

LETTING DATE
 09-24-2019
 SLIDE REPAIR
 NHSN-067-1(156)--2R-82

SCOTT CO.



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

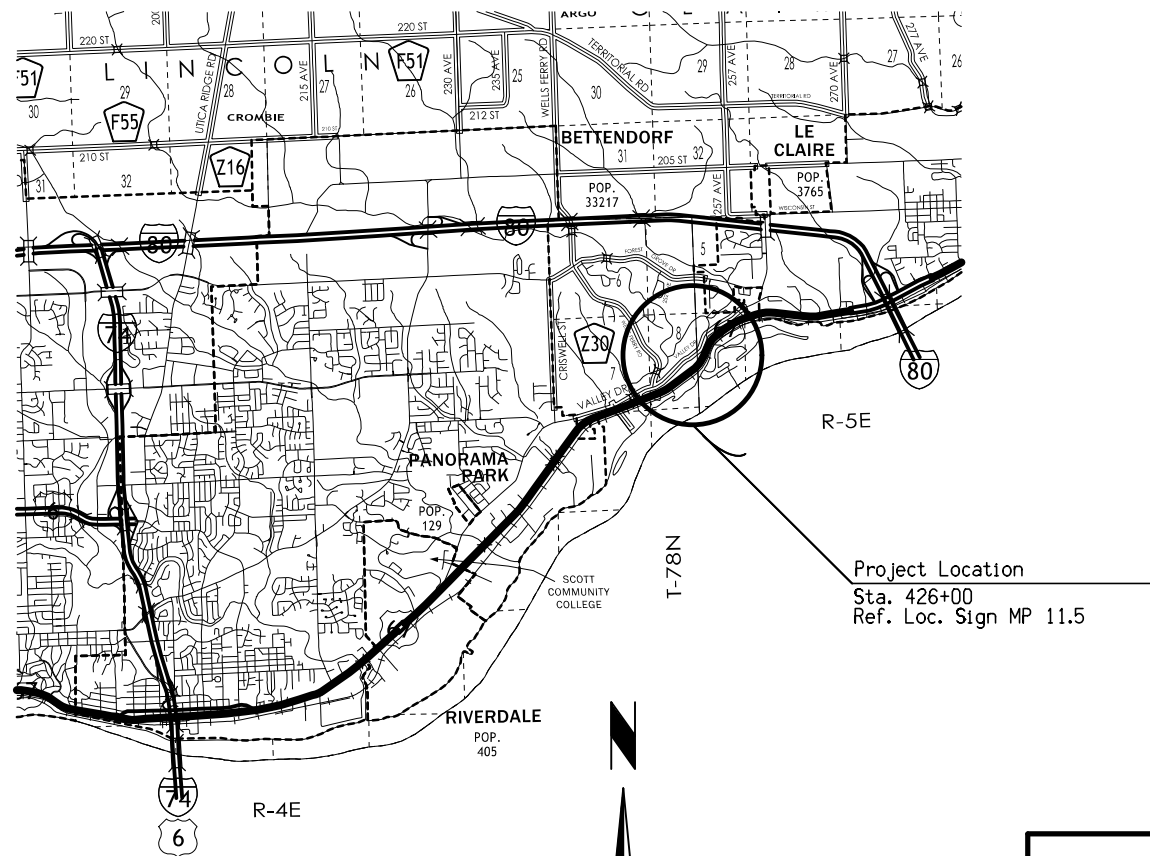
PRIMARY ROAD SYSTEM SCOTT COUNTY SLIDE REPAIR

2.0 mi S of I-80

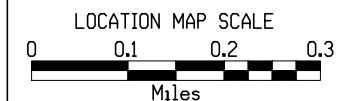
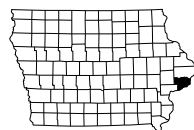
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



Project Location
Sta. 426+00
Ref. Loc. Sign MP 11.5



DESIGN DATA URBAN

2017 AADT	9,000	V.P.D.
20-- AADT	--	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	10.00	%
Total Design ESALs	--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Ryan Miller	Primary Signature Block
CS.1	David Heer	Geotechnical Design
RC.1	Seana K. Godbold	Landscape Design

ROADWAY DESIGN



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Ryan R. Miller
Signature Date 8-30-2019

Ryan R. Miller
Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: A.1, B.1, C.1-2, G.1-3, H.1, J.1, U.1
X

REVISIONS

TOTAL
39

PROJECT IDENTIFICATION NUMBER

20-82-067-010

PROJECT NUMBER

NHSN-067-1(156)--2R-82

R.O.W. PROJECT NUMBER

NHSN-067-1(157)--2R-82

INDEX OF SHEETS

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B Sheets	Typical Cross Sections and Details
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C Sheets	Quantities and General Information
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C.2	Standard Road Plans and Tabulations
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* Q.1 - 5	Soils Sheets
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U.1	500 Series, Modified Standards and Detail Sheets
W Sheets	Mainline Cross Sections
W.1 - 17	Mainline Cross Sections
	* Color Plan Sheets

FILE NO.

ENGLISH

DESIGN TEAM Miller \ Cooper \ Newman

SCOTT COUNTY

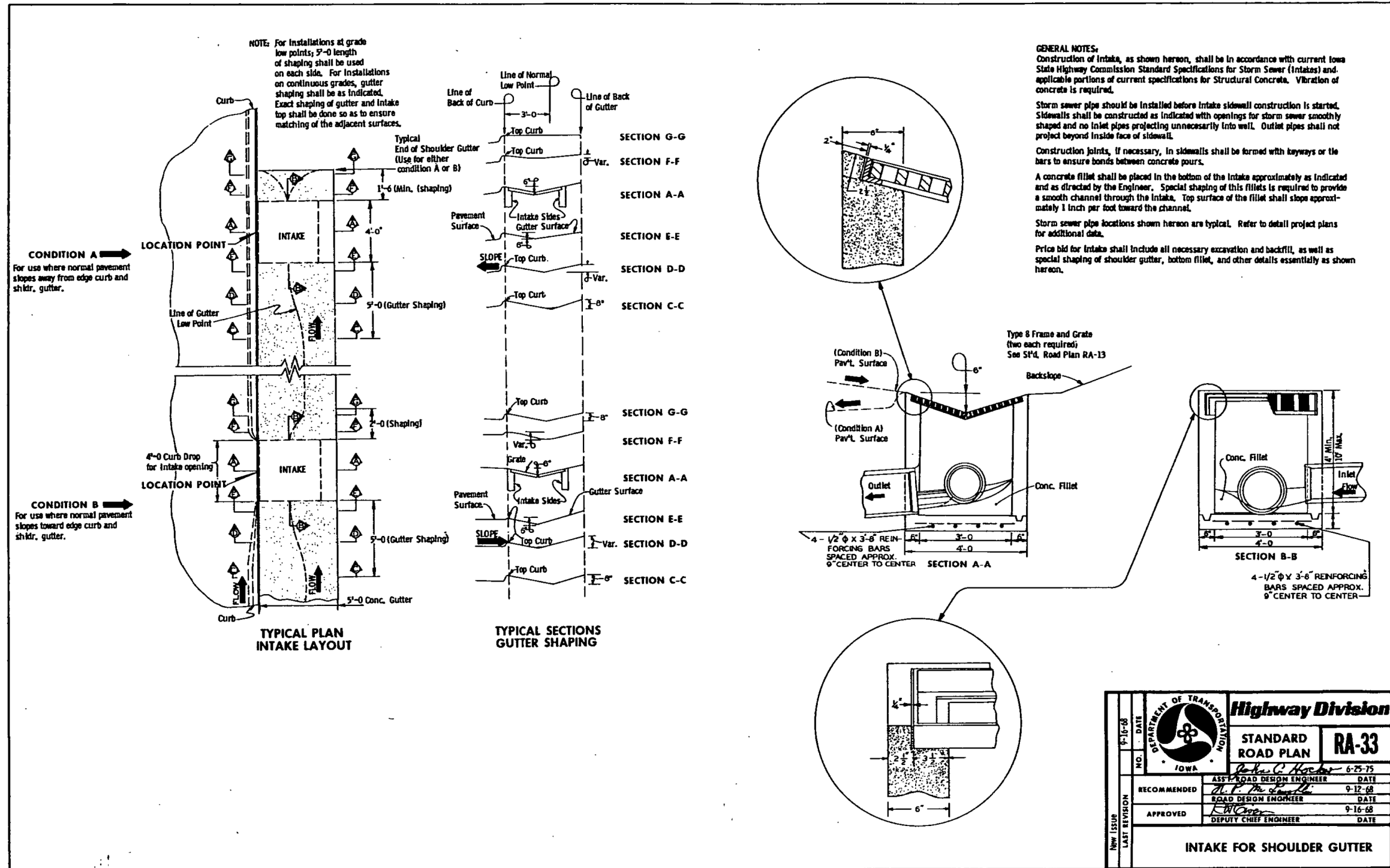
PROJECT NUMBER

NHSN-067-1(156)--2R-82

SHEET NUMBER

A.1

For Information Only



NEW ISSUE LAST REVISION	NO.	DATE	Highway Division STANDARD ROAD PLAN RA-33
	RECOMMENDED	DATE	
	APPROVED	DATE	
	DATE	DATE	
INTAKE FOR SHOULDER GUTTER			

100-1D 10-18-05
PROJECT DESCRIPTION
Emergency project to repair a slide on IA 67 in Scott County Major work involved: excavating existing roadway embankment, over-excaavating to place yugos (transverse slope drains) at certain locations, removing and replacing existing drainage structures

100-1A 07-15-97					
ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	1.0	
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	1,034.0	
3	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	10,122.0	
4	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	12.0	
5	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW	CY	10.0	
6	2102-4560000	LOCATING TILE LINES	STA	5.00	
7	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	2,630.0	
8	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	795.0	
9	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1.00	
10	2502-6745952	REMOVAL OF SUBDRAIN	LF	85.0	
11	2502-8212206	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.	LF	655	
12	2502-8221303	SUBDRAIN OUTLET, DR-303	EACH	1	
13	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	15	
14	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	40	
15	2507-3250005	ENGINEERING FABRIC	SY	2,878.0	
16	2507-8029000	EROSION STONE	TON	7,416.0	
17	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	EACH	1	
18	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
19	2528-8445110	TRAFFIC CONTROL	LS	1.00	
20	2528-8445113	FLAGGERS	EACH	See Proposal	
21	2533-4980005	MOBILIZATION	LS	1.00	
22	2602-0000530	GRATE INTAKE SEDIMENT FILTER BAG	EACH	1	
23	2602-0000540	MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	1	
24	2602-0000550	REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	1	

SEE RC.1 SHEETS FOR ADDITIONAL BID ITEMS AND QUANTITIES.

100-4A 10-29-02		
ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING Item is for clearing and grubbing within the construction needs line. Care should be taken to only clear and grub what is necessary for placement of subdrains and earthwork activities. Article 2101.01A, of the Standard Specifications is not required for this project.
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW
3	2102-2710090	EXCAVATION, CLASS 10, WASTE Refer to Tab. 103-12 on 'CS' sheets.

100-4A 10-29-02		
ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
4	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS Refer to Tab. 103-7 on 'CS' sheets. Dispose of excess material according to Article 1106.07 of the current specifications.
5	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW
6	2102-4560000	LOCATING TILE LINES
7	2105-8425005	TOPSOIL, FURNISH AND SPREAD Refer to Tab. 103-12 on 'CS' sheets.
8	2107-0875100	COMPACTION WITH MOISTURE CONTROL Refer to Tab. 103-6 on 'CS' sheets. Shrinkage will not be included in the moisture control quantity.
9	2401-6745650	REMOVAL OF EXISTING STRUCTURES Item is for removal of existing concrete building foundation. Refer to 110-2.
10	2502-6745952	REMOVAL OF SUBDRAIN Item is for removal of 24" clay tile. Refer to 'Q' sheets for location. Method of Measurement: Measurement of each type and size of subdrain removed will be in linear feet from end to end. Basis or Payment: Payment will be made at the contract unit price per linear foot for each type and size of subdrain removed. Payment is full compensation for excavation, removal, disposal, and placing backfill.
11	2502-8212206	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.
12	2502-8221303	SUBDRAIN OUTLET, DR-303
13	2502-8221306	SUBDRAIN OUTLET, DR-306 Refer to Tab. 104-9 on 'CS' sheets. 2502-8221306 SUBDRAIN OUTLET, DR-306 In addition to the steel post and sleeve required to mark the outlet end of the subdrains as per 2502.03.A.8 of the Standard Specifications, an additional steel post and plastic sleeve shall be placed at the upstream end of each Yugoslavian (Yugo) subdrain. The additional steel post and plastic sleeve placed at the start of each Yugo subdrain (count = 16) shall be considered incidental to this bid item.
14	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN. Refer to Tab. 110-14. UAC pipe connection into the existing intake. Only remove as much pipe as necessary to connect Yugo drain into existing storm sewer.
15	2507-3250005	ENGINEERING FABRIC Refer to Tab. 103-12 on 'CS' sheets.
16	2507-8029000	EROSION STONE Refer to 'Q' sheets and Tab. 103-12 on 'CS' sheets. Includes an additional 10 tons for backfilling existing sealed well. Fill chamber with Erosion Stone.
17	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES Refer to Tab. 110-15.
18	2526-8285000	CONSTRUCTION SURVEY
19	2528-8445110	TRAFFIC CONTROL
20	2528-8445113	FLAGGERS
21	2533-4980005	MOBILIZATION
22	2602-0000530	GRATE INTAKE SEDIMENT FILTER BAG
23	2602-0000540	MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG
24	2602-0000550	REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG Refer to Tab. 100-37 and 'U' sheets.

STANDARD ROAD PLANS			105-4 10-18-11
The following Standard Road Plans apply to construction work on this project.			
Number	Date	Title	
DR-303	10-17-17	Subdrains (Longitudinal)	
DR-306	10-16-18	Precast Concrete Headwall for Subdrain Outlets	
EC-602	10-16-18	Open-Throat Curb Intake Sediment Filter	
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)	
TC-202	04-21-15	Work Within 15 ft of Traveled Way	
TC-212	10-15-19	Spot Location Lane Closure with Flaggers	
TC-402	04-21-15	Work Within 15 ft of Traveled Way	
TC-419	10-16-18	Lane Closure on Undivided Highway	

REMOVAL OF EXISTING STRUCTURES			110-2 04-16-13
Location	Description	Remarks	
425+75 Lt	Mason Foundation Debris	Material to become property of the contractor	

REMOVAL OF INTAKES AND UTILITY ACCESSES				110-15 04-16-13
No.	Location/Description	Type	Remarks	
1	426+05; 4' x 4' concrete intake	Intakes		

UTILITIES (NOT A POINT 25 PROJECT)	262-6 10-18-05
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.	

