EXHIBIT III-2
VIEW LOOKING SOUTHWEST INTO CLARK'S VALLEY

EXHIBIT III-3
TYPICAL VIEW LOOKING SOUTHWEST OF ROAD AREA

5. Vegetation

Vegetation cover within the area of the proposed action is largely dependent upon elevation and soil type. Acreage of the various vegetation types located within the proposed road ROW is shown in TABLE III-1. The location of vegetation of general cover types appears on PLATE V.

A site-specific vegetation inventory was conducted within the area of the proposed action in March and April of 1996. Because the inventory was conducted early in the year and prior to the growing season of the majority of forbs and grasses, quantified analysis of vegetation density and ground cover was not completed. A list of species identified during the site-specific vegetation inventory is shown in TABLE III-2. This list, though not comprehensive, is a good determination of what species inhabit the site of the proposed ROW.

From the Soldier Creek Road tie-in, a transition from a salt desert shrub community to a sage-grass dominated cover is seen as the open saline basin gives way to the higher broken benches and ridge side slopes. In this drier area the vegetation consists mostly of greasewood (Sarcobatus vermiculatus), prickly pear (Opuntia spp.), fourwing saltbush (Atriplex canescens), galleta (Hilaria jamesii), black sagebrush (Artemisia nova) and basin big sagebrush (Artemisia tridentata). With the transition into a sage and grass dominated community, basin big sagebrush is the primary cover, with wheatgrass (Agropyron spp.), needle and thread (Stipa comata), and Indian ricegrass (Oryzopsis hymenoides) the most common grasses.

TABLE III-1

VEGETATION ACREAGE WITHIN THE PROPOSED ROAD ROW

Vegetation Type	Acreage
Pinyon-Juniper	35.70
Grass-Sagebrush	28.04
Salt Desert Shrub	10.89
Transitional Pinyon-Juniper	6.82
TOTAL ACREAGE	81.45

With an increase in elevation, there is a change from the grass and sage community, to a pinyon pine (Pinus edulis) and Utah juniper (Juniperus osteoperma) community on the bench tops and slopes. Within the canyon, pinyon and juniper begin to transition into Douglas fir (Pseudotsuga menziesii) and a deciduous community type,

dominated by narrowleaf cottonwood (Populus angustifolia) and bigtooth maple (Acer grandidentatum).

Vegetation cover is fairly homogenous over the length of the powerline ROW. Greater than 90 percent of the area is covered by pinyon-juniper. Small, open sage-grass mosaics with southerly aspects, dominated by wheatgrass, Indian rice grass, needle and thread, and basin big sagebrush also occur within the area of the powerline.

TABLE III-3

VEGETATION ACREAGE WITHIN THE EXISTING POWERLINE ROW

Vegetation Type	Acreage
Pinyon-Juniper	22.44
Grass-Sagebrush	2.23
TOTAL ACREAGE	24.67

Soldier Creek Riparian Area

The existing Dugout Canyon Road crosses Soldier Creek in a highly eroded and channelized section. A salt desert shrub habitat dominates this area, with a few narrowleaf cottonwoods along the banks. This habitat type is dominant along the lower reach of the creek, and within the location of the proposed crossing. Along the upper reaches of Soldier Creek and immediately below Soldier Creek Canyon, a willow and cottonwood community is dominant. Within this area is the location of the proposed powerline crossing.

Dugout Creek Riparian Area

Dugout Creek, flowing south out of Dugout Canyon, begins with a steep and narrow basin that gradually opens into a wider valley. Water flow is greatest in the upper portion of the canyon and decreases as the canyon opens. A change in vegetation follows this moisture gradient. Mesic vegetation occurs in the upper portion of the canyon, with a downstream transition toward plants characteristic of a drier habitat.

TABLE III-2

LIST OF PLANT SPECIES WITHIN THE PROPOSED ACTION

Common Name	Scientific Name
Grasses	
Indian rice grass	*Oryzopsis hymenoides*
needle and thread	*Stipa comata*
wheatgrass	*Agropyron spp.*
cheatgrass	*Bromus tectorom*
galleta	*Hilaria jamesii*
salina wildrye	*Elymus salina*
Forbs	
beard tongue	*Penstemon spp.*
mustard	*Brassica spp.*
aster	*Aster spp.*
Shrubs	
rubber rabbitbrush	*Chrysothamnus nauseosus*
Douglas rabbitbrush	*Chrysothamnus viscidiflorus*
black greasewood	*Sarcobatus vermiculatus*
basin big sagebrush	*Artemisia tridentata*
black sagebrush	*Artemisia nova*
prickly pear	*Opuntia spp.*
birch-leaf mountain mahogany	*Cercocarpus montanus*
coyote willow	*Salix exigua*
fourwing saltbush	*Atriplex canescens*
Utah serviceberry	*Amelanchier utahensis*
elderberry	*Sambucus spp.*
yucca	*Yucca spp.*
saltcedar	*Tamarix ramosissima*
spiny hopsage	*Artemisia spinosa*
winterfat	*Krascheninnikovia lanata*
skunkbush	*Rhus aromatica var.trilobata*
Trees	
Fremont cottonwood	*Populus fremontii*
narrowleaf cottonwood	*Populus angustifolia*
Douglas fir	*Pseudotsuga menziesii*
Utah juniper	*Juniperus osteosperma*
bigtooth maple	*Acer grandidentatum*
pinyon pine	*Pinus edulis*

An inventory of the riparian vegetation was completed in April 1996 (APPENDIX E). A wetted area, created by the construction of the present road, was found within an old stream meander located near the gate. Here the existing road has affected the function of the riparian area. The road has eliminated natural meanders and increased the gradient resulting in excessive bank erosion and cutting with high water events. Fremont cottonwood (Populus fremontii) and narrowleaf cottonwood dominate the overstory of this area, with Douglas fir, pinyon pine, Utah juniper and maple interspersed. The Dugout Canyon Road crosses the stream within this community type. Upon leaving the confined canyon, the riparian area widens out, with the existing and proposed Dugout Canyon Road bordering its western edge. Here the disturbance to the riparian function by the existing road is minimal. A stream crossing occurs in this area where skunkbush (Rhus aromatica var. trilobata), Utah serviceberry (Amelanchier utahensis), Douglas rabbitbrush (Chrysothamnus viscidiflorus), and basin big sagebrush (Artemisia tridentata) share the understory with a cottonwood overstory. As water becomes more scarce farther south, the cottonwood canopy opens and pinyon pine and Utah juniper become the dominate species. This drying trend continues until only a widely spaced juniper overstory occurs with a sagebrush and grass community dominating. This vegetation type is present where the Dugout Canyon Road crosses the ephemeral drainage emptying into Dugout Creek.

Special Status Vegetation Species

The USFWS was consulted regarding the presence of any Threatened, Endangered or Sensitive (TES) plant species in the project area (see APPENDIX F for their response). No such species were identified by USFWS as potentially occurring within the affected area.

6. Wildlife

Wildlife indigenous to the general area of the proposed action include amphibians, reptiles, birds and mammals. General wildlife use of the area is shown on PLATE VI.

Amphibians

There are six species of amphibians known to occur within the general area of the Wasatch Plateau. These species are classified as common, but are limited to mesic areas. These species could be present within the Dugout Creek riparian area, but their occurrence is not known. The pinyon-juniper and sagebrush-grass benches that make up most of the affected habitat is not considered important or limiting to their survival (Dalton et al, 1990).

Reptiles

There are ten species of reptiles known to inhabit the region. The habitat requirements for these species ranges in value from critical to substantial. The limited acreage of disturbance within the area of the proposed action, however, is not considered a significant threat to these species. This is due to the abundance of the preferred pinyon-juniper and sagebrush-grass habitat throughout the area.

Birds

There are approximately 185 bird species that could possibly be either year long residents or frequent the site during portions of the year. No specific habitat within the area of the proposed action is a limiting factor for any known bird species that may occur. However, the riparian area associated with Dugout Creek is of some importance to neotropical bird use, as well as potential tree nesting raptor habitat. A Cooper's hawk (Accipiter cooperii) nest was documented by the BLM in 1994 within the cottonwoods along Dugout Creek. A raptor inventory of the riparian area in April of 1996 identified the nest as old and dilapidated, with no visible use. No other tree nesting raptors were identified during this inventory.

A raptor inventory of the cliffs within the Dugout Canyon area was conducted in May of 1996 (APPENDIX F). No raptor nest sites were identified within 0.5 miles of the proposed road. An active golden eagle nest, as well as an active prarie falcon nest were identified in T. 13 S. R. 12 E., Sections 19 and 20. However, they are located outside of the 0.5 mile disturbance buffer recognized for active nests. Several old and inactive golden eagle (Aquila chrysaetos) nests were identified in the cliffs within 0.5 miles of the powerline.

Mammals

Ninety-two (92) species of mammals are known to exist in, or have the potential to inhabit the region. Of these species, mule deer (Odocoileus hemionus), elk (Cervus elaphus) and pronghorn antelope (Antilocapra americana) have been identified to be within the area associated with the proposed road development. The proposal area lies within the Unit Area 32 of the DWR, utilized by the Range Creek mule deer and elk herd units. The optimal herd unit within this area is 6000, with a current population at 50 percent of that. The area of the proposed action is situated within critical winter range and high priority winter range for mule deer, year long high value, winter high value and substantial winter range for elk, as well as year long high priority range for antelope. PLATES VI-A and VI-B shows these BLM range boundaries within the area of the proposed road development and powerline upgrade.

Pronghorn high priority habitat is present along the lower two miles of the existing Dugout Canyon Road (See PLATE VI-A). The road in this area actually conforms to the northern boundary of this management area. Many other mammal species utilize the pinyon-juniper and sagebrush-grass habitat for cover and forage. Small mammals in particular use the abundant ground litter deposited among the pinyon-juniper.

Special Status Wildlife Species

The USFWS was consulted regarding the presence of any TES wildlife species in the project area, (see APPENDIX E for their response). No such species were identified by USFWS as potentially occurring within the affected area.

7. Socioecomomic

In April of 1996, Carbon County had an unemployment rate of 5.5 percent, down approximately one percent from April of 1995. This percentage is substantially higher than the Utah average of 3.1 percent.

Employment within the Dugout Canyon area is limited at this time. Soldier Creek Coal Company, is currently in the process of re-opening the Dugout Mine.

CHAPTER IV. ENVIRONMENTAL CONSEQUENCES

A. IMPACTS ASSOCIATED WITH PROPOSED ACTION

TABLE IV-1 shows how activities associated with the construction and operation of the proposed road expansion, powerline upgrade and utility corridor (Proposed Action) affect the area around it in various ways.

TABLE IV-1

AREAS OF IMPACT ASSOCIATED WITH THE PROPOSED ACTION

Category	Area (acres)	Remarks
Soils	81.45	All Disturbance
Cultural	NA	
Vegetation/Habitat	81.45	All Disturbance
Hydrology	4.36	All Disturbance - Crossings
Wildlife	5,055.00	800 Meter Displacement On Each Side of ROW (ELK)
	1,264.00	200 Meter Displacement On Each Side of ROW (DEER)
Stock Grazing	NA	Limited to 120 Day Construction
Visual	Minor	Varies From KOP
Construction	81.45	All Disturbance
Usage	48.18	Limited to Actual Road
Reclamation	10.08	Reclaimed Road Sections

1. Soils

Impact to soil resources during construction, operation and maintenance of the road would be 81.45 acres. This figure includes the additional road ROW disturbance associated with the required backslopes and fills as well the establishment of a four acre borrow/storage site. The grading required for construction would displace topsoil and associated horizons throughout the total

length of the proposed road alignment. In association with grading, and the road cuts proposed (See Plate 1 through 15), the additive effect of lost vegetation cover and productivity during construction would also contribute to soil erosion along the entire length of the road, especially upon the steep and loose Gerst and Strych type soils encountered with the associated road cuts.

Operational impacts include the potential for accumulation in the soil of dissolved solids and salts resulting from runoff from the paved surface. The potential for contamination by coal fines blowing of haul trucks could also impact the entire length of the proposed road, as well as further impacting the Soldier Creek Road.

Impacts to soil resources by the upgrade of the powerline would be insignificant (< 0.5 acres). A temporal impact to soil within the ROW and access road from compaction where construction vehicles would travel could occur. Diminished vegetation cover could contribute to some soil erosion during and immediately after the upgrade of the powerline.

The utility corridor, located within the proposed road ROW, would be located within the road base and associated with the road impact. Additional impact to soil resources would not be generated by this action.

2. Surface Hydrology

No adverse effects are expected for the sub-surface water. There is, however, 4.36 acres of surface disturbance associated with the proposed creek crossings. The main potential for adverse impact to Dugout Creek and Soldier Creek would be temporal, and in the form of an increased possibility of erosion and sedimentation resulting during the construction of the proposed crossings and road alignment. There would be a potential for cut and fill material generated during construction to enter the creek, especially within the narrow and steep areas where the existing road borders the creek.

Portions of the road would be realigned to avoid disturbing most of Dugout Creek and its riparian area. Construction impacts to Soldier and Dugout Creeks, would be temporal and limited to the construction timeframe of the road and bridges. However, the operation of the road would require that the present nonfunctional hydrologic condition present within the upper reach of Dugout Canyon be maintained. Loss of adjacent vegetation and canopy could result in higher water temperatures and a potential for increased channelization. The impact that this degraded area would have upon the lower reaches of Dugout Creek over the life of the road are unknown.

There are also possibilities for adverse effects on the hydrology resulting from oil/diesel spills and fugitive dust accumulations during construction and operation of the road. Potential impacts from oil/diesel spills would be minimized by the implementation of a Spill Prevention Control and Countermeasure Plan (SPCC Plan) (APPENDIX B) specific to the site.

3. Cultural Resources

The archeological survey conducted by SENCO-PHENIX did not locate any significant cultural resources within the specific area of the proposed action. The road, powerline and utility corridor construction would not directly impact the quality and designation of any of the six identified resources known in the general area. The three wooden bridges that would be replaced by concrete pipe arches, are not over 50 years old and are not considered historically significant.

4. Land Use

The development of the road, powerline and utility corridor would impact land use resources both directly and indirectly by exerting a physical and/or visual influence. Direct impacts may result in the termination or severe modification of the existing land uses in the proposed project area. Indirect impacts, such as increased development, may result in altered land use patterns or access to use areas adjacent to or within view of the road and powerline. Indirect effects would also result if any portion of the proposed action stimulated or encouraged the development of land use not presently anticipated.

The proposed development would not preclude any public use of the affected lands for the life of the road. Direct construction impacts would be minimal and localized in the immediate proposed project area during the 120 day construction timeframe. However, use of this relatively pristine rural area would be disrupted by activities (i.e. vehicular traffic) during the life of the associated road and mining operation.

Grazing

Since construction associated with the proposed road would occur within the use periods of the Pace Canyon and Soldier Canyon allotments, grazing use would be excluded during this 120 day period. A short term impact to livestock operations and management during the fall of 1996 could result from the disturbance to fences and cattleguards disrupted during the course of construction.

Livestock mortality could increase at a unknown rate as a result of traffic on the proposed road. Hazardous areas are along Soldier Creek and Dugout Creek, where cattle would cross the proposed road

for access to these water sources. This impact would continue through the operational life of the road.

Recreation

A complete loss of access along the Dugout Canyon Road would be limited to the 120 day construction time frame.

The operation of a paved road maintained year long could increase recreational use in the area. Year round use would become possible where it was once limited by snow pack and muddy road conditions. The possible increase of recreation, such as stop-go traffic along the road, would have a negative displacement affect on wildlife and a congestive impact to coal traffic. Some recreational activities would experience a loss of quality (hunting, wildlife viewing, and mountain biking) surrounding the area of the proposed action as a result of heavy traffic.

Public lands currently available for dispersed recreational activities within the Dugout/Soldier Creek area would be impacted by increased vehicular travel and audible intrusions resulting from the establishment of the proposed road. Soldier Creek Road, a recognized scenic byway, as well as a primary access to Nine Mile Canyon would experience both visual and congestive effects. A section of the paved Dugout Canyon Road would be evident from Soldier Creek Road (see PLATE IV), potentially decreasing the scenic value. A 200 percent increase in vehicular traffic would result on the first eight miles of Soldier Creek Road from the proposed action.

Upgrade of the powerline and utility corridor would be conducted during the time frame established for construction of the road. No additional recreational access would result from the operation of the powerline or utility corridor.

Visual Resources

Effects to visual resources were assessed for the construction, operation, and closure of the proposed action. Two issues were addressed in determining impacts: 1) the type and extent of actual physical contrast resulting from the proposed action and related activities to existing conditions; and 2) the level of visibility.

The majority of the existing and proposed road is situated along the base of foothills below Dugout Canyon. Visual contrast of the road is reduced due to topography and vegetation screening. Road cuts created by the realignment of the new road would be evident from a short distance, but should not have a long range physical contrast. However, the 0.8 mile addition, selected for its location upon an open bench and wide view of the Soldier Creek Road, would impact visual resources for a 1.25 mile section of the Soldier Creek Road. The Soldier Creek Road would be the key

observation point (KOP) for the proposed 0.8 mile of road (See EXHIBIT III-1).

The visual impacts of the existing powerline is an increase in line and color contrasts to the surrounding landscapes. However, since little, if any, vegetation removal has been required or needed, ROW physical contrast over the entire area has been minimized. Where the powerline borders and crosses the Dugout Canyon Road, the impact to visual resources would be greatest. Again, little to no vegetation would be removed, and adequate screening would be maintained.

Noise

Noise levels would also be affected from both construction and operation activities. Noise levels associated with construction would be temporary and transient and would vary widely during the day. Noise levels associated with the road construction and resultant traffic upon the road are expected to be less than the levels considered protective of human health and welfare.

Vehicular traffic is expected to dominate construction-related noise levels during peak construction. Vehicular traffic would include commuting to and from the site. Associated impact upon road use within the area is expected to occur primarily during the daytime hours. The noise level from vehicular traffic along the Dugout Canyon and Soldier Creek Roads is estimated to be 60 dBA at a distance of 300 feet during truck travel.

Vehicular Traffic

During construction of the Dugout Canyon Road approximately 30 people would be employed. Each of those individuals would travel to and from Dugout Canyon Road via the Soldier Creek Road. This added traffic would have minimal impacts based on the relatively short construction schedule of approximately 120 days.

Upon completion of the proposed road, an abandoned coal mine anticipates reopening. This mine would employ as many as 100 people with estimated production of one million tons of coal a year. The personnel associated with the mine and the transport of the coal via the proposed Dugout Canyon Road would result in a substantial volume of traffic (TABLE IV-2).

This increase in traffic would result in an increase in vehicle wildlife accidents as well as domestic stock accidents. The Soldier Creek scenic byway would be negatively impacted for the first eight miles. This portion of the road is well below the area of scenic significance. Major impacts here are expected to be associated with congestion and inconvenience, rather than a direct impact to vistas and/or the aesthetics of the Nine Mile area.

TABLE IV-2

ANTICIPATED TRAFFIC VOLUME: SOLDIER CREEK AND DUGOUT CANYON ROADS

Current Volume of Vehicles Per Day (1995-1996)

Use	Soldier Creek	Dugout Creek
Recreational Use	100 +	12.5
Mine Related Personnel	25	0
Coal Haulage	36	0
Total	161 +	12.5

Anticipated Volume of Vehicles Per Day (1996-1997)

Use	Soldier Creek	Dugout Creek
Recreational Use	100 +	12.5
Mine Related Personnel	35	25
Coal Haulage	72	144
Total	207 +	181.5

** Lower eight miles of Soldier Creek Road - (Total Anticipated Use) 342.5 Total Vehicles/Day (Each Way) = 1.0 Vehicle/2.0 Minutes*

5. Vegetation

As discussed in CHAPTER III. AFFECTED ENVIRONMENT, the area of the road ROW compromises 81.45 acres. In the event of the complete removal of vegetation along the ROW, disturbance to vegetation as a direct result of construction activities could be as high as 81.45 acres. Most of this disturbance would result from the extensive road realignments established to minimize any impacts to the Dugout Creek riparian area. These realignments would predominantly exist within the pinyon-juniper habitat.

Vegetation bordering the existing Dugout Canyon Road would be eliminated in most cases. However, the riparian vegetation bordering the road would be left and avoided where possible. A few cottonwood and maple trees near the gate within Dugout Canyon would be removed, and/or trimmed due to the topography restrictions. Impact to functioning riparian habitat near the proposed stream crossings would be minimized to construction needs.

Disturbance to reclaimed areas would be temporal, from 24 to 36 months, and/or until vegetation becomes fully established.

Vehicular travel along the powerline ROW may flatten and crush ground cover. In the pinyon-juniper, it may be necessary to trim or remove some trees (2.2 acres maximum). No impact to the sagebrush-grass habitat is expected. No impact to any habitat type is expected during the operation of the powerline.

6. Wildlife

The primary concerns relative to wildlife within the area of the proposed ROW are; (1) critical big game range and (2) loss of habitat.

The Price River MFP restricts disturbance on critical and high value deer and elk winter range between November 1 and May 15, as well as establishing 10 acres as a threshold of significance for surface disturbance impacts on big game winter range. Impact of the proposed road would be the loss of 81.45 acres of habitat. This would be through the direct result of construction activities and road operation. The approximate acreage loss of habitat by vegetation type is the same as shown in TABLE III-1. Seasonal use impacts are minimized by the timing of construction activity to occur when big game are not present. The three month road construction timeframe and two week powerline upgrade would be initiated after the November 1 to May 15 seasonal use period established for big-game winter range.

