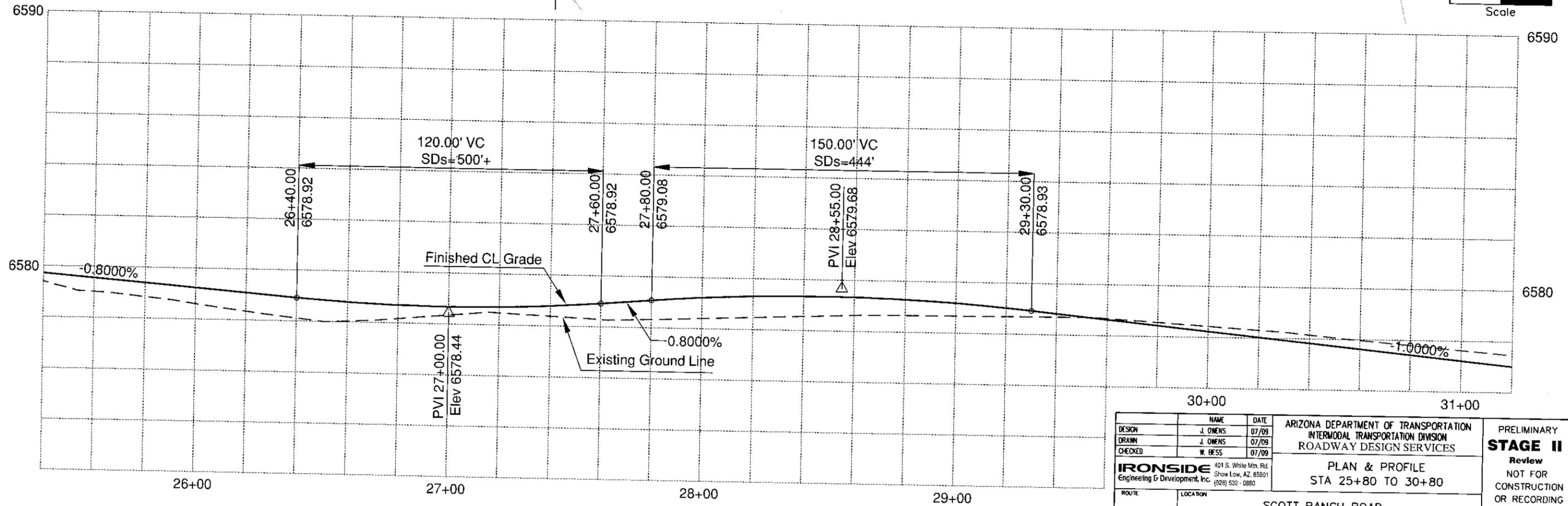
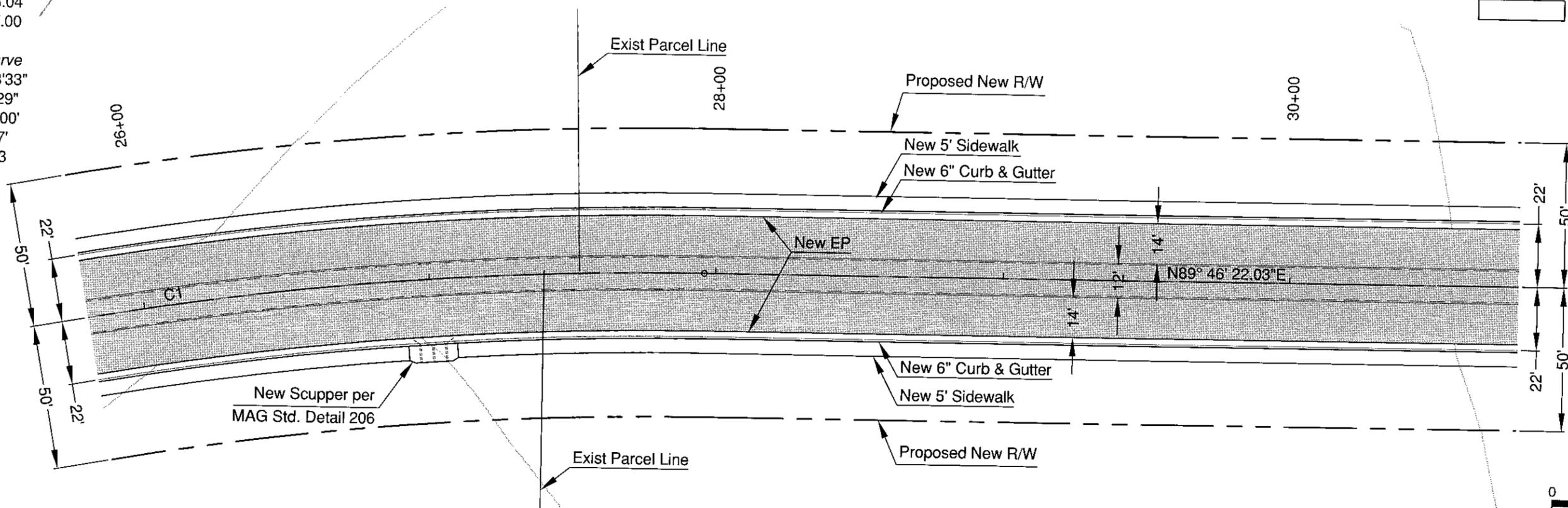


**CURVE DATA - C1**

PI Sta 25+89.01  
 N 63526.04  
 E 46787.00

Main Curve  
 $\Delta = 19^\circ 58' 33''$   
 $D = 4^\circ 46' 29''$   
 $R = 1200.00'$   
 $L = 418.37'$   
 $T = 211.33'$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			



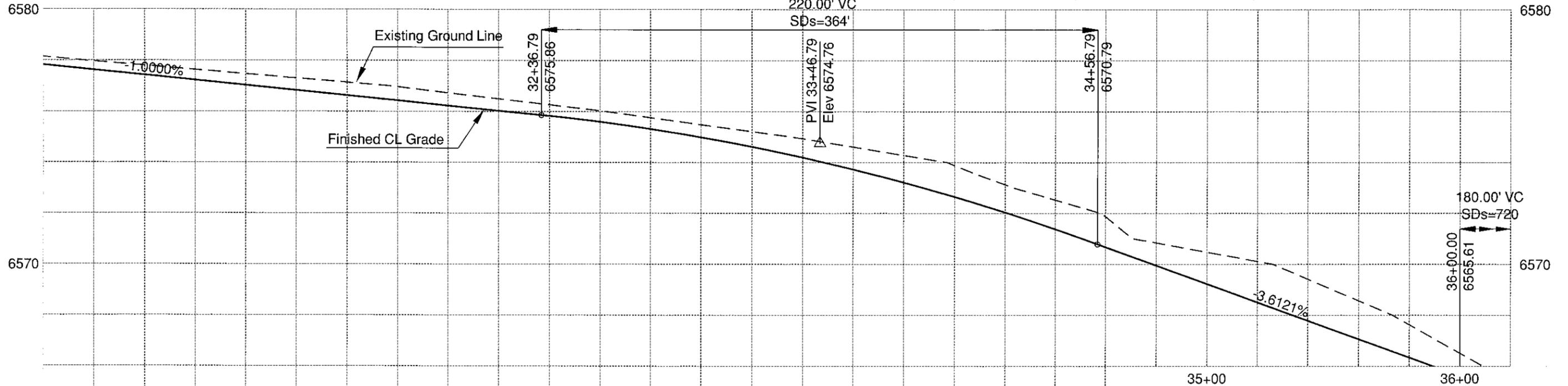
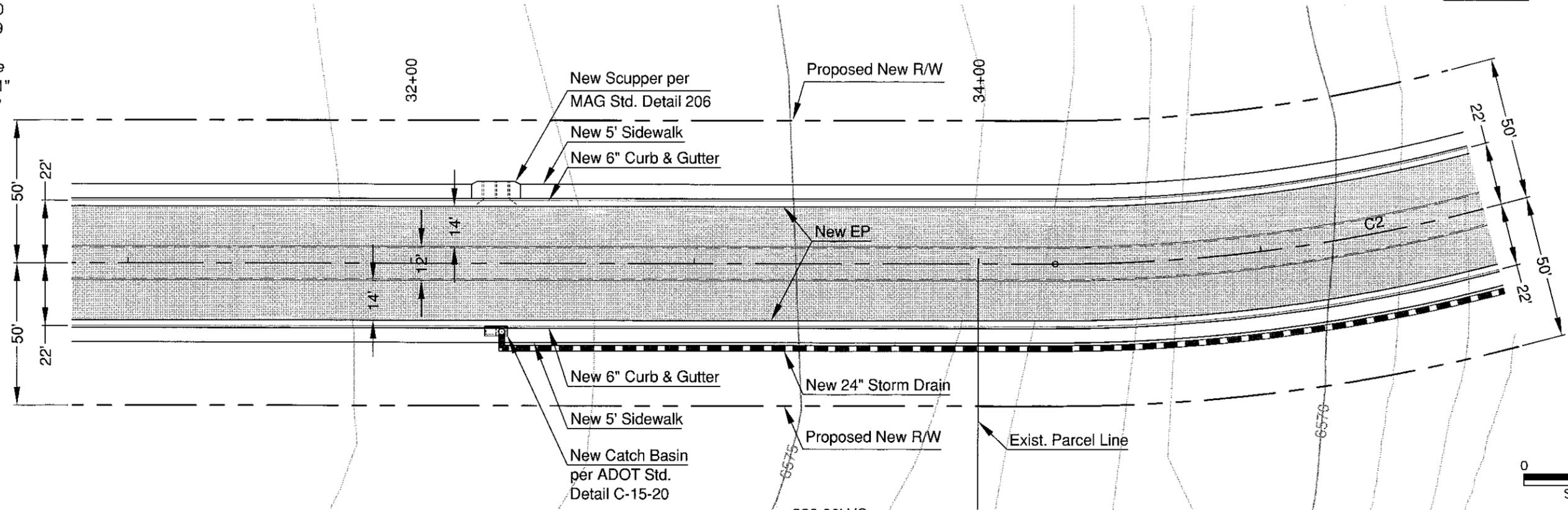
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>PRELIMINARY</b> <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			PLAN & PROFILE STA 25+80 TO 30+80	
ROUTE		LOCATION		SHEET 3 OF 18
TRACS NO. SS673 01C		SCOTT RANCH ROAD		APPENDIX L
				OF

**CURVE DATA - C2**

PI Sta 38+34.41  
 N 63531.00  
 E 48036.69

Main Curve  
 $\Delta = 68^\circ 20' 31''$   
 $D = 9^\circ 32' 57''$   
 $R = 600.00'$   
 $L = 715.68'$   
 $T = 407.32'$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			



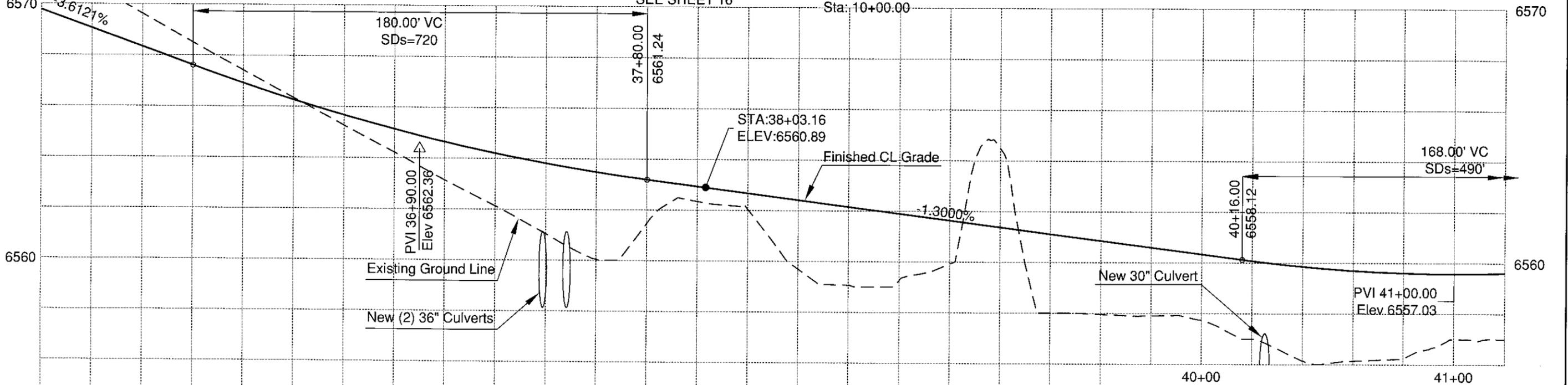
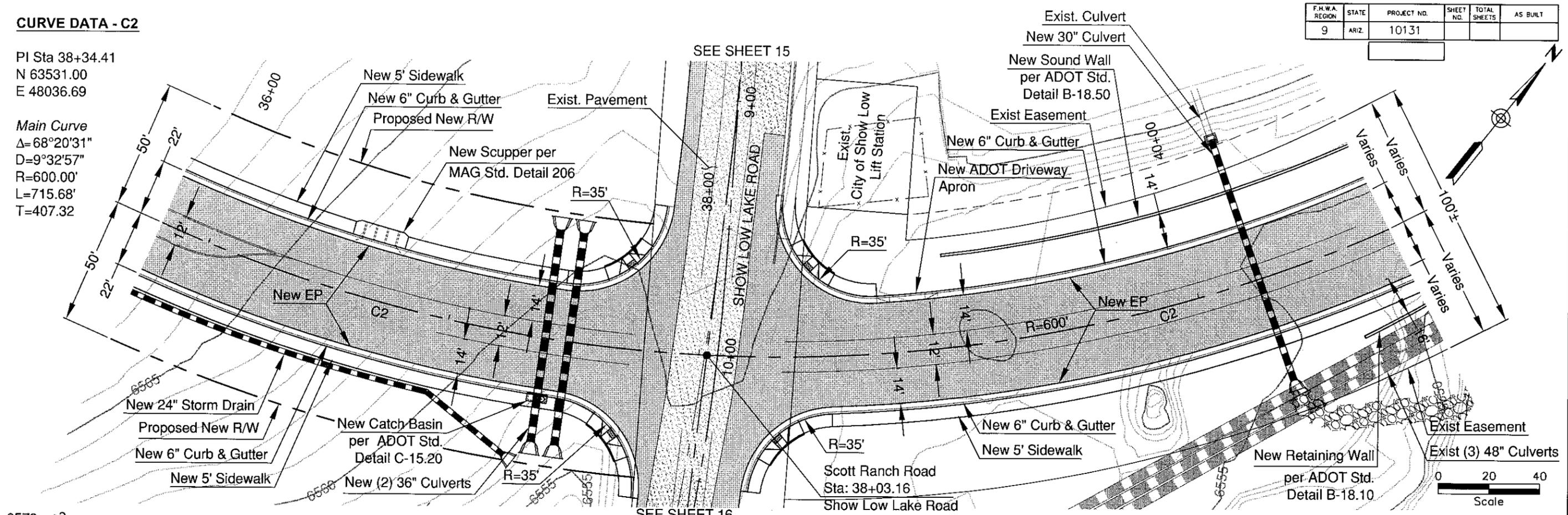
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>PRELIMINARY STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880</small>			<b>PLAN &amp; PROFILE</b> STA 30+80 TO 35+80	
ROUTE	LOCATION			
SCOTT RANCH ROAD			SHEET 4 OF 18	
TRACS NO. SS673 01C			APPENDIX L	

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

**CURVE DATA - C2**

PI Sta 38+34.41  
 N 63531.00  
 E 48036.69

Main Curve  
 $\Delta=68^{\circ}20'31''$   
 $D=9^{\circ}32'57''$   
 $R=600.00'$   
 $L=715.68'$   
 $T=407.32$

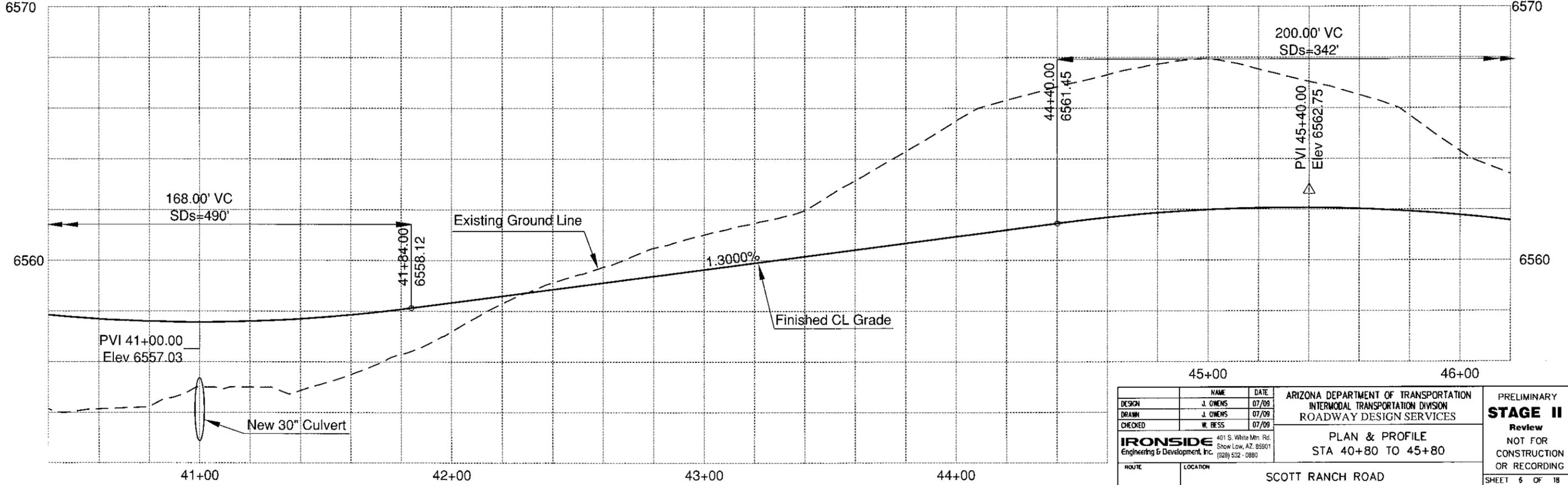
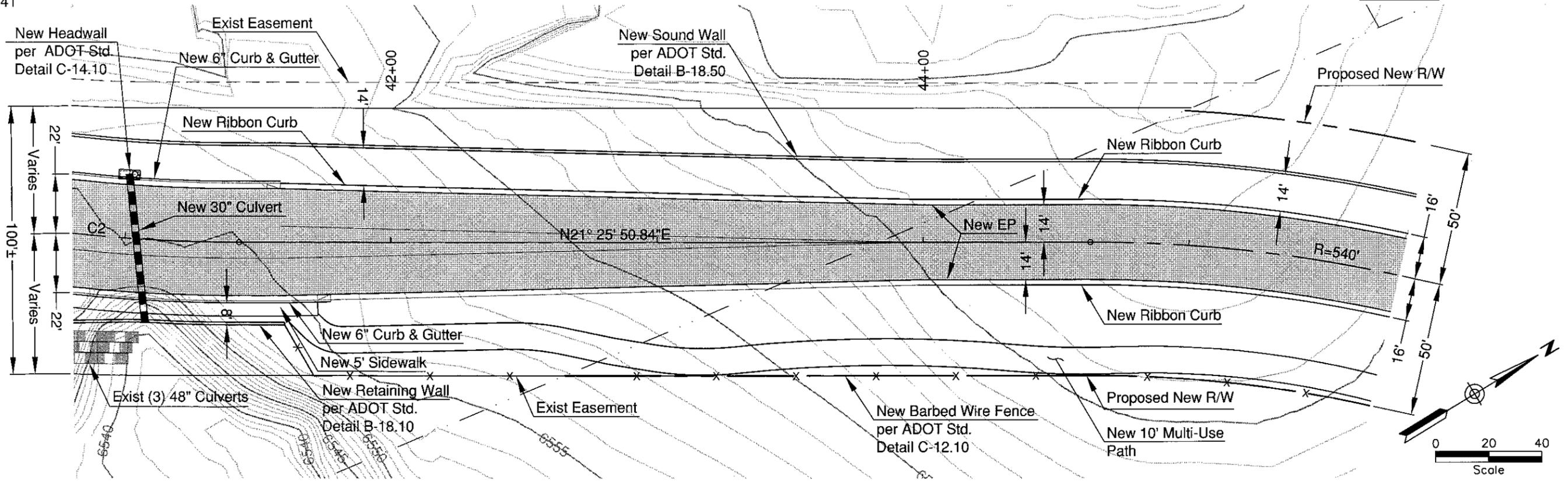


DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc.		401 S. White Mtn. Pl. Show Low, AZ 85901 (928) 532-0880		PLAN & PROFILE STA 35+80 TO 40+80
ROUTE	LOCATION	SCOTT RANCH ROAD		
TRACS NO. SS673 01C		APPENDIX L		SHEET 5 OF 18

**CURVE DATA - C2**

PI Sta 38+34.41  
 N 63531.00  
 E 48036.69  
 Main Curve  
 $\Delta=68^{\circ}20'31''$   
 $D=9^{\circ}32'57''$   
 $R=600.00'$   
 $L=715.68'$   
 $T=407.32'$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



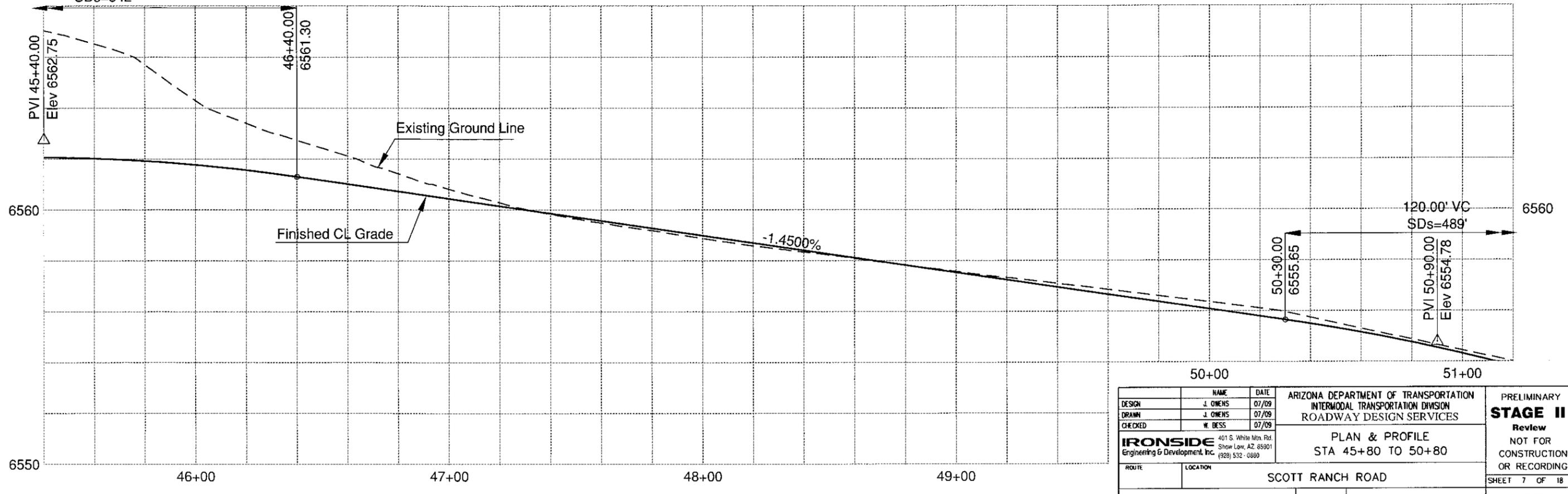
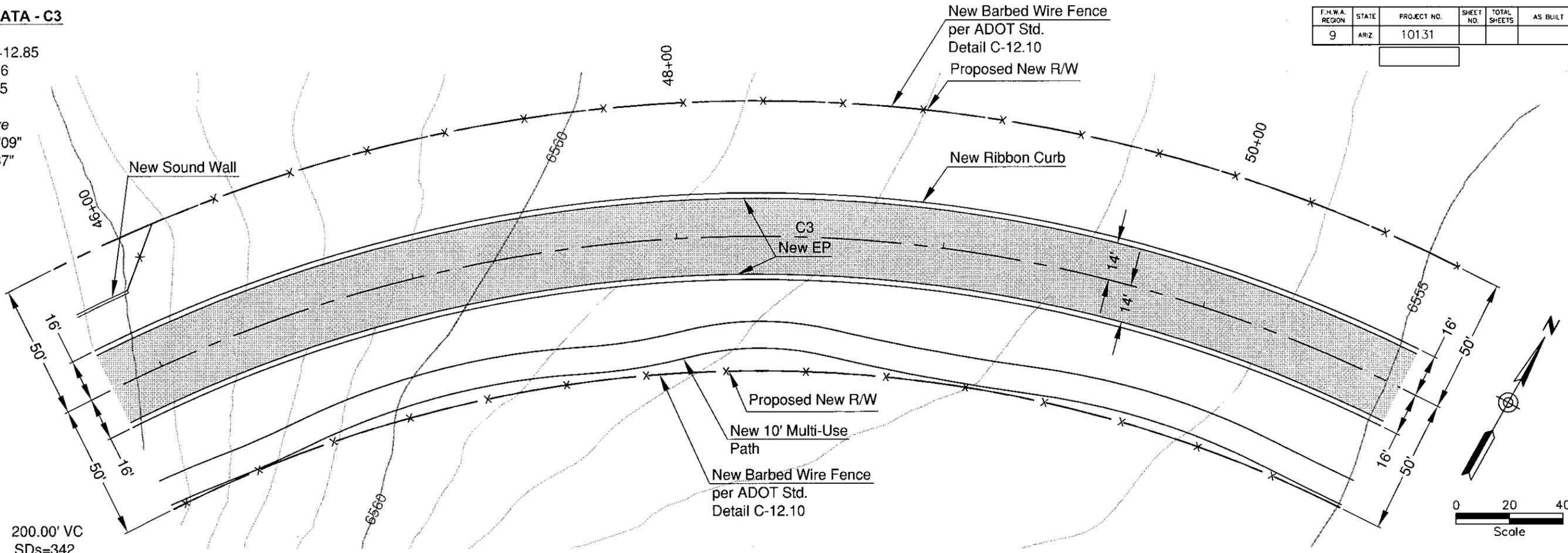
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880</small>			PLAN & PROFILE STA 40+80 TO 45+80	
ROUTE	LOCATION			SHEET 6 OF 18
TRACS NO. SS673 01C	SCOTT RANCH ROAD			APPENDIX L
				OF