GRATE INTAKE SEDIMENT FILTER BAG						100-37 04-18-17
Possible Detail: 570-7						
Location Station	Side	Installation	Maintenance	Removal	Remarks	
		EACH	EACH	EACH		
426+00	Lt	1	1	1		

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL						110-14 04-16-13
* Not a bid item						
Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			≤ 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
426+00	Storm Sewer	Removal	40			UAC pipe connection into the existing intake. Only remove as much pipe as necessary to connect Yugo drain into existing storm sewer

SLIDE REPAIR

Site No.	Location		Side	Boulders Cl. 12 Exc.	Class 10			Class "E" Revetment	Engineering Fabric	Erosion Stone	Gra. Material Blankets & Subdrain	Macadam Stone	Top Soil		Remarks
	Begin Sta.	End Sta.			Contractor Provided	Excavation & Waste	Roadway & Borrow						Furnish & Spread	Strip, Slavage & Spread	
1	425+18.00	428+22.00	Lt.			10122	1034		2878	7406			2630		See sheets Q.1-5

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Line No.	Road or Lane Identification	Location		Side	Depth (D)	Longitudinal Subdrain (DR-303)				Subdrain Outlet		Porous* Backfill	Class "A" Crushed Stone	Remarks			
		Station to Station	Shoulder			Backslope		Bridge Berm (EW-203 or EW-204)		DR-303, DR-305 or DR-306							
						Size	Length	Size	Length	Standard Road Plan and Type	Size				Length	Station	Standard Road Plan and Type
						IN	FT	IN	FT		IN				FT		
1	US 67	425+20.00	425+20.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
2	US 67	425+40.00	425+40.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
3	US 67	425+60.00	425+60.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
4	US 67	425+80.00	425+80.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
5	US 67	426+00.00	426+00.00	LT				6.0	55.0					Outlet into RA-33 intake			
6	US 67	426+20.00	426+20.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
7	US 67	426+40.00	426+40.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
8	US 67	426+60.00	426+60.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
9	US 67	426+80.00	426+80.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
10	US 67	427+00.00	427+00.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
11	US 67	427+20.00	427+20.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
12	US 67	427+40.00	427+40.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
13	US 67	427+60.00	427+60.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
14	US 67	427+80.00	427+80.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
15	US 67	428+00.00	428+00.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
16	US 67	428+20.00	428+20.00	LT				6.0	40.0					Place transversely at bottom of Yugo Drain			
Total:									0.0		655.0				DR-306 = 15 DR-303 = 1	0.0	0.0

EMBANKMENT WITH MOISTURE CONTROL

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.

SHRINKAGE DATA

Material	%	Remarks
Class 10	30%	
Topsoil	40%	
Boulder		12 CY

GEOTECHNICAL DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

David J. Heer 8-30-19
Signature Date

David J. Heer
Printed or Typed Name
My license renewal date is December 31, 2020

Pages or sheets covered by this seal: CS.1, Q.1-Q.5, W.1-W.17

Survey Information

Scott County
NHSN-067-1(156)--2R-82
US 67 Slide Repair
PIN 20-82-067-010
Sap-0696.1

Party Personnel

Tom Hoyle – Lead Survey Technician
Dave Ciskowski – Survey Technician
Brad Duffy - Survey Technician
Chris Mason – SUE Technician

Date(s) of Survey

Begin Date 7/25/2019
End Date 7/31/2019

General Information

Measurement units for this survey are US survey feet. This survey is for slide repair along US 67 approximately 2 miles south of I-80. This project is a Full DTM Survey.

Vertical Control

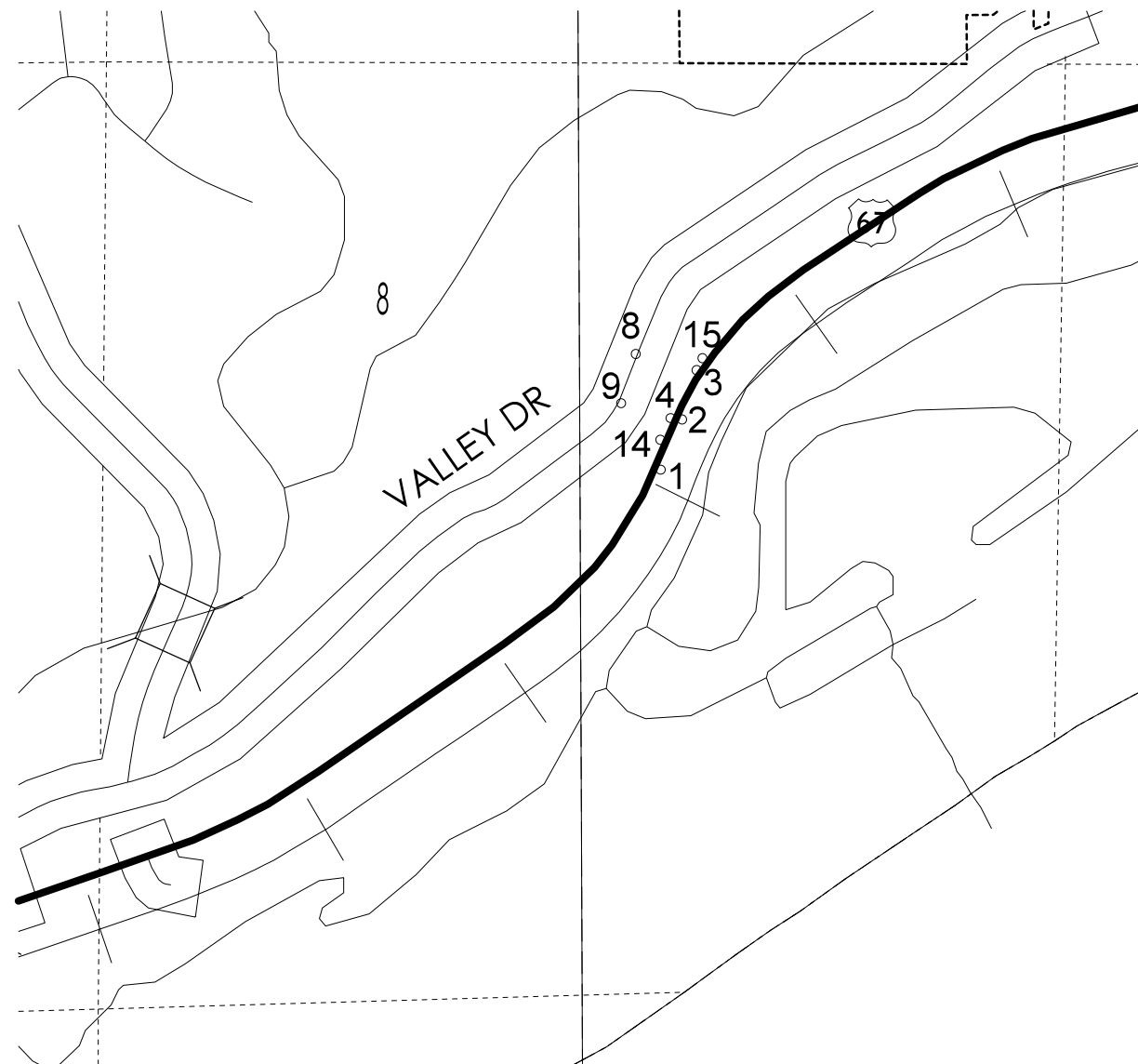
Vertical datum for this survey is NAVD88 A closed level loop was run though the control points 1 - 4, 14 and 15. The GPS derived elevation of point 1 was held fixed. The estimated standard error of the observed height differences from the network adjustment was 0.0054 ft/mile.

Horizontal Control

The project coordinate system is IaRCS Zone 11. The RTN position of reference station Davenport was held. Control points 1 and 2 were established by averaging multiple 3-minute observations. The maximum standard deviation of our observations was 0.028. Additional control points were established by closed traverse.

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 11

Coordinate listing from next sheet will be used with 1aRTN for monument recovery. No other reference ties are given.

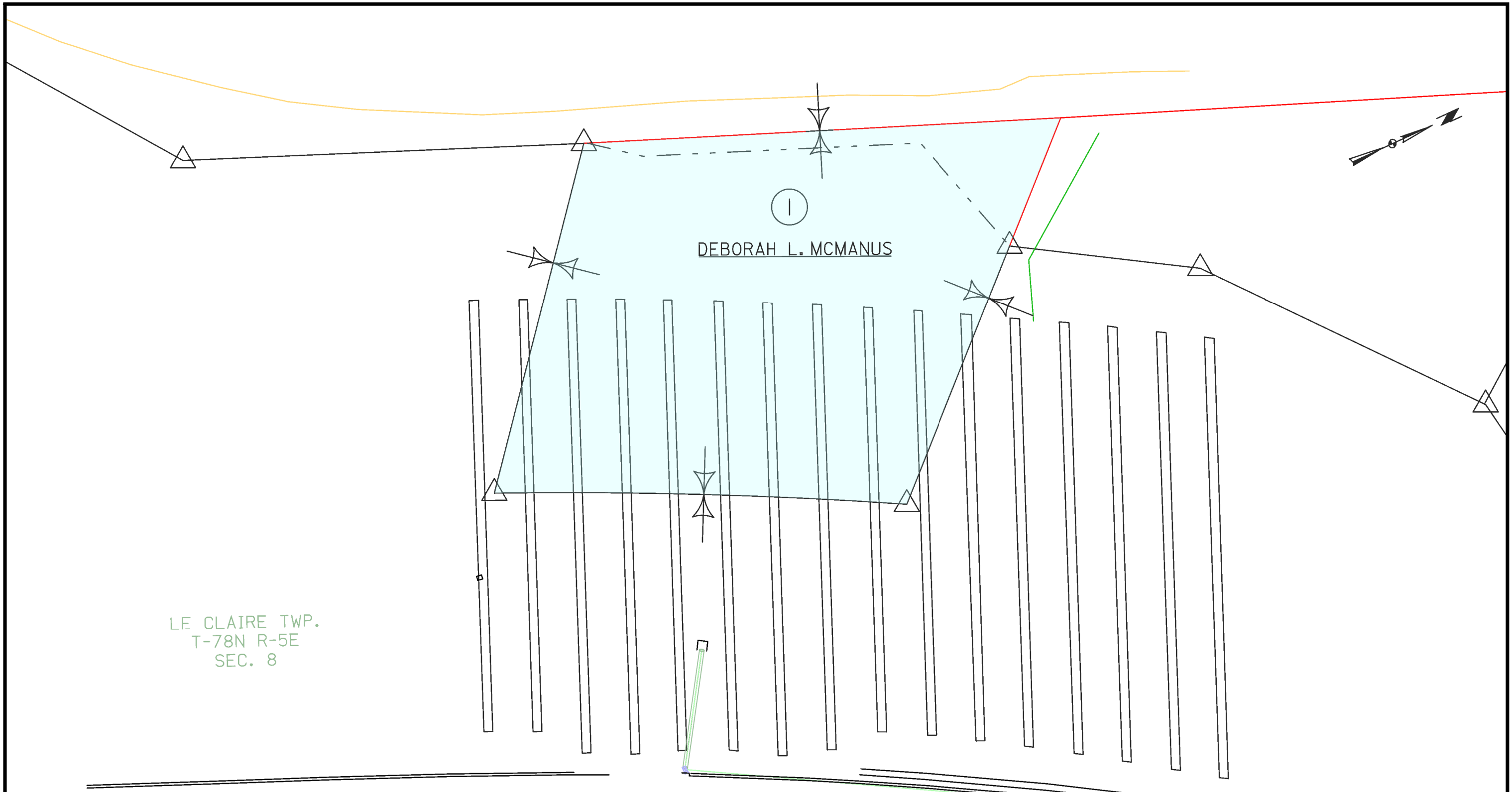
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 11

Point Name	Northing	Easting	Elevation	Feature Definition	Description
1	8083508.707	21535296.565	612.969	CP	SET MAG NAIL
2	8083785.418	21535415.130	612.817	CP	SET MAG NAIL
8	8084146.620	21535158.905	698.128	CP	SET 5/8' REBAR
9	8083874.919	21535078.379	698.532	CP	SET 5/8' REBAR
14	8083673.429	21535294.248	614.128	CP	SET 5/8' REBAR
15	8084123.659	21535527.017	618.130	CP	SET 5/8' REBAR

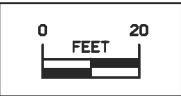


Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: LARSON/CUVA
 ROW #: NHSN-067-1(157)--2R-82
 Plan Date: 8/29/19

Color Legend:

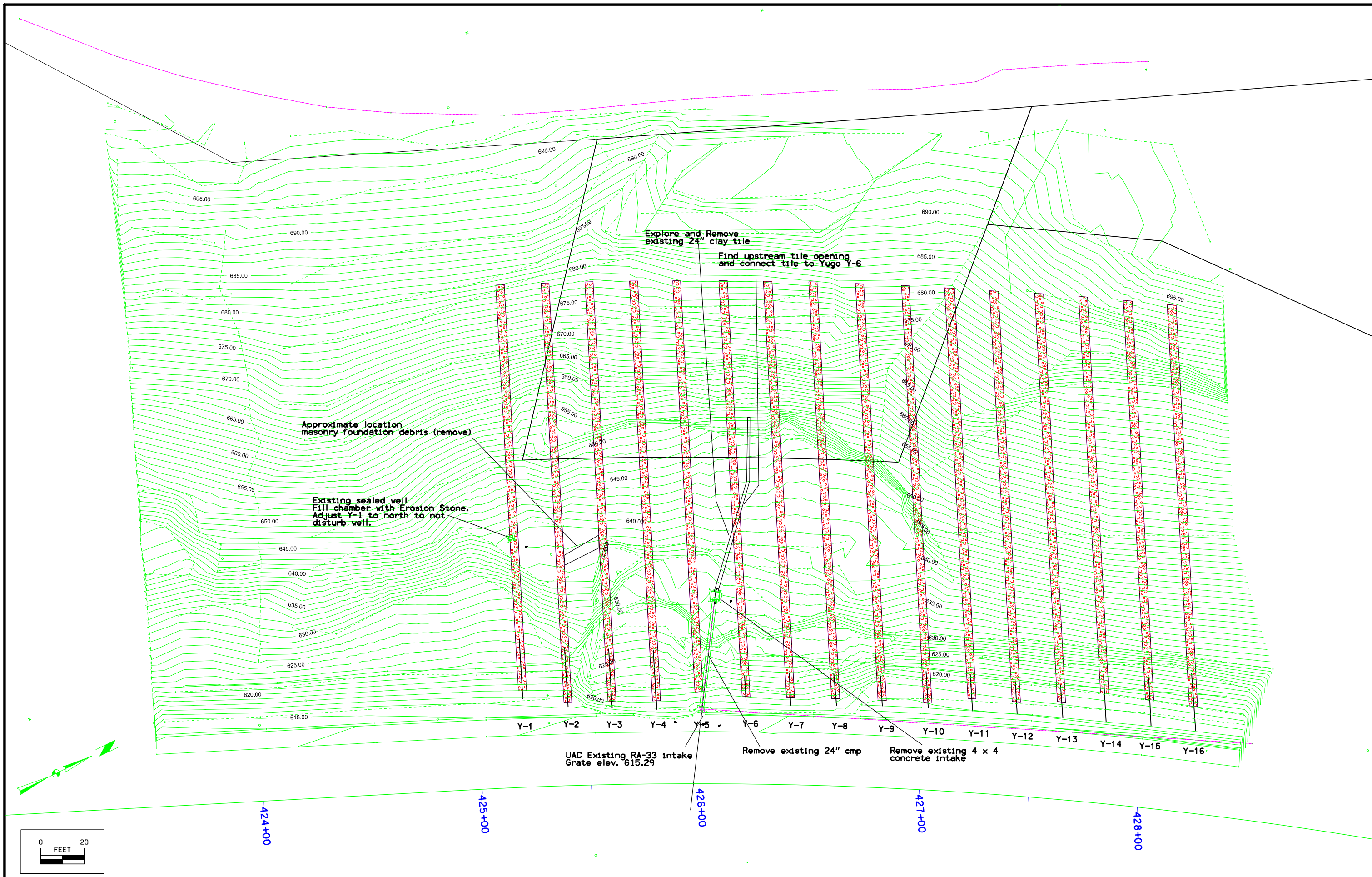
- Property Lines
- Temporary Easement
- Permanent Acquisition