The proposed action would result in the displacement of resident wintering deer and elk herds within the area of the road ROW and its adjacent buffer zone, during the year round operation of the road. Displacement zones recognized for mule deer and elk are 200 meters and 800 meters. Approximately 5,055 acres of habitat used by elk and 1,264 acres of habitat used by deer would be impacted by vehicular traffic, and stop-go recreational visitation associated with and along the road. TABLE IV-3 shows the acreages of displacement for the various elk and deer range boundaries shown on PLATE VI-A and VI-B.

TABLE IV-3

WILDLIFE DISPLACEMENT

Range Boundary	Miles	Acreage
MULE DEER (200 Meters)		
High Priority Winter Range	*2.27*	*360.9*
Critical Winter Range	*5.68*	*903.1*
ELK (800 Meters)		
Year Long High Value Range	*0.75*	*477.0*
Winter High Value Range	*5.68*	*3,612.2*
Winter Substantial Range	*1.52*	*965.8*

Considering the partial screening of the majority of the road by mature pinyon-juniper woodland and the fact that coal haul traffic would be constant and non-stop, some adaptation and acceptance of the intrusion by these species could occur. However, increased year-long recreational use would result in localized areas (Dugout Riparian) of displacement, with little habituation of species. Another operational impact of the proposed road would be the increased incidence of vehicle-wildlife fatalities. DWR management guidelines for Herd Unit 32 within the Soldier Creek area allow for 12 to 30 deer/elk deaths by vehicular travel per year. According to DWR estimates, the proposed operation and expected joint vehicular travel upon Dugout Canyon and Soldier Creek would result in a 300 percent increase in mortality of deer and elk from vehicular travel.

In the Price River Resource Area, no obtrusive (permanent) disturbance may occur within 0.5 miles of an active (Documented within three years) raptor nest. If an action is unobtrusive (periodic), no disturbance may occur within 0.5 miles of an active raptor nest between February 1 and July 15. A raptor inventory conducted by Soldier Creek Coal and the DWR in May of 1996 did not identify any raptor nesting activity within 0.5 miles of any portion of the proposed action (See APPENDIX F and PLATE VI-A).

7. Socioeconomic

The proposed action would have little direct affect on the over all socioeconomic of Carbon County. Anticipated labor associated with the construction is estimated at thirty employees over a 120 day period. It is unknown at this time if the contract would be awarded to a local firm or a company that is outside of the area. If the latter is the case, an infusion of dollars could enter into the motels and restaurants of Wellington and Price. A more substantial benefit to the area would come as an indirect impact of the benefit to the opening of the Dugout Mine. This would constitute as many as 200 new coal mining jobs over ten years, with an anticipated increase of 36 to 40 coal haulage jobs. These jobs would create a trickle affect that could realistically cause a net increase in mine and mine related employment of 360 to 576 jobs These additional jobs could lower regional unemployment by as much as two percent (UDES, 1996).

This additional work force is readily available in Carbon County. In addition the infrastructure (schools, housing, churches, medical services, etc.) is more than adequate to absorb any or all of the anticipated increase if the entire work force where to immigrate to this area.

B. IMPACTS ASSOCIATED WITH ALTERNATIVE I - NO ACTION

Associated impacts identified with the No Action alternative are derived from the inability to supply the necessary utilities and access requirements to the proposed coal mine in Dugout Canyon. The proposed facility would therefore be required to establish some other means of access or transport, as well as an alternative power and utility source. Potential lay-offs and facility closures at other related mines could result if an adequate solution was not found. Planned development for the facilities described, as well as future development would certainly be impacted. A unquantifiable negative impact to the socioeconomic condition of the Carbon County area would result from the curtailed development.

Impact to natural resources would remain as they currently exist.

C. CUMULATIVE AND ASSOCIATED IMPACTS

The cumulative impact of two operational mines within the Dugout/Soldier Creek area upon recreational visitation to the Nine Mile Canyon is substantial. Congestion with the proposed mine traffic volume previously described (See TABLE IV-2) could potentially increase due to visitor use to the Nine Mile area during the life of the mine. Procedures established within CHAPTER II: PROPOSED ACTION AND ALTERNATIVES - Stabilization, Maintenance and Operations Plan, would attempt to minimize operational impacts. However, management decisions for the Nine Mile area should take into consideration the increase of future recreational use, as well as the quality of that experience and the impact upon it by the proposed mine traffic volume.

The construction and operation of the proposed road would impact wildlife species as previously described. With each new road development within critical and high priority habitat of Herd Unit 32, movement of big game wildlife is further restricted and displaced. This impact must be addressed for future land use decisions that could occur in the area. Mining and gas development within the Carbon Crescent, such as the Helper and Castlegate coalbed methane fields, is far greater than the actual disturbance planned. The Helper Coalbed Methane Pilot Project, located approximately eight west of the proposed action, has resulted in 2,344 acres of displacement within high value winter range for elk, as well as 380 acres of critical and 404 acres of high value winter range for mule deer. Displacement of deer and elk is much greater within the Castlegate Coalbed Methane Project, located to five miles to the northwest of the proposed action. Within that area, 21,450 acres of critical value winter range for elk, 17,588 acres of high value winter range and 3,861 acres of high value deer range is anticipated. Mitigation has been conducted for the Helper Pilot Project and is committed for the Castlegate development. Because of the combined impact of these area activities, every opportunity

should be taken to mitigate the direct disturbance and displacement impacts of the proposed action.

D. MITIGATION OF PROPOSED ACTION

Procedures that would be followed for the construction, stabilization and maintenance of the proposed action (CHAPTER II: PROPOSED ACTION AND ALTERNATIVES - Stabilization, Maintenance and Operations Plan) were designed to minimize most impacts to resources within the area of the proposed action. Due to the extent of sensitive issues within the area (riparian, cultural, vehicular use), alignment of the road was reevaluated to reduce the impact. As previously stated, the acreage of direct impact associated with the road was based on the complete acreage of the road ROW minus the existing road.

Acreage of the powerline was only included where its ROW coexists with the proposed ROW in Dugout Canyon. Impacts occurring from maintenance actions proposed by UP&L, fall under the scope of use for the existing ROW, and therefore were not evaluated. The ROW of the proposed utility corridor was included within the disturbance of the proposed road.

Therefore, impacts mitigated are; 1) impacts resulting from vehicular traffic within the area; 2) impacts associated with displacement of wildlife; and 3) those associated with disturbances resulting from the actions within the proposed ROW of the road. Mitigation designed to aid big game would likewise enhance small mammal populations, enhancing both forage and cover. All or a portion of the mitigation options would be implemented as determined by BLM and Carbon County.

1. Vehicular Mitigation

To reduce vehicle wildlife accidents and mortality, the construction, operation and maintenance of the road would:

A. Increase visibility by selective thinning along road ROW.

B. Reduce speed limit to 40 MPH maximum.

C. Provide UDWR awareness training to coal haulers and mine personnel.

D. Manipulate habitat in the same general area to attract winter Mule deer away from the proposed road. Use a seed mix consisting of less desirable species on seeded areas adjacent to roads (see Stabilization, Maintenance and Operations Plan in Chapter II).

2. Habitat Displacement

Displacement of big game within the impacted area of the proposed action would be mitigated by the wildlife enhancement of 160 acres with browse interseeding. The area proposed is located T. 13 S. R. 12 E., Sections 28 and 33, and is nearby a site identified through discussions with the Soldier Creek Mine and the DWR. Soldier Creek Coal has agreed to cooperate on a mitigation effort on the 640 acres of private land. Browse interseeding associated with the 160 acres would be completed in the fall of 1996.

3. Habitat Disturbance

The entire area of actual road disturbance is located within critical and high priority winter Mule Deer range, as well as Elk high value and substantial winter range. The mitigation outlined for actual habitat disturbance is designed toward habitat manipulation within the same area identified within the displacement mitigation. This would maximize and increase available winter forage to big game. An accurate area of disturbance would be identified upon completion of the proposed action. At a minimum, one acre of mitigation for one acre of disturbance would be implemented.

There are a number of small areas within one mile of the proposed action where pinyon-juniper has invaded prime browse winter range. While this invasion is a natural succession of habitat, it is believed to have been accelerated due to a combination of factors including, but not limited to domestic livestock grazing and wildfire suppression over the past 100 years. The following options in particular would provide adequate mitigation of the proposed project:

Big Game Habitat Enhancement

40 acres of pinyon-juniper treatment and 40 acres of browse transplanting would be required to satisfy the mitigation of the diminished habitat. An area in T. 13 S. R. 12 E., Sections 28 and 33, has been identified for such treatment. The pinyon-juniper treatment of the 40 acre site would utilize a D-8 crawler tractor to push over trees on approximately a 63 acre area. This would leave approximately 0.33 percent of the pinyon-juniper stand as islands for thermal and escape cover. The treated area would be seeded with high value browse and forb species, according to the species list provided in TABLE IV-4. The grass, browse and forb seed mix would be applied with two seed dribblers mounted on the crawler tractor during the push operation. Grass and sagebrush seed would be applied with one dribbler while the browse and forb seed would be applied with the second dribbler. Push and seeding operation would be conducted in the fall of 1996.

TABLE IV-4

SEED MIX FOR WILDLIFE ENHANCEMENT AREAS

Grasses	*LBS/ACRE PLS*
Hard Fescue	*1.0*
Intermediate Wheatgrass	*1.0*
Hycrest Crested Wheatgrass	*1.0*
Perennial Mountain Rye	*1.0*
Browse	
Forage Kochia	*1.0*
Fourwing Saltbush	*2.0*
Antelope Bitterbrush	*1.0*
True Mountain Mahogany	*1.0*
Wyoming Sagebrush	*0.5*
Forbs	
Ladak-Nomad Alfalfa	*1.0*
Small Burnet	*1.0*
Yellow Sweetclover	*0.5*
Lewis Flax	*0.5*
TOTAL	*13.0*

Browse Seedling Species and Planting Rate/Acre	
Fourwing Saltbush	*100*
Antelope Bitterbrush	*75*
True Mountain Mahogany	*75*
TOTAL	*200/Acre*

Browse seedling stock would be planted at the rate of 200 per acre on public land chained in 1995. In the spring of 1997, browse seedling stock would be hand planted at a rate of 200 per acre on the treated area and on a 40 acre pinyon-juniper chaining completed in 1995. Browse species are shown in TABLE IV-4. The objective of the project would be to increase production of high value grass, browse and forb species to compensate for the loss of forage associated with road construction. The project location was selected for its close proximity to the area of disturbance and should help serve to attract big game away from the high traffic areas Soldier Creek and Dugout Canyon.

Riparian Habitat Enhancement

A permanent diversion structure would be constructed at the diversion point in Soldier Creek that diverts water for Anderson Reservoir. The construction design would be of a permanent nature to eliminate the need for the annual use of a dozer in the natural stream channel to reconstruct the diversion. It would provide for a partial flow to bypass the diversion and remain in the natural Soldier Creek channel when the diversion is being used to fill the Anderson Reservoir.

CHAPTER V. CONSULTATION AND COORDINATION

A. AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONTACTED

Numerous contacts with associated land use agencies, interested parties and individuals have been made during the course of this environmental assessment. The input from meetings, briefings and conversations during the months of February through May of 1996 has resulted in the completion of this document.

Public Government/Public Agencies

1. U.S. Department of Agriculture
   a. Natural Resource Conservation Service
2. U.S. Department of the Interior
   a. Bureau of Land Management
   b. U.S. Fish and Wildlife Service

State of Utah

1. Department of Employment Security
2. Department of Natural Resources
   a. Division of Water Rights
   b. Division of Wildlife Resources
   c. State Historical Preservation Office
3. Department of Transportation

Local Governments and Organizations

1. Carbon County Recorder
2. Carbon County Building Inspector
3. Carbon County Road Department
4. Carbon County Engineer
5. Carbon County Commissioners

Industry and Business

1. Creamer and Noble Engineers; St. George, Ut.
2. Utah Power & Light; Salt Lake City, Ut.
3. Coastal Energy; Scofield, Ut.
4. Soldier Creek Coal Co.; Price, Ut.
5. US West; Vernal, Ut.
6. Dan Guy, Blackhawk Engineering; Price, Ut.
7. SENCO-PHENIX ACS

B. LIST OF PREPARERS

CONSULTING INTERDISCIPLINARY TEAM - ENVIRONMENTAL INDUSTRIAL SERVICES (EIS); HELPER, UTAH

Melvin Coonrod	Project Manager and Coordinator, Wildlife Resources B.S. Chemistry and Invertebrate Zoology M.S. Silviculture
David Steed	Soils, Hydrology, Cultural Resources, Land Use, Wildlife and Vegetation B.S. Ecology
Michael Hubbard	Vegetation and Wildlife Resources B.A. Geography/Environmental Studies M.S. Environmental Studies
John Senulis	Cultural Resources - SENCO-PHENIX ACS B.A. Anthropology M.A. Anthropology Ph.D. Anthropology

CHAPTER VI. REFERENCES

Anderson, Terry. PacifiCorp. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-April 1996.

Atwood, Duane et al. 1991. Utah Endangered, Threatened and Sensitive Plant Field Guide, USFS Intermountain Region, Ogden, Ut.

Bailey, Mark. BLM Area Manager. Personal Communication with Mel Coonrod, Environmental Industrial Services. April 1996.

Bates, Bill. UDWR. Personal Communication with Mel Coonrod, Environmental Industrial Services. April 1996.

Bureau of Land Management. 1995. Nine Mile Canyon Special Recreation and Cultural Management Area.

Bureau of Land Management. 1989. Price River Management Framework Plan. Moab District Office. Moab, Utah.

Dalton, Larry. UDWR. Personal Communication with Mel Coonrod, Environmental Industrial Services. April 1996.

Dalton, L.B., J.S. Price and L. A. Romin. 1990. Fauna of Southeastern Utah and Life Requisites Regarding Their Ecosystems. Publication No. 90-11 Division of Wildlife Resources in cooperation with Utah Department of Natural Resources. Salt Lake City, Ut. 326 pp.

Flood, Kerry. BLM Hydrologist. Personal Communication with Mel Coonrod, Environmental Industrial Services. March 1996.

Frame, Kerry, Coastal Energy. Personal Communication with Mel Coonrod, Environmental Industrial Services. March 1996.

Fredricks, John. Soldier Creek Coal Co. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-April 1996.

Hickman, Terry. Creamer & Noble. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-April 1996.

Jensen, E.H. and J.W. Borchert. 1988. Soil Survey of Carbon Area, Utah. Soil Conservation Service, in Cooperation with the Bureau of Land Management and Utah Agricultural Experiment Station. 249 pages.

Jensen, Kenneth. Utah Department of Employment, Labor Market Economist. Personal Communication with Mel Coonrod, Environmental Industrial Services. May 1996.

Jensen, Ray. BLM Rangeland Management Specialist. Personal Communication with Mike Hubbard and David Steed, Environmental Industrial Services. April 1995.

Jones, Rod. US West. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-April 1996.

Lines, Gregory C. and Others. 1984. Hydrology of Area 56, Northern Great Plains and Rocky Mountain Coal Provinces, Utah. U.S. Geological Survey Water Resources Investigations. Open File Report 83-38. 69 pages.

Mackiewicz. Mark. BLM Realty Specialist. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-April, 1996.

Miller, Blaine. BLM Cultural Resource Specialist. Personal Communication with Mike Hubbard and David Steed, Environmental Industrial Services. April 1996.

Mills, David. BLM Wildlife Biologist. Personal Communication with Mel Coonrod, Mike Hubbard and David Steed, Environmental Industrial Services. February-April 1996.

Morris, Ben. UDWR. Personal Communication with David Steed and Mike Hubbard, Environmental Industrial Services. April 1996.

National Academy of Sciences. 1977. Sound Levels for Various Population Densities

Olendorff, Richard R. et al. 1981. Suggested Practices for Raptor Protection on Powerlines. Raptor Research Report No. 4. Raptor Research Foundation, Inc. 111 pages.

Padgett, Wayne G. et al. 1989. Riparian Community Type Classification of Utah and Southeastern Idaho. USFS R4-Ecol-89-01. 191 pages.

Paige, Mark. Utah Division of Water Rights. Personal Communication with Mel Coonrod, Environmental Industrial Services. March-April 1996.

Rodeback, Dwayne. PacifiCorp. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-March 1996.

Semken, Lee. Carbon County Road Department. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. February-April 1996.

Snyder, James D. Creamer & Noble. Personal Communication with Mel Coonrod and David Steed, Environmental Industrial Services. April 1996.

Thompson, Bob. USFS Manti-LaSal N.F. Personal Communication with Mel Coonrod, Environmental Industrial Services. March 1996.

Waddell, K.M. et al. 1986. Hydrology of the Price River Basin, Utah with Emphasis on Selected Coal-Field Areas. U.S. Geological Survey Water-Supply Paper 2246. 51 pages.

Willis, Dennis. BLM Recreation Specialist & Environmental Coordinator. Personal Communication with Mel Coonrod, Mike Hubbard and David Steed, Environmental Industrial Services. March-April 1996.

Zobell, Keith. Coastal Energy. Personal Communication with Mel Coonrod, Mike Hubbard and David Steed, Environmental Industrial Services. March-April 1996.

CHAPTER VII. APPENDICES

APPENDIX A	STREAM ALTERATION PERMIT -DIVISION OF WATER RIGHTS
	WATER RIGHTS
APPENDIX B	SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN - CARBON COUNTY
APPENDIX C	CORRESPONDENCE WITH NRCS CONCERNING PRIME FARMLAND
APPENDIX D	LETTER FROM SOLDIER CREEK COAL - DUGOUT BRIDGES
APPENDIX E	DUGOUT CREEK RIPARIAN COMMUNITY INVENTORY - EIS
APPENDIX F	CORRESPONDENCE WITH USFWS CONCERNING TES SPECIES WITHIN AREA OF PROPOSED ACTION
	RAPTOR SURVEY OF SOLDIER CANYON-DUGOUT CANYON AREA, 1996

APPENDIX A

STREAM ALTERATION PERMIT - DIVISION OF WATER RIGHTS

WATER RIGHTS

JOINT PERMIT APPLICATION FORM

U. S. ARMY CORPS OF ENGINEERS - FOR SECTIONS 404 AND 10
UTAH STATE ENGINEER'S OFFICE - FOR NATURAL STREAM CHANNELS

Application Number _____ / _____
(Assigned by:) Corps State Engineer

Applicant's Name (Last, First M.I.)	Authorized Agent	Telephone Number and Area Code
Carbon County	Cremer & Noble Eng.	(801 637 4700

Applicant's Address (Street, RFD, Box Number, City, State, Zip)

Courthouse Building Price, Utah 84520

PROJECT LOCATION

Quarter Section(s)	Section	Township	Range	Base & Meridian
SEE MAP	Various	13 S. & 14 S.	11 E. & 12 E.	Salt Lake

County	Watercourse to be altered	Check one: ___Within city limits _X_ Outside city limits
Carbon	Soldier & Dugout Crk.	List town or nearest town: Wellington

Project location or address:

Along Dugout Canyon Road and points along Soldier Creek, below Soldier Creek Canyon

Brief description of project:

* Concrete and rip rap crossing of Soldier Creek, UP&L Powerline Access
* Concrete Box Culvert across Soldier Creek for new access to Dugout Road
* 2 Concrete Box Culverts across Dugout Creek
* Stream alteration and bank stabilization along Dugout Creek, approx. 300 feet
* Various pipe arch culverts to cross small drainages along the Dugout Road

Purpose (justification) of project:

To modify and upgrade the existing Dugout Canyon Road and associated powerline. A 0.8 mile alteration of the Dugout Canyon Road is planned and would cross Soldier Creek, See Map A. A temporary crossing;2 to 4 weeks, of Soldier Creek is required for the powerline upgrade , See Map B.

Is this a single and complete project or is it part of a larger project, continuing project, or other related activities? If so, please describe the larger project or other related activities.

Part of an Environmental Assessment for the BLM and ROW Application to upgrade the road and support utilities to facilitate the reopening of the Dugout Canyon Mine.

If project includes the discharge of dredged or fill material:

Cubic yards of material:

Acreage or square footage of waters of the United States, including wetlands, affected by the project:

Source and type of fill material:

Alternatives (other ways to accomplish the project purpose):

Maintain the route of the existing Dugout Canyon Road, without the 0.8 mile addition, and upgrade and upgrade to facilitate heavy truck traffic. This alternative poses a high risk for accidents between coal trucks and vehicles using the Soldier Creek Road.

Names and addresses of adjacent property owners or other individuals who may be affected by this project:

State of Utah: School and Institutional Trust Lands, 1165 S. Hwy. 191 Moab, Utah

BLM: 125 South 600 West Price, Utah 84501

Sage Point Coal Co.: Contact Soldier Creek Coal: P.O. Box 1029 Wellington, Ut 84542

List other authorizations required by Federal, state or local governments (i.e.; National Flood Insurance Program), and the status of those authorizations.

EA for BLM ROW Grant, Carbon County, and Utah Department of Transportation

Estimated starting date of project	Estimated completion date
6/1/96	10/30/96

(If project has already been partially or totally completed, indicate date of work. Indicate existing work on drawings).

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or am acting as the duly authorized agent of the applicant.

Signature of applicant	Date

I hereby certify that ~~Creamer & Noble Engineering~~ is acting as my agent for this project.

