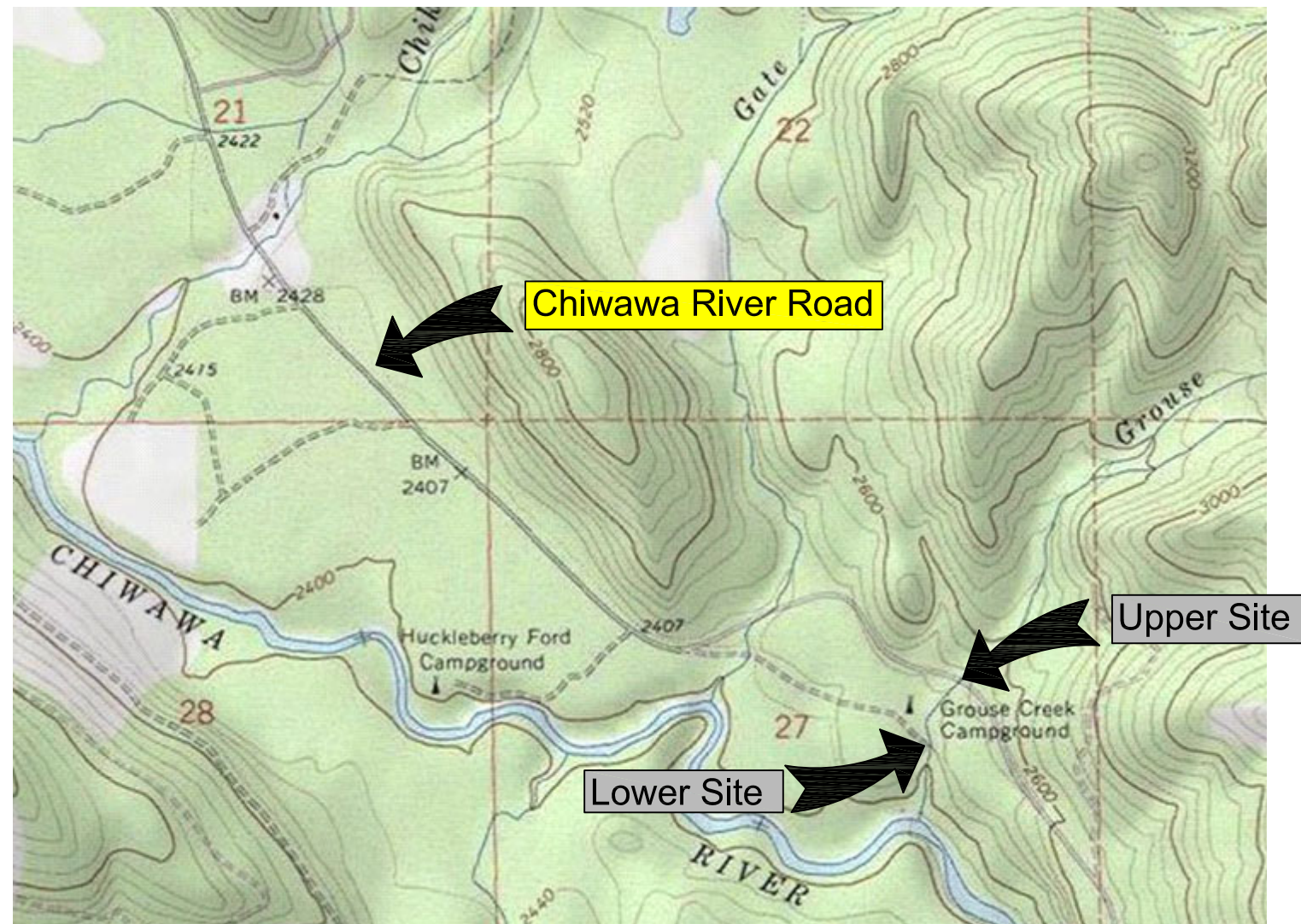


30 Percent Design Grouse Creek - Chiwawa River Road

Project Number XX-XXX

DRAWING INDEX:

1. Cover Sheet
2. Legend and Notes
3. Existing Site Plan
4. Site Plan Proposed
5. Road Profiles
6. Stream Profiles
7. Sections and Details
8. Road Profile
9. Traffic Detour



Grouse Creek - Chiwawa River Road

VICINITY MAP
NOT TO SCALE



Grouse Creek - Upper

Landowner: US Forest Service
Sec Twship Range: E 1/2 Section 27, T28N, R17E
Lat and Long: 47.897793, -120.696453



REV	DATE	BY	APPD	DESCRIPTION

SCALE VERIFICATION
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Waterfall Engineering

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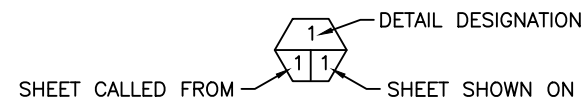
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7/15/22

