Hardy Road Properties

Final Drainage Report

PCD File No: SF265

All Terrain: Addressed.

All Terrain Engineering Project No: 25018

February 2026

Prepared for:

Hardy Road Properties, LLC

Attn: Jane & Jay Ohmes

10155 Hardy Road

Colorado Springs, CO 80908

Prepared by:

All Terrain Engineering LLC

Contact: Nicholas Jokerst

njokerst@allterraineneg.com

(530) 391-7635

ENGINEER'S STATEMENT

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County 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 any negligent acts, errors or omissions on my part in preparing this report.

Nicholas Q. Jokerst, PE Date

State of Colorado No. 59273

For and on behalf of All Terrain Engineering LLC

Please execute, make sure the signature goes through the seal.

All Terrain: Addressed.

DEVELOPER'S STATEMENT

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.

Jane Ohmes Date

Hardy Road Properties, LLC

10155 Hardy Road, Colorado Springs, CO 80908

Please have the Developer execute this section.

All Terrain: Addressed.

EL PASO COUNTY ONLY

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 and 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

Joshua Palmer, P.E. Date
County Engineer/ECM Administrator

Conditions:

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I. General Purpose, Location & Description

a. Purpose

The purpose of this Final Drainage Report (FDR) for the Hardy Road Properties is to describe the site's onsite and offsite drainage patterns, existing and proposed storm infrastructure, and to safely route developed stormwater to adequate outfalls. This FDR will support a final plat for Hardy Road Properties.

b. Location

Hardy Road Properties, referred to as 'the site' herein, is an unplatted parcel in El Paso County, Colorado. The site is bound by Hardy Road to the north, JJ Ranch subdivision to the west, unplatted land to the east and Warner Subdivision to the south. A vicinity map is presented in Appendix A.

c. Description of Property

The site is approximately 19.34 acres. There is no disturbed area associated with this FDR. In general, the site slopes to the east. Onsite elevations range from 7,416' - 7,456' with slopes ranging 1 - 20%. Per a NRCS soil survey, the site is made up of Elbeth sandy loam which is a Type B Soil. The NRCS soil survey is presented in Appendix A.

How is the proposed homes are going to be constructed. See comment on page 6

There are multiple, poorly defined drainage paths that traverse the site. These drainage paths convey onsite & offsite flow to the east and offsite. [illegible] to an overhead power line from Hardy Road to proposed l[illegible]

All Terrain: There is no home construction proposed at this time. Property owner is only subdividing the property at this time.

d. Floodplain Statement

Based on FEMA Firm map 08041C0310G dated December 7, 2018, the site is Zone X, which are of minimal [illegible]presented in Appendix A.

II.

All Terrain: Refer to existing drainage map that shows the existing structures based upon field survey. The property is heavily forested and structures may not be visible from aerial.

Photos of existing structures will not be provided. There is no requirement per the EPC FDR checklist to include photos of private structures. Furthermore, the date of construction is not required nor is known. Not addressed.

Explain in parenthesis, what are these two structures? I went to Google Earth and no structures are shown on this property, please include them on the location map and provide pictures for these structures and include the date of construction.

a.

b.

In the existing condition, the site is a single unplatted lot with two existing structures. The remainder of the lot is undeveloped. The existing drainage analysis divided the site into 4 basins. In addition to the onsite basins, existing drainage basins from the west and south have been included in the hydrologic analysis of the site. Excerpts from the approved drainage reports are included in Appendix E to detail these basins. See below for existing onsite basin descriptions.

Basin EX1 is 8.71 acres and includes the two existing structures and a portion of Hardy Road. The remainder of Basin EX1 is undeveloped. Basin EX1 stormwater (Q_5 = 2.1 cfs Q_{100} = 11.9 cfs) sheet flows south and east to DP1 (Q_5 = 2.5 cfs Q_{100} = 14.2 cfs) where it combines with DPJJ8 (Q_5 = 0.7 cfs Q_{100} = 3.3 cfs) and DPJJ9 (Q_5 = 0.2

Account for DPJJ6.

All Terrain: Please clarify comment. The basin EX2 description & calculations already include DPJJ6. Please review Basin EX2 & existing drainage calcs.

cfs Q_{100} = 1.1 cfs). The combined stormwater continues to DP5 offsite to the east.

Basin EX2 is 5.01 acres of undeveloped area. Basin EX2 stormwater (Q_5 = 1.1 cfs Q_{100} = 7.4 cfs) sheet flows east to DP2 (Q_5 = 17.8 cfs Q_{100} = 96.6 cfs) where it combines with DPJJ5 (Q_5 = 15.6 cfs Q_{100} = 84.6 cfs) and DPJJ6 (Q_5 = 2.4 cfs Q_{100} = 12.3 cfs). The combined stormwater continues to DP5 (Q_5 = 23.3 cfs Q_{100} = 131.9 cfs) and flows offsite to the east.

Basin EX3 is 4.06 acres of undeveloped area. Basin EX3 stormwater (Q_5 = 0.8 cfs Q_{100} = 5.4 cfs) sheet flows north and east to DP3 (Q_5 = 4.9 cfs Q_{100} = 32.8 cfs) where it combines with DPJJ7 (Q_5 = 0.5 cfs Q_{100} = 2.3 cfs) and DPOS1 (Q_5 = 4.7 cfs Q_{100} = 29.5 cfs). The combined stormwater continues to DP5 (Q_5 = 23.3 cfs Q_{100} = 131.9 cfs) and flows offsite to the east.

Basin EX4 is 2.76 acres of undeveloped area. Basin H3 stormwater (Q_5 = 0.6 cfs Q_{100} = 4.0 cfs) sheet flows north to DP4 (Q_5 = 0.6 cfs Q_{100} = 4.0 cfs). DP4 flows offsite to the east.

c. Proposed Basin Description

In the proposed condition, the site will be subdivided into two 5 acre lots and a 9.34 acre tract. The existing structures will remain on proposed Lot 1. Lot 1 and Lot 2 will remain undeveloped at this time. However, it is assumed that Lot 1 and 2 will eventually be home sites. Assumptions have been made on future home & driveways sizes to account for the additional impervious area. The hydrologic analysis accounts for 16' paved driveways with an assumed length of 200' in addition to 5,000 square feet of roof area for both Lots 1 and 2. Basin 1 and Basin 7 are assumed to include the future home sites. If future development exceeds these assumed values, a lot specific drainage letter and analysis should be performed to ensure downstream facilities are adequately sized and stable.

Basin 1 is 2.30 acres and includes a portion of Hardy Road and one future home sites with a paved driveway. The remainder of Basin 1 is assumed to remain undeveloped. Basin 1 stormwater (Q_5 = 1.1 cfs Q_{100} = 4.3 cfs) combines with DPJJ8 flow (Q_5 = 0.7 cfs Q_{100} = 3.3 cfs) at DP1 (Q_5 = 1.5 cfs Q_{100} = 6.3 cfs). The combined stormwater continues east to DP7. It is assumed a culvert will be required at DP1 when the future driveway is constructed. An assumed hydraulic analysis of the future culvert is presented in Appendix C. Prior to driveway & culvert construction, these assumptions must be verified per proposed roadway grades, culvert type, dimensions and slope.

Provide culvert design.

All Terrain: See appendix C, culvert calcs were provided on previous submittal. The basin description directs the reviewer to appendix c for calculations.

Basin 2 is 1.95 acres and includes the two existing structures [illegible] = 0.6 cfs Q_{100} = 3.4 cfs) combines with DPJJ9 flow (Q_5 = 0.2 cfs Q_{100} = 1.1 cfs) at DP2 (Q_5 = 0.7 cfs Q_{100} = 4.3 cfs). The combined stormwater continues east to DP7. It is assumed a culvert will be required at DP2 when the future driveway is constructed. An assumed hydraulic analysis of the future culvert is presented in Appendix C. Prior to driveway & culvert construction, these assumptions must be verified per proposed roadway grades, culvert type, dimensions and slope.

Show and label the future locations on the proposed map.

Basin 3 is 2.59 acres of undeveloped area. Basin 3 st[illegible] with DPJJ5 flow (Q_5 = 15.6 cfs Q_{100} = 84.6 cfs) at DP3 (Q_5 = [illegible] stormwater

All Terrain: Not addressed. Driveways are not being proposed with this report. At a future date, if the land owner decides to construct driveways, those will be presented to the County for review.

continues east to DP4. It is assumed a culvert will be required at DP3 when the future driveway is constructed. An assumed hydraulic analysis of the future culvert is presented in Appendix C. Prior to driveway & culvert construction, these assumptions must be verified per proposed roadway grades, culvert type, dimensions and slope. Hydraulic analysis of the Basin 3 drainageway is presented in Appendix C.

Basin 4 is 1.81 acres of undeveloped area. Basin 4 stormwater (Q_5 = 0.4 cfs Q_{100} = 2.7 cfs) combines with DPJJ6 flow (Q_5 = 2.4 cfs Q_{100} = 12.3 cfs) at DP4 (Q_5 =2.5 cfs Q_{100} = 13.1 cfs). The combined stormwater continues to DP4.1 (Q_5 =16.3 cfs Q_{100} = 88.2 cfs) where it combines with DP3 flow. DP4.1 continues to DP6.

Basin 5 is 3.98 acres of undeveloped area. Basin 5 stormwater (Q_5 = 0.8 cfs Q_{100} = 5.5 cfs) combines with DPJJ7 flow (Q_5 = 0.5 cfs Q_{100} = 2.3 cfs) and DPOS1 flow (Q_5 = 4.7 cfs Q_{100} = 29.5 cfs) at DP5 (Q_5 = 4.1 cfs Q_{100} = 27.4 cfs). The combined stormwater continues east to DP6. Hydraulic analysis of the Basin 5 drainageway is presented in Appendix C.

Basin 6 is 0.58 acres of undeveloped area. Basin 6 stormwater (Q_5 = 0.2 cfs Q_{100} = 1.1 cfs) combines with DP4.1 flow (Q_5 = 16.3 cfs Q_{100} = 88.2 cfs) at DP6 (Q_5 = 18.9 cfs Q_{100} = 106.7 cfs). The combined stormwater continues east to DP8. Hydraulic analysis of the Basin 6 drainageway is presented in Appendix C.

Basin 7 is 4.60 acres and includes a portion of Hardy Road and one future home sites with a paved driveway. The remainder of Basin 7 is assumed to remain undeveloped. Basin 7 stormwater (Q_5 = 1.5 cfs Q_{100} = 7.3 cfs) combines with DP1 flow (Q_5 = 1.5 cfs Q_{100} = 6.3 cfs) and DP2 flow (Q_5 = 0.7 cfs Q_{100} = 4.3 cfs) at DP7 (Q_5 = 3.3 cfs Q_{100} = 15.9 cfs). The combined stormwater continues east to DP8. Hydraulic analysis of the Basin 7 drainageway is presented in Appendix C.

Basin 8 is 2.76 acres of undeveloped area. Basin 8 stormwater (Q_5 = 0.6 cfs Q_{100} = 4.0 cfs) flows north to DP9 (Q_5 = 0.6 cfs Q_{100} = 4.0 cfs). DP9 follows historic drainage patterns offsite to the east.

III. Drainage Design Criteria

a. Development Criteria Reference

The drainage analysis follows the criteria from the “Drainage Criteria Manual County of El Paso, Colorado” Volumes 1 and 2,” as amended.

b. Hydrologic Criteria

Runoff was calculated per EPCDCM Chapter 5 – Storm Runoff Method of Analysis.

d. Hydraulic Criteria

Hydraulic criteria for culvert analysis are from EPCDCM Chapter 10 – Open Channel Design. Open channel analysis was performed using Hydraflow Express Extension for Autodesk Civil 3D, latest edition.

IV. Drainage Facility Design

a. General Concept

The site will not be performing any disturbance or ground cover changes at this time. This report supports a final plat that will subdivide the existing site into two 5 acre lots and a 9.34 acre tract. Proposed Lot 1 and 2 are analyzed for their future conditions. However, there are no proposed stormwater facilities being constructed with this report. However, in assumed locations of future culverts, hydraulic calculations are provided for culvert sizing. In general, stormwater will follow historic drainage patterns through onsite drainageways to the east.

b. Water Quality & Detention

The site is not proposing any disturbance, change to ground cover or alteration of existing drainage patterns. Therefore, permanent water quality is not required. A PCM Applicability form is presented in Appendix E. However, the proposed condition of the site provides an analysis if the proposed lots develop in the future.

c. Drainageways

There are multiple drainageways that convey stormwater through Hardy Road Properties to their historic outfall on the eastern property boundary. Drainageways exceeding 15 cfs in the 100-year storm are designated with 'No-Build' easement to maintain the flow path. To determine the easement limits, a hydraulic analysis of select cross sections is performed to determine water surface elevations and top widths. The proposed 'No-Build' easement encompasses the 100-year flow depth in the channel.

A channel analysis summary table is presented in Appendix C. A total of 14 cross sections were analyzed. Based upon EPC DCM Table 10-4, the permissible open channel velocity is 5 ft/s, as the channels are vegetated consistently with tall fescue and slopes are in the range of 0-5%. The 14 cross sections demonstrate velocities that range from 1.39 ft/s to 5.85 ft/s. Channel sections with velocities less than 5 ft/s are stable, and no improvements are necessary to address existing velocities. Cross Sections 6-1, 6-2 & 6-3 have average velocities exceeding 5 ft/s. Field observation will be performed prior to subsequent submittals to determine if signs of erosion are present and mitigation requirements will be detailed if required.

EPC DCM Section 10.5.2 states the permissible 100-year flow depth is 5.0'. All 14 cross sections demonstrate a 100-year flow depth less than 5.0'. EPC DCM Section 10.5.5 requires a minimum of 1.0' freeboard. All 14 cross sections demonstrate a freeboard of at least 1.0' in the 100-year scenario. Shear stress values are computed for reference purposes only, as EPC DCM does not provide guidance regarding acceptable shear stress values. EPC DCM Section 10.7 states that Froude number's greater than 1 represent supercritical flow and Froude's less than 1 represents subcritical flow. Channel Section 6-2 & 6-3 demonstrate 100-year Froude number of 1.1 and 1.0. Field observation will be performed prior to subsequent submittals to determine if signs of erosion are present and mitigation requirements will be detailed if required.

d. Grading & Erosion Control Plan

The project will disturb no area. Therefore, a separate Grading and Erosion Control plan is not required nor provided.

Portion of the site will be disturbed for the new proposed structures including the new homes and drives etc. please conform.

All Terrain: There is no home construction proposed at this time. Property owner is only subdividing the property at this time.

e. Four Step Method

Step 1 – Reducing Runoff Volumes: Roof drains promote infiltration and runoff reduction. Runoff reduct runoff and promoting infiltration. The Type B soils preser wet, that will help to reduce runoff volumes.

Step 2 – Treat and slowly release the WQCV: Water quality treatment is not required for the site as the total disturbance is 0 acres and no proposed changes to ground cover or drainage patterns is proposed. A PCM Applicability form is presented in Appendix D.

Step 3 – Stabilize stream channels: All new and re-development projects are required to construct or participate in the funding of channel stabilization measures. Drainage basin fees paid, at the time of platting, go towards channel stabilization with the drainage basin. However, there are no fees associated with the West Kiowa Creek drainage basin.

Step 4 – Consider the need for source controls: No industrial or commercial uses are proposed within this development and therefore no source controls are proposed.

f. Drainage Basin & Bridge Fees

There are no basin or bridge fees associated with the West Kiowa Creek drainage basin.

V. Summary

Hardy Road Properties remains consistent with pre-development drainage conditions. It is the professional opinion of the engineer that the future development will not have any adverse impacts on the existing site conditions or downstream facilities.

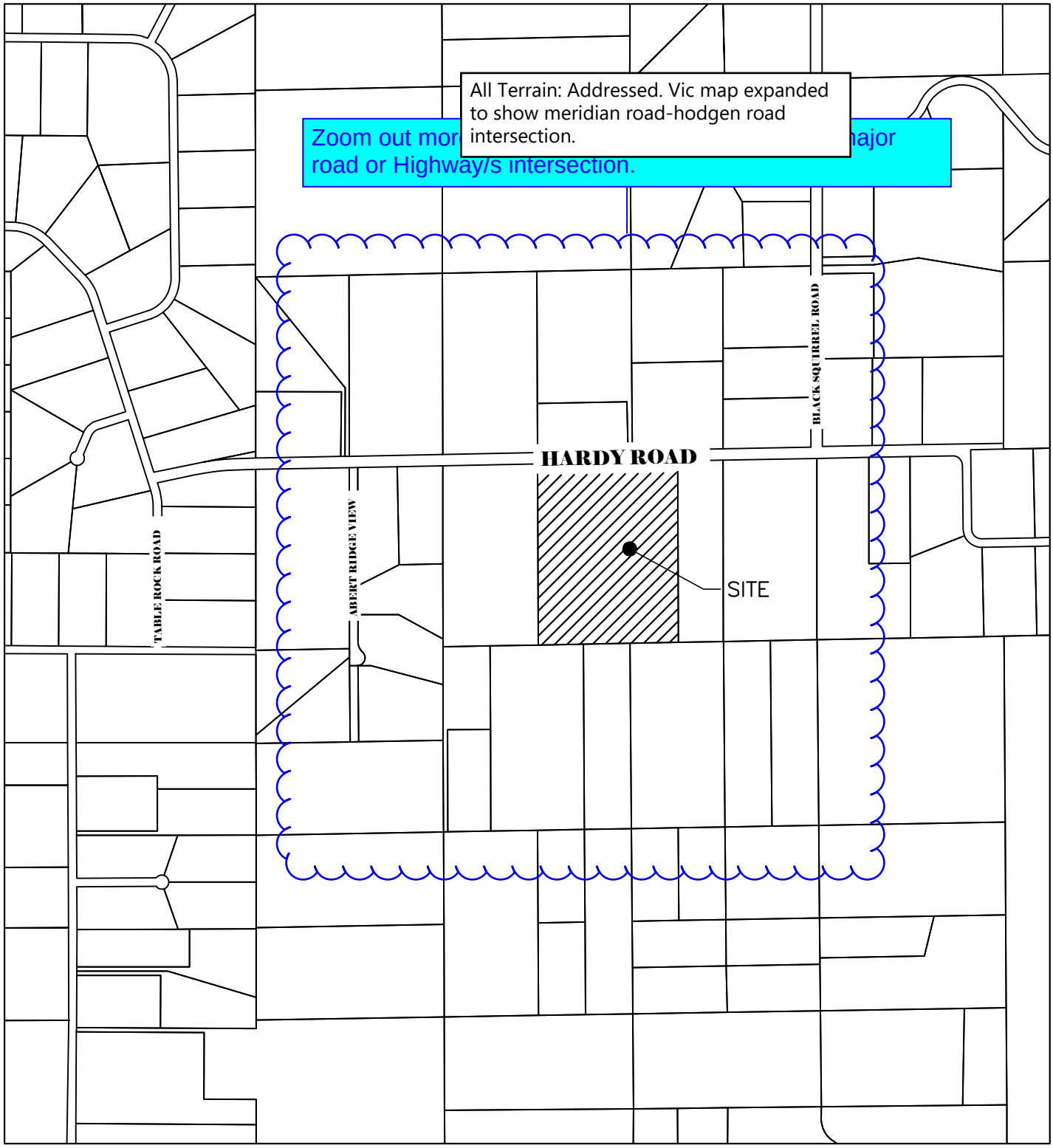
VI. References

1. El Paso County – Drainage Criteria Manual, 2018 as amended.
2. Federal Emergency Management Agency, Flood Map Service Center - https://msc.fema.gov/portal/home
3. Urban Storm Drainage Criteria Manual, Mile High Flood District, January 2018.
4. Web Soil Survey, Natural Resources Conservation Service, February 2026.

APPENDIX A – VICINITY MAP, FEMA MAP & NRCS WEB SOIL SURVEY

HARDY ROAD PROPERTIES

VICINITY MAP



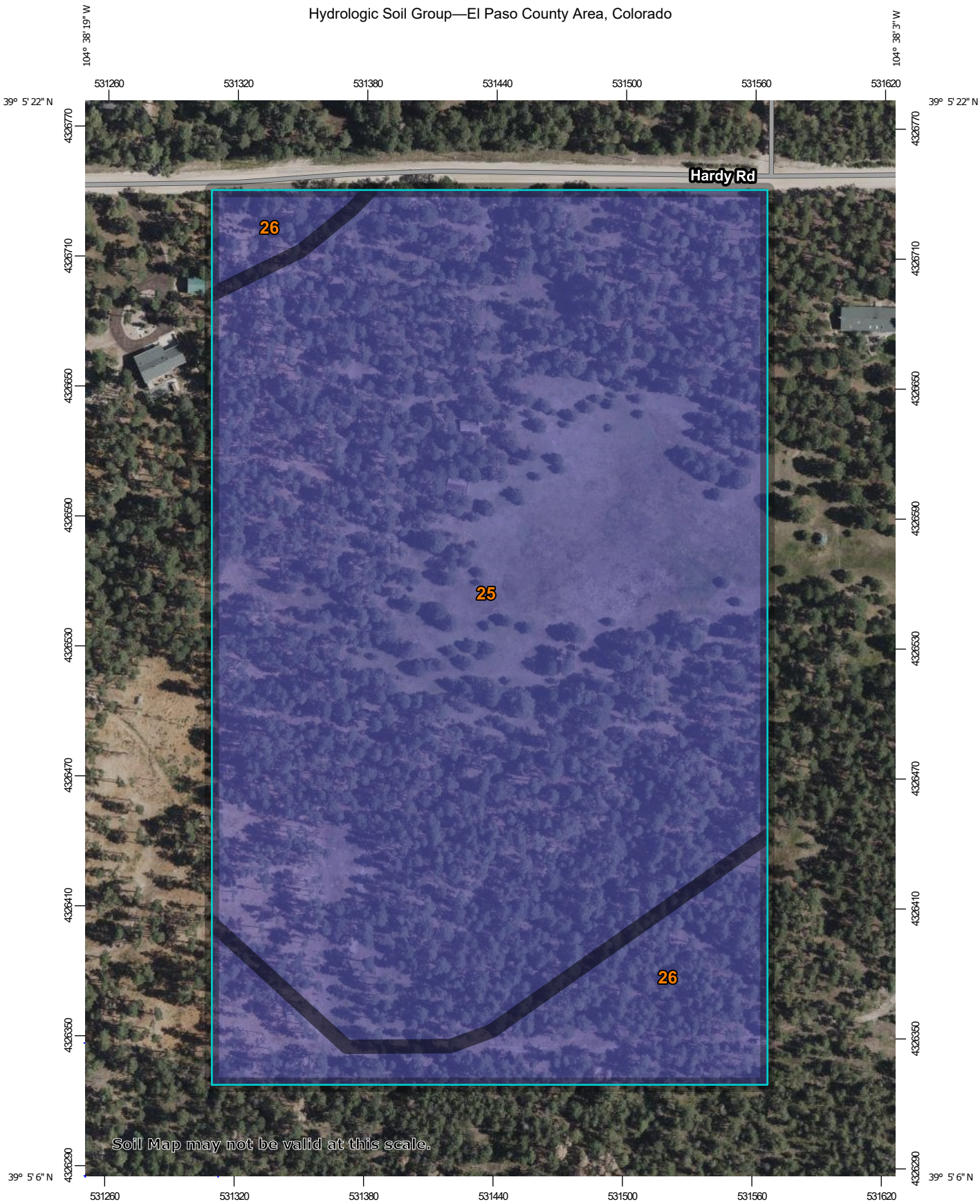
N

1000 500 0 1000 2000

ORIGINAL SCALE: 1" = 1000'

VICINITY MAP	
HARDY ROAD PROPERTIES	
JOB NO. 25018	
LOCATION: EPC	SHEET 1
02/20/2026	

ALL TERRAIN ENGINEERING
1004 WEST VAN BUREN STREET
COLORADO SPRINGS, CO 80907



Map Scale: 1:2,420 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 23, 2024—Aug 4, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
25	Elbeth sandy loam, 3 to 8 percent slopes	B	22.6	85.8%
26	Elbeth sandy loam, 8 to 15 percent slopes	B	3.8	14.2%
Totals for Area of Interest			**26.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

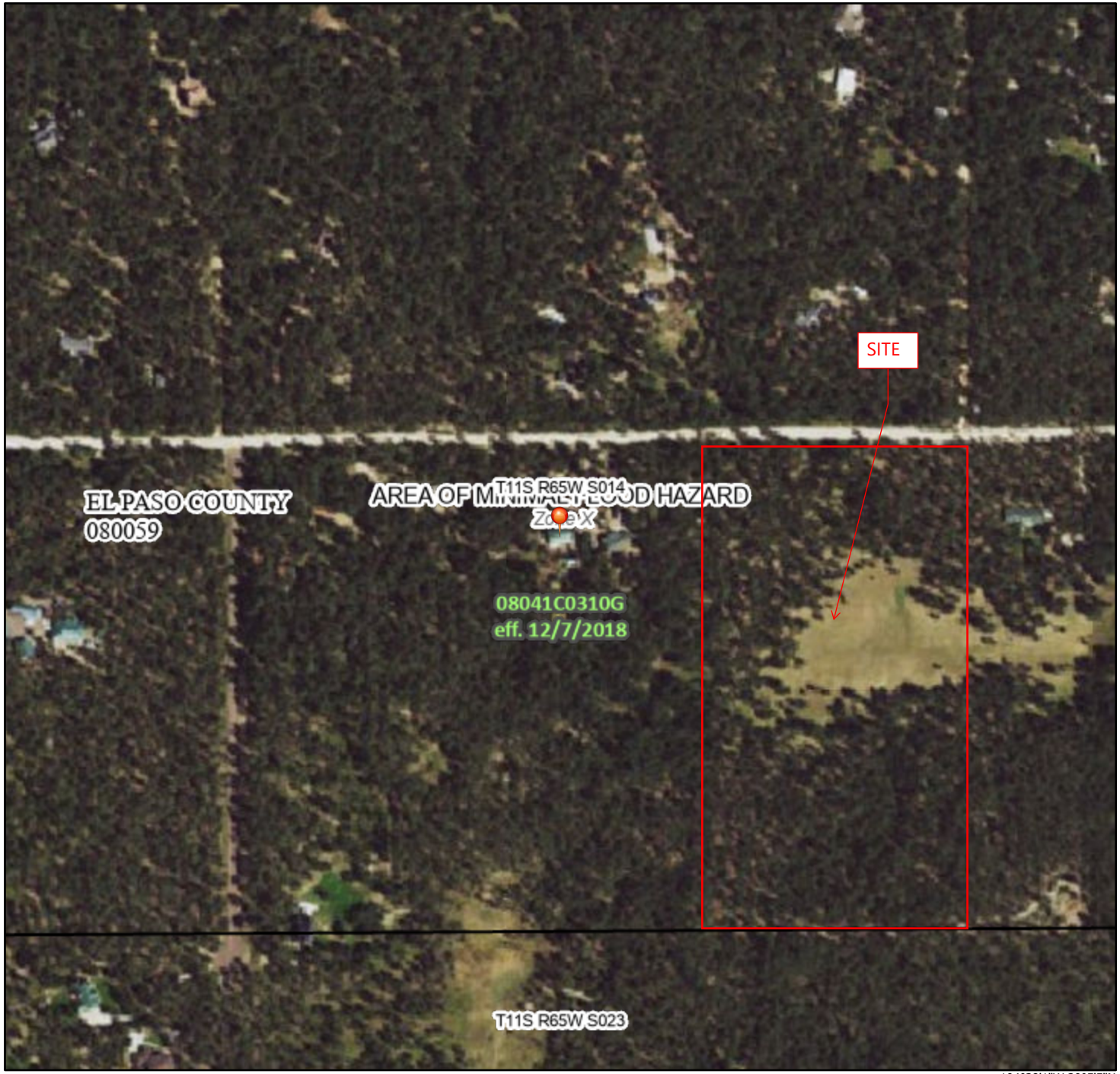
Rating Options

Aggregation Method: Dominant Condition

National Flood Hazard Layer FIRMette

FEMA

104°38'38"W 39°5'33"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

104°38'1"W 39°5'5"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/26/2025 at 5:59 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B – HYDROLOGIC CALCULATIONS

Subdivision:	Hardy Road Properties
Location:	El Paso County
Project Name:	Hardy Road Properties
Project Number:	25018
Calculated By:	NQJ
Checked By:	REB
Date:	2/17/2026

EXISTING CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
EX1	8.71	4%	0.11	0.37	36.9	2.1	11.9
EX2	5.01	2%	0.09	0.36	30.5	1.1	7.4
EX3	4.06	2%	0.09	0.36	36.1	0.8	5.4
EX4	2.76	2%	0.09	0.36	32.0	0.6	4.0

EXISTING CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
OS1	4.7	29.5
JJ5	15.6	84.6
JJ6	2.4	12.3
JJ7	0.5	2.3
JJ8	0.7	3.3
JJ9	0.2	1.1
1	2.5	14.2
2	17.8	96.6
3	4.9	32.8
4	0.6	4.0
5	23.3	131.9

COMPOSITE % IMPERVIOUS CALCULATIONS - EXISTING CONDITIONS

Subdivision: Hardy Road Properties
Location: El Paso County

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		Gravel					Paved				Roofs				Undeveloped				Weighted C_5 & C_{100}		Basins Total Weighted % Imp.
Basin ID	Total Area (ac)	C_5	C_{100}	Area (ac)	% Imp.	% Imp.	C_5	C_{100}	Area (ac)	% Imp.	C_5	C_{100}	Area (ac)	% Imp.	C_5	C_{100}	Area (ac)	% Imp.	C_5	C_{100}	
EX1	8.71	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.17	100.0%	0.73	0.81	0.05	90.0%	0.09	0.36	8.49	2.0%	0.11	0.37	4.4%
EX2	5.01	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	5.01	2.0%	0.09	0.36	2.0%
EX3	4.06	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	4.06	2.0%	0.09	0.36	2.0%
EX4	2.76	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	2.76	2.0%	0.09	0.36	2.0%
Total	**20.54**																				**3.0%**

STANDARD FORM SF-2 - EXISTING CONDITIONS
TIME OF CONCENTRATION

Subdivision: Hardy Road Properties
Location: El Paso County

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

SUB-BASIN DATA					INITIAL/OVERLAND (T_i)			TRAVEL TIME (T_t)					*tc* CHECK (URBANIZED BASINS)			FINAL
BASIN ID	D.A. (ac)	Hydrologic Soils Group	Weighted C_5	Impervious (%)	L (ft)	S_o (%)	t_i (min)	L_t (ft)	S_t (%)	K	VEL. (ft/s)	t_t (min)	COMP. t_c (min)	TOTAL LENGTH (ft)	Urbanized t_c (min)	t_c (min)
EX1	8.71	B	0.11	4.4%	125	8.0%	10.1	995	2.2%	2.5	0.4	44.7	54.8	1120.0	36.9	36.9
EX2	5.01	B	0.09	2.0%	300	3.3%	21.3	410	2.3%	2.5	0.4	18.0	39.3	710.0	30.5	30.5
EX3	4.06	B	0.09	2.0%	175	5.3%	13.9	915	2.5%	2.5	0.4	38.6	52.5	1090.0	36.1	36.1
EX4	2.76	B	0.09	2.0%	180	7.1%	12.8	735	4.3%	2.5	0.5	23.6	36.4	915.0	32.0	32.0

NOTES:

$$t_c = t_i + t_t$$

Where:

t_c = computed time of concentration (minutes)

t_i = overland (initial) flow time (minutes)

t_t = channelized flow time (minutes).

$$t_t = \frac{L_t}{60K\sqrt{S_o}} = \frac{L_t}{60V_t}$$

Where:

t_t = channelized flow time (travel time, min)
L_t = waterway length (ft)
S_o = waterway slope (ft/ft)
V_t = travel time velocity (ft/sec) = $K\sqrt{S_o}$
K = NRCS conveyance factor (see Table 6-2).

