

# I-40/CC Westbound On- Ramp and Right-Turn Lane

CENE-486C  
30% Presentation  
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# Project Review

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- Client: Arizona Department of Transportation (ADOT)
- Location: I-40 and Country Club Drive Traffic Interchange (Flagstaff, AZ)
- Final Product: New right-turn lane and new on-ramp lane



Figure 1: Project Location (NTS)

# Milestones

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- Milestone 1: Process Survey Data
- Milestone 2: Input Existing Geometry
- Milestone 3: Create Construction Alignments
- Milestone 4: Create Existing Cross-Sections
- Milestone 5: Complete Existing Runoff Calculations

# Processing Survey Data

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- Contour Data was downloaded as a .shp file, and processed within Civil 3D
- Parcel information was exported from GIS into Civil 3D



Figure 2: Existing Contour Data (NTS)

# Input Existing Geometry

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- Project Aerial was georeferenced into Civil 3D
- Existing Geometry was drawn in using Aerial, within Civil 3D
- Various Layers and Line Types were used for Existing Geometry



Figure 3: Existing Geometry (NTS)

- Country Club Drive CL Alignment
  - Stationing began at Intersection of US89
  - Placement Involved a split of ROW along Country Club Drive
- I-40 On-Ramp Edge Alignment
  - Stationing Began at Intersection of Country club Drive







# Existing Runoff Calculations Cont.

- Watershed was Delineated for Existing Catch Basin and 24" CMP
  - Rational Method
  - Bentley Flowmaster
- ADOT and COF Drainage Standards [2] [3]
- Existing Infrastructure is able to Accommodate Existing Flows [1]

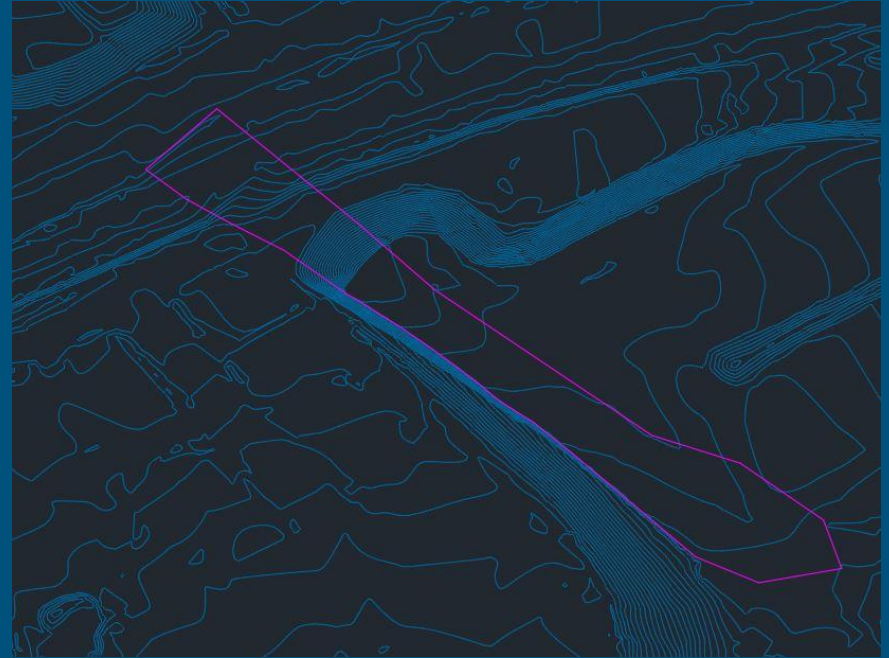


Figure 6: Inlet Watershed (NTS)



# Existing Cross-Sections

- Obtained from As-Builts Provided by ADOT
- Drawn within Civil 3D
- Includes
  - Pavement Structure
  - Lane Widths and Usage
  - Curb and Gutter Detail Callouts
  - Cross-Slopes
  - Sidewalk Detail Callouts
  - Embankment Detail Callouts

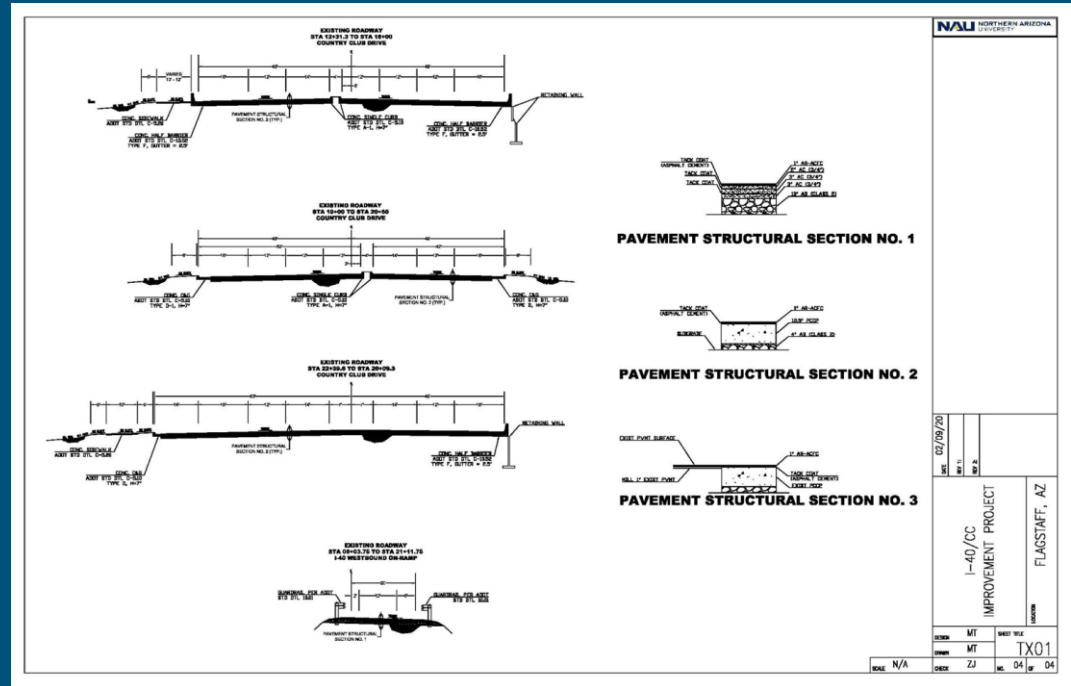


Figure 7: Typical Cross-Sections (NTS)



# References

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- [1] Primatech (2020). *Interstate 40 East Flagstaff Traffic Interchange at SR 89 and US 66*. [online] Arizona Department of Transportation, pp.7, 8, 16, 18. Available at: <http://file:///C:/Users/mlt289/AppData/Local/Downloads/SR89%20and%20US66%20TI.pdf> [Accessed 9 Feb. 2020].
- [2] City of Flagstaff Engineering Division (2009). *CITY OF FLAGSTAFF STORMWATER MANAGEMENT DESIGN MANUAL*. Flagstaff: City of Flagstaff, pp.3-1, 3-3, 3-4.
- [3] Arizona Department of Transportation (2020). *Roadway Design Guidelines*. Arizona Department of Transportation, pp.600-6, Appendix C.

# Questions?

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