**CURVE DATA - C3**

PI Sta 51+12.85  
 N 64813.16  
 E 48539.95

Main Curve  
 $\Delta = 100^\circ 34' 09''$   
 $D = 10^\circ 36' 37''$   
 $R = 540.00'$   
 $L = 947.84'$   
 $T = 650.08'$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



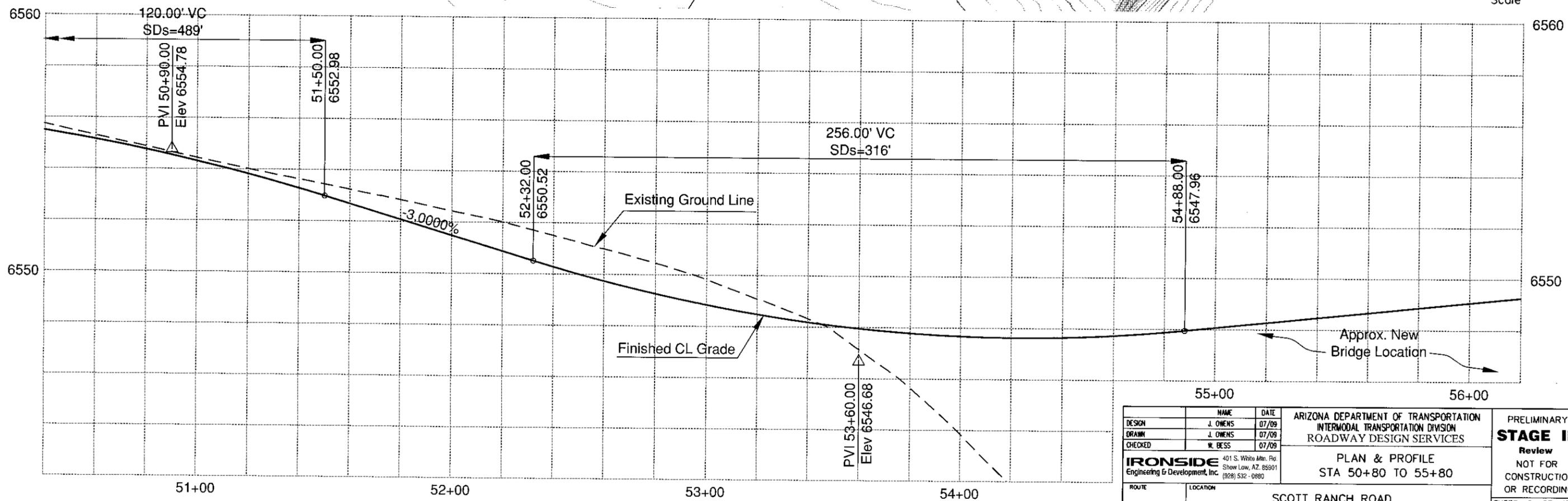
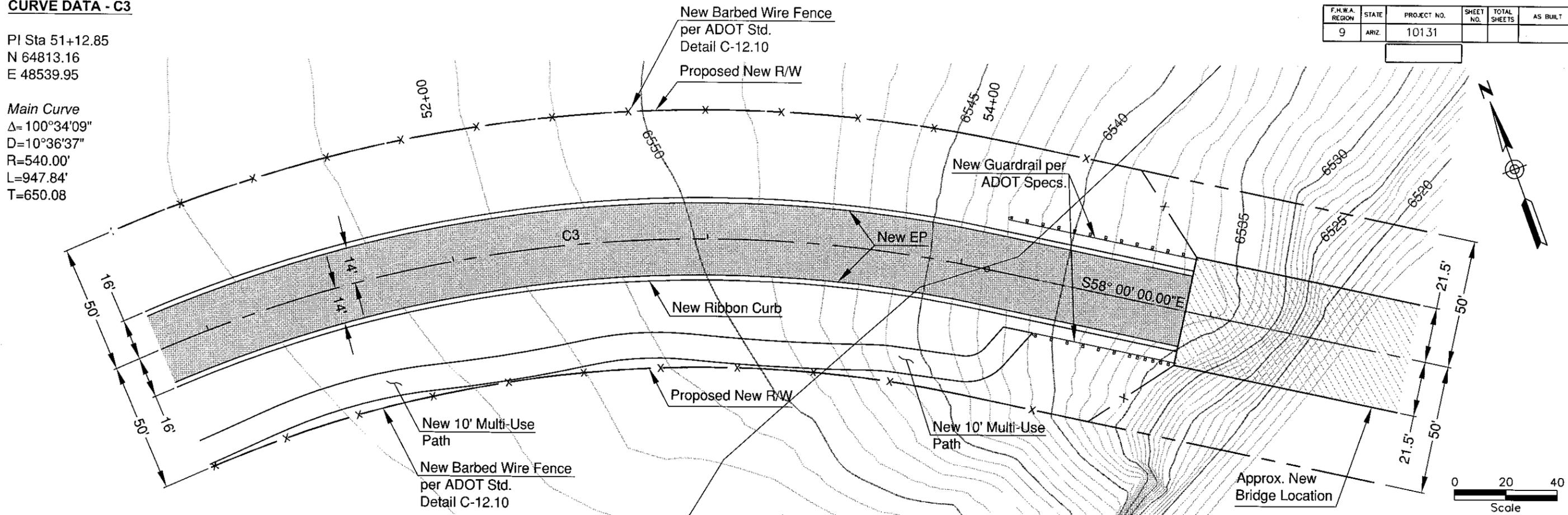
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>PRELIMINARY</b> <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			PLAN & PROFILE STA 45+80 TO 50+80	
ROUTE	LOCATION			SHEET 7 OF 18
TRACS NO. SS673 01C			SCOTT RANCH ROAD	APPENDIX L

**CURVE DATA - C3**

PI Sta 51+12.85  
 N 64813.16  
 E 48539.95

Main Curve  
 $\Delta = 100^\circ 34' 09''$   
 $D = 10^\circ 36' 37''$   
 $R = 540.00'$   
 $L = 947.84'$   
 $T = 650.08$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			



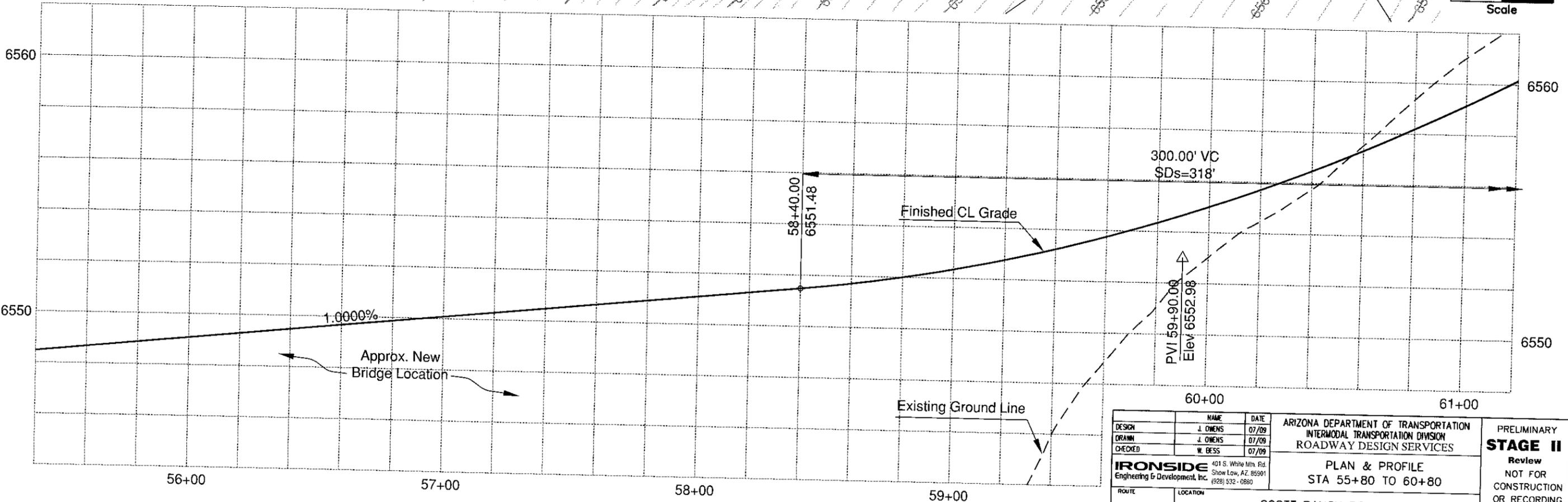
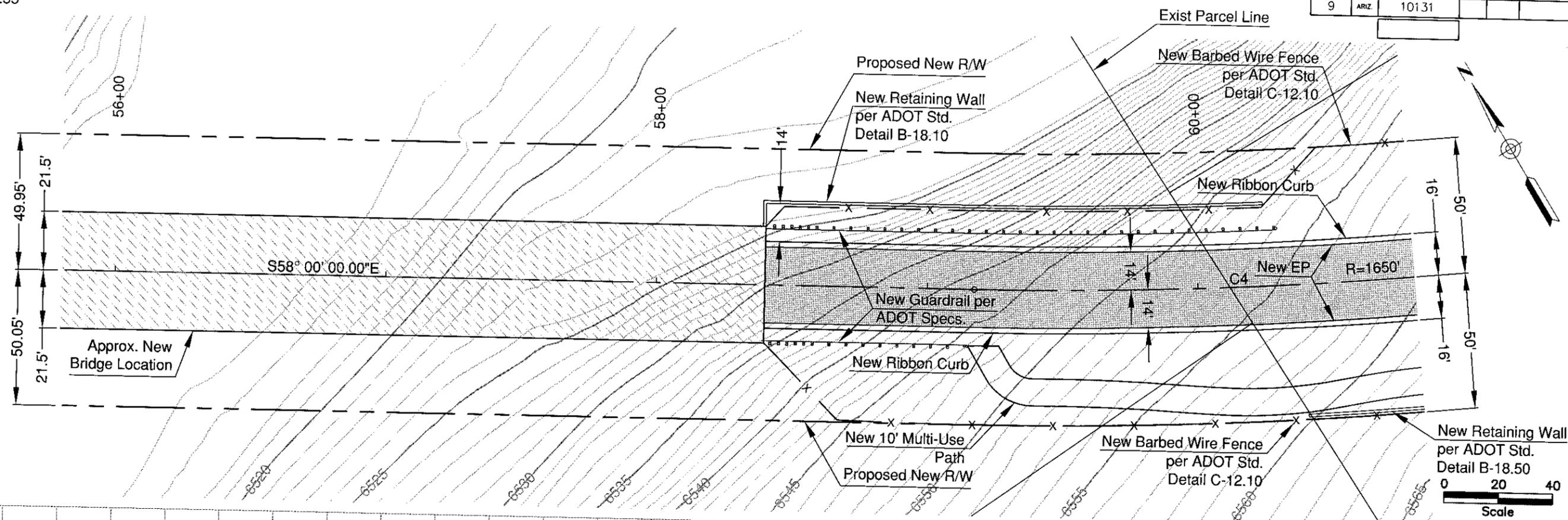
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING	
DRAWN	J. OWENS	07/09			
CHECKED	W. BESS	07/09			
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Pk.                  Show Low, AZ 85901                  (928) 532-0880</small>			PLAN & PROFILE STA 50+80 TO 55+80		
ROUTE	SCOTT RANCH ROAD			SHEET 8 OF 18	
TRACS NO.	SS673 01C	APPENDIX L	OF		

**CURVE DATA - C4**

PI Sta 63+71.55  
 N 63959.45  
 E 49906.17

Main Curve  
 $\Delta = 30^\circ 47' 12''$   
 $D = 3^\circ 28' 21''$   
 $R = 1650.00'$   
 $L = 886.59'$   
 $T = 454.28'$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ	10131			



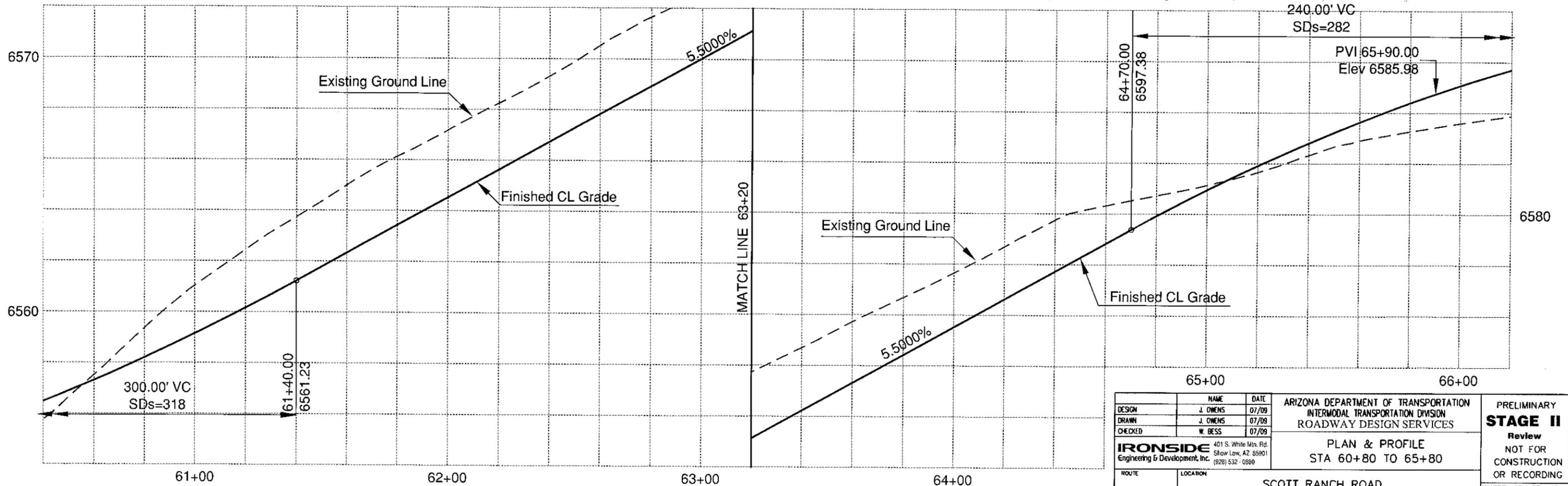
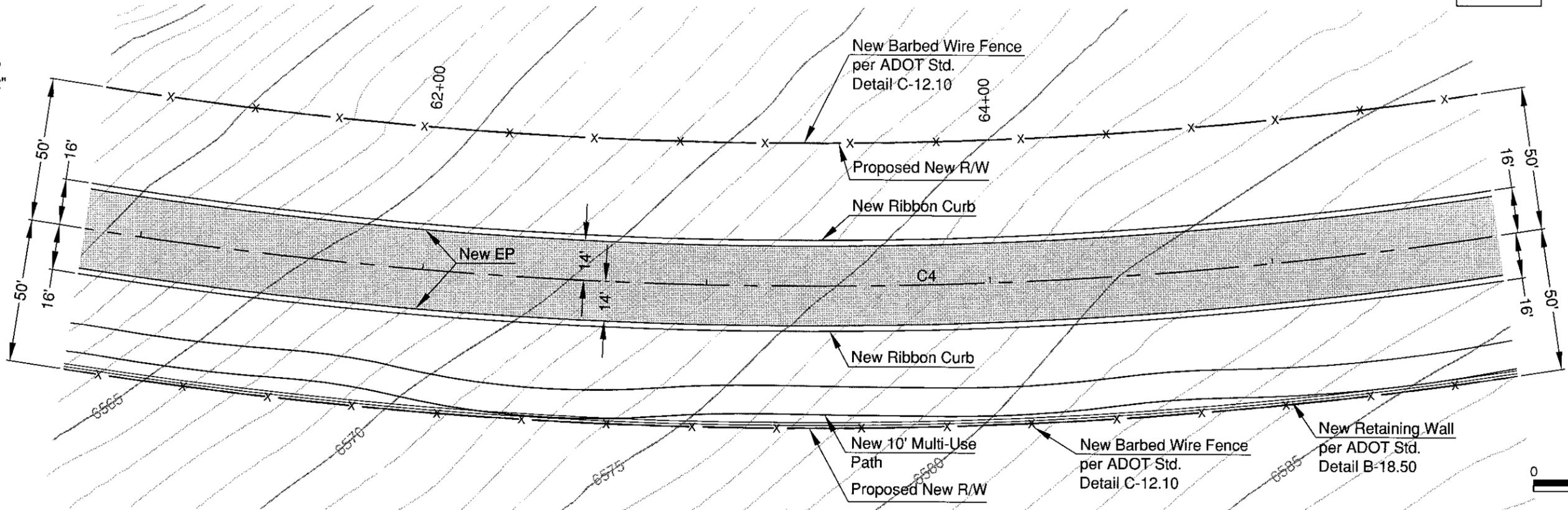
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>PRELIMINARY STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 932-0880			PLAN & PROFILE STA 55+80 TO 60+80	
ROUTE		LOCATION		
TRACS NO. SS673 01C		SCOTT RANCH ROAD		
		APPENDIX L		SHEET 9 OF 18
				OF

**CURVE DATA - C4**

PI Sta 63+71.55  
 N 63959.45  
 E 49906.17

Main Curve  
 $\Delta = 30^\circ 47' 12''$   
 $D = 3^\circ 28' 21''$   
 $R = 1650.00'$   
 $L = 886.59'$   
 $T = 454.28$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



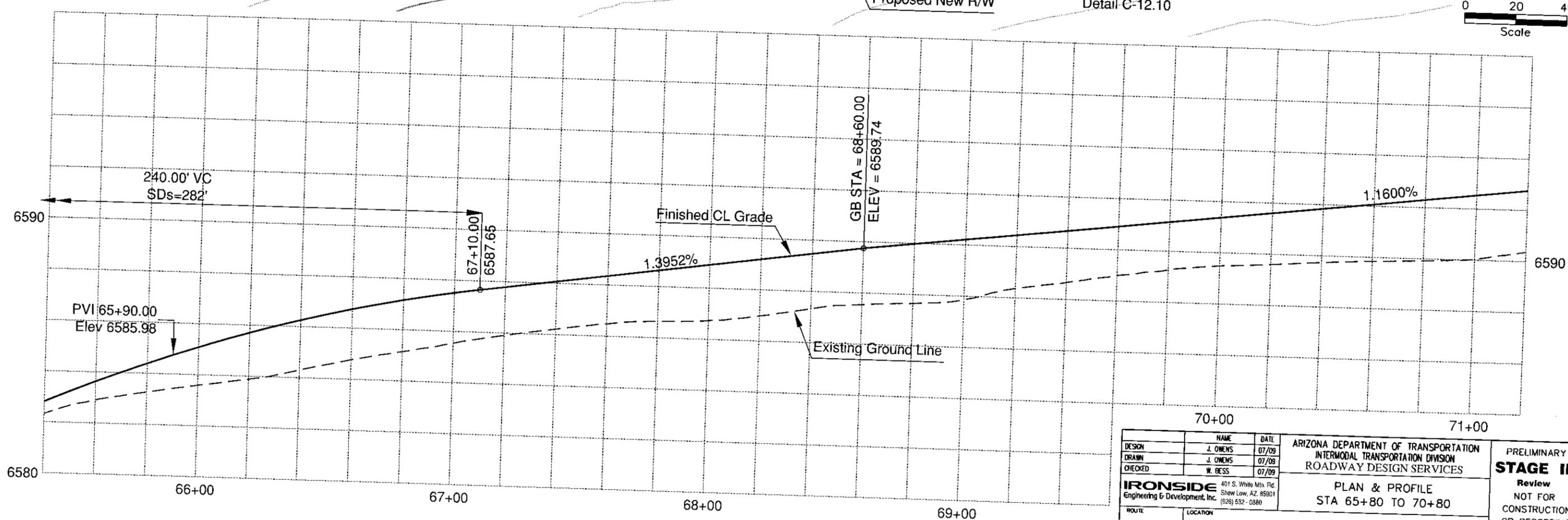
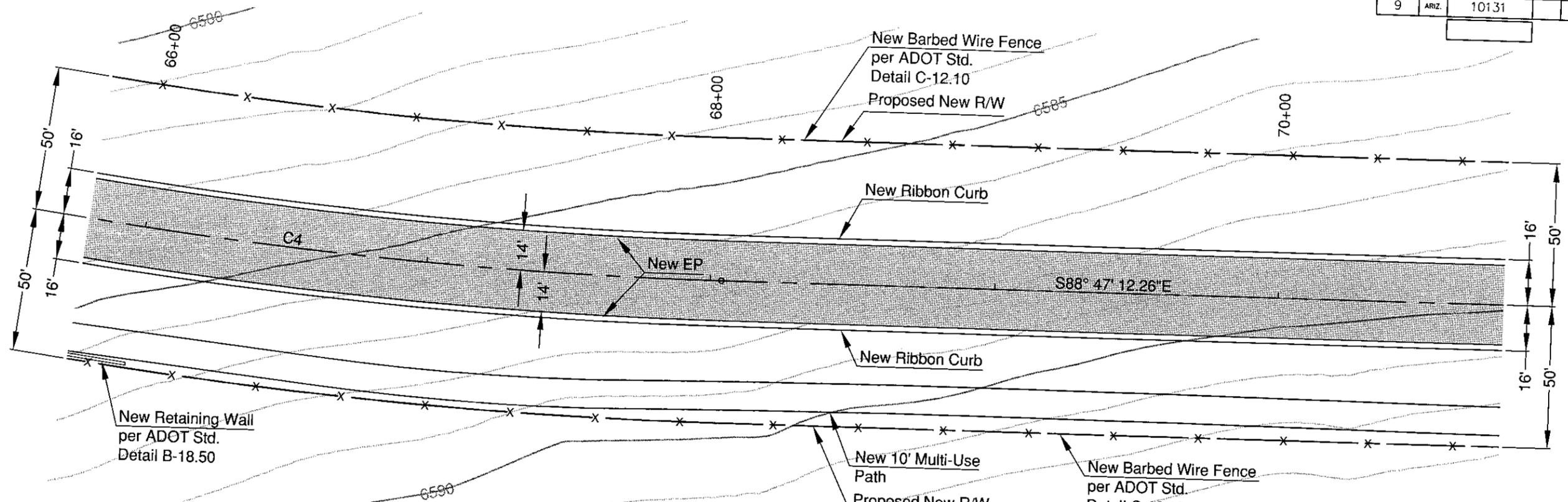
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>PRELIMINARY</b> <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			PLAN & PROFILE STA 60+80 TO 65+80	
ROUTE	SCOTT RANCH ROAD			SHEET 10 OF 18
TRACS NO. SS673 01C			APPENDIX L	OF