108-23A 08-01-08
TRAFFIC CONTROL PLAN
<p>U.S. 67 traffic shall be maintained at all times. Short-term lane closures will be allowed for delivery of materials and equipment if needed.</p> <p>All lane closures shall be removed at the end of each working day.</p> <p>Valley Drive traffic shall be maintained at all times. Temporary lane closures may be utilized via use of flaggers.</p>

111-01 04-17-12						
COORDINATED OPERATIONS						
<p>Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.</p>						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Project</td> <td style="width: 50%;">Type of Work</td> </tr> <tr> <td>None Provided</td> <td></td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Project	Type of Work	None Provided			
Project	Type of Work					
None Provided						

511 TRAVEL RESTRICTIONS												108-25 10-21-14
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
U.S. 67		Scott	No travel restrictions expected									



Slide Repair - US 67

Station 425+23 to Station 428+22

The design intent of this project is to install sixteen (16) "Yugoslavian" (Yugo) Drains at approximate 20 foot centers as depicted on Sheet Q.1. Drains shall extend from 230 feet left of centerline down to the roadway ditch. The length of the trenches will vary across the site ranging from approximately 185 to 192 feet. The width of each drain shall be a nominal 4 feet. The depth of the excavation shall be 12 feet, unless hard shale is encountered as discussed below in section 'Yugoslavian Drains'. Stage Yugo drain installation from south to north (Y-1 to Y-16) and monitor slope stability of the upper backslope during construction.

Backfill the Yugo trenches with Erosion Stone to within 12 inches of the proposed ground surface before topsoil cover. The top of the Erosion Stone and upper 2 feet of the sides of the trenches shall be covered with Engineering Fabric.

The completed Yugo drain trenches, in addition to areas between them that were regraded to an approximate 3:1 slope, shall be covered with 12 inches of topsoil.

SOIL BORINGS

Soil borings were not done for this project. Borings from previous U.S. 67 grading and paving projects, and adjacent slide repairs, were used to estimate soil layers and depth to bedrock. Elevation of shale from borings is shown on the cross sections.

The general soil section from top to bottom is: Silty Clay (Loess), Glacial Clay, Residual Clay or Reworked Shale, bedrock of Shale with occasional Limestone layers. Broken and reworked shale is found in the toe of slide, which indicates that the lower part of the slide is moving over shale.

CLASS 10 EXCAVATION

Remove Class 10 excavation as shown on cross sections between Stations 425+20 and 428+20. Waste soil off site at a location to be provided by the Contractor. First excavate soil from the upper part of the slide (greater than 150 ft (+/-) from C.L. U.S. 67). This staging is to increase stability of the slope before removing soil at the toe of the slide. Then excavate soil from the lower part of the slide (less than 150 ft (+/-) from C.L. U.S. 67).

YUGOSLAVIAN DRAINS

After excavating the lower part of the slide to grade, install 'Yugoslavian" (Yugo) drains transverse to the slope, to collect groundwater and to increase the overall shear strength of existing soils. Standard depth of Yugo drains is 12 ft below finished grade. Estimated Shale depth below finished grade of the lower part of slide is less than 12 ft. Excavate drains to 12 ft if possible, and stop excavation at hard shale. If hard shale is found at less than 12 ft, stop excavation at hard shale. If shale is not found at depth 12 ft, stop excavation and backfill with erosion stone. The bottom of each Yugo drain shall be graded to have a positive slope to the subdrain outlet. Limit excavation of the bottom of Yugo Y-5 to elev. 608 ft, to allow positive drainage to the RA-33 intake FL of 607.53 ft.

DRAINAGE OUTLETS

Install 40 ft of 6 inch perforated pipe at base of Yugo drains, and install a DR-306 subdrain outlet. Outlet Yugo drain Y-5 to the existing RA-33 inlet at Station 426+00. See details on Sheet Q.5.

CROSS SECTIONS

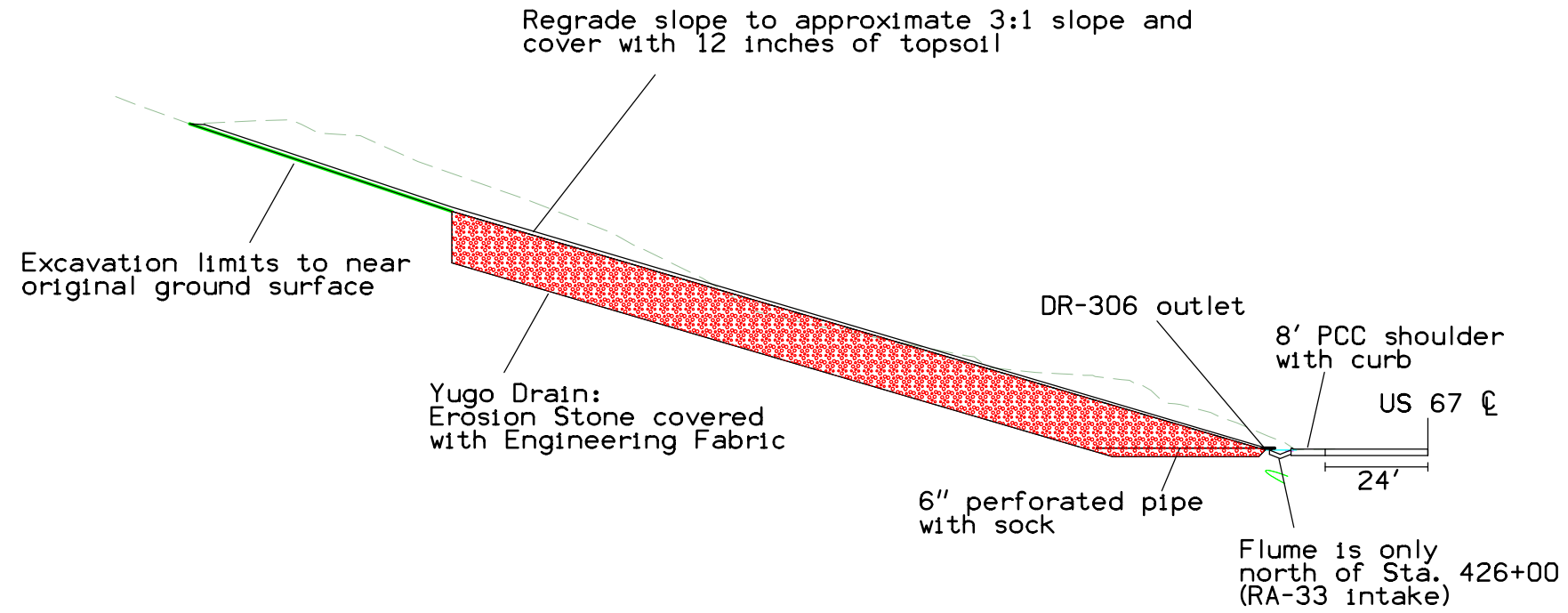
Areas requiring fill on the cross sections shall be compacted with moisture control. Template fill will be paid as Class 10 Excavation, Roadway & Borrow.

Notify the engineer if shale is found at elevations less than 615 ft. If so, some Yugo drain connectors may be added by the Engineer to drain into the existing RA-33 intake. See sheet Q.5

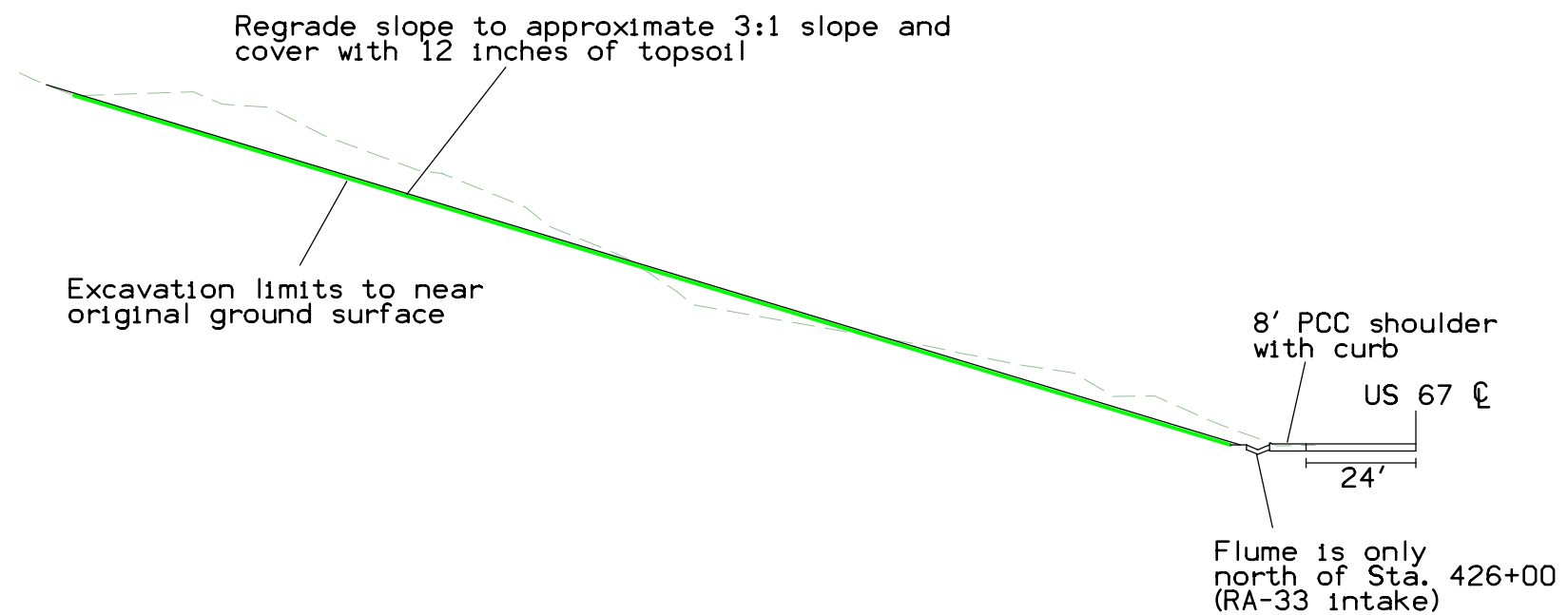
TREE CUTTING

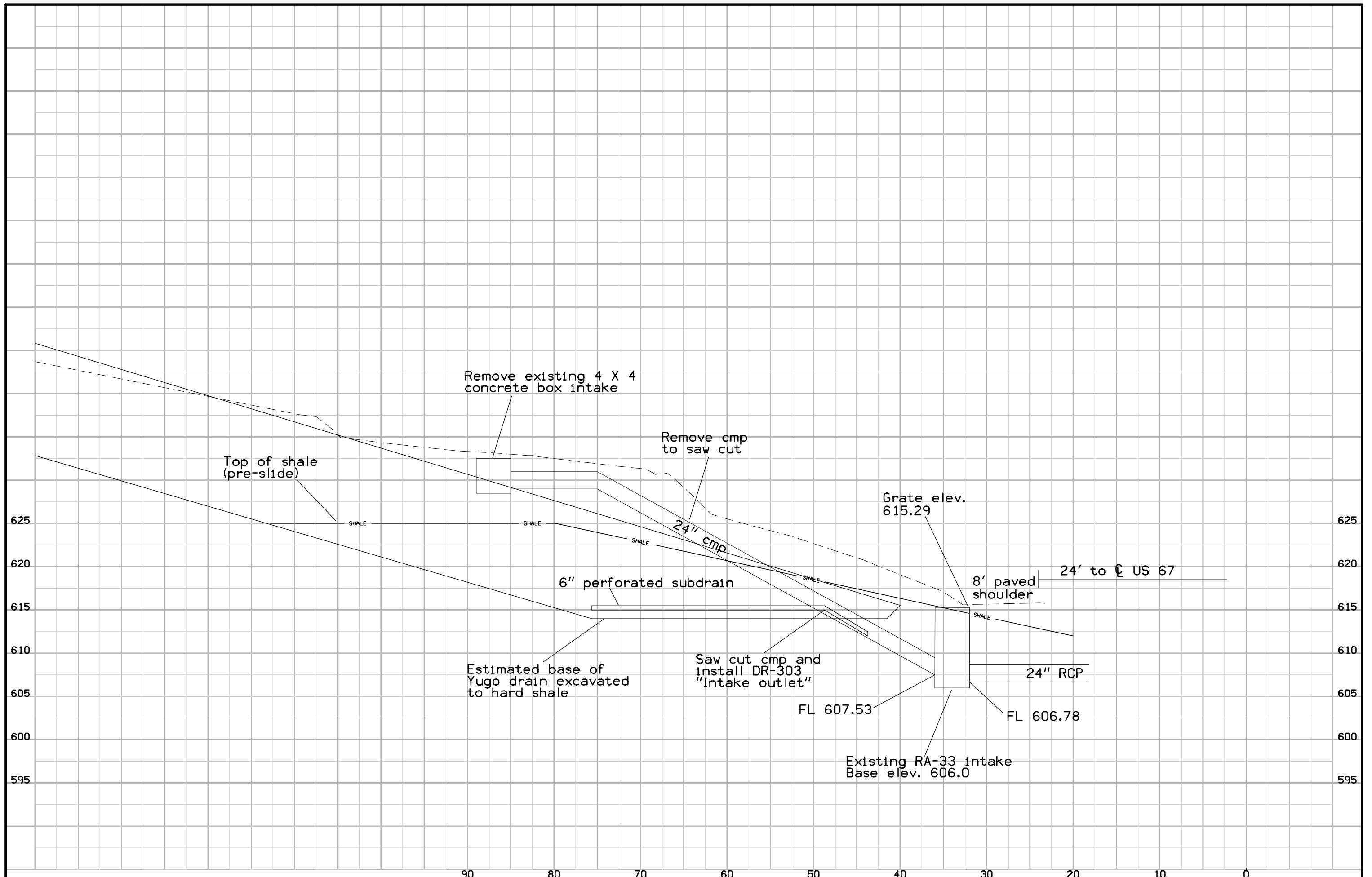
Minimize removal of trees in area outside of excavation limits and trenching for Yugo drains.

