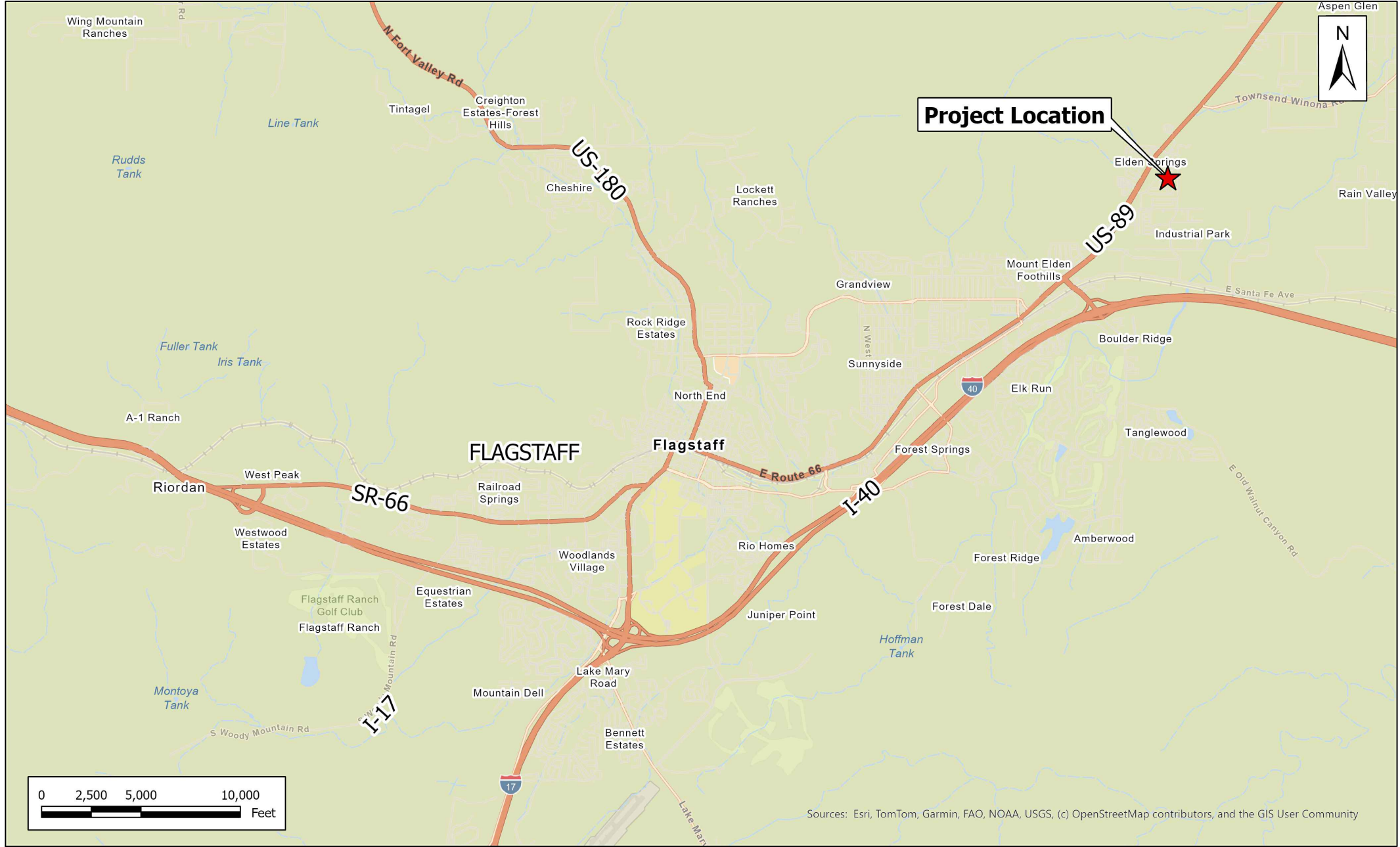


REDESIGN OF PENSTOCK WASH FOR THE SMOKERISE NEIGHBORHOOD

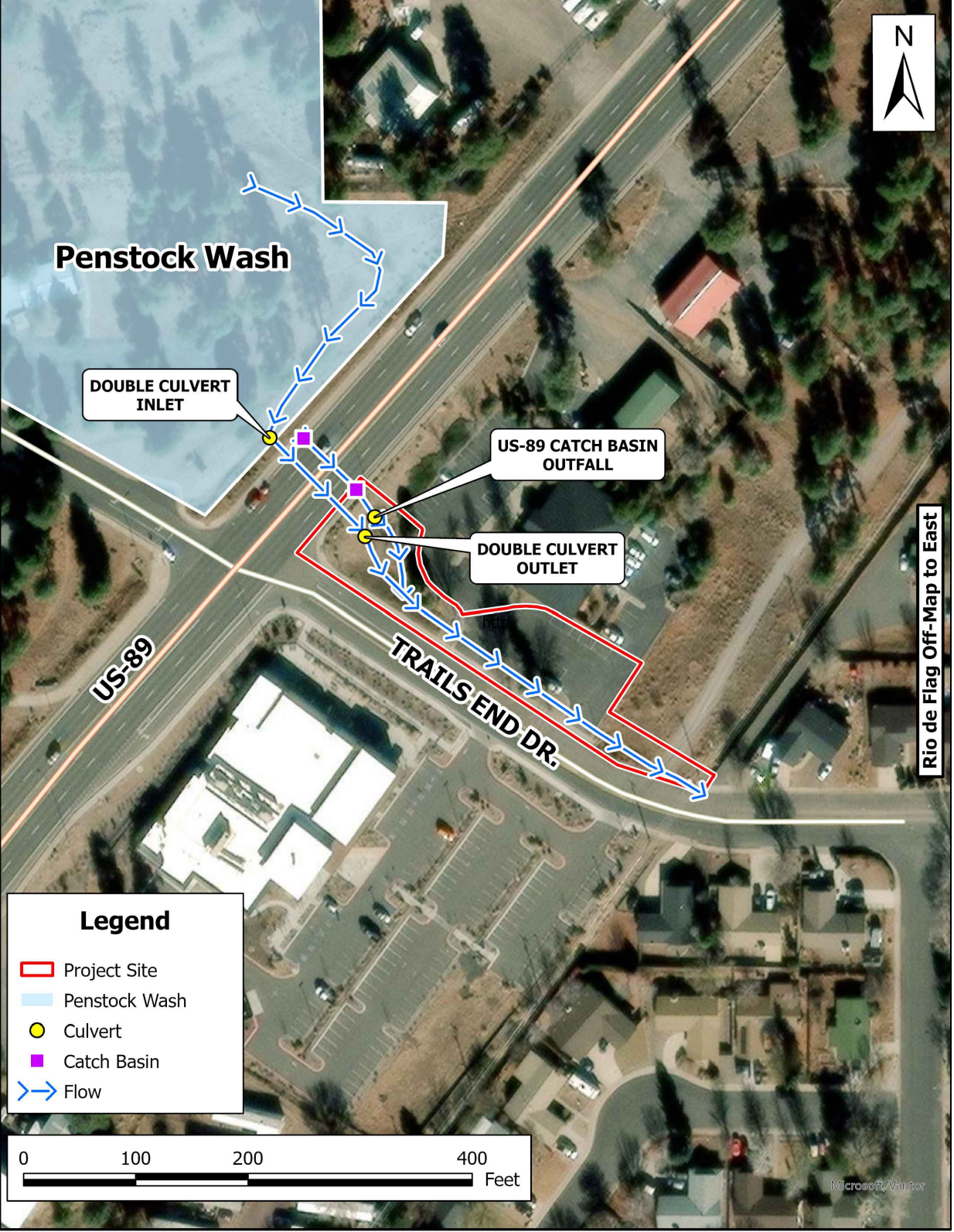
AGUA JACKS

NORTHERN ARIZONA UNIVERSITY

PROJECT VICINITY MAP



SITE MAP



INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES
- 3 TOPOGRAPHIC MAP
- 4 EXISTING MAP
- 5 PROPOSED MAP
- 6 FLOODPLAIN MAP
- 7 GENERAL DETAILS
- 8 CULVERT DESIGN