Cover Sheet

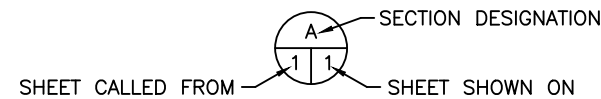
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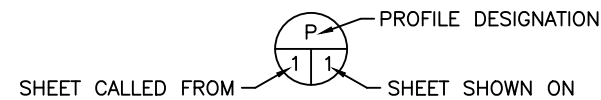
SHEET SYMBOLS



DETAIL CALLOUT

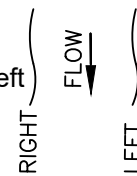


SECTION CALLOUT



PROFILE CALLOUT

References to Right and Left as viewed downstream



- " - INCHES
- ' - FEET
- APPROX. - APPROXIMATELY
- B&B - BALLED AND BURLAPPED
- BM - BENCH MARK
- CL - CENTERLINE
- CAL. - CALIPER
- CFS - CUBIC FEET PER SECOND
- CLR. - CLEARANCE
- CMP - CORRUGATED METAL PIPE
- CONC. - CONCRETE
- DIA. - DIAMETER
- ELEV. - ELEVATION
- EQ. - EQUAL
- FTG. - FOOTING
- HDPE - HIGH DENSITY POLYETHYLENE
- HT. - HEIGHT
- GAL. - GALLON
- I.D. - INSIDE DIAMETER
- I.E. - INVERT ELEVATION
- LBS. - POUNDS
- LWD - LARGE WOODY DEBRIS
- MAX. - MAXIMUM
- MFG. - MANUFACTURER'S
- MHW - MEAN HIGH WATER
- MHHW - MEAN HIGHER HIGH WATER
- MIN. - MINIMUM
- MISC. - MISCELLANEOUS

ABBREVIATIONS

- MISC. - MISCELLANEOUS
- MPH - MILES PER HOUR
- O.C. - ON CENTER
- O.D. - OUTSIDE DIAMETER
- OHW - ORDINARY HIGH WATER
- PK - PARKER-KALON
- R.O.W. - RIGHT OF WAY
- REQ'D - REQUIRED
- SEC. - SECTION
- S.F. - SQUARE FEET
- SHT. - SHEET
- SPEC'S. - PROJECT SPECIFICATIONS
- STA. - STATION
- SS - STAINLESS STEEL
- TEMP. - TEMPORARY
- TYP. - TYPICAL
- W.S. - WATER SURFACE
- WSDOT - WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
- WSEL - WATER SURFACE ELEVATION

LEGEND

- PROPERTY LINE
- RIGHT OF WAY LINE
- CENTERLINE
- EXISTING FENCE
- BUILDING LINE
- INDEX CONTOUR LINE
- UNDERGROUND POWER
- EXISTING WATER LINE
- EXISTING CALLOUT
- NEW CALLOUT
- SURVEY POINT
-
- PROJECT BENCH MARK
- BORING LOCATIONS
- SANDBAGS
- NOTE CALLOUT
- STATION CALLOUT
- PHOTO CALLOUT
- FOUND SURVEY MONUMENT
- SET CONTROL POINT
- POWER POLE
- MANHOLE
- UTILITY CABINET
- LIGHT POST
- TREE
- WATER VALVE
- OWNERSHIP REFERENCE
- PAVEMENT
- CONCRETE
- FILL
- ROCK/GRAVEL
- UNDISTURBED GRADE
- WETLAND DELINEATION
- DEMO
- ELEVATION MARKER
- TREE TO BE REMOVED
- TREE TO REMAIN

Survey is Based on Assumed Coordinates Completed by Waterfall Engineering

Control Points				
POINT	EASTING	NORTHING	ELEV	Description



Grouse Creek - Upper

Landowner: US Forest Service
 Sec Twnshp Range: E 1/2 Section 27, T28N, R17E
 Lat and Long: 47.897793, -120.696453