Typical Section
(at Yugo Drain)



Typical Section
(not at Yugo Drain)





100-1A
07-15-97

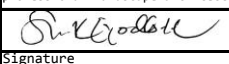
**ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)**

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2601-2633100	MOWING	ACRE	11.9	
2	2601-2636015	NATIVE GRASS SEEDING	ACRE	1.7	
3	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	677.0	
4	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	1.7	
5	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	135.40	
6	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	600.0	
7	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1,831.3	
8	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	412.5	
9	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	2,243.8	
10	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
11	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2601-2633100	MOWING Estimate is based on seven mowings of all native grass seeded areas. In areas inaccessible to field equipment, cut with appropriate hand equipment and keep current with the mowing of adjacent areas. The first critical mowing occurs prior to seeding (if weed pressure/stabilization crop present). Mow all seeded areas 3 times in the first year of establishment. Mow when the vegetation is between 12 to 18 inches tall. Mow vegetation to the height of 6 inches. Mow all seeded areas 3 times in the second year of establishment. Perform second year mowings when vegetation is between 12 to 18 inches tall. Mow native vegetation to a height of 10 inches.
2	2601-2636015	NATIVE GRASS SEEDING Seed all areas outside eight feet adjacent to outside shoulder along mainline, side roads, and infield areas at interchanges with "Native Grass Seeding". Supply all seed for "Native Grass Seeding". Apply all forb seed through the native grass drill wildflower or small seed box. Do not mix and apply Forb seed with the native grass seed. Apply cover crop through the cool season or through cover crop seed box. Do not mix and apply cover crop seed with the native grass seed. Remove seed remaining in the drill at the end of each day. At the completion of all seeding, remove remaining seed from the drill by vacuum or other means. Hand broadcast remaining seed on the project. The Engineer will review the limits with the Contractor prior to seeding.
3	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT Refer to Tab. 100-22 for locations. Refer to Standard Road Plan EC-103 ----- Prepare seedbed according to Article 2601.03, B, 4, of the Standard Specifications prior to seeding and fertilizing under the slope protection.
4	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING Item is included for stabilizing disturbed areas until areas are seeded to permanent vegetation. Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications.
5	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION Estimate for watering Special Ditch Control, Slope Protection Areas, Turf Reinforcement Mat, or Transition Mat is based on a total of four waterings at a rate of 50 gallons per square.
6	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303

LANDSCAPE DESIGN	
	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional landscape architect under the laws of the state of Iowa.
	
	8/29/2019 Date
	Seana K. Godbold Printed or Typed Name My license renewal date is June 30, 2021
Pages or sheets covered by this seal: RC.1 - 4 ; RR.1 - 2	

ESTIMATE REFERENCE INFORMATION			100-4A 10-29-02
Item No.	Item Code	Description	
7	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. Refer to Tab. 100-19. Refer to Standard Road Plan EC-204. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.	
8	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. Refer to Tab. 100-19. Refer to Standard Road Plan EC-204. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 20 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.	
9	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	
10	2602-0010010	MOBILIZATIONS, EROSION CONTROL	
11	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	

EROSION CONTROL (NATIVE GRASS SEEDING)		232-3C 04-16-19
Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:		
SEED MIX:		
Big bluestem (Andropogon gerardii)	6 lbs. PLS/Acre (7.0 kg/ha)	
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)	
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)	
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)	
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)	
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)	
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)	
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)	
Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is bearded or equal to facilitate the application of seed.		
Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.		
Place seed according to the requirements of Article 4169.02 of the Standard Specifications.		
Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.		
Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.		

STORM WATER BEST MANAGEMENT PRACTICES		281-3 10-17-17
Storm water storage volumes are not calculated for this project. The following best management practices are used in place of storm water detention. Undisturbed foreslope and ditches will act as vegetated buffers.		

INDEX OF TABULATIONS			111-25 10-18-11
Tabulation	Tabulation Title	Sheet No.	
RC Sheets			
110-12	POLLUTION PREVENTION PLAN	RC.3 - RC.4	
111-25	INDEX OF TABULATIONS	RC.2	
105-4	STANDARD ROAD PLANS	RC.2	
100-1A	ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)	RC.1	
100-4A	ESTIMATE REFERENCE INFORMATION	RC.1 - RC.2	
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	RC.2	
100-22	ROLLED EROSION CONTROL	RC.2	

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE							100-19 04-19-16
Possible Standards: EC-204							
Location			Length of Installation			Remarks	
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia		
			LF	LF	LF		
425+10.00	428+35.00	Lt			330.0		
425+10.00	428+35.00	Lt		330.0		45' Spacing	
425+10.00	428+35.00	Lt		330.0		45' Spacing	
425+10.00	428+35.00	Lt		330.0		45' Spacing	
425+10.00	428+35.00	Lt		330.0		45' Spacing	
425+35.00	426+10.00	Lt		50.0		45' Spacing	
426+65.00	427+25.00	Lt		60.0		45' Spacing	
426+95.00	427+40.00	Lt		35.0		45' Spacing	
PSSCD Tab Totals:				1465.0	330.0		
CD Bid Totals:				1831.3		125% of Tab Total	
CD Bid Totals:					412.5	125% of Tab Total	
emoval Totals:					2243.8	100% of Bid Total	

STANDARD ROAD PLANS			105-4 10-18-11
The following Standard Road Plans apply to construction work on this project.			
Number	Date	Title	
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection	
EC-204	04-18-17	Perimeter and Slope Sediment Control Devices	
EC-502	04-21-15	Seeding in Rural Areas	
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)	

ROLLED EROSION CONTROL											100-22 04-21-15	
Refer to EC-101, EC-103 and EC-104												
Location				L FT	W FT	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103) Squares	Special Ditch Control (EC-101) Squares	Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Squares	Type 2 Squares	Type 3 Squares	Type 4 Squares			
Hwy 67	425+10.00	428+35.00	Lt	330	205					677		
Total										677		

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITIES**A. Designer:**

1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP.

B. Contractor:

1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
4. Installs and maintains appropriate controls. This work may be subcontracted.
5. Supervises and implements good housekeeping practices.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.

C. Subcontractors:

1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Implement good housekeeping practices.

D. RCE/Project Engineer:

1. Is Project Storm Water Manager.
2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
7. Is familiar with the Project PPP and storm water site map.
8. On projects where DOT is Contracting Authority, is responsible for monitoring inspection reports on a monthly basis, to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
10. Is signature authority on Notice of Discontinuation.

E. Inspector:

1. Updates PPP whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Maintains an up-to-date record that identifies contractors and subcontractors as co-permittees.
3. Makes these plans available to the DNR upon their request.
4. Conducts joint required inspections of the site with the contractor/subcontractor.
5. Completes an inspection report after each inspection.
6. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the construction of a Slide Repair.
- B. This PPP covers approximately 1.7 acres with an estimated 1.7 acres being disturbed. The portion of the PPP covered by this contract has 1.7 acres disturbed.
- C. The PPP is located in an area of Fayette soil association. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.30.
- D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.
- E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.
- F. Runoff from this work will flow into Mississippi River.

POLLUTION PREVENTION PLAN**III. CONTROLS**

- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.

1. EROSION AND SEDIMENT CONTROLS**a. Stabilization Practices**

- 1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
- 2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
 - a) Permanently ceased on any portion of the site, or
 - b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
- 3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
- 4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map (when included), Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C sheets.
- 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
- 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.

b. Structural Practices

- 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
- 2) Structural practices to be used for this project are located in the storm water site map (when included), Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C sheets.

c. Storm Water Management

- 1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map (when included) and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS

- a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
 - 1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
 - 2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
 - 3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
 - 4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
 - 5) Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
 - 6) Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
 - 7) Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
 - 8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
 - 9) Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
 - 10) Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS

During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

POLLUTION PREVENTION PLAN

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the Contractor and the Contracting Authority at least once every seven calendar days. Storm water monitoring inspections will include:
 1. Date of the inspection.
 2. Summary of the scope of the inspection.
 3. Name and qualifications of the personnel making the inspection.
 5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
 6. Major observations related to the implementation of the PPP.
 7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and fieldbook entries made by the inspector.
- C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and bid item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
- E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.





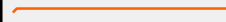
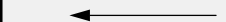



Signature








Seana K. Godbold

Print Name






LINE STYLE LEGEND OF EROSION CONTROL SHEETS



-  Silt Fence
-  Perimeter and Slope Sediment Control Device (9")
-  Perimeter and Slope Sediment Control Device (12")
-  Perimeter and Slope Sediment Control Device (20")
-  Open-Throat Curb Intake Sediment Filter
-  Concentrated Flow
-  Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

















-  Temporary Sediment Control basin
-  Erosion Control for Circular Intake or Manhole Well
-  Erosion Control for Rectangular Intake or Manhole Well
-  Grate Intake Sediment Filter Bag
-  Silt Basin
-  Silt Fence Tail
-  Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINEWORK	Design Color No.	
Green	(2)	 Existing Topographic Features and Labels
Blue	(1)	 Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	 Existing Utilities
Black	(0)	 Permanent Erosion Control Features
Blaze Orange	(222)	 Temporary Erosion Control Features

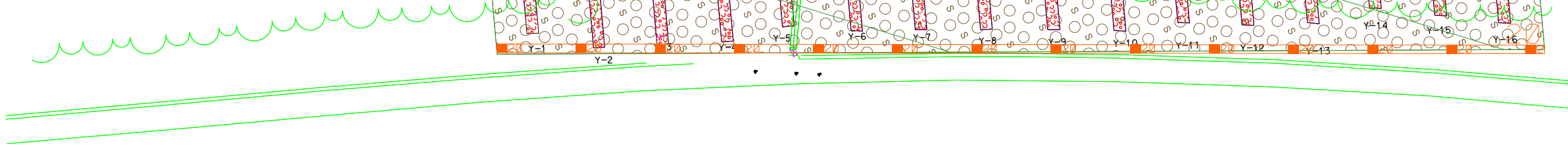
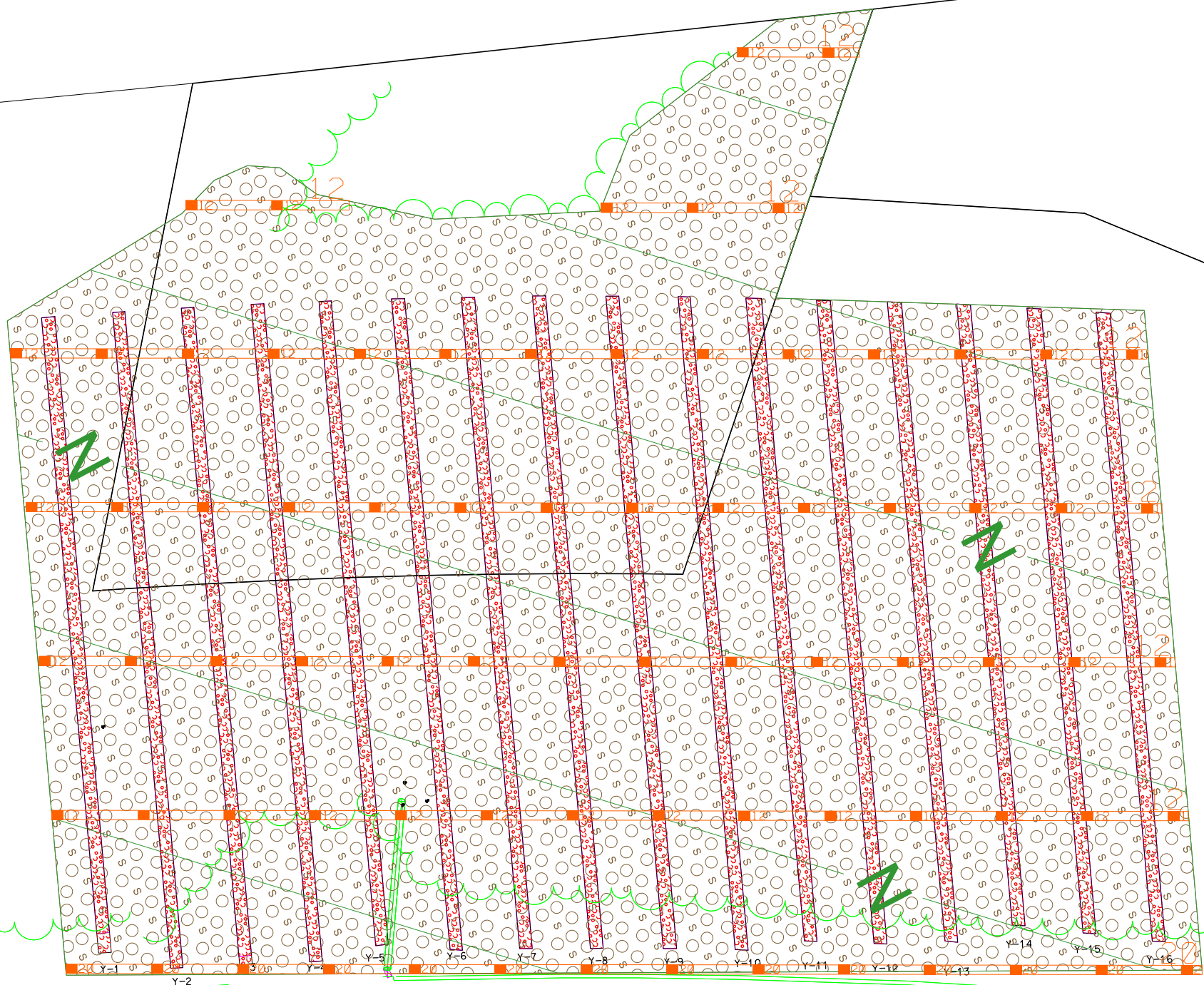
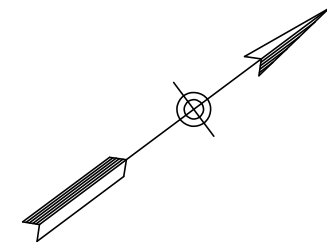
SHADING	Design Color No.		Transparency
Citron	(234)	 Mulching, All Types	50%
Light Brown	(238)	 Special Ditch Control, Wood Excelsior Mat	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

