FINAL DRAINAGE REPORT
for
PINE CREEK CORRIDOR - PHASE I
from
DETENTION FACILITY NO. 1
through
CHAPEL HILLS DRIVE
January 1993

RETURN WITHIN 2 WEEKS TO:
CITY OF COLORADO SPRINGS
STORM WATER & SUBDIVISION
101 W. COSTILLA , SUITE 113
COLORADO SPRINGS, CO 80903
(719) 578-6212

FINAL DRAINAGE REPORT
for
PINE CREEK CORRIDOR - PHASE I
from
DETENTION FACILITY NO. 1
through
CHAPEL HILLS DRIVE
January 1993

Project No. 91025-2

OBERING, WURTH & ASSOCIATES
Consulting Civil Engineers
Professional Land Surveyors

1015 Elkton Drive
Colorado Springs, Colorado 80907
Phone: (719) 531-6200
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APPENDIX:

Obering, Wurth & Associates
Consulting Civil Engineers
Registered Land Surveyors

1015 Elkton Drive • Colorado Springs, Colorado 80907 • Phone (719) 531-6200 • Fax (719) 531-6266 Ext. 3

January, 1993

City of Colorado Springs
Department of Planning & Development
Engineering Division
30 S. Nevada Avenue
P.O. Box 1575, Mail Code 435
Colorado Springs, CO 80901

Re: Final Drainage Report for the Pine Creek Corridor - Phase I from Detention Facility No. 1 through Chapel Hills Drive

Project No. 91025

Gentlemen:

This letter transmits a Final Drainage Report for the Pine Creek Corridor Phase I from Detention Facility No. 1 upstream through the Pine Creek Golf Course to and through Chapel Hills Drive (proposed). This report is a condition of approval of Pine Creek Subdivision Filings No. 1 and 2. The corridor is unique in that Pine Creek will be carrying stormwater flows through a privately owned parcel (Pine Creek Golf Course) that will not be subject to the City's Subdivision Ordinance, hence this study in association with adjacent platting.

The study has been prepared in accordance with current criteria and with consideration of conclusions presented in the Preliminary and Final Drainage Report and Plan for Pine Creek Subdivision Filing No. 1 (filed 12/20/91), Addendum to Pine Creek Subdivision Filing No. 1 Drainage Report and Plan (filed 1/28/92), Pine Creek Subdivision Filing No. 2 (filed 10/19/92), and the Design Report for Pine Creek Detention Facility No. 1 (dated December, 1992). Reference is made to these studies.

The general conclusions reached in this study are that the Pine Creek corridor will remain in its current natural state requiring no formal channel improvements, a public drainage easement will be granted, and stormwater maintenance of the corridor will be by a private entity associated with the Pine Creek Golf Course.

Questions or comments, please contact the undersigned.

Very truly yours,
OBERING, WURTH & ASSOCIATES

Roland G. Obering, P.E. & P.L.S.

RGO/p

cc: Vintage Communities, Mike DeGrant

Obering, Wurth & Associates
Consulting Civil Engineers
Registered Land Surveyors

1015 Elkton Drive • Colorado Springs, Colorado 80907 • Phone (719) 531-6200 • Fax (719) 531-6266 Ext. 3

January, 1993
Pine Creek Corridor - Phase I
Detention Facility No. 1
through Chapel Hills Drive
Project No. 91025-2

ENGINEER'S STATEMENT

The attached drainage report was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said drainage report has been prepared to the criteria established by the City for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by the negligent acts, errors, or omissions on my part in preparing this report.

_____
Roland G. Obering, P.E. & P.L.S. Colorado 13226

DEVELOPER'S STATEMENT

The developer has read and will comply with all the requirements specified in this drainage report and plan. The Developer accepts maintenance responsibility for Pine Creek as defined in the report.

_____
Business Name

_____
By

_____
Title

_____
Address

_____

CITY OF COLORADO SPRINGS

Filed in accordance with Section 15-3-906 of the Code of the City of Colorado Springs, 1980, as amended.

_____ _____
City Engineer Date

Conditions:

GENERAL

The Pine Creek Corridor - Phase I included in this Final Drainage Report consists of the Pine Creek channel and adjacent land development from the Pine Creek Detention Facility No. 1 upstream to and through Chapel Hills Drive (proposed). The study is a condition of approval of adjacent platting of the Pine Creek Subdivision Filings No. 1 and No. 2. The study is also an extension of the Pine Creek Detention Facility No. 1 Design Report (December 1992) prepared and submitted under separate cover.

The Pine Creek watershed was the subject of a Drainage Basin Planning Study (DBPS) approved in late 1988 with Amendment No. 1 (filed 8/6/92). This study identified the basin as a "no fee" basin relative to the City's Drainage Ordinance recognizing the majority of the land within the basin was under the control of the Developer, Vintage Communities. The portion of Pine Creek included in this study was proposed in the DBPS to remain in a natural condition. This study identifies the limits of flood flows, appropriate easements and maintenance responsibilities.

Pine Creek was identified in the referenced DBPS by milepost distances upstream from the confluence with Monument Creek (MP 0.00). By way of reference, the crossing of State Highway 83 has milepost designation of MP 2.25. Briargate Parkway, the embankment for Detention Facility No. 1 is located at MP 2.53. The inflow into the detention facility is located at MP 2.67 (study section 100) and is the beginning of this detailed study area. The Chapel Hills Drive (proposed) crossing has a location of MP 3.31 and is the end of this detailed study area.

The study area, approximately 3550 L.F. has a natural stream grade of 2.5% from USGS elevation 6663 to 6574. The Pine Creek Golf Course, constructed in 1986-1987 is well established adjacent to the entire channel reach. The Pine Creek channel varies considerably in width through this reach. There is a very small channel thread that contains a base flow. The top of bank width ranges from 75 feet at a narrow point at MP 3.19± to about 210 feet at a wide point at MP 3.11± just downstream. There is only a minor amount of bank instability and this occurs on the North bank at about MP 3.14 (study section 240). The estimated high water elevation does not reach this unstable area in a maximum storm flow.

The total stream cross-section for its entire length contains a significant amount of vegetation. Although a formal wetland delineation has not been completed for this reach, one was completed for the Detention Facility adjacent and downstream. The herbaceous wetlands extended generally from bank to bank in that area and similar conditions exist in this study area. There are also some large trees both in the channel and adjacent. The operation of the golf course, through its maintenance and irrigation, has greatly enhanced the vegetation growth along all of Pine Creek over the last five to six years and this is expected to continue.

The study area does not currently contain any improvements other than two (2) pedestrian bridges as part of the golf course operation. There are four storm sewer systems that outfall directly into or adjacent to the channel. Two of these systems were installed in association with the Tall Trees (now known as Pinewoods) development. One each was also installed with Pine Creek Subdivision No. 1 and No. 2. These systems are discussed in more detail in the "Improvements" section of this study.

The stream in this area is an integral part of the golf course providing not only the natural setting but also boundaries along fairways and a division between adjacent holes. The stream is also the conveyance for stormwater runoff from adjacent development and to a greater degree from upstream as urbanization occurs. In an effort to accommodate both the golf course and the stormwater management of the basin the Developer proposes to assume both functional and aesthetic maintenance responsibilities for the channel from the entrance to the detention facility upstream to the downstream right-of-way of Chapel Hills Drive (proposed). Specific details are contained in the Maintenance and Easements section of this study.

HYDROLOGY

The hydrology for the study area has been previously identified by use of the HEC-1 computer model and is summarized in this section. The first hydrologic analysis was contained in the referenced DBPS. This data was refined and updated in the Design Report for the Pine Creek Detention Facility No. 1 and the hydrology (peak flows) identified in that report have been used to model Pine Creek in this study area. Subdivision of several adjacent residential areas has identified additional point source flows that outfall in the study reach. These include Tall Trees (Pinewoods), Pine Creek Subdivision Filing No. 1 and No. 2 each with an underground storm sewer(s) as an outfall. All of these are summarized in this section and reference is made to each of the studies for detailed hydrologic calculations.

The Pine Creek DBPS identified summary points at Briargate Parkway (detention facility inflow) and at Chapel Hills Drive. The following hydrology was developed for a 24 hour duration storm which provided slightly higher flows than a 6 hour duration storm.

POINT NO.	LOCATION	Q_5 (CFS)	Q_{100} (CFS)
9	Detention Facility No. 1 (Inflow)	1458	3269
8	Chapel Hills Drive	1268	2695

It should also be noted that the above flows were for the fully developed basin and detention in accordance with the master plan. This study was published in October 1988.

The Design Report for the Pine Creek Detention Facility No. 1, prepared in December 1992 provided hydrologic data for the design of this major detention facility. The design report utilized Amendment No. 1 to the Pine Creek DBPS as it related specifically to the detention facility, but it also revised hydrology upstream due to the two major components of the Amendment. The first significant change to the DBPS was the re-routing of approximately 323 acres of the Business Campus and Penrose areas at or upstream of the detention facility. The second was the location of an additional regional detention facility upstream of Chapel Hills Drive (proposed) at approximate MP 3.84. The following summarizes hydrology at the same two points for Q_{100} flows in a 24 hour duration storm.

POINT NO.	LOCATION	PARTIAL DEVELOPMENT Q_{100} (CFS)	ULTIMATE DEVELOPMENT Q_{100} (CFS)
9	Detention Facility No. 1 (Inflow)	2636	2710*
8	Chapel Hills Drive	1897	1797*

*For Comparison with original Pine Creek DBPS

The ultimate flows as shown in the table are for full basin urbanization with all detention in place. The detention facility report also analyzed the Pine Creek flows based on partial development of the drainage basin. These partial flows were developed to correspond with the basin's probable development schedule and to determine the maximum allowable flow to enter the detention facility during its operation under restricted (historic) release rates. A comparison of the ultimate developed flow and partial developed flow at Summary Point 8 reveals that the partial flow is actually 100 CFS higher. This difference occurs due to the inclusion of upstream regional detention facilities in the ultimate condition. Since the timing for development of regional detention facilities upstream of Chapel Hills Drive is uncertain, the partial development Q_{100} of 1897 CFS represents the worst case scenario and is utilized as the design flow from MP 2.76 (study section 160) to Chapel Hills Drive.

The Pine Creek DBPS identifies two subbasins that are adjacent and contributory to this study reach of Pine Creek. They are Subbasin 20 to the North of Pine Creek and Subbasin 21 to the South of Pine Creek. There are three areas within Subbasin 20 that have been developed recently and have increased the developed flows in Pine Creek. Those areas are Pinewoods Subdivision, Pine Creek Subdivision Filing No. 1 and Pine Creek Subdivision Filing No. 2. A summary of the flows from these subdivisions is as follows.

SUBDIVISION	$Q_{10, CFS}$	Q_{100}, CFS
Pinewoods (2 Outfall Pipes)	26.3	46.5
Pine Creek No. 1	12.8	24.7
Pine Creek No. 2	19.8	39.9

The outfall pipes from these subdivisions discharge flows on the North side of the golf course (except for one of the Pinewoods outfall pipes which extends to the Pine Creek flowline) and allows runoff to flow overland across the course to the stream. Maintenance from the end of the outfall pipes to the channel is the responsibility of the Developer, Vintage Communities.

The residential subdivisions referenced all lie within Subbasin 20 of the DBPS. The majority of this 169 acre subbasin outfalls into the portion of Pine Creek contained in this study. This subbasin's flow was re-estimated in the Detention Facility report and a Q_{100} = 328 CFS was identified with the peak flow about 30 minutes before the main channel flow. For purposes of this study we have assumed that half of the flow from Subbasin 20 enters the channel above MP 2.76 (study section 160).

Subbasin 21 in the DBPS, a portion of the Briargate Business Campus, adjacent to the channel on the South in this study area, has the potential to contribute directly to this channel. Since there is no specific drainage master plan for this property, it is extremely difficult to predict where or how much this area might contribute. A revised peak flow of Q_{100} = 182 CFS from this 79 acre subbasin was estimated in the Detention Facility Report. Again, for purposes of this study, half of the peak flow is also assumed to enter the channel above MP 2.76 (study section 160).

The conclusion with respect to hydrology for this study reach is as follows. The HEC-1 computer model had been used previously to predict various flows. With the additional basin development and phasing information, Amendment No. 1 to the DBPS, and assumptions as to impact from adjacent land, a Q_{100} = 1897 CFS (1900 CFS used in the HEC runs) has been used as a peak flow at Chapel Hills Drive. The flow has been increased to Q_{100} = 2055 CFS for that portion of the study reach below MP 2.76 (study section 160). This flow extends downstream to where the channel enters the detention facility. It should be noted that the 2055 CFS does not represent the total inflow into the detention facility since additional Briargate Business Campus flows enter the facility through a storm sewer system.

HYDRAULICS

The hydraulics of the Pine Creek Channel has been modeled by using the HEC-2 computer model. The purpose of the model was to identify water surface profiles, channel velocities, widths of flows (floodplain limits), and impacts to existing and proposed channel crossings (bridges). The parameters and results of the modeling are discussed in this section.

A 1"=50' topographic map containing 2 foot contour intervals as provided by the Developer was used to identify geometry of cross-sections. A series of 24 cross-sections were developed at key locations along the channel reach. This includes multiple sections at each of the three bridge locations as well as at significant changes in the channel section.

The channel area has considerable vegetation with overbank having grass as is evident in the photographs. Using the Drainage Criteria Manual (DCM) recommendations as a reference (CHOW, Ven Te, 1959, Open Channel Hydraulics) a channel roughness coefficient of 0.50 has been selected. A value of 0.30 has been used for the overbank. Since the portion of the referenced document is not contained in the DCM it has been included in the Appendix of this study.

As discussed in the previous section, the peak design flows for this channel for a Q_{100}, 24 hour design storm are 1800 CFS at Chapel Hills Drive increasing to 2055 CFS at a point above MP 2.76 downstream and carrying into the detention facility. These flows are somewhat conservative allowing for partial development (without the proposed additional detention facility upstream) and some flexibility with respect to stormwater routing from adjacent subbasins. These flows will predict the future water surfaces that may be expected through this portion of Pine Creek.

The detailed results of the HEC-2 model are included in the Appendix. The flow is predicted to be subcritical for the majority of the reach. The exceptions are in the areas of the bridge structures and in the narrow reach of the stream. Maximum velocities in the channel range from 4.3 FPS to 18.1 FPS. Total water depth ranges from 2.62 feet to 6.98 feet. There is one area of the channel system where the flood flow will leave the main channel. This is in the area of the North abutment of the upper golf cart bridge. This was previously predicted in the Pine Creek Filing No. 1 drainage study. The flood flow does not impact any property beyond the limits of the golf course.

The cross-sections modeled provide widths of flow at the various locations. This information has been used to identify a floodplain for future stormwater flows in the Pine Creek channel. In addition, a drainage easement has been identified for the portion of the golf course that contains the floodplain. The drainage easement will permit offsite

developed stormwater flows to pass through the golf course property and is attached to a private maintenance agreement.

The cross-section locations used in this model have been shown on the accompanying Pine Creek Corridor plans (3 sheets). The limits of the floodplain as identified in the cross-sections is also shown. The boundaries of the drainage easement have been shown graphically and are contained in the legal description included in the Appendix.

IMPROVEMENTS

The Pine Creek channel from Detention Facility No. 1 through Chapel Hills Drive (proposed) was proposed in the DBPS to remain as a natural channel with possible stabilization being required. The channel supports a considerable amount of vegetation commonly referred to as herbaceous wetlands the entire study reach. There is no evidence of erosion or potentially unstable channel banks within the floodflow area. Although the velocities being predicted do exceed the DMC recommended allowable velocities for open channels no channel bank stabilization or grade control structures are being recommended.

The existing improvements in the Pine Creek corridor include two golf cart bridges associated with the golf course and four storm sewer systems that outfall directly or near the main channel. The bridges are of wooden construction set on concrete abutments. The water surface profile is well below the bottom deck at both locations. Floodflow does leave the main channel and flow on the North side of the upper bridge. Wingwalls protect abutments at both locations.

The storm sewer outfalls include an 18" RCP and 24" RCP storm system from the Pinewoods development, an 18" RCP system from Pine Creek Subdivision Filing No. 1 and a 24" RCP system from Pine Creek Subdivision Filing No. 2. The 18" Pinewoods system outfalls at the channel bank and is protected with rock riprap. The 24" Pinewoods outfall as well as both of the Pine Creek Subdivisions outfall at the North edge of the golf course improvements. The outfalls terminate with end sections and rock riprap. Storm flows continue overland (across the fairways) to the creek channel from these three outlets.

The Chapel Hills Drive crossing of Pine Creek has been master planned from a transportation and land use standpoint. Golf course grading and improvements also reflect the future crossing. The roadway will eventually be dedicated by platting when the access is required. The creek crossing by the roadway has been designed as a clear span bridge as part of the golf course design. This design was developed to accommodate golf cart path crossings and maintain the floodflow in an improved (but separate from the cart paths) configuration under the bridge. Concrete lining of the

channel in the area of the bridge has been designed. These improvements are subject to final review by the City, evaluation of impact on wetlands, and construction. They have been included as existing in the HEC-2 model.

The undeveloped area South of the channel, part of the Business Campus, will be developed through the normal platting process up to the golf course boundary. Outfall points, then sizes, locations, and protection requirements will all be identified in the Final Drainage Report(s) for those subdivision(s). Only the impact of these developments on the total channel flow has been included in this study.

The conclusion is that the channel is proposed to remain in its natural condition with only minor rock riprap protection associated with the outfall storm sewers both existing and proposed. Considerable channel improvements, concrete lining and cart paths are proposed at the future Chapel Hills Drive crossing. These improvements are subject to final design review prior to construction. The improvements will be maintained either by the City as public facilities or privately by the Developer or his assignees as discussed in the following section.

MAINTENANCE & EASEMENTS

The maintenance of stormwater facilities within the Pine Creek Corridor from the Detention Facility through Chapel Hills Drive (proposed) is proposed generally to be by City forces for stormwater improvements installed to City standards in public easements and by the Developer, Vintage Communities, and its assigns - the Pine Creek Golf Course and the Briargate Business Campus for the channel and golf course related improvements. This approach is consistent with the DBPS and similar to maintenance responsibilities identified in the Design Report for Detention Facility No. 1.

The public improvements are identified as the storm sewer outfall systems including the end sections and all improvements associated with the Chapel Hills bridge when it is constructed. Public storm sewer easements have been dedicated for all four existing storm sewer outfall systems by prior platting and/or by deed. Future systems will be identified, constructed, and easements granted similarly. Chapel Hills Drive as previously indicated will be created by platting. Channel protection upstream and downstream of the right-of-way width will either be included as part of the right-of-way by plat or by public easement. The functional maintenance of the channel improvements will be by the City with golf cart paths and aesthetic maintenance by the Developer (Golf Course).

The channel maintenance is proposed to be by the Developer as indicated. This includes the two golf cart bridges, the rock riprap at the storm sewer outfall points, concrete cart paths, sod, irrigation systems as well as repair and stabilization of the channel section that may be required as a result of storm flows. A drainage easement has been delineated on the accompanying plans and included in a legal description. This

easement across private property is intended to identify an area where stormwater flows resulting from upstream development are allowed to flow across the property and be a part of a maintenance agreement for the Developer to provide necessary functional and aesthetic maintenance. Upon acceptance of the agreement by all parties it will be recorded and will be come a part of this study.

SUMMARY

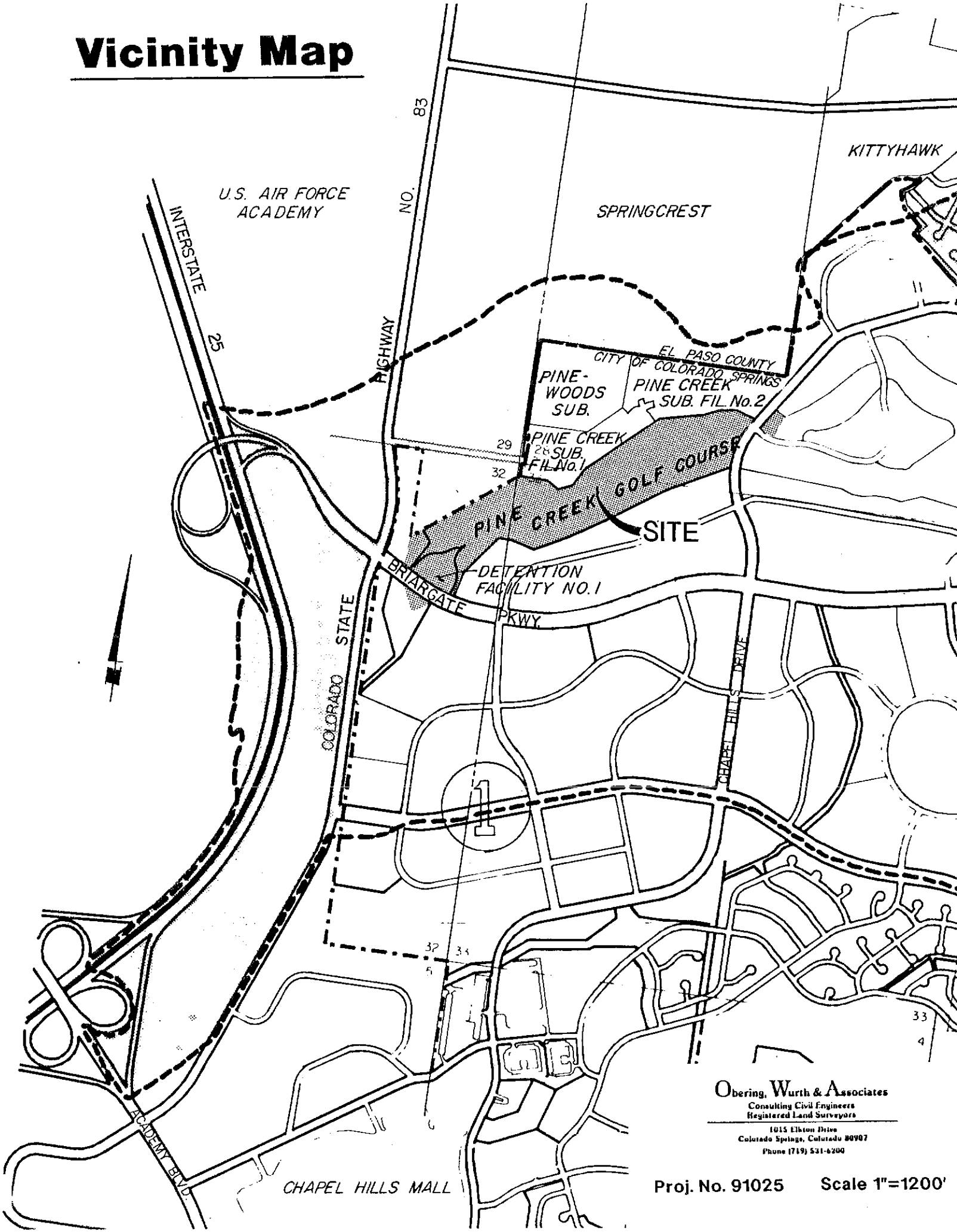
This study is intended to be a Final Drainage Report for this portion of the Pine Creek Drainage Basin to fulfill the requirements of approval of the previously referenced subdivisions. The study also identifies the impacts of developed storm flows on the subject Pine Creek Corridor. Finally the study identifies maintenance responsibilities and necessary easements to allow future subdivision and development upstream of Chapel Hills Drive while keeping the channel in its current condition in association with the Golf Course.

The Appendix of this study contains a number of relevant exhibits that detail the hydraulics of the channel, existing improvements, and the floodplain and easement limits. A plan of the corridor on three sheets at 1"=50' containing 2' contours has also been included in the Appendix to illustrate all of the pertinent elements of this study.

The study has been prepared as a Final Drainage Report for a portion of the Golf Course area since the site will not be part of any subdivision action. The basin does not contain any drainage or bridge fees. This study generally conforms to the Pine Creek DBPS as amended.

APPENDIX

Vicinity Map



Obering, Wurth & Associates
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Proj. No. 91025 Scale 1"=1200'

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 1 of 8

1. Looking Upstream from Detention Pond Inflow. MP 2.67

2. Lower Golf Course Bridge. MP 2.74

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 2 of 8

3. Pinewoods Subdivision - 18" Outfall at Channel. MP 2.80

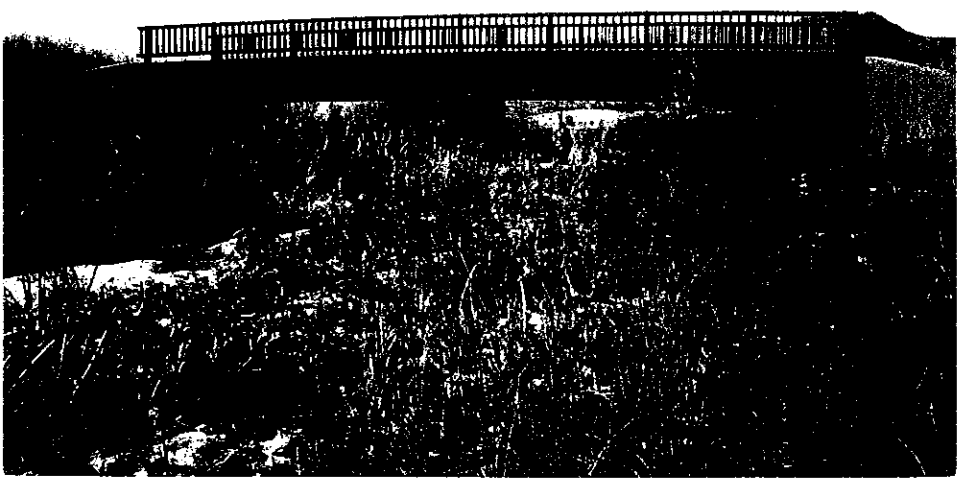
4. Pinewoods Subdivision - 24" Outfall, 240' Left. MP 2.80

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 3 of 8

5. Pine Creek Subdivision #1 - 18" Outfall, 150' Left. MP 2.86



6. Upper Golf Course Bridge. MP 2.88

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 4 of 8

7. Downstream from Upper Bridge. MP 2.88

8. Upstream from Upper Bridge. MP 2.88

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 5 of 8

9. Downstream from above Upper Bridge. MP 2.96

10. Unstable North Bank. MP 3.14

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 6 of 8

11. Pine Creek Subdivision No. 2 - 24" Outfall, 410' Left. MP 3.20

12. Downstream from Start of Narrow Channel. MP 3.16

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 7 of 8

13. Upstream from Start of Narrow Channel. MP 3.16

14. Downstream from Chapel Hills Drive. MP 3.31

SITE PHOTOGRAPHS

PINE CREEK CORRIDOR
PHASE I

Taken: January 5, 1993
Sheet 8 of 8

15. Upstream from Chapel Hills Drive. MP 3.31

16. Canadian Geese on the 14th Green.

TYPICAL ROUGHNESS COEFFICIENTS FOR OPEN CHANNELS
(Reference: Chow, Ven Te, 1959; Open-Channel Hydraulics)

Type of channel and description	Minimum	Normal	Maximum
D. Natural streams (*cont.*)			
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Floodplains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage > 100 ft). The n value is less than that for minor streams of similar description because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025		0.060
b. Irregular and rough section	0.035		0.100

HEC-2 MODELING OUTPUT

A. Composite Cross-Section Summary Table

B. Subcritical Flow Computer Run

C. Supercritical Flow Computer Run

D. Profile Plots

E. Cross-Section Plots

Project No. 91025-2
January, 1993

COMPOSITE CROSS-SECTION SUMMARY TABLE*
for
PINE CREEK CORRIDOR - PHASE I

X-Sect	Milepost	Q_{100} Max HWL	Depth of Flow	Velocity, FPS	Type of Flow
100	2.67	6577.67	3.56'	8.77	Subcritical
110	2.69	6580.81	4.50'	8.56	Subcritical
120	2.72	6584.33	4.63'	8.93	Subcritical
130	2.74	6585.98	3.98'	14.59	Supercritical
140.1	2.74	6588.18	5.68'	10.17	Subcritical
150	2.74	6589.78	6.98'	5.51	Subcritical
160	2.76	6590.33	6.33'	4.41	Subcritical
170	2.84	6597.62	2.62'	8.67	Supercritical
180	2.87	6603.55	4.55'	11.43	Supercritical
190.1	2.88	6605.28	5.88'	6.96	Subcritical
200	2.88	6605.39	5.39'	7.41	Subcritical
210	2.89	6606.49	5.59'	4.30	Subcritical
220	2.92	6607.23	4.23'	9.73	Critical
230	3.08	6626.60	3.60'	6.11	Subcritical
240	3.14	6633.15	2.65'	7.37	Subcritical
250	3.17	6639.71	5.01'	9.76	Supercritical
260	3.21	6645.13	4.43'	10.10	Supercritical
270	3.25	6651.81	3.61'	18.14	Supercritical
280	3.29	6658.41	4.81'	14.45	Supercritical
289.9	3.29	6659.42	5.20'	12.60	Supercritical
299.9	3.31	6660.99	5.39'	11.74	Supercritical
310	3.31	6660.90	4.70'	16.56	Supercritical
320	3.34	6666.80	3.80'	9.01	Subcritical

*__NOTE:__ This table combines the results of HEC-2 Computer Runs for the Pine Creek Corridor. Subcritical and supercritical runs were completed and analyzed. Due to flow variations within this study reach a combination of subcritical and supercritical results were utilized to determine maximum high water levels.