REV	DATE	BY	APPD	DESCRIPTION

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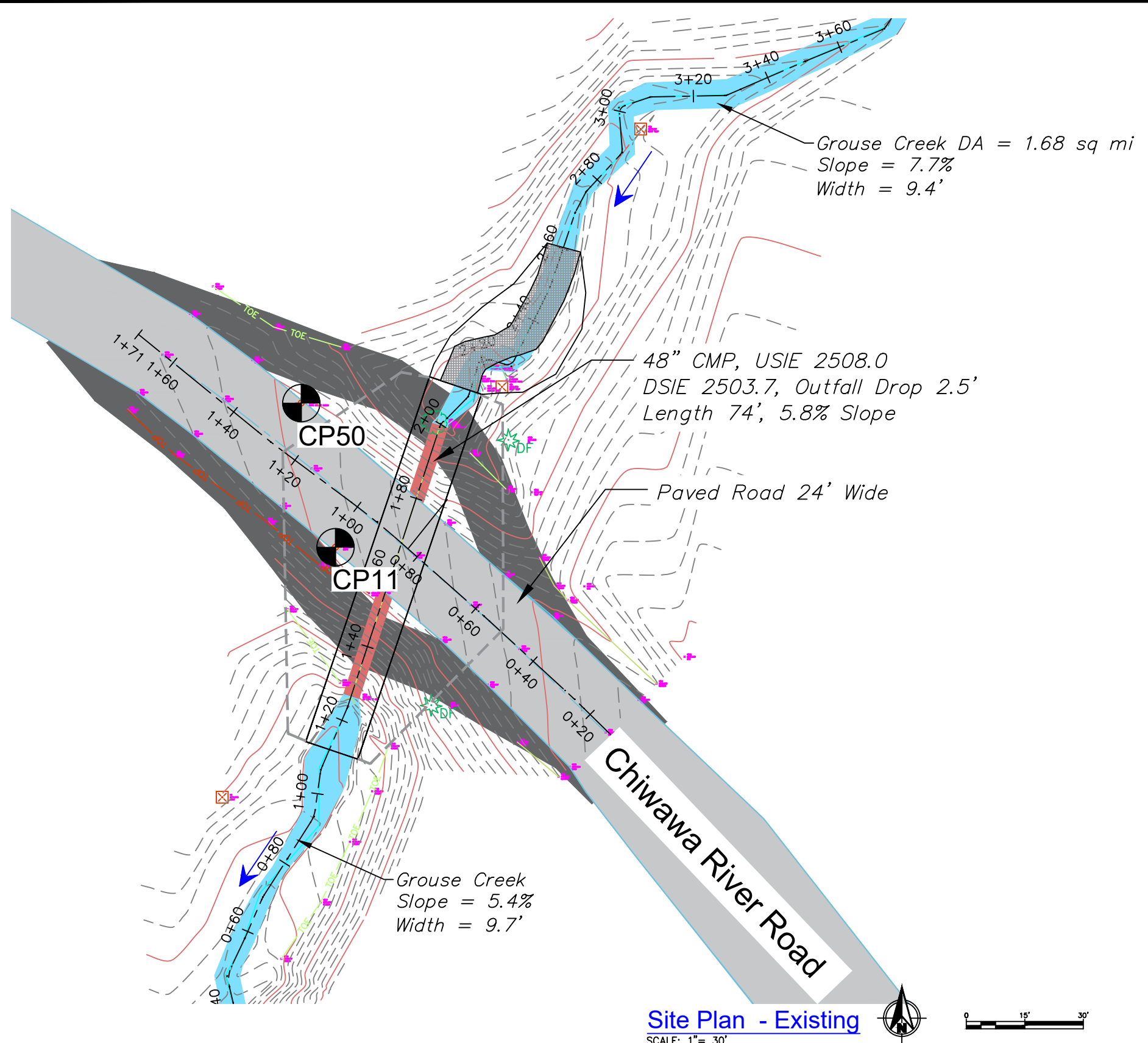
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Legend and Notes



Grouse Creek Pebble Counts:
 D₉₀ = 2-1/4"
 D₈₄ = 2"
 D₅₀ = 3/4"

Site Plan - Existing
 SCALE: 1" = 30'



Grouse Creek - Upper

Landowner: US Forest Service
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 Lat and Long: 47.897793, -120.696453



