



Juneau Access Improvements Project Draft Supplemental Environmental Impact Statement

2014 Update to Appendix D Technical Alignment Report

Prepared for:

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& Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801-7999**

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Attachments

- Attachment A: Revised East Lynn Canal Plan and Profile Sheets
- Attachment B: Revised West Lynn Canal Plan and Profile Sheets
- Attachment C: Revised Highway Maintenance Cost Estimate

Attachment D: Revised Marine Terminal Plans and Cost Update
Attachment E: Revised Engineer's Estimate

Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ACF	Alaska Class Ferry
ADT	average daily traffic
AMHS	Alaska Marine Highway System
ATB	Asphalt Treated Base
CIP	Capital Improvement Plan
DOT&PF	Alaska Department of Transportation and Public Facilities
EATB	Emulsified Asphalt Treated Base
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
JAI	Juneau Access Improvements
MP	Milepost
NEPA	National Environmental Policy Act
NHS	National Highway System
SEIS	Supplemental Environmental Impact Statement

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1. Introduction

In September 2004, the Juneau Access Improvement (JAI) Project-Technical Alignment Report was prepared and included as Appendix D of the JAI Supplemental Draft Environmental Impact Statement (EIS) in January 2005. During development of the JAI 2006 Final EIS, the Alaska Department of Transportation and Public Facilities (DOT&PF) responded to comments on the Supplemental Draft EIS and incorporated new data and new analysis into the project. Changes were made to Alternative 2B, and Alternatives 2, 2A, and 2C were dropped from the range of reasonable alternatives. These revisions required the preparation of an Addendum to Appendix D – Alignment Technical Report, which was included in Appendix W of the 2006 Final EIS.

The 2006 Addendum to Appendix D described changes to the design criteria, updated the alignment discussion where changes occurred, provided updated bridge summaries, provided updated plan and profile sheets where changes occurred, updated ferry terminal layouts and cost estimates, updated the Engineer's Estimate, and provided an errata sheet for the original technical report.

As part of the JAI Project 2014 Draft Supplemental Environmental Impact Statement (SEIS), additional changes and updates to design criteria, plans, and costs have been prepared and are presented in this *2014 Update to Appendix D – Technical Alignment Report*. This Update incorporates and replaces the 2006 Addendum to Appendix D. The information reported in the 2004 Technical Alignment Report Appendix D remains valid unless replaced with new information presented in this Update.

Due to the extent of changes to the Alternative 2B and 3 alignments, new plan and profile sheets are provided, as are new ferry terminal layouts and highway and ferry terminal cost estimates.

1.1 Project Description

As required by the National Environmental Policy Act (NEPA), this technical report considers the following reasonable alternatives.

1.1.1 Alternative 1 – No Action

The No Action Alternative (Alternative 1) includes a continuation of mainline ferry service in Lynn Canal and incorporates two Day Boat Alaska Class Ferries (ACFs). The Alaska Marine Highway System (AMHS) would continue to be the National Highway System (NHS) route from Juneau to Haines and Skagway, and no new roads or ferry terminals would be built. In addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. This alternative is based on the most likely AMHS operations in the absence of any capital improvements specific to the JAI Project.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round trips per day between Haines and Skagway six days per week. The Day

Boat ACFs would not sail on the seventh day because the mainliner is on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal.

1.1.2 Alternative 1B – Enhanced Service with Existing AMHS Assets

Alternative 1B includes all of the components of Alternative 1, No Action, but focuses on enhancing service using existing AMHS assets without major initial capital expenditures. Similar to Alternative 1, Alternative 1B includes a continuation of mainline ferry service in Lynn Canal; the AMHS would continue to be the NHS route from Juneau to Haines and Skagway; no new roads or ferry terminals would be built; and in addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. Service to other communities would remain the same as with the No Action Alternative. Alternative 1B keeps the *M/V Malaspina* in service after the second Day Boat ACF is brought online to provide additional capacity in Lynn Canal. Enhanced services included as part of Alternative 1B are a 20 percent reduction in fares for trips in Lynn Canal and extended hours of operations for the reservation call center.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, the *M/V Malaspina* would make one round trip per day seven days per week on a Skagway-Auke Bay-Skagway route, while one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because the mainliner would be on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week.

1.1.3 Alternative 2B – East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway

Alternative 2B would construct the East Lynn Canal Highway (50.8 miles, including 47.9 miles of new highway and upgrade to 2.9 miles of the existing Glacier Highway) from Echo Cove around Berners Bay to a new ferry terminal 2 miles north of the Katzehin River. Ferry service would connect Katzehin to Haines and Skagway. In addition, this alternative includes modifications to the Skagway Ferry Terminal to include a new end berth and construction of a new conventional monohull ferry to operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before Alternative 2B would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer months, one Day Boat ACF would make eight round trips per day between Haines and Katzehin, a second Day Boat ACF would make six round trips per day between Skagway and Katzehin, and the Haines-Skagway shuttle ferry would make two trips per day.

During the winter, one Day Boat ACF would make six round trips per day between Haines and Katzehin, and a second Day Boat ACF would make four round trips per day between Skagway and Katzehin. The Haines-Skagway shuttle would not operate; travelers going between Haines and Skagway would travel to Katzehin and transfer ferries.

1.1.4 Alternative 3 – West Lynn Canal Highway

Alternative 3 would upgrade/extend the Glacier Highway (5.2 miles, including 2.3 miles of new highway and upgrade to 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay. New ferry terminals would be constructed at Sawmill Cove in Berners Bay and at William Henry Bay on the west shore of Lynn Canal, and the Skagway Ferry Terminal would be modified to include a new end berth. A new 38.9-mile highway would be constructed from the William Henry Bay Ferry Terminal to Haines with a bridge across the Chilkat River/Inlet connecting into Mud Bay Road. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before Alternative 3 would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer, two Day Boat ACFs would make six round-trips per day between Sawmill Cove and William Henry Bay (total of 12 trips each direction), and the Haines-Skagway shuttle ferry would make six round-trips per day. During the winter, one Day Boat ACF would make four round-trips per day between Sawmill Cove and William Henry Bay, and the Haines-Skagway shuttle ferry would make four round-trips per day.

1.1.5 Alternatives 4A through 4D – Marine Alternatives

All four marine alternatives would include continued mainline ferry service in Lynn Canal with a minimum of two trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. Each marine alternative includes a new conventional monohull shuttle that would make two round trips per day between Haines and Skagway six days a week in the summer and a minimum of three round trips per week between Haines and Skagway in the winter. The AMHS would continue to be the NHS route from Juneau to Haines and Skagway. These alternatives assume the following improvements will have been made independent of the JAI Project before the alternative comes on-line: improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include new double bow berths.

1.1.5.1 Alternative 4A – Fast Vehicle Ferry Service from Auke Bay

Alternative 4A would construct two new fast vehicle ferries (FVFs). No new roads would be built for this alternative, and the Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. The FVFs would make two round trips between Auke Bay and Haines and two round trips between Auke

Bay and Skagway per day in the summer. During the winter, one FVF would make one round trip between Auke Bay and Haines and one round trip between Auke Bay and Skagway each day.

1.1.5.2 Alternative 4B – Fast Vehicle Ferry Service from Berners Bay

Similar to Alternative 4A, Alternative 4B would construct two new FVFs. This alternative would upgrade/extend Glacier Highway (5.2 miles, including 2.3 miles of new highway and 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay, where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. In the summer, the FVFs would make two round trips between Sawmill Cove and Haines and two round trips between Sawmill Cove and Skagway per day. During the winter, one FVF would make one round trip between Auke Bay and Haines and one round trip between Auke Bay and Skagway each day.

1.1.5.3 Alternative 4C – Conventional Monohull Service from Auke Bay

Alternative 4C would use Day Boat ACFs to provide additional ferry service in Lynn Canal. No new roads would be built for this alternative. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new bow berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. In the summer, one Day Boat ACF would make one round trip per day between Auke Bay and Haines, and one Day Boat ACF would make one round trip per day between Auke Bay and Skagway. During the winter, one Day Boat ACF would alternate between a round trip to Haines one day and a round trip to Skagway the next day.

1.1.5.4 Alternative 4D – Conventional Monohull Service from Berners Bay

Alternative 4D would use Day Boat ACFs to provide additional ferry service in Lynn Canal. This alternative would upgrade/extend Glacier Highway (5.2 miles, including 2.3 miles of new highway and 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay, where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new bow berth. This alternative includes construction of a new conventional monohull ferry that would operate between Haines and Skagway. In the summer, the Day Boat ACFs would make two trips per day between Sawmill Cove and Haines and two trips per day between Sawmill Cove and Skagway. During the winter, a Day Boat ACF would operate from Auke Bay, alternating between a round trip to Haines one day and to Skagway the next day.

2. Design Standards

2.1 Highway Design Criteria

The highway has been designed following the American Association of State Highway and Transportation Officials' (AASHTO's) "A Policy on Geometric Design of Highways and Streets." Over the years AASHTO has updated its design guidance, with the latest update occurring in 2011. Based on this latest update, the following revision is made to Roadway Design Criteria: The minimum Allowable Radius of a Horizontal Curve has been reduced from 510 feet to 485 feet using a design speed of 40 mph.

2.2 Design Exceptions

The following design exception will be required (see Table 2-1); supporting reasons are quoted from AASHTO:

Table 2-1: Alaska State National Highway System Standard

Criteria Description	AASHTO Standard	Juneau Access Improvements Project
Width of shoulder	6 ft.	4 ft.

The reasons for the exception have remained the same, with slight changes in wording:

Reason: The State of Alaska has adopted the AASHTO Standard as its standard.

Shoulder Widths: AASHTO Standards indicate that a 4-foot-wide usable shoulder should be considered for rural arterials with average daily traffic (ADT) less than 400 that have travel lanes 11 feet wide and Design Speeds from 40 to 55 mph. For ADTs between 400 and 1,500 a 6-foot-wide usable shoulder should be considered.

AASHTO states: "As a minimum, 0.6 m [2 ft] of the shoulder width should be paved to provide for pavement support, wide vehicles, and collision avoidance."

AASHTO also states: "Where bicycles are to be accommodated on the shoulder, a minimum paved width of 1.2 m [4 ft] should be used."

The DOT&PF has elected to use the 4-foot paved usable shoulder width to minimize construction impacts while still providing for bicyclists and pedestrians.

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3. Recommended Design

3.1 Typical Sections

The highway typical section has been revised to replace the 4-inch-thick layer of Emulsified Asphalt Treated Base (EATB) with 2 inches Asphalt Treated Base (ATB) and 4 inches Aggregate Base Course, Grading D-1. The combined ATB and Base Course will provide a more durable structural section. The ATB and Base Course have been included in the Engineer's Estimates for all alternatives and are shown on the typical sections.

Select material below the base and pavement section has increased from 12 inches to 24 inches where the road is constructed on frost susceptible soils. Providing a non-frost susceptible material below the road base is critical in preserving the integrity of the road structure and will minimize long term maintenance efforts.

The ditch width has increased from 8 feet to 10 feet. The wider ditch width will better accommodate subsurface drainage from the 24-inch select material to the ditch and provide more capacity for drainage and snow storage.

The attached Figures 3-1 through 3-6 reflect this change and provide information on various typical sections.

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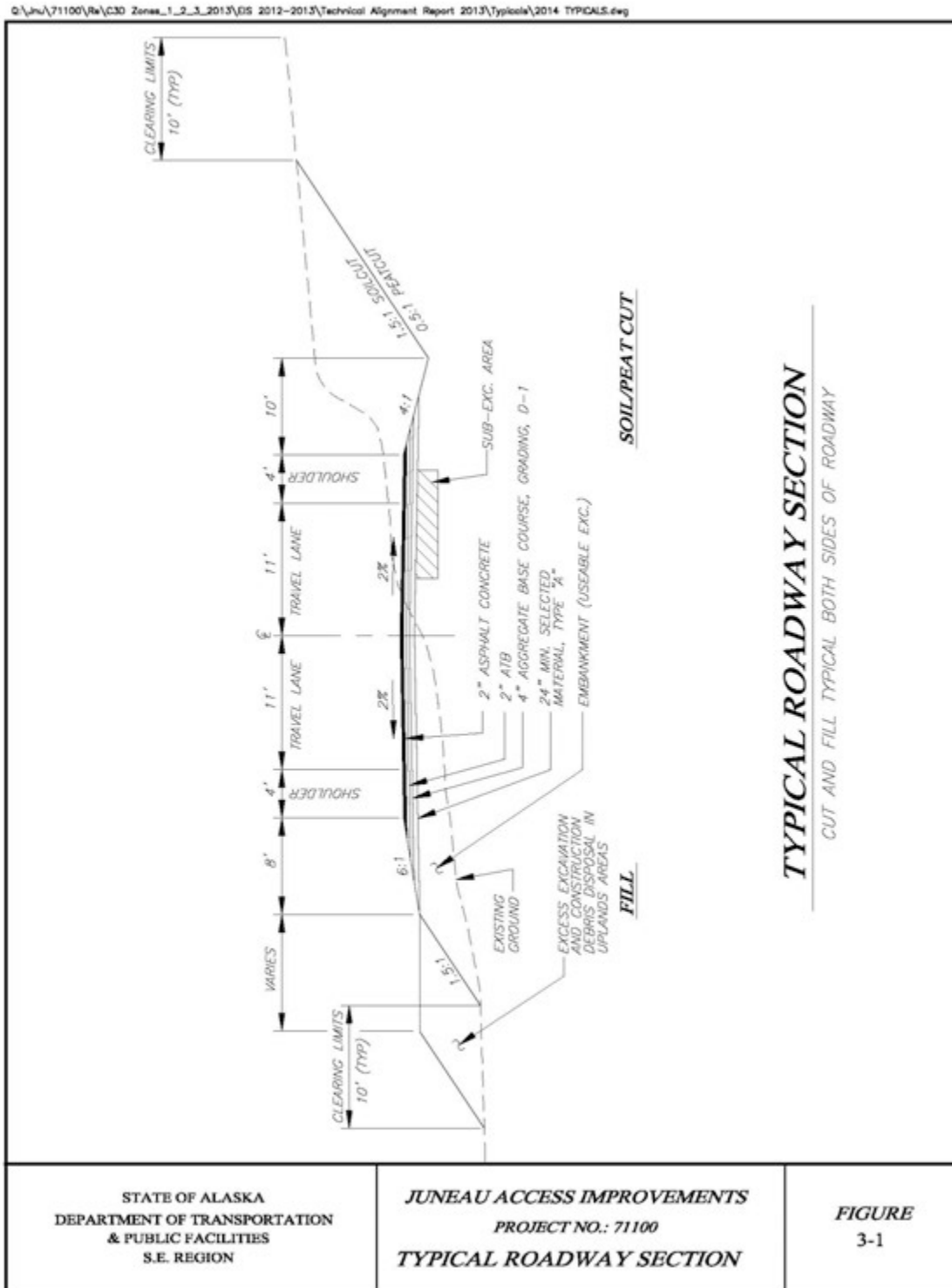


Figure 3-1: Typical Roadway Section

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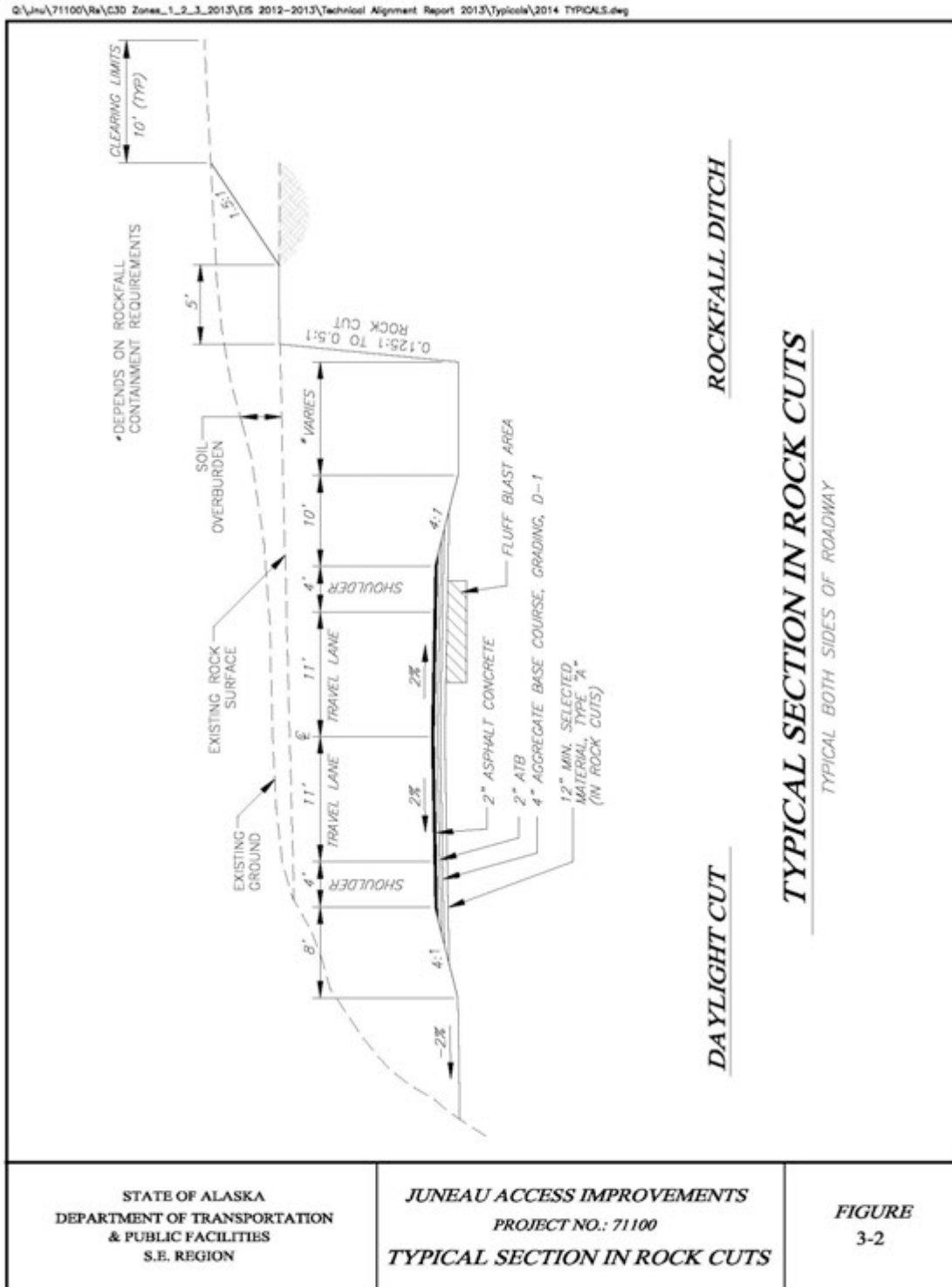


Figure 3-2: Typical Section in Rock Cuts

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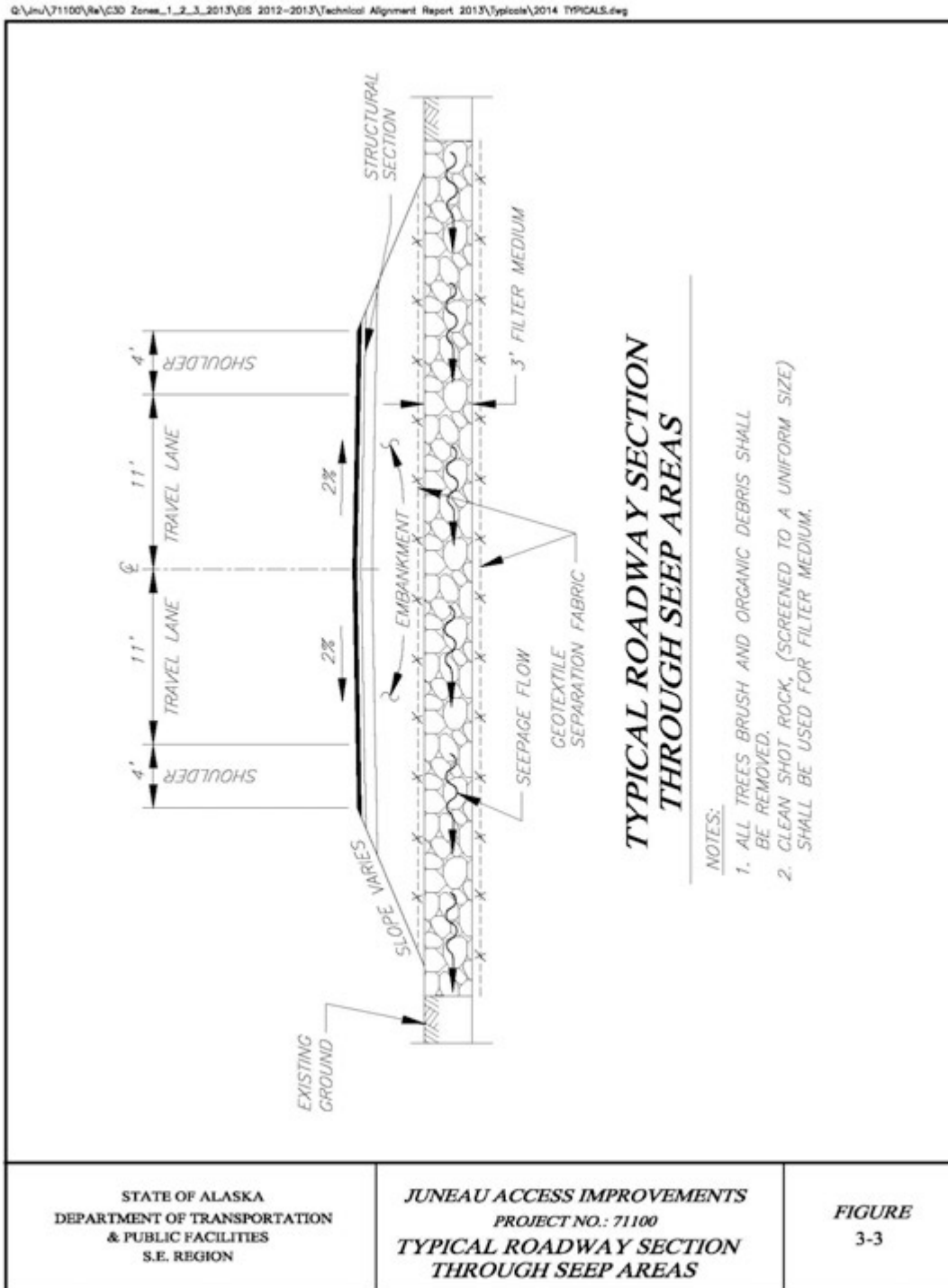


Figure 3-3: Typical Roadway Section through Seep Areas

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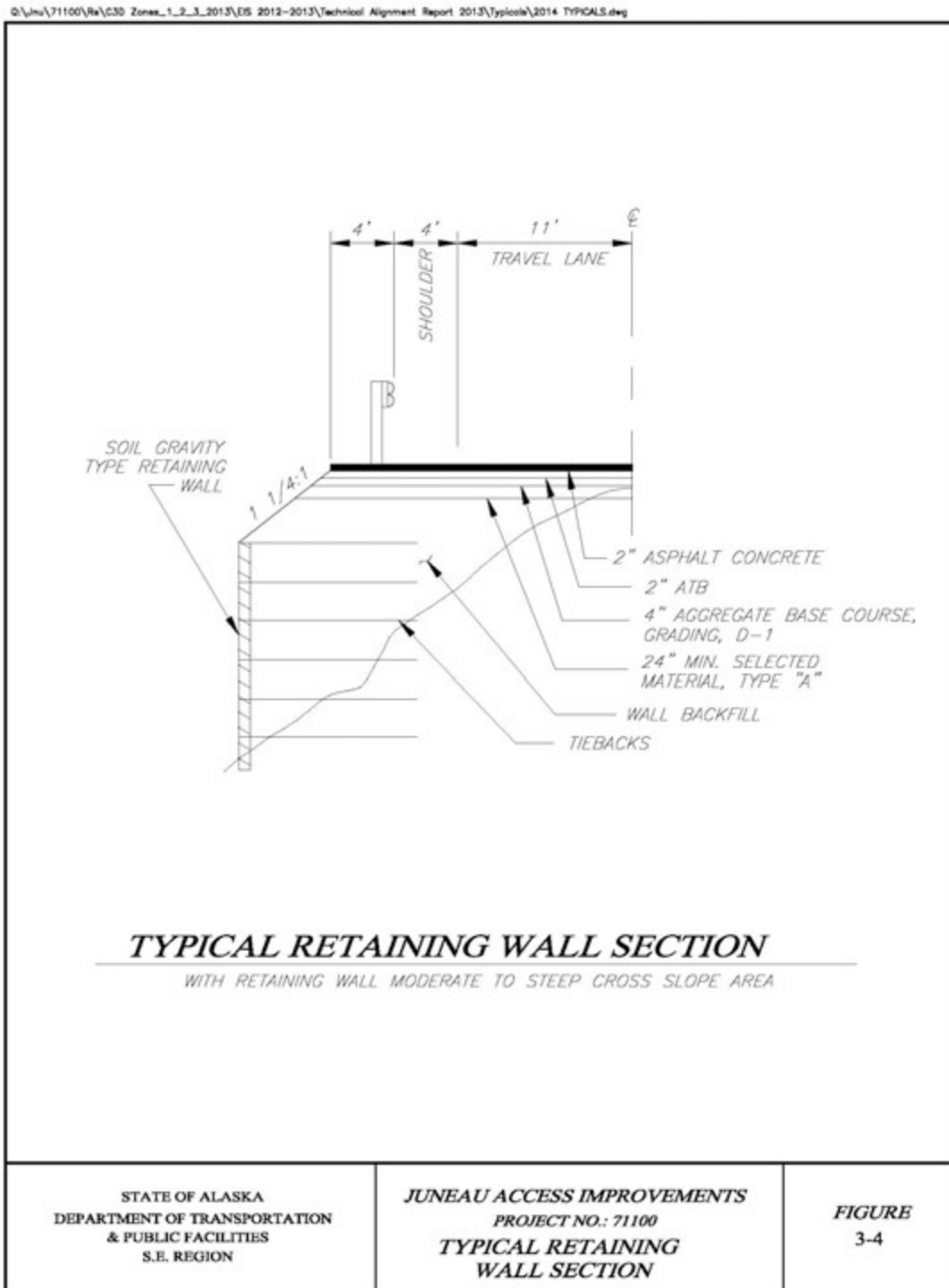


Figure 3-4: Typical Retaining Wall Section (Moderate to Steep)

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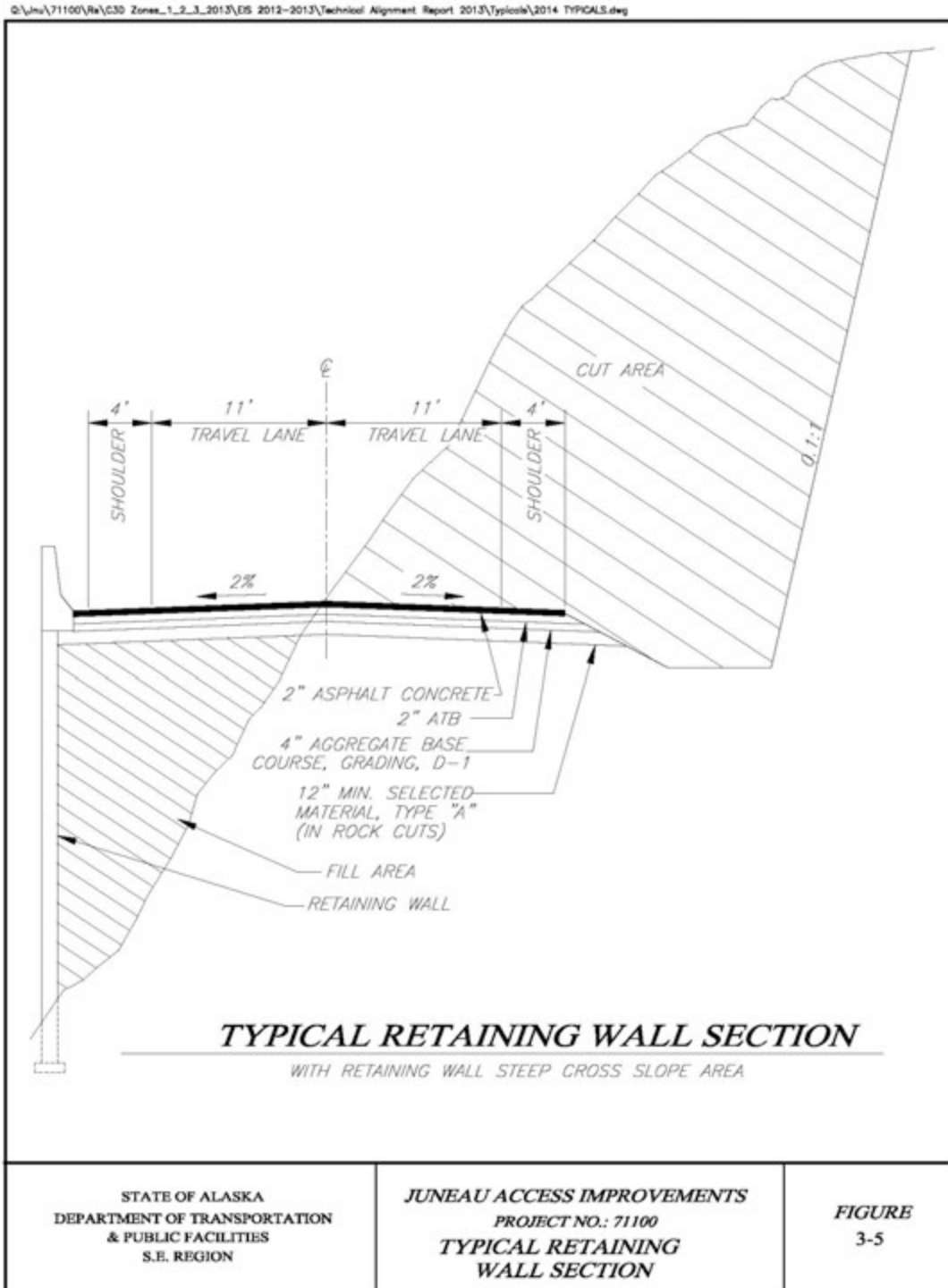


Figure 3-5: Typical Retaining Wall Section (Steep)

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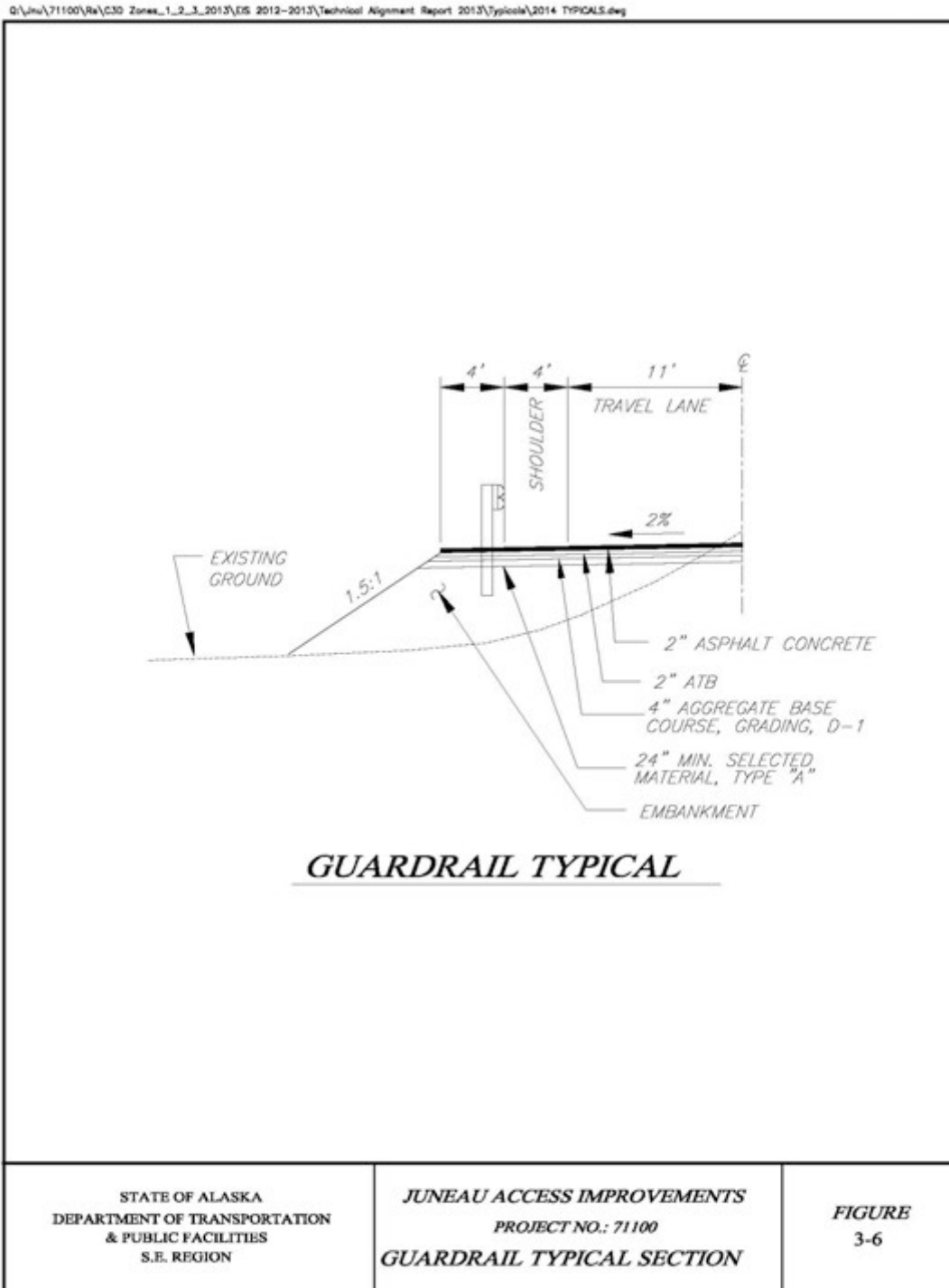


Figure 3-6: Guardrail Typical Section

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3.2 Alignment Discussion Overview

3.2.1 East Lynn Canal Discussion

Note: The stationing along this route has changed from the 2006 Final EIS (FEIS) and 2008 Corps of Engineers Permit Alignment due to the numerous alignment revisions. The stationing provided in the discussion reflects stationing on the revised plan sheets in Attachment A.

Station 64+75 (Milepost [MP] 40.5) to Station 570+00 (MP 50.1) – Echo Cove to Berners Bay Crossing – (Plan Sheets 1 - 7) – This segment had minor alignment revisions for better bridge crossings, to minimize wetland impacts, and to avoid eagle nests.

In 2011, the pioneer road from Echo Cove to Cascade Point was reconstructed and widened. The current alignment between Station 64+75 and Station 207+00 will straddle the Goldbelt Cascade Point Road centerline alignment.

The curve at station 255+00 was lengthened to shift the alignment into a rock outcropping in order to generate material. Just beyond this at station 277+00, the crossing of Sawmill Creek was shifted downhill to avoid multiple converging creeks and boggy terrain. The crossing of Boulder Creek at station 393+00 was also shifted to take advantage of a better crossing. Here the alignment was shifted uphill.

Additional adjustments to the alignment were made between Station 207+00 and Station 410+00 to avoid emergent wetlands and minimize impacts to lower value wetlands.

Beginning approximate station 410+00 and extending to 520+00 the alignment is shifted uphill to follow geotechnical investigative recommendations, to meet commitments for a minimum 50 foot offset from the water, and to avoid the primary zones (330-foot radius around the nest tree) of eagle nests #076, #119, and #074.

From Station 520+00 forward, the alignment was optimized by making minor downhill shifts where possible, and by following the curvature of the terrain more closely. Two new eagle nests were identified in this area. Nest #294 at station 521+60 Left and nest #292 at station 561+40 Right both required shifting the alignment to avoid the nests. To optimize the first bridge crossing at Berners Bay (Antler Slough) and to reduce shoreline impacts, the alignment was shifted about 500 feet upstream at station 572+00.

Station 570+00 (MP 50.1) to Station 756+50 (MP 53.6) - Berners Bay Crossing – (Plan Sheets 7 - 9) – This segment is largely unchanged but does have some minor alignment revisions to better line up with the bridge crossings. A bridge was added to cross a newly identified anadromous fish stream and avoid riparian wetlands.

Station 756+50 (MP 53.6) to Station 1401+00 (MP 65.8) – Berners Bay Crossing to Independence Lake – (Plan Sheets 9 - 19) – This 12.2-mile segment was revised at multiple points to minimize or eliminate impacts to wetlands, to better avoid eagle nests, to make use of better stream crossings and foundation soils, to avoid steep ravine areas, to minimize cut heights,

and to use the existing Jualin Road corridor where feasible.

Station 1401+00 (MP 65.8) to Station 1520+00 (MP 68.1) – Independence Lake North – (Plan Sheets 19 - 20) – The alignment was shifted uphill to decrease the amount of marine fill and for better confined crossings through two debris flows and avalanche chutes.

Station 1520+00 (MP 68.1) to Station 1615+00 (MP 69.9) – Met Point South – (Plan Sheets 20 - 22) – In this segment, the alignment was shifted uphill in a couple areas to avoid boulder debris and to move the bridge crossing 10E to avoid complex channel morphology, debris deposition, and to reduce marine fill. Also two new eagle nests were identified in 2012, nest #236 at station 1521+00 Right and #233 at station 1573+00 Right, causing minor shifts to avoid the nests.

Station 1615+00 (MP 69.9) to Station 2096+00 (MP 79.0) – Met Point North to Level Point – (Plan Sheets 22 - 29) – This segment is characterized by numerous active debris flows and rockfall hazards. Geotechnical investigations identified large areas of steep talus slopes requiring special consideration for crossing. The general recommendation was to avoid cuts through the talus fields. The alignment has been shifted in many locations to provide for better crossings over the mapped debris flows and both horizontal and vertical adjustments for crossing the talus slopes. The majority of alignment shifts have been uphill to minimize these hazards. The original alignment closely followed the beach, therefore the shifts have also resulted in less marine fill. A large heavy-duty bridge was added at station 1735+58 to cross below an unstable talus slope and steep cliff face.

Also, seven new eagle nests were identified in 2012. The new nests and respective locations are; #105 at station 1650+00 Left, #102 at station 1713+00 Left, #149 at station 1714+00 Left, #212 at station 1912+00 Right, #211 at station 1952+00 Right, #033 at station 2014+00 Left, and #157 at station 2098+00 Left.

Station 2096+00 (MP 79.0) to Station 2635+00 (MP 89.2) – Level Point to Katzehin River – (Plan Sheets 29 - 37) – This segment is also characterized by numerous active debris flows and rockfall hazards. The alignment has been shifted either uphill or downhill in many locations to minimize the risks from these hazards. Shifts were also made to move bridge crossings into more favorable terrain. Numerous steep talus slopes present unique construction challenges.

From station 2140+00 to 2203+00, the alignment has predominantly been shifted uphill to minimize the risk from cutting through talus slopes. A better bridge crossing of Yeldagala Creek at station 2245+00 resulted in an uphill shift. The alignment remained shifted uphill to optimize the crossings of many debris flows and rockfall hazards.

A major shift is at Gran Point, station 2357+00, where the alignment now travels through two tunnels to avoid the hazards due to the rock cliffs and to shield the sea lion haulout. The alignment remains uphill to station 2454+00 to avoid very steep and difficult terrain.

Another major shift is at station 2540+00 where the alignment follows the contours at the water's edge and places deep water fill from station 2565+50 to 2581+00. The decision was made to

shift the alignment into the water to avoid rockfall hazards from the cliffs above.

Between station 2595+00 and 2629+00, the alignment had minor shifts to better fit the terrain and to eliminate marine wetlands impacts.

Three new eagle nests were identified in 2012 within this segment. Nest #157 is at the beginning of this segment but was discussed in the previous segment. Nest #029 is at station 2233+00 Left, #024 is at station 2451+00 Left, and #204 is at station 2501+60 Right.

Station 2635+00 (MP 89.2) to Station 2771+86 (MP 91.8) – South Katzehin River to Katzehin Ferry Terminal – (Plan Sheets 37 - 38) – The Katzehin River Bridge was skewed to minimize exposure to the rockfall hazard along the southern bank of the river and to avoid a slough immediately north of the river. The need for a wildlife undercrossing was identified at station 2704+00 resulting in the need for bridge 20E. Its length is 130 feet.

The alignment on this segment was kept at the base of the mountain between station 2725+00 and the ferry terminal at station 2770+00 to eliminate estuarine wetlands impacts and to avoid eagle nest #196 at station 2740+00 Left. The ferry terminal fill was moved south to avoid the runoff of an avalanche path.

3.2.2 West Lynn Canal Discussion

The alignment along the west side of Lynn Canal is mainly unchanged except for minor shifts to avoid new eagle nests identified in 2012; revised plan and profile sheets are included in Attachment B.

Nest #402, station 5675+53 Right, is situated at the top of steep terrain above the beach. The alignment consists of a through cut with steep terrain above making any uphill alignment shift difficult. The profile was raised to increase the distance from the cut limit to the nest.

At station 5745+37, nest #403 and the roadway are on a slight bench with steep slopes both uphill and downhill with very little room for shifting. The nest is situated uphill of the road. The roadway was shifted towards the seaward side to maximize the distance between the road and nest, thereby increasing retaining wall height.

Nest #406, station 5940+00 Right, is over the bank near the beach. The road would be in a through cut at a knob with a bench area both before and after the knob. The profile was raised to lessen the height of cut and to increase the distance between the nest and cut limit.

3.3 Drainage and Bridges

Table 3-1, East Lynn Canal Bridge Summary, has been updated to include the new Alternative 2B bridges. Geotechnical investigation identified numerous new bridge locations due to the need to span active debris flows or other drainages.

Bridges north of station 1300+00 have been divided into 3 classifications; standard, special, and heavy duty. Standard bridges are planned at crossings that can be spanned using common length concrete girders that are readily available. Special bridges are those that require girder lengths

longer than those for standard bridges, require special foundation design, or may require other elements such as curvature. Heavy Duty bridges are those required at special crossings such as avalanche chutes or very difficult crossings. These bridges are required to address various hazards such as avalanche side loading and extreme topographic conditions. Figure 3-7, Bridge Elevations (originally Figure 3-8), was updated to distinguish between multiple span bridges for major and minor crossings.

Table 3-2 (originally Table 3-3) was updated to summarize the avalanche zones along the East Lynn Canal route. Avalanche sheds are anticipated at avalanche path numbers ELC019, ELC020, and ELC021 (paths are identified in Appendix J, *Snow Avalanche Report*, of the Supplemental Draft EIS, October 2004, and the 2014 Update to Appendix J). These paths have a combined width of 1,500 feet at this point, so it is assumed that the final design will include sheds with a total length of approximately 1,500 feet to mitigate for these high hazard avalanche zones.

Table 3-1: East Lynn Canal Bridge Summary

Bridge No.	Begin Station	Highway Milepost	Length (ft)	Intermediate Piers	Name
1E	276+72	44.4	128	0	Sawmill Creek (A)
2E	391+98	46.6	128	0	Boulder Creek
3E	572+17	50.0	144	0	unnamed (A)
4Ea	641+86	51.3	2,759	19	Antler/Gilkey Rivers (A)
4Eb	671+09	51.9	128	0	Wildlife Undercrossing
4Ec	694+48	52.3	118	0	Wildlife Undercrossing
4Ed	723+79	52.9	118	0	unnamed
5E	728+39	53.0	2,881	20	Berners/Lace Rivers (A)
6E	921+15	56.7	288	2	Slate Creek (A) (SP)
7E	1306+03	64.0	118	0	Sweeny Creek (A)
8E	1343+71	64.7	60	0	Sherman Creek (A)
9E	1453+18	66.8	144	0	Independence Creek (A)
10E	1561+01	68.8	128	0	unnamed
11E	1669+80	70.9	144	0	unnamed (SP)
12E	1677+80	71.1	144	0	unnamed (HD)
13E	1681+30	71.2	118	0	unnamed
14E	1703+78	71.6	128	0	unnamed (HD)
15E	1735+58	72.2	400	3	(HD)
16E	1784+50	73.1	300	0	unnamed (HD)
17E	1984+00	76.9	160	0	unnamed (SP)
18E	2039+52	77.9	300	0	unnamed (HD)
19E	2244+80	81.8	160	0	Yeldagalga Creek (SP)
20E	2260+80	82.1	128	0	unnamed
21E	2282+00	82.5	128	0	unnamed (HD)
22E	2293+37	82.7	128	0	unnamed (HD)
23E	2320+84	83.2	150	0	unnamed (HD)
24E	2337+93	83.5	144	0	unnamed (HD)
25E	2422+39	85.1	128	0	unnamed
26E	2481+03	86.2	128	0	unnamed (SP)
27E	2589+53	88.3	128	0	unnamed
28Ea	2637+65	89.2	2,590	18	Katzehin River (A)
28Eb	2703+45	90.4	128	0	Wildlife Undercrossing
Total Bridges		32	Total Length		12,563

(A) = Anadromous fish stream

(SP) = Special Bridge

(HD) = Heavy Duty Bridge

* Bridges not labeled as SP or HD are Standard Bridges

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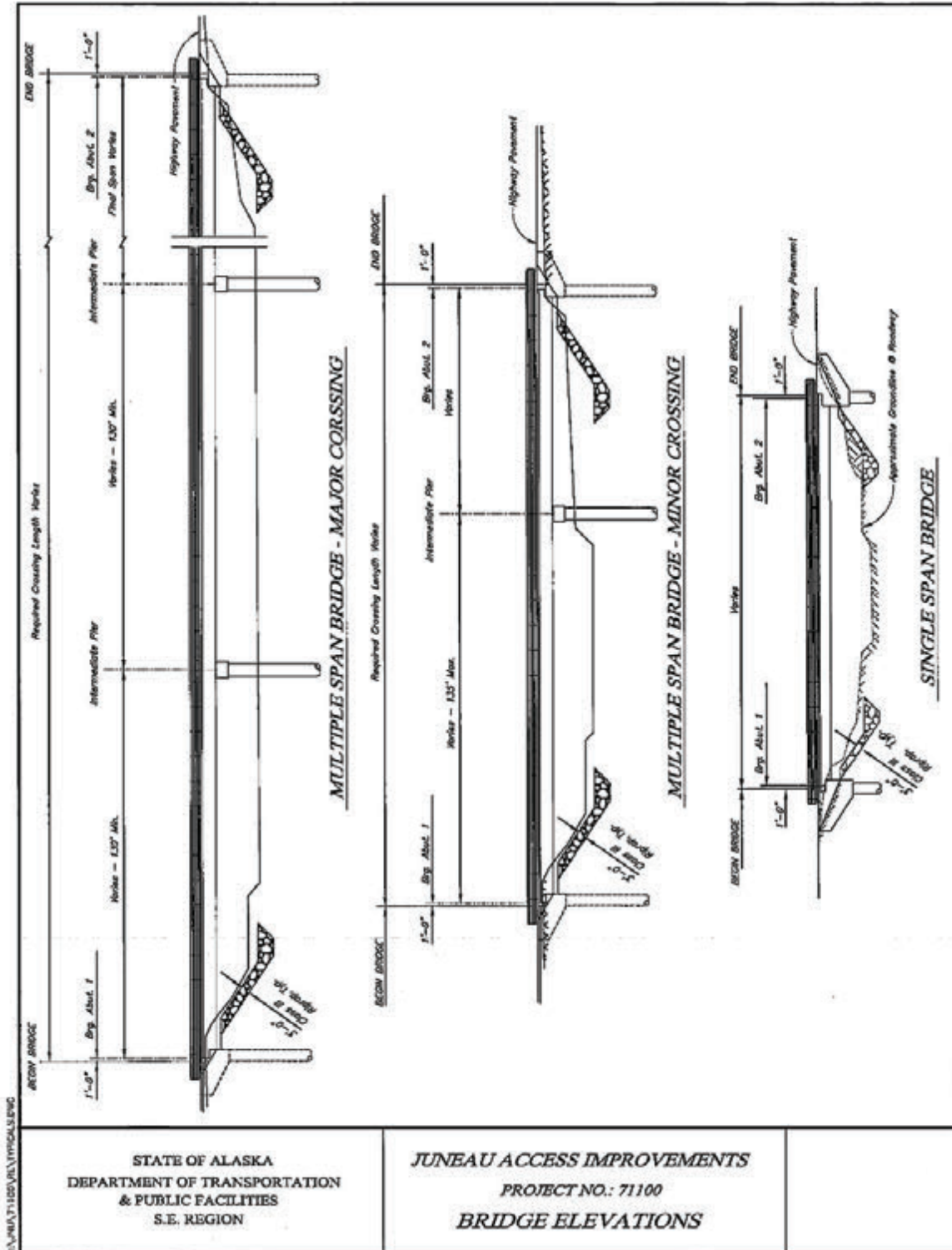


Figure 3-7: Bridge Elevations

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Table 3-2: East Lynn Canal Snow Avalanche Summary

ID	Station	ID	Station
LC001	353+50	LC020	2102+65
LC002	1490+68	LC021	2114+62
LC003	1514+45	LC022	2122+86
LC003-1	1517+42	LC023	2128+85
LC004	1629+60	LC024	2140+96
LC005	1678+60	LC025	2282+59
LC005-1	1692+00	LC026	2294+14
LC006	1704+50	LC026-1	2308+00
LC007	1721+25	LC027	2311+00
LC008	1733+70	LC028	2321+34
LC009	1748+30	LC028-1	2328+33
LC010	1752+82	LC028-2	2331+98
LC011	1757+83	LC029	2338+67
LC001	353+50	LC020	2102+65
LC002	1490+68	LC021	2114+62
LC003	1514+45	LC022	2122+86
LC003-1	1517+42	LC023	2128+85
LC004	1629+60	LC024	2140+96
LC005	1678+60	LC025	2282+59
LC005-1	1692+00	LC026	2294+14
LC006	1704+50	LC026-1	2308+00
LC007	1721+25	LC027	2311+00

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3.4 Maintenance and Operational Requirements

Revised highway maintenance cost estimates are included in Attachment C.

3.5 Marine Terminal Plans and Costs

Revised marine terminal plans and cost updates are included in Attachment D.

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4. Highway Costs

4.1 Engineer's Estimate Discussion

The engineer's estimates for Alternatives 2B, 3, 4B, and 4D highway segments have been updated to reflect current layouts, quantities, and unit prices for construction year 2012; see Attachment E. The estimates for Alternatives 2B and 3 were also updated to include camp costs, which were not included in the original estimates in the 2006 FEIS and but were identified as necessary in the subsequent 2009 cost report. Adjustments have also been made to costs related to preliminary development, mitigation, right of way, maintenance building, and avalanche control Capital Improvement Plan (CIP). Right of way, maintenance building, and avalanche control CIP only apply to Alternatives 2B and 3. The M&O facility estimates are based on costs for similar recently constructed facilities. The Indirect Cost Allocation Plan (ICAP) rate has also increased from 4.66 percent used in the 2009 cost report to 4.79 percent for Alternative 2B and from 4.3 percent used in the 2006 FEIS to 4.79 percent for Alternatives 3, 4B and 4D.

Unit prices were updated to reflect inflation costs from year 2008 to year 2012. The 2009 cost report included unit prices from the 2008 construction year for Alternative 2B only. The inflation rate was obtained by comparing the Construction Cost Indices for years 2008 and 2012 provided by the Washington State Department of Transportation. This resulted in an inflation rate of 8.3% over the 4-year period. The unit prices in the 2009 cost report were updated based on this inflation rate and the resulting unit prices were also applied to Alternatives 3, 4B, and 4D.

Additional field reconnaissance and data on debris flows, avalanche areas, talus fields, and wildlife undercrossings since the 2006 FEIS has increased the number and magnitude of bridges required to pass these areas. These improvements are included in the Alternative 2B estimate. Avalanche sheds were also added to this alternative to mitigate high hazard avalanche zones. The estimate for the sheds was based on a comparison with other recently planned and/or constructed snow sheds, including the Snoqualmie Pass area in the State of Washington. Applying an average unit cost of \$17 thousand per lineal foot to the three avalanche sheds briefly discussed in Section 3.3 yields a cost of approximately \$25.5 million. This cost is included in the updated estimate for Alternative 2B.

The preceding improvements are exclusive to the northern 28-mile segment of Alternative 2B, which was in the Final Design Phase until it was determined a supplemental EIS was required. Given the fact that more detailed information is available for this segment, and additional costs have been identified and included in the estimate, the construction contingency for this segment was reduced from 15 percent to 10 percent in the current estimate. The contingency is still higher than other Alternative 2B segments, in part to address potential higher costs for new bridge crossings at active debris flows. Geotechnical investigation identified locations that may require special design that could result in higher construction costs.

The contingency for all other segments within this alternative remains at 5 percent, which was the original contingency contained within the 2009 cost report.

The construction contingency for the West Lynn Canal portion of Alternative 3 has been set at 30 percent, due to the much more limited data available for this road segment. However, the

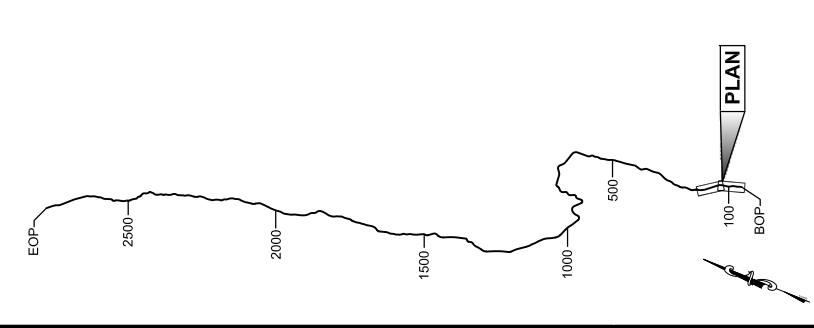
segment on the east side of Lynn Canal has a construction contingency of 5 percent, which is consistent with the other alternatives that include this segment.

Attachment A
Juneau Access Improvements Project
Revised East Lynn Canal Plan and Profile Sheets

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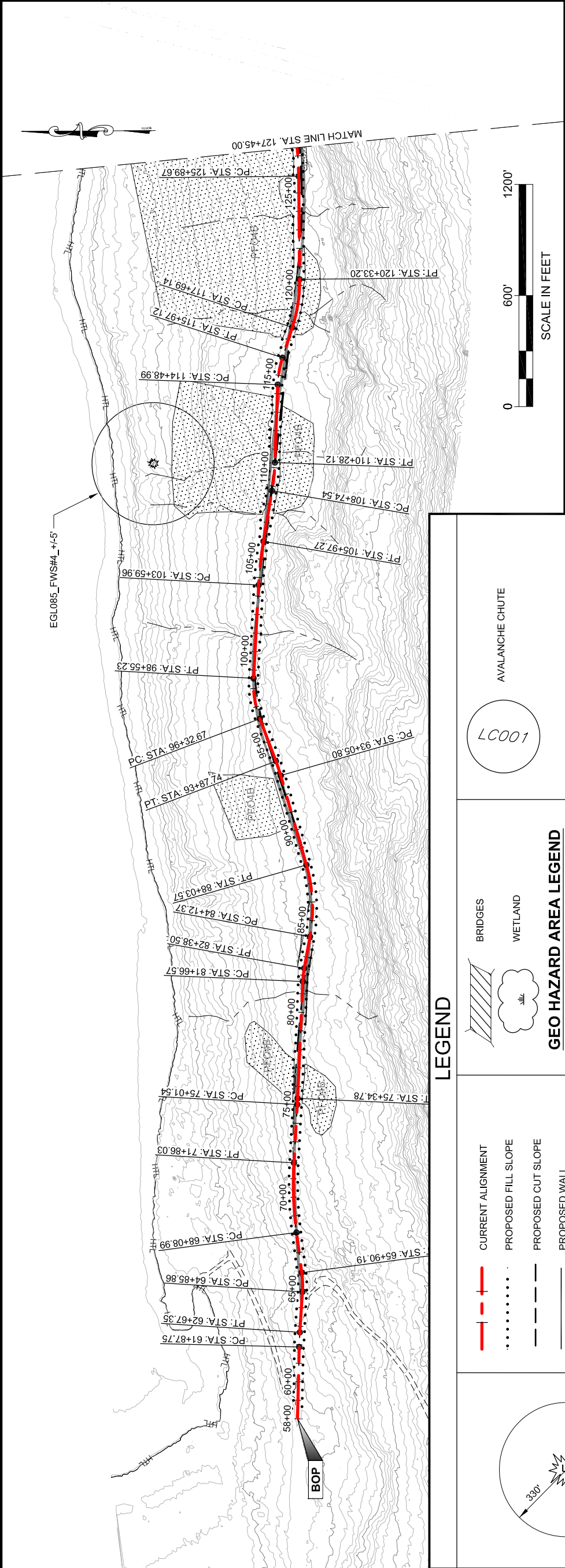
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SHEET NUMBER	TOTAL SHEETS
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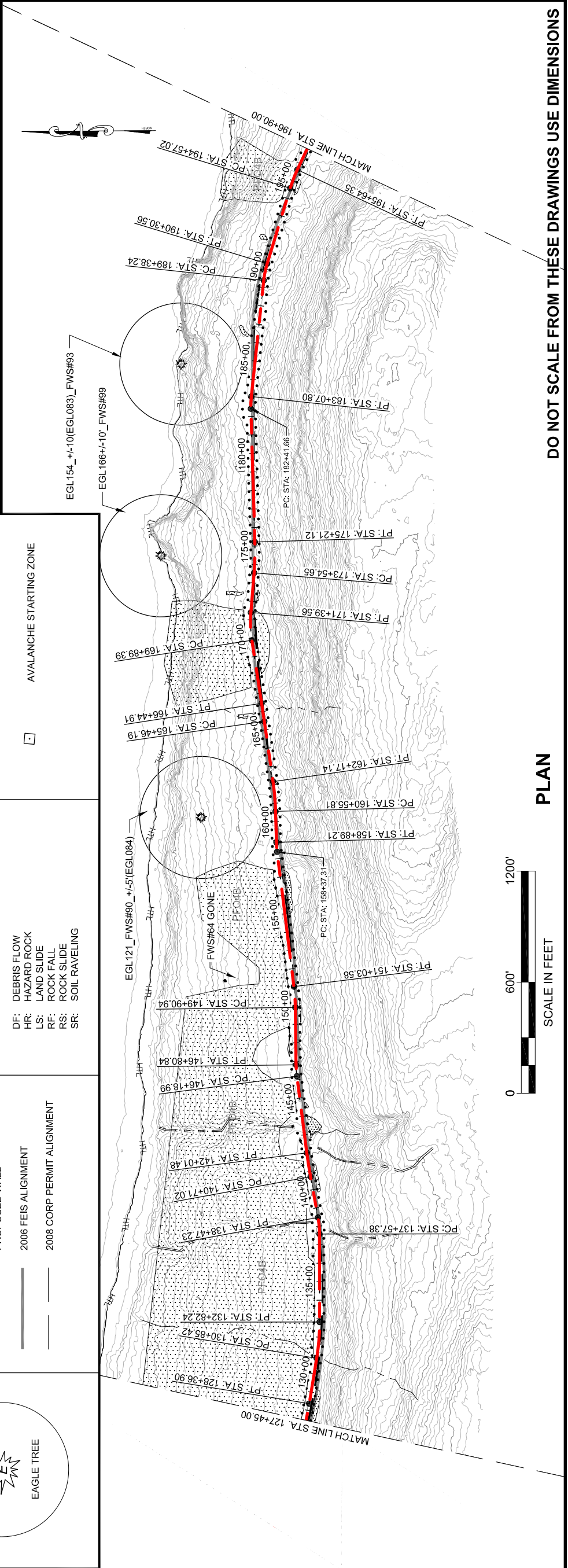


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	PROPOSED CUT SLOPE		AVALANCHE CHUTE
	PROPOSED WALL		AVALANCHE STARTING ZONE
	2006 FEIS ALIGNMENT		
	2008 CORP PERMIT ALIGNMENT		

GEO HAZARD AREA LEGEND

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- HR: HAZARD ROCK
- LS: LAND SLIDE
- RF: ROCK FALL
- RS: ROCK SLIDE
- SR: SOIL RAVELING



PLAN

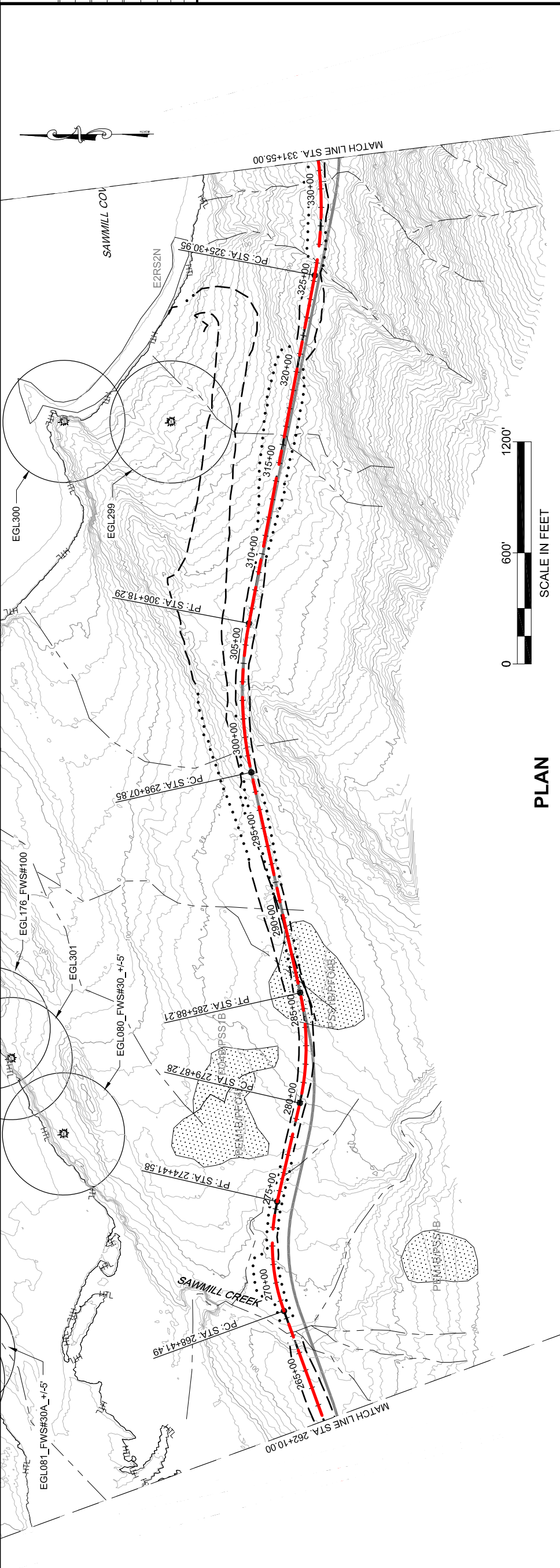
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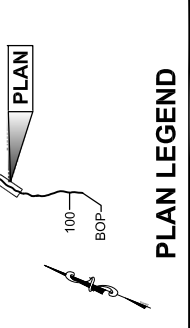
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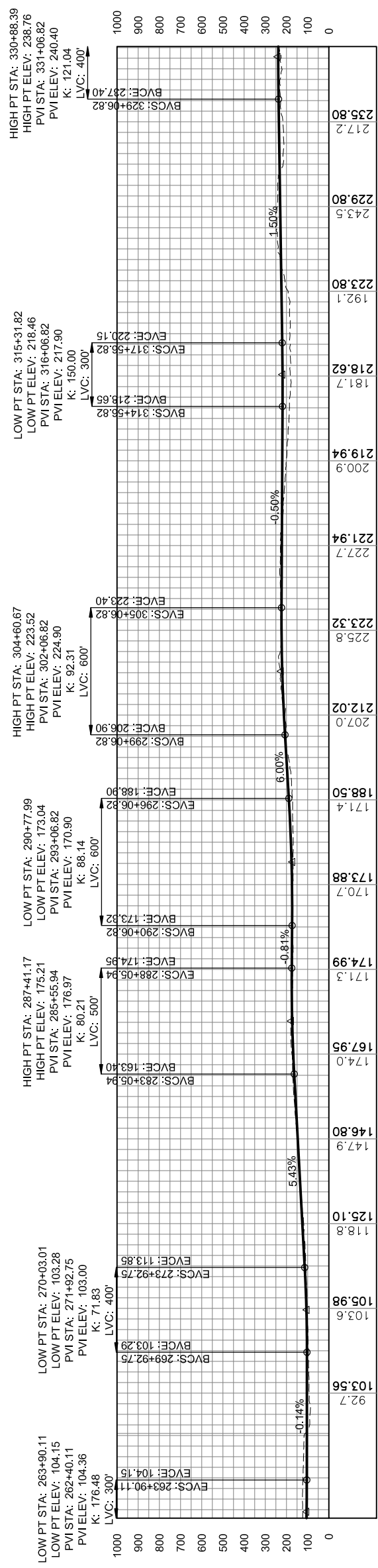
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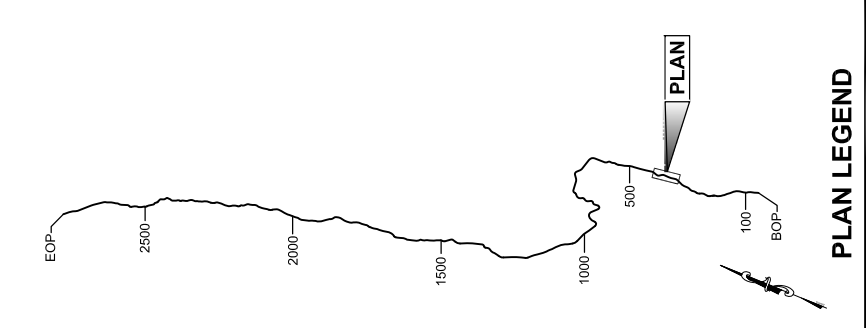