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*********************************************
*  HEC-2 WATER SURFACE PROFILES             *
*                                           *
*  Version   4.6.2;  May 1991               *
*                                           *
*  RUN DATE    12JAN93    TIME   13:40:16   *
*********************************************
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**************************************
*  U.S. ARMY CORPS OF ENGINEERS      *
*  HYDROLOGIC ENGINEERING CENTER     *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616-4687      *
*         (916) 756-1104             *
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
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X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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::::::::::::::::::::::::::::::::::::::::::::::
:::                                        :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
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H A E S T A D   M E T H O D S
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

SUBCRITICAL RUN

THIS RUN EXECUTED 12JAN93 13:40:16

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**************************************
 HEC-2 WATER SURFACE PROFILES

 Version  4.6.2;  May 1991
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T1 PINE CREEK CORRIDOR-PHASE 1
T2 OWA PROJECT NO. 91025-2
T3 PINE CREEK CORRIDOR

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2		0	-1				6579	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
			10				-1			

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	43	1	2	8	4	26	39	33	66	
150										
NC	.030	.030	.050	.3	.5					
QT	2	2055	1200							
X1	100	14	17	153						
GR	6588	0	6586	13	6585	17	6580	25	6578	33
GR	6576	39	6575	42	6574.1	65	6575	81	6576	122
GR	6577	133	6580	142	6582	153	6582	219		
X1	110	15	12	130	165	85	130			
GR	6589	0	6588	12	6586	15	6584	20	6582	29
GR	6580	35	6578	70	6577	99	6576.5	106	6578	112
GR	6580	119	6582	122	6584	130	6584.5	154	6584	173
X1	120	17	40	148	100	160	150			
GR	6590	0	6589	36	6588	40	6586	49	6584	59
GR	6582	77	6581	89	6580	101	6579.7	105	6580	108
GR	6581	125	6582	134	6584	137	6586	145	6588	148
GR	6589	171	6589	226						
X1	130	16	91	157	65	80	75			
X3	10							6594	6594	
GR	6593	0	6593	19	6593.5	36	6593	58	6592	76
GR	6590	81	6588	91	6586	99	6584	107	6582	125
GR	6584	149	6586	157	6588	163	6589	167	6589	190
GR	6590	223								

X1	140	14	109	172	15	15	15			
GR	6594	0	6592	49	6592	66	6594	92	6591	109
GR	6587	109.05	6582.5	133	6587.7	171.95	6591	172	6594	184
GR	6592	206	6590.5	242	6592	314	6594	344		
X1	140.1				.1	.1	.1			
BT	-5	92	6594	6594	109	6595	6591	133	6595	6591
BT		172	6595	6591	184	6594	6594			
X1	150	15	144	209	15	15	15			
X3	10									
GR	6596	0	6594	41	6592	92	6590	136	6588	144
GR	6586	154	6584	165	6582.8	175	6584	199	6586	209
GR	6588	217	6590	220	6590	247	6592	357	6594	385
X1	160	15	164	319	90	105	80			
GR	6598	0	6596	89	6594	143	6592	164	6590	168
GR	6588	172	6586	178	6584	198	6586	230	6588	262
GR	6590	305	6592	319	6594	329	6596	339	6598	351
QT	2	1900	1200							
X1	170	20	68	333	375	480	445			
GR	6610	0	6608	19	6606	54	6604	68	6602	76
GR	6600	81	6598	86	6596	107	6596	130	6596.2	142
GR	6596	152	6595	209	6596	214	6598	220	6600	233
GR	6602	241	6604	333	6606	358	6608	377	6610	398
X1	180	21	85	162	210	250	160			
X3	10							6611	6611	
GR	6614	0	6612	48	6610	80	6608	85	6606	92
GR	6604	100	6602	110	6600	120	6599	136	6600	145
GR	6602	157	6604	162	6606	170	6608	183	6606	213
GR	6604	239	6604	255	6606	281	6608	288	6610	296
GR	6612	373								
X1	190	17	97	160	15	15	15			
GR	6616	0	6614	26	6612	65	6607.9	97	6603.9	97.05
GR	6599.4	134	6603.4	159.95	6607.9	160	6610	175	6608	193
GR	6606	208	6604	225	6604	254	6606	271	6608	278
GR	6610	286	6612	372						
X1	190.1				.1	.1	.1			
BT	-5	65	6612	6612	97	-6611.9	6607.9	134	6611.9	6607.9
BT		160	6611.9	6607.9	175	6610	6610			
X1	200	22	93	162	15	15	15			
X3	10									
GR	6616	0	6614	22	6612	64	6610	80	6608	93
GR	6606	102	6604	112	6602	117	6600	132	6600	144
GR	6602	155	6604	162	6606	169	6608	175	6608	182
GR	6606	205	6604	217	6604	245	6606	263	6608	270
GR	6610	279	6612	377						

X1	210	15	97	249	65	110	65			
GR	6616	0	6614	18	6612	85	6610	97	6608	105
GR	6606	108	6604	112	6602	118	6600.9	129	6602	147
GR	6604	215	6606	236	6608	242	6610	249	6612	370
X1	220	23	65	165	145	175	145			
GR	6626	0	6624	13	6622	34	6620	53	6618	65
GR	6610	86	6608	88	6606	91	6604	95	6603	103
GR	6604	133	6606	151	6608	160	6610	165	6612	207
GR	6612	213	6610	225	6609	242	6610	262	6612	272
GR	6614	281	6616	293	6618	342				
X1	230	14	8	213	880	820	880			
GR	6640	0	6638	8	6630	23	6628	27	6626	33
GR	6624	73	6623	85	6624	119	6626	184	6628	189
GR	6630	193	6640	213	6642	230	6644	267		
X1	240	20	50	236	275	435	315			
GR	6644	0	6642	50	6640	54	6638	56	6636	60
GR	6634	64	6632	68	6631	75	6632	137	6630.5	173
GR	6630.5	193	6632	203	6634	211	6636	219	6638	227
GR	6640	233	6642	236	6644	239	6646	250	6648	295
X1	250	17	40	123	110	185	115			
GR	6646	0	6644	33	6642	40	6640	45	6638	67
GR	6636	77	6634.7	91	6636	108	6638	113	6640	117
GR	6642	119	6644	123	6646	145	6648	155	6648	162
GR	6648	193	6650	201						
X1	260	19	130	226	225	195	205			
GR	6660	0	6658	22	6656	42	6654	122	6652	130
GR	6650	137	6648	139	6646	141	6644	146	6642	154
GR	6640.7	183	6642	195	6644	201	6646	206	6648	211
GR	6650	216	6652	226	6654	279	6654	303		
X1	270	22	122	201	250	205	240			
GR	6660	0	6658	10	6657.2	16	6658	25	6660	40
GR	6660.8	64	6660	105	6658	122	6656	140	6654	144
GR	6652	147	6650	153	6648.2	175	6650	189	6652	192
GR	6654	195	6656	197	6658	201	6658.5	206	6658	214
GR	6656	224	6654	245						
NC			.015							
X1	280	31	248	320	185	270	205			
X3	10							6676	6676	
GR	6665	0	6664	40	6666	80	6668	112	6670	155
GR	6671	206	6670	215	6668	224	6666	231	6664	238
GR	6662	244	6660	248	6657.8	252	6657.6	262	6661.6	262.05
GR	6661.6	262.95	6657.6	263	6653.6	276	6653.7	286	6657.8	299
GR	6661.8	299.05	6661.8	299.95	6657.8	300	6658	310	6660	320
GR	6662	326	6664	333	6666	338	6668	348	6670	360
GR	6668	425								

X1	290	16	155	221	35	15	25			
GR	6675.4	0	6669.8	155	6658.42	155.05	6658.22	165	6662.22	165.05
GR	6662.2	165.95	6658.22	166	6654.22	178	6654.22	188	6658.22	200
GR	6662.2	200.05	6662.22	200.95	6658.22	201	6658.42	210.95	6669.8	211
GR	6676	339								
X1	290.1				.1	.1	.1			
BT	-5	0	6675.4	6675.4	155	6677.05	6669.8	178	6677.05	6669.8
BT		211	6677.05	6669.8	339	6676	6676			
X1	300	16	160	216	65	65	65			
GR	6675.2	0	6669.8	160	6659.8	160.05	6659.6	170	6663.6	170.05
GR	6663.6	170.95	6659.6	171	6655.6	183	6655.6	193	6659.6	205
GR	6663.6	205.05	6663.6	205.95	6659.6	206	6659.6	215.95	6669.8	216
GR	6677	331								
X1	300.1				.1	.1	.1			
BT	-5	0	6675.20	6675.20	160	6677.05	6669.80	183	6677.05	6669.80
BT		216	6677.05	6669.80	331	6677	6677			
X1	310	24	218	287	15	35	25			
X3	10							6677	6677	
GR	6675.6	0	6674	70	6672	113	6670	164	6668.5	180
GR	6662	218	6661	231	6665	231.05	6665	231.95	6661	232
GR	6656.2	248	6656.3	259	6661	271	6665	271.05	6665	271.95
GR	6661	272	6662	287	6664	291	6666	295	6668	299
GR	6670	303	6672	309	6674	314	6677.4	380		
NC			.050							
X1	320	18	199	319	180	165	165			
GR	6683.7	0	6682	20	6676	76	6674	96	6670	199
GR	6668	216	6666	231	6664	251	6663	273	6664	297
GR	6666	308	6668	314	6670	319	6672	325	6674	330
GR	6676	398	6678	405	6680	410				

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= 0.300 CEHV= 0.500
*SECNO 100.000
3720 CRITICAL DEPTH ASSUMED

100.000	3.56	6577.67	6577.67	6579.00	6578.86	1.19	0.00	0.00	6585.00
2055.0	0.0	2055.0	0.0	0.0	234.4	0.0	0.0	0.0	6582.00
0.00	0.00	8.77	0.00	0.000	0.050	0.000	0.000	6574.10	34.00
0.028561	0.	0.	0.	0	18	0	0.00	100.99	135.00

*SECNO 110.000

110.000	4.50	6581.00	6580.81	0.00	6582.14	1.14	3.26	0.02	6588.00
2055.0	0.0	2055.0	0.0	0.0	240.2	0.0	0.7	0.3	6584.00
0.00	0.00	8.56	0.00	0.000	0.050	0.000	0.000	6576.50	31.99
0.022236	165.	130.	85.	2	11	0	0.00	88.51	120.50

*SECNO 120.000

120.000	4.63	6584.33	6584.16	0.00	6585.56	1.24	3.38	0.05	6588.00
2055.0	0.0	2055.0	0.0	0.0	230.2	0.0	1.5	0.6	6588.00
0.01	0.00	8.93	0.00	0.000	0.050	0.000	0.000	6579.70	57.36
0.022769	100.	150.	160.	2	5	0	0.00	80.96	138.31

*SECNO 130.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6594.00 ELREA= 6594.00

130.000	4.96	6586.96	6586.96	0.00	6588.61	1.65	1.81	0.20	6588.00
2055.0	0.0	2055.0	0.0	0.0	199.5	0.0	1.9	0.7	6586.00
0.01	0.00	10.30	0.00	0.000	0.050	0.000	0.000	6582.00	95.16
0.025639	65.	75.	80.	0	8	0	0.00	61.84	157.00

*SECNO 140.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
140.000	5.68	6588.18	6588.18	0.00	6589.79	1.61	0.39	0.01	6591.00
2055.0	0.0	2055.0	0.0	0.0	201.9	0.0	2.0	0.7	6591.00
0.01	0.00	10.18	0.00	0.000	0.050	0.000	0.000	6582.50	109.04
0.026052	15.	15.	15.	0	8	0	0.00	62.92	171.96

*SECNO 140.100

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6594.00 MAX ELLC= 6591.00

140.100	5.68	6588.18	6588.14	0.00	6589.79	1.61	0.00	0.00	6591.00
2055.0	0.0	2055.0	0.0	0.0	202.0	0.0	2.0	0.7	6591.00
0.01	0.00	10.17	0.00	0.000	0.050	0.000	0.000	6582.50	109.04
0.025989	0.	0.	0.	0	20	0	0.00	62.92	171.96

*SECNO 150.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.63

150.000	6.98	6589.78	6587.58	0.00	6590.25	0.47	0.12	0.34	6588.00
2055.0	17.4	1900.8	136.7	6.3	345.0	24.6	2.1	0.7	6586.00
0.01	2.75	5.51	5.56	0.030	0.050	0.030	0.000	6582.80	136.88
0.003762	15.	15.	15.	4	15	0	0.00	82.78	219.67

*SECNO 160.000

160.000	6.33	6590.33	6588.42	0.00	6590.63	0.30	0.33	0.05	6592.00
2055.0	0.0	2055.0	0.0	0.0	466.5	0.0	2.8	1.0	6592.00
0.02	0.00	4.41	0.00	0.000	0.050	0.000	0.000	6584.00	167.34
0.004461	90.	80.	105.	3	14	0	0.00	139.96	307.30

*SECNO 170.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

170.000	2.80	6597.80	6597.80	0.00	6598.75	0.94	4.01	0.32	6604.00
1900.0	0.0	1900.0	0.0	0.0	243.9	0.0	6.5	2.3	6604.00
0.03	0.00	7.79	0.00	0.000	0.050	0.000	0.000	6595.00	88.05
0.030262	375.	445.	480.	0	14	0	0.00	131.36	219.41

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 180.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6611.00 ELREA= 6611.00

180.000	4.94	6603.94	6603.94	0.00	6605.50	1.55	4.46	0.30	6608.00
1900.0	0.0	1900.0	0.0	0.0	190.0	0.0	7.3	2.7	6604.00
0.04	0.00	10.00	0.00	0.000	0.050	0.000	0.000	6599.00	100.28
0.025745	210.	160.	250.	0	14	0	0.00	61.58	161.86

*SECNO 190.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.58

190.000	5.87	6605.27	6604.78	0.00	6605.98	0.71	0.23	0.25	6607.90
1900.0	0.0	1632.7	267.3	0.0	234.1	50.4	7.3	2.7	6607.90
0.04	0.00	6.98	5.30	0.000	0.050	0.030	0.000	6599.40	97.03
0.010332	15.	15.	15.	7	8	0	0.00	113.49	264.77

*SECNO 190.100

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6610.00 MAX ELLC= 6607.90

190.100	5.88	6605.28	6604.81	0.00	6605.98	0.71	0.00	0.00	6607.90
1900.0	0.0	1631.6	268.4	0.0	234.4	50.7	7.3	2.7	6607.90
0.04	0.00	6.96	5.30	0.000	0.050	0.030	0.000	6599.40	97.03
0.010274	0.	0.	0.	0	17	0	0.00	113.57	264.82

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 200.000

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6608.00 ELREA= 6604.00

200.000	5.39	6605.39	6605.03	0.00	6606.19	0.79	0.16	0.04	6608.00
1900.0	0.0	1574.5	325.5	0.0	212.5	56.9	7.4	2.8	6604.00
0.04	0.00	7.41	5.72	0.000	0.050	0.030	0.000	6600.00	105.04
0.011027	15.	15.	15.	2	15	0	0.00	110.73	257.53

*SECNO 210.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.63

210.000	5.59	6606.49	6604.76	0.00	6606.78	0.29	0.44	0.15	6610.00
1900.0	0.0	1900.0	0.0	0.0	442.1	0.0	8.0	3.0	6610.00
0.04	0.00	4.30	0.00	0.000	0.050	0.000	0.000	6600.90	107.27
0.004148	65.	65.	110.	2	19	0	0.00	130.20	237.47

*SECNO 220.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

220.000	4.23	6607.23	6607.23	0.00	6608.70	1.47	1.24	0.59	6618.00
1900.0	0.0	1900.0	0.0	0.0	195.4	0.0	9.1	3.3	6610.00
0.05	0.00	9.73	0.00	0.000	0.050	0.000	0.000	6603.00	89.15
0.026498	145.	145.	175.	0	15	0	0.00	67.38	156.54

*SECNO 230.000

3301 HV CHANGED MORE THAN HVINS

230.000	3.60	6626.60	6626.23	0.00	6627.18	0.58	18.22	0.27	6638.00
1900.0	0.0	1900.0	0.0	0.0	311.2	0.0	14.2	5.5	6640.00
0.09	0.00	6.11	0.00	0.000	0.050	0.000	0.000	6623.00	31.21
0.016617	880.	880.	820.	4	19	0	0.00	154.28	185.49

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 240.000									
240.000	2.65	6633.15	6633.09	0.00	6633.99	0.84	6.68	0.13	6642.00
1900.0	0.0	1900.0	0.0	0.0	257.6	0.0	16.2	6.6	6642.00
0.10	0.00	7.37	0.00	0.000	0.050	0.000	0.000	6630.50	65.71
0.027953	275.	315.	435.	3	19	0	0.00	141.88	207.58
*SECNO 250.000									
3301 HV CHANGED MORE THAN HVINS									
7185 MINIMUM SPECIFIC ENERGY									
3720 CRITICAL DEPTH ASSUMED									
250.000	5.04	6639.74	6639.74	0.00	6641.19	1.45	3.13	0.30	6642.00
1900.0	0.0	1900.0	0.0	0.0	196.8	0.0	16.8	6.9	6644.00
0.10	0.00	9.66	0.00	0.000	0.050	0.000	0.000	6634.70	47.87
0.026492	110.	115.	185.	0	17	0	0.00	68.60	116.48
*SECNO 260.000									
7185 MINIMUM SPECIFIC ENERGY									
3720 CRITICAL DEPTH ASSUMED									
260.000	4.45	6645.15	6645.15	0.00	6646.72	1.57	5.36	0.06	6652.00
1900.0	0.0	1900.0	0.0	0.0	189.0	0.0	17.7	7.2	6652.00
0.11	0.00	10.05	0.00	0.000	0.050	0.000	0.000	6640.70	143.13
0.025790	225.	205.	195.	0	11	0	0.00	60.73	203.87
*SECNO 270.000									
7185 MINIMUM SPECIFIC ENERGY									
3720 CRITICAL DEPTH ASSUMED									
270.000	5.14	6653.34	6653.34	0.00	6655.14	1.80	6.10	0.11	6658.00
1900.0	0.0	1900.0	0.0	0.0	176.5	0.0	18.8	7.5	6658.00
0.11	0.00	10.76	0.00	0.000	0.050	0.000	0.000	6648.20	144.99
0.025012	250.	240.	205.	0	8	0	0.00	49.03	194.01
*SECNO 280.000									
3265 DIVIDED FLOW									
7185 MINIMUM SPECIFIC ENERGY									
3720 CRITICAL DEPTH ASSUMED									

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6676.00 ELREA= 6676.00

280.000	5.81	6659.41	6659.41	0.00	6660.89	1.48	1.26	0.09	6660.00
1900.0	0.0	1900.0	0.0	0.0	194.5	0.0	19.6	7.8	6660.00
0.12	0.00	9.77	0.00	0.000	0.015	0.000	0.000	6653.60	249.07
0.002712	185.	205.	270.	0	8	0	0.00	66.08	317.06

*SECNO 290.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

290.000	5.73	6659.96	6659.96	0.00	6661.69	1.74	0.07	0.13	6669.80
1900.0	0.0	1900.0	0.0	0.0	179.6	0.0	19.7	7.8	6669.80
0.12	0.00	10.58	0.00	0.000	0.015	0.000	0.000	6654.22	155.04
0.002953	35.	25.	15.	0	5	0	0.00	54.00	210.96

*SECNO 290.100

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6675.40 MAX ELLC= 6669.80

290.100	6.49	6660.71	6659.97	0.00	6661.87	1.16	0.00	0.17	6669.80
1900.0	0.0	1900.0	0.0	0.0	220.3	0.0	19.7	7.8	6669.80
0.12	0.00	8.63	0.00	0.000	0.015	0.000	0.000	6654.22	155.04
0.001636	0.	0.	0.	12	19	0	0.00	54.04	210.96

*SECNO 300.000

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

300.000	5.73	6661.33	6661.33	0.00	6663.05	1.73	0.14	0.29	6669.80
1900.0	0.0	1900.0	0.0	0.0	180.2	0.0	20.0	7.9	6669.80
0.12	0.00	10.55	0.00	0.000	0.015	0.000	0.000	6655.60	160.04
0.002932	65.	65.	65.	0	15	0	0.00	54.00	215.96

*SECNO 300.100

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6675.20 MAX ELLC= 6669.80

300.100	6.46	6662.06	6661.33	0.00	6663.22	1.16	0.00	0.17	6669.80
1900.0	0.0	1900.0	0.0	0.0	219.5	0.0	20.0	7.9	6669.80
0.12	0.00	8.65	0.00	0.000	0.015	0.000	0.000	6655.60	160.04
0.001654	0.	0.	0.	12	19	0	0.00	54.05	215.96

*SECNO 310.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6677.00 ELREA= 6677.00

310.000	6.16	6662.36	6662.36	0.00	6663.82	1.46	0.05	0.15	6662.00
1900.0	0.0	1900.0	0.0	0.0	195.8	0.0	20.1	7.9	6662.00
0.12	0.00	9.70	0.00	0.000	0.015	0.000	0.000	6656.20	218.00
0.002625	15.	25.	35.	0	12	0	0.00	67.07	287.00

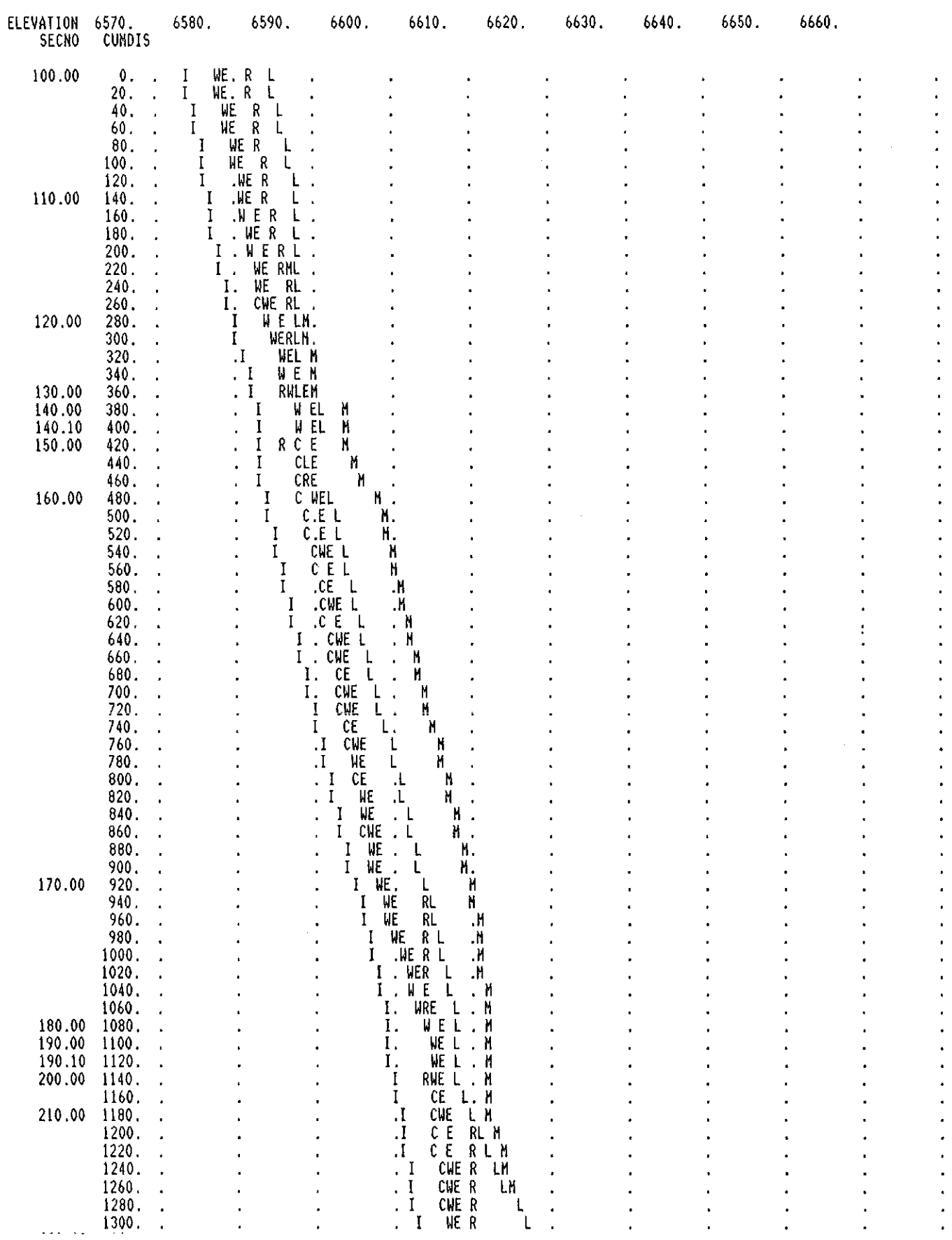
SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