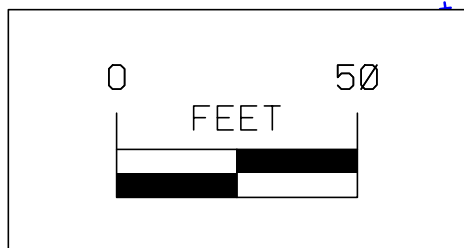
- | | | | |
|---|---------------------------------|---|--------------------------------------|
|  | Seeding and Fertilizing |  | Turf Reinforcement Mat Type 1 |
|  | Seeding and Fertilizing (Rural) |  | Turf Reinforcement Mat Type 2 |
|  | Seeding and Fertilizing (Urban) |  | Turf Reinforcement Mat Type 3 |
|  | Native Grass Seeding |  | Turf Reinforcement Mat Type 4 |
|  | Salt Tolerant Seeding |  | Slope Protection, Wood Excelsior Mat |
|  | Wetland Grass Seeding |  | Transition Mat |
|  | Wildflower Seeding |  | Rock Features, Permanent |
|  | Sodding |  | Rock Features, Temporary |

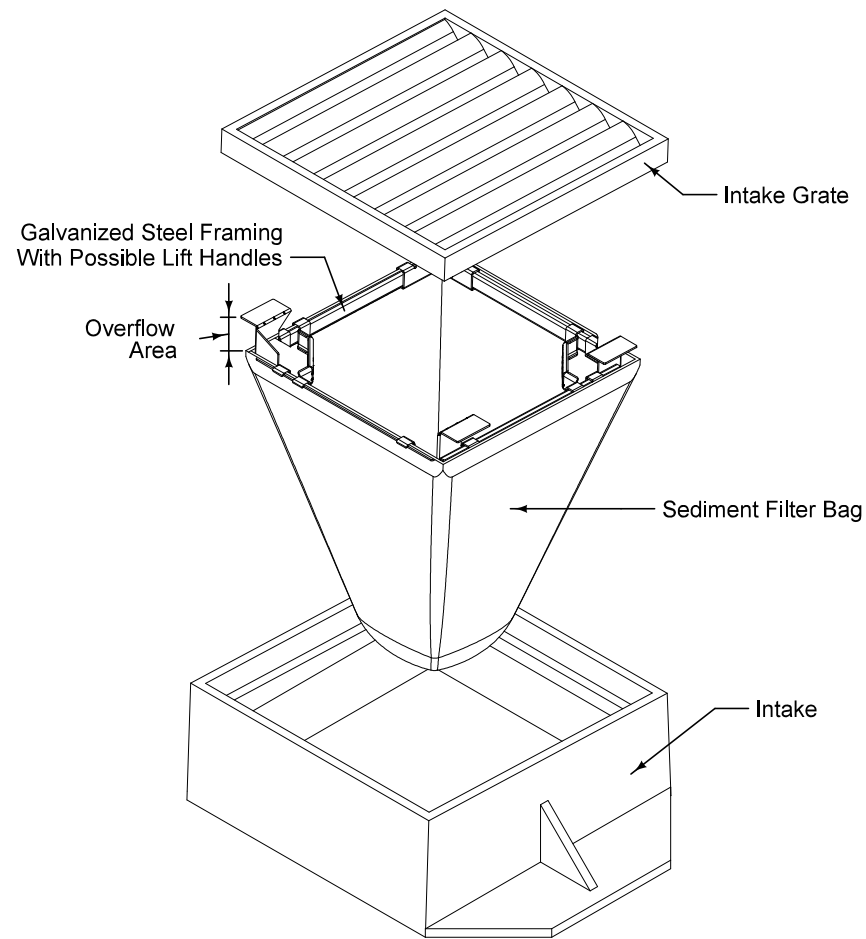
EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)

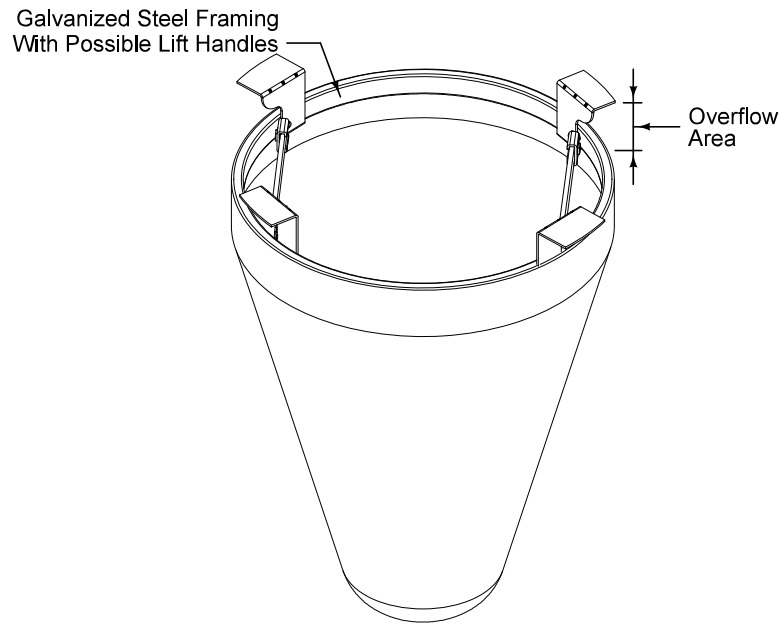


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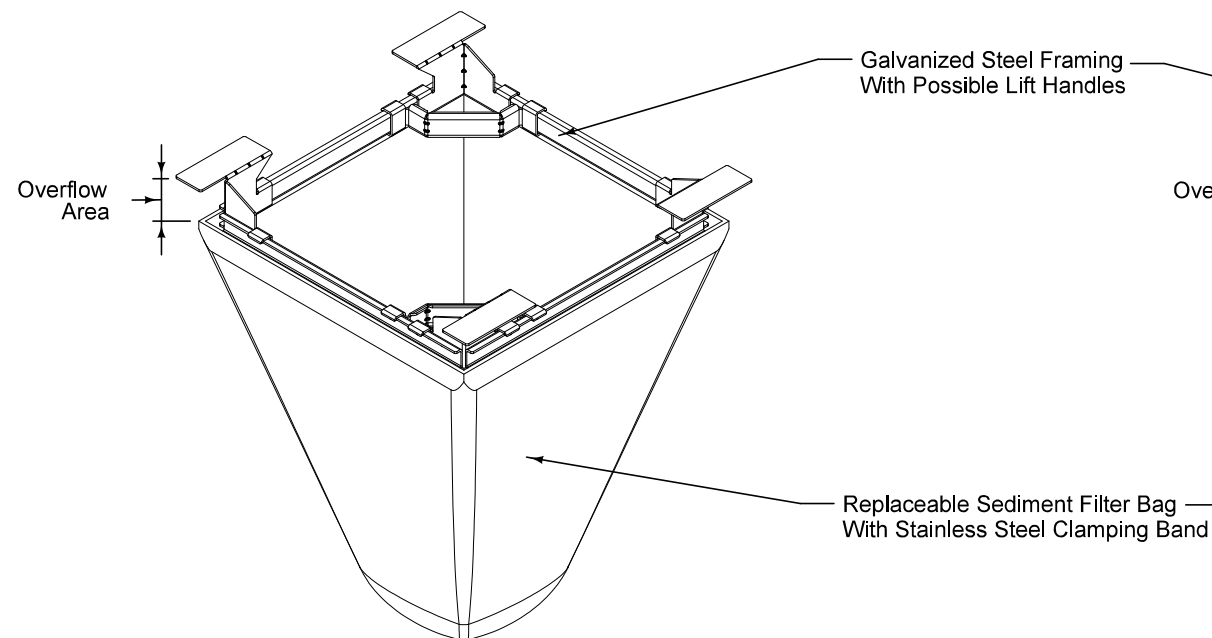




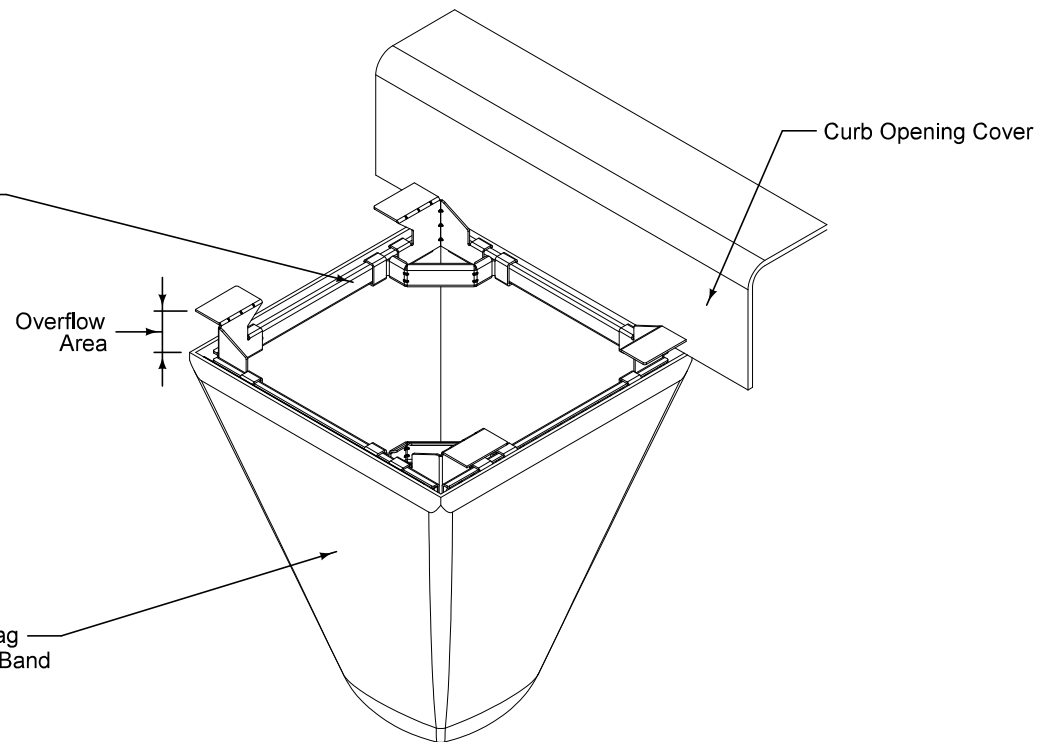
TYPICAL SEDIMENT FILTER BAG PLACEMENT



SEDIMENT FILTER BAG FOR CIRCULAR GRATE



SEDIMENT FILTER BAG FOR SQUARE OR RECTANGULAR GRATE



SEDIMENT FILTER BAG FOR COMBINATION GRATE WITH CURB OPENING

Remove sediment filter bag upon stabilization of sediment sources.

Measurement for Grate Intake Sediment Filter Bag will be by count.

Basis of Payment for Grate Intake Sediment Filter Bag will be at the contract unit price for each device installed. Payment is full compensation for furnishing all equipment, labor, and materials required to install the Grate Intake Sediment Filter Bag as shown.

Method of Measurement for Maintenance of Grate Intake Sediment Filter Bag will be by count.

Basis of Payment for Maintenance of Grate Intake Sediment Filter Bag will be at the contract unit price for each occurrence. Payment is full compensation for clean out and disposal of material when capacity reaches 50%, and for any other repair needed during the project.

Measurement for Removal of Grate Intake Sediment Filter Bag will be by count.

Basis of Payment for Removal of Grate Intake Sediment Filter Bag will be at the contract unit price for each device removed. Payment is full compensation for all labor and equipment required for removal.

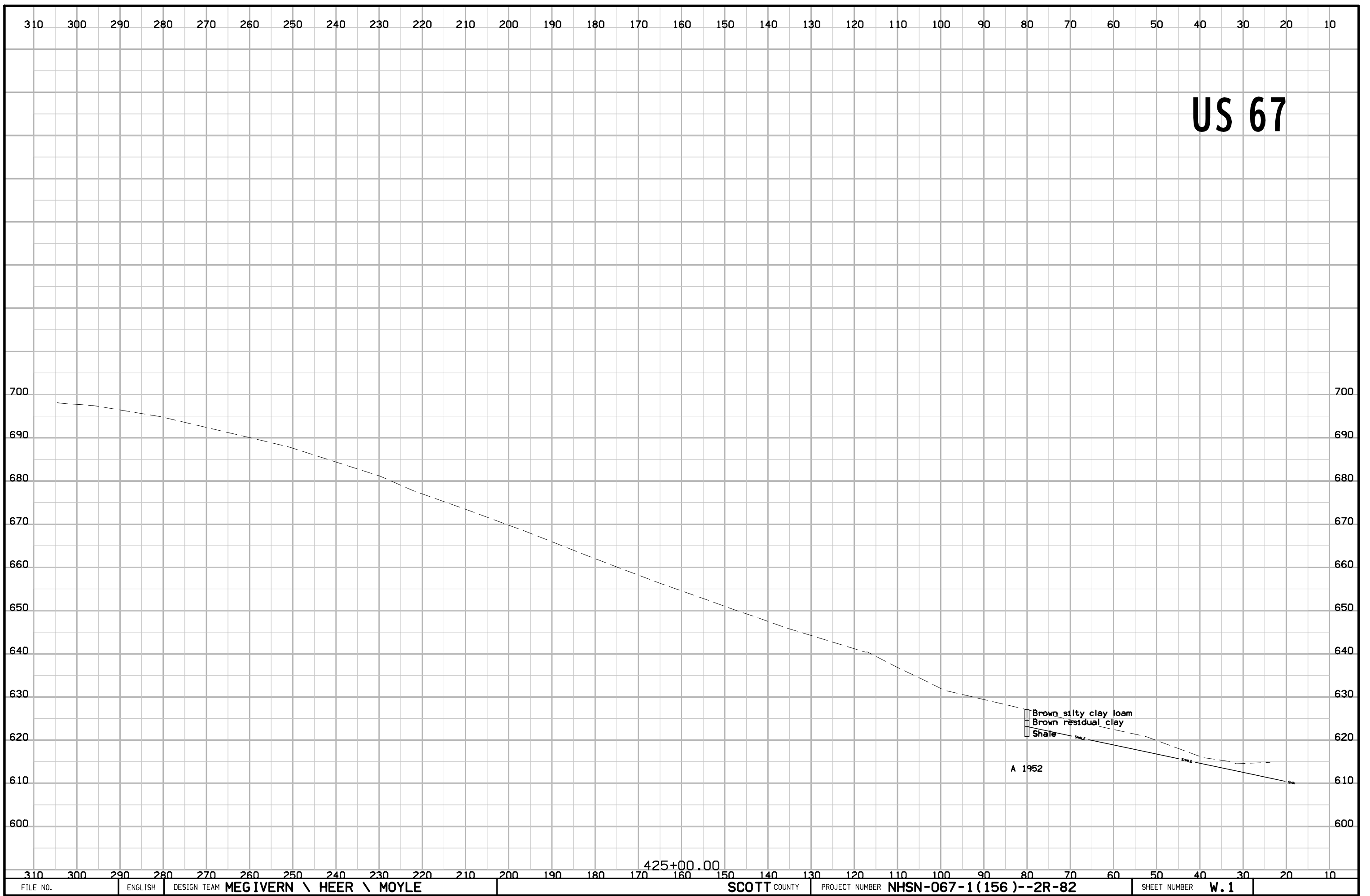
① Woven material meeting the requirements of Table 4196.01-1 of the Standard Specifications, except a maximum apparent opening size US Sieve No. 10 and a minimum flow rate of 145 gallons per minute per square foot.