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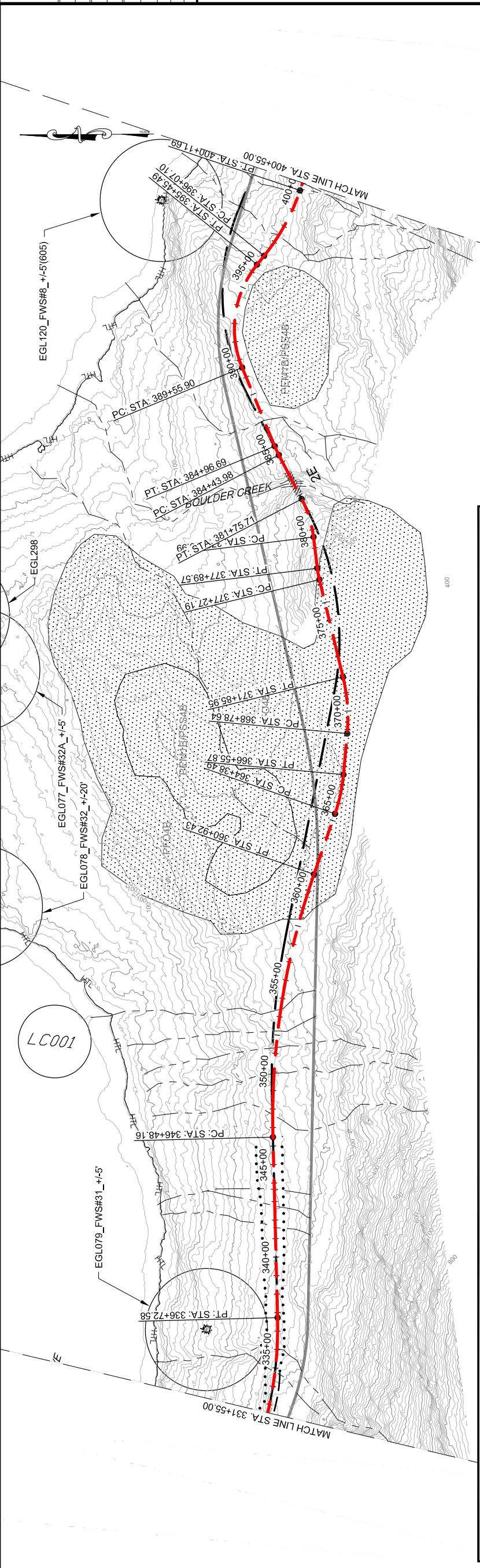
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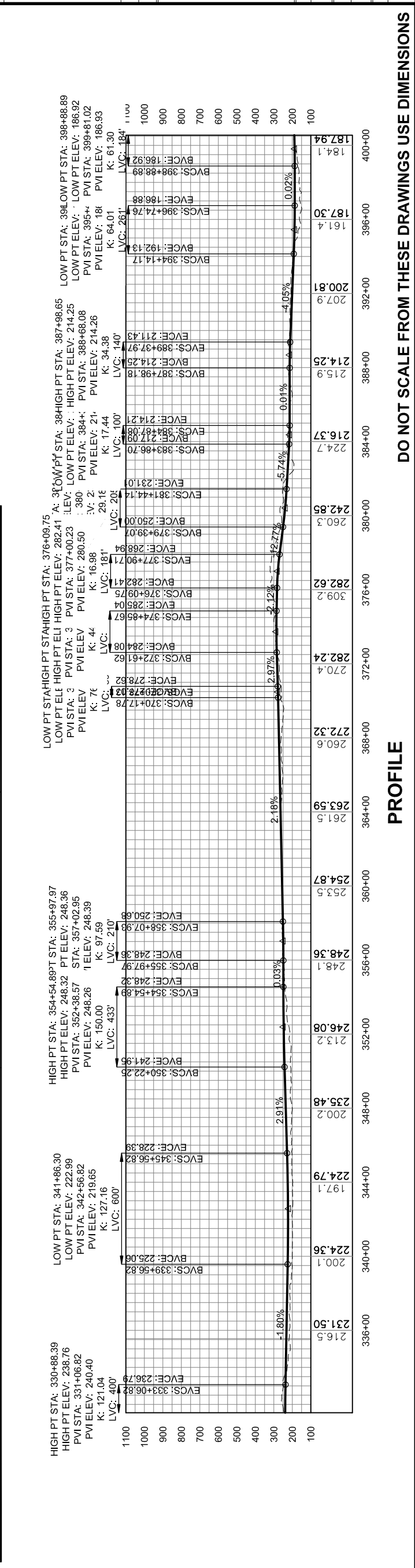
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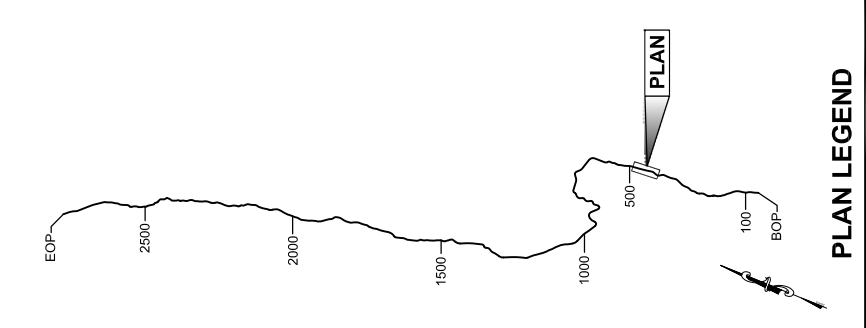
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EAGLE TREE



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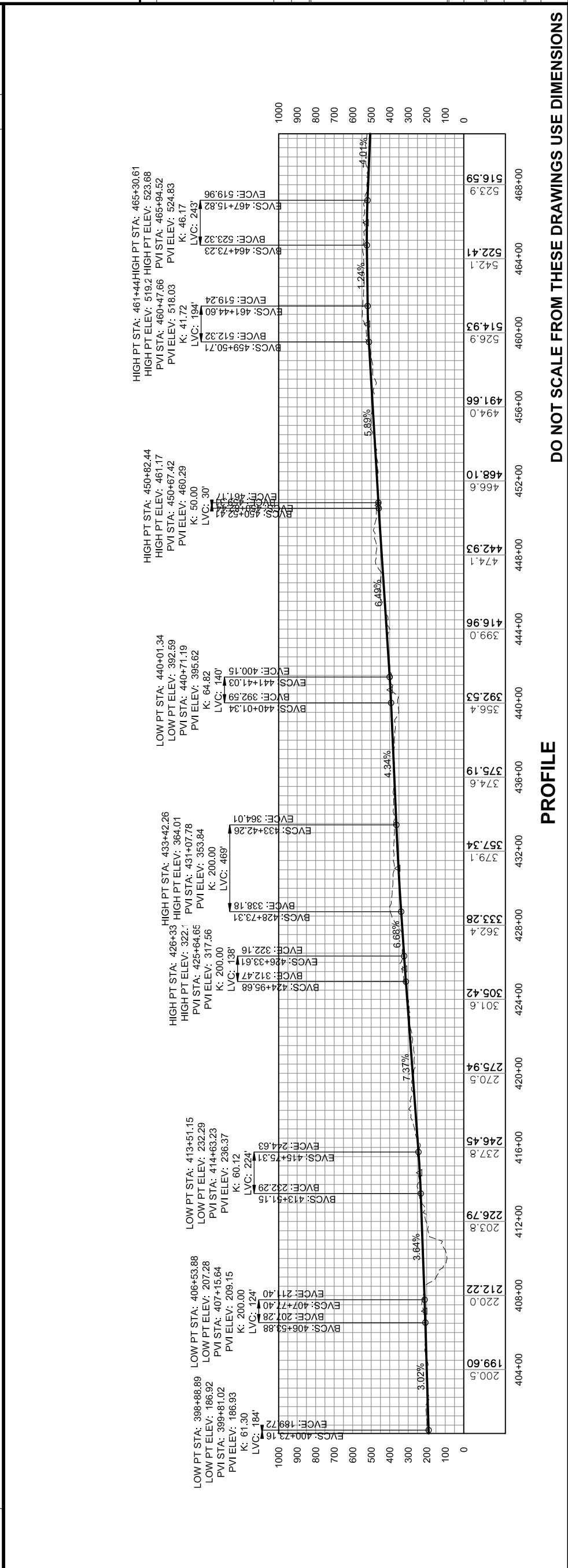
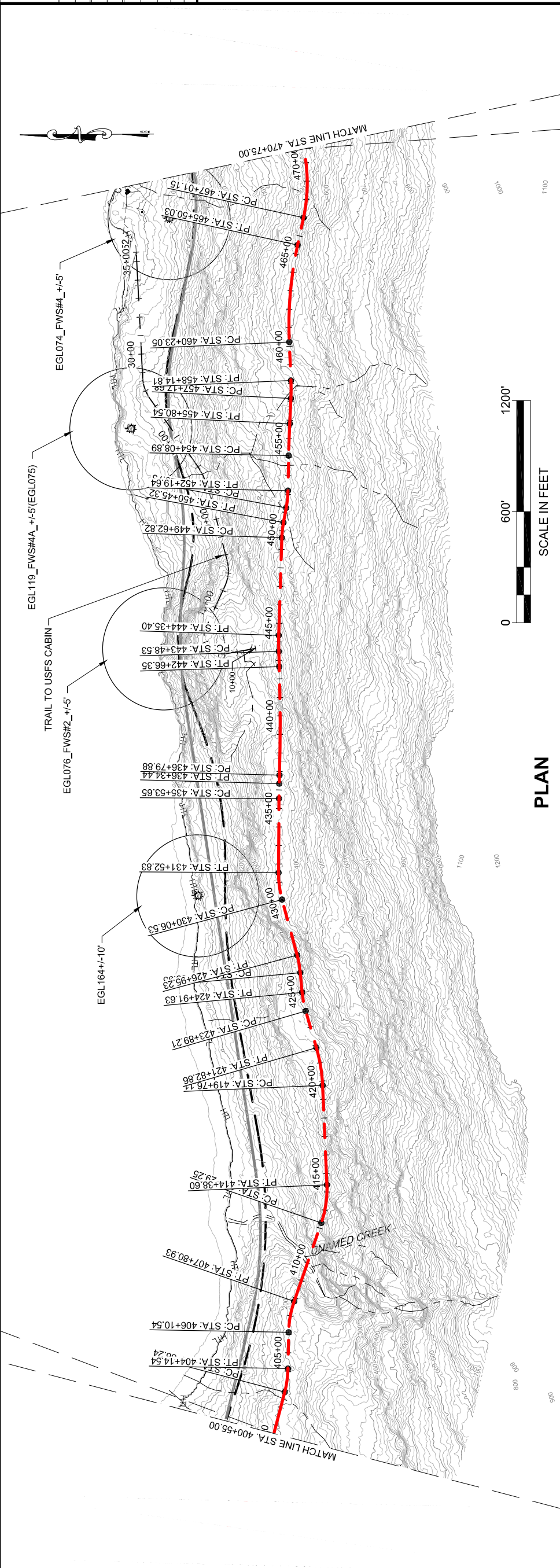
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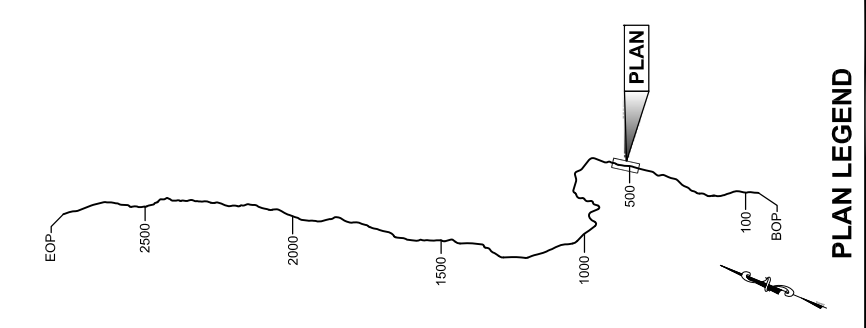
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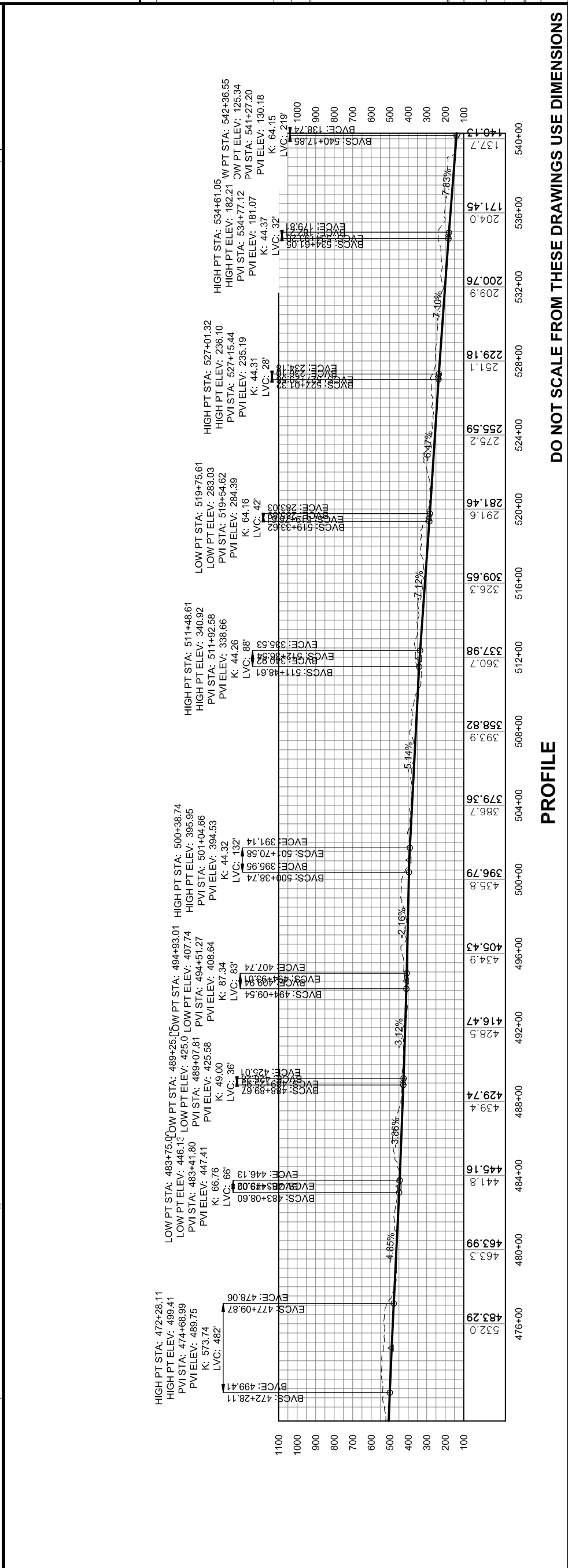
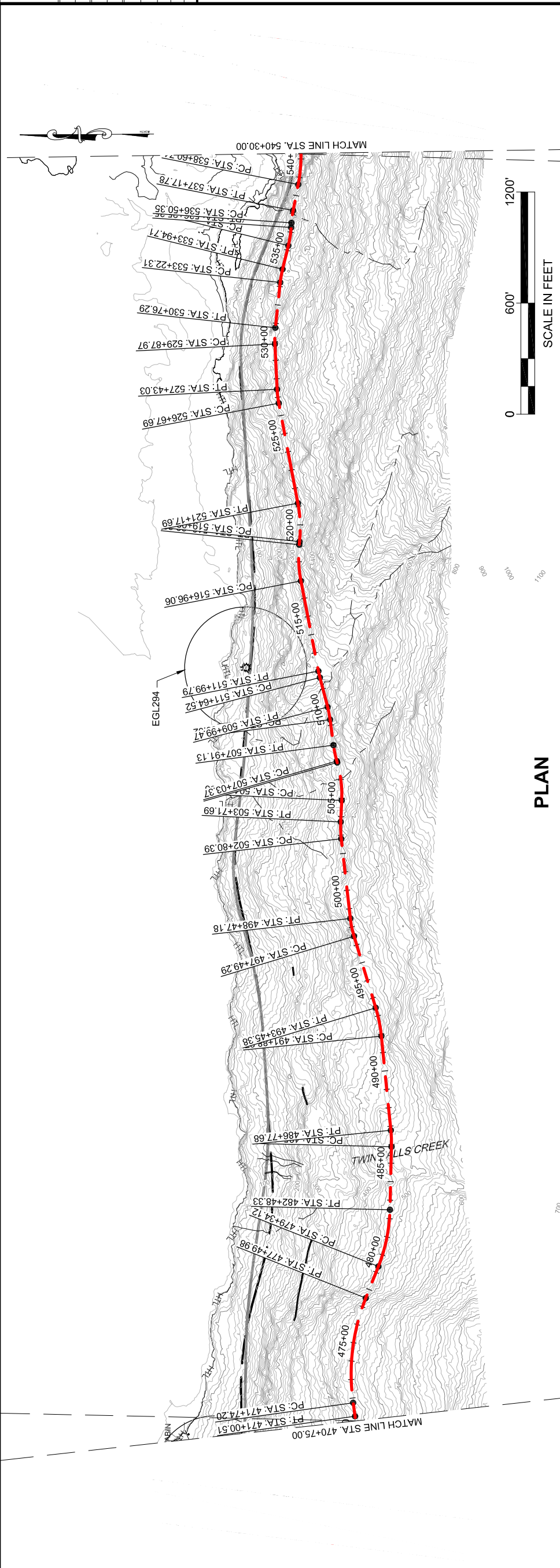
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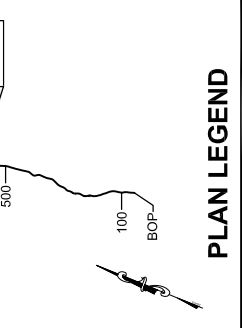
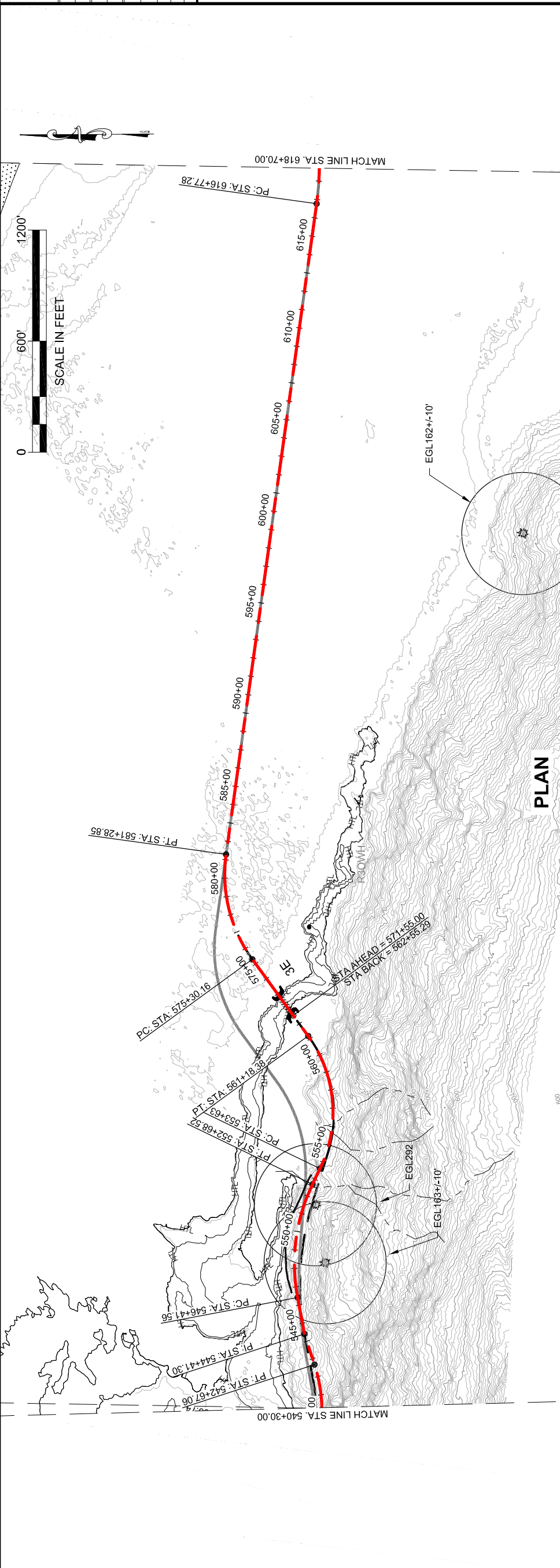
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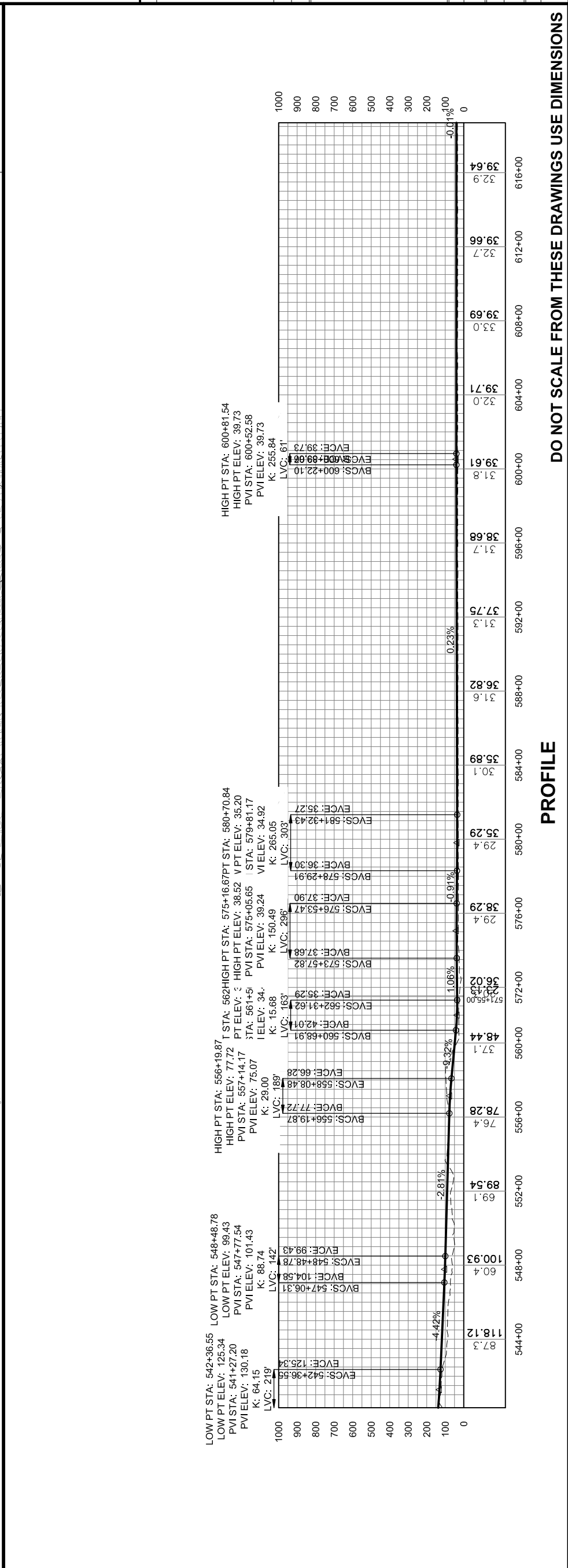
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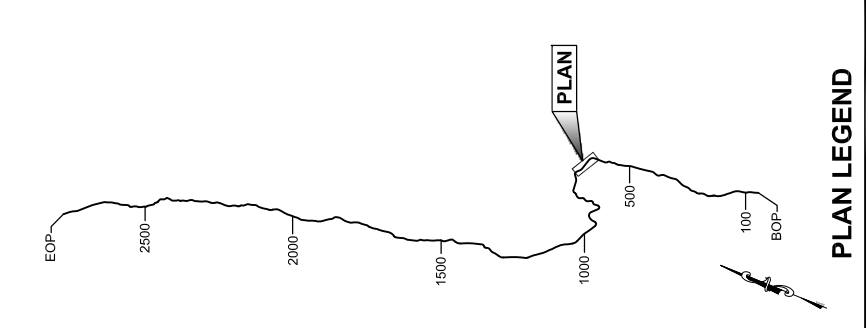
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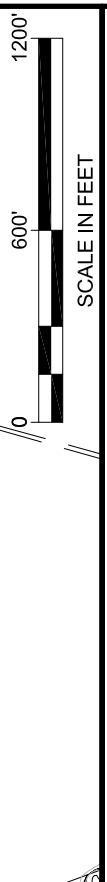
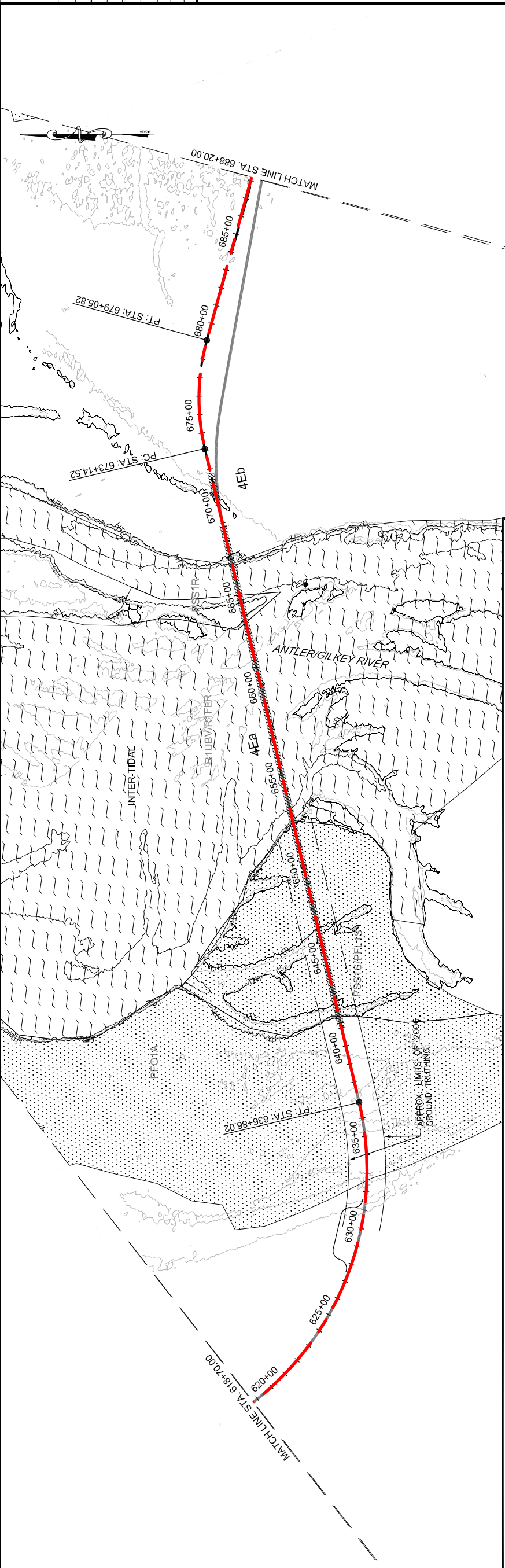
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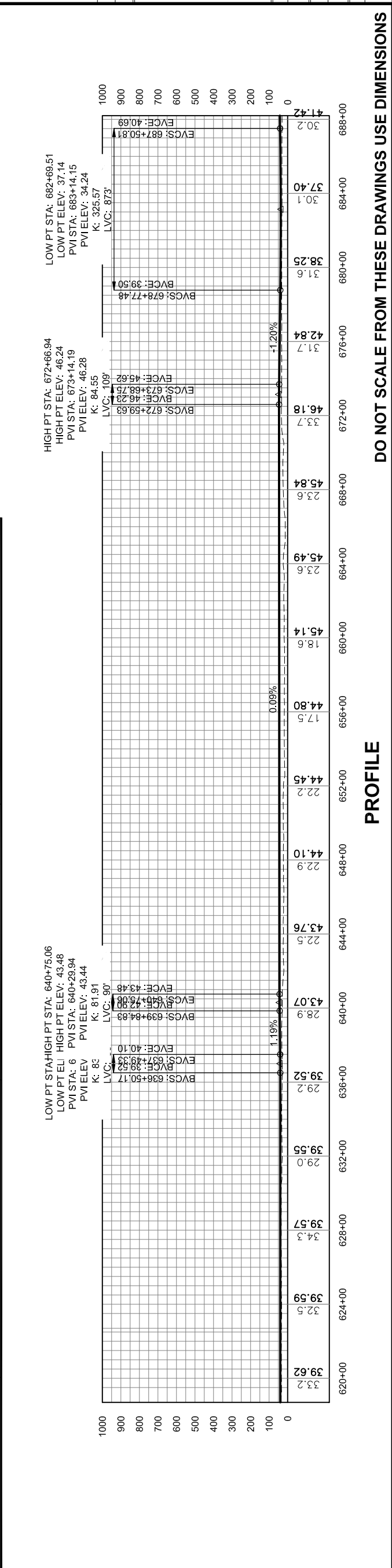
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AVALANCHE CHUTE

AVALANCHE STARTING ZONE

EAGLE TREE

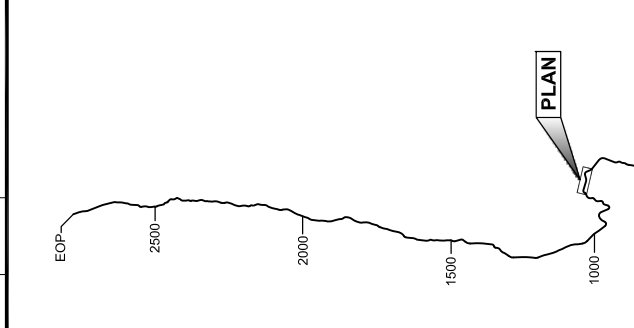


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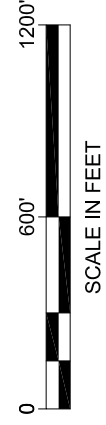
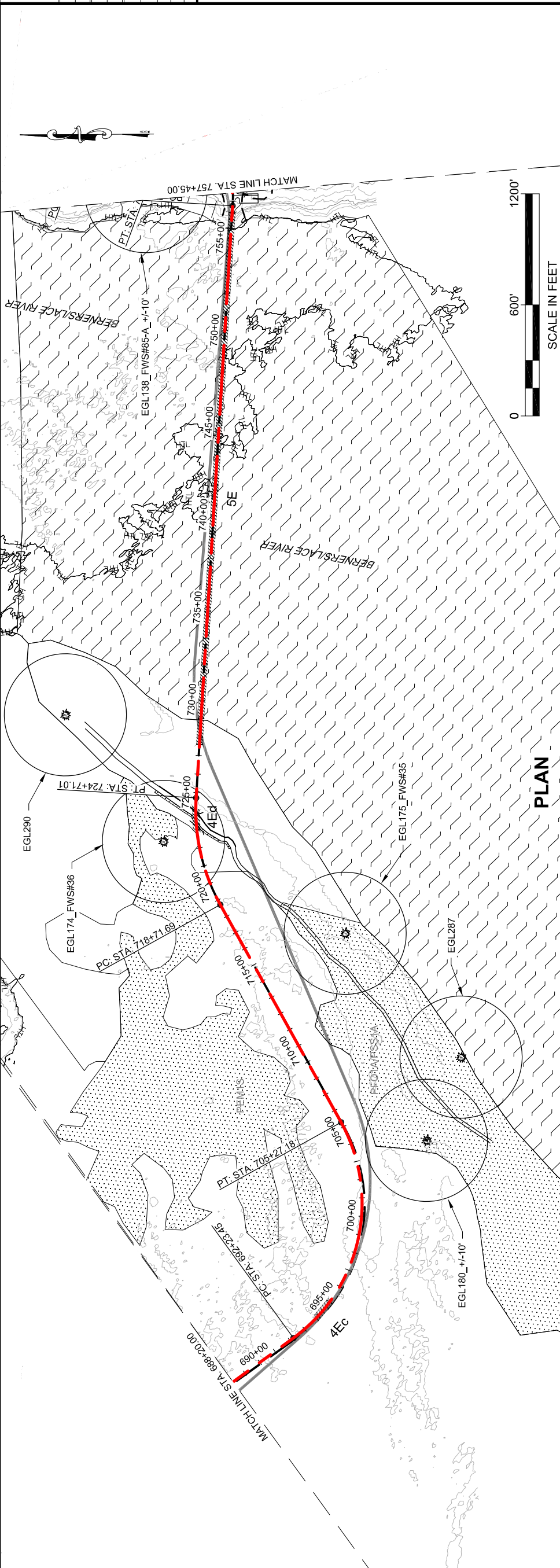
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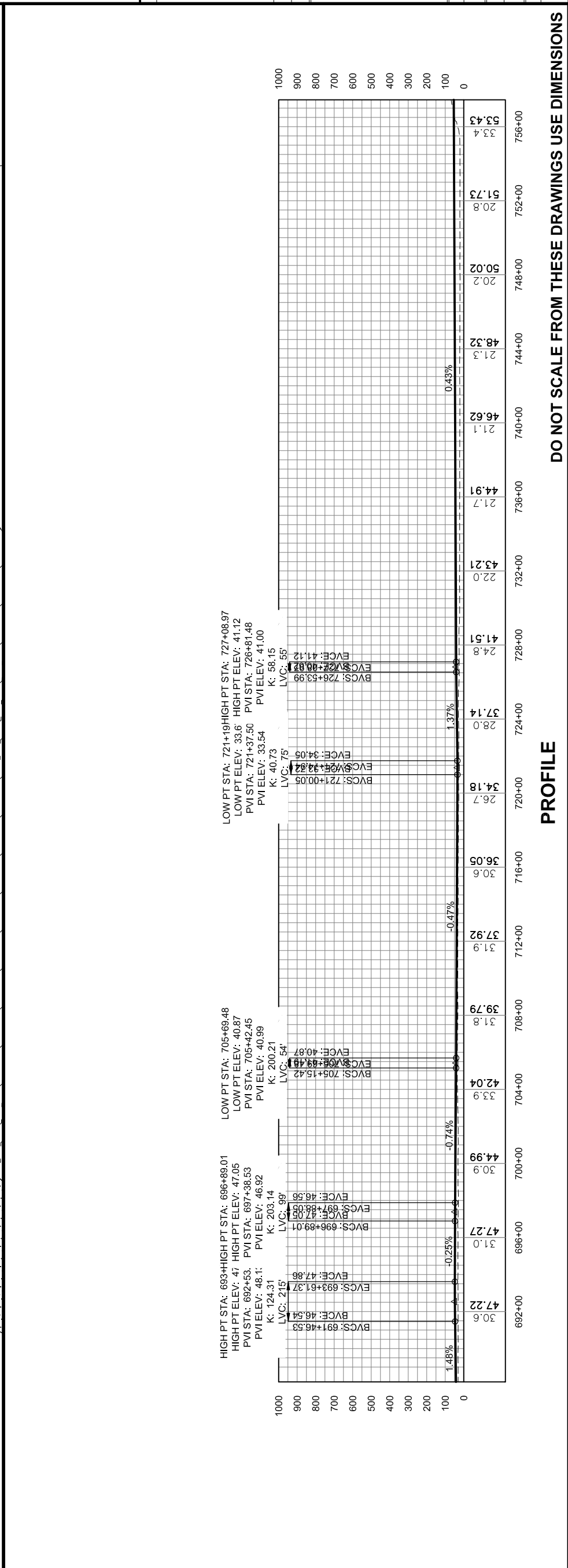
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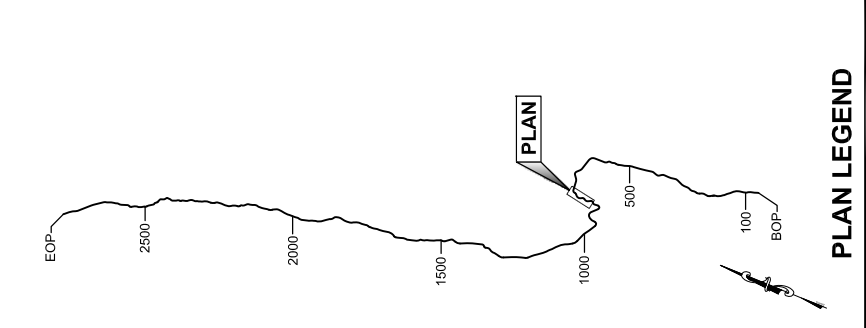
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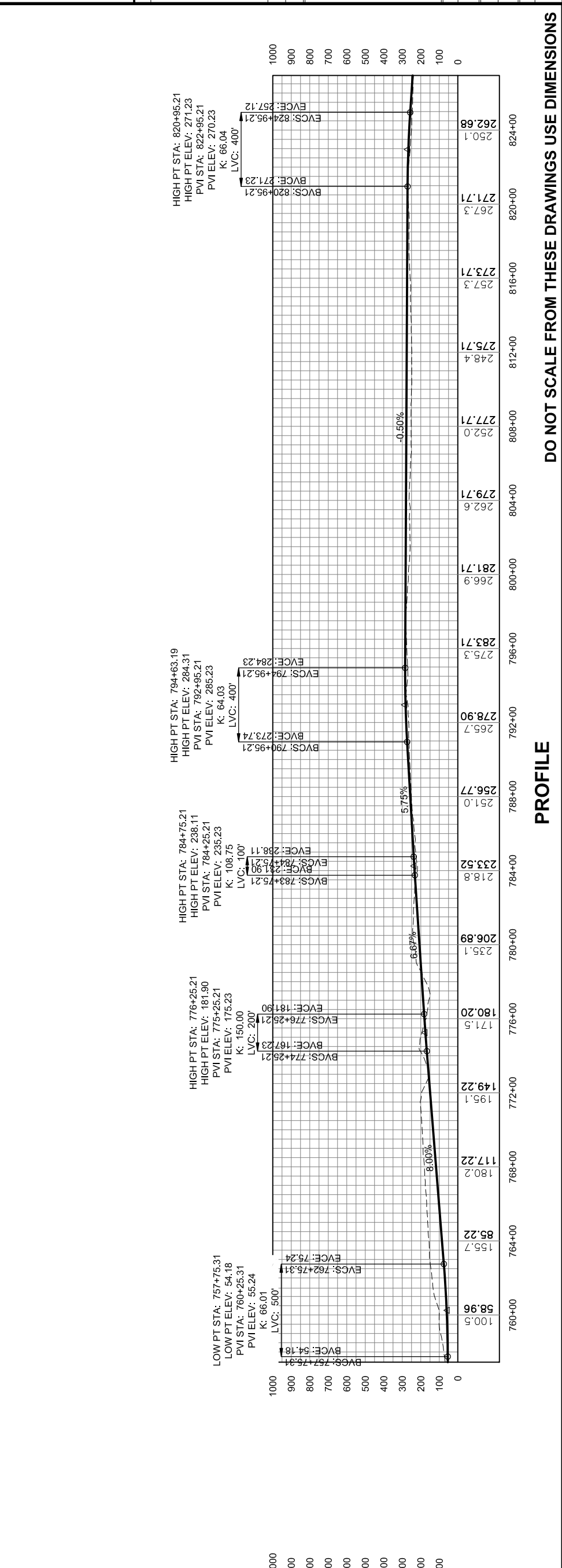
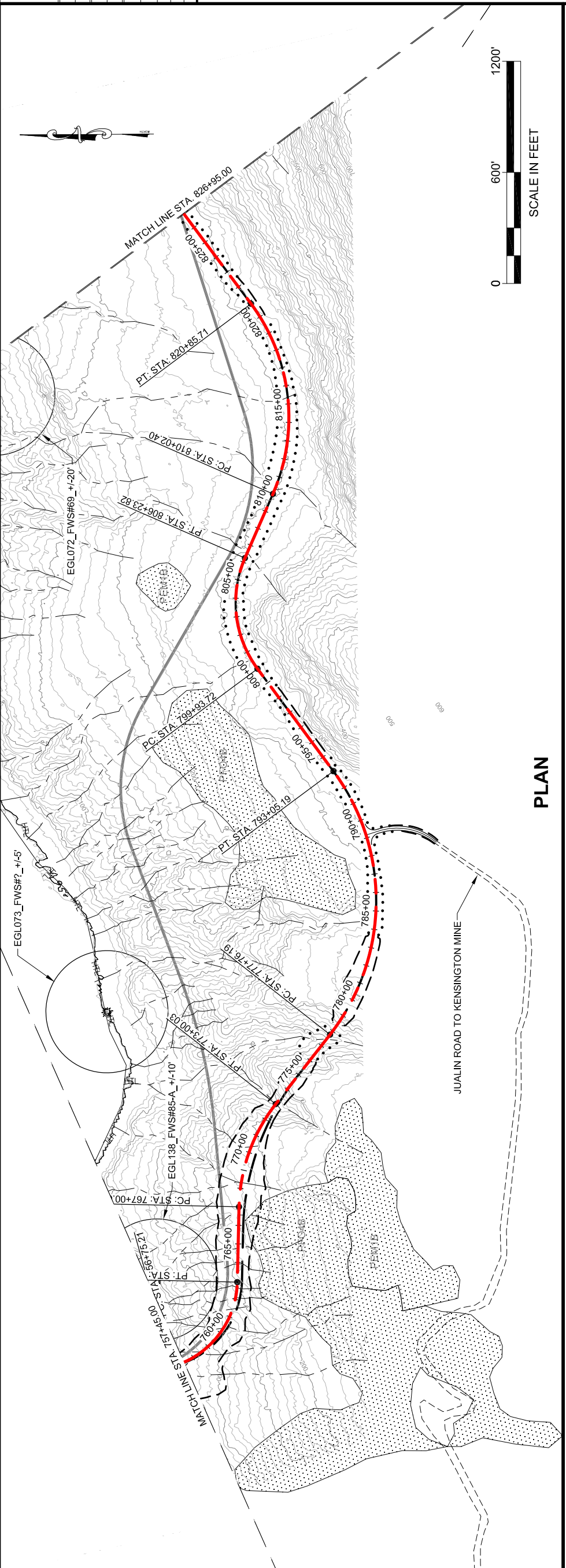
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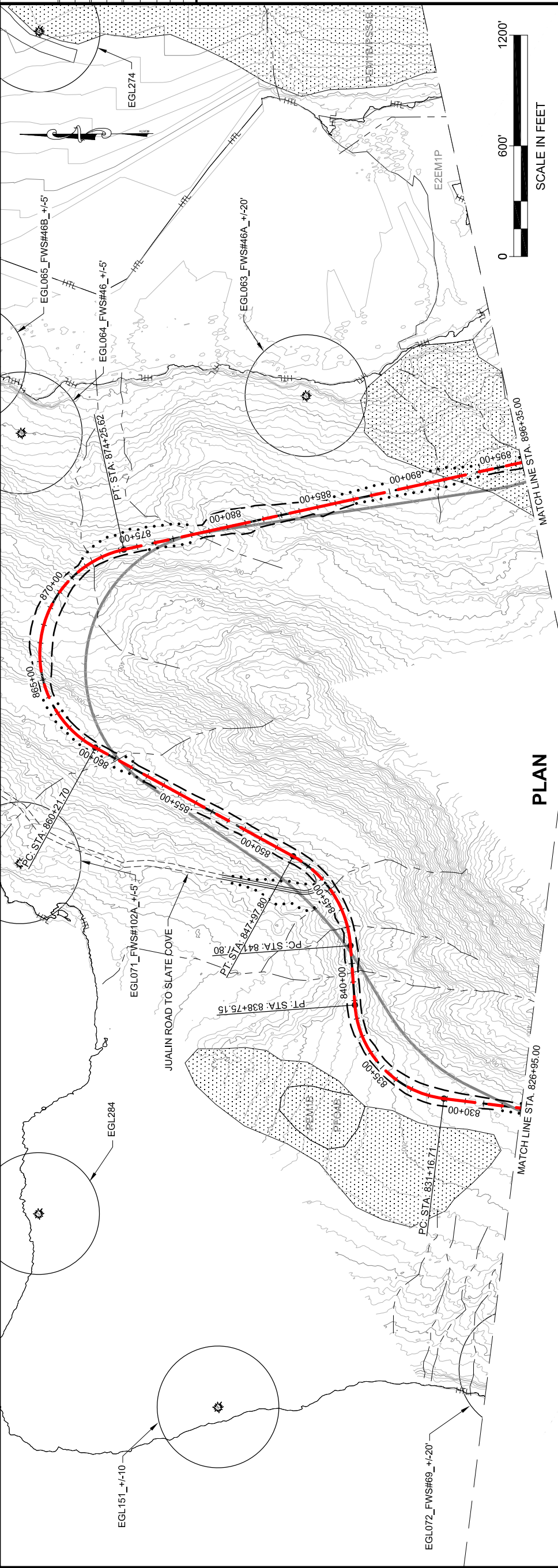
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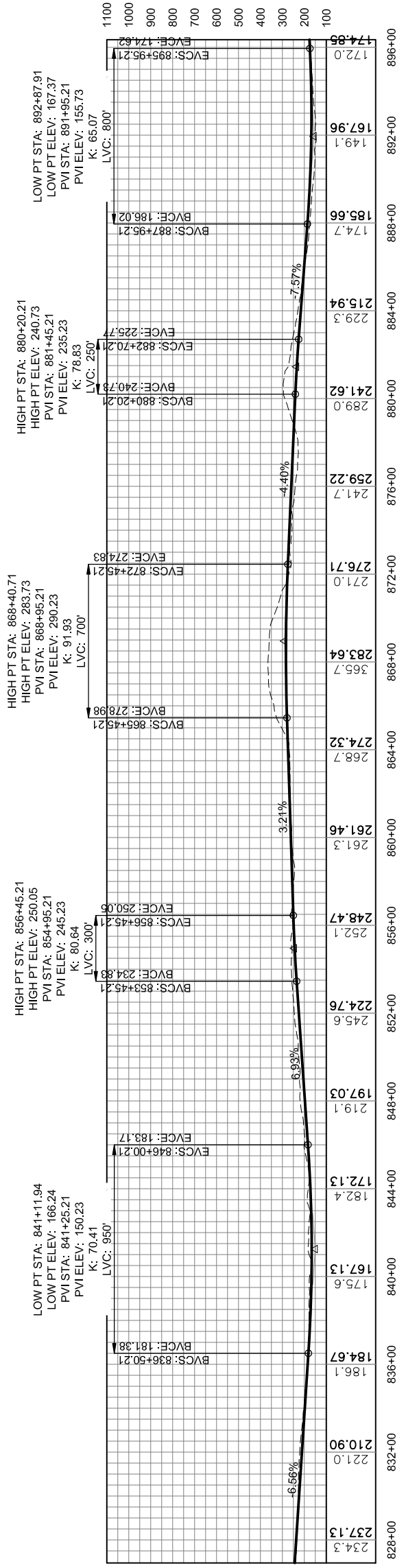
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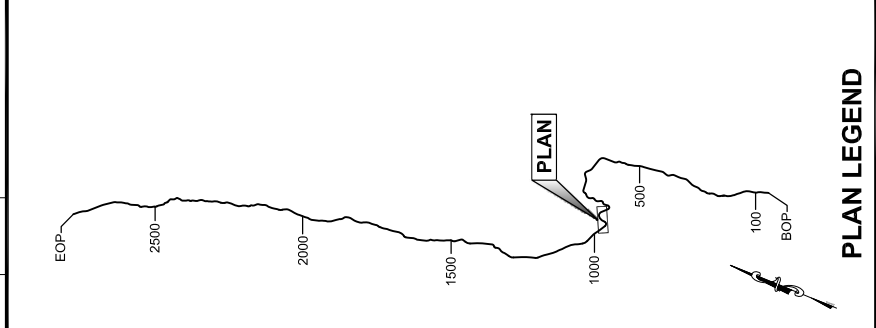
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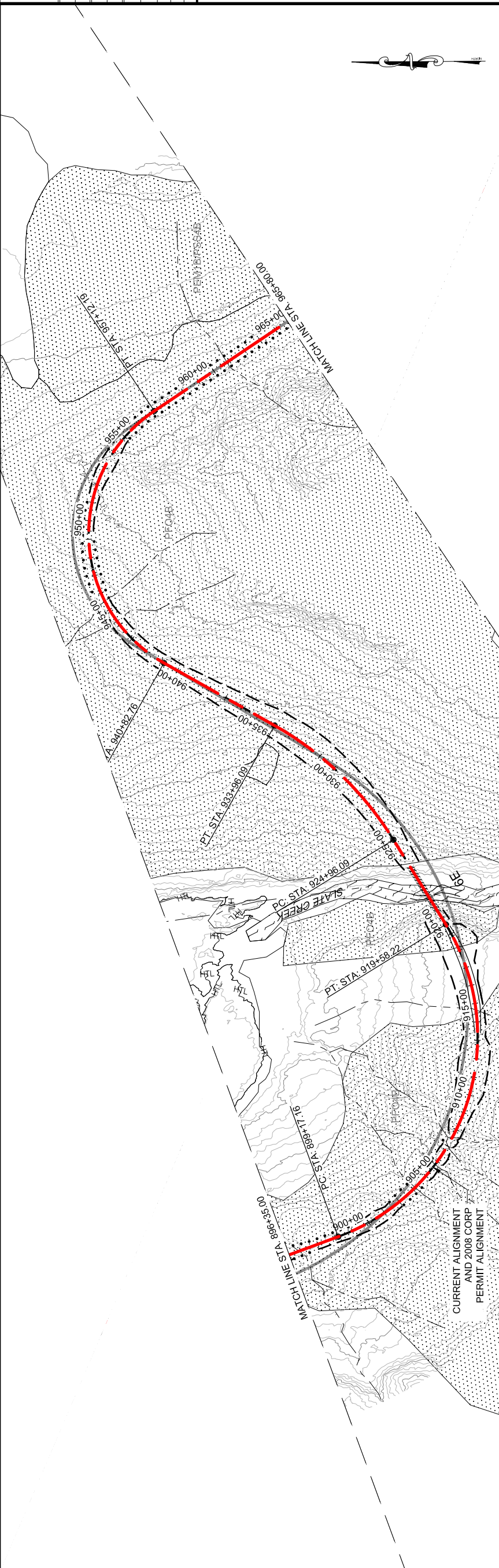
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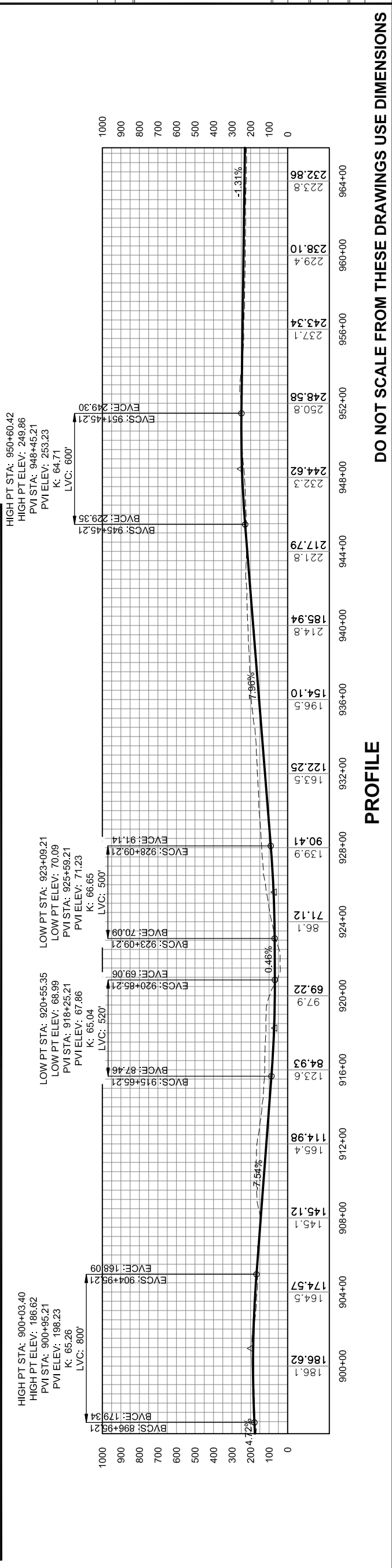
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	PROPOSED CUT SLOPE
	PROPOSED WALL
	2006 FEIS ALIGNMENT
	2008 CORP PERMIT ALIGNMENT

GEO HAZARD AREA LEGEND

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	WETLAND
	EAGLE TREE
	AVAILANCHE CHUTE
	AVAILANCHE STARTING ZONE

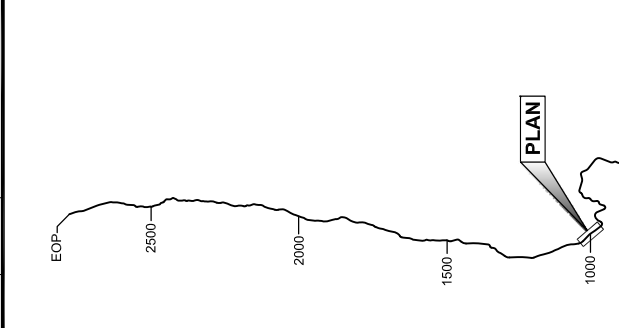
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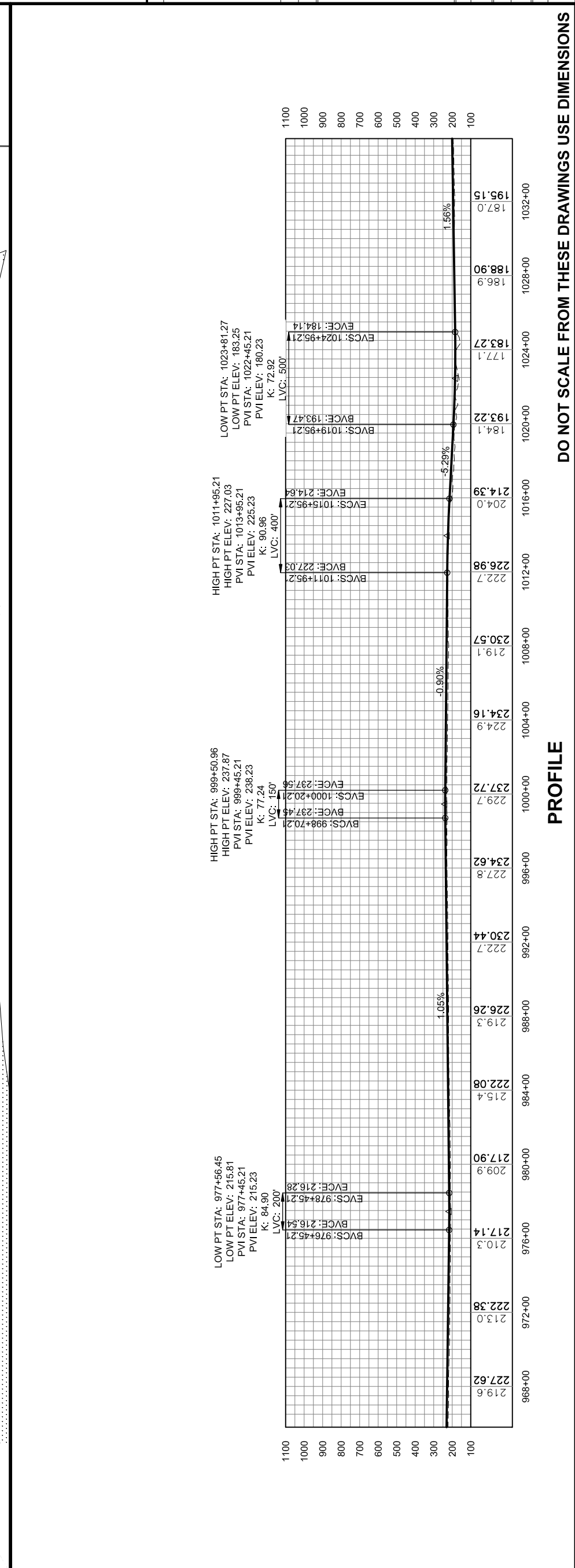
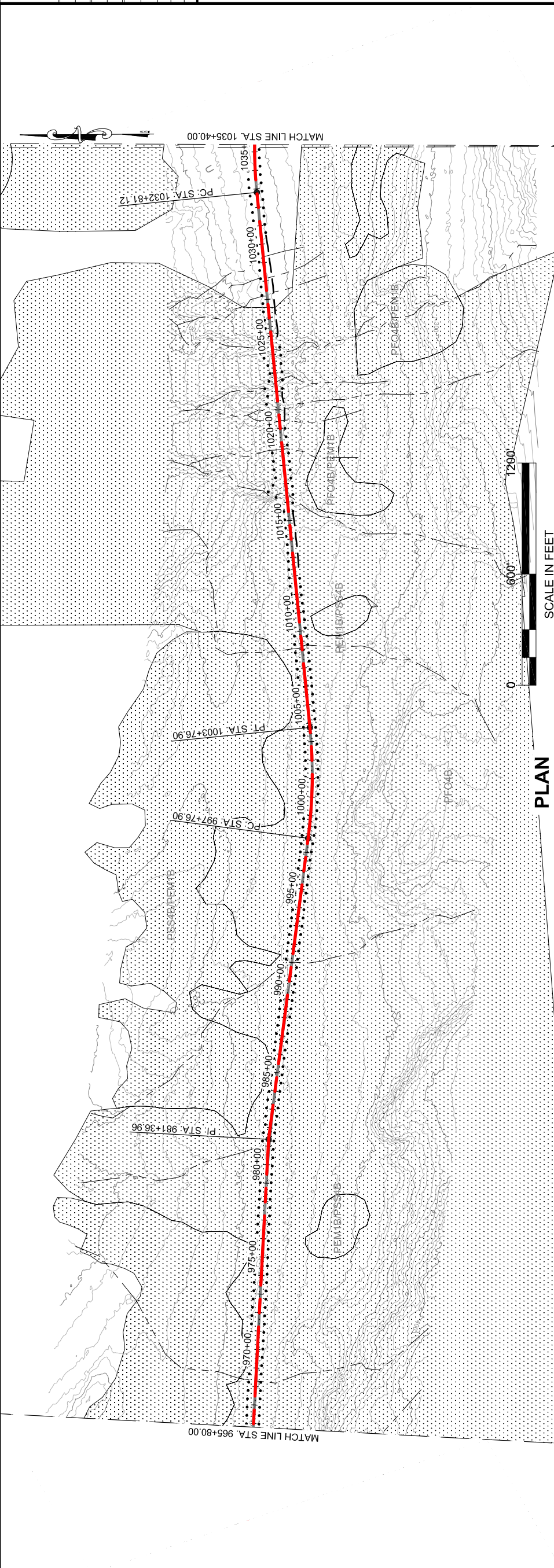
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STATE	71100
YEAR	2013
SHEET NUMBER	EL13
TOTAL SHEETS	38



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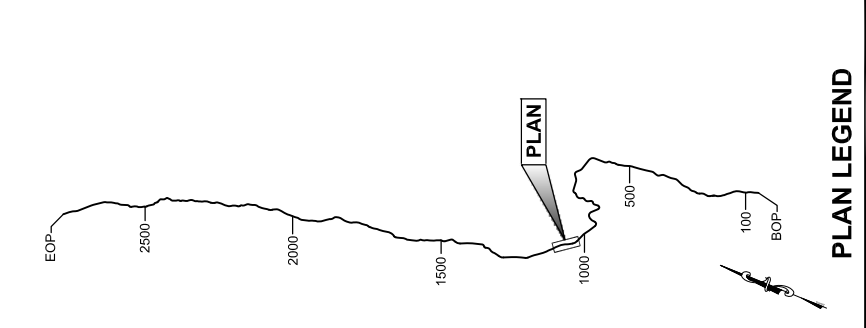
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APPENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS

NO.	DATE	DESCRIPTION



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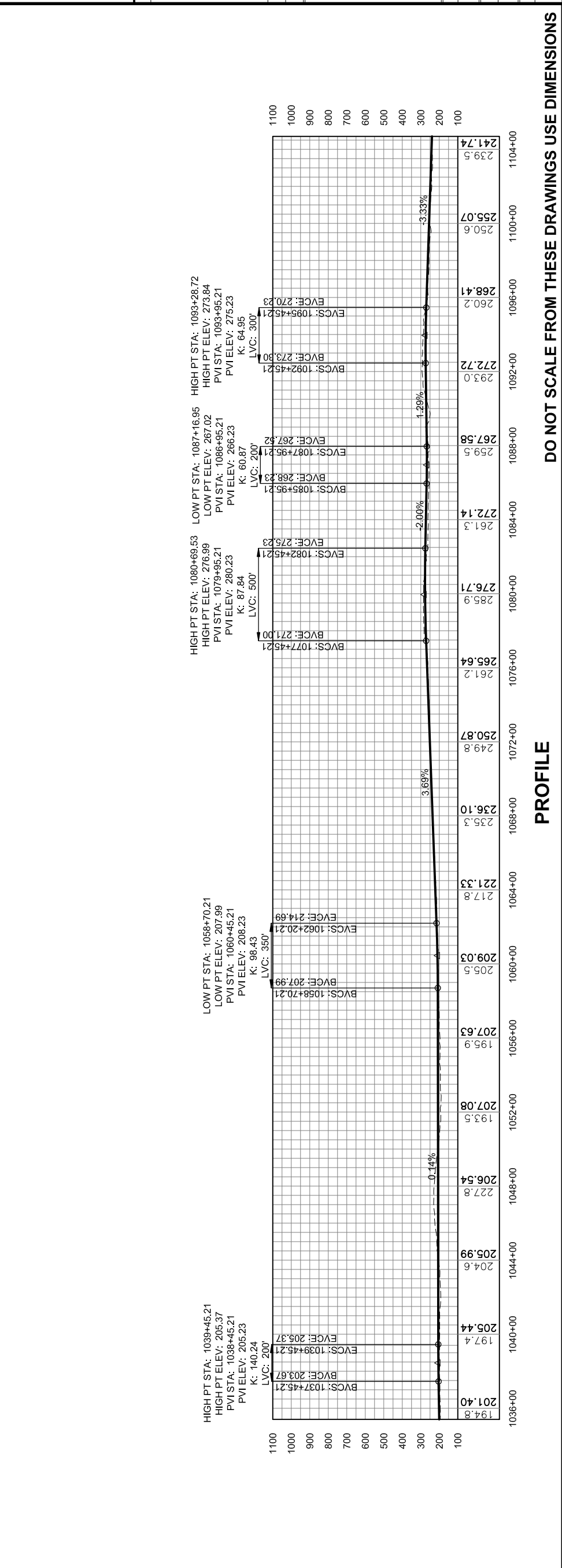
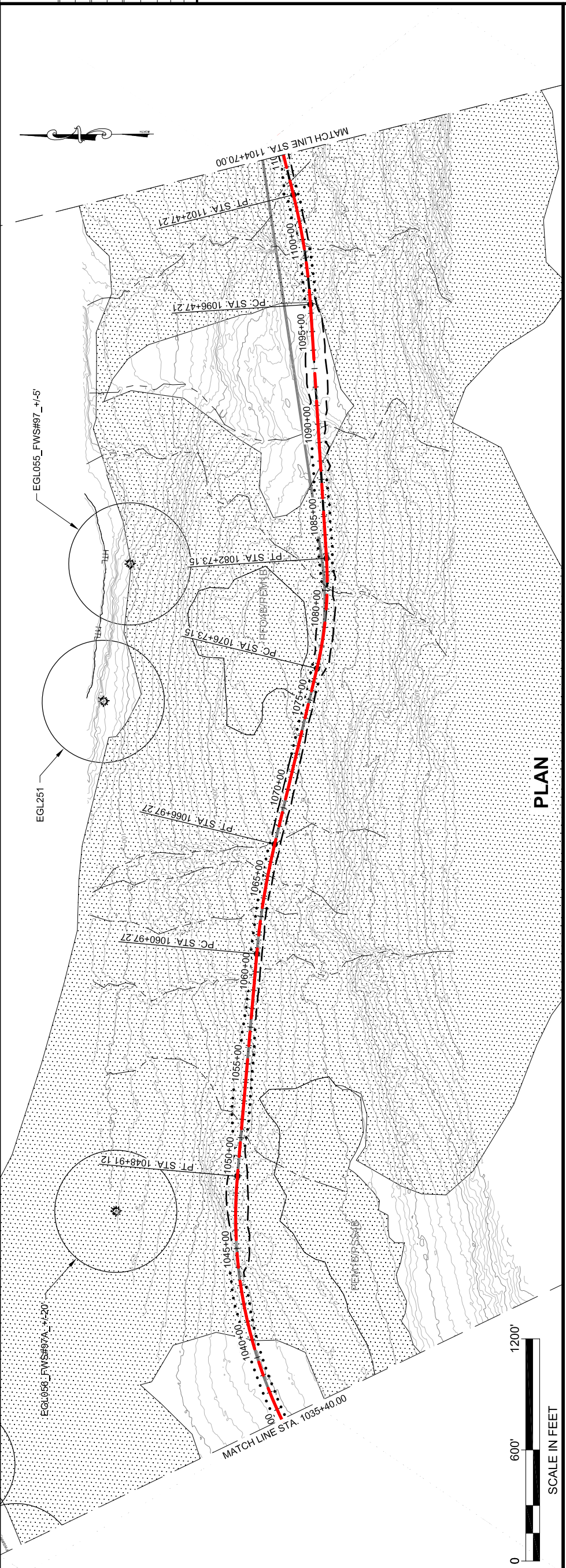
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 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL14
TOTAL SHEETS	38

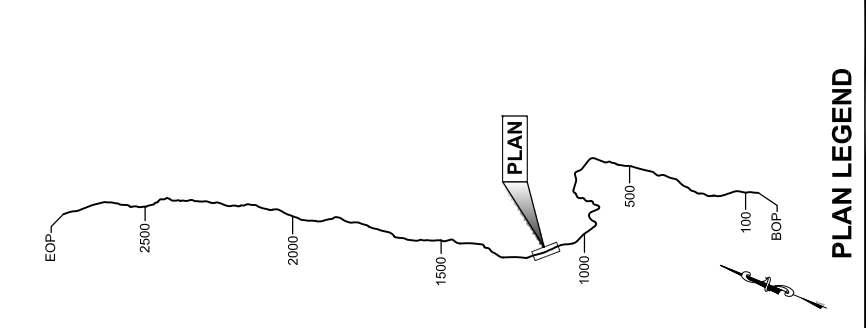


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NO.	DATE	DESCRIPTION

APPENDIX NUMBER
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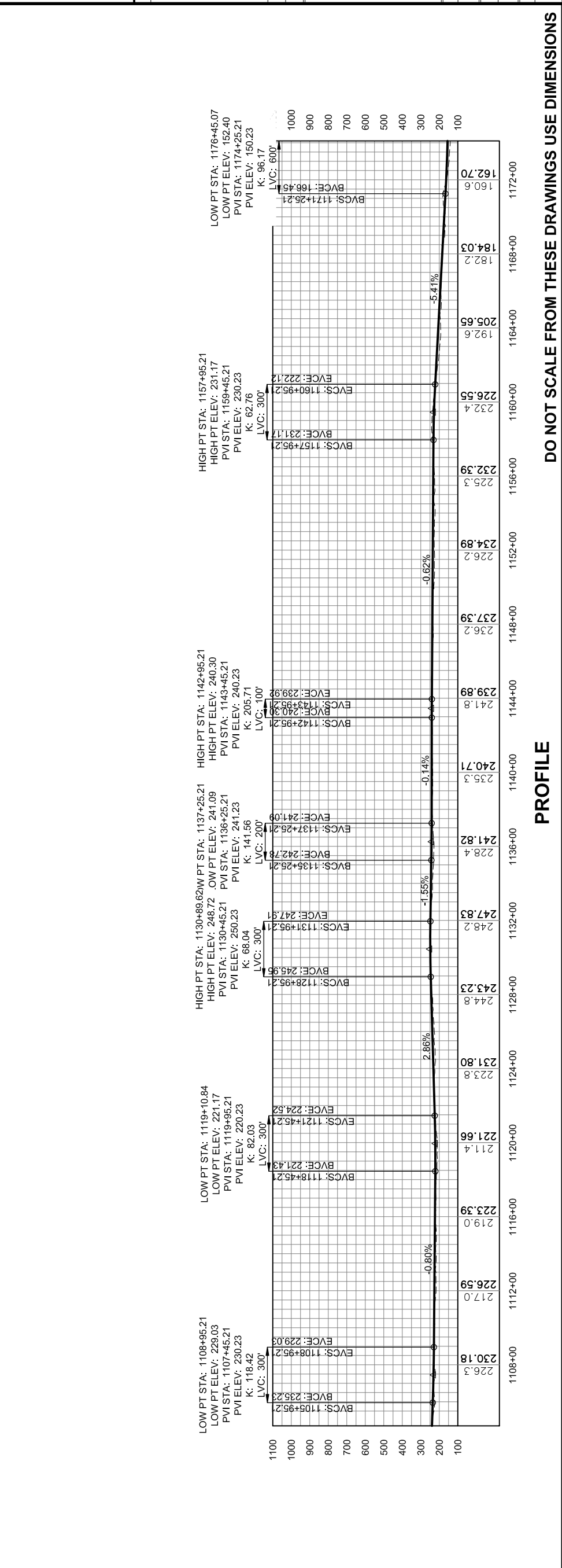
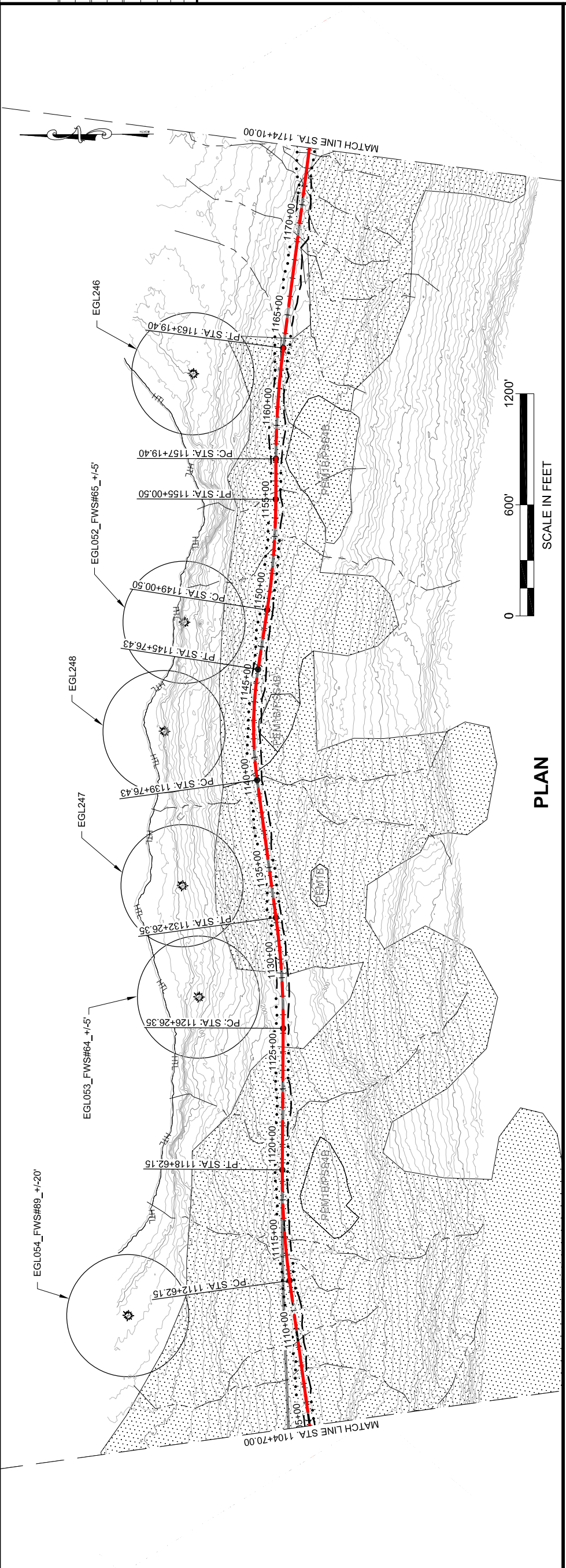
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL15
TOTAL SHEETS	38