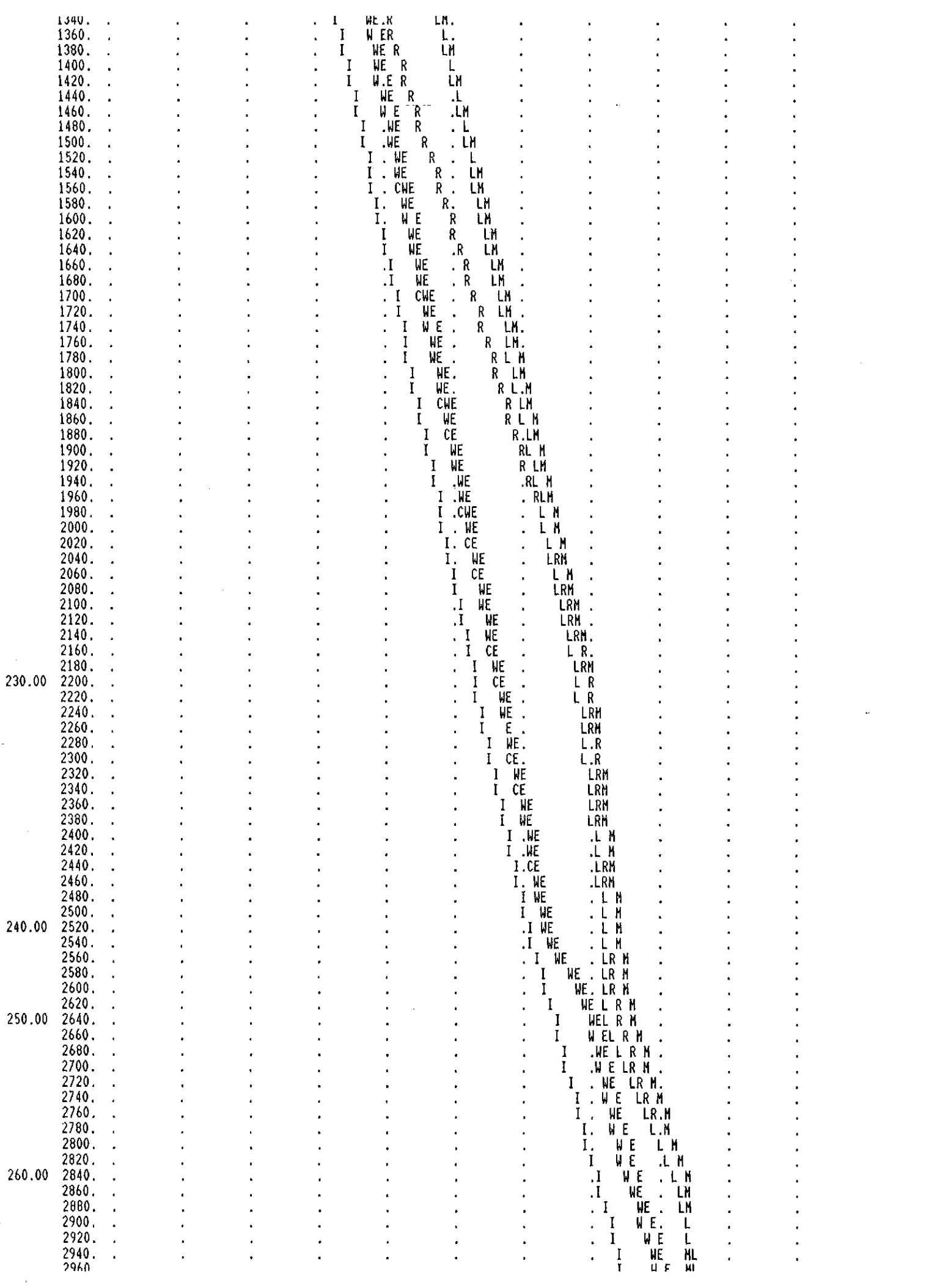
*SECNO 320.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

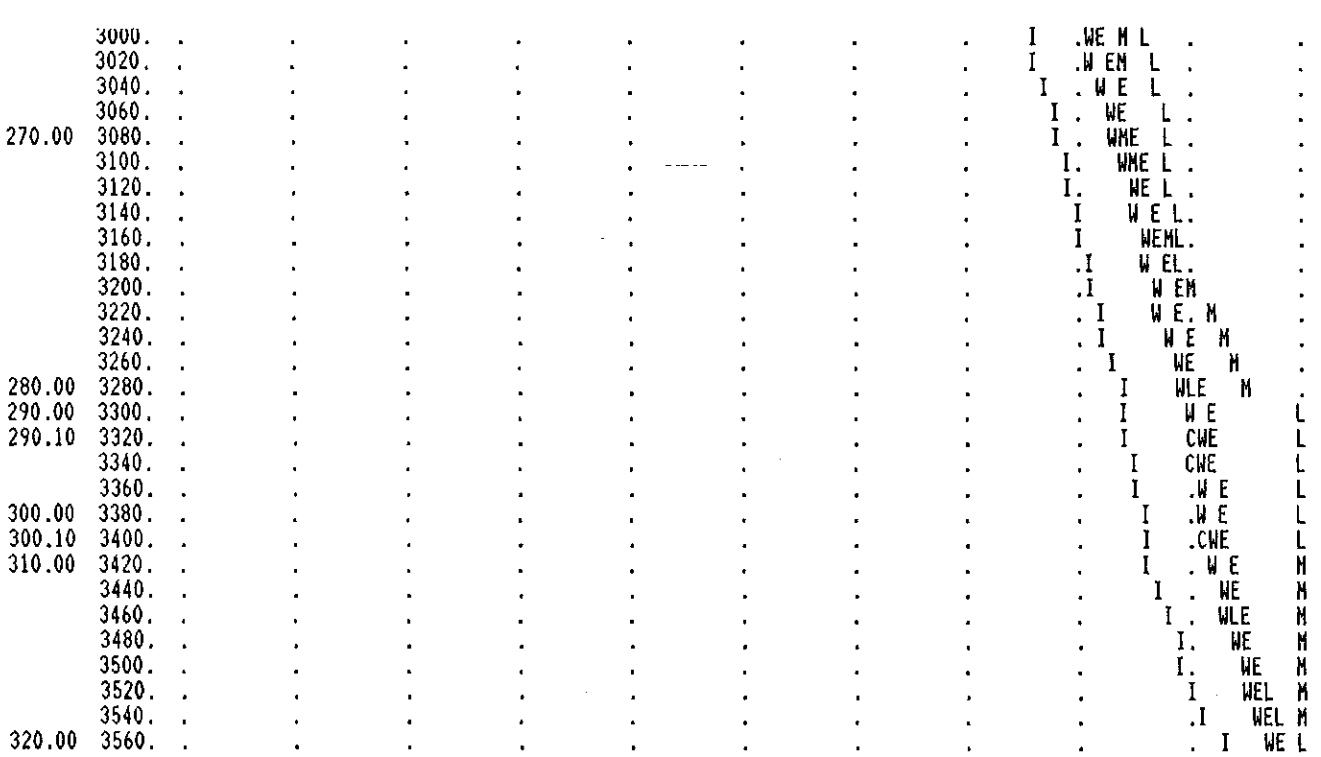
320.000	3.80	6666.80	6666.80	0.00	6668.06	1.26	1.01	0.06	6670.00
1900.0	0.0	1900.0	0.0	0.0	210.9	0.0	20.9	8.2	6670.00
0.13	0.00	9.01	0.00	0.000	0.050	0.000	0.000	6663.00	225.01
0.027740	180.	165.	165.	0	14	0	0.00	85.39	310.40

PROFILE FOR STREAM PINE CREEK CORRIDOR

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA



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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

PINE CREEK CORRIDOR

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	CRIWS	DEPTH	TOPWID	VCH	XLCH	K*CHSL	CUMDS
*	100.000	2055.00	6577.67	6577.67	3.56	100.99	8.77	0.00	0.00	0.00
	110.000	2055.00	6581.00	6580.81	4.50	88.51	8.56	130.00	18.46	130.00
	120.000	2055.00	6584.33	6584.16	4.63	80.96	8.93	150.00	21.33	280.00
*	130.000	2055.00	6586.96	6586.96	4.96	61.84	10.30	75.00	30.66	355.00
*	140.000	2055.00	6588.18	6588.18	5.68	62.92	10.18	15.00	33.33	370.00
	140.100	2055.00	6588.18	6588.14	5.68	62.92	10.17	0.10	0.00	370.10
*	150.000	2055.00	6589.78	6587.58	6.98	82.78	5.51	15.00	19.99	385.10
	160.000	2055.00	6590.33	6588.42	6.33	139.96	4.41	80.00	15.00	465.10
*	170.000	1900.00	6597.80	6597.80	2.80	131.36	7.79	445.00	24.72	910.10
*	180.000	1900.00	6603.94	6603.94	4.94	61.58	10.00	160.00	25.00	1070.10
*	190.000	1900.00	6605.27	6604.78	5.87	113.49	6.98	15.00	26.66	1085.10
	190.100	1900.00	6605.28	6604.81	5.88	113.57	6.96	0.10	0.00	1085.20
	200.000	1900.00	6605.39	6605.03	5.39	110.73	7.41	15.00	40.01	1100.20
*	210.000	1900.00	6606.49	6604.76	5.59	130.20	4.30	65.00	13.84	1165.20
*	220.000	1900.00	6607.23	6607.23	4.23	67.38	9.73	145.00	14.48	1310.20
	230.000	1900.00	6626.60	6626.23	3.60	154.28---	6.11	880.00	22.73	2190.20
	240.000	1900.00	6633.15	6633.09	2.65	141.88	7.37	315.00	23.81	2505.20

	SECNO	Q	CWSEL	CRIWS	DEPTH	TOPWID	VCH	XLCH	K*CHSL	CUMDS
*	250.000	1900.00	6639.74	6639.74	5.04	68.60	9.66	115.00	36.52	2620.20
*	260.000	1900.00	6645.15	6645.15	4.45	60.73	10.05	205.00	29.27	2825.20
*	270.000	1900.00	6653.34	6653.34	5.14	49.03	10.76	240.00	31.25	3065.20
*	280.000	1900.00	6659.41	6659.41	5.81	66.08	9.77	205.00	26.34	3270.20
*	290.000	1900.00	6659.96	6659.96	5.73	54.00	10.58	25.00	24.80	3295.20
	290.100	1900.00	6660.71	6659.97	6.49	54.04	8.63	0.10	0.00	3295.30
*	300.000	1900.00	6661.33	6661.33	5.73	54.00	10.55	65.00	21.23	3360.30
	300.100	1900.00	6662.06	6661.33	6.46	54.05	8.65	0.10	0.00	3360.40
*	310.000	1900.00	6662.36	6662.36	6.16	67.07	9.70	25.00	24.00	3385.40
*	320.000	1900.00	6666.80	6666.80	3.80	85.39	9.01	165.00	41.21	3550.40

PINE CREEK CORRIDOR

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	100.000	0.00	0.00	0.00	6574.10	2055.00	6577.67	6577.67	6578.86	285.61	8.77	234.38	121.60
	110.000	130.00	0.00	0.00	6576.50	2055.00	6581.00	6580.81	6582.14	222.36	8.56	240.17	137.81
	120.000	150.00	0.00	0.00	6579.70	2055.00	6584.33	6584.16	6585.56	227.69	8.93	230.17	136.19
*	130.000	75.00	0.00	0.00	6582.00	2055.00	6586.96	6586.96	6588.61	256.39	10.30	199.49	128.34
*	140.000	15.00	0.00	0.00	6582.50	2055.00	6588.18	6588.18	6589.79	260.52	10.18	201.89	127.32
	140.100	0.10	6594.00	6591.00	6582.50	2055.00	6588.18	6588.14	6589.79	259.89	10.17	202.04	127.47
*	150.000	15.00	0.00	0.00	6582.80	2055.00	6589.78	6587.58	6590.25	37.62	5.51	375.96	335.03
	160.000	80.00	0.00	0.00	6584.00	2055.00	6590.33	6588.42	6590.63	44.61	4.41	466.51	307.67
*	170.000	445.00	0.00	0.00	6595.00	1900.00	6597.80	6597.80	6598.75	302.62	7.79	243.88	109.22
*	180.000	160.00	0.00	0.00	6599.00	1900.00	6603.94	6603.94	6605.50	257.45	10.00	190.03	118.41
*	190.000	15.00	0.00	0.00	6599.40	1900.00	6605.27	6604.78	6605.98	103.32	6.98	284.49	186.93
	190.100	0.10	6610.00	6607.90	6599.40	1900.00	6605.28	6604.81	6605.98	102.74	6.96	285.04	187.45
	200.000	15.00	0.00	0.00	6600.00	1900.00	6605.39	6605.03	6606.19	110.27	7.41	269.41	180.93
*	210.000	65.00	0.00	0.00	6600.90	1900.00	6606.49	6604.76	6606.78	41.48	4.30	442.12	294.99
*	220.000	145.00	0.00	0.00	6603.00	1900.00	6607.23	6607.23	6608.70	264.98	9.73	195.37	116.72
	230.000	880.00	0.00	0.00	6623.00	1900.00	6626.60	6626.23	6627.18	166.17	6.11	311.15	147.39
	240.000	315.00	0.00	0.00	6630.50	1900.00	6633.15	6633.09	6633.99	279.53	7.37	257.65	113.64
*	250.000	115.00	0.00	0.00	6634.70	1900.00	6639.74	6639.74	6641.19	264.92	9.66	196.78	116.73
*	260.000	205.00	0.00	0.00	6640.70	1900.00	6645.15	6645.15	6646.72	257.90	10.05	189.02	118.31
*	270.000	240.00	0.00	0.00	6648.20	1900.00	6653.34	6653.34	6655.14	250.12	10.76	176.55	120.14
*	280.000	205.00	0.00	0.00	6653.60	1900.00	6659.41	6659.41	6660.89	27.12	9.77	194.48	364.84
*	290.000	25.00	0.00	0.00	6654.22	1900.00	6659.96	6659.96	6661.69	29.53	10.58	179.61	349.62
	290.100	0.10	6675.40	6669.80	6654.22	1900.00	6660.71	6659.97	6661.87	16.36	8.63	220.26	469.78
*	300.000	65.00	0.00	0.00	6655.60	1900.00	6661.33	6661.33	6663.05	29.32	10.55	180.16	350.87

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	300.100	0.10	6675.20	6669.80	6655.60	1900.00	6662.06	6661.33	6663.22	16.54	8.65	219.54	467.20
*	310.000	25.00	0.00	0.00	6656.20	1900.00	6662.36	6662.36	6663.82	26.25	9.70	195.81	370.81
*	320.000	165.00	0.00	0.00	6663.00	1900.00	6666.80	6666.80	6668.06	277.40	9.01	210.90	114.08

PINE CREEK CORRIDOR

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	100.000	2055.00	6577.67	0.00	0.00	-1.33	100.99	0.00
	110.000	2055.00	6581.00	0.00	3.34	0.00	88.51	130.00
	120.000	2055.00	6584.33	0.00	3.32	0.00	80.96	150.00
*	130.000	2055.00	6586.96	0.00	2.63	0.00	61.84	75.00
*	140.000	2055.00	6588.18	0.00	1.22	0.00	62.92	15.00
	140.100	2055.00	6588.18	0.00	0.01	0.00	62.92	0.10
*	150.000	2055.00	6589.78	0.00	1.60	0.00	82.78	15.00
	160.000	2055.00	6590.33	0.00	0.55	0.00	139.96	80.00
*	170.000	1900.00	6597.80	0.00	7.48	0.00	131.36	445.00
*	180.000	1900.00	6603.94	0.00	6.14	0.00	61.58	160.00
*	190.000	1900.00	6605.27	0.00	1.33	0.00	113.49	15.00
	190.100	1900.00	6605.28	0.00	0.00	0.00	113.57	0.10
	200.000	1900.00	6605.39	0.00	0.12	0.00	110.73	15.00
*	210.000	1900.00	6606.49	0.00	1.10	0.00	130.20	65.00
*	220.000	1900.00	6607.23	0.00	0.74	0.00	67.38	145.00
	230.000	1900.00	6626.60	0.00	19.37	0.00	154.28	880.00
	240.000	1900.00	6633.15	0.00	6.54	0.00	141.88	315.00
*	250.000	1900.00	6639.74	0.00	6.59	0.00	68.60	115.00
*	260.000	1900.00	6645.15	0.00	5.41	0.00	60.73	205.00
*	270.000	1900.00	6653.34	0.00	8.20	0.00	49.03	240.00
*	280.000	1900.00	6659.41	0.00	6.07	0.00	66.08	205.00
*	290.000	1900.00	6659.96	0.00	0.54	0.00	54.00	25.00
	290.100	1900.00	6660.71	0.00	0.76	0.00	54.04	0.10
*	300.000	1900.00	6661.33	0.00	0.61	0.00	54.00	65.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	300.100	1900.00	6662.06	0.00	0.73	0.00	54.05	0.10
*	310.000	1900.00	6662.36	0.00	0.30	0.00	67.07	25.00
*	320.000	1900.00	6666.80	0.00	4.44	0.00	85.39	165.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 100.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 130.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 130.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 140.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 140.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 150.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 170.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 170.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 180.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 180.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 190.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 210.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 220.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 220.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 250.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 250.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 260.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
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CAUTION SECNO= 290.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 300.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 300.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 310.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 310.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 320.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 320.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

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*  HEC-2 WATER SURFACE PROFILES             *
*                                           *
*  Version   4.6.2;  May 1991               *
*                                           *
*  RUN DATE    12JAN93    TIME   12:57:27   *
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*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*         (916) 756-1104                *
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X     X  X        X                 X     X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX             XXXXXXX
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:::                                        :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                        :::
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HAESTAD METHODS

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

SUPERCRITICAL RUN

THIS RUN EXECUTED 12JAN93 12:57:27

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**************************************
 HEC-2 WATER SURFACE PROFILES

 Version  4.6.2;  May 1991
**************************************
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This file is the output of REVGR - check all data!

