Form C-104
Rev. 02/2009

VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

☒ Conceptual Proposal ☐ Final Proposal

Date 11/11/2009

Contract ID 090626-X04

Job No. J0P0876

County Wayne Rt. 34

Original Bid Cost $10,490,752.07

Contractor H R Quadri Contractors LLC

By Robert Sullivan

Designed By Eric Krapf

Phone 573-945-2224

VECP# 09-96 (to be completed by C.O.)

VECP ☐ or PDVECP ☒

1. **Description of existing requirements and proposed change(s). Advantages/Disadvantages**

   We are proposing drilling and shooting the rock in the cut area from sta 271+00 to sta 281+00 using 20 foot rock benches instead of 2:1 slopes. Our proposal, as shown in cross sections provided, include changing the in slope to a 4:1 while keeping the same ditch grade. We propose changing the V ditch to an eight foot flat bottom ditch, then having a 20 foot face on a 1/4 to 1, a ten foot wide bench, then another rock face on a 1/4 to 1 where needed. By changing to this roadway template there will be approx. 56,700 cuyds of rock that will be left in place. If rock is shot on a 2:1 slope there will be little grass that will grow on a 2:1 rock slope and what does grow can not be mowed or maintained safely. This proposal not only will save moving the rock left in place but also create an aesthetically pleasing view of Missouri's indigenous rock in an area that draws tourism due to its beauty.

2. **Estimate of reduction in construction costs.** $266,490.00 — $436,371.50

3. **Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.**

   The rock in the proposed cut area appears to be solid. No sandstone or shale type rock has been detected in this cut; therefore, the rock faces should pre-split clean and cause no additional cost to maintain in the future.

4. **Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.**

   11/12/2009
   (date)

5. **Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.**

   _____ (date) _____ (effect)

6. **Dates of any previous or concurrent submission of the same proposal.**

   N/A
   (date and/or dates)

NOV 12 2009

Additional Comments:

**** Portion Below This Line To Be Filled Out by MoDOT ****

Comments: THIS PROPOSAL WILL SAVE CONSIDERABLE MONEY ON THE PROJECT. IT ALSO ENHANCES SAFETY & PROVIDES BETTER DRAINAGE BY ALTERING THE IN-SLOPES AND ADDING AN 8FT DITCH. THESE MODIFICATIONS WILL ALSO PROVIDE A PROJECT EASIER TO MAINTAIN. THE PROJECT WAS DESIGNED AS UNCLASSIFIED EXC - THE RISK ASSOCIATED WITH THIS TYPE OF BIDDING SHOULD BE CONSIDERED WHEN RECOMMENDING APPROVAL OR DENIAL. I RECOMMEND APPROVAL OF THE VECP

Submitted By Resident Engineer — Date: 13 NOV 09

Comments: Recommend approval as a 75%/25% split of savings with the following modifications: 15' bench as per EPG 231.7, interception ditch/levee to control drainage, provide for sight distance at entrance 28A+76 Rt, soil slopes as per recommendations in soils report.

☑ **Approval Recommended**
☐ **Rejection Recommended**

Mark Shelton by R. Ritter — District Engineer — Date: 11-18-09

Comments:

☐ **Approval Recommended**
☐ **Rejection Recommended**

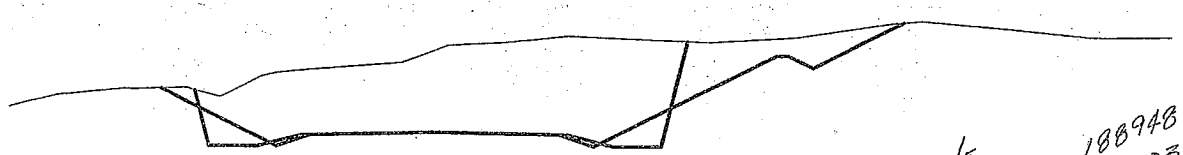
Federal Highway Administration
Required for FHWA Full Oversight Projects — Date

Comments: Agree w/ District recommendations 75/25 split.