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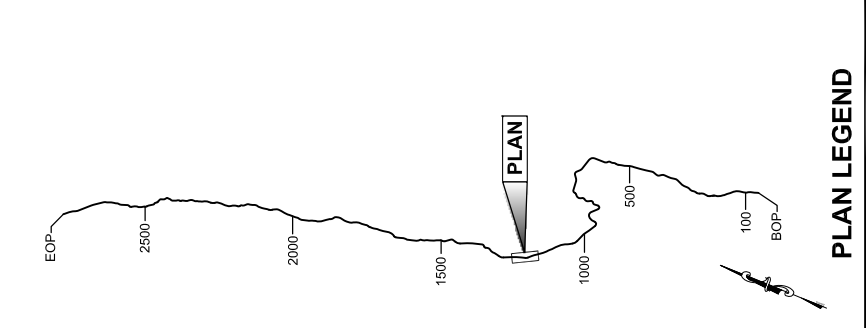
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NO.	DATE
DESCRIPTION	



PLAN LEGEND

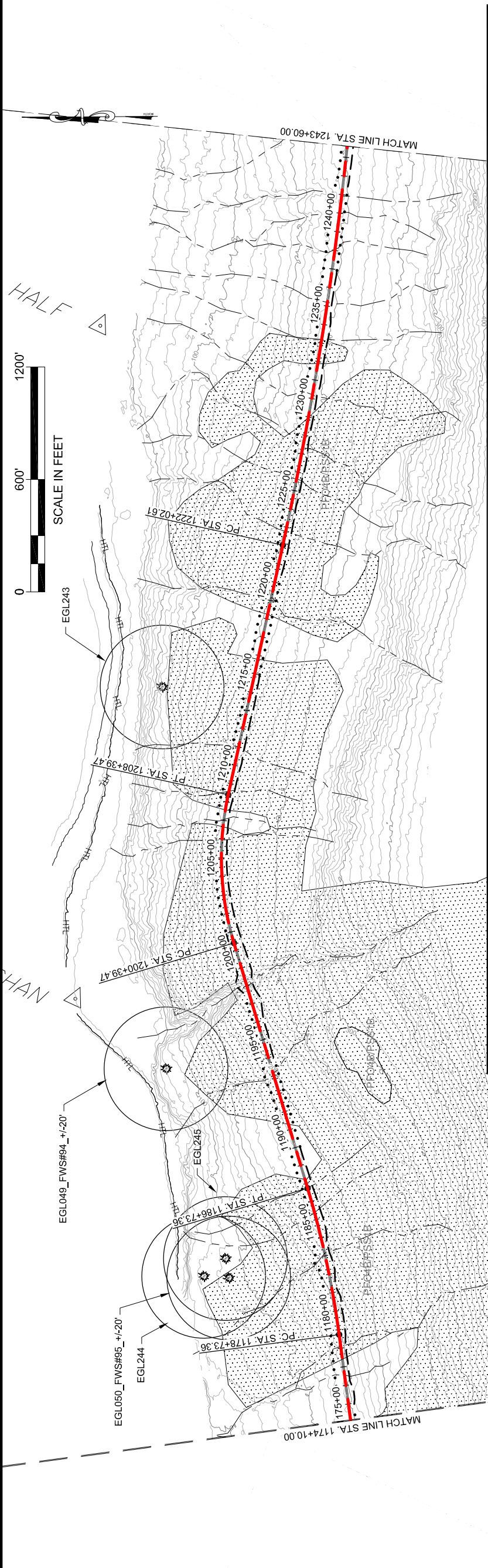
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DRAFT

DESIGNED BY:
 DRAWN BY:
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL16
TOTAL SHEETS	38

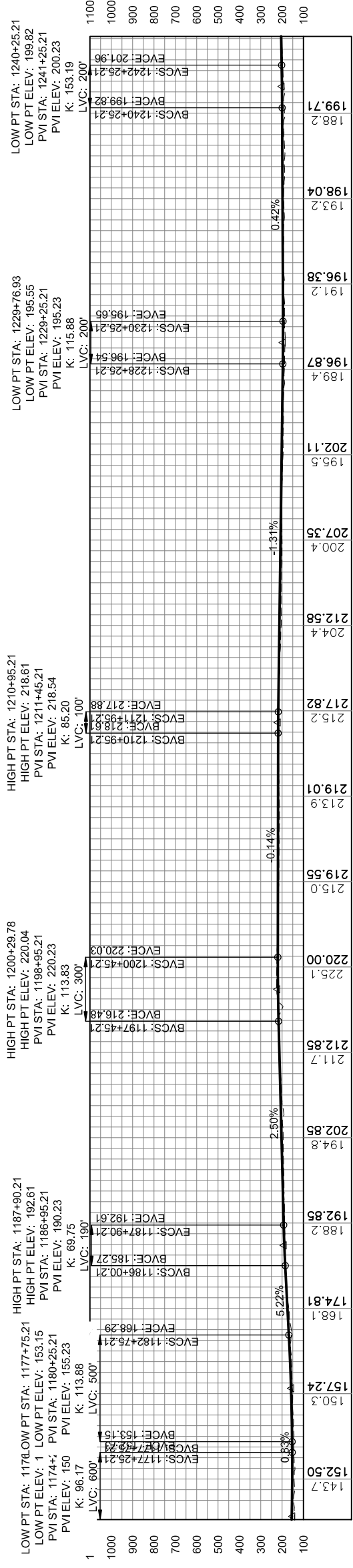


LEGEND

CURRENT ALIGNMENT PROPOSED FILL SLOPE PROPOSED CUT SLOPE PROPOSED WALL 2006 FEIS ALIGNMENT 2008 CORP PERMIT ALIGNMENT	BRIDGES WETLAND EAGLE TREE	AVALANCHE CHUTE AVALANCHE STARTING ZONE
--	----------------------------------	--

GEO HAZARD AREA LEGEND

DF: DEBRIS FLOW
 HR: HAZARD ROCK
 LS: LAND SLIDE
 RF: ROCK FALL
 RS: ROCK SLIDE
 SR: SOIL RAVELING



PROFILE

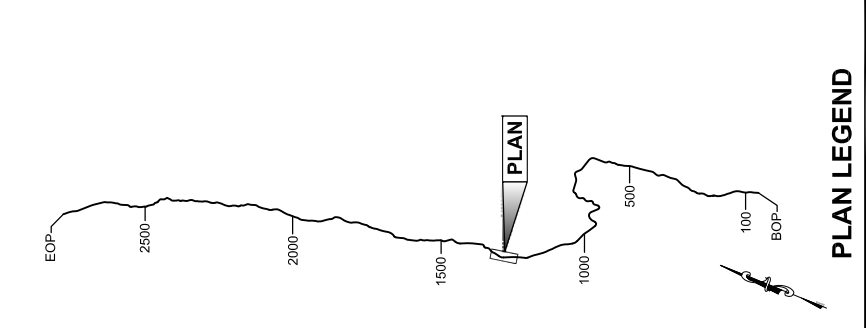
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NO.	DESCRIPTION

APPENDIX NUMBER
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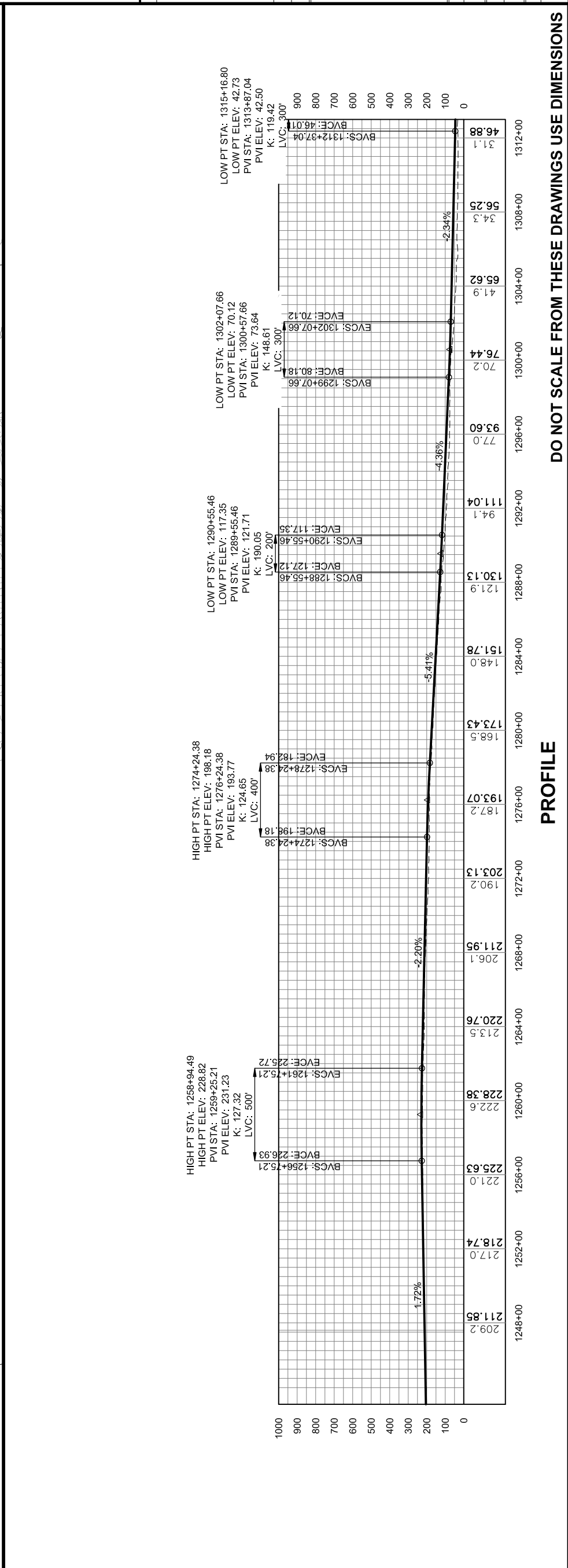
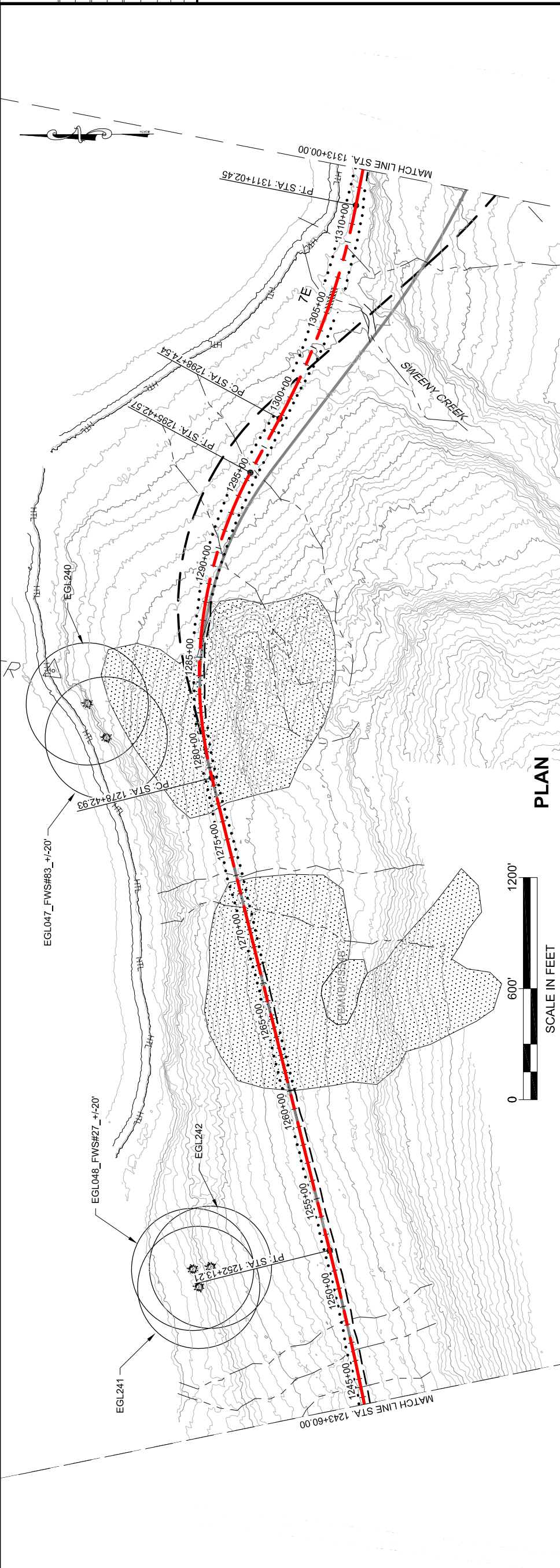
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL17
TOTAL SHEETS	38



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PROFILE

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NO.	DATE	DESCRIPTION

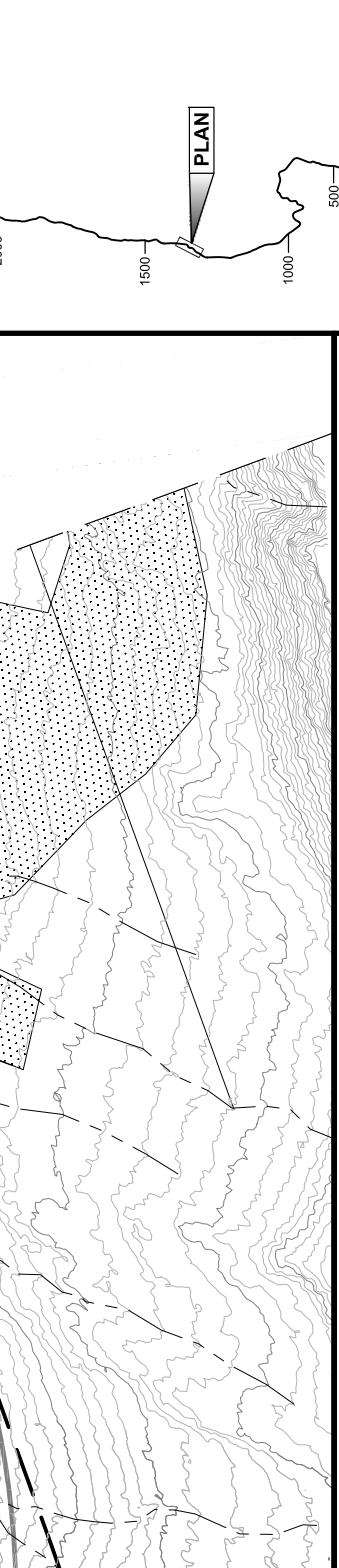
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ATTACHMENT NUMBER

PLAN



SCALE IN FEET



PLAN

PLAN LEGEND

CHECKED BY:

DRAFT

DESIGNED BY:

DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION

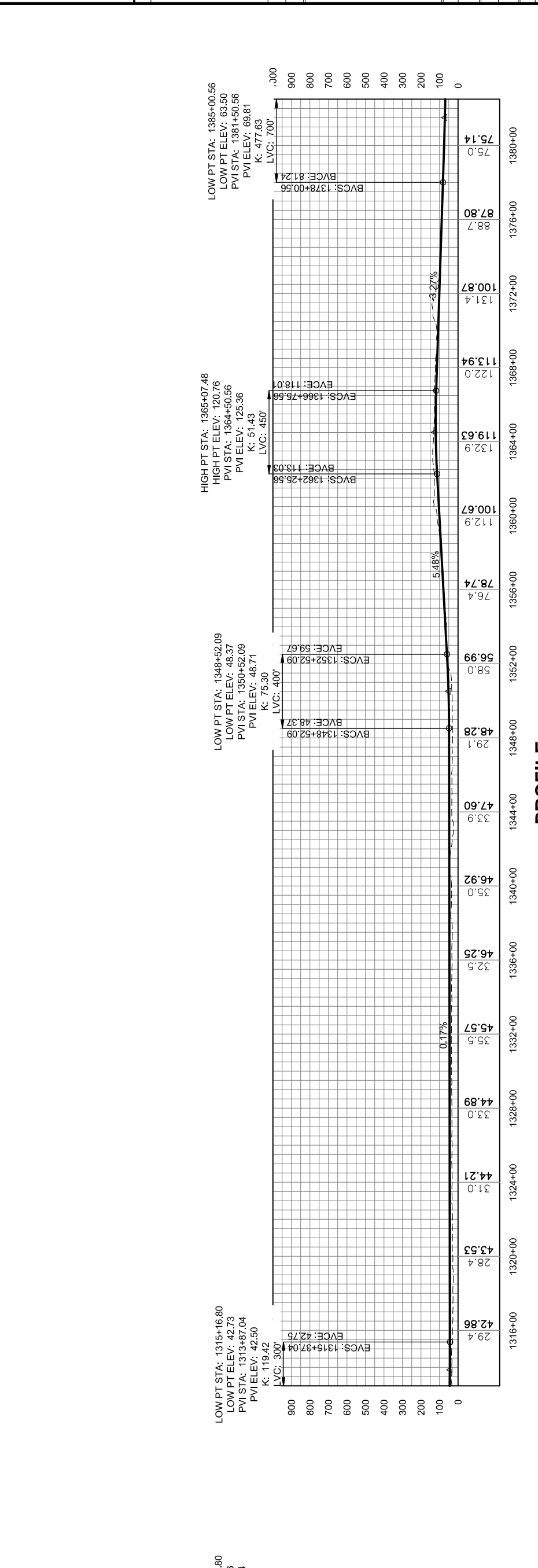
71100

STATE ALASKA

YEAR 2013

SHEET NUMBER EL18

TOTAL SHEETS 38



PROFILE

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LOW PT STA: 1385+00.56
 LOW PT ELEV: 63.50
 PVI STA: 1381+50.56
 PVI ELEV: 69.81
 K: 477.63
 LVC: 700'

HIGH PT STA: 1365+07.48
 HIGH PT ELEV: 120.76
 PVI STA: 1364+50.56
 PVI ELEV: 125.36
 K: 51.43
 LVC: 450'

LOW PT STA: 1348+52.09
 LOW PT ELEV: 48.37
 PVI STA: 1350+52.09
 PVI ELEV: 48.71
 K: 75.30
 LVC: 400'

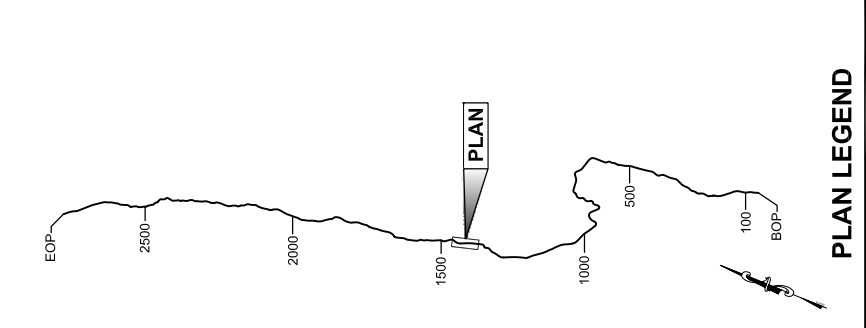
LOW PT STA: 1315+16.80
 LOW PT ELEV: 42.73
 PVI STA: 1313+87.04
 PVI ELEV: 42.50
 K: 119.42
 LVC: 300'

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RECORD OF REVISIONS		
NO.	DATE	DESCRIPTION

APPENDUM NUMBER
 ATTACHMENT NUMBER



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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

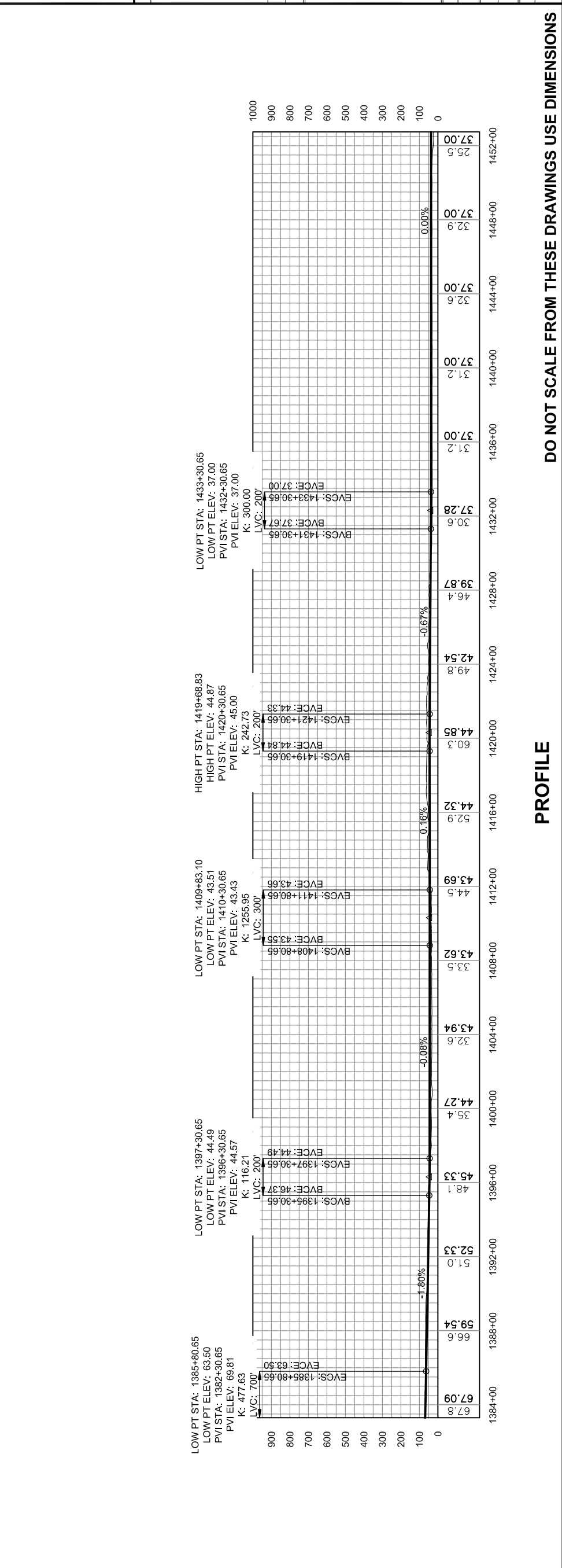
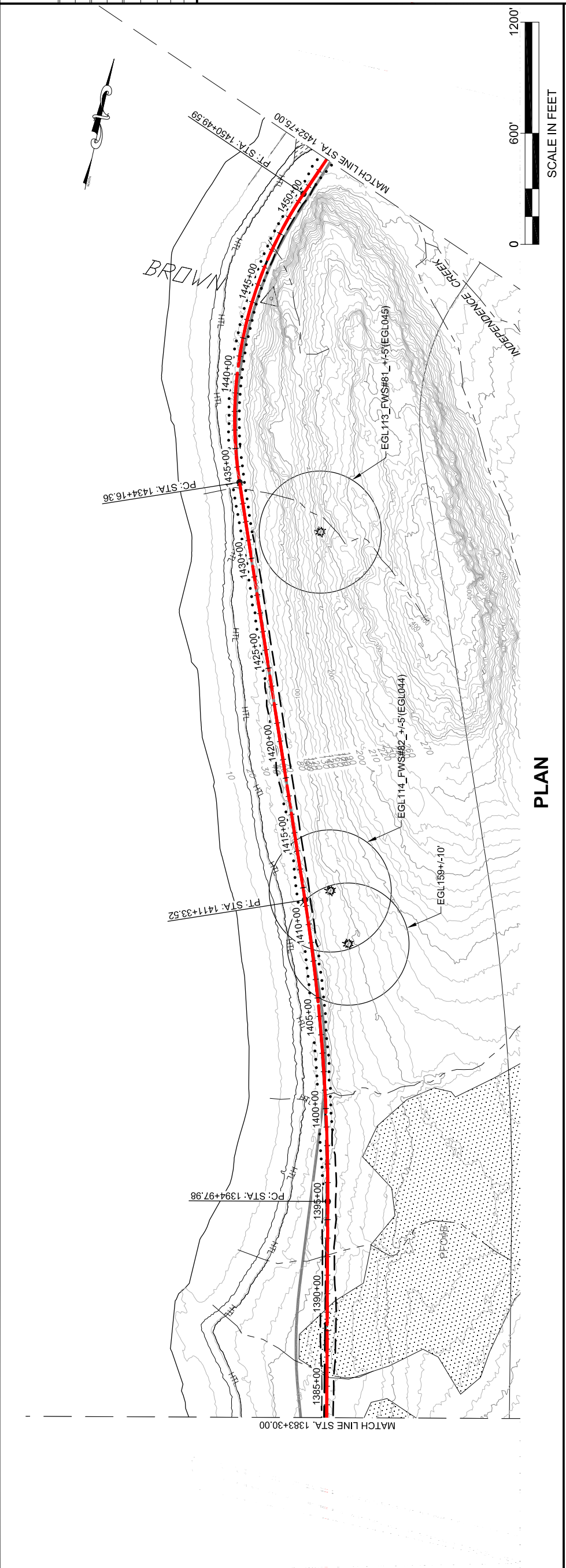
**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013

SHEET NUMBER
EL19

TOTAL SHEETS
38

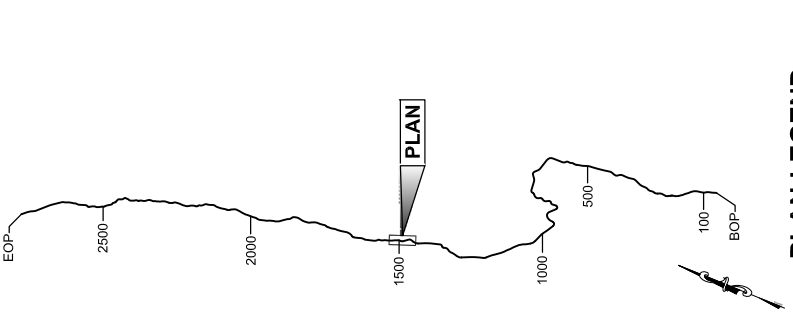


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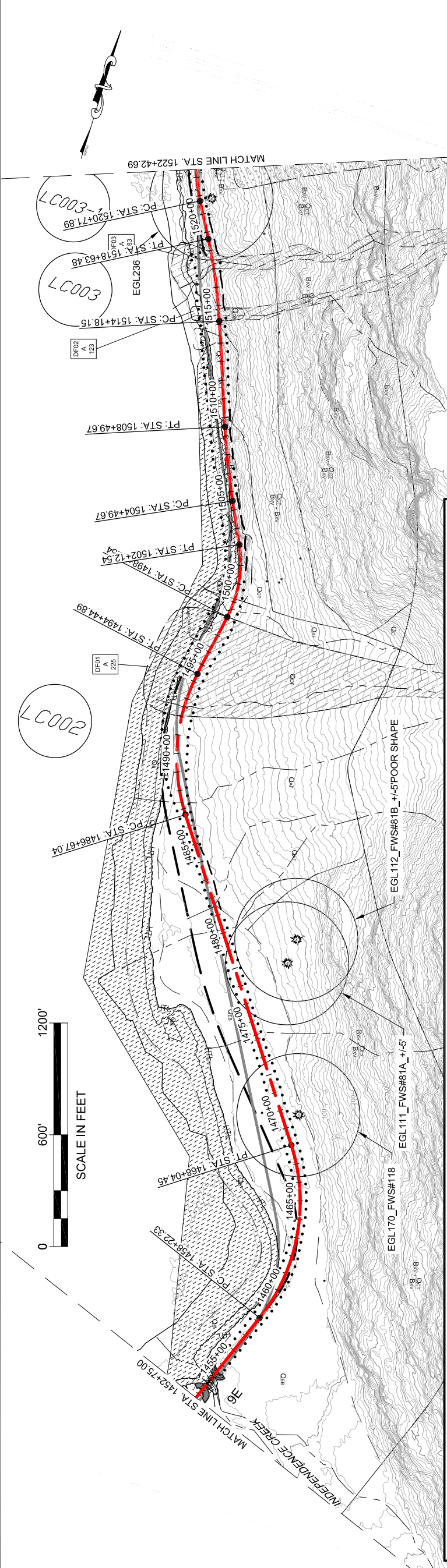


PLAN LEGEND
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 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNEAU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL20
TOTAL SHEETS	38

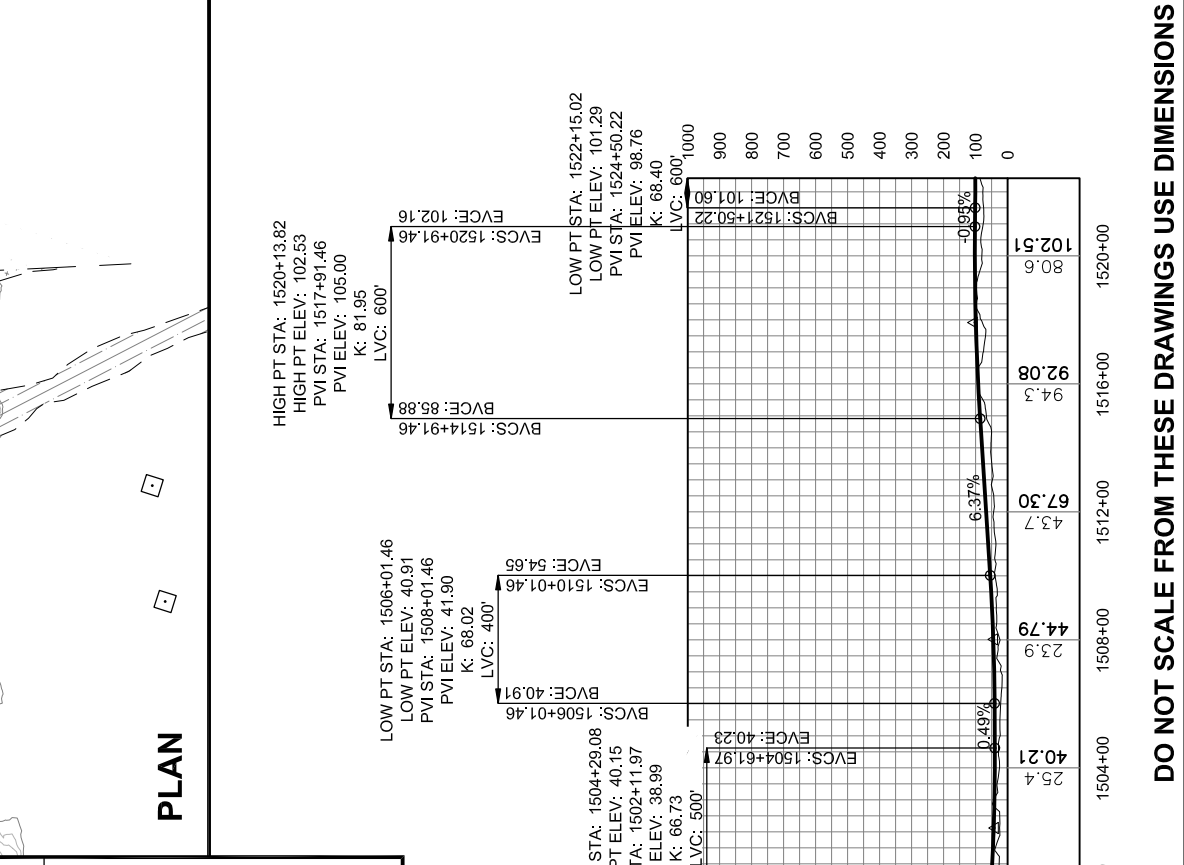


LEGEND

	CURRENT ALIGNMENT		BRIDGES
	PROPOSED FILL SLOPE		WETLAND
	PROPOSED CUT SLOPE		
	PROPOSED WALL		
	2006 FEIS ALIGNMENT		
	2008 CORP PERMIT ALIGNMENT		

GEO HAZARD AREA LEGEND

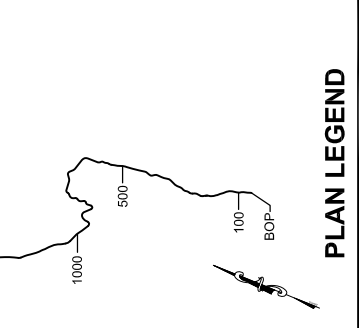
DF: DEBRIS FLOW
 HR: HAZARD ROCK
 LS: LAND SLIDE
 RF: ROCK FALL
 RS: ROCK SLIDE
 SR: SOIL RAVELING



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RECORD OF REVISIONS	
NO.	DESCRIPTION



PLAN LEGEND

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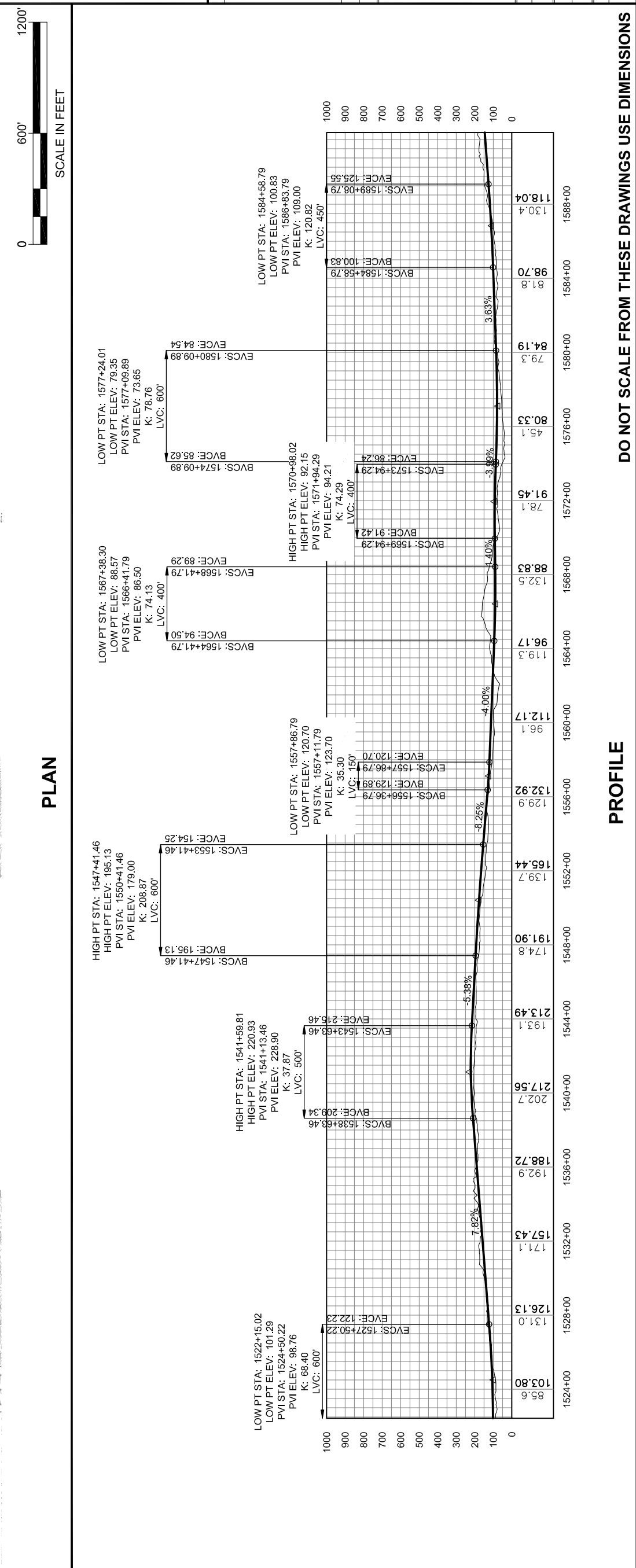
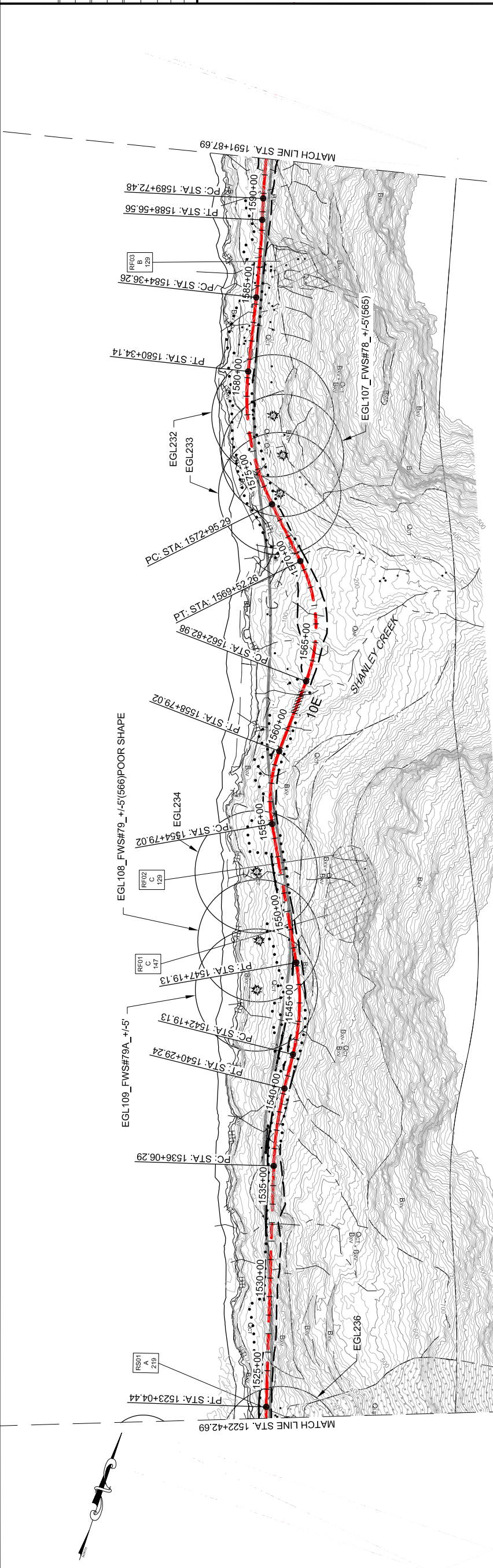
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	ALASKA	YEAR	2013
SHEET NUMBER	EL21	TOTAL SHEETS	38



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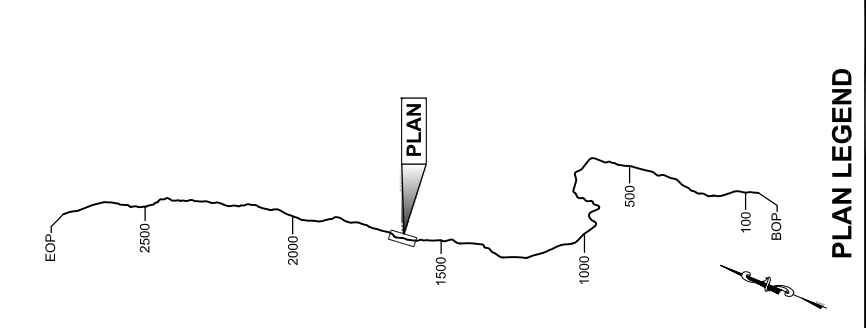
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APPENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS	
NO.	DESCRIPTION



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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

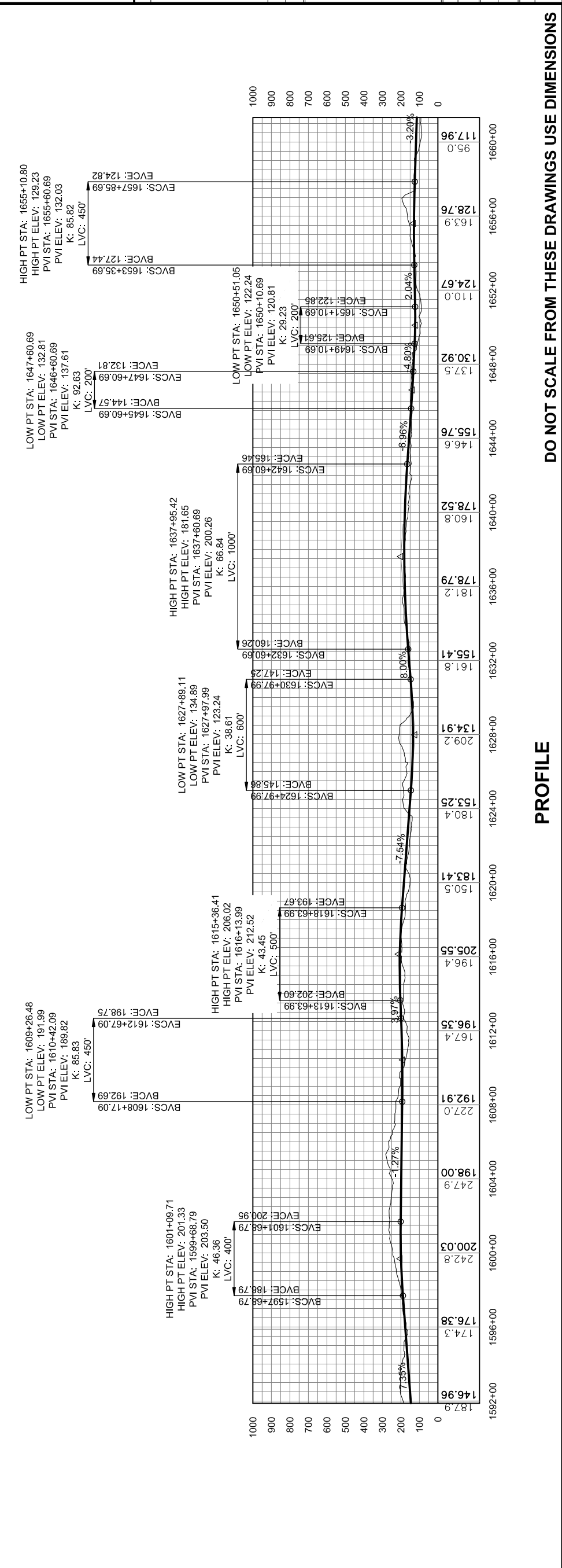
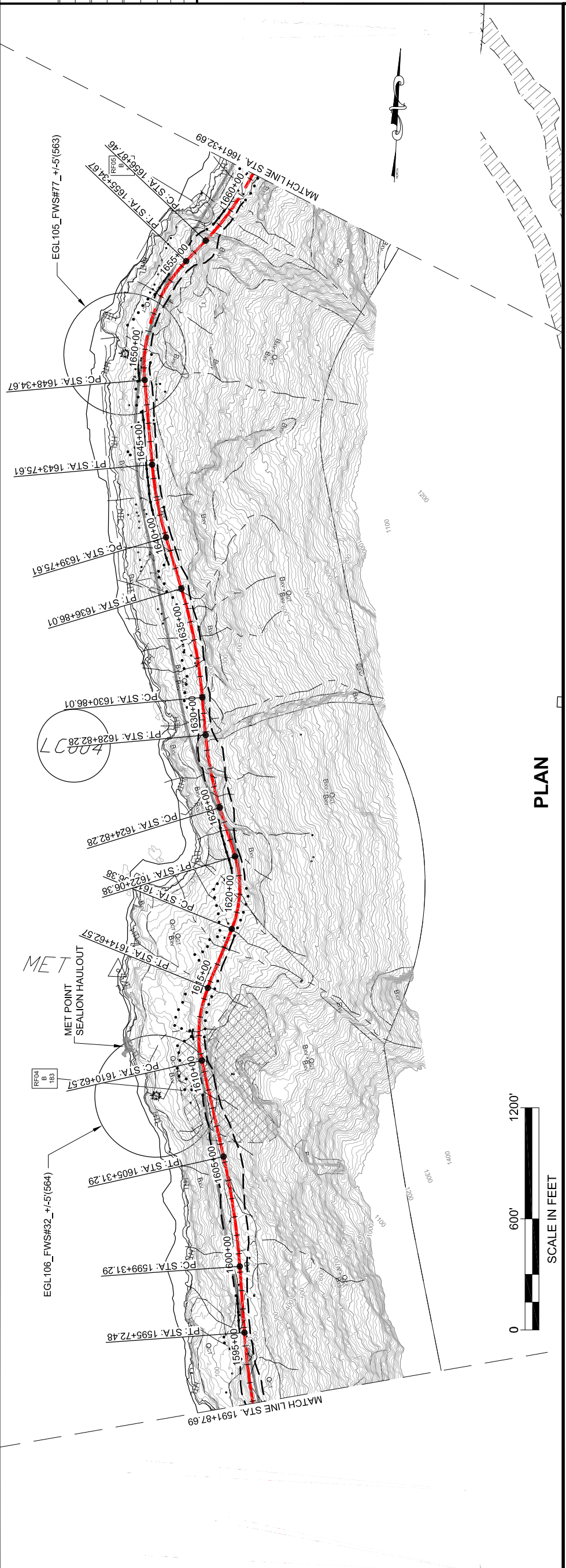
**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013

SHEET NUMBER	TOTAL SHEETS
EL22	38

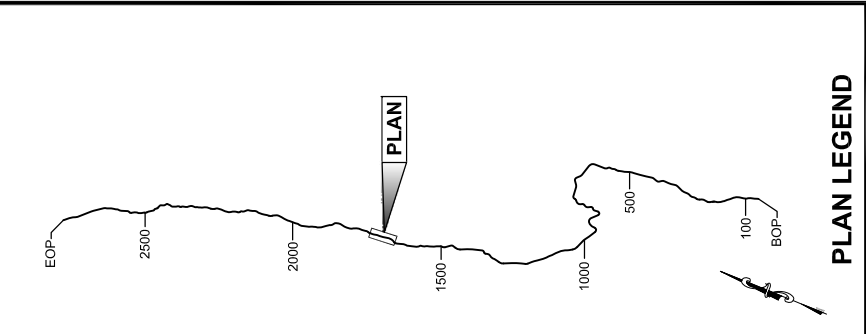


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PROFILE

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NO.	DATE	DESCRIPTION



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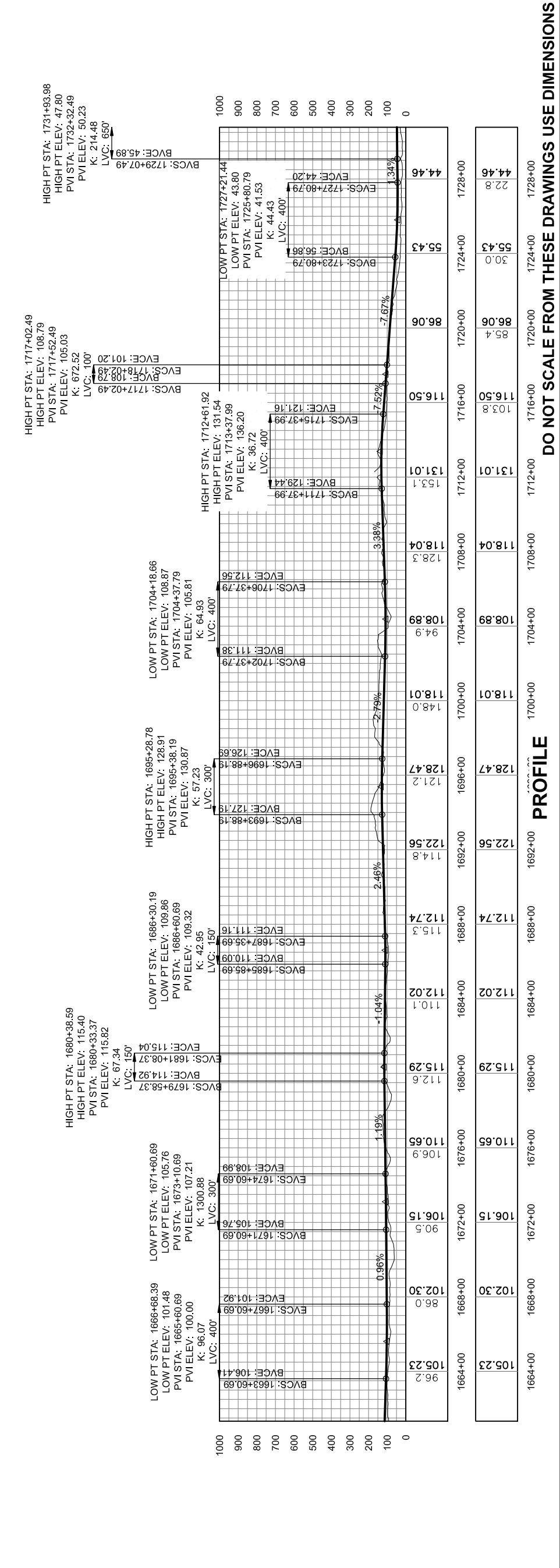
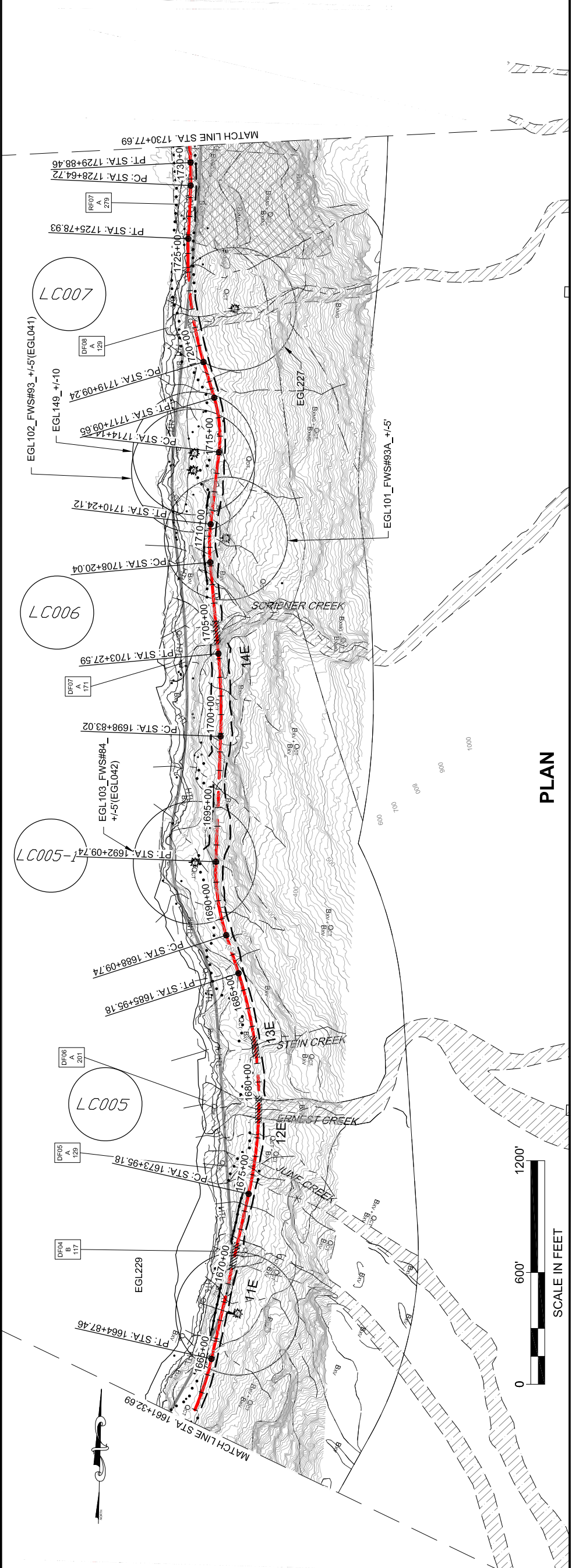
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR	TOTAL SHEETS
ALASKA	2013	38
SHEET NUMBER	EL23	



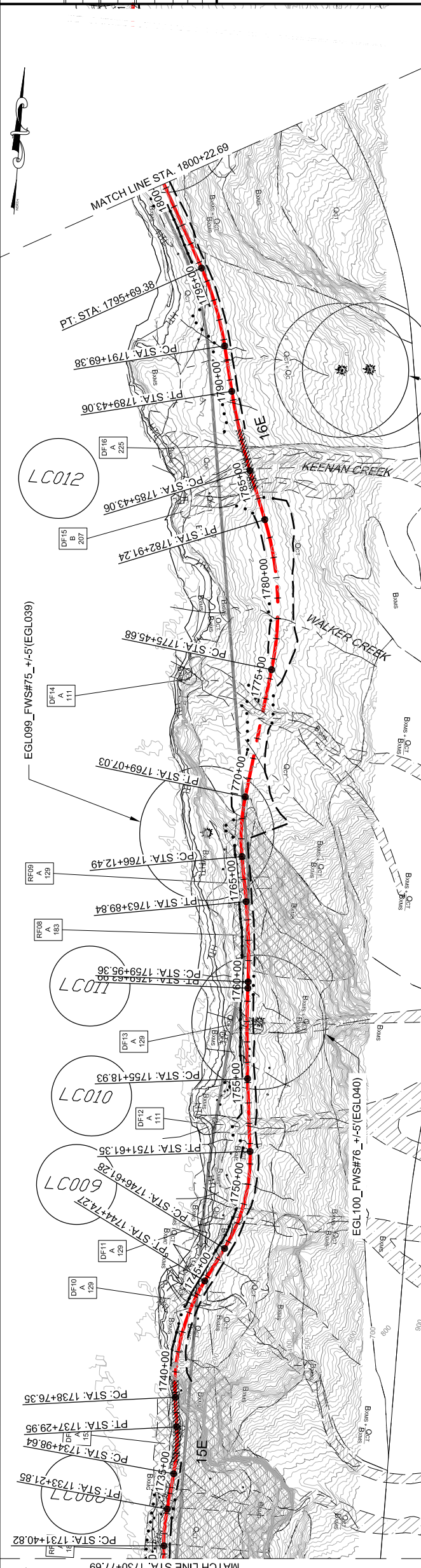
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DATE		NO.	



LEGEND

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	PROPOSED CUT SLOPE
	PROPOSED WALL
	2006 FEIS ALIGNMENT
	2008 CORP PERMIT ALIGNMENT

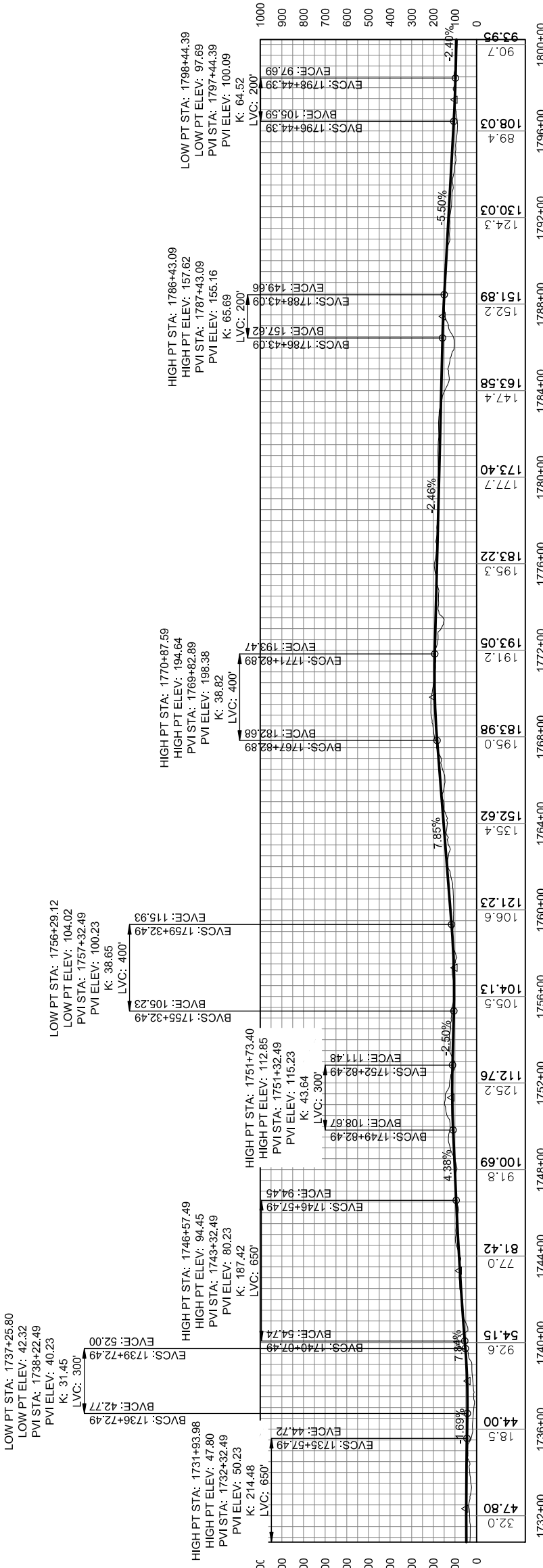
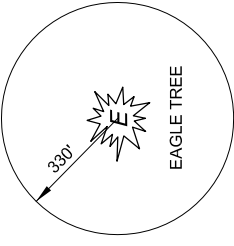
GEO HAZARD AREA LEGEND

	DEBRIS FLOW
	HAZARD ROCK
	LAND SLIDE
	ROCK FALL
	ROCK SLIDE
	SOIL RAVELING

	BRIDGES
	WETLAND

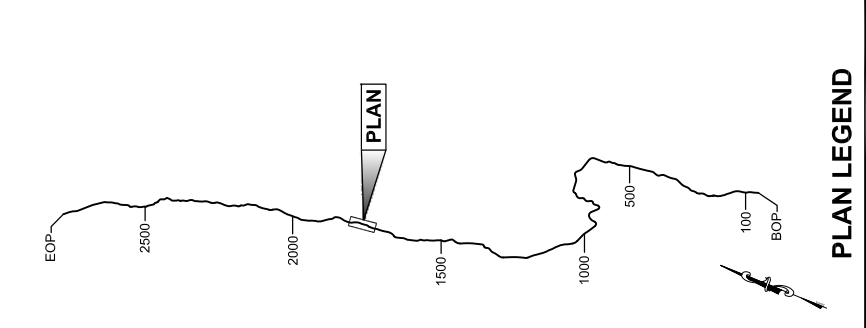
AVALANCHE CHUTE

AVALANCHE STARTING ZONE



PROFILE

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PLAN LEGEND

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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

2012 EIS PLAN VIEW

PROJECT DESIGNATION
71100

STATE	YEAR	TOTAL SHEETS
ALASKA	2012	38

SHEET NUMBER **EL24**

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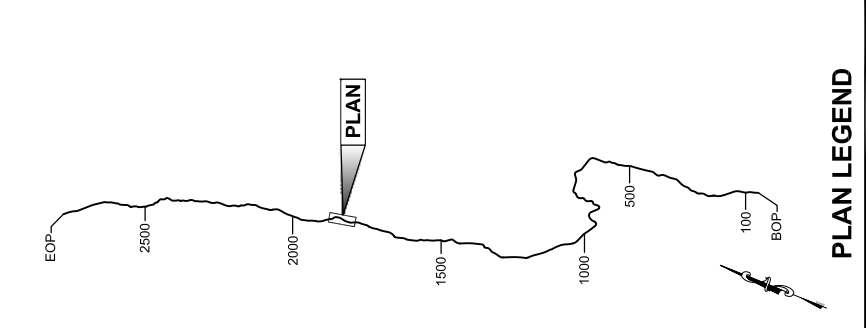
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APPENDUM NUMBER
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RECORD OF REVISIONS

NO.	DATE	DESCRIPTION



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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

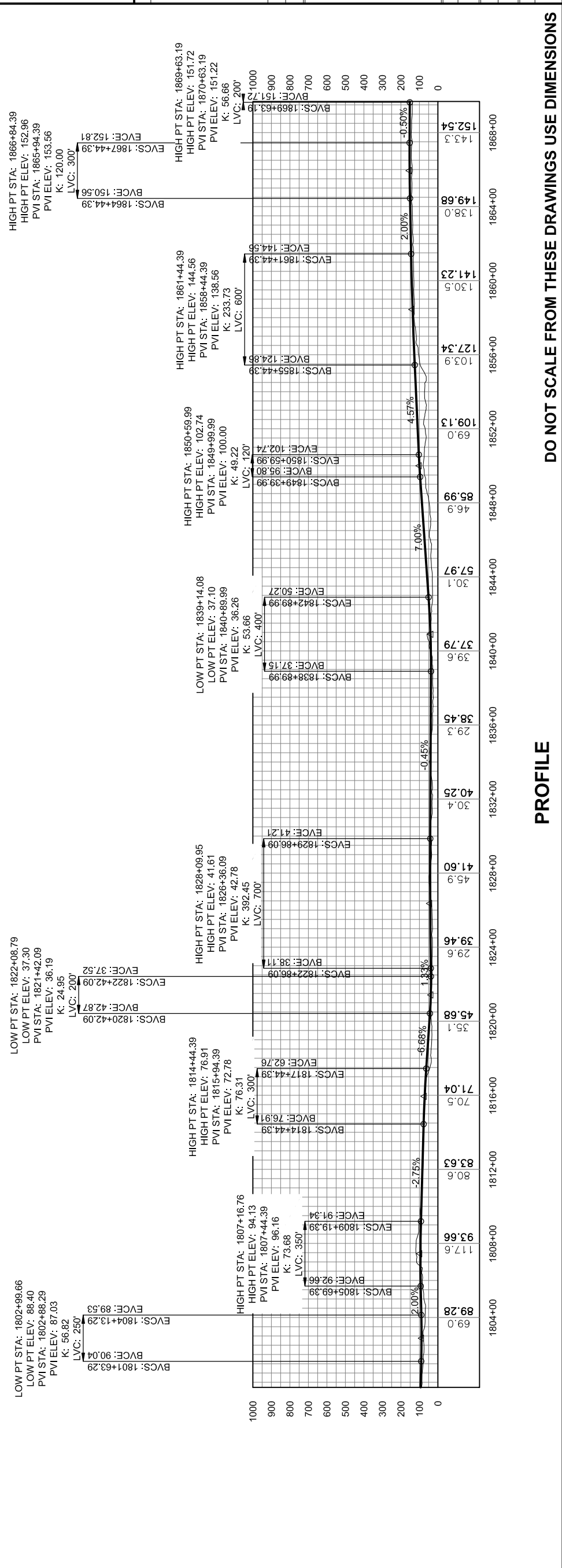
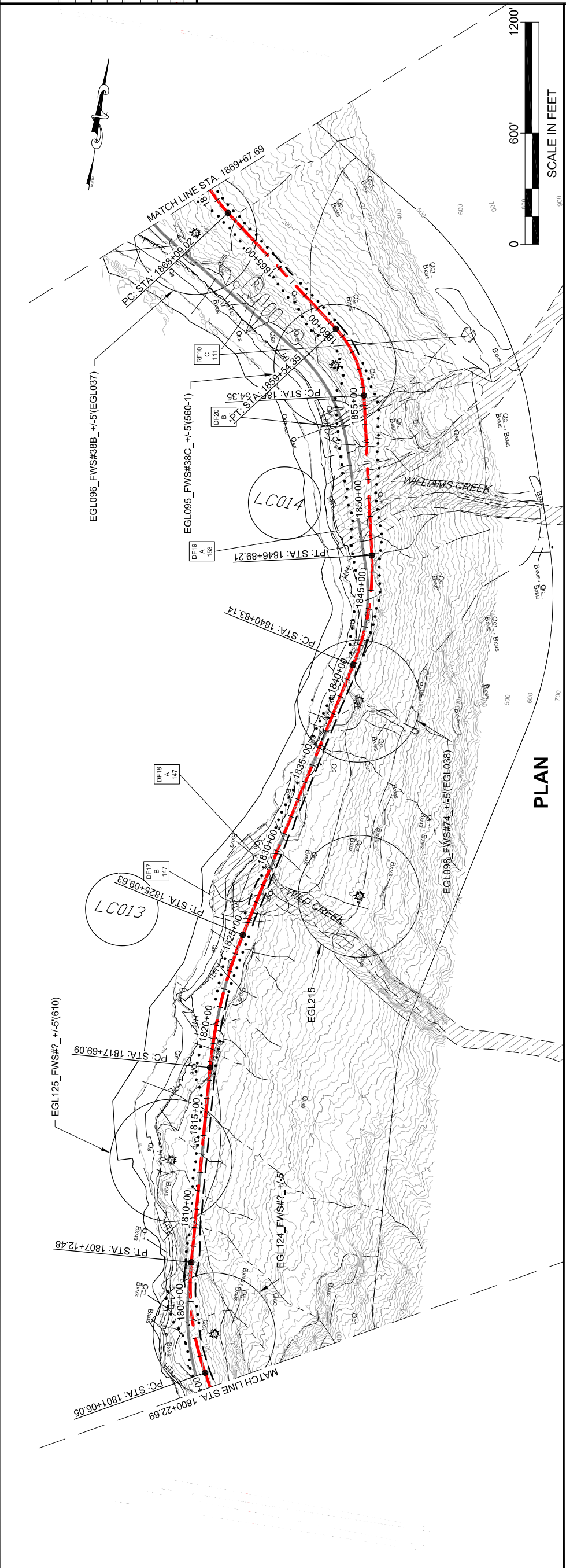
**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013