**CURVE DATA - C4**

PI Sta 63+71.55  
 N 63959.45  
 E 49906.17

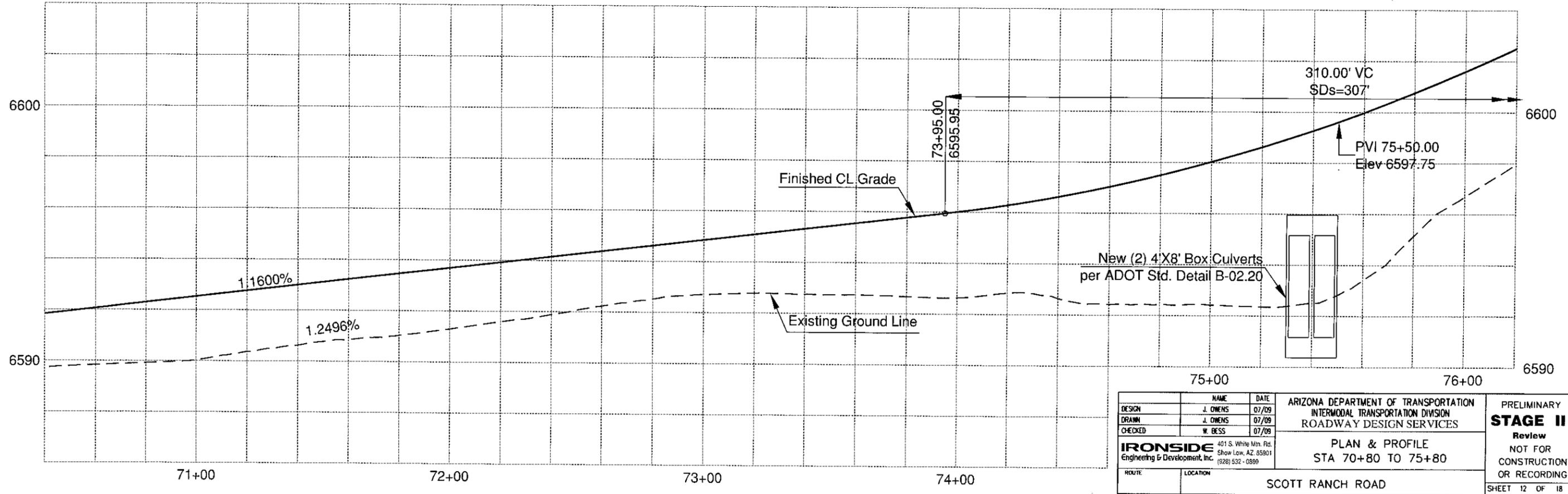
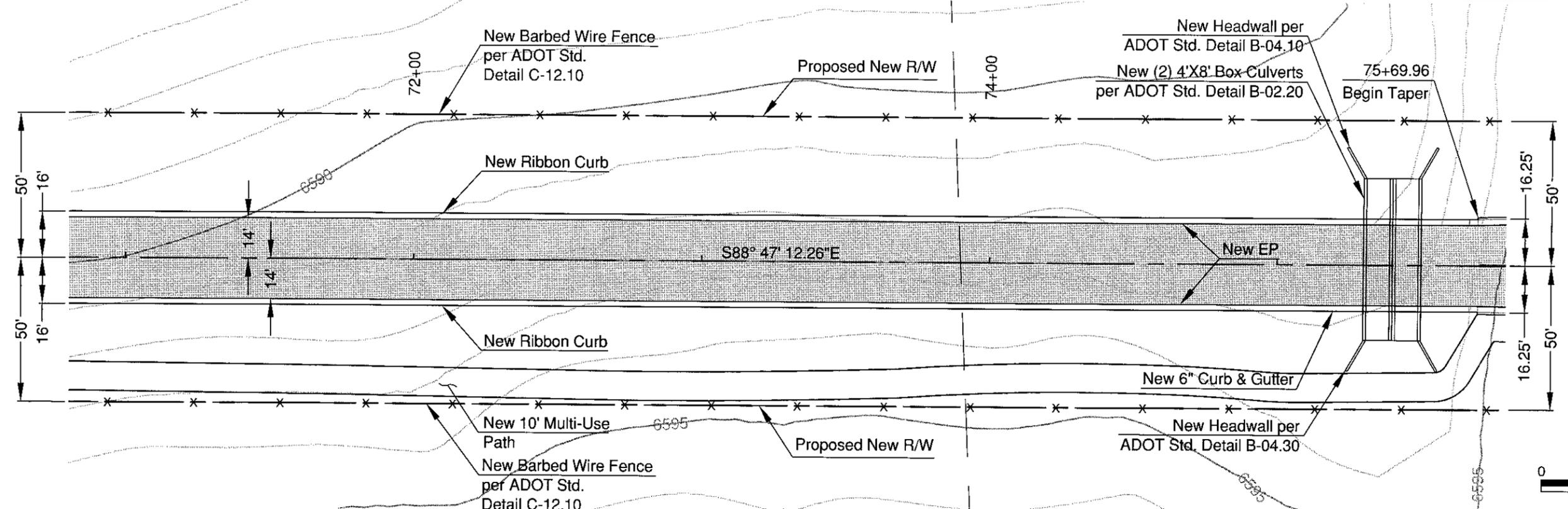
Main Curve  
 $\Delta = 30^\circ 47' 12''$   
 $D = 3^\circ 28' 21''$   
 $R = 1650.00'$   
 $L = 886.59'$   
 $T = 454.28$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd.                  Show Low, AZ, 85901                  (928) 832-0880</small>			PLAN & PROFILE STA 65+80 TO 70+80	SHEET 11 OF 18
ROUTE	SCOTT RANCH ROAD		TRACS NO. SS673 01C	
				OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	10131			



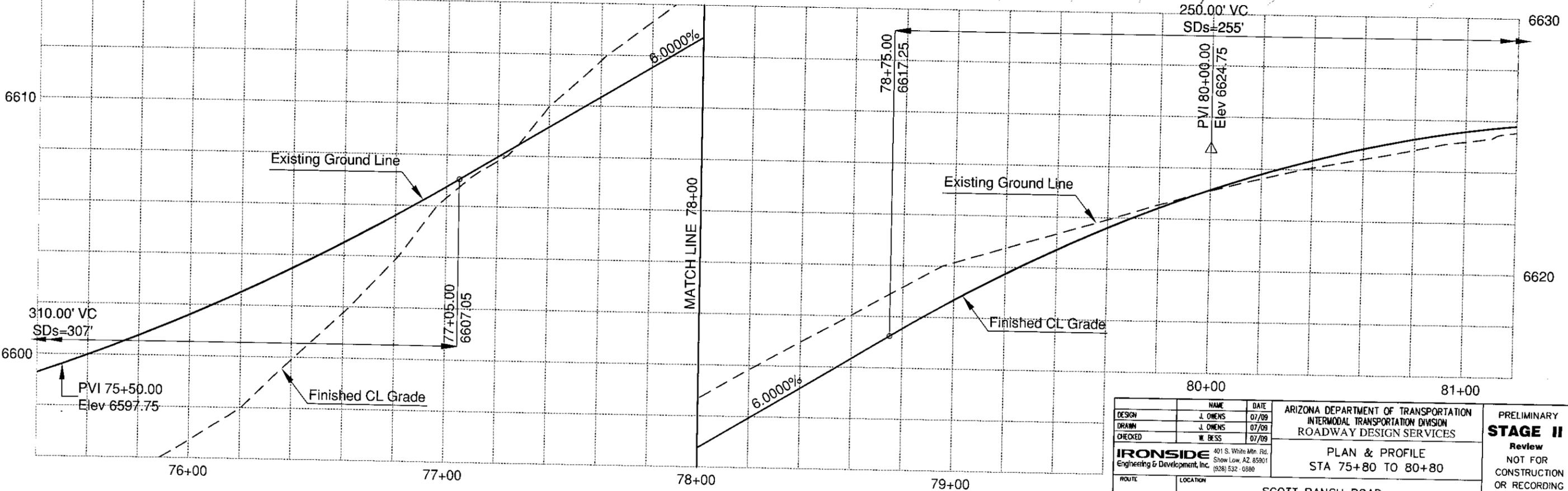
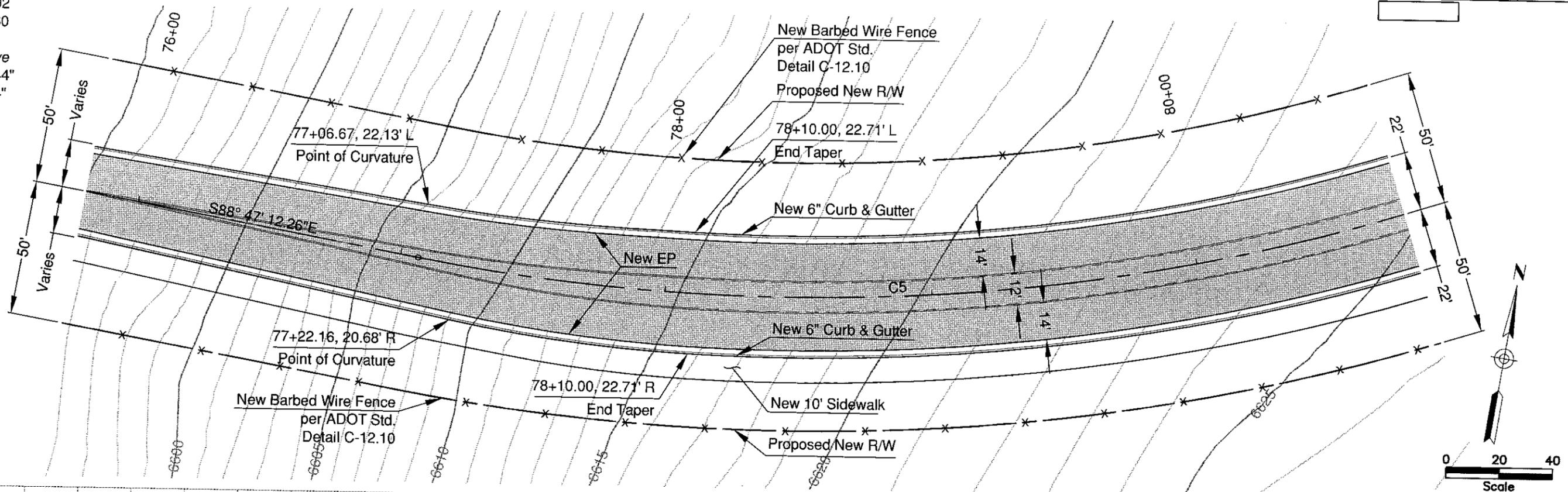
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING SHEET 12 OF 18
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			PLAN & PROFILE STA 70+80 TO 75+80	
ROUTE	SCOTT RANCH ROAD			OF
TRACS NO. SS673 01C			APPENDIX L	

**CURVE DATA - C5**

PI Sta 79+33.37  
 N 63925.92  
 E 51489.60

Main Curve  
 $\Delta = 32^\circ 24' 44''$   
 $D = 7^\circ 20' 44''$   
 $R = 780.00'$   
 $L = 441.25'$   
 $T = 226.70'$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



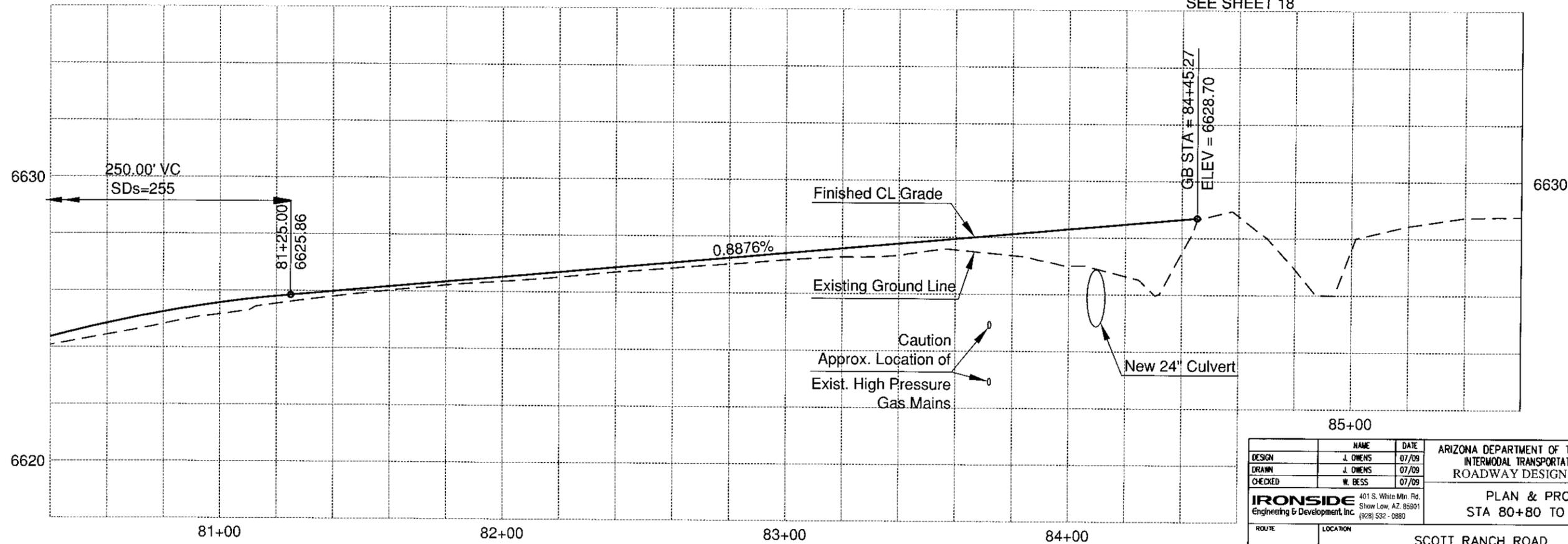
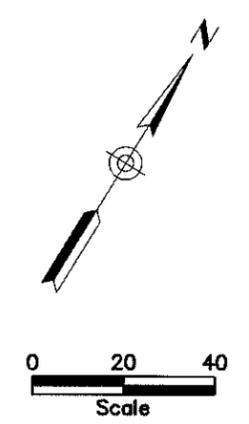
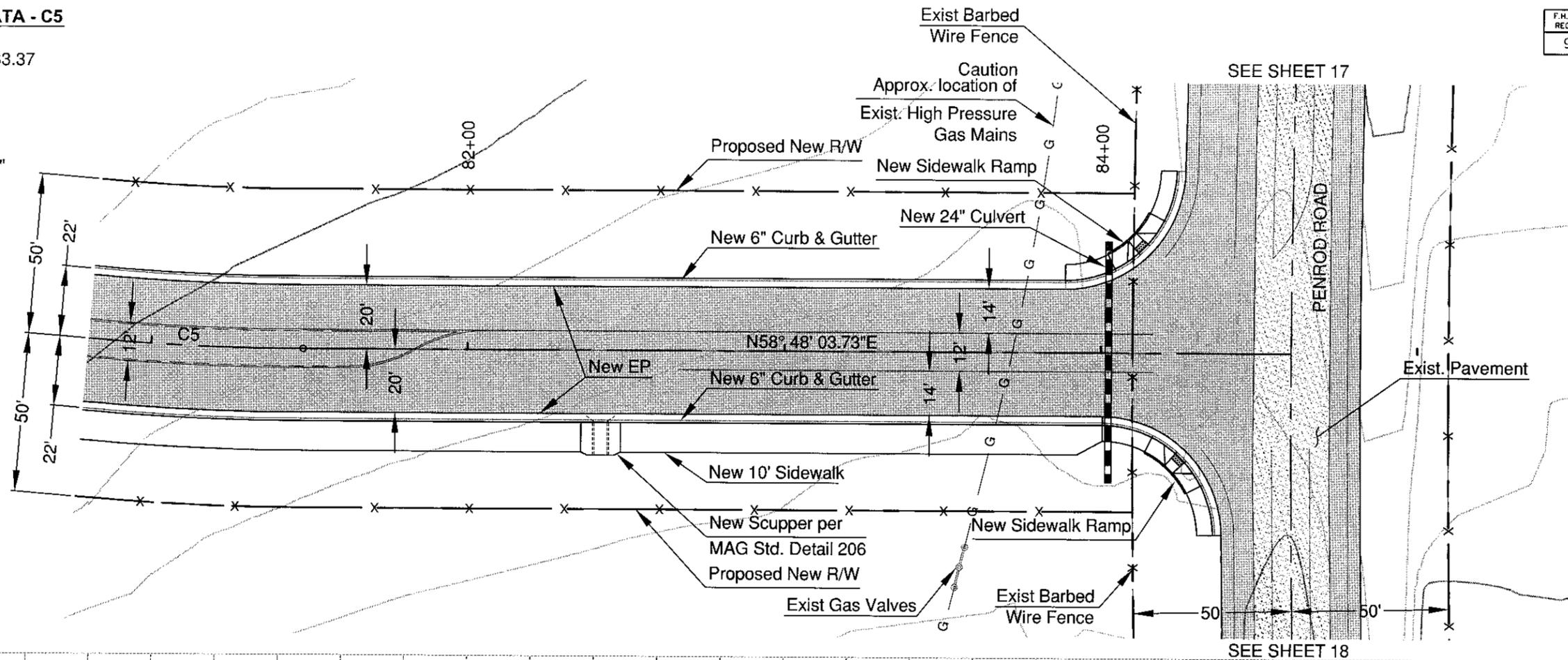
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	<b>PRELIMINARY</b> <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd.,                  Show Low, AZ 85901                  (928) 532-0880</small>			PLAN & PROFILE STA 75+80 TO 80+80	
ROUTE		LOCATION		
		SCOTT RANCH ROAD		SHEET 13 OF 18
TRACS NO. SS673 01C		APPENDIX L		OF

**CURVE DATA - C5**

PI Sta 79+33.37  
 N 63925.92  
 E 51489.60

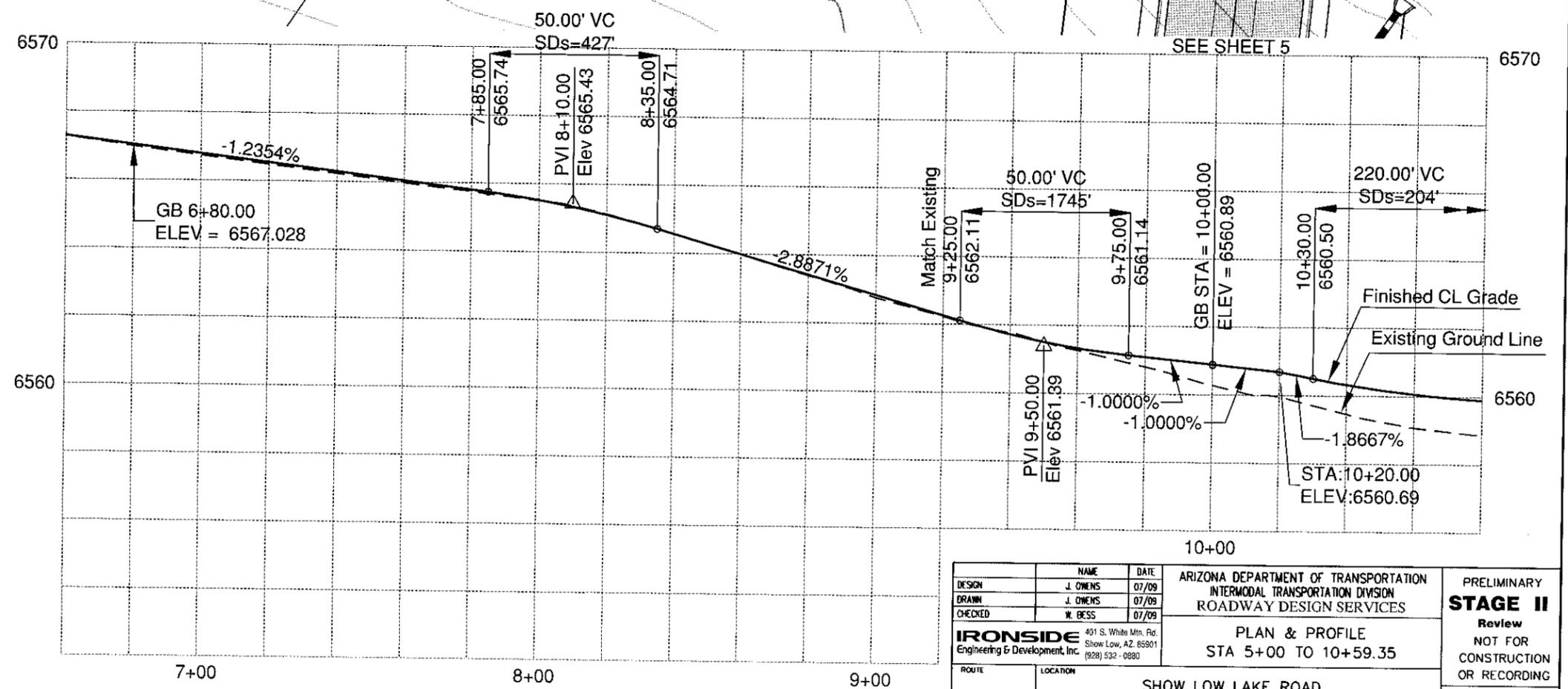
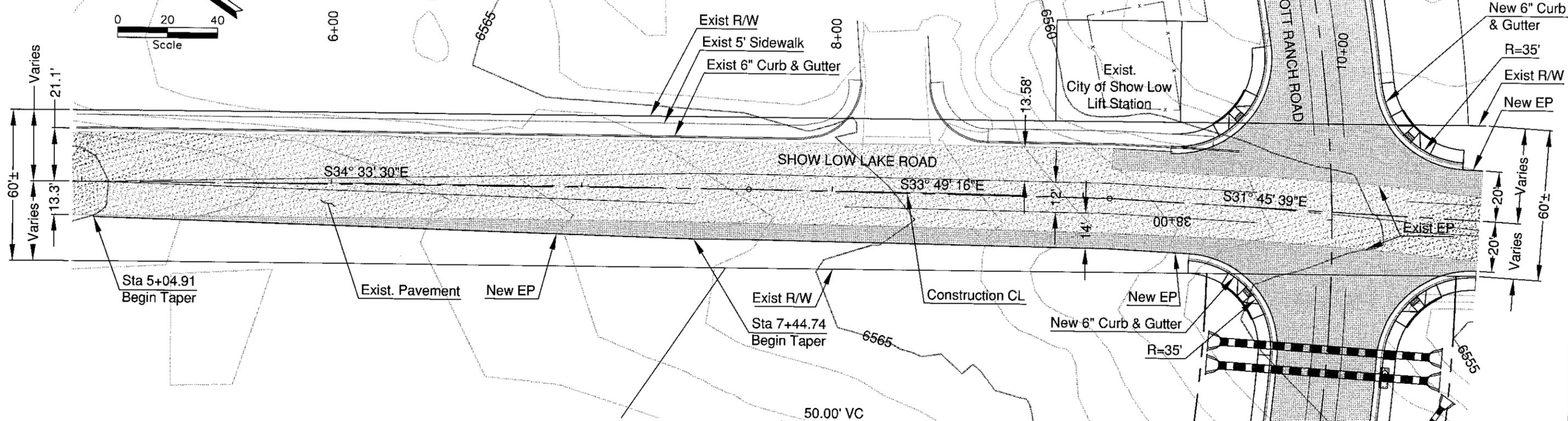
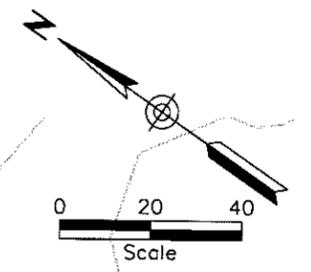
Main Curve  
 $\Delta = 32^\circ 24' 44''$   
 $D = 7^\circ 20' 44''$   
 $R = 780.00'$   
 $L = 441.25'$   
 $T = 226.70$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>301 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880</small>			PLAN & PROFILE STA 80+80 TO 84+60	
ROUTE	SCOTT RANCH ROAD			SHEET 14 OF 18
TRACS NO. SS673 01C			APPENDIX L	