Agent's address and telephone number

P.O. Box 37 Saint George, Utah 84771 801 673 4677

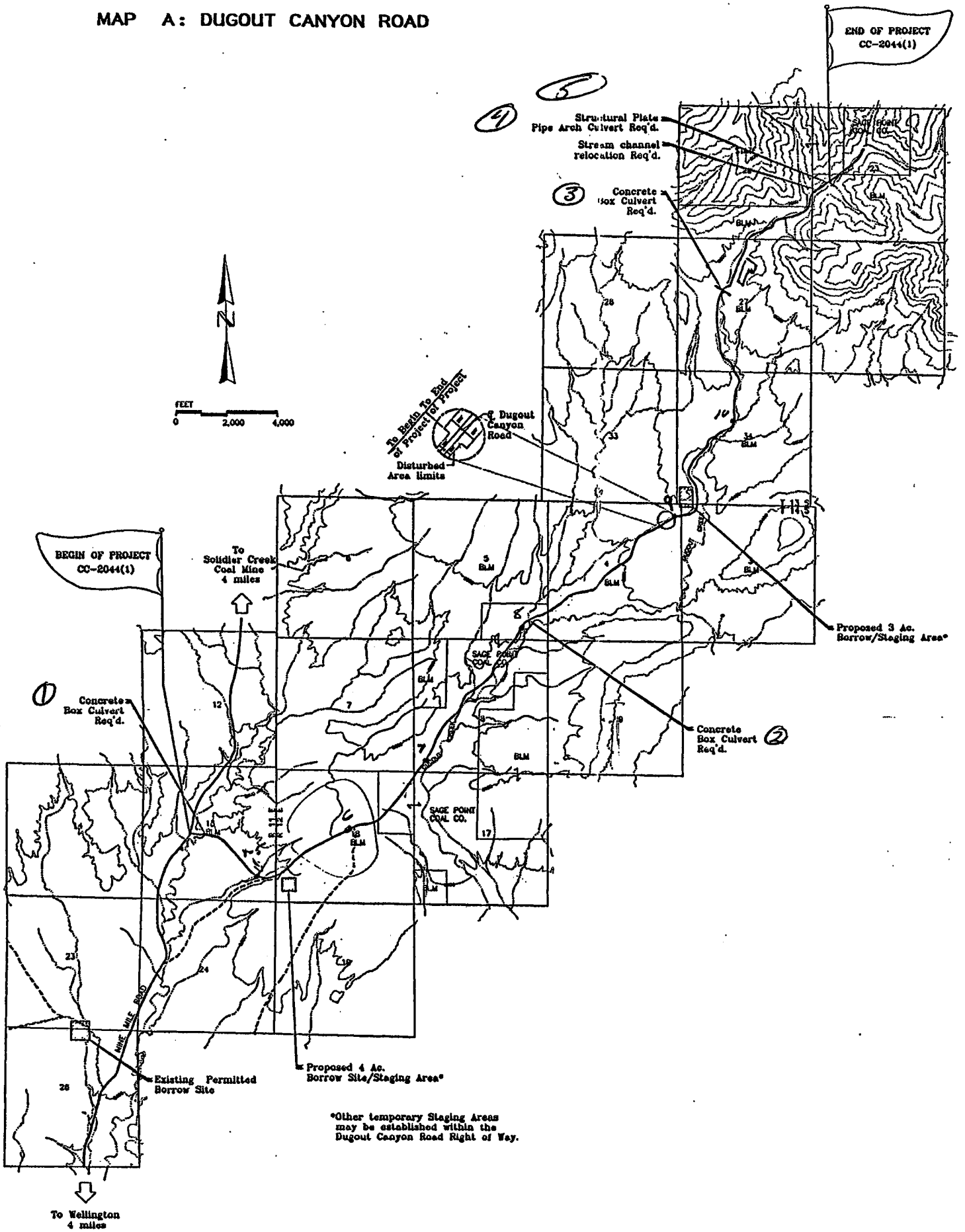
INSTRUCTIONS

Applications which do not include the following will not be processed.

For a complete application, you **MUST** include the following on **8 1/2 by 11** paper (for large projects, multiple sheets with a key may be used). Clear, hand-drawn plans approximately to scale are acceptable.

1. An accurate location map (USGS quadrangle map preferred)
2. A plan view of the proposed activity (as seen from above) including dimensions of work.
3. A cross-section view of the proposed activity (may use typical cross-section for large projects) including dimensions.
4. For projects which include wetlands, an accurate wetland delineation must be prepared in accordance with the current method required by the Corps.

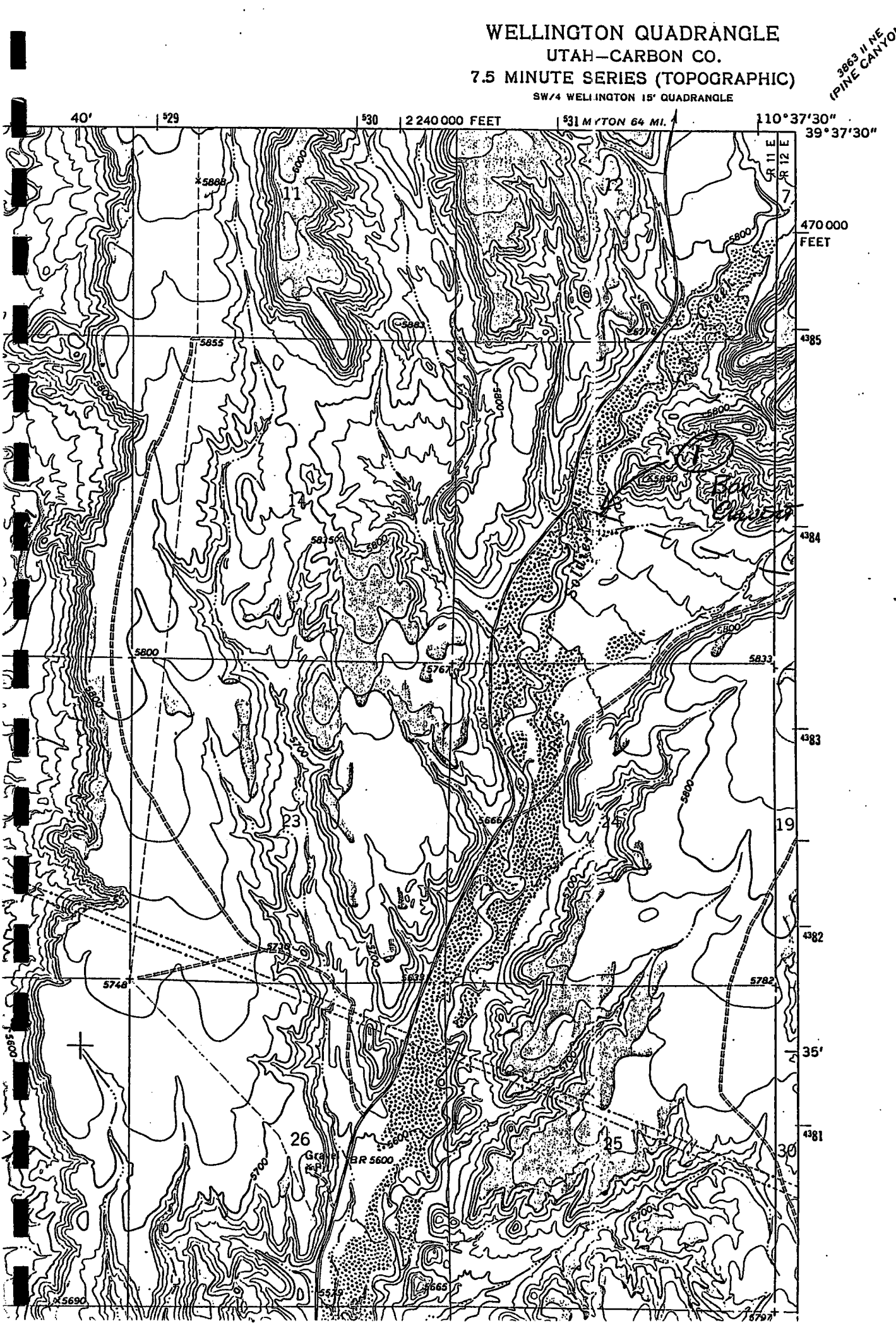
MAP A: DUGOUT CANYON ROAD

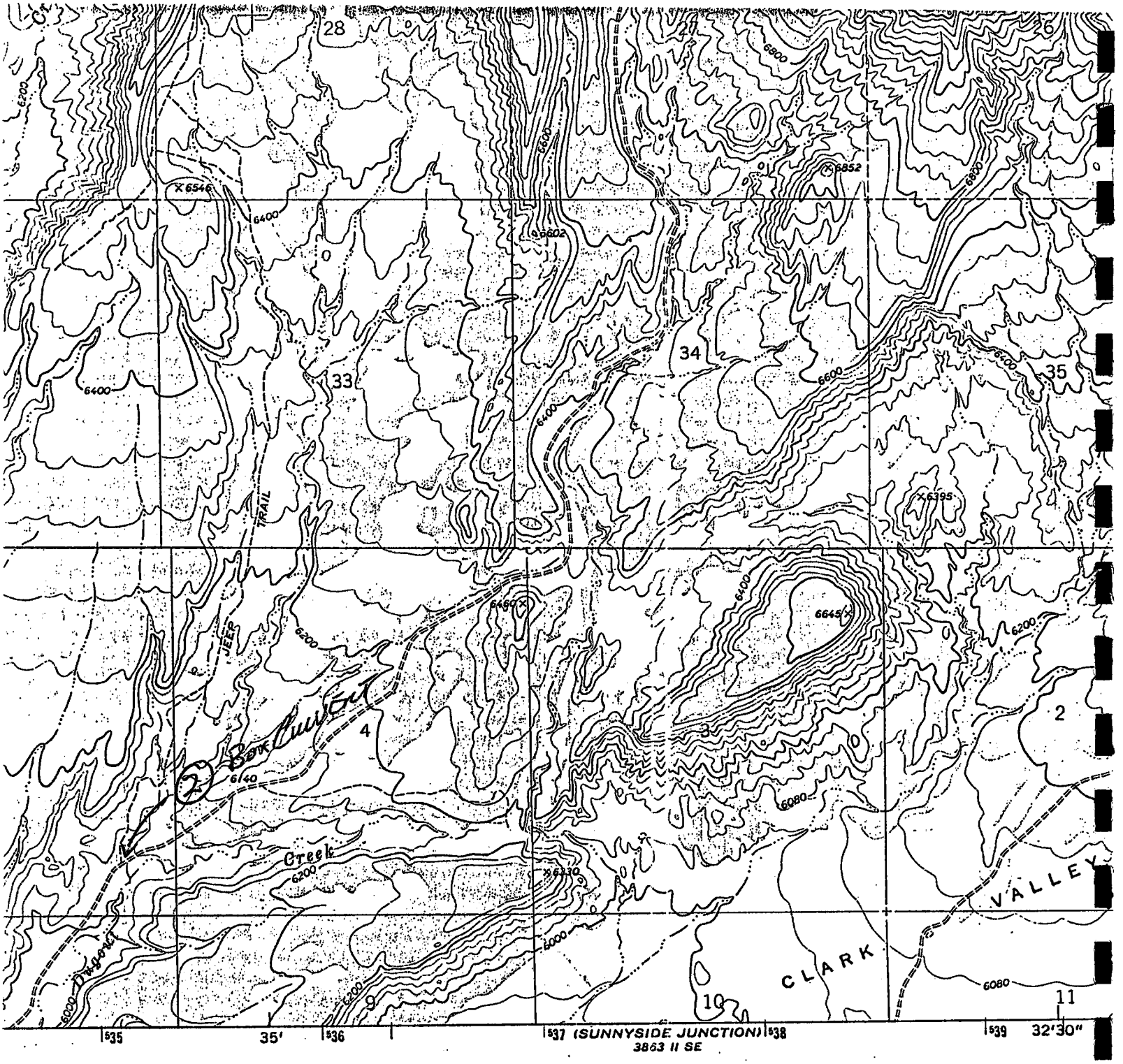


WELLINGTON QUADRANGLE
UTAH—CARBON CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

SW/4 WELLINGTON 15' QUADRANGLE

3863 II NE
(PINE CANYON)





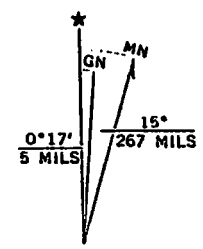
SCALE 1:24 000

1 0 1/2 1 MILE

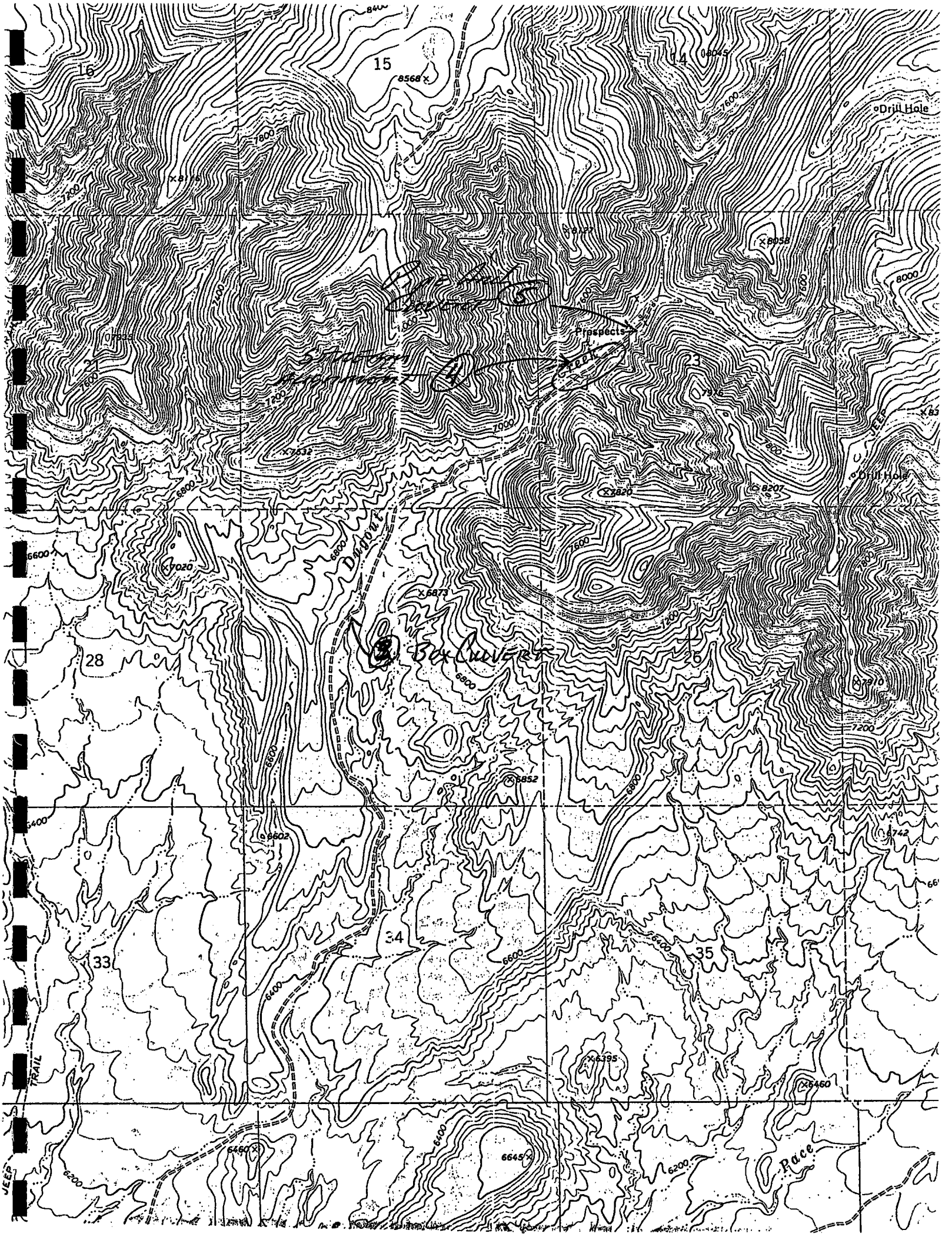
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

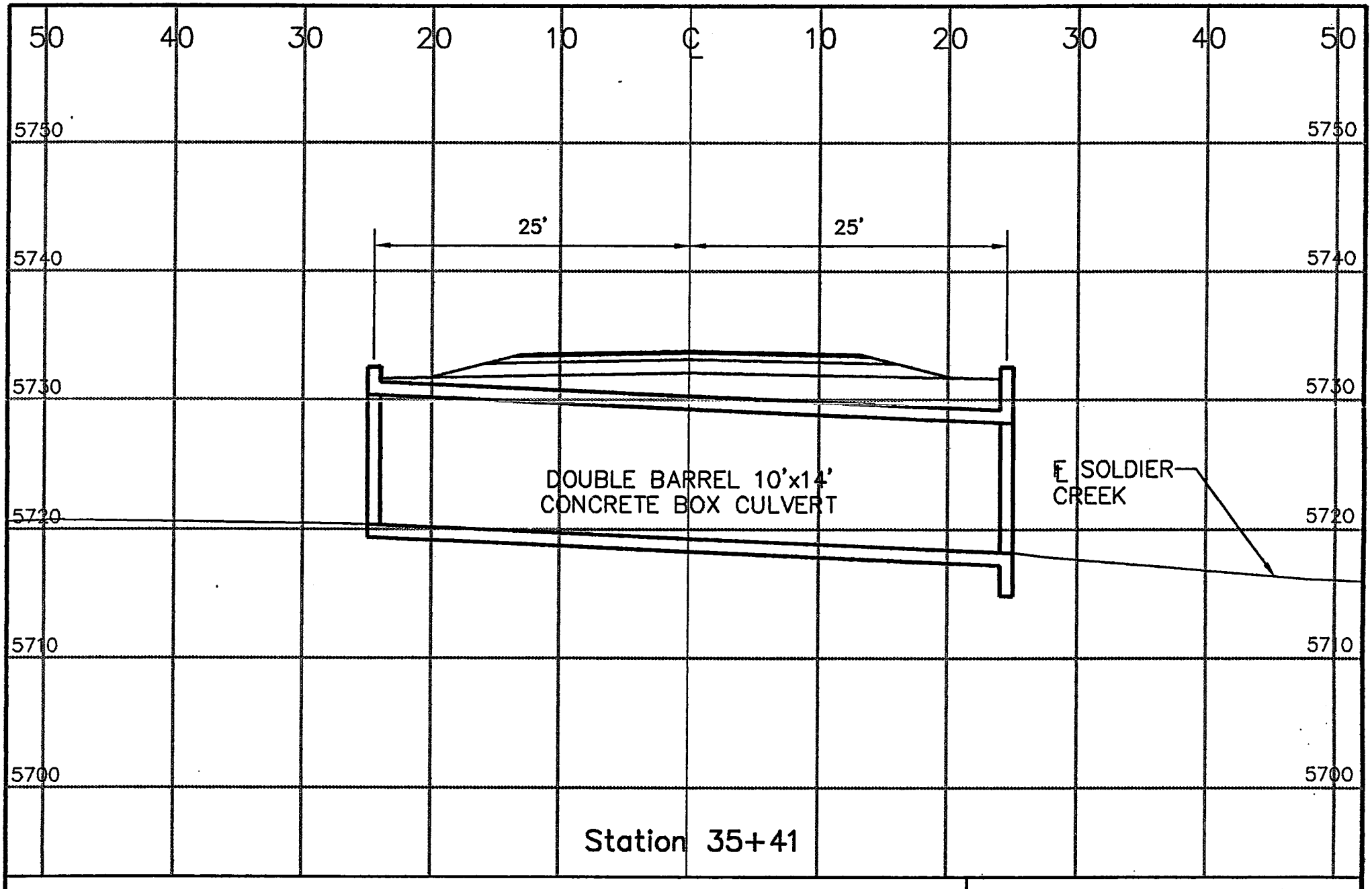
1 .5 0 1 KILOMETRE

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



UTM GRID AND 1972 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET


Drill Hole
Prospects
Box Culvert
Race
JEEP TRAIL
15
16
21
28
33
34
35
3
25
14

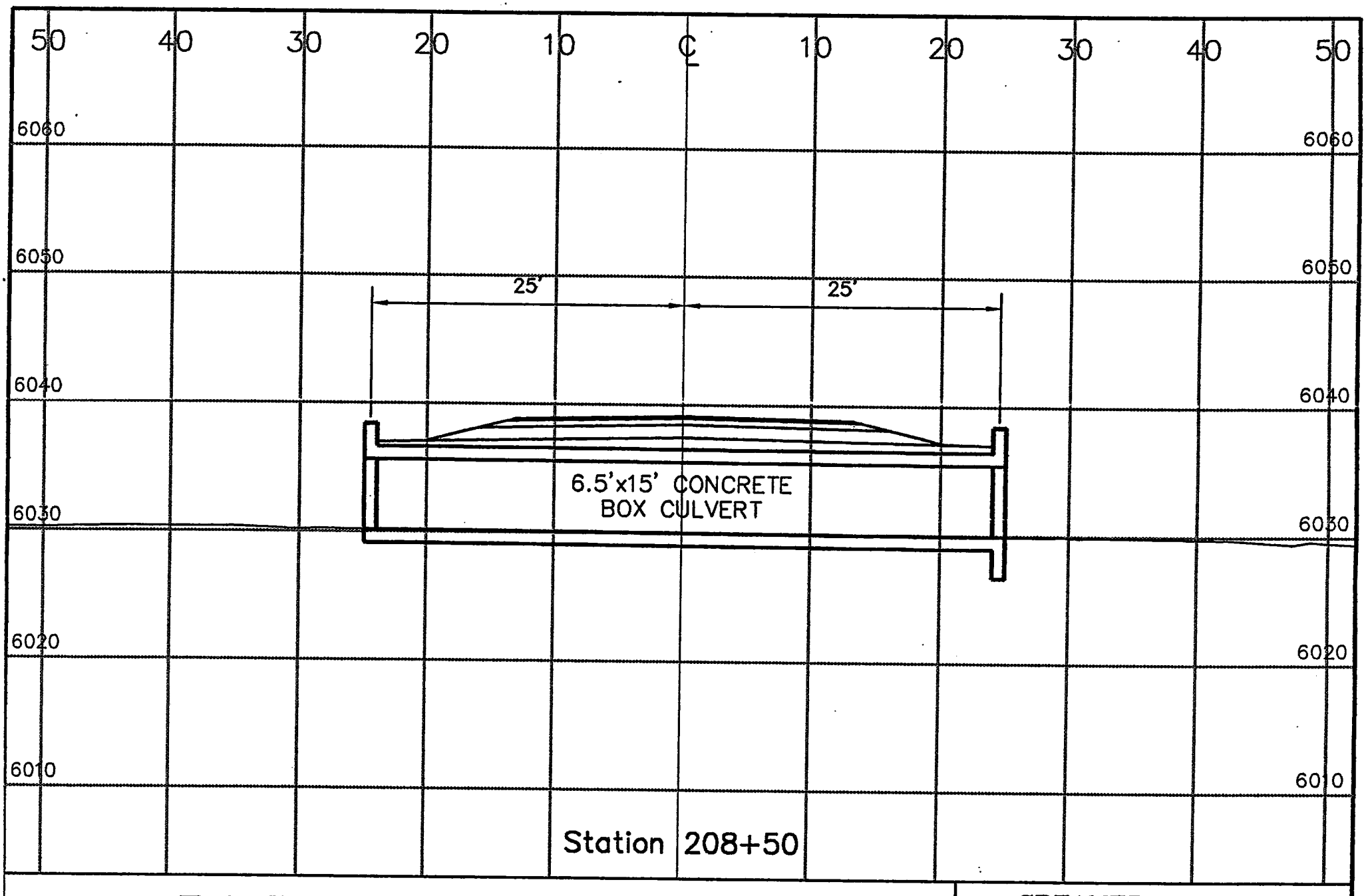


DUGOUT CANYON ROAD

Box Culvert @ 35+41 (Soldier Creek)