Input File	This File
91025-2.HC2	91025SUP.HC2
SUBcritical	=> SUPERcritical

J1 fields 5 & 9 have been deleted

CI & X4 cards not modified

Check the order of any other comment (*) cards

```
T1 PINE CREEK CORRIDOR-PHASE 1
T2 OWA PROJECT NO. 91025-2
T3      PINE CREEK CORRIDOR
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2		1	-1				6667	

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	43	1	2	8	4	26	39	33	
150									

NC	.030	.030	.050	.3	.5					
QT	2	1900	1200							
X1	320	18	199	319	180	165	165			
GR	6683.7		6682	20	6676	76	6674	96	6670	199
GR	6668	216	6666	231	6664	251	6663	273	6664	297
GR	6666	308	6668	314	6670	319	6672	325	6674	330
GR	6676	398	6678	405	6680	410				
NC	.030	.030	.015	.3	.5					
QT	2	1900	1200							
X1	310	24	218	287	15	35	25			
X3	10							6677	6677	
GR	6675.6		6674	70	6672	113	6670	164	6668.5	180
GR	6662	218	6661	231	6665	231.05	6665	231.95	6661	232
GR	6656.2	248	6656.3	259	6661	271	6665	271.05	6665	271.95
GR	6661	272	6662	287	6664	291	6666	295	6668	299
GR	6670	303	6672	309	6674	314	6677.4	380		

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NC     .030     .030     .015      .3       .5
QT        2     1900     1200
X1      300       16      160      216       65       65       65
GR   6675.2             6669.8      160   6659.8   160.05   6659.6      170   6663.6   170.05
GR   6663.6   170.95   6659.6      171   6655.6      183   6655.6      193   6659.6      205
GR   6663.6   205.05   6663.6   205.95   6659.6      206   6659.6   215.95   6669.8      216
GR     6677      331

X1    299.9              160      216       .1       .1       .1
BT       -5          6675.20  6675.20      160  6677.05  6669.80      183  6677.05  6669.80
BT                       216  6677.05  6669.80      331     6677     6677

NC     .030     .030     .015      .3       .5
QT        2     1900     1200
X1      290       16      155      221       35       15       25
GR   6675.4             6669.8      155   6658.42   155.05   6658.22      165   6662.22   165.05
GR   6662.2   165.95   6658.22      166   6654.22      178   6654.22      188   6658.22      200
GR   6662.2   200.05   6662.22   200.95   6658.22      201   6658.42   210.95   6669.8       211
GR     6676      339

X1    289.9              155      221       .1       .1       .1
BT       -5          6675.4   6675.4      155  6677.05   6669.8      178  6677.05   6669.8
BT                       211  6677.05   6669.8      339     6676     6676

NC     .030     .030     .015      .3       .5
QT        2     1900     1200
X1      280       31      248      320      185      270      205
X3       10                                                   6676     6676
GR     6665             6664       40     6666       80     6668      112     6670      155
GR     6671      206     6670      215     6668      224     6666      231     6664      238
GR     6662      244     6660      248   6657.8      252   6657.6      262   6661.6   262.05
GR   6661.6   262.95   6657.6      263   6653.6      276   6653.7      286   6657.8      299
GR   6661.8   299.05   6661.8   299.95   6657.8      300     6658      310     6660      320
GR     6662      326     6664      333     6666      338     6668      348     6670      360
GR     6668      425

NC     .030     .030     .050      .3       .5
QT        2     1900     1200
X1      270       22      122      201      250      205      240
GR     6660             6658       10   6657.2       16     6658       25     6660       40
GR   6660.8       64     6660      105     6658      122     6656      140     6654      144
GR     6652      147     6650      153   6648.2      175     6650      189     6652      192
GR     6654      195     6656      197     6658      201   6658.5      206     6658      214
GR     6656      224     6654      245

NC     .030     .030     .050      .3       .5
QT        2     1900     1200
X1      260       19      130      226      225      195      205
GR     6660             6658       22     6656       42     6654      122     6652      130
GR     6650      137     6648      139     6646      141     6644      146     6642      154
GR   6640.7      183     6642      195     6644      201     6646      206     6648      211
GR     6650      216     6652      226     6654      279     6654      303
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NC      .030      .030      .050      .3        .5
QT         2      1900      1200
X1       250        17        40       123       110       185       115
GR      6646                6644        33      6642        40      6640        45      6638        67
GR      6636        77    6634.7        91      6636       108      6638       113      6640       117
GR      6642       119      6644       123      6646       145      6648       155      6648       162
GR      6648       193      6650       201

NC      .030      .030      .050      .3        .5
QT         2      1900      1200
X1       240        20        50       236       275       435       315
GR      6644                6642        50      6640        54      6638        56      6636        60
GR      6634        64      6632        68      6631        75      6632       137    6630.5       173
GR    6630.5       193      6632       203      6634       211      6636       219      6638       227
GR      6640       233.     6642       236      6644       239      6646       250      6648       295

NC      .030      .030      .050      .3        .5
QT         2      1900      1200
X1       230        14         8       213       880       820       880
GR      6640                6638         8      6630        23      6628        27      6626        33
GR      6624        73      6623        85      6624       119      6626       184      6628       189
GR      6630       193      6640       213      6642       230      6644       267

NC      .030      .030      .050      .3        .5
QT         2      1900      1200
X1       220        23        65       165       145       175       145
GR      6626                6624        13      6622        34      6620        53      6618        65
GR      6610        86      6608        88      6606        91      6604        95      6603       103
GR      6604       133      6606       151      6608       160      6610       165      6612       207
GR      6612       213      6610       225      6609       242      6610       262      6612       272
GR      6614       281      6616       293      6618       342

NC      .030      .030      .050      .3        .5
QT         2      1900      1200
X1       210        15        97       249        65       110        65
GR      6616                6614        18      6612        85      6610        97      6608       105
GR      6606       108      6604       112      6602       118    6600.9       129      6602       147
GR      6604       215      6606       236      6608       242      6610       249      6612       370

NC      .030      .030      .050      .3        .5
QT         2      1900      1200
X1       200        22        93       162        15        15        15
X3        10
GR      6616                6614        22      6612        64      6610        80      6608        93
GR      6606       102      6604       112      6602       117      6600       132      6600       144
GR      6602       155      6604       162      6606       169      6608       175      6608       182
GR      6606       205      6604       217      6604       245      6606       263      6608       270
GR      6610       279      6612       377
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NC      .030      .030      .050       .3       .5
QT         2      1900      1200
X1       190        17        97      160       15        15        15
GR      6616                6614       26     6612        65    6607.9        97    6603.9     97.05
GR    6599.4       134    6603.4   159.95    6607.9       160      6610       175      6608       193
GR      6606       208      6604      225      6604       254      6606       271      6608       278
GR      6610       286      6612      372

X1     189.9                  97      160        .1        .1        .1
BT        -5        65      6612     6612        97    6611.9    6607.9       134    6611.9    6607.9
BT                 160    6611.9   6607.9       175      6610      6610

NC      .030      .030      .050       .3       .5
QT         2      1900      1200
X1       180        21        85      162       210       250       160
X3        10                                                            6611      6611
GR      6614                6612       48     6610        80      6608        85      6606        92
GR      6604       100      6602      110      6600       120      6599       136      6600       145
GR      6602       157      6604      162      6606       170      6608       183      6606       213
GR      6604       239      6604      255      6606       281      6608       288      6610       296
GR      6612       373

NC      .030      .030      .050       .3       .5
QT         2      1900      1200
X1       170        20        68      333       375       480       445
GR      6610                6608       19     6606        54      6604        68      6602        76
GR      6600        81      6598       86     6596       107      6596       130    6596.2       142
GR      6596       152      6595      209      6596       214      6598       220      6600       233
GR      6602       241      6604      333      6606       358      6608       377      6610       398

NC      .030      .030      .050       .3       .5
QT         2      2055      1200
X1       160        15       164      319       90       105        80
GR      6598                6596       89     6594       143      6592       164      6590       168
GR      6588       172      6586      178      6584       198      6586       230      6588       262
GR      6590       305      6592      319      6594       329      6596       339      6598       351

NC      .030      .030      .050       .3       .5
QT         2      2055      1200
X1       150        15       144      209       15        15        15
X3        10
GR      6596                6594       41     6592        92      6590       136      6588       144
GR      6586       154      6584      165   6582.8       175      6584       199      6586       209
GR      6588       217      6590      220      6590       247      6592       357      6594       385

NC      .030      .030      .050       .3       .5
QT         2      2055      1200
X1       140        14       109      172       15        15        15
GR      6594                6592       49     6592        66      6594        92      6591       109
GR      6587    109.05    6582.5      133   6587.7    171.95      6591       172      6594       184
GR      6592       206    6590.5      242     6592       314      6594       344
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X1	139.9		109	172	.1	.1	.1			
BT	-5	92	6594	6594	109	6595	6591	133	6595	6591
BT		172	6595	6591	184	6594	6594			
NC	.030	.030	.050	.3	.5					
QT	2	2055	1200							
X1	130	16	91	157	65	80	75			
X3	10							6594	6594	
GR	6593		6593	19	6593.5	36	6593	58	6592	76
GR	6590	81	6588	91	6586	99	6584	107	6582	125
GR	6584	149	6586	157	6588	163	6589	167	6589	190
GR	6590	223								
NC	.030	.030	.050	.3	.5					
QT	2	2055	1200							
X1	120	17	40	148	100	160	150			
GR	6590		6589	36	6588	40	6586	49	6584	59
GR	6582	77	6581	89	6580	101	6579.7	105	6580	108
GR	6581	125	6582	134	6584	137	6586	145	6588	148
GR	6589	171	6589	226						
NC	.030	.030	.050	.3	.5					
QT	2	2055	1200							
X1	110	15	12	130	165	85	130			
GR	6589		6588	12	6586	15	6584	20	6582	29
GR	6580	35	6578	70	6577	99	6576.5	106	6578	112
GR	6580	119	6582	122	6584	130	6584.5	154	6584	173
NC	.030	.030	.050	.3	.5					
QT	2	2055	1200							
X1	100	14	17	153						
GR	6588		6586	13	6585	17	6580	25	6578	33
GR	6576	39	6575	42	6574.1	65	6575	81	6576	122
GR	6577	133	6580	142	6582	153	6582	219		

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CCHV= 0.300 CEHV= 0.500
*SECNO 320.000
3720 CRITICAL DEPTH ASSUMED

320.000	3.82	6666.82	6666.82	6667.00	6668.06	1.24	0.00	0.00	6670.00
1900.0	0.0	1900.0	0.0	0.0	212.7	0.0	0.0	0.0	6670.00
0.00	0.00	8.93	0.00	0.000	0.050	0.000	0.000	6663.00	224.85
0.027077	0.	0.	0.	0	7	0	0.00	85.61	310.46

CCHV= 0.300 CEHV= 0.500
*SECNO 310.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 0.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6677.00 ELREA= 6677.00

310.000	4.70	6660.90	6662.41	0.00	6665.15	4.26	2.00	0.91	6662.00
1900.0	0.0	1900.0	0.0	0.0	114.7	0.0	0.6	0.2	6662.00
0.00	0.00	16.56	0.00	0.000	0.015	0.000	0.000	6656.20	232.35
0.006840	180.	165.	165.	7	12	0	0.00	38.37	270.73

CCHV= 0.300 CEHV= 0.500
*SECNO 300.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

300.000	4.39	6659.99	6661.33	0.00	6664.77	4.77	0.23	0.15	6669.80
1900.0	0.0	1900.0	0.0	0.0	108.4	0.0	0.7	0.3	6669.80
0.00	0.00	17.53	0.00	0.000	0.015	0.000	0.000	6655.60	160.05
0.013421	15.	25.	35.	16	11	0	0.00	53.92	215.95

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 299.900

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6675.20 MAX ELLC= 6669.80

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3710 WSEL ASSUMED BASED ON MIN DIFF

299.900	5.39	6660.99	6661.33	0.00	6663.13	2.14	0.44	1.29	6669.80
1900.0	0.0	1900.0	0.0	0.0	161.8	0.0	0.9	0.3	6669.80
0.00	0.00	11.74	0.00	0.000	0.015	0.000	0.000	6655.60	160.04
0.004023	65.	65.	65.	20	19	0	0.00	53.98	215.96

CCHV= 0.300 CEHV= 0.500
*SECNO 290.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

290.000	4.67	6658.90	6659.97	0.00	6662.65	3.75	0.00	0.48	6669.80
1900.0	0.0	1900.0	0.0	0.0	122.3	0.0	0.9	0.3	6669.80
0.00	0.00	15.54	0.00	0.000	0.015	0.000	0.000	6654.22	155.05
0.009279	0.	0.	0.	12	8	0	0.00	53.94	210.95

*SECNO 289.900

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6675.40 MAX ELLC= 6669.80

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3710 WSEL ASSUMED BASED ON MIN DIFF

289.900	5.20	6659.42	6659.97	0.00	6661.89	2.47	0.17	0.39	6669.80
1900.0	0.0	1900.0	0.0	0.0	150.7	0.0	1.0	0.4	6669.80
0.01	0.00	12.60	0.00	0.000	0.015	0.000	0.000	6654.22	155.05
0.004951	35.	25.	15.	20	19	0	0.00	53.97	210.95

CCHV= 0.300 CEHV= 0.500
*SECNO 280.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6676.00 ELREA= 6676.00

280.000	4.81	6658.41	6659.41	0.00	6661.65	3.24	0.00	0.23	6660.00
1900.0	0.0	1900.0	0.0	0.0	131.5	0.0	1.0	0.4	6660.00
0.01	0.00	14.45	0.00	0.000	0.015	0.000	0.000	6653.60	250.90
0.008044	0.	0.	0.	16	8	0	0.00	59.17	312.03

CCHV= 0.300 CEHV= 0.500
*SECNO 270.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.89

270.000	3.61	6651.81	6653.32	0.00	6656.92	5.11	4.17	0.56	6658.00
1900.0	0.0	1900.0	0.0	0.0	104.7	0.0	1.5	0.6	6658.00
0.01	0.00	18.14	0.00	0.000	0.050	0.000	0.000	6648.20	147.58
0.121410	185.	205.	270.	6	8	0	0.00	44.12	191.71

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= 0.300 CEHV= 0.500
*SECNO 260.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

260.000	4.43	6645.13	6645.13	0.00	6646.72	1.58	11.72	9.63	6652.00
1900.0	0.0	1900.0	0.0	0.0	188.1	0.0	2.3	0.9	6652.00
0.01	0.00	10.10	0.00	0.000	0.050	0.000	0.000	6640.70	143.17
0.026179	250.	240.	205.	20	11	0	0.00	60.66	203.83

CCHV= 0.300 CEHV= 0.500
*SECNO 250.000

250.000	5.01	6639.71	6639.74	0.00	6641.19	1.48	5.48	0.05	6642.00
1900.0	0.0	1900.0	0.0	0.0	194.6	0.0	3.2	1.2	6644.00
0.02	0.00	9.76	0.00	0.000	0.050	0.000	0.000	6634.70	48.22
0.027269	225.	205.	195.	2	8	0	0.00	68.19	116.41

CCHV= 0.300 CEHV= 0.500
*SECNO 240.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.34

240.000	1.91	6632.41	6633.08	0.00	6634.77	2.37	6.15	0.27	6642.00
1900.0	0.0	1900.0	0.0	0.0	153.9	0.0	3.7	1.5	6642.00
0.02	0.00	12.34	0.00	0.000	0.050	0.000	0.000	6630.50	67.19
0.148781	110.	115.	185.	5	11	0	0.00	137.42	204.61

CCHV= 0.300 CEHV= 0.500
*SECNO 230.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

230.000	3.24	6626.24	6626.24	0.00	6627.09	0.85	18.39	19.69	6638.00
1900.0	0.0	1900.0	0.0	0.0	256.8	0.0	5.2	2.5	6640.00
0.04	0.00	7.40	0.00	0.000	0.050	0.000	0.000	6623.00	32.27
0.030947	275.	315.	435.	20	14	0	0.00	152.33	184.61

CCHV= 0.300 CEHV= 0.500
*SECNO 220.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

220.000	4.23	6607.23	6607.23	0.00	6608.70	1.47	25.20	13.21	6618.00
1900.0	0.0	1900.0	0.0	0.0	195.2	0.0	9.7	4.7	6610.00
0.06	0.00	9.73	0.00	0.000	0.050	0.000	0.000	6603.00	89.16
0.026578	880.	880.	820.	20	11	0	0.00	67.37	156.52

CCHV= 0.300 CEHV= 0.500
*SECNO 210.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

210.000	3.87	6604.77	6604.77	0.00	6605.82	1.05	4.07	0.41	6610.00
1900.0	0.0	1900.0	0.0	0.0	230.8	0.0	10.4	5.0	6610.00
0.07	0.00	8.23	0.00	0.000	0.050	0.000	0.000	6600.90	110.46
0.029697	145.	145.	175.	20	15	0	0.00	112.61	223.07

CCHV= 0.300 CEHV= 0.500
*SECNO 200.000

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6608.00 ELREA= 6604.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
200.000	5.02	6605.02	6605.02	0.00	6606.13	1.11	1.48	1.66	6608.00
1900.0	0.0	1674.4	225.6	0.0	191.7	38.3	10.8	5.2	6604.00
0.07	0.00	8.74	5.90	0.000	0.050	0.030	0.000	6600.00	106.89
0.016820	65.	65.	110.	20	18	0	0.00	102.00	254.19

CCHV= 0.300 CEHV= 0.500
*SECNO 190.000

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

190.000	5.38	6604.78	6604.78	0.00	6605.88	1.10	0.27	0.37	6607.90
1900.0	0.0	1752.2	147.8	0.0	203.3	27.7	10.9	5.3	6607.90
0.07	0.00	8.62	5.33	0.000	0.050	0.030	0.000	6599.40	97.04
0.018670	15.	15.	15.	20	8	0	0.00	105.16	260.62

*SECNO 189.900

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6610.00 MAX ELLC= 6607.90

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

189.900	5.41	6604.81	6604.81	0.00	6605.88	1.06	0.27	0.04	6607.90
1900.0	0.0	1743.6	156.4	0.0	205.5	29.2	11.0	5.3	6607.90
0.07	0.00	8.48	5.35	0.000	0.050	0.030	0.000	6599.40	97.04
0.017856	15.	15.	15.	20	17	0	0.00	105.76	260.91

CCHV= 0.300 CEHV= 0.500
*SECNO 180.000

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6611.00 ELREA= 6611.00

180.000	4.55	6603.55	6603.93	0.00	6605.58	2.03	0.00	0.29	6608.00
1900.0	0.0	1900.0	0.0	0.0	166.2	0.0	11.0	5.3	6604.00
0.07	0.00	11.43	0.00	0.000	0.050	0.000	0.000	6599.00	102.27
0.037630	0.	0.	0.	4	11	0	0.00	58.60	160.87

CCHV= 0.300 CEHV= 0.500
*SECNO 170.000

3301 HV CHANGED MORE THAN HVINS

170.000	2.62	6597.62	6597.80	0.00	6598.79	1.17	6.36	0.43	6604.00
1900.0	0.0	1900.0	0.0	0.0	219.1	0.0	11.7	5.6	6604.00
0.07	0.00	8.67	0.00	0.000	0.050	0.000	0.000	6595.00	90.05
0.042109	210.	160.	250.	3	14	0	0.00	128.79	218.84

CCHV= 0.300 CEHV= 0.500
*SECNO 160.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

160.000	4.44	6588.44	6588.44	0.00	6589.62	1.18	14.97	10.13	6592.00
2055.0	0.0	2055.0	0.0	0.0	235.4	0.0	14.0	6.8	6592.00
0.09	0.00	8.73	0.00	0.000	0.050	0.000	0.000	6584.00	171.13
0.027886	375.	445.	480.	20	14	0	0.00	100.22	271.35

CCHV= 0.300 CEHV= 0.500
*SECNO 150.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6588.00 ELREA= 6586.00

150.000	4.78	6587.58	6587.58	0.00	6589.11	1.53	2.07	1.82	6588.00
2055.0	0.0	2022.7	32.3	0.0	202.8	5.0	14.4	7.0	6586.00
0.09	0.00	9.98	6.43	0.000	0.050	0.030	0.000	6582.80	146.08
0.023987	90.	80.	105.	20	8	0	0.00	69.25	215.33

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= 0.300 CEHV= 0.500
*SECNO 140.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

140.000	5.64	6588.14	6588.14	0.00	6589.79	1.64	0.38	0.82	6591.00
2055.0	0.0	2055.0	0.0	0.0	199.8	0.0	14.5	7.0	6591.00
0.09	0.00	10.29	0.00	0.000	0.050	0.000	0.000	6582.50	109.04
0.026935	15.	15.	15.	20	11	0	0.00	62.92	171.96

*SECNO 139.900

3370 NORMAL BRIDGE, NRD= 5 MIN ELTRD= 6594.00 MAX ELLC= 6591.00

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

139.900	5.64	6588.14	6588.14	0.00	6589.79	1.65	0.41	0.75	6591.00
2055.0	0.0	2055.0	0.0	0.0	199.4	0.0	14.5	7.0	6591.00
0.09	0.00	10.31	0.00	0.000	0.050	0.000	0.000	6582.50	109.04
0.027108	15.	15.	15.	20	20	0	0.00	62.92	171.96

CCHV= 0.300 CEHV= 0.500
*SECNO 130.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.66

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 6594.00 ELREA= 6594.00

130.000	3.98	6585.98	6586.97	0.00	6589.29	3.31	0.00	0.50	6588.00
2055.0	0.0	2055.0	0.0	0.0	140.8	0.0	14.5	7.0	6586.00
0.09	0.00	14.59	0.00	0.000	0.050	0.000	0.000	6582.00	99.08
0.074730	0.	0.	0.	7	11	0	0.00	57.84	156.92

CCHV= 0.300 CEHV= 0.500

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 120.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

120.000	4.47	6584.17	6584.17	0.00	6585.56	1.39	3.15	1.16	6588.00
2055.0	0.0	2055.0	0.0	0.0	217.6	0.0	14.9	7.1	6588.00
0.09	0.00	9.44	0.00	0.000	0.050	0.000	0.000	6579.70	58.14
0.026817	65.	75.	80.	20	8	0	0.00	79.55	137.69

CCHV= 0.300 CEHV= 0.500
*SECNO 110.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

110.000	4.34	6580.84	6580.84	0.00	6582.13	1.29	4.04	0.34	6588.00
2055.0	0.0	2055.0	0.0	0.0	225.7	0.0	15.6	7.4	6584.00
0.10	0.00	9.10	0.00	0.000	0.050	0.000	0.000	6576.50	32.49
0.027018	100.	150.	160.	20	8	0	0.00	87.77	120.26

CCHV= 0.300 CEHV= 0.500
*SECNO 100.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

100.000	3.57	6577.67	6577.67	0.00	6578.86	1.19	3.61	2.08	6585.00
2055.0	0.0	2055.0	0.0	0.0	234.4	0.0	16.3	7.7	6582.00
0.10	0.00	8.77	0.00	0.000	0.050	0.000	0.000	6574.10	34.00
0.028542	165.	130.	85.	20	15	0	0.00	100.99	135.00

PROFILE FOR STREAM PINE CREEK CORRIDOR

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION  6574.    6594.    6614.    6634.    6654.    6674.    6694.    6714.    6734.    6754.
   SECNO   CUMDIS

  320.00      0.                                        I WEL . M
              20.                                       I WE  . M
              40.                                       I WE  . M
              60.                                      I WE   . M
              80.                                      I WE   . M
             100.                                     . I  WE  . M
             120.                                     . I WCE  .M
             140.                                     . I WLE  .M
             160.                                     .I WC E  .M
  310.00     180.                                     .I WC E  .M
  300.00     200.                                     .I WCE  L .M
             220.                                     .I WCE  L .M
             240.                                     .I WCE  L .M
  299.90     260.                                     .I WCE  L .M
  290.00     280.                                     I WCE   L .M
  289.90     300.                                     I  WE   L .M
  280.00     320.                                     I WCEM    .
             340.                                    I. WLEM    .
             360.                                    I. WEM     .
             380.                                    I.WCEM     .
             400.                                    I.W E      .
             420.                                   I .WLE      .
             440.                                   I WCE       .
             460.                                   I WCE       .
             480.                                   I WME       .
  270.00     500.                                  I WCEL       .
             520.                                  I WMEL       .
             540.                                 I WCME        .
             560.                                 I WCEL        .
             580.                                 I W EL        .
             600.                                I WCEML        .
             620.                                I WCEL         .
             640.                                I WE L         .
             660.                                I WE L         .
             680.                               I WCE L         .
             700.                               I WE LM         .
             720.                               I WE LM         .
  260.00     740.                              I  E  LM         .
             760.                              I WE LRM         .
             780.                              I WE LM.         .
             800.                             I  WELRM.         .
             820.                             I WE LM  .        .
             840.                             I WE LM  .        .
             860.                             I WELRM  .        .
             880.                            .I  E LM  .        .
             900.                            .I WELRM  .        .
             920.                            .I WELM   .        .
  250.00     940.                            I  WERM   .        .
             960.                            I WELRM   .        .
             980.                            I E LRM   .        .
            1000.                           I.WE LM    .        .
            1020.                           IWE  LM    .        .
            1040.                          I WE  LM    .        .
  240.00    1060.                          IWE   LM    .        .
            1080.                          IWE   LM    .        .
            1100.                          IWE   LM    .        .
            1120.                         I WE   LM    .        .
            1140.                         IWE.  LR     .        .
            1160.                         IWE.  LR     .        .
            1180.                         IWE.  LR     .        .
            1200.                         IWE.  LR     .        .
            1220.                        I E .  LM     .        .
            1240.                        IWE .  LM     .        .
            1260.                        IWE .  LM     .        .
            1280.                        IWE .  LM     .        .
            1300.                      I E   . LR      .        .
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        1340.  .        .        .    IWE  . LR  .  .  .  .  .  .  .
        1360.  .        .        .    IWE  . LR  .  .  .  .  .  .  .
230.00  1380.  .        .        .   I E   . LR  .  .  .  .  .  .  .
        1400.  .        .        .   I E   . LR  .  .  .  .  .  .  .
        1420.  .        .        .   I E   .LR  .  .  .  .  .  .  .
        1440.  .        .        .   IWE   .LR  .  .  .  .  .  .  .
        1460.  .        .        .   IWE   .LR  .  .  .  .  .  .  .
        1480.  .        .        .  I E    .LM  .  .  .  .  .  .  .
        1500.  .        .        .  I E    .L   .  .  .  .  .  .  .
        1520.  .        .        .  I E    LR   .  .  .  .  .  .  .
        1540.  .        .        .  IWE    LM   .  .  .  .  .  .  .
        1560.  .        .        . I WE    LM   .  .  .  .  .  .  .
        1580.  .        .        . I E     L    .  .  .  .  .  .  .
        1600.  .        .        . I E    LM    .  .  .  .  .  .  .
        1620.  .        .        . IWE    LM    .  .  .  .  .  .  .
        1640.  .        .        .I WE    LM    .  .  .  .  .  .  .
        1660.  .        .        .I WE   RL.    .  .  .  .  .  .  .
        1680.  .        .        .I E    RL.    .  .  .  .  .  .  .
        1700.  .        .        .I E   RLM.    .  .  .  .  .  .  .
        1720.  .        .        .IWE   RLM.    .  .  .  .  .  .  .
        1740.  .        .        I WE   RL .    .  .  .  .  .  .  .
        1760.  .        .        I WE  R L .    .  .  .  .  .  .  .
        1780.  .        .        I E   RLM .    .  .  .  .  .  .  .
        1800.  .        .        I E   RLM .    .  .  .  .  .  .  .
        1820.  .        .       I.WE  R L  .    .  .  .  .  .  .  .
        1840.  .        .       I.WE  R L  .    .  .  .  .  .  .  .
        1860.  .        .       I.E   RLM  .    .  .  .  .  .  .  .
        1880.  .        .       I.E  R LM  .    .  .  .  .  .  .  .
        1900.  .        .       IWE  R L   .    .  .  .  .  .  .  .
        1920.  .        .      I WE  R L   .    .  .  .  .  .  .  .
        1940.  .        .      I WE R  L   .    .  .  .  .  .  .  .
        1960.  .        .      I E  R LM   .    .  .  .  .  .  .  .
        1980.  .        .      I E  R L    .    .  .  .  .  .  .  .
        2000.  .        .     I WE R  L    .    .  .  .  .  .  .  .
        2020.  .        .     I WE R  L    .    .  .  .  .  .  .  .
        2040.  .        .     I WE R LM    .    .  .  .  .  .  .  .
        2060.  .        .     I E.R  L     .    .  .  .  .  .  .  .
        2080.  .        .    I  E.R  L     .    .  .  .  .  .  .  .
        2100.  .        .    I WE.R  L     .    .  .  .  .  .  .  .
        2120.  .        .    I WER   L     .    .  .  .  .  .  .  .
        2140.  .        .    I WER  L      .    .  .  .  .  .  .  .
        2160.  .        .    I E R  L      .    .  .  .  .  .  .  .
        2180.  .        .   I WER.  L      .    .  .  .  .  .  .  .
        2200.  .        .   I WER.  L      .    .  .  .  .  .  .  .
        2220.  .        .   I WER. L       .    .  .  .  .  .  .  .
        2240.  .        .   I WE . L       .    .  .  .  .  .  .  .
220.00  2260.  .        .  I  ER . L       .    .  .  .  .  .  .  .
        2280.  .        .  I WER .LM       .    .  .  .  .  .  .  .
        2300.  .        .  I WER .L        .    .  .  .  .  .  .  .
        2320.  .        .  I WER LM        .    .  .  .  .  .  .  .
        2340.  .        .  I WER L         .    .  .  .  .  .  .  .
        2360.  .        .  I E RLM         .    .  .  .  .  .  .  .
        2380.  .        .  I E RL.         .    .  .  .  .  .  .  .
210.00  2400.  .        . I WE LM.         .    .  .  .  .  .  .  .
        2420.  .        . I WERLM.         .    .  .  .  .  .  .  .
        2440.  .        . I WEL M.         .    .  .  .  .  .  .  .
200.00  2460.  .        . I WEL M.         .    .  .  .  .  .  .  .
190.00  2480.  .        . I WEL M.         .    .  .  .  .  .  .  .
189.90  2500.  .        . I WEL M.         .    .  .  .  .  .  .  .
180.00  2520.  .        .I  WEL M.         .    .  .  .  .  .  .  .
        2540.  .        .I WE L M.         .    .  .  .  .  .  .  .
        2560.  .        .I WEL  M.         .    .  .  .  .  .  .  .
        2580.  .        .I ERL  M.         .    .  .  .  .  .  .  .
        2600.  .        .I WERL M .        .    .  .  .  .  .  .  .
        2620.  .        .I WERL M .        .    .  .  .  .  .  .  .
        2640.  .        .IWE L  M .        .    .  .  .  .  .  .  .
170.00  2660.  .        I E  L  M .        .    .  .  .  .  .  .  .
        2680.  .        I E  L  M .        .    .  .  .  .  .  .  .
        2700.  .        IWE L  M  .        .    .  .  .  .  .  .  .
        2720.  .        IWE L  M  .        .    .  .  .  .  .  .  .
        2740.  .       I.WE L  M  .        .    .  .  .  .  .  .  .
        2760.  .       I.E  L  M  .        .    .  .  .  .  .  .  .
        2780.  .       I.E L  M   .        .    .  .  .  .  .  .  .
        2800.  .       IWE L  M   .        .    .  .  .  .  .  .  .
        2820.  .      I WE L  M   .        .    .  .  .  .  .  .  .
        2840.  .      I E  L  M   .        .    .  .  .  .  .  .  .
        2860.  .      I E L  M    .        .    .  .  .  .  .  .  .
        2880.  .      IWE L  M    .        .    .  .  .  .  .  .  .
        2900.  .     I WE L  M    .        .    .  .  .  .  .  .  .
        2920.  .     I WEL  M     .        .    .  .  .  .  .  .  .
        2940.  .     I E.L  M     .        .    .  .  .  .  .  .  .
        2960        I F I  M
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        3000.  .     1 WEL  M      .  .  .  .  .  .  .  .  .  .
        3020.  .     I WEL  M      .  .  .  .  .  .  .  .  .  .
        3040.  .     I E L  M      .  .  .  .  .  .  .  .  .  .
        3060.  .     I E L  M      .  .  .  .  .  .  .  .  .  .
        3080.  .    I WEL. M      .  .  .  .  .  .  .  .  .  .
160.00  3100.  .    I WEL. M      .  .  .  .  .  .  .  .  .  .
        3120.  .    I WE .M       .  .  .  .  .  .  .  .  .  .
        3140.  .    I WE .M       .  .  .  .  .  .  .  .  .  .
        3160.  .   I  WE M        .  .  .  .  .  .  .  .  .  .
150.00  3180.  .   I RWE M        .  .  .  .  .  .  .  .  .  .
140.00  3200.  .   I  WE M        .  .  .  .  .  .  .  .  .  .
139.90  3220.  .   I  WE M        .  .  .  .  .  .  .  .  .  .
130.00  3240.  .   I WLE .        .  .  .  .  .  .  .  .  .  .
        3260.  .   I WEM .        .  .  .  .  .  .  .  .  .  .
120.00  3280.  .  I WEL  .        .  .  .  .  .  .  .  .  .  .
        3300.  .  I WEL  .        .  .  .  .  .  .  .  .  .  .
        3320.  . I  ERL  .        .  .  .  .  .  .  .  .  .  .
        3340.  . I WERL  .        .  .  .  .  .  .  .  .  .  .
        3360.  . I WERL  .        .  .  .  .  .  .  .  .  .  .
        3380.  . I WERL  .        .  .  .  .  .  .  .  .  .  .
        3400.  . I ER L  .        .  .  .  .  .  .  .  .  .  .
        3420.  .I WER L  .        .  .  .  .  .  .  .  .  .  .
110.00  3440.  .I WER L  .        .  .  .  .  .  .  .  .  .  .
```

PROFILE FOR STREAM PINE CREEK CORRIDOR

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

ELEVATION SECNO	6400. CUMDIS	6420.	6440.	6460.	6480.	6500.	6520.	6540.	6560.	6580.
	3460.	.	.	.	.	.	.	.	.	I WER L .
	3480.	.	.	.	.	.	.	.	.	I WER L .
	3500.	.	.	.	.	.	.	.	.	I E RL .
	3520.	.	.	.	.	.	.	.	.	IWER L .
	3540.	.	.	.	.	.	.	.	.	I WER L .
100.00	3560.	.	.	.	.	.	.	.	.	I E.R L .