Eq $$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S_o^{0.33}}$$ Equation 6-3

Where:

t_i = overland (initial) flow time (minutes)
C_5 = runoff coefficient for 5-year frequency (from Table 6-4)
L_i = length of overland flow (ft)
S_o = average slope along the overland flow path (ft/ft).

Equation 6-4 $26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$ Equation 6-5

:

t_c = minimum time of concentration for first design point when less than t_c from Equation 6-1.
L_t = length of channelized flow path (ft)
i = imperviousness (expressed as a decimal)
S_t = slope of the channelized flow path (ft/ft).

Table 6-2. NRCS Conveyance factors, K

Type of Land Surface	Conveyance Factor, K
Heavy meadow	2.5
Tillage/field	5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

Use a minimum t_c value of 5 minutes for urbanized areas and a minimum t_c value of 10 minutes for areas that are not considered urban. Use minimum values even when calculations result in a lesser time of concentration.

STANDARD FORM SF-3 - EXISTING CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: Hardy Road Properties
Location: El Paso County
Design Storm: 5-Year

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		DIRECT RUNOFF							TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (Ac)	Runoff Coeff.	t_c (min)	C*A (Ac)	I (in/hr)	Q (cfs)	tc (min)	C*A (ac)	I (in/hr)	Q (cfs)	Q_{street} (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
	JJ5	-	-	-	60.0	10.84	1.44	15.6															DPJJ5 FLOW, DRAINS INTO BASIN EX2
	JJ6	-	-	-	33.5	1.04	2.32	2.4															DPJJ6 FLOW, DRAINS INTO BASIN EX2
	JJ7	-	-	-	9.9	0.12	4.15	0.5															DPJJ7 FLOW, DRAINS INTO BASIN EX3
	JJ8	-	-	-	9.1	0.17	4.27	0.7															DPJJ8 FLOW, DRAINS INTO BASIN EX1
	JJ9	-	-	-	13.5	0.05	3.67	0.2															DPJJ9 FLOW, DRAINS INTO BASIN EX1
	OS1				46.2	2.30	1.83	4.7															DPOS1 FLOW PER STREAMSTATS, DRAINS INTO BASIN EX3
		EX1	8.71	0.11	36.9	0.95	2.17	2.1															BASIN E FLOW @ DP6, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	1								36.9	1.17	2.17	2.5											COMBINED DPEX8, DPEX9 & BASIN H1 @ DP1, CONTINUES TO DP5
		EX2	5.01	0.09	30.5	0.45	2.46	1.1															BASIN EX2 FLOW @ DP2
	2								60.0	12.33	1.44	17.8											COMBINED DPEX5, DPEX6 & BASIN EX2 FLOW @ DP2, CONTINUES TO DP5
		EX3	4.06	0.09	36.1	0.37	2.21	0.8															BASIN EX3 FLOW @ DP3
	3								46.2	2.67	1.83	4.9											COMBINED DPOS1 & BASIN EX3 @ DP3, CONTINUES TO DP5
	4	EX4	2.76	0.09	32.0	0.25	2.38	0.6															BASIN EX4 FLOW @ DP4, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	5								60.0	16.17	1.44	23.3											DP1-DP3 COMBINED @ DP5, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST

Notes:
Street and Pipe C*A values are determined by Q/i using the catchment's intensity value.

STANDARD FORM SF-3 - EXISTING CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: Hardy Road Properties
Location: El Paso County
Design Storm: 100-Year

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		DIRECT RUNOFF							TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (ac)	Runoff Coeff.	t_c (min)	C*A (ac)	I (in/hr)	Q (cfs)	t_c (min)	C*A (ac)	I (in/hr)	Q (cfs)	Q_{street} (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
	JJ5	-	-	-	60.0	35.00	2.42	84.6															DPJJ5 FLOW, DRAINS INTO BASIN EX2
	JJ6	-	-	-	33.5	3.17	3.89	12.3															DPJJ6 FLOW, DRAINS INTO BASIN EX2
	JJ7	-	-	-	9.9	0.33	6.97	2.3															DPJJ7 FLOW, DRAINS INTO BASIN EX3
	JJ8	-	-	-	9.1	0.47	7.16	3.3															DPJJ8 FLOW, DRAINS INTO BASIN EX1
	JJ9	-	-	-	13.5	0.18	6.17	1.1															DPJJ9 FLOW, DRAINS INTO BASIN EX1
	OS1	-	-	-	46.2	9.22	3.08	29.5															DPOS1 FLOW PER STREAMSTATS, DRAINS INTO BASIN EX3
		EX1	8.71	0.37	36.9	3.26	3.64	11.9															BASIN E FLOW @ DP6, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	1								36.9	3.91	3.64	14.2											COMBINED DPEX8, DPEX9 & BASIN H1 @ DP1, CONTINUES TO DP5
		EX2	5.01	0.36	30.5	1.80	4.12	7.4															BASIN EX2 FLOW @ DP2
	2								60.0	39.97	2.42	96.6											COMBINED DPEX5, DPEX6 & BASIN EX2 FLOW @ DP2, CONTINUES TO DP5
		EX3	4.06	0.36	36.1	1.46	3.70	5.4															BASIN EX3 FLOW @ DP3
	3								46.2	10.68	3.08	32.8											COMBINED DPOS1 & BASIN EX3 @ DP3, CONTINUES TO DP5
	4	EX4	2.76	0.36	32.0	0.99	4.00	4.0															BASIN EX4 FLOW @ DP4, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST

Notes:
Street and Pipe C*A values are determined by Q/i using the catchment's intensity value.

Subdivision:	Hardy Road Properties
Location:	El Paso County
Project Name:	Hardy Road Properties
Project Number:	25018
Calculated By:	NQJ
Checked By:	REB
Date:	2/17/2026

PROPOSED CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
1	2.30	13.5%	0.18	0.43	27.8	1.1	4.3
2	1.95	4.3%	0.11	0.37	23.7	0.6	3.4
3	2.59	2.0%	0.09	0.36	29.7	0.6	3.9
4	1.81	2.0%	0.09	0.36	29.6	0.4	2.7
5	3.98	2.0%	0.09	0.36	34.0	0.8	5.5
6	0.58	2.0%	0.09	0.36	19.0	0.2	1.1
7	4.60	7.3%	0.13	0.39	31.0	1.5	7.3
8	2.76	2.0%	0.09	0.36	32.0	0.6	4.0

PROPOSED CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
OS1	4.7	29.5
JJ5	15.6	84.6
JJ6	2.4	12.3
JJ7	0.5	2.3
JJ8	0.7	3.3
JJ9	0.2	1.1
1	1.5	6.3
2	0.7	4.3
3	14.7	79.8
4	2.5	13.1
4.1	16.3	88.2
5	4.1	27.4
6	18.9	106.7
7	3.3	15.9
8	20.7	115.4
9	0.6	4.0

COMPOSITE % IMPERVIOUS CALCULATIONS - PROPOSED CONDITIONS

Subdivision: Hardy Road Properties
Location: El Paso County

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		Gravel					Paved				Roofs				Undeveloped				Weighted C_5 & C_{100}		Basins Total Weighted % Imp.
Basin ID	Total Area (ac)	C_5	C_{100}	Area (ac)	% Imp.	% Imp.	C_5	C_{100}	Area (ac)	% Imp.	C_5	C_{100}	Area (ac)	% Imp.	C_5	C_{100}	Area (ac)	% Imp.	C_5	C_{100}	
1	2.30	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.17	100.0%	0.73	0.81	0.11	90.0%	0.09	0.36	2.02	2.0%	0.18	0.43	13.5%
2	1.95	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.05	90.0%	0.09	0.36	1.90	2.0%	0.11	0.37	4.3%
3	2.59	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	2.59	2.0%	0.09	0.36	2.0%
4	1.81	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	1.81	2.0%	0.09	0.36	2.0%
5	3.98	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	3.98	2.0%	0.09	0.36	2.0%
6	0.58	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	0.58	2.0%	0.09	0.36	2.0%
7	4.60	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.15	100.0%	0.73	0.81	0.11	90.0%	0.09	0.36	4.34	2.0%	0.13	0.39	7.3%
8	2.76	0.59	0.70	0.00	80.0%	7.0%	0.90	0.96	0.00	100.0%	0.73	0.81	0.00	90.0%	0.09	0.36	2.76	2.0%	0.09	0.36	2.0%
Total	**20.57**																				**4.7%**

STANDARD FORM SF-2 - PROPOSED CONDITIONS
TIME OF CONCENTRATION

Subdivision: Hardy Road Properties
Location: El Paso County

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

SUB-BASIN DATA					INITIAL/OVERLAND (T_i)			TRAVEL TIME (T_t)					*tc* CHECK (URBANIZED BASINS)			FINAL
BASIN ID	D.A. (ac)	Hydrologic Soils Group	Weighted C_5	Impervious (%)	L (ft)	S_o (%)	t_i (min)	L_t (ft)	S_t (%)	K	VEL. (ft/s)	t_t (min)	COMP. t_c (min)	TOTAL LENGTH (ft)	Urbanized t_c (min)	t_c (min)
1	2.30	B	0.18	13.5%	135	4.4%	11.8	330	1.5%	2.5	0.3	18.0	29.8	465.0	27.8	27.8
2	1.95	B	0.11	4.3%	300	6.5%	16.8	175	2.8%	2.5	0.4	7.0	23.7	475.0	27.1	23.7
3	2.59	B	0.09	2.0%	300	6.0%	17.5	295	1.7%	2.5	0.3	15.1	32.6	595.0	29.7	29.7
4	1.81	B	0.09	2.0%	250	6.0%	16.0	415	3.6%	2.5	0.5	14.6	30.5	665.0	29.6	29.6
5	3.98	B	0.09	2.0%	215	3.3%	18.0	815	3.1%	2.5	0.4	30.9	48.9	1030.0	34.0	34.0
6	0.58	B	0.09	2.0%	65	7.7%	7.5	300	3.0%	2.5	0.4	11.5	19.0	365.0	28.8	19.0
7	4.60	B	0.13	7.3%	140	5.0%	12.2	700	3.5%	2.5	0.5	24.9	37.1	840.0	31.0	31.0
8	2.76	B	0.09	2.0%	180	7.1%	12.8	735	4.3%	2.5	0.5	23.6	36.4	915.0	32.0	32.0

NOTES:

$$t_c = t_i + t_t$$

Where:

t_c = computed time of concentration (minutes)

t_i = overland (initial) flow time (minutes)

t_t = channelized flow time (minutes).

$$t_t = \frac{L_t}{60K\sqrt{S_o}} = \frac{L_t}{60V_t}$$

Where:

t_t = channelized flow time (travel time, min)
L_t = waterway length (ft)
S_o = waterway slope (ft/ft)
V_t = travel time velocity (ft/sec) = $K\sqrt{S_o}$
K = NRCS conveyance factor (see Table 6-2).

Eq $$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S_o^{0.33}}$$ Equation 6-3

Where:

t_i = overland (initial) flow time (minutes)
C_5 = runoff coefficient for 5-year frequency (from Table 6-4)
L_i = length of overland flow (ft)
S_o = average slope along the overland flow path (ft/ft).

Equation 6-4 $(26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$ Equation 6-5

:

t_c = minimum time of concentration for first design point when less than t_c from Equation 6-1.
L_t = length of channelized flow path (ft)
i = imperviousness (expressed as a decimal)
S_t = slope of the channelized flow path (ft/ft).

Table 6-2. NRCS Conveyance factors, K

Type of Land Surface	Conveyance Factor, K
Heavy meadow	2.5
Tillage/field	5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

Use a minimum t_c value of 5 minutes for urbanized areas and a minimum t_c value of 10 minutes for areas that are not considered urban. Use minimum values even when calculations result in a lesser time of concentration.

STANDARD FORM SF-3 - PROPOSED CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: Hardy Road Properties
Location: El Paso County
Design Storm: 5-Year

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

STREET	Design Point	DIRECT RUNOFF							TOTAL RUNOFF				OVERLAND			PIPE				TRAVEL TIME			REMARKS
		Basin ID	Area (Ac)	Runoff Coeff.	t_c (min)	C*A (Ac)	I (in/hr)	Q (cfs)	tc (min)	C*A (ac)	I (in/hr)	Q (cfs)	$Q_{overland}$ (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	
	JJ5	-	-	-	60.0	10.84	1.44	15.6					15.60	10.84	2.9					350	1.2	4.9	DPJJ5 FLOW, DRAINS INTO BASIN 3
	JJ6	-	-	-	33.5	1.04	2.32	2.4					2.40	1.04	4.8					625	1.5	6.8	DPJJ6 FLOW, DRAINS INTO BASIN 4
	JJ7	-	-	-	9.9	0.12	4.15	0.5					0.50	0.12	3.7					965	1.3	11.9	DPJJ7 FLOW, DRAINS INTO BASIN 5
	JJ8	-	-	-	9.1	0.17	4.27	0.7					0.70	0.17	2.6					462	1.1	6.8	DPJJ8 FLOW, DRAINS INTO BASIN 1
	JJ9	-	-	-	13.5	0.05	3.67	0.2					0.20	0.05	5.4					463	1.6	4.7	DPJJ9 FLOW, DRAINS INTO BASIN 2
	OS1				46.2	2.30	1.83	4.7					4.70	2.30	3.7					968	1.3	12.0	DPOS1 FLOW PER STREAMSTATS, DRAINS INTO BASIN 5
		1	2.30	0.18	27.8	0.42	2.59	1.1															BASIN 1 FLOW @ DP1
	1								27.8	0.59	2.59	1.5	1.52	0.59	3.9					520	1.4	6.3	COMBINED BASIN 1 & DPJJ8 FLOW @ DP1, CONTINUES TO DP7
		2	1.95	0.11	23.7	0.21	2.83	0.6															BASIN 2 FLOW @ DP2
	2								23.7	0.26	2.83	0.7	0.73	0.26	3					350	1.2	4.8	COMBINED BASIN 2 & DPJJ9 FLOW @ DP2, CONTINUES TO DP7
		3	2.59	0.09	29.7	0.23	2.50	0.6															BASIN 3 FLOW @ DP3
	3								64.9	11.07	1.32	14.7	14.66	11.07	5.5					90	1.6	0.9	COMBINED BASIN 3 & DPJJ5 FLOW @ DP3, CONTINUES TO DP4
		4	1.81	0.09	29.6	0.16	2.50	0.4															BASIN 4 FLOW @ DP4
	4								40.3	1.20	2.04	2.5											COMBINED BASIN 4 & DPJJ6 FLOW @ DP4, CONTINUES TO DP4.1
	4.1								64.9	12.28	1.32	16.3	16.25	12.28	3.5					260	1.3	3.3	COMBINED DP3 & DP4 @ DP4.1, CONTINUES TO DP6
		5	3.98	0.09	34.0	0.36	2.29	0.8															BASIN 5 FLOW @ DP5
	5								58.2	2.78	1.49	4.1	4.13	2.78	2					78	1.0	1.3	COMBINED BASIN 5, DPJJ7 & DPOS1 @ DP5, CONTINUES TO DP6
		6	0.58	0.09	19.0	0.05	3.16	0.2															BASIN 6 FLOW @ DP6
	6								68.2	15.11	1.25	18.9											COMBINED BASIN 6, DP4.1, & DP5 @ DP6, CONTINUES TO DP8
		7	4.60	0.13	31.0	0.61	2.43	1.5															BASIN 7 FLOW @ DP7

STANDARD FORM SF-3 - PROPOSED CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: Hardy Road Properties
Location: El Paso County
Design Storm: 5-Year

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		DIRECT RUNOFF							TOTAL RUNOFF				OVERLAND			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (Ac)	Runoff Coeff.	t_c (min)	C*A (Ac)	I (in/hr)	Q (cfs)	tc (min)	C*A (ac)	I (in/hr)	Q (cfs)	$Q_{overland}$ (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
	7								34.1	1.45	2.29	3.3											COMBINED DP1, DP2, & BASIN 7 FLOW @ DP7, CONTINUES TO DP8
	8								68.2	16.55	1.25	20.7											COMBINED DP6 & DP7 @ DP8, CONTINUES EAST OFFSITE
	9	8	2.76	0.09	32.0	0.25	2.38	0.6															BASIN 8 FLOW @ DP9, CONTINUES EAST OFFSITE

Notes:
Street and Pipe C*A values are determined by Q/i using the catchment's intensity value.

STANDARD FORM SF-3 - PROPOSED CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: Hardy Road Properties
Location: El Paso County
Design Storm: 100-Year

Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		DIRECT RUNOFF							TOTAL RUNOFF				OVERLAND			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (ac)	Runoff Coeff.	t_c (min)	C*A (ac)	I (in/hr)	Q (cfs)	tc (min)	C*A (ac)	I (in/hr)	Q (cfs)	$Q_{overland}$ (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
	JJ5	-	-	-	60.0	35.00	2.42	84.6					84.60	35.00	2.9					350	1.2	4.9	DPJJ5 FLOW, DRAINS INTO BASIN 3
	JJ6	-	-	-	33.5	3.17	3.89	12.3					12.30	3.17	4.8					625	1.5	6.8	DPJJ6 FLOW, DRAINS INTO BASIN 4
	JJ7	-	-	-	9.9	0.33	6.97	2.3					2.30	0.33	3.7					965	1.3	11.9	DPJJ7 FLOW, DRAINS INTO BASIN 5
	JJ8	-	-	-	9.1	0.47	7.16	3.3					3.30	0.47	2.6					462	1.1	6.8	DPJJ8 FLOW, DRAINS INTO BASIN 1
	JJ9	-	-	-	13.5	0.18	6.17	1.1					1.10	0.18	5.4					463	1.6	4.7	DPJJ9 FLOW, DRAINS INTO BASIN 2
	OS1				46.2	9.22	3.08	29.5					29.50	9.22	3.7					968	1.3	12.0	DPOS1 FLOW PER STREAMSTATS, DRAINS INTO BASIN 5
		1	2.30	0.43	27.8	0.98	4.35	4.3															BASIN 1 FLOW @ DP1
	1								27.8	1.45	4.35	6.3	6.31	1.45	3.9					520	1.4	6.3	COMBINED BASIN 1 & DPJJ8 FLOW @ DP1, CONTINUES TO DP7
		2	1.95	0.37	23.7	0.72	4.76	3.4															BASIN 2 FLOW @ DP2
	2								23.7	0.90	4.76	4.3	4.30	0.90	3					350	1.2	4.8	COMBINED BASIN 2 & DPJJ9 FLOW @ DP2, CONTINUES TO DP7
		3	2.59	0.36	29.7	0.93	4.19	3.9															BASIN 3 FLOW @ DP3
	3								64.9	35.93	2.22	79.8	79.76	35.93	5.5					90	1.6	0.9	COMBINED BASIN 3 & DPJJ5 FLOW @ DP3, CONTINUES TO DP4
		4	1.81	0.36	29.6	0.65	4.20	2.7															BASIN 4 FLOW @ DP4
	4								40.3	3.82	3.42	13.1											COMBINED BASIN 4, DP3 & DPJJ6 FLOW @ DP4, CONTINUES TO DP6
	4.1								64.9	39.75	2.22	88.2	88.24	39.75	3.5					260	1.3	3.3	COMBINED DP3 & DP4 @ DP4.1, CONTINUES TO DP6
		5	3.98	0.36	34.0	1.43	3.85	5.5															BASIN 5 FLOW @ DP5
	5								58.2	10.98	2.49	27.4	27.40	10.98	2					78	1.0	1.3	COMBINED BASIN 5, DPJJ7 & DPOS1 @ DP5, CONTINUES TO DP6
		6	0.58	0.36	19.0	0.21	5.31	1.1															BASIN 6 FLOW @ DP6
	6								68.2	50.95	2.09	106.7											COMBINED BASIN 6, DP4.1, & DP5 @ DP6, CONTINUES TO DP8

STANDARD FORM SF-3 - PROPOSED CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: Hardy Road Properties
Location: El Paso County
Design Storm: 100-Year

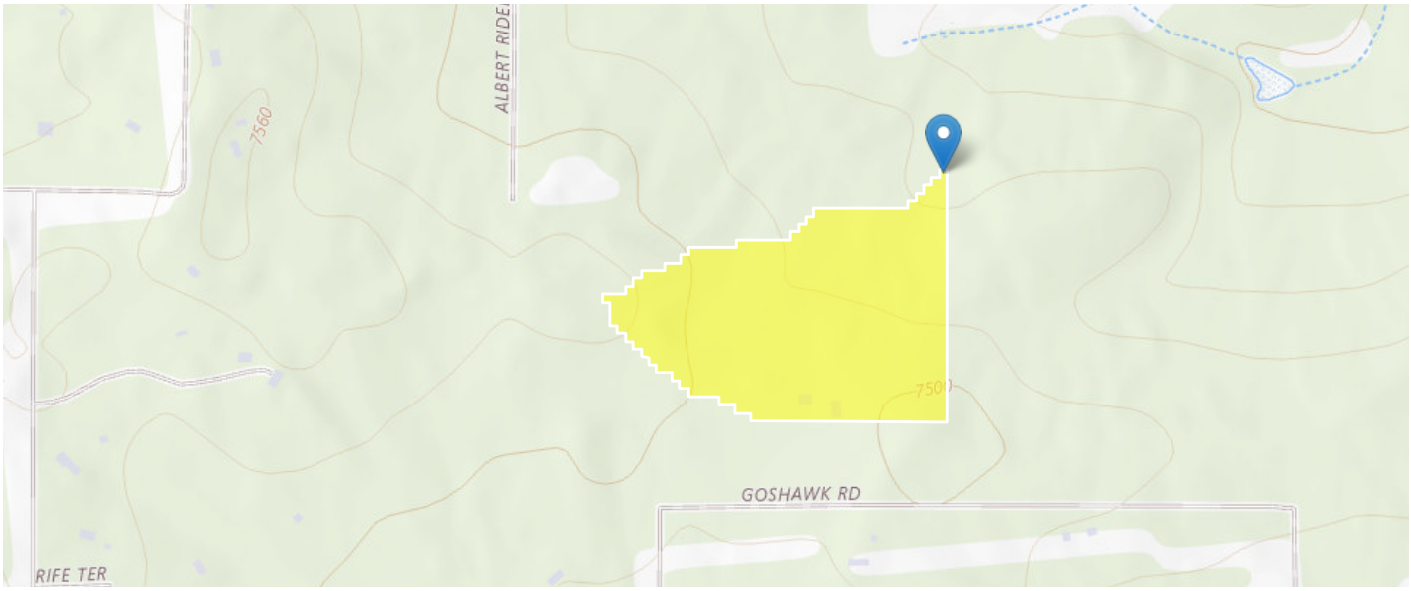
Project Name: Hardy Road Properties
Project No.: 25018.00
Calculated By: NQJ
Checked By: REB
Date: 2/17/26

		DIRECT RUNOFF							TOTAL RUNOFF				OVERLAND			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (ac)	Runoff Coeff.	t_c (min)	C*A (ac)	I (in/hr)	Q (cfs)	tc (min)	C*A (ac)	I (in/hr)	Q (cfs)	$Q_{overland}$ (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
		7	4.60	0.39	31.0	1.80	4.08	7.3															BASIN 7 FLOW @ DP7
	7								34.1	4.15	3.84	15.9											COMBINED DP1, DP2, & BASIN 7 FLOW @ DP7, CONTINUES TO DP8
	8								68.2	55.10	2.09	115.4											COMBINED DP6 & DP7 @ DP8, CONTINUES EAST OFFSITE
	9	8	2.76	0.36	32.0	0.99	4.00	4.0															BASIN 8 FLOW @ DP9, CONTINUES EAST OFFSITE

Notes:
Street and Pipe C*A values are determined by Q/i using the catchment's intensity value.

StreamStats Report - DPOS1

Region ID: CO
Clicked Point (Latitude, Longitude): 39.08579, -104.63548
NHD Stream GNIS Name of Click Point: Stream name not found
Time: 2026-02-19 12:12:37 -0700



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLDEM10M	Mean basin slope computed from 10 m DEM	4.72	percent
DRNAREA	Area that drains to a point on a stream	0.04	square miles
EL7500	Percent of area above 7500 ft	15.66	percent
ELEV	Mean Basin Elevation	7487.06	feet
ELEVMAX	Maximum basin elevation	7526.72	feet
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	4.977	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years	1.89	inches
I6H100Y	6-hour precipitation that is expected to occur on average once in 100 years	3.822	inches
I6H2Y	Maximum 6-hour precipitation that occurs on average once in 2 years	1.384	inches

Parameter Code	Parameter Description	Value	Unit
LAT_OUT	Latitude of Basin Outlet	39.085834	decimal degrees
LC11BARE	Percentage of barren from NLCD 2011 class 31	0	percent
LC11CRPHAY	Percentage of cultivated crops and hay, classes 81 and 82, from NLCD 2011	0	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	0	percent
LC11FOREST	Percentage of forest from NLCD 2011 classes 41-43	100	percent
LC11GRASS	Percent of area covered by grassland/herbaceous using 2011 NLCD	0	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0	percent
LC11SHRUB	Percent of area covered by shrubland using 2011 NLCD	0	percent
LC11SNOIC	Percent snow and ice from NLCD 2011 class 12	0	percent
LC11WATER	Percent of open water, class 11, from NLCD 2011	0	percent
LC11WETLND	Percentage of wetlands, classes 90 and 95, from NLCD 2011	0	percent
LFPLENGTH	Length of longest flow path	0.341	miles
LONG_OUT	Longitude of Basin Outlet	-104.635495	decimal degrees
MINBELEV	Minimum basin elevation	7450.94	feet
OUTLETELEV	Elevation of the stream outlet in feet above NAVD88	7450.94	feet
PRECIP	Mean Annual Precipitation	20.63	inches
RCN	Runoff-curve number as defined by NRCS (http://policy.nrcs.usda.gov/OpenNonWebContent.aspx?content=17758.wba)	55	dimensionless
RUNCO_CO	Soil runoff coefficient as defined by Verdin and Gross (2017)	0.48	dimensionless
SSURGOA	Percentage of area of Hydrologic Soil Type A from SSURGO	0	percent
SSURGOB	Percentage of area of Hydrologic Soil Type B from SSURGO	100	percent
SSURGOC	Percentage of area of Hydrologic Soil Type C from SSURGO	0	percent
SSURGOD	Percentage of area of Hydrologic Soil Type D from SSURGO	0	percent
STATSCLAY	Percentage of clay soils from STATSGO	16.3	percent
STORNHD	Percent storage (wetlands and waterbodies) determined from 1:24K NHD	0	percent
TOC	Time of concentration in hours	0.77	hours

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Foothills Region Peak Flow 2016 5099]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.04	square miles	0.6	2850
I6H100Y	6 Hour 100 Year Precipitation	3.822	inches	2.38	4.89
OUTLETELEV	Elevation of Gage	7450.94	feet	4290	8270
STATSCLAY	STATSGO Percentage of Clay Soils	16.3	percent	9.87	37.5

Peak-Flow Statistics Disclaimers [Foothills Region Peak Flow 2016 5099]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Foothills Region Peak Flow 2016 5099]

Statistic	Value	Unit
50-percent AEP flood	1.46	ft^3/s
20-percent AEP flood	4.68	ft^3/s
10-percent AEP flood	8.23	ft^3/s
4-percent AEP flood	14.6	ft^3/s
2-percent AEP flood	21	ft^3/s
1-percent AEP flood	29.5	ft^3/s
0.5-percent AEP flood	39.4	ft^3/s
0.2-percent AEP flood	55.8	ft^3/s

Peak-Flow Statistics Citations

Kohn, M.S., Stevens, M.R., Harden, T.M., Godaire, J.E., Klinger, R.E., and Mommandi, A.,2016, Paleoflood investigations to improve peak-streamflow regional-regression equations for natural streamflow in eastern Colorado, 2015: U.S. Geological Survey Scientific Investigations Report 2016–5099, 58 p. (http://dx.doi.org/10.3133/sir20165099)

Bankfull Statistics

Bankfull Statistics Parameters [Interior Plains D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.04	square miles	0.19305	59927.7393

Bankfull Statistics Parameters [Great Plains P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.04	square miles	0.598455	30899.82624

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.04	square miles	0.07722	59927.7393

Bankfull Statistics Disclaimers [Interior Plains D Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [Interior Plains D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	3.79	ft
Bieger_D_channel_depth	0.809	ft
Bieger_D_channel_cross_sectional_area	4.72	ft^2

Bankfull Statistics Disclaimers [Great Plains P Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [Great Plains P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	1.09	ft
Bieger_P_channel_depth	0.747	ft
Bieger_P_channel_cross_sectional_area	8.28	ft^2

Bankfull Statistics Disclaimers [USA Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	3.99	ft
Bieger_USA_channel_depth	0.607	ft
Bieger_USA_channel_cross_sectional_area	3	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	3.79	ft
Bieger_D_channel_depth	0.809	ft
Bieger_D_channel_cross_sectional_area	4.72	ft^2
Bieger_P_channel_width	1.09	ft
Bieger_P_channel_depth	0.747	ft
Bieger_P_channel_cross_sectional_area	8.28	ft^2
Bieger_USA_channel_width	3.99	ft
Bieger_USA_channel_depth	0.607	ft
Bieger_USA_channel_cross_sectional_area	3	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPages)

Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [Crippen Bue Region 12]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.04	square miles	0.1	7000

Maximum Probable Flood Statistics Disclaimers [Crippen Bue Region 12]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Maximum Probable Flood Statistics Flow Report [Crippen Bue Region 12]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	516	ft^3/s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D.1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (https://pubs.usgs.gov/wsp/1887/report.pdf)

NHD Features of Delineated Basin

NHD Streams Intersecting Basin Delineation Boundary

This functionality attempts to find the stream name at the delineation point. The name of the nearest intersecting National Hydrography Dataset (NHD) stream is selected by default to appear in the report above. NHD streams do not correspond to the StreamStats stream grid and may not be accurate. If you would like a different stream to appear in the above section, please make a selection below.