☑ **Approval**
☐ **Rejection**

David D. Oliver — State Construction and Materials Engineer — Date: 11-19-09

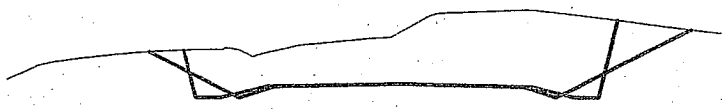
Distribution: Resident Engineer, Project Manager, District Construction & Materials Engineer, State Construction & Materials Engineer, FHWA Value Engineering Administrator – MoDOT, P. O. Box 270, Jefferson City, MO 65102



271+50

1066 S.F.
1179 S.F.

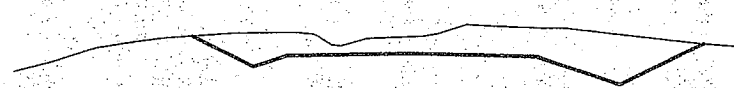
1602 C.Y. ✓
1746 C.Y. 1733



271+00

664 S.F.
707 S.F.

942 C.Y. ✓
982 C.Y. 979



270+50

353 S.F.
353 S.F.

NOTES: → PGL & DITCH grade REMAIN THE SAME
→ INSLOPES FLATTER THAN ORIGINAL 4:1 from 3:1
→ 8' FB vs 'V' ditch
→ 0.25:1 SLOPES
→ 10 FT BENCHES
→ NO PIPES AFFECTED
→ NEED TO INCORPORATE DW @ Z79+72 LT

188948
96103
92845 CY * $4.70 = $436,371.50

Station	VE	Plan
270+50		
271+00	942	979 ✓
271+50	1602	1733 ✓
272+00	2495	3019 ✓
272+50	3419	4907 ✓
273+00	4091	7289 ✓
273+50	4772	
274+00	5217	20683 ✓
274+50	5173	
275+00	5259	25020 ✓
275+50	5854	
276+00	6411	27998 ✓
276+50	6725	
277+00	6856	29944 ✓
277+50	6862	
278+00	6782	28039 ✓
278+50	6473	
279+00	5744	22596 ✓
279+50	4587	~~19490~~
280+00	3182	~~2048~~ 12538 ✓
280+50	1936	2514 ✓
281+00	1112	1195 ✓
281+50	609	494 ✓
	96103	188948