THIS RUN EXECUTED 12JAN93 12:57:29

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

PINE CREEK CORRIDOR

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	CRIWS	DEPTH	TOPWID	VCH	XLCH	K*CHSL
*	320.000	1900.00	6666.82	6666.82	3.82	85.61	8.93	0.00	0.00
*	310.000	1900.00	6660.90	6662.41	4.70	38.37	16.56	165.00	-41.21
*	300.000	1900.00	6659.99	6661.33	4.39	53.92	17.53	25.00	-24.00
*	299.900	1900.00	6660.99	6661.33	5.39	53.98	11.74	65.00	0.00
*	290.000	1900.00	6658.90	6659.97	4.67	53.94	15.54	0.10	-13798.83
*	289.900	1900.00	6659.42	6659.97	5.20	53.97	12.60	25.00	0.00
	280.000	1900.00	6658.41	6659.41	4.81	59.17	14.45	0.10	-6201.17
*	270.000	1900.00	6651.81	6653.32	3.61	44.12	18.14	205.00	-26.34
*	260.000	1900.00	6645.13	6645.13	4.43	60.66	10.10	240.00	-31.25
	250.000	1900.00	6639.71	6639.74	5.01	68.19	9.76	205.00	-29.27
*	240.000	1900.00	6632.41	6633.08	1.91	137.42	12.34	115.00	-36.52
*	230.000	1900.00	6626.24	6626.24	3.24	152.33	7.40	315.00	-23.81
*	220.000	1900.00	6607.23	6607.23	4.23	67.37	9.73	880.00	-22.73
*	210.000	1900.00	6604.77	6604.77	3.87	112.61	8.23	145.00	-14.48
*	200.000	1900.00	6605.02	6605.02	5.02	102.00	8.74	65.00	-13.84
*	190.000	1900.00	6604.78	6604.78	5.38	105.16	8.62	15.00	-40.01
*	189.900	1900.00	6604.81	6604.81	5.41	105.76	8.48	15.00	0.00

	SECNO	Q	CWSEL	CRIWS	DEPTH	TOPWID	VCH	XLCH	K*CHSL
*	180.000	1900.00	6603.55	6603.93	4.55	58.60	11.43	0.10	-3999.02
	170.000	1900.00	6597.62	6597.80	2.62	128.79	8.67	160.00	-25.00
*	160.000	2055.00	6588.44	6588.44	4.44	100.22	8.73	445.00	-24.72
*	150.000	2055.00	6587.58	6587.58	4.78	69.25	9.98	80.00	-15.00
*	140.000	2055.00	6588.14	6588.14	5.64	62.92	10.29	15.00	-19.99
*	139.900	2055.00	6588.14	6588.14	5.64	62.92	10.31	15.00	0.00
*	130.000	2055.00	6585.98	6586.97	3.98	57.84	14.59	0.10	-5000.00
*	120.000	2055.00	6584.17	6584.17	4.47	79.55	9.44	75.00	-30.66
*	110.000	2055.00	6580.84	6580.84	4.34	87.77	9.10	150.00	-21.33
*	100.000	2055.00	6577.67	6577.67	3.57	100.99	8.77	130.00	-18.46

PINE CREEK CORRIDOR

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	320.000	0.00	0.00	0.00	6663.00	1900.00	6666.82	6666.82	6668.06	270.77	8.93	212.66	115.47
*	310.000	165.00	0.00	0.00	6656.20	1900.00	6660.90	6662.41	6665.15	68.40	16.56	114.73	229.73
*	300.000	25.00	0.00	0.00	6655.60	1900.00	6659.99	6661.33	6664.77	134.21	17.53	108.36	164.01
*	299.900	65.00	6675.20	6669.80	6655.60	1900.00	6660.99	6661.33	6663.13	40.23	11.74	161.78	299.55
*	290.000	0.10	0.00	0.00	6654.22	1900.00	6658.90	6659.97	6662.65	92.79	15.54	122.27	197.25
*	289.900	25.00	6675.40	6669.80	6654.22	1900.00	6659.42	6659.97	6661.89	49.51	12.60	150.74	270.02
	280.000	0.10	0.00	0.00	6653.60	1900.00	6658.41	6659.41	6661.65	80.44	14.45	131.49	211.85
*	270.000	205.00	0.00	0.00	6648.20	1900.00	6651.81	6653.32	6656.92	1214.10	18.14	104.71	54.53
*	260.000	240.00	0.00	0.00	6640.70	1900.00	6645.13	6645.13	6646.72	261.79	10.10	188.07	117.43
	250.000	205.00	0.00	0.00	6634.70	1900.00	6639.71	6639.74	6641.19	272.69	9.76	194.61	115.06
*	240.000	115.00	0.00	0.00	6630.50	1900.00	6632.41	6633.08	6634.77	1487.81	12.34	153.94	49.26
*	230.000	315.00	0.00	0.00	6623.00	1900.00	6626.24	6626.24	6627.09	309.47	7.40	256.81	108.00
*	220.000	880.00	0.00	0.00	6603.00	1900.00	6607.23	6607.23	6608.70	265.78	9.73	195.17	116.55
*	210.000	145.00	0.00	0.00	6600.90	1900.00	6604.77	6604.77	6605.82	296.97	8.23	230.80	110.25
*	200.000	65.00	0.00	0.00	6600.00	1900.00	6605.02	6605.02	6606.13	168.20	8.74	229.94	146.50
*	190.000	15.00	0.00	0.00	6599.40	1900.00	6604.78	6604.78	6605.88	186.70	8.62	231.00	139.05
*	189.900	15.00	6610.00	6607.90	6599.40	1900.00	6604.81	6604.81	6605.88	178.56	8.48	234.71	142.19
*	180.000	0.10	0.00	0.00	6599.00	1900.00	6603.55	6603.93	6605.58	376.30	11.43	166.18	97.95
	170.000	160.00	0.00	0.00	6595.00	1900.00	6597.62	6597.80	6598.79	421.09	8.67	219.11	92.59
*	160.000	445.00	0.00	0.00	6584.00	2055.00	6588.44	6588.44	6589.62	278.86	8.73	235.38	123.06
*	150.000	80.00	0.00	0.00	6582.80	2055.00	6587.58	6587.58	6589.11	239.87	9.98	207.78	132.69
*	140.000	15.00	0.00	0.00	6582.50	2055.00	6588.14	6588.14	6589.79	269.35	10.29	199.80	125.22
*	139.900	15.00	6594.00	6591.00	6582.50	2055.00	6588.14	6588.14	6589.79	271.08	10.31	199.40	124.81
*	130.000	0.10	0.00	0.00	6582.00	2055.00	6585.98	6586.97	6589.29	747.30	14.59	140.84	75.17

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	120.000	75.00	0.00	0.00	6579.70	2055.00	6584.17	6584.17	6585.56	268.17	9.44	217.59	125.49
*	110.000	150.00	0.00	0.00	6576.50	2055.00	6580.84	6580.84	6582.13	270.18	9.10	225.71	125.02
*	100.000	130.00	0.00	0.00	6574.10	2055.00	6577.67	6577.67	6578.86	285.42	8.77	234.43	121.64

PINE CREEK CORRIDOR

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	320.000	1900.00	6666.82	0.00	0.00	-0.18	85.61	0.00
*	310.000	1900.00	6660.90	0.00	-5.92	0.00	38.37	165.00
*	300.000	1900.00	6659.99	0.00	-0.90	0.00	53.92	25.00
*	299.900	1900.00	6660.99	0.00	0.99	0.00	53.98	65.00
*	290.000	1900.00	6658.90	0.00	-2.09	0.00	53.94	0.10
*	289.900	1900.00	6659.42	0.00	0.53	0.00	53.97	25.00
	280.000	1900.00	6658.41	0.00	-1.01	0.00	59.17	0.10
*	270.000	1900.00	6651.81	0.00	-6.60	0.00	44.12	205.00
*	260.000	1900.00	6645.13	0.00	-6.68	0.00	60.66	240.00
	250.000	1900.00	6639.71	0.00	-5.42	0.00	68.19	205.00
*	240.000	1900.00	6632.41	0.00	-7.30	0.00	137.42	115.00
*	230.000	1900.00	6626.24	0.00	-6.16	0.00	152.33	315.00
*	220.000	1900.00	6607.23	0.00	-19.02	0.00	67.37	880.00
*	210.000	1900.00	6604.77	0.00	-2.46	0.00	112.61	145.00
*	200.000	1900.00	6605.02	0.00	0.25	0.00	102.00	65.00
*	190.000	1900.00	6604.78	0.00	-0.24	0.00	105.16	15.00
*	189.900	1900.00	6604.81	0.00	0.04	0.00	105.76	15.00
*	180.000	1900.00	6603.55	0.00	-1.26	0.00	58.60	0.10
	170.000	1900.00	6597.62	0.00	-5.93	0.00	128.79	160.00
*	160.000	2055.00	6588.44	0.00	-9.19	0.00	100.22	445.00
*	150.000	2055.00	6587.58	0.00	-0.85	0.00	69.25	80.00
*	140.000	2055.00	6588.14	0.00	0.56	0.00	62.92	15.00
*	139.900	2055.00	6588.14	0.00	-0.01	0.00	62.92	15.00
*	130.000	2055.00	6585.98	0.00	-2.16	0.00	57.84	0.10

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	120.000	2055.00	6584.17	0.00	-1.81	0.00	79.55	75.00
*	110.000	2055.00	6580.84	0.00	-3.33	0.00	87.77	150.00
*	100.000	2055.00	6577.67	0.00	-3.17	0.00	100.99	130.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION SECNO=    320.000  PROFILE=  1  CRITICAL DEPTH ASSUMED

WARNING SECNO=    310.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    300.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    299.900  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=    299.900  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    290.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    289.900  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=    289.900  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    270.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    260.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    260.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    260.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    240.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    230.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    230.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    230.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    220.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    220.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    220.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    210.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    210.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    210.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    200.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    200.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    200.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    190.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    190.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    190.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    189.900  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    189.900  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    189.900  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    180.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    160.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    160.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    160.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=    150.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    150.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    150.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    140.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    140.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    140.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    139.900  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    139.900  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    139.900  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    130.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    120.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    120.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    120.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    110.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    110.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    110.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    100.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    100.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    100.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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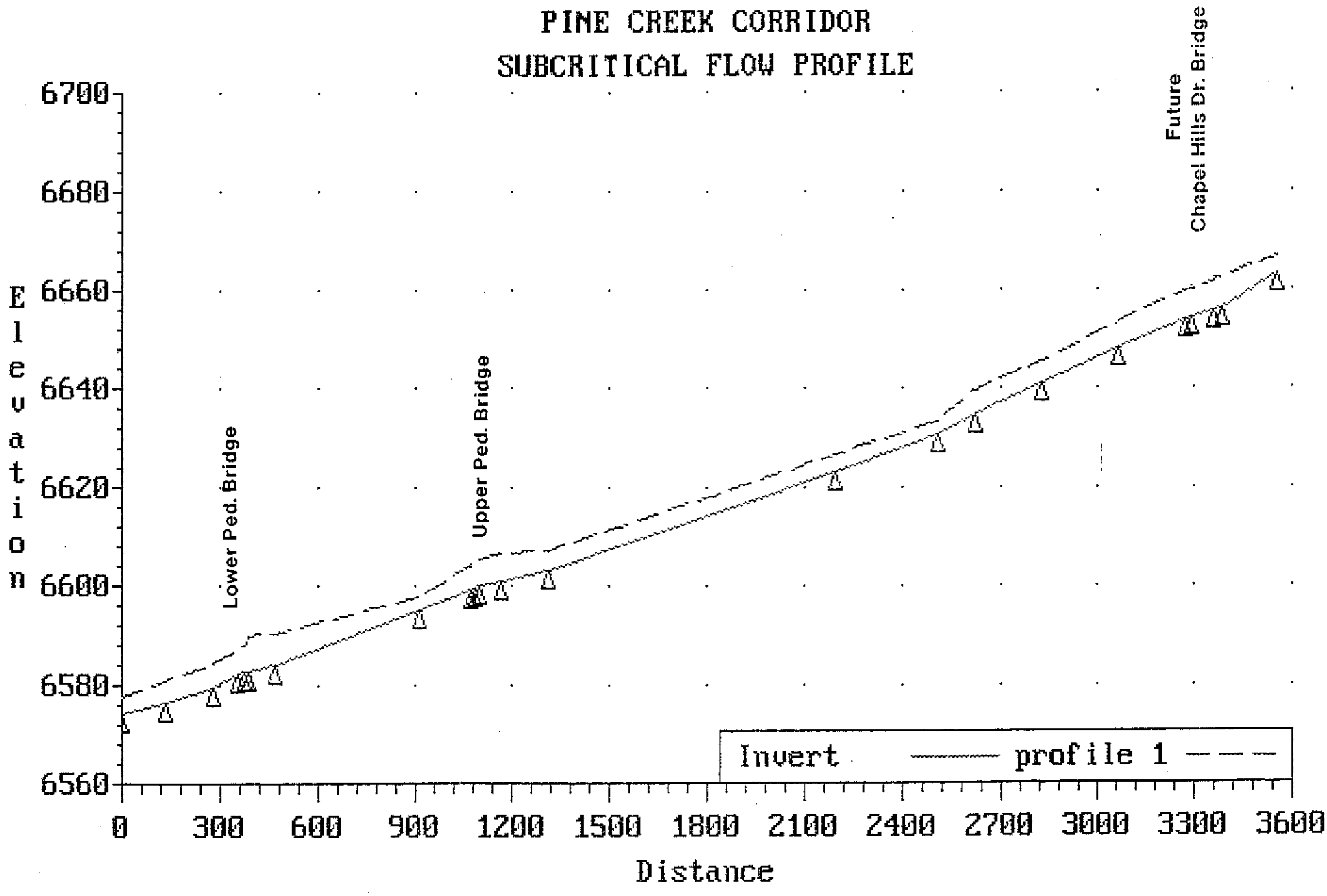
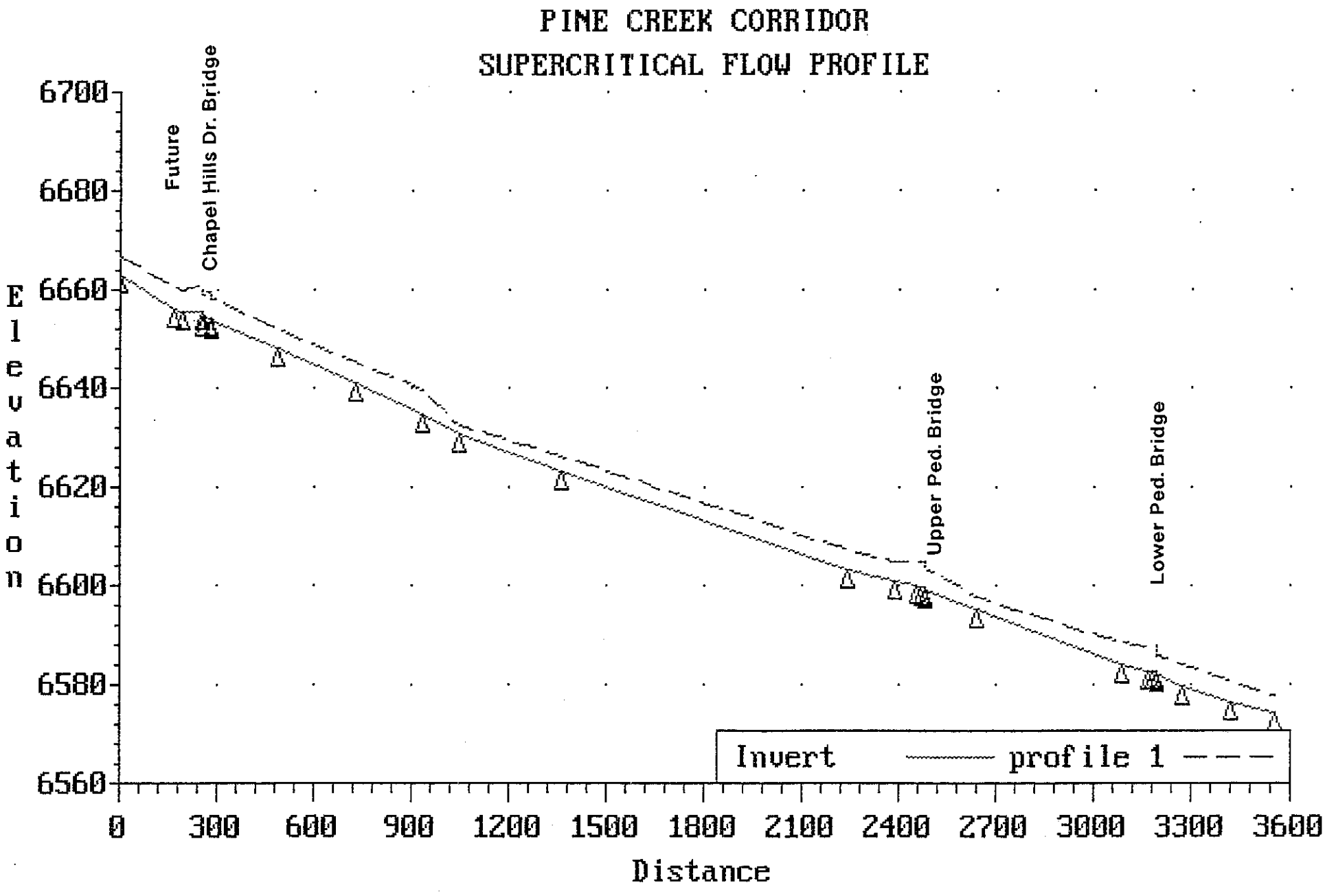
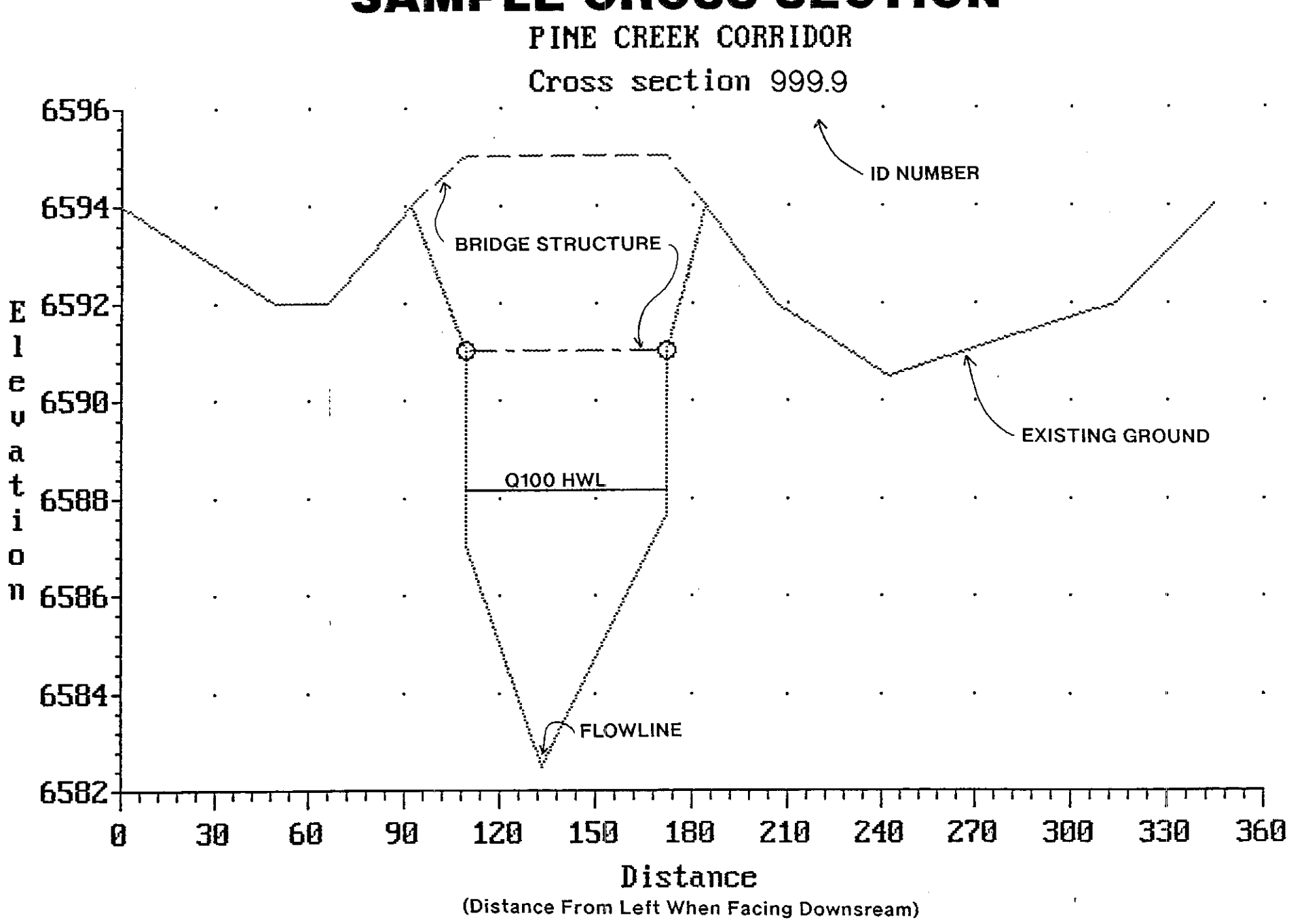
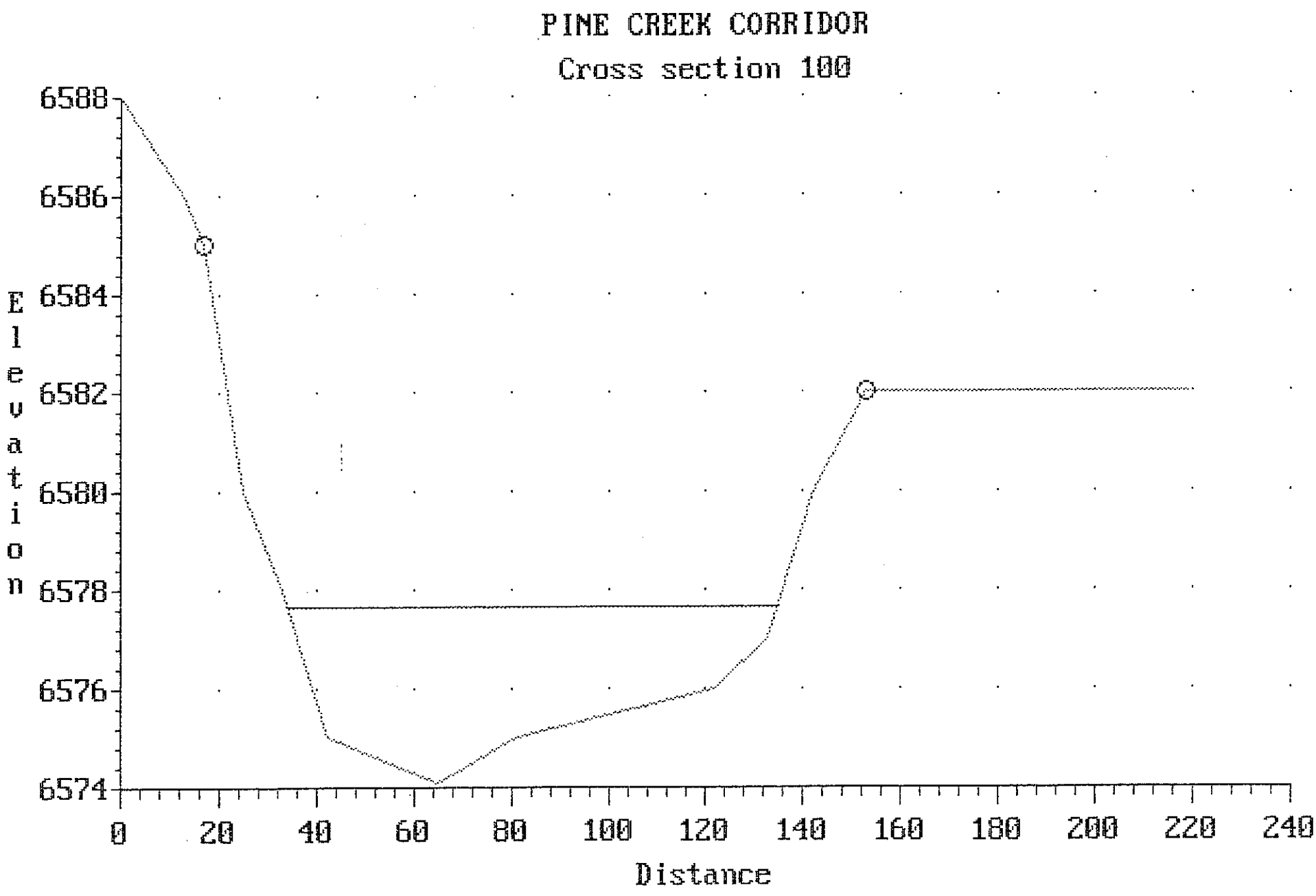

PINE CREEK CORRIDOR
SUBCRITICAL FLOW PROFILE
Future
Chapel Hills Dr. Bridge
Lower Ped. Bridge
Upper Ped. Bridge
Elevation
6700
6680
6660
6640
6620
6600
6580
6560
0
300
600
900
1200
1500
1800
2100
2400
2700
3000
3300
3600
Distance
Invert
profile 1


PINE CREEK CORRIDOR
SUPERCRITICAL FLOW PROFILE
Future
Chapel Hills Dr. Bridge
Upper Ped. Bridge
Lower Ped. Bridge
Elevation
6700
6680
6660
6640
6620
6600
6580
6560
0
300
600
900
1200
1500
1800
2100
2400
2700
3000
3300
3600
Distance
Invert
profile 1

SAMPLE CROSS SECTION




PINE CREEK CORRIDOR
Cross section 100
6588
6586
6584
6582
6580
6578
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6574
Elevation
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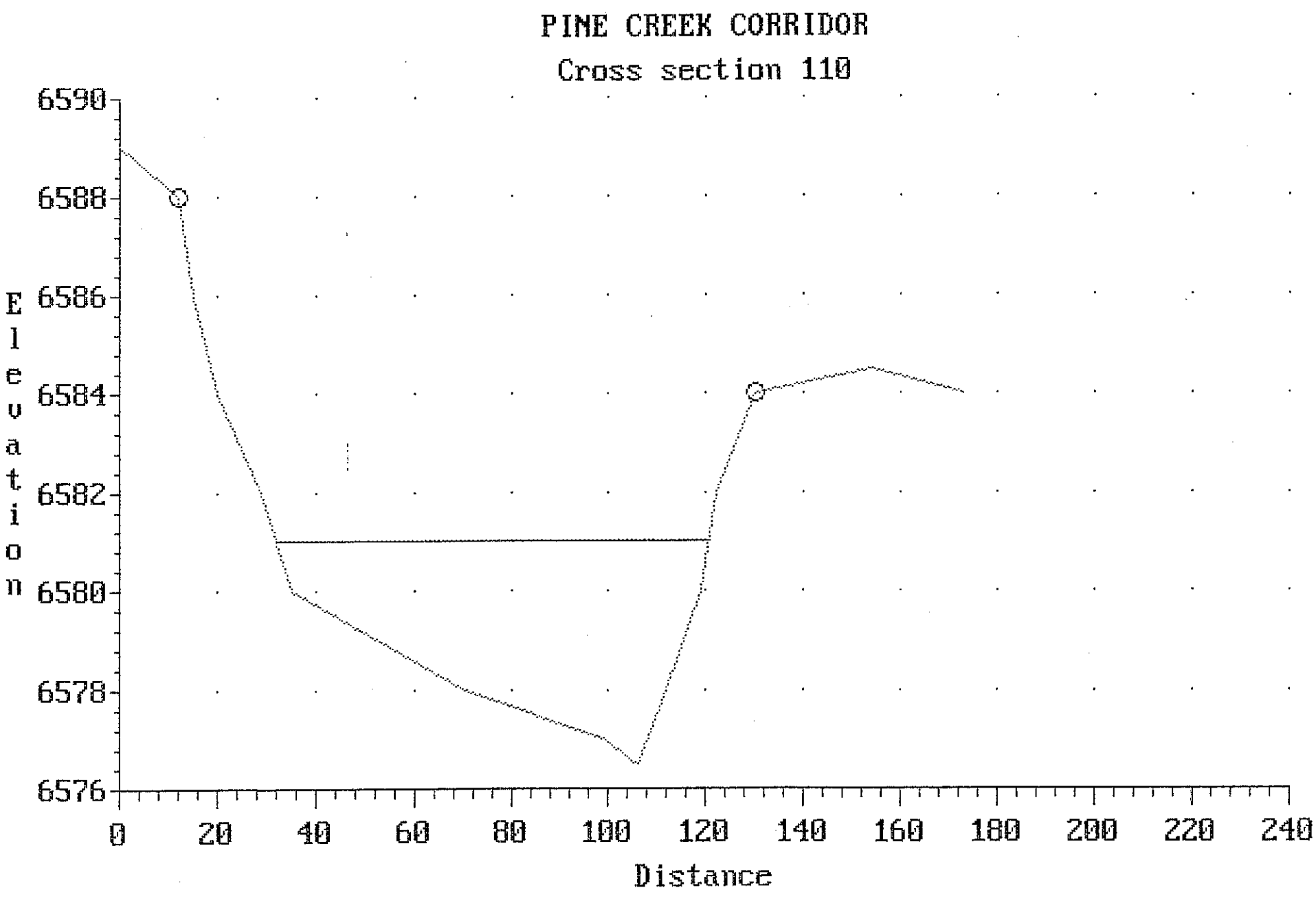
20
40
60
80
100
120
140
160
180
200
220
240
Distance