CREAMER & NOBLE
ENGINEERS
ST. GEORGE, UTAH

EXHIBIT NO.:

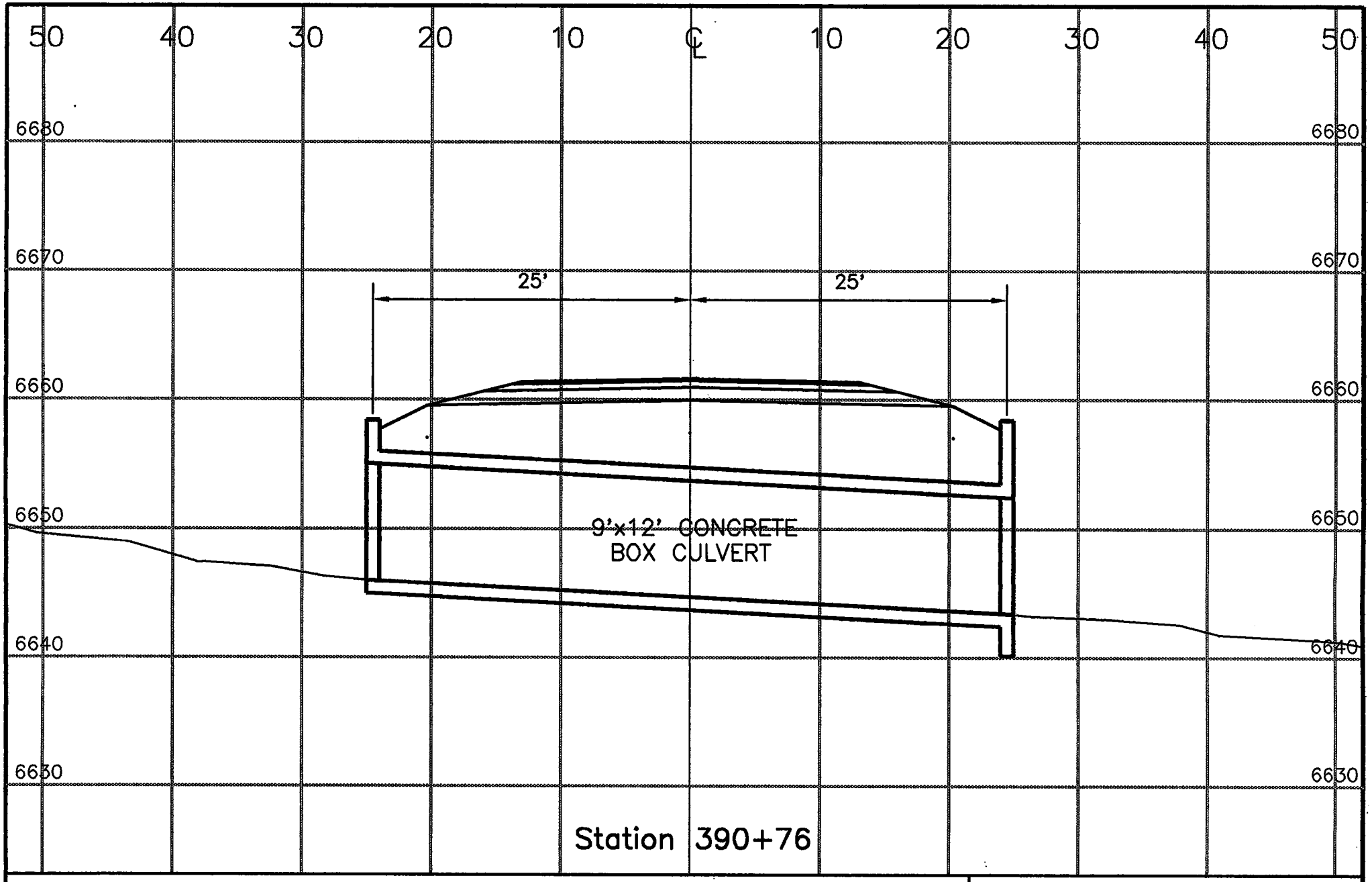


DUGOUT CANYON ROAD

Box Culvert @ 208+50

CREAMER & NOBLE
ENGINEERS
ST. GEORGE, UTAH

EXHIBIT NO.:



DUGOUT CANYON ROAD

Box Culvert @ 390+76

CREAMER & NOBLE
ENGINEERS
ST. GEORGE, UTAH

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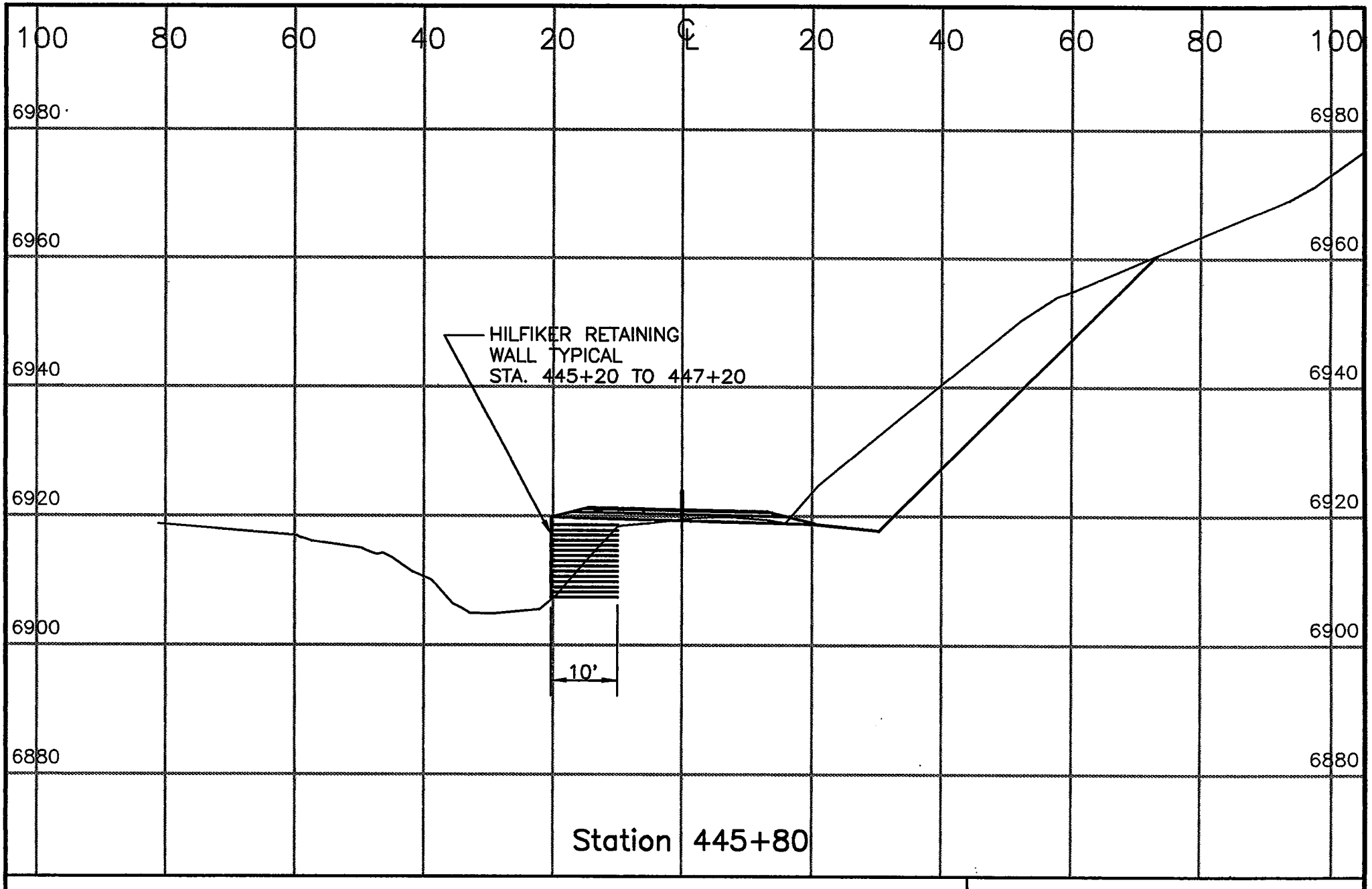


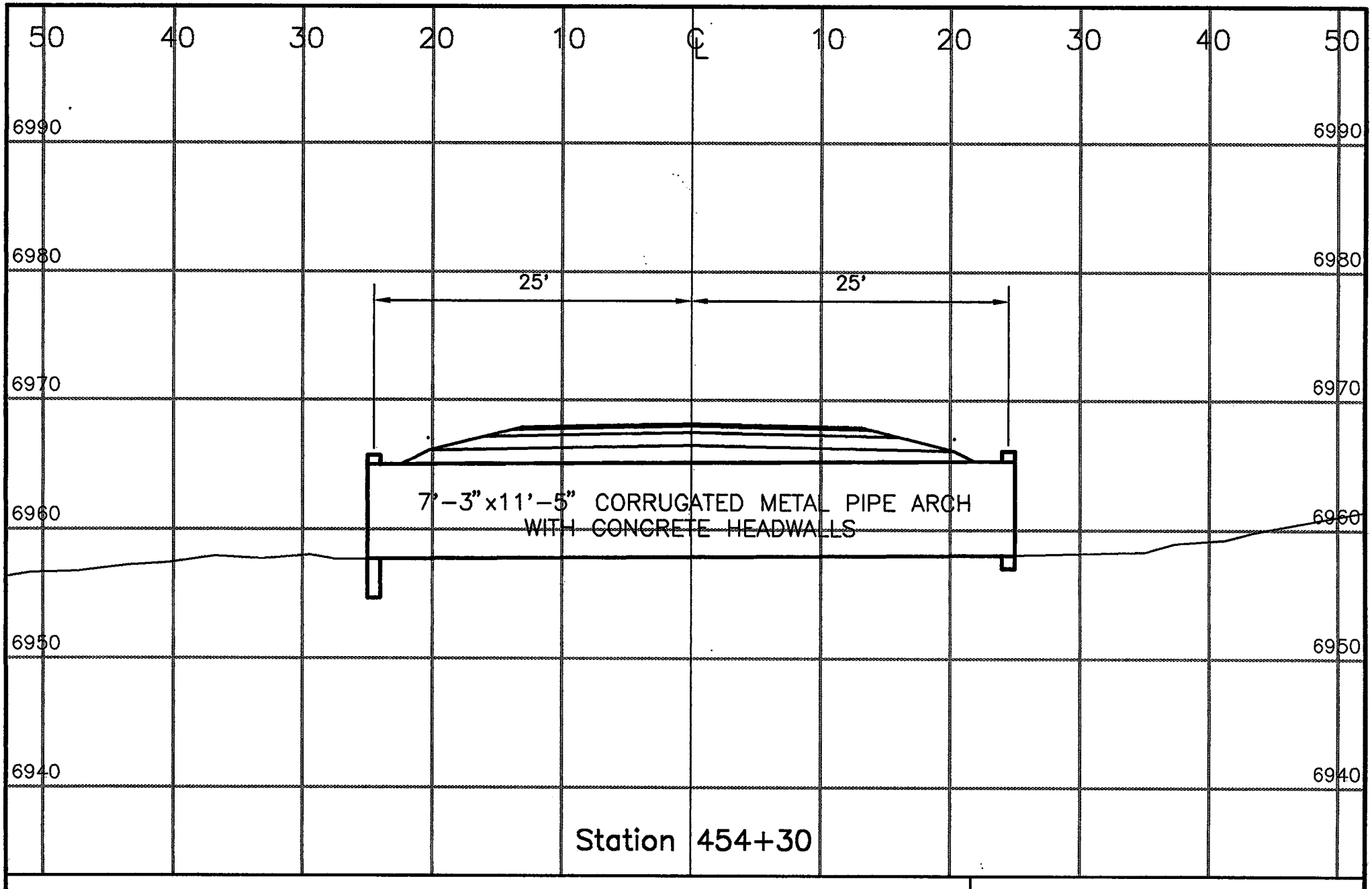
DUGOUT CANYON ROAD

HILFIKER RETAINING WALL @ 445+80

CREAMER & NOBLE
ENGINEERS
ST. GEORGE, UTAH

EXHIBIT NO.:

DugOut 445+80



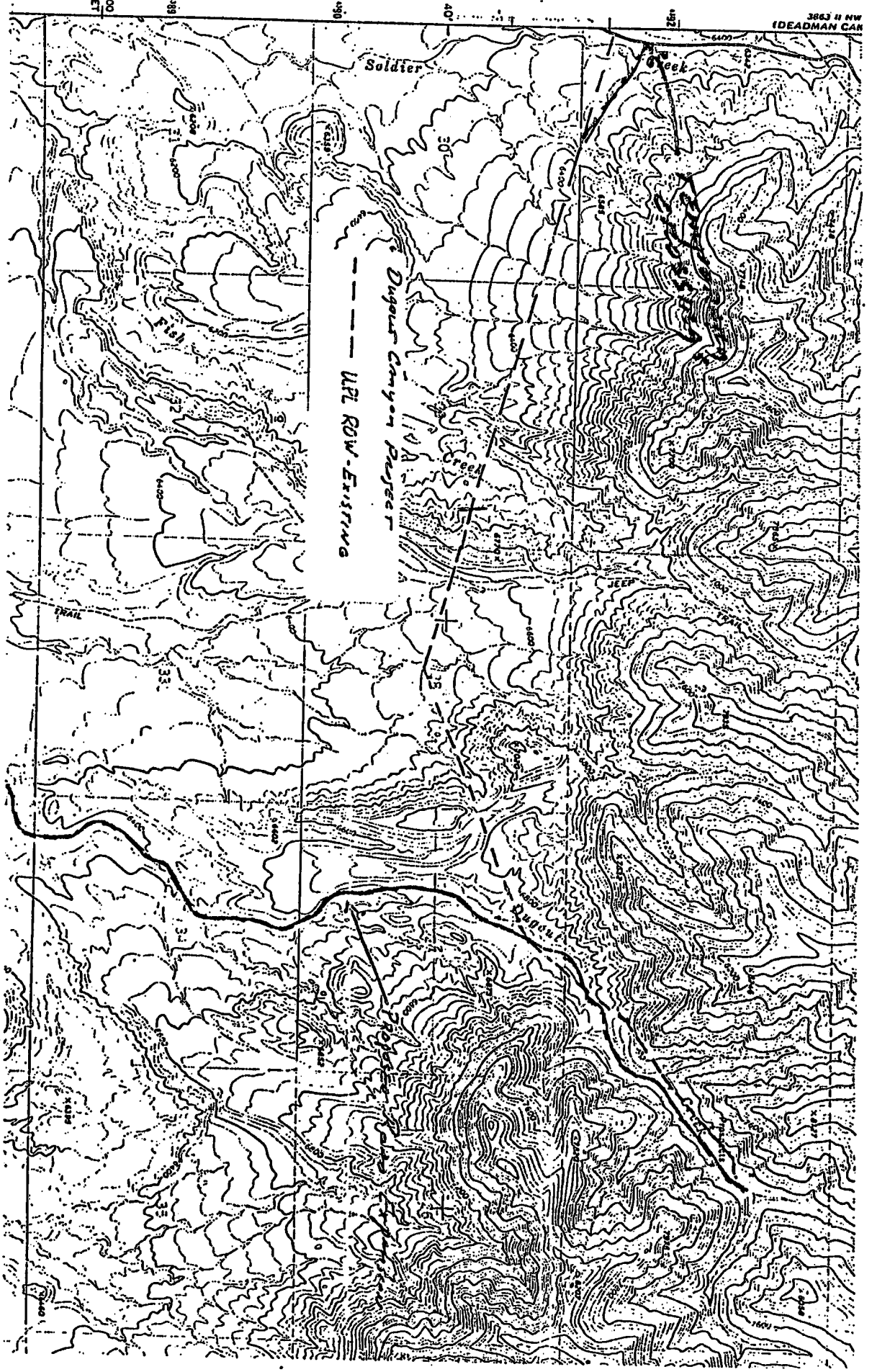
DUGOUT CANYON ROAD

Pipe Arch Culvert @ 454+30

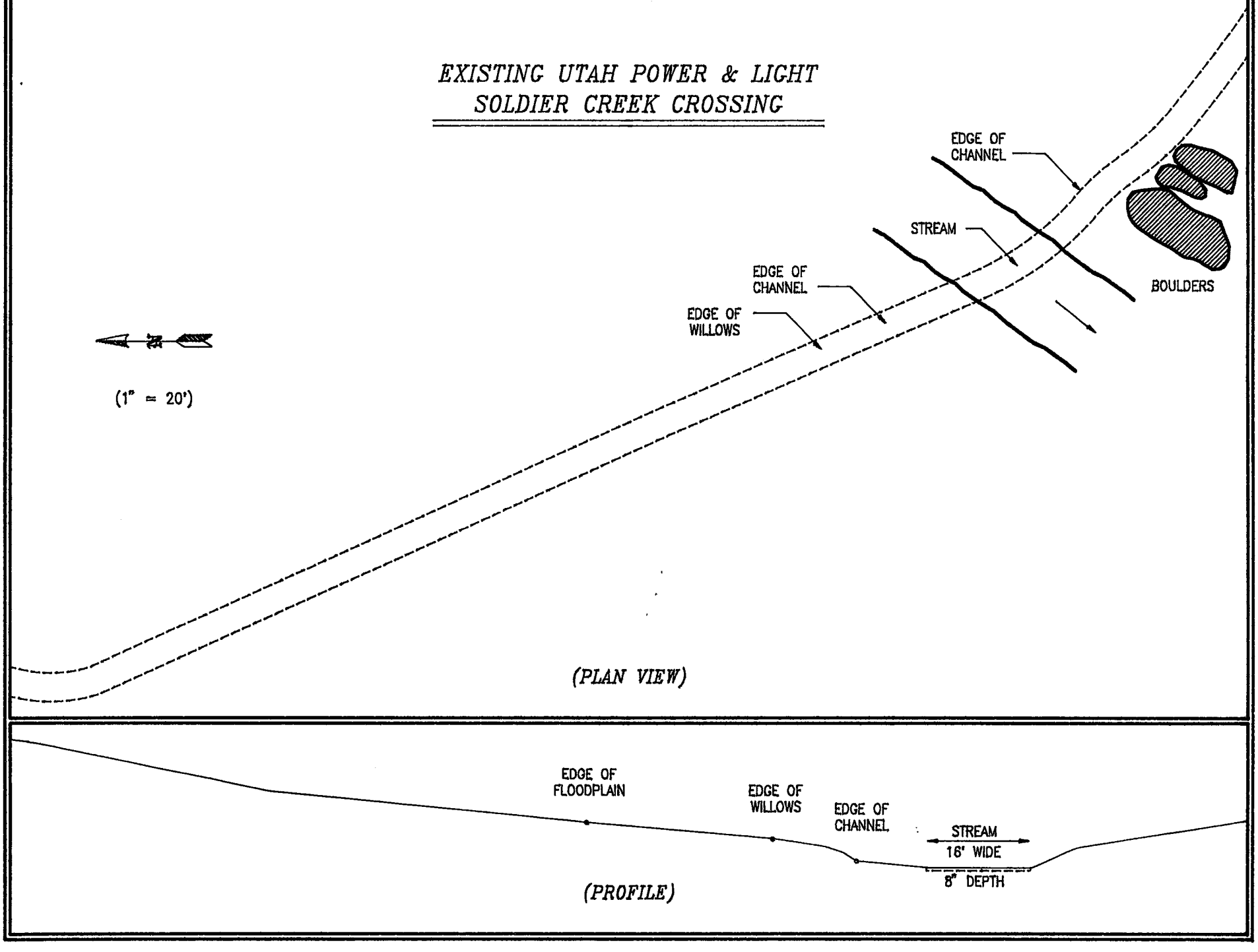
CREAMER & NOBLE
ENGINEERS
ST. GEORGE, UTAH