REV	DATE	BY	APPD	DESCRIPTION

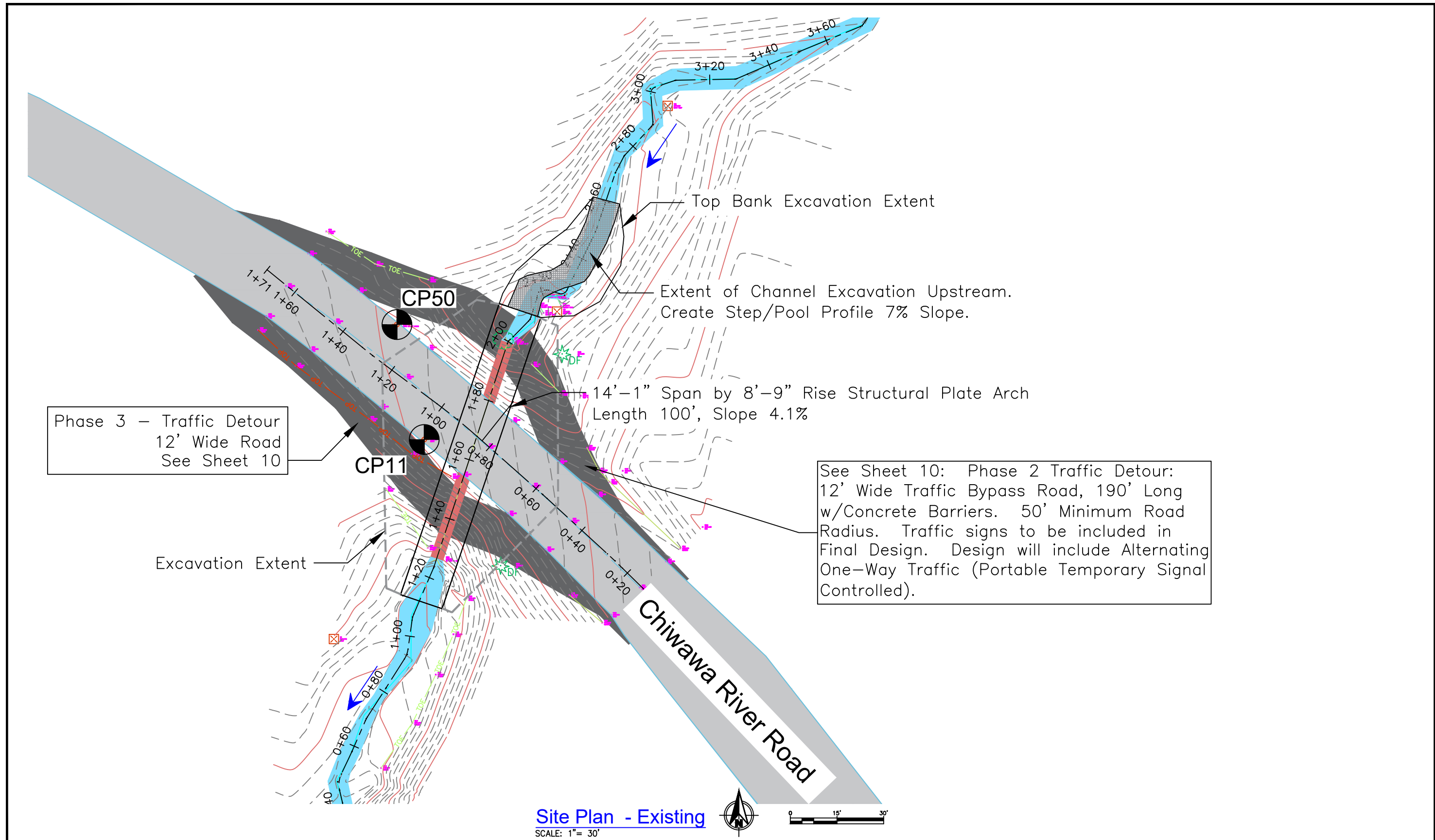
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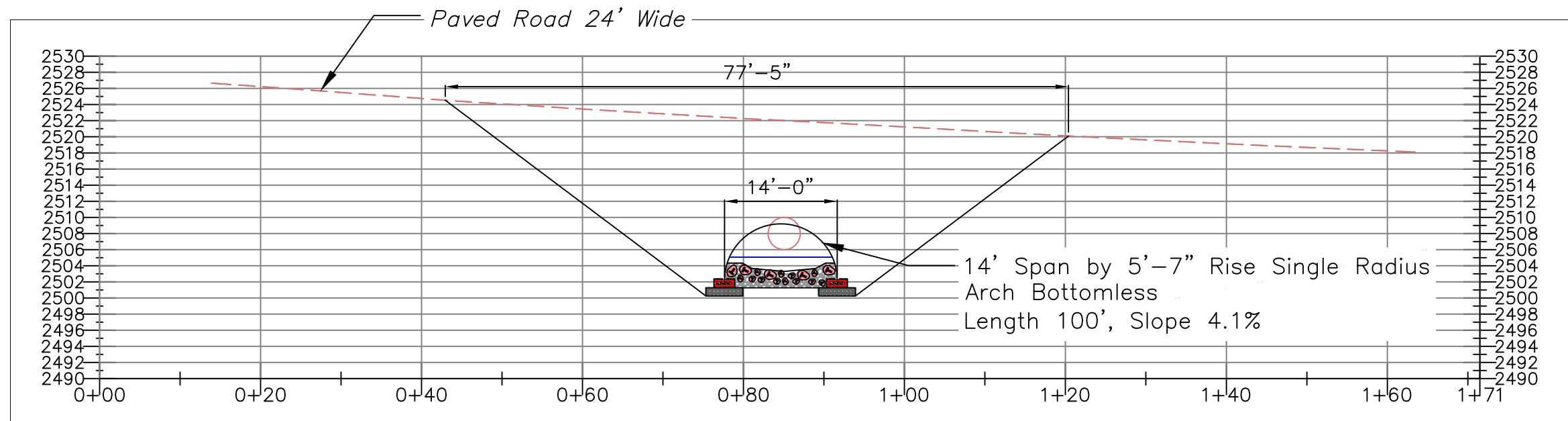
DATE:
7/15/22

Existing Site Plan



Site Plan - Existing
SCALE: 1" = 30'