No NHD streams intersect the delineated basin.

Watershed Boundary Dataset (WBD) HUC 8 Intersecting Basin Delineation Boundary

This functionality attempts to find the intersecting HUC 8 of the delineated watershed. HUC boundaries do not correspond to the StreamStats data and may not be accurate.

HUC 8	Name
10190010	Kiowa

NHD Hydrologic Features Citations

U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6. (https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6) U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4. (https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4)

Application Version: 4.31.0
SSHydro Services Version: 1.1.0
SSDelineate Services Version: 1.0.1
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.1

APPENDIX C – HYDRAULIC CALCULATIONS

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

DP1 Culvert (Q100 = 6.3 cfs)

Invert Elev Dn (ft)	=	7435.00
Pipe Length (ft)	=	20.00
Slope (%)	=	2.00
Invert Elev Up (ft)	=	7435.40
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.022
Culvert Type	=	Circular Corrugate Metal Pipe
Culvert Entrance	=	Projecting
Coeff. K,M,c,Y,k	=	0.034, 1.5, 0.0553, 0.54, 0.9

Embankment

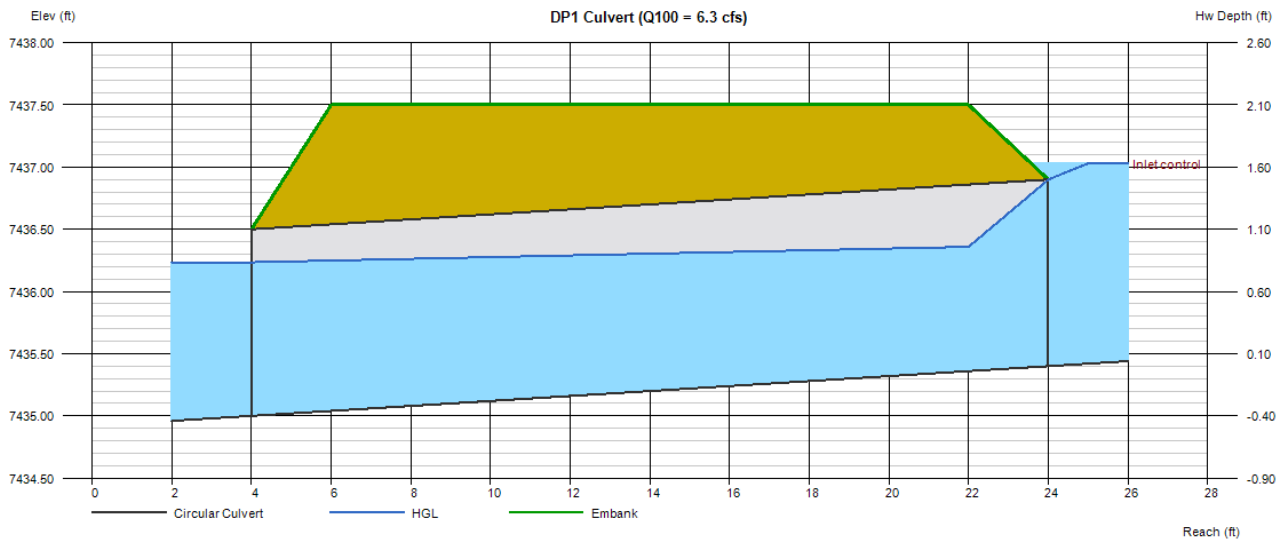
Top Elevation (ft)	=	7437.50
Top Width (ft)	=	16.00
Crest Width (ft)	=	50.00

Calculations

Qmin (cfs)	=	6.30
Qmax (cfs)	=	6.30
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	6.30
Qpipe (cfs)	=	6.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	4.05
Veloc Up (ft/s)	=	5.19
HGL Dn (ft)	=	7436.24
HGL Up (ft)	=	7436.37
Hw Elev (ft)	=	7437.03
Hw/D (ft)	=	1.09
Flow Regime	=	Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

DP2 Culvert (Q100 = 4.3 cfs)

Invert Elev Dn (ft)	=	7429.00
Pipe Length (ft)	=	20.00
Slope (%)	=	2.00
Invert Elev Up (ft)	=	7429.40
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.022
Culvert Type	=	Circular Corrugate Metal Pipe
Culvert Entrance	=	Projecting
Coeff. K,M,c,Y,k	=	0.034, 1.5, 0.0553, 0.54, 0.9

Embankment

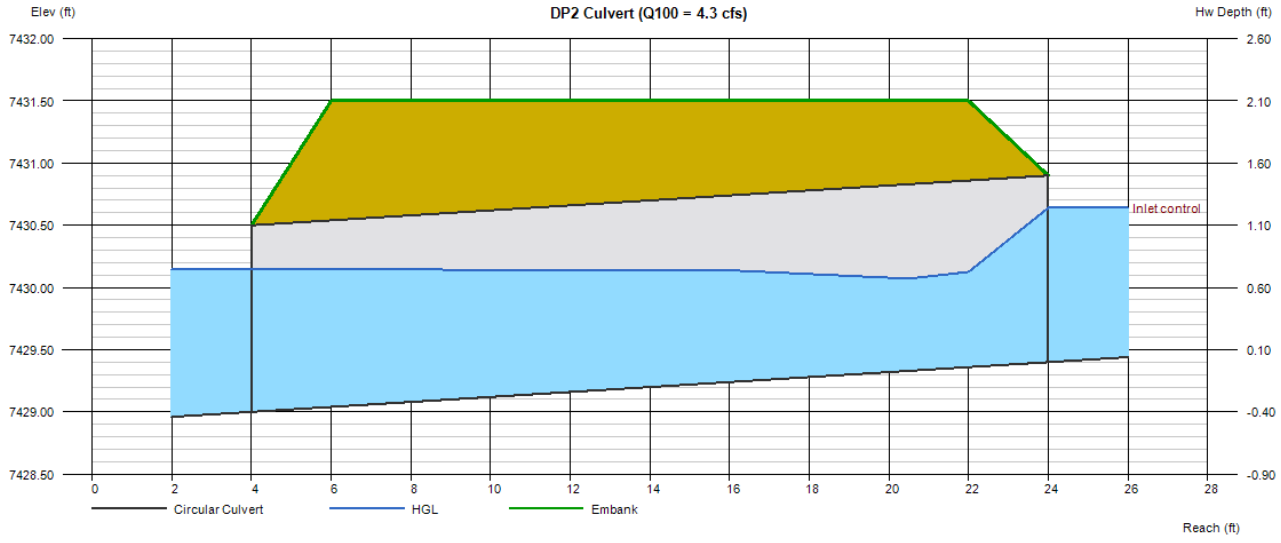
Top Elevation (ft)	=	7431.50
Top Width (ft)	=	16.00
Crest Width (ft)	=	50.00

Calculations

Qmin (cfs)	=	4.30
Qmax (cfs)	=	4.30
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	4.30
Qpipe (cfs)	=	4.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	2.97
Veloc Up (ft/s)	=	4.50
HGL Dn (ft)	=	7430.15
HGL Up (ft)	=	7430.20
Hw Elev (ft)	=	7430.64
Hw/D (ft)	=	0.83
Flow Regime	=	Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

DP3 Culvert (Q100 = 79.8 cfs)

Invert Elev Dn (ft)	=	7425.00
Pipe Length (ft)	=	110.00
Slope (%)	=	4.00
Invert Elev Up (ft)	=	7429.40
Rise (in)	=	36.0
Shape	=	Circular
Span (in)	=	36.0
No. Barrels	=	1
n-Value	=	0.013
Culvert Type	=	Circular Concrete
Culvert Entrance	=	Groove end projecting (C)
Coeff. K,M,c,Y,k	=	0.0045, 2, 0.0317, 0.69, 0.2

Embankment

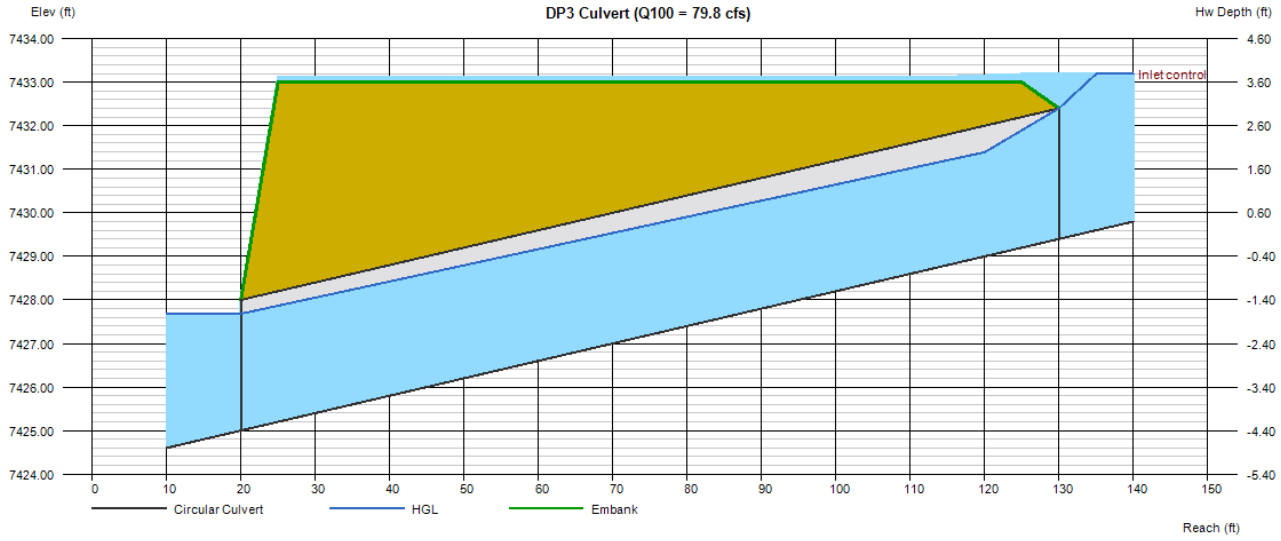
Top Elevation (ft)	=	7433.00
Top Width (ft)	=	100.00
Crest Width (ft)	=	100.00

Calculations

Qmin (cfs)	=	79.80
Qmax (cfs)	=	79.80
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	79.80
Qpipe (cfs)	=	52.99
Qovertop (cfs)	=	26.81
Veloc Dn (ft/s)	=	7.95
Veloc Up (ft/s)	=	8.87
HGL Dn (ft)	=	7427.68
HGL Up (ft)	=	7431.76
Hw Elev (ft)	=	7433.19
Hw/D (ft)	=	1.26
Flow Regime	=	Inlet Control



Subdivision:	Hardy Road Properties
Location:	El Paso County
Project Name:	Hardy Road Properties
Project Number:	25018
Calculated By:	NQJ
Checked By:	REB
Date:	2/20/2026

Proposed Conditions - Drainageway Summary Table

Channel Section	Section Slope, ft/ft	5-year Depth, ft	5-year Velocity, ft/s	5-year Hydraulic Radius, ft	100-year Depth, ft	100-year Velocity, ft/s	100-year Hydraulic Radius, ft	Froude, 5-yr	Froude, 100-yr	Shear Stress, 5-yr	Shear Stress, 100-yr
3-1	0.0384	0.32	2.71	0.16	0.64	3.27	0.20	0.84	0.72	0.4	0.5
3-2	0.0384	0.09	1.74	0.09	0.24	3.32	0.22	1.02	1.19	0.2	0.5
5-1	0.0375	0.18	1.78	0.09	0.36	3.49	0.23	0.74	1.03	0.2	0.5
5-2	0.027	0.19	1.62	0.09	0.39	3.03	0.24	0.65	0.86	0.2	0.4
5-3	0.03	0.22	1.97	0.11	0.45	3.15	0.23	0.74	0.83	0.2	0.4
5-4	0.035	0.27	2.24	0.13	0.54	3.74	0.27	0.76	0.90	0.3	0.6
5-5	0.042	0.15	2.48	0.14	0.43	4.91	0.35	1.13	1.32	0.4	0.9
5-6	0.028	0.27	2.05	0.13	0.54	4.02	0.34	0.70	0.96	0.2	0.6
6-1	0.02	0.41	3.07	0.31	0.96	5.12	0.63	0.84	0.92	0.4	0.8
6-2	0.03	0.34	3.46	0.27	0.83	5.85	0.57	1.05	1.13	0.5	1.1
6-3	0.023	0.34	3.19	0.30	0.88	5.68	0.68	0.96	1.07	0.4	1.0
7-1	0.033	0.13	1.39	0.08	0.24	2.53	0.16	0.68	0.91	0.2	0.3
7-2	0.035	0.15	2.17	0.13	0.35	3.91	0.28	0.99	1.16	0.3	0.6
8-1	0.018	0.38	2.66	0.27	0.86	4.6	0.59	0.76	0.87	0.3	0.7

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 3-1 (Q5 = 14.7 cfs)

User-defined

Invert Elev (ft)	= 7436.36
Slope (%)	= 3.84
N-Value	= 0.030

Calculations

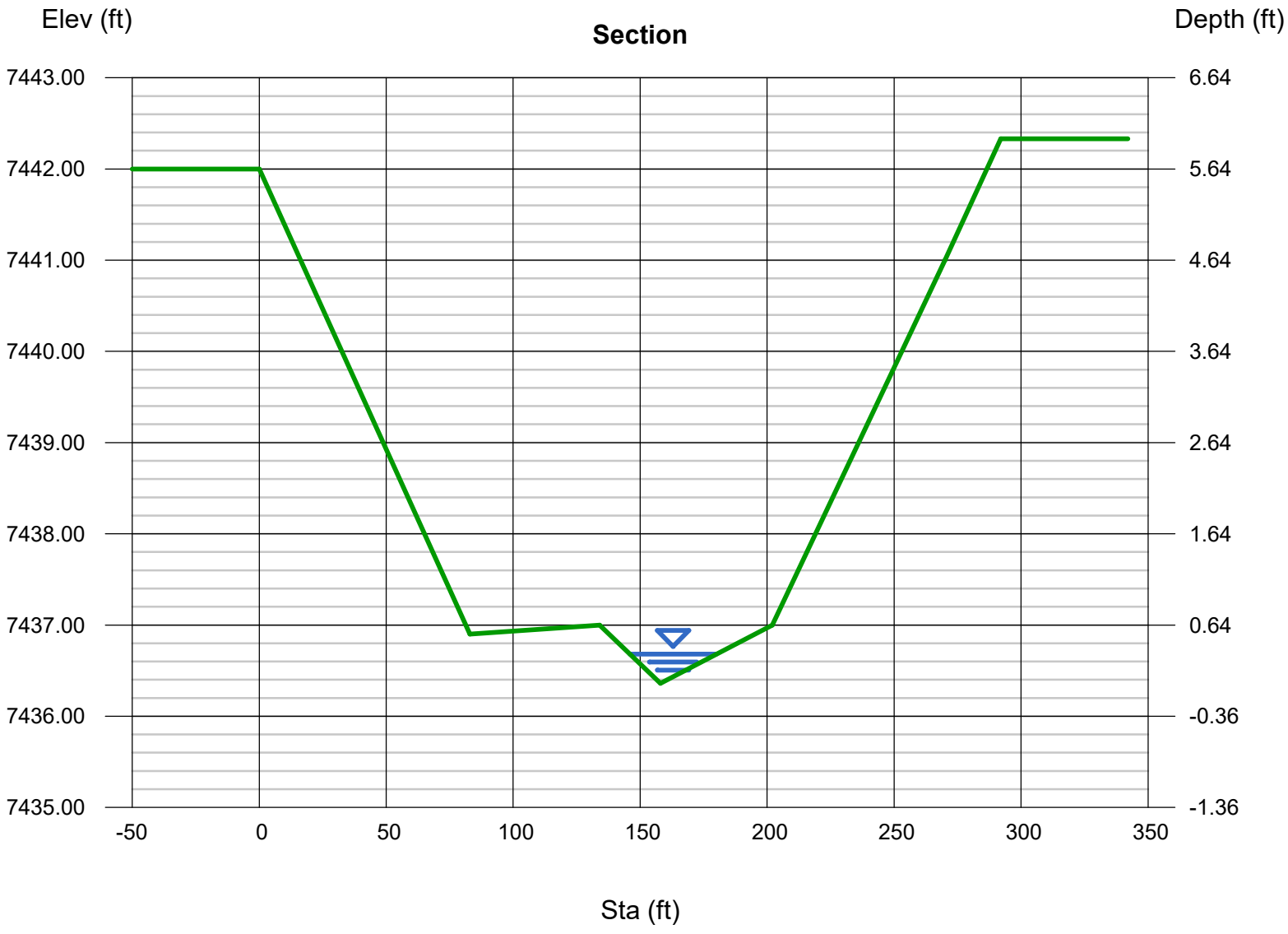
Compute by:	Known Q
Known Q (cfs)	= 14.70

Highlighted

Depth (ft)	= 0.32
Q (cfs)	= 14.70
Area (sqft)	= 5.43
Velocity (ft/s)	= 2.71
Wetted Perim (ft)	= 33.98
Crit Depth, Yc (ft)	= 0.35
Top Width (ft)	= 33.97
EGL (ft)	= 0.43

(Sta, El, n)-(Sta, El, n)...

(0.00, 7442.00)-(83.00, 7436.90, 0.030)-(134.00, 7437.00, 0.030)-(158.00, 7436.36, 0.030)-(202.00, 7437.00, 0.030)-(270.00, 7441.00, 0.030)-(292.00, 7442.33, 0.0



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 3-1 (Q100= 79.8 cfs)

User-defined

Invert Elev (ft)	= 7436.36
Slope (%)	= 3.84
N-Value	= 0.030

Calculations

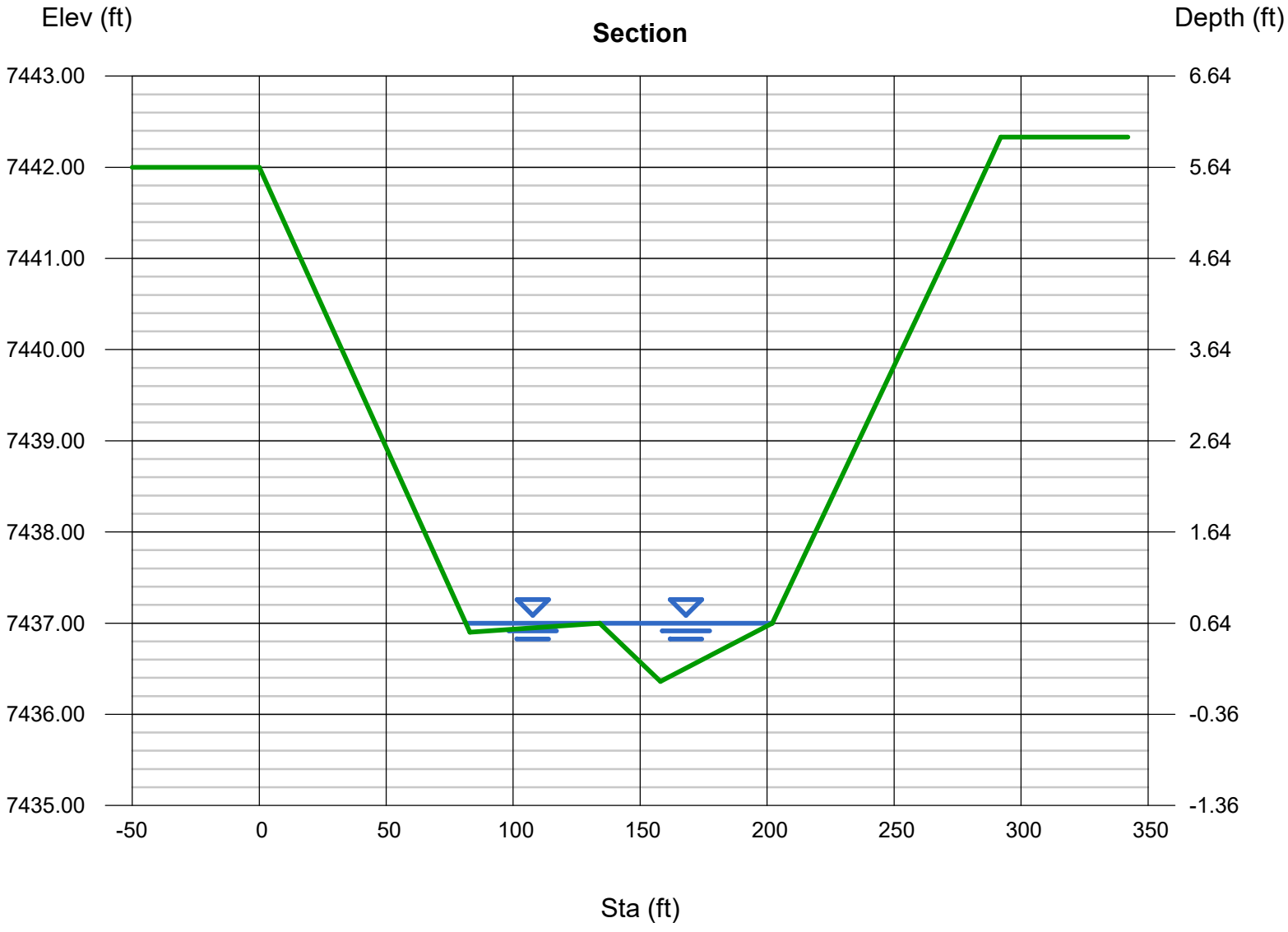
Compute by:	Known Q
Known Q (cfs)	= 79.80

Highlighted

Depth (ft)	= 0.64
Q (cfs)	= 79.80
Area (sqft)	= 24.40
Velocity (ft/s)	= 3.27
Wetted Perim (ft)	= 120.65
Crit Depth, Yc (ft)	= 0.68
Top Width (ft)	= 120.63
EGL (ft)	= 0.81

(Sta, El, n)-(Sta, El, n)...

(0.00, 7442.00)-(83.00, 7436.90, 0.030)-(134.00, 7437.00, 0.030)-(158.00, 7436.36, 0.030)-(202.00, 7437.00, 0.030)-(270.00, 7441.00, 0.030)-(292.00, 7442.33, 0.0



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 3-2 (Q5 = 14.7 cfs)

User-defined

Invert Elev (ft)	= 7430.40
Slope (%)	= 3.84
N-Value	= 0.030

Calculations

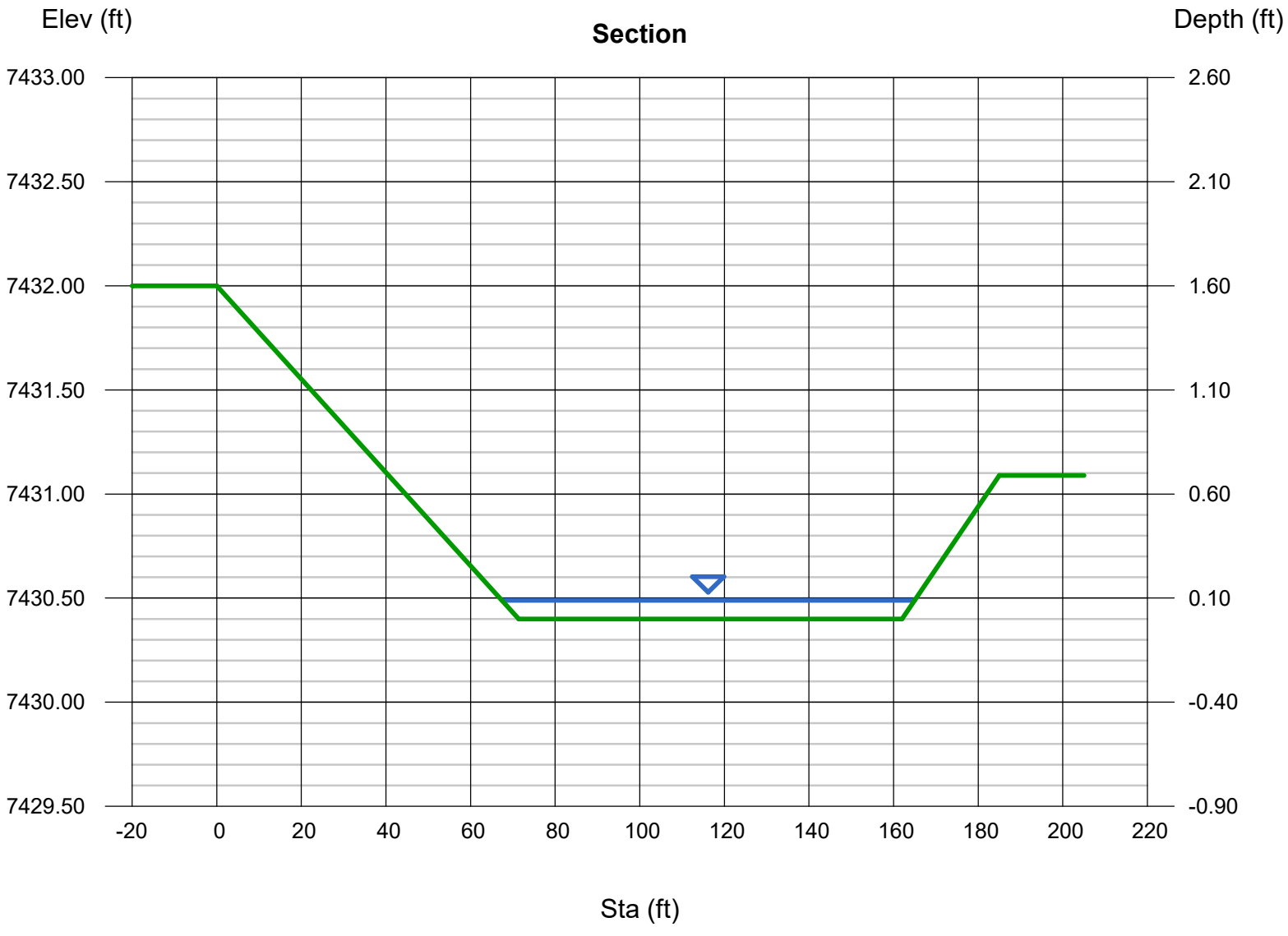
Compute by:	Known Q
Known Q (cfs)	= 14.70

Highlighted

Depth (ft)	= 0.09
Q (cfs)	= 14.70
Area (sqft)	= 8.45
Velocity (ft/s)	= 1.74
Wetted Perim (ft)	= 97.61
Crit Depth, Yc (ft)	= 0.10
Top Width (ft)	= 97.60
EGL (ft)	= 0.14

(Sta, El, n)-(Sta, El, n)...