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



SURVEY NO. FINISHED PLANS DATE LOCATION REVISIONS DATE FINISHED PLANS SURVEY NO. DATE

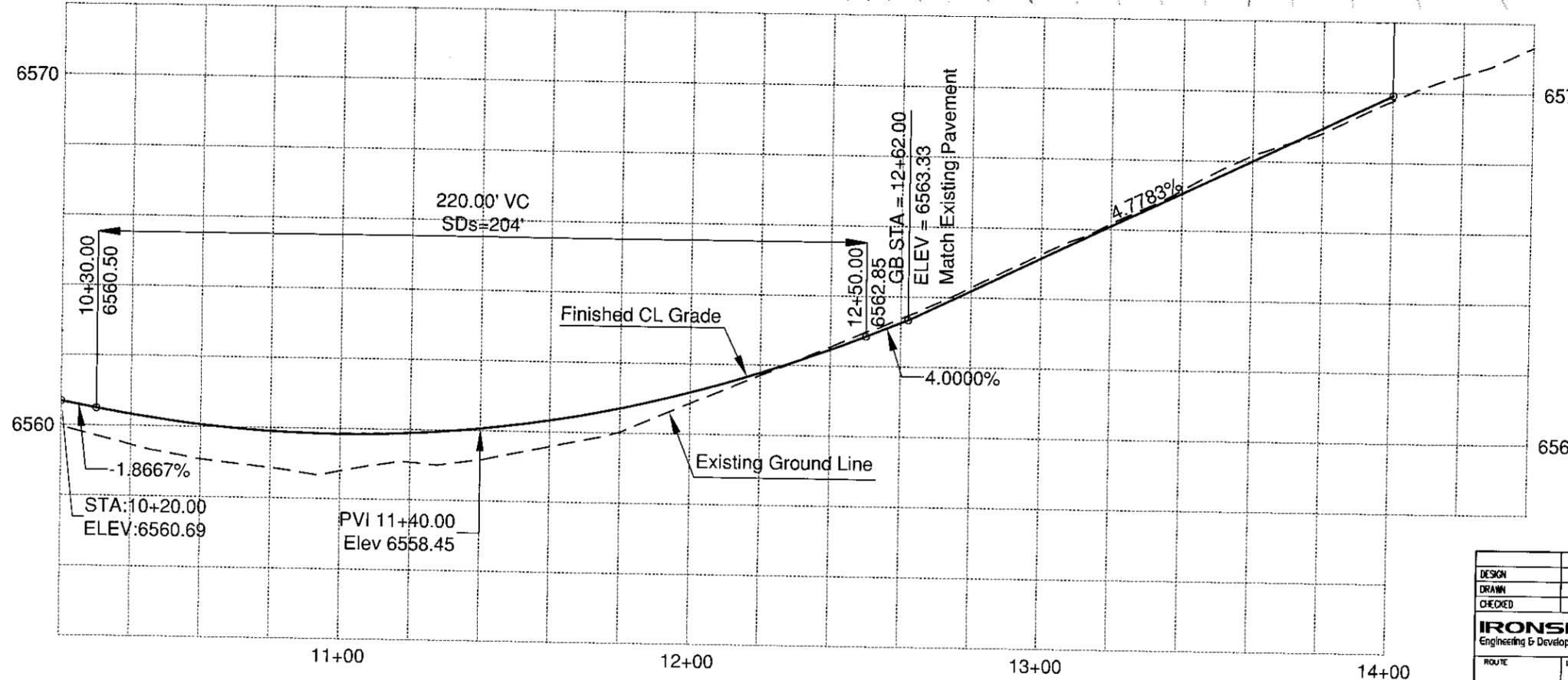
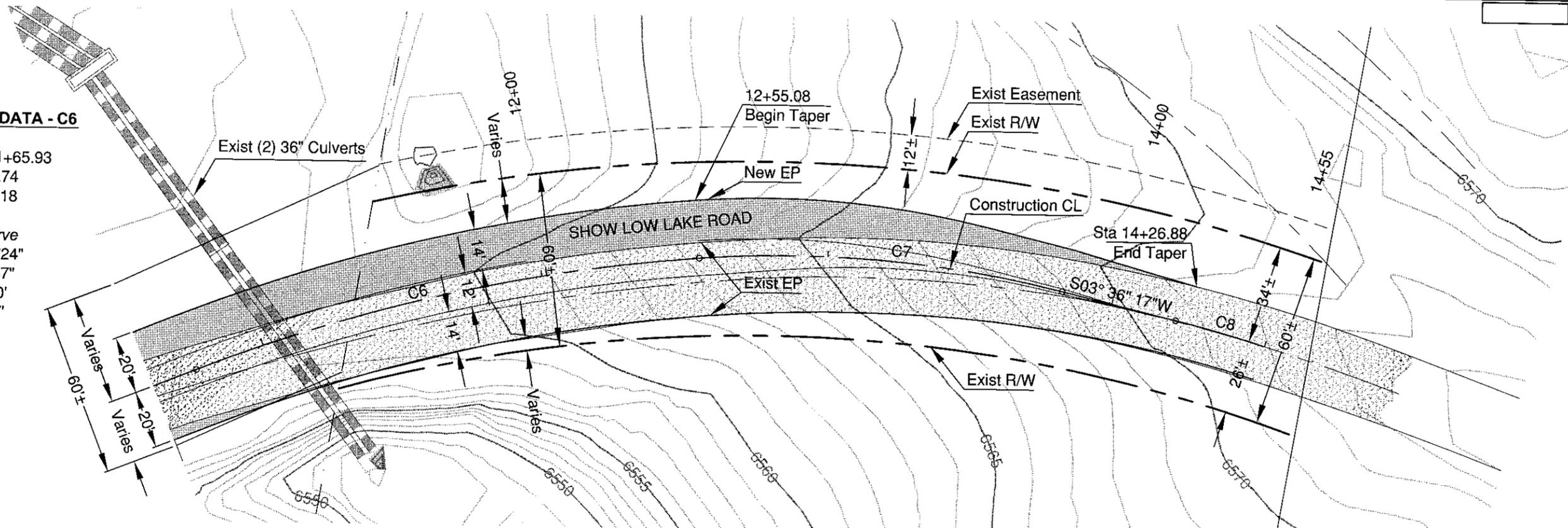
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86901 (928) 532-0880			PLAN & PROFILE STA 5+00 TO 10+59.35	
ROUTE		LOCATION		
		SHOW LOW LAKE ROAD		
TRACS NO. SS673 01C		APPENDIX L		OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

**CURVE DATA - C6**

PI Sta 11+65.93  
 N 63503.74  
 E 48068.18

Main Curve  
 $\Delta = 17^\circ 09' 24''$   
 $D = 9^\circ 32' 57''$   
 $R = 600.00'$   
 $L = 179.67'$   
 $T = 90.51$



**CURVE DATA - C7**

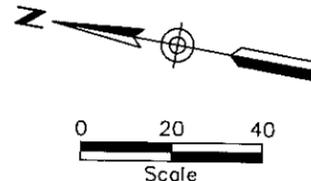
PI Sta 13+19.18  
 N 63354.13  
 E 48107.16

Main Curve  
 $\Delta = 18^\circ 12' 31''$   
 $D = 14^\circ 19' 26''$   
 $R = 400.00'$   
 $L = 127.12'$   
 $T = 64.10$

**CURVE DATA - C8**

PI Sta 14+38.96  
 N 63233.51  
 E 48099.56

Main Curve  
 $\Delta = 3^\circ 55' 14''$   
 $D = 12^\circ 08' 20''$   
 $R = 472.00'$   
 $L = 32.30'$   
 $T = 16.16$



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			PLAN & PROFILE STA 10+59.35 TO 14+26.88	SHEET 16 OF 18
ROUTE	SHOW LOW LAKE ROAD		TRACS NO. SS673 01C	APPENDIX L

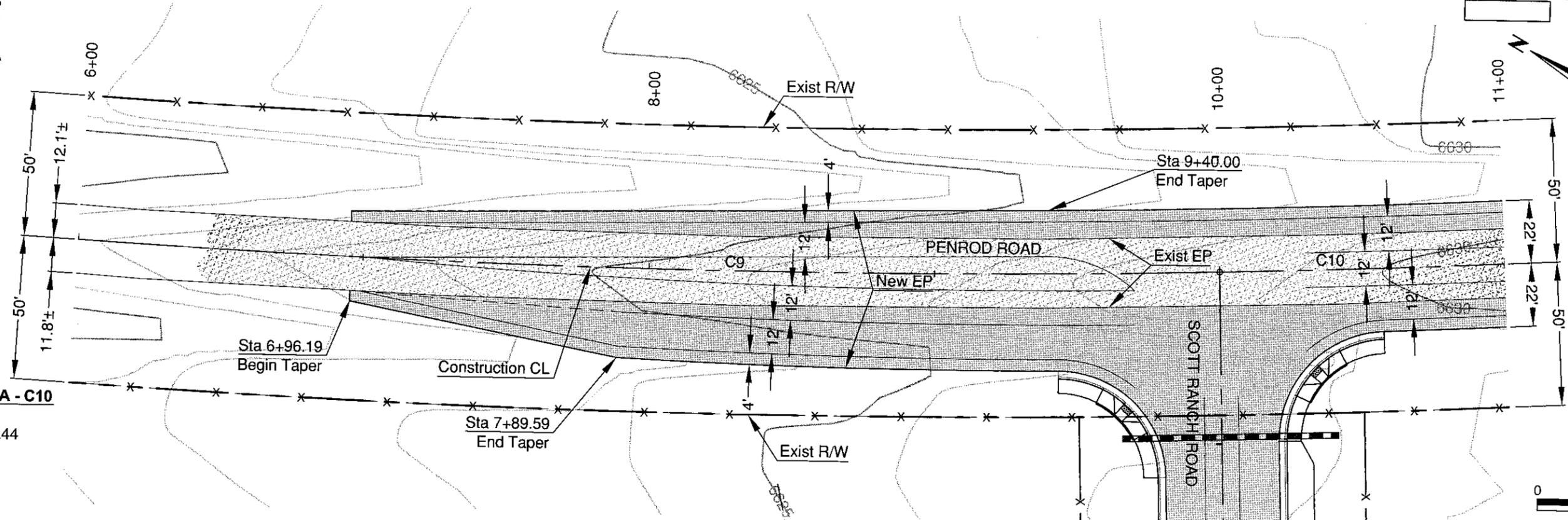
SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

**CURVE DATA - C9**

PI Sta 8+00.13  
 N 64376.16  
 E 51846.72

Main Curve  
 $\Delta = 5^{\circ}02'12''$   
 $D = 1^{\circ}15'33''$   
 $R = 4550.29'$   
 $L = 400.00'$   
 $T = 200.13$

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

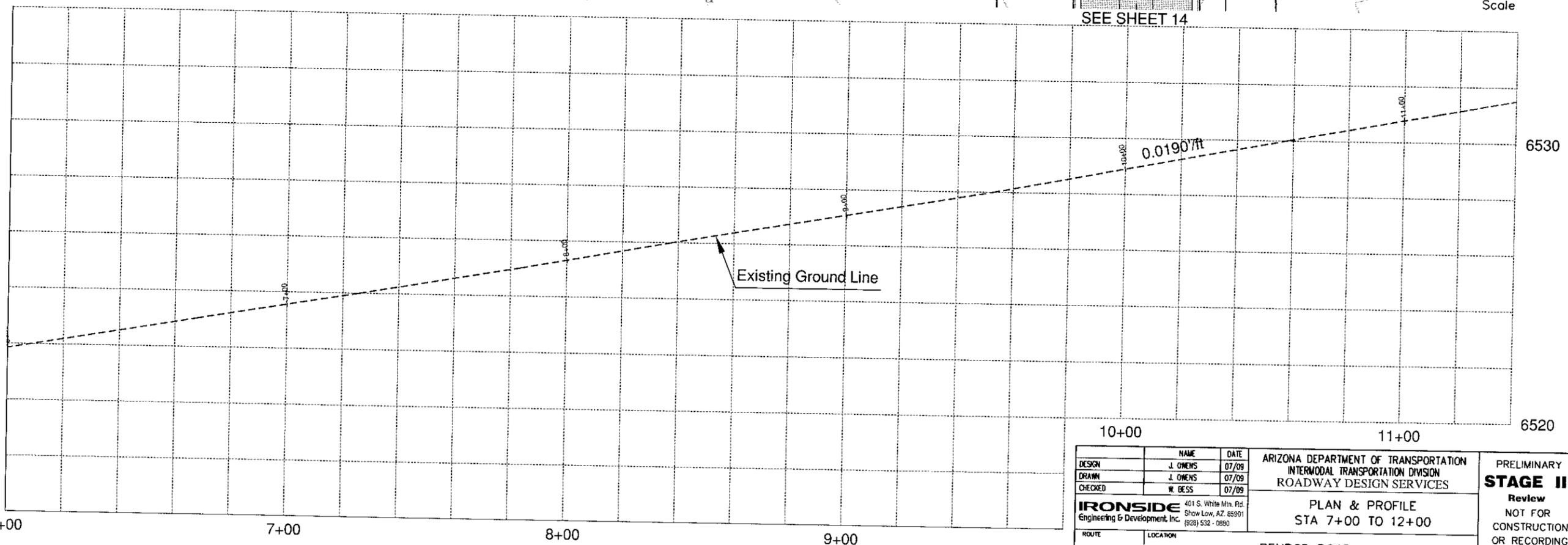


**CURVE DATA - C10**

PI Sta 13+00.44  
 N 63947.99  
 E 52106.02

Main Curve  
 $\Delta = 7^{\circ}33'18''$   
 $D = 1^{\circ}15'33''$   
 $R = 4550.29'$   
 $L = 600.00'$   
 $T = 300.44$

6530

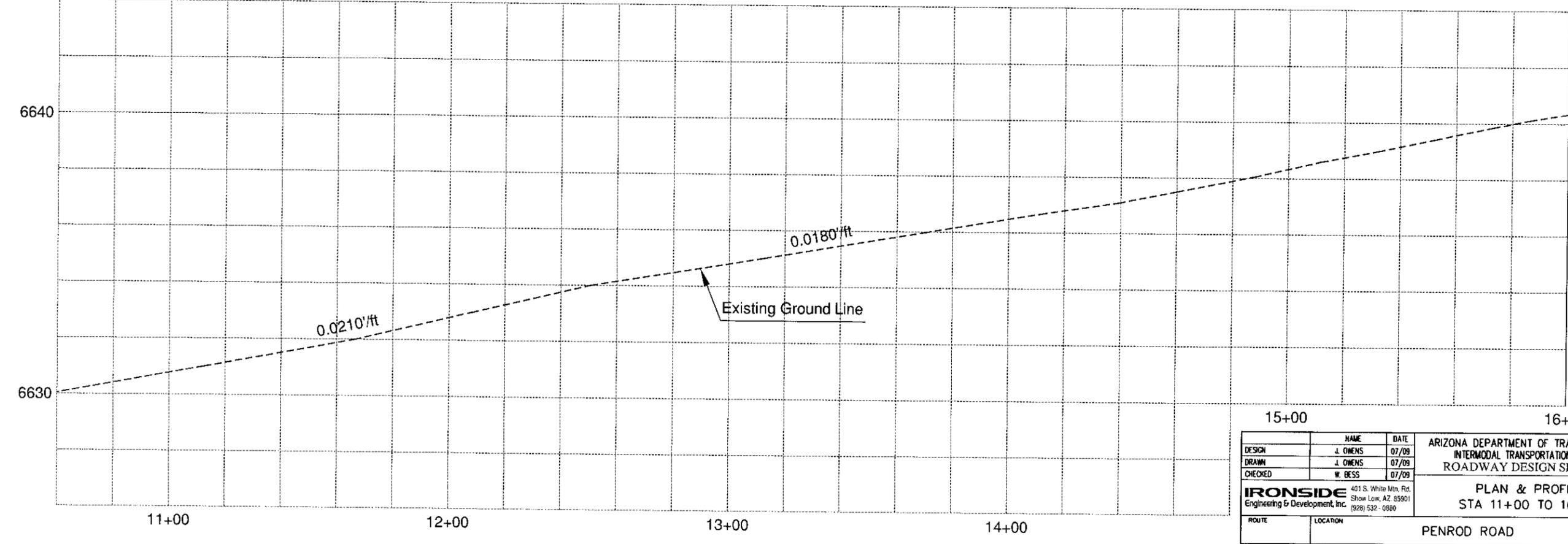
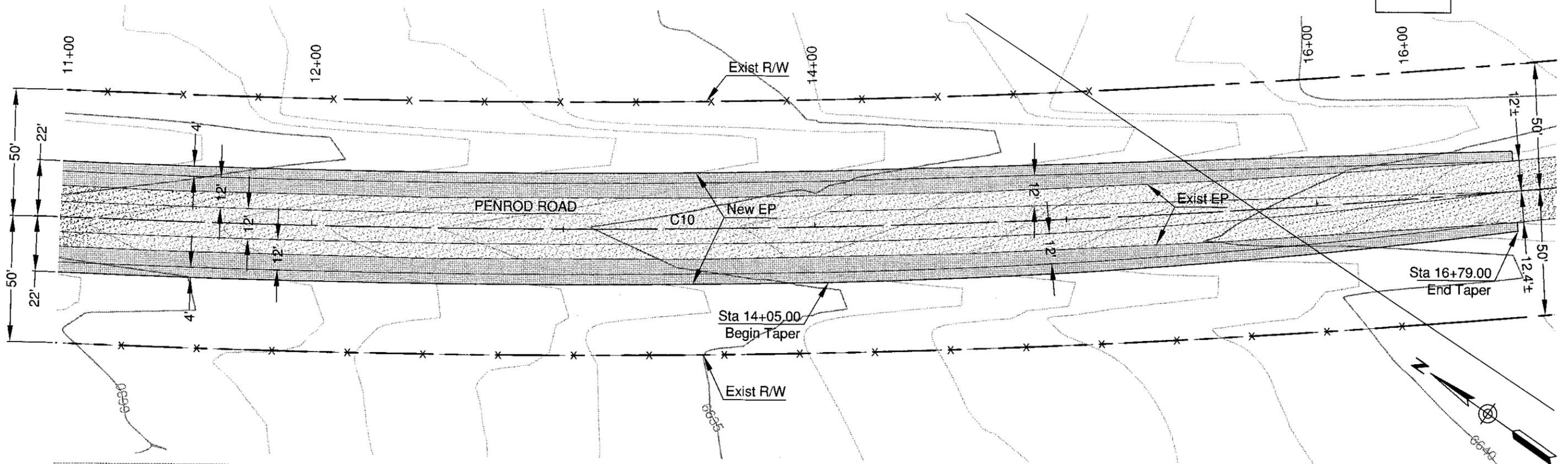


SEE SHEET 14

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd.                  Show Low, AZ 85901                  (928) 532-0880</small>			PLAN & PROFILE STA 7+00 TO 12+00	
ROUTE	PENROD ROAD			SHEET 17 OF 18
TRACS NO. SS673 01C			APPENDIX L	___ OF ___

SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



**CURVE DATA - C10**

PI Sta 13+00.44  
 N 63947.99  
 E 52106.02

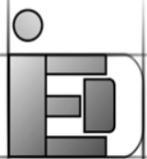
Main Curve  
 $\Delta = 7^\circ 33' 18''$   
 $D = 1^\circ 15' 33''$   
 $R = 4550.29'$   
 $L = 600.00'$   
 $T = 300.44'$

DESIGN	J. OMENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OMENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			<b>PLAN &amp; PROFILE</b> STA 11+00 TO 16+00	
ROUTE	PENROD ROAD			SHEET 18 OF 18

TRACS NO. SS673 01C      APPENDIX L      OF

SURVEY NO. FINISHED PLANS- LOCATION- DATE- REVISIONS- FINISHED PLANS- LOCATION- DATE- REVISIONS- FINISHED PLANS- LOCATION- DATE-

## ***Appendix M – Geometric Layout***



*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

*M-1*

*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

**CURVE DATA - C1**

PI Sta 25+89.01  
N 63526.04  
E 46787.00

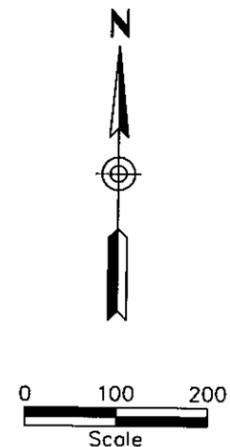
Main Curve  
Δ= 19°58'33"  
D=4°46'29"  
R=1200.00'  
L=418.37'  
T=211.33

**CURVE DATA - C2**

PI Sta 38+34.41  
N 63531.00  
E 48036.69

Main Curve  
Δ= 68°20'31"  
D=9°32'57"  
R=600.00'  
L=715.68'  
T=407.32

POINT TABLE		
POINT	NORTHING	EASTING
1	63216.8805	45946.8505
2	63453.0612	46588.6691
3	63526.8814	46998.3260
4	63529.3840	47629.3741
5	63910.1530	48185.5105
6	64208.0284	48302.4313



DESIGN	S. IRWIN	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING	
DRAWN	S. IRWIN	07/09			
CHECKED	J. OWENS	07/09			
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			GEOMETRIC LAYOUT STA 16+93.78 TO 44+62.77		
ROUTE	SCOTT RANCH ROAD			SHEET 1 OF 5	
TRACS NO.	SS673 01C	APPENDIX M	___ OF ___		

SURVEY NO. FINISHED PLANS- REVISIONS- DATE- LOCATION- FINISHED PLANS- REVISIONS- DATE- LOCATION- FINISHED PLANS- REVISIONS- DATE- LOCATION-

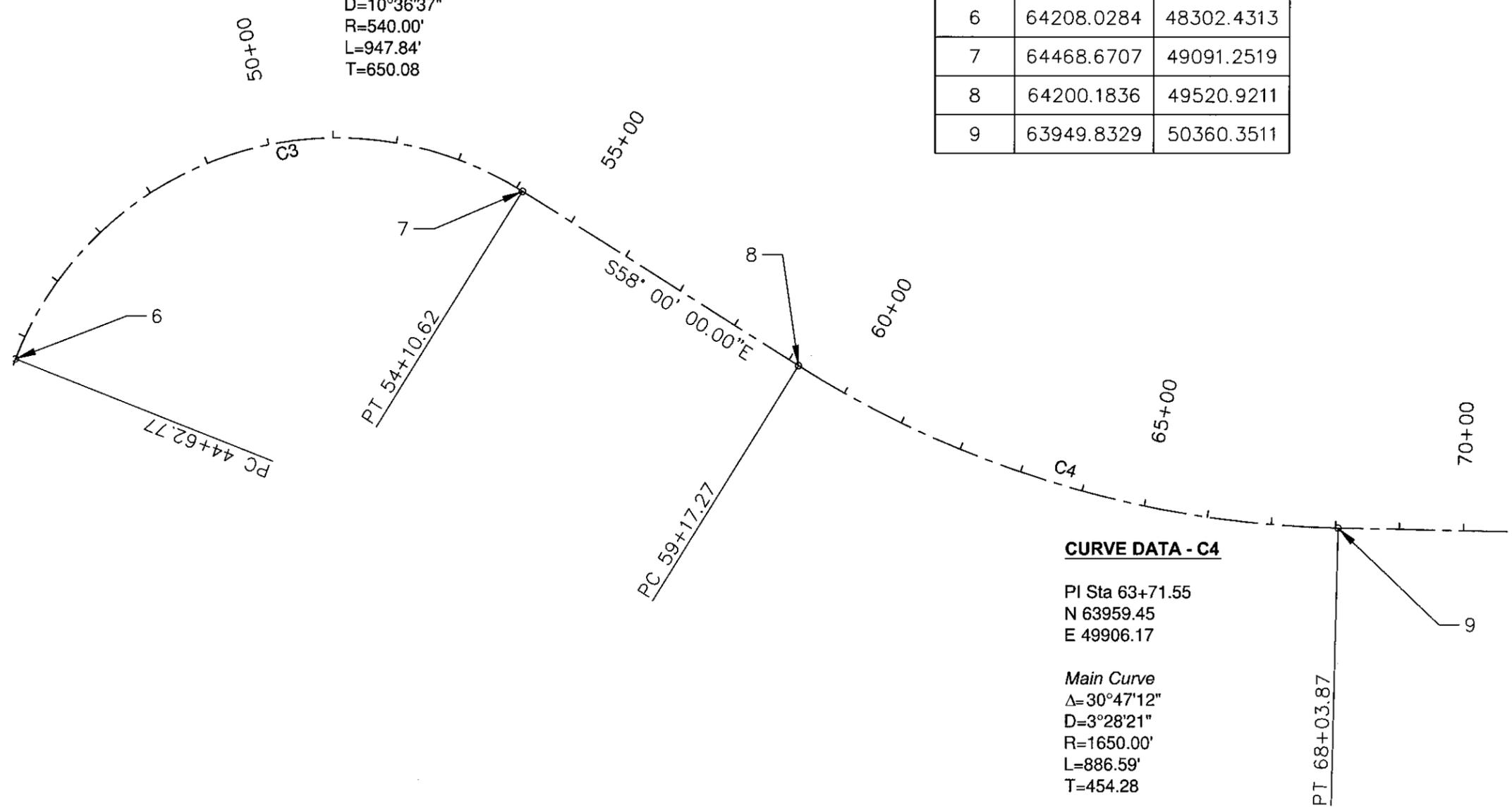
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