	Grouse Creek - Upper		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> <th>APPD</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	BY	APPD	DESCRIPTION																DESIGN BY: Waterfall Engineering DRAWN BY: DATE: 4/12/23	Proposed Site Plan	4 SHEET OF 9
	REV		DATE	BY	APPD	DESCRIPTION																				
Landowner: US Forest Service Sec Twnshp Range: E 1/2 Section 27, T28N, R17E Lat and Long: 47.897793, -120.696453	SCALE VERIFICATION <small>BAR IS ONE INCH ON ORIGINAL DRAWING.</small> <small>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</small>																									



Road Section - View Downstream

SCALE: 1" = 16'



Grouse Creek - Upper

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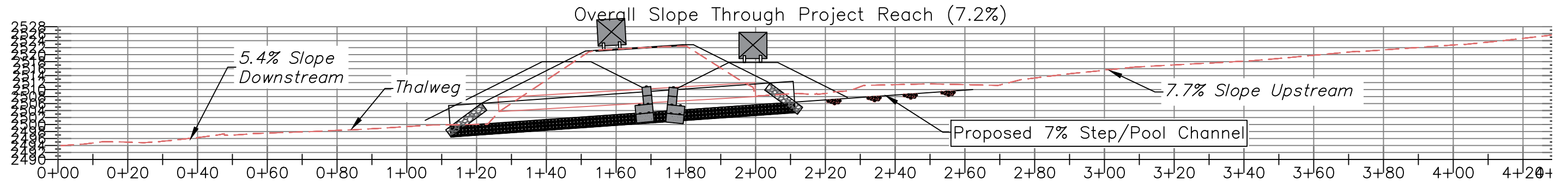
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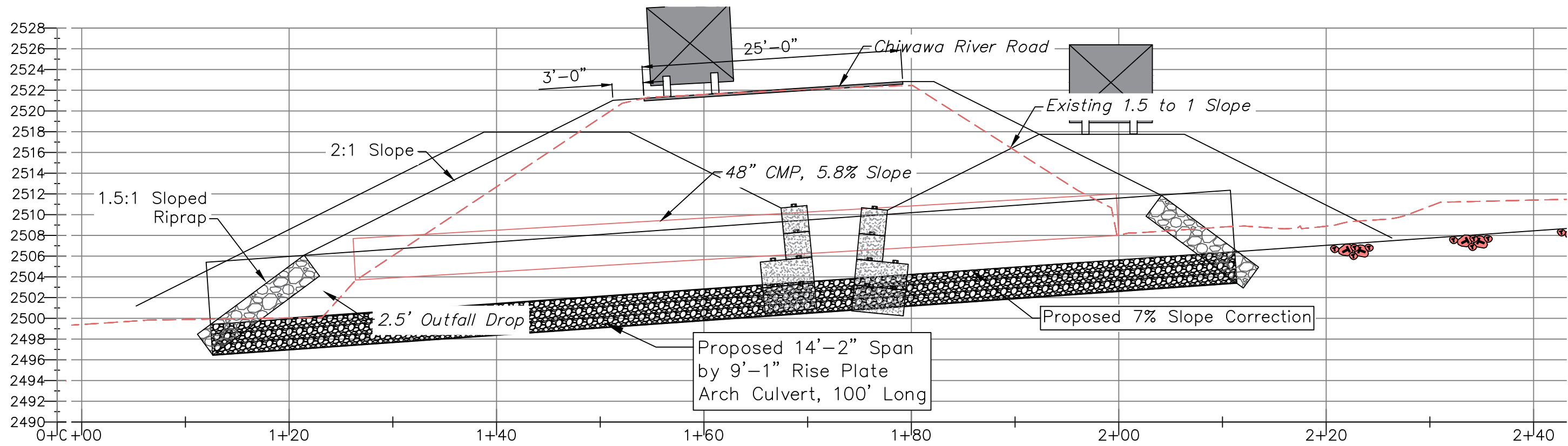
DATE:
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Road Profile



Long Stream Profile

Scale: 1" = 30'



Stream Profile

Scale: 1" = 10'



Grouse Creek - Upper

Landowner: US Forest Service
 Sec Twnshp Range: E 1/2 Section 27, T28N, R17E
 Lat and Long: 47.897793, -120.696453