SHEET NUMBER
EL25

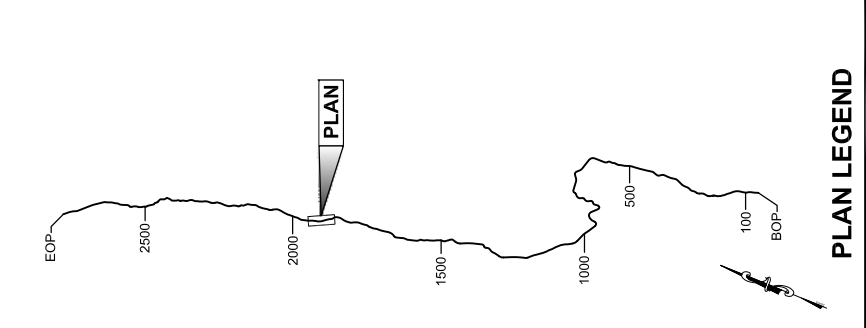
TOTAL SHEETS
38



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PROFILE

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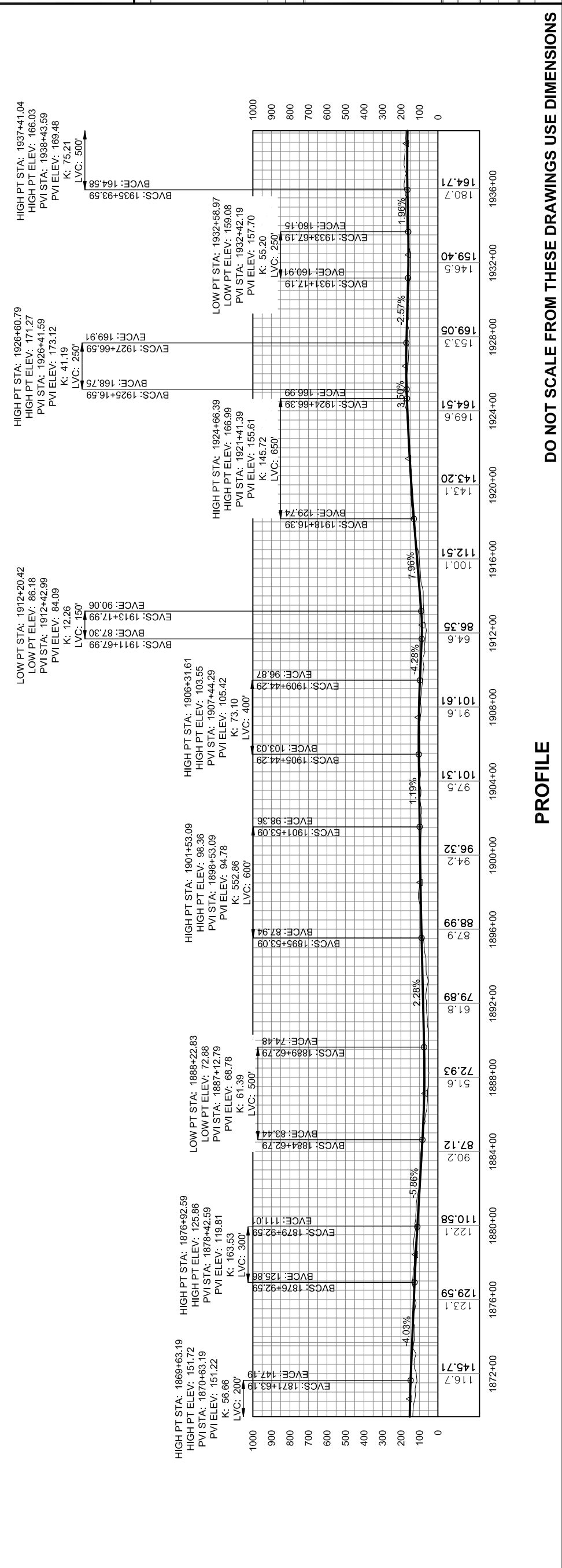
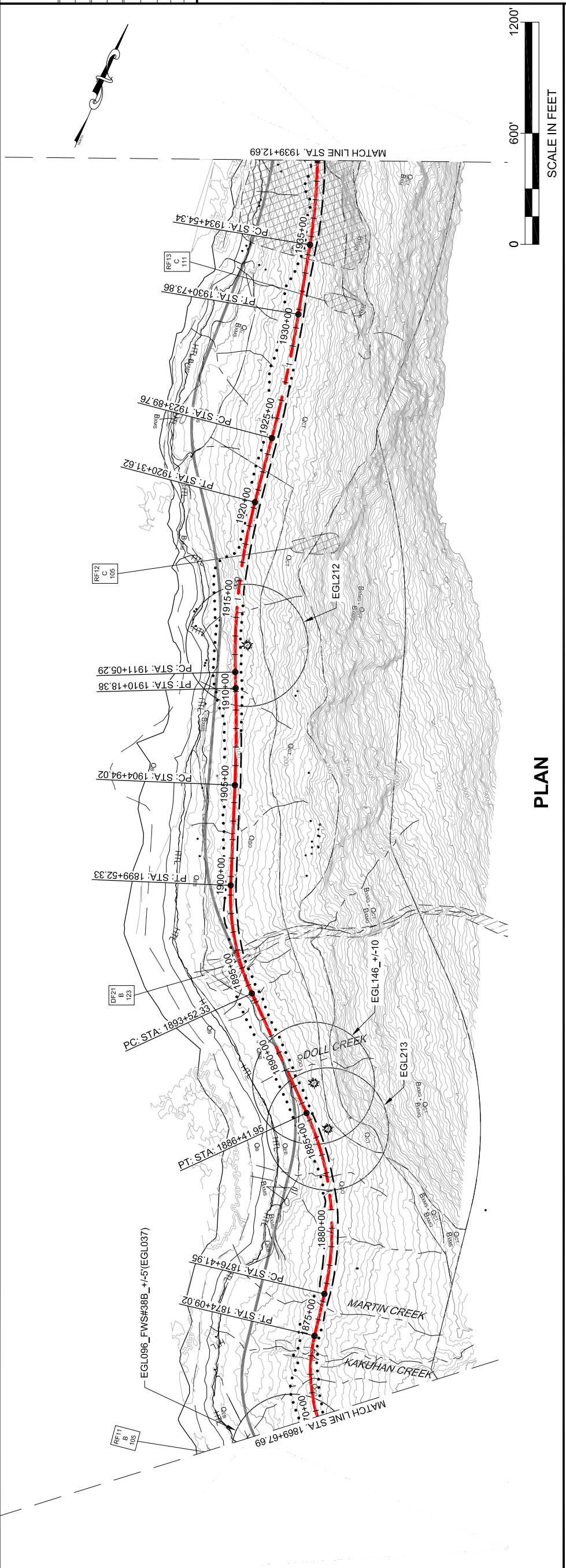
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

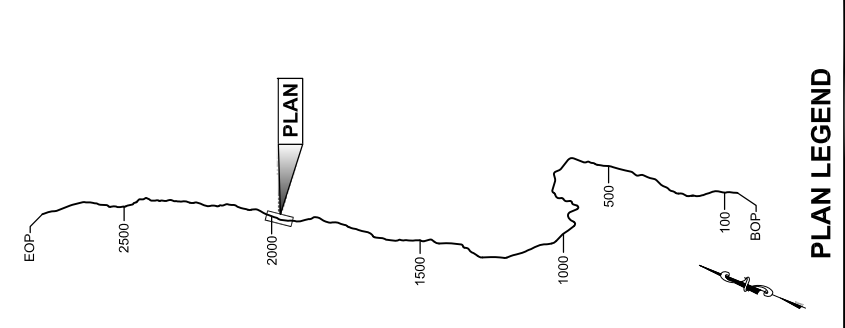
STATE	YEAR
ALASKA	2013
SHEET NUMBER	TOTAL SHEETS
EL26	38



PROFILE

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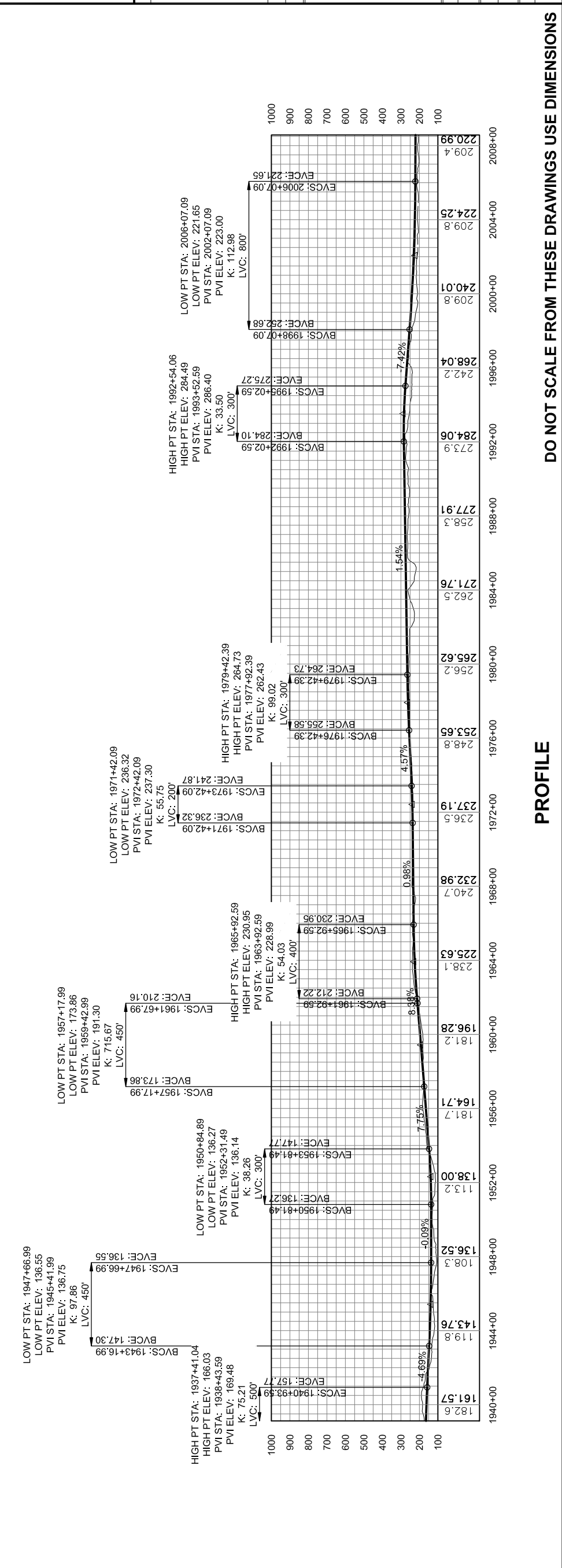
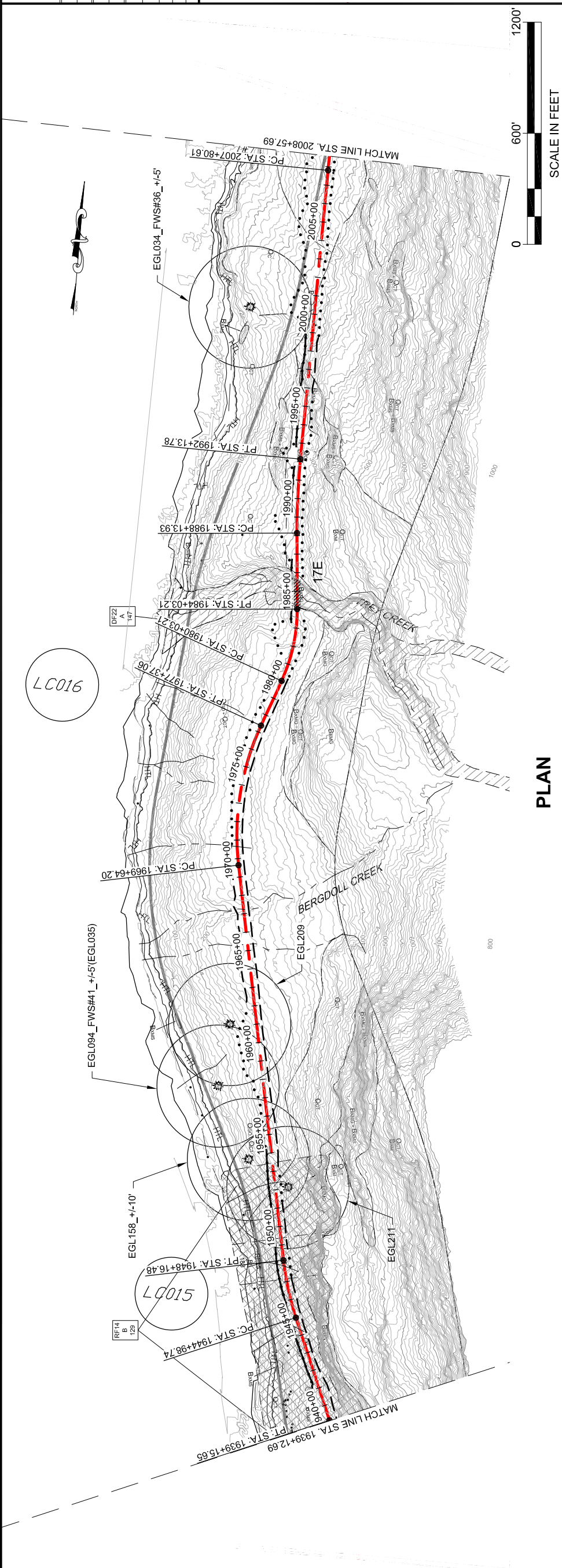
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DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL27
TOTAL SHEETS	38

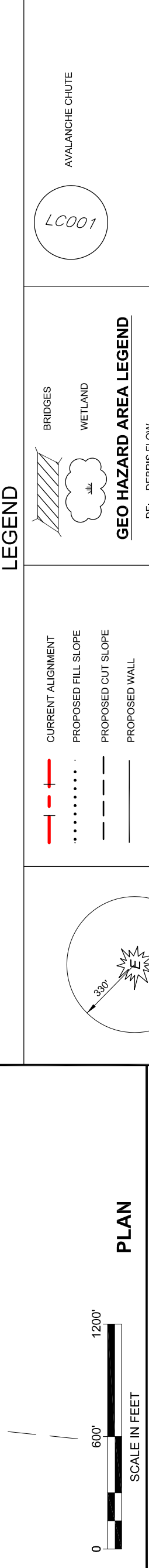
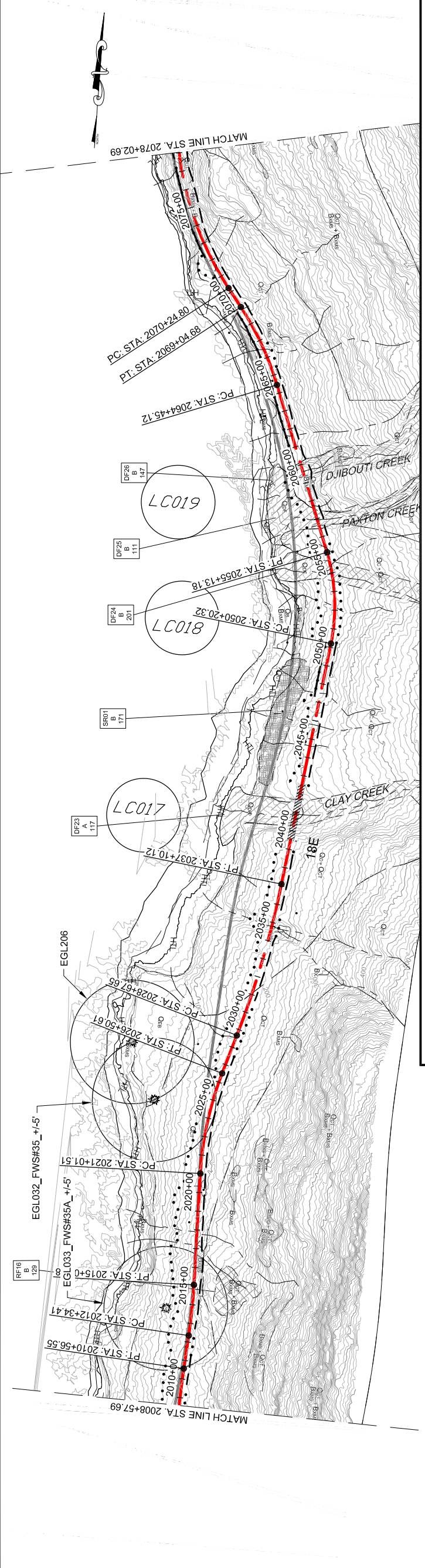


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APPENDUM NUMBER	ATTACHMENT NUMBER

RECORD OF REVISIONS	
NO.	DESCRIPTION



PLAN LEGEND

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STATE OF ALASKA
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 SOUTHEAST REGION

JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

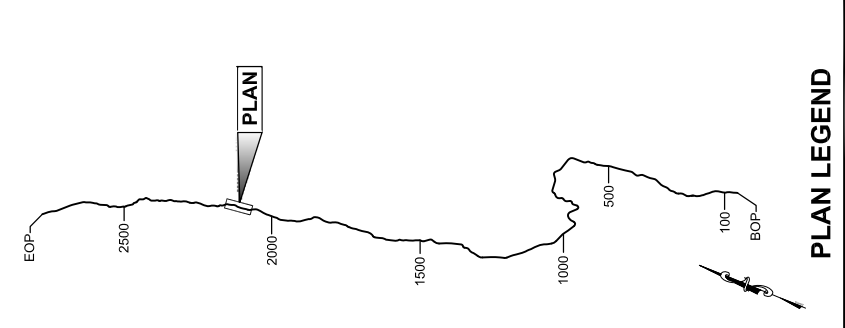
PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013

SHEET NUMBER **EL28** TOTAL SHEETS **38**

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RECORD OF REVISIONS		
NO.	DATE	DESCRIPTION
ATTACHMENT NUMBER		



PLAN LEGEND

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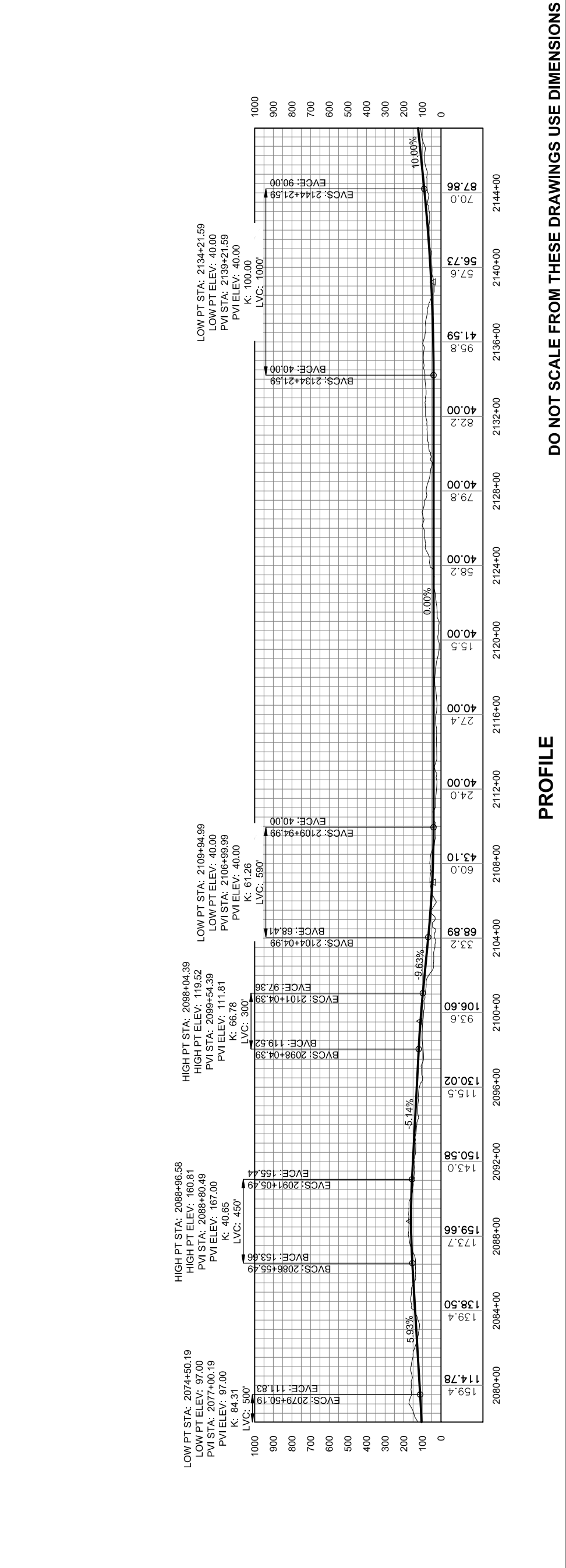
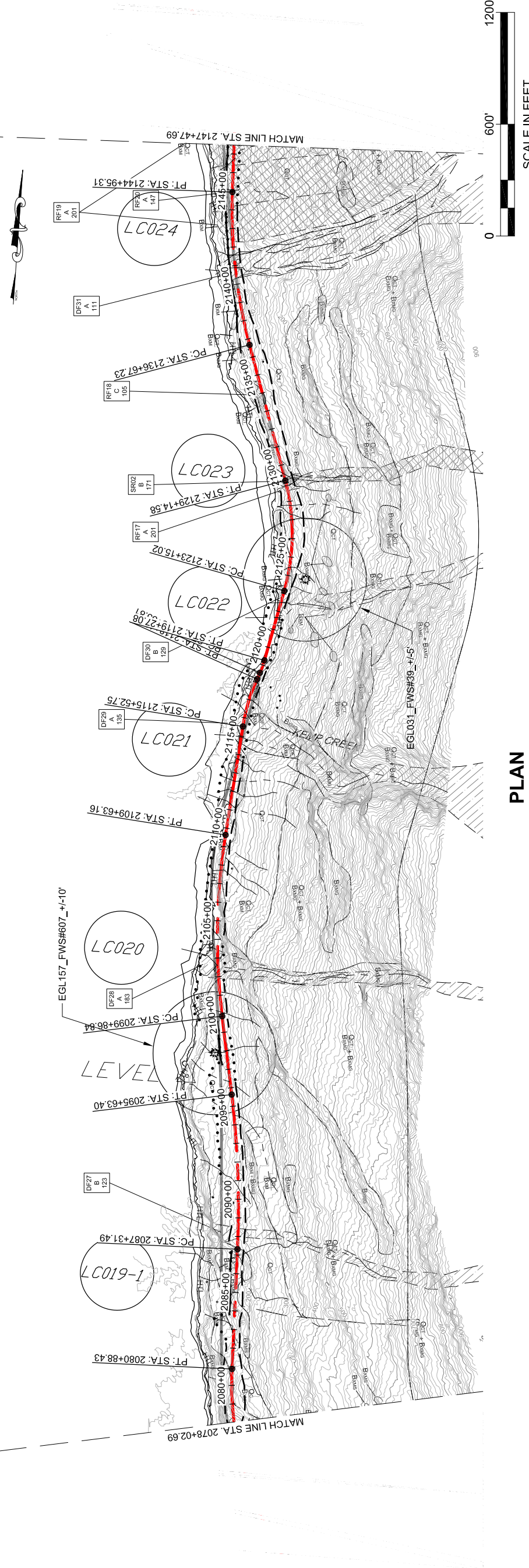
DRAFT

DESIGNED BY:
 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL29
TOTAL SHEETS	38



DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

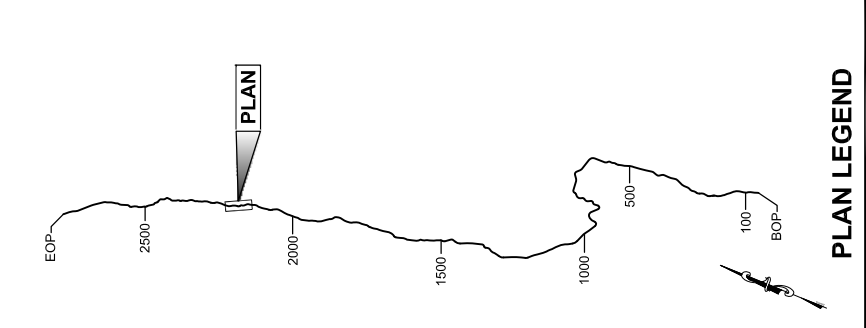
PROFILE

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GEARY, NATE (DOT)
 APPENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS	
NO.	DATE DESCRIPTION



CHECKED BY:

DESIGNED BY:

DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

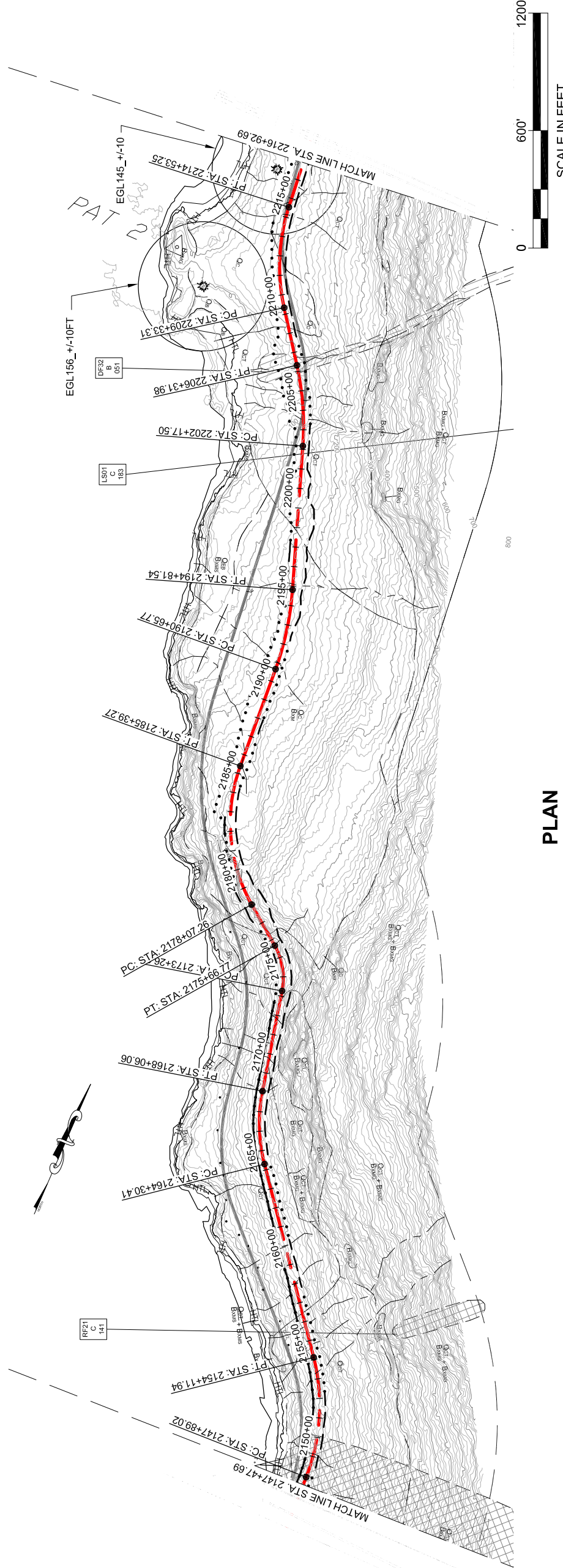
JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

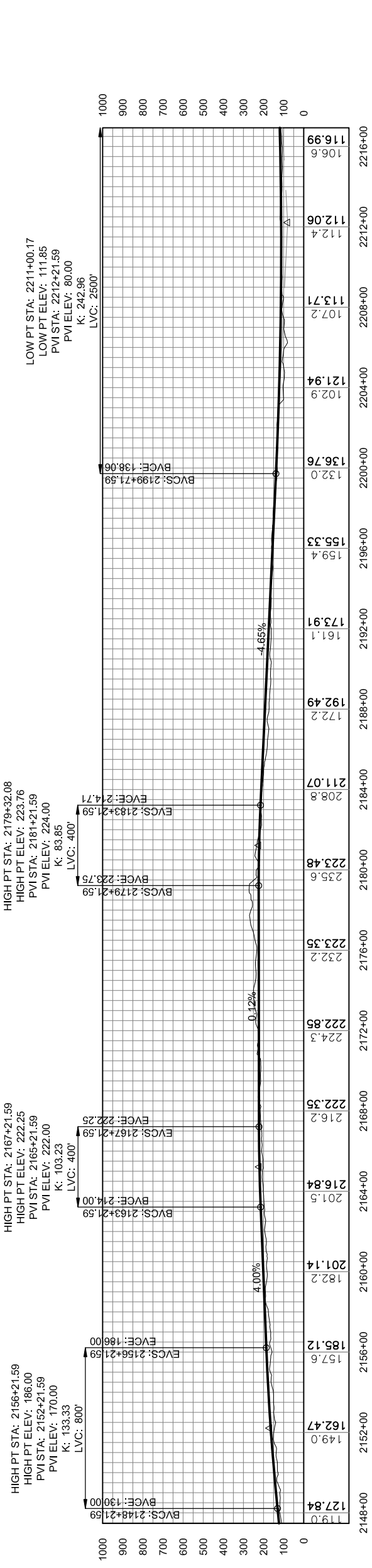
PROJECT DESIGNATION	71100
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STATE	ALASKA	YEAR	2013
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SHEET NUMBER	EL30	TOTAL SHEETS	38
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PLAN

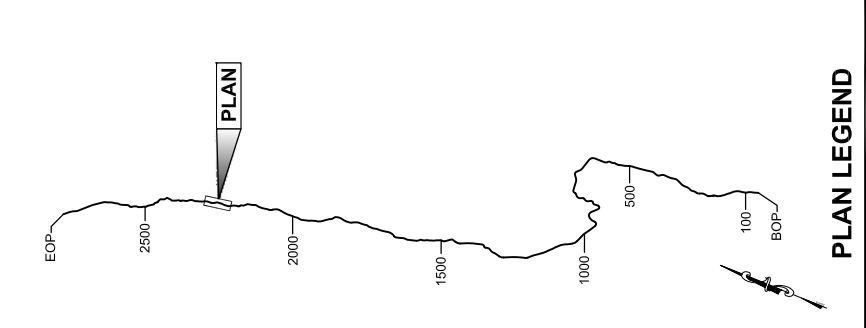


PROFILE

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

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RECORD OF REVISIONS	
NO.	DATE DESCRIPTION



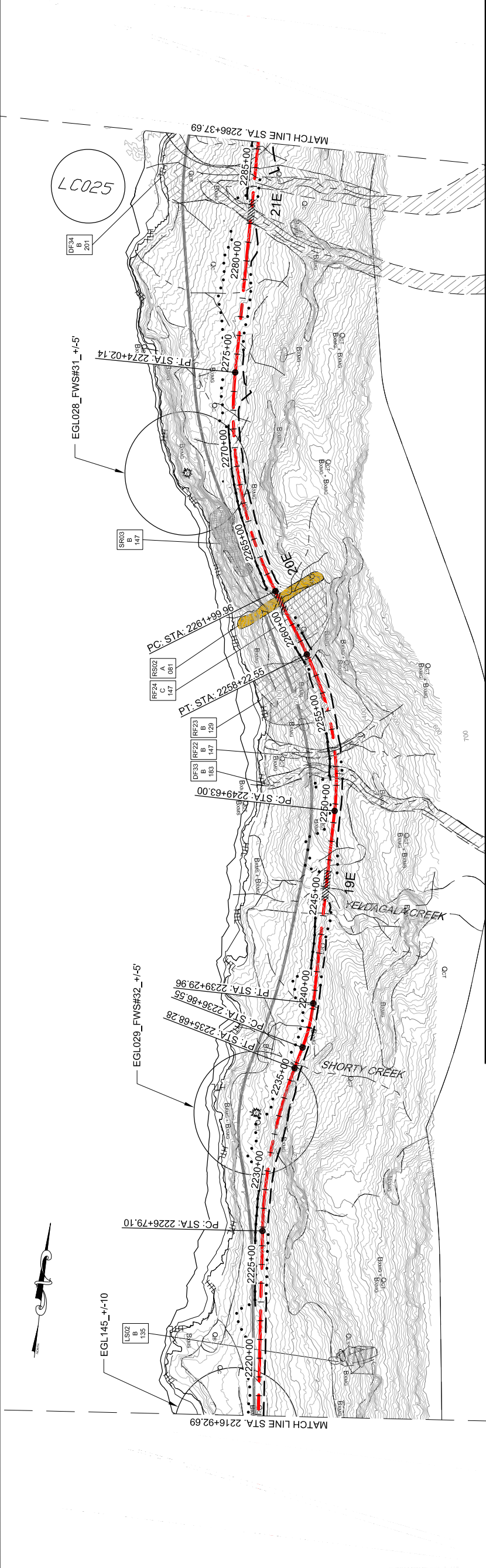
DRAFT

DESIGNED BY:
 DRAWN BY:
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL31
TOTAL SHEETS	38



LEGEND

	CURRENT ALIGNMENT
	PROPOSED FILL SLOPE
	PROPOSED CUT SLOPE
	PROPOSED WALL
	2006 FEIS ALIGNMENT
	2008 CORP PERMIT ALIGNMENT

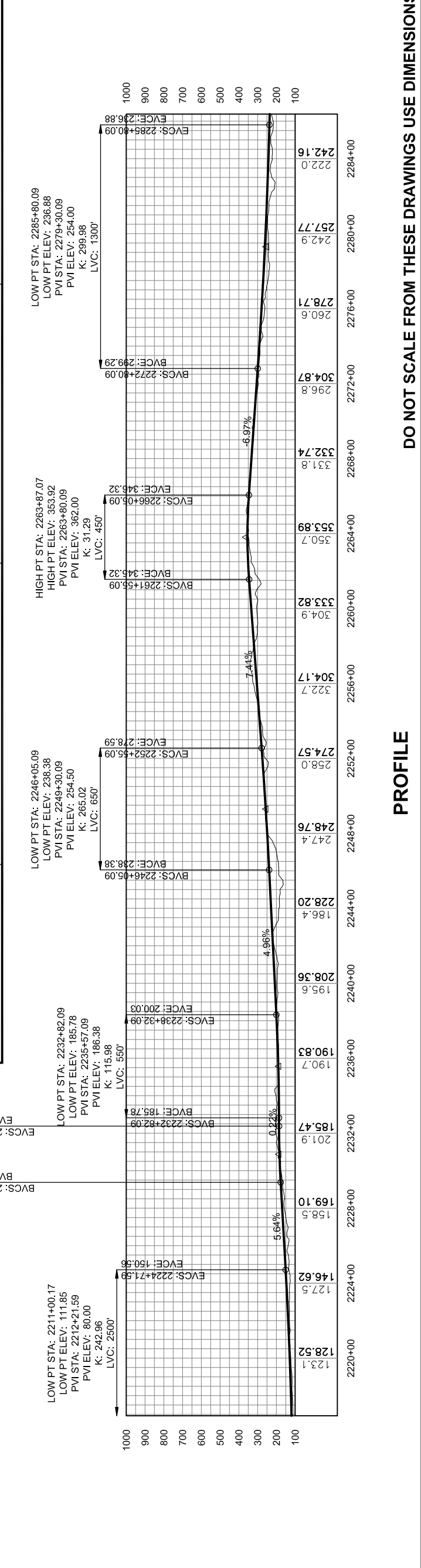
	BRIDGES
	WETLAND

GEO HAZARD AREA LEGEND

	DF: DEBRIS FLOW
	HR: HAZARD ROCK
	LS: LAND SLIDE
	RF: ROCK FALL
	RS: ROCK SLIDE
	SR: SOIL RAVELING

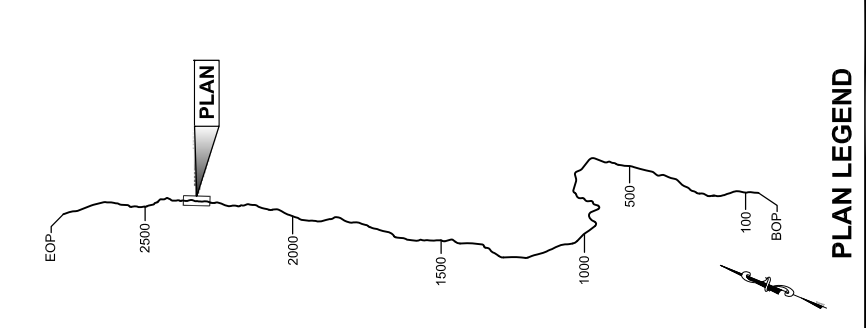
	AVALANCHE CHUTE
	AVALANCHE STARTING ZONE

EAGLE TREE



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RECORD OF REVISIONS		
NO.	DATE	DESCRIPTION
ATTACHMENT NUMBER		
APPENDIX NUMBER		
GEARY, NATE (DOT)		
TAB: EL33.dwg, October 04, 2013 12:56:22 PM		



PLAN LEGEND

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DESIGNED BY:

DRAWN BY:

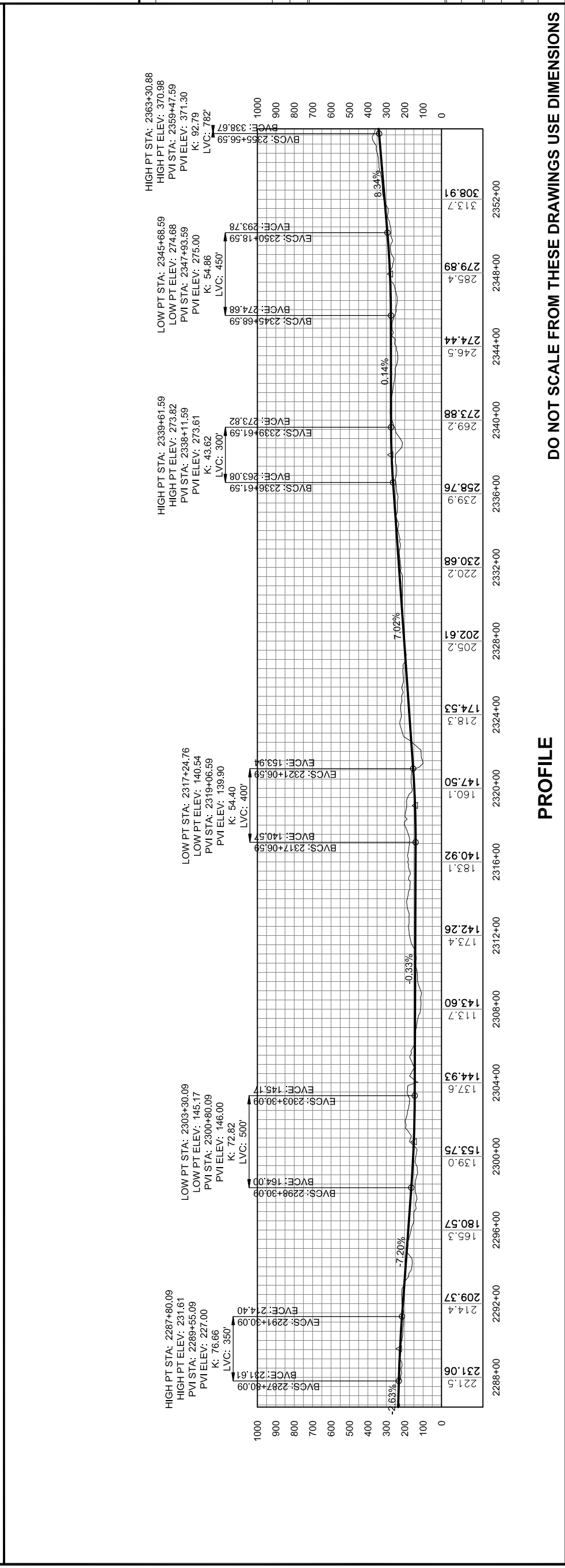
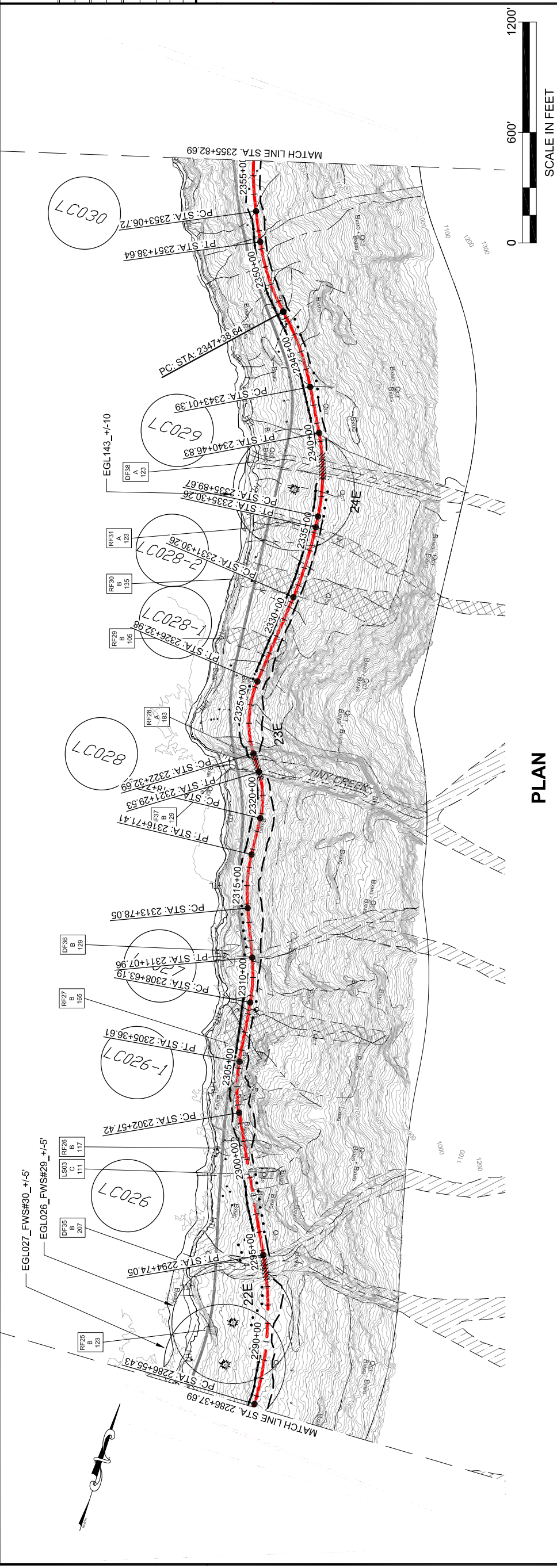
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013
SHEET NUMBER	TOTAL SHEETS
EL32	38

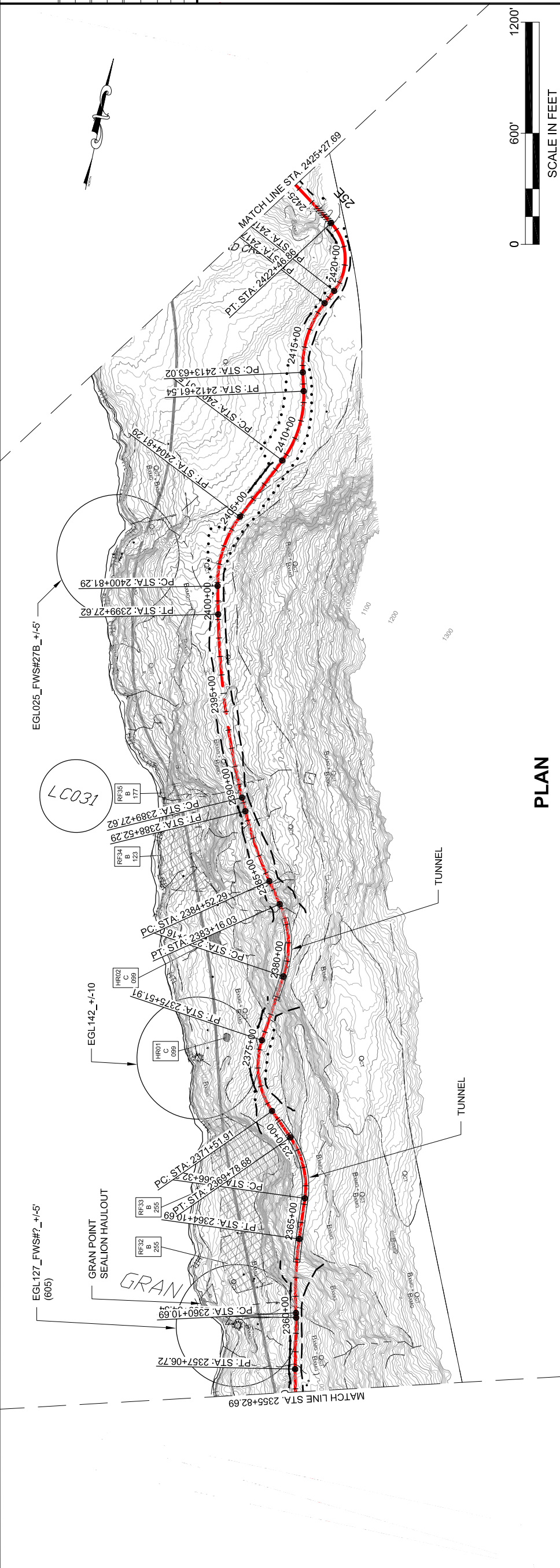


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RECORD OF REVISIONS		
NO.	DATE	DESCRIPTION

APPENDUM NUMBER
 ATTACHMENT NUMBER



PLAN

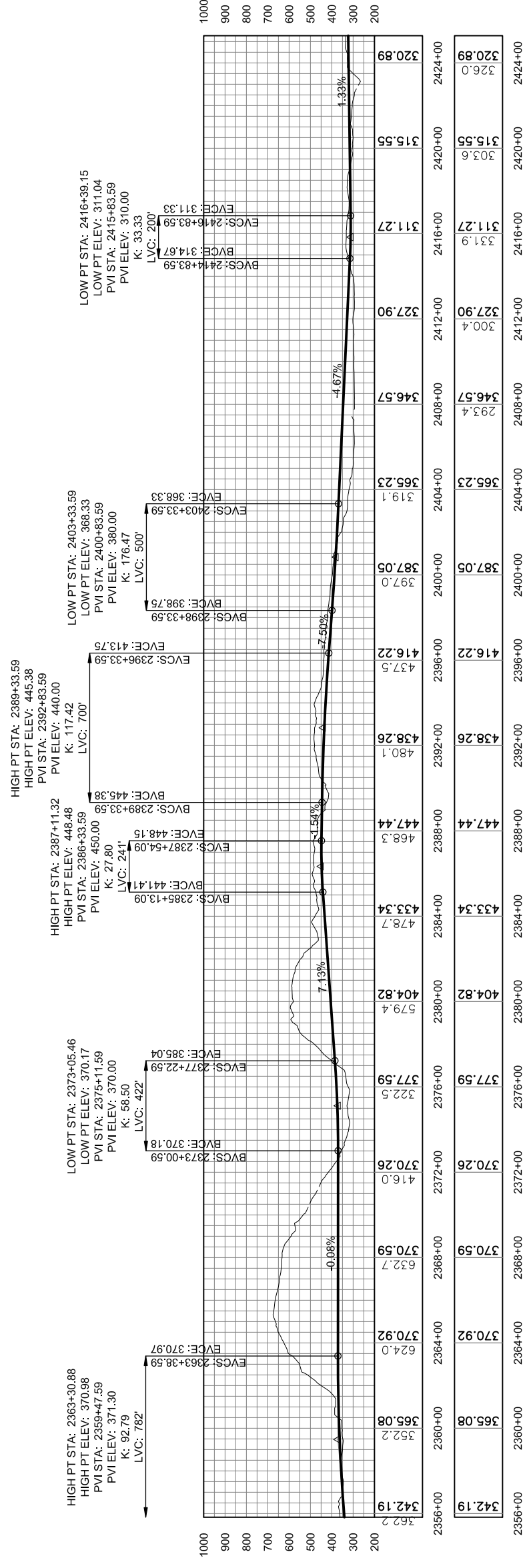
PLAN LEGEND

CHECKED BY:
 DRAFT

DESIGNED BY:
 DRAWN BY:
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL33
TOTAL SHEETS	38



PROFILE

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

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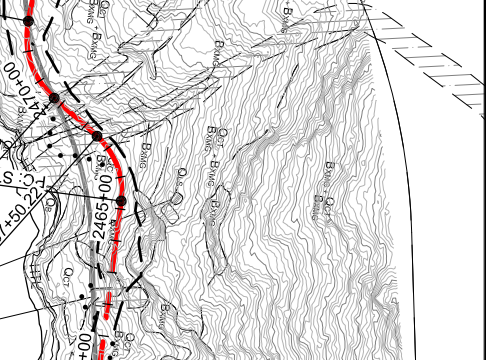
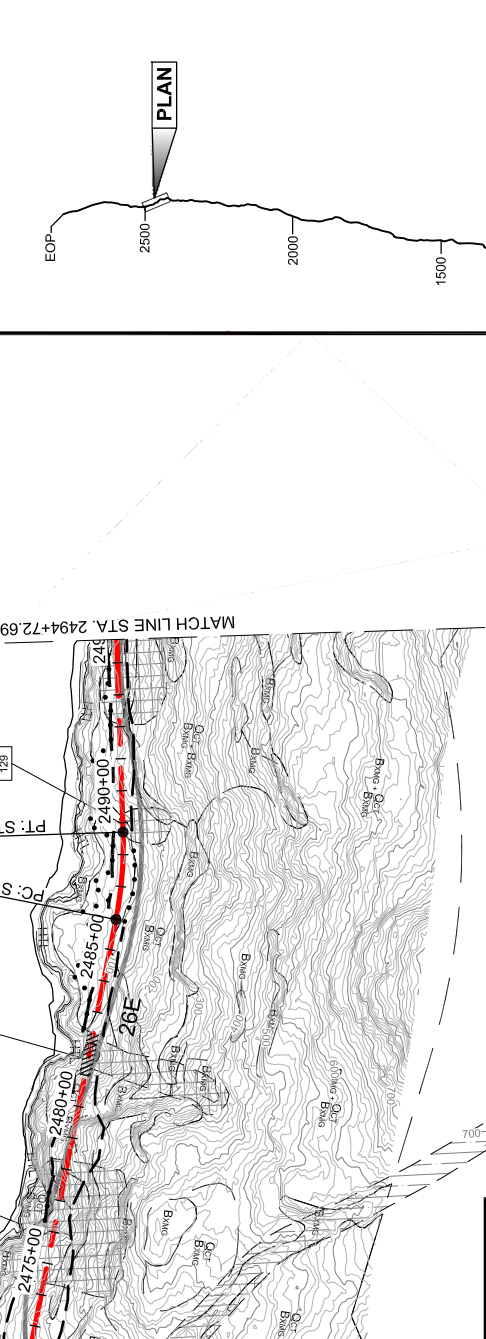
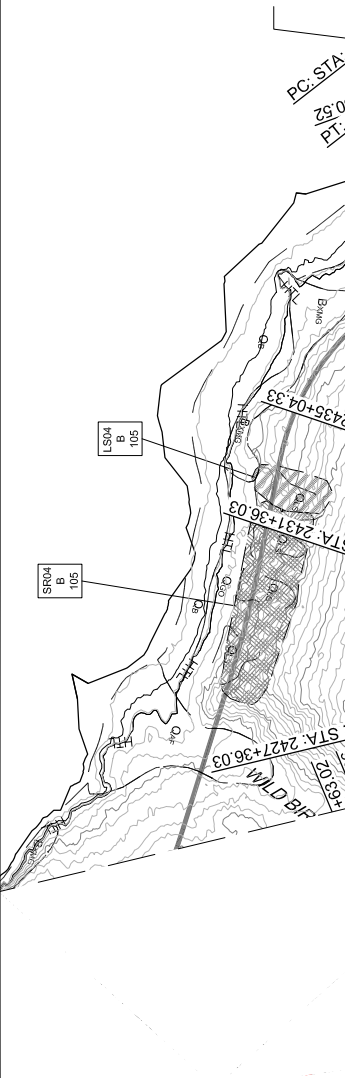
RECORD OF REVISIONS		
NO.	DATE	DESCRIPTION

APPENDUM NUMBER	
ATTACHMENT NUMBER	

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL34
TOTAL SHEETS	38

DESIGNED BY:
 DRAWN BY:
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

2013 EIS
 PLAN VIEW

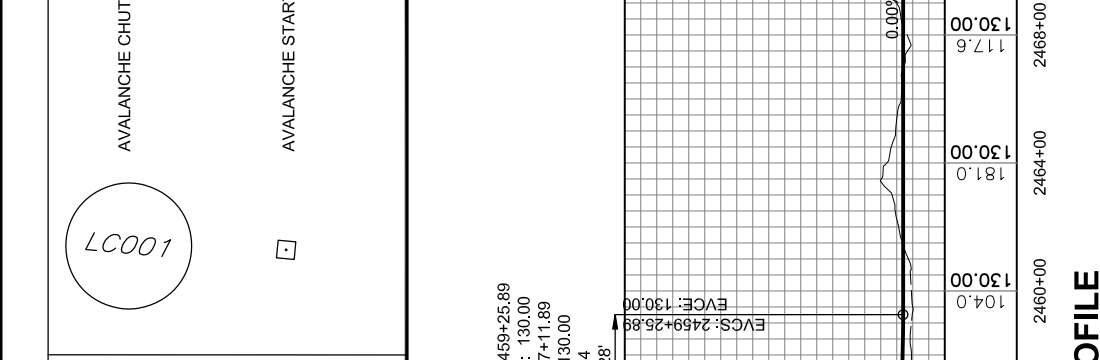
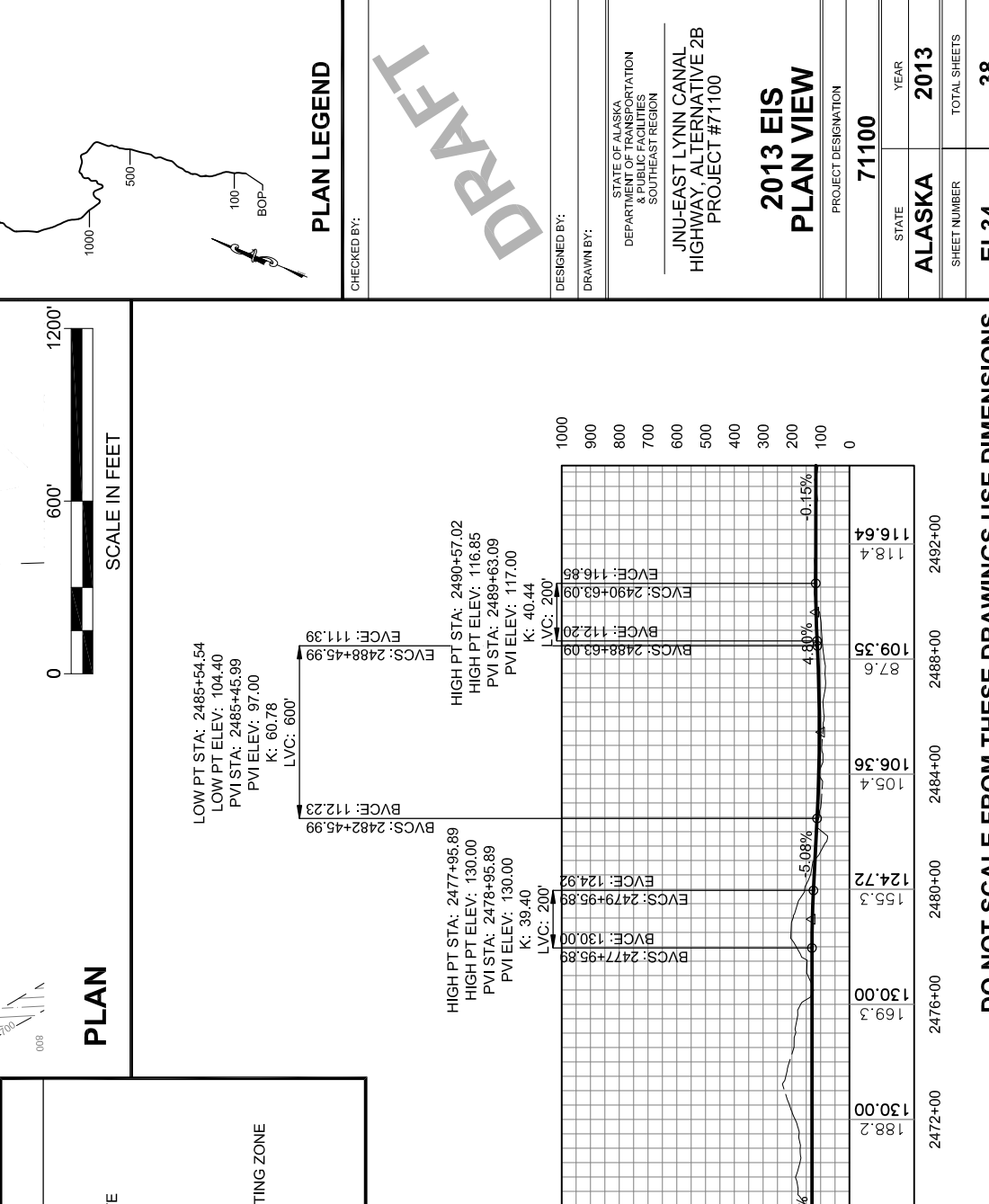
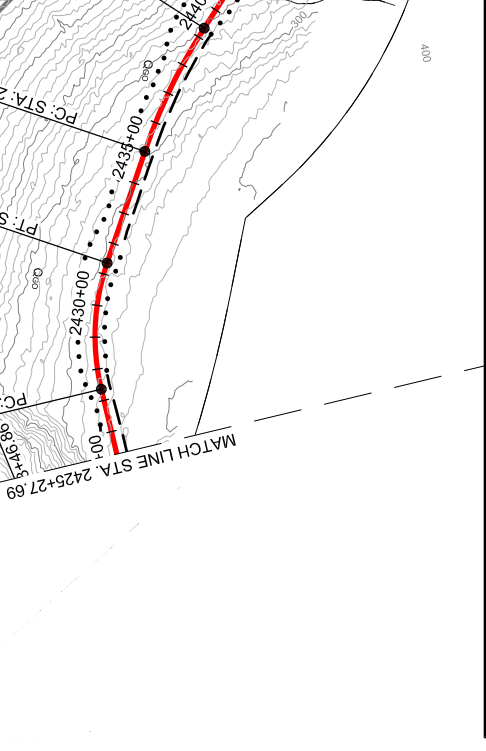


LEGEND

- BRIDGES
- WETLAND

GEO HAZARD AREA LEGEND

- DF: DEBRIS FLOW
- HR: HAZARD ROCK
- LS: LAND SLIDE
- RF: ROCK FALL
- RS: ROCK SLIDE
- SR: SOIL RAVELING

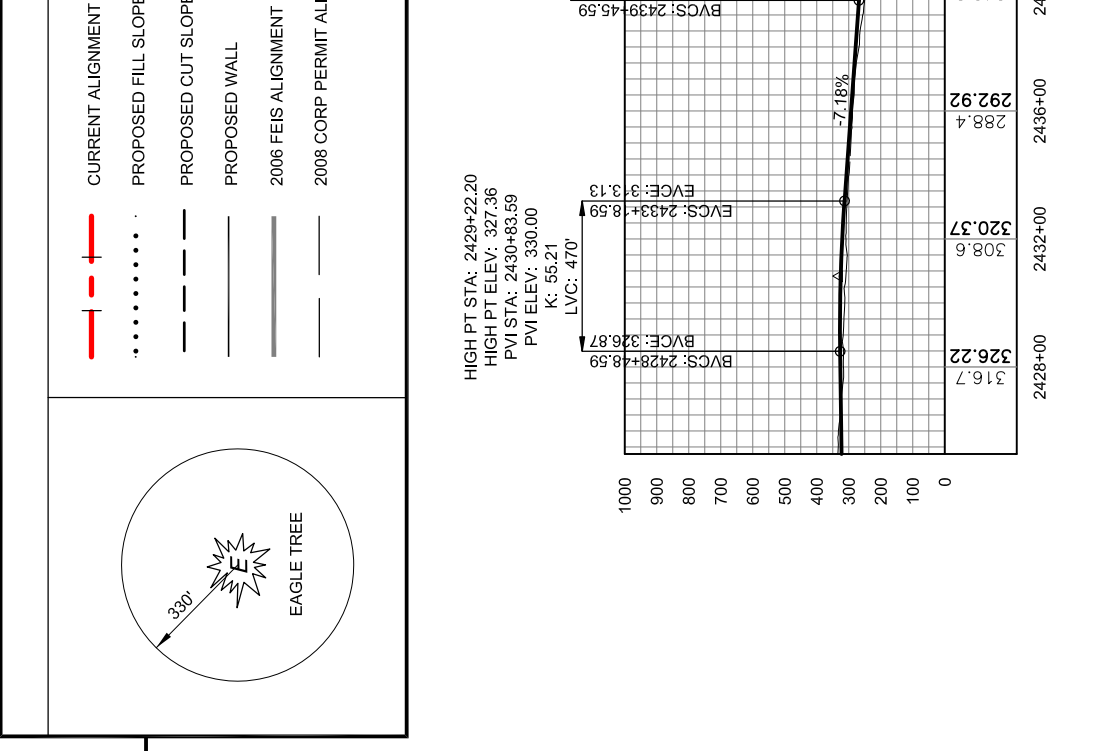


LEGEND

- BRIDGES
- WETLAND

GEO HAZARD AREA LEGEND

- DF: DEBRIS FLOW
- HR: HAZARD ROCK
- LS: LAND SLIDE
- RF: ROCK FALL
- RS: ROCK SLIDE
- SR: SOIL RAVELING



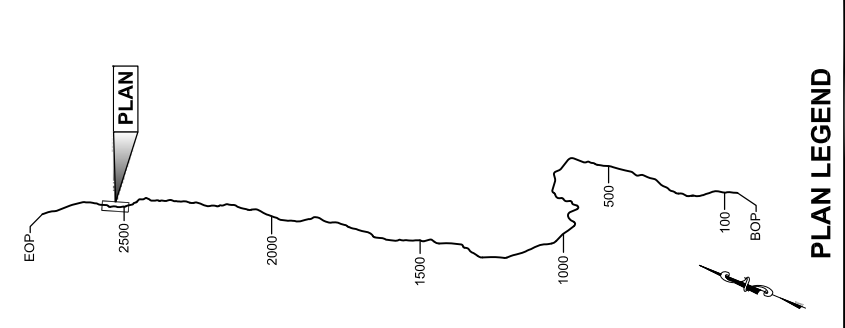
DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

PROFILE

PLAN LEGEND

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RECORD OF REVISIONS	
NO.	DESCRIPTION



CHECKED BY:

DRAFT

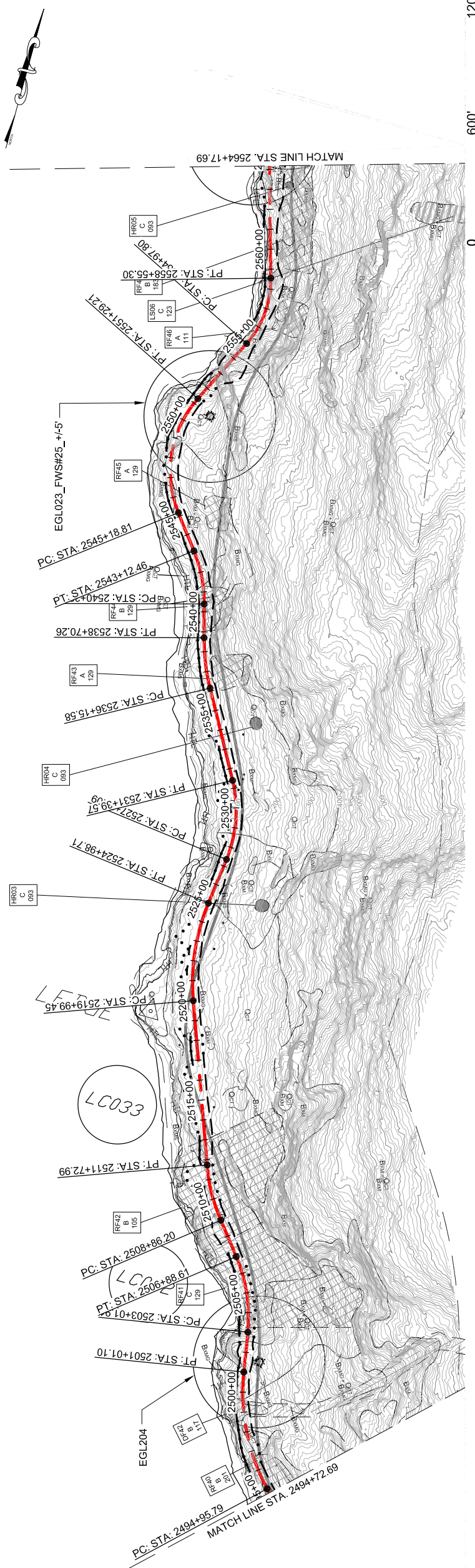
DESIGNED BY:
 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

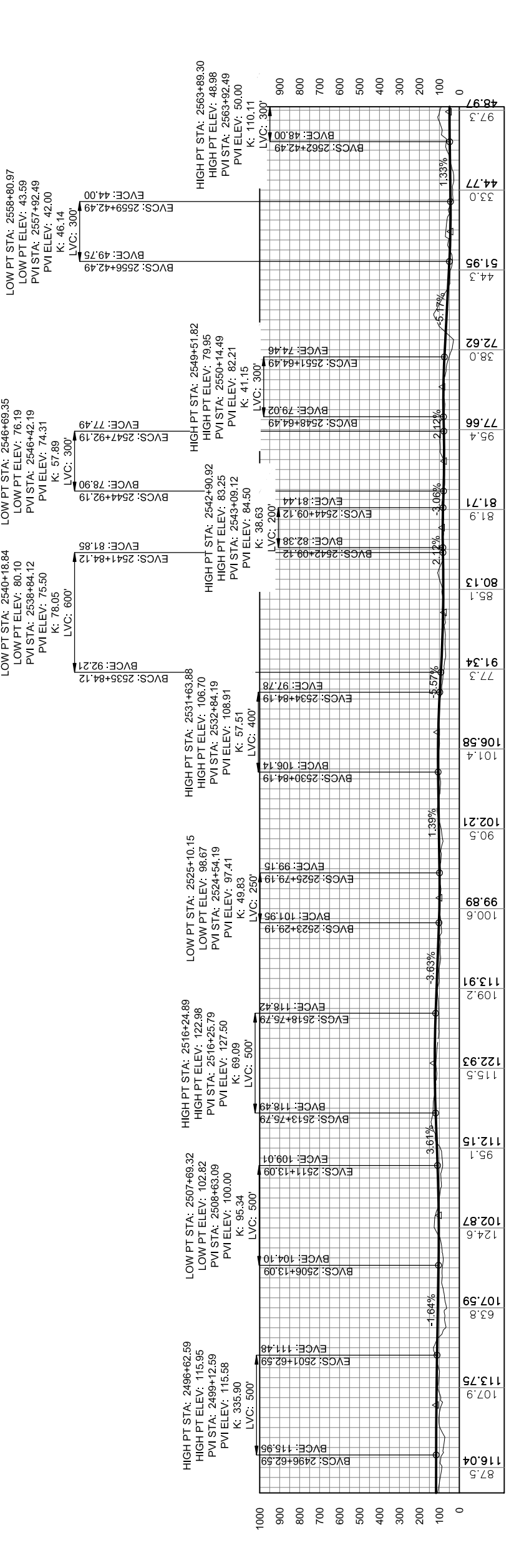
**JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100**

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL35
TOTAL SHEETS	38



PLAN



PROFILE

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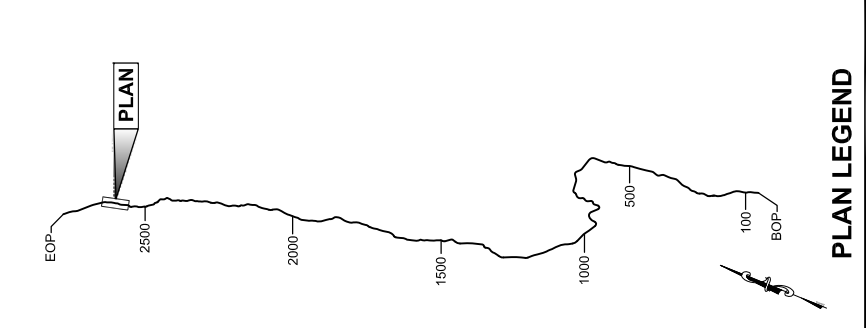
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GEARY, NATE (DOT)
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APPENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS	
NO.	DATE DESCRIPTION



CHECKED BY:

DESIGNED BY:

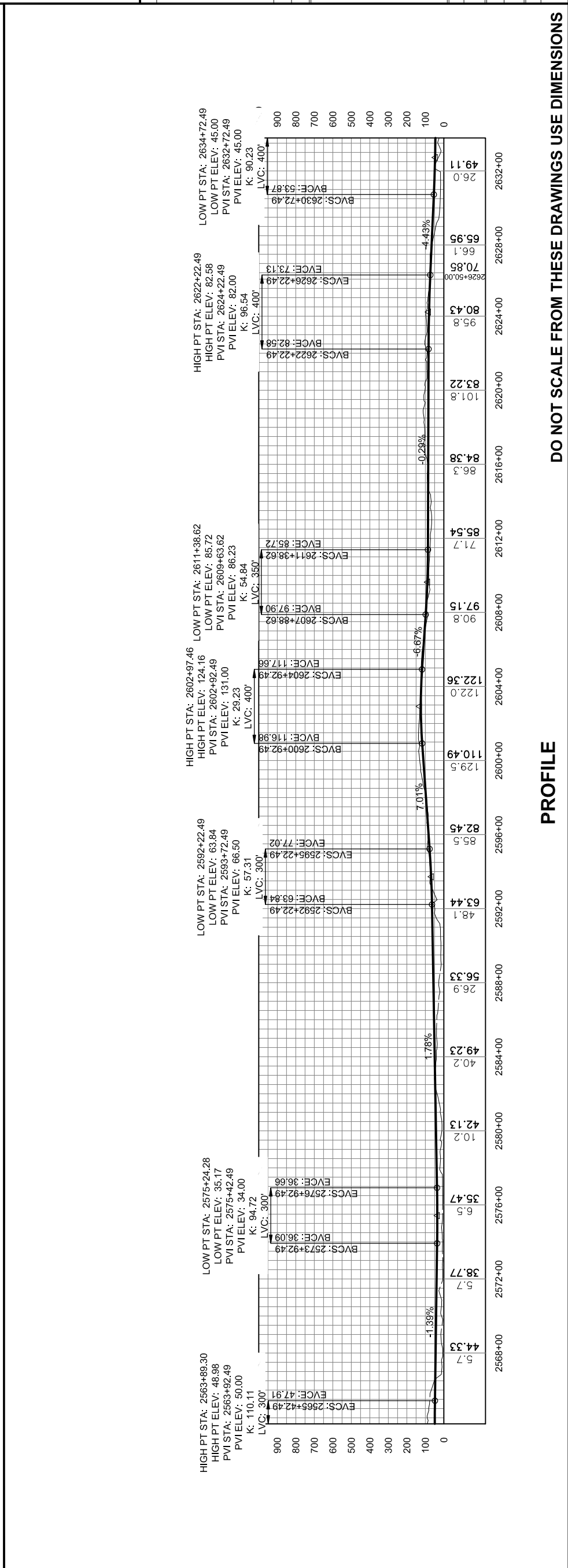
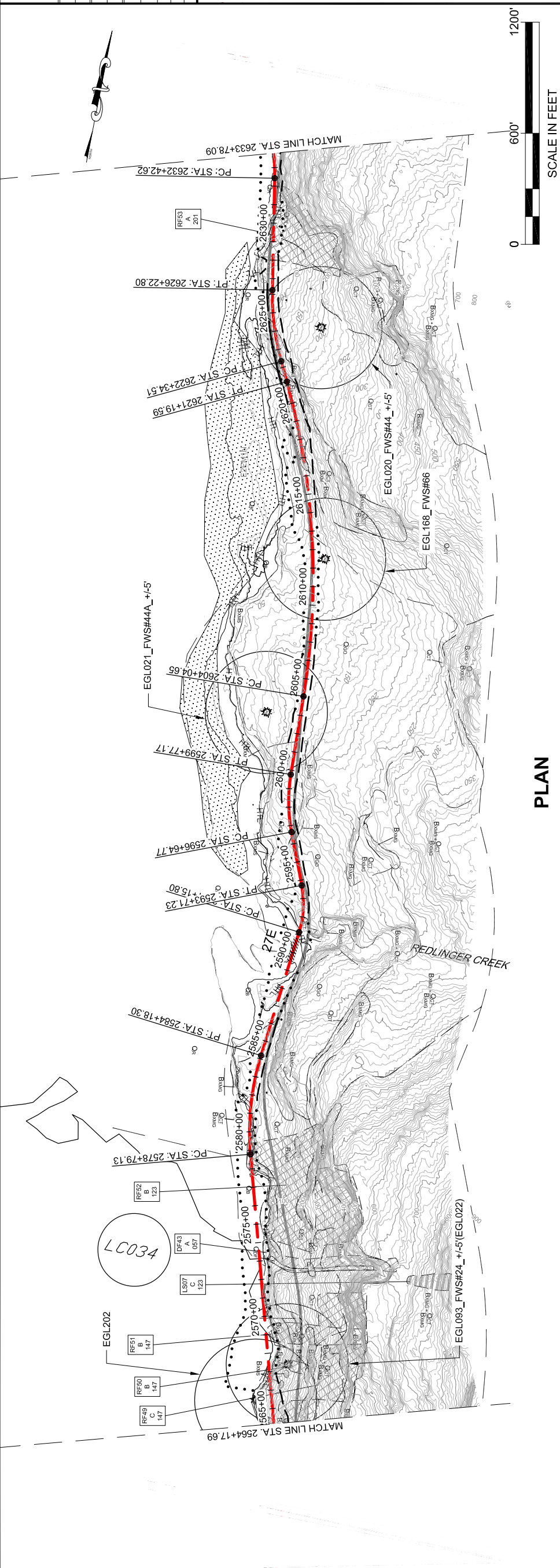
DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION

JNU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	EL36
TOTAL SHEETS	38

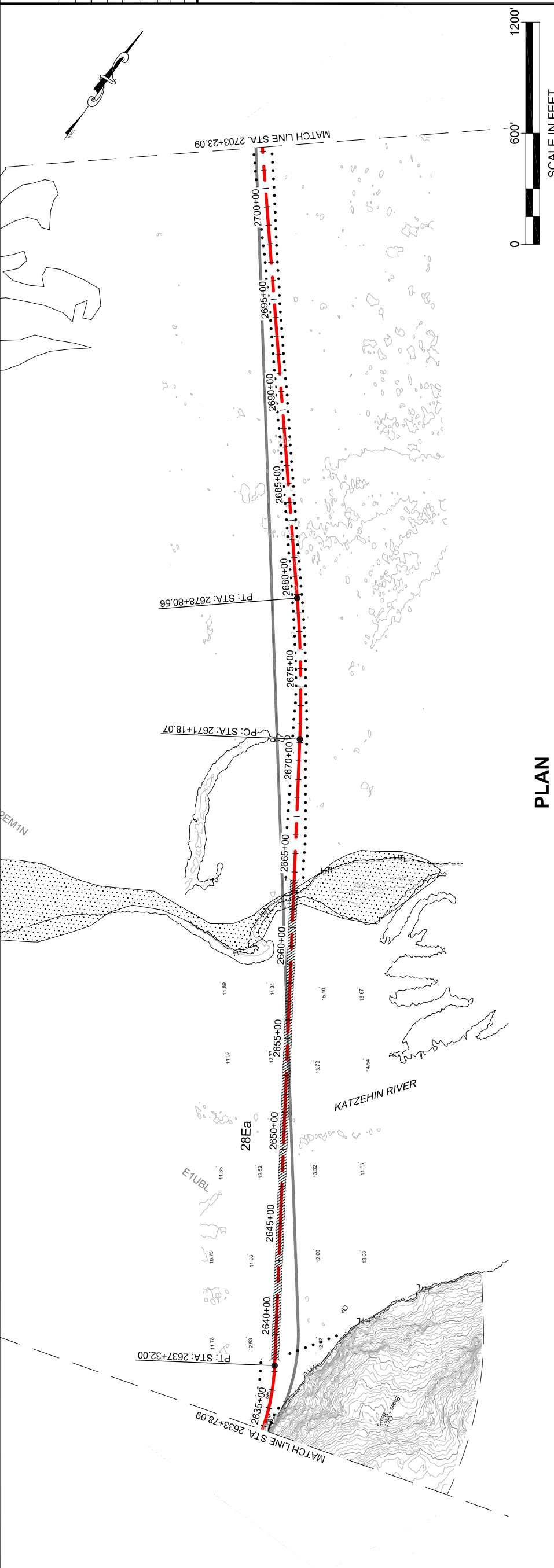


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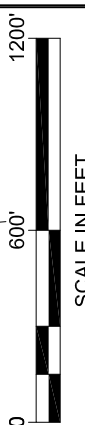
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NO.	DATE

APPENDUM NUMBER
 ATTACHMENT NUMBER



PLAN



PLAN LEGEND

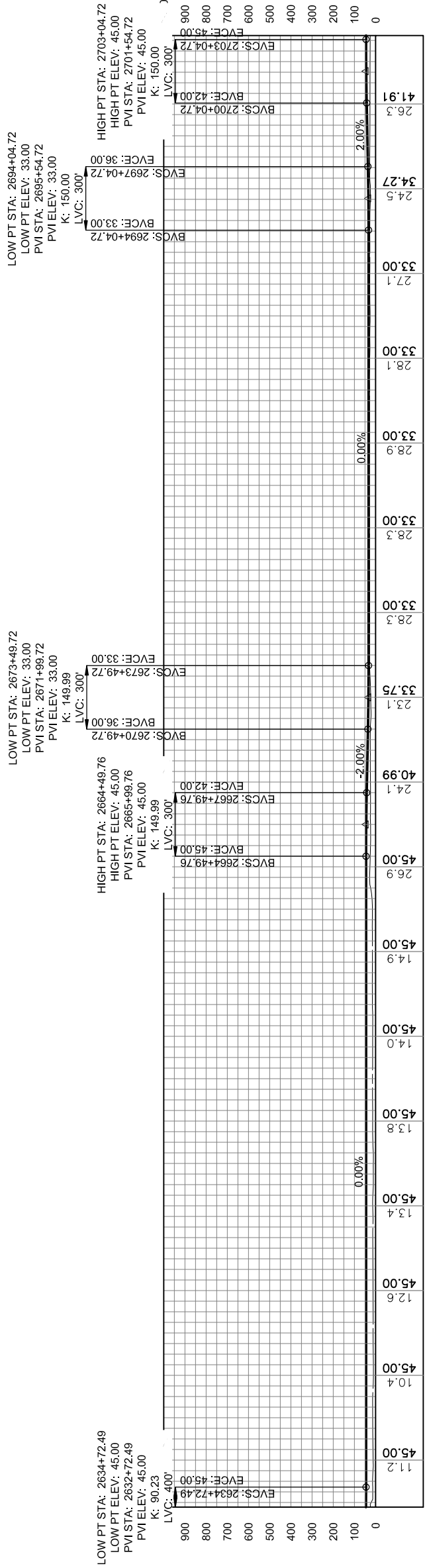
CHECKED BY:
 DESIGNED BY:
 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNEAU-EAST LYNN CANAL
 HIGHWAY ALTERNATIVE 2B
 PROJECT #71100

**2013 EIS
 PLAN VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013
SHEET NUMBER	TOTAL SHEETS
EL37	38



PROFILE

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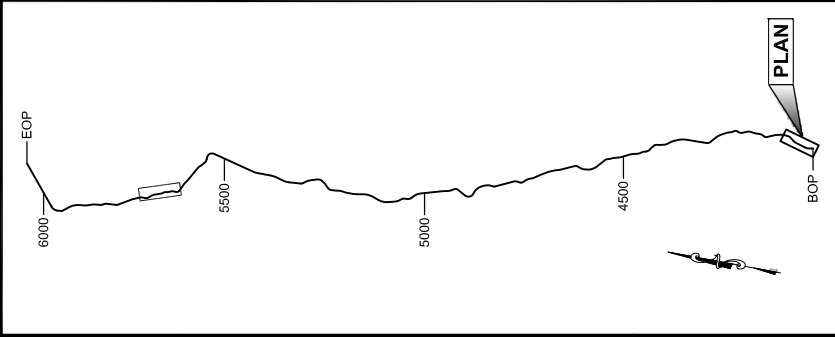
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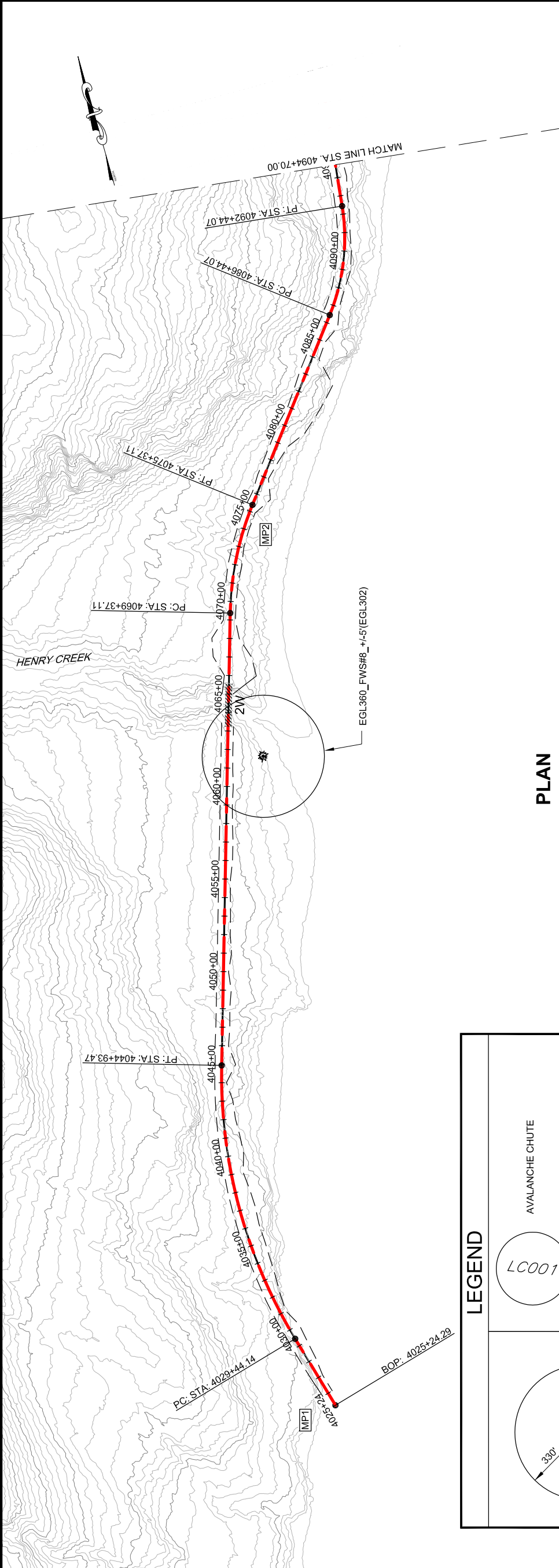
Attachment B
Juneau Access Improvements Project
Revised West Lynn Canal Plan and Profile Sheets

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 No. DATE DESCRIPTION

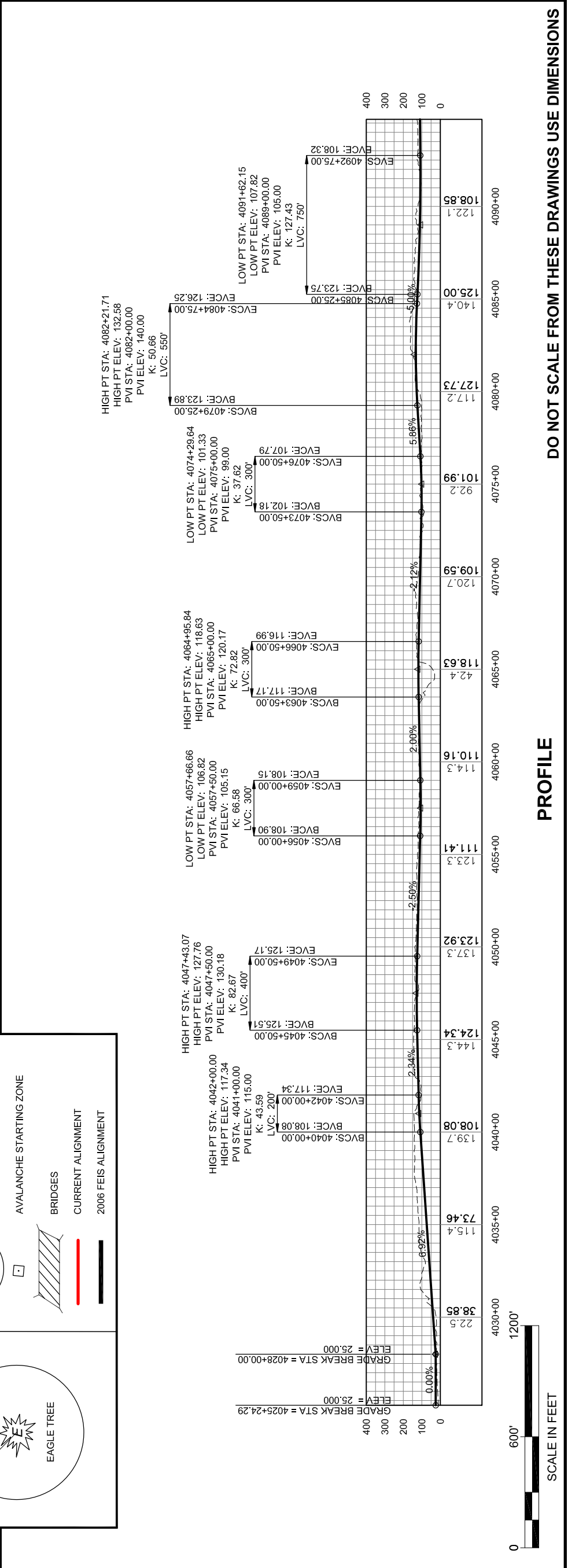


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 DESIGNED BY:
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 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
**JNU-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100**
**2012 EIS
 PLAN & PROFILE
 VIEW**
 PROJECT DESIGNATION
71100
 STATE ALASKA
 SHEET NUMBER WL1
 YEAR 2013
 TOTAL SHEETS XX



LEGEND

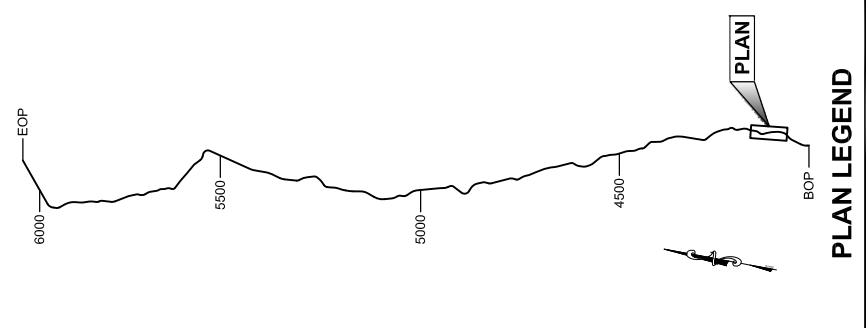
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- AVALANCHE STARTING ZONE (square with diagonal lines)
- BRIDGES (hatched rectangle)
- CURRENT ALIGNMENT (red line)
- 2006 FEIS ALIGNMENT (black line)
- EAGLE TREE (starburst symbol)



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 GEARY, NATE (DOT)
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 ATTACHMENT NUMBER

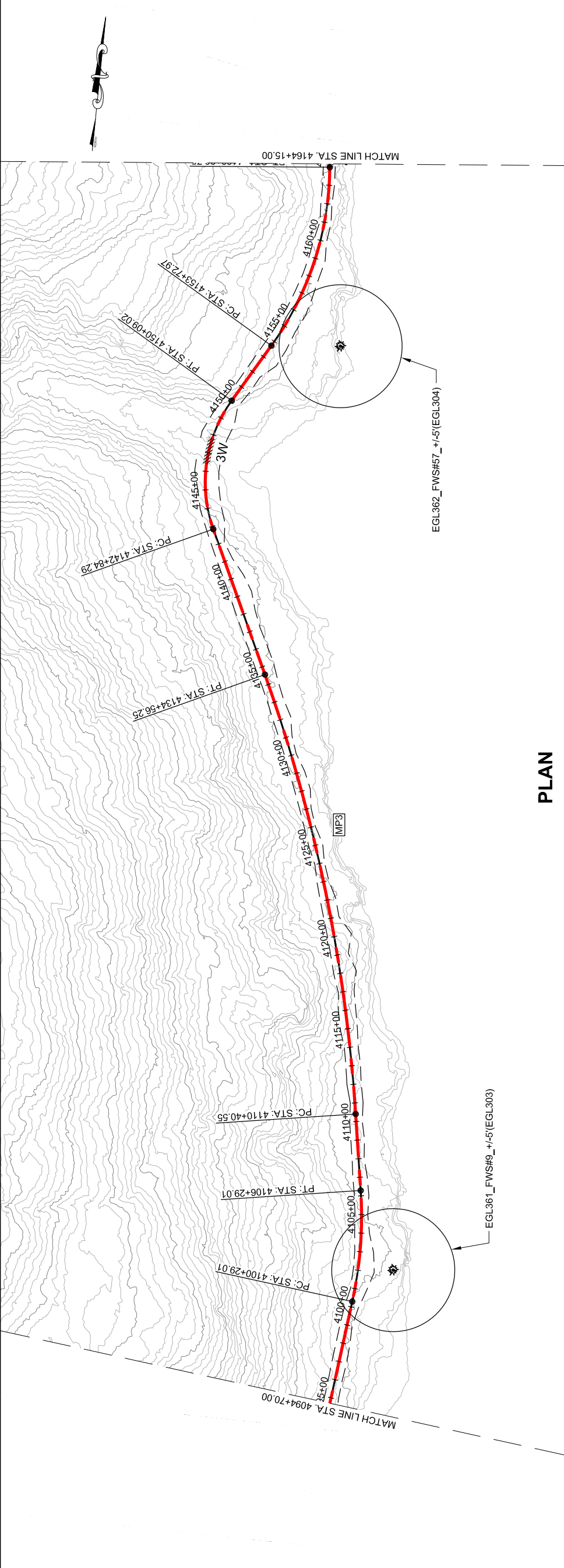
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NO.	DESCRIPTION



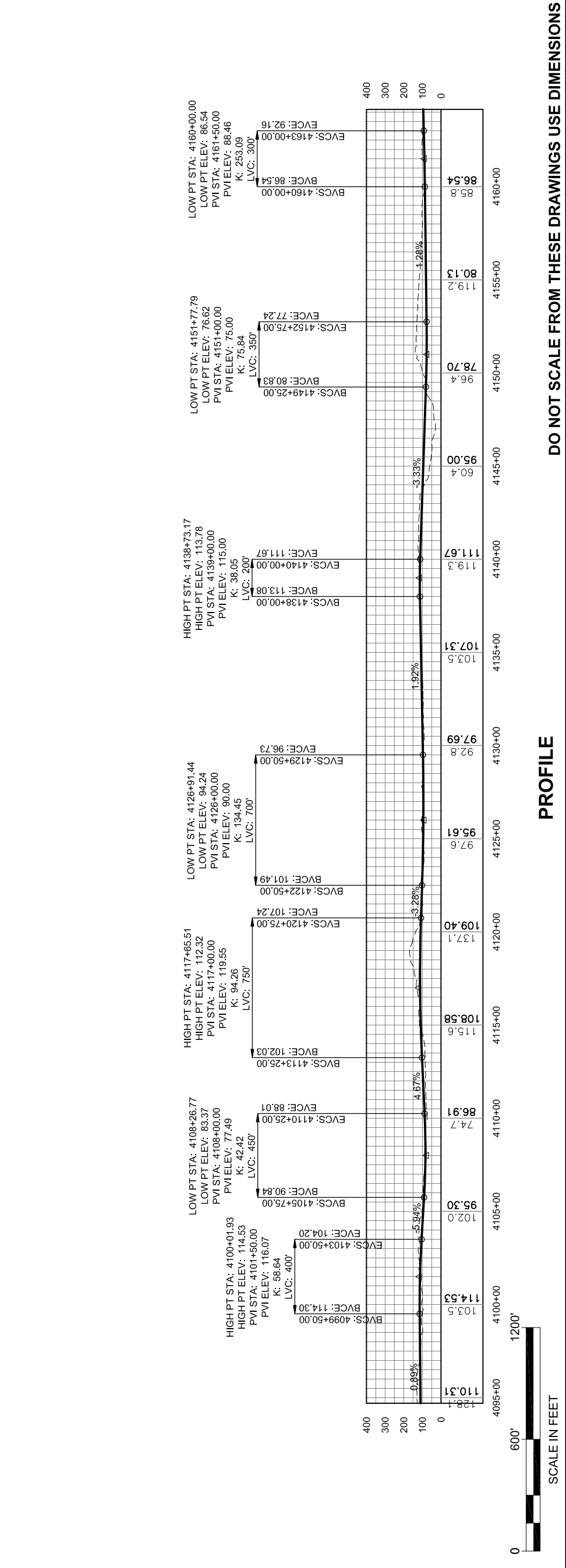
CHECKED BY:
 DESIGNED BY:
 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL2
TOTAL SHEETS	XX



PLAN



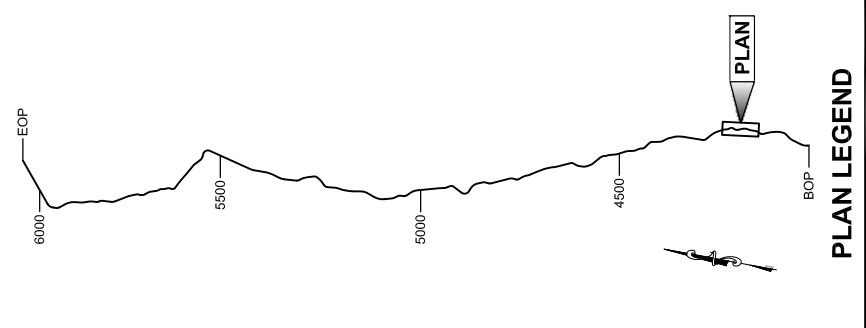
PROFILE

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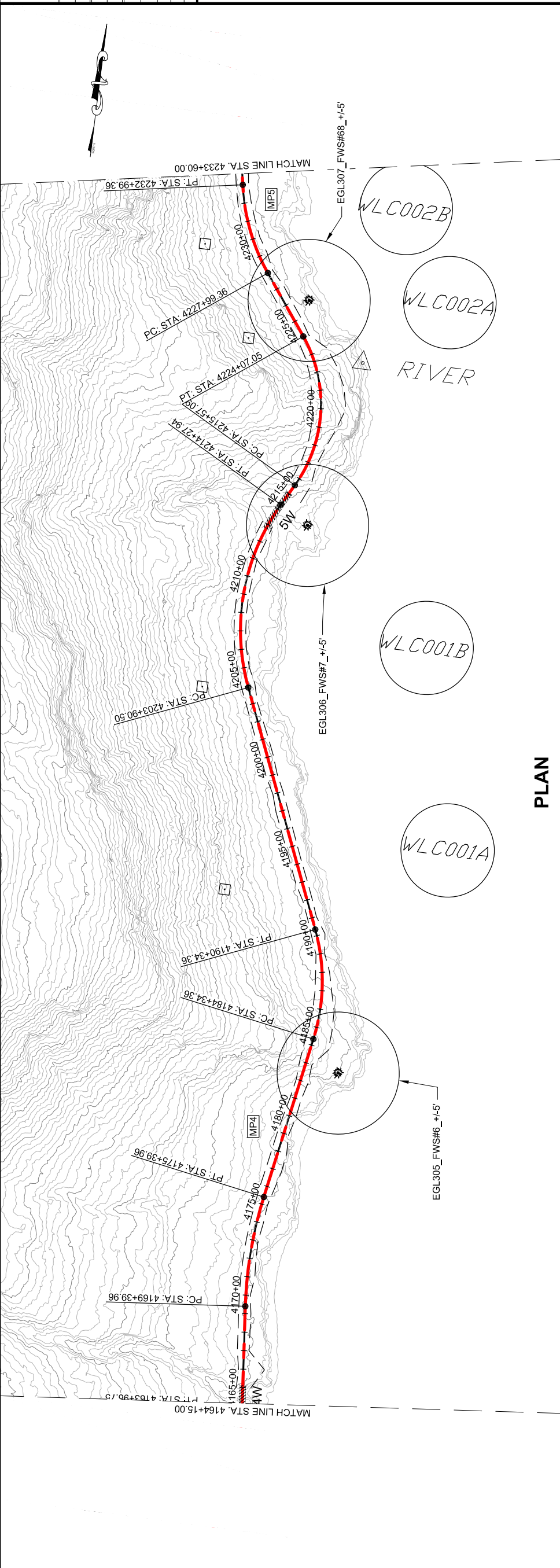
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 RECORD OF REVISIONS
 No. DATE DESCRIPTION



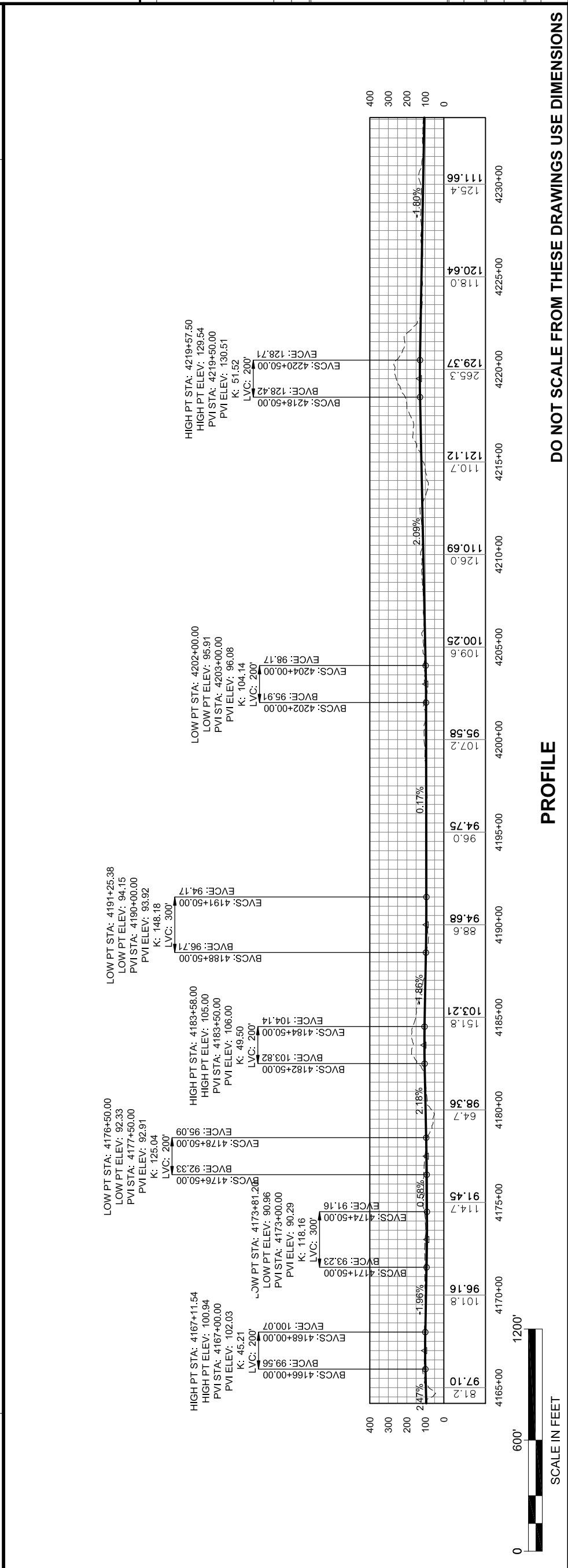
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 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

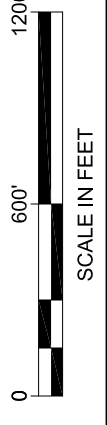
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STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL3
TOTAL SHEETS	XX



PLAN



PROFILE



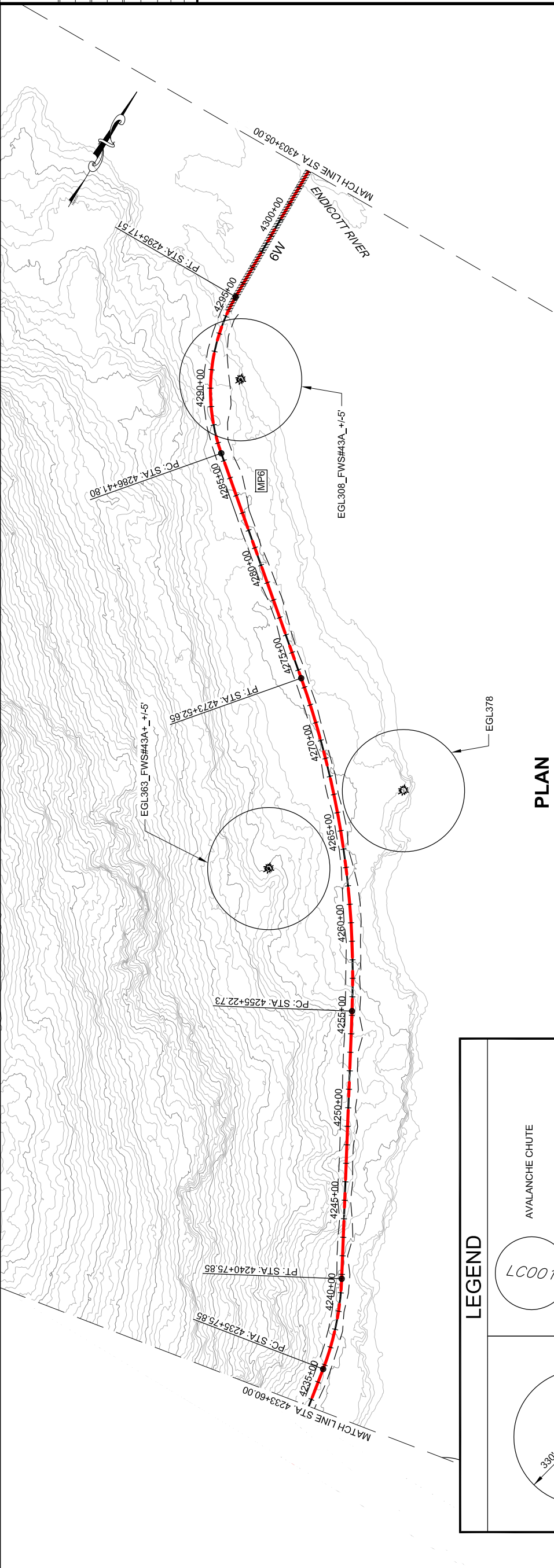
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 TAB: WL4
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RECORD OF REVISIONS	
NO.	DESCRIPTION

APPENDIX NUMBER
 ATTACHMENT NUMBER



PLAN

LEGEND

- EAGLE TREE
- AVALANCHE CHUTE
- AVALANCHE STARTING ZONE
- BRIDGES
- CURRENT ALIGNMENT
- 2006 FEIS ALIGNMENT

PLAN LEGEND

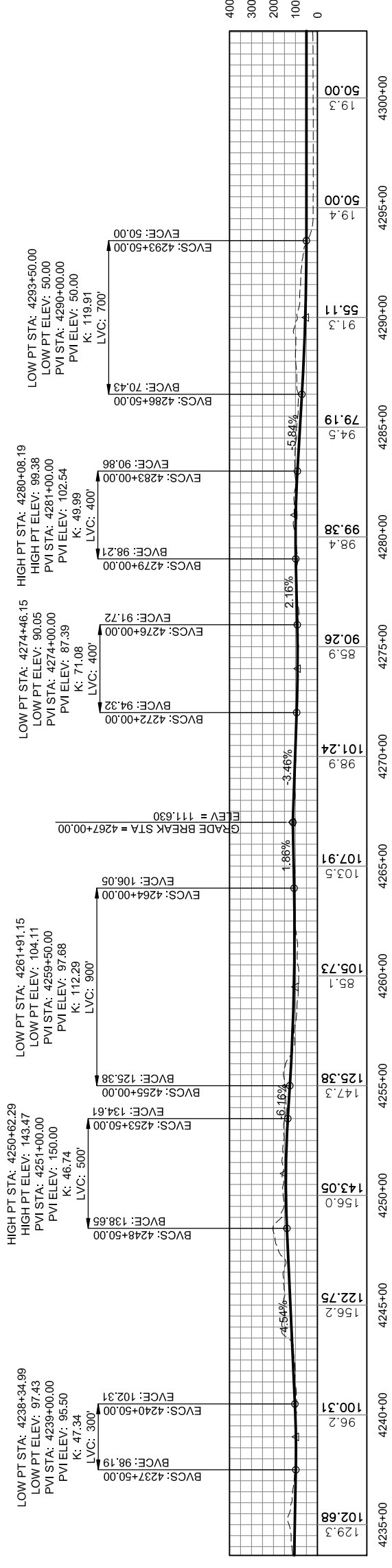
CHECKED BY:
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DESIGNED BY:
 DRAWN BY:
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100

**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013
SHEET NUMBER	TOTAL SHEETS
WL4	XX



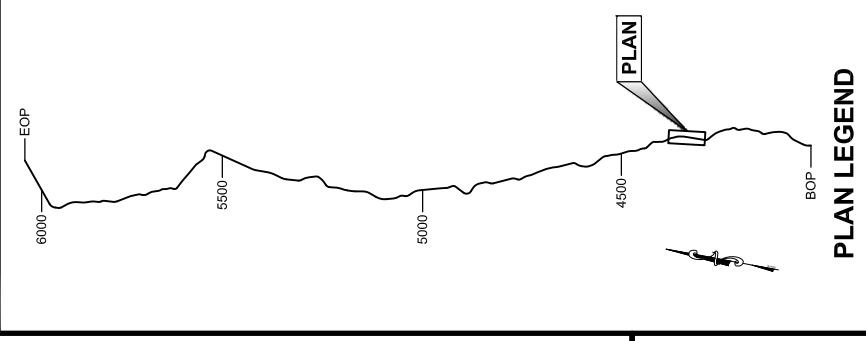
PROFILE

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

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 PLANS.DWG
 GEARY, NATE (DOT)
 TAB: WL5 Friday, October 04, 2013 1:18:41 PM

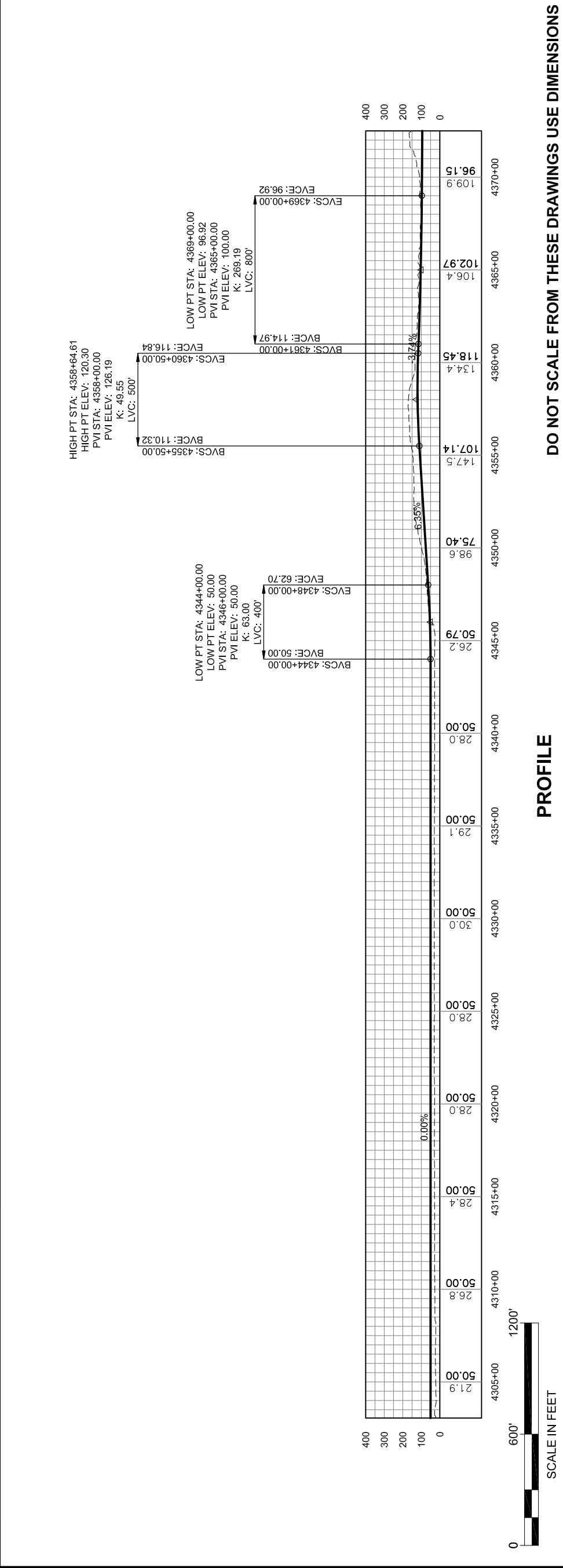
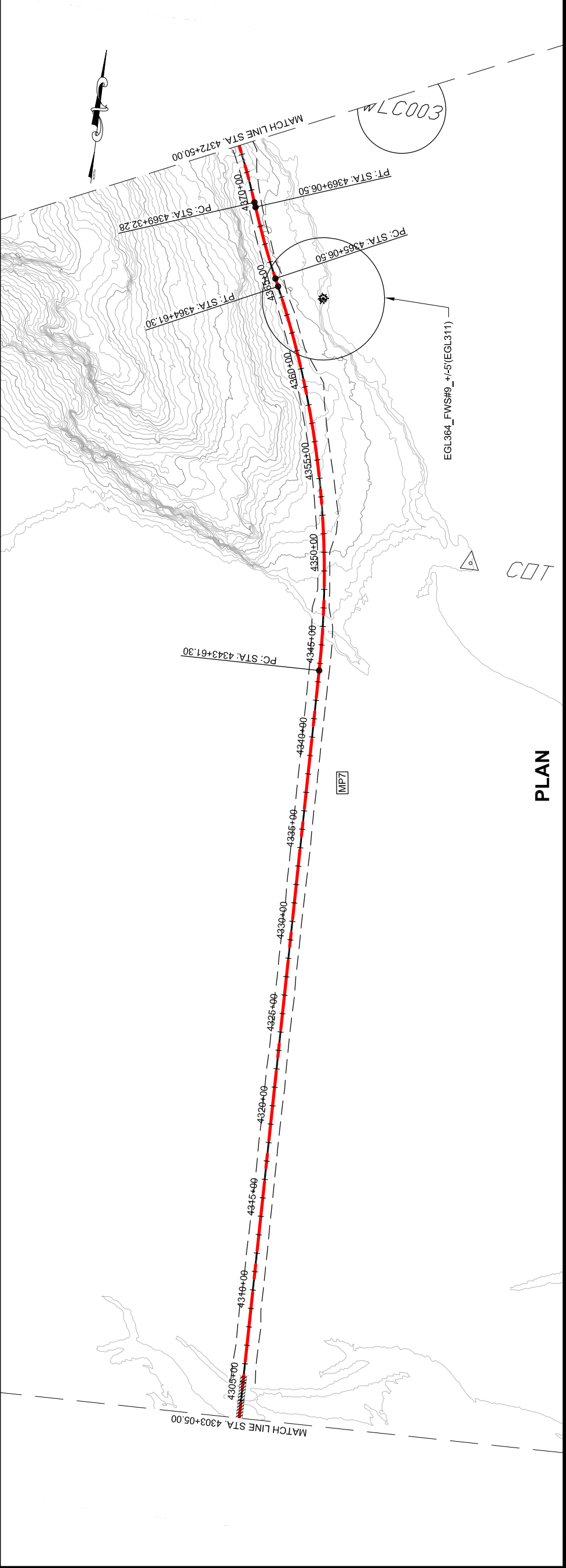
RECORD OF REVISIONS	
NO.	DATE



CHECKED BY:
 DESIGNED BY:
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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL5
TOTAL SHEETS	XX



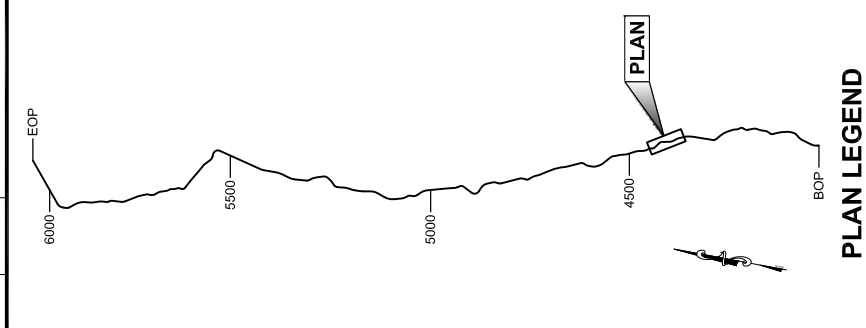
DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

PROFILE

SCALE IN FEET

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 DWGS\71100_2012 EIS WEST LYNN
 PLANS.DWG
 GEARY, NATE (DOT)
 TAB: WL6
 Friday, October 04, 2013 1:19:02 PM
 APPENDUM NUMBER
 ATTACHMENT NUMBER
 RECORD OF REVISIONS
 No. DATE DESCRIPTION

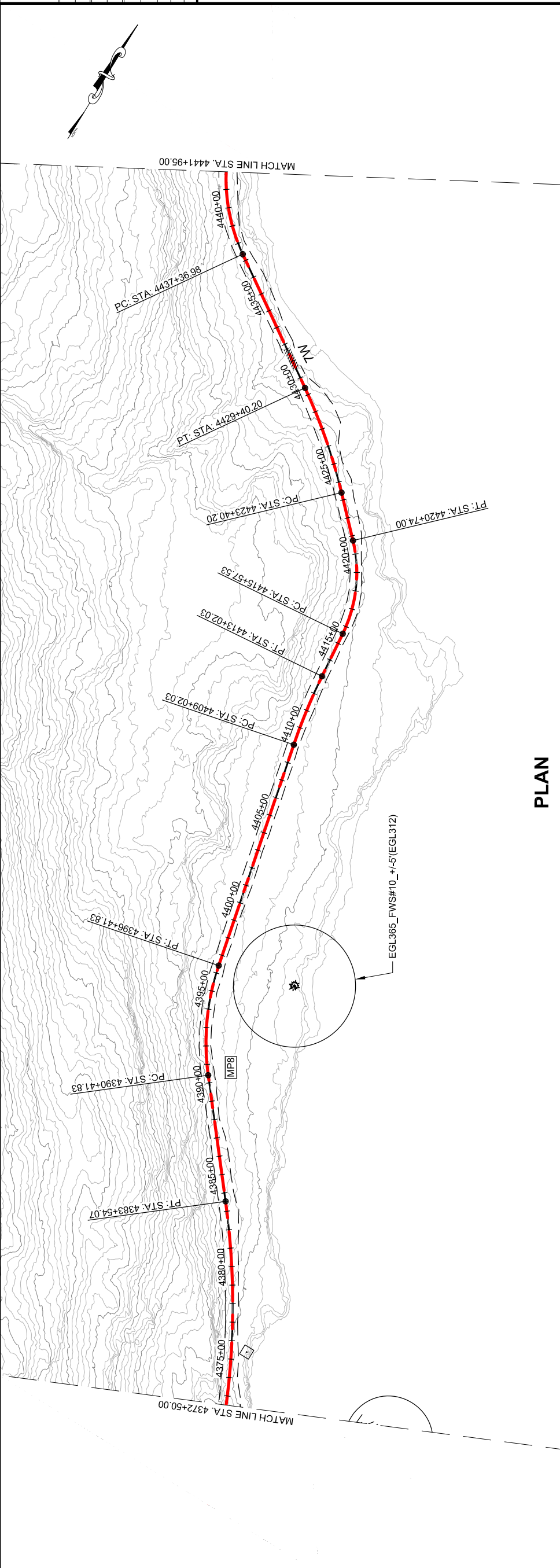


**2012 EIS
PLAN & PROFILE
VIEW**

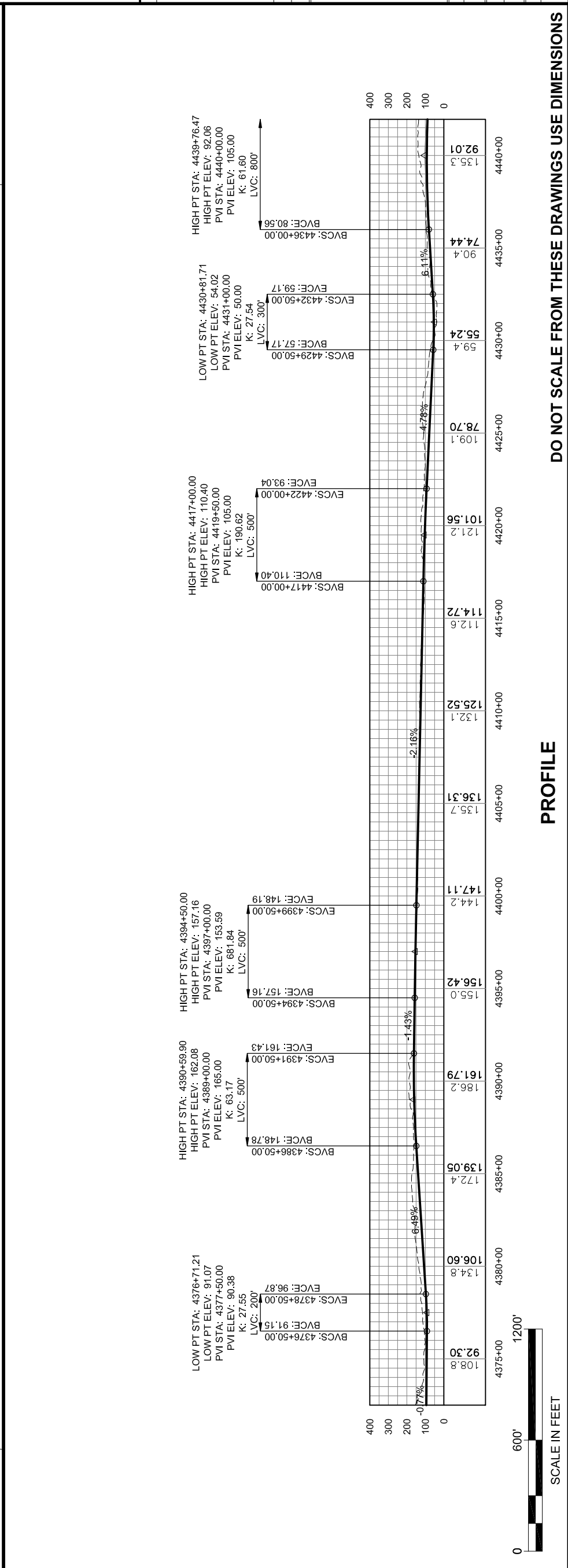
PROJECT DESIGNATION
71100

STATE ALASKA
 YEAR 2013
 SHEET NUMBER WL6
 TOTAL SHEETS XX

DESIGNED BY:
 DRAWN BY:
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100



PLAN



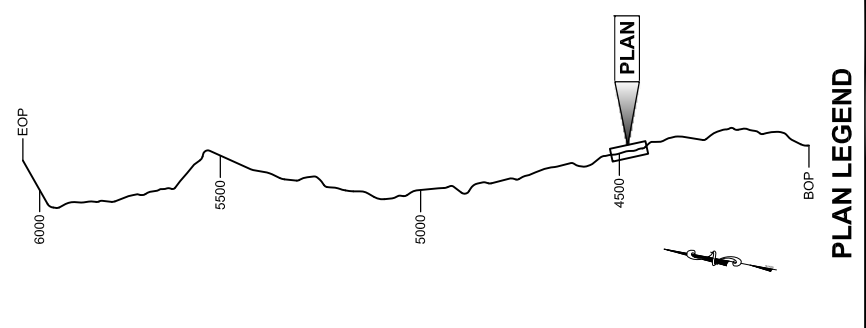
PROFILE



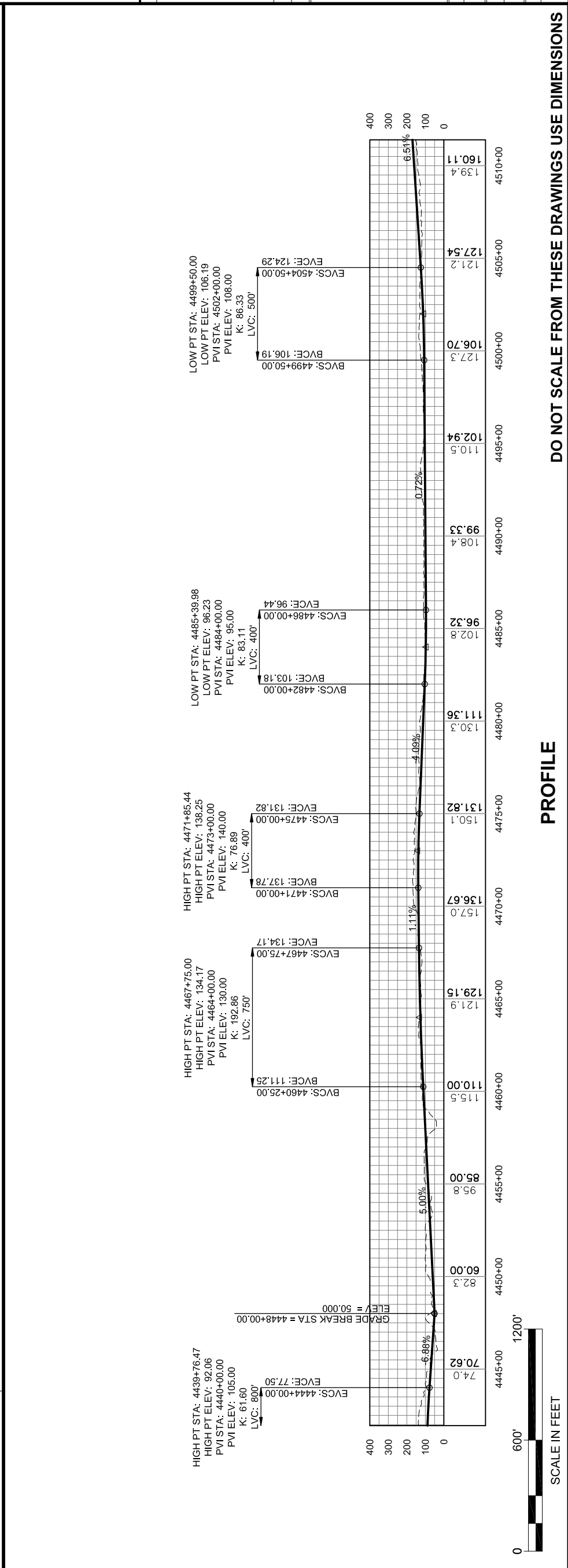
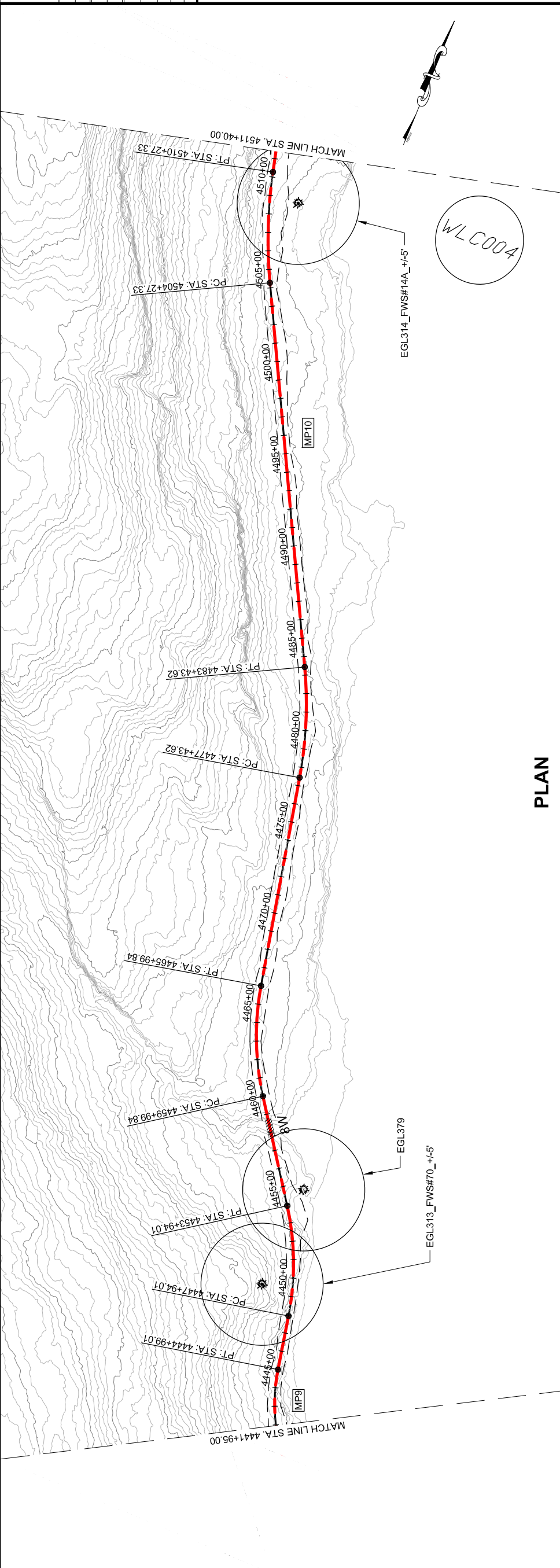
DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

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 APPENDUM NUMBER
 ATTACHMENT NUMBER
 RECORD OF REVISIONS
 No. DATE DESCRIPTION

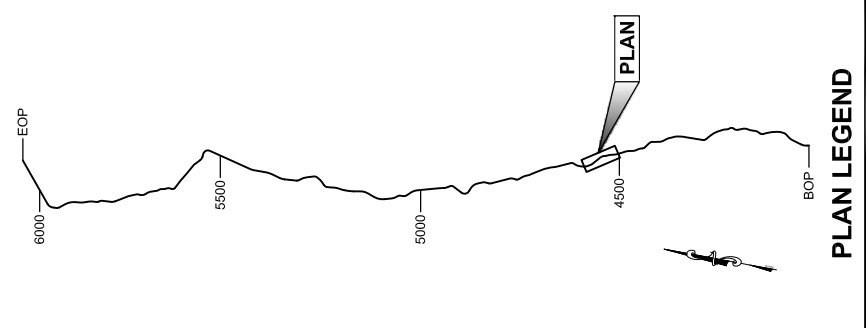


DRAFT
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
2012 EIS
PLAN & PROFILE
VIEW
 PROJECT DESIGNATION
71100
 STATE ALASKA
 YEAR **2013**
 SHEET NUMBER **WL7**
 TOTAL SHEETS **XX**



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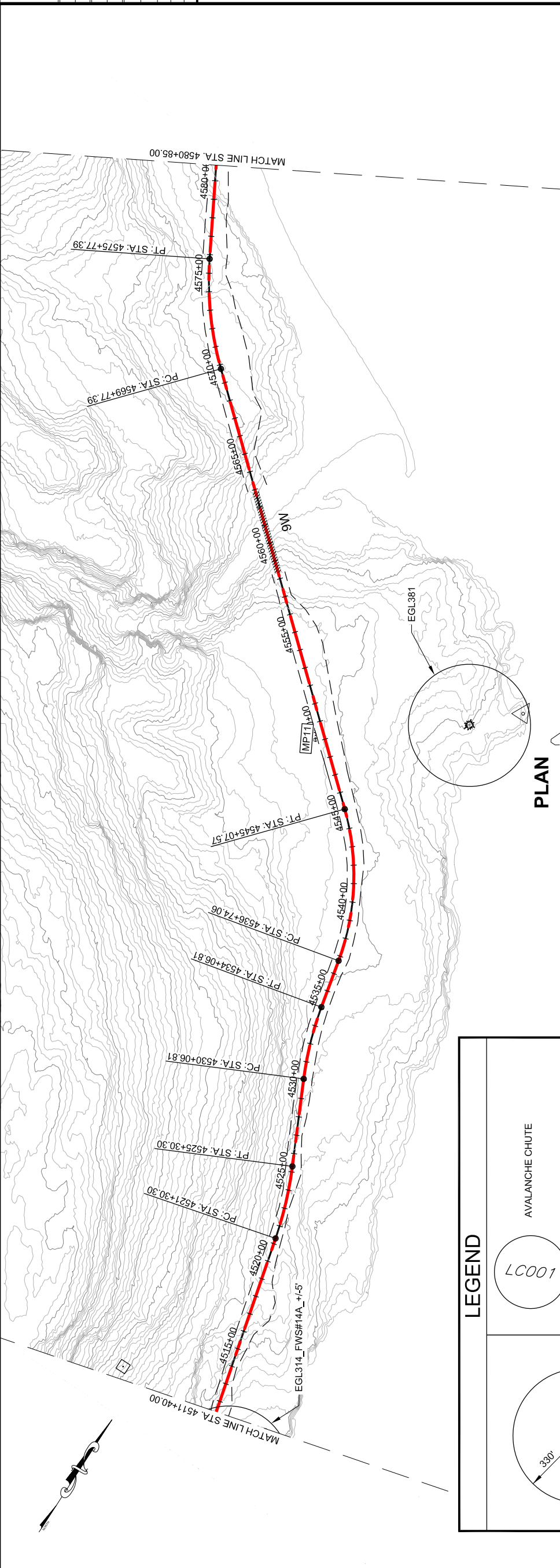
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 DRAWN BY:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
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 SOUTHEAST REGION

**JNU-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100**

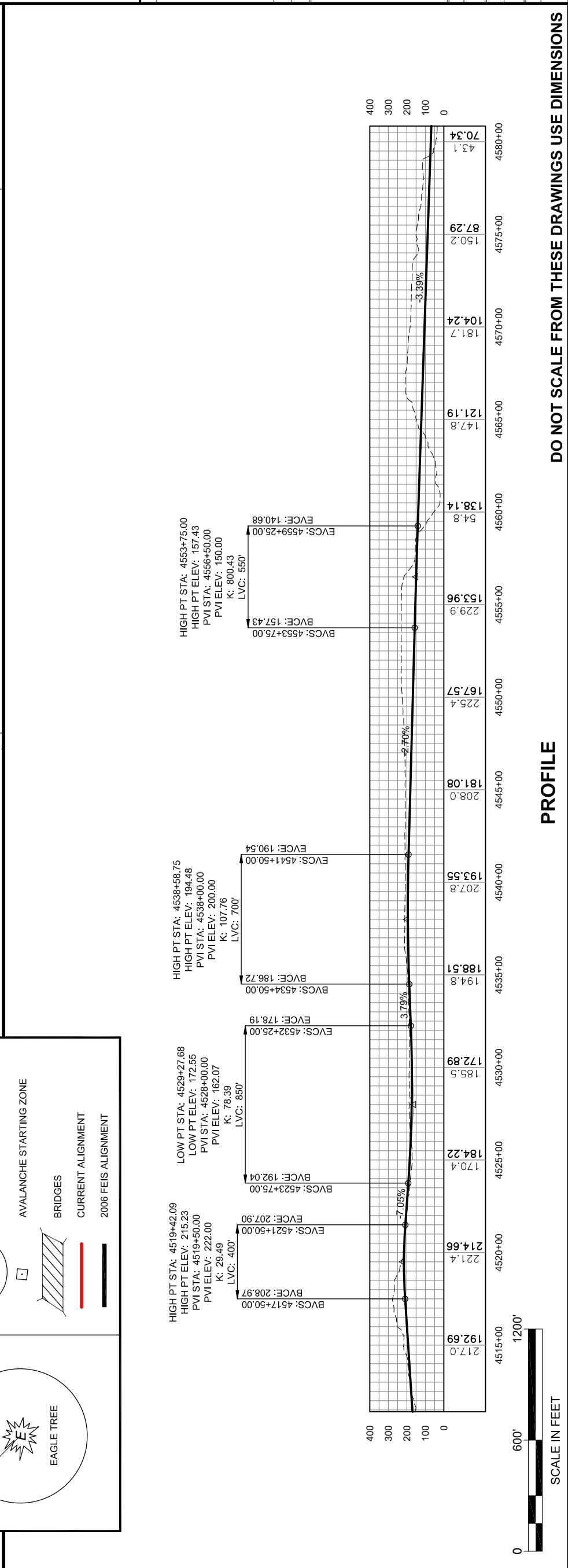
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL8
TOTAL SHEETS	XX



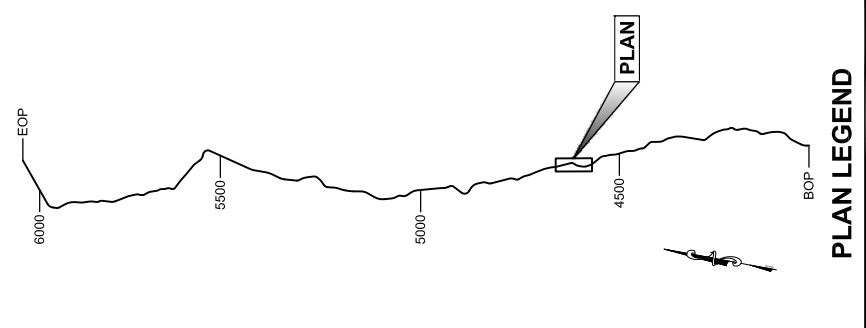
LEGEND

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	AVALANCHE STARTING ZONE
	BRIDGES
	CURRENT ALIGNMENT
	2006 FEIS ALIGNMENT



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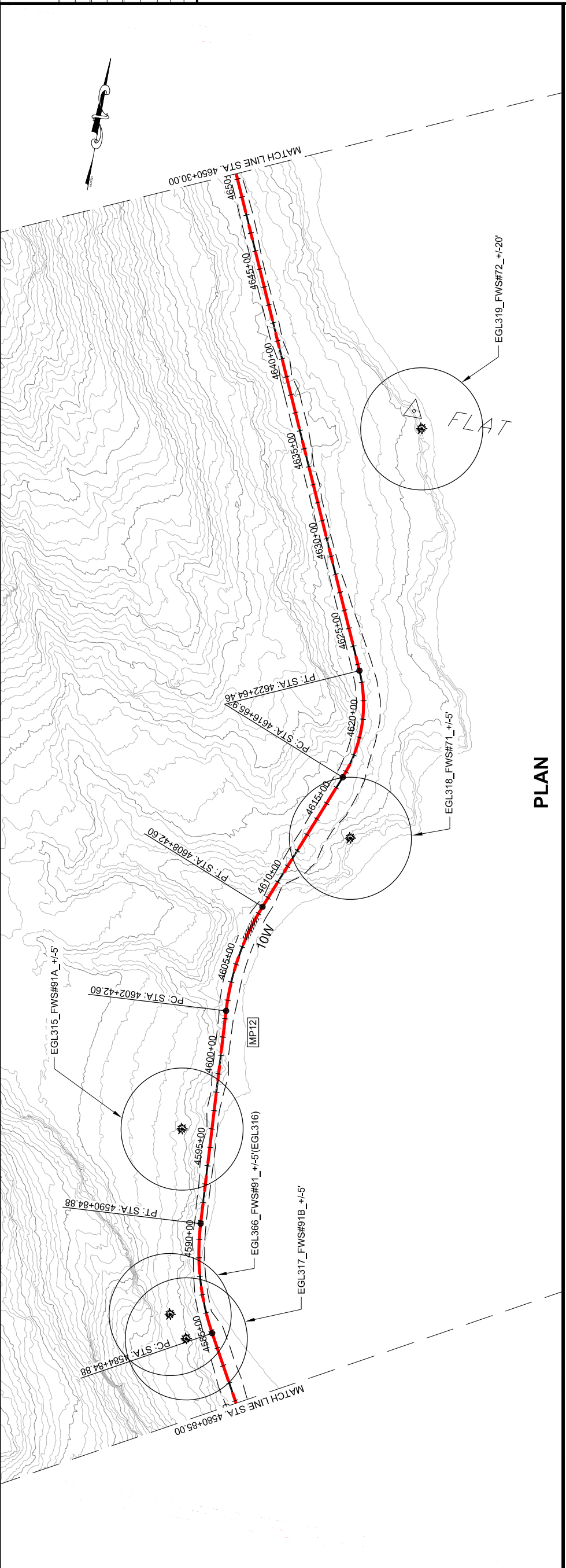
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 ATTACHMENT NUMBER
 RECORD OF REVISIONS
 No. DATE DESCRIPTION



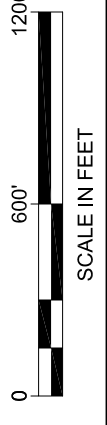
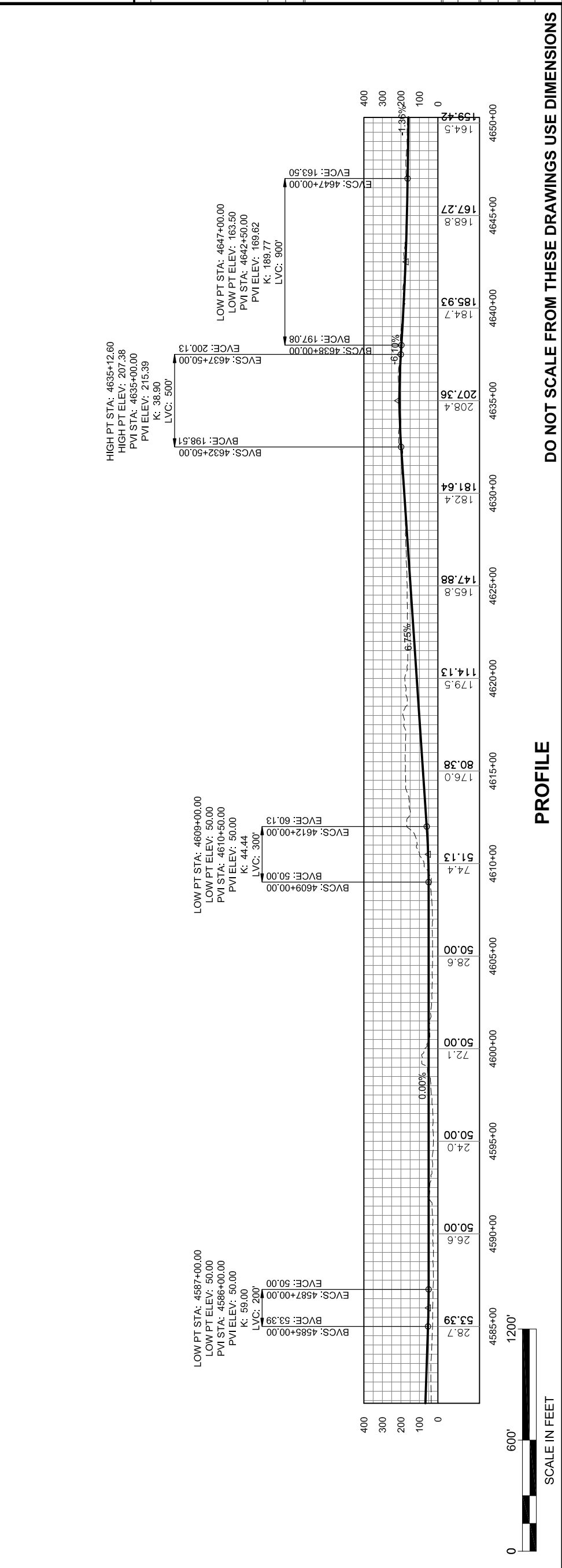
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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL9
TOTAL SHEETS	XX