Possible Contract Items:
 Grate Intake Sediment Filter Bag
 Maintenance of Grate Intake Sediment Filter Bag
 Removal of Grate Intake Sediment Filter Bag

Possible Tabulation:
 100-37

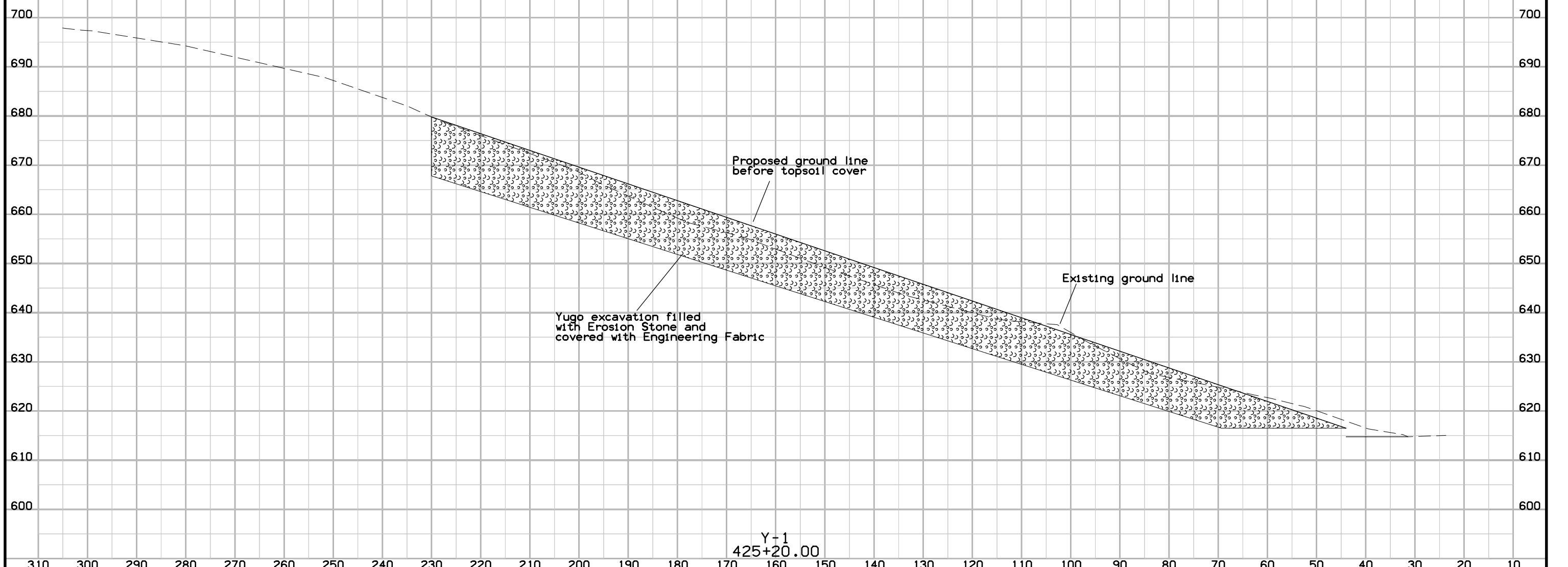
IOWADOT	REVISION	
	NEW	04-18-17
ROAD DESIGN DETAIL		570-7
		SHEET 1 of 1
REVISIONS: NEW		
GRATE INTAKE SEDIMENT FILTER BAG		

US 67



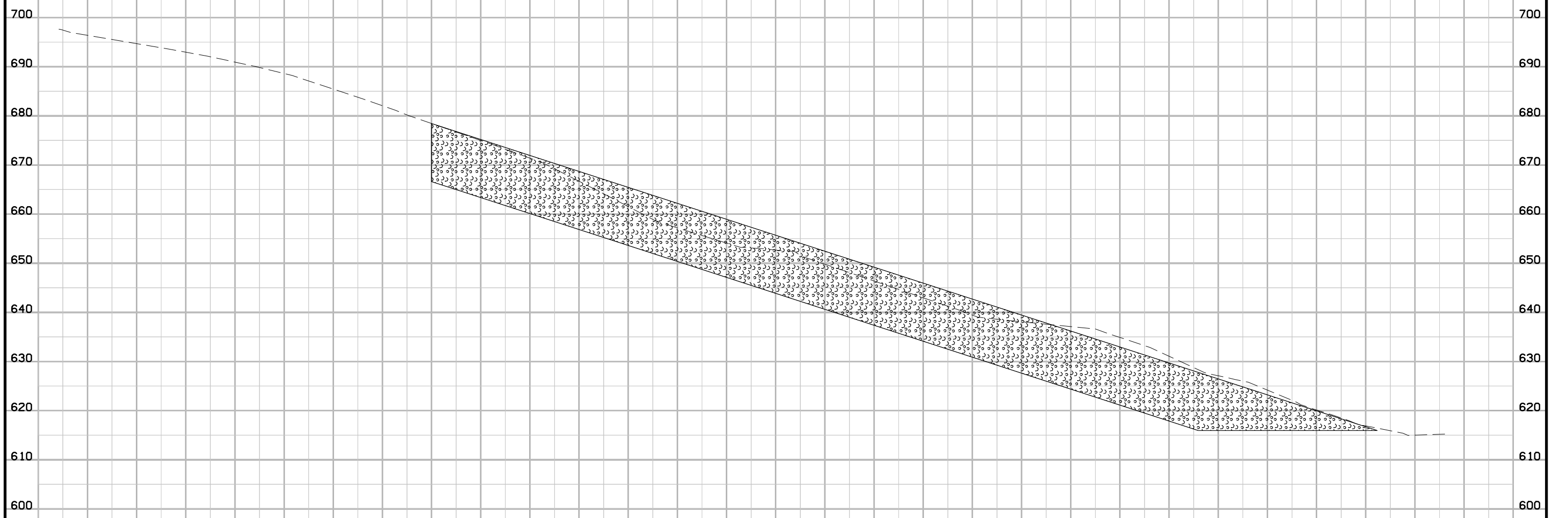
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US 67



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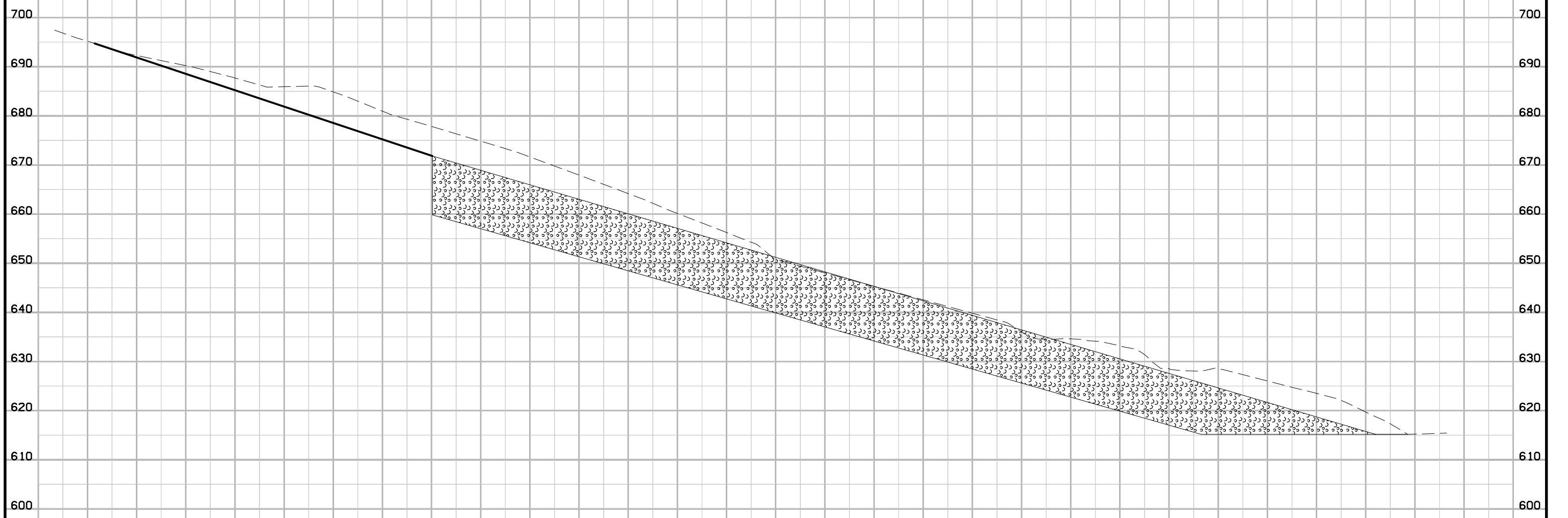
US 67



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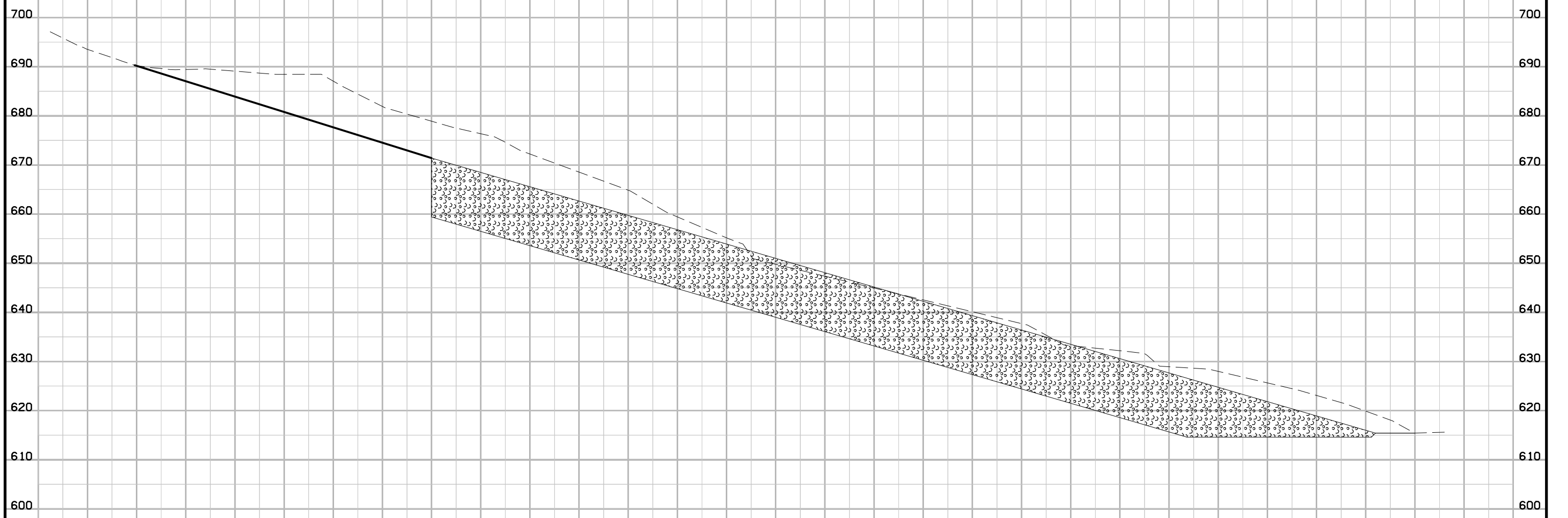
US 67