PINE CREEK CORRIDOR
Cross section 110
6590
6588
6586
6584
6582
6580
6578
6576
Elevation
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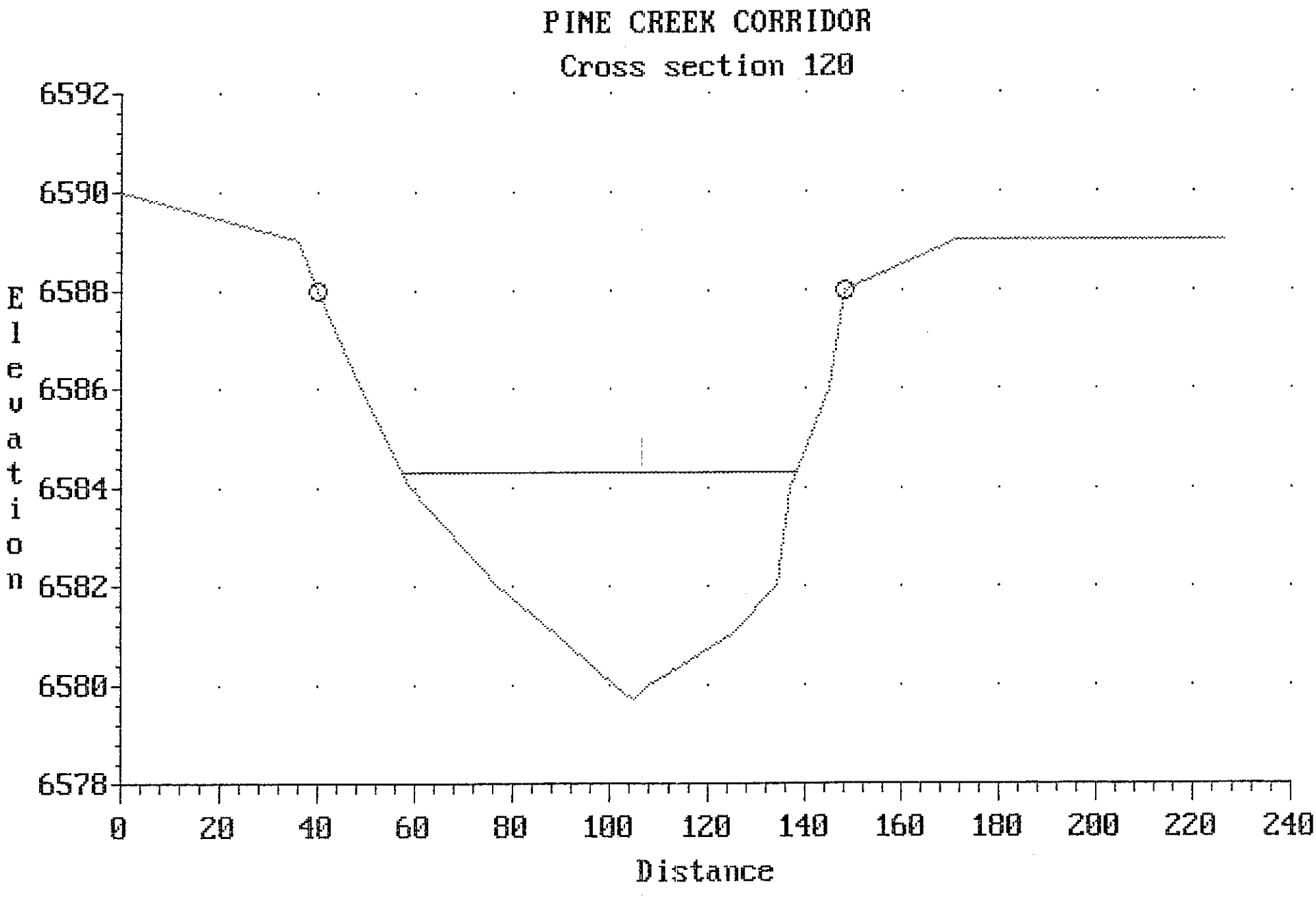
20
40
60
80
100
120
140
160
180
200
220
240
Distance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Cross section 120
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6588
6586
6584
6582
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Elevation
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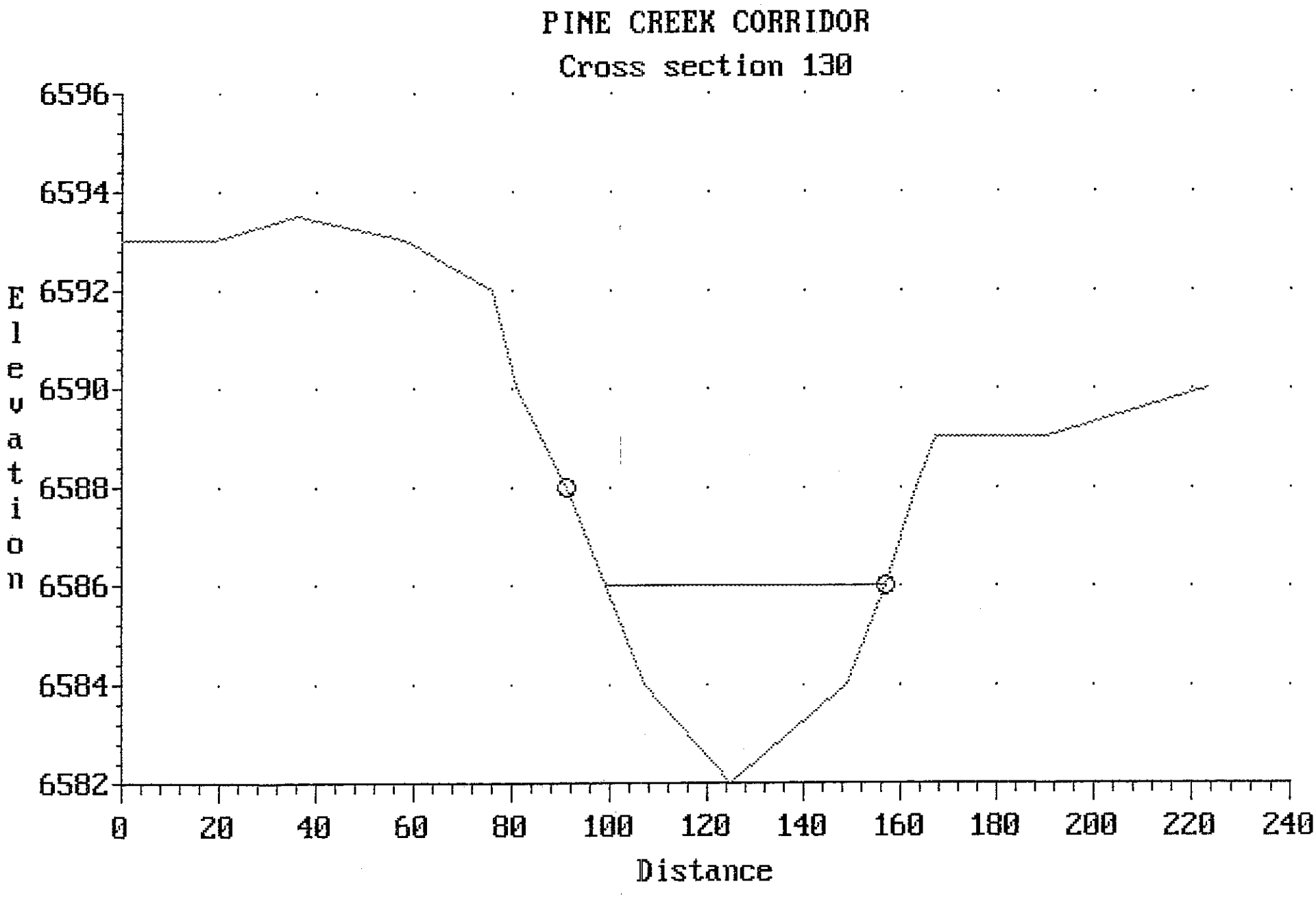
80
100
120
140
160
180
200
220
240
Distance


PINE CREEK CORRIDOR
Cross section 130
6596
6594
6592
6590
6588
6586
6584
6582
Elevation
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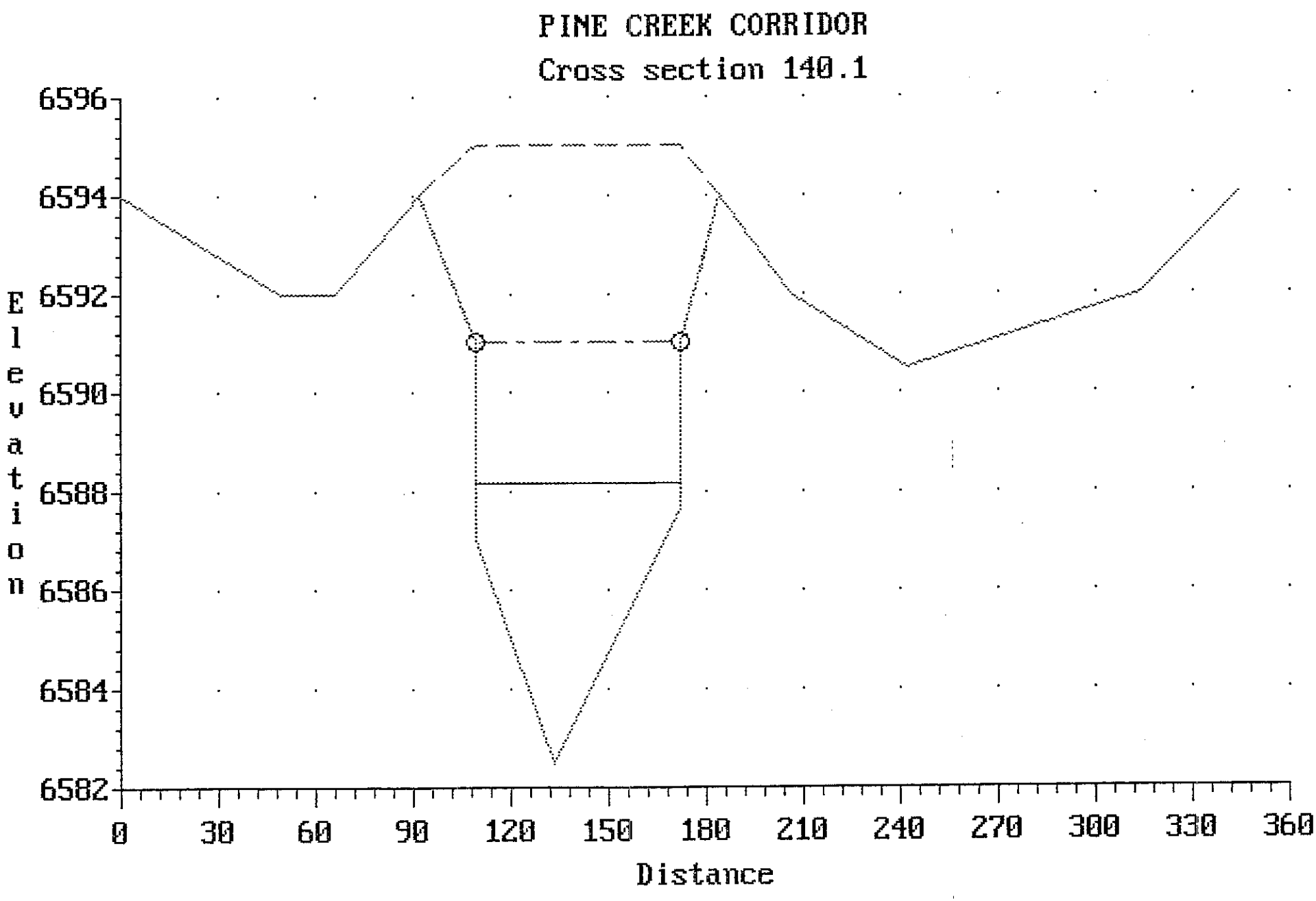
20
40
60
80
100
120
140
160
180
200
220
240
Distance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Cross section 140.1
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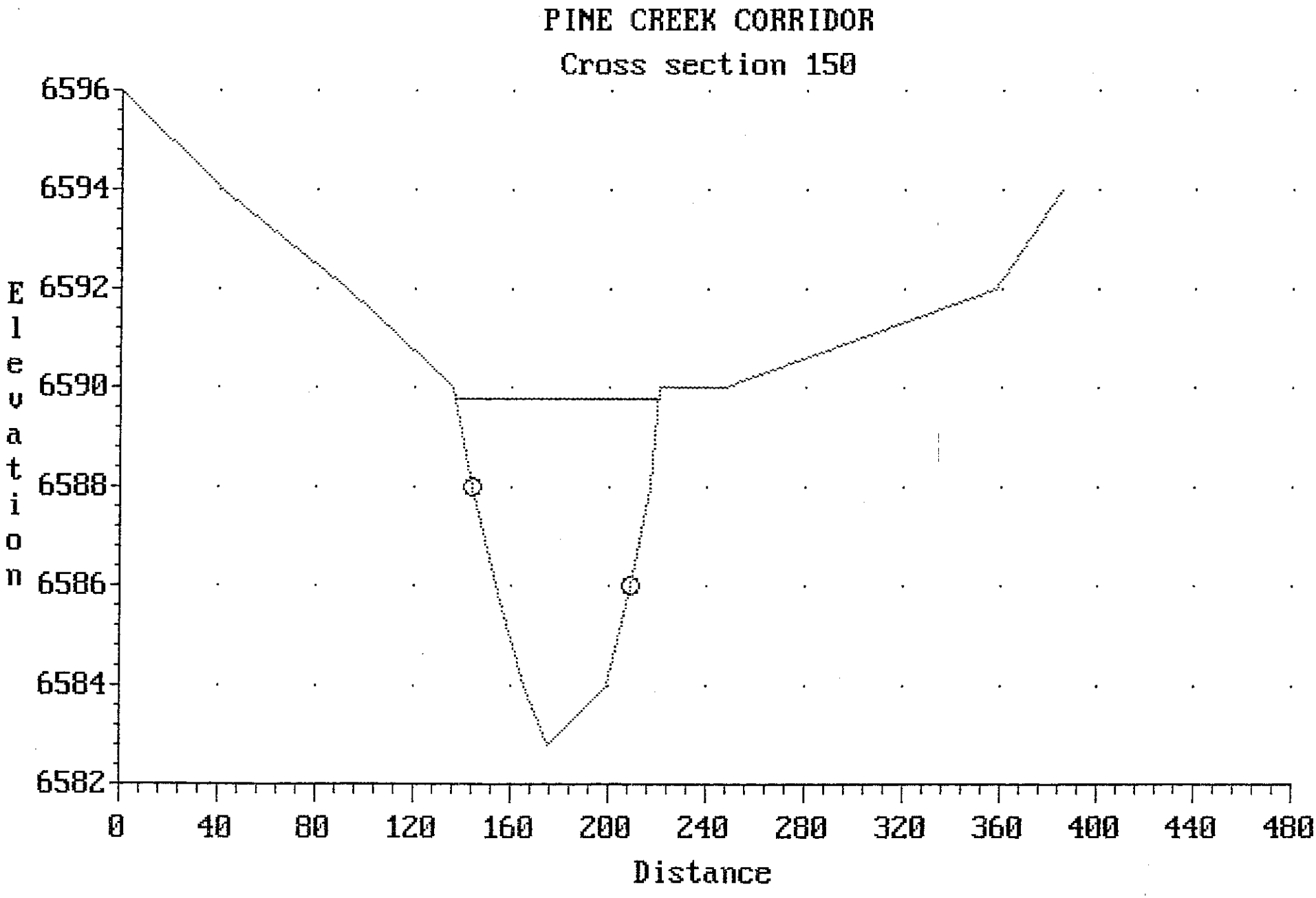
6594
6592
6590
6588
6586
6584
6582
Elevation
0
30
60
90
120
150
180
210
240
270
300
330
360
Distance


PINE CREEK CORRIDOR
Cross section 150
6596
6594
6592
6590
6588
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Elevation
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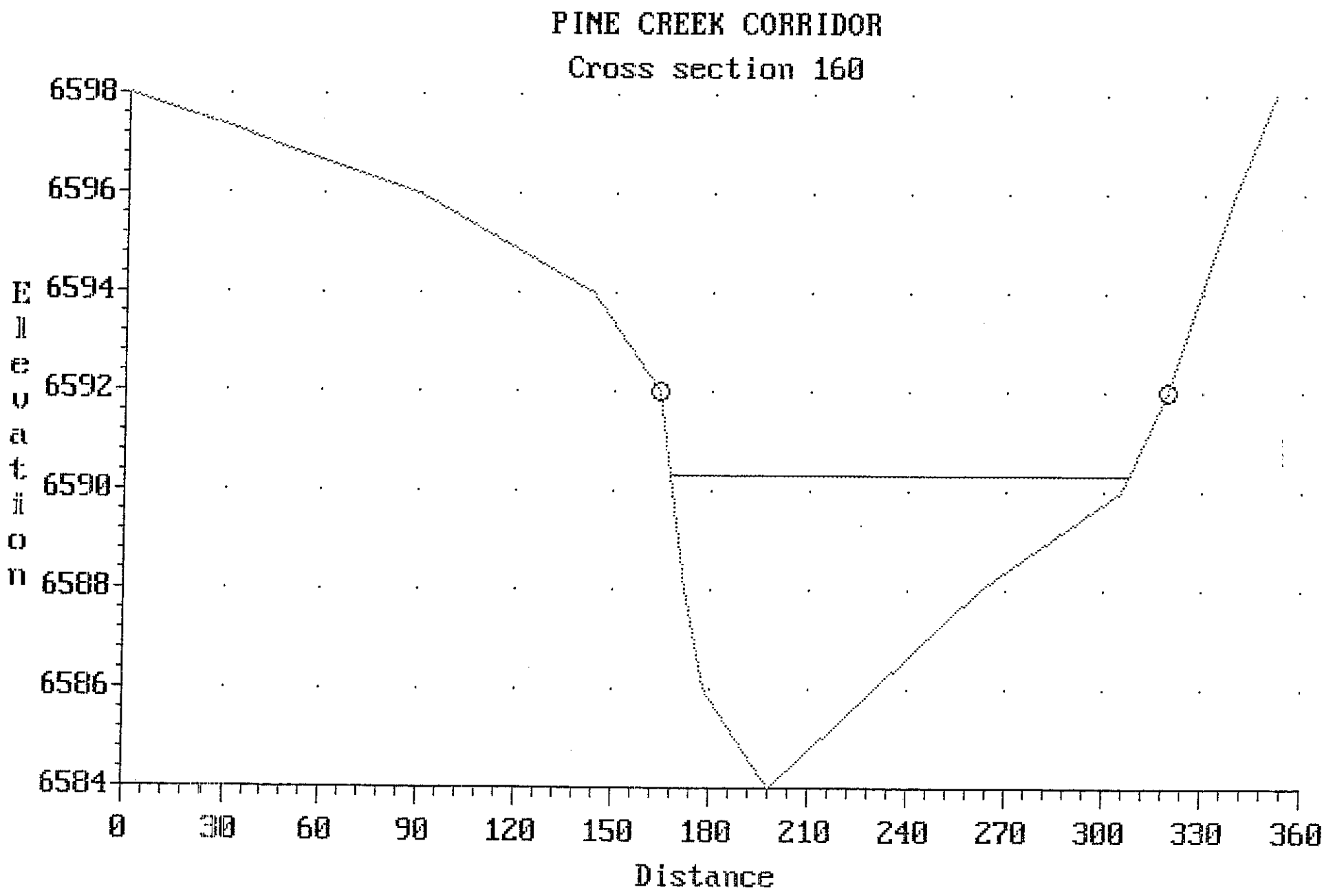
Distance


PINE CREEK CORRIDOR
Cross section 160
6598
6596
6594
6592
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Elevation
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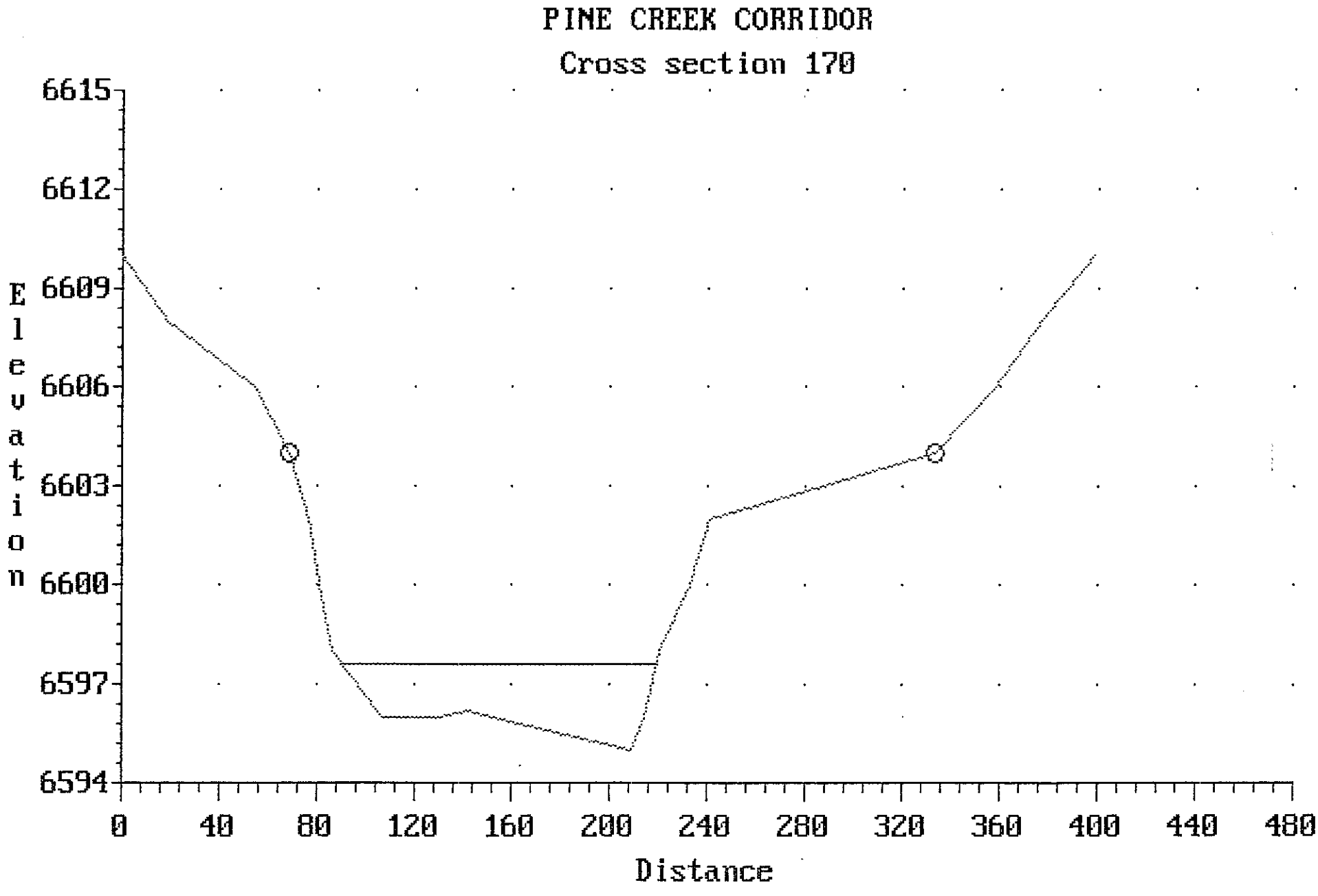
Distance


PINE CREEK CORRIDOR
Cross section 170
6615
6612
6609
6606
6603
6600
6597
6594
Elevation
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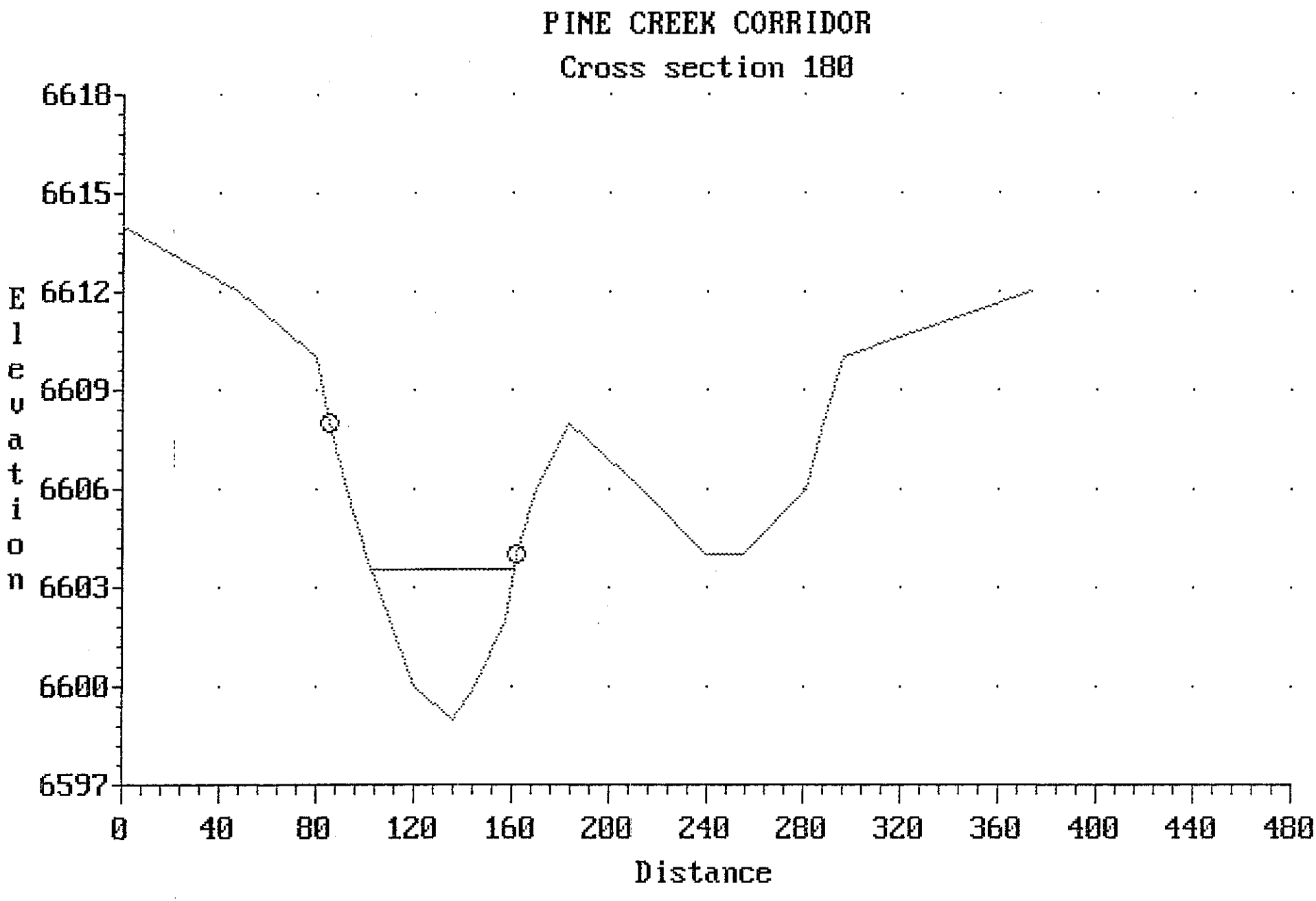
Distance