EXHIBIT NO.:

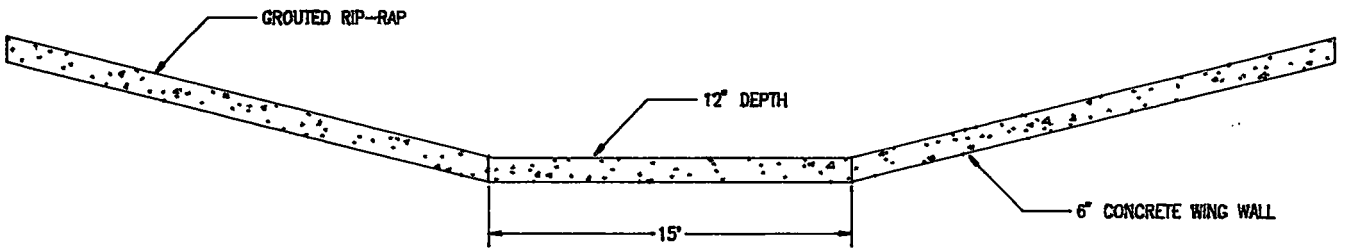
MAP B: UP&L CROSSING OF SOLDIER CREEK



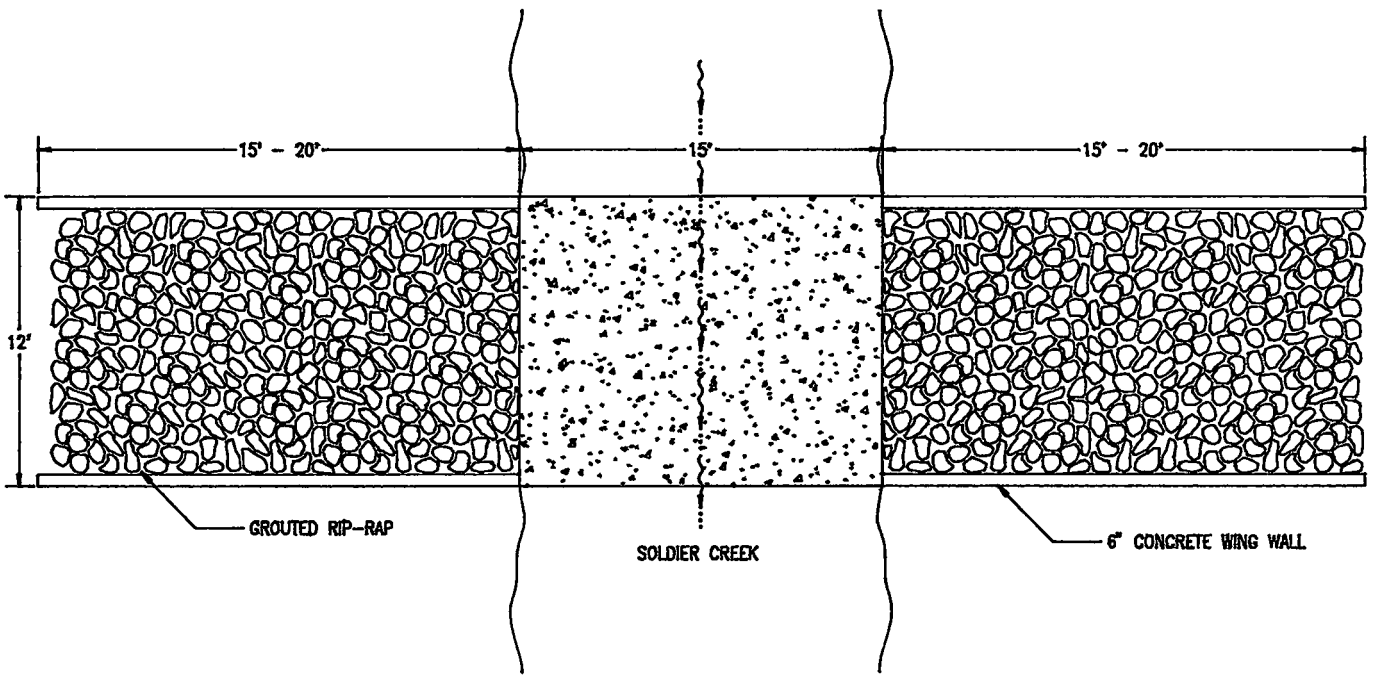
EXISTING UTAH POWER & LIGHT
SOLDIER CREEK CROSSING



PROPOSED UTAH POWER & LIGHT
SOLDIER CREEK CROSSING



(SECTION VIEW)



(PLAN VIEW)

WATER RIGHTS WITHIN THE DUGOUT CREEK AREA

WATER RIGHT #	OWNER *	PRIORITY DATE	SOURCE **	USE
427	Sage Point Coal Co.	00/00/1902	Dugout Creek	Stockwatering
428	Sage Point Coal Co.	00/00/1869	Unnamed wash	Unknown
429	Sage Point Coal Co.	00/00/1869	Unnamed wash	Unknown
466	Sage Point Coal Co.	00/00/1901	Dugout Creek	Unknown
467	Sage Point Coal Co.	00/00/1869	Unnamed wash	Unknown
468	Sage Point Coal Co.	00/00/1869	Unnamed wash	Unknown
538	Sage Point Coal Co.	00/00/1869	Soldier Creek	Unknown
2579	USA BLM	00/00/1869	Soldier Creek	Unknown
3726	USA BLM	00/00/1869	Unnamed wash	Stockwatering
3752	USA BLM	00/00/1869	Dugout Creek	Stockwatering
4402	Sunoco Energy Co.	00/00/1869	Unnamed wash	Stockwatering
4673	USA BLM	00/00/1869	Dugout Creek	Stockwatering / Other
4679	USA BLM	00/00/1869	Dugout Creek	Stockwatering / Other
19877	Sage Point Coal Co.	01/30/1913	Dugout Creek	Mining / Other

* See Land Use Map for Location of Water Rights
** Quantities Unknown

APPENDIX B

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN - CARBON COUNTY

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN

CARBON COUNTY

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
SURFACE STORAGE

CARBON COUNTY

CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN

CONTENTS (Continued)

Section I - Oil Spill Control and Countermeasures (SPCC) Plan (Non-PCB)

5-1.0.0 Purpose

The purpose of this Oil Spill Prevention, Control and Countermeasure (SPCC) Plan is to identify potential sources of oil spill, establish measures of prevention and delineate control and cleanup procedures for all sites where oil and/or diesel is temporarily stored at facilities located in Carbon County, Utah.

Responsibility for compliance with this plan lies with the Superintendent of Maintenance or other Responsible Individuals for this facility who has signed this plan and with the Company official who has signed this plan for Company management.

5-1.1.0 Legal Reference

Preparation of this plan is pursuant to Section 311, Oil and Hazardous Substance Liability of the Federal Water Pollution Control Act (Public Law 92-500 as amended): which requires "establishing procedures, methods, and equipment and other requirements for equipment to prevent discharges of oil and hazardous substances from vessels and from onshore facilities and offshore facilities, and to contain such discharges."

The regulations published in response to the Act specify the elements of the SPCC Plan and have been published in the Code of Federal Regulations (40 CFR, Ch.1, Subpart D, Part 112) and in the Federal Register Dec. 11, 1973, Vol. 38 No. 237, Part III "Oil Pollution Prevention: Nontransportation Related Onshore and Offshore Facilities."

5-1.2.0 Scope of Application

The above-referenced regulations state that the same apply if an onshore nontransportation related facility has oil containers holding more than 660 gallons in a single container or 1320 gallons or more in several above-ground containers, a SPCC Plan must then be prepared, implemented and kept on file (40 CFR 112.1 (d) (1-4).

5-1.3.0 Definition of Oil Spill

A legally reportable "oil spill" is any spillage, leakage, discharge or disposal of oil, grease or

other such petroleum product that enters or is threatening to enter any waterway.

A "waterway" includes any river, stream, canal, lake, sewer, drain or pond. Further definition is given in 40 CFR, 112.2 (a). Environmental Industrial Services reporting procedures are described below in Section 5-5.5.0.

5-2.0.0 Surface Storage Description

5-2.1.0 General - Construction Site "Mobile Portable Storage"

There is a potential for 300 to 500 gallon diesel tank and multiple 55 and 5 gallon oil drums contained in a bermed area.

5-2.2.0 Potential Sources of Diesel and Oil.

The shop, office area and construction sites are equipped with diesel and oil storage tanks.

5-2.2.1 Central Storage (At shop)

(1) Diesel - 500 to 10,000 gallons above ground storage tank.

(2) 500 gallons engine oil (and/or 55 gallon drums).

(3) Gasoline - 55 gallons to >2,000 gallons above ground storage.

5-2.2.2 Maintenance Materials

(1) 55 gallons anti-freeze

(2) 55 gallons gear lube.

(3) 5 gallons grease and lube oils.

5-2.2.3 Used Oil

Used oil is stored in 55 gallon drums and disposed of as needed via an approved carrier to an EPA approved reclaimer.

Volume varies month to month and never exceeds 550 gallons in storage for disposal. Used oil is sent back to main shop in 55 gallon drums.

5-3.0.0 Prevention and Control of Oil Spills

Prevention measures are centered around proper design, inspection and maintenance of oil-filled apparatus. The apparatus is inspected regularly for leaks. If leaks do occur, they are immediately mopped or cleaned up as part of regular operating procedure. Spent cleanup material, gravel, soil and other cleanup debris is disposed of in accordance with Section 5-4.2.0 below.

5-3.1.0 Control At Office/Shop Area

Oil(s) will be controlled by concrete containments or within structures with concrete floors. All used oil-filled barrels are transported to Carabon County Road shop for temporary storage and disposal.

5-4.0.0 Countermeasures

The area described above is designed to contain oil leaks, should they occur, and thus mitigate the possibility of oil getting into a watercourse. In the case of small leaks which are confined to small areas, cleanup is part of the ordinary operating procedure. Countermeasures as outlined in Section 5.4.1.0 are to be taken immediately when there is any danger of oil entering any waterway and in case of any large oil leak.

5-4.1.0 Direct Countermeasures

In the case of a spill, direct countermeasures include the necessary actions to terminate the source of flow of the oil. Make sure the spill is totally contained. Plug the leak, close the valve. Dig a trench or dike or do whatever else is necessary to stop the spill from leaving the property or entering a waterway. Get help if necessary. If the oil has already left the property, upon discovery, effort must be made to place appropriate oil-absorbent materials (sand, soil, straw bales or floor dry) in watercourses or take other actions necessary to minimize environmental damage as a result of the spill. After this is accomplished, the in-house reporting procedure described in Section 5.1.0 should be initiated immediately. Once the countermeasure and reporting functions have been accomplished, cleanup will begin in accordance with Section 5-4.2.0.

5-4.2.0 Non-PCB Spill Cleanup Procedures

Direct operating responsibility for the work site

rests with the Project Supervisor. He will be responsible for cleanup operations.

5-4.2.1 Who to contact for Cleanup

In most cases, the entire cleanup operation will be directed and performed by Carbon County employees under the direction of the Project Supervisor. If the supervisor cannot be reached, call the site Superintendent of the Maintenance and/or Environmental Engineer, 637-4700 as described in Section 5-5.1.1 below to initiate this notification sequence. If available operating personnel cannot contain the spill, call in outside contractors as described in Section 5-4.2.2.

5-4.2.2 List of Contractors

Should Carbon County personnel be unable to perform the cleanup operation, and it is necessary for cleanup to begin immediately, one of the following outside contractors may be notified.

1. Nelco, Inc.
   Neil Frandsen
   P.O. Box 282
   Price, Utah 84501
   (801) 637-3495

2. Eph Henrie Construction
   Route 2, Box 17
   Price, Utah 84501
   (808) 637-0204

3. Nielson Construction Co.
   P.O. Box 620
   Huntington, Utah 84528
   (801) 687-2494

Other contractors with light earth-moving capability who are willing to do oil spill work may also be contacted and used. However, it is necessary to inform the contractor that the oil-contaminated material he is hauling must be deposited in a state-approved sanitary landfill. If the spill is massive, special cleanup effort such as those provided by the Coast Guard may be necessary. In this case, call the Environmental Engineer at (801) 637-4700. Do not call the Coast Guard yourself.

5-4.2.3 Supply of Cleanup Materials

Sufficient quantities of sorbent material such as sand, straw bales and/or floor dry and other cleanup equipment are maintained at all sites to accomplish cleanup of oil spills should they occur.

5-4.2.4 Cleanup Procedures

In conjunction with the countermeasures of Section 5-4.1.0 and the reporting of Section 5-5.1.2, cleanup must be started. If the spilled material has been determined to be a non-PCB fluid or otherwise nonhazardous material, the cleanup procedure is as follows:

1. Remove all oil-saturated earth and oil-coated rock and prior to hauling the oil-contaminated material to an approved sanitary landfill, listed in Section 5-4.2.6.

a. Aerate the diesel and gasoline soaked soils by spreading and turning the soil to remove hydrocarbons

b. Take a soil sample on all oil (motor, hydraulic, transmission etc.) contaminated soils and test for TCLP, B-TEX, and TPH's, then wait for analyses to return and final approval for Utah State Department of Environmental Health.

This would also include oil on the surface of waterways and stream banks.

2. Clean concrete and metal surfaces with rags and degreasing agents. Use gloves or whatever is necessary to keep the agents off your skin and dispose of the rags with the other oil spill material cleaned up.

3. Repair all facilities designed for oil containment purposes should they be damaged during the spill or cleanup operations.

4. Submit recommendations, if any, on preventative measures to prevent or control future oil spills.

5-4.2.5 Disposal of Spent Cleanup Material

All spent cleanup material such as rags, sorbent,

oil, blankets, etc., must be disposed of in the same manner as contaminated rock and earth removed from the spill site - that is, taken to an approved sanitary landfill as listed in Section 5-4.2.6.

5-4.2.6 Approved Solid Waste Landfills

When disposing of spent cleanup materials or oil-contaminated rock and earth at an approved landfill, an Environmental Engineer will notify the landfill operator in advance to make sure the landfill is still in operation and has "approved" status from the State Bureau of Solid and Hazardous Waste.

Current information on approved landfills will be supplied by:

Utah State Department of Environmental Health
Dave Ariotti
(801) 637-3671

At the present time, the approved landfills in Carbon and Emery Counties are:

1. East Carbon Hazardous Waste Site
   East Carbon, Utah
   Carbon County

2. Emery County Landfill near Orangeville, Utah
   Dave Ariotti
   Utah State Department of Environmental Health
   (801) 637-3671

3. Barney Landfill (Emery Recycling)
   Next to Emery County Landfill
   Near Orangeville, Utah
   Ronald Barney
   (801) 384-2779

If any numbers given above do not provide the necessary information, call Utah State Bureau of Solid and Hazardous Waste at (801) 538-6170

5-5.0.0 Reporting

Reporting is very important and must be done carefully, accurately and timely.

5-5.1.0 When to Report and When Not to Report

As defined above in Section 5-1.3.0, a legally

reportable "oil spill" is any spillage, leakage, discharge or disposal of oil, grease, or other such petroleum product that enters or is threatening to enter any river, stream, canal, sewer, drain, lake or pond.

At all work sites, any leakage or spillage of oil that is in danger of leaving the property must be reported immediately to the Superintendent of Maintenance, Environmental Engineer, Shift Foreman, or Safety Manager. After the above people are notified, the Environmental Coordinator at Carbon County should be informed.

5-5.1.1 In-House Verbal Reporting

Any personnel discovering leakage or spillage at a site described in Section 5-5.1.0 above must notify their immediate supervisor, who will report it to the site Manager.

5-5.1.2 In-House Written Reporting

For any legally reportable spill, a complete written report must be submitted by the Environmental Engineer within five days of the original verbal report. The written report must address the same components described in Section 5-5.1.3 below and any additional issues deemed important by operating personnel.

5-5.1.3 The Environmental Engineer will execute all reporting to the agencies under direction of the Legal Department. Verbal notification to the agencies must be made within 24 hours of a legally reportable spill. In Utah, legally reportable oil spills are reported to:

1. U.S. Environmental Protection Agency
   Denver Place, Suite 1300
   999 18th Street
   Permits and Technical Support Branch
   (303) 293-1742

2. Utah Division of Health
   Bureau of Water Pollution Control
   288 North 1460 West
   P.O. Box 16690
   Salt Lake City, Utah 84116-0690
   (801) 538-6146

No one but a representative of Carbon County is authorized to call the Coast Guard concerning spills.

The following information must be included in the verbal report:

1. The company name
2. The name of the person reporting, including title and phone number
3. The location of the spill, including type of terrain and nearest waters or drains and anticipated movement of spilled material
4. The time the spill was first observed
5. Existing weather conditions
6. The device or activity involved when the spill occurred
7. The cause of the spill
8. The material spilled
9. The estimated quantity of the spill
10. When and what action was taken for countermeasures, control and cleanup
11. The effectiveness of cleanup operations

5-6.0.0 Compliance Schedule

5-6.1.0 Spill Control Facilities

The collection system and sediment pond in the permit area will prevent any discharge of oil from leaving the permit area and entering any waterway.

5-6.1.1 Drainage - Where feasible, oil and/or diesel tanks are to be bermed with total containment of all fluids.

5-6.2.0 Schedule of Compliance Actions

The various work Sites' Surface Storage is inspected by Ray Hanson or Carl Schade on a monthly basis to insure all necessary control facilities in place.

Section II - Verification and Authorization

To gain acceptance by the Utah Division of Health, Bureau of Water Pollution Control and EPA, this Spill Prevention Control and Countermeasures Plan must be signed by (1) a professional engineer, (2) a representative of management, and (3) Environmental Engineer. The stamp of the professional engineer certifies that the elements of the Plan, including the Compliance Schedule, are in accordance with good engineering practice and that the Compliance Schedule does not suggest any changes which will be contrary to good engineering practice. The signature of management certifies that management has knowledge of the Plan and that the necessary financial arrangements will be made for its implementation. The Environmental Engineer's signature certifies that he has knowledge of the plan and has notified and briefed the necessary operations personnel of the procedures required to implement the Plan. It will be the responsibility of the owners or the Environmental Engineer to assure that the Compliance Schedule is completed expeditiously and in accordance with the rest of the Plan.

Section III - Signatures

_____ _____

Superintendent of Maintenance Date

_____ _____

Carbon County Commissioner Date

_____ _____

Professional Engineer stamp Date

APPENDIX C

CORRESPONDENCE WITH NRCS CONCERNING PRIME FARMLAND

United States
Department of
Agriculture

Natural Resources
Conservation
Service

P.O. Box 11350
Salt Lake City, UT 84147
Phone (801) 524-5064

April 16, 1996

David Steed
Ecologist/Consultant
4855 N. Spring Glen Rd.
Spring Glen, Utah 84526

Dear Mr. Steed:

We have evaluated your prime farmland request for the Dugout Road Project, Carbon County. We have determined that the area is excluded from all categories of important farmlands because there is no developed irrigation system on arid soils.

If we can be of further assistance, please call on us.

Mike Domeca, for
WILLIAM BRODERSON
State Soil Scientist

APPENDIX D

LETTER FROM SOLDIER CREEK COAL – DUGOUT BRIDGES

Coastal
The Energy People

REID W. "RICK" OLSEN
VICE PRESIDENT AND GENERAL MANAGER
SOLDIER CREEK COAL COMPANY

May 9, 1996

Mel Coonrod
E.I.S., Inc.
4855 North Spring Glen Road
Helper, Utah 84526

Dear Mr. Coonrod:

This information is in response to our telephone conversation earlier this week related to the "age" of the wooden bridges which are part of the existing Dugout Canyon road infrastructure.

Please be advised that Soldier Creek Coal Company has concluded that these bridges did not exist prior to W.W. Clyde's Knight-Ideal Coal Company's underground coal mining activities in Dugout Canyon which commenced initially in 1958. This information is based upon copies of the Knight-Ideal mine progress maps which are available in our office.

In addition, I also contacted Lon Thayn (637-4301) and John Pappas (472-3456) who were former employees of Knight-Ideal at the Dugout operations. They both confirmed that the existing bridges were constructed after Knight-Ideal commenced operations in 1958. Thayn claims that the road "was just a trail" initially and was improved later. Both Thayn and Pappas are willing to discuss this matter with you or someone from the State if necessary.

In brief, to the best of Soldier Creek Coal Company's knowledge (which is based upon the aforementioned), the bridges in question are structures that are approximately 38 to 40 years old.

If you have any questions, please contact me or feel free to contact Msrs. Thayn and/or Pappas.