PREPARED FOR:

CITY OF FLAGSTAFF—STORMWATER DIVISION
CHASE MCLEOD, STORMWATER ENGINEER

DESIGN STANDARDS:

CITY OF FLAGSTAFF STORMWATER DESIGN MANUAL
FEMA FLOODPLAIN MANAGEMENT REGULATIONS
NRCS TR-55

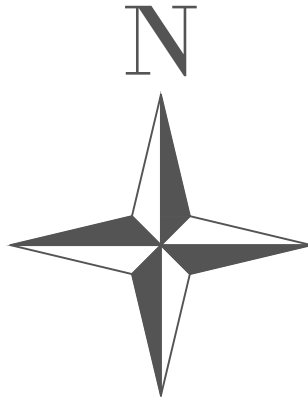
PROJECT OBJECTIVE:

THE OBJECTIVE OF THIS PROJECT IS TO REDUCE FLOODING IMPACTS IN THE SMOKERISE NEIGHBORHOOD BY EVALUATING AND REDESIGNING PENSTOCK WASH IN COMPLIANCE WITH CITY OF FLAGSTAFF AND FEMA STANDARDS.

CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

COVER SHEET

SHEET NUMBER:	01
TOTAL SHEET NUMBER:	08



SECTION 13-06-007 GENERAL NOTES

A. GENERAL

1. APPROVAL OF THESE PLANS BY THE CITY OF FLAGSTAFF IS VALID FOR ONE (1) YEAR. IF CONSTRUCTION IS NOT INITIATED WITHIN THIS PERIOD, PLANS SHALL BE RESUBMITTED FOR REVIEW.
 2. ALL WORK SHALL CONFORM TO THE CITY OF FLAGSTAFF STORMWATER MANAGEMENT DESIGN MANUAL (2025) AND APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
 3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
 4. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AT LEAST 24 HOURS PRIOR TO START OF CONSTRUCTION.
 5. ALL MATERIALS AND WORKMANSHIP SHALL MEET ASTM, AASHTO, AND CITY STANDARDS.
 6. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES. CALL ARIZONA 811 PRIOR TO EXCAVATION.
 7. THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL IN ACCORDANCE WITH MUTCD.
 8. ANY DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- B. SITE CONDITIONS
9. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
 10. EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED UNLESS OTHERWISE APPROVED.
 11. ALL SEDIMENT, VEGETATION, AND DEBRIS SHALL BE REMOVED FROM CHANNELS AND CULVERTS PRIOR TO INSTALLATION OF IMPROVEMENTS.
 12. ALL DISTURBED AREAS SHALL BE STABILIZED AFTER CONSTRUCTION.

C. DRAINAGE AND CULVERT DESIGN

13. PROVIDE 18-INCH DIAMETER CULVERT PIPE AT GRAVEL ROAD CROSSING.
14. PROVIDE MINIMUM 6-INCH CONCRETE COVER ABOVE CULVERT PIPE.
15. CULVERT SHALL BE INSTALLED WITH PROPER BEDDING, BACKFILL, AND COMPACTION PER CITY STANDARDS.
16. DRAINAGE IMPROVEMENTS ARE DESIGNED TO INCREASE FLOW CONVEYANCE AND REDUCE ROADWAY FLOODING.
17. CHANNEL GRADING MAY BE REQUIRED TO DIRECT FLOW INTO CULVERT.
18. DESIGN SHALL ACCOMMODATE 10-YEAR AND 100-YEAR STORM EVENTS.

D. EROSION CONTROL

19. IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES PER ADEQ AND CITY REQUIREMENTS.
20. INSTALL AND MAINTAIN BEST MANAGEMENT PRACTICES (BMPS) DURING CONSTRUCTION.
21. STABILIZE DISTURBED AREAS USING APPROVED METHODS.

E. CONSTRUCTION

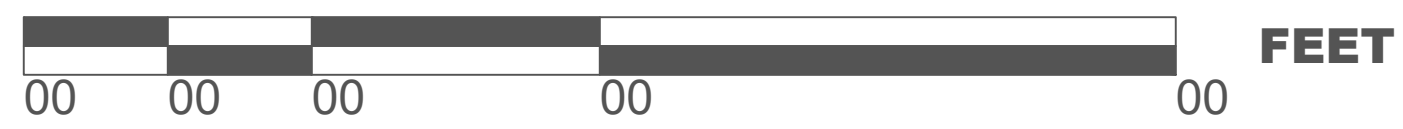
22. CONSTRUCTION STAKING SHALL BE PERFORMED BY A QUALIFIED SURVEYOR OR ENGINEER.
23. DISPOSE OF EXCESS MATERIALS IN ACCORDANCE WITH LOCAL REGULATIONS.
24. TEMPORARY ACCESS AND STAGING SHALL COMPLY WITH CITY REQUIREMENTS.
25. MINIMIZE IMPACTS TO TRAFFIC AND NEARBY RESIDENTS.

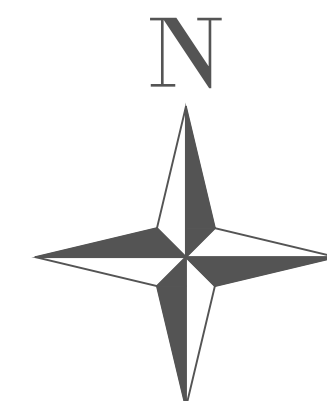
F. FINAL ACCEPTANCE

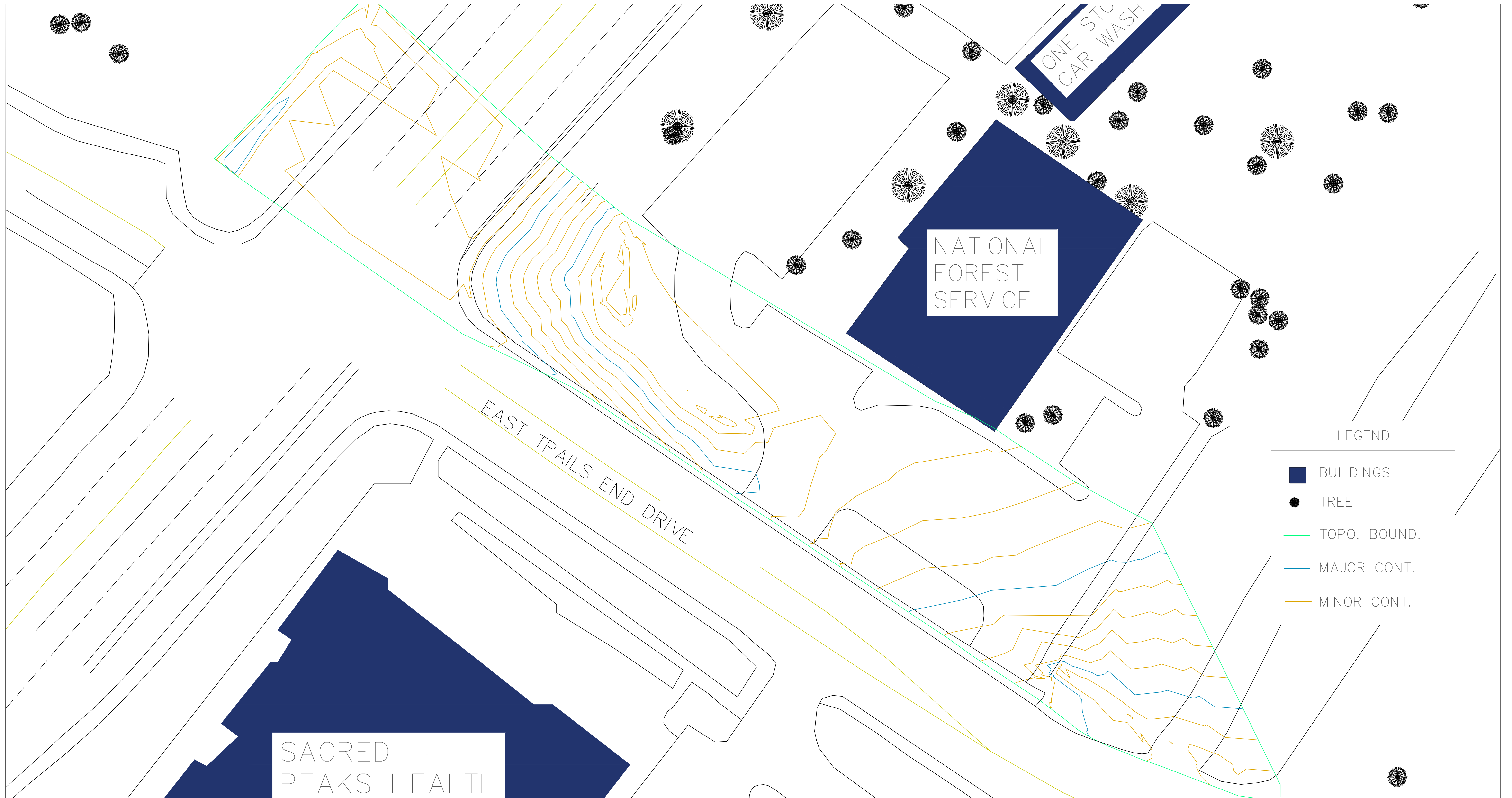
26. FINAL ACCEPTANCE SHALL BE SUBJECT TO CITY ENGINEER APPROVAL.
27. ALL DEFICIENCIES SHALL BE CORRECTED PRIOR TO FINAL ACCEPTANCE.