PINE CREEK CORRIDOR
Cross section 180
Elevation
6618
6615
6612
6609
6606
6603
6600
6597
0
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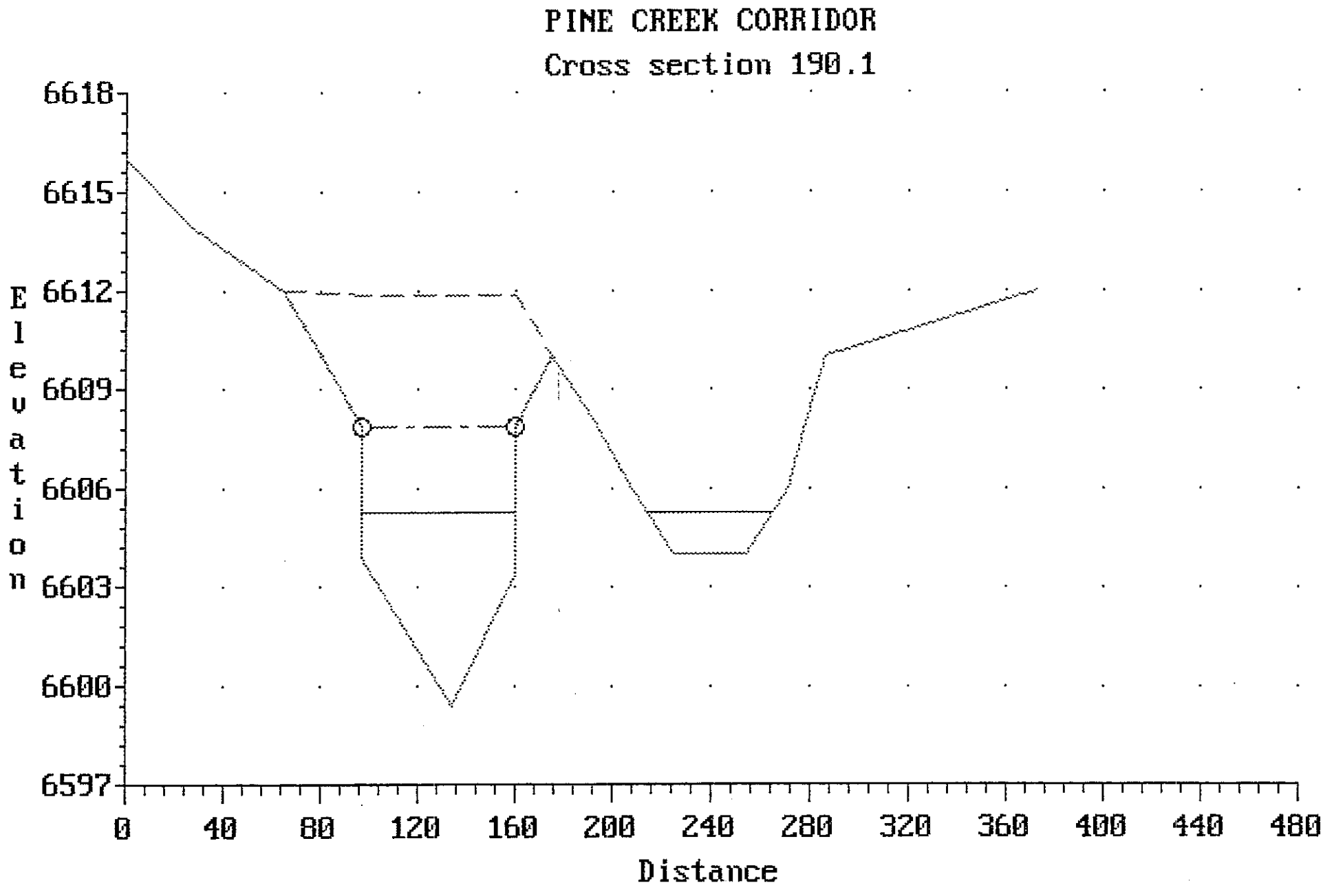
Distance


PINE CREEK CORRIDOR
Cross section 190.1
Elevation
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6615
6612
6609
6606
6603
6600
6597
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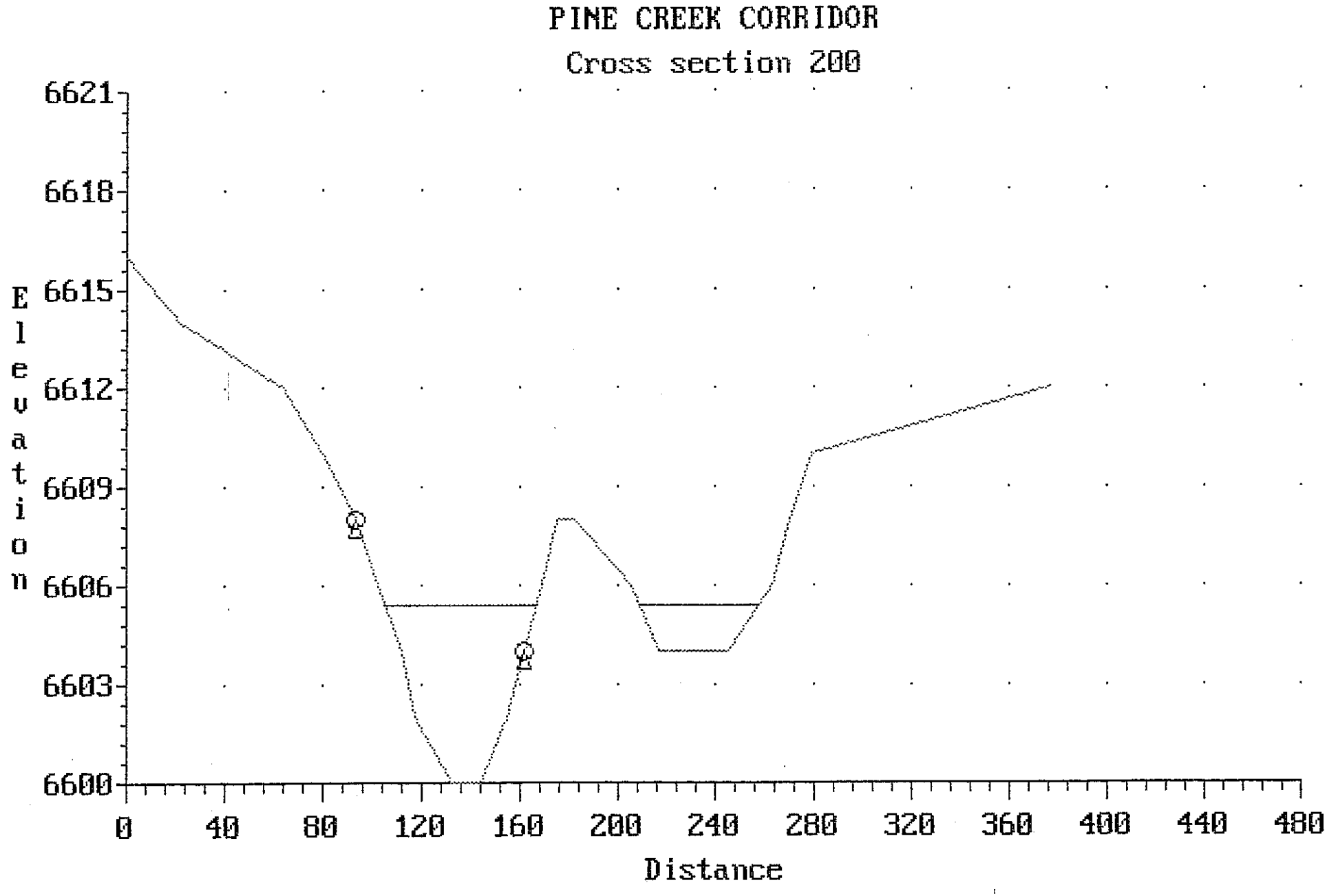
480
Distance


PINE CREEK CORRIDOR
Cross section 200
Elevation
6621
6618
6615
6612
6609
6606
6603
6600
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400
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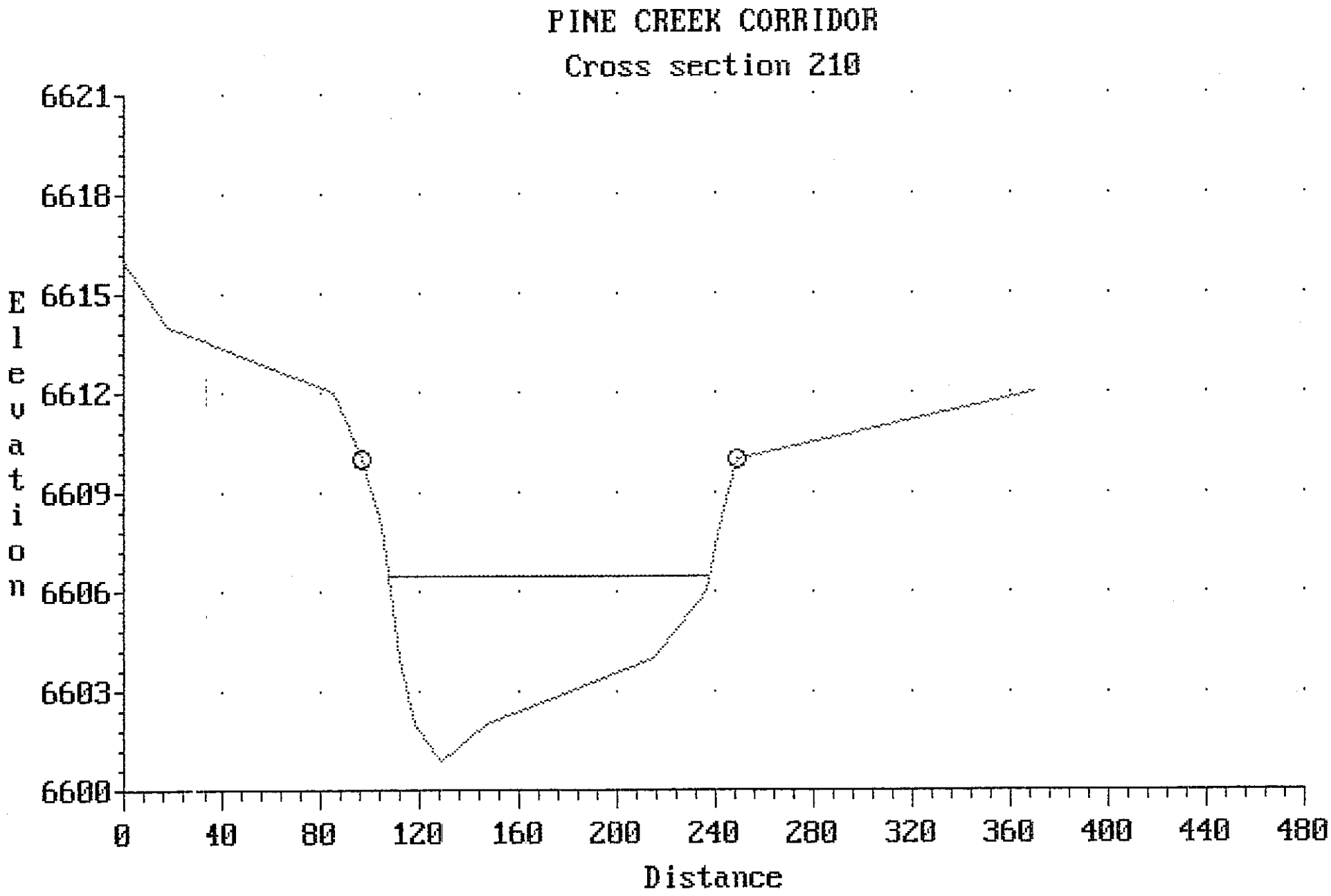
480
Distance


PINE CREEK CORRIDOR
Cross section 210
6621
6618
6615
6612
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6606
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6600
Elevation
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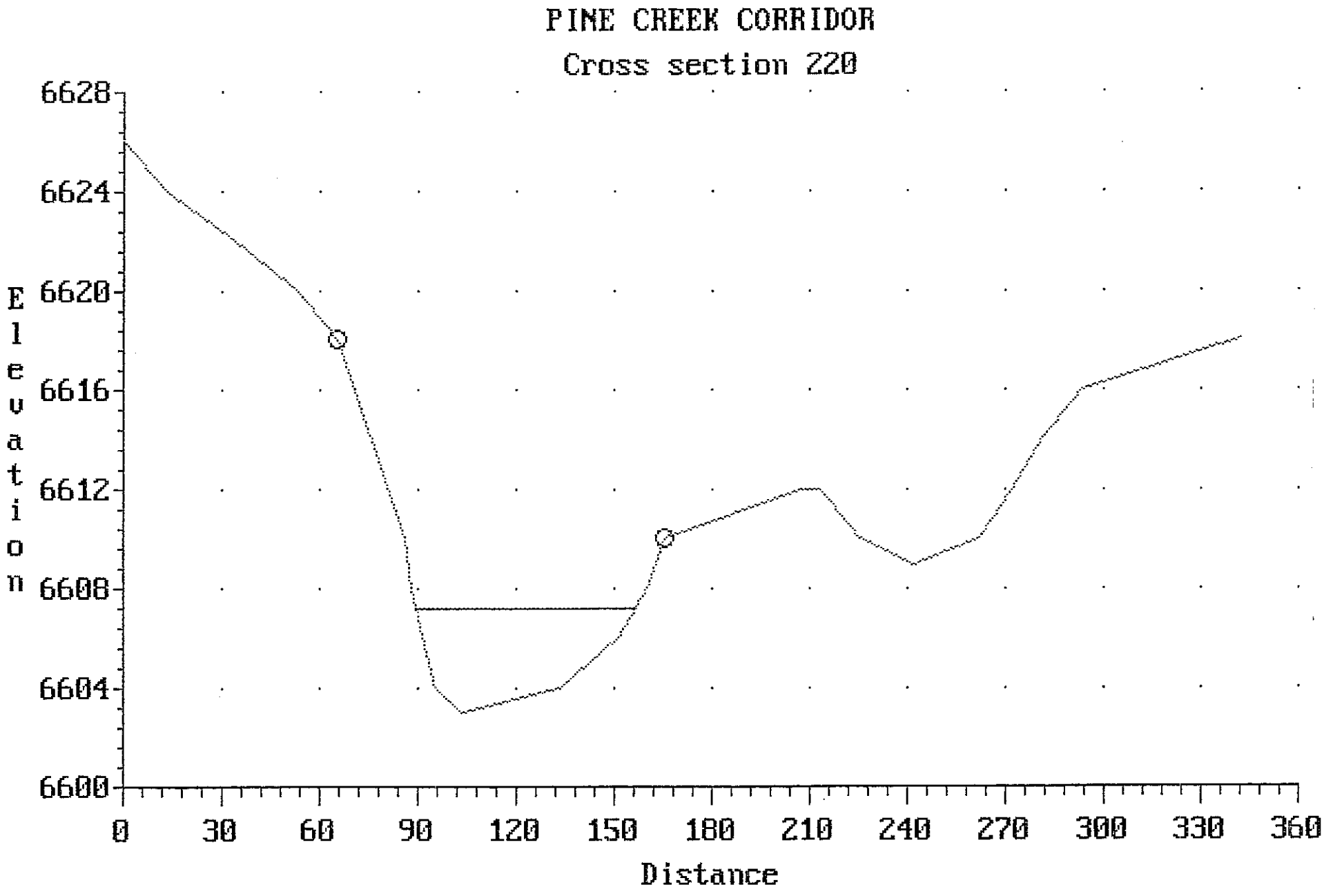
Distance


PINE CREEK CORRIDOR
Cross section 220
6628
6624
6620
6616
6612
6608
6604
6600
Elevation
0
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120
150
180
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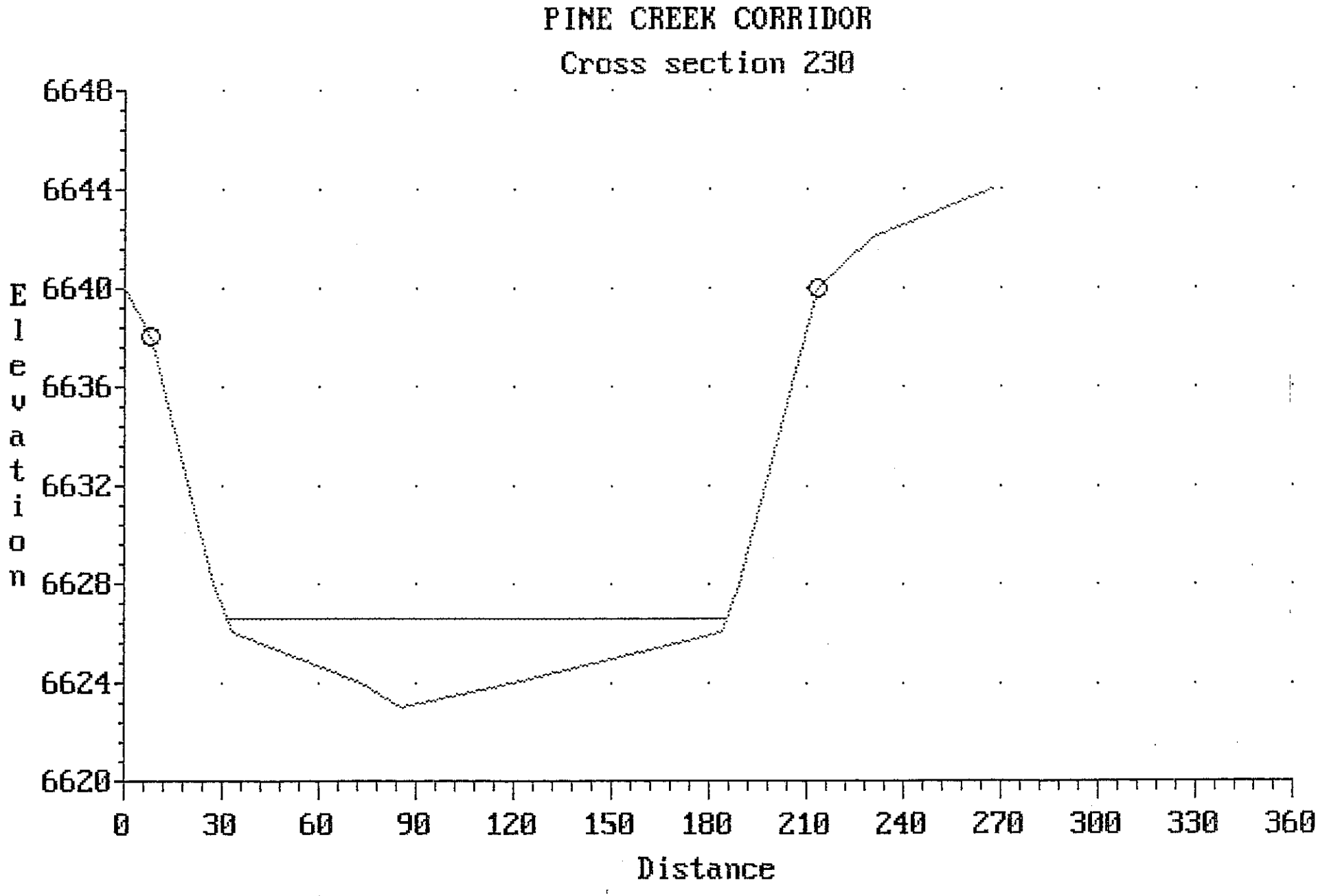
300
330
360
Distance


PINE CREEK CORRIDOR
Cross section 230
Elevation
6648
6644
6640
6636
6632
6628
6624
6620
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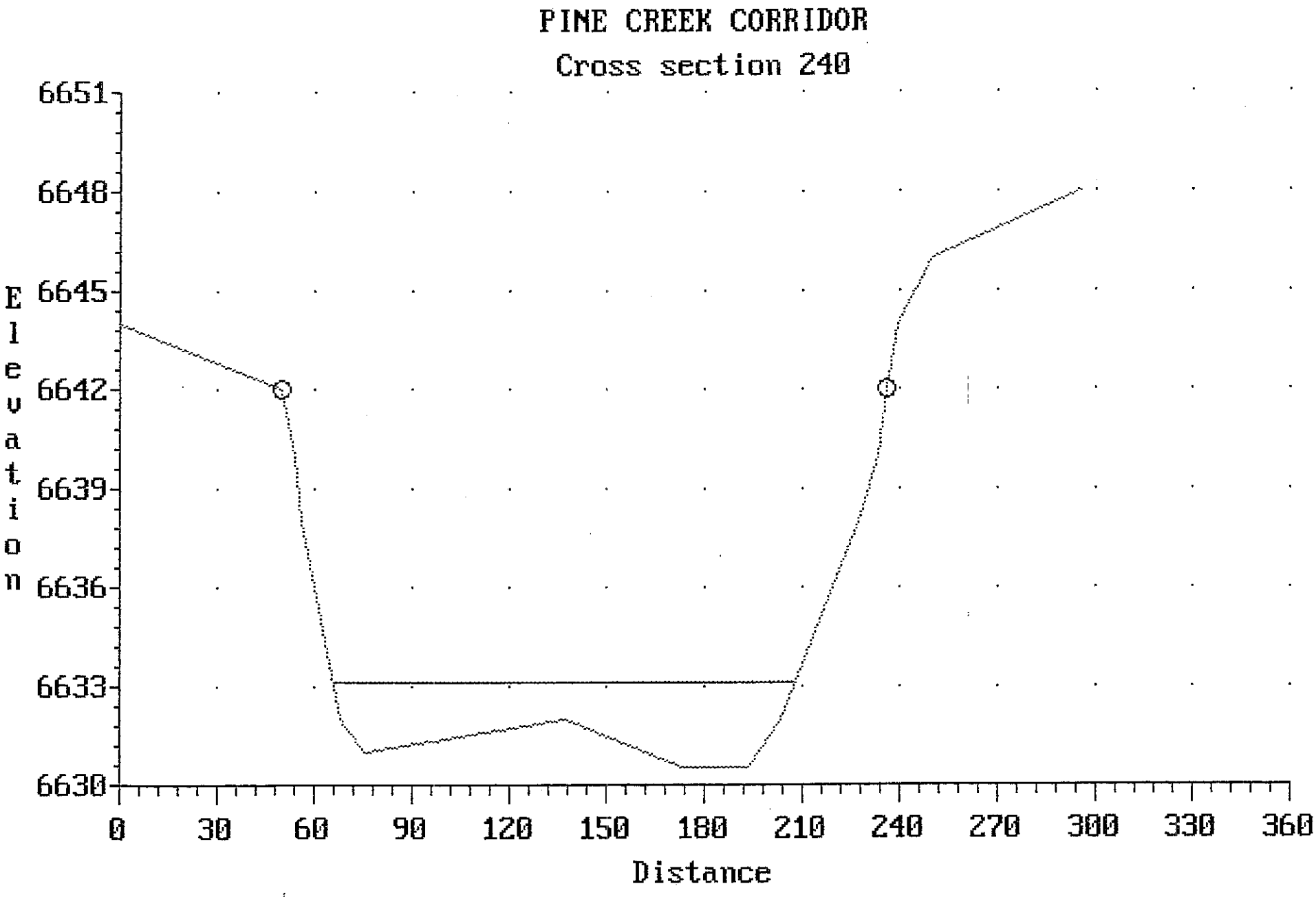
360
Distance


PINE CREEK CORRIDOR
Cross section 240
6651
6648
6645
6642
6639
6636
6633
6630
Elevation
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120
150
180
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300
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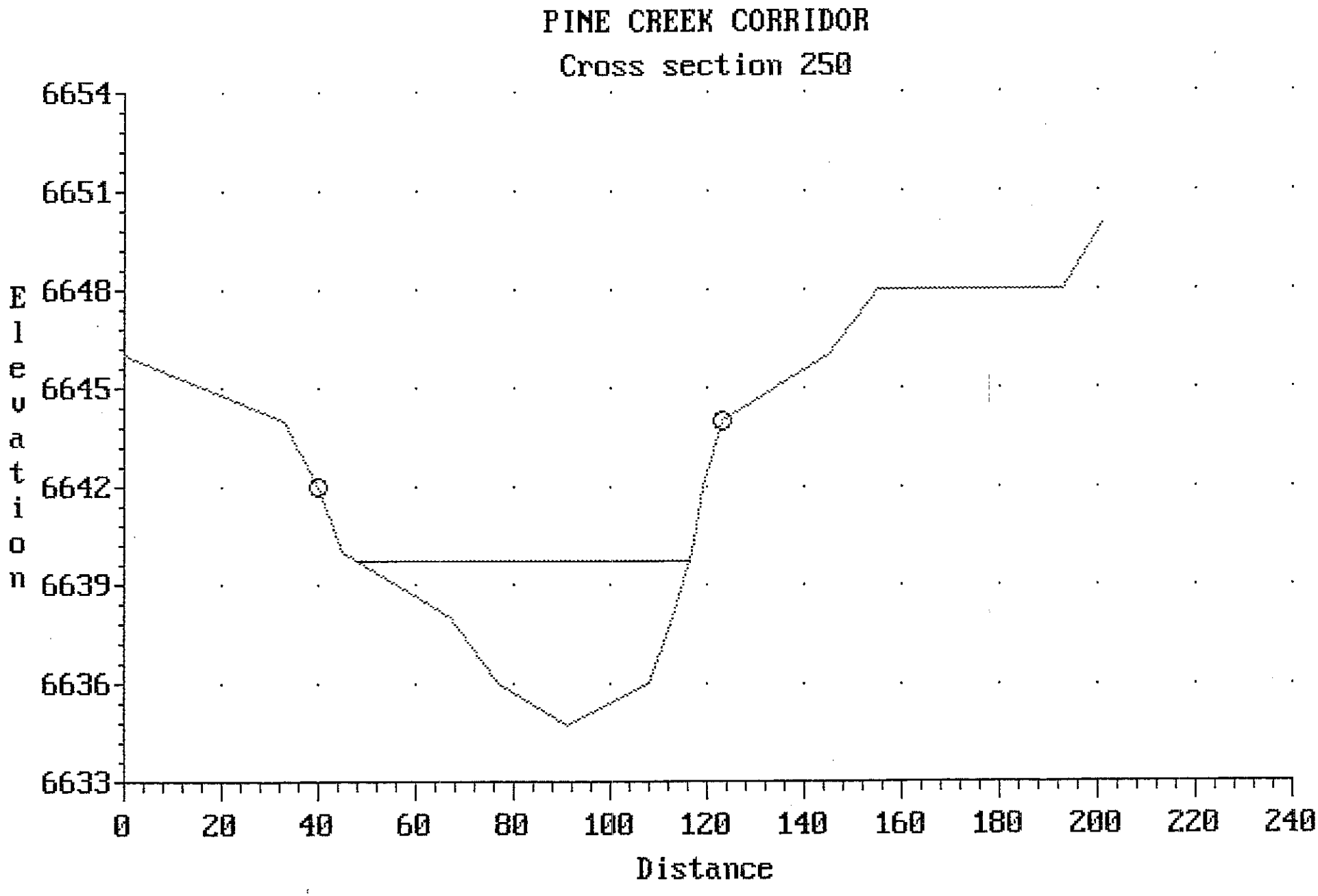
Distance