Sincerely,

R.W. Olsen
Vice President & General Manager

xc: Lee Semken - Carbon County
Reed Noble - Creamer & Noble Engineering
C. File - Dugout Canyon Project (Road)

Soldier Creek Coal Company
A SUBSIDIARY OF THE COASTAL CORPORATION
P O BOX 1029 • WELLINGTON UT 84542 • 801 637-6360 • FAX 801 637-0108

APPENDIX E

DUGOUT CREEK RIPARIAN COMMUNITY INVENTORY - EIS

DUGOUT CREEK RIPARIAN COMMUNITY INVENTORY: APRIL 1, 1996. ENVIRONMENTAL INDUSTRIAL SERVICES

The consulting firm of Environmental Industrial Services (EIS) was contracted by Carbon County to conduct a Riparian Inventory of Dugout Creek. The purpose of this inventory was to: 1) identify community types present and, 2) evaluate the potential impact on them by the proposed Dugout Canyon Road expansion and improvement.

In meetings with David Mills, wildlife biologist for the BLM Price River RA, it was determined that a site-specific inventory of all potentially impacted areas would be required. These site-specific areas and needs identified were:

* *Wetted area located in old stream meander near gate.*
* *200 foot section of Dugout Creek proposed for re-alignment.*
* *A potential wetland located below the existing Dugout Canyon Road.*
* *Community classification, based on major overstory and understory.*

Methodology:

With the aid of aerial maps taken of the Dugout area, as well as visits to the site using 7.5 quadrangle maps, the areal extent of existing riparian habitat was identified. With the aid of Riparian Community Type Classification of Utah and Southeastern Idaho (Padgett et al. 1989), the vegetation was categorized into four community types based on major overstory and understory vegetation. Generalized lengths for each community type were generated from odometer readings taken as field personnel travelled south from the gate and along the paralleling Dugout Canyon Road.

The upper, narrower portion of the canyon, from the gate down the adjacent road (1.6 miles), is characterized by two related community types, cottonwood/maple (Populus fremontii/Acer grandidentatum) and cottonwood/skunkbush (Populus fremontii/Rhus aromatica) (Figures 1 and 2). In both communities the overstory is dominated by Fremont cottonwood (Populus fremontii) and narrowleaf cottonwood (Populus angustifolia), with some Douglas fir (Pseudotsuga menziesii), pinyon pine (Pinus edulis), and Utah juniper (Juniperus osteoperma) occurring in small numbers. bigtooth maple (Acer grandidentatum) dominates the understory near the gate.

Approximately 1.0 mile downstream, the maple thins out and is replaced by skunkbush (Rhus aromatica var. trilobata), Utah serviceberry (Amelanchier utahensis), elderberry (Sambucus spp.), green rabbit-brush (Chrysothamnus viscidiflorus), and big sagebrush (Artemisia tridentata). At the lower reaches of this second vegetation zone, 1.5 miles south of the gate, there is a dense patch of cottonwood occurring where the flat topography of the stream bed allows for a small wetland. Mature Fremont cottonwood

and narrow leaf cottonwoods occupy the canopy of this area, with a dense thicket of replacement cottonwoods in the understory.

As the canyon widens and the stream channel becomes broader there is a vegetational change toward a dryer community type. The canopy opens up and the species composition moves from a dominate cottonwood type into a mixed pinyon pine - Utah juniper type with interspersed cottonwoods (Figures 2, 3, and 4). This gradual change becomes apparent just south of the wetland and continues to where Dugout Creek leaves the road, 3.1 miles south of the gate. In this area trees do not dominate the landscape. Cottonwoods are sparse, mostly mature, and occur only at the stream's edge. Big sagebrush and skunkbush are the most common species with pinyon pine and Utah juniper both abundant. At 4.8 miles, the creek returns to the road. No surface water flow was evident and the trend toward drier species types is even more apparent. Here there is only an occasional cottonwood with an increase in sage and juniper. This drier habitat type continues to where the creek leaves the road again. At this point (6.1 miles south of the gate) the riparian survey ended.

Findings:

With fulfillment of the proposed action the riparian area may experience some indirect impacts. Direct impacts would be avoided by realigning the road, away from Dugout Creek. Conclusions of this inventory are:

1. *Old wetted stream meander would be eliminated. It was determined through consultation with the Utah Division of Water Rights, that the area does not qualify as a wetland, and should be drained prior to construction. It appears that water may be accumulating from a subsurface source.*

2. *200 foot area identified for Hilfiker bank stabilization. By aligning road into hill slope (PLATE 15, Station 445-447), impact to bank above Dugout Creek, as well as movement of material into creek by the proposed road would be minimized.*

3. *Wetland identified near the existing road (See Figure 2). To eliminate any impact to the wetland, the road should be realigned (PLATE 12, Station 365-354).*

4. *Stabilization of the outslope of the proposed road would minimize/eliminate potential impacts of riparian contamination from road runoff and soil erosion (PLATES 9-12, All Stations)*

AERIAL PHOTOGRAPH (10/12/83)

FIGURE 1.

AERIAL PHOTOGRAPH (10/12/83)

FIGURE 2.

AERIAL PHOTOGRAPH (10/12/83)

FIGURE 3.

AERIAL PHOTOGRAPH (10/12/83)

FIGURE 4.

APPENDIX F

CORRESPONDENCE WITH USFWS CONCERNING TES SPECIES WITHIN AREA OF PROPOSED ACTION

RAPTOR SURVEY OF SOLDIER CANYON-DUGOUT CANYON AREA, 1995

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
LINCOLN PLAZA
145 EAST 1300 SOUTH, SUITE 404
SALT LAKE CITY, UTAH 84115

In Reply Refer To
(CO/KS/NE/UT)

April 12, 1996

David Steed
Environmental Industrial Services
4855 N. Spring Glen Rd.
Spring Glen, Utah 84526

RE: Dugout Canyon Mine Powerline, Telephoneline, and Road Improvement

Dear Mr. Steed:

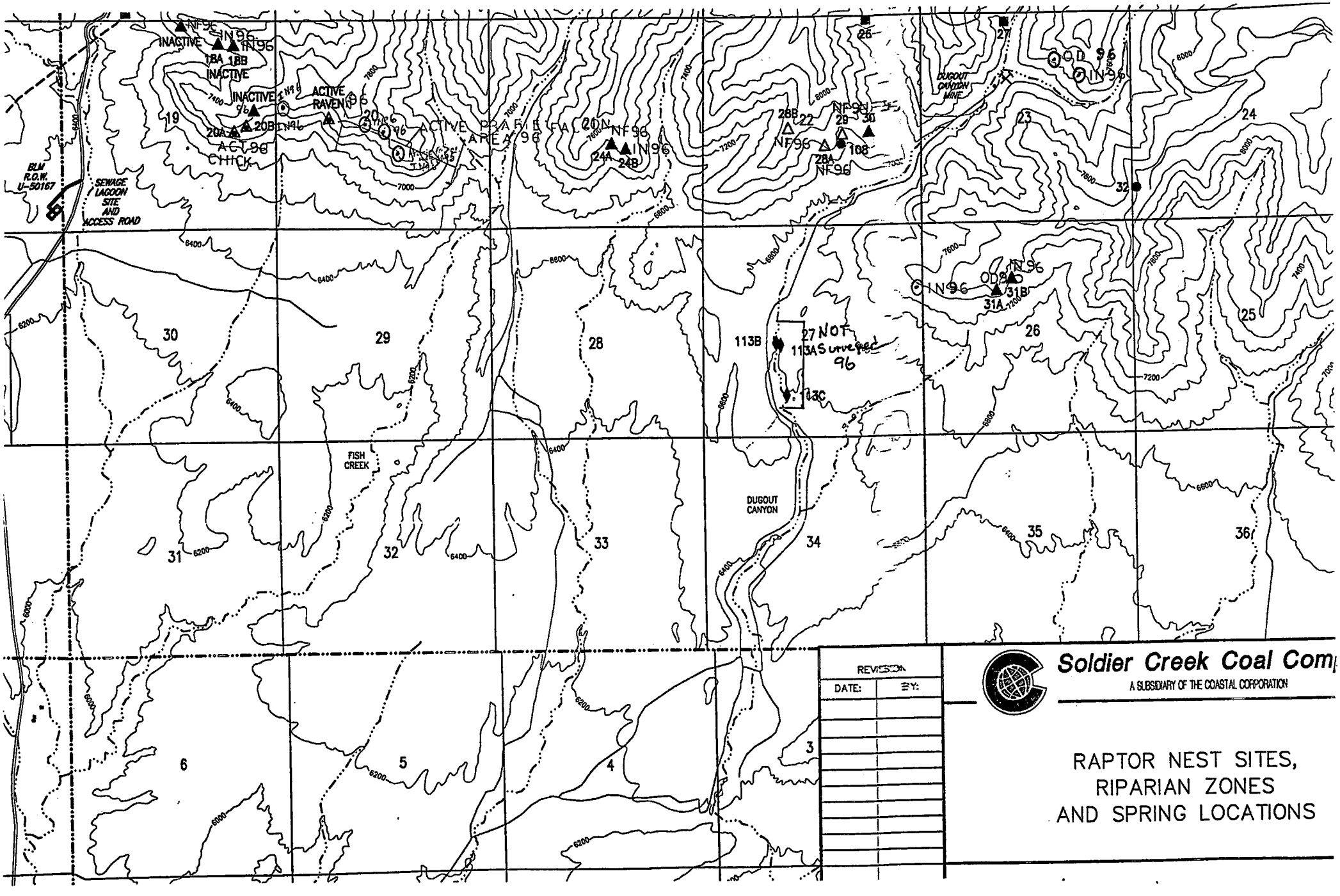
We received and reviewed your letter of March 11, 1996 concerning Utah Power and Light Company's proposed upgrade of an existing power line serving the Dugout Canyon Mine, US West's proposed improvement of a telephone line serving the same mine and Carbon Count's proposed improvement of the Dugout Canyon Road in Section 13, T14S, R11E; Sections 3, 4, 5, 8, 17, 18 T14S, R12E; and Sections 19, 22, 23, 27, 28, 29, 30 & 34 T13S, R12E SLBM in Carbon County, Utah. The U.S. Fish and Wildlife Service advises that no federally listed threatened or endangered species are known to occur on the project site.

If we can be of any further assistance please contact us.

Sincerely,

Robert D. Williams
Assistant Field Supervisor

cc: BLM, Price, Utah



REVISION	
DATE:	BY:

Soldier Creek Coal Com

A SUBSIDIARY OF THE COASTAL CORPORATION

RAPTOR NEST SITES, RIPARIAN ZONES AND SPRING LOCATIONS

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Robert G. Valentine
Division Director

Southeastern Region
455 West Railroad Avenue
Price, Utah 84501-2829
801-637-3310
801-637-7361 (Fax)

January 30, 1996

Barry Barnum
Utah Fuel Company
P.O. Box 719
Helper, Utah 84526

Dear Mr. Barnum:

On May 24, 1995 a raptor survey was conducted of the Alkali Lease, Soldier Canyon Mine, and Dugout Mine areas. This survey was conducted by Ben Morris and Bill Bates of the Utah Division of Wildlife Resources. The results of the survey are shown on the attached map. See PLATE 3-2

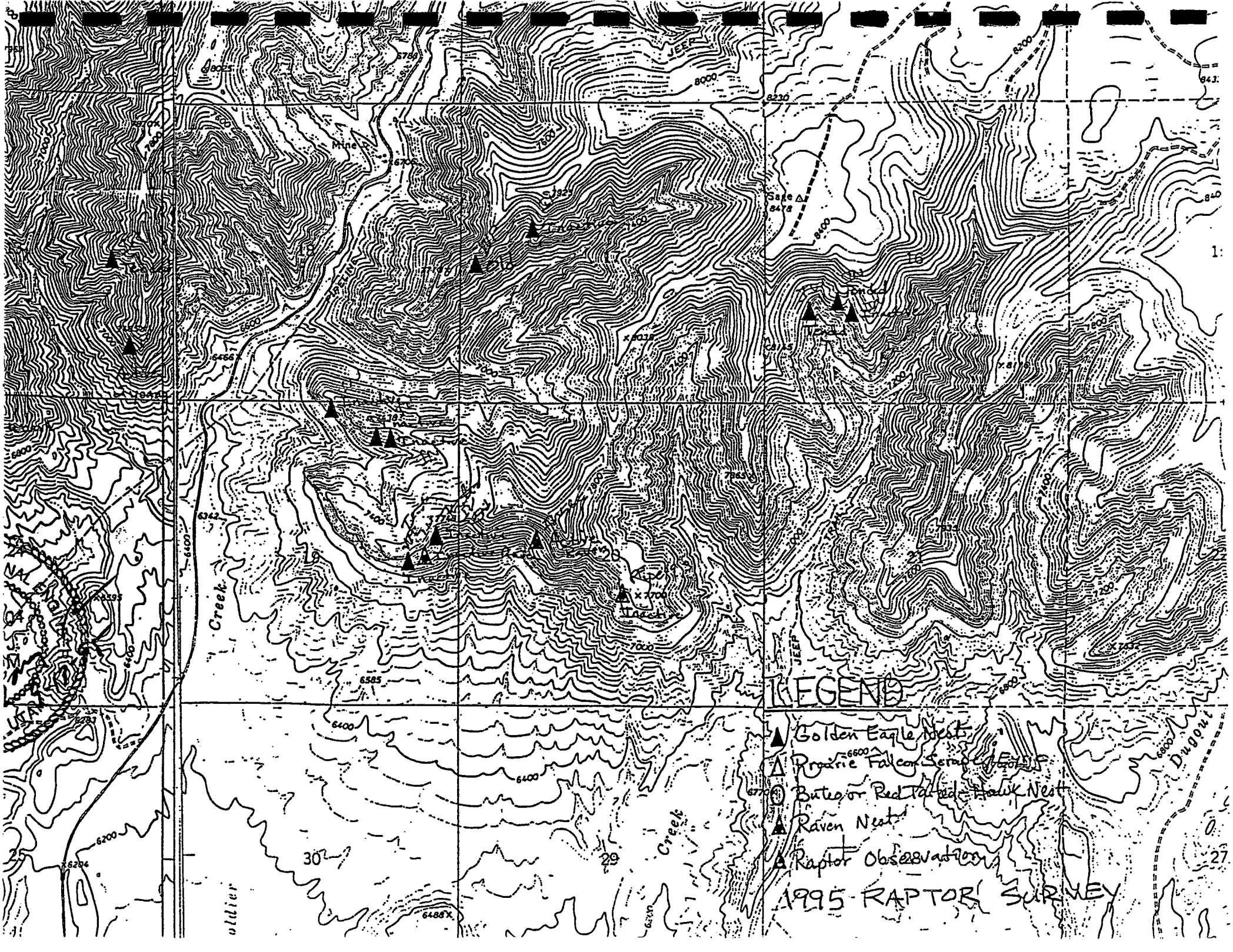
One active nest was found during the survey. It was a prairie falcon nest with 4 eggs.. A pair of golden eagles was observed in the Dugout Canyon area, but no active eagle nests were found.

If there are any questions, please contact Bill Bates.

Sincerely,

Bill Bates, for

Miles Moretti
Supervisor


LEGEND
Golden Eagle Nest
Prairie Falcon Nest
Buteo or Red Tailed Hawk Nest
Raven Nest
Raptor Observation
1995 RAPTOR SURVEY

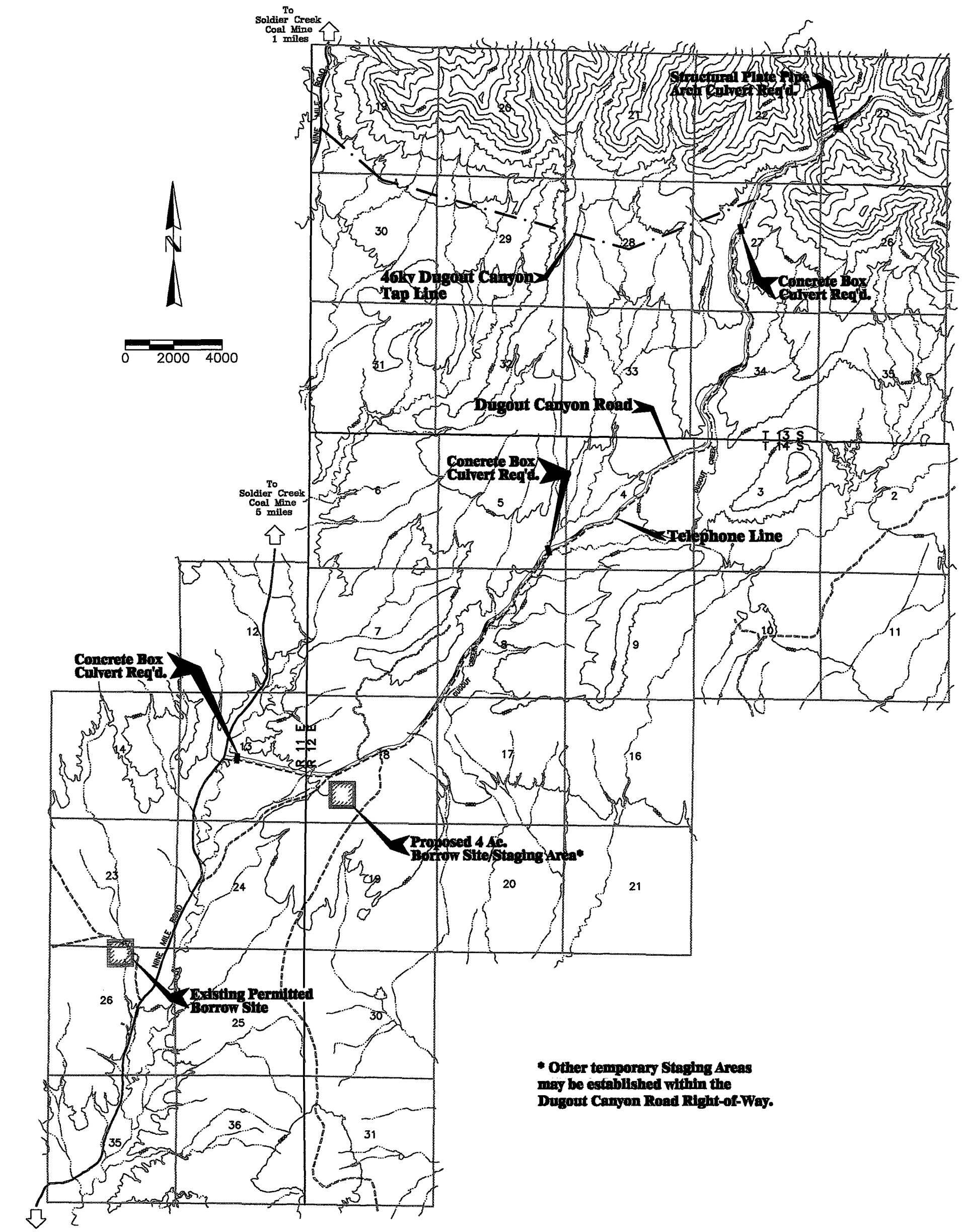
PROJECT LOCATION MAP

PROJECT VICINITY MAP

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Plate No.: 1

Dugout Canyon Road
Carbon County
GENERAL LACATION MAPS



*** Other temporary Staging Areas may be established within the Dugout Canyon Road Right-of-Way.**

Dugout Canyon Road
Carbon County
PROPOSED ACTION

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Plate No.: II

PI STA = 31+57.75
CIRCULAR
Δ= 13°02'12"
T = 68.56'
R = 600.00'
L = 136.52'
C = 136.23'

PI STA = 40+25.95
CIRCULAR
Δ= 8°45'35"
T = 45.96'
R = 600.00'
L = 91.73'
C = 91.64'

STA. 29+26
R1-1, 36"X36"
SIGN, REQ'D.

PC STA = 30+89.20

PT STA = 32+25.72

STA. 31+00
R2-1, 24"x30"
SIGN, REQ'D.