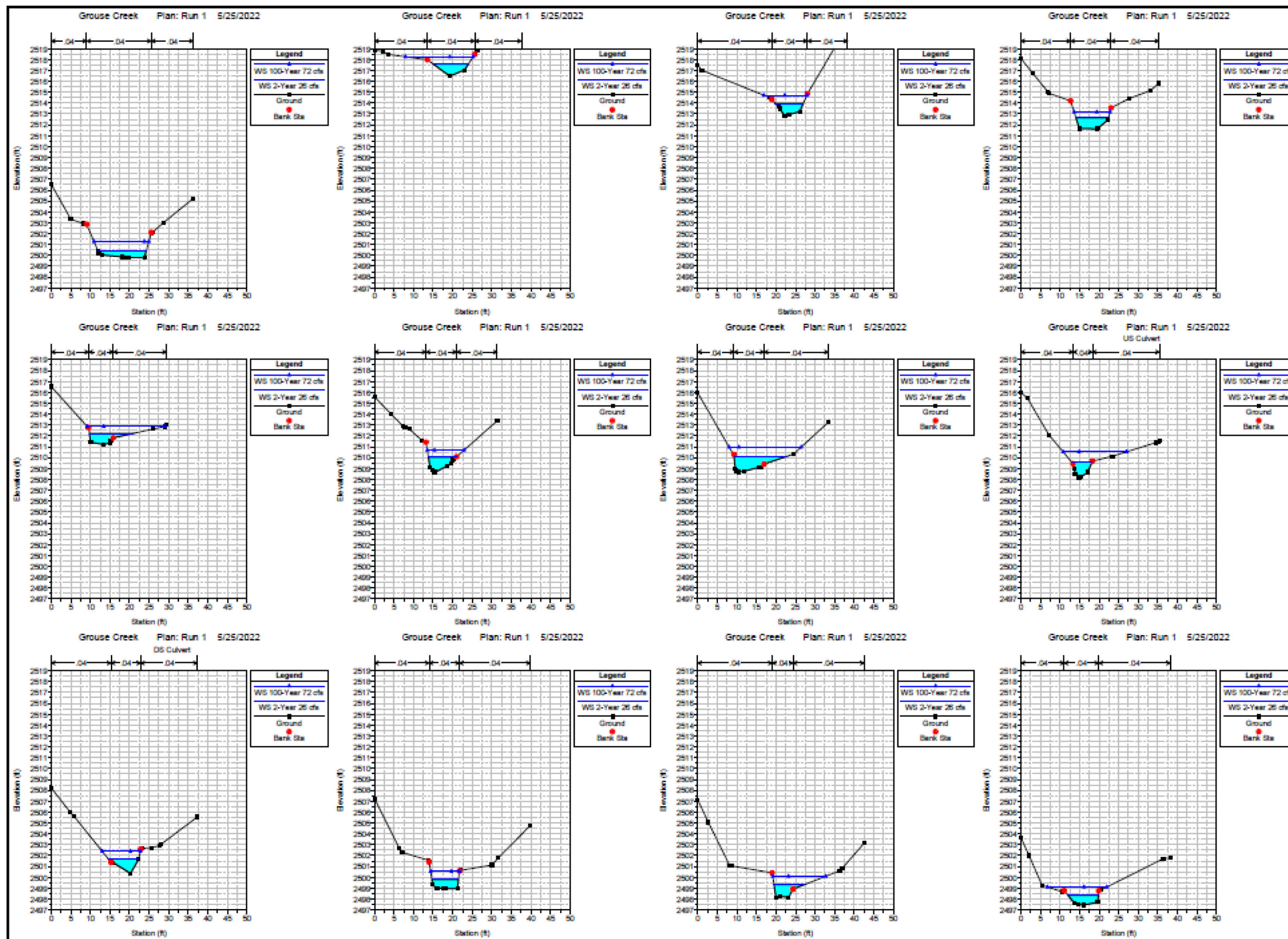
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Stream Profile

6 **9**
 SHEET OF



HEC RAS Top Width (ft)	
2-Year	100-Year
9.0	17.3
7.1	11.0
8.3	9.2
11.1	19.9
7.1	9.4
13.2	18.4
5.2	16.2
7.7	9.7
12.4	14.0
6.8	7.4
7.8	13.6
7.8	15.2
8.6	13.4
Average	