20301
7697
27998

9672
6209
14063
29944

720
475
1195

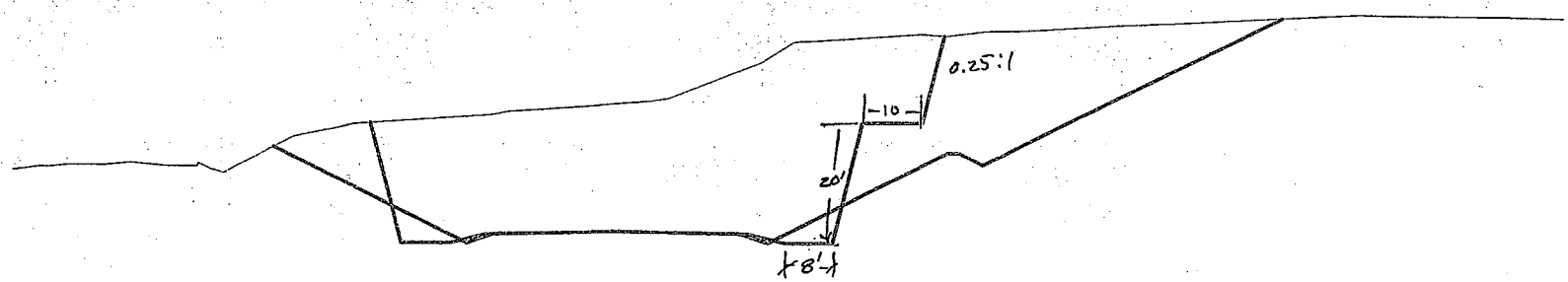
851
21745
22596

1477
1037
2514

331
163
494

10143
347
2048
12538

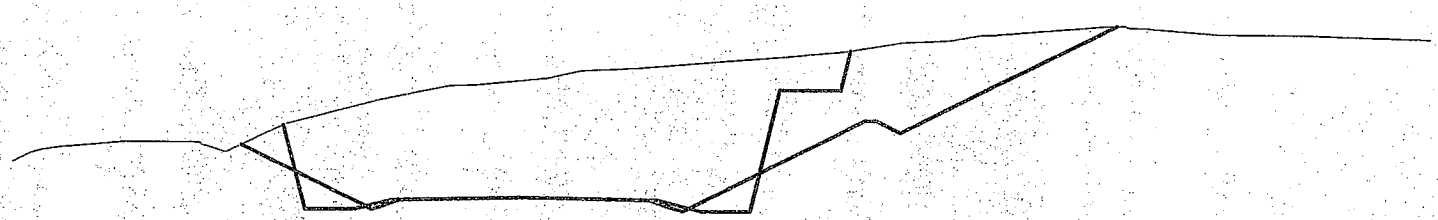
NOV 1 2 2009



272+50

2064 S.F.
2994 S.F.

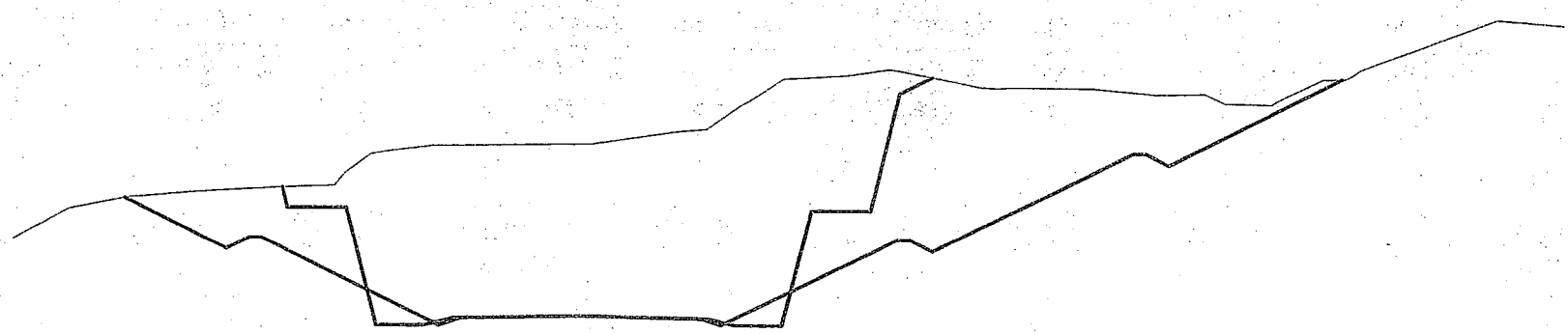
3419 C.Y.
4715 C.Y. 4907



272+00

1629 S.F.
2098 S.F.

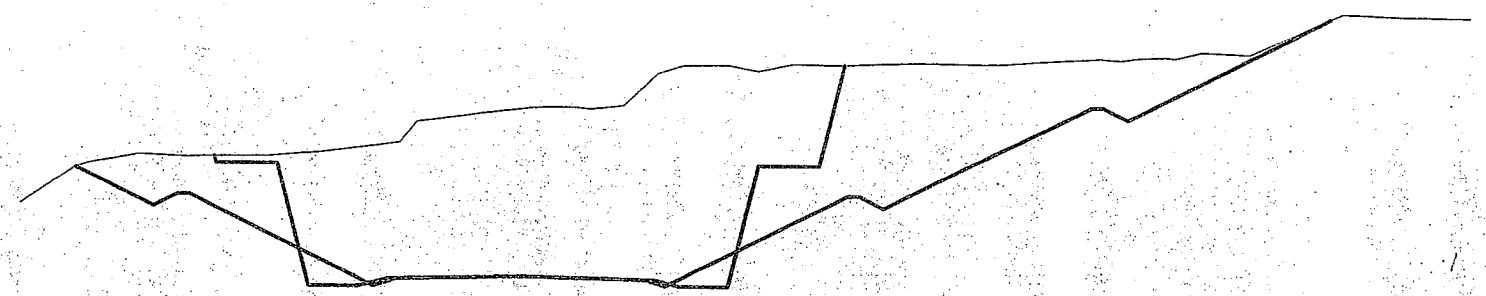
2495 C.Y.
3034 C.Y. 3019



273+50

2800 S.F.
4279 S.F.

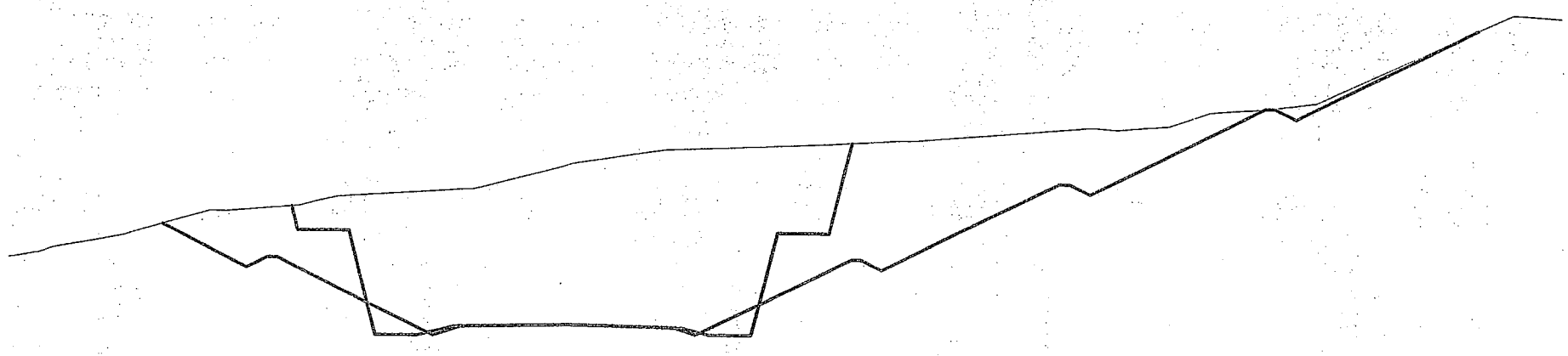
4772 C.Y.
7289 C.Y.