CREATED BY:	QY
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GENERAL NOTES

SHEET NUMBER:	02
TOTAL SHEET NUMBER:	08
	





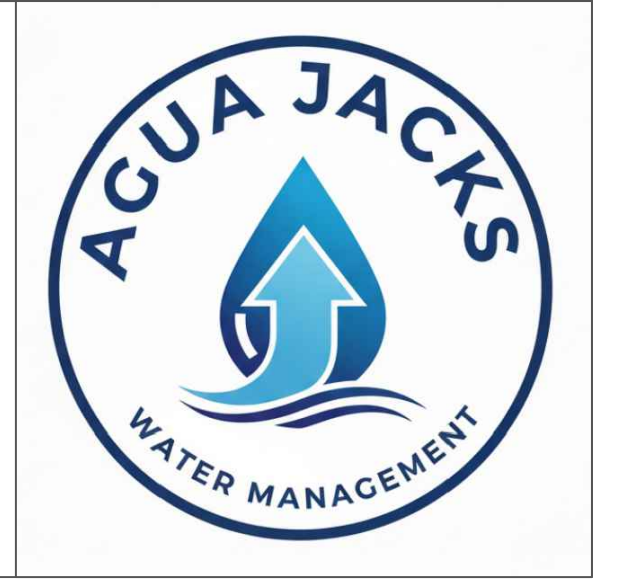
LEGEND

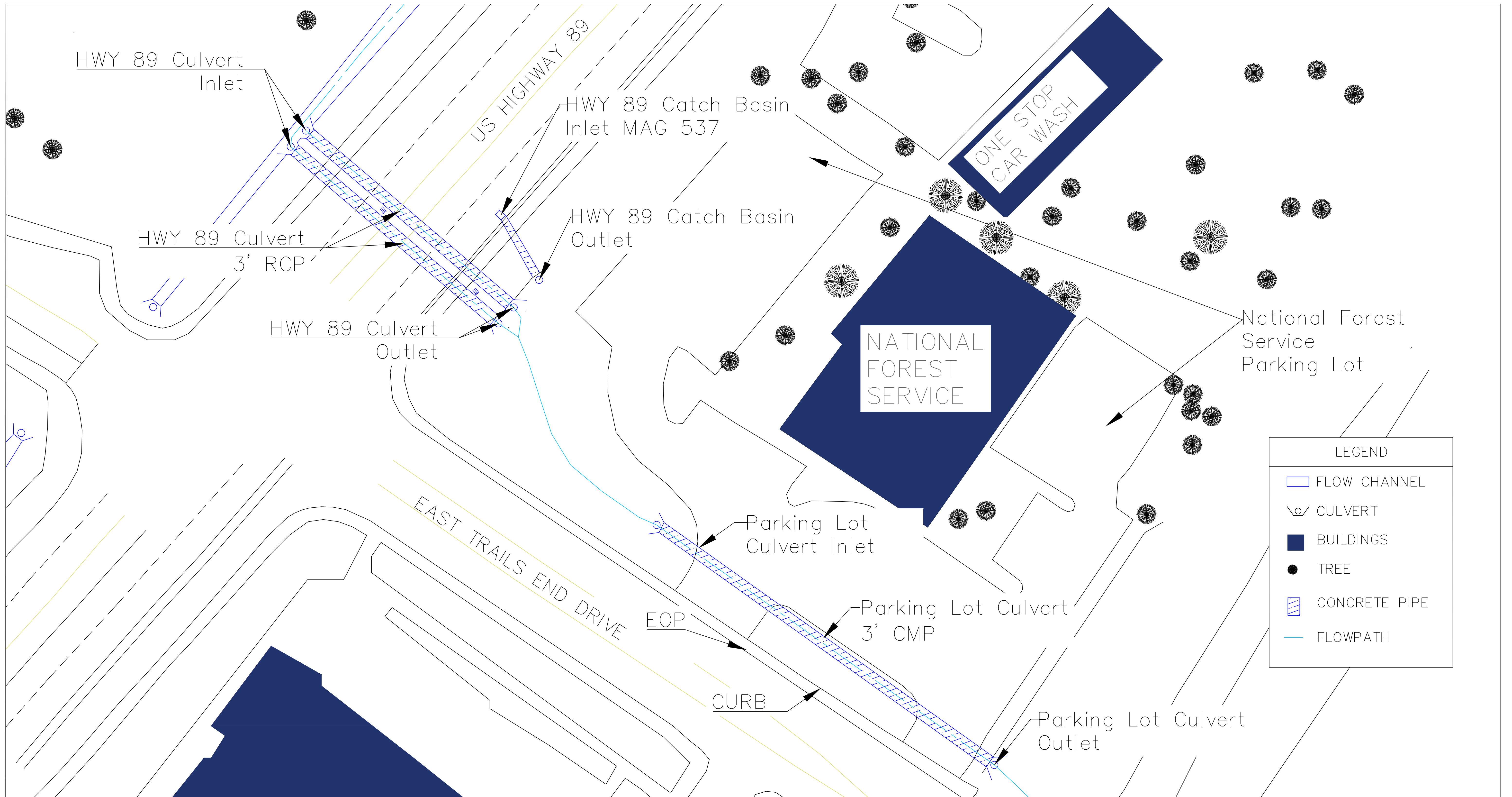
- BUILDINGS
- TREE
- TOPO. BOUND.
- MAJOR CONT.
- MINOR CONT.

CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

TOPOGRAPHIC MAP

SHEET NUMBER:	03
TOTAL SHEET NUMBER:	08





LEGEND

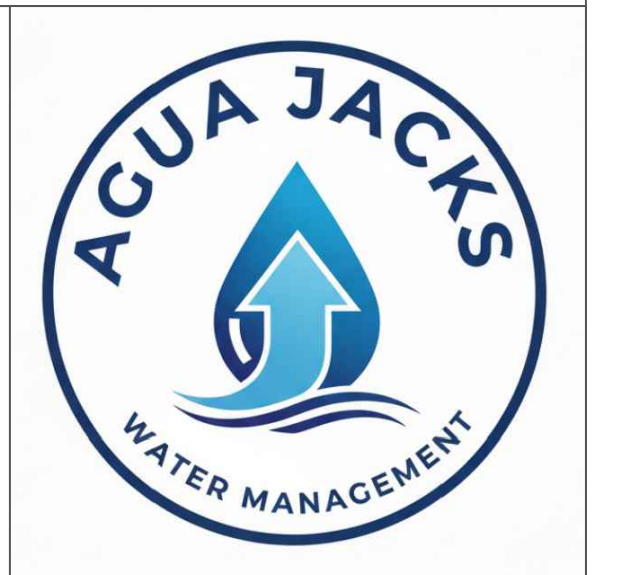
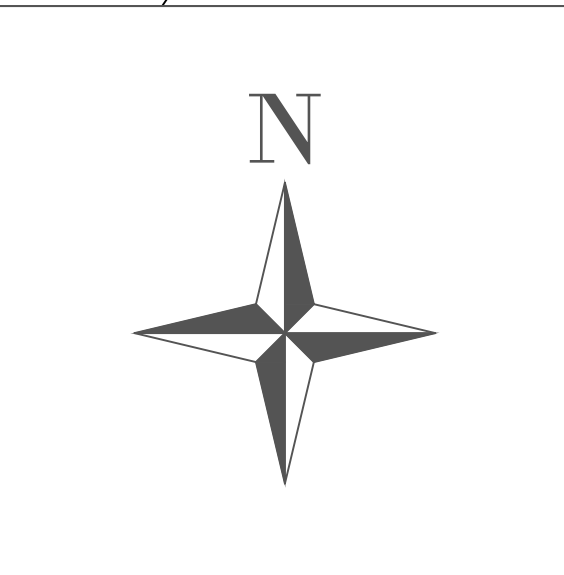
- FLOW CHANNEL
- CULVERT
- BUILDINGS
- TREE
- CONCRETE PIPE
- FLOWPATH

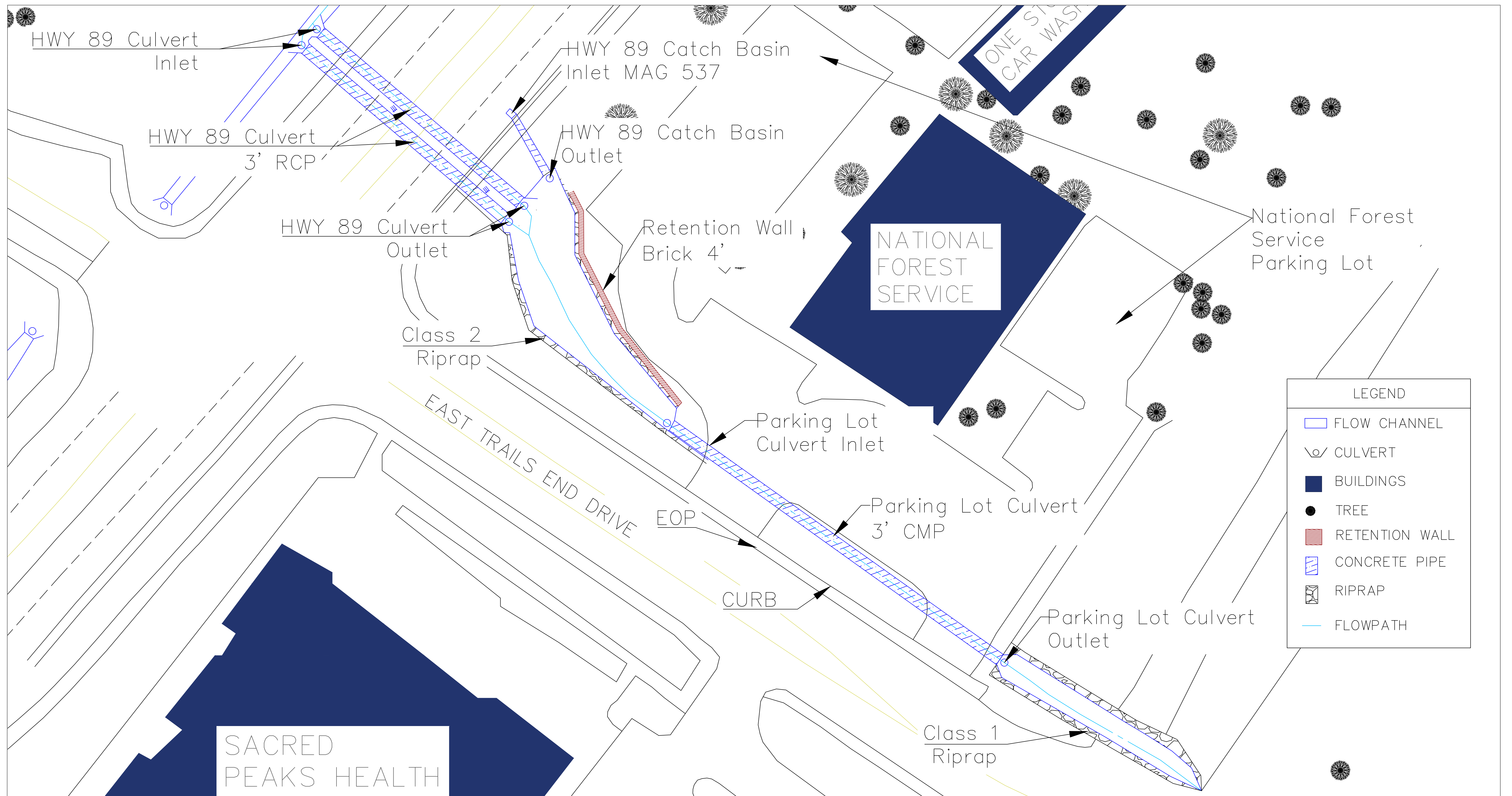
CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

EXISTING SITE

SHEET NUMBER:	04
TOTAL SHEET NUMBER:	08

0 15 30 60 120 FEET

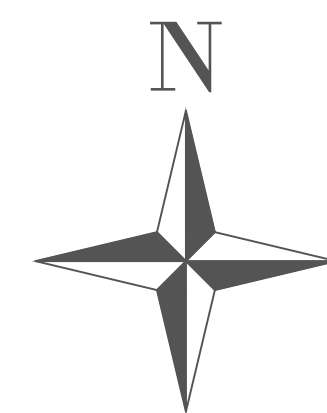
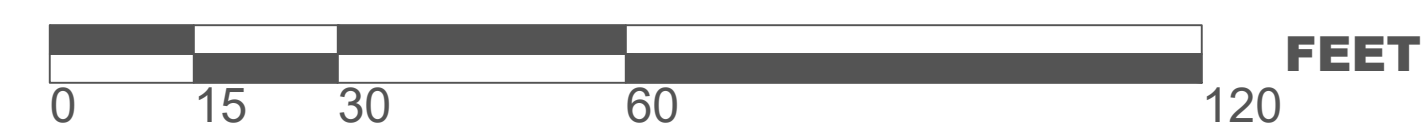




CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

PROPOSED SITE

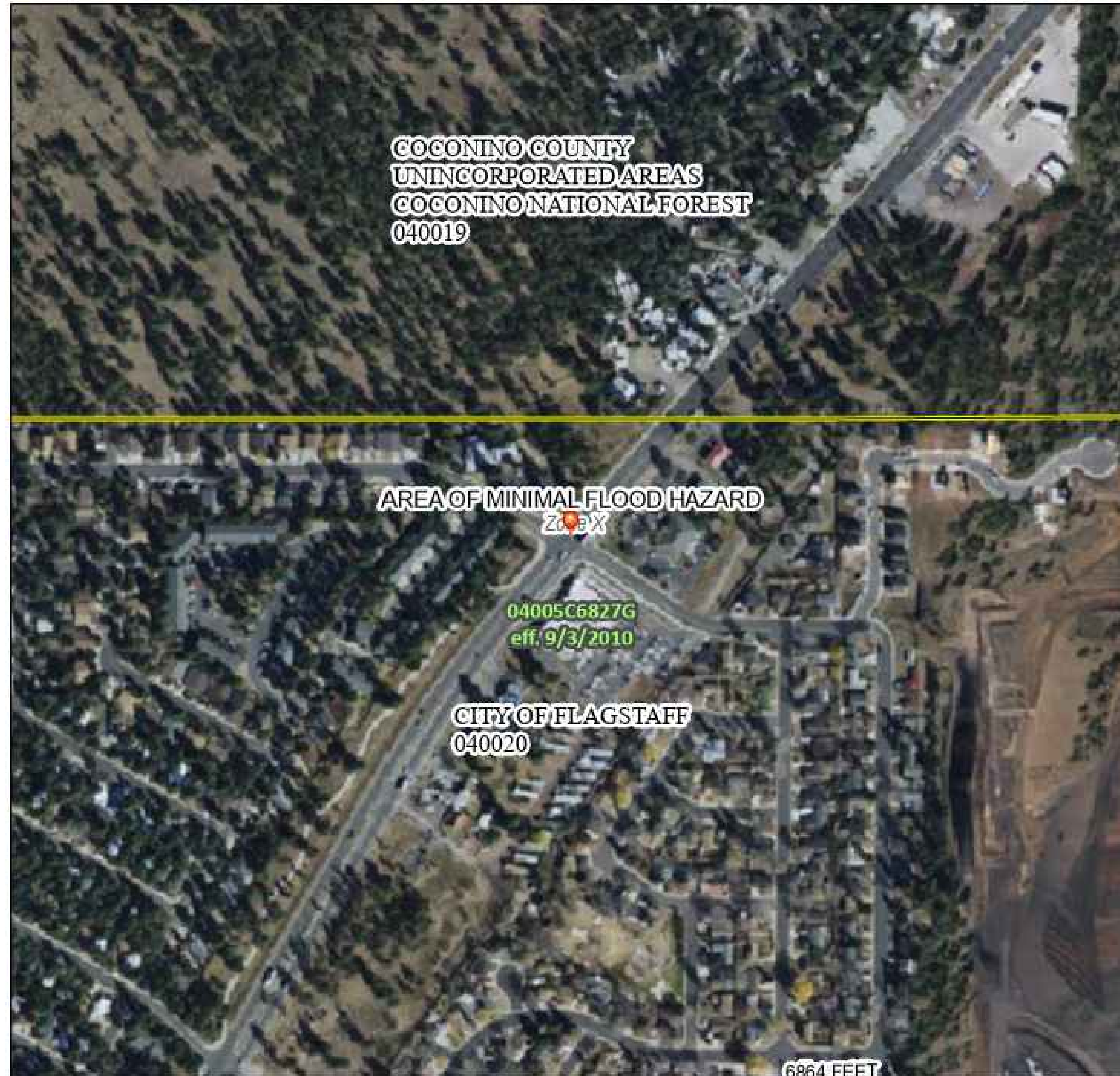
SHEET NUMBER:	05
TOTAL SHEET NUMBER:	08



National Flood Hazard Layer FIRMette



111°34'36"W 35°14'35"N



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, A1, 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 Cross Sections with 1% Annual Chance Water Surface Elevation
 - 17.5 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
- 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 5/5/2026 at 8:43 AM 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.

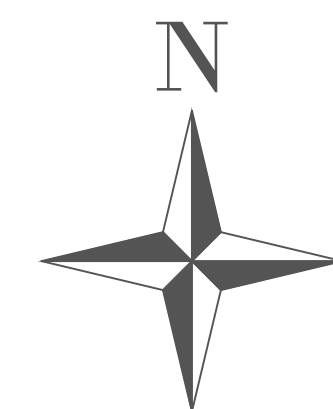
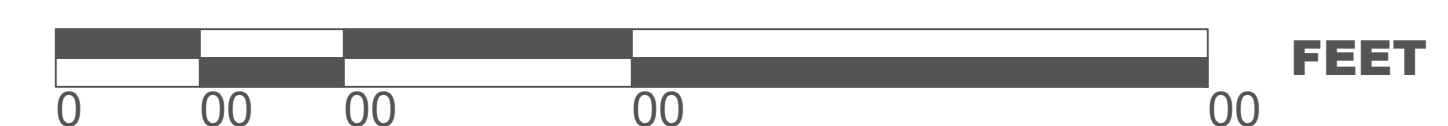
0 250 500 1,000 1,500 2,000 Feet 1:6,000 111°33'59"W 35°14'6"W
Basemap Imagery Source: USGS National Map 2023

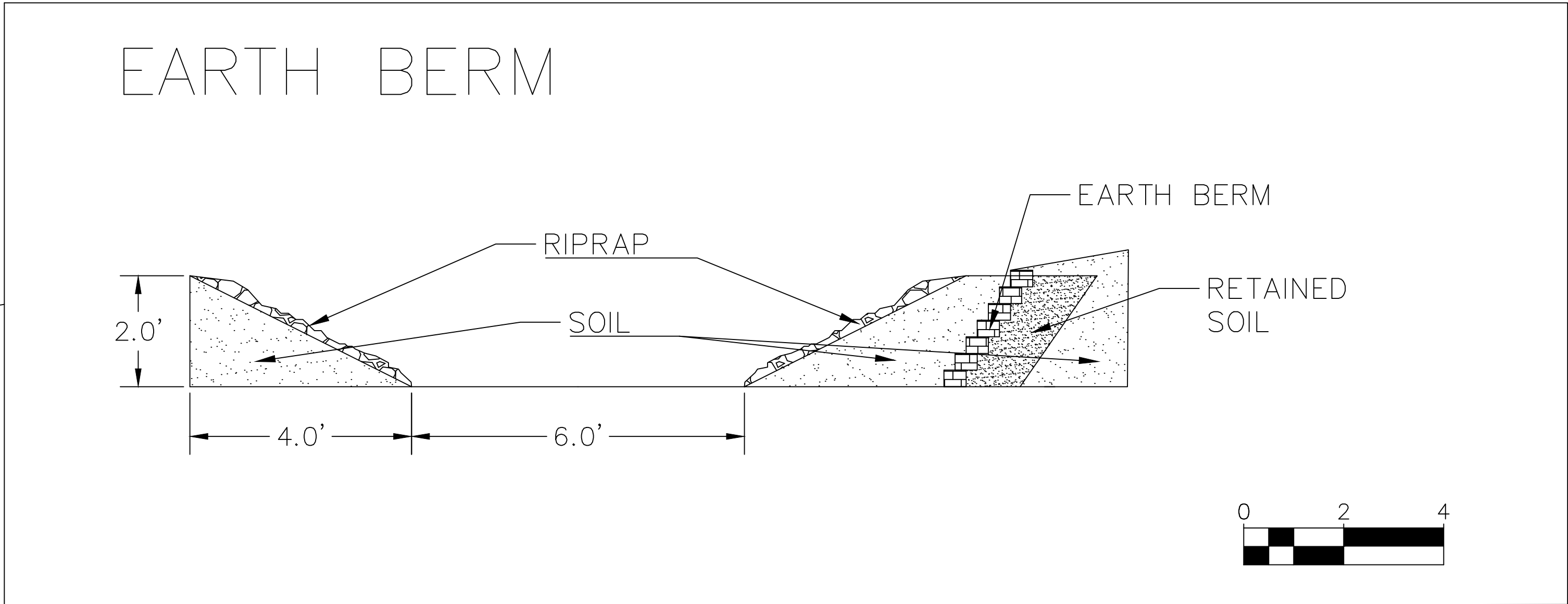
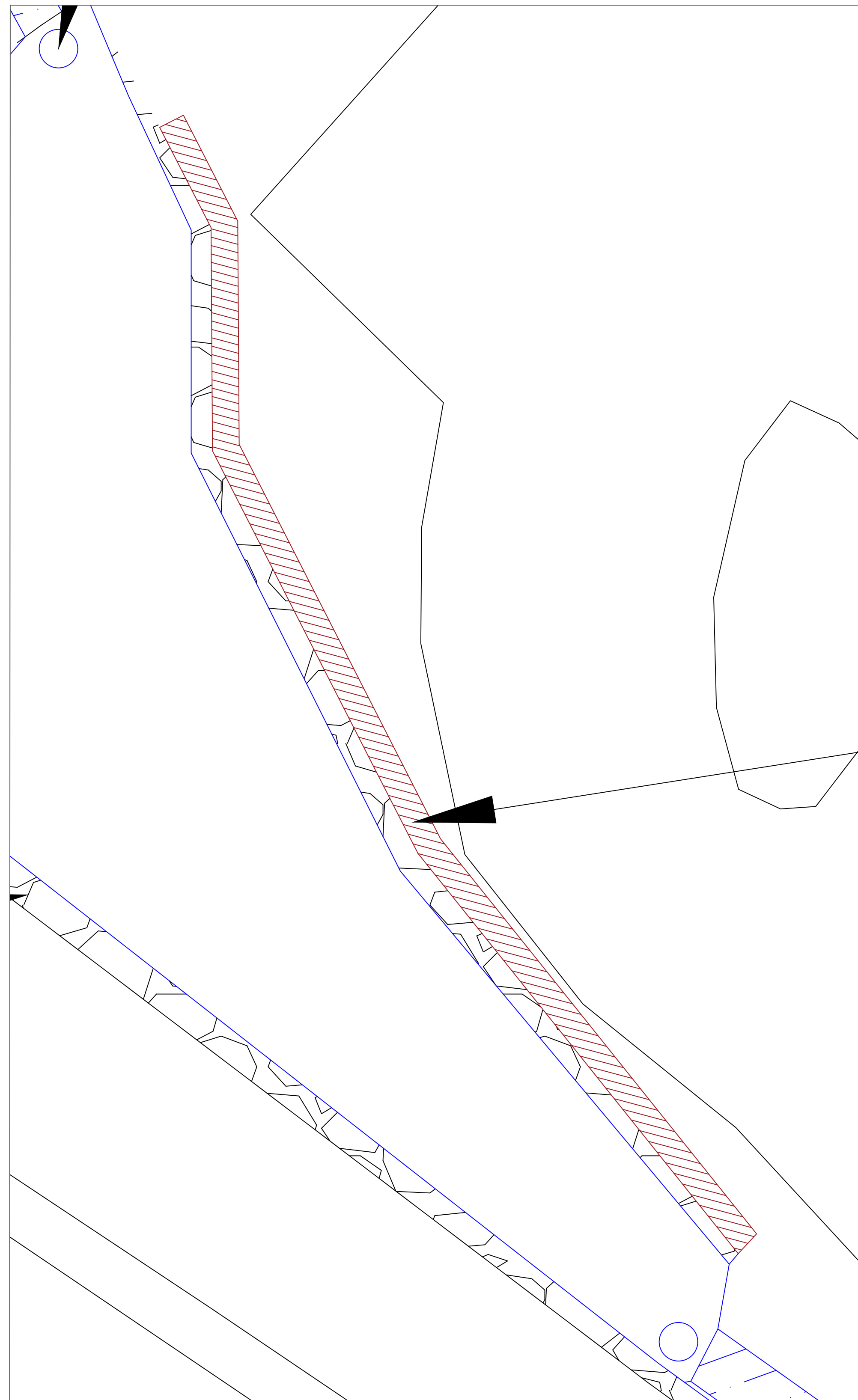
CREATED BY:	QY
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DATE:	05/2026
PROJECT:	SMOKERISE