(0.00, 7432.00)-(71.40, 7430.40, 0.030)-(162.00, 7430.40, 0.030)-(185.00, 7431.09, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 3-2 (Q100 = 79.8 cfs)

User-defined

Invert Elev (ft)	= 7430.40
Slope (%)	= 3.84
N-Value	= 0.030

Calculations

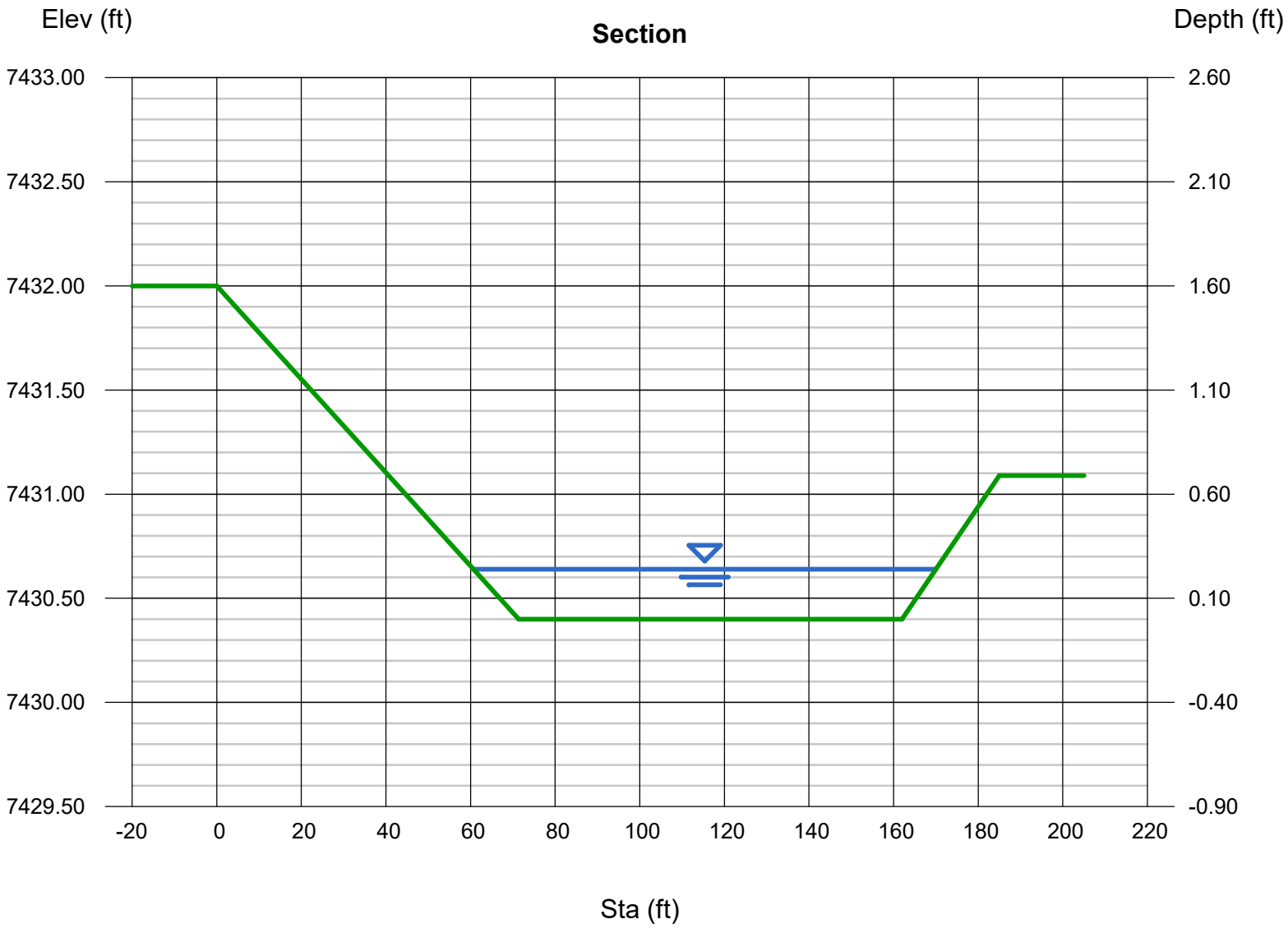
Compute by:	Known Q
Known Q (cfs)	= 79.80

Highlighted

Depth (ft)	= 0.24
Q (cfs)	= 79.80
Area (sqft)	= 24.01
Velocity (ft/s)	= 3.32
Wetted Perim (ft)	= 109.33
Crit Depth, Yc (ft)	= 0.28
Top Width (ft)	= 109.33
EGL (ft)	= 0.41

(Sta, El, n)-(Sta, El, n)...

(0.00, 7432.00)-(71.40, 7430.40, 0.030)-(162.00, 7430.40, 0.030)-(185.00, 7431.09, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-1 (Q5 = 4.1 cfs)

User-defined

Invert Elev (ft)	= 7443.70
Slope (%)	= 3.75
N-Value	= 0.030

Calculations

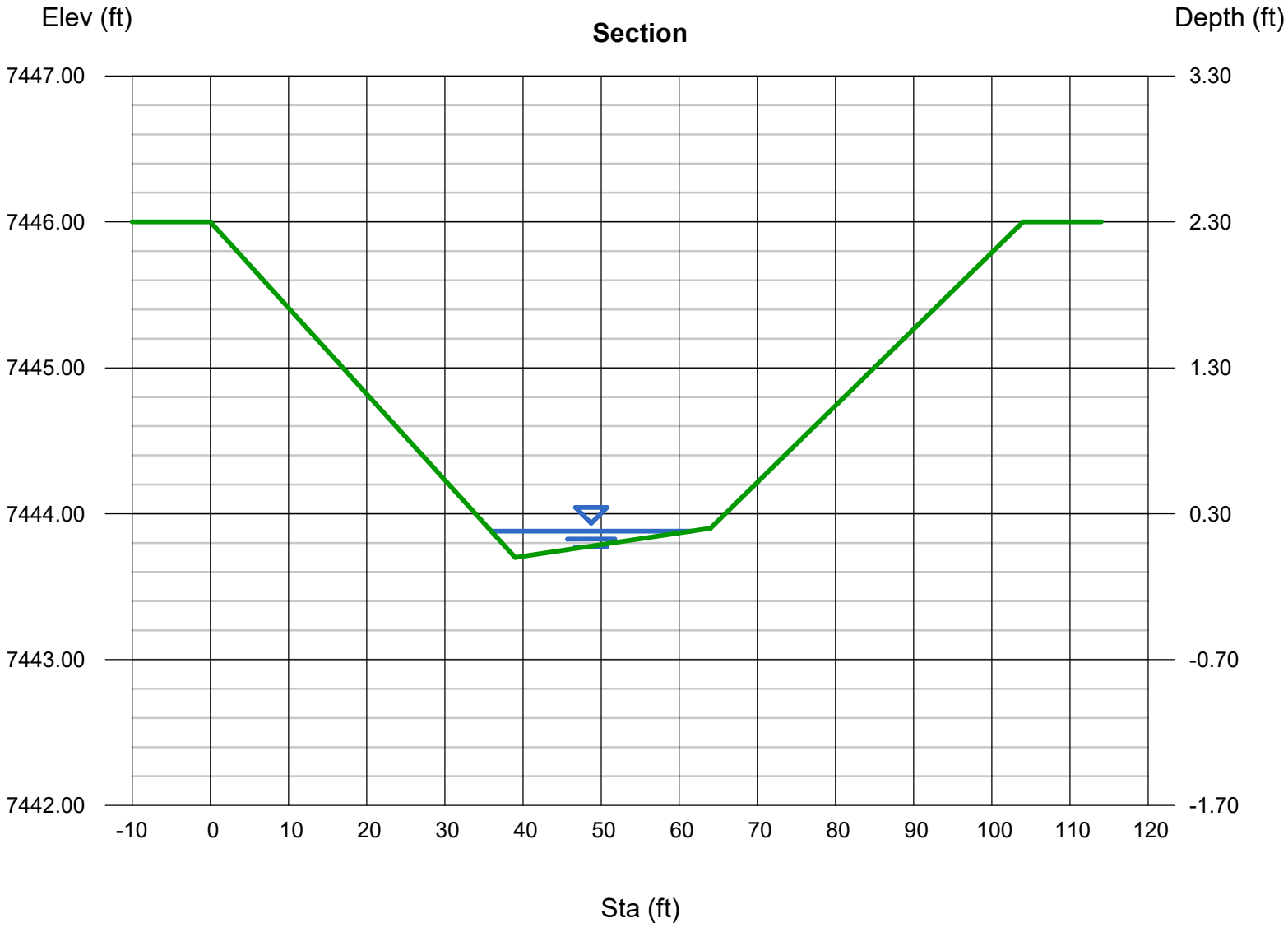
Compute by:	Known Q
Known Q (cfs)	= 4.10

Highlighted

Depth (ft)	= 0.18
Q (cfs)	= 4.100
Area (sqft)	= 2.31
Velocity (ft/s)	= 1.78
Wetted Perim (ft)	= 25.62
Crit Depth, Yc (ft)	= 0.19
Top Width (ft)	= 25.61
EGL (ft)	= 0.23

(Sta, El, n)-(Sta, El, n)...

(0.00, 7446.00)-(39.00, 7443.70, 0.030)-(64.00, 7443.90, 0.030)-(104.00, 7446.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-1 (Q100 = 27.4 cfs)

User-defined

Invert Elev (ft)	= 7443.70
Slope (%)	= 3.75
N-Value	= 0.030

Calculations

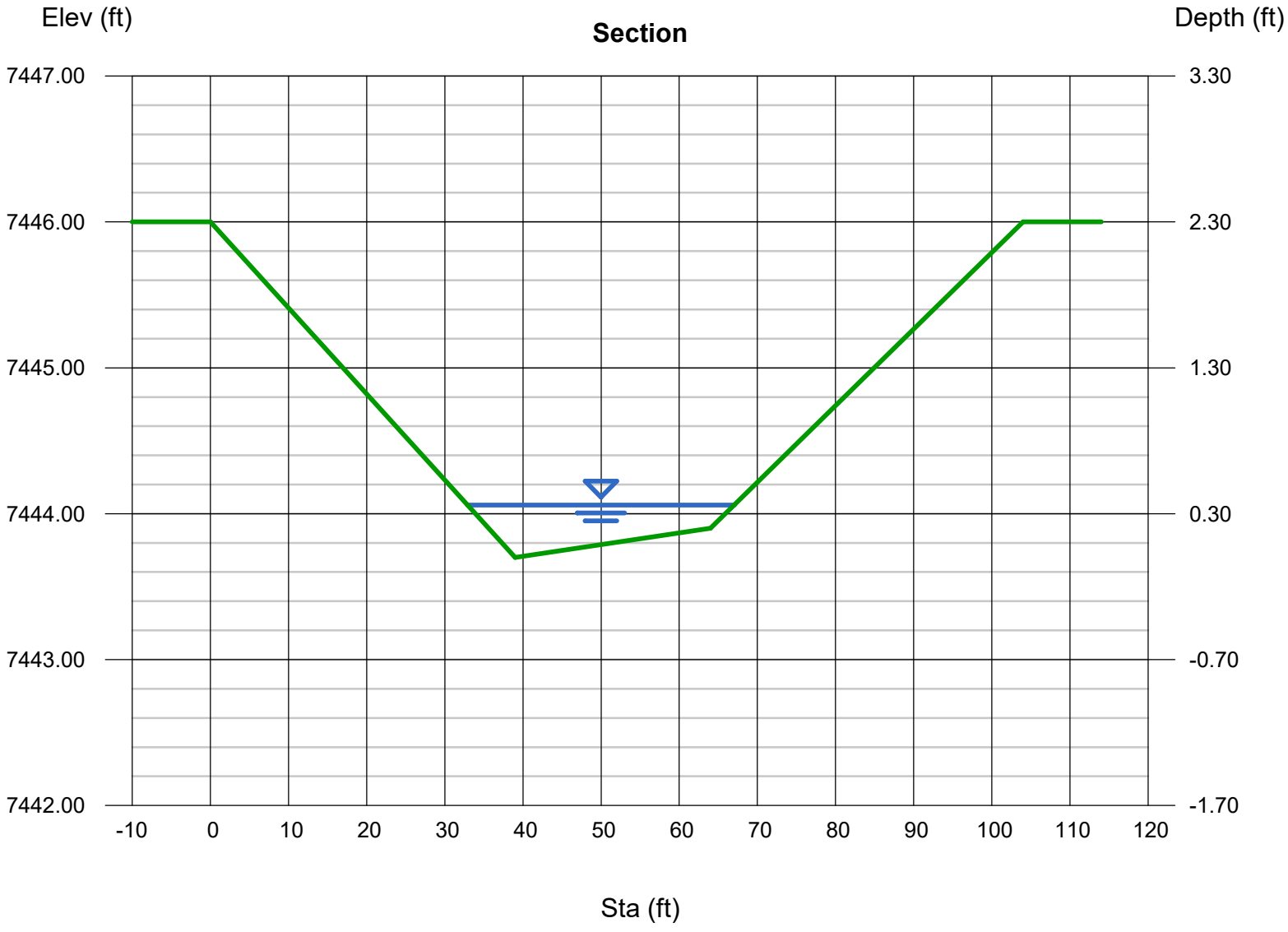
Compute by:	Known Q
Known Q (cfs)	= 27.40

Highlighted

Depth (ft)	= 0.36
Q (cfs)	= 27.40
Area (sqft)	= 7.84
Velocity (ft/s)	= 3.49
Wetted Perim (ft)	= 34.17
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 34.15
EGL (ft)	= 0.55

(Sta, El, n)-(Sta, El, n)...

(0.00, 7446.00)-(39.00, 7443.70, 0.030)-(64.00, 7443.90, 0.030)-(104.00, 7446.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-2 (Q5 = 4.1 cfs)

User-defined

Invert Elev (ft)	= 7438.80
Slope (%)	= 2.70
N-Value	= 0.030

Calculations

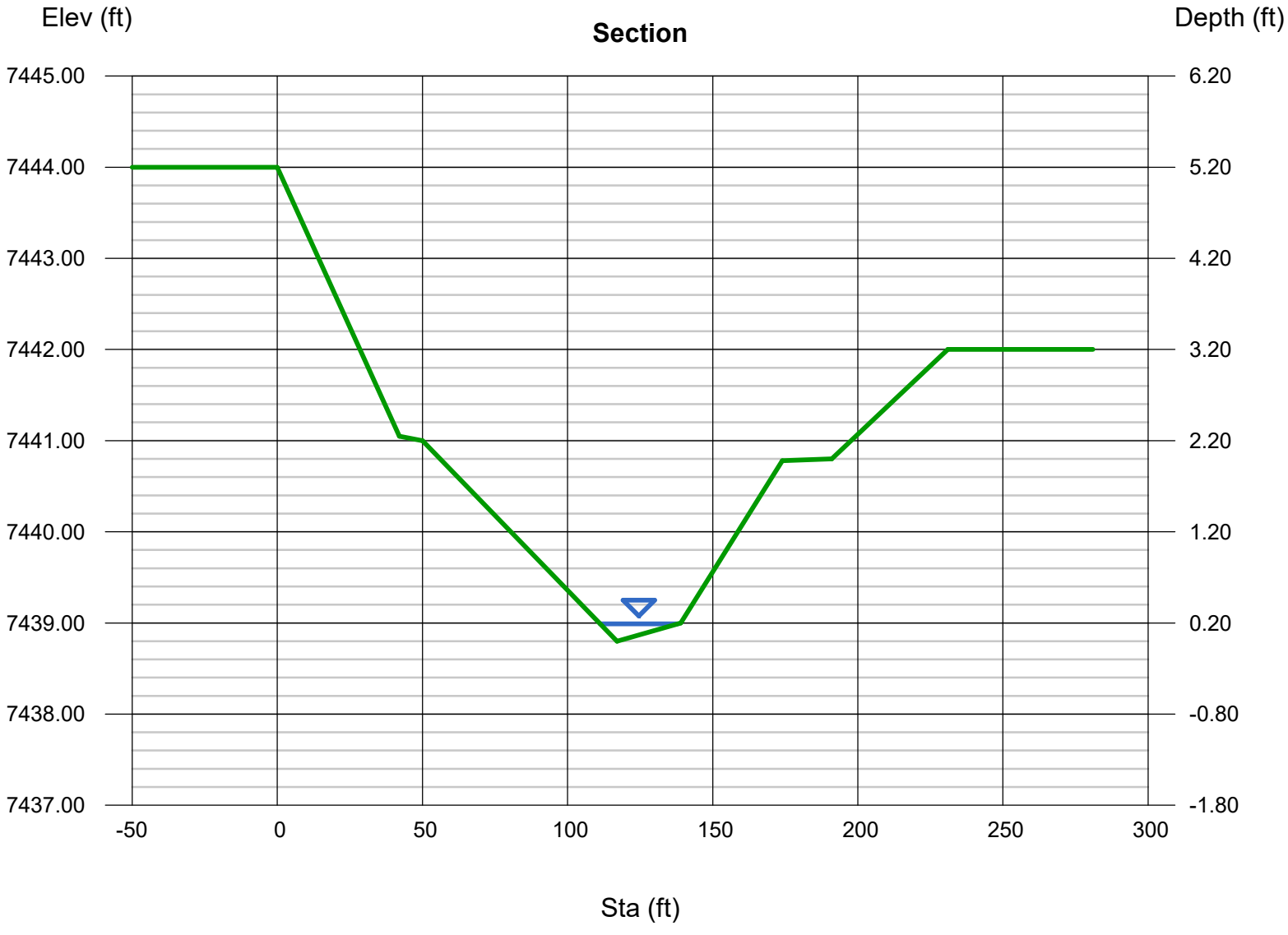
Compute by:	Known Q
Known Q (cfs)	= 4.10

Highlighted

Depth (ft)	= 0.19
Q (cfs)	= 4.100
Area (sqft)	= 2.53
Velocity (ft/s)	= 1.62
Wetted Perim (ft)	= 26.66
Crit Depth, Yc (ft)	= 0.19
Top Width (ft)	= 26.66
EGL (ft)	= 0.23

(Sta, El, n)-(Sta, El, n)...

(0.00, 7444.00)-(42.00, 7441.05, 0.030)-(50.00, 7441.00, 0.030)-(117.00, 7438.80, 0.030)-(139.00, 7439.00, 0.030)-(174.00, 7440.78, 0.030)-(191.00, 7440.80, 0.03
-(231.00, 7442.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-2 (Q100 = 27.4 cfs)

User-defined

Invert Elev (ft)	= 7438.80
Slope (%)	= 2.70
N-Value	= 0.030

Calculations

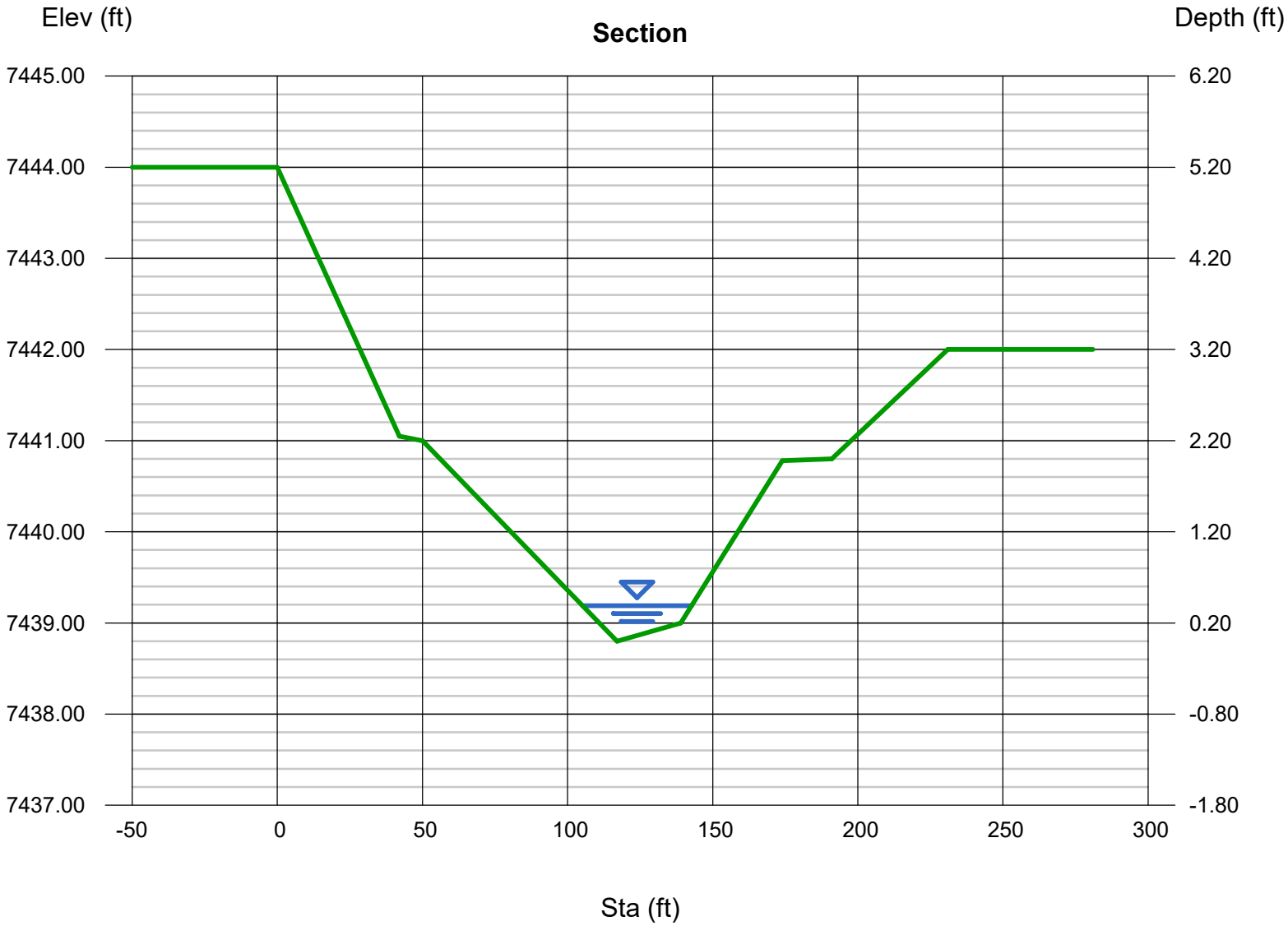
Compute by:	Known Q
Known Q (cfs)	= 27.40

Highlighted

Depth (ft)	= 0.39
Q (cfs)	= 27.40
Area (sqft)	= 9.05
Velocity (ft/s)	= 3.03
Wetted Perim (ft)	= 37.63
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 37.62
EGL (ft)	= 0.53

(Sta, El, n)-(Sta, El, n)...

(0.00, 7444.00)-(42.00, 7441.05, 0.030)-(50.00, 7441.00, 0.030)-(117.00, 7438.80, 0.030)-(139.00, 7439.00, 0.030)-(174.00, 7440.78, 0.030)-(191.00, 7440.80, 0.03
-(231.00, 7442.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-3 (Q5 = 4.1 cfs)

User-defined

Invert Elev (ft)	= 7434.60
Slope (%)	= 3.00
N-Value	= 0.030

Calculations

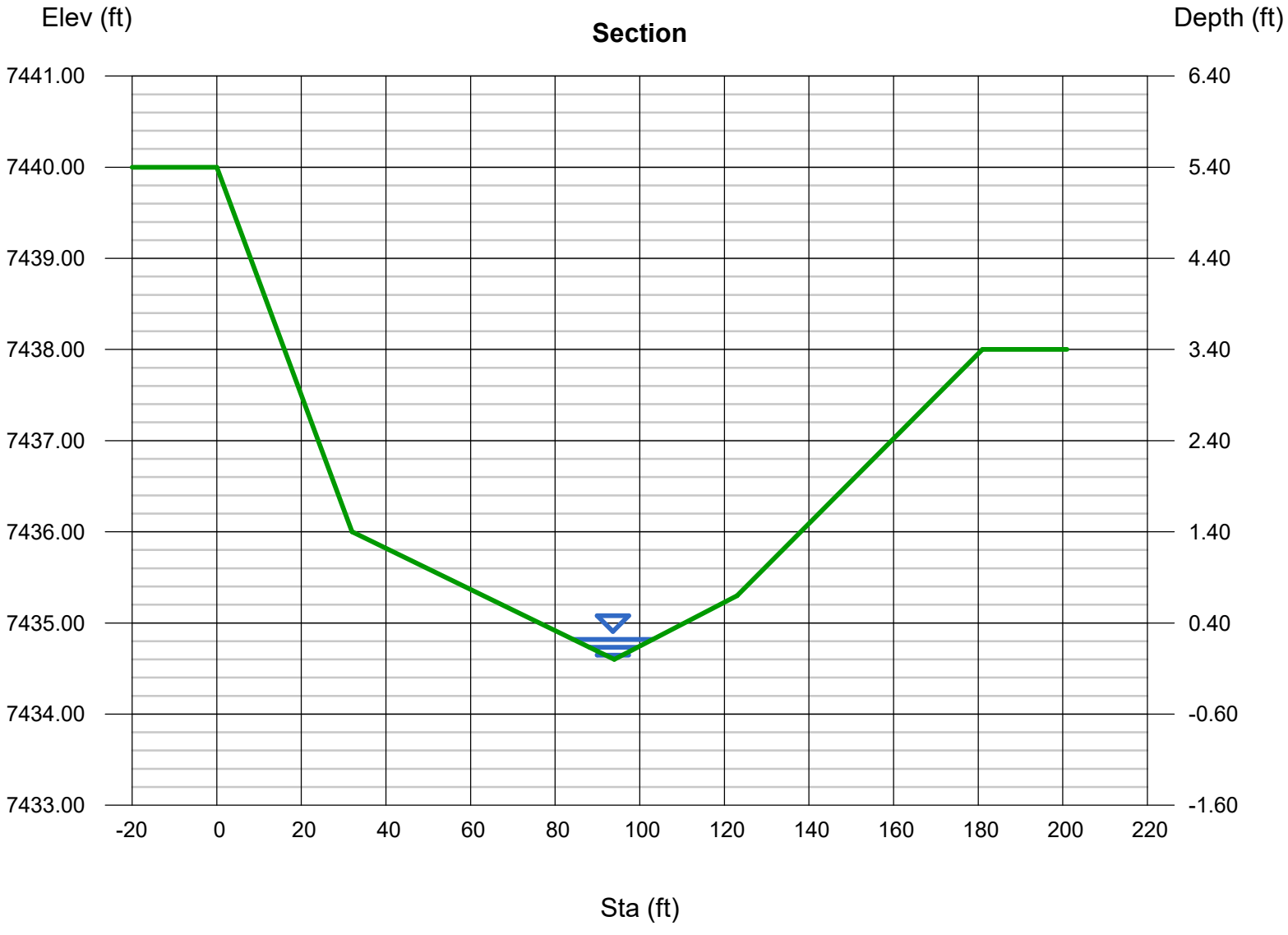
Compute by:	Known Q
Known Q (cfs)	= 4.10

Highlighted

Depth (ft)	= 0.22
Q (cfs)	= 4.100
Area (sqft)	= 2.08
Velocity (ft/s)	= 1.97
Wetted Perim (ft)	= 18.89
Crit Depth, Yc (ft)	= 0.23
Top Width (ft)	= 18.88
EGL (ft)	= 0.28

(Sta, El, n)-(Sta, El, n)...

(0.00, 7440.00)-(32.00, 7436.00, 0.030)-(94.00, 7434.60, 0.030)-(123.00, 7435.30, 0.030)-(181.00, 7438.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-3 (Q100 = 27.4 cfs)

User-defined

Invert Elev (ft)	= 7434.60
Slope (%)	= 3.00
N-Value	= 0.030

Calculations

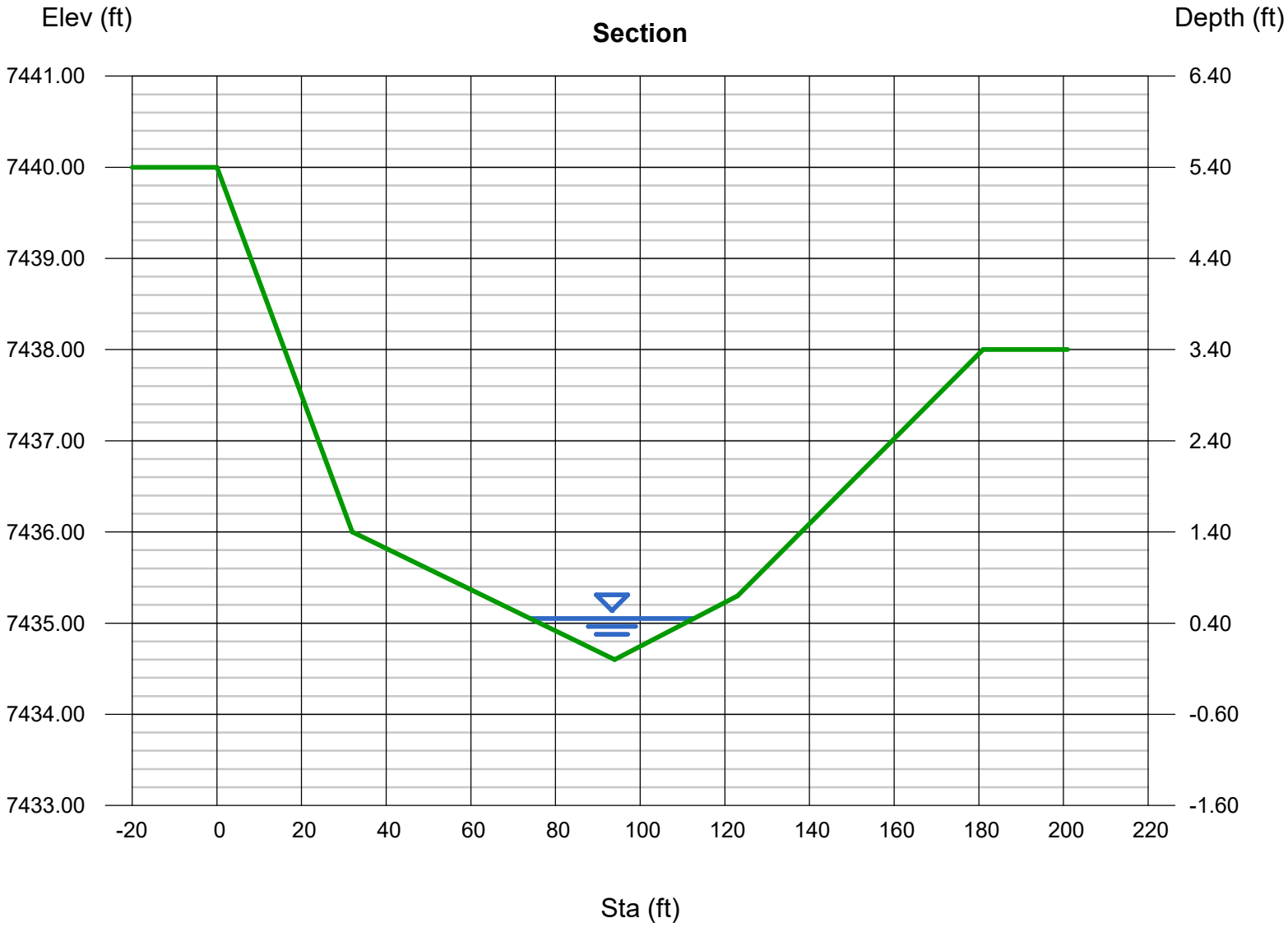
Compute by:	Known Q
Known Q (cfs)	= 27.40

Highlighted

Depth (ft)	= 0.45
Q (cfs)	= 27.40
Area (sqft)	= 8.69
Velocity (ft/s)	= 3.15
Wetted Perim (ft)	= 38.61
Crit Depth, Yc (ft)	= 0.48
Top Width (ft)	= 38.60
EGL (ft)	= 0.60

(Sta, El, n)-(Sta, El, n)...