273+00

2354 S.F.
3593 S.F.

4091 C.Y.
6099 C.Y.



2753 S.F.
4242 S.F.

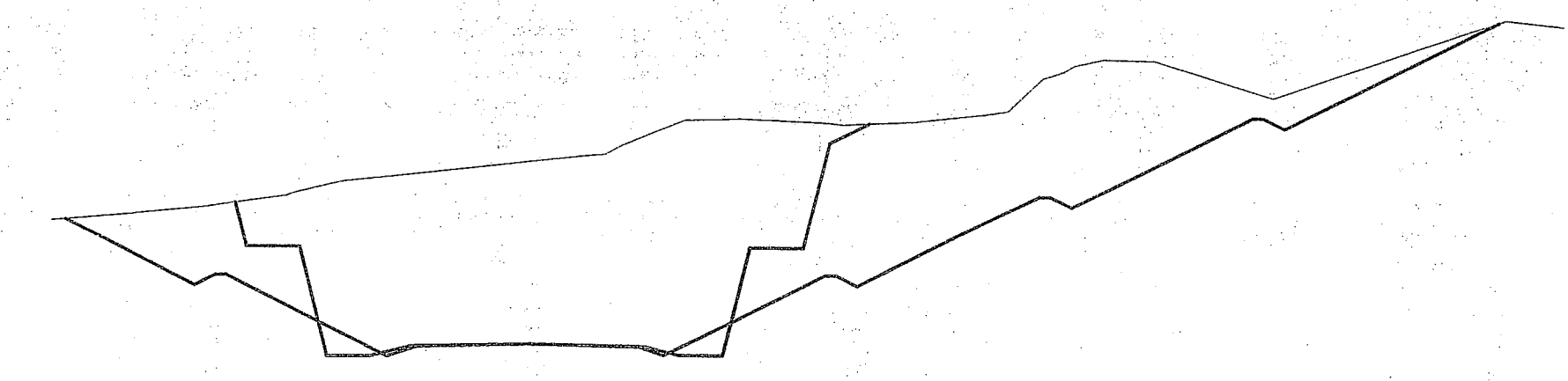
274+50

5173 C.Y.
8396 C.Y.

2834 S.F.
4826 S.F.

274+00

5217 C.Y.
8431 C.Y.



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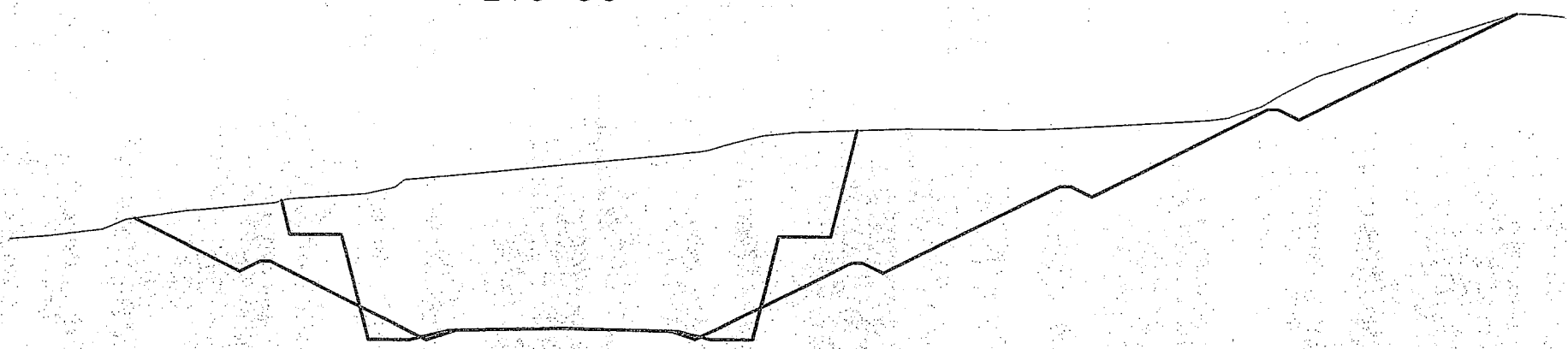