**CURVE DATA - C3**

PI Sta 51+12.85  
 N 64813.16  
 E 48539.95

Main Curve  
 $\Delta=100^{\circ}34'09''$   
 $D=10^{\circ}36'37''$   
 $R=540.00'$   
 $L=947.84'$   
 $T=650.08$

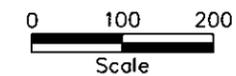
POINT TABLE		
POINT	NORTHING	EASTING
6	64208.0284	48302.4313
7	64468.6707	49091.2519
8	64200.1836	49520.9211
9	63949.8329	50360.3511



**CURVE DATA - C4**

PI Sta 63+71.55  
 N 63959.45  
 E 49906.17

Main Curve  
 $\Delta=30^{\circ}47'12''$   
 $D=3^{\circ}28'21''$   
 $R=1650.00'$   
 $L=886.59'$   
 $T=454.28$



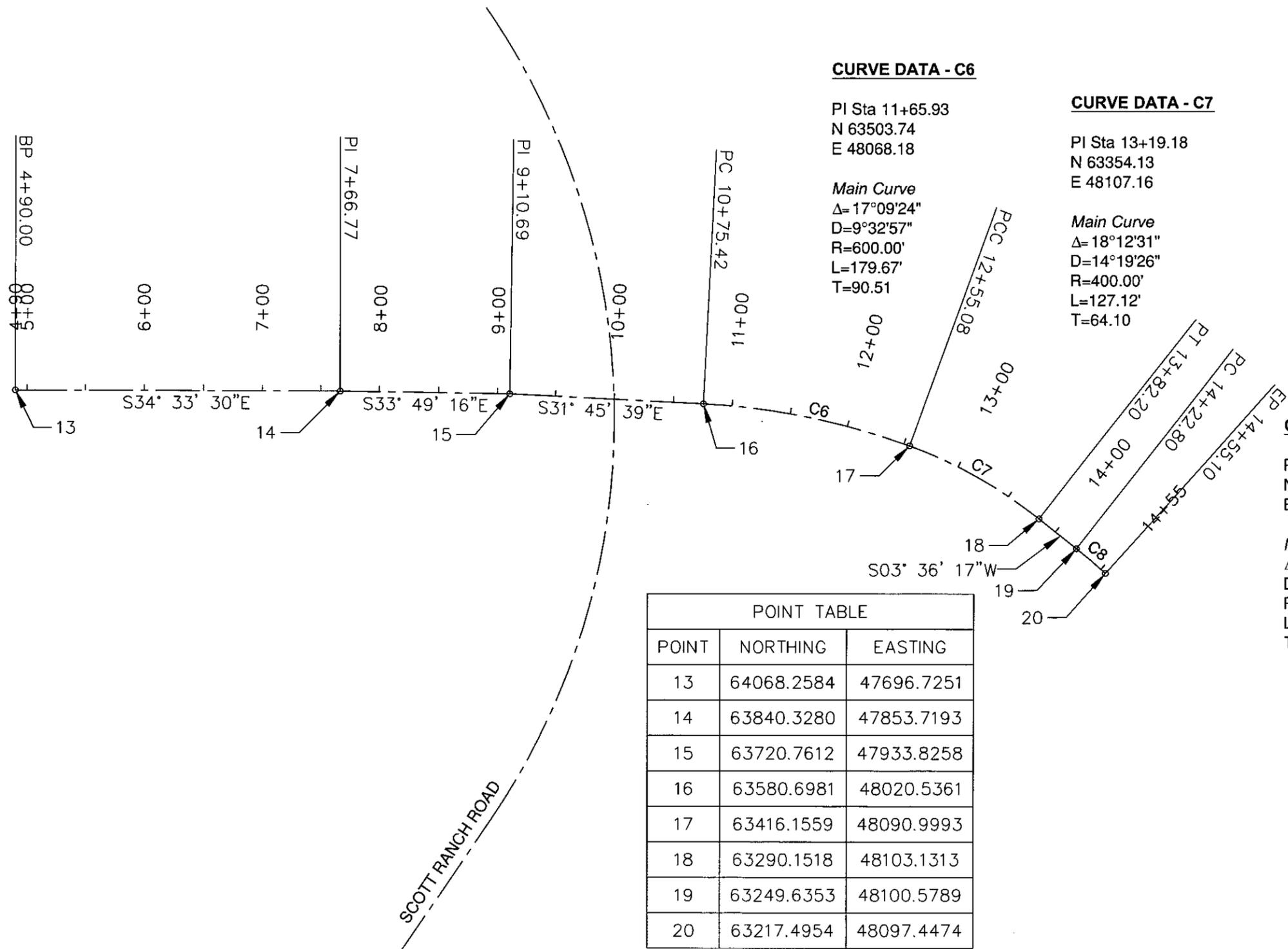
SURVEY NO. \_\_\_\_\_ DATE \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ REVISIONS \_\_\_\_\_ LOCATION \_\_\_\_\_ DATE \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_

DESIGN	S. IRWIN	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	S. IRWIN	07/09		
CHECKED	J. OWENS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc.			401 S. White Mtn. Rd. Show Low, AZ, 86001 (928) 532-0880	GEOMETRIC LAYOUT STA 44+62.77 TO 68+03.87
ROUTE	SCOTT RANCH ROAD			SHEET 2 OF 5
TRACS NO. SS673 01C		APPENDIX M		___ OF ___

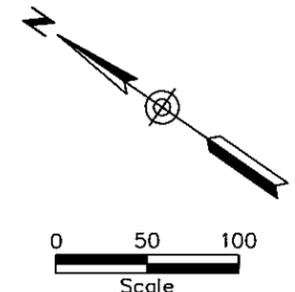


F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

SURVEY NO. LOCATION DATE REVISIONS FINISHED PLANS DATE SURVEY NO. LOCATION DATE REVISIONS FINISHED PLANS DATE SURVEY NO.



POINT TABLE		
POINT	NORTHING	EASTING
13	64068.2584	47696.7251
14	63840.3280	47853.7193
15	63720.7612	47933.8258
16	63580.6981	48020.5361
17	63416.1559	48090.9993
18	63290.1518	48103.1313
19	63249.6353	48100.5789
20	63217.4954	48097.4474



DESIGN	S. IRWIN	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	S. IRWIN	07/09		
CHECKED	J. DIMENS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86901 (928) 532-0880			GEOMETRIC LAYOUT STA 6+00.00 TO 14+00.00	SHEET 4 OF 5
ROUTE	SHOW LOW LAKE ROAD			
TRACS NO. SS673 01C			APPENDIX M	OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			

**CURVE DATA - C9**

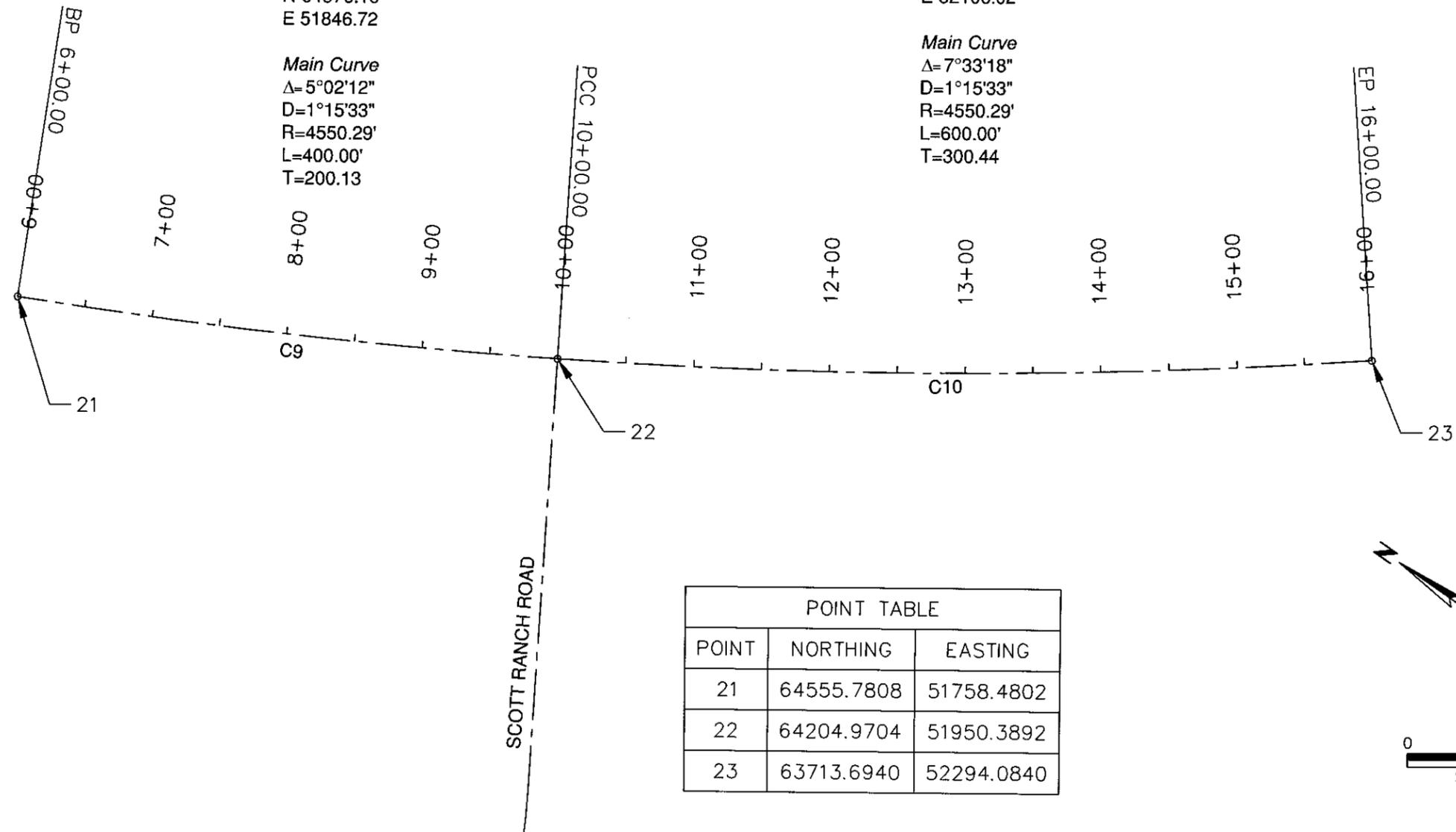
PI Sta 8+00.13  
 N 64376.16  
 E 51846.72

Main Curve  
 $\Delta=5^{\circ}02'12''$   
 $D=1^{\circ}15'33''$   
 $R=4550.29'$   
 $L=400.00'$   
 $T=200.13$

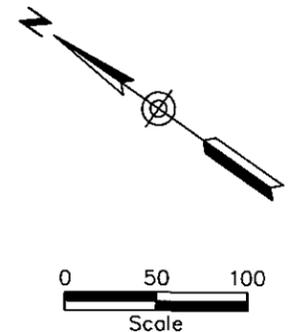
**CURVE DATA - C10**

PI Sta 13+00.44  
 N 63947.99  
 E 52106.02

Main Curve  
 $\Delta=7^{\circ}33'18''$   
 $D=1^{\circ}15'33''$   
 $R=4550.29'$   
 $L=600.00'$   
 $T=300.44$



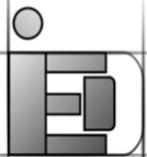
POINT TABLE		
POINT	NORTHING	EASTING
21	64555.7808	51758.4802
22	64204.9704	51950.3892
23	63713.6940	52294.0840



SURVEY NO. DATE LOCATION FINISHED PLANS REVISIONS DATE LOCATION FINISHED PLANS REVISIONS DATE LOCATION FINISHED PLANS REVISIONS

DESIGN	S. IRWIN	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	S. IRWIN	07/09		
CHECKED	J. OWENS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd.          Show Low, AZ, 85901          (928) 532-0880</small>			GEOMETRIC LAYOUT STA 6+00.00 TO 16+00.00	
ROUTE	PENROD ROAD			SHEET 5 OF 5
TRACS NO. SS673 01C		APPENDIX M		___ OF ___

## ***Appendix N – Removal Sheets***



*Initial Design Concept Report  
Scott Ranch Road & Bridge - SR 260 to Penrod Road*

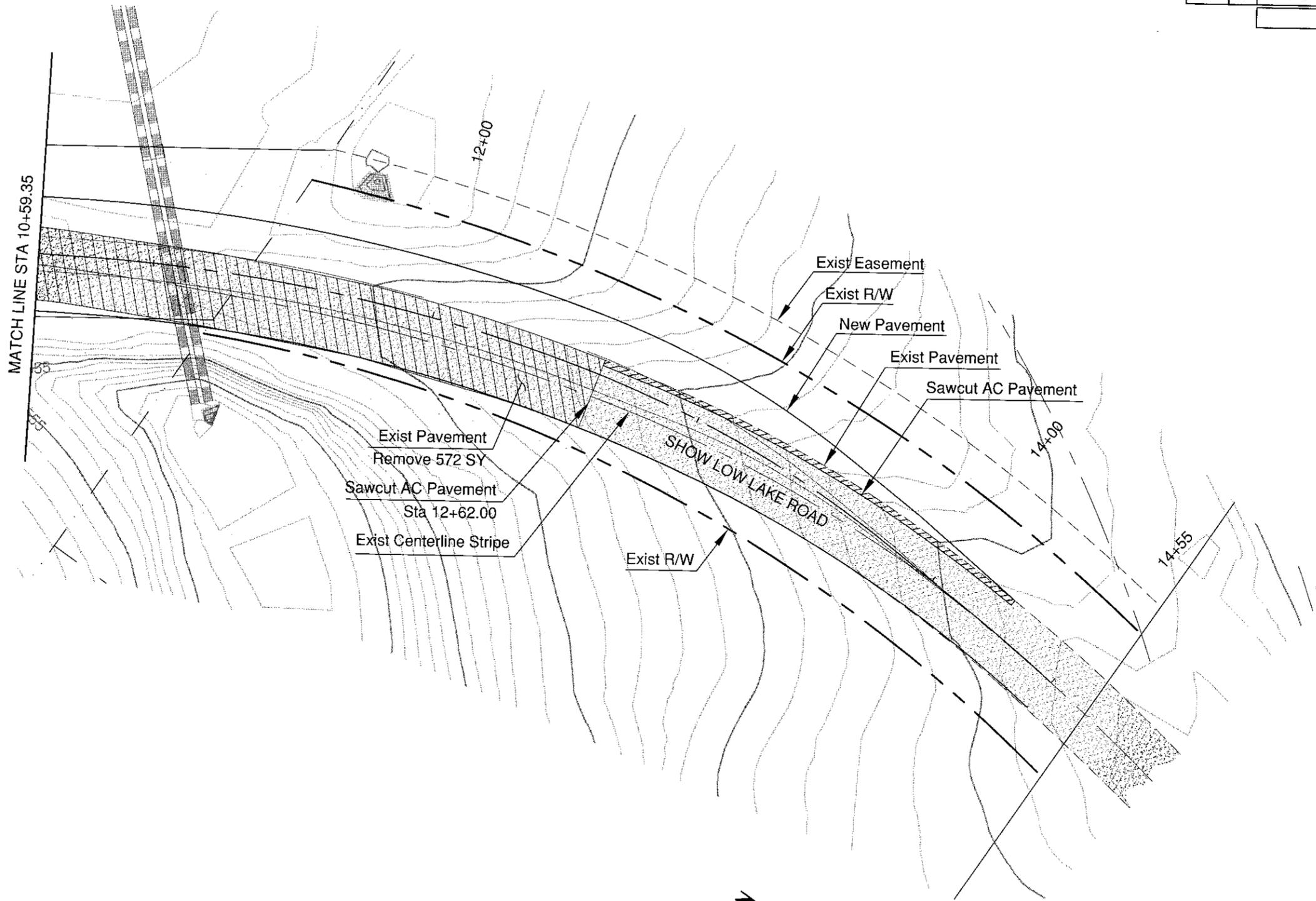
*N-1*

*IED Project No. 10131  
TRACS No. SS673 01C  
Federal Aid No. HPP-SLW-(200)A*

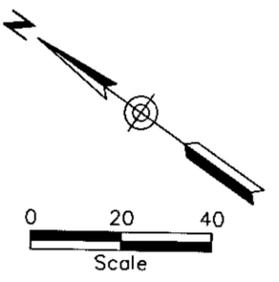




F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			

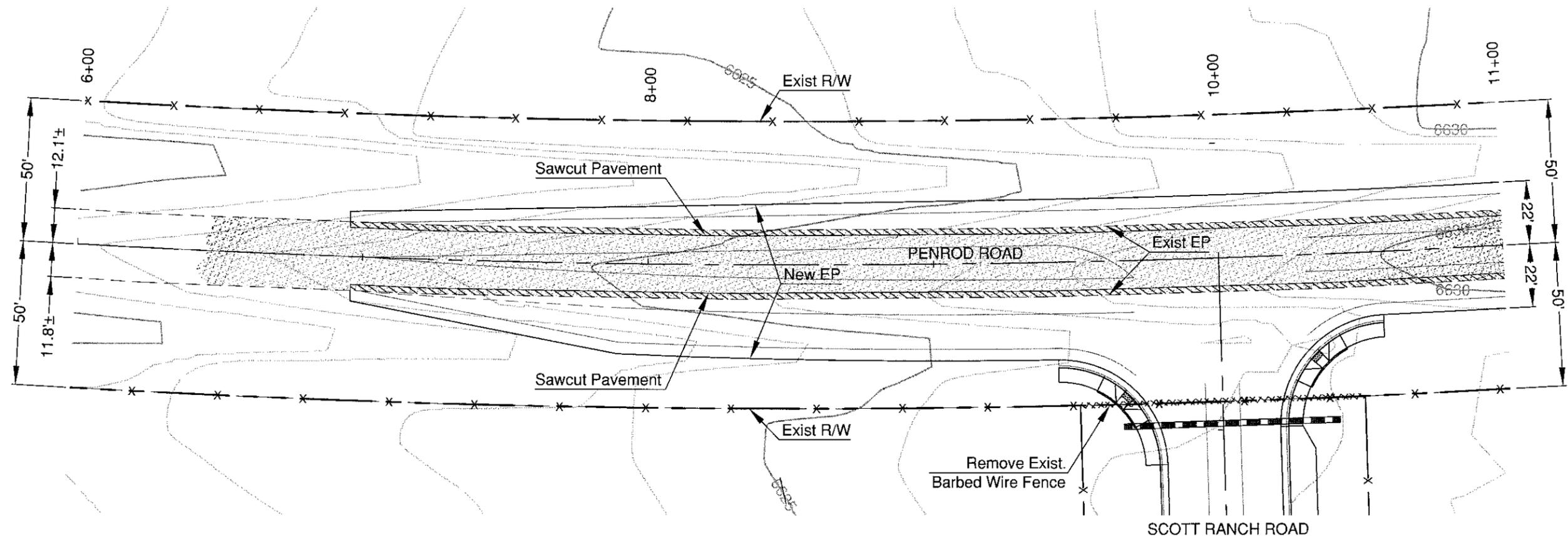


SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION FINISHED PLANS REVISIONS DATE SURVEY NO. FINISHED PLANS REVISIONS DATE



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0860			EXISTING CONDITIONS & REMOVAL STA 10+59.35 TO 14+26.88	SHEET 2 OF 4
ROUTE	SHOW LOW LAKE ROAD			
TRACS NO. SS673 01C			APPENDIX N	OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

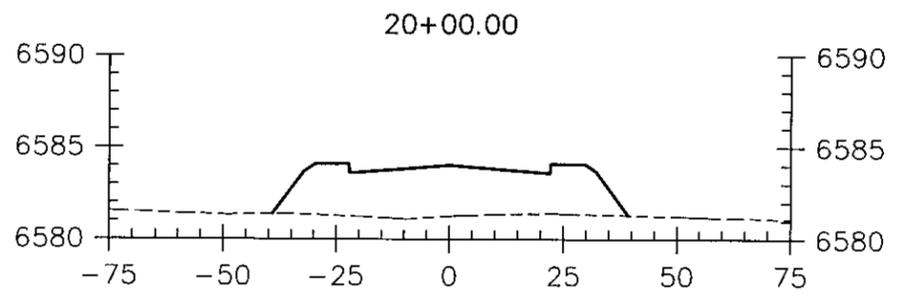
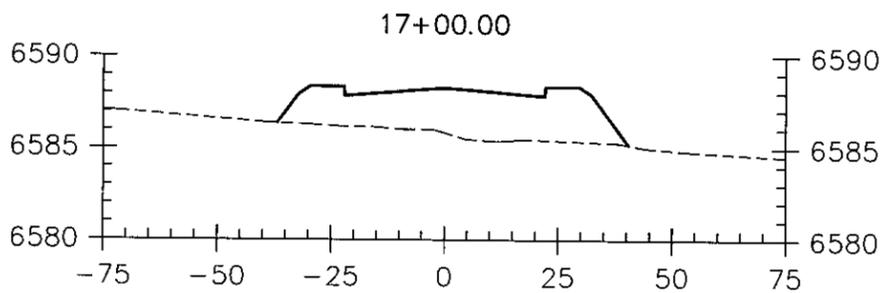
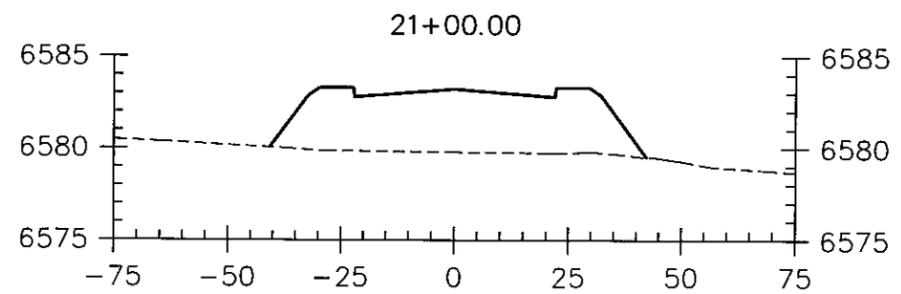
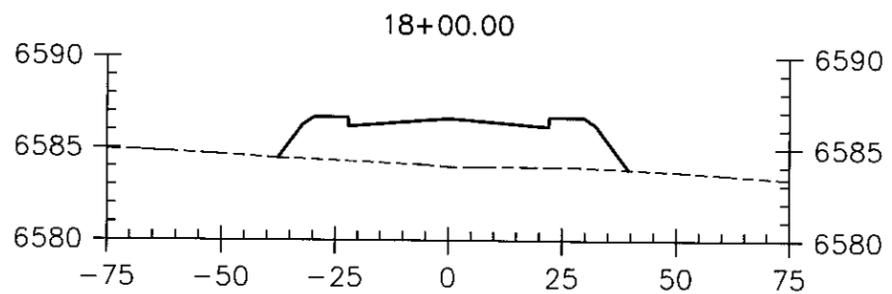
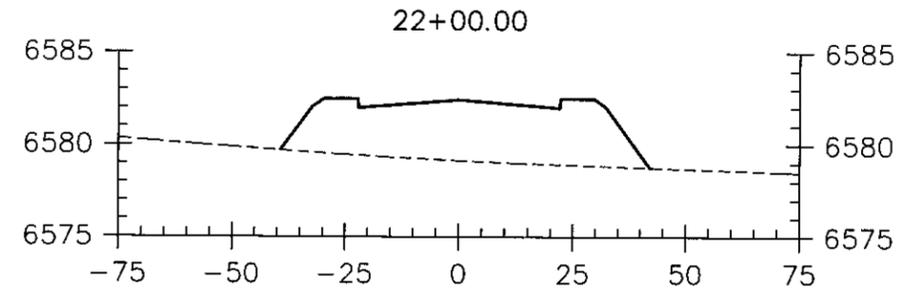
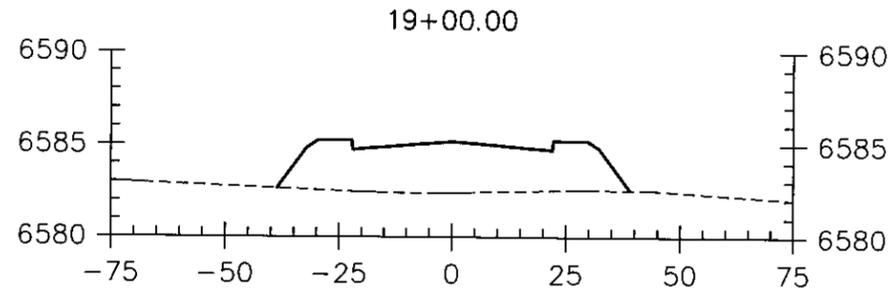
DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880</small>			EXISTING CONDITIONS & REMOVAL STA 7+00 TO 11+00	SHEET 3 OF 4
ROUTE	PENROD ROAD			APPENDIX N
TRACS NO. SS673 01C				OF