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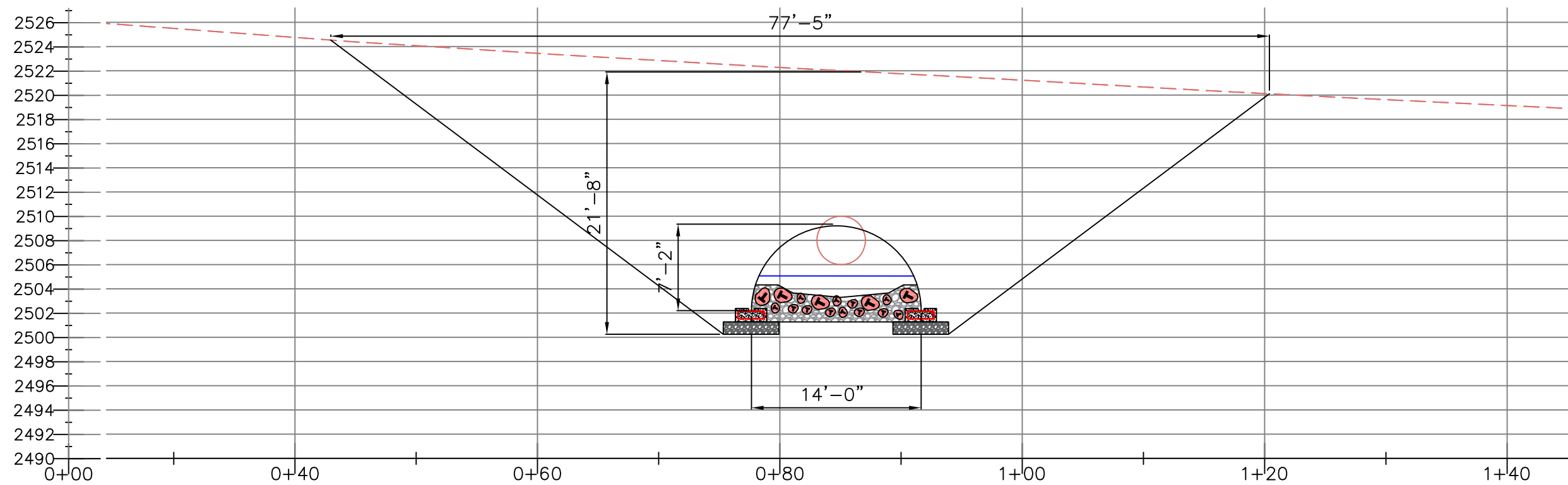
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DATE:
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Stream Sections



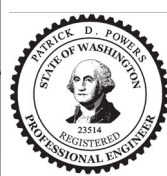
Bottomless Culvert Option - Section

Scale: 1" = 10'



Grouse Creek - Upper

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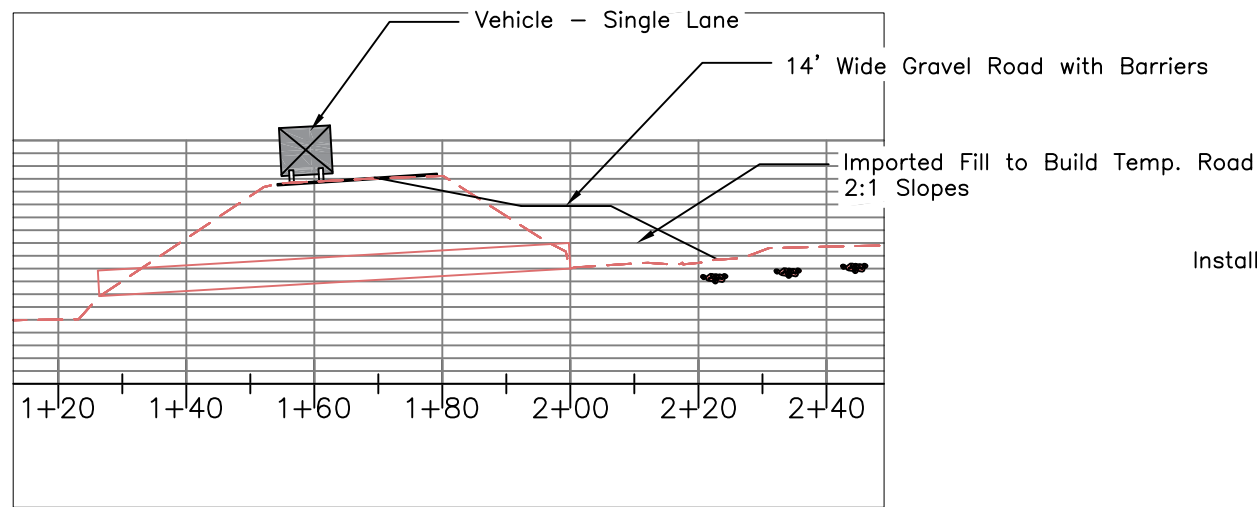