PLAN



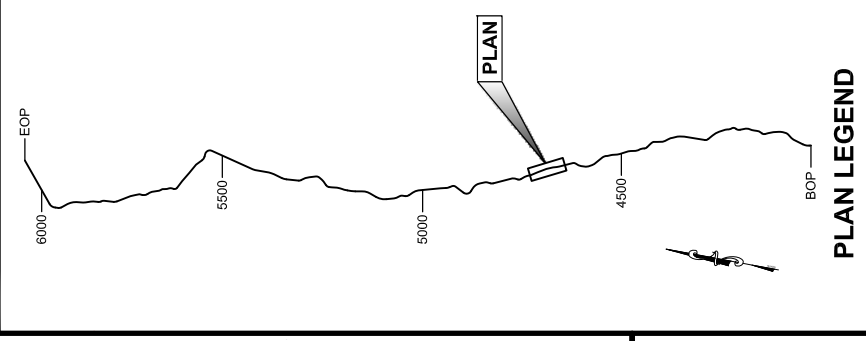
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NO.	DATE

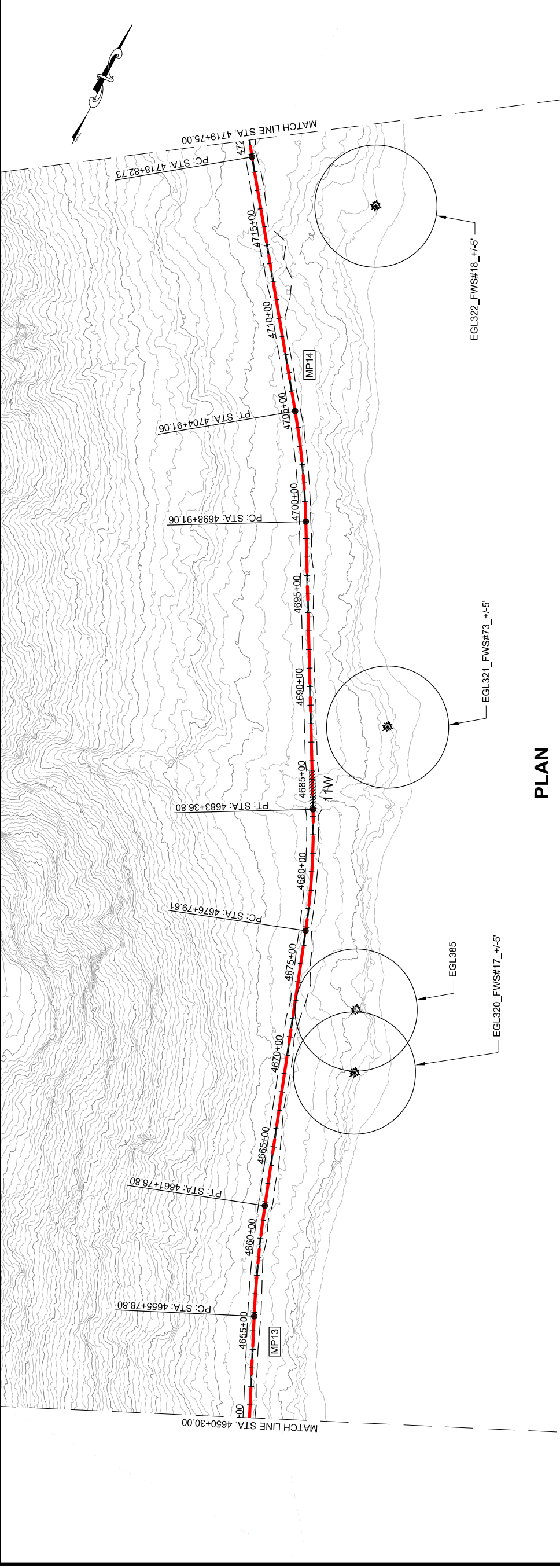


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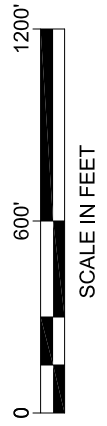
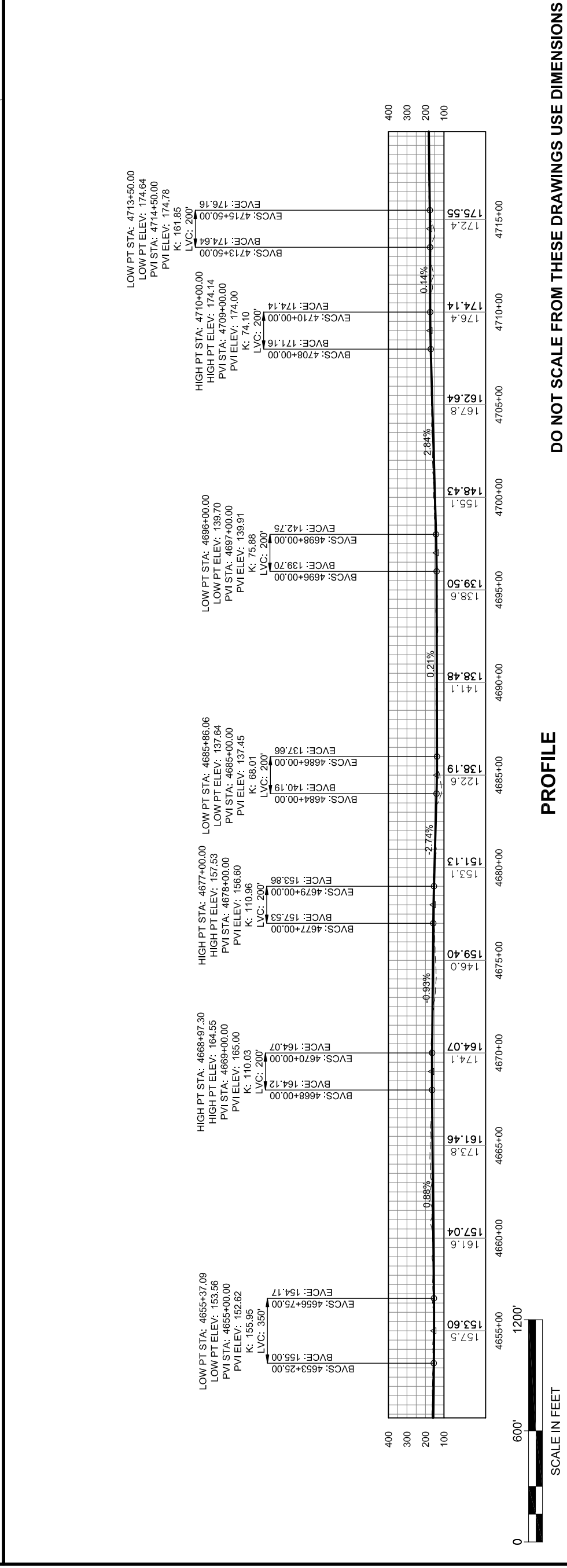
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 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100

**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL10
TOTAL SHEETS	XX



PLAN

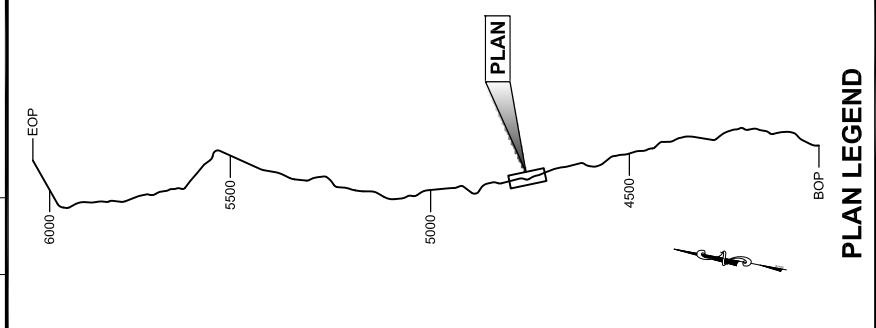


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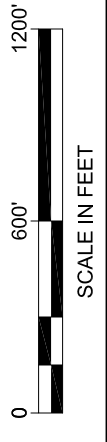
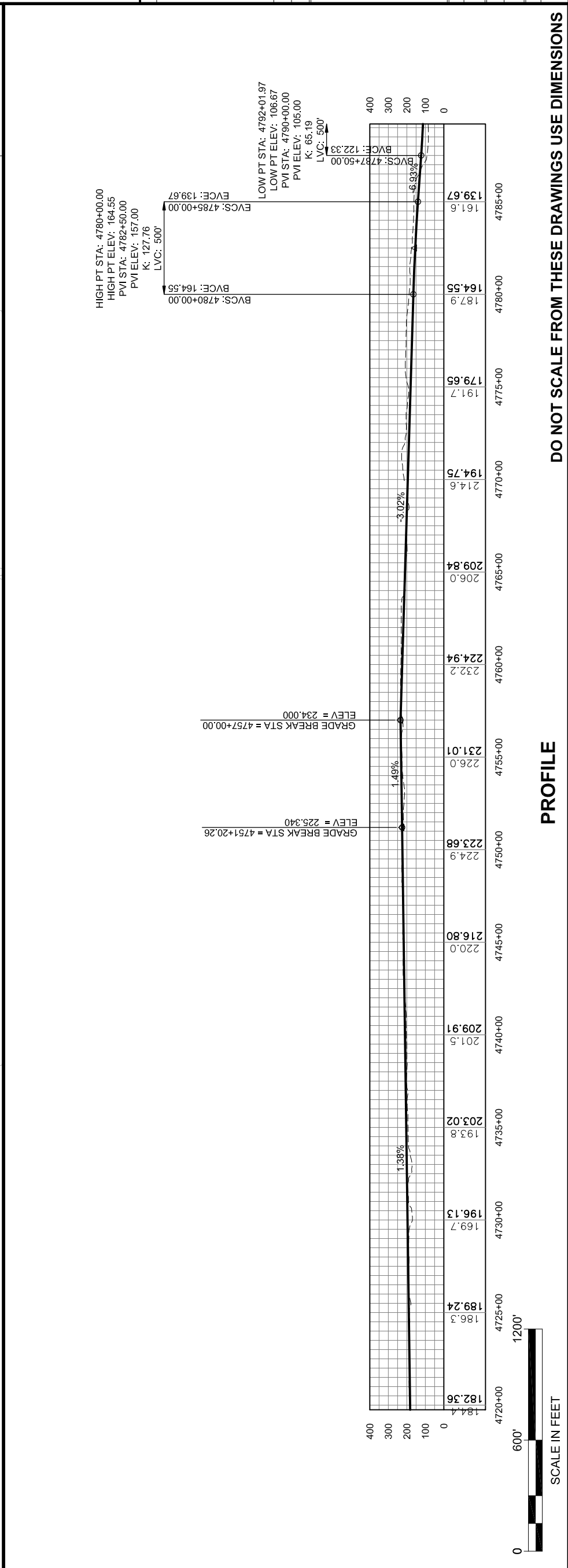
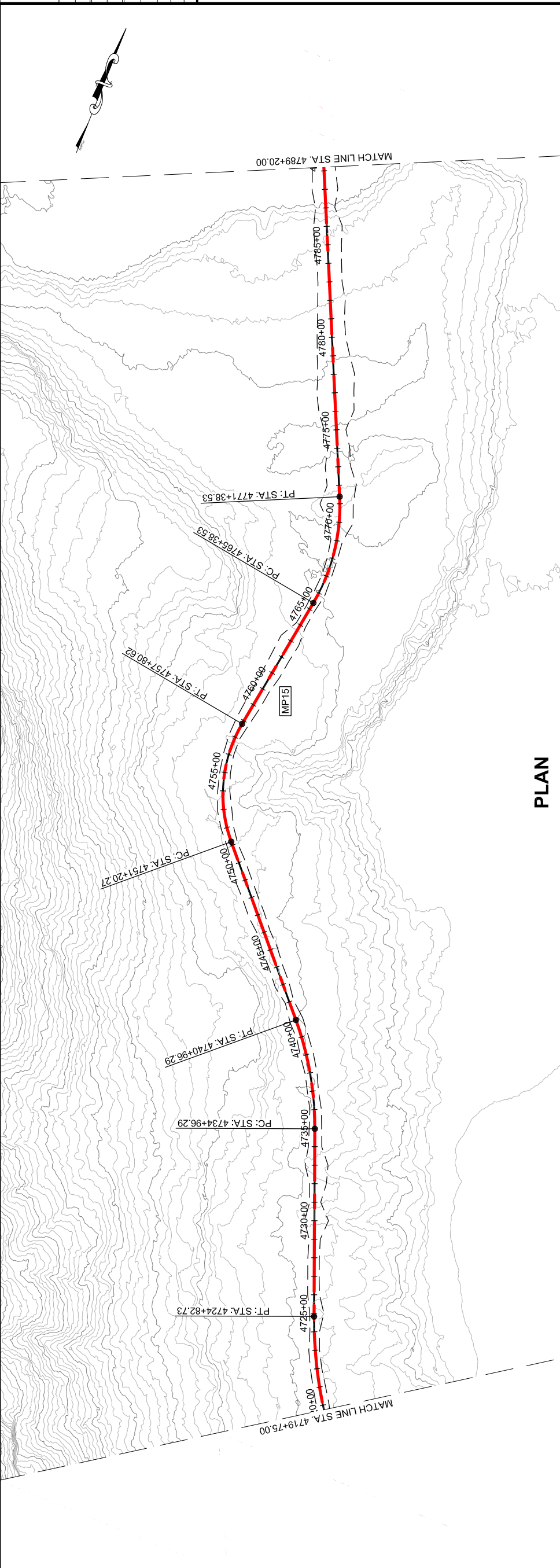
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 APPENDUM NUMBER
 ATTACHMENT NUMBER
 RECORD OF REVISIONS
 No. DATE DESCRIPTION



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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL11
TOTAL SHEETS	XX

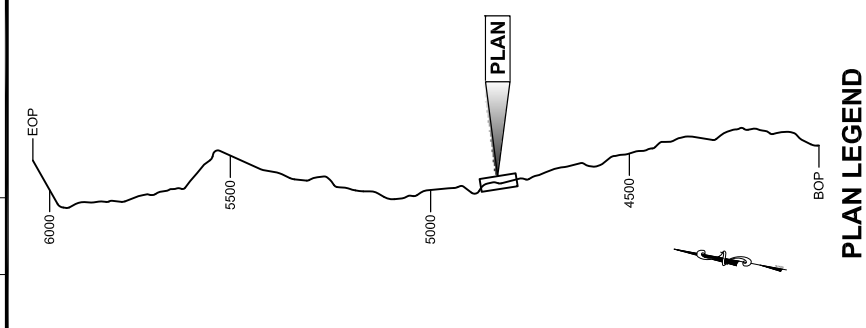


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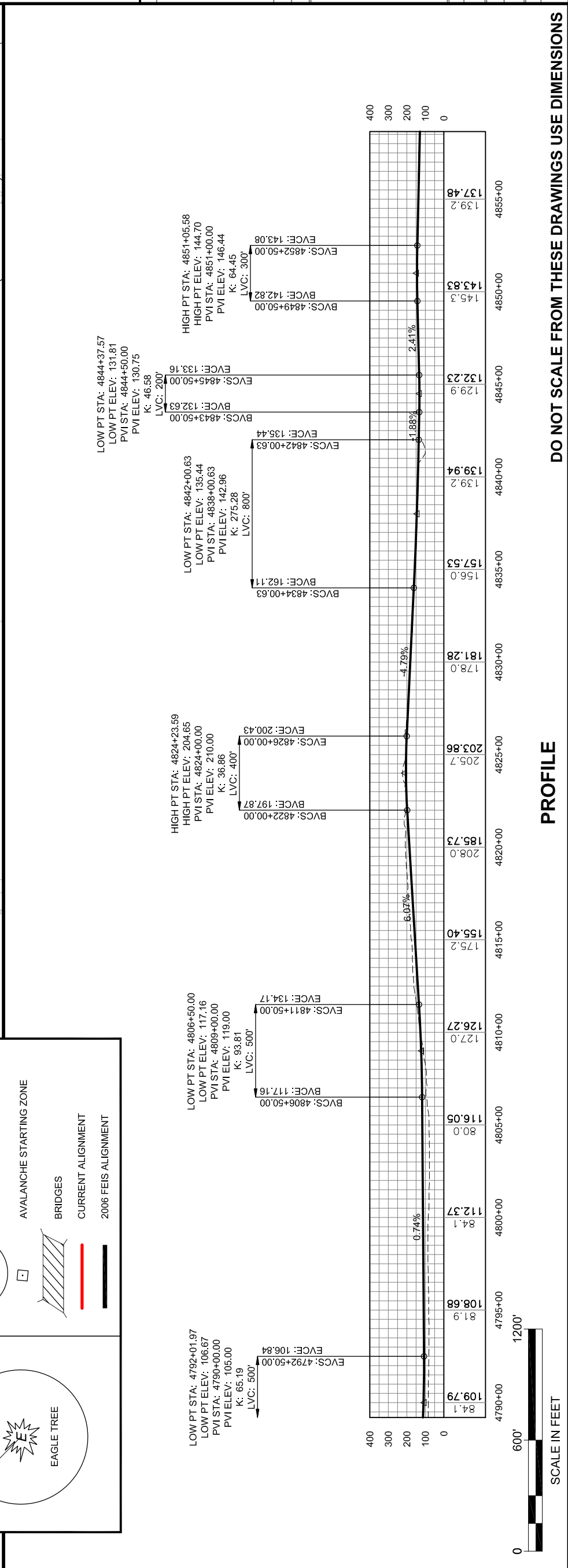
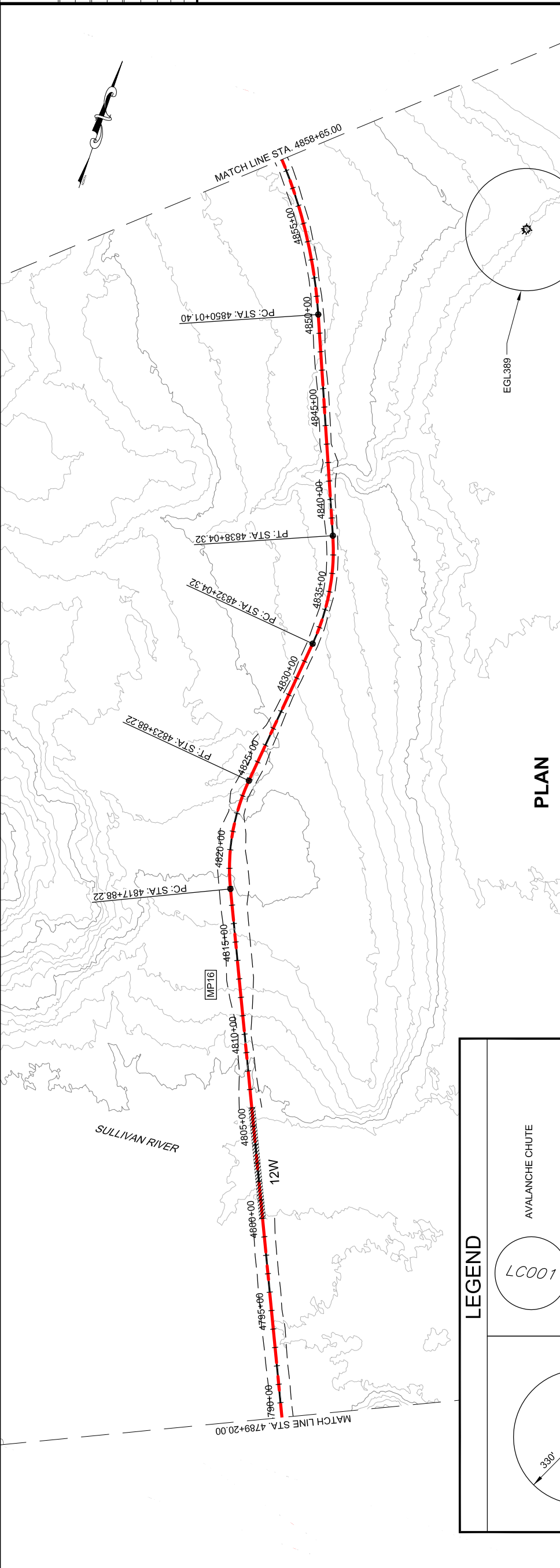


PLAN & PROFILE VIEW

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100

71100

PROJECT DESIGNATION
 STATE YEAR
 ALASKA 2013
 SHEET NUMBER TOTAL SHEETS
 WL12 XX



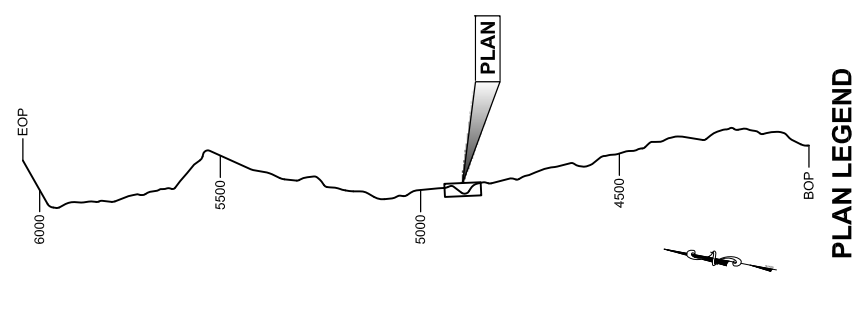
LEGEND

- AVALANCHE CHUTE
- EAGLE TREE
- AVALANCHE STARTING ZONE
- BRIDGES
- CURRENT ALIGNMENT
- 2006 FEIS ALIGNMENT

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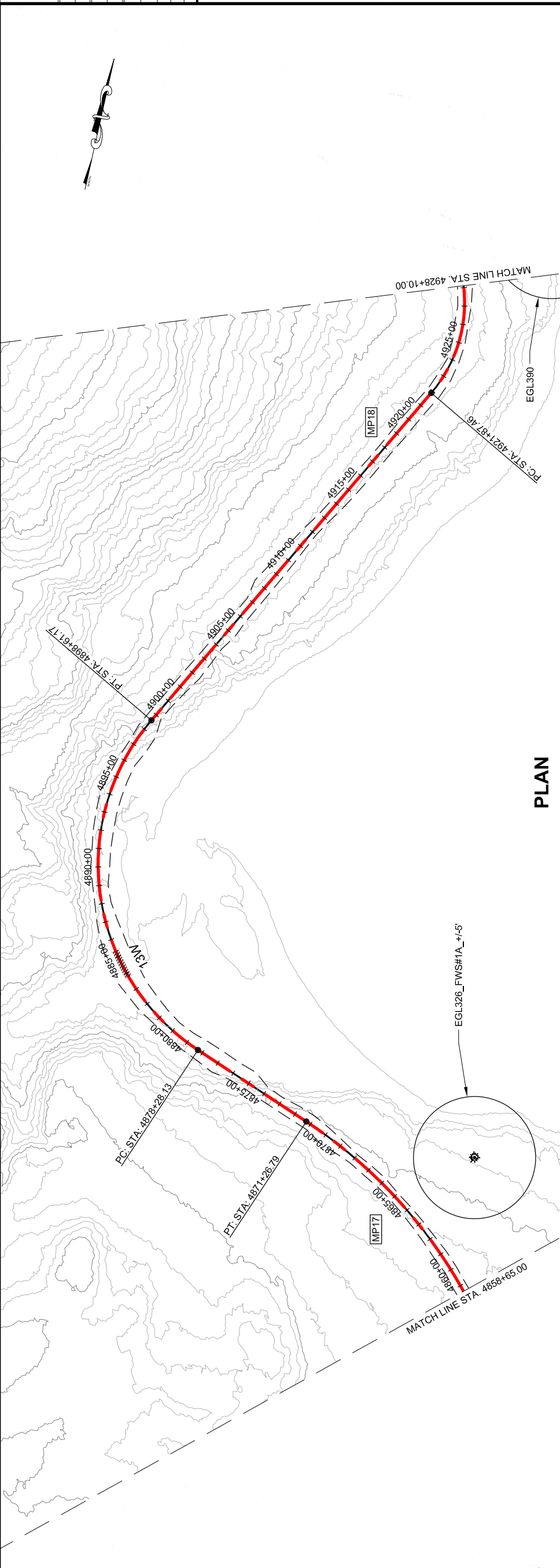
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NO.	DESCRIPTION



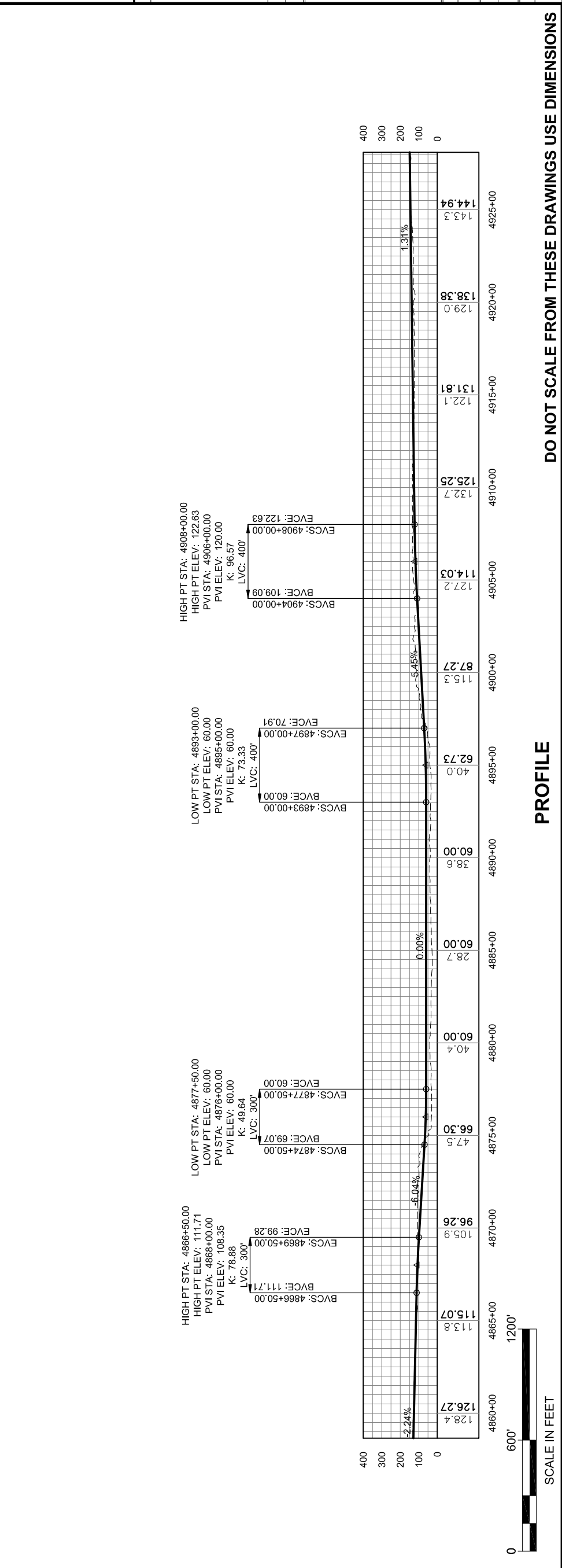
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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

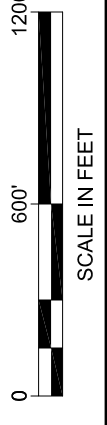
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STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL13
TOTAL SHEETS	XX



PLAN



PROFILE

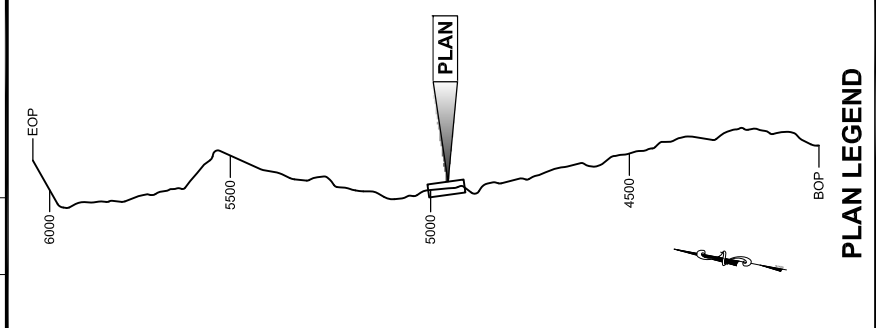


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NO.	DATE

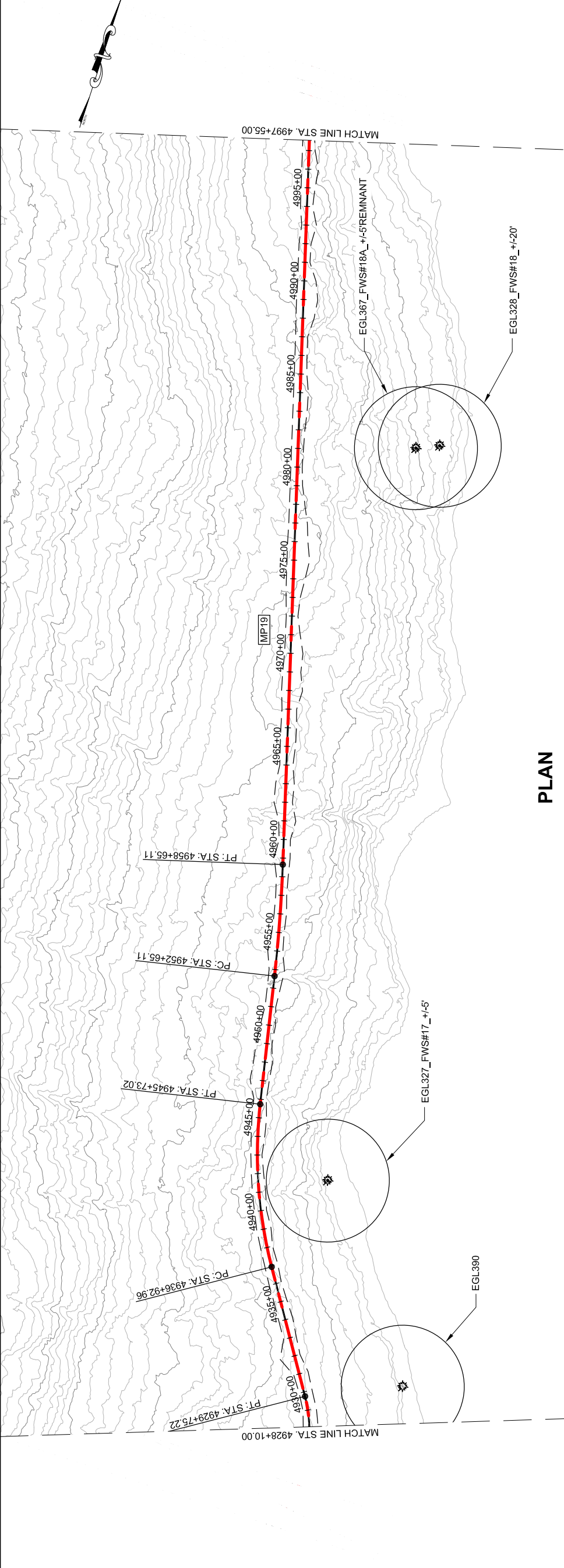


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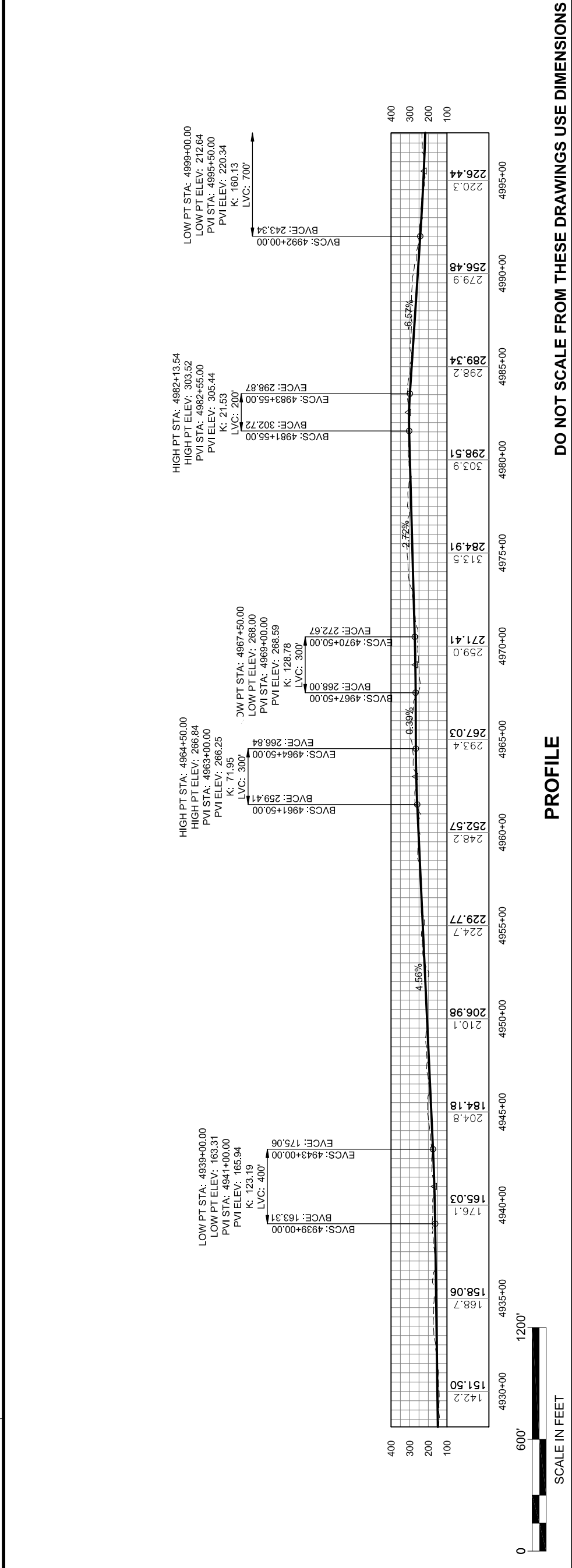
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100

2012 EIS
 PLAN & PROFILE
 VIEW

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL14
TOTAL SHEETS	XX



PLAN

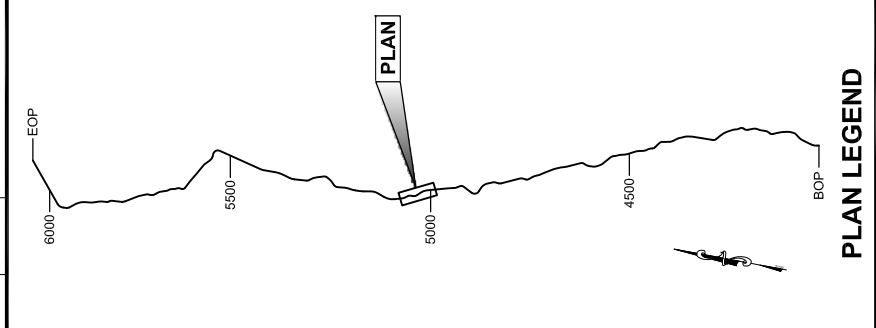


PROFILE

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 No. DATE DESCRIPTION



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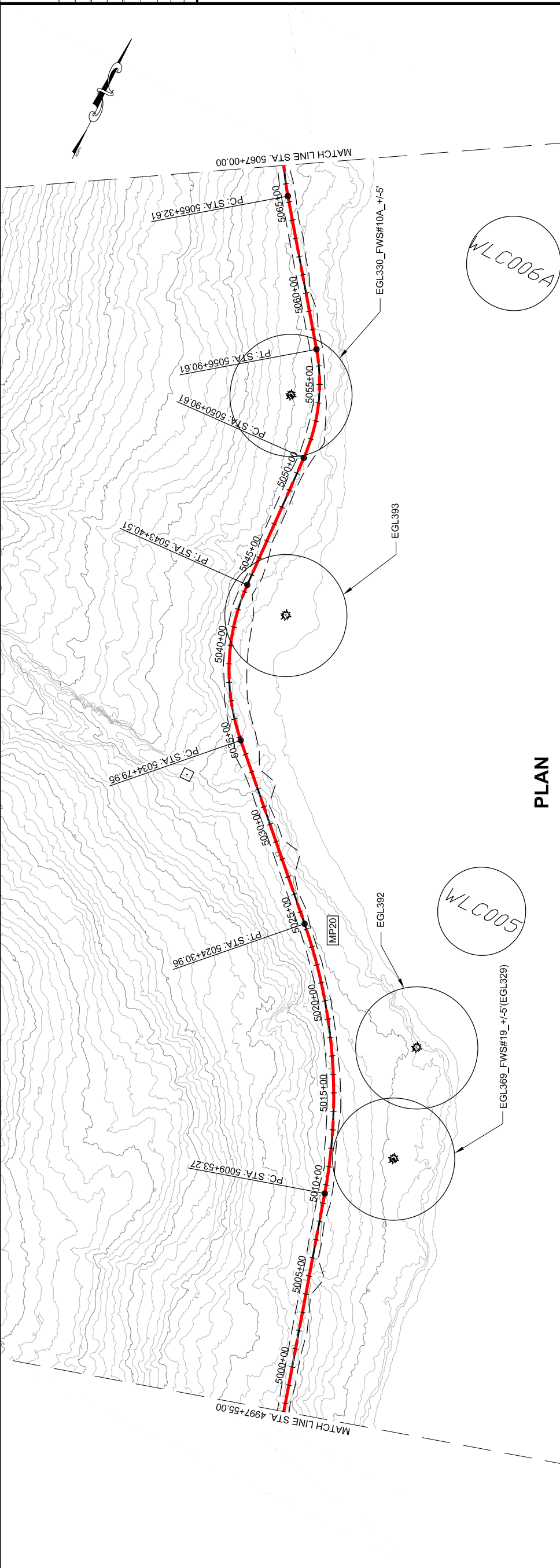
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHEAST REGION

JNL-WEST LYNN CANAL
HIGHWAY ALTERNATIVE 3
PROJECT #71100

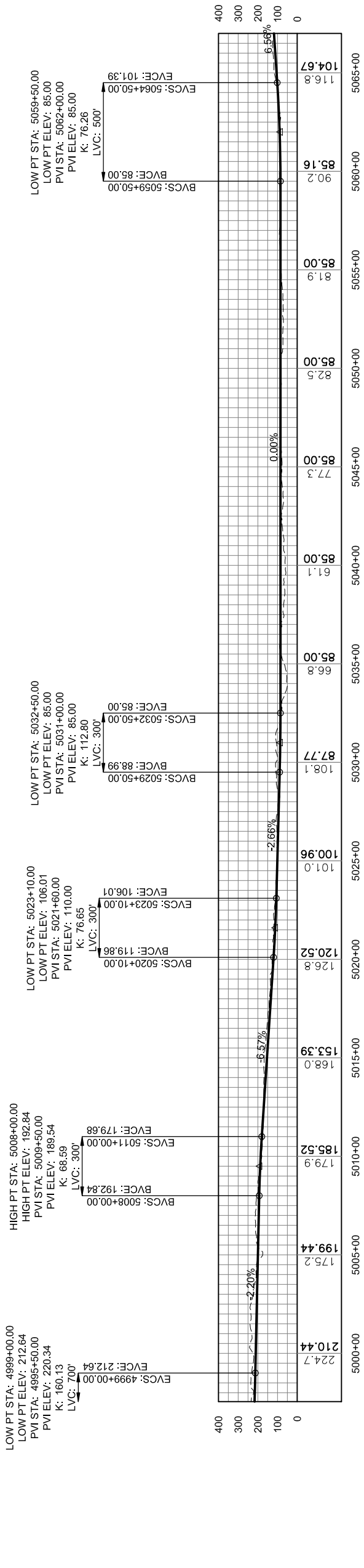
**2012 EIS
PLAN & PROFILE
VIEW**

PROJECT DESIGNATION
71100

STATE	YEAR
ALASKA	2013
SHEET NUMBER	TOTAL SHEETS
WL15	XX



PLAN



PROFILE

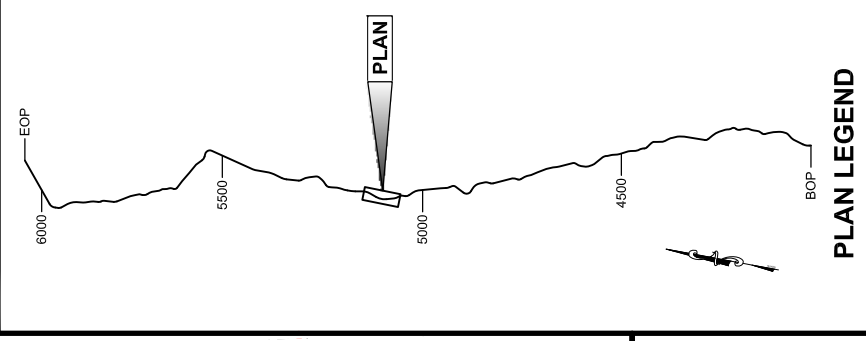
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NO.	DATE

ATTACHMENT NUMBER	

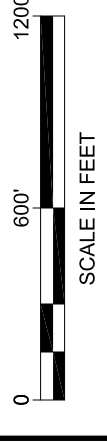
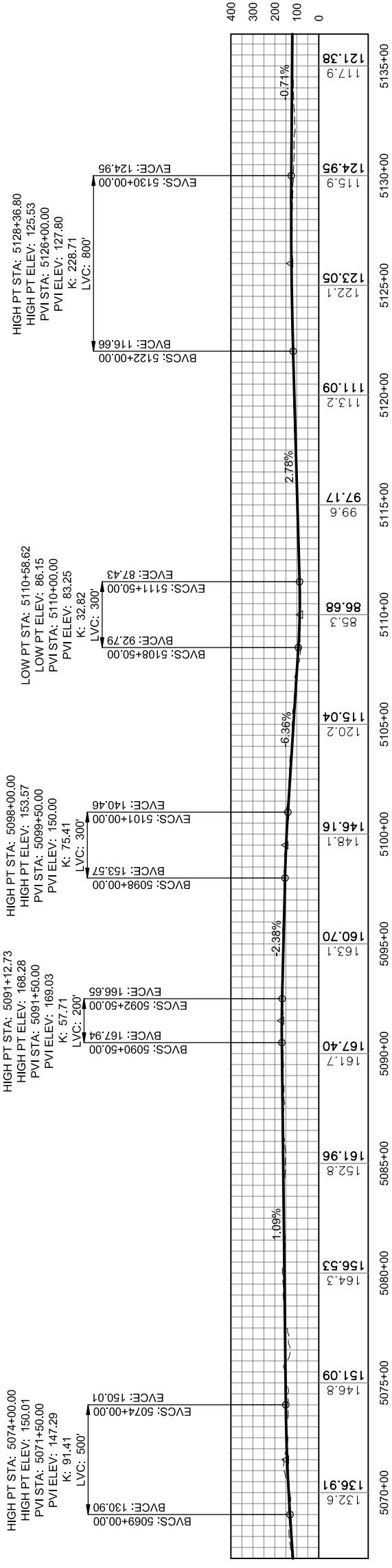
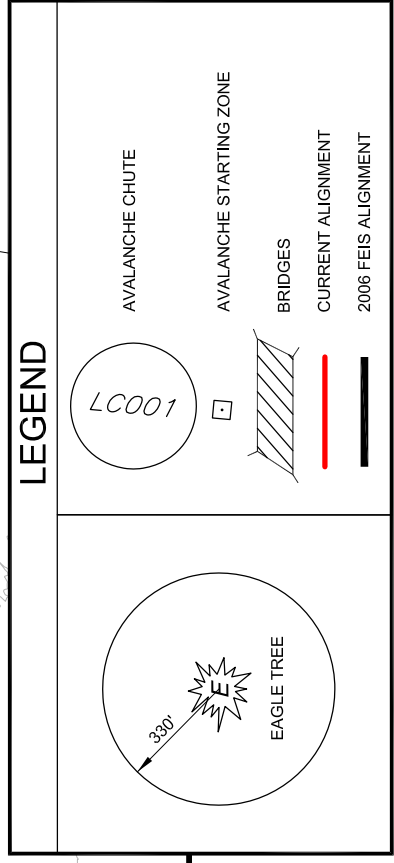
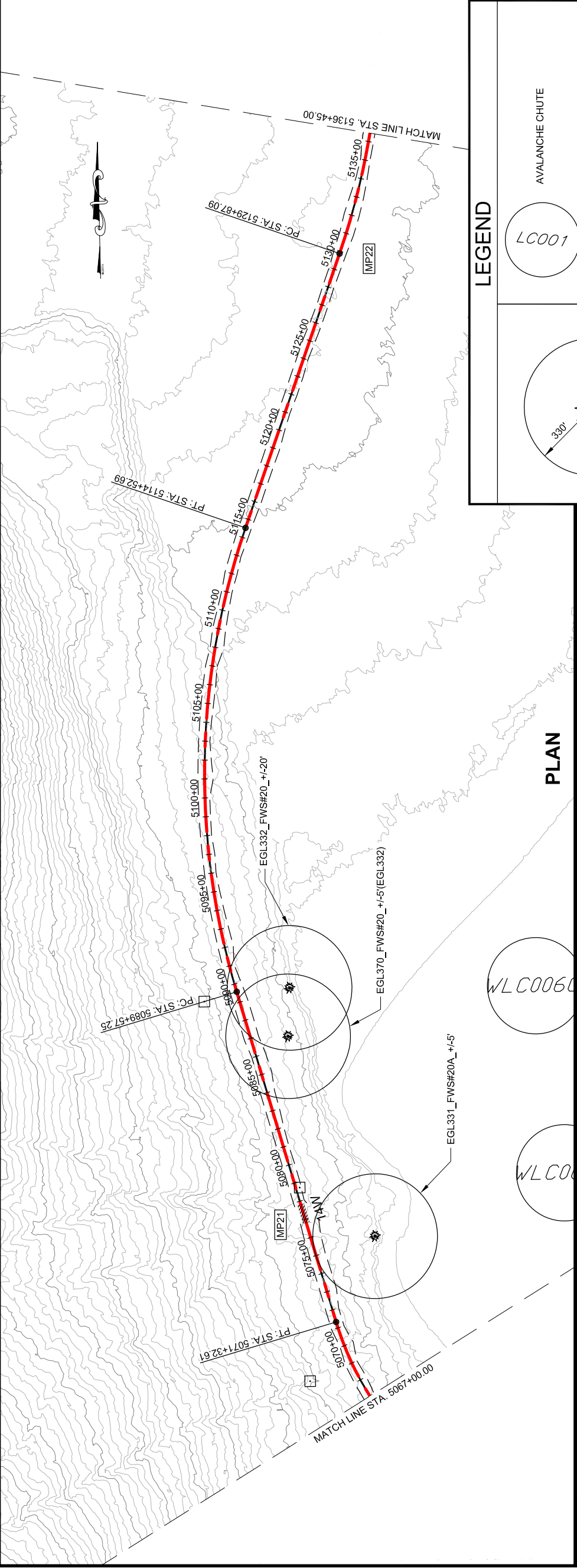


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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JNL-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
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STATE	ALASKA	YEAR	2013
SHEET NUMBER	WL16	TOTAL SHEETS	XX

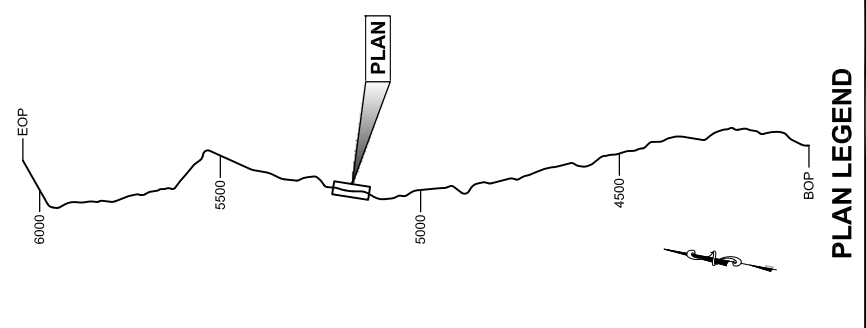


PROFILE

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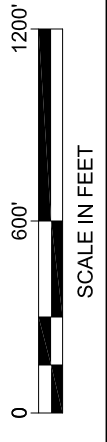
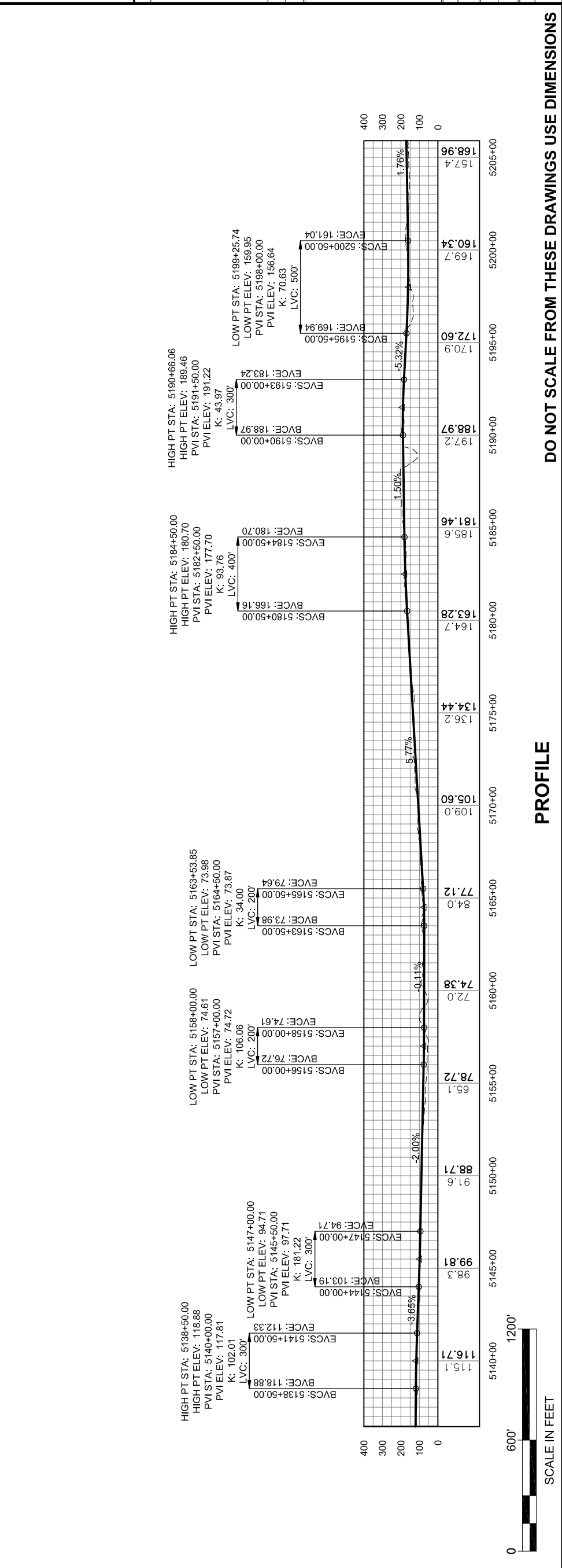
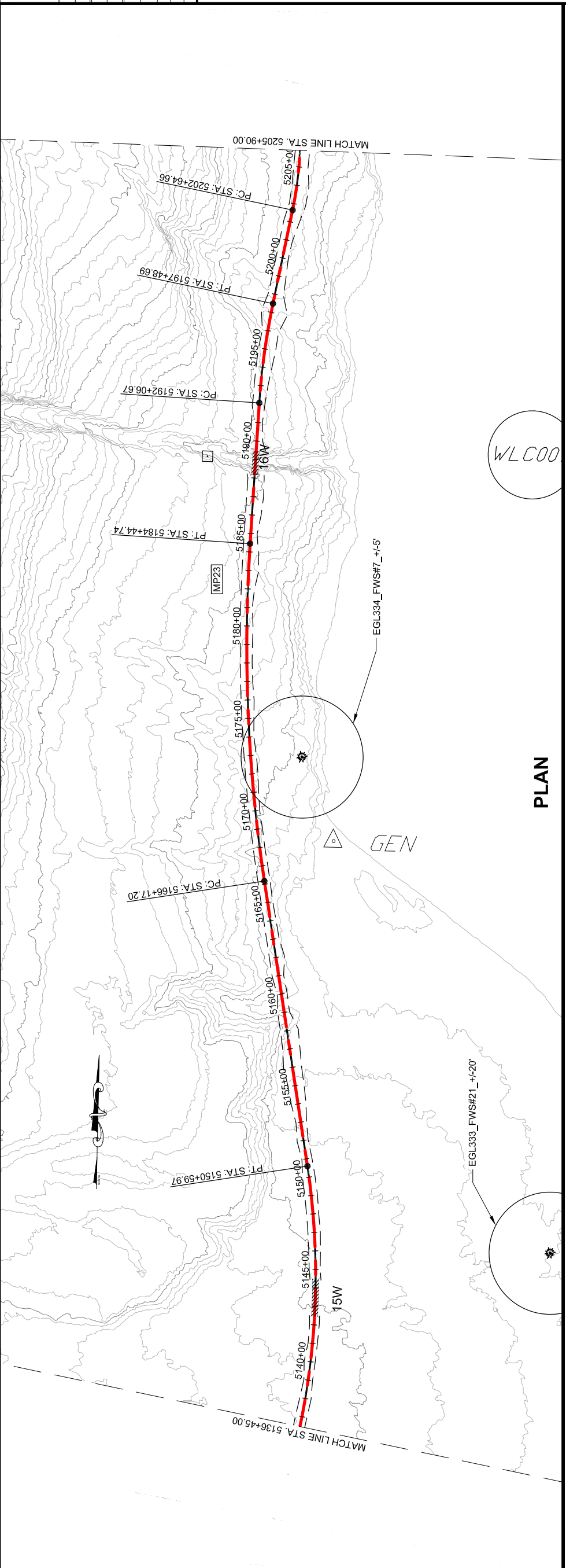
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 APPENDUM NUMBER
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 No. DATE DESCRIPTION



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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL17
TOTAL SHEETS	XX



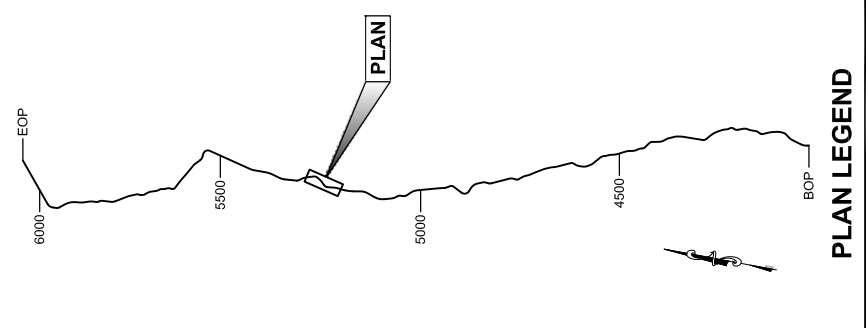
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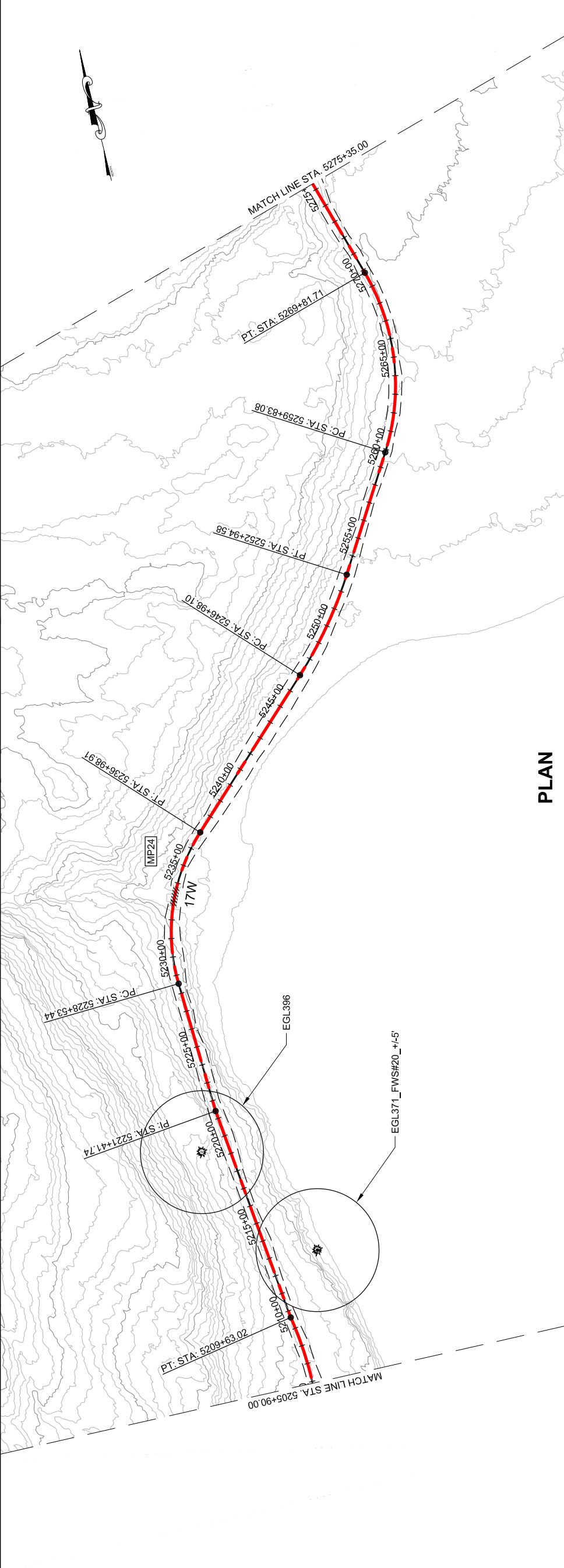
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NO.	DESCRIPTION



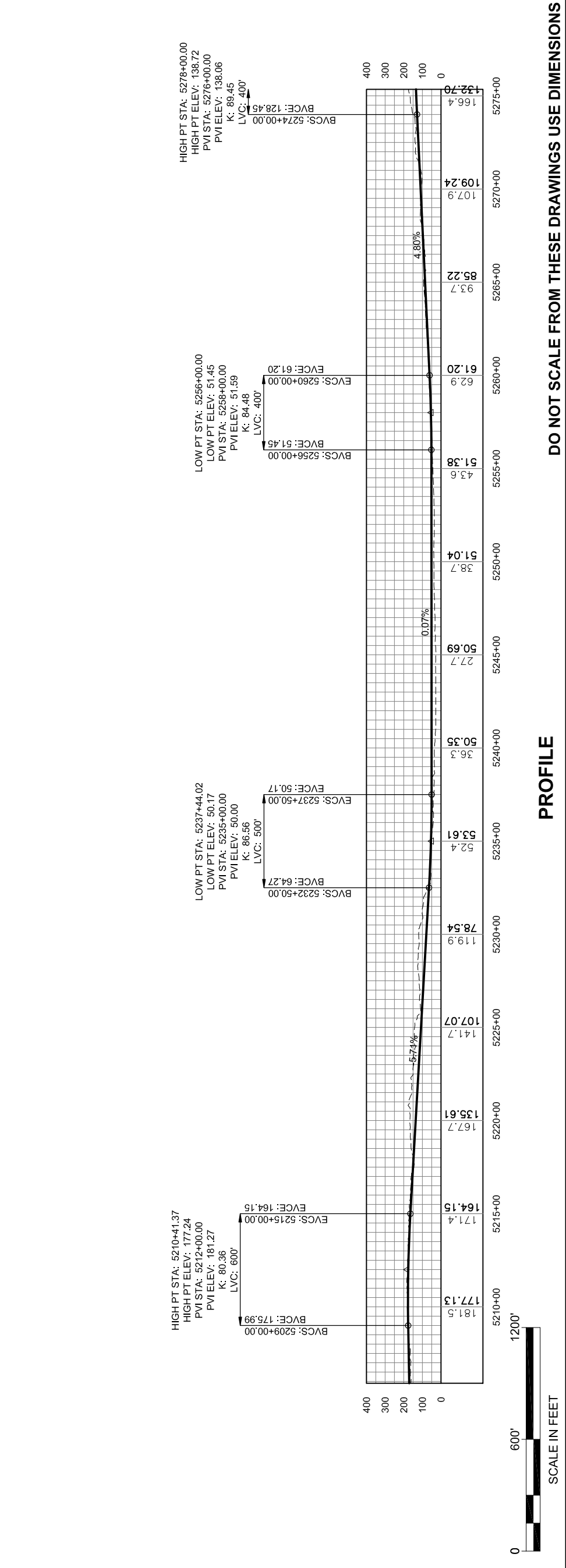
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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
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 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
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PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
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TOTAL SHEETS	XX



PLAN



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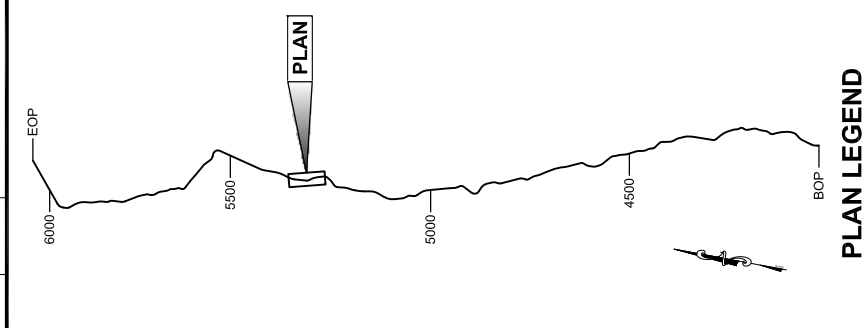
PROFILE

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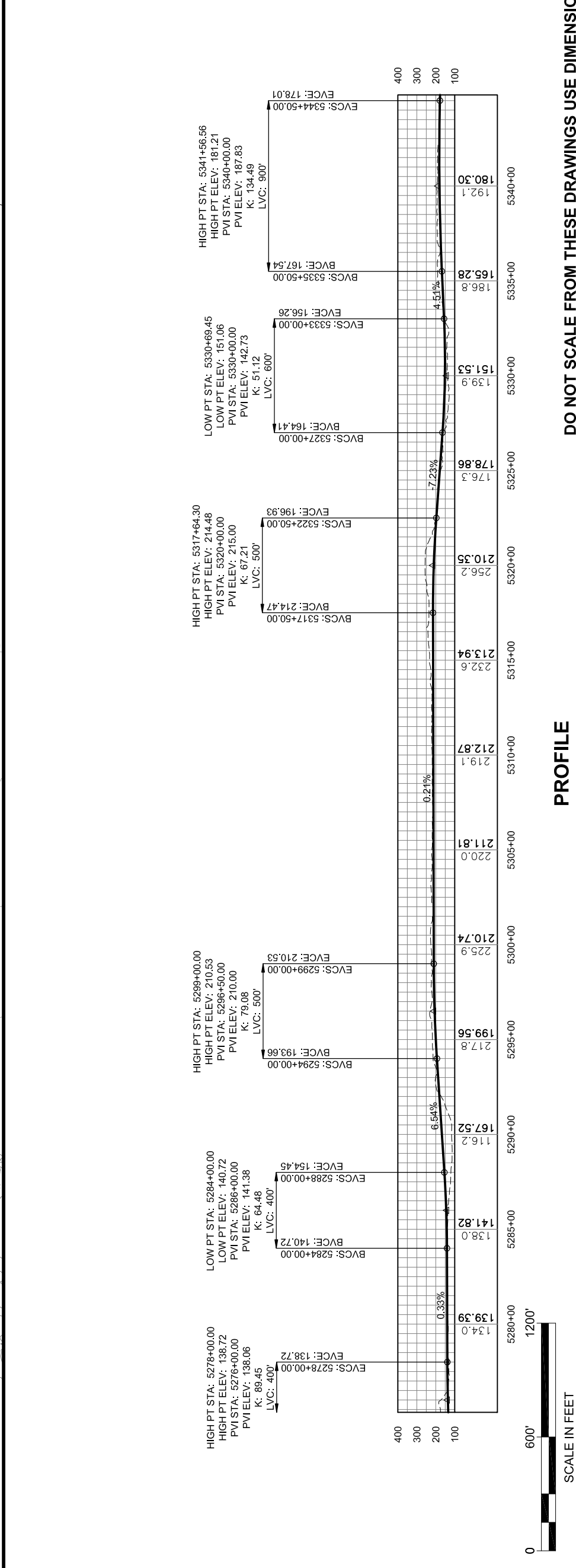
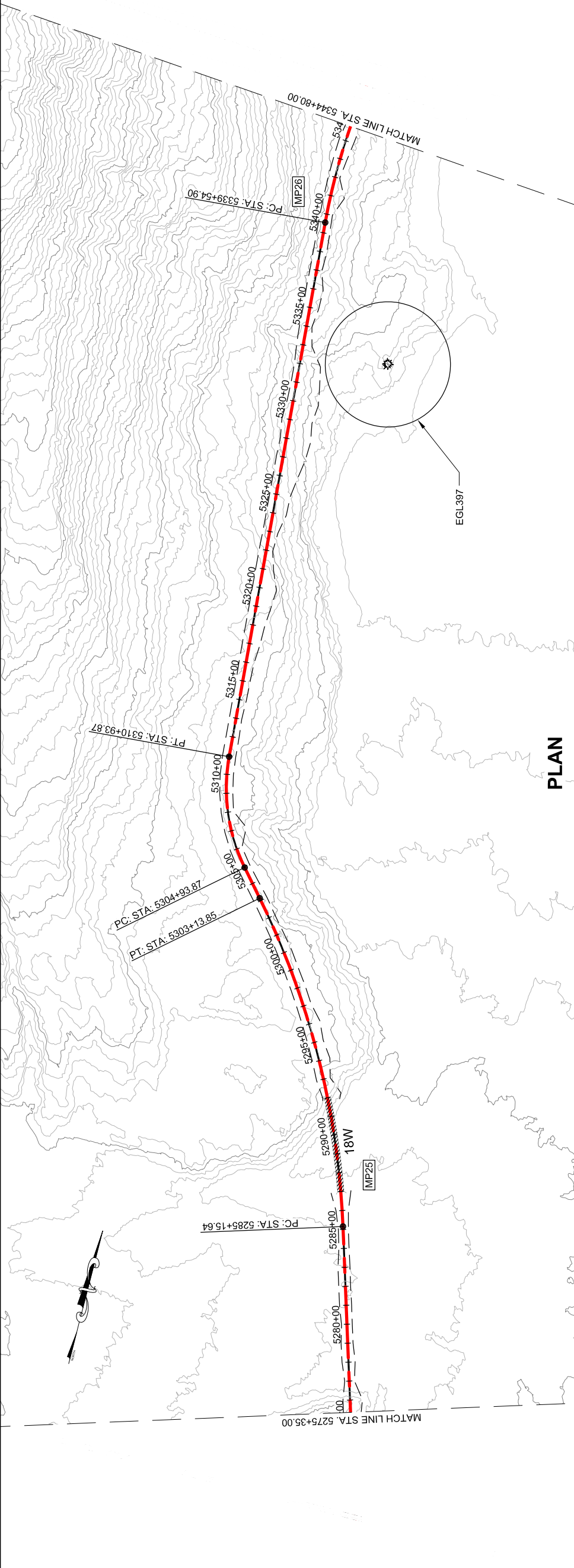
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NO.	DATE



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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100

PROJECT DESIGNATION	71100
STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL19
TOTAL SHEETS	XX



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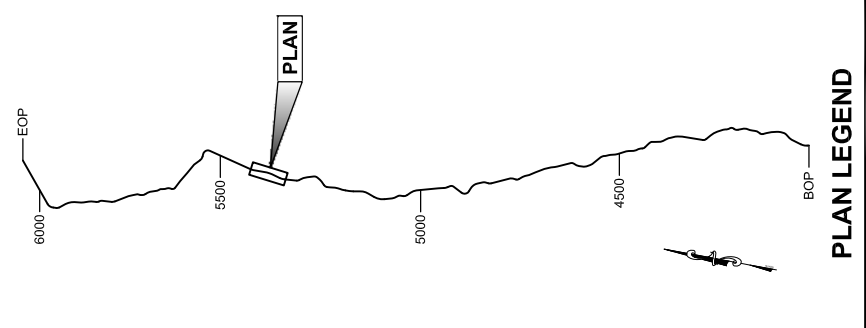
PROFILE