**Appendix O – Roadway Cross Sections**



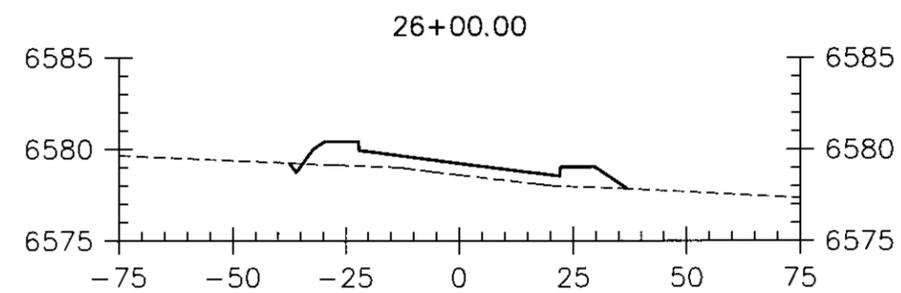
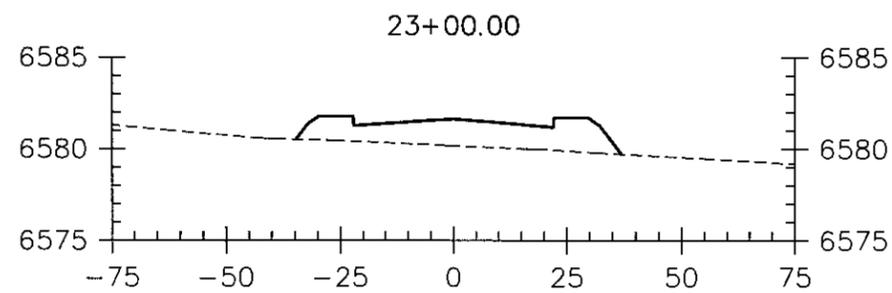
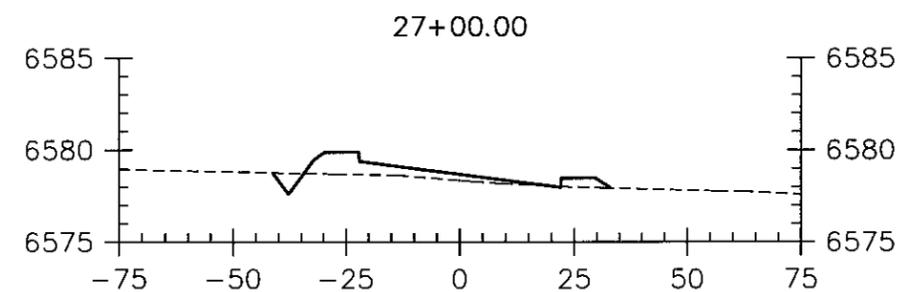
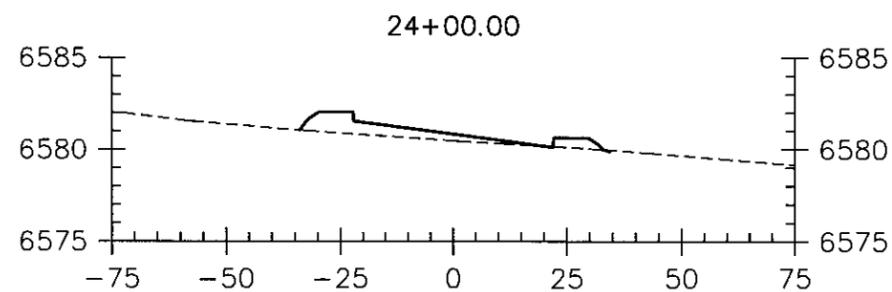
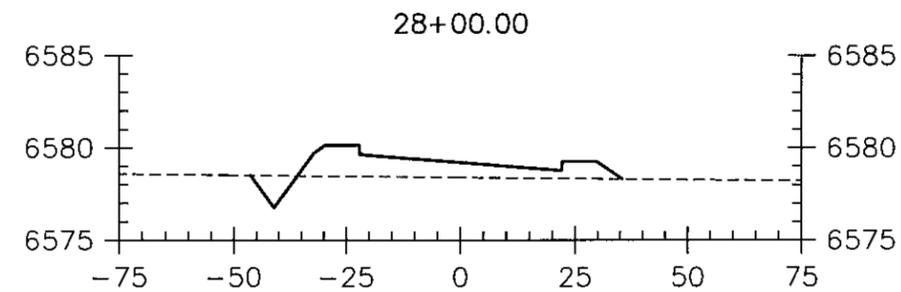
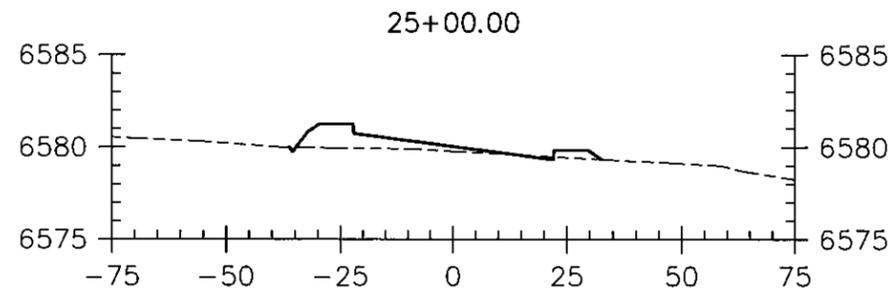
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



SURVEY NO. FINISHED PLANS- LOCATION- DATE- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- REVISIONS- LOCATION- DATE-

DESIGN	J. OMENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OMENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ, 85901 (928) 532-0880</small>			<b>CROSS SECTIONS</b> <b>STA 17+00 TO 22+00</b>	
ROUTE	LOCATION			SHEET 1 OF 14
	SCOTT RANCH ROAD			
TRACS NO. SS673 01C			APPENDIX O	___ OF ___

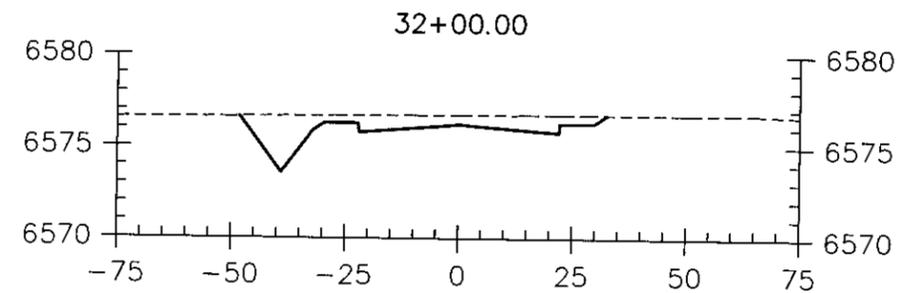
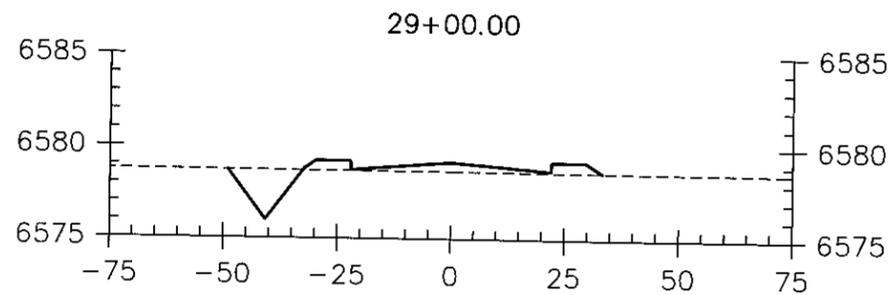
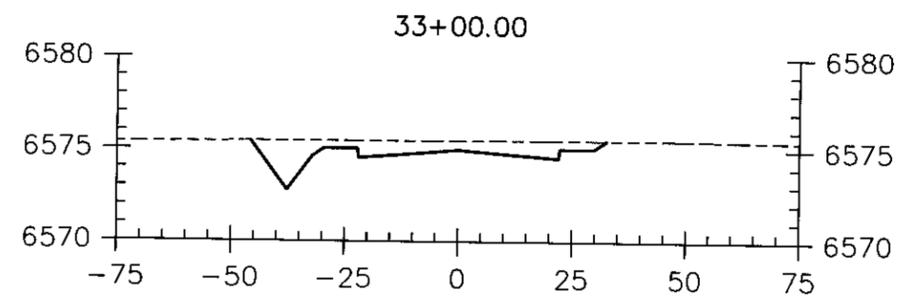
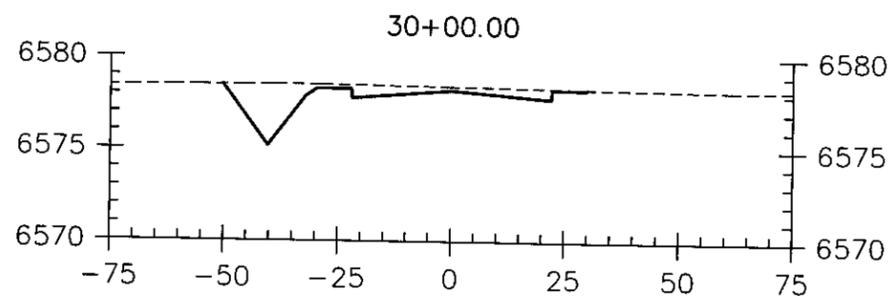
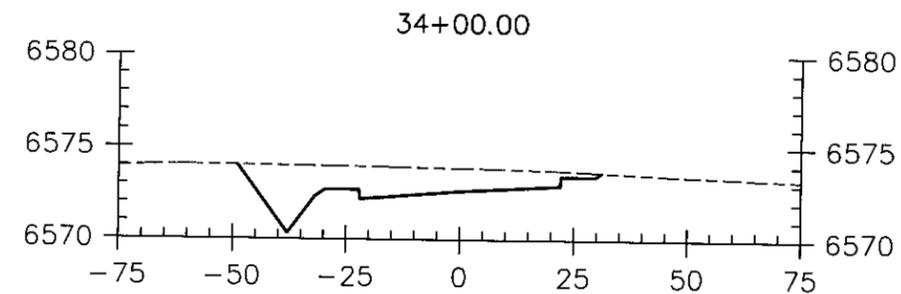
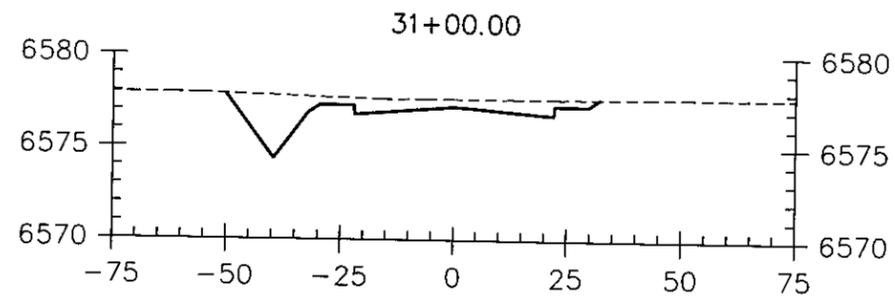
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



SURVEY NO. FINISHED PLANS- LOCATION- DATE- REVISIONS- FINISHED PLANS- LOCATION- DATE- SURVEY NO.

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ 86001 (928) 532-0880</small>			CROSS SECTIONS STA 23+00 TO 28+00	
ROUTE	SCOTT RANCH ROAD			SHEET 2 OF 14
TRACS NO. SS673 01C			APPENDIX O	___ OF ___

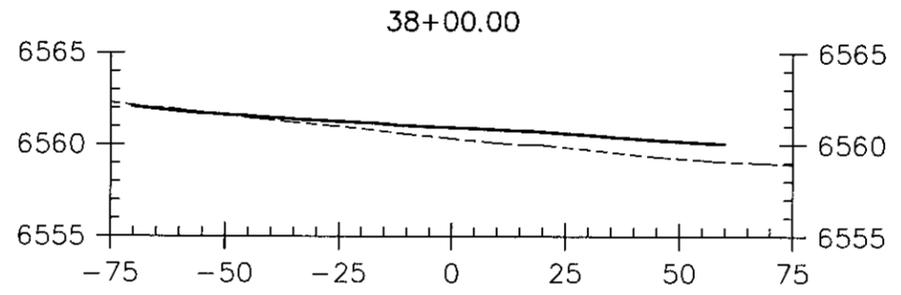
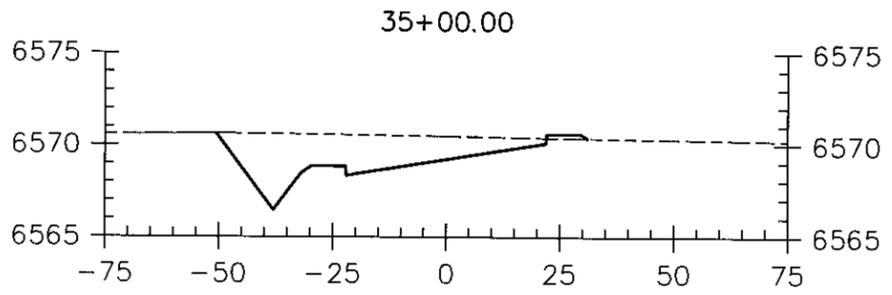
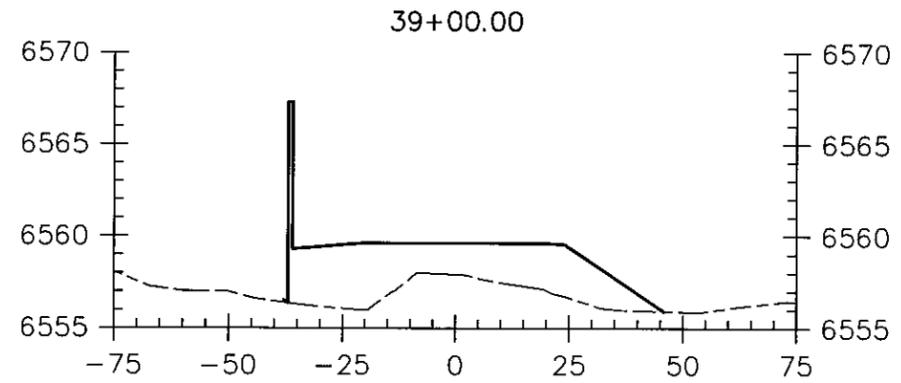
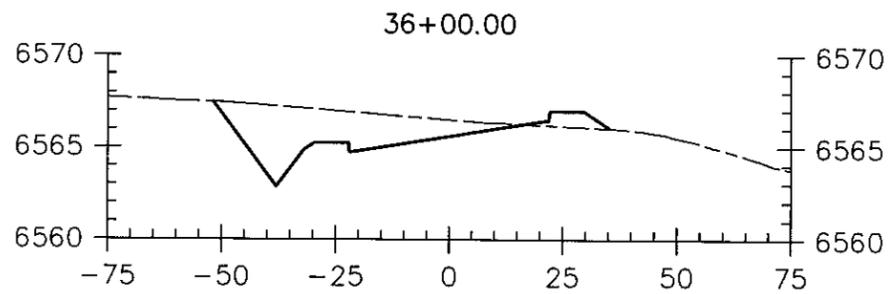
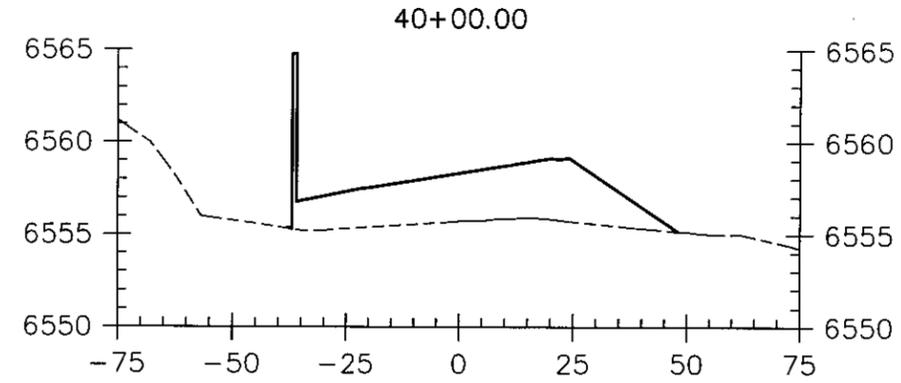
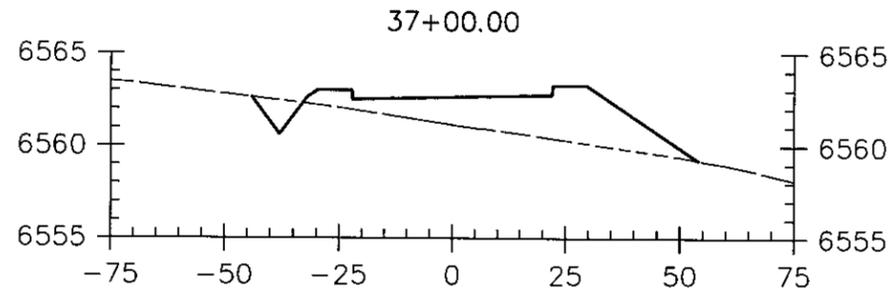
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ, 86801 (928) 532-0880			<b>CROSS SECTIONS</b> STA 29+00 TO 34+00	
ROUTE	SCOTT RANCH ROAD			SHEET 3 OF 14
TRACS NO. SS673 01C			APPENDIX O	OF

SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION DATE FINISHED PLANS REVISIONS DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			

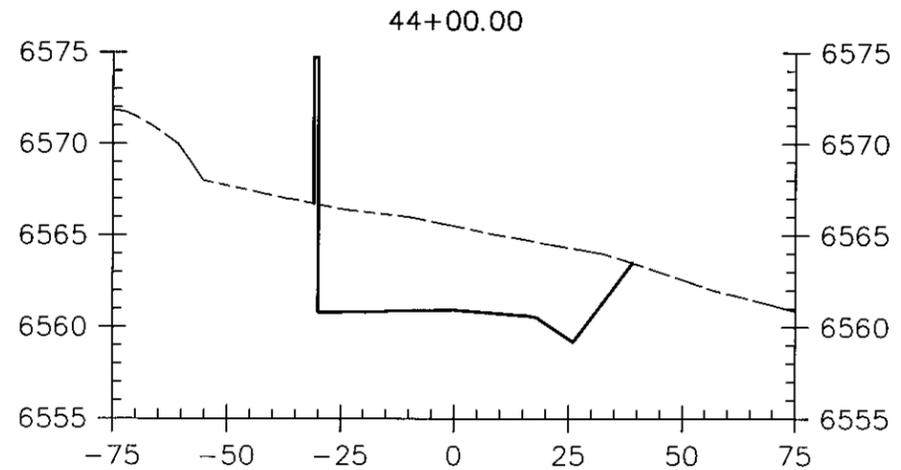
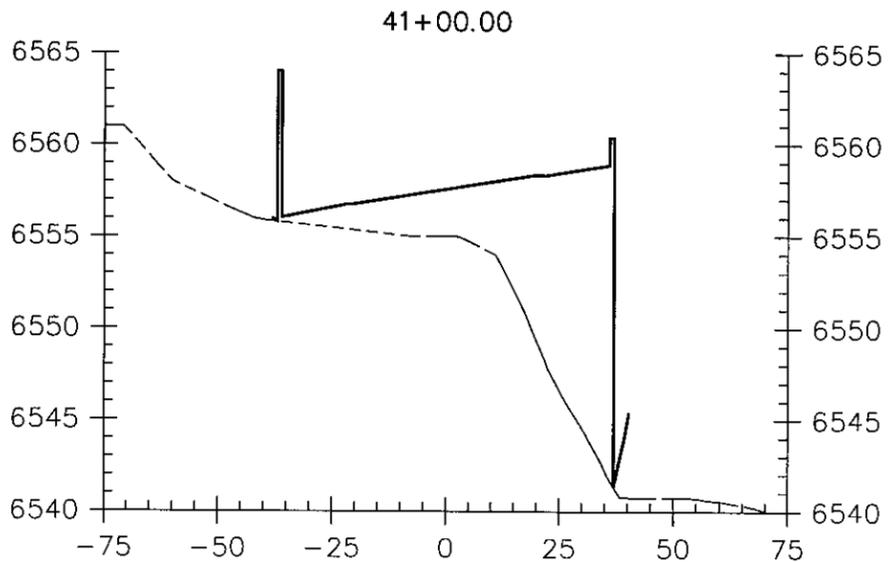
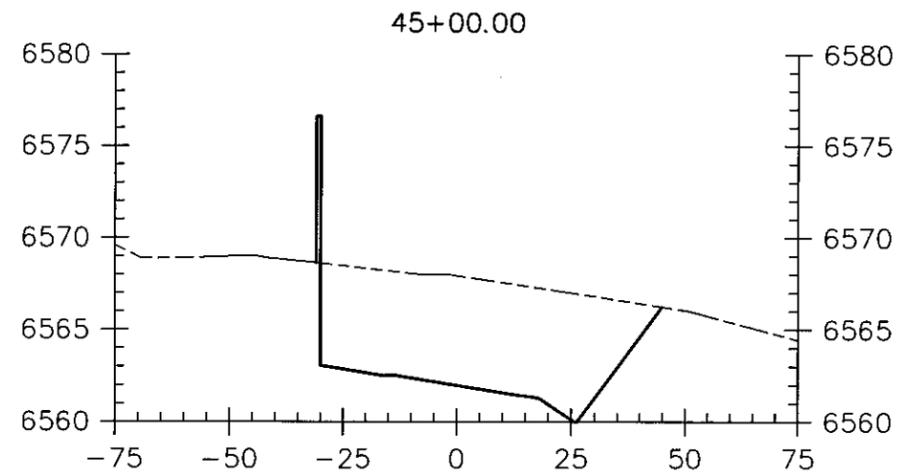
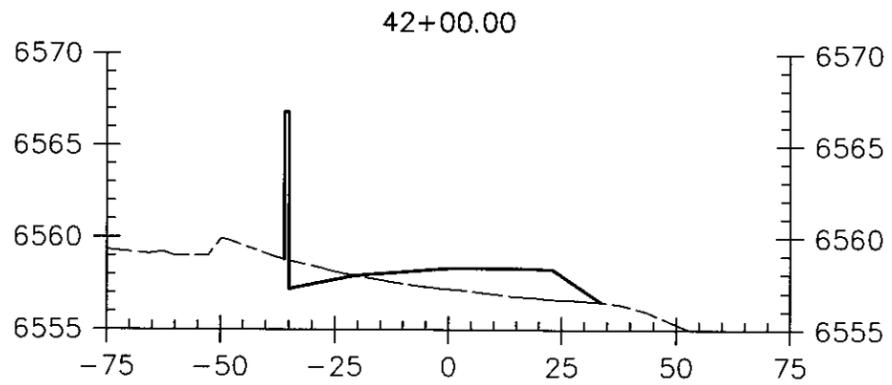
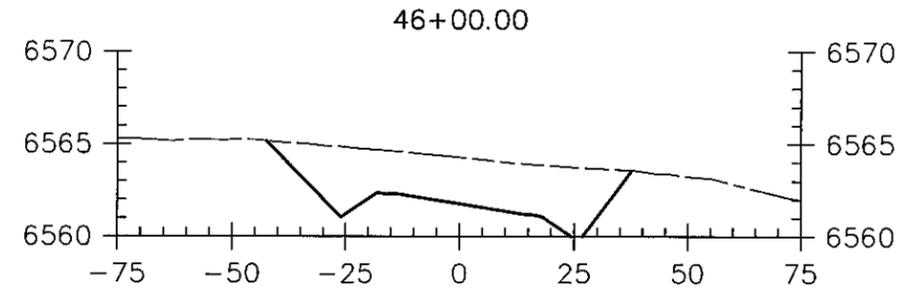
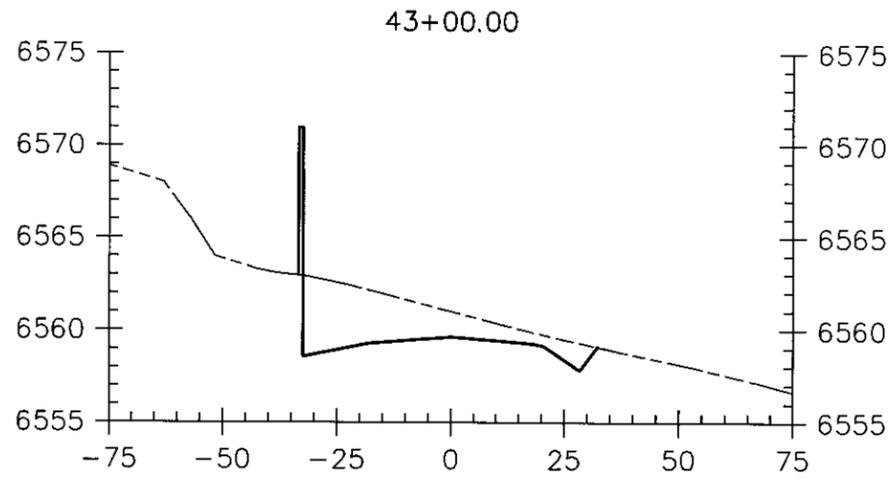


SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ 86001 (928) 532-0880</small>			<b>CROSS SECTIONS</b> <b>STA 35+00 TO 40+00</b>	
ROUTE	SCOTT RANCH ROAD			SHEET 4 OF 14
TRACS NO. SS673 01C			APPENDIX 0	___ OF ___

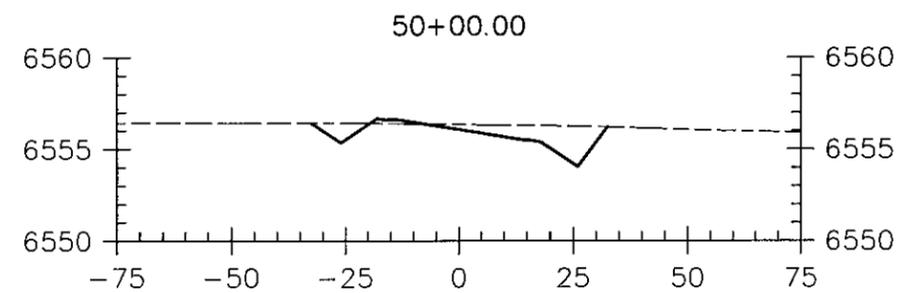
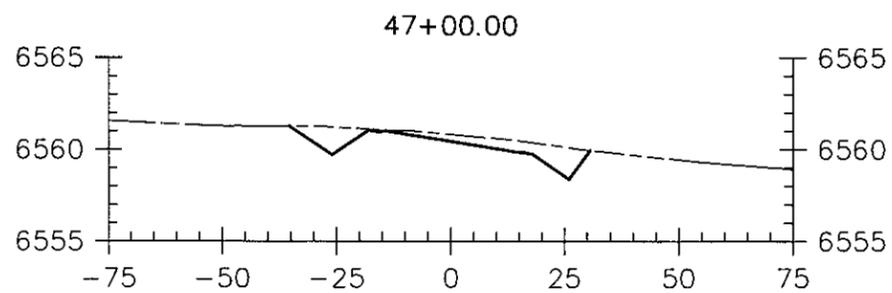
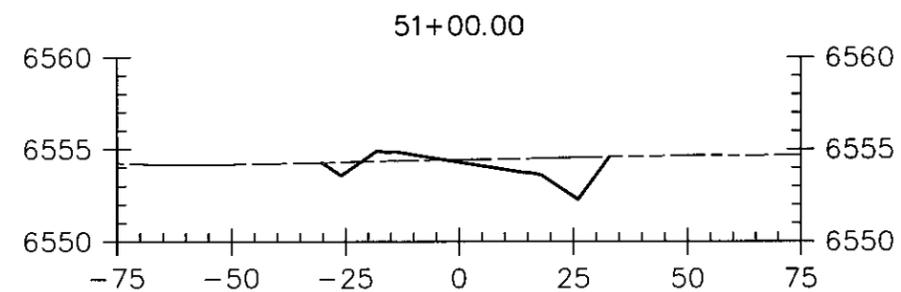
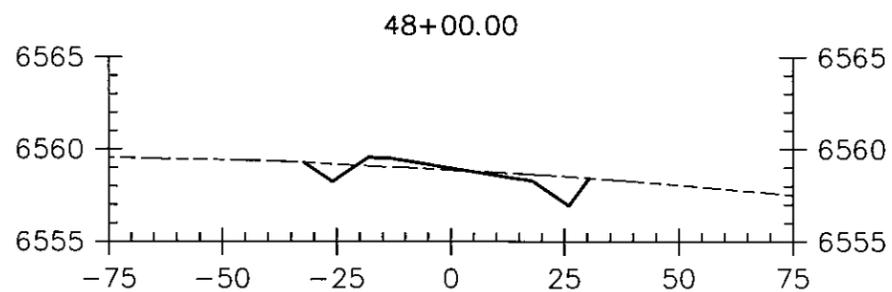
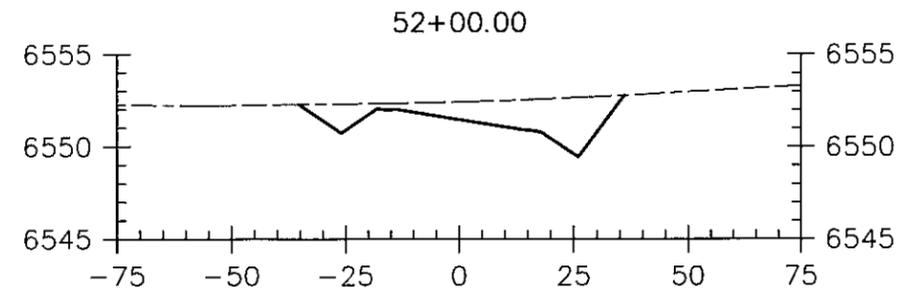
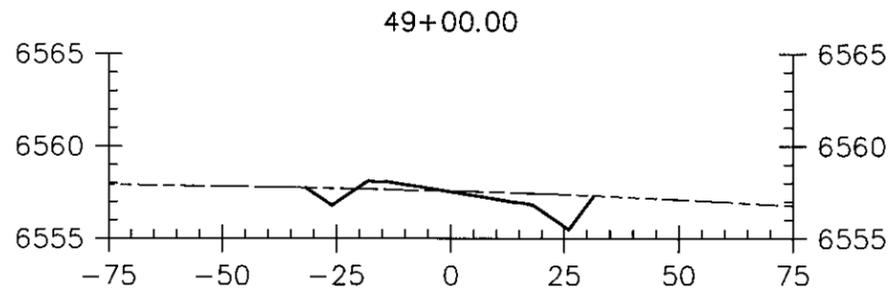
SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE SURVEY NO. REVISIONS FINISHED PLANS LOCATION DATE SURVEY NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> 401 S. White Mtn. Rd. Engineering & Development, Inc. Show Low, AZ 85901 (928) 532-0880			CROSS SECTIONS STA 41+00 TO 46+00	
ROUTE	SCOTT RANCH ROAD			SHEET 5 OF 14
TRACS NO. SS673 01C			APPENDIX O	___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			

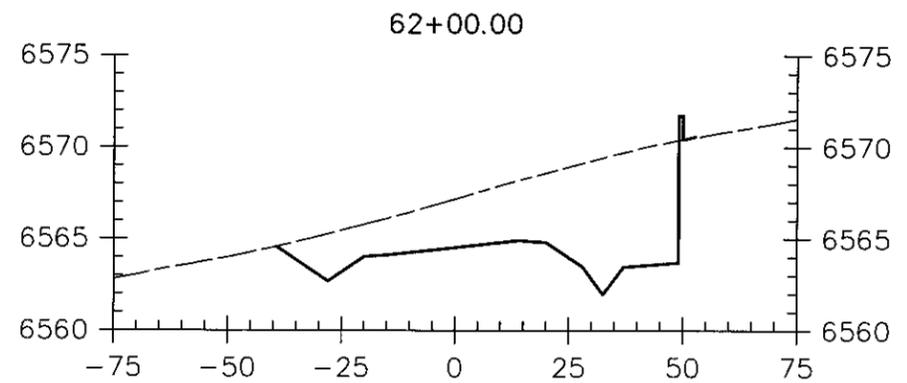
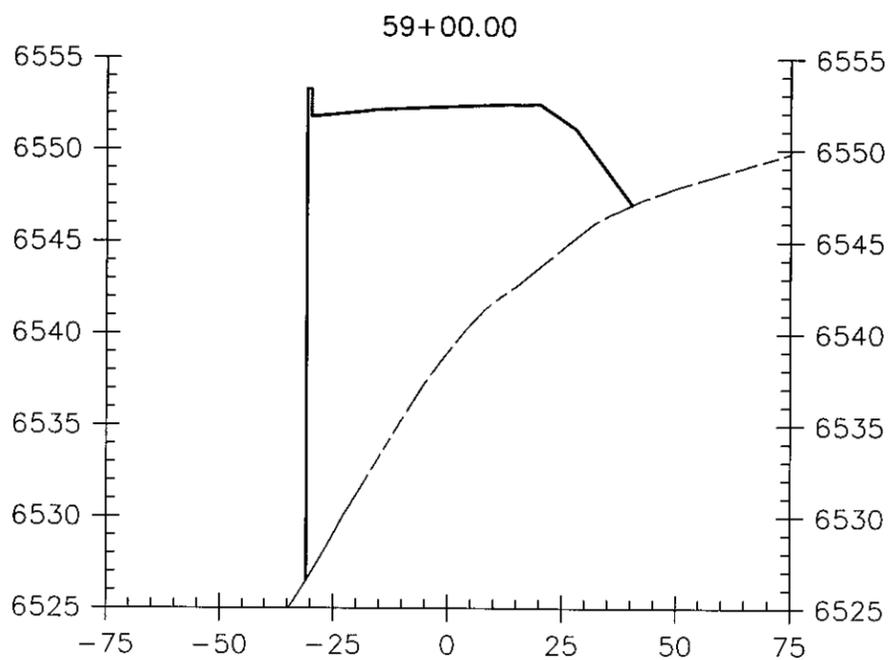
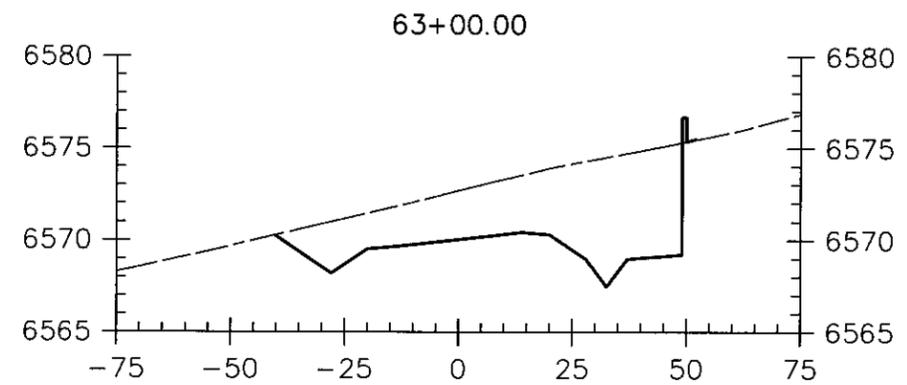
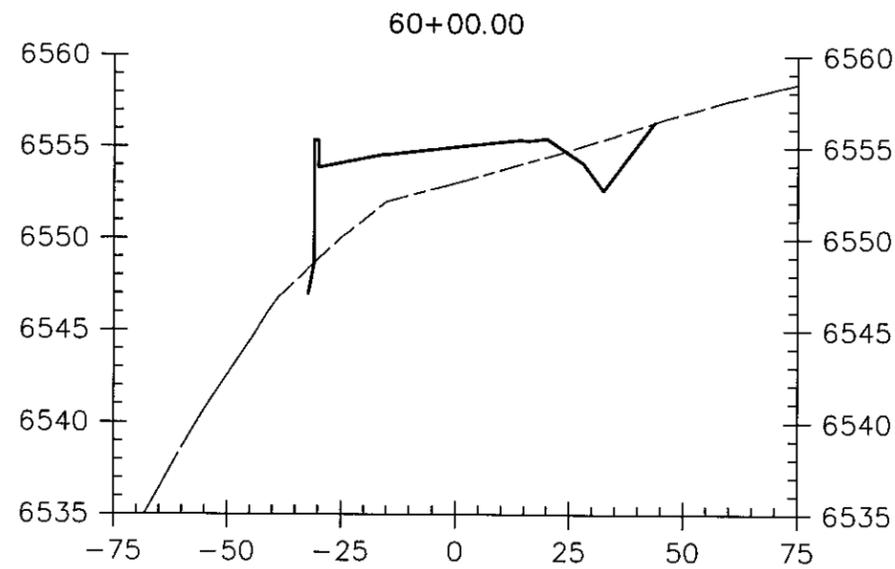
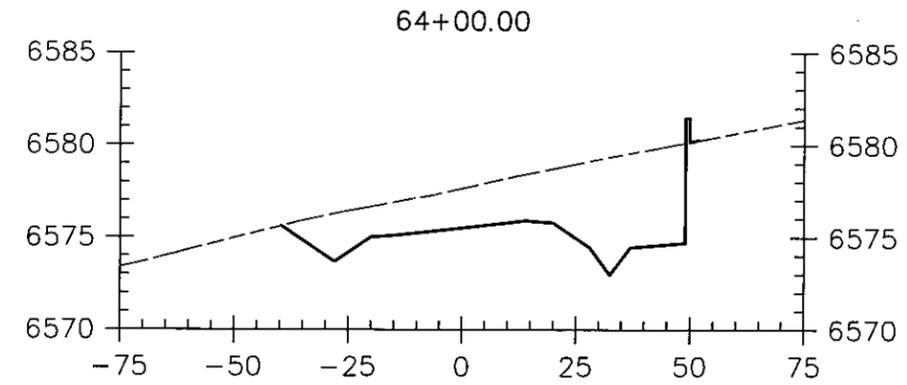
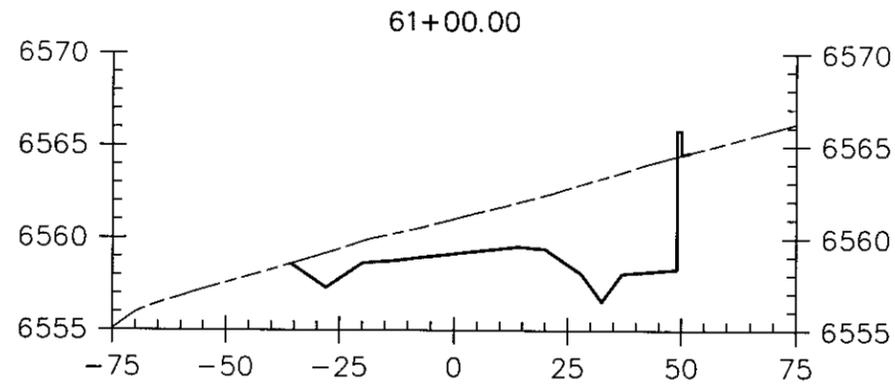


SURVEY NO. FINISHED PLANS- REVISIONS- LOCATION- DATE- SURVEY NO. FINISHED PLANS- REVISIONS- LOCATION- DATE-

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Shawlow, AZ 85901 (928) 532-0880</small>			<b>CROSS SECTIONS</b> <b>STA 47+00 TO 52+00</b>	
ROUTE	SCOTT RANCH ROAD			SHEET 6 OF 14
TRACS NO. SS673 01C			APPENDIX O	___ OF ___



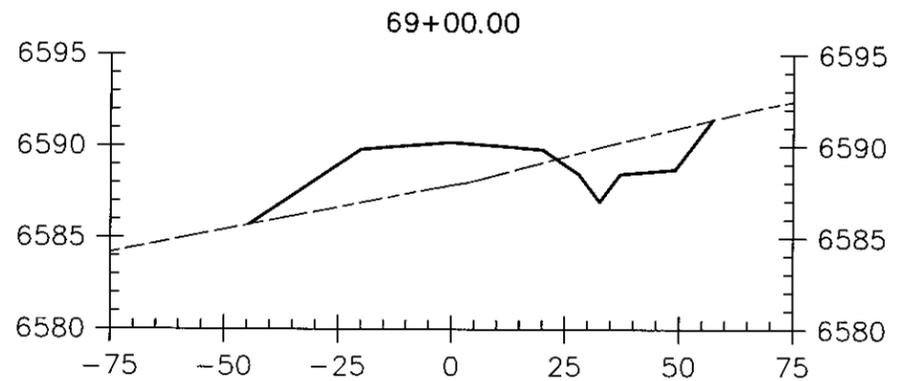
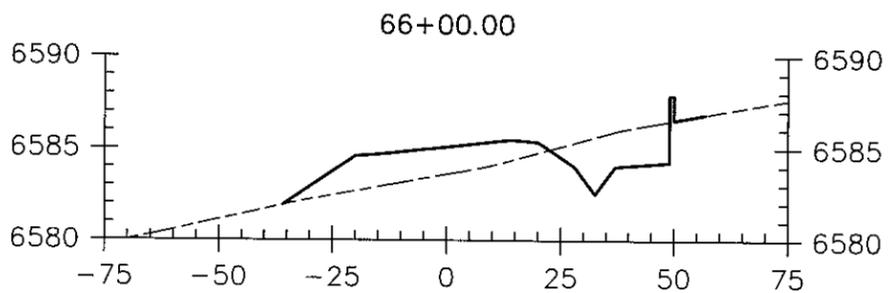
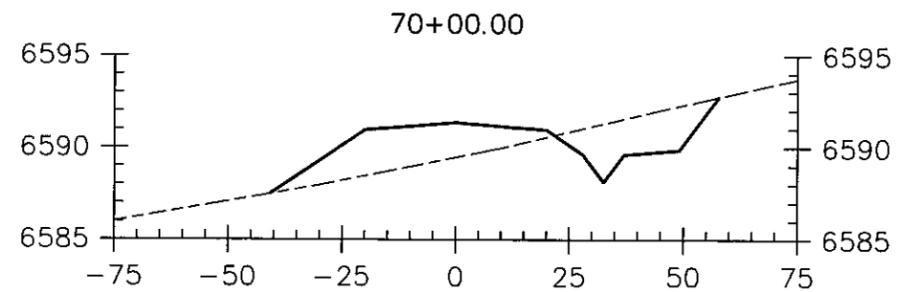
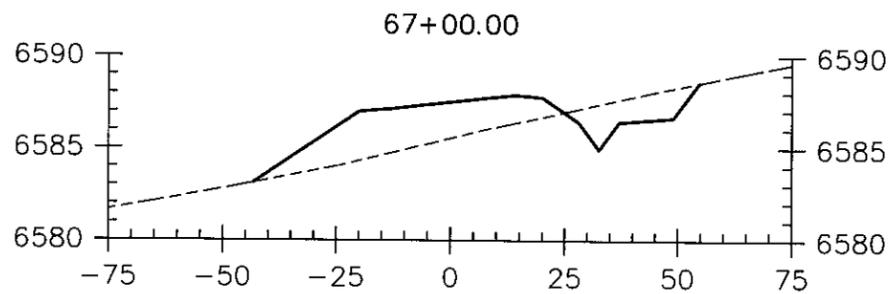
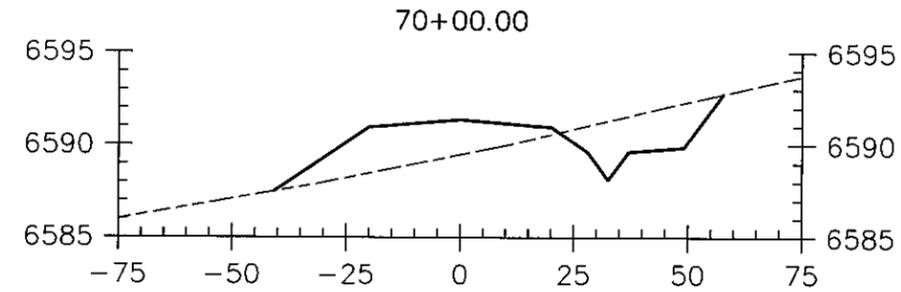
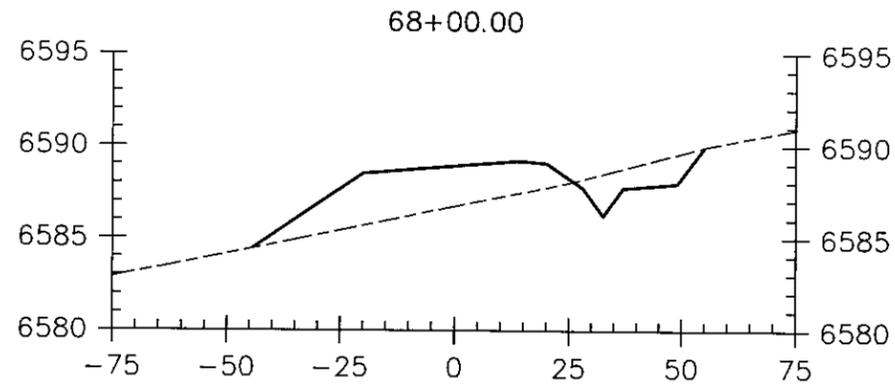
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



SURVEY NO. FINISHED PLANS- REVISIONS- LOCATION- DATE- SURVEY NO. FINISHED PLANS- REVISIONS- LOCATION- DATE-

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86001 (520) 532-0880			CROSS SECTIONS STA 59+00 TO 64+00	
ROUTE	SCOTT RANCH ROAD			SHEET 8 OF 14
TRACS NO. SS673 01C			APPENDIX O	___ OF ___