(0.00, 7440.00)-(32.00, 7436.00, 0.030)-(94.00, 7434.60, 0.030)-(123.00, 7435.30, 0.030)-(181.00, 7438.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-4 (Q5 = 4.1 cfs)

User-defined

Invert Elev (ft)	= 7429.50
Slope (%)	= 3.50
N-Value	= 0.030

Calculations

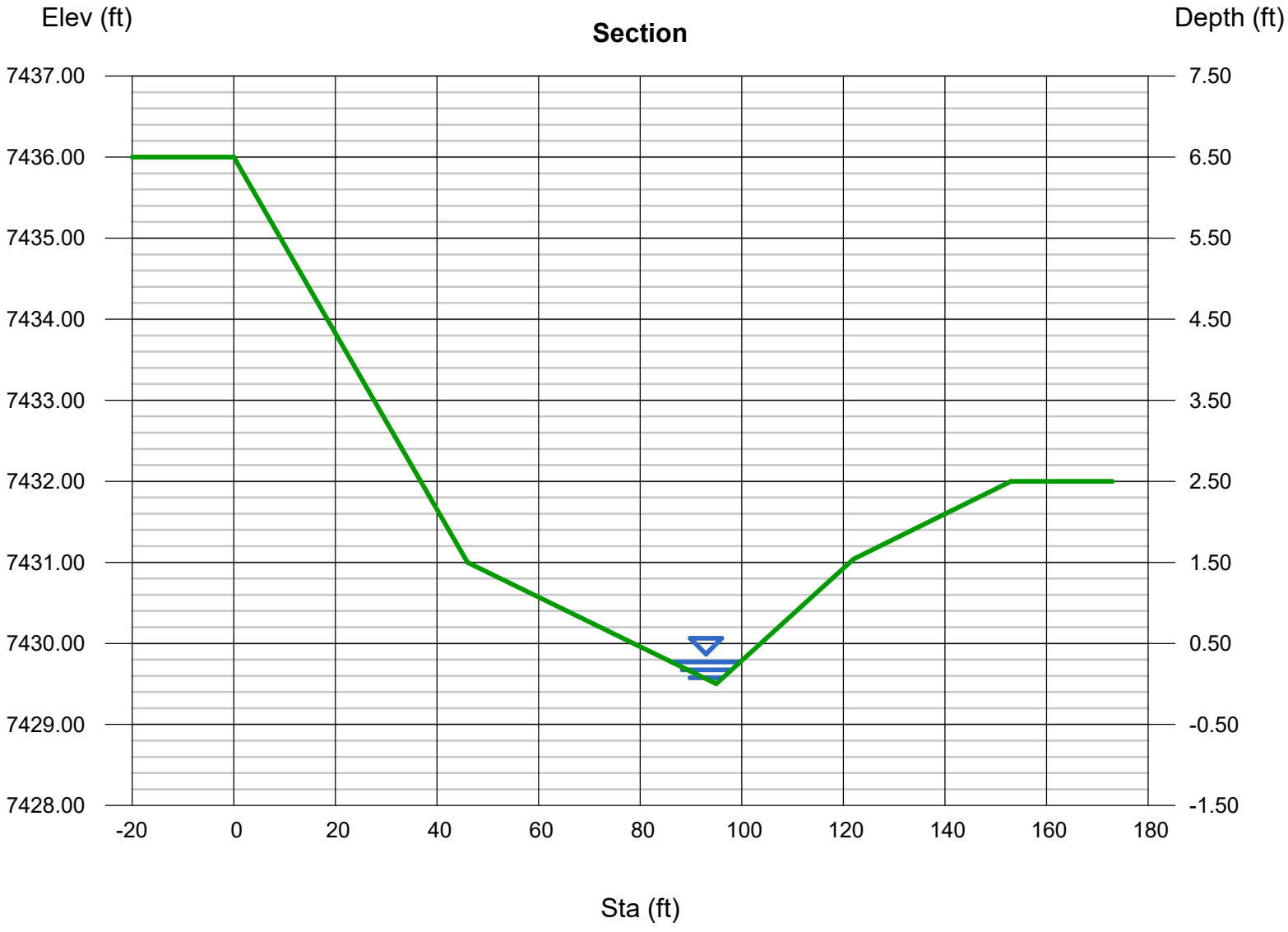
Compute by:	Known Q
Known Q (cfs)	= 4.10

Highlighted

Depth (ft)	= 0.27
Q (cfs)	= 4.100
Area (sqft)	= 1.83
Velocity (ft/s)	= 2.24
Wetted Perim (ft)	= 13.57
Crit Depth, Yc (ft)	= 0.28
Top Width (ft)	= 13.55
EGL (ft)	= 0.35

(Sta, El, n)-(Sta, El, n)...

(0.00, 7436.00)-(46.00, 7431.00, 0.030)-(95.00, 7429.50, 0.030)-(122.00, 7431.04, 0.030)-(153.00, 7432.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-4 (Q100 =27.4 cfs)

User-defined

Invert Elev (ft)	= 7429.50
Slope (%)	= 3.50
N-Value	= 0.030

Calculations

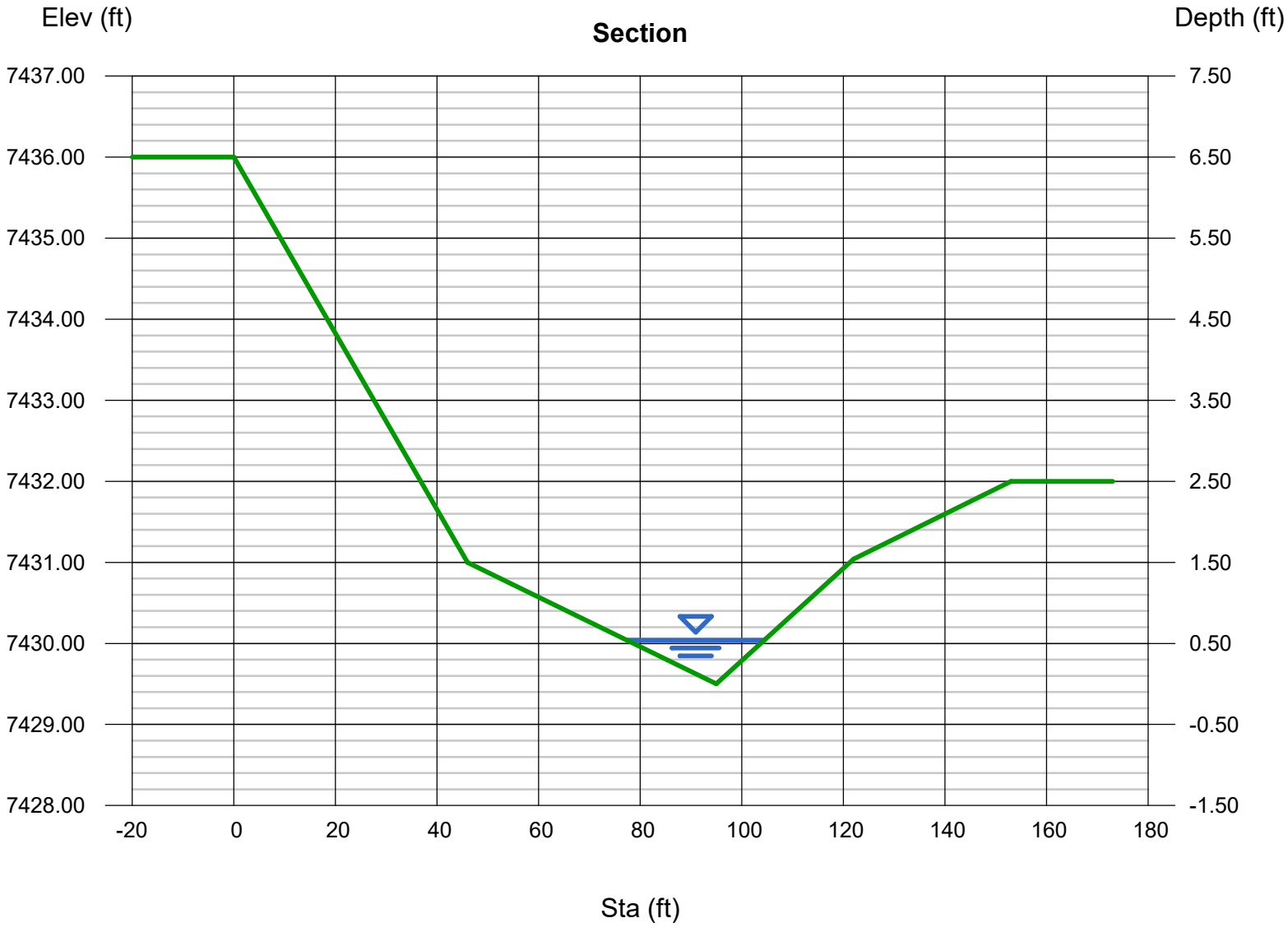
Compute by:	Known Q
Known Q (cfs)	= 27.40

Highlighted

Depth (ft)	= 0.54
Q (cfs)	= 27.40
Area (sqft)	= 7.32
Velocity (ft/s)	= 3.74
Wetted Perim (ft)	= 27.13
Crit Depth, Yc (ft)	= 0.60
Top Width (ft)	= 27.11
EGL (ft)	= 0.76

(Sta, El, n)-(Sta, El, n)...

(0.00, 7436.00)-(46.00, 7431.00, 0.030)-(95.00, 7429.50, 0.030)-(122.00, 7431.04, 0.030)-(153.00, 7432.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-5 (Q5 =4.1 cfs)

User-defined

Invert Elev (ft)	= 7426.00
Slope (%)	= 4.20
N-Value	= 0.030

Calculations

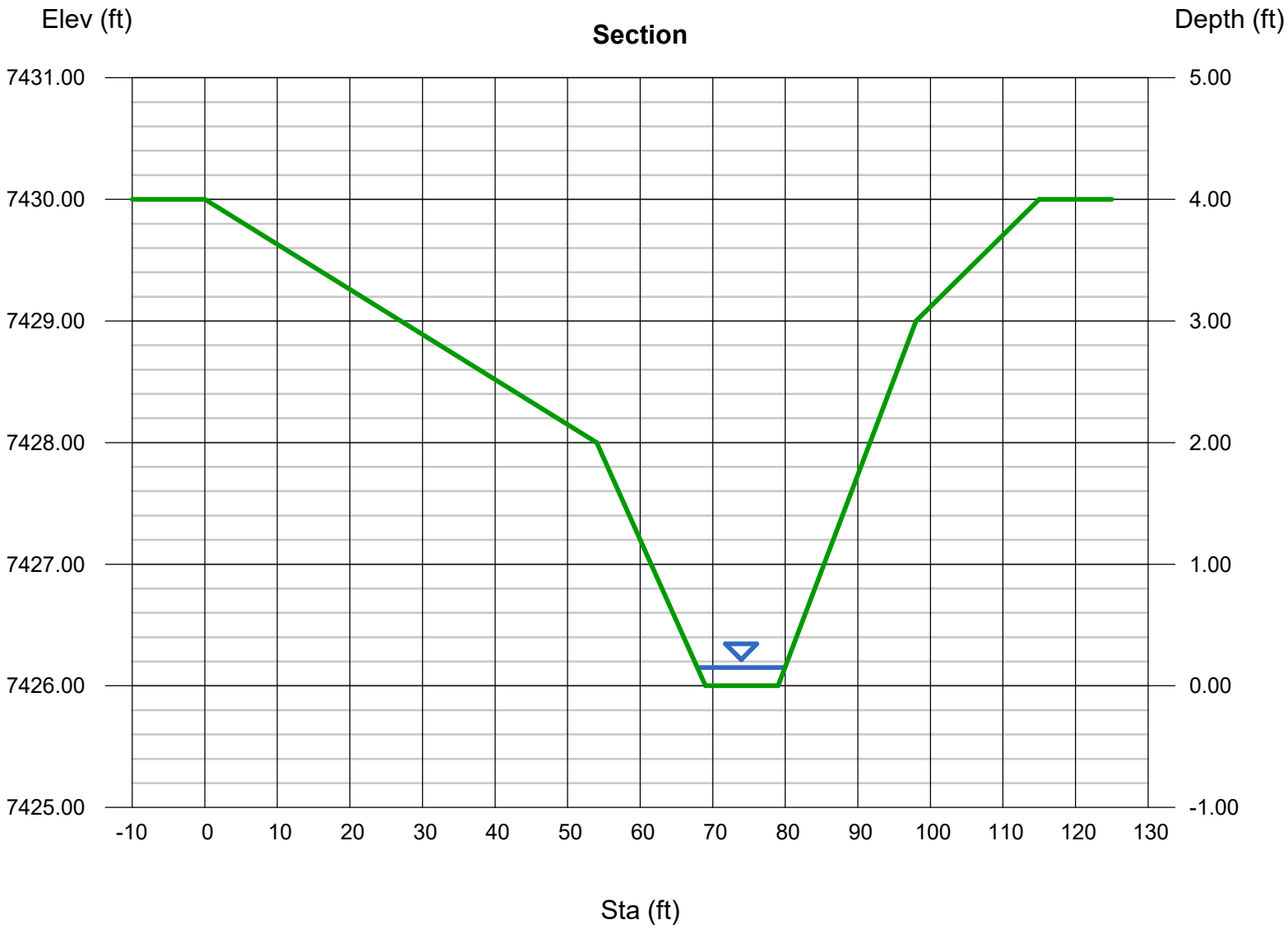
Compute by:	Known Q
Known Q (cfs)	= 4.10

Highlighted

Depth (ft)	= 0.15
Q (cfs)	= 4.100
Area (sqft)	= 1.65
Velocity (ft/s)	= 2.48
Wetted Perim (ft)	= 12.10
Crit Depth, Yc (ft)	= 0.17
Top Width (ft)	= 12.07
EGL (ft)	= 0.25

(Sta, El, n)-(Sta, El, n)...

(0.00, 7430.00)-(54.00, 7428.00, 0.030)-(69.00, 7426.00, 0.030)-(79.00, 7426.00, 0.030)-(98.00, 7429.00, 0.030)-(115.00, 7430.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-5 (Q100 =27.4 cfs)

User-defined

Invert Elev (ft)	= 7426.00
Slope (%)	= 4.20
N-Value	= 0.030

Calculations

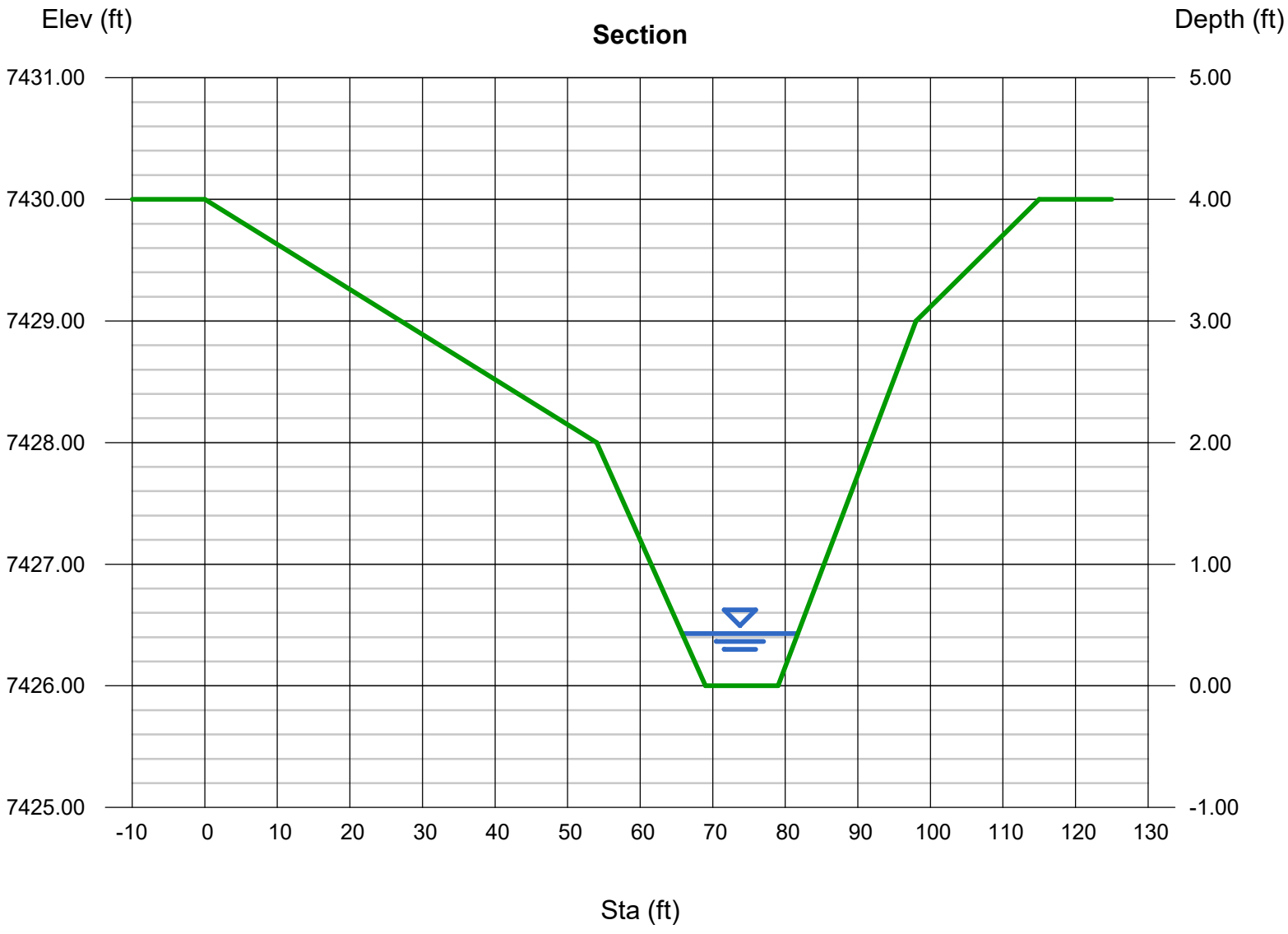
Compute by:	Known Q
Known Q (cfs)	= 27.40

Highlighted

Depth (ft)	= 0.43
Q (cfs)	= 27.40
Area (sqft)	= 5.58
Velocity (ft/s)	= 4.91
Wetted Perim (ft)	= 16.01
Crit Depth, Yc (ft)	= 0.54
Top Width (ft)	= 15.95
EGL (ft)	= 0.80

(Sta, El, n)-(Sta, El, n)...

(0.00, 7430.00)-(54.00, 7428.00, 0.030)-(69.00, 7426.00, 0.030)-(79.00, 7426.00, 0.030)-(98.00, 7429.00, 0.030)-(115.00, 7430.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-6 (Q5 =4.1 cfs)

User-defined

Invert Elev (ft)	= 7422.70
Slope (%)	= 2.75
N-Value	= 0.030

Calculations

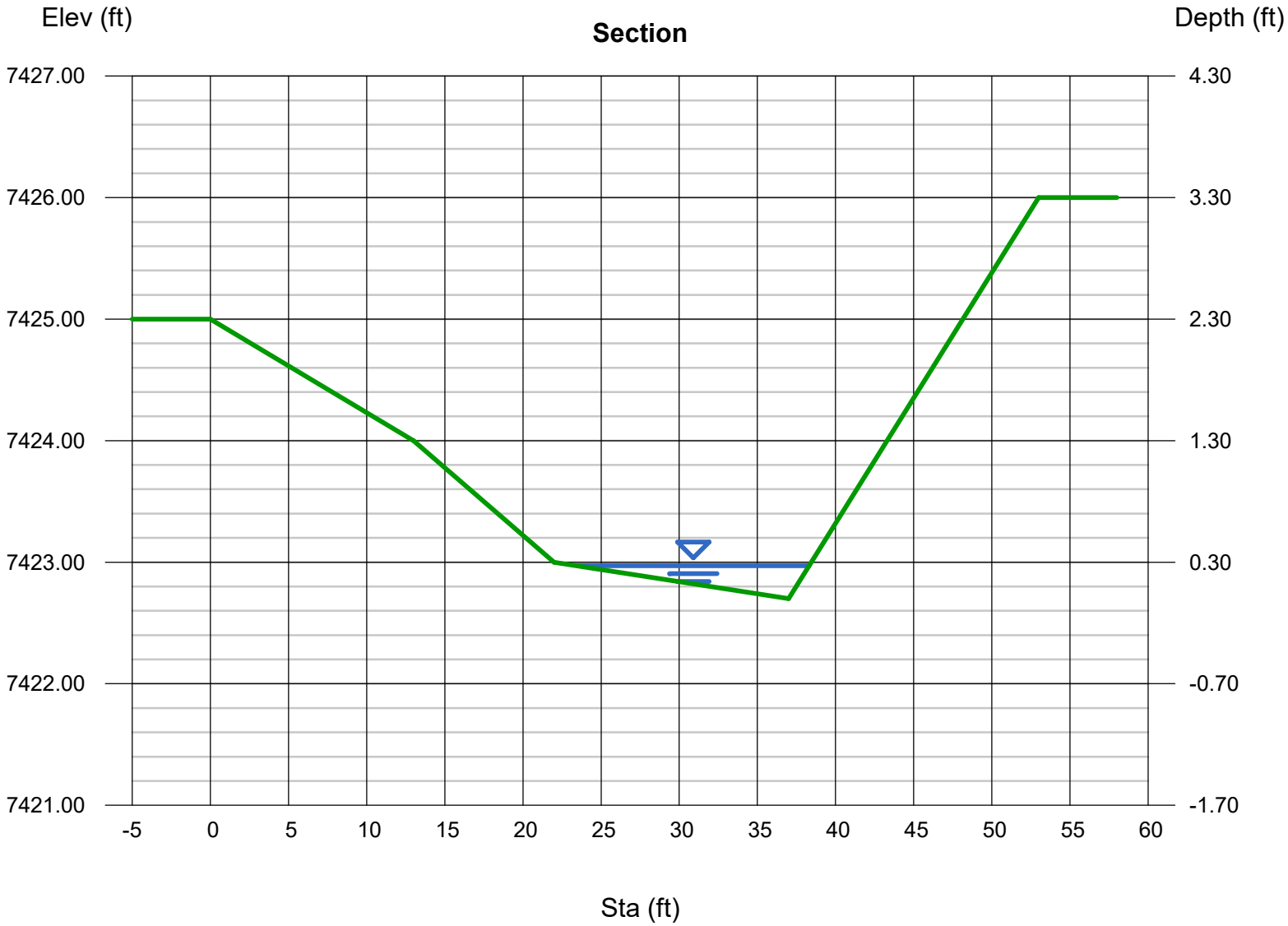
Compute by:	Known Q
Known Q (cfs)	= 4.10

Highlighted

Depth (ft)	= 0.27
Q (cfs)	= 4.100
Area (sqft)	= 2.00
Velocity (ft/s)	= 2.05
Wetted Perim (ft)	= 14.85
Crit Depth, Yc (ft)	= 0.27
Top Width (ft)	= 14.82
EGL (ft)	= 0.34

(Sta, El, n)-(Sta, El, n)...

(0.00, 7425.00)-(13.00, 7424.00, 0.030)-(22.00, 7423.00, 0.030)-(37.00, 7422.70, 0.030)-(53.00, 7426.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 5-6 (Q100 =27.4 cfs)

User-defined

Invert Elev (ft)	= 7422.70
Slope (%)	= 2.75
N-Value	= 0.030

Calculations

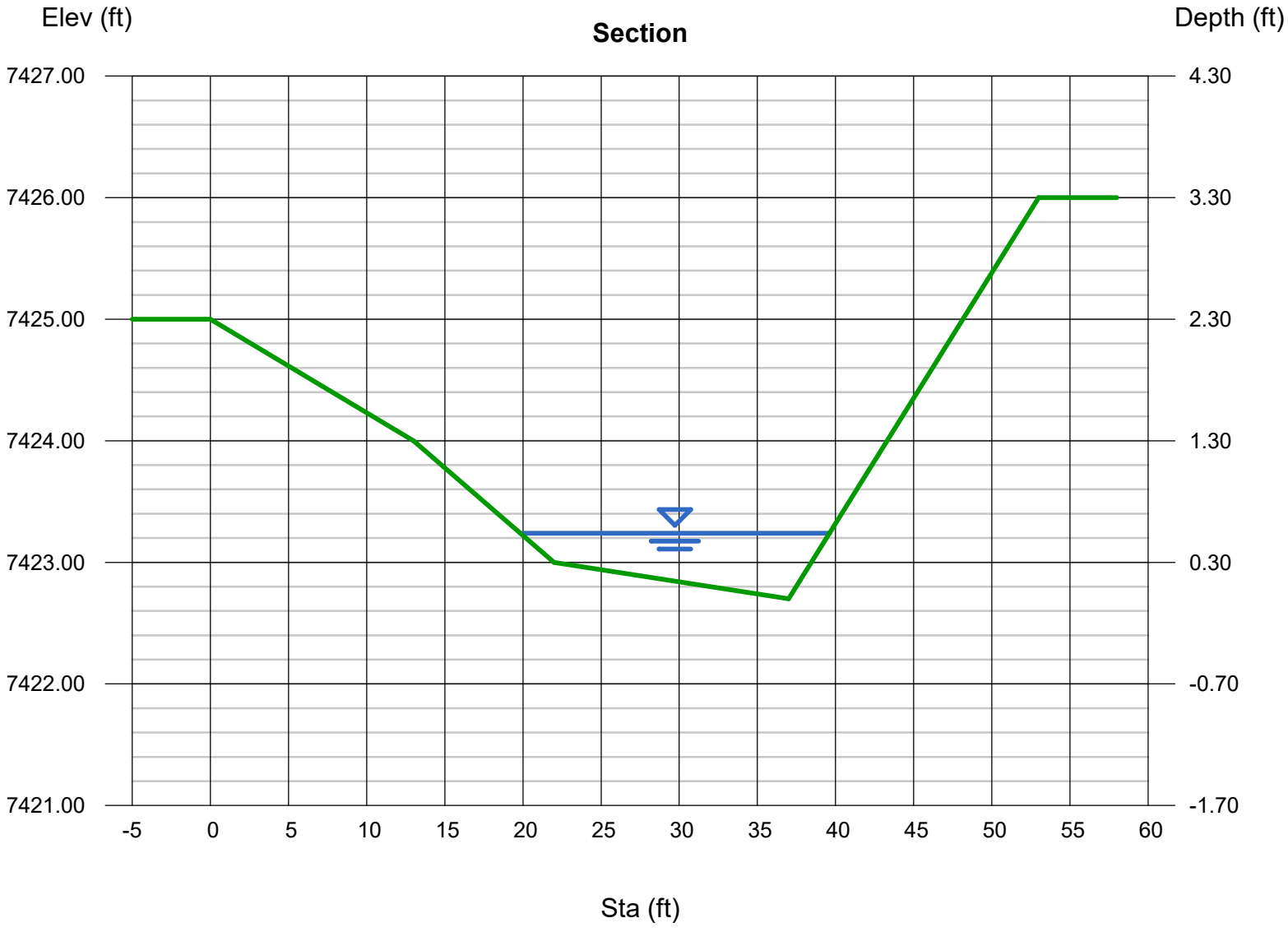
Compute by:	Known Q
Known Q (cfs)	= 27.40

Highlighted

Depth (ft)	= 0.54
Q (cfs)	= 27.40
Area (sqft)	= 6.82
Velocity (ft/s)	= 4.02
Wetted Perim (ft)	= 19.85
Crit Depth, Yc (ft)	= 0.59
Top Width (ft)	= 19.78
EGL (ft)	= 0.79

(Sta, El, n)-(Sta, El, n)...