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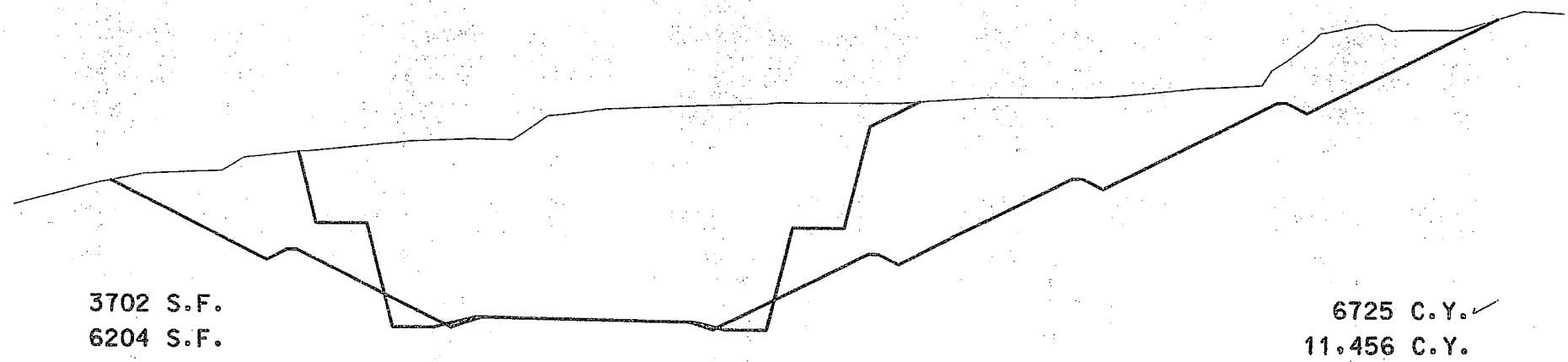
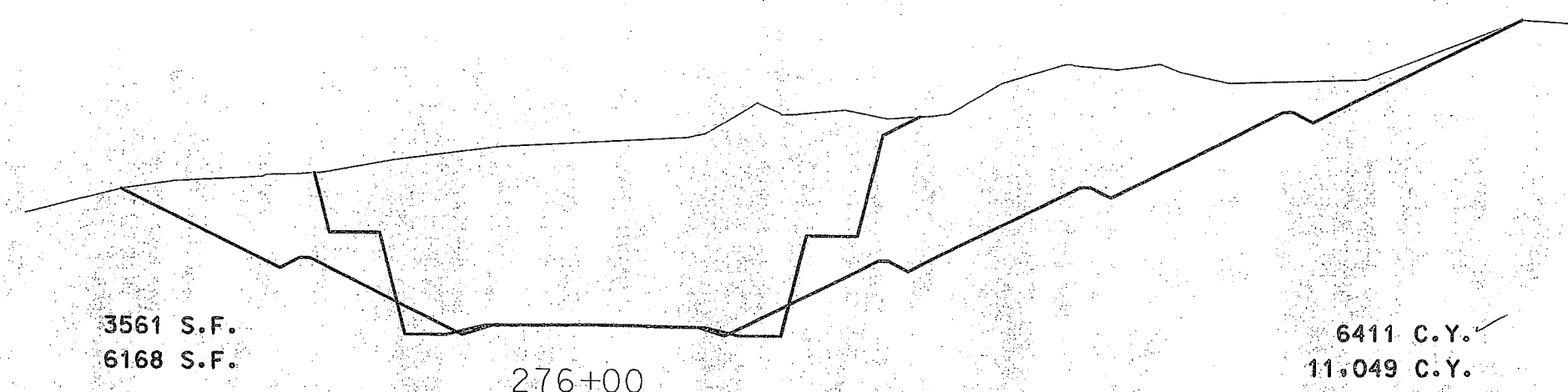
8289 C.Y.