SCALE IN FEET



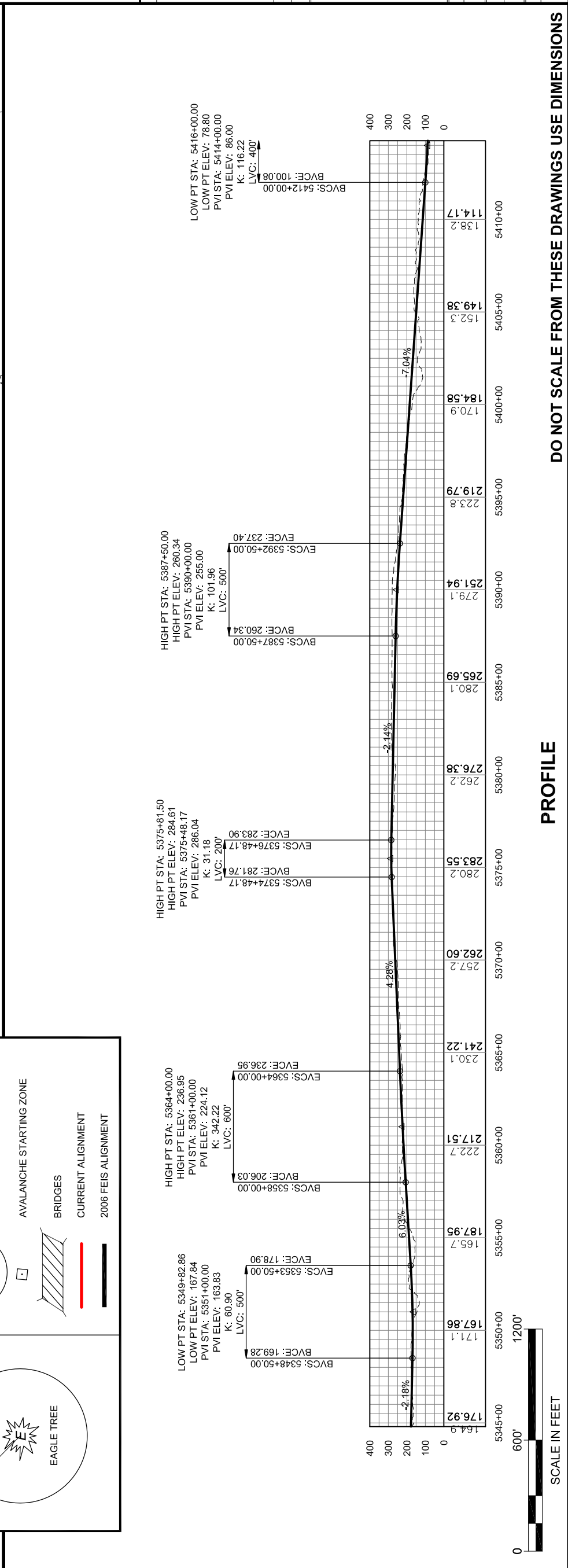
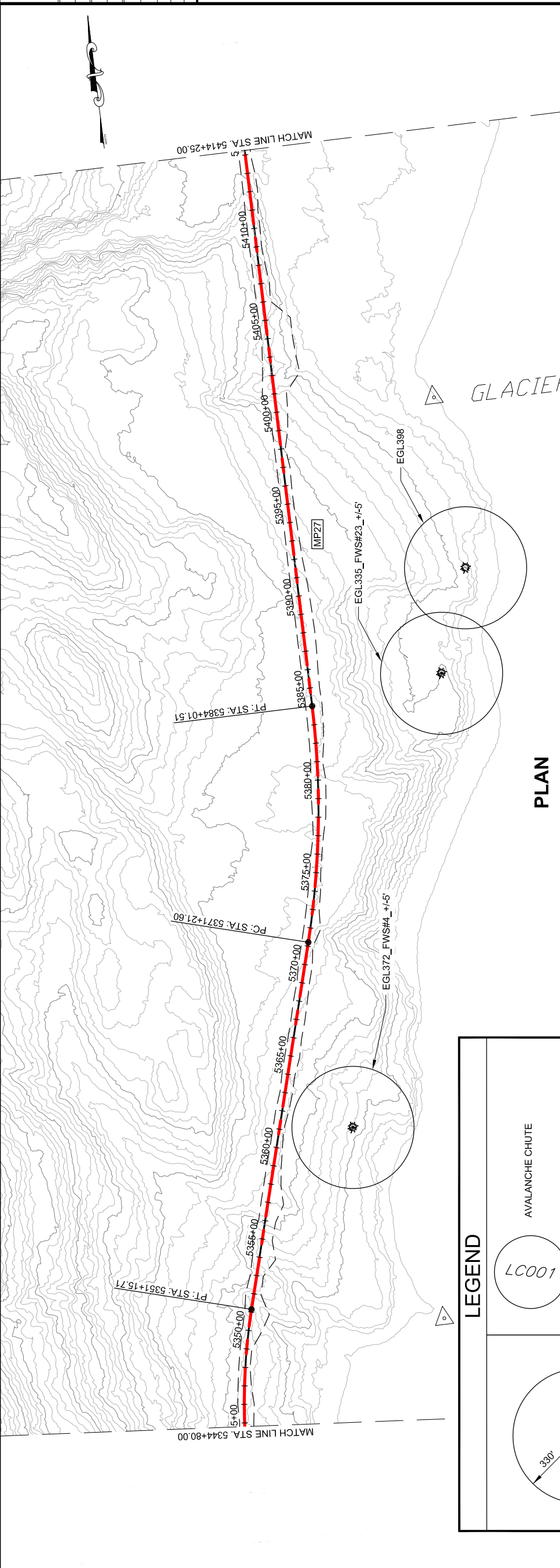
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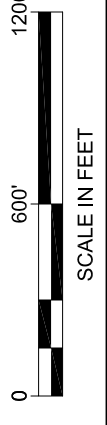
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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 & PUBLIC FACILITIES
 SOUTHEAST REGION
 JUNI-WEST LYNN CANAL
 HIGHWAY ALTERNATIVE 3
 PROJECT #71100
**2012 EIS
 PLAN & PROFILE
 VIEW**
 PROJECT DESIGNATION
71100
 STATE ALASKA YEAR **2013**
 SHEET NUMBER **WL20** TOTAL SHEETS **XX**



LEGEND

- EAGLE TREE
- AVALANCHE CHUTE
- AVALANCHE STARTING ZONE
- BRIDGES
- CURRENT ALIGNMENT
- 2006 FEIS ALIGNMENT



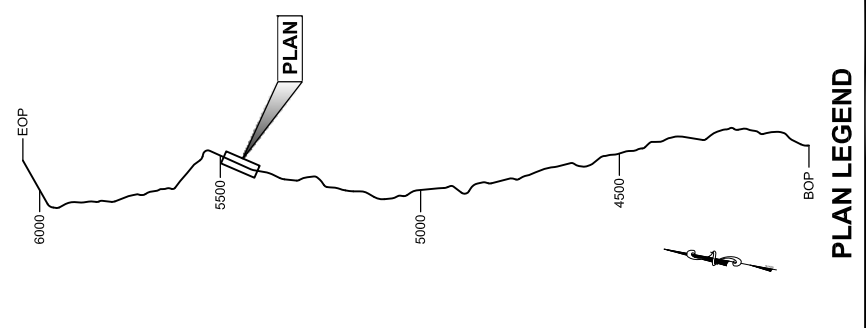
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PROFILE

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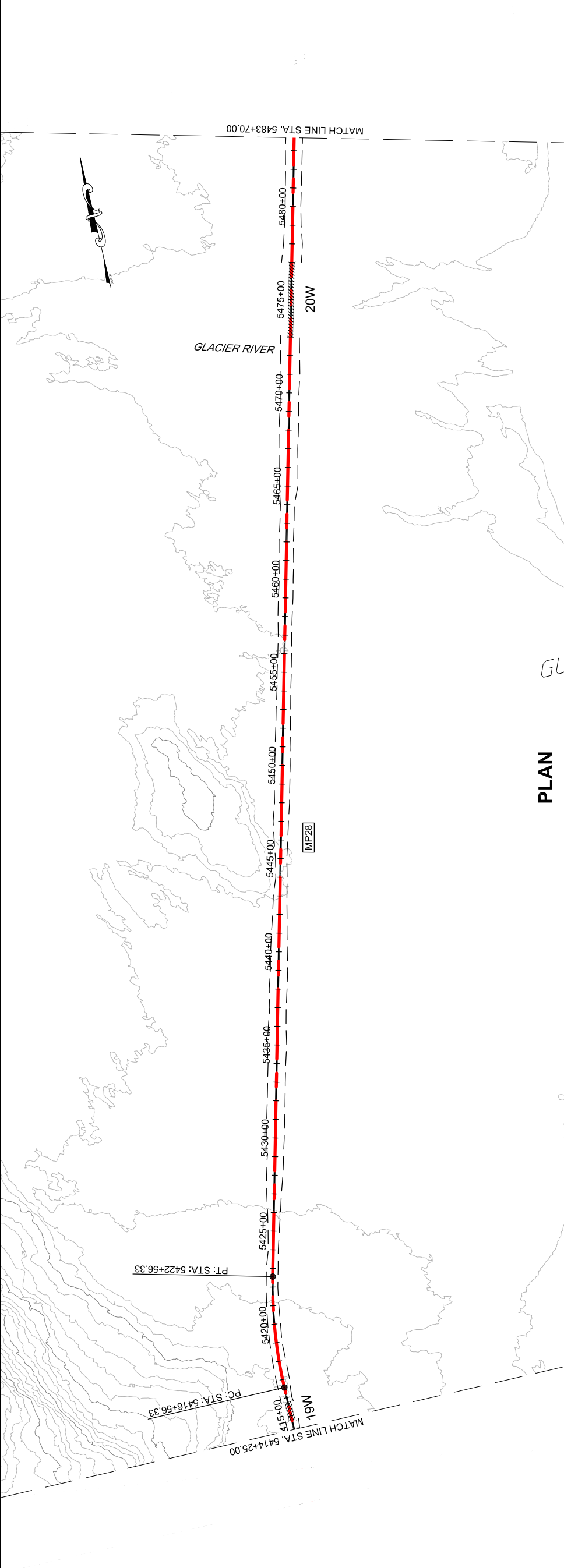
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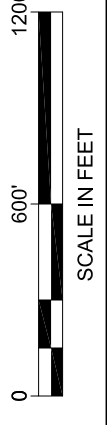
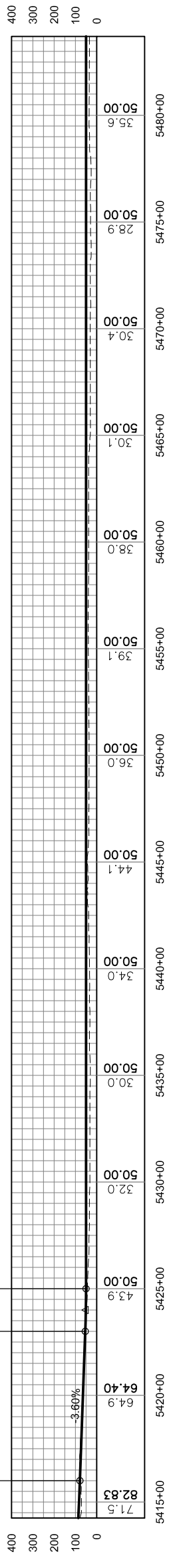
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YEAR	2013
SHEET NUMBER	WL21
TOTAL SHEETS	XX



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 PVI STA: 5414+00.00
 PVI ELEV: 86.00
 K: 116.22
 LVC: 400'

LOW PT STA: 5425+00.00
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PROFILE

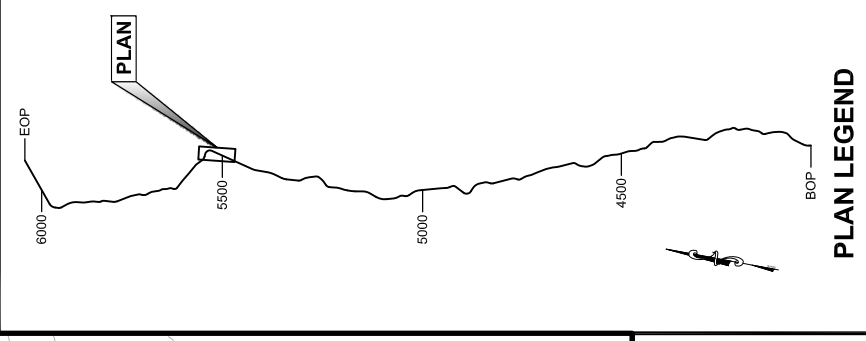
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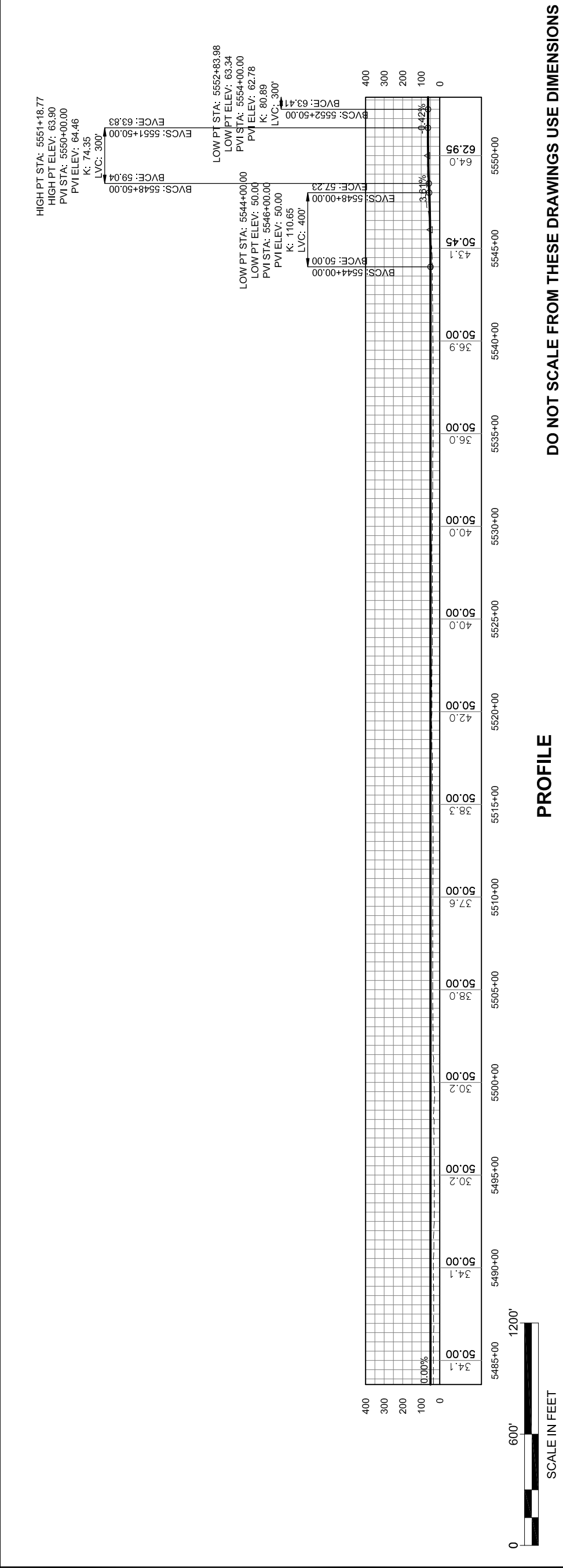
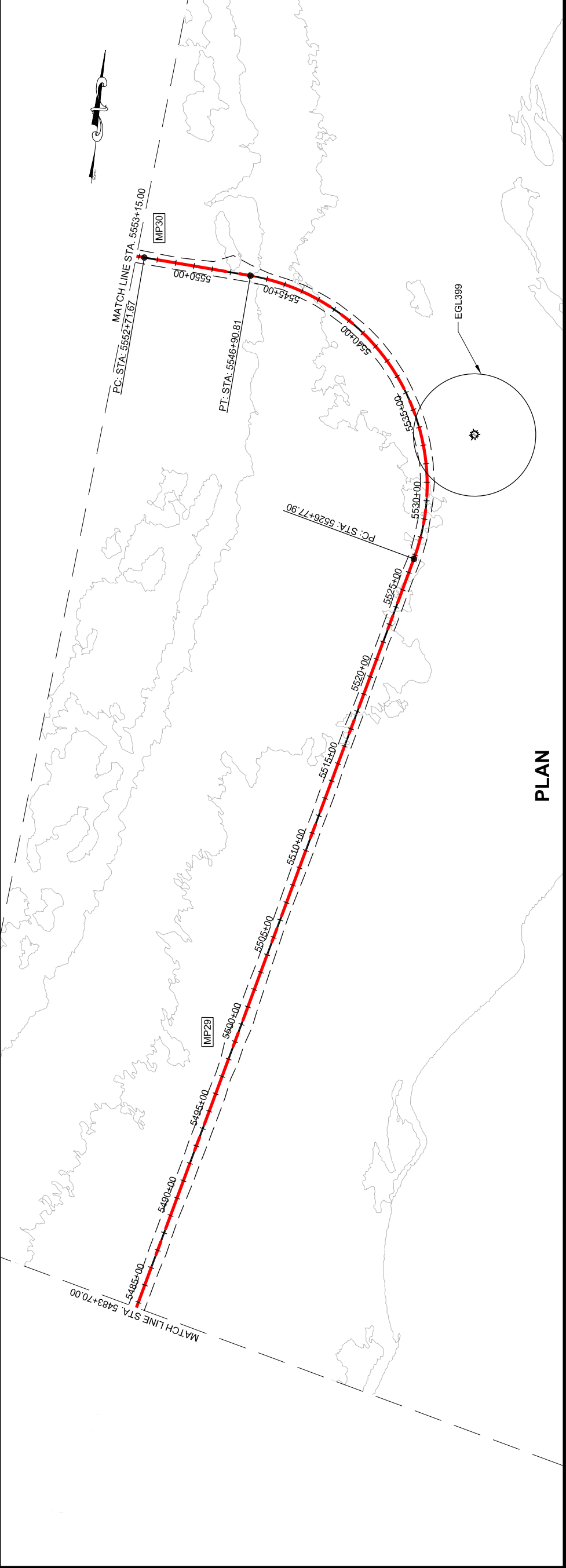
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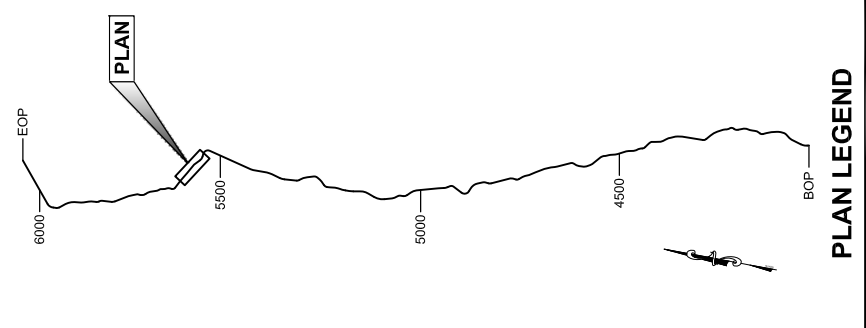
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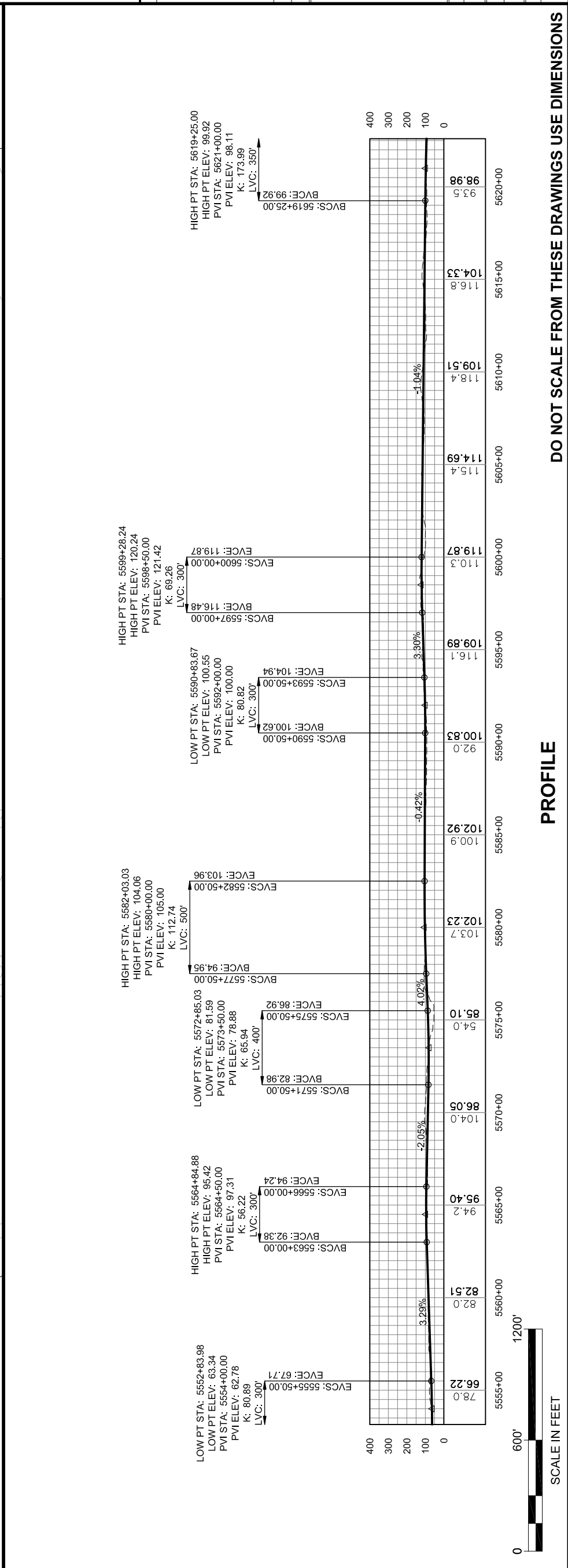
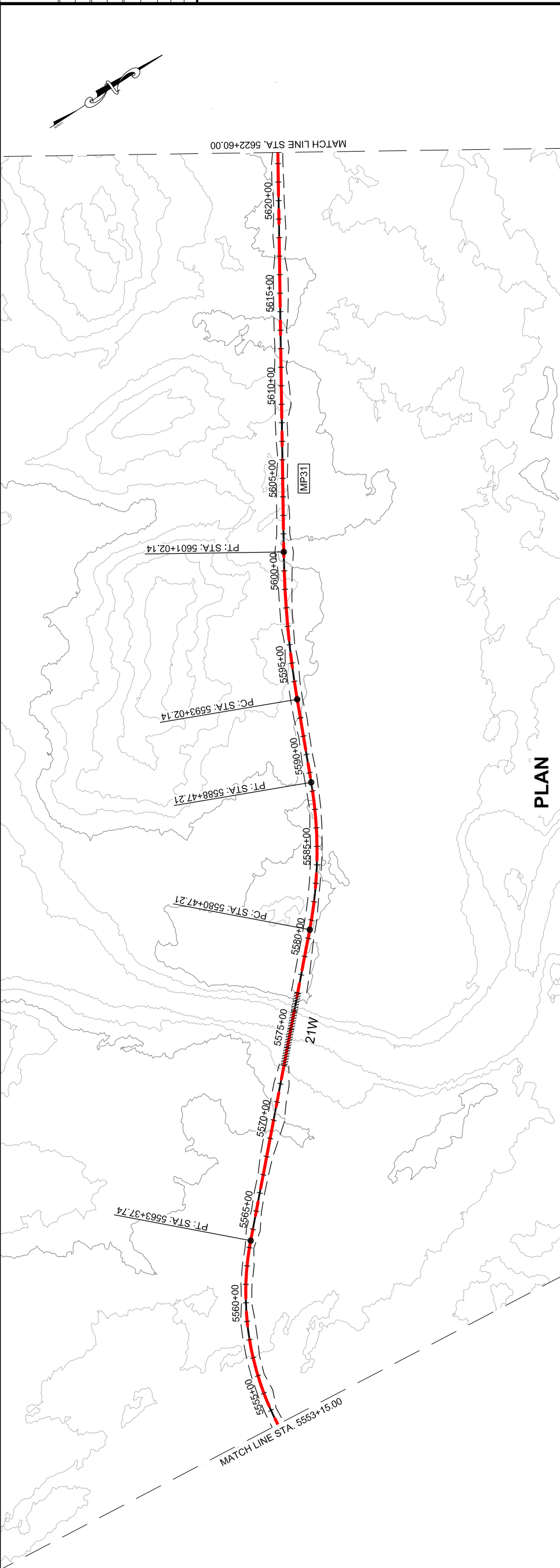
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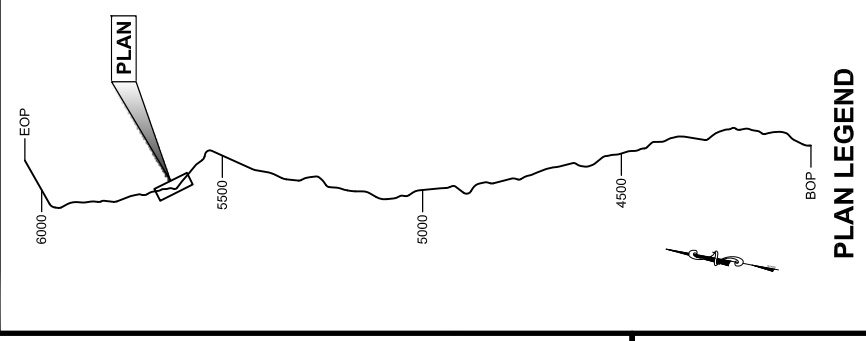
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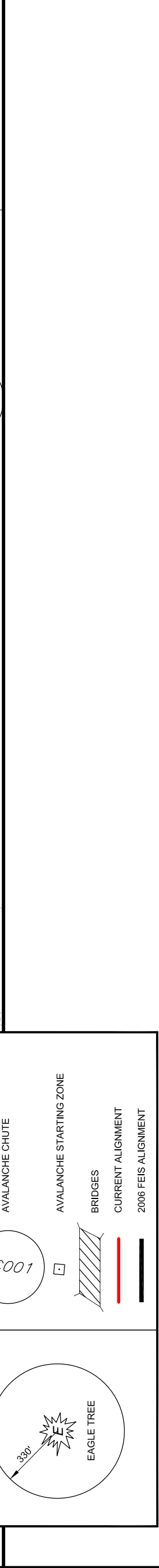
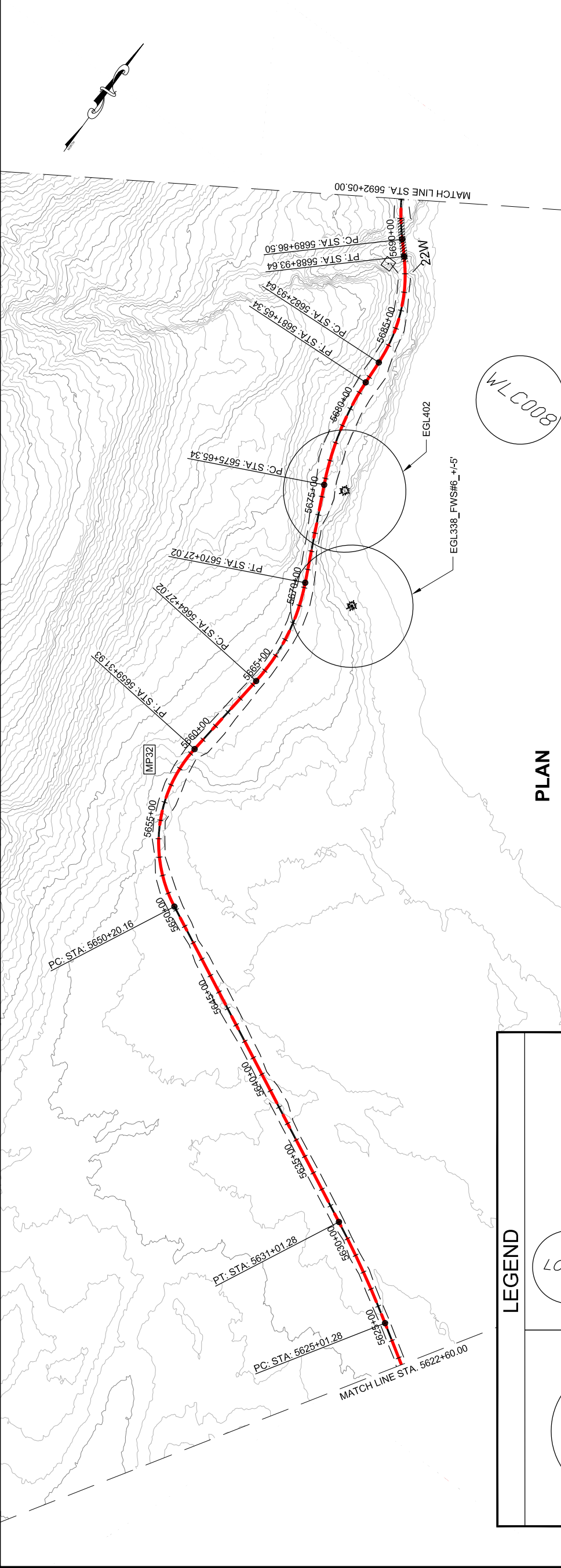
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STATE	ALASKA
YEAR	2013
SHEET NUMBER	WL24
TOTAL SHEETS	XX



LEGEND

- EAGLE TREE
- AVALANCHE CHUTE
- AVALANCHE STARTING ZONE
- BRIDGES
- CURRENT ALIGNMENT
- 2006 FEIS ALIGNMENT

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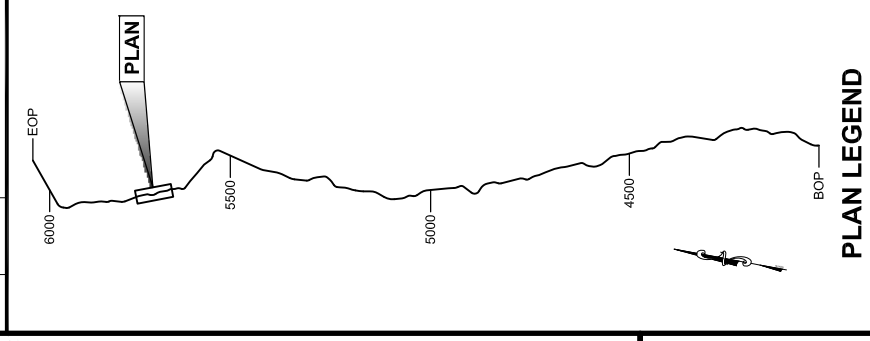
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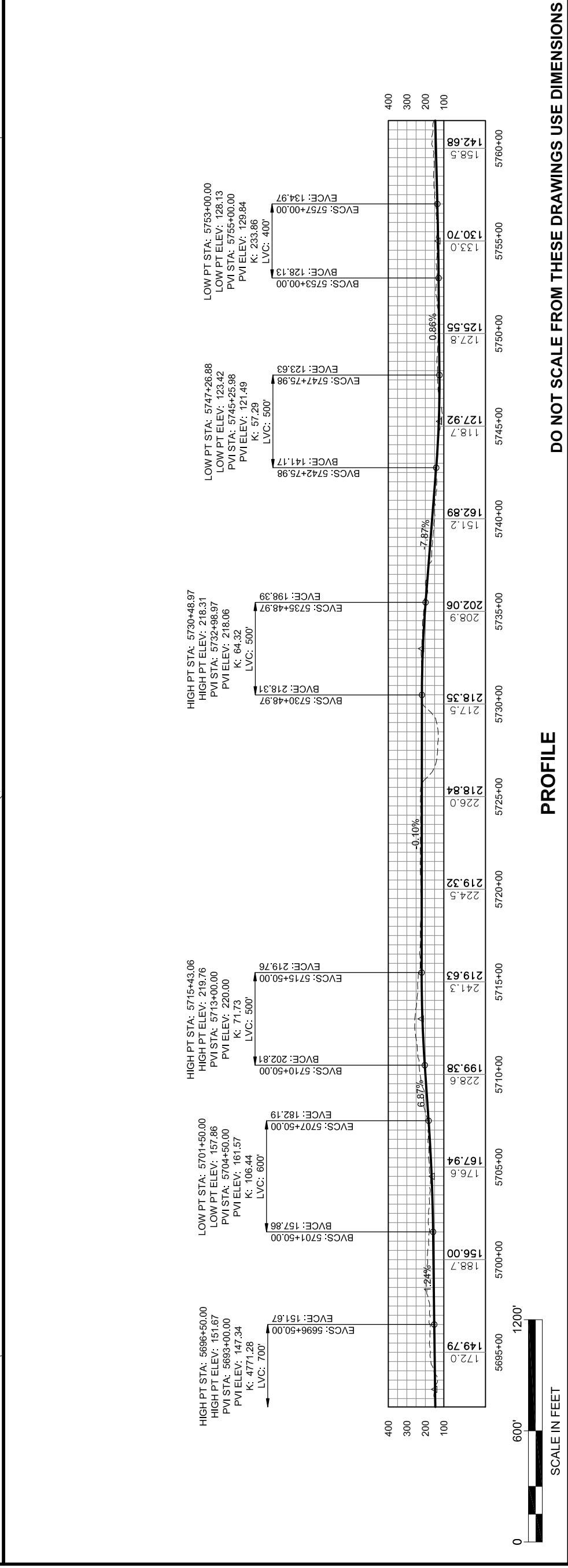
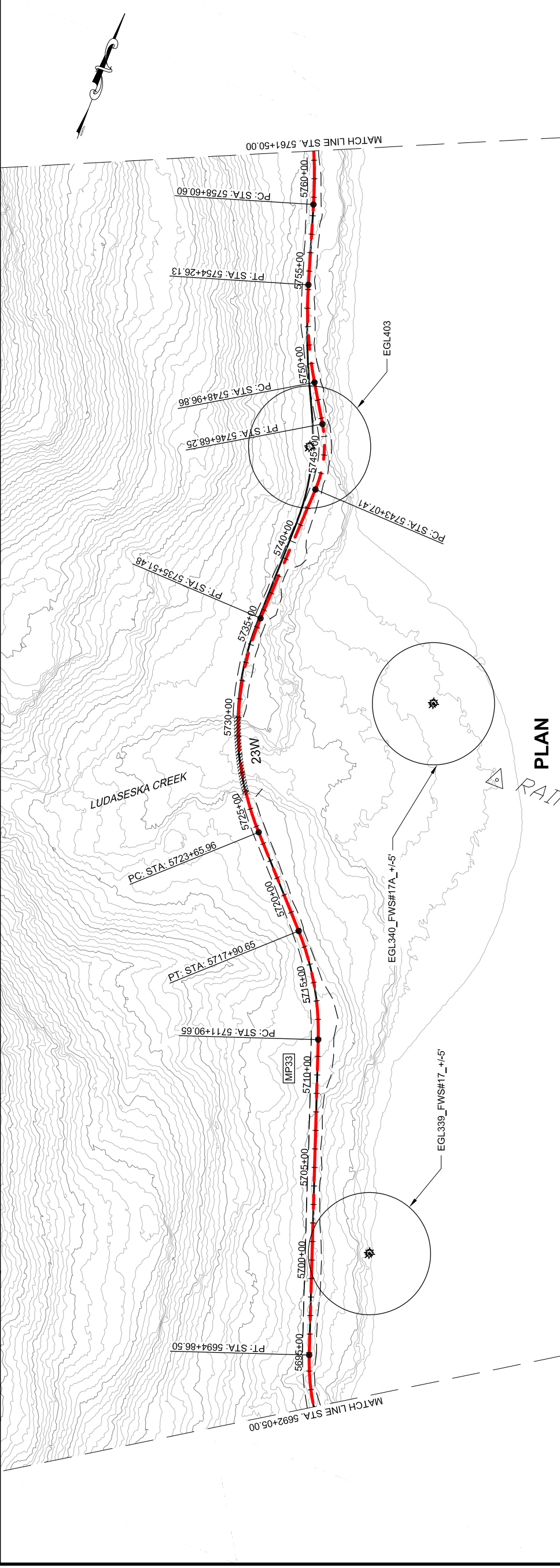
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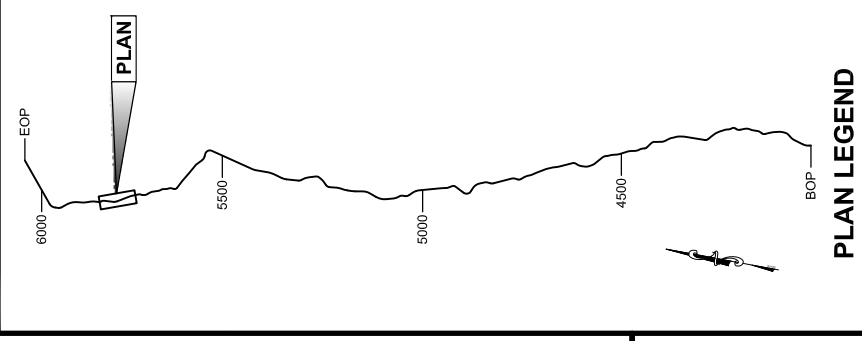
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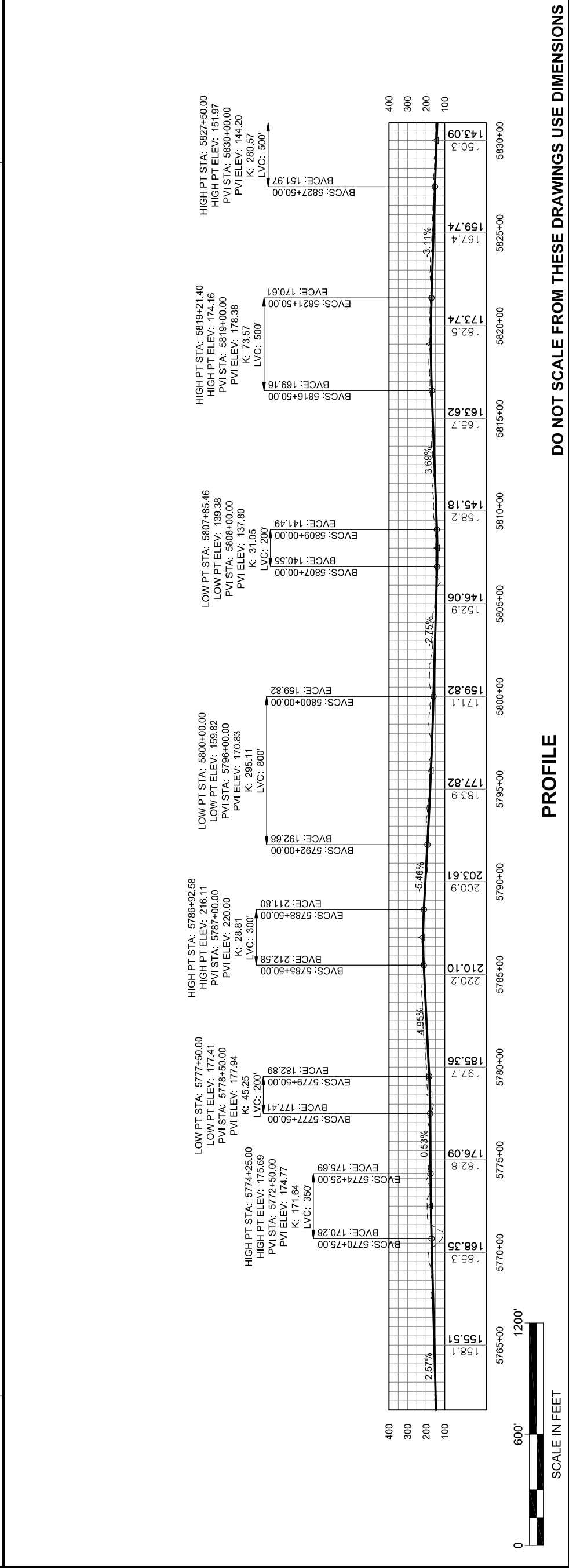
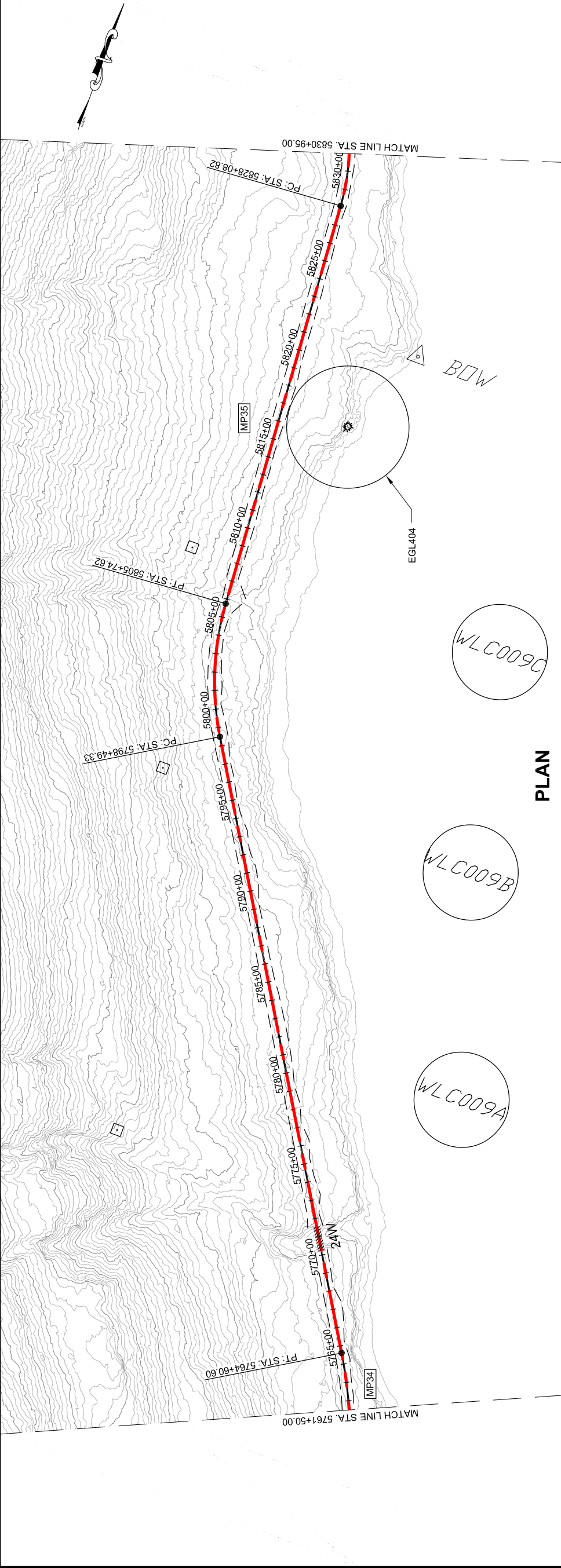
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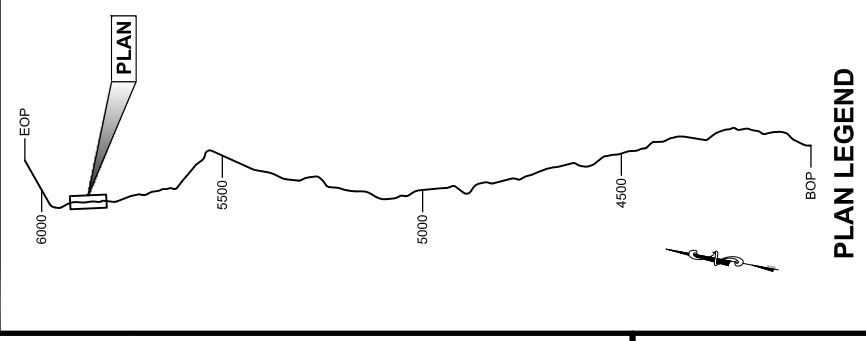


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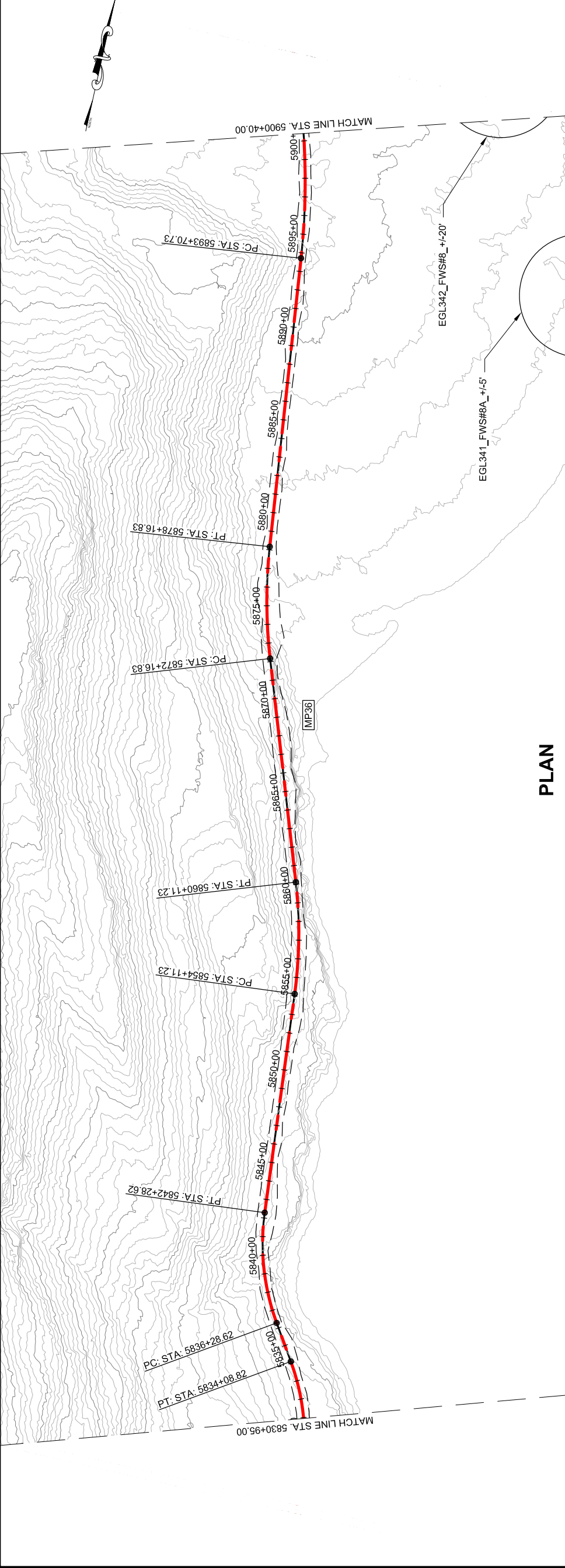


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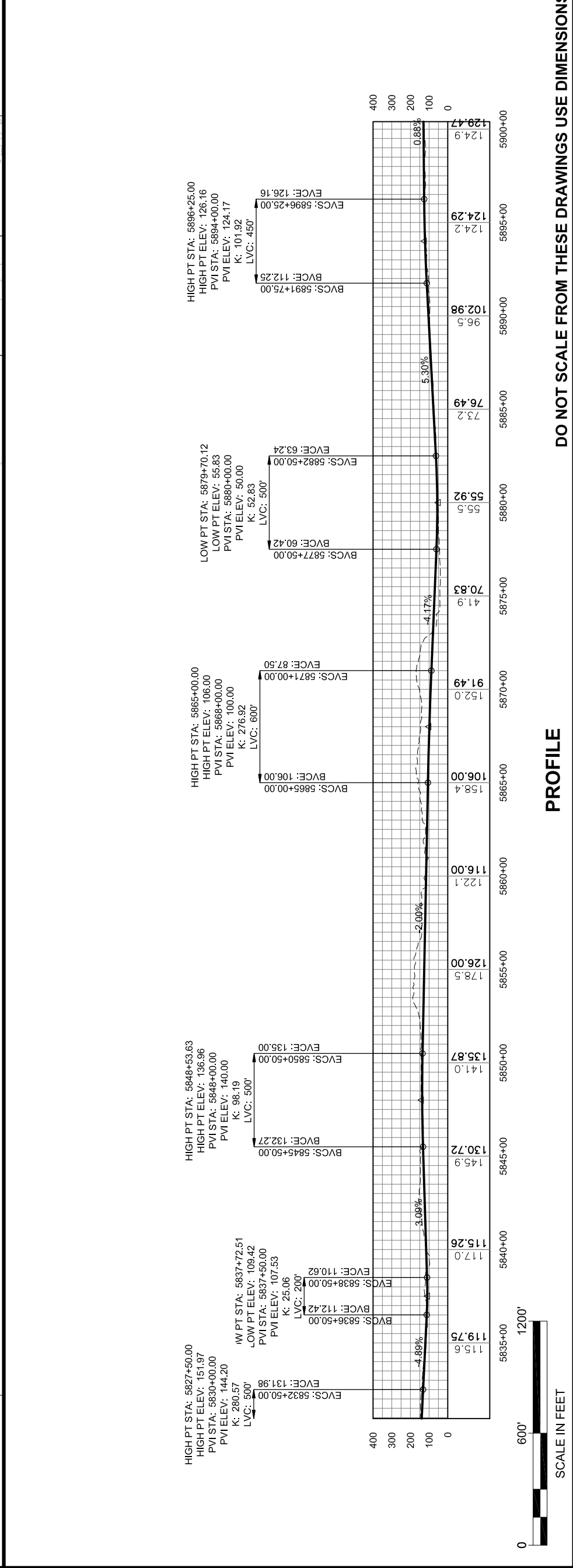
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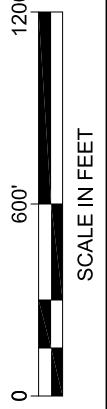
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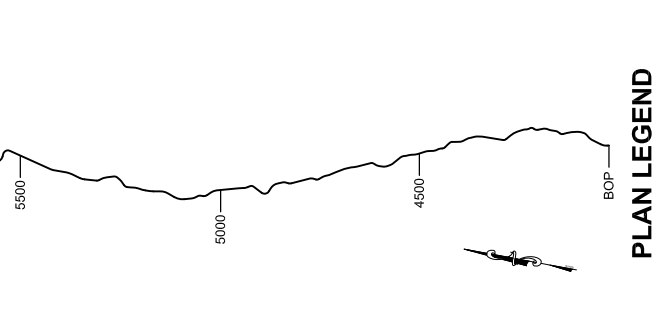


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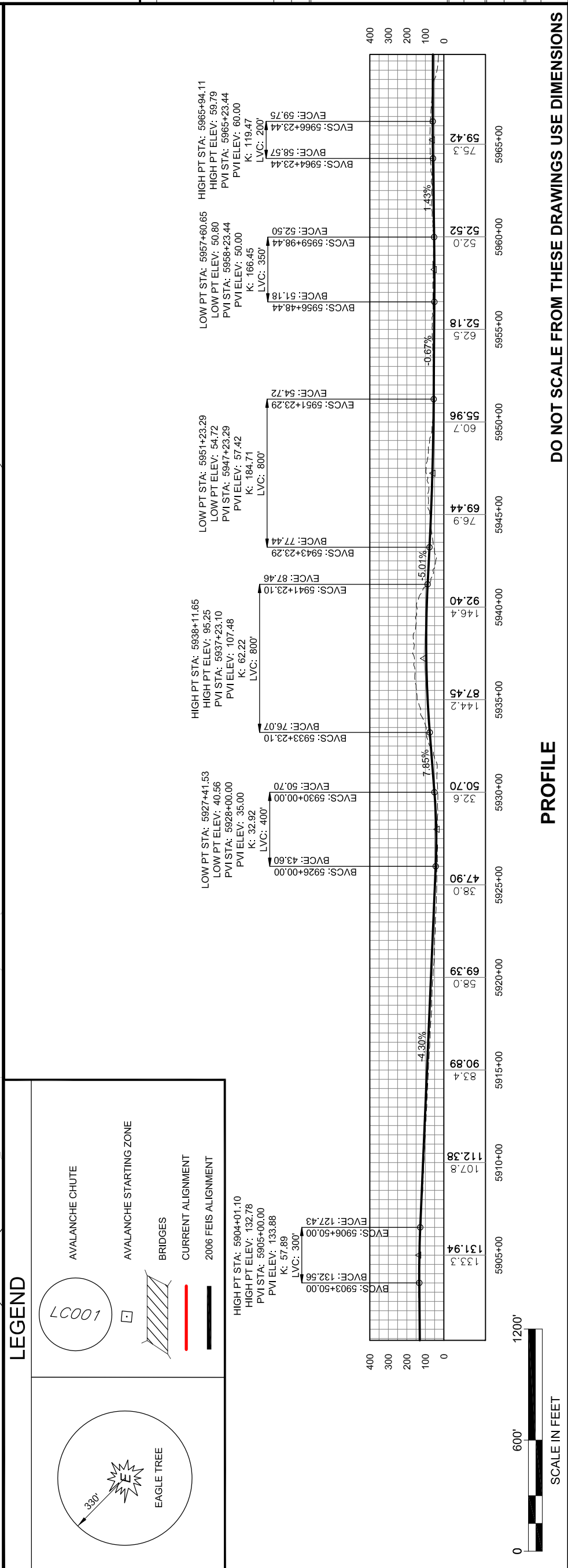
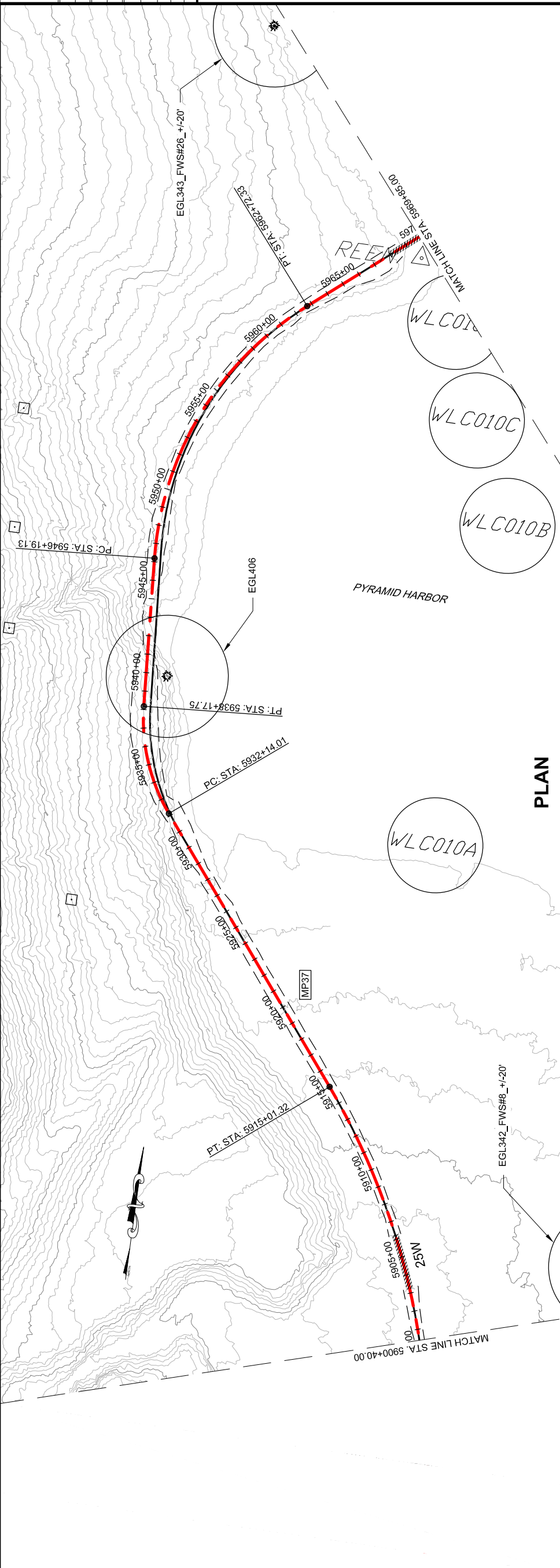
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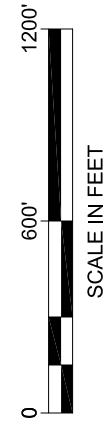
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- CURRENT ALIGNMENT
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- EAGLE TREE

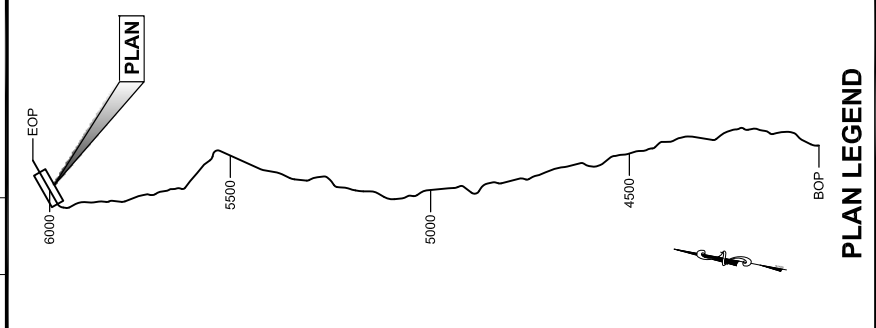


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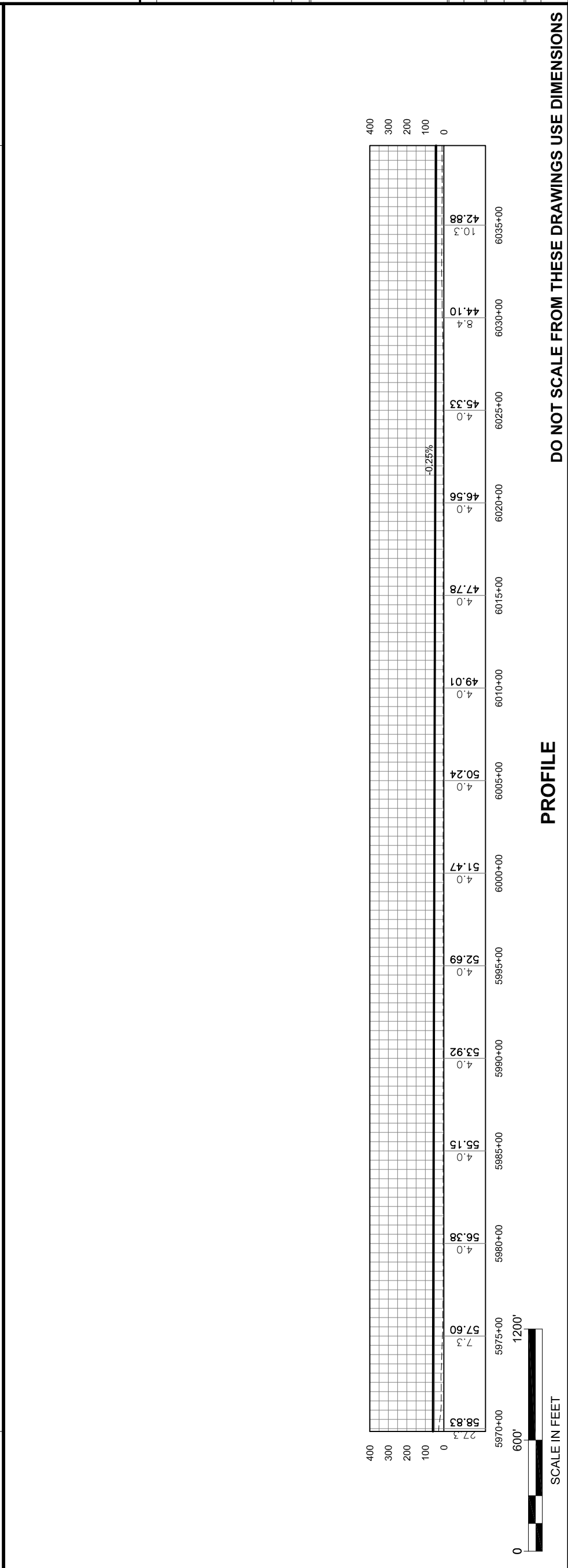
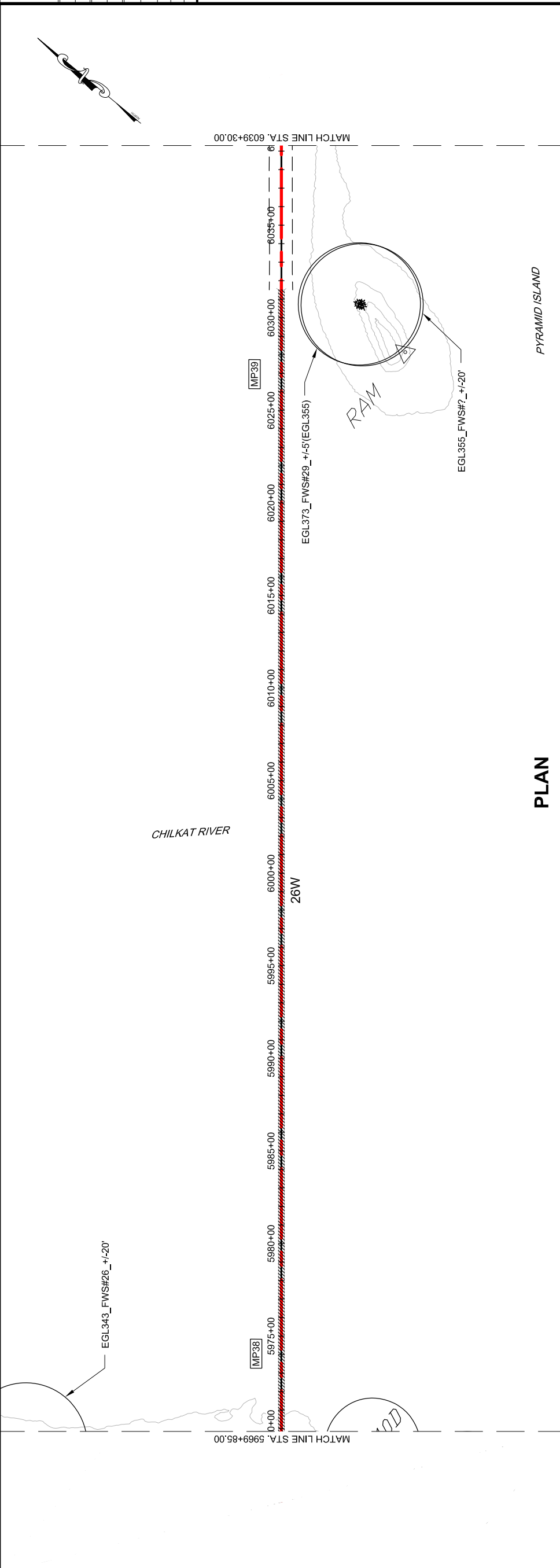
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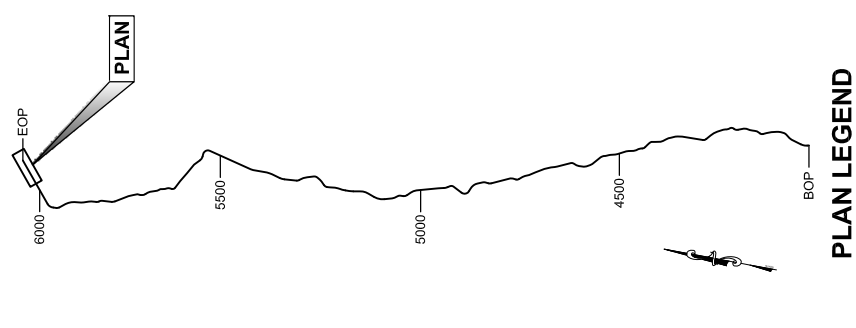
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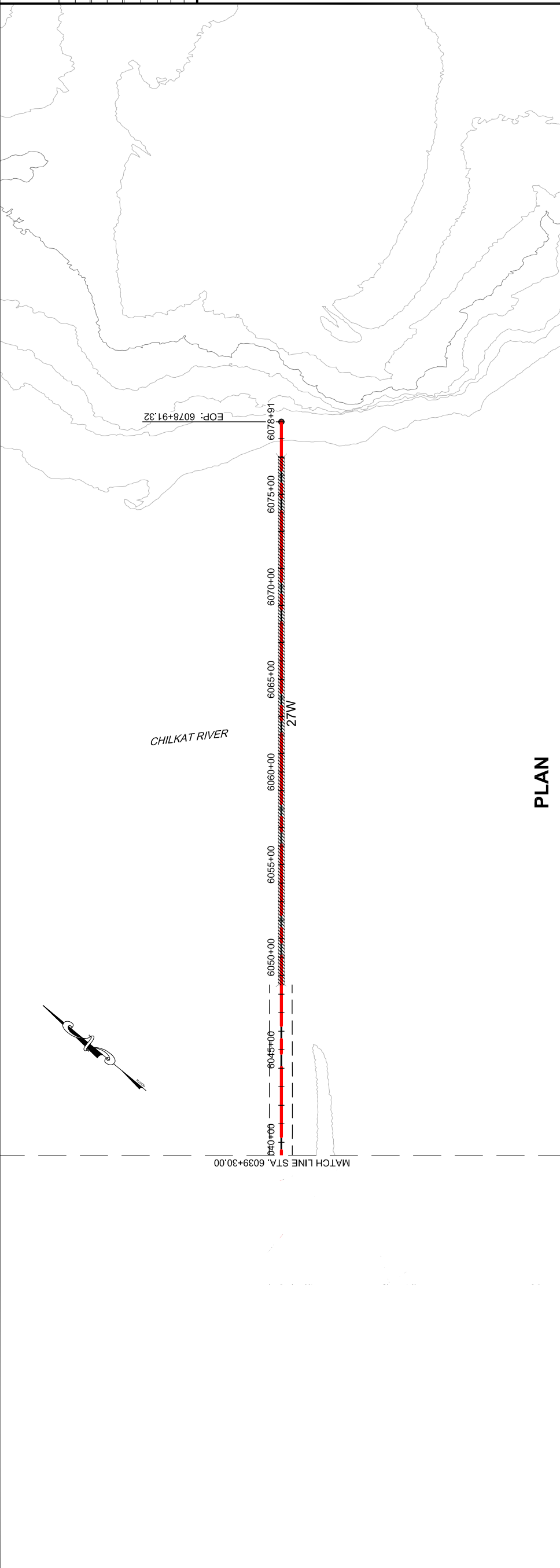
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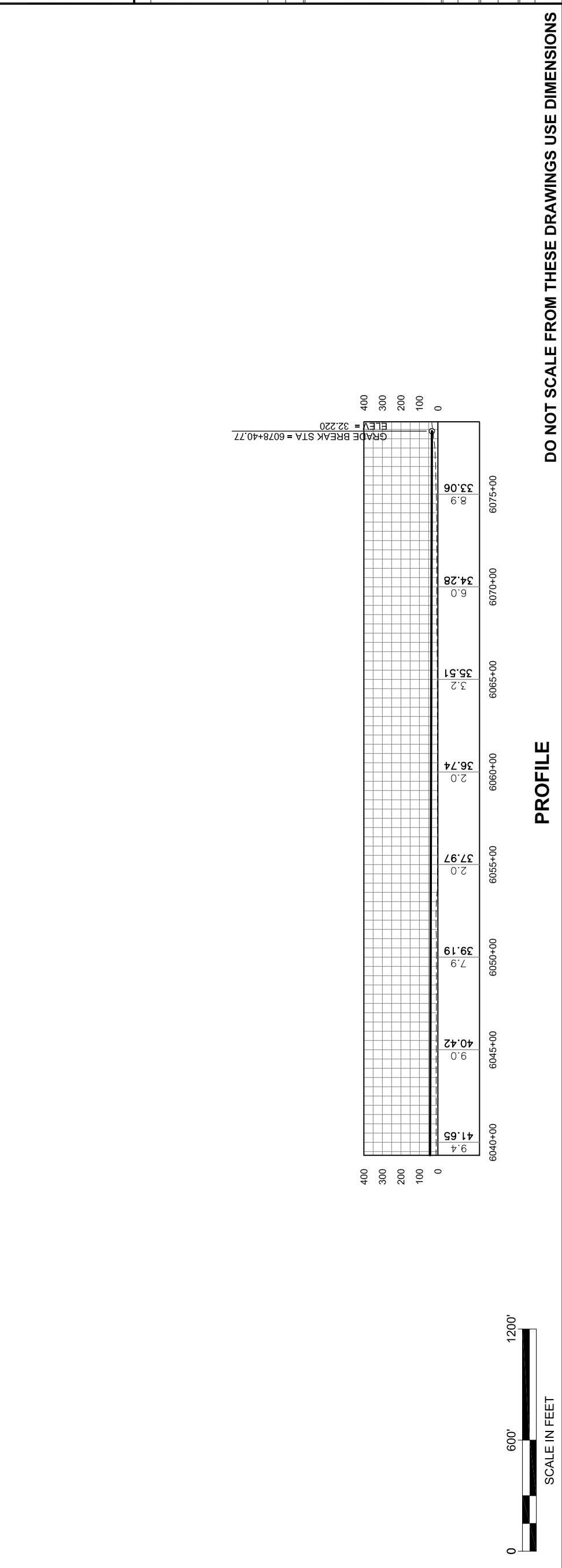
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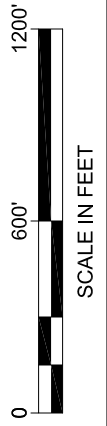
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Attachment C

Juneau Access Improvements Project Highway Maintenance Cost Estimates

Prepared by Southeast Region Maintenance & Operations
Updated August 27, 2013

PURPOSE

The purpose of this document is to provide a basic concept and cost estimate for maintenance of new highway segments for the Juneau Access Improvement (JAI) Project alternatives. This report was originally prepared in 2003. This edition updates costs and eliminates Alternatives 2, 2A, and 2C.