(0.00, 7425.00)-(13.00, 7424.00, 0.030)-(22.00, 7423.00, 0.030)-(37.00, 7422.70, 0.030)-(53.00, 7426.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 6-1 (Q5 = 18.9 cfs)

User-defined

Invert Elev (ft)	= 7424.00
Slope (%)	= 2.00
N-Value	= 0.030

Calculations

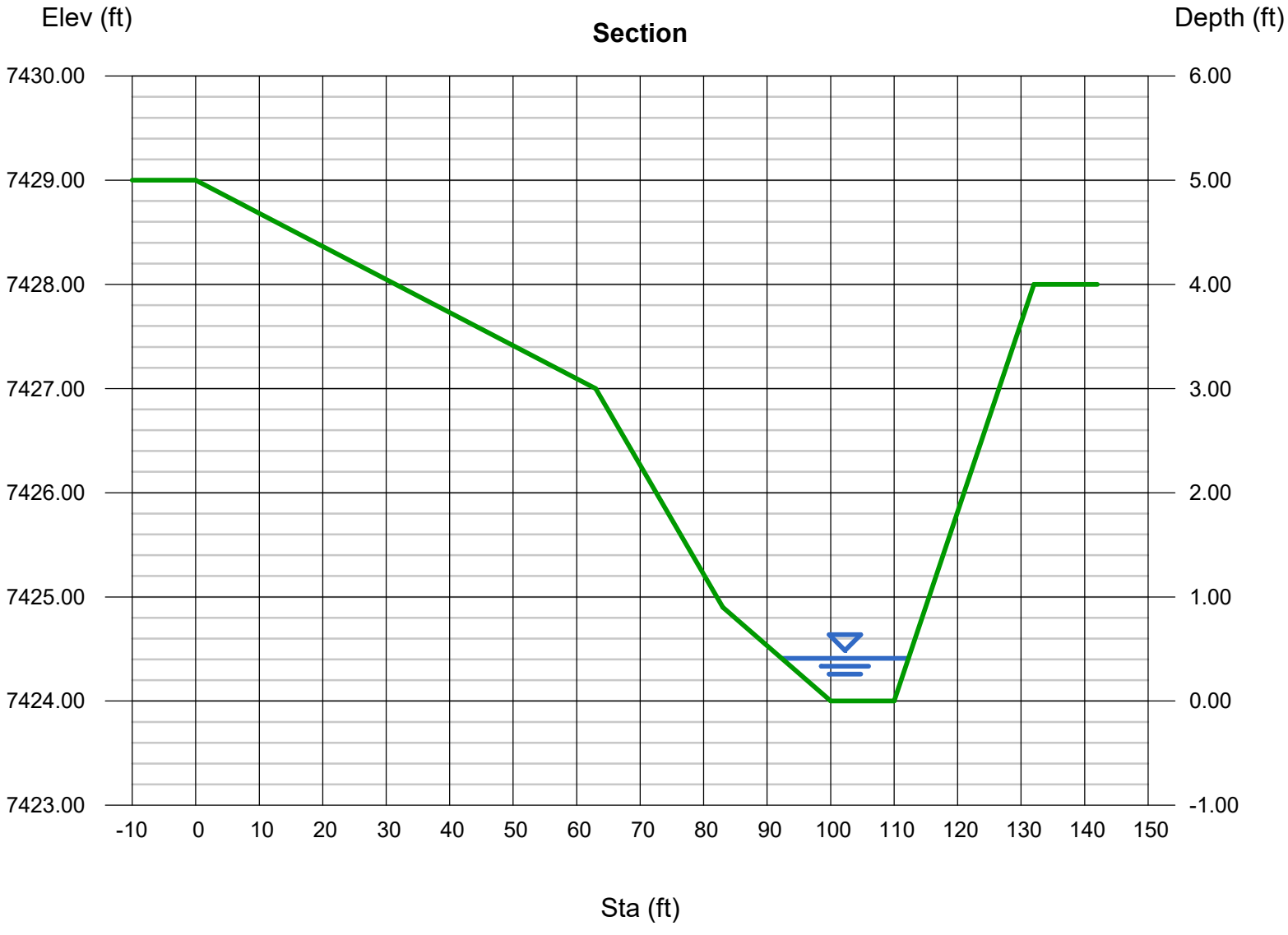
Compute by:	Known Q
Known Q (cfs)	= 18.90

Highlighted

Depth (ft)	= 0.41
Q (cfs)	= 18.90
Area (sqft)	= 6.15
Velocity (ft/s)	= 3.07
Wetted Perim (ft)	= 20.05
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 20.00
EGL (ft)	= 0.56

(Sta, El, n)-(Sta, El, n)...

(0.00, 7429.00)-(63.00, 7427.00, 0.030)-(83.00, 7424.90, 0.030)-(100.00, 7424.00, 0.030)-(110.00, 7424.00, 0.030)-(132.00, 7428.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 6-1 (Q100 = 106.7 cfs)

User-defined

Invert Elev (ft)	= 7424.00
Slope (%)	= 2.00
N-Value	= 0.030

Calculations

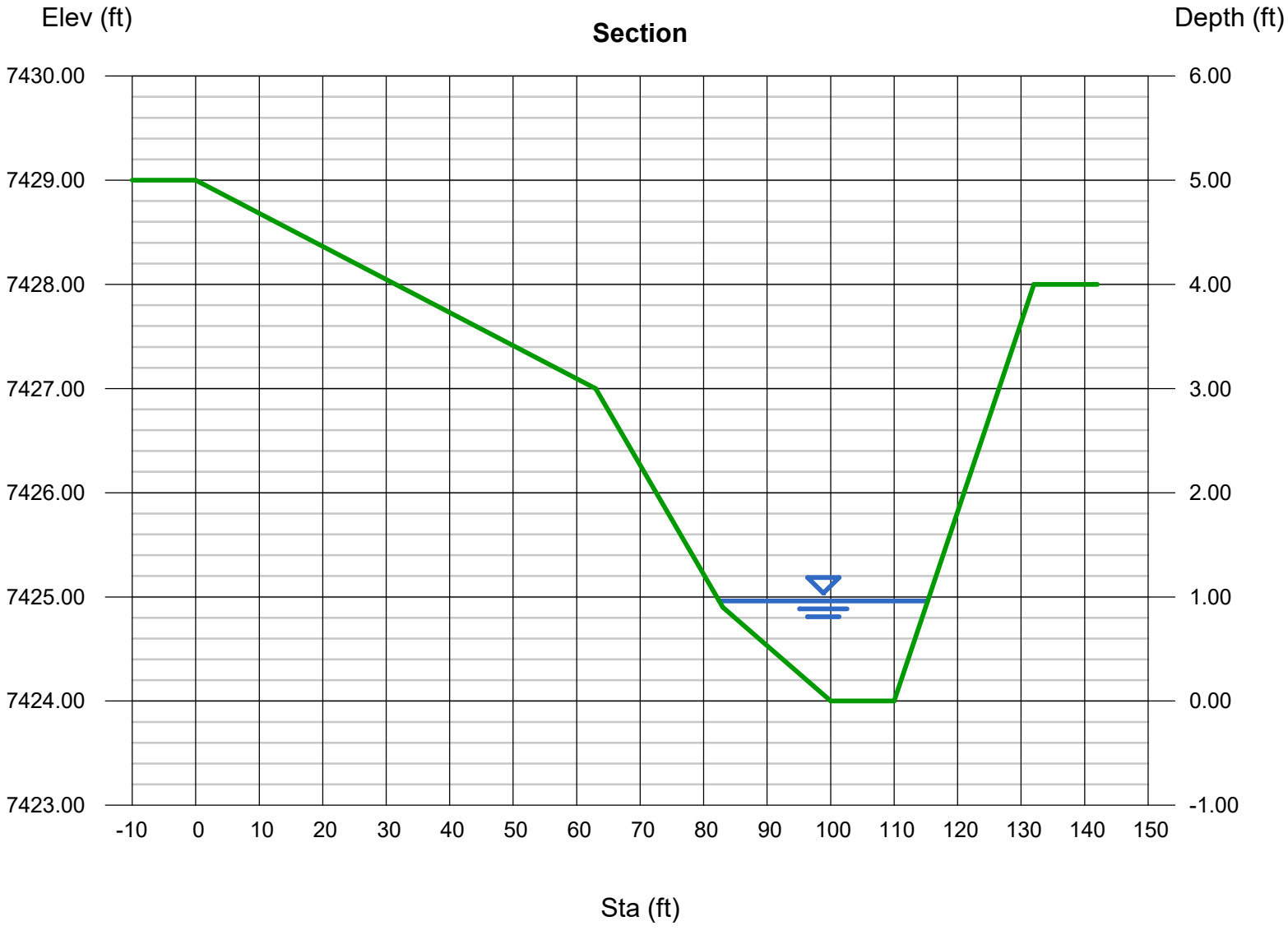
Compute by:	Known Q
Known Q (cfs)	= 106.70

Highlighted

Depth (ft)	= 0.96
Q (cfs)	= 106.70
Area (sqft)	= 20.82
Velocity (ft/s)	= 5.12
Wetted Perim (ft)	= 32.97
Crit Depth, Yc (ft)	= 1.03
Top Width (ft)	= 32.85
EGL (ft)	= 1.37

(Sta, El, n)-(Sta, El, n)...

(0.00, 7429.00)-(63.00, 7427.00, 0.030)-(83.00, 7424.90, 0.030)-(100.00, 7424.00, 0.030)-(110.00, 7424.00, 0.030)-(132.00, 7428.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 6-2 (Q5 = 18.9 cfs)

User-defined

Invert Elev (ft)	= 7422.00
Slope (%)	= 3.00
N-Value	= 0.030

Calculations

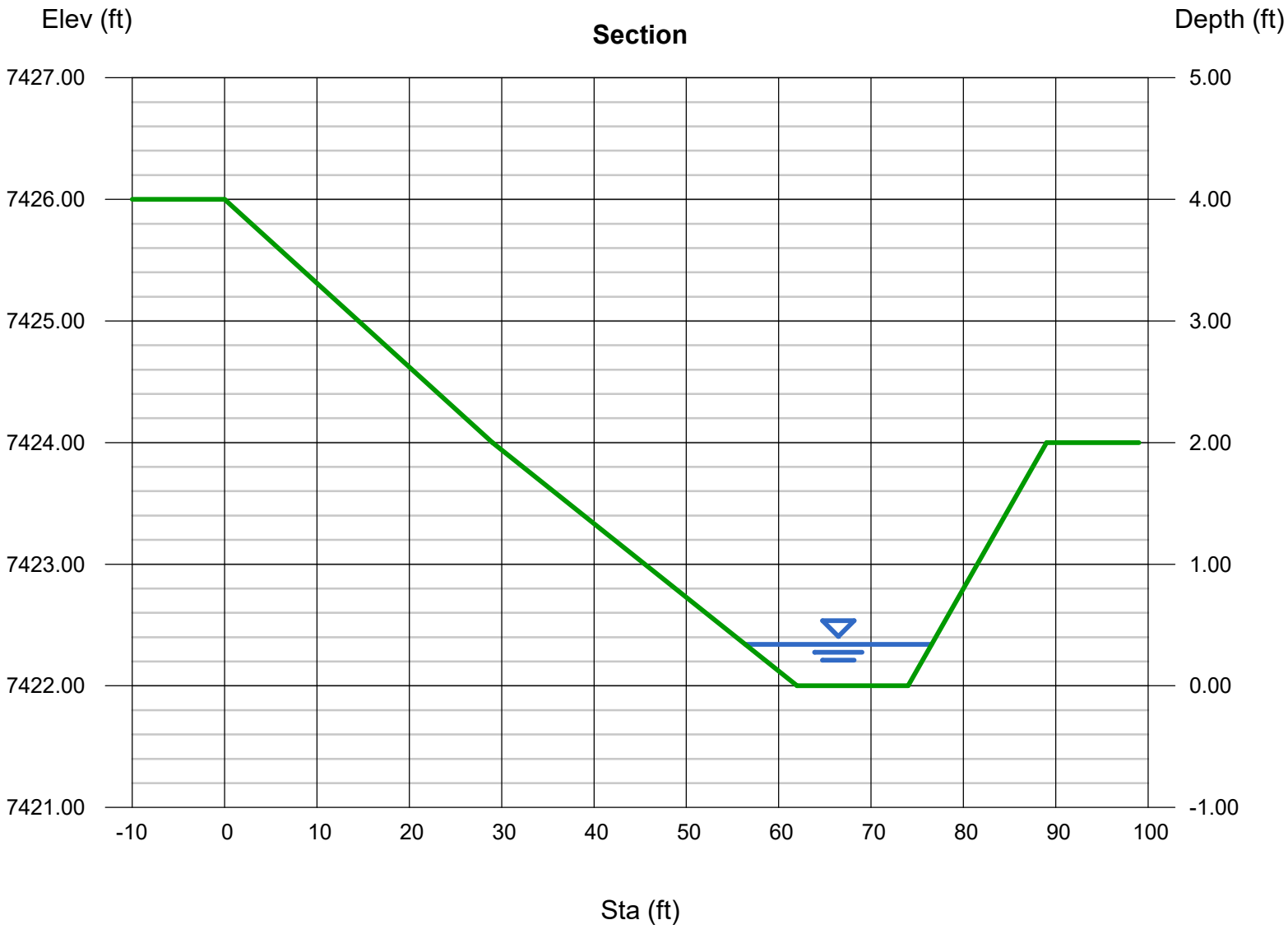
Compute by:	Known Q
Known Q (cfs)	= 18.90

Highlighted

Depth (ft)	= 0.34
Q (cfs)	= 18.90
Area (sqft)	= 5.46
Velocity (ft/s)	= 3.46
Wetted Perim (ft)	= 20.19
Crit Depth, Yc (ft)	= 0.38
Top Width (ft)	= 20.16
EGL (ft)	= 0.53

(Sta, El, n)-(Sta, El, n)...

(0.00, 7426.00)-(29.00, 7424.00, 0.030)-(62.00, 7422.00, 0.030)-(74.00, 7422.00, 0.030)-(89.00, 7424.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 6-2 (Q100 = 106.7 cfs)

User-defined

Invert Elev (ft)	= 7422.00
Slope (%)	= 3.00
N-Value	= 0.030

Calculations

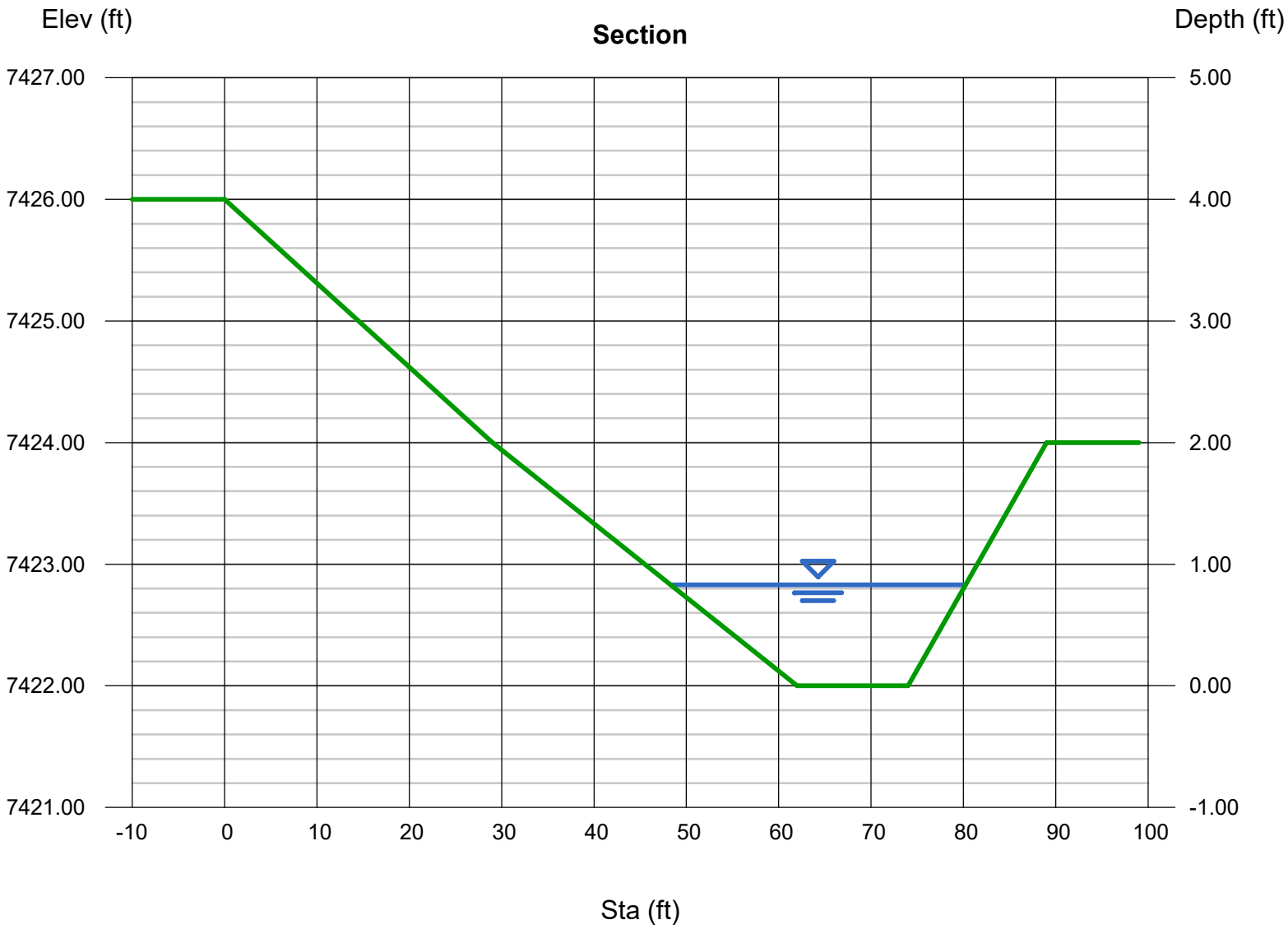
Compute by:	Known Q
Known Q (cfs)	= 106.70

Highlighted

Depth (ft)	= 0.83
Q (cfs)	= 106.70
Area (sqft)	= 18.23
Velocity (ft/s)	= 5.85
Wetted Perim (ft)	= 32.00
Crit Depth, Yc (ft)	= 0.98
Top Width (ft)	= 31.92
EGL (ft)	= 1.36

(Sta, El, n)-(Sta, El, n)...

(0.00, 7426.00)-(29.00, 7424.00, 0.030)-(62.00, 7422.00, 0.030)-(74.00, 7422.00, 0.030)-(89.00, 7424.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 6-3 (Q5 = 18.9 cfs)

User-defined

Invert Elev (ft)	= 7418.00
Slope (%)	= 2.30
N-Value	= 0.030

Calculations

Compute by:	Known Q
Known Q (cfs)	= 18.90

Highlighted

Depth (ft)	= 0.34
Q (cfs)	= 18.90
Area (sqft)	= 5.93
Velocity (ft/s)	= 3.19
Wetted Perim (ft)	= 19.94
Crit Depth, Yc (ft)	= 0.35
Top Width (ft)	= 19.89
EGL (ft)	= 0.50

(Sta, El, n)-(Sta, El, n)...

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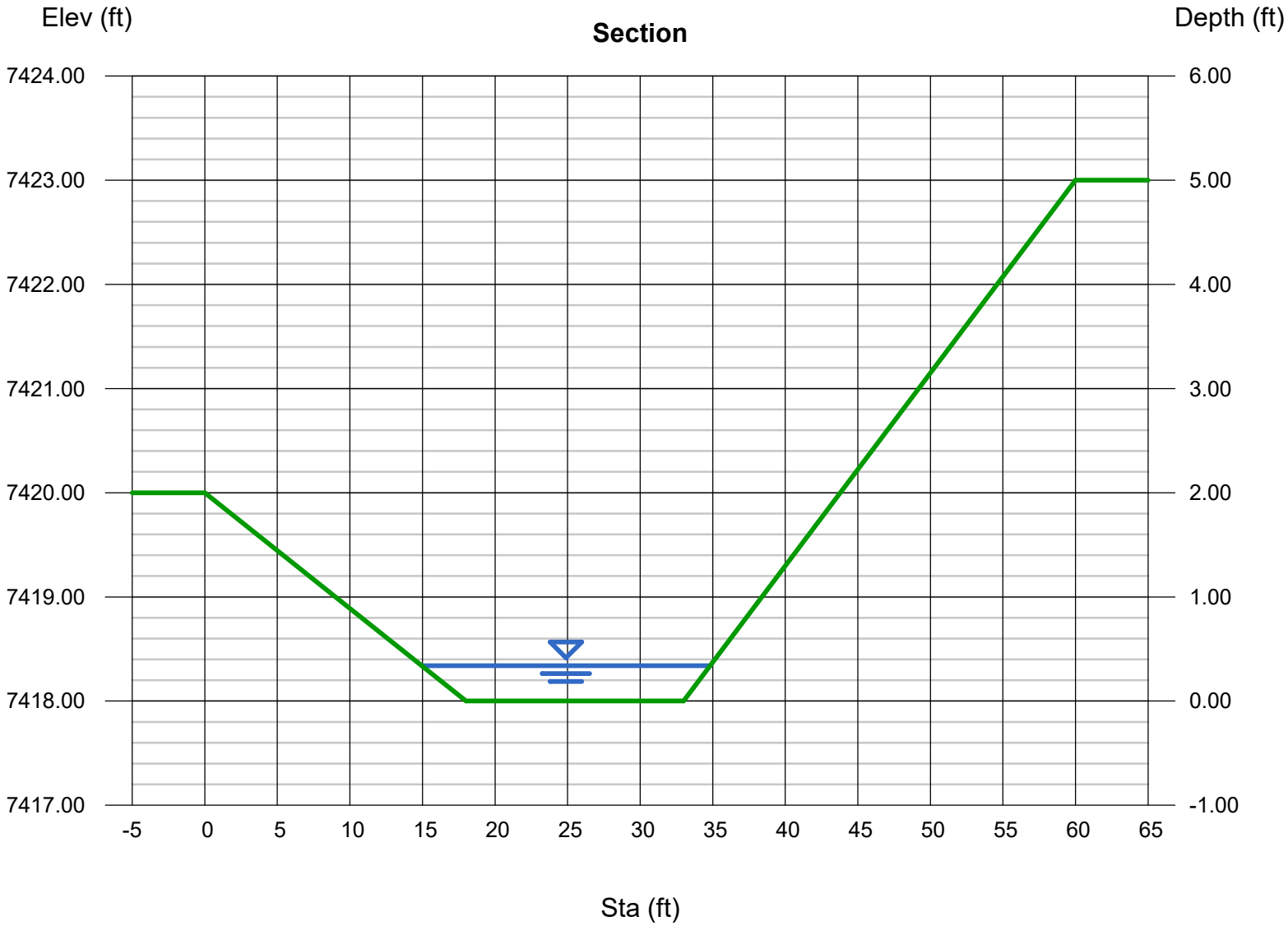

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 6-3 (Q100 = 106.7 cfs)

User-defined

Invert Elev (ft)	= 7418.00
Slope (%)	= 2.30
N-Value	= 0.030

Calculations

Compute by:	Known Q
Known Q (cfs)	= 106.70

Highlighted

Depth (ft)	= 0.88
Q (cfs)	= 106.70
Area (sqft)	= 18.77
Velocity (ft/s)	= 5.68
Wetted Perim (ft)	= 27.80
Crit Depth, Yc (ft)	= 0.99
Top Width (ft)	= 27.67
EGL (ft)	= 1.38

(Sta, El, n)-(Sta, El, n)...

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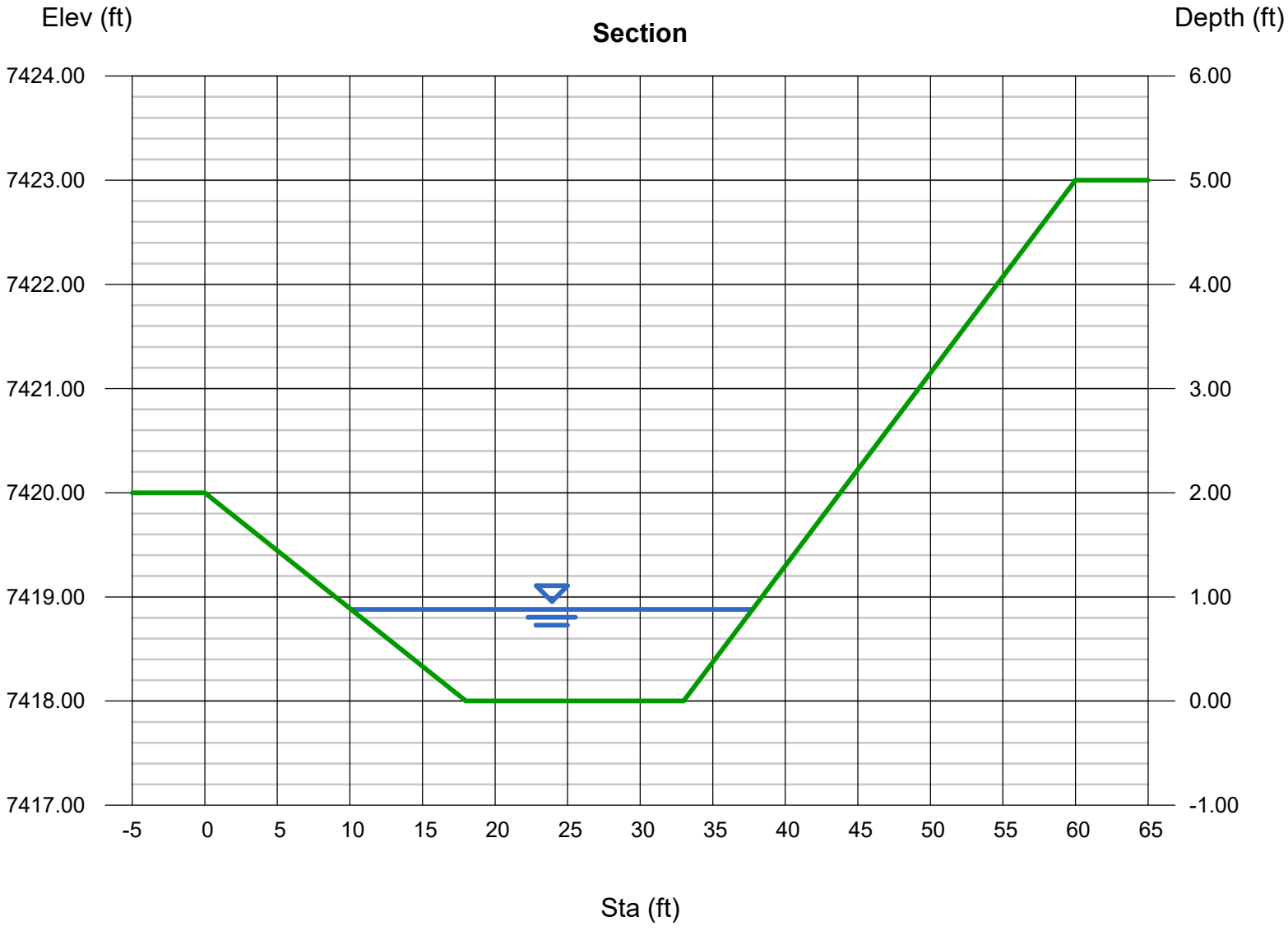


Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 7-1 (Q5 = 3.3 cfs)

User-defined

Invert Elev (ft)	= 7427.30
Slope (%)	= 3.30
N-Value	= 0.030

Calculations

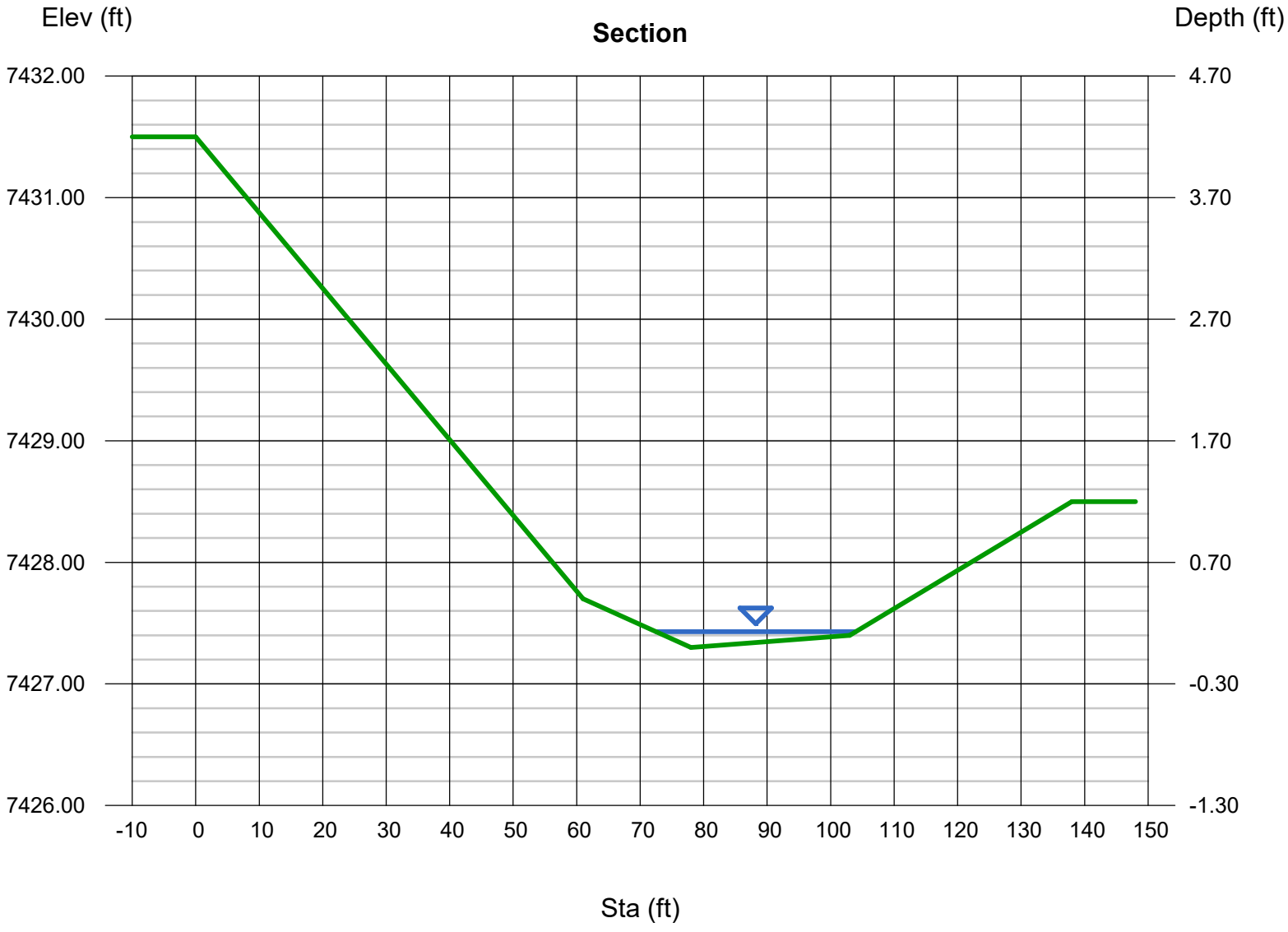
Compute by:	Known Q
Known Q (cfs)	= 3.30

Highlighted

Depth (ft)	= 0.13
Q (cfs)	= 3.300
Area (sqft)	= 2.37
Velocity (ft/s)	= 1.39
Wetted Perim (ft)	= 31.46
Crit Depth, Yc (ft)	= 0.13
Top Width (ft)	= 31.46
EGL (ft)	= 0.16

(Sta, El, n)-(Sta, El, n)...