3702 S.F.
6204 S.F.
276+50
6725 C.Y.
11,456 C.Y.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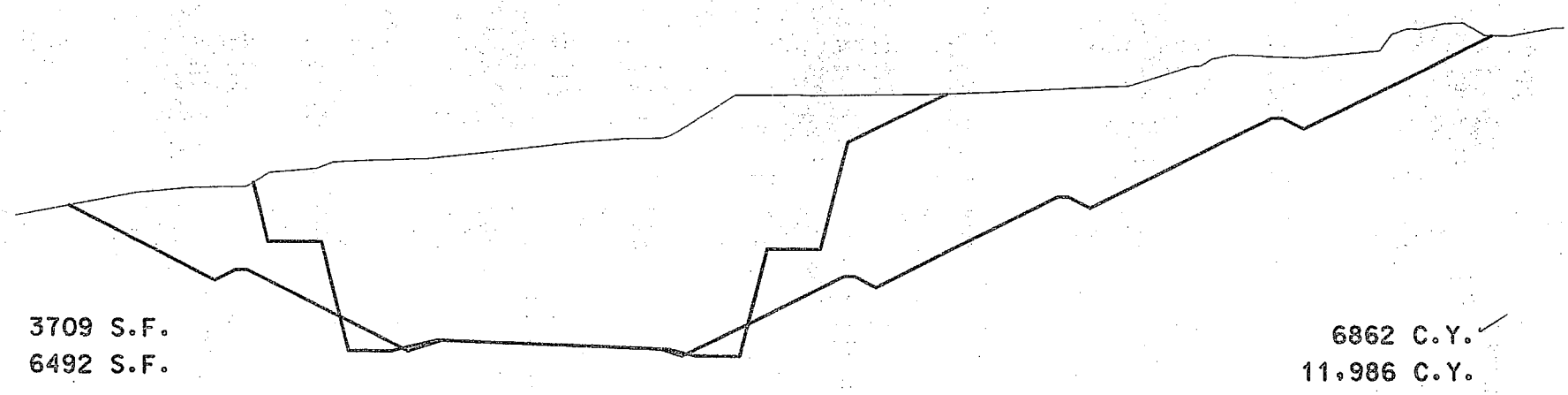
276+00
6411 C.Y.
11,049 C.Y.