STA. 35+47 DOUBLE BARREL 14'x10'
CONCRETE BOX CULVERT, REQ'D.
SEE STRUCTURAL DRAWINGS S1
110' X-ING

STA. 43+70 24" PIPE CULVERT
CLASS C WITH END SECTIONS, REQ'D.
90° X-ING

STA. 47+39 36" PIPE CULVERT
CLASS C WITH END SECTIONS, REQ'D.
135' X-ING

STA. 50+16 24" PIPE CULVERT
CLASS C WITH END SECTIONS, REQ'D.
135' X-ING

STA. 53+58 24" PIPE CULVERT
CLASS C WITH END SECTIONS, REQ'D.
90° X-ING

PC STA = 39+79.99

PT STA = 40+71.72

EXISTING FENCE

EXISTING FENCE

BOP = 29+17
@ EDGE OF EXISTING RD

STA. 29+60 30" PIPE CULVERT
CLASS C WITH END SECTIONS, REQ'D.
80° X-ING

SCALES:
1" =100' HOR
1" =20' VER

S76°28'32"E

S85°38'44"E

S76°45'09"E

30+00

35+00

40+00

45+00

50+00

55+00

BOP STA = 29+17
BOP EL = 5734.23

VPI STA = 30+00
VPI EL = 5735.50

VC = 160'

VPC STA = 28+20
VPC EL = 5734.28

30" PIPE CULVERT
CLASS C REQ'D

VPT STA = 30+80
VPT EL = 5734.78

VPI STA = 33+00
VPC EL = 5732.80

14'x10' DOUBLE BARREL
CONCRETE BOX CULVERT

VPT STA = 37+00
VPT EL = 5738.20

VC = 400'
VPI STA = 35+00
VPI EL = 5731.00

VPC STA = 39+00
VPC EL = 5745.40

VPI STA = 40+00
VPI EL = 5749.00

VC = 200'

VPT STA = 41+00
VPT EL = 5751.57

24" PIPE CULVERT
CLASS C REQ'D

36" PIPE CULVERT
CLASS C REQ'D

24" PIPE CULVERT
CLASS C REQ'D

24" PIPE CULVERT
CLASS C REQ'D

VPC STA = 55+00
VPC EL = 5787.55

VPI STA = 56+50
VPI EL = 5791.40

VC = 300'

VPT STA = 58+00

-0.90%

3.60%

2.57%

0.25%

5840
5820
5800
5780
5760
5740
5720
5700
5680
5660

8+00 9+00 30+00 1+00 2+00 3+00 4+00 35+00 6+00 7+00 8+00 9+00 40+00 1+00 2+00 3+00 4+00 45+00 6+00 7+00 8+00 9+00 50+00 1+00 2+00 3+00 4+00 55+00 6+00 7+00 8+00

5734.67 5733.01 5734.98 5734.60 5733.70 5732.80 5732.48 5732.46 5732.72 5733.25 5734.07 5735.16 5736.54 5738.20 5741.80 5745.40 5747.14 5748.74 5750.22 5751.57 5754.14 5756.71 5759.28 5761.85 5764.42 5766.98 5769.56 5772.13 5774.70 5777.27 5779.84 5782.41 5784.96 5787.55 5788.73 5789.73 5790.53 5791.14 5791.55 5791.77

DESIGNED DJS
CHECKED KRN
DRAWN LOB
DATE APPROVED
PROJECT NO.
SCALE AS SHOWN

REVISION DATE
REVISION DATE
REVISION DATE

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 28+00 - 58+00

RCP01800
SHEET NO.
1

S76°45'05"E

PC STA = 61+68.50

PT STA = 62+97.87

PI STA = 62+43.34

CIRCULAR
I = 10°26'40"
T = 54.84'
R = 600.00'
L = 109.37'
C = 109.22'

STA. 64+05 36" PIPE CULVERT CLASS C WITH END SECTIONS, REQ'D. 90° X-ING

STA. 64+70 24" PIPE CULVERT CLASS C WITH END SECTIONS, REQ'D. 110° X-ING

STA 66+00 END SURFACE DITCH, REQ'D

STA 67+00 BEGIN REMOVAL EXISTING FENCE REQ'D, 32' CATTLE GUARD TYPE I, REQ'D, BEGIN R.O.W. FENCE TYPE A, REQ'D,

STA. 68+18 24" PIPE CULVERT CLASS C WITH END SECTIONS, REQ'D. 63° X-ING

S87°11'48"E

STA 72+00 END R.O.W. FENCE TYPE A, REQ'D END REMOVAL EXISTING FENCE, REQ'D

PC STA = 72+91.02

PT STA = 76+12.29

N82°07'26"E

STA. 71+60 24" PIPE CULVERT CLASS C WITH END SECTIONS, REQ'D. 90° X-ING

PI STA = 74+55.60
CIRCULAR
I = 30°40'45"
T = 164.59'
R = 600.00'
L = 321.27'
C = 317.45'

STA 76+00 BEGIN SMALL DITCH EXCAVATION, REQ'D

STA 78+50 END SMALL DITCH EXCAVATION, REQ'D

SCALES:
1" =100' HOR
1" =20' VER

VPC STA = 63+00
VPC EL = 5793.01

36" PIPE CULVERT CLASS C REQ'D

24" PIPE CULVERT CLASS C REQ'D

VPT STA = 67+00
VPT EL = 5805.18

24" PIPE CULVERT CLASS C REQ'D

VC = 400'
VPI STA = 65+00
VPI EL = 5793.50

0.25%

VPC STA = 75+00
VPC EL = 5851.91

6.84%

VPI STA = 76+00
VPI EL = 5857.75

VC = 200'

VPT STA = 77+00
VPT EL = 5862.58

VPC STA = 78+00
VPC EL = 5867.58

4.81%

VPI STA = 80+00
VPI EL = 5877.00
VC = 400'

VPT STA = 82+00
VPT EL = 5879.67

1.34%

VPT STA = 59+00
VPT EL = 5791.77

5900 5880 5860 5840 5820 5800 5780 5760 5740 5720

7+00 8+00 9+00 60+00 1+00 2+00 3+00 4+00 65+00 6+00 7+00 8+00 9+00 70+00 1+00 2+00 3+00 4+00 75+00 6+00 7+00 8+00 9+00 80+00 1+00 2+00 3+00 4+00 85+00 6+00 7+00

5791.55 5791.77 5792.02 5792.26 5792.51 5792.76 5793.01 5793.30 5793.55 5794.55 5796.30 5797.38 5800.04 5802.44 5805.18 5811.02 5816.36 5822.70 5828.55 5834.39 5840.23 5846.07 5851.91 5854.77 5857.45 5860.09 5862.36 5867.36 5869.67 5871.75 5873.62 5875.26 5876.69 5877.90 5878.90 5879.67 5881.01 5882.35 5883.66 5885.02 5886.36

DESIGNED DJS | DRAWN LOB | CHECKED KRN | DATE APPROVED | PROJECT NO. | SCALE AS SHOWN

REVISION | DATE

REVISION | DATE

REVISION | DATE

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE

RCP02800

SHEET NO.
2

87+30 L+
20' GRAVELED ACCESS, REQ'D

STA 87+44 24" PIPE CULVERT
CLASS C W/END SECTIONS, REQ'D
90° XING

EXISTING
FENCE

N62°07'26"E

STA 96+68 RT
20' GRAVELED ACCESS' REQ'D

PC STA = 96+62.30

PT STA = 98+90.12

PI STA = 97+77.16

CIRCULAR
Δ= 18°00'17"
T = 114.86'
R = 725.00'
L = 227.82'
C = 226.89'

N80°07'43"E

STA 103+15 24" PIPE CULVERT
CLASS C W/END SECTIONS, REQ'D
90° XING

PC STA = 104+07.81

PT STA = 107+91.92

PI STA = 106+07.40

CIRCULAR
Δ= 38°24'37"
T = 199.58'
R = 572.96'
L = 384.10'
C = 376.95'

STA 107+85 REMOVE AND
SALVAGE CATTLE GUARD,
REQ'D
32' CATTLE GUARD TYPE I
REQ'D TIE TO EXISTING
FENCE, REQ'D

STA 109+80 RT
20' GRAVELED ACCESS
REQ'D

STA 111+32 REMOVE AND
SALVAGE 48" RCP REQ'D
48" PIPE CULVERT CLASS C
W/CONCRETE HEADWALL,
REQ'D 90°-XING

N41°43'06"E

SCALES:
1" =100' HOR
1" =20' VER

VPI STA = 97+50
VPI EL = 5900.46
VC = 560'

24" PIPE CULVERT
CLASS C REQ'D

1.34%

VPC STA = 95+00
VPC EL = 5897.06

VPT STA = 100+00
VPT EL = 5888.73

4.67%

VC = 250'
VPI STA = 102+00
VPI EL = 5878.40

VPC STA = 100+75
VPC EL = 5885.23

VPT STA = 103+25
VPT EL = 5877.46

24" PIPE CULVERT
CLASS C REQ'D

1.65%

VPC STA = 108+00
VPC EL = 5868.55

VPT STA = 111+00
VPT EL = 5866.49

48" PIPE CULVERT
CLASS C REQ'D

0.51%

VC = 250'
VPI STA = 110+00
VPI EL = 5867.00

5940 5920 5900 5880 5860 5840 5820 5800 5780 5760

5866.36 5867.70 5869.03 5890.37 5891.71 5893.05 5894.38 5895.72 5897.06 5897.58 5892.79 5897.71 5897.33 5896.65 5895.67 5894.36 5892.80 5890.92 5888.73 5884.11 5882.08 5880.37 5878.98 5877.88 5876.30 5874.75 5873.20 5871.55 5870.10 5866.55 5867.84 5867.26 5866.61 5866.45 5865.98 5865.47 5864.96 5864.44 5863.93

6+00 7+00 8+00 9+00 90+00 1+00 2+00 3+00 4+00 95+00 6+00 7+00 8+00 9+00 100+00 1+00 2+00 3+00 4+00 105+00 6+00 7+00 8+00 9+00 110+00 1+00 2+00 3+00 4+00 115+00 6+00

DESIGNED DJS
CHECKED KRN
DRAWN LOB
DATE APPROVED
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SCALE AS SHOWN

REVISION	DATE
REVISION	DATE
REVISION	DATE

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 86+00 - 116+00

SHTNAME
SHEET NO.
3

PC STA = 118+52.04

PT STA = 120+47.34

PT STA = 142+44.94

PC STA = 140+48.45

PI STA = 119+49.84

CIRCULAR
Δ= 7°48'43"
T = 97.80'
R = 1432.39'
L = 195.30'
C = 195.15'

PI STA = 141+47.01

CIRCULAR
Δ= 11°15'28"
T = 98.56'
R = 1000.00'
L = 196.48'
C = 196.17'

N33°54'25" E

STA 119+00 24" PIPE CULVERT, REQ'D CLASS C W/END SECTIONS, 90° XING

STA 132+48 24" PIPE CULVERT CLASS C W/END SECTIONS, REQ'D 90° XING

STA 137+08 REMOVE AND SALVAGE 24" PIPE CULVERT REQ'D, 24" PIPE REQ'D, CLASS C W/END SECTION, 90° X-ING

SCALES:
1" =100' HOR
1" =20' VER

VPC STA = 117+75
VPC EL = 5863.34

VPT STA = 120+25
VPT EL = 5865.53

VC = 250'
VPI STA = 119+00
VPI EL = 5862.40

-0.51%

2.50%

VPC STA = 127+50
VPC EL = 5881.65

VPI STA = 129+00
VPI EL = 5887.40

VC = 300'

VPT STA = 130+50
VPT EL = 5886.30

24" PIPE CULVERT CLASS C REQ'D

0.73%

VPC STA = 134+00
VPC EL = 5883.73

VC = 200'
VPI STA = 135+00
VPI EL = 5883.00

VPT STA = 136+00
VPT EL = 5884.53

24" PIPE CULVERT CLASS C REQ'D

0.53%

VPC STA = 138+50
VPC EL = 5888.37

VC = 200'
VPI STA = 139+50
VPI EL = 5889.90

VPT STA = 140+50
VPT EL = 5893.03

3.13%

5960 5940 5920 5900 5880 5860 5840 5820 5800 5780

5863.93 5863.42 5862.95 5862.99 5863.34 5863.99 5864.94 5866.40 5868.90 5872.40 5876.90 5877.40 5879.90 5882.40 5883.65 5884.77 5885.61 5886.19 5886.46 5886.53 5886.30 5885.93 5885.20 5884.47 5883.73 5883.51 5883.57 5883.91 5884.53 5886.07 5887.60 5888.37 5889.23 5890.30 5891.57 5893.03 5894.60 5897.73 5900.86 5903.98 5907.12

115+00 6+00 7+00 8+00 9+00 120+00 1+00 2+00 3+00 4+00 125+00 6+00 7+00 8+00 9+00 130+00 1+00 2+00 3+00 4+00 135+00 6+00 7+00 8+00 9+00 140+00 1+00 2+00 3+00 4+00 145+00

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CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 115+00 - 145+00

SHTNAME
SHEET NO.
4

PI STA = 149+89.11
CIRCULAR
Δ= 15°44'54"
T = 79.24'
R = 572.96'
L = 157.48'
C = 156.99'

PI STA = 156+06.47
CIRCULAR
Δ= 7°12'01"
T = 185.61'
R = 2950.00'
L = 370.72'
C = 370.48'

PI STA = 168+27.96
CIRCULAR
Δ= 36°29'01"
T = 188.84'
R = 572.96'
L = 364.84'
C = 358.70'

PI STA = 161+77.12
CIRCULAR
Δ= 24°24'16"
T = 123.90'
R = 572.96'
L = 244.04'
C = 242.20'

PI STA = 173+85.15
CIRCULAR
Δ= 6°44'05"
T = 130.71'
R = 2400.00'
L = 261.16'
C = 261.03'

STA 149+70 24" PIPE CULVERT CLASS C W/END SECTIONS, REQ'D 90° X-ING

STA 162+01 24" PIPE CULVERT CLASS C W/END SECTIONS, REQ'D 90° X-ING

STA 164+00 BEGIN HAY OR STRAW EROSION CONTROL CHECK DAM, REQ'D

STA 167+00 END HAY OR STRAW EROSION CONTROL CHECK DAM, REQ'D

STA 172+50 60" PIPE CULVERT CLASS C W/HEADWALL, REQ'D 90° X-ING

PC STA = 149+09.86
PT STA = 150+67.36
PC STA = 154+20.87
PT STA = 157+91.58
PC STA = 160+53.22
PT STA = 162+97.26
PT STA = 166+56.11
PT STA = 170+03.95
PC STA = 172+54.44

N22°38'55"E
N36°23'49"E
N45°35'61"E
N27°11'55"E
N57°40'55"E

SCALES:
1" =100' HOR
1" =20' VER

VPI STA = 151+00
VPI EL = 5925.90
VC = 200'
24" PIPE CULVERT CLASS C REQ'D
VPC STA = 150+00
VPC EL = 5922.77
VPT STA = 152+00
VPT EL = 5922.42
5.13%
1.52%

VPI STA = 157+58
VPI EL = 5935.80
VC = 300'
VPC STA = 156+00
VPC EL = 5933.52
VPT STA = 159+00
VPT EL = 5934.33
-0.98%

VPI STA = 161+00
VPI EL = 5932.36
24" PIPE CULVERT CLASS C REQ'D
VC = 400'
VPI STA = 163+00
VPI EL = 5930.40
VPC STA = 161+80
VPC EL = 5933.11
VPT STA = 165+00
VPT EL = 5939.11

VPI STA = 167+50
VPI EL = 5950.00
VC = 300'
VPC STA = 166+00
VPC EL = 5943.47
VPT STA = 169+00
VPT EL = 5952.59
4.36%

VPI STA = 173+00
VPI EL = 5959.50
VC = 200'
VPC STA = 172+00
VPC EL = 5957.77
60" PIPE CULVERT CLASS C REQ'D
VPT STA = 174+00
1.73%

6000 5980 5960 5940 5920 5900 5880 5860 5840 5820

5907.12 5910.25 5913.38 5916.51 5919.64 5922.77 5924.23 5925.50 5926.56 5927.42 5928.95 5930.47 5931.99 5933.52 5934.17 5934.62 5934.86 5934.86 5934.71 5934.33 5933.35 5932.36 5932.04 5932.05 5932.39 5933.07 5934.08 5935.42 5937.10 5939.11 5943.47 5945.53 5947.38 5949.01 5950.43 5951.62 5952.59 5954.32 5956.05 5957.77 5958.60 5959.34 5960.01 5960.60

4+00 145+00 6+00 7+00 8+00 9+00 150+00 1+00 2+00 3+00 4+00 155+00 6+00 7+00 8+00 9+00 160+00 1+00 2+00 3+00 4+00 165+00 6+00 7+00 8+00 9+00 170+00 1+00 2+00 3+00 4+00

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

DESIGNED	DJS	DATE	
CHECKED	KRN	REVISION	DATE
DRAWN	LOB	REVISION	DATE
DATE APPROVED		REVISION	DATE
PROJECT NO.			
SCALE	AS SHOWN		

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 144+00 – 174+00

SHTNAME
SHEET NO. 5

PI STA = 175+85.15
N51°26'30"E
PT STA = 175+15.60
PC STA = 176+00
PI STA = 181+63.45
CIRCULAR
Δ= 39°38'22"
T = 206.50'
R = 572.96'
L = 396.39'
C = 388.54'
PC STA = 179+56.95
PT STA = 183+53.34
PI STA = 186+28.97
CIRCULAR
Δ= 28°23'04"
T = 144.90'
R = 572.96'
L = 283.84'
C = 280.95'
N11°48'07"E
PC STA = 184+84.07
PT STA = 187+67.92
STA 180+95 24" PIPE CULVERT CLASS C W/END SECTIONS, REQ'D 90° X-ING
STA 188+85 REMOVE EXISTING 30" CMP. INSTALL 30" PIPE CULVERT CLASS C W/ END SECTIONS 90° X-ING
N40°11'13"E
PC STA = 197+40
PT STA = 201+74.10
PI STA = 199+58.39
CIRCULAR
Δ= 15°32'43"
T = 218.39'
R = 1600.00'
L = 434.11'
C = 432.78'
SCALES:
1" =100' HOR
1" =20' VER
VPT STA = 174+00
VPT EL = 5950.00
VC = 200'
VPI STA = 178+00
VPI EL = 5965.00
VPC STA = 177+00
VPC EL = 5963.90
VPT STA = 179+00
VPT EL = 5967.96
1.10%
2.93%
VPI STA = 184+00
VPI EL = 5982.75
VC = 200'
24" PIPE CULVERT CL CLASS C REQ'D
VPC STA = 183+00
VPC EL = 5979.79
VPT STA = 185+00
VPT EL = 5985.39
30" PIPE CULVERT CL CLASS C REQ'D
2.84%
VPI STA = 196+00
VPI EL = 6014.40
VC = 200'
VPC STA = 195+00
VPC EL = 6011.76
VPT STA = 197+00
VPT EL = 6018.83
2.63%
VPC STA = 203+00

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

	DATE	REVISION

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Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 173+00 – 203+00

SHTNAME
SHEET NO. 6

PI STA = 206+08.06

CIRCULAR
Δ= 36°41'37"
T = 190.01'
R = 572.96'
L = 366.94'
C = 360.70'

STA 206+50 LT
20' GRAVELED ACCESS
ROAD, REQ'D
12" PIPE CULVERT CLASS C
W/END SECTIONS, REQ'D

205+00

N24°35'29"E

PC STA = 204+18.06

PT STA = 207+84.99

STA 208+50
REMOVE BRIDGE REQ'D
15'x6.5' CONCRETE BOX
CULVERT, REQ'D (110'
X-ING

N61°20'02"E

PI STA = 211+72.65

CIRCULAR
Δ= 14°53'06"
T = 74.85'
R = 572.96'
L = 148.85'
C = 148.43'

210+00

PC STA = 210+97.81

PT STA = 212+46.66

STA 211+00
BEGIN HAY OR STRAW
EROSION COUNTROL CHECK
DAM, REQ'D

PI STA = 214+75.30

CIRCULAR
Δ= 19°15'08"
T = 97.18'
R = 572.96'
L = 192.52'
C = 191.62'

PC STA = 213+78.12

215+00

PT STA = 215+70.64

STA 215+70 24" PIPE CULVERT
CLASS C W/END SECTION, REQ'D
90° X-ING

STA 217+82 REMOVE & SALVAGE
EXISTING CATTLE GUARD REQ'D
INSTALL 22' CATTLE GUARD TYPE
1 REQ'D

N76°13'W

N56°58'03"E

220+00

PC STA = 222+56.42

PT STA = 222+94.98

225+00

CIRCULAR
PI STA = 223+49.91
Δ= 10°40'55"
T = 93.49'
R = 1000.00'
L = 186.44'
C = 186.17'

STA 223+68 24" PIPE CULVERT
CLASS C W/END SECTIONS,
135° X-ING

STA 226+00
BEGIN SURFACE DITCH
REQ'D

STA 228+00
END SURFACE DITCH
REQ'D

STA 229+00
END STRW OR HAY
EROSION CONTROL
CHECK DAM REQ'D

230+00

PC STA = 225+78.98

PI STA = 227+28.08

CIRCULAR
Δ= 29°10'19"
T = 149.09'
R = 572.96'
L = 291.72'
C = 288.58'

PT STA = 228+70.70

PC STA = 230+80.47

PT STA = 231+79.62

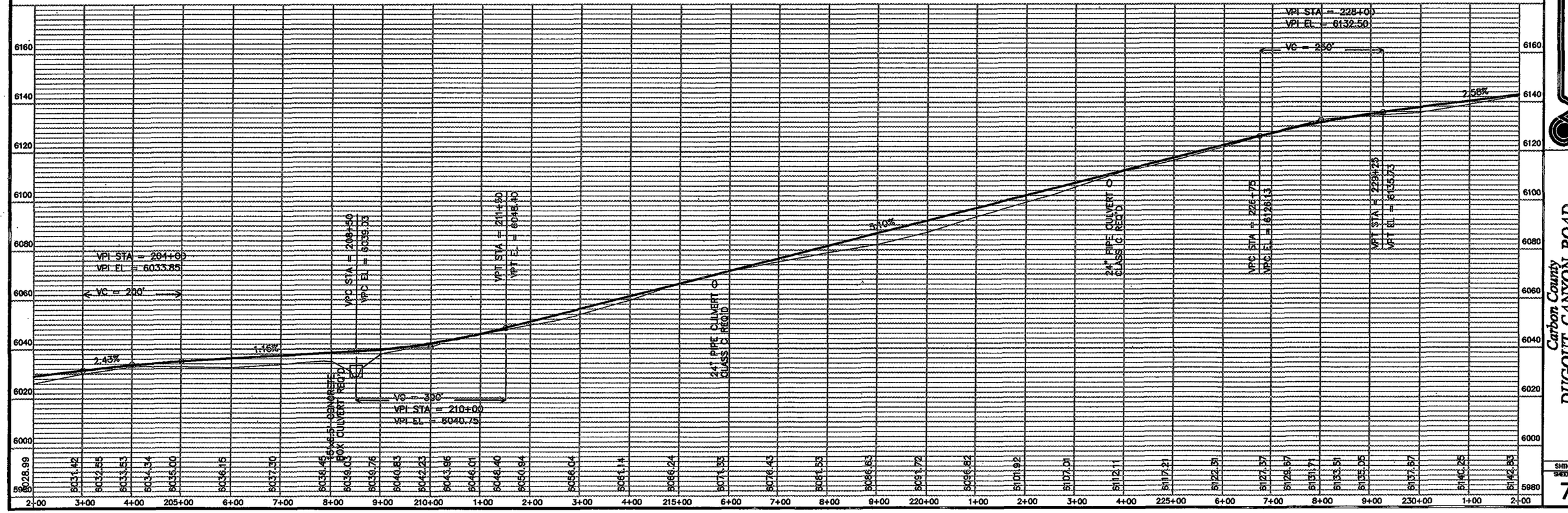
STA 231+33
20' GRAVELED ACCESS
ROAD, REQ'D