(0.00, 7431.50)-(61.00, 7427.70, 0.030)-(78.00, 7427.30, 0.030)-(103.00, 7427.40, 0.030)-(138.00, 7428.50, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 7-1 (Q100 = 15.9 cfs)

User-defined

Invert Elev (ft)	= 7427.30
Slope (%)	= 3.30
N-Value	= 0.030

Calculations

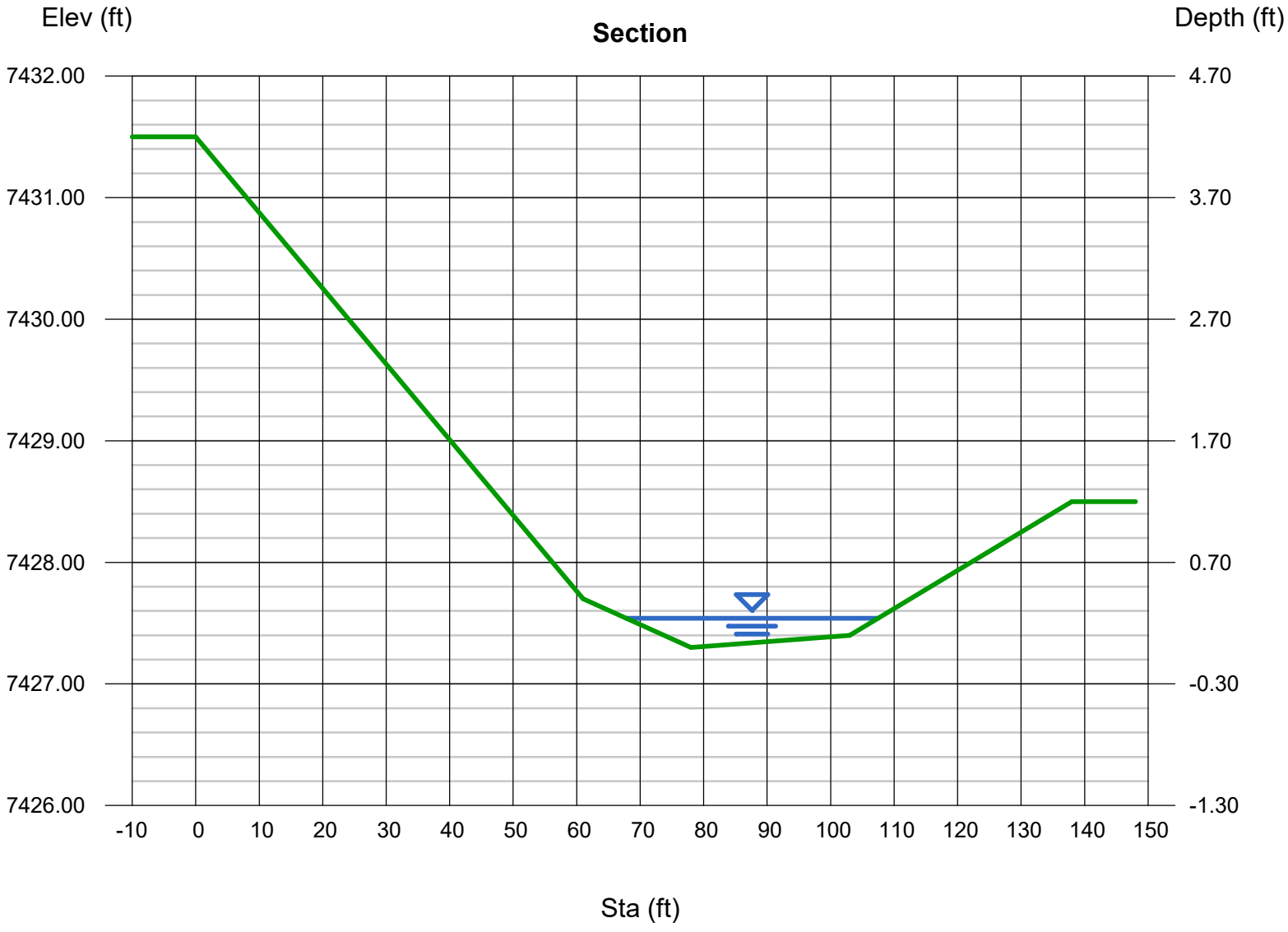
Compute by:	Known Q
Known Q (cfs)	= 15.90

Highlighted

Depth (ft)	= 0.24
Q (cfs)	= 15.90
Area (sqft)	= 6.29
Velocity (ft/s)	= 2.53
Wetted Perim (ft)	= 39.66
Crit Depth, Yc (ft)	= 0.26
Top Width (ft)	= 39.66
EGL (ft)	= 0.34

(Sta, El, n)-(Sta, El, n)...

(0.00, 7431.50)-(61.00, 7427.70, 0.030)-(78.00, 7427.30, 0.030)-(103.00, 7427.40, 0.030)-(138.00, 7428.50, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 7-2 (Q5 = 3.3 cfs)

User-defined

Invert Elev (ft)	= 7419.00
Slope (%)	= 3.50
N-Value	= 0.030

Calculations

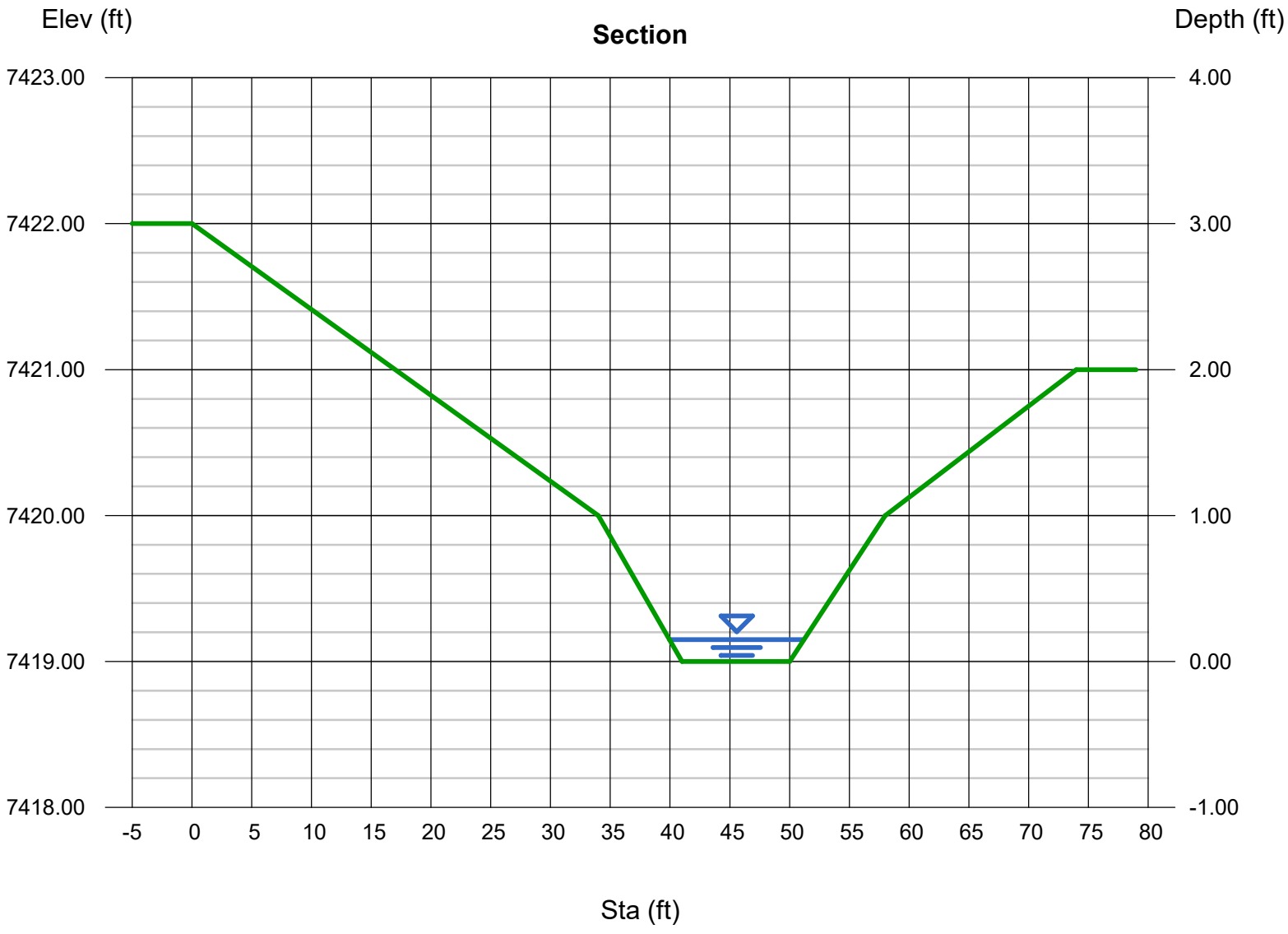
Compute by:	Known Q
Known Q (cfs)	= 3.30

Highlighted

Depth (ft)	= 0.15
Q (cfs)	= 3.300
Area (sqft)	= 1.52
Velocity (ft/s)	= 2.17
Wetted Perim (ft)	= 11.27
Crit Depth, Yc (ft)	= 0.16
Top Width (ft)	= 11.25
EGL (ft)	= 0.22

(Sta, El, n)-(Sta, El, n)...

(0.00, 7422.00)-(34.00, 7420.00, 0.030)-(41.00, 7419.00, 0.030)-(50.00, 7419.00, 0.030)-(58.00, 7420.00, 0.030)-(74.00, 7421.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 7-2 (Q100 = 15.9 cfs)

User-defined

Invert Elev (ft)	= 7419.00
Slope (%)	= 3.50
N-Value	= 0.030

Calculations

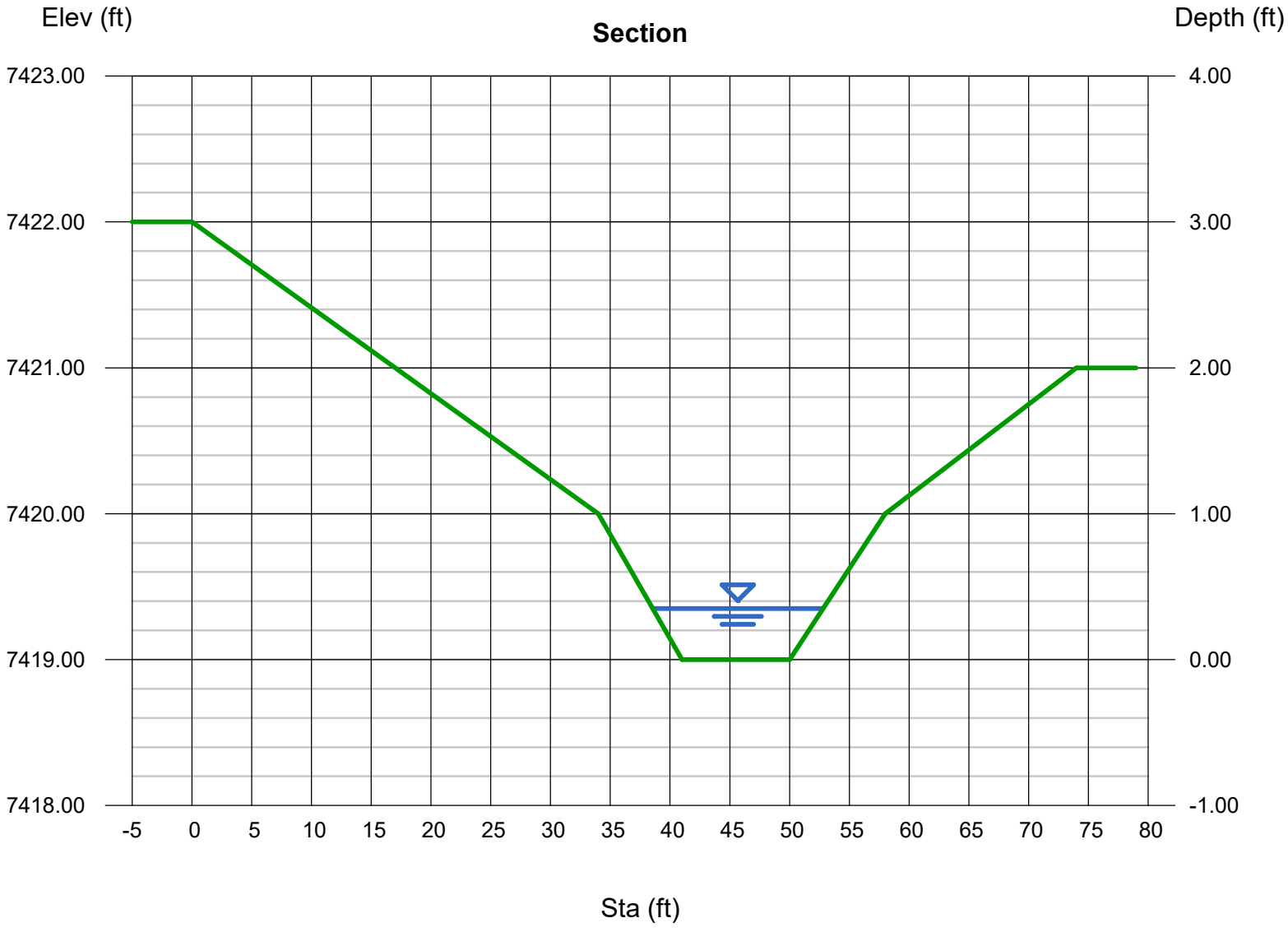
Compute by:	Known Q
Known Q (cfs)	= 15.90

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 15.90
Area (sqft)	= 4.07
Velocity (ft/s)	= 3.91
Wetted Perim (ft)	= 14.30
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 14.25
EGL (ft)	= 0.59

(Sta, El, n)-(Sta, El, n)...

(0.00, 7422.00)-(34.00, 7420.00, 0.030)-(41.00, 7419.00, 0.030)-(50.00, 7419.00, 0.030)-(58.00, 7420.00, 0.030)-(74.00, 7421.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 8-1 (Q5 = 20.7 cfs)

User-defined

Invert Elev (ft)	= 7415.20
Slope (%)	= 1.80
N-Value	= 0.030

Calculations

Compute by:	Known Q
Known Q (cfs)	= 20.70

Highlighted

Depth (ft)	= 0.38
Q (cfs)	= 20.70
Area (sqft)	= 7.78
Velocity (ft/s)	= 2.66
Wetted Perim (ft)	= 28.63
Crit Depth, Yc (ft)	= 0.36
Top Width (ft)	= 28.61
EGL (ft)	= 0.49

(Sta, El, n)-(Sta, El, n)...

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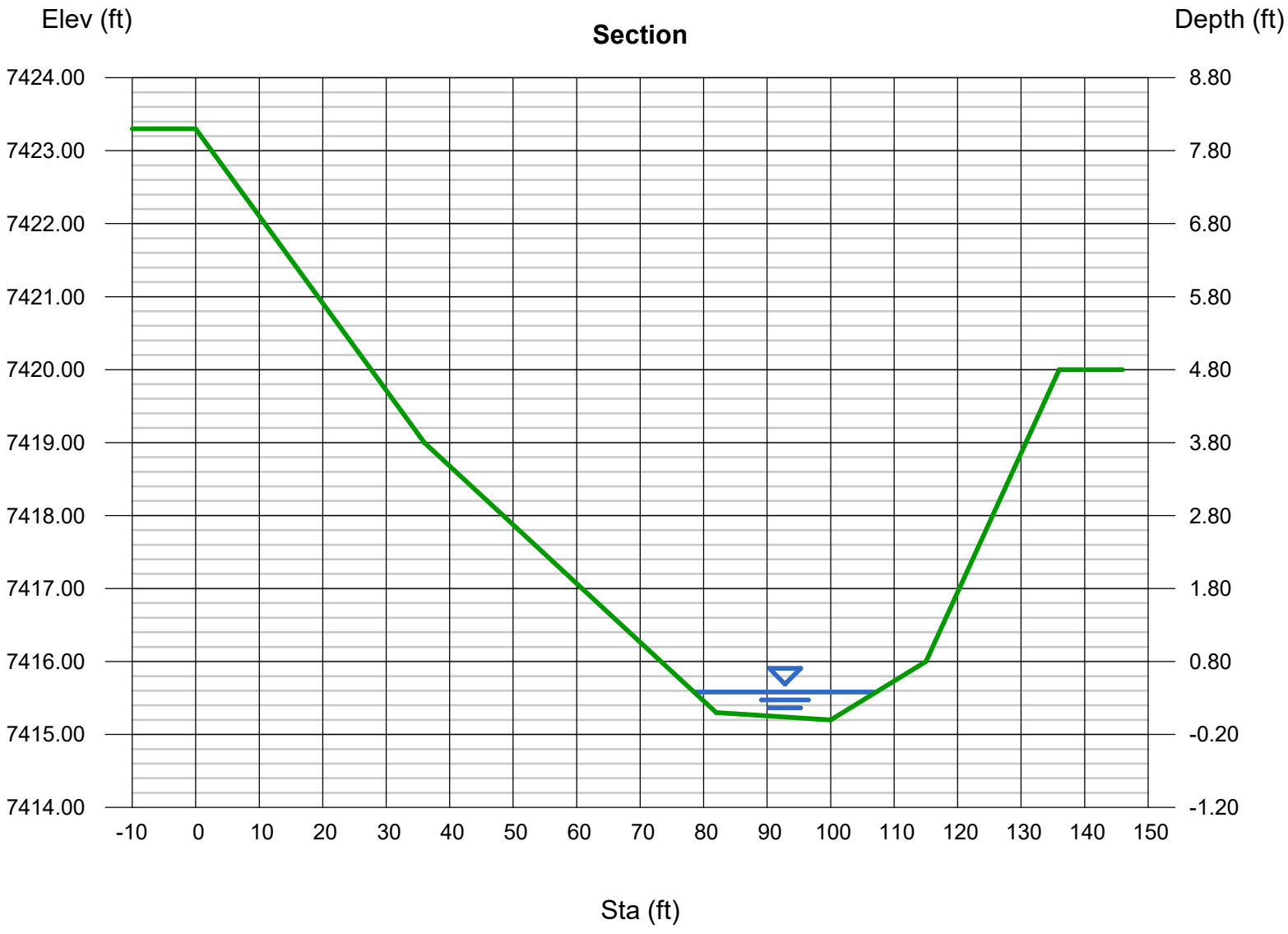


Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Feb 19 2026

Drainage 8-1 (Q100 = 115.4 cfs)

User-defined

Invert Elev (ft)	= 7415.20
Slope (%)	= 1.80
N-Value	= 0.030

Calculations

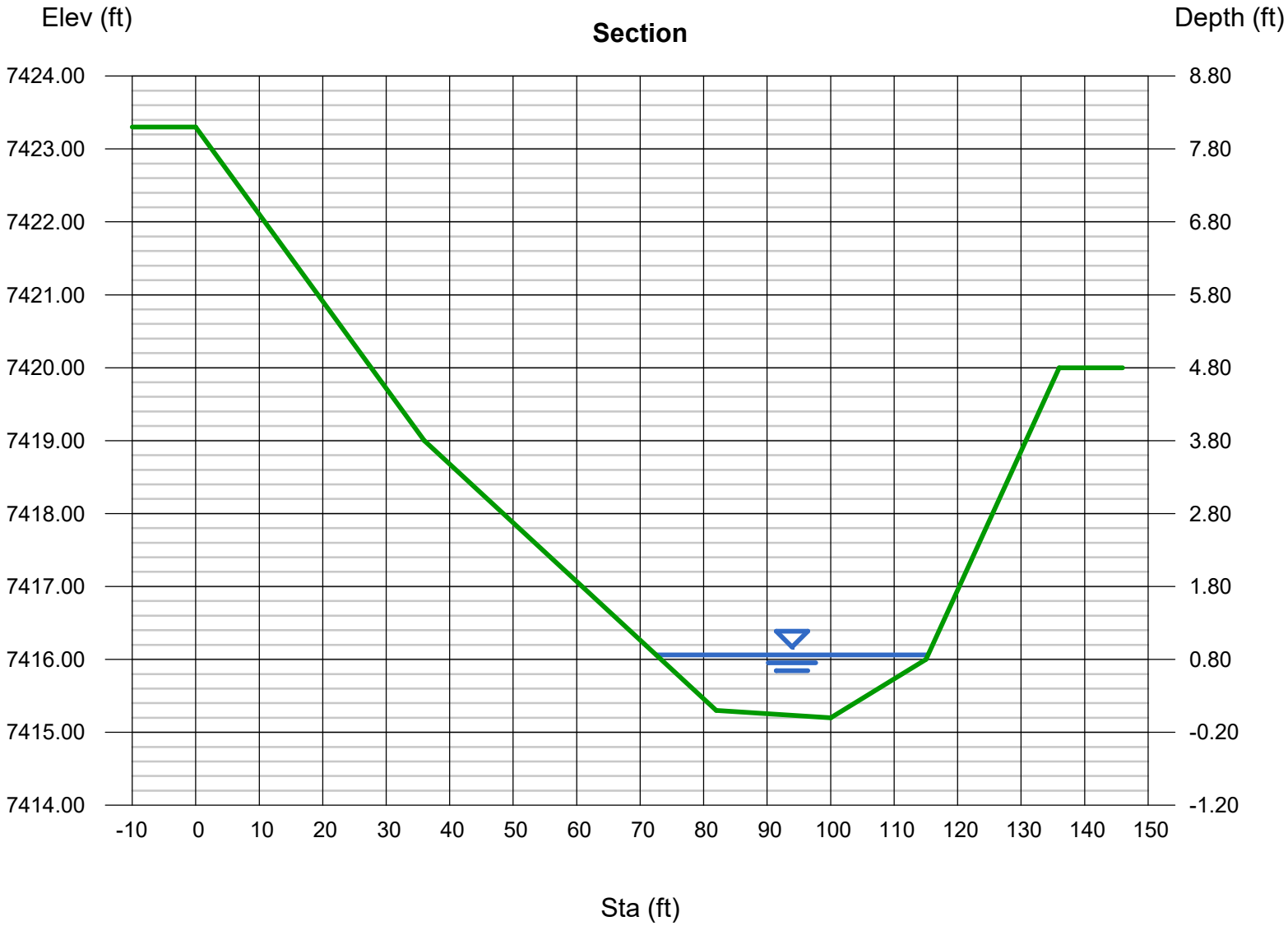
Compute by:	Known Q
Known Q (cfs)	= 115.40

Highlighted

Depth (ft)	= 0.86
Q (cfs)	= 115.40
Area (sqft)	= 25.08
Velocity (ft/s)	= 4.60
Wetted Perim (ft)	= 42.82
Crit Depth, Yc (ft)	= 0.89
Top Width (ft)	= 42.77
EGL (ft)	= 1.19

(Sta, El, n)-(Sta, El, n)...

(0.00, 7423.30)-(36.00, 7419.00, 0.030)-(82.00, 7415.30, 0.030)-(100.00, 7415.20, 0.030)-(115.00, 7416.00, 0.030)-(136.00, 7420.00, 0.030)



APPENDIX D – WATER QUALITY & DETENTION

2880 International Circle, Suite 110
Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

Pleas... or ...ne FDR)

All Terrain: PCM is submitted as a standalone document. But as this is the drainage report, it is relevant appendix material & the engineer's discretion to include. PCM form has been corrected to project.

EL PASO COUNTY
PCM APPLICABILITY FORM

EPC Project Number: _____

This form is to be used by the Engineer of Record to determine if the proposed construction activities are eligible for an exclusion to stormwater quality permanent control measure (PCM) requirements. All "applicable construction activity" within El Paso County (EPC) must comply with the post-construction stormwater management criteria. Reference ECM Appendix I for information about PCMs.

Note that this form only addresses stormwater quality for the site. Even if the site is fully excluded from needing a stormwater quality PCM, the site may still need to address stormwater detention (per DCMv1 Chap 1.5 and ECM Chap 3.2.8.B). However, if the site requires stormwater detention, then it must also address stormwater quality (per DCMv2 Chap 4.1 and ECM Appendix I.7.3). Refer to the Reference Information pages below for more guidance.

Part I. Project Summary			
Project Name:	ASCENT CHURCH		
Is Stormwater Detention Required?	☒ Yes ☐ No	**Is Water Quality Treatment Required? (i.e.: non-excluded disturbance >1ac)**	☒ Yes ☐ No
Is an ESQCP Required? If "No," Check Applicable Reason	☒ Yes ☐ No	☐ Not an Applicable Construction Activity ☐ Oil & Gas ☐ R-Factor	
Engineer of Record Email Address:	NJOKERST@ALLTERRAINENG.COM		

Part II. PCM Exclusions

Note: Questions A through K directly correlate to Part I.E.4.a.i (A) to (K) on page 27 of the 2016 CDPS Statewide Standard MS4 General Permit COR090000 (i.e.: the MS4 Permit), as amended. Document exclusions that apply to the whole project or parts of it.

Questions	Excluded Acreage	Yes	No	Notes
A. Is this project a "Pavement Management Site?"			✘	This exclusion applies to the maintenance, rehabilitation, and reconstruction of pavement on existing roads, bridges, bike lanes, and parking along roads. Areas used primarily for parking (i.e.: separate lots not along roadway) or access to parking are not included. No increase in impervious area is allowable.
B. Review two options below to see if project is an "Excluded Roadway Development."				Does not include sidewalks. Does include curb & gutter.
• Does the project include improvements to an existing roadway that adds < 1 acre of paved or gravel area per mile of roadway?			✘	If selected, list the proposed additional acreage per mile in Part IV Notes below.
• Does the project include improvements to an existing roadway that adds ≤ 8.25 ft of paved width at any location?			✘	If selected, list the proposed additional width in Part IV Notes below.

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Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

EL PASO COUNTY
PCM APPLICABILITY FORM

EPC Project Number: _____

Part II. PCM Exclusions (continued)				
Questions	**Excluded Acreage**	**Yes**	**No**	**Notes**
C. Does the project include "Excluded Existing Roadway Areas?"			X	For redevelopment of existing roadways. This exclusion only excludes the original roadway area, it does NOT apply to the entire project. This exclusion applies only when the proposed project will expand the existing roadway width by <2x on average. If selected, list the proposed expanded width in Part IV Notes below.
D. Is the project considered an Aboveground or Underground Utilities activity?			X	Activity can not permanently alter the terrain, ground cover, or drainage patterns from existing conditions.
E. Is the project considered a "Large Lot Single-Family Site"? *This exclusion only pertains to the lots and does not include roadways.*			X	Must be a single-family residential lot or agricultural zoned land with ≥ 2.5 acres per dwelling and total lot impervious area < 10%. If "Yes," notate the percent impervious below in Part IV: Notes.
F. Do Non-Residential or Non-Commercial Infiltration Conditions exist? *Post-development surface conditions do not result in concentrated stormwater flow or surface water discharge during an 80th percentile stormwater runoff event, and the 80th percentile event must be infiltrated.*			X	Exclusion does not apply to residential or commercial sites for buildings. A site-specific study is required and must show rainfall and soil conditions, allowable slopes, surface conditions, and ratios of imperviousness area to pervious area.
G. Is the project land disturbance to Undeveloped Land where undeveloped land remains undeveloped following the activity?	0.67			Project must be on land with no human made structures such as buildings or pavement. The proposed development must return the disturbed area to its historical condition. See CDPHE's "Standard MS4 Permit FAQ" for more detail on how this exclusion applies.
H. Is the project a Stream Stabilization Site?			X	
I. Is the project a Bike or Pedestrian Trail?			X	Bike lanes for roadways are not included in this exclusion but may qualify if attached to a larger roadway activity that is excluded in A, B or C above. Pedestrian trails (e.g. sidewalks) that are attached to a roadway do not apply.
J. Is the project Oil and Gas Exploration?			X	Activities and facilities associated with oil and gas exploration are excluded.
K. Is the project in a County Growth Area?				El Paso County does not apply this exclusion.

If any exclusions above apply (via a "Yes" for any row), runoff from those areas is excluded from stormwater quality treatment requirements. All runoff from remaining non-excluded disturbed areas will need to be treated by a stormwater quality PCM, unless remaining area is <1ac. If remaining area is >1ac, select at least one Design Standard on the next page.

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EL PASO COUNTY
PCM APPLICABILITY FORM

EPC Project Number: _____

Part III: PCM Information		
Questions	**Yes**	**No**
1. Which of the following Design Standard(s) will the project utilize? *(If a PCM is required, you must select at least one. See Control Measure Requirements identified in MS4 Permit Part I.E.4.a.iv on page 29.)*		
A. Water Quality Capture Volume (WQCV) Standard	X	
B. Pollutant Removal Standard - 80% Total Suspended Solids Removal (TSS) *(must treat runoff to <30mg/L of TSS)*		
C. Runoff Reduction Standard		
D. Applicable Development Site Draining to a Regional WQCV Control Measure *(no conveyance via "Waters of the State")*		
E. Applicable Development Site Draining to a Regional WQCV Facility *(conveyance allowable via "Waters of the State," if the 8 conditions in the MS4 permit are met and documented in the drainage report)*		
F. Constrained Redevelopment Sites Standard *(must be pre-approved by ECM Administrator)*		
G. Previous Permit Term Standard		
2. Will any of the PCMs be located within any other jurisdiction besides EPC?		X

Part IV: Notes

Provide info regarding all applicable PCM(s) and PCM Exclusion(s) including location, PCM name(s)/number(s), and additional relevant filings or reports or maintenance agreements, etc. Attach an additional sheet if you need more space. Attaching a detailed summary table would replace the need for any notes here.