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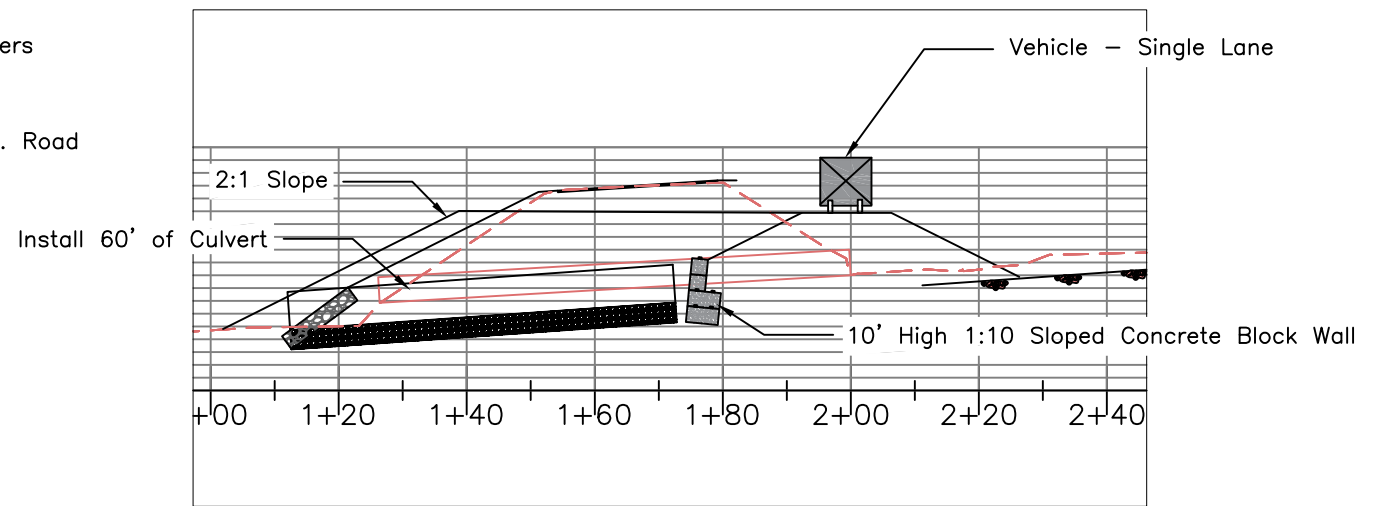
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7/15/22

Road Profile



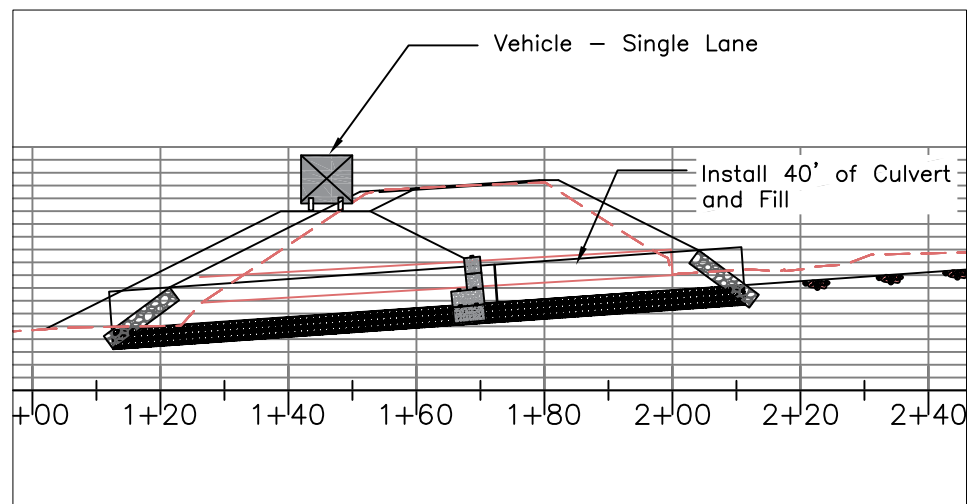
Phase 1: Culvert Profile - Showing Traffic Phases

SCALE: 1"= 20'



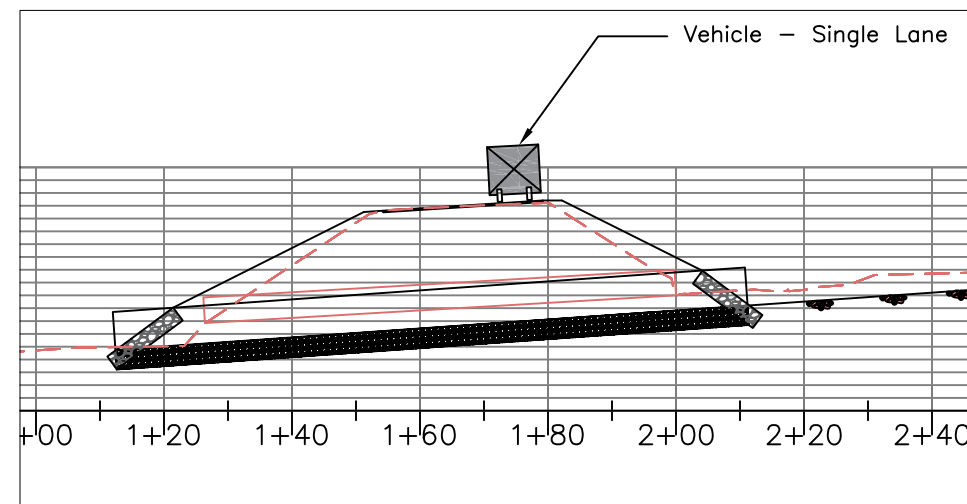
Phase 2: Culvert Profile - Showing Traffic Phases

SCALE: 1"= 20'



Phase 3: Culvert Profile - Showing Traffic Phases

SCALE: 1"= 20'



Phase 4: Culvert Profile - Showing Traffic Phases

SCALE: 1"= 20'



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4/19/23

Traffic Detour