A significant portion of the maintenance cost for the proposed highways is related to avalanche control and clean up. The costs of these activities are reported in the Juneau Access Improvements Snow Avalanche Report Update. Those costs are omitted from the cost calculations in this report, but are included in the final table on page 8.

MAINTENANCE CONCEPT

The basic concept for maintenance of a JAI highway is to use existing forces and equipment at the Juneau and Haines termini, and to establish and staff an intermediate maintenance station at the mid-point between Juneau and the Katzehin River marine terminal for Alternative 2B. For Alternative 3, a small maintenance facility would be established at the William Henry Bay terminal.

In general, a maintenance station can economically maintain a length of highway with a terminus of no more than 25 miles from its home facility. For Alternatives 2B and 3, an intermediate maintenance station is required. Alternatives 4B and 4D do not require an intermediate station: although the distance between Juneau station and the Sawmill Cove terminal is 38 miles, the terminal would not be used in winter.

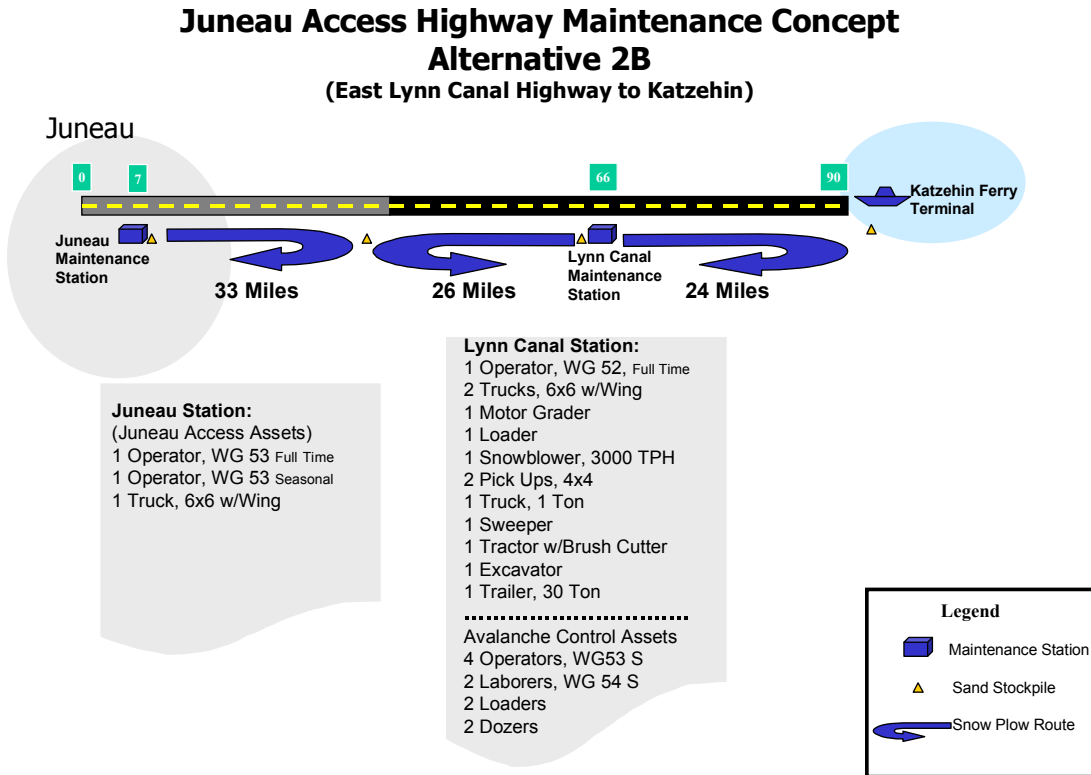
The cost of JAI highway maintenance is driven by the addition of new road miles and new maintenance facilities. Alternatives 1, 1B, 4A, and 4C have no new highway sections. Alternatives 2B, and 3 will have significant highway costs because of the new highway miles. Alternatives 4B and 4D have minimal costs, due to short sections of new highway. They are identical in highway maintenance cost.

The alternatives considered in this study, and the new miles of road for each alternative, are depicted in the chart below.

Alternative	Brief Description	New Road Miles
1, 1B	No construction specifically for Lynn Canal	0
2B	Highway, Echo Cove to Katzehin, with ferry terminal connection to Skagway and Haines	47
3	Highway, Echo Cove to Sawmill Cove, Ferry across Lynn Canal, Highway West Lynn Canal, William Henry Bay to Haines	41
4A & 4C	Ferry from Auke Bay	0
4B & 4D	Ferry from Sawmill Cove (summer only)	2

Alternative 2B – East Lynn Canal Highway to Katzehin

Alternative 2B proposes approximately 47 miles of new road (118 lane miles), from Cascade Point to Katzehin. Winter maintenance of Glacier Highway from Echo Cove to Cascade Point would also be increased (currently winter maintenance ends at Echo Cove). A Lynn Canal station would be established, and staffed and equipped as shown below.



A total of seven operators [2 full time (FT) and 5 part time (PT)] would be assigned to the new highway segment.

Alternative 2B Staffing Table

Station	No.	Job title	WG	Status
Lynn Canal	1	Equipment Operator, Foreman	52	FT
Lynn Canal	4	Equipment Operator (Avalanche Control)	53	PT
Juneau	1	Equipment Operator	53	FT
Juneau	1	Equipment Operator	53	PT

Maintenance of the East Lynn Canal highway would be provided by a new maintenance station located at approximately Mile Point 66. One full time foreman/operator and four seasonal positions (avalanche control staff) would be allocated to the new highway. The station would be augmented with two 6x6 plow trucks with wings, a motor grader, snow blower, a loader, an excavator, and various other pieces of equipment. Two loaders and two bulldozers, identified for avalanche control, will also be provided.

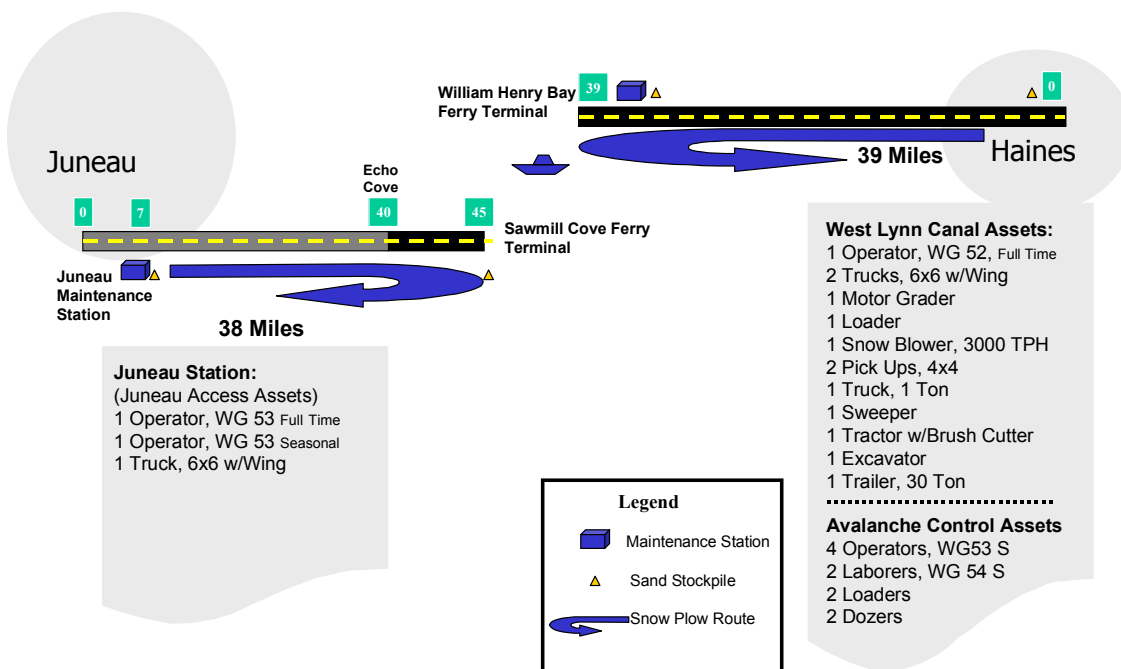
The Juneau Maintenance Station would be augmented with one full time operator and one seasonal position, to assist in maintaining the highway from Juneau to Cascade Point. Juneau Station would be required to place a higher priority on maintenance of the highway from Echo Cove to Cascade Point than they presently do. Current Juneau Station staffing allows only sporadic winter maintenance beyond Echo Cove. In effect, Juneau Station will take on three additional center line miles of high priority road maintenance. The Juneau station would be required to assist with avalanche clean up from time to time.

The total staffing increase for Alternative 2B is seven (2 FT; 5 PT). This level of staffing provides seven-day-a-week winter maintenance, including avalanche control and clean up, as well as summer maintenance activities. At 26.2 lane miles per operator, it affords a slightly better level of service than the regional average of 28.8 lane miles per operator.

Alternative 3 – West Lynn Canal Highway

Alternative 3 calls for construction of approximately 39 miles of new road (97.5 lane miles) between Haines and a ferry terminal at William Henry Bay. An additional two miles of road will be constructed between Cascade Point and a new ferry terminal at Sawmill Cove. Total road distance is 41 miles (102.5 lane miles).

Juneau Access Highway Maintenance Concept Alternative 3 (West Lynn Canal Highway)



Maintenance of the West Lynn Canal highway would be provided by the Haines Maintenance Station. One full time and four seasonal positions would be allocated to the new highway (this includes four seasonal positions identified for avalanche control). These personnel would operate out of the existing Haines station. The station would be augmented with two 6x6 plow trucks with wings, a motor grader, snow blower, a loader, and various other pieces of equipment. Two loaders and two bulldozers, designated for avalanche control, will also be provided.

An equipment shed and sand stockpile would be located near the William Henry Bay terminal. The shed would house equipment for highway maintenance and avalanche control. It would also provide emergency housing for highway maintenance and avalanche control crews.

The Juneau Maintenance Station would be augmented with one full time operator and one seasonal position, to assist in maintaining the new highway segment from Echo Cove to Cascade Point. In addition to maintaining the new two mile road segment, Juneau Station would be required to place a higher priority on maintenance of the highway from Echo Cove to Cascade Point than they presently do. Current Juneau Station staffing allows only sporadic winter maintenance beyond Echo Cove. In effect, Juneau Station will take on three additional center line miles of high priority road maintenance. The Juneau station may be required to assist with avalanche clean up from time to time.

The total staffing increase for Alternative 3 is seven (2 FT; 5 PT). This level of staffing provides seven-day-a-week winter maintenance, including avalanche control and clean up, as well as summer maintenance activities. At 24.4 lane miles per operator, it affords a slightly better level of service than the regional average of 28.8 lane miles per operator.

Alternative 3 Staffing Table

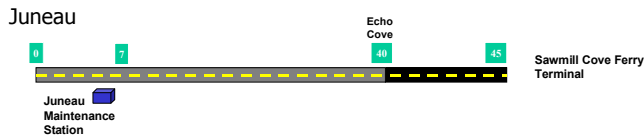
Station	No.	Job title	WG	Status
Haines	1	Equipment Operator	53	FT
Haines	4	Equipment Operator (Avalanche Control)	53	PT
Juneau	1	Equipment Operator	53	FT
Juneau	1	Equipment Operator	53	PT

Alternative 4B and 4D – Ferry Service from Sawmill Cove (Summer Only)

These alternatives call for construction of approximately two miles of road from Cascade Point to a new ferry terminal at Sawmill Cove. Because this is a summer only operation (ferry operates out of Auke Bay in winter), this alternative adds no appreciable winter maintenance responsibility. The road from Echo Cove to Sawmill Cove would have a low priority for maintenance in winter.

Based on this assumption, no additional maintenance personnel or equipment would be required. The Juneau Maintenance Station would absorb the additional workload associated with maintaining two miles of highway. This would be a low priority road in winter, as is the current section of Glacier Highway from Echo Cove to Cascade Point.

Juneau Access Highway Maintenance Concept Alternative 4B & 4D (Road to Sawmill Cove)



No additional highway maintenance assets required for summer maintenance.
Five mile road from Echo Cove to Sawmill Cove low priority for winter maintenance.

MAINTENANCE COST ESTIMATES

Methodology

Maintenance costs for each alternative were estimated in the following manner:

Personal Service Costs (Budget Line 1000)

- Based on number of full time and seasonal positions by wage grade (WG) and location
- Salary and benefit costs based on FY13 budget costs for similar positions
- Includes approximately 24% additional for premium pay
- Seasonal positions funded for six months per year

Travel Costs (Budget Line 2000)

Based on FY13 costs for similar travel

Contractual Costs (Budget Line 3000)

- Equipment costs based on FY13 State Equipment Fleet rates for similar equipment
- Highway striping costs based on FY12 contract amounts
- Utilities costs based on similar sized station
- Miscellaneous costs of 10% added

Commodities Costs (Budget Line 4000)

Estimates itemized in major budget account categories and based on costs experienced at similar sized stations

Equipment (Budget Line 5000)

No equipment capital costs included. Equipment purchased with capital funds.

Management & Overhead

Management and overhead estimated at 8%, similar to actual Southeast Region Maintenance and Operations experience.

Cost Estimates for Alternatives

Based on the maintenance concepts described above, the cost estimates for each alternative are provided in the table below. A detailed breakout of costs for each alternative is attached.

Annual Highway Maintenance Costs

Alternative		Annual Maintenance Cost Estimate
2B	East Lynn to Katzehin	\$1,091,469
3	West Lynn Canal Highway	\$951,041
4B & 4D	Road to Sawmill Cove	\$45,024

The table below shows the combined annual cost estimate of highway maintenance and avalanche control. Avalanche control cost estimates are taken from the Juneau Access Improvements Snow Avalanche Report, updated June 2013. The report provides several options and cost estimates, based on the type of control work provided. This table reflects the cost of the option that ADOT&PF considers most likely to be implemented.

Annual Highway & Avalanche Control Costs

Alternative	Highway Maintenance	Avalanche Control	Total Cost
2B	\$1,091,469	\$1,665,746	\$2,752,215
3	\$951,041	\$1,384,025	\$2,335,066
4B & 4D	\$45,024	\$0	\$45,024

SUMMARY

For the East Lynn Canal and West Lynn Canal highway alternatives, total maintenance costs, including avalanche control, are \$12,765 and \$12,130 per lane mile, respectively. This is 11 to 15% higher than the average cost for highway maintenance throughout Southeast Alaska (\$10,541). However, it reflects additional personnel and assets assigned to the highway to address the high snowfall and avalanche activity expected on these routes.

These cost estimates are intended to represent the cost of providing seven day per week highway maintenance during winter, and routine summer maintenance. Staffing and equipment levels include additional equipment operators to perform avalanche control and clean up on a frequent basis. Avalanche control asset costs are addressed in the Juneau Access Improvements Snow Avalanche Report Update, and those costs are not duplicated here, although the assets are

depicted. This is because when the avalanche control personnel are not performing avalanche control, they would be available to perform routine winter maintenance.

Staffing levels for each alternative are estimated to provide an adequate winter level of service, but do not provide active snow plowing and patrolling 24 hours per day. During major snow storms and heavy avalanches, staffing would not be adequate to ensure trafficable roads at all times, and highway closures for avalanche monitoring and clean-up will be necessary similar to existing State highways that experience heavy snowfall and avalanches.

All costs are based on current experiences where possible.

Alternative 2B

Budget Line	Description	Cost
Personal Services	1 Equipment Operator, WG 52, Full Time (Lynn Canal)	\$116,995
	1 Equipment Operator, WG 53, Full Time (JNU)	\$106,897
	1 Equipment Operator, WG 53, Seasonal (6 mo.) (JNU)	\$65,173
		\$289,065

Note: Additional 4 equipment operators, WG 53, seasonal, and 2 laborers, seasonal, included in Snow Avalanche Report.

Travel & Per Diem	Triennial avalanche control training for 3 operators (annual cost)	\$1,380
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Contractual	Equipment (See Equipment Table, below)	\$282,744
	Utilities	\$12,000
	Highway Striping	\$109,250
	Training	\$6,000
	Communications	\$2,000
	Miscellaneous (@ 10% of above costs, except equipment)	\$12,925
		\$424,919

Supplies	Fuel (bulk)	\$109,392
	Highway sand & aggregate	\$96,320
	Winter chemicals	\$26,000
	Blades & chains	\$16,000
	Signs	\$6,000
	Highway paint	\$0
	Asphalt/oil	\$6,000
	Office supplies	\$2,100
	Household	\$2,100
	Structural	\$2,100
	Small Equipment	\$5,000
	Miscellaneous (@ 15% of above costs)	\$24,243
	\$295,255	

Sub Total	\$1,010,619
Management & Overhead @ 8%	\$80,850
Grand Total	\$1,091,469
Cost per Lane Mile (216 lane miles):	\$5,053

Avalanche Control Cost (from Avalanche Report):	\$1,665,746
Total Operating Cost (includes Avalanche Control):	\$2,757,215
Cost per Lane Mile (including Avalanche Control):	\$12,764.88

Alternative 2B (Continued)

Equipment List*	Annual Operating and Replacement Cost	Capital Cost (First Year)
3 Truck, 6x6 (1 WX)	\$83,940	\$504,000
1 Motor Grader (WX)	\$14,016	\$0
1 Loader	\$29,064	\$306,000
1 Snowblower	\$32,808	\$560,000
2 Pick Up Truck (1 WX)	\$6,624	\$23,000
1 Truck, 1 1/2 T	\$11,784	\$70,000
1 Sweeper (WX)	\$8,712	\$0
1 Tractor/Brush Cutter	\$13,776	\$140,000
1 Excavator	\$24,576	\$225,000
1 Trailer, 30 T	<u>\$3,804</u>	<u>\$33,000</u>
	\$229,104	
Total Equipment Capital Cost:		\$2,113,000

* Typically some equipment assigned to a new mission is "X" status, meaning it is kept after it has reached its assigned service life. X equipment is normally in good condition with low operating hours when it is assigned the new mission. The State has already paid for the equipment so there is no capital cost for procurement.

Avalanche Control Equipment (from Snow Avalanche Report)	Capital Cost (First Year)	
2 Loaders	\$612,000	
2 Bull Dozers	\$1,060,000	
2 Pick Up Trucks (One WX)	<u>\$23,000</u>	
Total Equipment Capital Cost:		\$1,695,000

Alternative 3

Budget Line	Description	Cost
Personal Services	2 Equipment Operators, WG 53, Full Time (1 HNS, 1 JNU)	\$213,794
	1 Equipment Operator, WG 53, Seasonal (6 mo.) (HNS)	<u>\$65,173</u>
		\$278,967

Note: Additional 4 equipment operators, WG 53, seasonal, and 2 laborers, seasonal, included in Snow Avalanche Report.

Travel & Per Diem	Triennial avalanche control training for 5 operators (annual cost)	\$2,300
-------------------	--	---------

Contractual	Equipment (See Equipment Table below)	\$243,480
	Utilities	\$6,000
	Highway Striping	\$96,140
	Training	\$6,000
	Communications	\$2,000
	Miscellaneous (@ 10% of above costs, except equipment)	<u>\$2,230</u>
		\$355,850

Supplies	Fuel (bulk)	\$94,077
	Highway sand & aggregate	\$84,762
	Winter chemicals	\$22,880
	Blades & chains	\$5,000
	Highway paint	\$0
	Asphalt/oil	\$2,500
	Office supplies	\$0
	Household	\$0
	Structural	\$0
	Small Equipment	\$2,500
	Miscellaneous (@ 15% of above costs)	<u>\$31,758</u>
	\$243,477	

Sub Total	\$880,594
Management & Overhead @ 8%	<u>\$70,447</u>
Grand Total	\$951,041
Cost per Lane Mile (192.5 lane miles):	\$4,940.47

Avalanche Control Cost (from Avalanche Report):	\$1,384,025
Total Operating Cost (includes Avalanche Control):	\$2,335,066
Cost per Lane Mile (including Avalanche Control):	\$12,130

Alternative 3 (Continued)

Equipment List*	Annual Operating and Replacement Cost	Capital Cost (First Year)
3 Truck, 6x6 (1 WX)	\$83,940	\$504,000
1 Motor Grader (WX)	\$14,016	\$0
1 Loader	\$29,064	\$306,000
1 Snowblower	\$32,808	\$560,000
2 Pick Up Truck (1 WX)	\$6,624	\$23,000
1 Truck, 1 1/2 T	\$11,784	\$70,000
1 Sweeper (WX)	\$8,712	\$0
1 Tractor/Brush Cutter	\$13,766	\$140,000
1 Excavator	\$24,576	\$225,000
1 Trailer, 30 T	<u>\$3,804</u>	<u>\$33,000</u>
Annual Cost:	\$229,094	
Total Equipment Capital Cost:		\$2,113,000

* Typically some equipment assigned to a new mission is "X" status, meaning it is kept after it has reached its assigned service life. X equipment is normally in good condition with low operating hours when it is assigned the new mission. The State has already paid for the equipment so there is no capital cost for procurement.

Avalanche Control Equipment (from Snow Avalanche Report)	Capital Cost (First Year)	
2 Loaders	\$612,000	
2 Bull Dozers	\$1,060,000	
2 Pick Up Trucks (One WX)	<u>\$23,000</u>	
Total Equipment Capital Cost:		\$1,695,000

Equipment Operating Costs

ALTERNATIVE 2B

Equipment	Op Cost	Rep Cost	Units	Monthly Cost	Annual Cost
Truck, 6x4	\$1,301	\$1,546	2	\$5,694	\$68,328
Truck, 6x4 (WX)	\$1,301	\$0	1	\$1,301	\$15,612
Motor Grader (WX)	\$1,168	\$0	1	\$1,168	\$14,016
Loader	\$488	\$1,934	1	\$2,422	\$29,064
Snowblower	\$766	\$1,968	1	\$2,734	\$32,808
Pick Up Truck, 4x4	\$126	\$300	1	\$426	\$5,112
Pick Up Truck, 4x4 (WX)	\$126	\$0	1	\$126	\$1,512
Truck, 1 1/2 T	\$359	\$623	1	\$982	\$11,784
Sweeper (WX)	\$726	\$0	1	\$726	\$8,712
Tractor/Brush Cutter	\$787	\$361	1	\$1,148	\$13,776
Excavator	\$492	\$1,556	1	\$2,048	\$24,576
Trailer, 30 T	\$44	\$273	1	\$317	\$3,804
Total Monthly Equip Cost:				\$19,092	
Annual Cost:				\$229,104	\$229,104

Equipment provided for Avalanche Control (cost estimated under avalanche control costs)

	Op Cost	Rep Cost	Units	Monthly Cost	Annual Cost
Loader, 988	\$817	\$1,934	2	\$5,502	\$66,024
Dozer, D-8	\$1,250	\$5,160	2	\$12,820	\$153,840
Pick Up, 4x4	\$210	\$306	1	\$516	\$6,192
					\$226,056

ALTERNATIVE 3

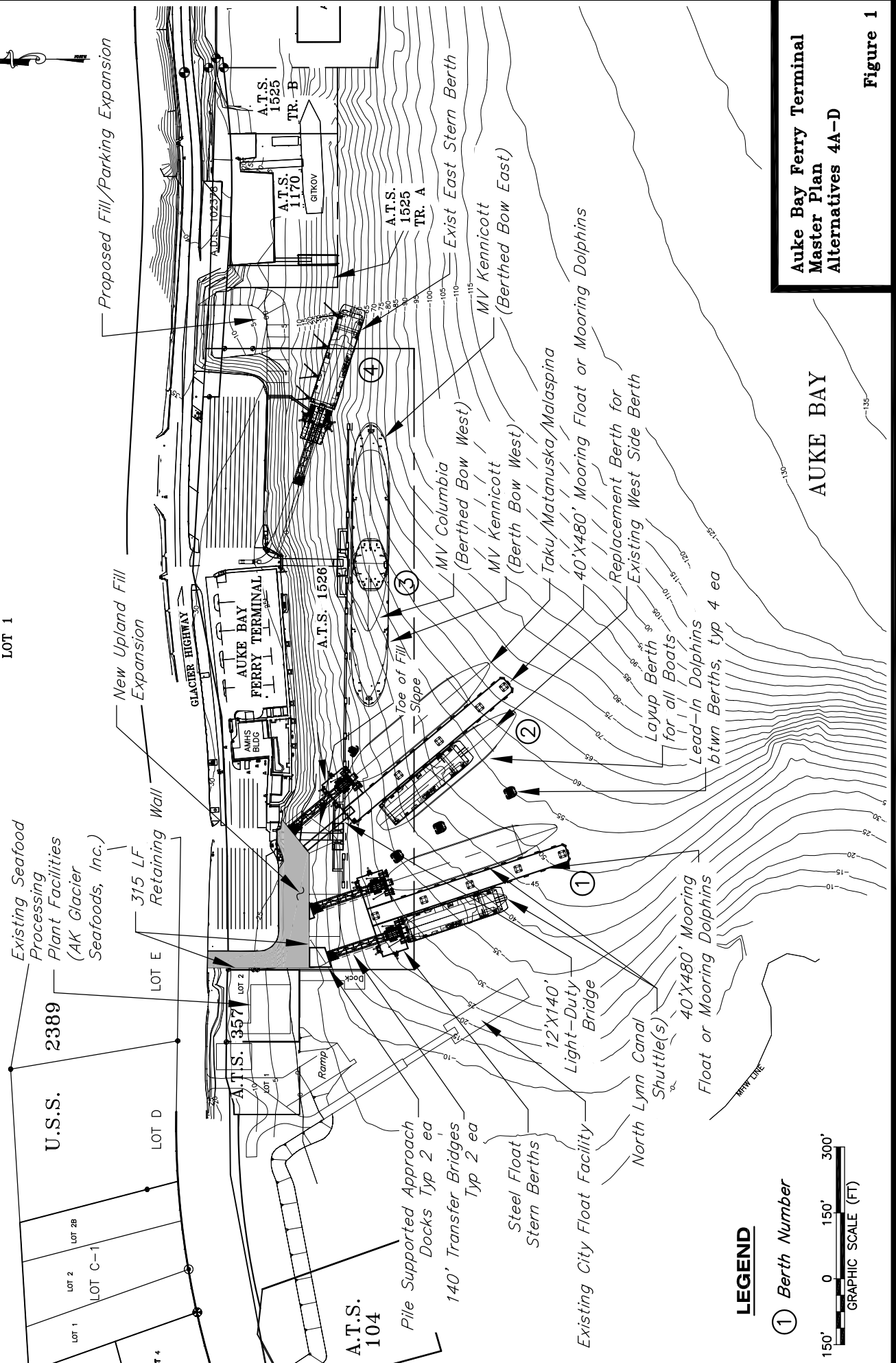
Equipment	Op Cost	Rep Cost	Units	Monthly Cost	Annual Cost
Truck, 6x4	\$1,301	\$1,546	2	\$5,694	\$68,328
Truck, 6x4 (WX)	\$1,301	\$0	1	\$1,301	\$15,612
Motor Grader (WX)	\$1,168	\$0	1	\$1,168	\$14,016
Loader	\$488	\$1,934	1	\$2,422	\$29,064
Snowblower	\$766	\$1,968	1	\$2,734	\$32,808
Pick Up Truck	\$126	\$300	1	\$426	\$5,112
Pick Up Truck, 4x4 (WX)	\$126	\$0	1	\$126	\$1,512
Truck, 1 1/2 T	\$359	\$623	1	\$982	\$11,784
Sweeper (WX)	\$726	\$0	1	\$726	\$8,712
Tractor/Brush Cutter	\$787	\$361	1	\$1,148	\$13,776
Excavator	\$492	\$1,556	1	\$2,048	\$24,576
Trailer, 30 T	\$44	\$273	1	\$317	\$3,804
Total Monthly Equip Cost:				\$19,092	
Annual Cost:				\$229,104	\$229,104

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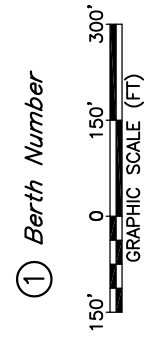
Attachment D
Juneau Access Improvements Project
Revised Marine Terminal Plans and Cost Update

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CITY & BOROUGH OF JUNEAU
 U.S.S. 3810
 LOT 1



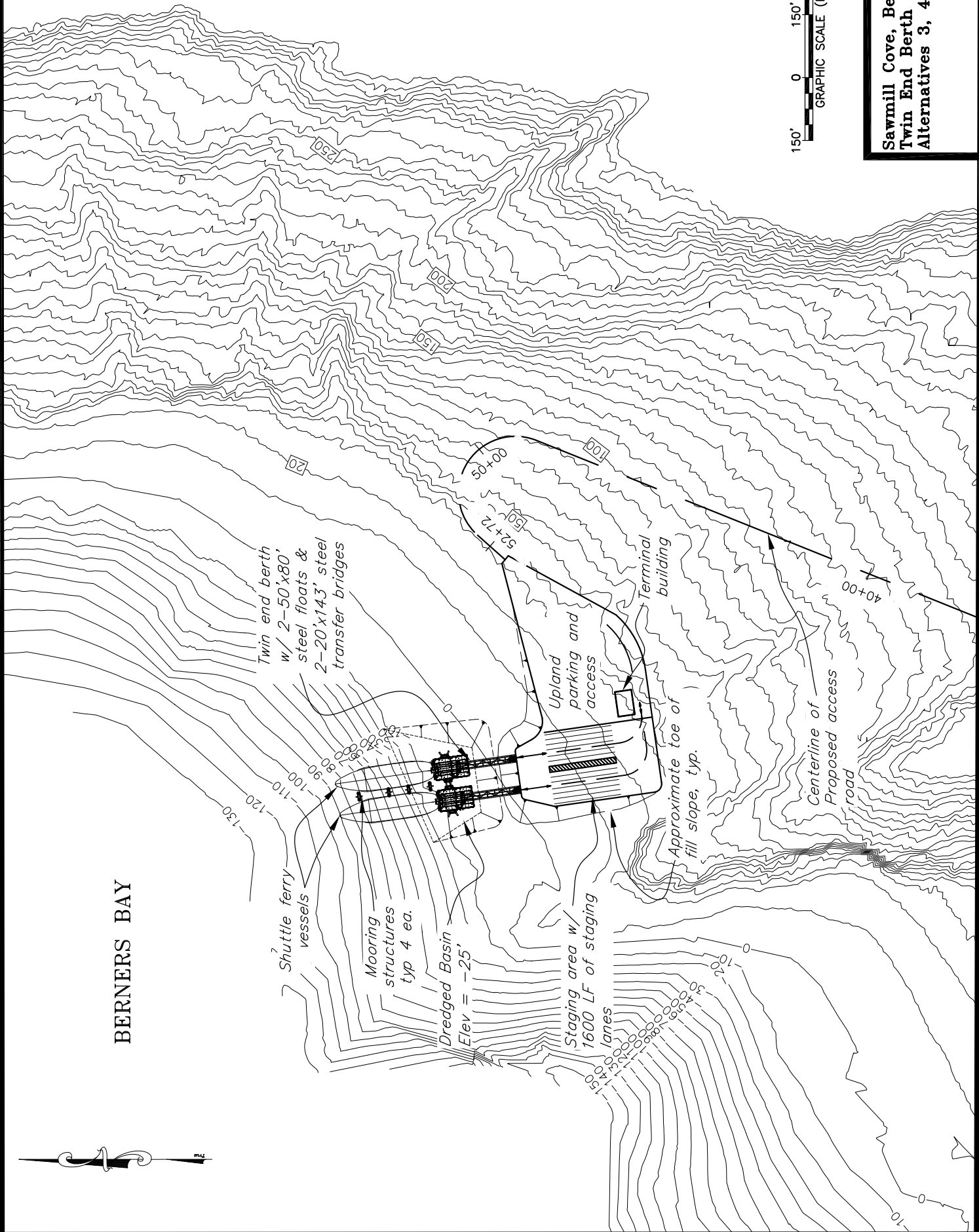
LEGEND



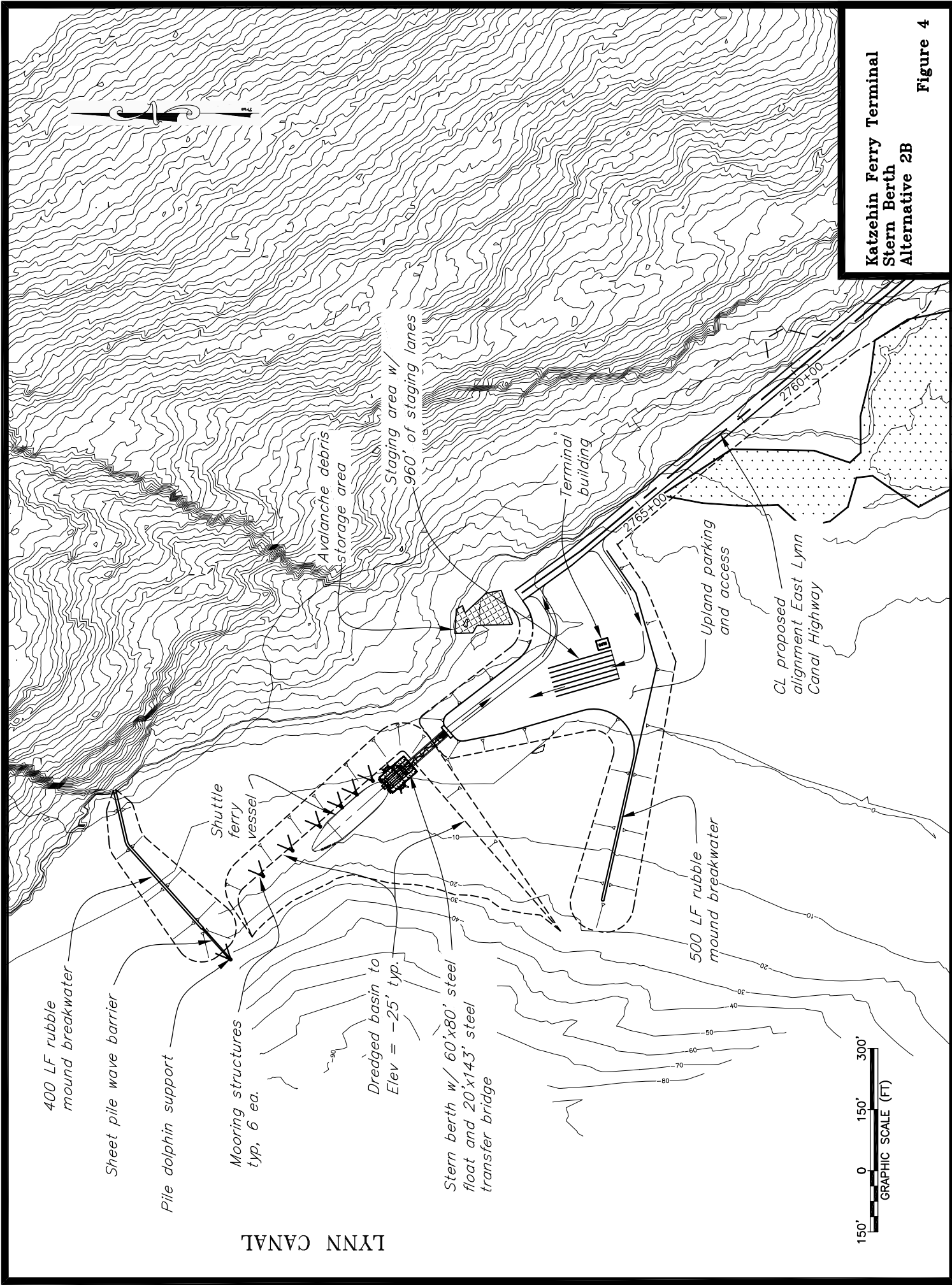
**Auke Bay Ferry Terminal
 Master Plan
 Alternatives 4A-D**

Figure 1

BERNERS BAY



**Sawmill Cove, Berners Bay
Twin End Berth
Alternatives 3, 4B & 4D
Figure 2**



**Katzehin Ferry Terminal
Stern Berth
Alternative 2B**

Figure 4

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LYNN CANAL

150' 0 150' 300'
GRAPHIC SCALE (FT)

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SE Region - Marine Engineering

Project Construction Cost Estimate

PROJECT NUMBER: 71100

PROJECT TITLE: Auke Bay Ferry Terminal - Alternatives 4A-D (Figure 1)

DESCRIPTION: Juneau Access Ferry Terminals Double Twin Stern Berth

Item No.	Item	Unit	Unit Price	Quantity	Amount	
1	General					
	Mobilization	LS	\$750,000	All Req'd.	\$750,000	
	Temporary Erosion and Pollution Control	CS	\$25,000	All Req'd.	\$25,000	
	Construction Surveying	LS	\$50,000	All Req'd.	\$50,000	
	Traffic Maintenance and Control	LS	\$12,500	All Req'd.	\$12,500	
	Furnish and Maintain Field Office	LS	\$15,000	All Req'd.	\$15,000	
	Demolition & Removal	LS	\$500,000	All Req'd.	\$500,000	
2	Marine Facilities					
	140' Steel Transfer Bridge w/ Apron	LS	\$900,000	2	\$900,000	
	12'x140' Light-Duty Transfer Bridge to Layup Float	LS	\$300,000	1	\$300,000	
	50'x60' Steel Bridge Float (3 each) w/ Intermediate Ramp, Apron & Fender Systems	SF	\$450	9,000	\$4,050,000	
	4-Pile Stern Float Restraint Dolphins	EA	\$250,000	6	\$1,500,000	
	3-Pile Float Restraint Dolphins	EA	\$160,000	2	\$320,000	
	Lead In Stern Dolphin w/ Fender System	EA	\$350,000	1	\$350,000	
	Berth Separation Dolphins w/ Fender System	EA	\$350,000	3	\$1,050,000	
	40'x480' Mooring Float or Mooring Dolphins (2 Rqd)	SF	\$250	38,400	\$9,600,000	
	4-Pile, Mooring Float Restraint Dolphins	EA	\$350,000	10	\$3,500,000	
	On-Float Fender Units	EA	\$35,000	48	\$1,680,000	
	Pile Supported Bridge Access Docks (2 ea) Steel Piles / Prestressed Concrete Deck	SF	\$300	2,000	\$600,000	
	Sanitary Sewer Pumpout Piping	LF	\$65	600	\$39,000	
	Potable Water Supply Piping (Heat Trace, Arctic Pipe)	LF	\$100	600	\$60,000	
	Fuel Supply Piping (Welded Steel/Corrosion Control Wrapped)	LF	\$100	600	\$60,000	
	Electrical Power and Lighting System (Terminal)	LS	\$500,000	All Req'd	\$500,000	
	3	Upland Improvements (West Staging Area)				
		Sheet Pile Retaining Wall	SF	\$75	13,125	\$984,375
		Embankment - Borrow Type D	CY	\$20	42,500	\$850,000
		6" Crushed Aggregate Base Course	CY	\$25	560	\$14,000
12" Subbase - Grading E		CY	\$25	1,200	\$30,000	
Asphalt Concrete Pavement (2" Thick)		TON	\$200	350	\$70,000	
Misc. Asphalt Concrete Replacement/Patching		SY	\$100	150	\$15,000	
Metal Beam Guardrail		LF	\$50	420	\$21,000	
Riprap for Slope Protection (Class IV)		CY	\$50	2,500	\$125,000	
Traffic Markings		LS	\$15,000	All Req'd.	\$15,000	
Electrical Power & Lighting System (Parking Lot)	LS	\$200,000	All Req'd	\$200,000		

Item Totals \$28,185,875
 Estimating & Construction Contingencies @ 10% \$2,818,587.50

Subtotal \$31,004,463

10% Design & Permitting \$3,100,446
 15% Construction Engineering \$4,650,669

4.79% ICAP \$1,856,392.19

Project Total = \$40,611,970

Prepared by: KDM
 Checked by: KDM

Date: 06/05/13
 Date:

SE Region - Marine Engineering

Project Construction Cost Estimate

PROJECT NUMBER: 71100

PROJECT TITLE: Juneau Access Ferry Terminals

DESCRIPTION: Sawmill Cove Ferry Terminal - Twin Stern Berth For Alternatives 3, 4B + 4D
(Figure 2)

Item No.	Item	Units	Unit Price	Quantity	Amount
1	General				
	Mobilization/Demobilization	LS	\$700,000	1	\$700,000
	Temporary Erosion and Pollution Control	CS	\$250,000	1	\$250,000
	Construction Surveying	LS	\$75,000	1	\$75,000
	Construction Camp Facilities	LS	\$125,000	1	\$125,000
2	Dredged Mooring Basin				
	Dredged Mooring Basin (Includes placement as upland fill or disposal)	CY	\$15.00	16,000	\$240,000
3	Marine Facilities				
	Pile Supported Bridge Approach Abutment	EA	\$80,000	2	\$160,000
	20'x142' Steel Transfer Bridge	EA	\$900,000	2	\$1,800,000
	50'x80' Steel Bridge Float (w/ Intermediate Ramp, Apron & Fenders)	EA	\$1,800,000	2	\$3,600,000
	4-Pile Bridge Float Restraint Dolphins	EA	\$325,000	3	\$975,000
	6-Pile Double Sided Breasting Dolphins	EA	\$450,000	4	\$1,800,000
	Electrical Power and Lighting System (Terminal)	LS	\$300,000	1	\$300,000
3	Upland Improvements (Access/Staging Area)				
	Embankment (Local Excavation)	CY	\$8.00	68,000	\$544,000
	Riprap Slope Protection	CY	\$50	5,500	\$275,000
	12" Aggregate Surface Course (Approx 135,000sf)	CY	\$20.00	5,000	\$100,000
	Asphalt Concrete Surfacing (2" thick) (Approx 135,000 sf)	Ton	\$200.00	1,500	\$300,000
	Metal Beam Guardrail	LF	\$50	950	\$47,500
	Potable Water Supply (Well & Piping)	LS	\$200,000	1	\$200,000
	Sanitary Sewer (Pkg Treatment Plant/Outfall)	LS	\$300,000	1	\$300,000
	Diesel Generator System, Bldg & Fuel Storage Tank	LS	\$600,000	1	\$600,000
	Electrical Power Supply & Area Lighting System	LS	\$350,000	1	\$350,000
5	Building Structures				
	Terminal Building (24'x40')	SF	\$450	960.00	\$432,000

Item Totals \$13,173,500

Estimating & Construction Contingencies @ 10% \$1,317,350

Construction Subtotal \$14,490,850

10% Design & Permitting \$1,449,085

15% Construction Engineering \$2,173,628

4.79% ICAP \$867,639.64

Project Total = \$18,981,202

Prepared by: KDM

Checked by: KDM

Date: 06/05/13

Date:

SE Region - Marine Engineering

Project Construction Cost Estimate

PROJECT NUMBER: 71100

PROJECT TITLE: Juneau Access Ferry Terminals

DESCRIPTION: William Henry Bay Ferry Terminal - Side Berth w/ Lift Bridge For Alternative 3
(Figure 3)

Item No.	Item	Units	Unit Price	Quantity	Amount
1	General				
	Mobilization/Demobilization	LS	\$700,000	1	\$700,000
	Temporary Erosion and Pollution Control	CS	\$50,000	1	\$50,000
	Construction Surveying	LS	\$75,000	1	\$75,000
	Construction Camp Facilities	LS	\$200,000	1	\$200,000
2	Marine Facilities				
	Pile Supported Bridge Approach Abutment	LS	\$80,000	1	\$80,000
	24' x 550' Pile Supported Approach Trestle	SF	\$250	13,200	\$3,300,000
	20'x143' Steel Transfer Bridge	LS	\$900,000	1	\$900,000
	Bridge Lift Towers & Syncro Lift or Float System	EA	\$1,000,000	2	\$2,000,000
	5-Pile Breasting Dolphins	EA	\$350,000	3	\$1,050,000
	Electrical Power and Lighting System (Terminal)	LS	\$350,000	1	\$350,000
3	Upland Improvements (Access/Staging Area)				
	Clearing & Grubbing	LS	\$60,000	1	\$60,000
	Embankment (Local Excavation)	CY	\$15.00	30,000	\$450,000
	Riprap Slope Protection	CY	\$65	6,200	\$403,000
	12" Aggregate Surface Course (Approx 96,500 sf)	CY	\$20.00	3,600	\$72,000
	Asphalt Concrete Surfacing (2" thick) (Approx 96,500 sf)	Ton	\$200.00	1,200	\$240,000
	Metal Beam Guardrail	LF	\$50	750	\$37,500
	Potable Water Supply (Well & Piping)	LS	\$250,000	1	\$250,000
	Sanitary Sewer (Pkg Treatment Plant/Outfall)	LS	\$325,000	1	\$325,000
	Diesel Generator System, Bldg & Fuel Storage Tank	LS	\$650,000	1	\$650,000
Electrical Power Supply & Area Lighting System	LS	\$400,000	1	\$400,000	
4	Building Structures				
Terminal Building (24'x40')	SF	\$450	960.00	\$432,000	

Item Totals \$12,024,500

Estimating & Construction Contingencies @ 10% \$1,202,450

Construction Subtotal \$13,226,950

10% Design & Permitting \$1,322,695.00

15% Construction Engineering \$1,984,043

4.79% ICAP \$791,963.63

Project Total = \$17,325,651

Prepared by: KDM

Checked by: KDM

Date: 06/05/13

Date:

SE Region - Marine Engineering

Project Construction Cost Estimate

PROJECT NUMBER: 71100

PROJECT TITLE: Juneau Access Ferry Terminals

DESCRIPTION: Katzeihin Ferry Terminal (North & South Breakwaters) For Alternative 2B
(Figure 4)

Item No.	Item	Units	Unit Price	Quantity	Amount
1	General				
	Mobilization/Demobilization	LS	\$900,000	1	\$900,000
	Temporary Erosion and Pollution Control	CS	\$350,000	1	\$350,000
	Construction Surveying	LS	\$200,000	1	\$200,000
	Construction Camp Facilities	LS	\$350,000	1	\$350,000
2	Mooring Basin & Breakwaters				
	Dredged Mooring Basin (Includes placement as upland/breakwater fill where usable)	CY	\$15.00	40,000	\$600,000
	North Rubble Mound Breakwater	LF	\$2,000	400	\$800,000
	North Sheet Pile Wave Barrier	LF	\$2,000	110	\$220,000
	Protection Dolphin at Wave Barrier End	EA	\$350,000	1	\$350,000
	South Rubble Mound Breakwater	LF	\$2,000	500	\$1,000,000
	Navigational Aids	EA	\$10,000	2	\$20,000
3	Marine Facilities				
	Pile Supported Bridge Approach Abutment	LS	\$100,000	1	\$100,000
	20'x150' Steel Transfer Bridge	LS	\$900,000	1	\$900,000
	50'x80' Steel Bridge Float (w/ Intermediate Ramp & Apron)	LS	\$1,800,000	1	\$1,800,000
	4-Pile Bridge Float Restraint Dolphins	EA	\$350,000	2	\$700,000
	5-Pile Breasting Dolphins	EA	\$400,000	6	\$2,400,000
	Electrical Power and Lighting System (Terminal)	LS	\$350,000	1	\$350,000
3	Upland Improvements (Access/Staging Area)				
	Import Embankment - Borrow (Classified Materials)	CY	\$12.00	50,000	\$600,000
	Riprap Slope Protection (NIC Breakwaters)	CY	\$50	6,000	\$300,000
	12" Aggregate Surface Course (Approx 103,000 sf)	CY	\$20.00	4,000	\$80,000
	Asphalt Concrete Surfacing (2" thick) (Approx 103,000 sf)	Ton	\$200.00	1,200	\$240,000
	Metal Beam Guardrail	LF	\$50	850	\$42,500
	Potable Water Supply (Well & Piping)	LS	\$200,000	1	\$200,000
	Sanitary Sewer (Pkg Treatment Plant/Outfall)	LS	\$300,000	1	\$300,000
	Diesel Generator System, Bldg & Fuel Storage Tank	LS	\$600,000	1	\$600,000
	Electrical Power Supply & Area Lighting System	LS	\$300,000	1	\$300,000
4	Building Structures				
Terminal Building (24'x40')	SF	\$450	960.00	\$432,000	

Item Totals \$14,134,500
Estimating & Construction Contingencies @ 10% \$1,413,450

Construction Subtotal \$15,547,950

10% Design & Permitting \$1,554,795

15% Construction Admin \$2,332,193

4.79% ICAP \$744,746.81

Project Total = \$20,179,684

Prepared by: KDM
Checked by: KDM

Date: 06/05/13
Date:

SE Region - Marine Engineering

Project Construction Cost Estimate

PROJECT NUMBER: 71100

PROJECT TITLE: Juneau Access Ferry Terminals

DESCRIPTION: Skagway Ferry Terminal - End Berth For Alternatives 2B & 3
(Figure 5)

Item No.	Item	Units	Unit Price	Quantity	Amount
1	General				
	Mobilization/Demobilization	LS	\$600,000	1	\$600,000
	Temporary Erosion and Pollution Control	CS	\$50,000	1	\$50,000
	Construction Surveying	LS	\$75,000	1	\$75,000
2	Marine Facilities				
	Pile Supported Bridge Approach Abutment	LS	\$80,000	1	\$80,000
	Access Catwalks & Gangways	EA	\$100,000	4	\$400,000
	New Breasting Dolphin Structures	EA	\$800,000	4	\$3,200,000
	Vehicle Apron & Hydraulic Systems	LS	\$100,000	1	\$100,000
	Electrical Power and Lighting System (Terminal)	LS	\$450,000	1	\$450,000
	Potable Water Utilities	LS	\$500,000	1	\$500,000
	Sanitary Sewer Utilities	LS	\$500,000	1	\$500,000

Item Totals \$5,955,000
 Estimating & Construction Contingencies @ 10% \$595,500

Construction Subtotal \$6,550,500

10% Design & Permitting \$655,050.00
 15% Construction Engineering \$982,575

4.79% ICAP \$392,211.19

Project Total = \$8,580,336

Prepared by: KDM

Date: 06/05/13

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Attachment E
Juneau Access Improvements Project
Revised Engineer's Estimate

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ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY, ECHO COVE TO KATZEHIN TERMIN FULL BUILDOUT (Alt. 2B) 2012 update AKSAS No.: 71100 Federal No.: Version ID: 38169 Printed: 8/19/2013 2:44:45 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
201(1A)	Clearing	483	Acre	7,500.00	3,622,500.00
201(1B)	Clearing - Zones 2,3 & 5	169	Acre	5,800.00	980,200.00
201(6)	Selective Tree Removal	350	Each	350.00	122,500.00
202(4)	Removal of Culvert Pipe	530	Linear Foot	16.50	8,745.00
203(2)	Rock Excavation	4,910,510	Cubic Yard	13.00	63,836,630.00
203(3)	Unclassified Excavation	1,104,460	Cubic Yard	5.50	6,074,530.00
203(5)	Borrow	242,500	Cubic Yard	4.50	1,091,250.00
203(10)	Controlled Blasting	238,780	Square Yard	21.00	5,014,380.00
203(12)	Drain Holes	29,077	Linear Foot	3.50	101,769.50
203(13)	Stabilization - Rock Bolt	5,378	Each	1,625.00	8,739,250.00
203(19)	Barrier Rocks	4,000	Linear Foot	9.00	36,000.00
205(3)	Foundation Fill	7,951	Cubic Yard	27.00	214,677.00
301(1)	Aggregate Base Course, Grading ____	221,795	Ton	27.00	5,988,465.00
306(1)	Asphalt Treated Base	103,589	Ton	46.00	4,765,094.00
401(1)	Asphalt Concrete, Type II; Class B	109,740	Ton	55.00	6,035,700.00
401(2)	Asphalt Cement, Grade 58-28	11,258	Ton	760.00	8,556,080.00
402(1)	STE-1 Asphalt For Tack Coat	259	Ton	760.00	196,840.00
501(1)	Class A Concrete	All required	Lump Sum	10,843,000.00	10,843,000.00
501(2)	Class A-A Concrete	All required	Lump Sum	1,418,000.00	1,418,000.00
501(7A)	Precast Concrete Member (128' Decked Bulb Tee)	18	Each	65,250.00	1,174,500.00
501(7B)	Precast Concrete Member (144' Decked Bulb Tee)	228	Each	76,100.00	17,350,800.00
501(7C)	Precast Concrete Member (118' Decked Bulb Tee)	12	Each	65,250.00	783,000.00

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY, ECHO COVE TO KATZEHIN TERMIN FULL BUILDOUT (Alt. 2B) 2012 update AKSAS No.: 71100 Federal No.: Version ID: 38169 Printed: 8/19/2013 2:44:45 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
501(8)	Concrete Price Adjustment	All required	Contingent Sum	0.00	0.00
501(9)	Bridge Expansion Joint	660	Linear Foot	1,200.00	792,000.00
501(10)	Screening Structure	6,510	Linear Foot	160.00	1,041,600.00
501(11)	Precast Concrete Headwall	14	Each	5,500.00	77,000.00
501(13a)	Zone 4 Bridges, Standard	1,080	Linear Foot	9,000.00	9,720,000.00
501(13b)	Zone 4 Bridges, Special	592	Linear Foot	12,500.00	7,400,000.00
501(13c)	Zone 4 Bridges, Heavy Duty	1,822	Linear Foot	18,000.00	32,796,000.00
501(14)	Katzehin Bridge	2,590	Linear Foot	9,000.00	23,310,000.00
501(15)	Snow Shed	1,500	Linear Foot	17,000.00	25,500,000.00
507(6)	Safety Railing	39,465	Linear Foot	4.00	157,860.00
503(1)	Reinforcing Steel	All required	Lump Sum	3,198,350.00	3,198,350.00
503(2)	Epoxy-Coated Reinforcing Steel	All required	Lump Sum	1,448,825.00	1,448,825.00
504(2)	Structural Steel	1,150,000	Pound	2.75	3,162,500.00
505(5A)	Furnish Structural Steel Piles - HP14X117	787.5	Linear Foot	71.00	55,912.50
505(5B)	Furnish Structural Steel Pipe Piles - 24 in	6,668	Linear Foot	135.00	900,180.00
505(5C)	Furnish Structural Steel Pipe Piles - 48 in dia	15,161.4	Linear Foot	545.00	8,262,963.00
505(6A)	Drive Structural Steel Piles - HP14X117	6	Each	5,450.00	32,700.00
505(6b)	Drive Structural Steel Pipe Piles - 24 in dia	78	Each	8,150.00	635,700.00
505(6C)	Drive Structural Steel Pipe Piles - 48 in dia	111	Each	27,000.00	2,997,000.00
505(9)	Structural Steel Sheet Piles	3,200	Square Foot	50.00	160,000.00
507(1)	Steel Bridge Railing	14,135	Linear Foot	245.00	3,463,075.00
511(1)	Mechanically Stabilized Earth Wall	860,536	Square Foot	54.50	46,899,212.00
514(1)	Tunnel, Dual Lane/Bi-Directional (300' to <800')	1,250	Linear Foot	10,000.00	12,500,000.00
515(1)	Debris Flow Mitigation Structure	18	Each	275,000.00	4,950,000.00
602(3A)	Structural Plate Arch 20' Span, 8'3 1/2" Rise, 7 Gage	50	Linear Foot	2,305.00	115,250.00
602(3B)	Structural Plate Arch 31'9" Span, 10'2" Rise, 7 Gage	624	Linear Foot	4,240.00	2,645,760.00

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY, ECHO COVE TO KATZEHIN TERMIN FULL BUILDOUT (Alt. 2B) 2012 update AKSAS No.: 71100 Federal No.: Version ID: 38169 Printed: 8/19/2013 2:44:45 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
603(17-24)	24 Inch Pipe	26,877	Linear Foot	85.00	2,284,545.00
603(17-36)	36 Inch Pipe	15,852	Linear Foot	155.00	2,457,060.00
603(17-48)	48 Inch Pipe	3,924	Linear Foot	210.00	824,040.00
603(17-60)	60 Inch Pipe	1,774	Linear Foot	315.00	558,810.00
603(17-72)	72 Inch Pipe	814	Linear Foot	380.00	309,320.00
603(17-144)	144 Inch Pipe	370	Linear Foot	815.00	301,550.00
606(1)	W-beam Guardrail	102,057	Linear Foot	30.00	3,061,710.00
606(12)	Guardrail/bridge Rail Connection	36	Each	3,500.00	126,000.00
606(13)	Parallel Guardrail Terminal	185	Each	3,000.00	555,000.00
610(3)	Ditch Lining	25	Station	815.00	20,375.00
611(1A)	Riprap, Class II	3,885	Cubic Yard	11.00	42,735.00
611(1B)	Riprap, Class IV	122,000	Cubic Yard	11.00	1,342,000.00
611(3)	Riprap Slope Stabilization	32,022	Square Yard	11.50	368,253.00
615(1)	Standard Sign	3,872	Square Foot	60.00	232,320.00
618(1)	Seeding	206	Acre	2,350.00	484,100.00
619(2)	Matting	59,000	Square Yard	3.00	177,000.00
630(1)	Geotextile, Separation	176,000	Square Yard	3.00	528,000.00
631(2)	Geotextile, Erosion Control, Class 1	3,740	Square Yard	2.50	9,350.00
633(1)	Silt Fence	72,000	Linear Foot	4.50	324,000.00
637(1)	Reinforced Soil Slope	500	Square Foot	22.00	11,000.00
640(1)	Mobilization And Demobilization	All required	Lump Sum	35,704,000.00	35,704,000.00
640(4)	Worker Meals and Lodging, or Per Diem	All required	Lump Sum	1,620,000.00	1,620,000.00
641(1)	Erosion And Pollution Control Administration	All required	Lump Sum	86,550.00	86,550.00
641(2)	Temporary Erosion And Pollution Control	All required	Contingent Sum	2,207,000.00	2,207,000.00
641(6)	Withholding	All required	Contingent Sum	0.00	0.00
641(8)	Preliminary Seeding	47	Acre	2,750.00	129,250.00

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY, ECHO COVE TO KATZEHIN TERMIN FULL BUILDOUT (Alt. 2B) 2012 update AKSAS No.: 71100 Federal No.: Version ID: 38169 Printed: 8/19/2013 2:44:45 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
641(9)	Temporary Rock Check Dam	540	Each	110.00	59,400.00
641(10)	Settling Pool	8	Each	580.00	4,640.00
642(1)	Construction Surveying	All required	Lump Sum	1,708,000.00	1,708,000.00
642(3)	Three Person Survey Party	700	Hour	275.00	192,500.00
642(13)	Monumentation with case	190	Each	575.00	109,250.00
644(1)	Field Office	3	Each	27,500.00	82,500.00
644(2)	Field Laboratory	3	Each	27,500.00	82,500.00
644(3)	Curing Shed	All required	Lump Sum	5,800.00	5,800.00
644(8a)	Vehicle, 4X4 SUV	216	Each/Month	435.00	93,960.00
644(8b)	Vehicle, 4X4 ATV	288	Each/Month	165.00	47,520.00
644(15)	Nuclear Testing Equipment Storage Shed	All required	Lump Sum	90,000.00	90,000.00
644(16)	Storage Container	All required	Lump Sum	18,000.00	18,000.00
645(1)	Training Program, 2 Trainees/Apprentices	3,000	Labor Hour	11.00	33,000.00
646(1)	CPM Scheduling	All required	Lump Sum	58,000.00	58,000.00
670(1)	Painted Traffic Markings	All required	Lump Sum	279,000.00	279,000.00
670(8)	Recessed Pavement Marker	4,891	Each	38.00	185,858.00
PROJECT Summary	Pay Items:	90 Items		Subtotal:	395,989,694.00
	Construction Engineering (Percentage)	6%		CENG Subtotal	23,759,381.64
	Indirect Cost Allocation Plan (ICAP)	4.79%			20,105,980.72
	TOTAL PARTICIPATING				439,855,056.36

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY, ECHO COVE TO KATZEHIN TERMIN FULL BUILDOUT (Alt. 2B) 2012 update AKSAS No.: 71100 Federal No.: Version ID: 38169 Printed: 8/19/2013 2:44:45 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
	ADDED COSTS (Not part of the Contract)				
	Contingency (5% Z 1,2,3,5 , 10% Z 4)				31,379,721.00
	Camp Costs				23,153,100.00
	Glacier Highway Extension Credit				-3,874,000.00
	Preliminary Development				15,000,000.00
	Mitigation				3,500,000.00
	Right of Way				1,700,000.00
	Maintenance Building				1,300,000.00
	Avalanche Control CIP				8,603,893.00
	Highway M&O Equipment CIP				2,113,000.00
	PROJECT TOTAL				522,730,770.36

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY, WEST SIDE ALTERNATIVE (ALT. 3) 2012 Update AKSAS No.: 71100 Federal No.: Version ID: 38172 Printed: 6/19/2013 11:04:20 AM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
201(1B)	Clearing	All required	Lump Sum	800,000.00	800,000.00
203(2)	Rock Excavation	4,060,000	Cubic Yard	13.00	52,780,000.00
203(3)	Unclassified Excavation	2,118,000	Cubic Yard	5.50	11,649,000.00
203(10)	Controlled Blasting	77,918	Square Yard	21.00	1,636,278.00
203(12)	Drain Holes	9,490	Linear Foot	3.50	33,215.00
203(13)	Stabilization - Rock Bolt	1,755	Each	1,625.00	2,851,875.00
301(2)	Aggregate Base Course, Grading ____	183,815	Ton	27.00	4,963,005.00
306(1)	ATB	85,846	Ton	46.00	3,948,916.00
401(1)	Asphalt Concrete, Type II; Class B	90,948	Ton	55.00	5,002,140.00
401(2)	Asphalt Cement, Grade 58-28	9,331	Ton	760.00	7,091,560.00
402(1)	STE-1 Asphalt For Tack Coat	218	Ton	760.00	165,680.00
501(13a)	Bridge Structure	15,885	Linear Foot	9,000.00	142,965,000.00
511(1)	Mechanically Stabilized Earth Wall	77,446	Square Foot	54.50	4,220,807.00
602(2)	Structural Plate Pipe-Arch ____ Span, ____ Rise, ____ Gage	2,232	Linear Foot	4,240.00	9,463,680.00
603(17-24)	24 Inch Pipe	14,088	Linear Foot	85.00	1,197,480.00
603(17-36)	36 Inch Pipe	13,026	Linear Foot	155.00	2,019,030.00
603(17-48)	48 Inch Pipe	3,560	Linear Foot	210.00	747,600.00
603(17-72)	72 Inch Pipe	3,844	Linear Foot	380.00	1,460,720.00
606(1)	W-beam Guardrail	8,900	Linear Foot	30.00	267,000.00
606(13)	Parallel Guardrail Terminal	130	Each	3,000.00	390,000.00
611(1)	Riprap, Class ____	164,500	Cubic Yard	11.00	1,809,500.00
615(1)	Standard Sign	3,400	Square Foot	60.00	204,000.00
618(1)	Seeding	All required	Lump Sum	300,000.00	300,000.00

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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
633(1)	Silt Fence	206,000	Linear Foot	4.50	927,000.00
640(1)	Mobilization And Demobilization	All required	Lump Sum	14,800,000.00	14,800,000.00
640(4)	Worker Meals and Lodging, or Per Diem	All required	Lump Sum	1,490,000.00	1,490,000.00
641(1)	Erosion And Pollution Control Administration	All required	Lump Sum	20,400.00	20,400.00
641(2)	Temporary Erosion And Pollution Control	All required	Contingent Sum	520,000.00	520,000.00
641(6)	Withholding	All required	Contingent Sum	0.00	0.00
642(1)	Construction Surveying	All required	Lump Sum	1,950,000.00	1,950,000.00
642(13)	Monumentation with case	208	Each	575.00	119,600.00
670(1)	Painted Traffic Markings	All required	Lump Sum	230,000.00	230,000.00
670(8)	Recessed Pavement Marker	4,052	Each	38.00	153,976.00
PROJECT Summary	Pay Items:	33 Items		Subtotal:	276,177,462.00
	Construction Engineering (Percentage)	6%		CENG Subtotal	16,570,647.72
	Indirect Cost Allocation Plan (ICAP)	4.79%			14,022,634.46
	TOTAL PARTICIPATING				306,770,744.18
	ADDED COSTS (Not part of the Contract)				
	Contingency (5% East, 30% West)				80,350,712.00
	Mitigation				3,600,000.00
	Right of Way				1,500,000.00
	Maintenance Building				1,300,000.00
	Glacier Highway Extension Credit				-3,874,000.00
	Preliminary Development				10,200,000.00
	Camp Costs				11,576,550.00
	Avalanche Control CIP				8,025,234.00
	Highway M&O Equipment CIP				2,113,000.00
	PROJECT TOTAL				421,562,240.18

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY (Alt. 4B,D) 2012 Update AKSAS No.: 71100 Federal No.: Version ID: 39333 Printed: 6/3/2013 9:14:27 AM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
201(1B)	Clearing	All required	Lump Sum	15,000.00	15,000.00
203(2)	Rock Excavation	270,500	Cubic Yard	13.00	3,516,500.00
203(3)	Unclassified Excavation	270,500	Cubic Yard	5.50	1,487,750.00
203(10)	Controlled Blasting	15,400	Square Yard	21.00	323,400.00
203(12)	Drain Holes	1,876	Linear Foot	3.50	6,566.00
203(13)	Stabilization - Rock Bolt	347	Each	1,625.00	563,875.00
301(2)	Aggregate Base Course, Grading ____	17,179	Ton	27.00	463,833.00
306(1)	ATB	8,023	Ton	46.00	369,058.00
401(1)	Asphalt Concrete, Type II; Class B	8,500	Ton	55.00	467,500.00
401(2)	Asphalt Cement, Grade 58-28	872	Ton	760.00	662,720.00
402(1)	STE-1 Asphalt For Tack Coat	20	Ton	760.00	15,200.00
501(13a)	Bridge Structure	100	Linear Foot	9,000.00	900,000.00
511(1)	Mechanically Stabilized Earth Wall	350	Square Foot	54.50	19,075.00
603(17-24)	24 Inch Pipe	2,560	Linear Foot	85.00	217,600.00
603(17-36)	36 Inch Pipe	908	Linear Foot	155.00	140,740.00
603(17-48)	48 Inch Pipe	444	Linear Foot	210.00	93,240.00
603(17-72)	72 Inch Pipe	132	Linear Foot	380.00	50,160.00
606(1)	W-beam Guardrail	630	Linear Foot	30.00	18,900.00
606(13)	Parallel Guardrail Terminal	6	Each	3,000.00	18,000.00
611(1)	Riprap, Class ____	1,000	Cubic Yard	11.00	11,000.00
615(1)	Standard Sign	200	Square Foot	60.00	12,000.00
618(1)	Seeding	All required	Lump Sum	15,000.00	15,000.00
633(1)	Silt Fence	20,000	Linear Foot	4.50	90,000.00

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Southeast Region	JNU - LYNN CANAL HIGHWAY (Alt. 4B,D) 2012 Update AKSAS No.: 71100 Federal No.: Version ID: 39333 Printed: 6/3/2013 9:14:27 AM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
640(1)	Mobilization And Demobilization	All required	Lump Sum	255,000.00	255,000.00
640(4)	Worker Meals and Lodging, or Per Diem	All required	Lump Sum	150,000.00	150,000.00
641(1)	Erosion And Pollution Control Administration	All required	Lump Sum	1,200.00	1,200.00
641(2)	Temporary Erosion And Pollution Control	All required	Contingent Sum	30,000.00	30,000.00
641(6)	Withholding	All required	Contingent Sum	0.00	0.00
642(1)	Construction Surveying	All required	Lump Sum	30,000.00	30,000.00
642(13)	Monumentation with case	30	Each	575.00	17,250.00
670(1)	Painted Traffic Markings	All required	Lump Sum	37,000.00	37,000.00
670(8)	Recessed Pavement Marker	330	Each	38.00	12,540.00
PROJECT Summary	Pay Items:	32 Items		Subtotal:	10,010,107.00
	Construction Engineering (Percentage)	6%		CENG Subtotal	600,606.42
	Indirect Cost Allocation Plan (ICAP)	4.79%			508,253.17
	TOTAL PARTICIPATING				11,118,966.59
	ADDED COSTS (Not part of the Contract)				
	Mitigation				36,000.00
	Construction Contingency (5%)				500,505.00
	Glacier Highway Extension Credit				-3,874,000.00
	Preliminary Development				240,000.00
	PROJECT TOTAL				8,021,471.59

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