FEMA Floodplain

SHEET NUMBER: 06

TOTAL SHEET NUMBER: 08

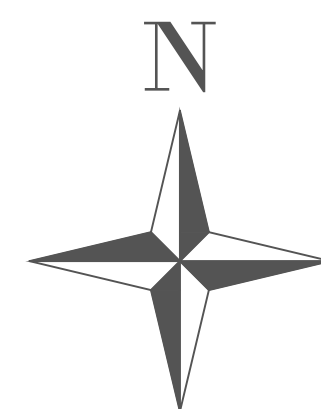




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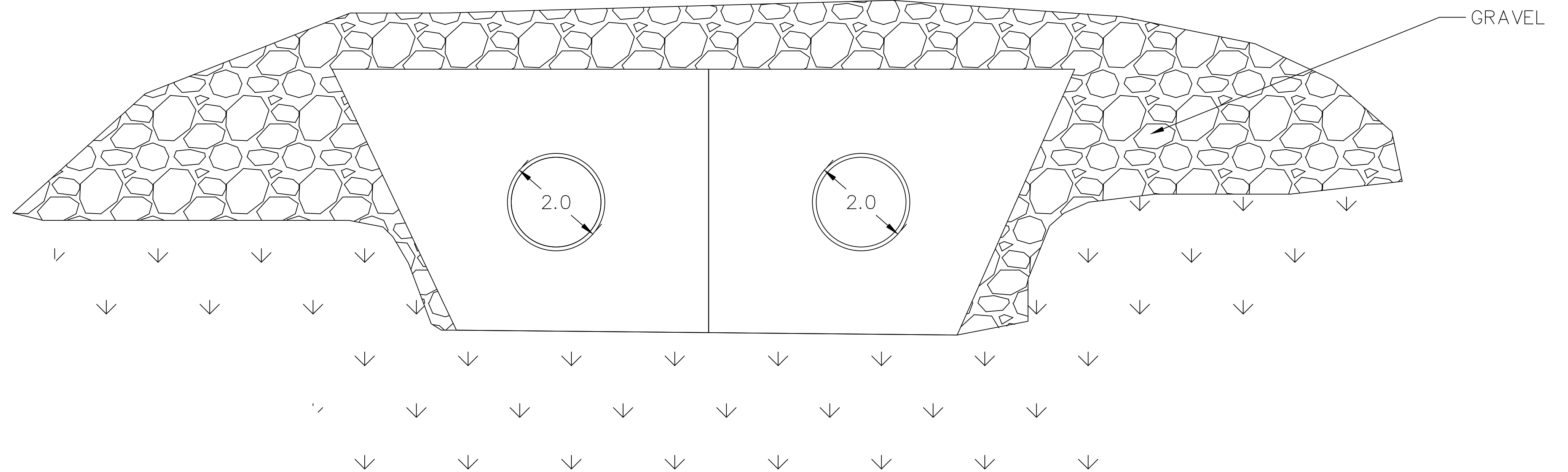
DESIGN DETAILS

SHEET NUMBER:	07
TOTAL SHEET NUMBER:	08



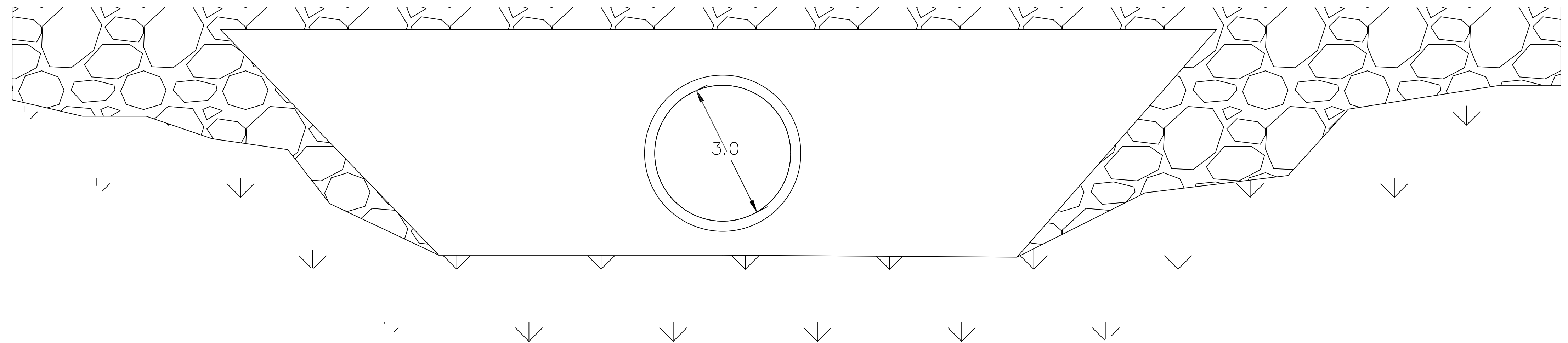
HIGHWAY 89 CULVERT (DOUBLE CIRCULAR CULVERT)

HWY 89 CULVERT	
LENGTH	120'-0"
MANNING N	0.0190
INLET ELEV	6904.7500
OUTLET ELEV	6902.5000
DIAMETER	2*2.0



PARKING LOT CULVERT (SINGLE CIRCULAR CULVERT)