PINE CREEK CORRIDOR
Cross section 250
Elevation
6654
6651
6648
6645
6642
6639
6636
6633
0
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40
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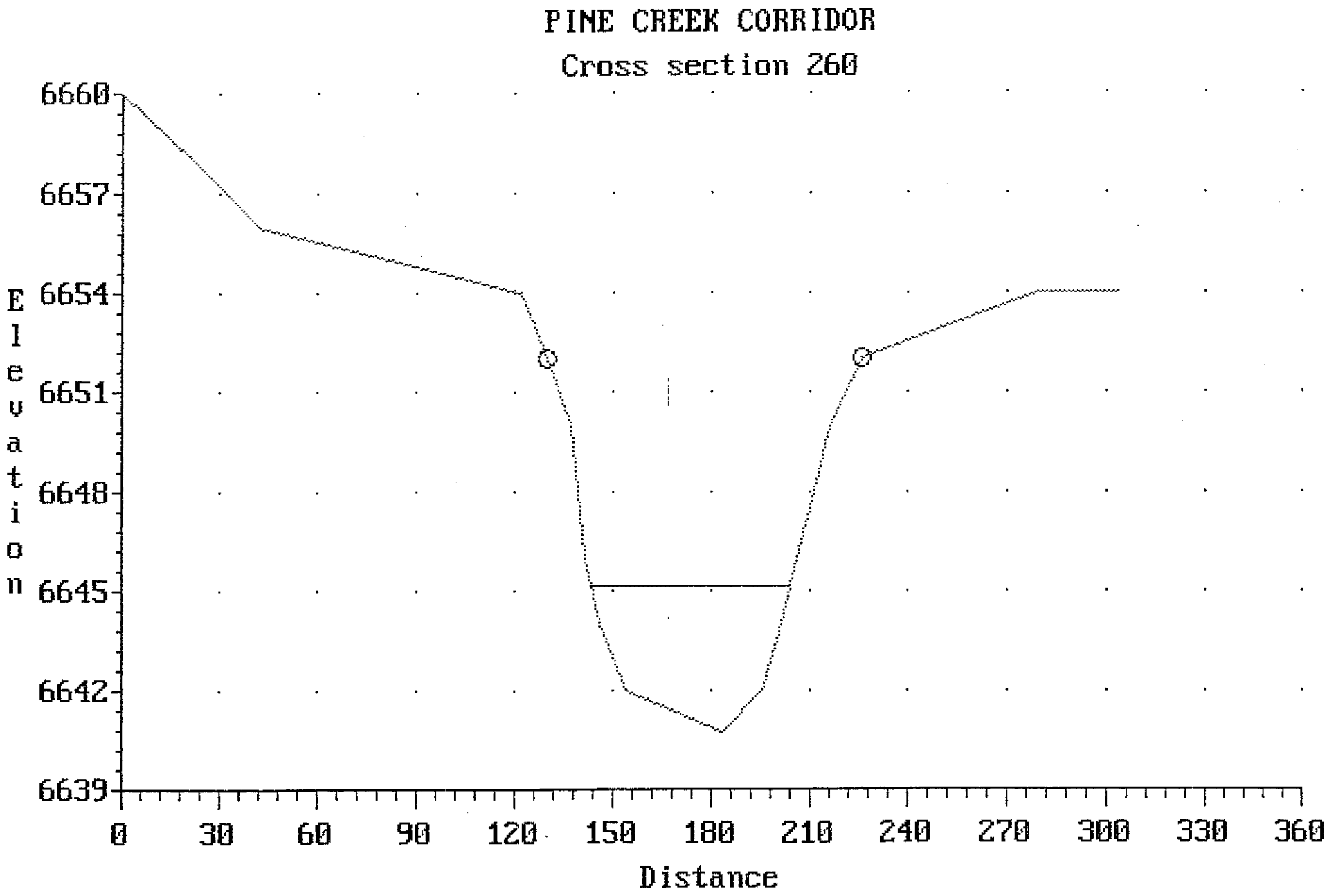
80
100
120
140
160
180
200
220
240
Distance


PINE CREEK CORRIDOR
Cross section 260
Elevation
6660
6657
6654
6651
6648
6645
6642
6639
0
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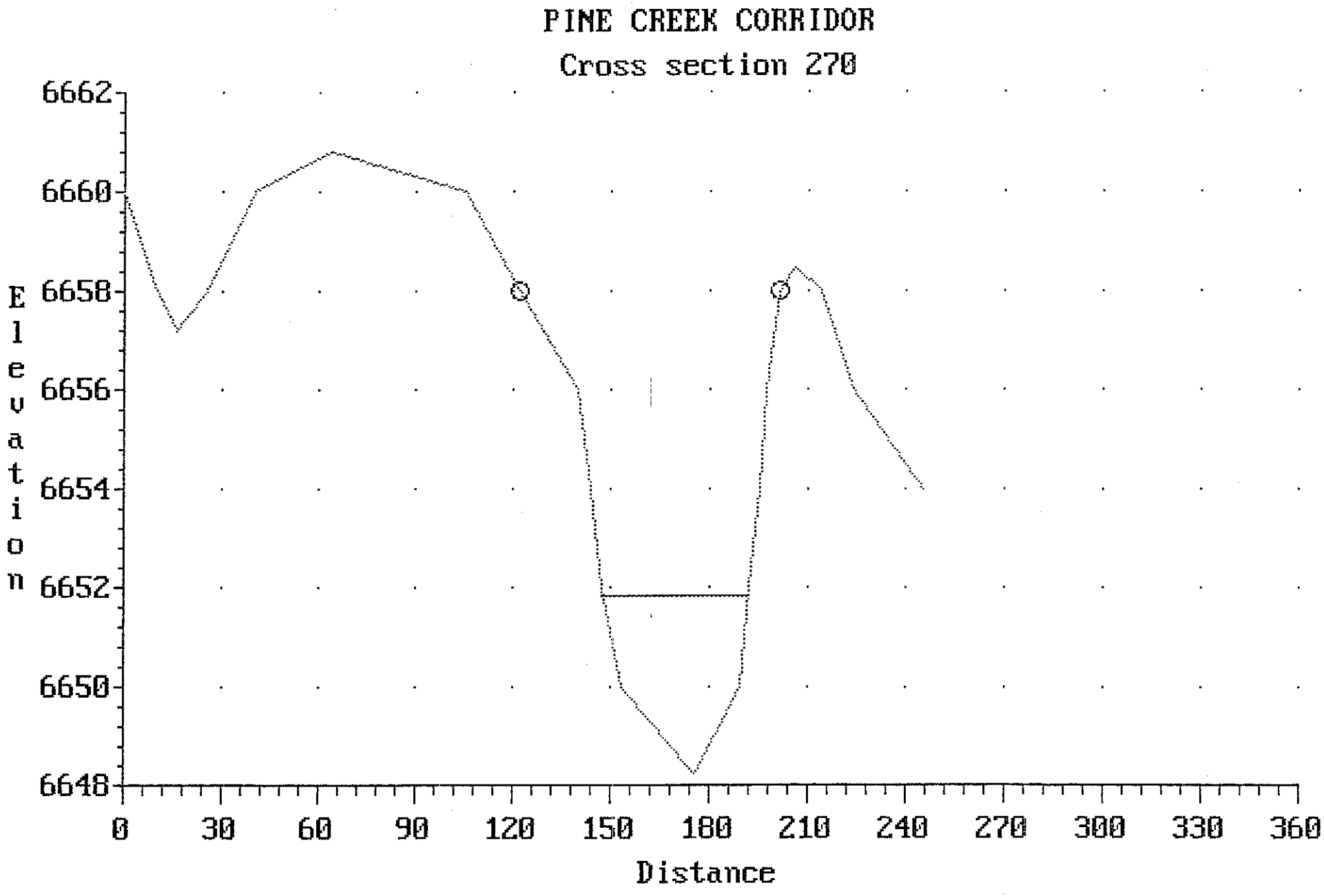
360
Distance


PINE CREEK CORRIDOR
Cross section 270
6662
6660
6658
6656
6654
6652
6650
6648
Elevation
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300
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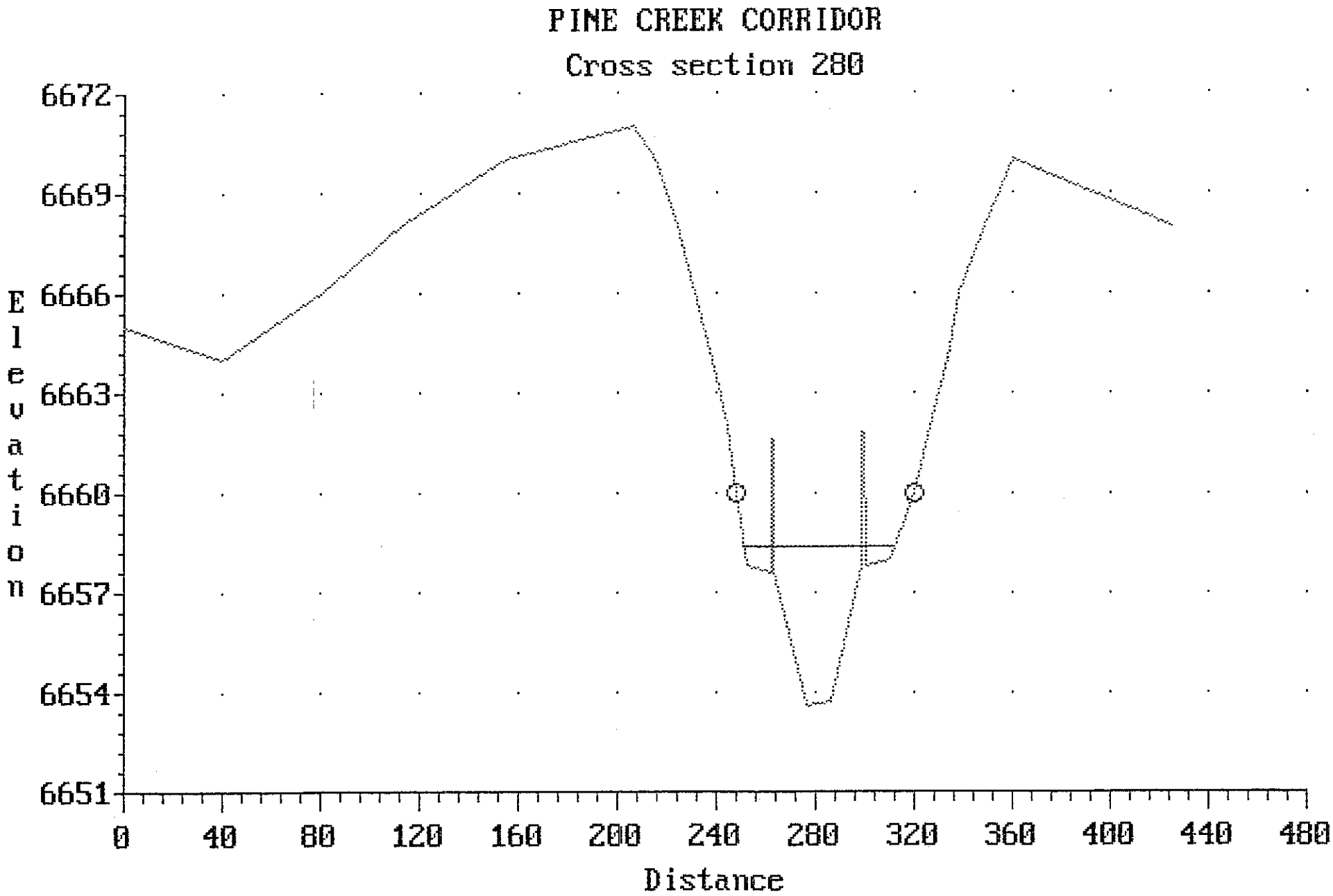
360
Distance


PINE CREEK CORRIDOR
Cross section 280
6672
6669
6666
6663
6660
6657
6654
6651
Elevation
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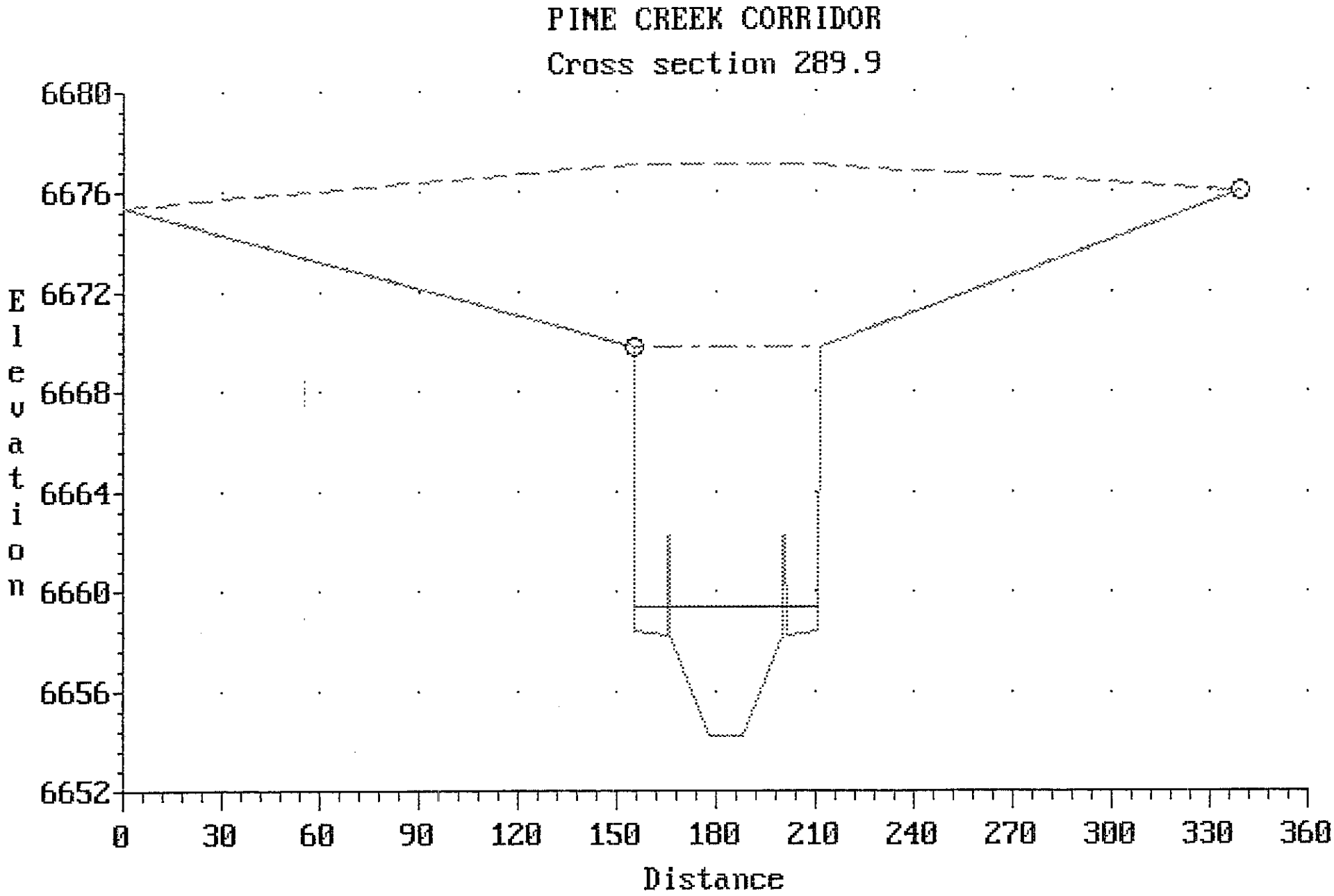
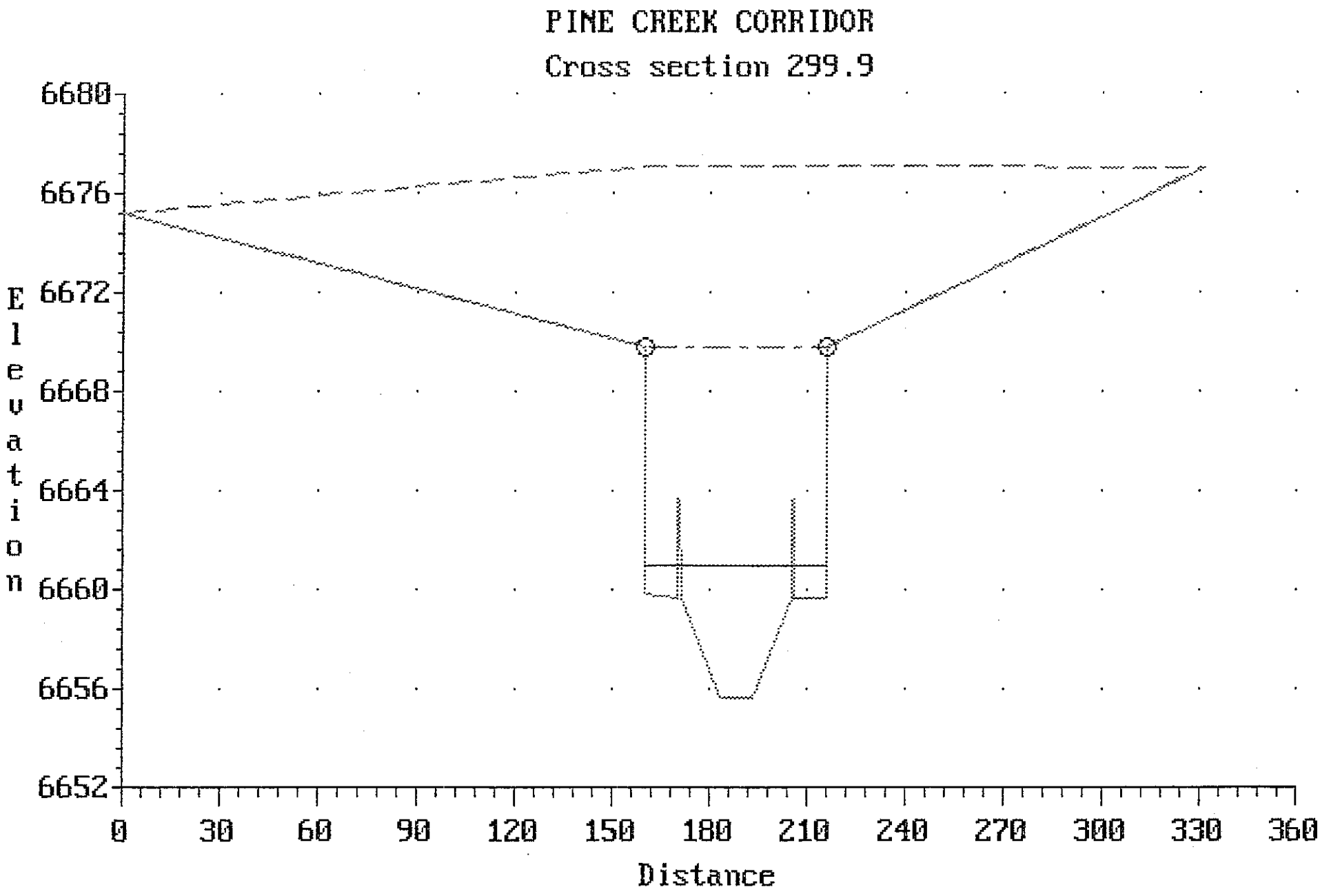
Distance


PINE CREEK CORRIDOR
Cross section 289.9
6680
6676
6672
6668
6664
6660
6656
6652
Elevation
0
30
60
90
120
150
180
210
240
270
300
330
360
Distance


PINE CREEK CORRIDOR
Cross section 299.9
6680
6676
6672
6668
6664
6660
6656
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Elevation
0
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60
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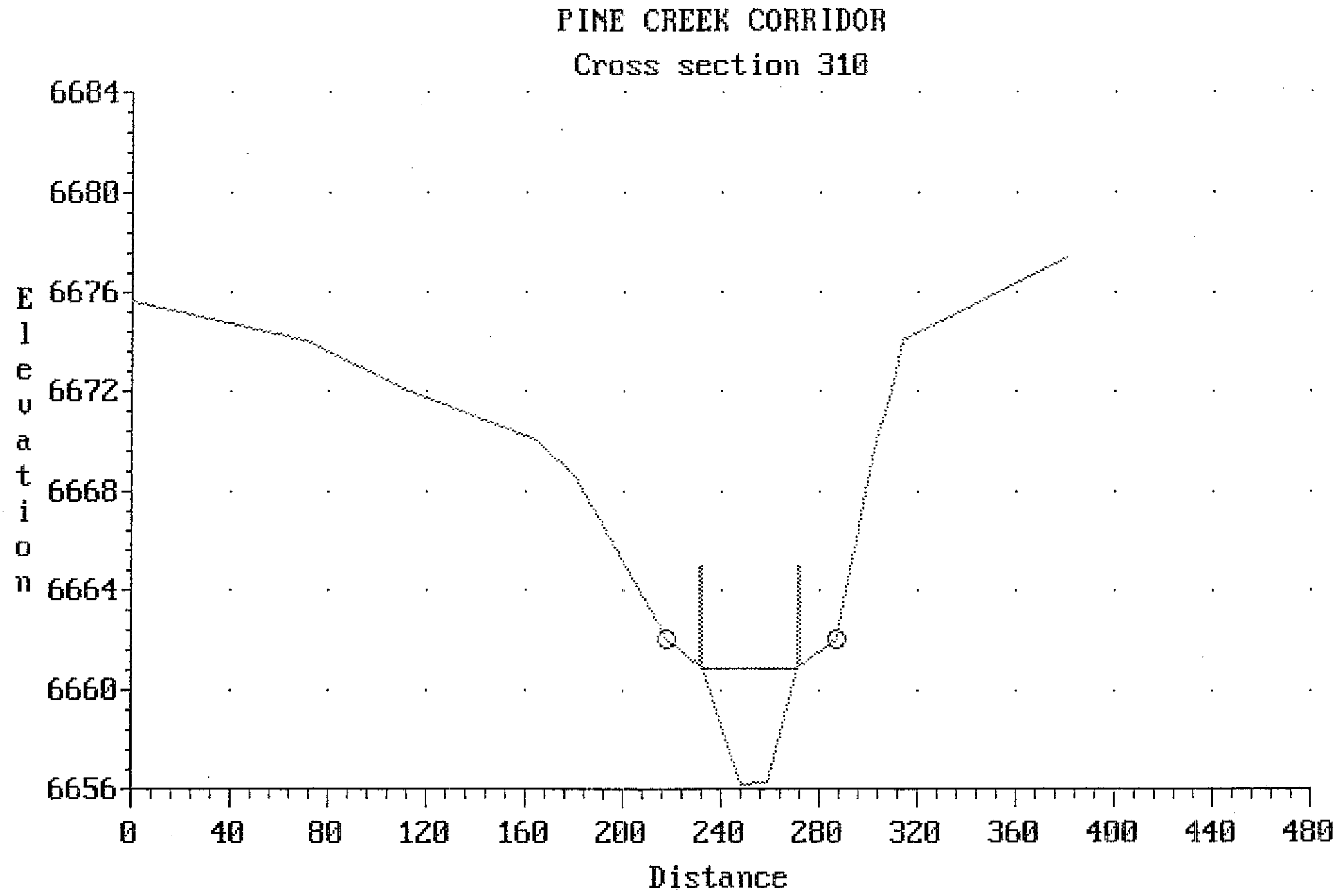
Distance


PINE CREEK CORRIDOR
Cross section 310
6684
6680
6676
6672
6668
6664
6660
6656
Elevation
0
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80
120
160
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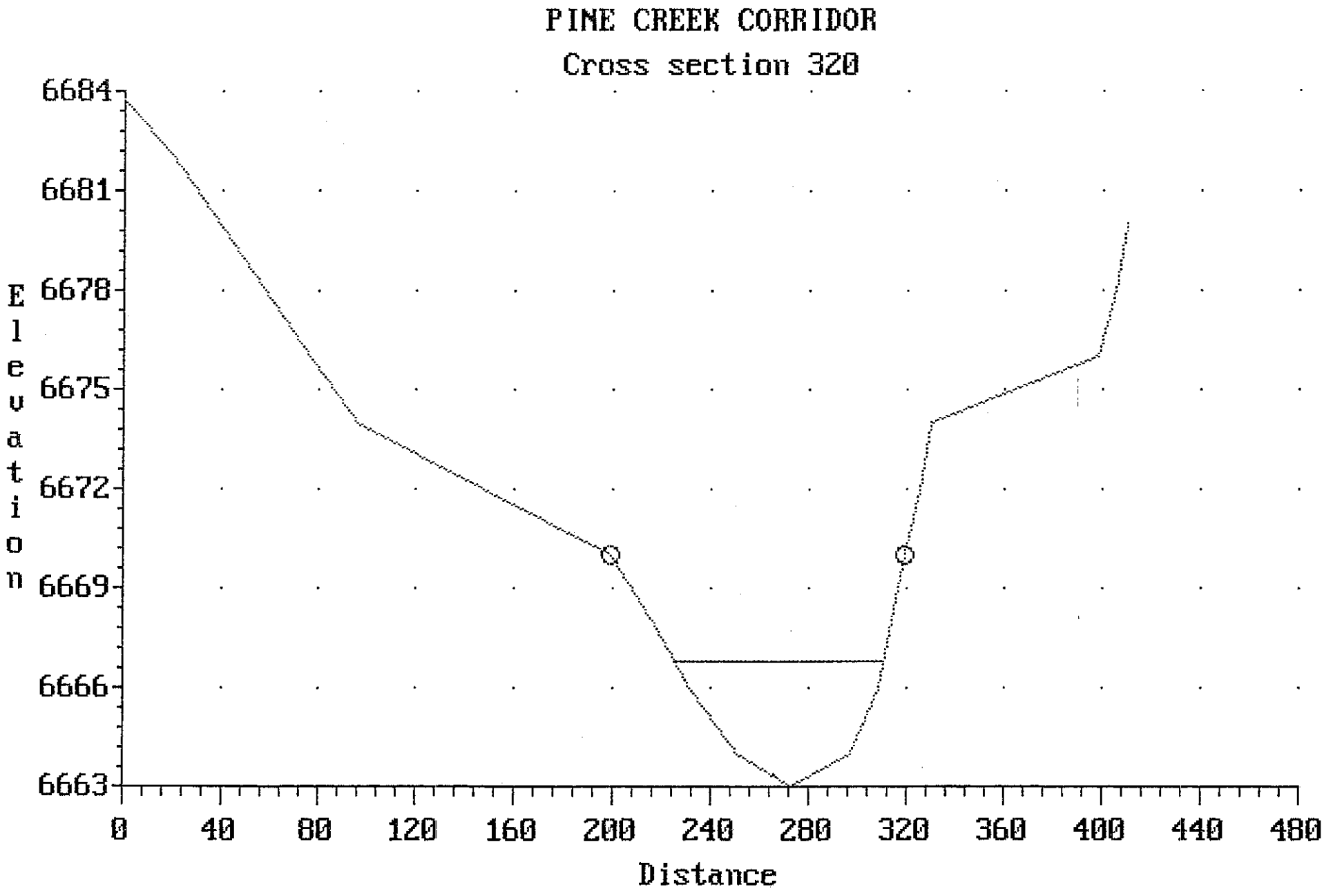
Distance


PINE CREEK CORRIDOR
Cross section 320
Elevation
6684
6681
6678
6675
6672
6669
6666
6663
0
40
80
120
160
200
240
280
320
360
400
440
480
Distance

EASEMENT LEGAL DESCRIPTION

(To Be Provided)

MAINTENANCE AGREEMENT

(To Be Provided)