PI STA = 231+30.06

CIRCULAR
Δ= 3°47'14"
T = 49.59'
R = 1500.00'
L = 99.15'
C = 99.13'

N75°21'29"E

SCALES:
1" =100' HOR
1" =20' VER



DESIGNED DJS
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CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 202+00 - 232+00

SHTNAME
SHEET NO.
7

PI STA = 231+30.06

PT STA = 231+79.62

N79°14'42"E

PC STA = 235+42.98

STA 238+02 30" PIPE CULVERT CLASS C, WITH END SECTION REQ'D 90° X-ING

PT STA = 239+86.54

PI STA = 237+82.40

CIRCULAR
Δ= 45°21'24"
T = 239.42'
R = 572.96'
L = 453.57'
C = 441.82'

PI STA = 242+79.53

CIRCULAR
Δ= 11°25'18"
T = 135.01'
R = 1350.00'
L = 269.12'
C = 268.62'

N39°53'18"E

PC STA = 241+44.52

PT STA = 244+13.64

PI STA = 249+36.20

CIRCULAR
Δ= 15°17'23"
T = 147.65'
R = 1100.00'
L = 293.54'
C = 292.67'

N45°18'35"E

PC STA = 247+88.56

PT STA = 250+62.10

N60°35'58"E

PC STA = 254+12.47

PT STA = 258+60.07

PI STA = 256+48.40

CIRCULAR
Δ= 44°45'36"
T = 235.92'
R = 572.96'
L = 447.60'
C = 436.30'

STA 259+14 RT
20' GRAVELED ACCESS ROAD, (REQ'D 12" PIPE CULVERT CLASS C W/ END SECTIONS, REQ'D

STA 259+93 REMOVE 18" CMP REQ'D 24" PIPE CULVERT CLASS C W/END SECTION, REQ'D, 90° X-ING

PI STA = 265+07.15

CIRCULAR
Δ= 50°08'15"
T = 280.66'
R = 600.00'
L = 525.04'
C = 508.45'

N15°50'24"E

PC STA = 262+28.49

SCALES:
1" =100' HOR
1" =20' VER

VPI STA = 234+00
VPI EL = 6148.00
VC = 200'

VPC STA = 233+00
VPC EL = 6145.42

VPT STA = 235+00
VPT EL = 6148.50

0.50%

2.58%

VPC STA = 236+50
VPC EL = 6149.25

30" PIPE CULVERT CLASS C REQ'D

VC = 300'
VPI STA = 238+00
VPI EL = 6150.00

VPT STA = 239+50
VPT EL = 6155.16

3.44%

VPI STA = 255+50
VPI EL = 6210.25
VC = 300'

VPC STA = 254+00
VPC EL = 6205.09

VPT STA = 257+00
VPT EL = 6211.75

1.90%

24" PIPE CULVERT CLASS C REQ'D

6240 6220 6200 6180 6160 6140 6120 6100 6080 6060

1+00 2+00 3+00 4+00 235+00 6+00 7+00 8+00 9+00 240+00 1+00 2+00 3+00 4+00 245+00 6+00 7+00 8+00 9+00 250+00 1+00 2+00 3+00 4+00 255+00 6+00 7+00 8+00 9+00 260+00 1+00

6142.83 6145.42 6146.58 6147.48 6148.12 6148.50 6149.00 6149.25 6149.82 6150.24 6151.10 6152.21 6153.57 6155.16 6156.89 6160.33 6163.77 6167.21 6170.86 6174.10 6177.54 6180.98 6184.43 6187.87 6191.31 6194.75 6198.20 6201.64 6205.09 6206.71 6206.12 6209.33 6210.34 6211.5 6211.75 6212.75 6213.75 6214.75 6215.75

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

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Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 231+00 – 261+00

SHTNAME
SHEET NO. 8

PI STA = 265+07.15

CIRCULAR
Δ= 50°08'15"
T = 280.66'
R = 600.00'
L = 525.04'
C = 508.45'

PC STA = 262+26.49

PT STA = 267+57.33
STA 267+35
REMOVE EXISTING 24" CMP
24" PIPE CULVERT CLASS C
W/END SECTION REQ'D
90° X-ING

STA 268+60
BEGIN SURFACE DITCH, REQ'D

STA 270+60
END SURFACE DITCH, REQ'D

PC STA = 270+06.65

PT STA = 274+77.24

PI STA = 272+42.57

CIRCULAR
Δ= 10°10'29"
T = 235.92'
R = 2650.00'
L = 470.59'
C = 469.98'

PI STA = 280+43.93

CIRCULAR
Δ= 19°50'07"
T = 139.88'
R = 800.00'
L = 276.95'
C = 275.57'

PC STA = 279+04.05

PT STA = 281+80.01

STA 284+50
BEGIN HAY OR STRAW BAIL
EROSION CONTROL CHECK
DAM, REQ'D

PC STA = 284+86.77

STA 285+08 24" PIPE CULVERT
CLASS C W/ END SECTIONS, REQ'D
80° X-ING

STA 286+10
W1-2L SIGN REQ'D
W/ W13-1 30 MPH
SIGN, REQ'D

PI STA = 291+10.03

CIRCULAR
Δ= 76°36'27"
T = 323.25'
R = 409.26'
L = 547.20'
C = 507.34'

SCALES:
1" =100' HOR
1" =20' VER

VPC STA = 253+25
VPC EL = 6218.00
VC = 250'
VPI STA = 256+75
VPI EL = 6223.82
1.00%
3.66%
24" PIPE CULVERT
CLASS C REQ'D
VPC STA = 276+50
VPC EL = 6263.14
VPI STA = 279+50
VPI EL = 6268.01
VC = 200'
VPI STA = 277+50
VPI EL = 6266.80
2.71%
VPC STA = 284+50
VPC EL = 6280.28
24" PIPE CULVERT
CLASS C REQ'D
VC = 300'
VPI STA = 286+00
VPI EL = 6285.60
6.36%

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

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Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 260+00 - 290+00

SHTNAME
SHEET NO. 9

PI STA = 308+68.39

CIRCULAR
Δ= 82°48'49"
T = 505.25'
R = 572.96'
L = 828.14'
C = 757.91'

PC STA = 287+86.77

PT STA = 295+15.91

STK 294+00
SILT HAY OR STRAW BAIL
EROSION CONTROL CHECK
DAM, REQ'D

STA 295+10
W1-2R SIGN REQ'D &
W/ W13-1 30 MPH
SIGN, REQ'D

30 MPH

290+00

295+00

300+00

305+00

310+00

315+00

320+00

N01°58'10"W

PC STA = 299+63.40

PT STA = 304+63.14

PI STA = 299+96.19

CIRCULAR
Δ= 34°58'05"
T = 180.48'
R = 572.96'
L = 349.68'
C = 344.28'

STA 308+32
REMOVE EXISTING 24" CMP, REQ'D
24" PIPE CULVERT CLASS C W/END
SECTION, REQ'D 90° X-ING

PT STA = 311+81.28

STA 311+85
REMOVE EXISTING 24" CMP, REQ'D
24" PIPE CULVERT CLASS C W/END
SECTION, REQ'D 90° X-ING

N68°57'44"E

PC STA = 314+15.44

STA 315+58
REMOVE EXISTING 24" CMP, REQ'D
24" PIPE CULVERT CLASS C W/END
SECTION, REQ'D 90° X-ING

PI STA = 318+62.85

CIRCULAR
Δ= 23°09'45"
T = 117.42'
R = 572.96'
L = 231.63'
C = 230.09'

PC STA = 317+13.21

PI STA = 323+77.06

PI STA = 291+10.03

SCALES:
1" =100' HOR
1" =20' VER

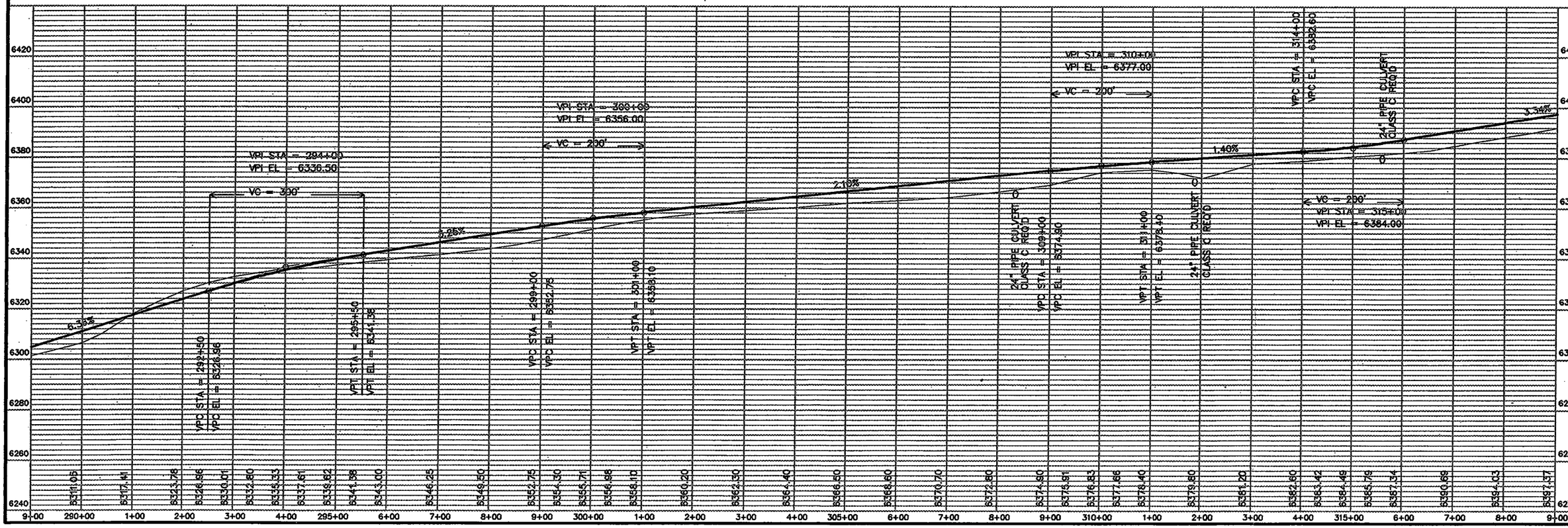
STA 293+63 RIGHT
20' GRAVELED ACCESS
ROAD, REQ'D

PT STA = 323+40.81

CIRCULAR
Δ= 38°21'16"
T = 188.13'
R = 572.96'
L = 383.64'
C = 376.48'

PI STA =

N29°42'48"E



DESIGNED DJS
CHECKED KRN
DRAWN LOB

DATE ADDENDUM
DATE 4-23-10
PROJECT NO.
SCALE AS SHOWN

REVISION DATE
REVISION DATE
REVISION DATE

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 280+00 - 319+00

SHTNAME
SHEET NO.
10

PI STA = 318+62.85

PT STA = 319+77.20

STA 321+93
REMOVE EXISTING 24" CMP
24" PIPE CULVERT CLASS C
W/ END SECTIONS, REQ'D
110' X-ING

PC STA = 321+12.21

PI STA = 323+01.34
CIRCULAR
Δ = 36°21'16"
T = 188.13'
R = 572.96'
L = 363.54'
C = 357.48'

PT STA = 324+76.75

STA 326+00
REMOVE EXISTING 24" CMP
24" PIPE CULVERT CLASS C
W/ END SECTIONS, REQ'D
90° X-ING

STA 327+00
BEGIN HAY OR STRAW
BAIL EROSION CONTROL
CHECK DAM REQ'D

PC STA = 330+92.81

PI STA = 334+37.41
CIRCULAR
Δ = 62°02'58"
T = 344.60'
R = 572.95'
L = 620.49'
C = 590.61'

STA 334+00
END HAY OR STRAW
BAIL EROSION CONTROL
CHECK DAM REQ'D

PT STA = 337+13.30

STA 336+57
24" PIPE CULVERT
CLASS C W/ END SECTIONS, REQ'D
135° X-ING
SMALL DITCH EXCAVATION REQ'D

PC STA = 342+56.79

PI STA = 343+66.26
CIRCULAR
Δ = 15°26'49"
T = 129.51'
R = 954.93'
L = 257.45'
C = 256.67'

STA 344+00
BEGIN HAY OR STRAW
BAIL EROSION CONTROL
CHECK DAM REQ'D

PT STA = 344+86.20

STA 347+93
24" PIPE CULVERT
CLASS C W/ END SECTIONS,
90° X-ING

PC STA = 347+56.98

PI STA = 349+49.72
CIRCULAR
Δ = 30°28'08"
T = 156.03'
R = 572.96'
L = 304.67'
C = 301.09'

N60°04'10"E

N27°56'50"W

N1°58'53"W

SCALES:
1" =100' HOR
1" =20' VER

VPI STA = 322+00
VPI EL = 6407.40
VC = 200'
3.54%
1.70%
VPC STA = 325+00
VPC EL = 6411.21
VPT STA = 329+00
VPT EL = 6428.03
24" PIPE CULVERT CLASS C REQ'D
VPI STA = 327+00
VPI EL = 6413.75
VC = 400'
VPI STA = 332+00
VPC EL = 6444.57
5.16%
VPI STA = 334+00
VPI EL = 6456.90
VC = 400'
VPT STA = 336+00
VPT EL = 6462.87
24" PIPE CULVERT CLASS C REQ'D
2.69%
VPC STA = 343+00
VPC EL = 6483.77
VC = 300'
VPI STA = 344+50
VPI EL = 6488.25
6.17%
24" PIPE CULVERT CLASS C REQ'D

STA 321+93 24" CMP CLASS C REQ'D
VPC EL = 6404.05
STA 323+00 24" PIPE CULVERT CLASS C REQ'D
VPT EL = 6408.87

6520 6500 6480 6460 6440 6420 6400 6380 6360 6340

8+00 9+00 320+00 1+00 2+00 3+00 4+00 325+00 6+00 7+00 8+00 9+00 330+00 1+00 2+00 3+00 4+00 335+00 6+00 7+00 8+00 9+00 340+00 1+00 2+00 3+00 4+00 345+00 6+00 7+00 8+00

6397.37 6400.71 6406.08 6406.88 6407.91 6408.87 6409.94 6411.21 6412.00 6413.09 6414.49 6416.20 6418.21 6420.53 6423.15 6426.08 6432.24 6438.41 6444.57 6447.86 6450.34 6452.92 6455.31 6457.80 6459.48 6461.28 6462.87 6465.86 6468.84 6471.83 6474.81 6477.80 6480.78 6483.77 6485.39 6487.28 6489.42 6491.83 6494.50 6497.42 6503.24 6509.55

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ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 318+00 - 347+00

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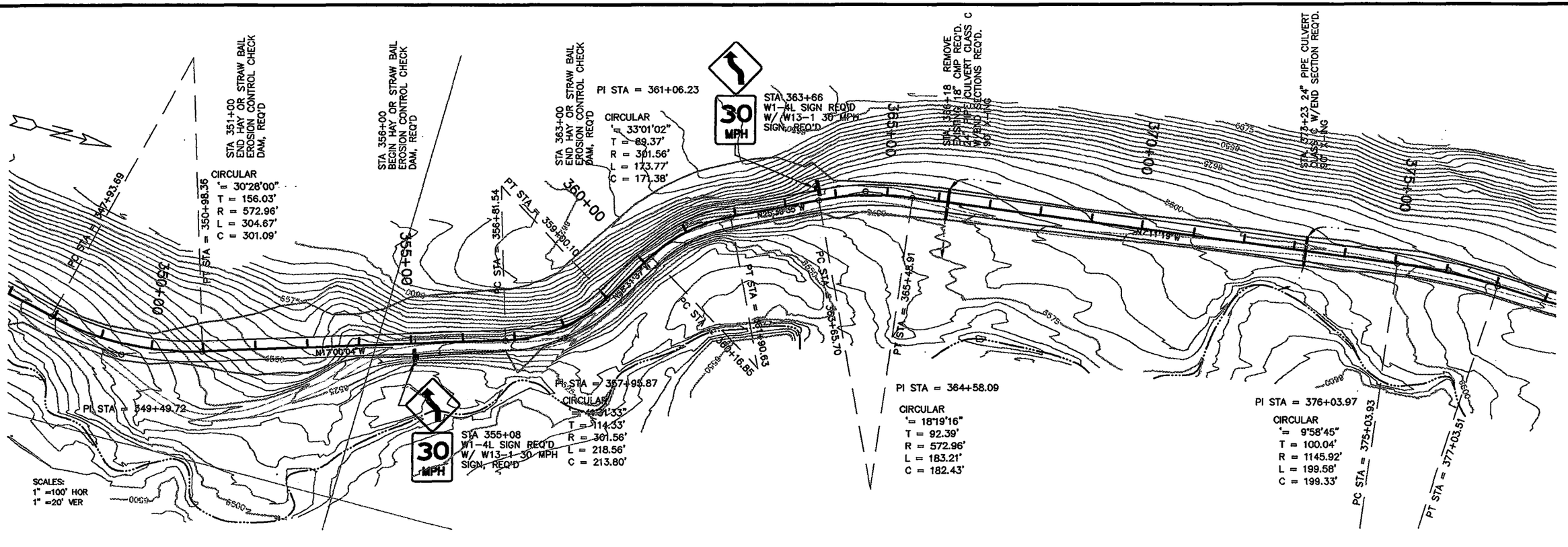
11



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St. GEORGE, UTAH

DESIGNED	DJS	REVISION	DATE
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DRAWN	LOB	REVISION	DATE
DATE APPROVED			
PROJECT NO.	rop01900		
SCALE	AS SHOWN		
SHEET NO.	12		

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 347+00 – 377+00

PI STA = 387+62.15
CIRCULAR
Δ = 52°42'10"
T = 283.81'
R = 572.96'
L = 527.03'
C = 508.64'

PI STA = 376+03.97
N2°47'28"E
PC STA = 384+78.34
PT STA = 387+93.51
STA 387+73 REMOVE EXISTING 24" CMP, 24" PIPE CULVERT CLASS C W/END SECTIONS, REQ'D 90° X-ING
PT STA = 390+65.31
STA 390+74 REMOVE BRIDGE, REQ'D 12'x8' CONCRETE BOX CULVERT, REQ'D 110° X-ING
STA 392+60 BEGIN SURFACE DITCH REQ'D
STA 393+30 END SURFACE DITCH REQ'D
N58°29'38"E
PC STA = 394+43.80
PT STA = 395+19.92
PI STA = 393+37.24
CIRCULAR
Δ = 37°18'45"
T = 193.45'
R = 572.96'
L = 373.13'
C = 366.57'
N18°10'51"E
PC STA = 400+22.84
PT STA = 401+36.09
PI STA = 400+79.56
CIRCULAR
Δ = 7°55'39"
T = 56.72'
R = 818.51'
L = 113.25'
C = 113.16'
N26°06'30"E
STA 406+95 RELOCATION OF POWER POLE BY OTHERS, REQ'D

SCALES:
1" =100' HOR
1" =20' VER

VPI STA = 377+00
VPI EL = 6615.05
5.05%
VPC STA = 383+53
VPC EL = 6647.89
VPI STA = 385+50
VPI EL = 6658.00
VC = 400'
VPI STA = 387+50
VPI EL = 6659.69
24" PIPE CULVERT CLASS C REQ'D
0.86%
VPC STA = 390+30
VPC EL = 6668.23
12'x8' CONCRETE BOX CULVERT REQ'D
VC = 300'
VPI STA = 392+00
VPI EL = 6663.50
VPI STA = 343+50
VPI EL = 6670.53
7.69%
VPC STA = 398+00
VPC EL = 6696.31
VPI STA = 400+00
VPI EL = 6701.00
VC = 200'
VPI STA = 401+00
VPI EL = 6705.00
7.80%

6740 6720 6700 6680 6660 6640 6620 6600 6580 6560

6612.70 6615.05 6620.11 6625.18 6630.21 6635.26 6640.32 6645.37 6647.89 6650.29 6652.42 6654.26 6655.90 6657.24 6658.32 6659.14 6659.69 6660.12 6660.96 6661.81 6662.23 6662.81 6663.72 6664.94 6666.46 6668.35 6670.53 6672.88 6677.56 6682.25 6686.94 6691.63 6696.31 6698.61 6700.83 6702.96 6705.00 6709.00 6713.00 6717.00 6721.00 6725.00

6+00 7+00 8+00 9+00 380+00 1+00 2+00 3+00 4+00 385+00 6+00 7+00 8+00 9+00 390+00 1+00 2+00 3+00 4+00 395+00 6+00 7+00 8+00 9+00 400+00 1+00 2+00 3+00 4+00 405+00 6+00

DESIGNED	DJS
CHECKED	KRN
DRAWN	LOB

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CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Carbon County
DUGOUT CANYON ROAD
PLAN & PROFILE / 376+00 - 406+00

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