Y+3
425+60.00

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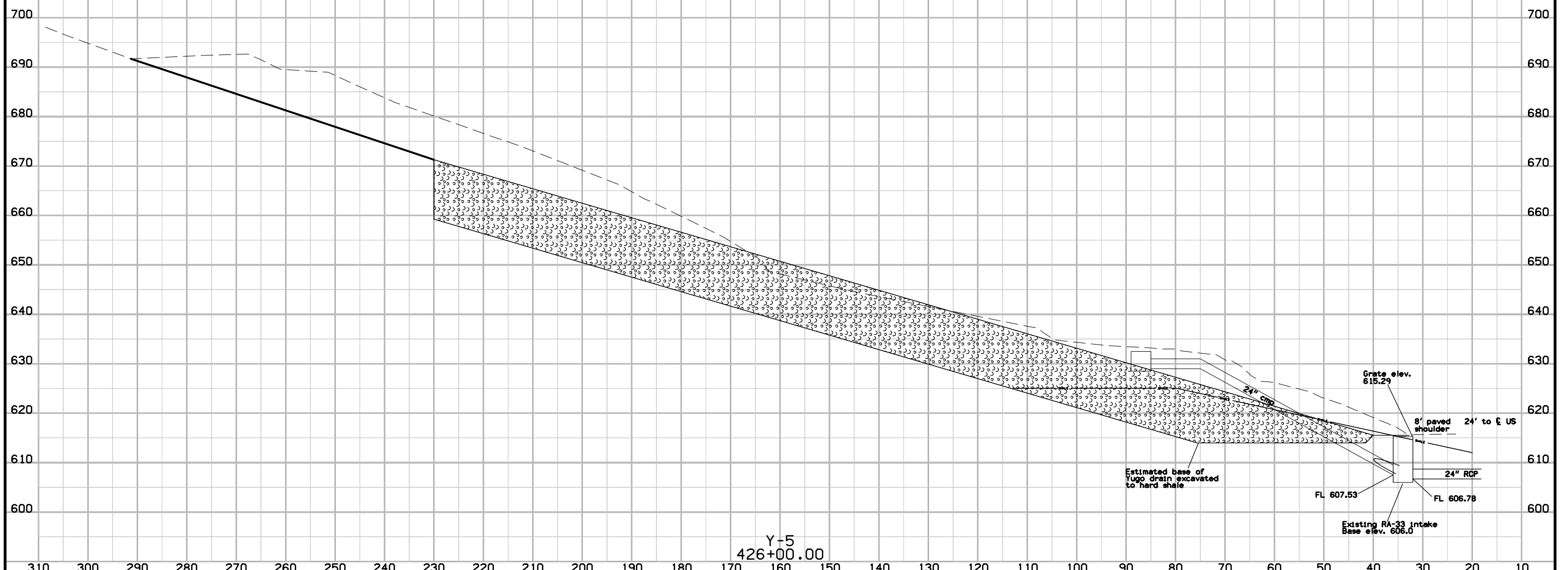
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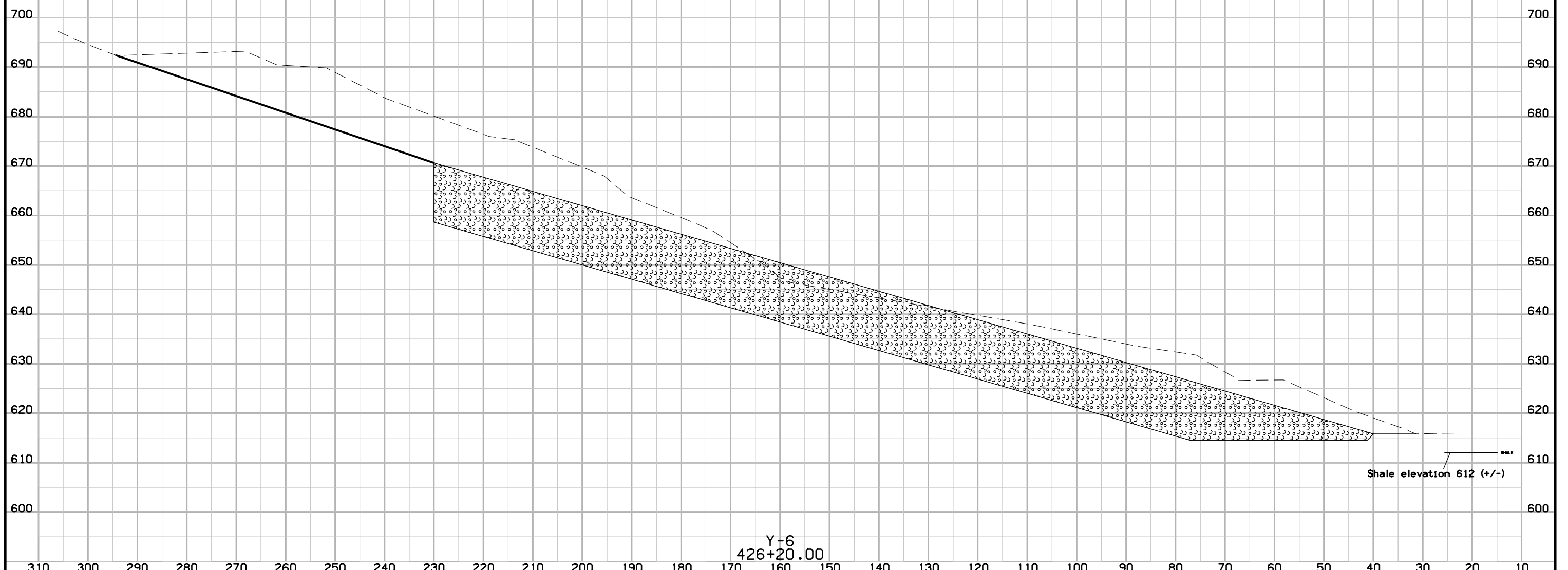
US 67



Y+5
426+00.00

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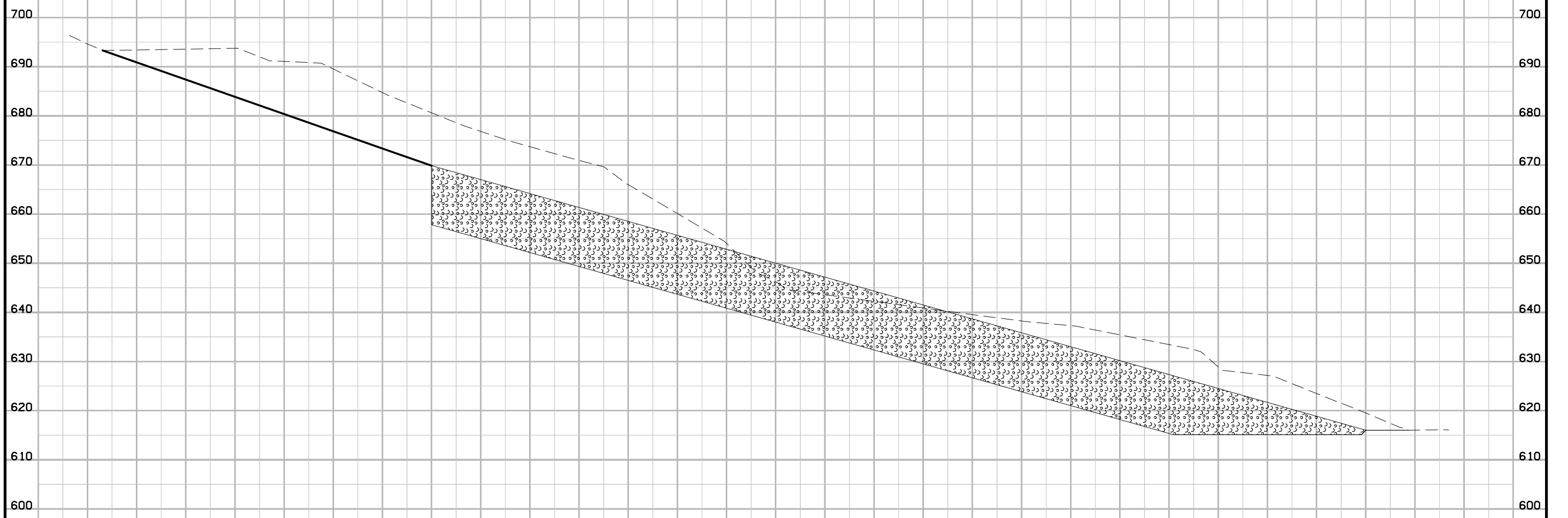
US 67



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US 67

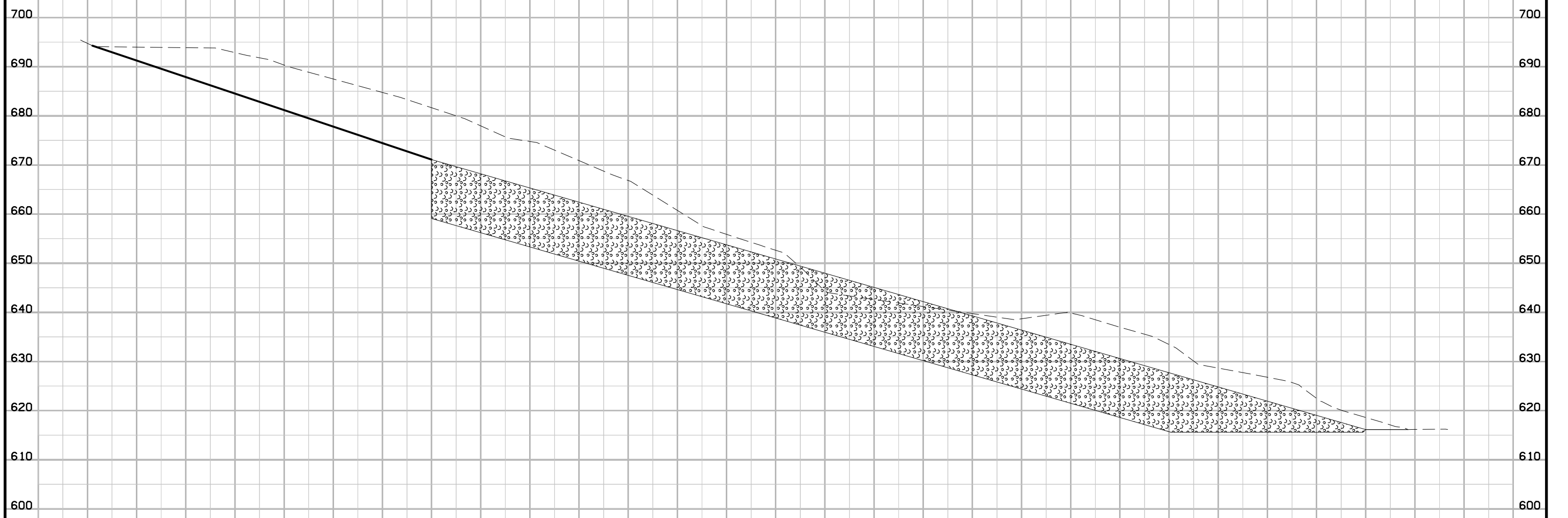


Y+7
426+40.00

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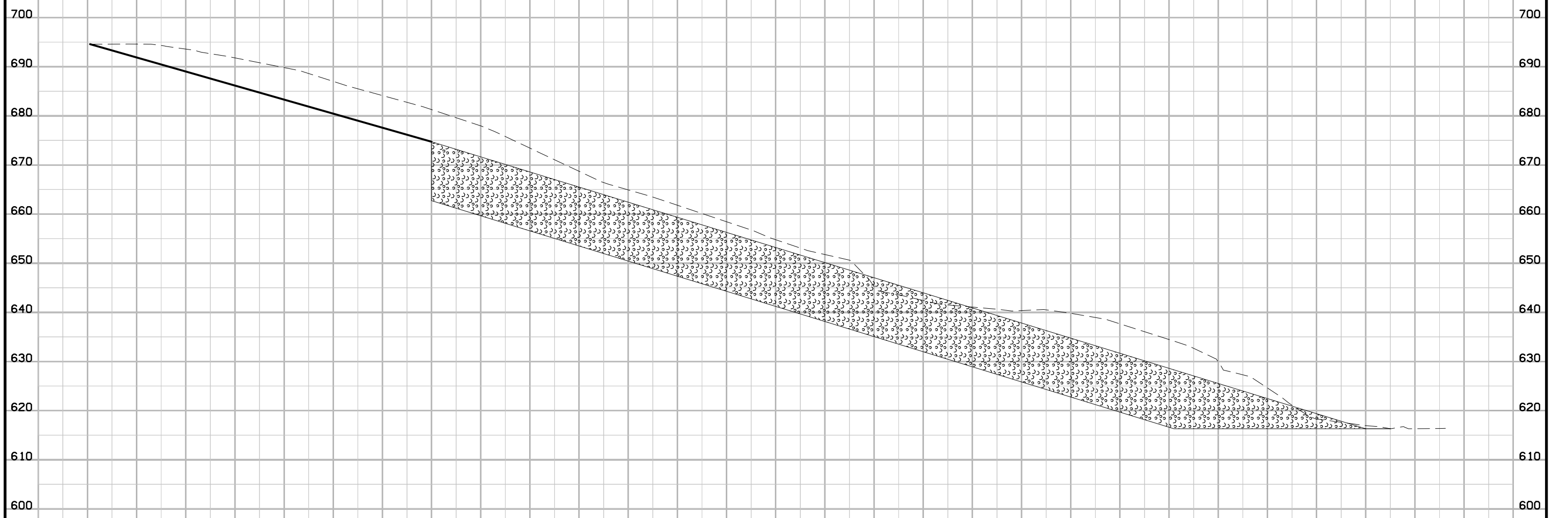
US 67



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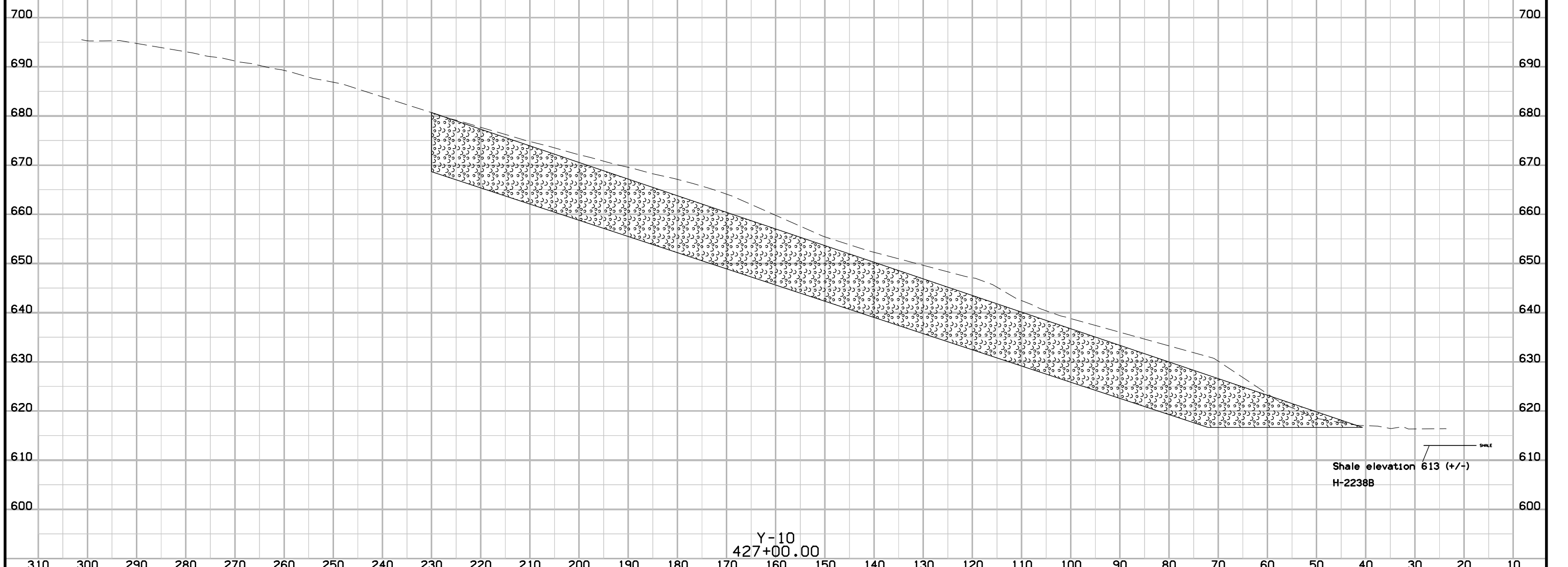
US 67