PARKING LOT CULVERT	
LENGTH	167.5000
MANNING N	0.0240
INLET ELEV	6894.2500
OUTLET ELEV	6886.3500
DIAMETER	3.0

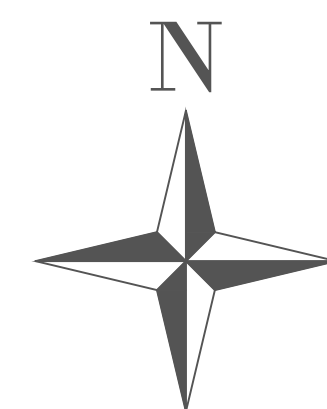
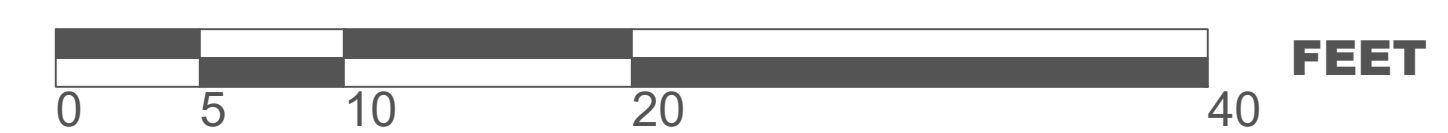