3709 S.F.
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277+50
6862 C.Y.
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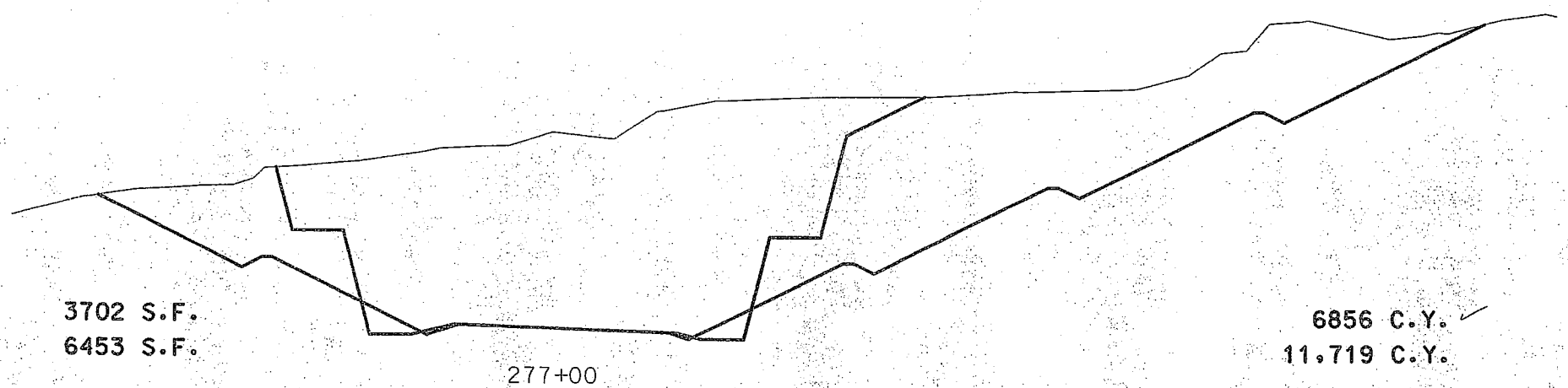
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277+00
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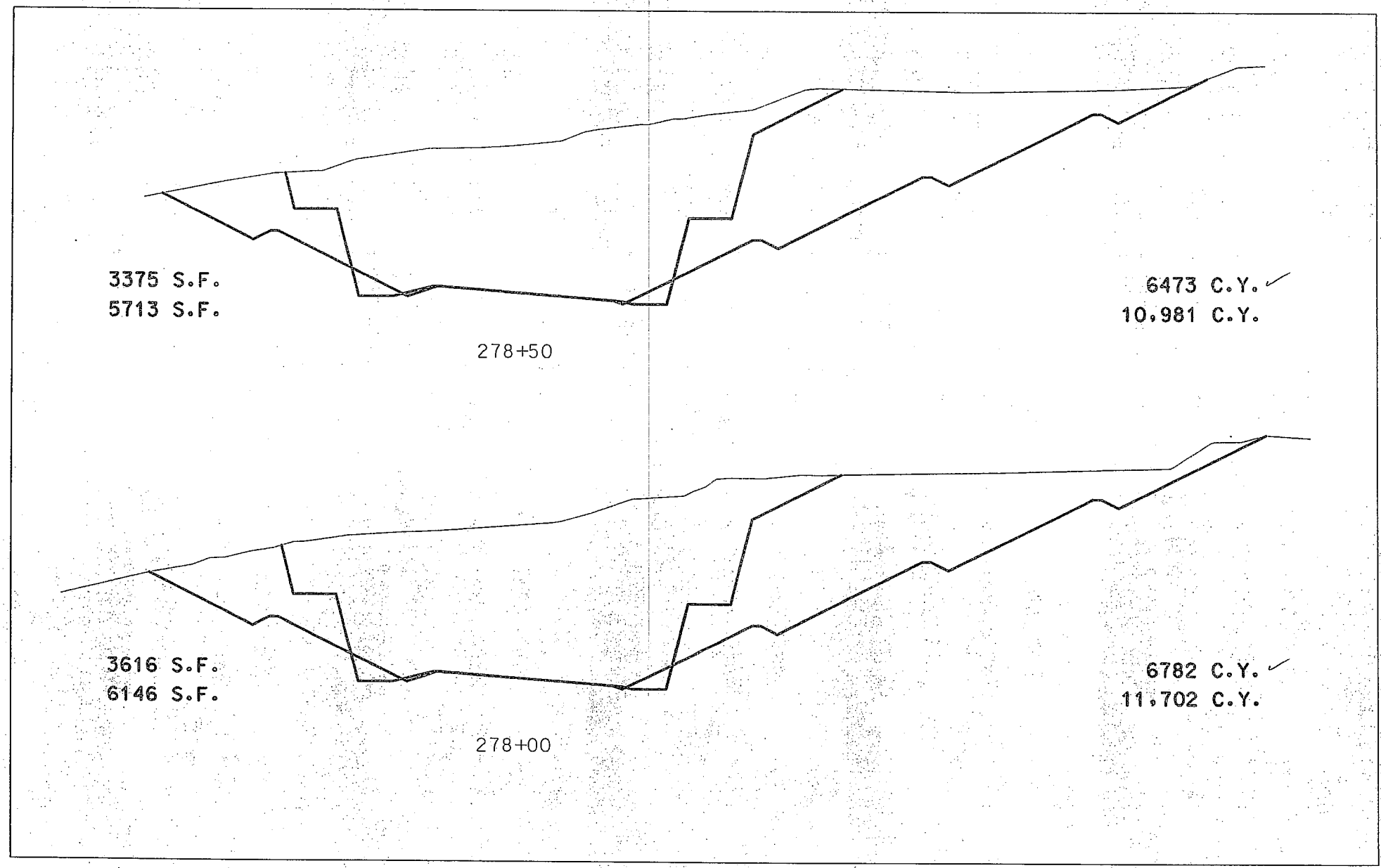
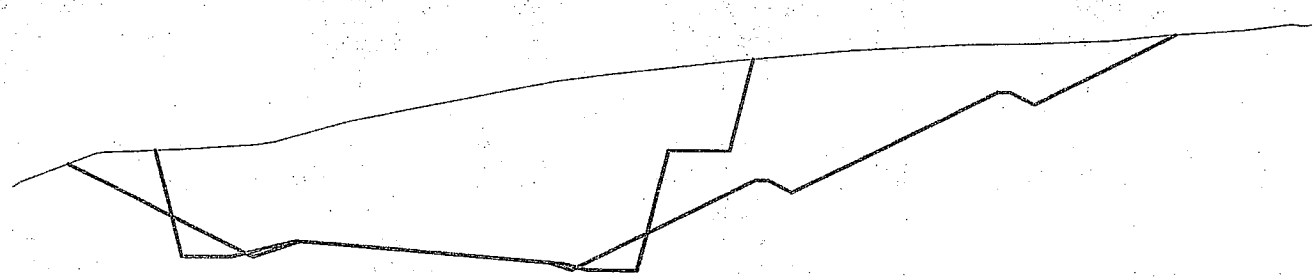
11,719 C.Y.