Y+9
426+80.00

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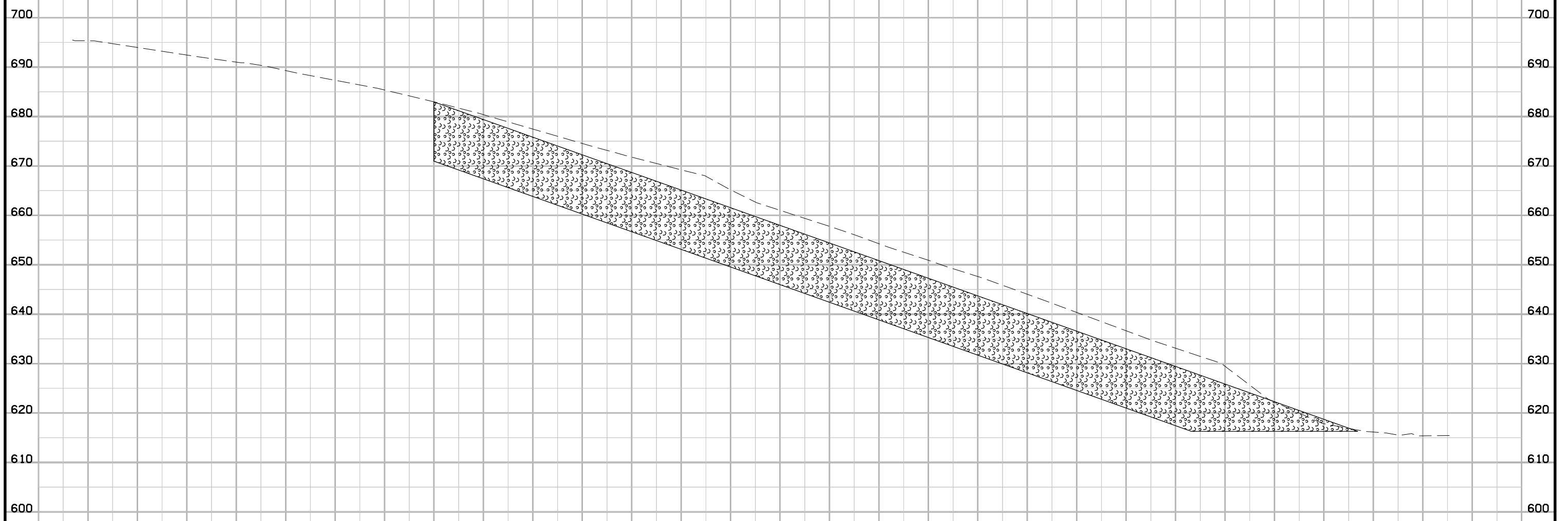
US 67



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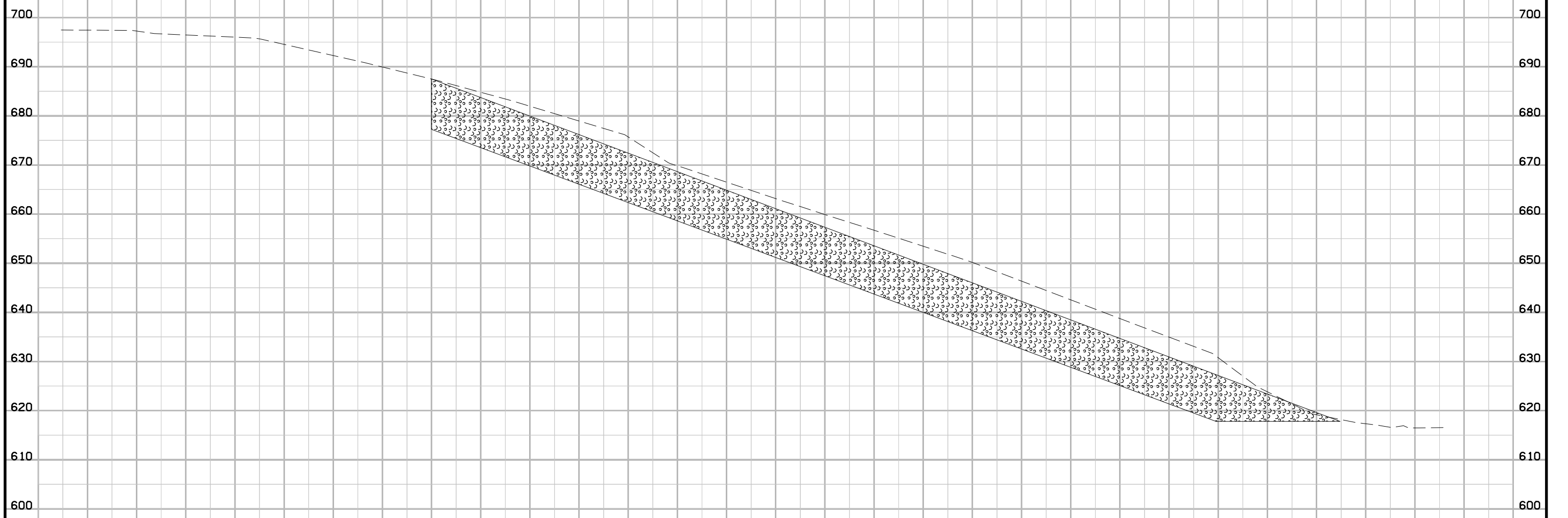
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US 67



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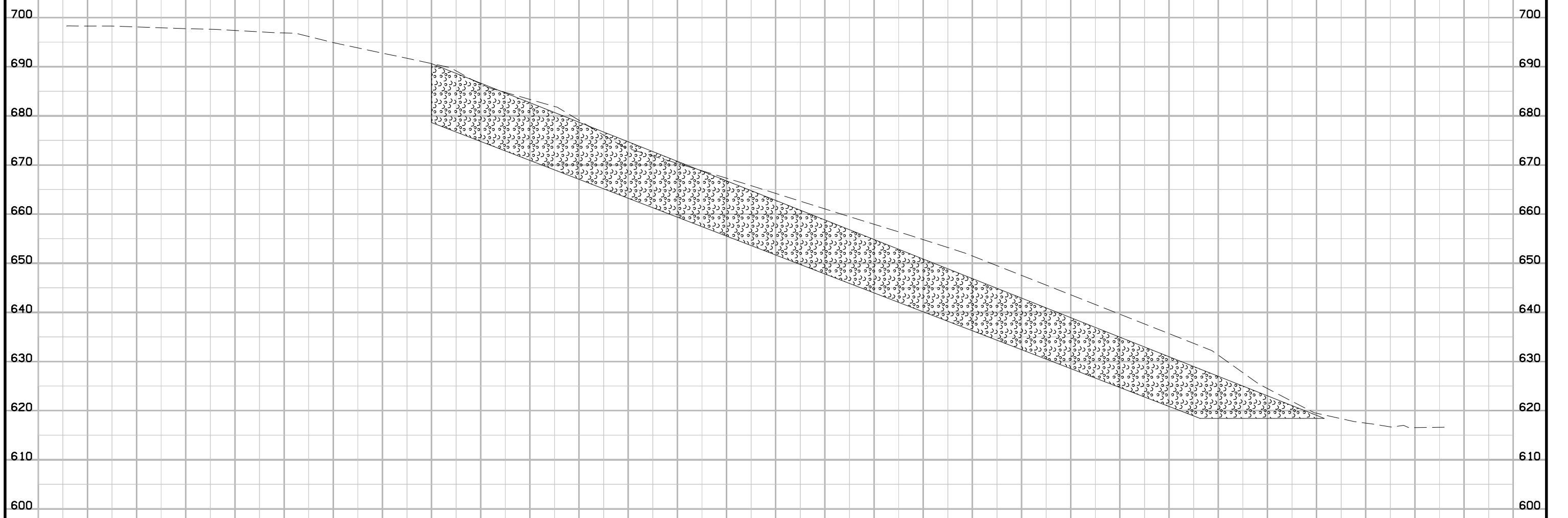
US 67



Y-12
427+40.00

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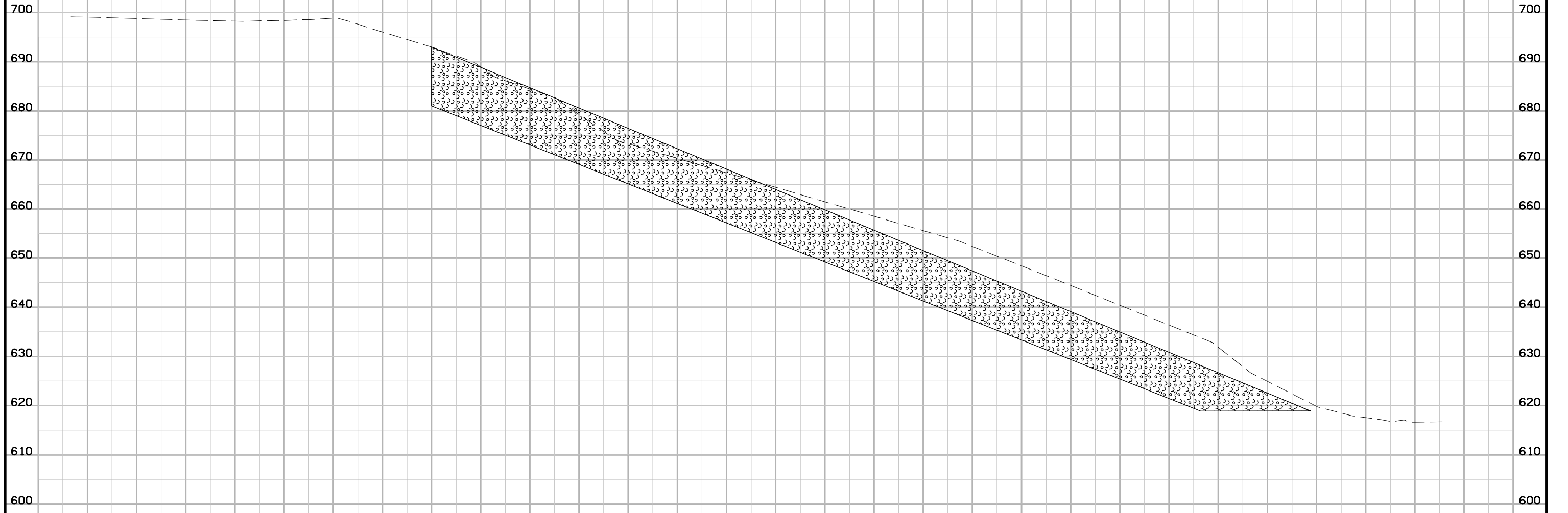
US 67



Y-13
427+60.00

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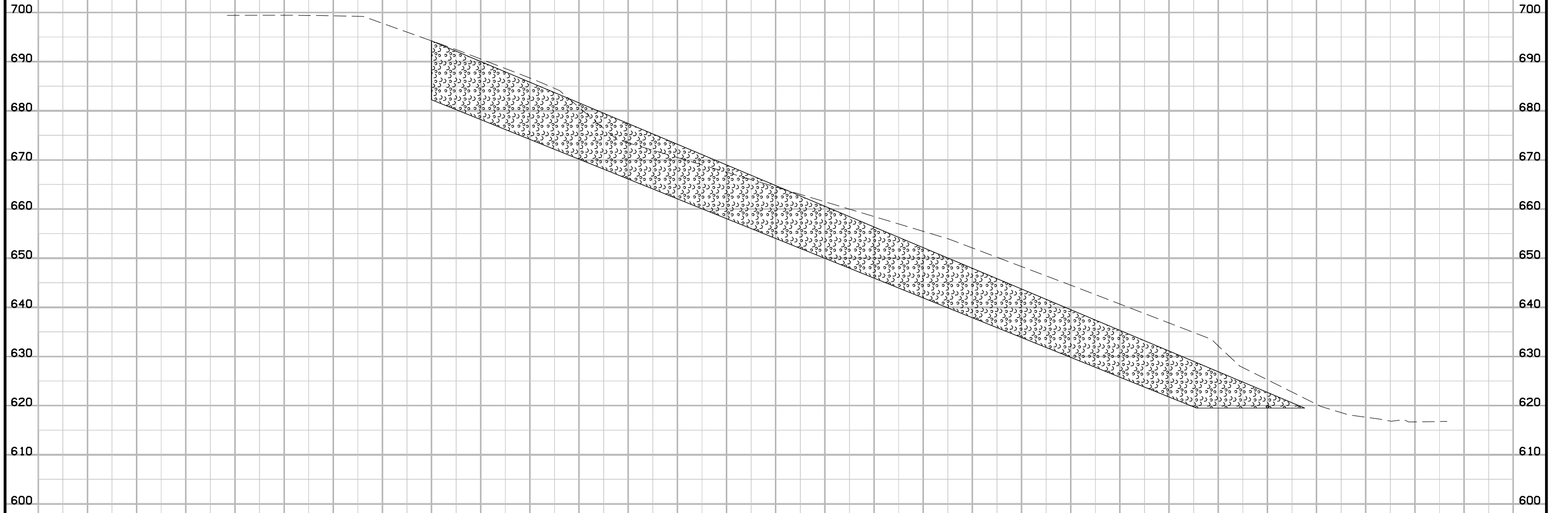
US 67



Y-14
427+80.00

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US 67

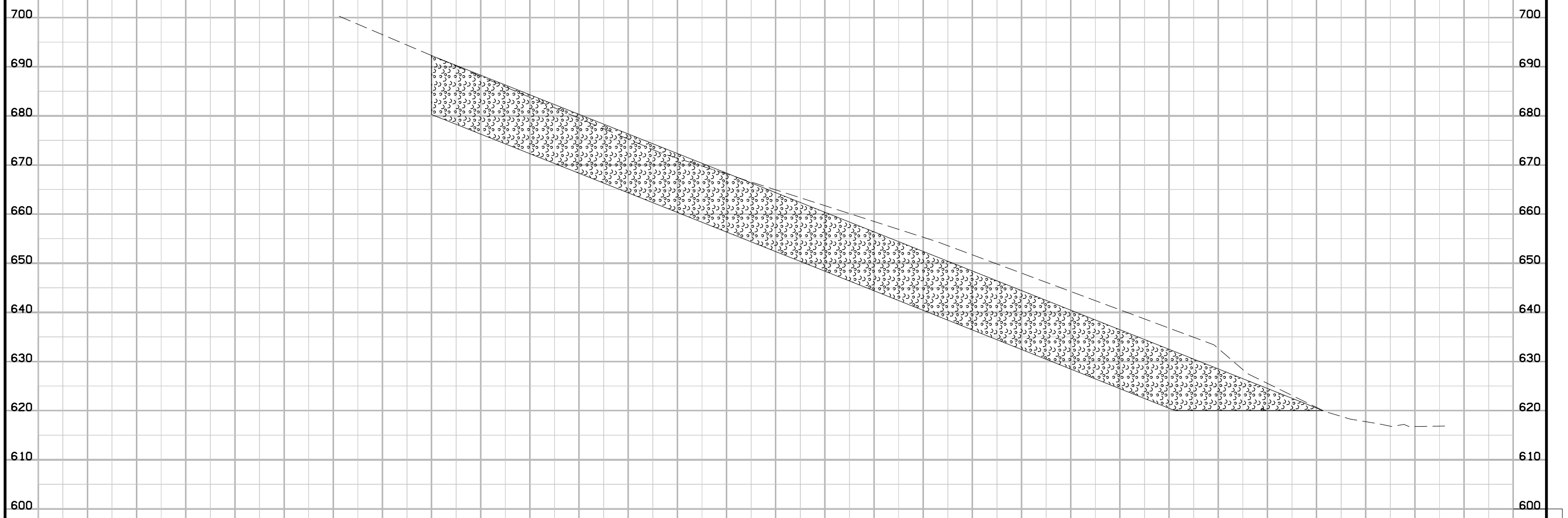


Y-15
428+00.00

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310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10

US 67



310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10