A full spectrum water quality & detention pond will be constructed on-site to capture & treat stormwater from proposed drainage basins 2 & 3.

Basin 1 (0.67 acres) is excluded from WQ & detention per EPC ECM Appendix I, Section I.7.1.B.7.

Basin 4 (0.11) is excluded from WQ & detention per EPC ECM Appendix I, Section I.7.1.C.1a.

Basin EX2 and 5 remain undisturbed & are therefore excluded from WQ & detention requirements.

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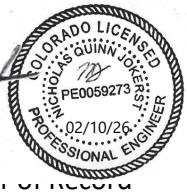
EL PASO COUNTY
PCM APPLICABILITY FORM

EPC Project Number: _____

Part V: Signatures

Applicant: This PCM Applicability Form was prepared under my direction and supervision and is correct to the best of my knowledge and belief. It was prepared along with the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required. And it has been reviewed for compliance with the Post Construction Stormwater Management criteria and MS4 Permit requirements.



_____ _____ 02/10/2026

Signature and Stamp of Engineer of Record — Date

(If the project is not an Applicable Construction Activity, this line can be signed by the Applicant or their rep, they do not have to be an engineer)

El Paso County: This PCM Applicability Form has been reviewed and the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required, have been reviewed for compliance with the Post Construction Stormwater Management process and MS4 Permit requirements.

_____ _____

Signature of El Paso County Project Engineer — Date

APPENDIX E – REFERENCE MATERIAL

STANDARD FORM SF-3 - PROPOSED CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: JJ Ranch Subdivision
Location: El Paso County
Design Storm: 5-Year

Project Name: JJ Ranch Subdivision
Project No.: 24023.00
Calculated By: NQJ
Checked By: REB
Date: 5/27/25

		DIRECT RUNOFF							TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (Ac)	Runoff Coeff.	t_c (min)	C*A (Ac)	I (in/hr)	Q (cfs)	t_c (min)	C*A (ac)	I (in/hr)	Q (cfs)	Q_{street} (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
	1	OS1	65.25	0.11	52.9	7.31	1.63	11.9					11.9	7.31	1.8					765	1.3	1.0	BASIN OS1 FLOW, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP1 & CONTINUES TO DP2
	2	B	2.38	0.11	14.7	0.27	3.55	0.9	53.9	7.57	1.60	12.1	12.1	7.57	1.9					305	1.4	3.7	BASIN B & DP1 FLOW @ DP2, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP3
	3	C	6.77	0.13	19.8	0.86	3.10	2.7	57.6	8.43	1.50	12.7	12.7	8.43	3.1					261	1.8	2.5	BASIN C & DP2 FLOW @ DP3, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP5
	4	D1	5.66	0.10	16.9	0.56	3.34	1.9					1.88	0.56	3.9					763	2.0	6.4	BASIN D1 FLOW @ DP4, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP5
		D2	4.64	0.15	22.7	0.69	2.90	2.0															BASIN D2 FLOW @ DP5
	5	A	7.88	0.15	32.7	1.15	2.35	2.7	60.0	10.84	1.44	15.6											BASIN A, BASIN D2, DP1-DP4 COMBINED FLOW @ DP5, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	6	E	8.33	0.13	33.5	1.04	2.32	2.4															BASIN E FLOW @ DP6, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	7	F	0.84	0.14	9.9	0.12	4.15	0.5															BASIN F FLOW @ DP7, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	8	G	1.17	0.15	9.1	0.17	4.27	0.7															BASIN G FLOW @ DP8, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	9	H	0.51	0.09	13.5	0.05	3.67	0.2															BASIN H FLOW @ DP9, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST

Notes:
Street and Pipe C*A values are determined by Q/i using the catchment's intensity value.

STANDARD FORM SF-3 - PROPOSED CONDITIONS

STORM DRAINAGE SYSTEM DESIGN

(RATIONAL METHOD PROCEDURE)

Subdivision: JJ Ranch Subdivision
Location: El Paso County
Design Storm: 100-Year

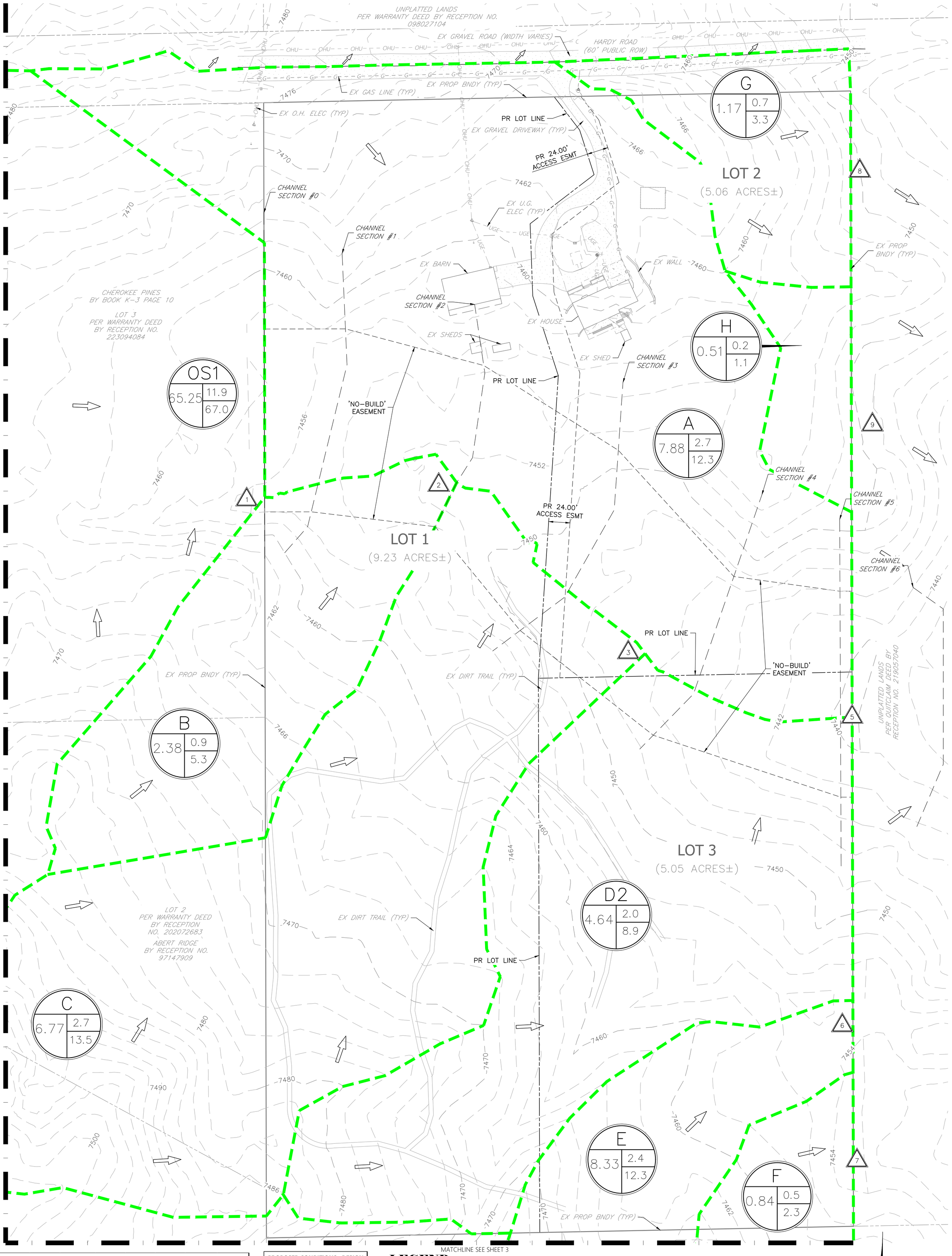
Project Name: JJ Ranch Subdivision
Project No.: 24023.00
Calculated By: NQJ
Checked By: REB
Date: 5/27/25

		DIRECT RUNOFF							TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			
STREET	Design Point	Basin ID	Area (ac)	Runoff Coeff.	t_c (min)	C*A (ac)	I (in/hr)	Q (cfs)	tc (min)	C*A (ac)	I (in/hr)	Q (cfs)	Q_{street} (cfs)	C*A (ac)	Slope (%)	Q_{pipe} (cfs)	C*A (ac)	Slope (%)	Pipe Size (inches)	Length (ft)	Velocity (fps)	t_t (min)	REMARKS
	1	OS1	65.25	0.38	52.9	24.48	2.74	67.0					67.0	24.48	1.8					765	1.3	1.0	BASIN OS1 FLOW, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP1 & CONTINUES TO DP2
	2	B	2.38	0.37	14.7	0.89	5.97	5.3	53.9	25.37	2.69	68.2	68.2	25.37	1.9					305	1.4	3.7	BASIN B & DP1 FLOW @ DP2, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP3
	3	C	6.77	0.38	19.8	2.59	5.21	13.5	57.6	27.96	2.52	70.5	70.5	27.96	3.1					261	1.8	2.5	BASIN C & DP2 FLOW @ DP3, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP5
	4	D1	5.66	0.37	16.9	2.07	5.60	11.6					11.60	2.07	3.9					763	2.0	6.4	BASIN D1 FLOW @ DP4, FOLLOWS HISTORIC DRAINAGE PATTERNS TO DP5
		D2	4.64	0.40	22.7	1.84	4.87	8.9															BASIN D2 FLOW @ DP5
	5	A	7.88	0.40	32.7	3.13	3.94	12.3	60.0	35.00	2.42	84.6											BASIN A, BASIN D2, DP3 & DP4 COMBINED FLOW @ DP5, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	6	E	8.33	0.38	33.5	3.17	3.89	12.3															BASIN E FLOW @ DP6, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	7	F	0.84	0.39	9.9	0.33	6.97	2.3															BASIN F FLOW @ DP7, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	8	G	1.17	0.40	9.1	0.47	7.16	3.3															BASIN G FLOW @ DP8, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST
	9	H	0.51	0.36	13.5	0.18	6.17	1.1															BASIN H FLOW @ DP9, FOLLOWS HISTORIC DRAINAGE PATTERNS OFFSITE TO THE EAST

Notes:
Street and Pipe C*A values are determined by Q/i using the catchment's intensity value.

JJ RANCH SUBDIVISION

PROPOSED DRAINAGE MAP



PROPOSED CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
A	7.88	9.2%	0.15	0.40	32.7	2.7	12.3
B	2.38	4.2%	0.11	0.37	14.7	0.9	5.3
C	6.77	6.3%	0.13	0.38	19.8	2.7	13.5
D1	5.66	3.0%	0.10	0.37	16.9	1.9	11.6
D2	4.64	8.4%	0.15	0.40	22.7	2.0	8.9
E	8.33	5.5%	0.13	0.38	33.5	2.4	12.3
F	0.84	7.0%	0.14	0.39	9.9	0.5	2.3
G	1.17	10.7%	0.15	0.40	9.1	0.7	3.3
H	0.51	2.0%	0.09	0.36	13.5	0.2	1.1
OS1	65.25	5.2%	0.11	0.38	52.9	11.9	67.0

PROPOSED CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
1	11.9	67.0
2	12.1	68.2
3	12.7	70.5
4	1.9	11.6
5	15.6	84.6
6	2.4	12.3
7	0.5	2.3
8	0.7	3.3
9	0.2	1.1

LEGEND

	EXISTING	PROPOSED
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
FLOW DIRECTION		
BASIN ID	ID / AC / Q5 / Q100	
DESIGN POINT DESIGNATION		1
SUB-BASIN DRAINAGE AREA		

N

50 25 0 50 100

ORIGINAL SCALE: 1" = 50'

PROPOSED DRAINAGE MAP

JJ RANCH SUBDIVISION

JOB NO. 24023
LOCATION: EPC
05/27/2025

SHEET 1

ALL TERRAIN ENGINEERING

JJ RANCH SUBDIVISION

PROPOSED DRAINAGE MAP

PROPOSED CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
A	7.88	9.2%	0.15	0.40	32.7	2.7	12.3
B	2.38	4.2%	0.11	0.37	14.7	0.9	5.3
C	6.77	6.3%	0.13	0.38	19.8	2.7	13.5
D1	5.66	3.0%	0.10	0.37	16.9	1.9	11.6
D2	4.64	8.4%	0.15	0.40	22.7	2.0	8.9
E	8.33	5.5%	0.13	0.38	33.5	2.4	12.3
F	0.84	7.0%	0.14	0.39	9.9	0.5	2.3
G	1.17	10.7%	0.15	0.40	9.1	0.7	3.3
H	0.51	2.0%	0.09	0.36	13.5	0.2	1.1
OS1	65.25	5.2%	0.11	0.38	52.9	11.9	67.0

PROPOSED CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
1	11.9	67.0
2	12.1	68.2
3	12.7	70.5
4	1.9	11.6
5	15.6	84.6
6	2.4	12.3
7	0.5	2.3
8	0.7	3.3
9	0.2	1.1

LEGEND

	EXISTING	PROPOSED
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
FLOW DIRECTION		
BASIN ID	ID / AC / Q5 / Q100	DESIGN POINT DESIGNATION: 1
SUB-BASIN DRAINAGE AREA		

100 50 0 100 200

ORIGINAL SCALE: 1" = 100'

PROPOSED DRAINAGE MAP

JJ RANCH SUBDIVISION

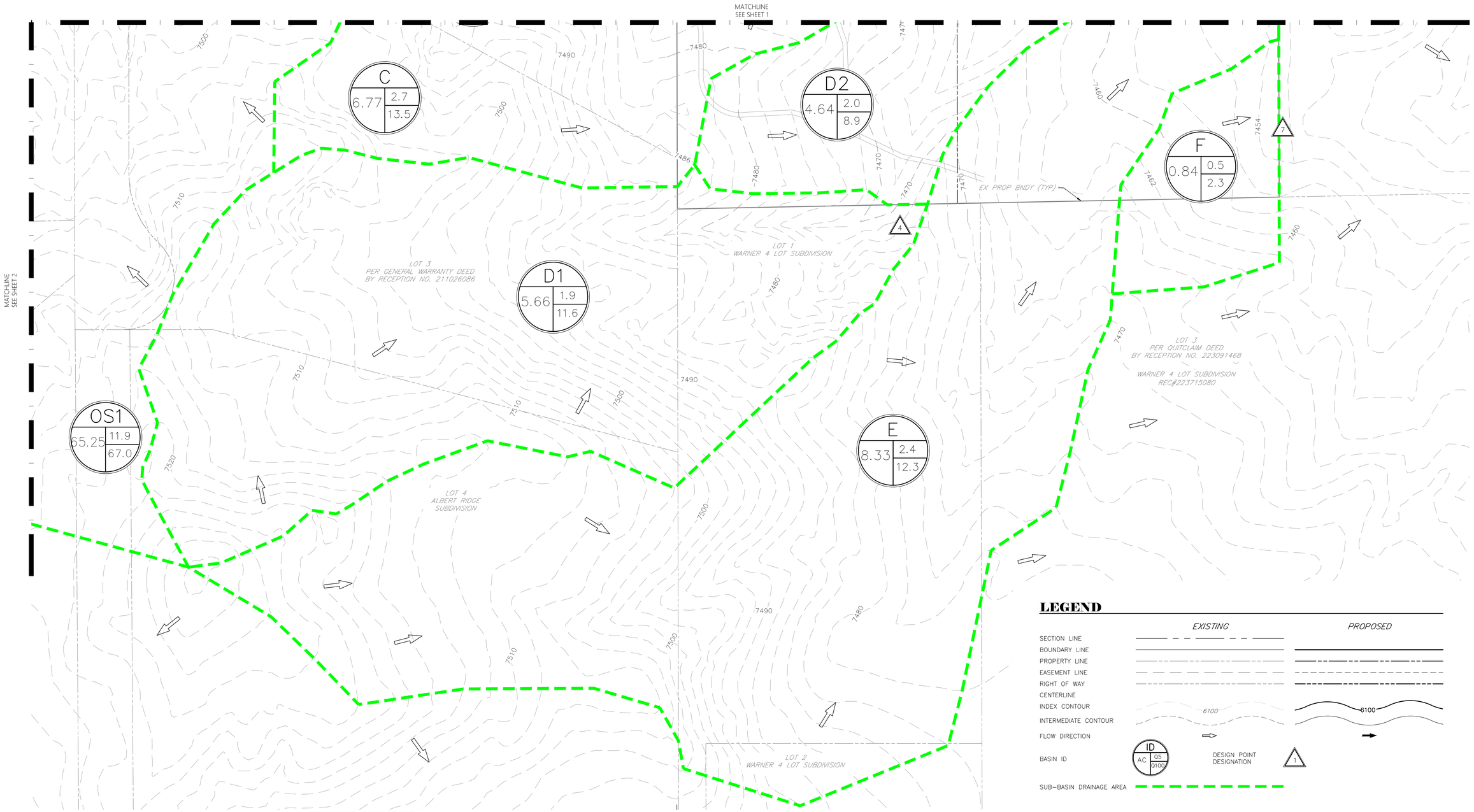
JOB NO. 24023
LOCATION: EPC
05/27/2025

SHEET 2

ALL TERRAIN ENGINEERING

JJ RANCH SUBDIVISION

PROPOSED DRAINAGE MAP



LEGEND

	EXISTING	PROPOSED
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
FLOW DIRECTION		

BASIN ID — ID / AC / Q5 / Q100

DESIGN POINT DESIGNATION — 1

SUB-BASIN DRAINAGE AREA

PROPOSED CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
A	7.88	9.2%	0.15	0.40	32.7	2.7	12.3
B	2.38	4.2%	0.11	0.37	14.7	0.9	5.3
C	6.77	6.3%	0.13	0.38	19.8	2.7	13.5
D1	5.66	3.0%	0.10	0.37	16.9	1.9	11.6
D2	4.64	8.4%	0.15	0.40	22.7	2.0	8.9
E	8.33	5.5%	0.13	0.38	33.5	2.4	12.3
F	0.84	7.0%	0.14	0.39	9.9	0.5	2.3
G	1.17	10.7%	0.15	0.40	9.1	0.7	3.3
H	0.51	2.0%	0.09	0.36	13.5	0.2	1.1
OS1	65.25	5.2%	0.11	0.38	52.9	11.9	67.0

PROPOSED CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
1	11.9	67.0
2	12.1	68.2
3	12.7	70.5
4	1.9	11.6
5	15.6	84.6
6	2.4	12.3
7	0.5	2.3
8	0.7	3.3
9	0.2	1.1

50 25 0 50 100

ORIGINAL SCALE: 1" = 50'

PROPOSED DRAINAGE MAP

JJ RANCH SUBDIVISION

JOB NO. 24023 | SHEET 3

LOCATION: EPC

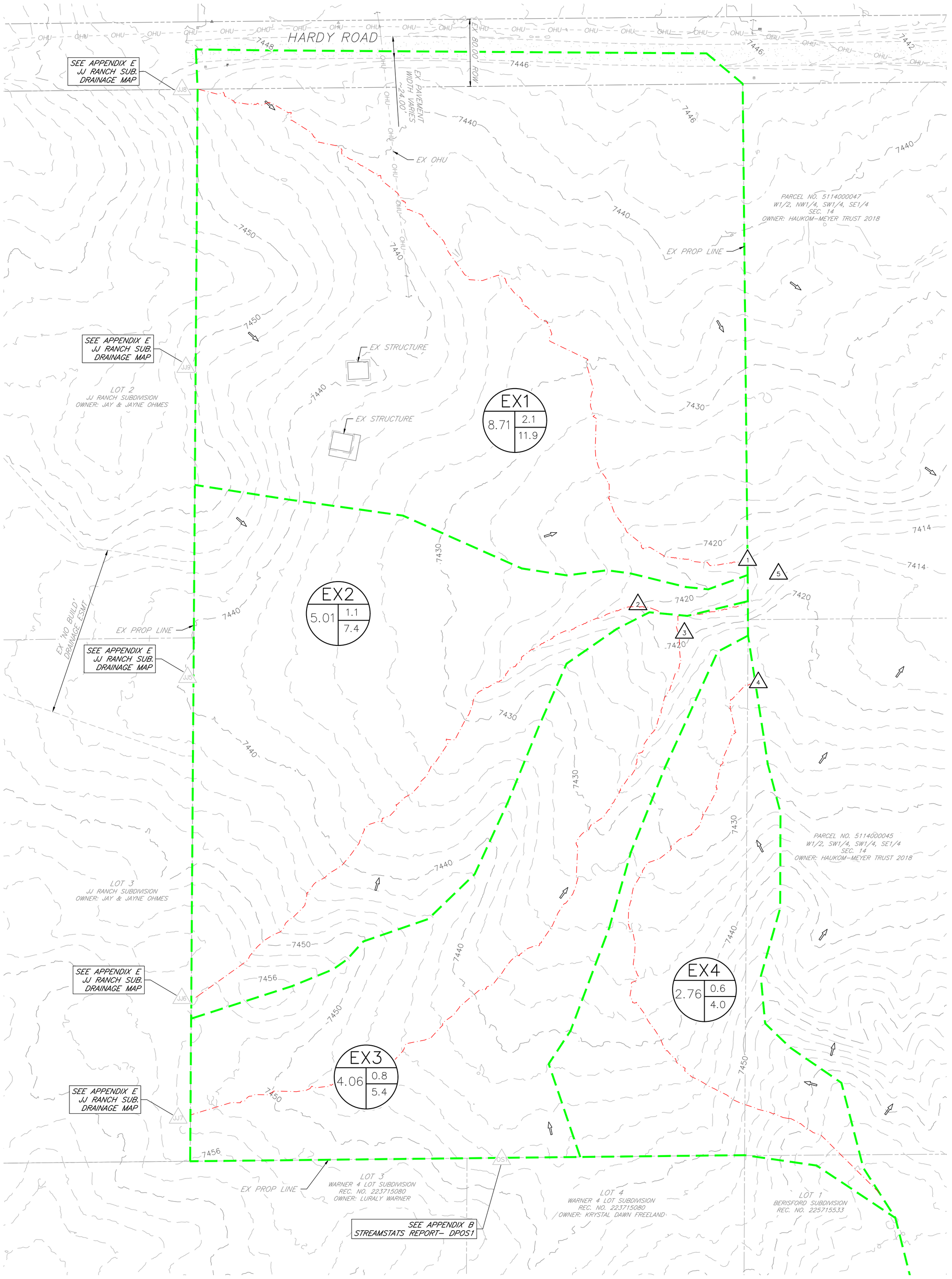
05/27/2025

ALL TERRAIN ENGINEERING

APPENDIX F – DRAINAGE MAPS

HARDY ROAD PROPERTIES

EXISTING DRAINAGE MAP



LEGEND

	EXISTING	PROPOSED
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
FLOW DIRECTION		

PROPOSED BASIN ID — ID / AC / Q5 / Q100

PROPOSED DESIGN POINT — 1

EXISTING/OFFSITE DESIGN POINT — EX7

BASIN LIMITS

TC PATH

EXISTING CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
EX1	8.71	4%	0.11	0.37	36.9	2.1	11.9
EX2	5.01	2%	0.09	0.36	30.5	1.1	7.4
EX3	4.06	2%	0.09	0.36	36.1	0.8	5.4
EX4	2.76	2%	0.09	0.36	32.0	0.6	4.0

EXISTING CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
OS1	4.7	29.5
JJ5	15.6	84.6
JJ6	2.4	12.3
JJ7	0.5	2.3
JJ8	0.7	3.3
JJ9	0.2	1.1
1	2.5	14.2
2	17.8	96.6
3	4.9	32.8
4	0.6	4.0
5	23.3	131.9

N

60 30 0 60 120

ORIGINAL SCALE: 1" = 60'

EXISTING DRAINAGE MAP

HARDY ROAD PROP.

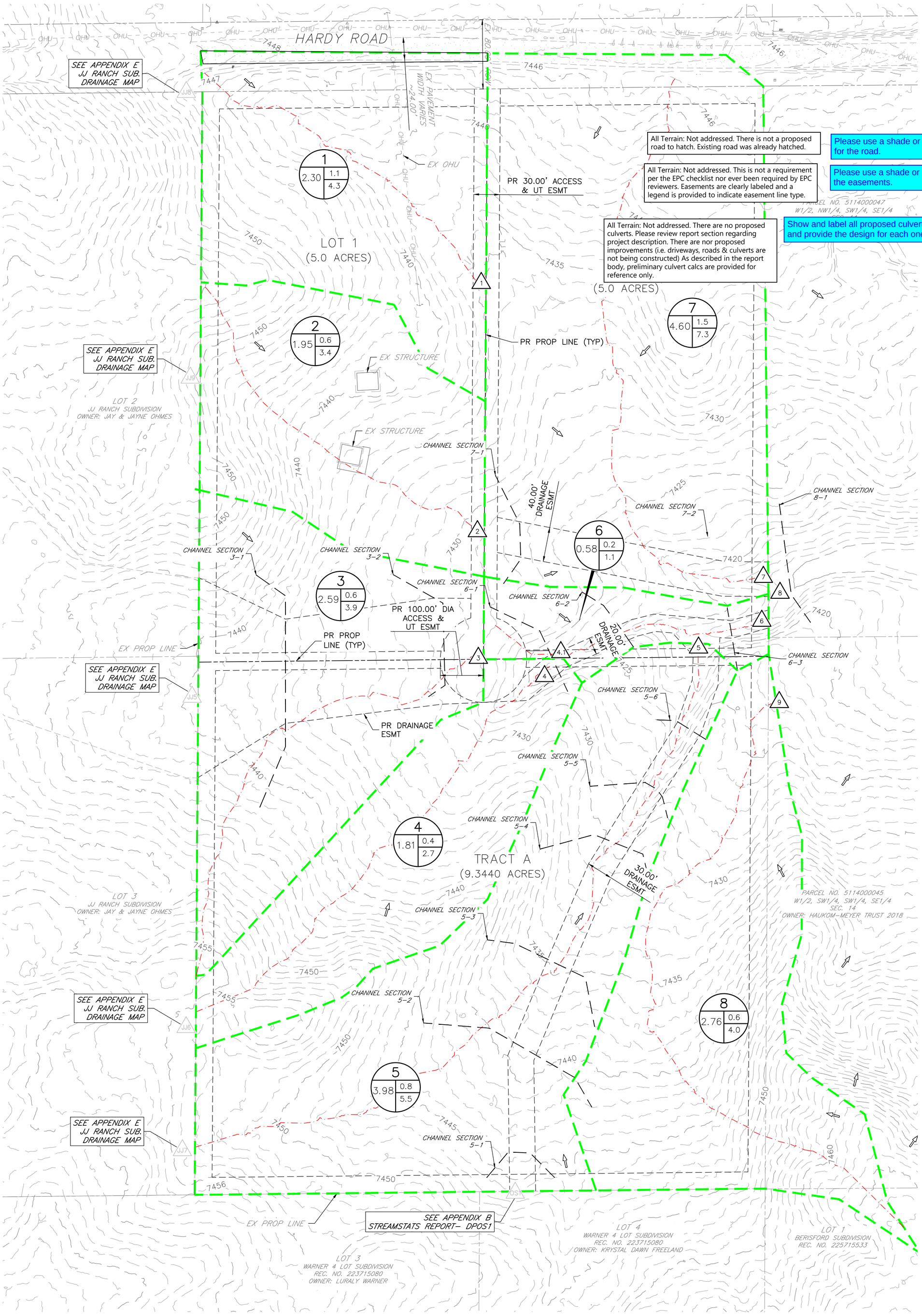
JOB NO. 25018 | SHEET 1

LOCATION: EPC

02/17/2026

HARDY ROAD PROPERTIES

PROPOSED DRAINAGE MAP



LEGEND

	EXISTING	PROPOSED
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
FLOW DIRECTION		

PROPOSED BASIN ID — ID / AC / Q5 / Q100

PROPOSED DESIGN POINT — 1

EXISTING/OFFSITE DESIGN POINT — EX7

BASIN LIMITS

TC PATH

PROPOSED CONDITIONS - BASIN SUMMARY TABLE

Tributary Sub-basin	Area (acres)	Percent Impervious	C_5	C_{100}	t_c (min)	Q_5 (cfs)	Q_{100} (cfs)
1	2.30	13.5%	0.18	0.43	27.8	1.1	4.3
2	1.95	4.3%	0.11	0.37	23.7	0.6	3.4
3	2.59	2.0%	0.09	0.36	29.7	0.6	3.9
4	1.81	2.0%	0.09	0.36	29.6	0.4	2.7
5	3.98	2.0%	0.09	0.36	34.0	0.8	5.5
6	0.58	2.0%	0.09	0.36	19.0	0.2	1.1
7	4.60	7.3%	0.13	0.39	31.0	1.5	7.3
8	2.76	2.0%	0.09	0.36	32.0	0.6	4.0

PROPOSED CONDITIONS - DESIGN POINT SUMMARY TABLE

DP#	$Q_{5\text{-YR}}$	$Q_{100\text{-YR}}$
OS1	4.7	29.5
JJ5	15.6	84.6
JJ6	2.4	12.3
JJ7	0.5	2.3
JJ8	0.7	3.3
JJ9	0.2	1.1
1	1.5	6.3
2	0.7	4.3
3	14.7	79.8
4	2.5	13.1
4.1	16.3	88.2
5	4.1	27.4
6	18.9	106.7
7	3.3	15.9
8	20.7	115.4
9	0.6	4.0

N

60 30 0 60 120

ORIGINAL SCALE: 1" = 60'

PROPOSED DRAINAGE MAP

HARDY ROAD PROP.

JOB NO. 25018 | SHEET 2

LOCATION: EPC

02/17/2026