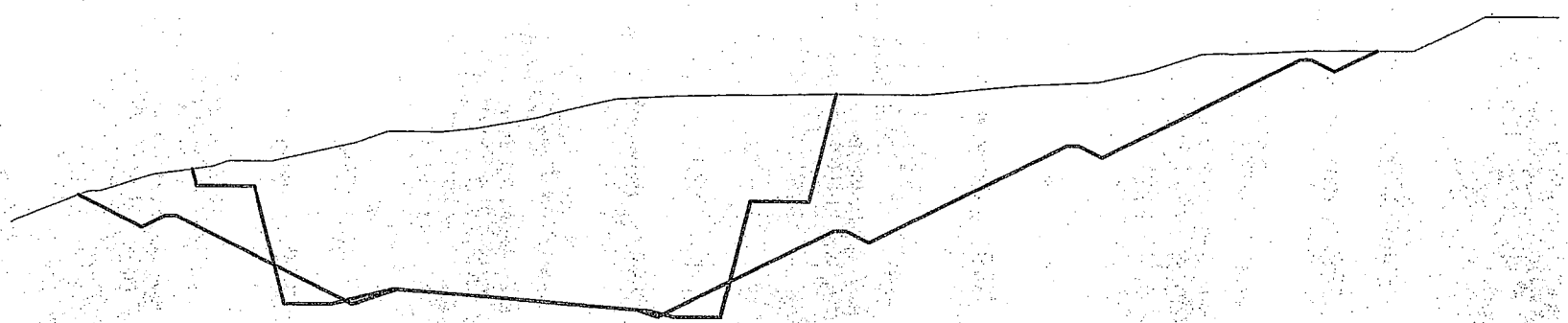

3375 S.F.
5713 S.F.
6473 C.Y.
10,981 C.Y.
278+50
3616 S.F.
6146 S.F.
6782 C.Y.
11,702 C.Y.
278+00



2125 S.F.
3155 S.F.

279+50

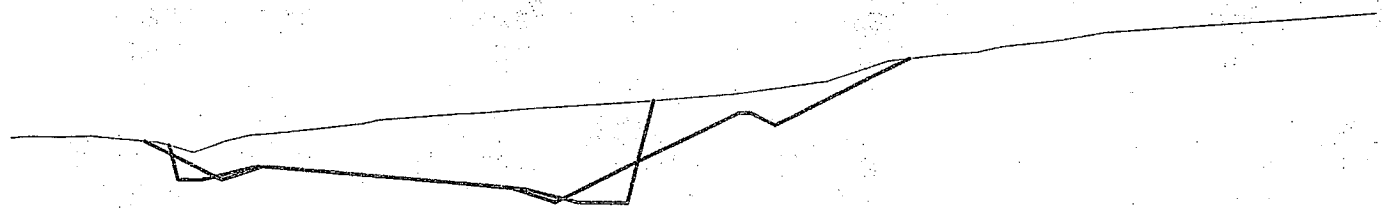
4587 C.Y.
6915 C.Y.



2829 S.F.
4313 S.F.

279+00

5744 C.Y.
9283 C.Y.



780 S.F.
919 S.F.

280+50

1936 C.Y.
2544 C.Y.

1311 S.F.
1828 S.F.

280+00

3182 C.Y.
4614 C.Y.

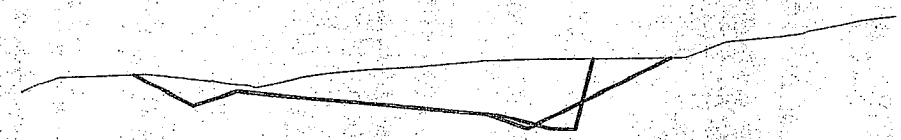
ROCK REVISION = 96,133 C.Y.
MODOT DESIGN = 152,840 C.Y.

237 S.F.
237 S.F.

281+50

609 C.Y.
640 C.Y.

421 S.F.
454 S.F.



281+00

1112 C.Y.
1271 C.Y.

VALUE ENGINEERING CHECK SHEET

TYPE OF WORK

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☐ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☐ Paving (PCCP, ect.)
- ☐ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- X Misc. _Excavation_____

SUMMARY OF PROPOSAL

(If needed, condense summary to a couple of lines)

Practical design value engineering change proposal. Contractor proposes to steepen the back slopes thus reducing the amount of excavation required.

SCANNING OF DOCUMENT

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.

_____

_____

_____