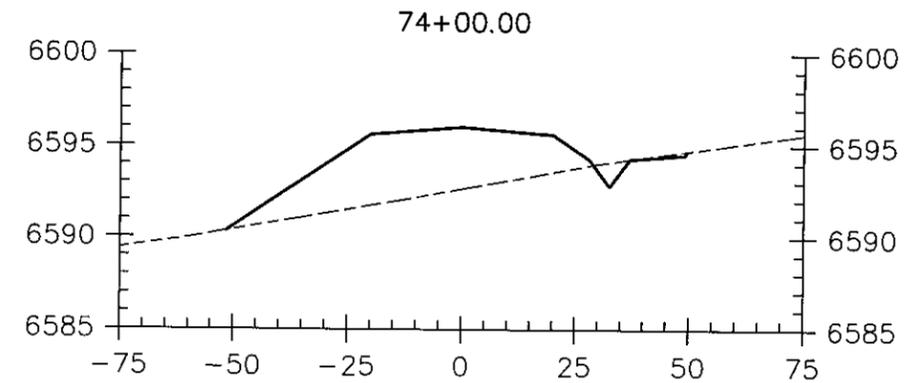
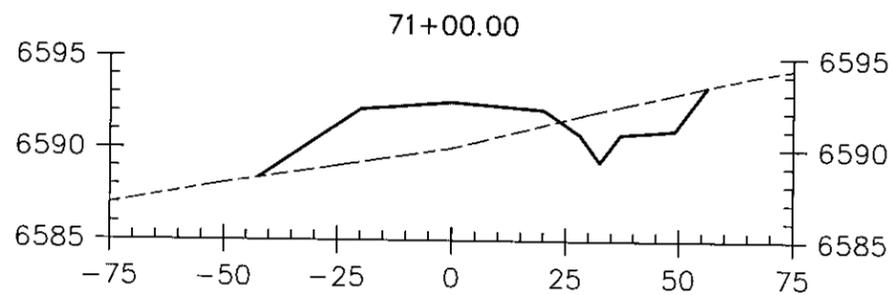
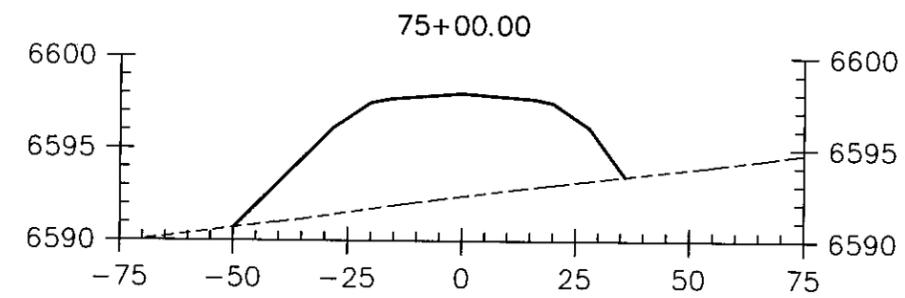
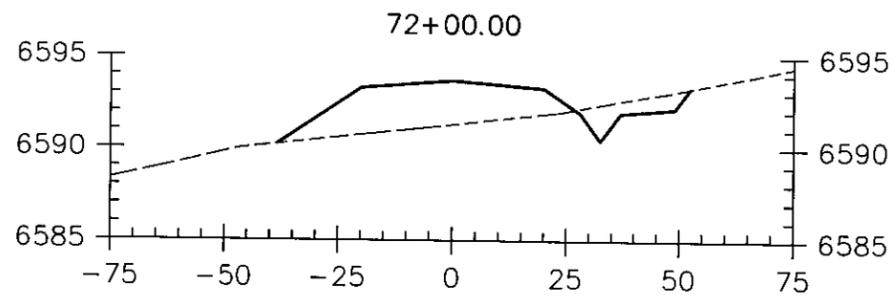
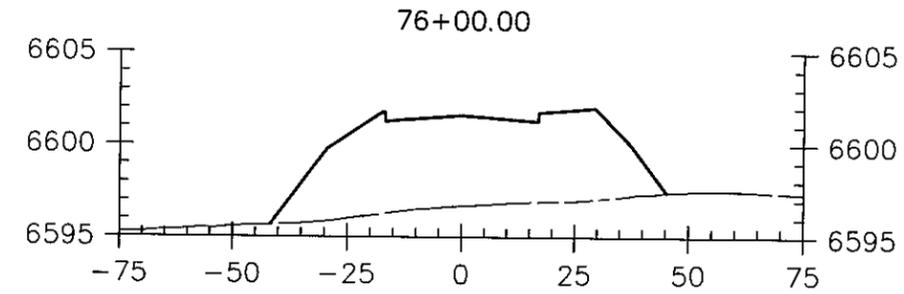
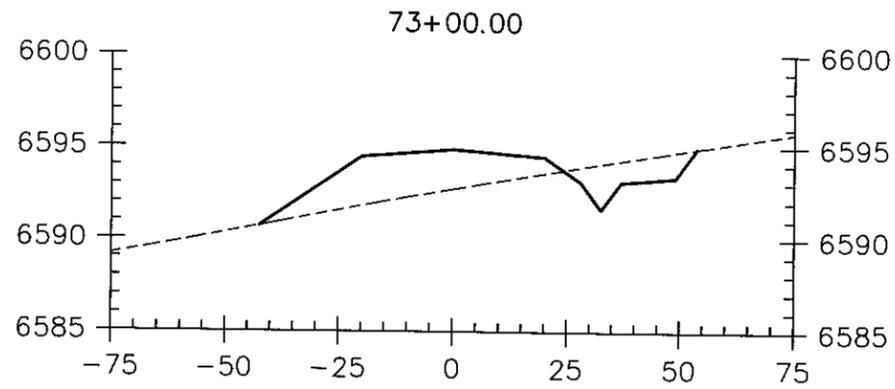
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAIN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86301 (928) 532-0880			CROSS SECTIONS STA 65+00 TO 70+00	
ROUTE	SCOTT RANCH ROAD			SHEET 9 OF 14
TRACS NO. SS673 01C			APPENDIX 0	___ OF ___

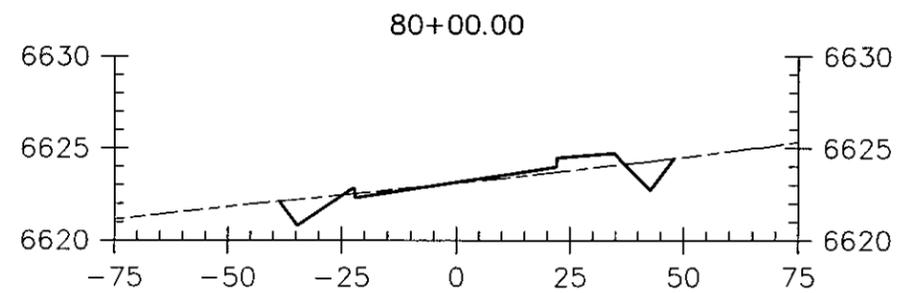
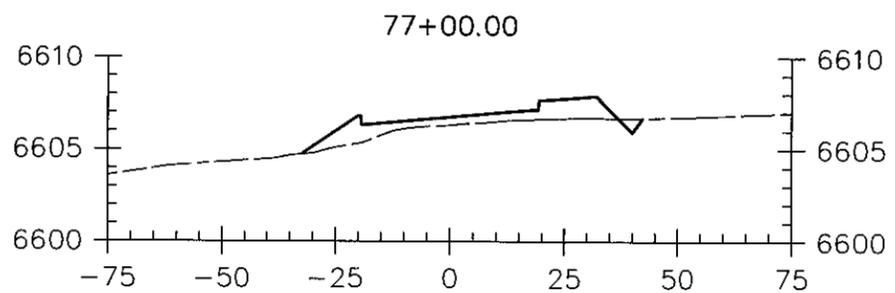
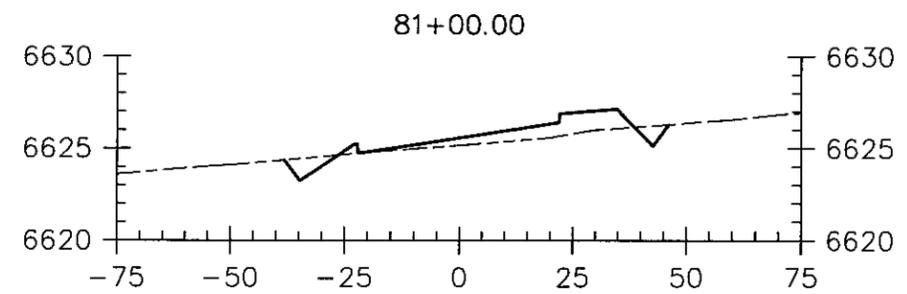
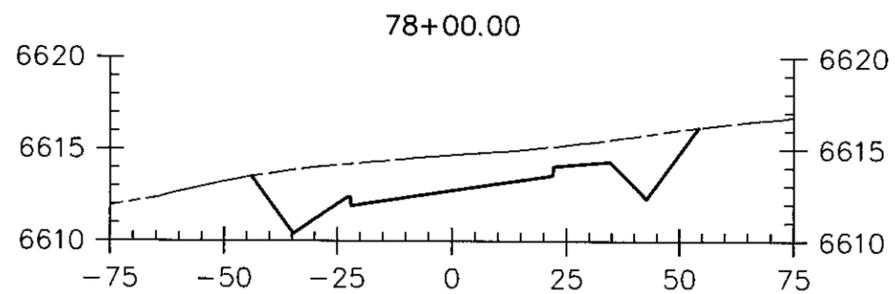
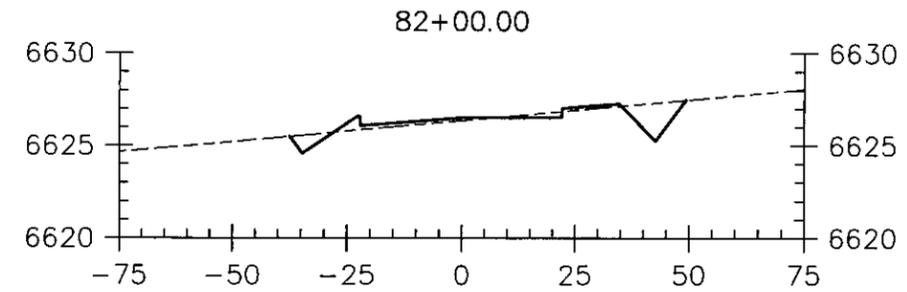
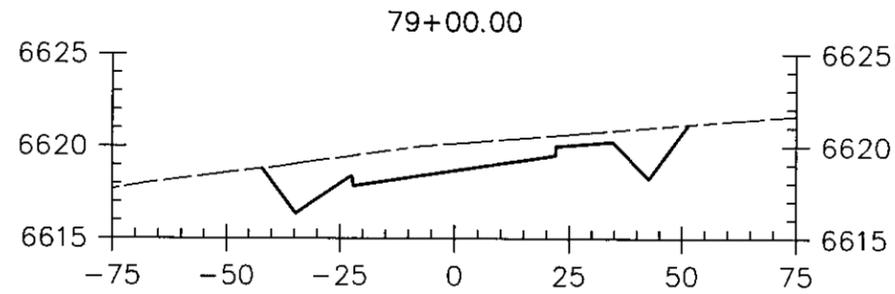
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86001 (928) 532-0880			CROSS SECTIONS STA 71+00 TO 76+00	
ROUTE	SCOTT RANCH ROAD			SHEET 10 OF 14
TRACS NO. SS673 01C			APPENDIX 0	___ OF ___

SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

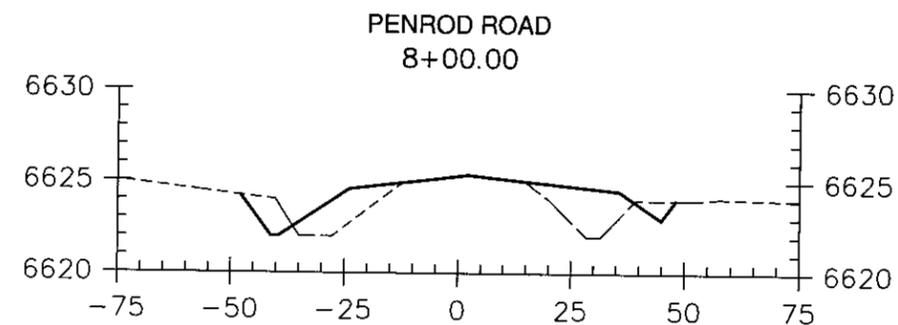
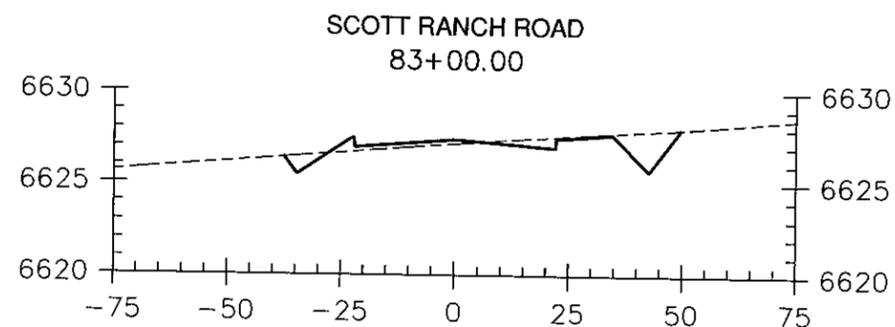
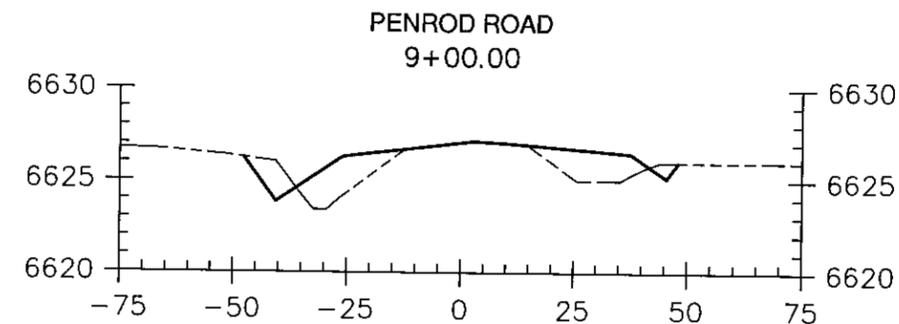
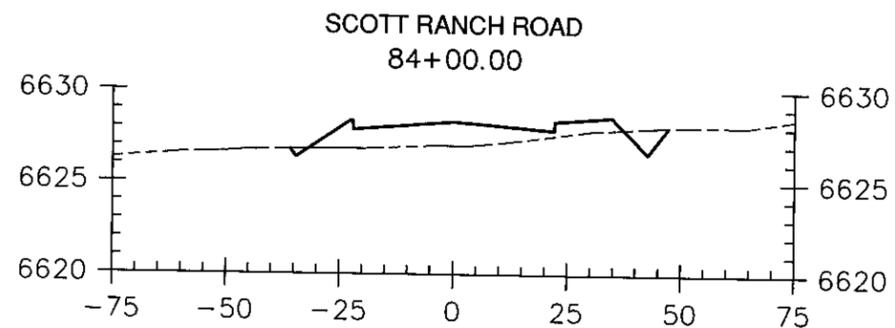
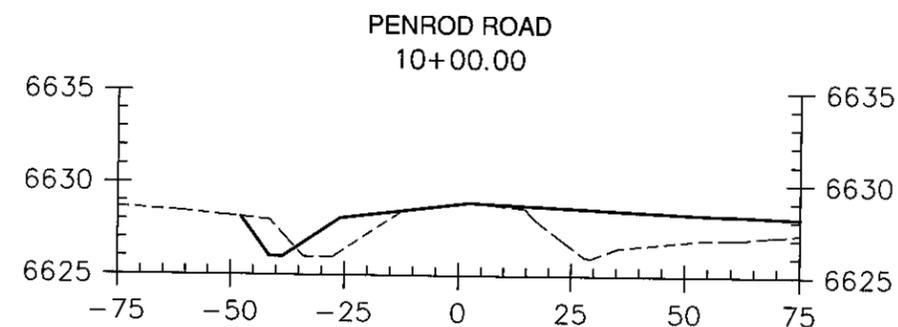
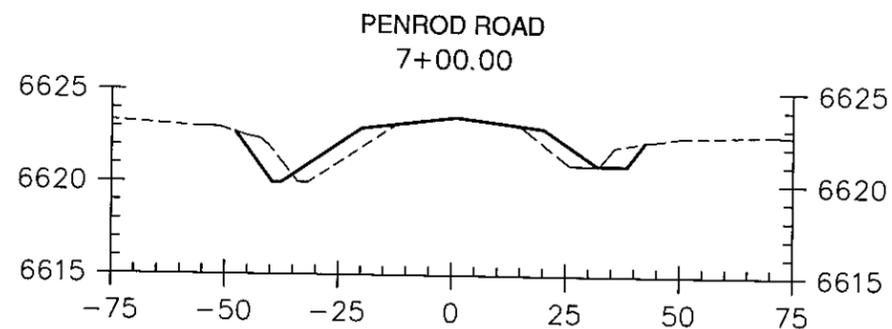
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	10131			



REVISIONS: \_\_\_\_\_  
 FINISHED PLANS: \_\_\_\_\_  
 SURVEY NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
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 FINISHED PLANS: \_\_\_\_\_  
 SURVEY NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
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 FINISHED PLANS: \_\_\_\_\_  
 SURVEY NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_

DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. <small>401 S. White Mtn. Rd. Show Low, AZ, 85901 (928) 532-0980</small>			CROSS SECTIONS STA 77+00 TO 82+00	SHEET 11 OF 14
ROUTE	LOCATION		SCOTT RANCH ROAD	
TRACS NO. SS673 01C			APPENDIX O	___ OF ___

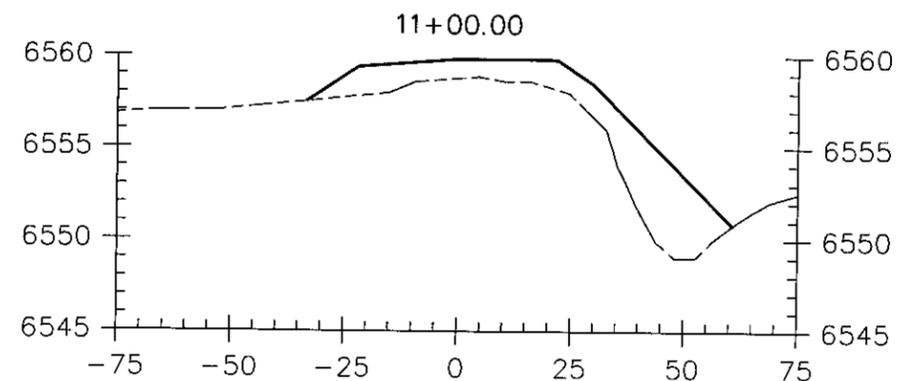
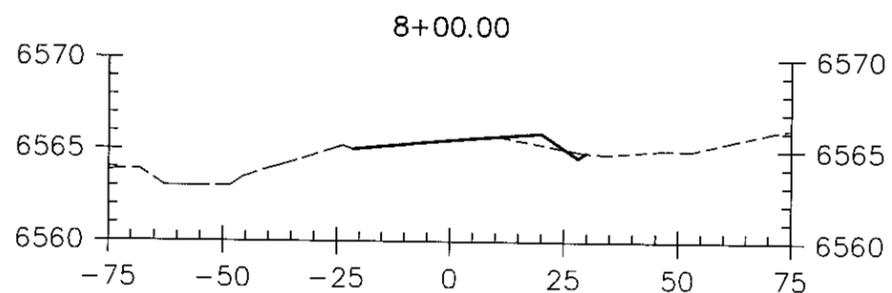
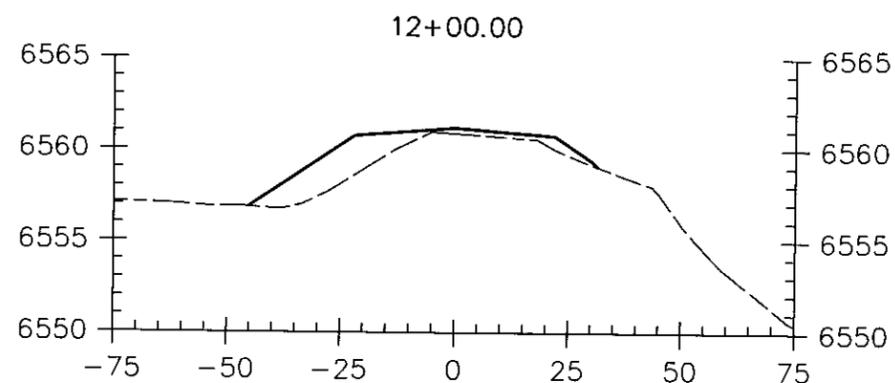
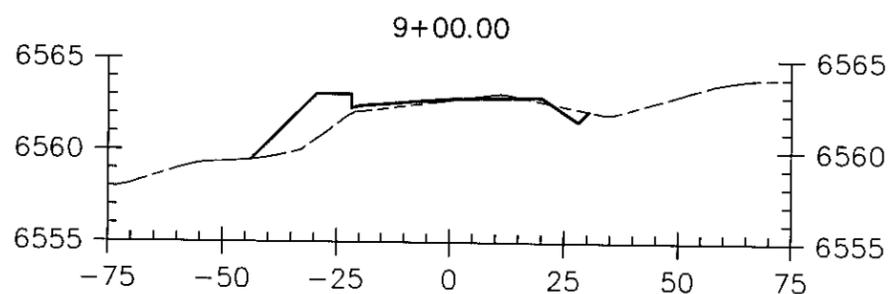
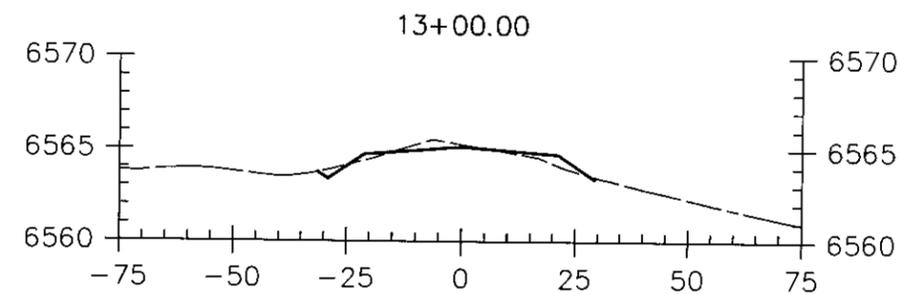
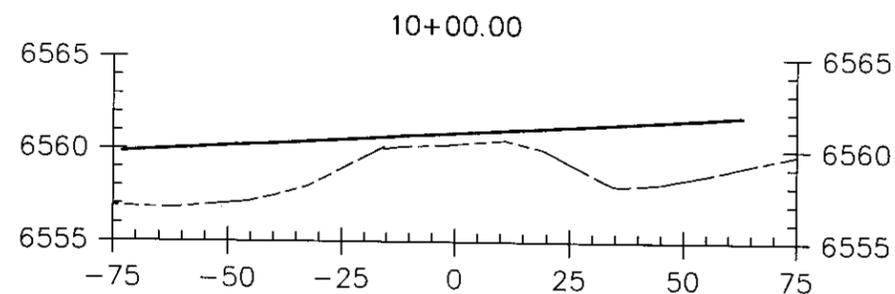
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 85901 (928) 532-0880			CROSS SECTIONS 83+00-84+00, 7+00-10+00	
ROUTE	SCOTT RANCH ROAD - PENROD ROAD			SHEET 12 OF 14
TRACS NO. SS673 01C			APPENDIX O	OF



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	10131			



DESIGN	J. OWENS	07/09	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	PRELIMINARY <b>STAGE II</b> Review NOT FOR CONSTRUCTION OR RECORDING
DRAWN	J. OWENS	07/09		
CHECKED	W. BESS	07/09		
<b>IRONSIDE</b> Engineering & Development, Inc. 401 S. White Mtn. Rd. Show Low, AZ 86001 (928) 832-0880			CROSS SECTIONS STA 8+00 TO 13+00	
ROUTE	SHOW LOW LAKE ROAD			SHEET 14 OF 14
TRACS NO. SS673 01C			APPENDIX O	OF

SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS LOCATION DATE