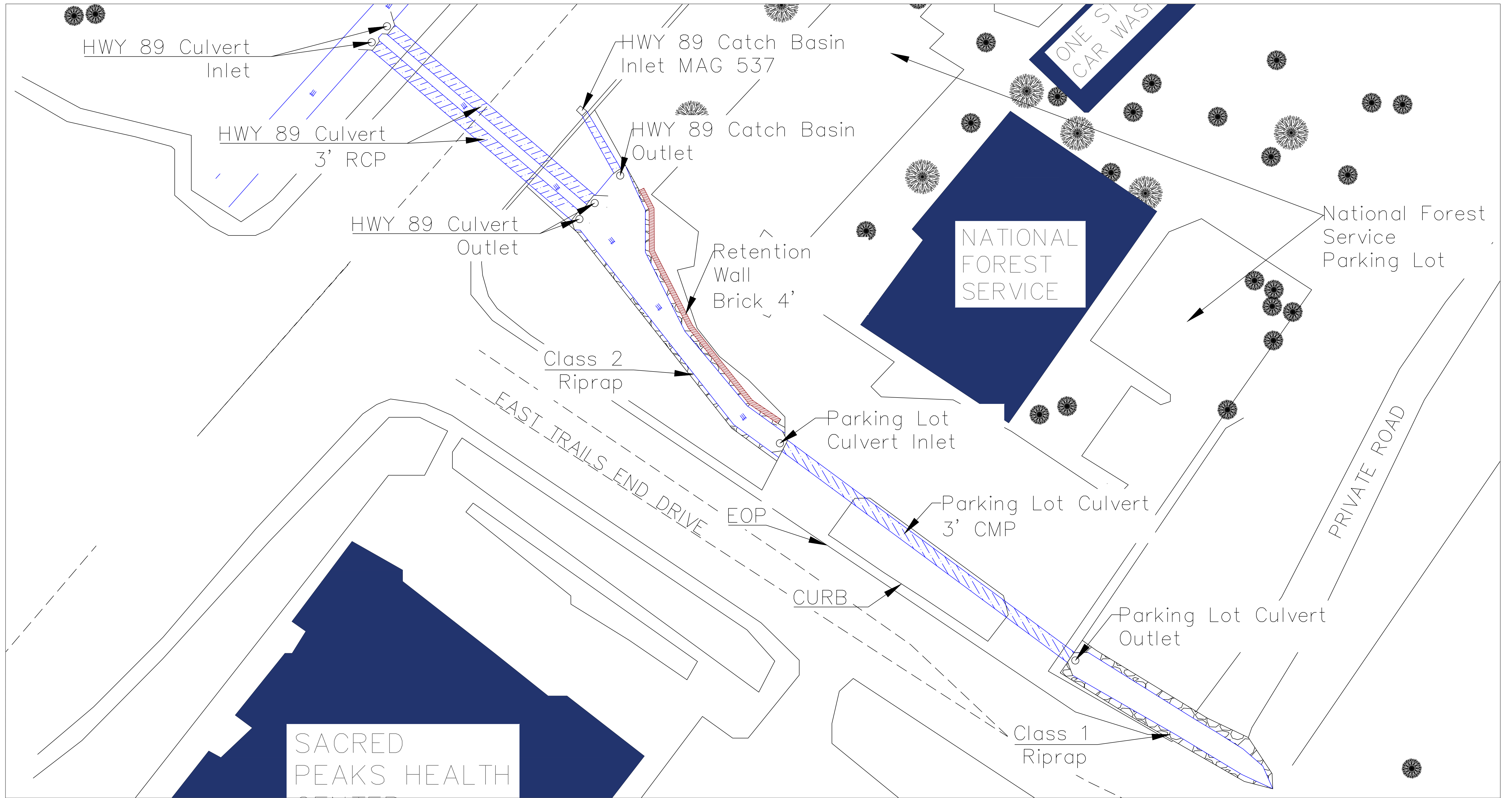
CULVERT DETAILS

CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

SHEET NUMBER: 08

TOTAL SHEET NUMBER: 08



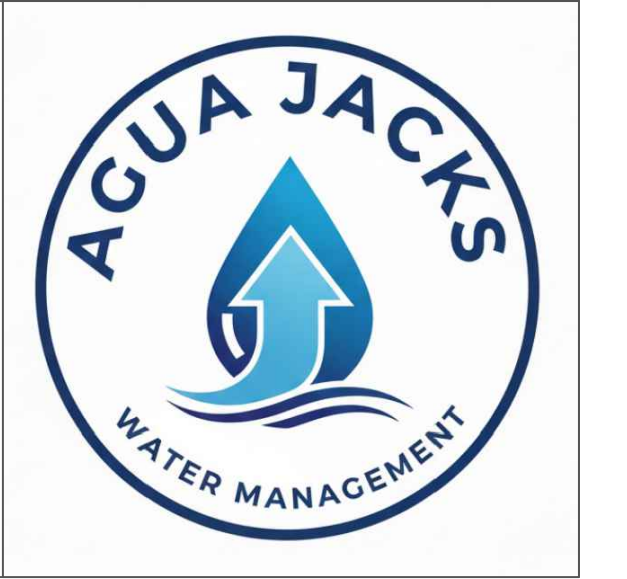


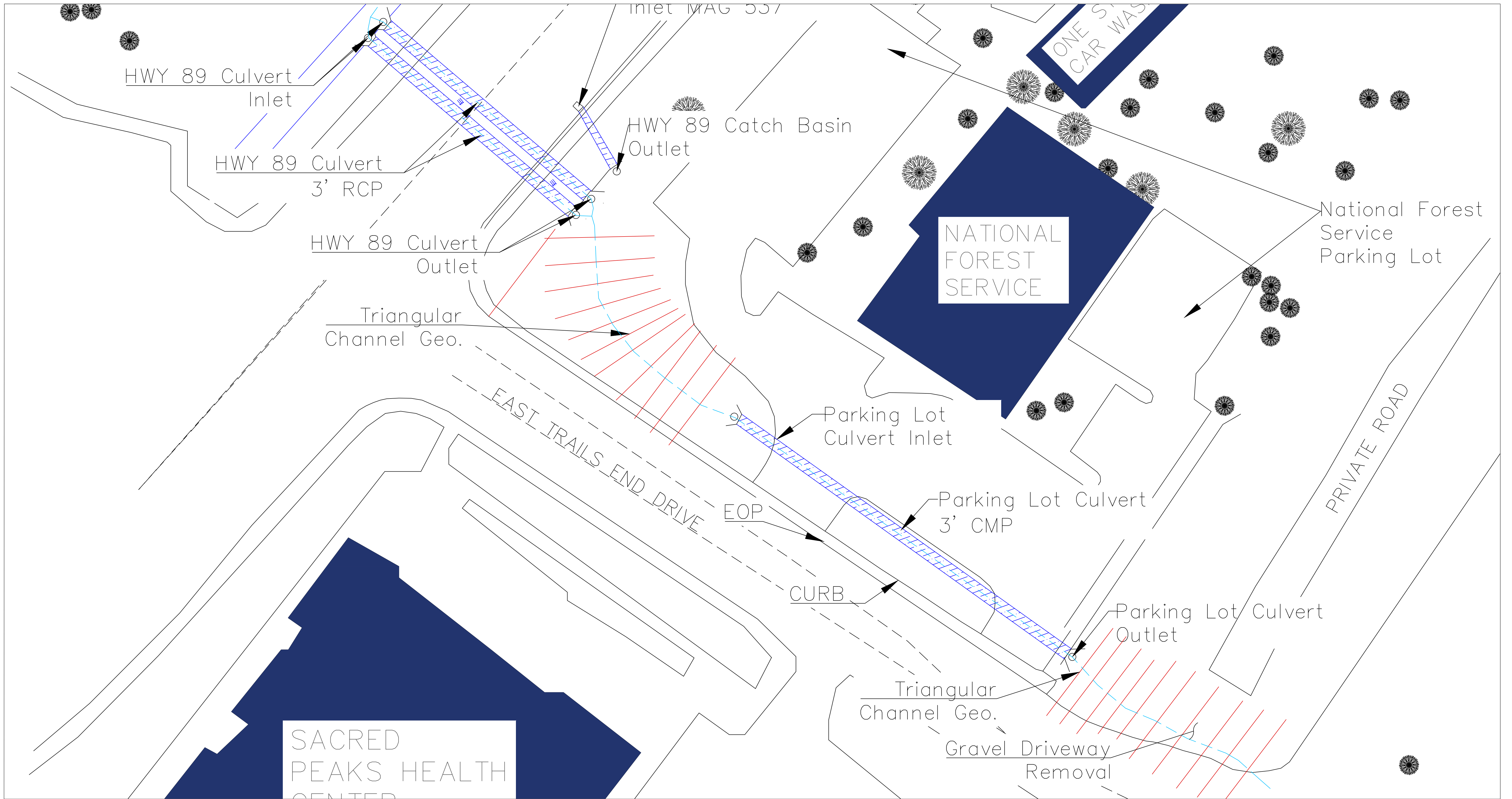
CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

ALTERNATIVE 1 PLAN VIEW

SHEET NUMBER:	A1
TOTAL SHEET NUMBER:	A3

0 15 30 60 120 FEET



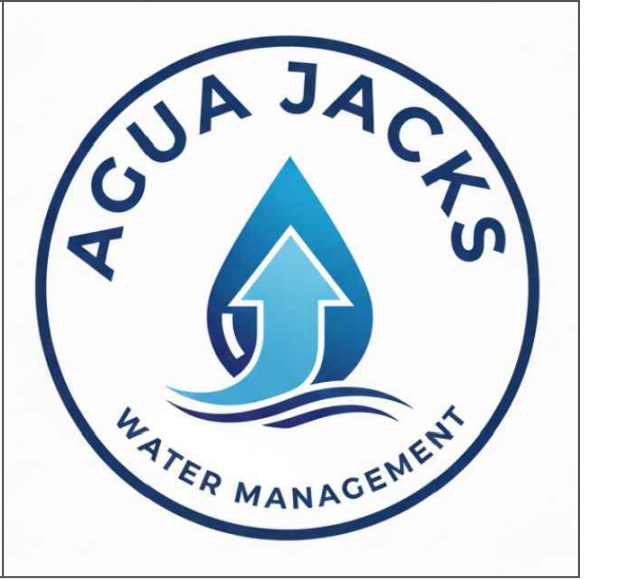


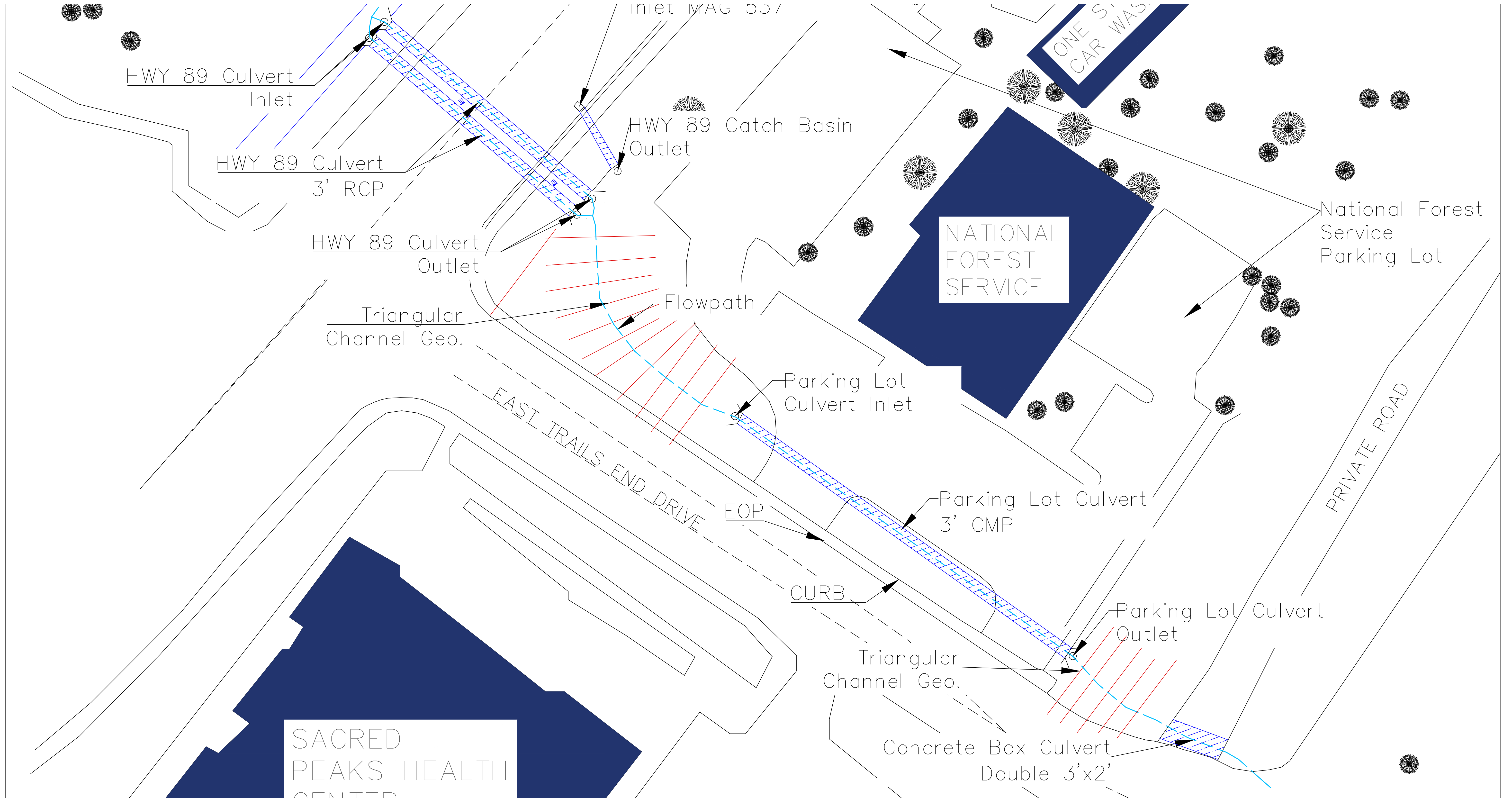
CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

ALTERNATIVE 2 PLAN VIEW

SHEET NUMBER:	A2
TOTAL SHEET NUMBER:	A3

0 15 30 60 120 FEET





CREATED BY:	QY
CHECKED BY:	MJB
DATE:	05/2026
PROJECT:	SMOKERISE

ALTERNATIVE 3 PLAN VIEW

SHEET NUMBER:	A3
TOTAL SHEET NUMBER:	A3

