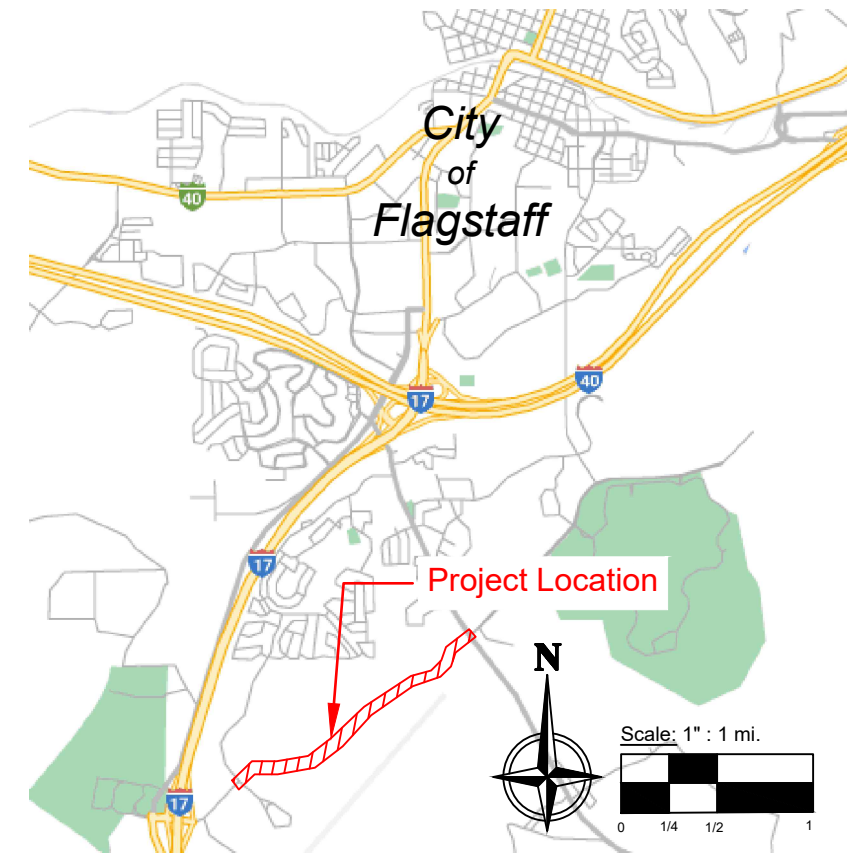


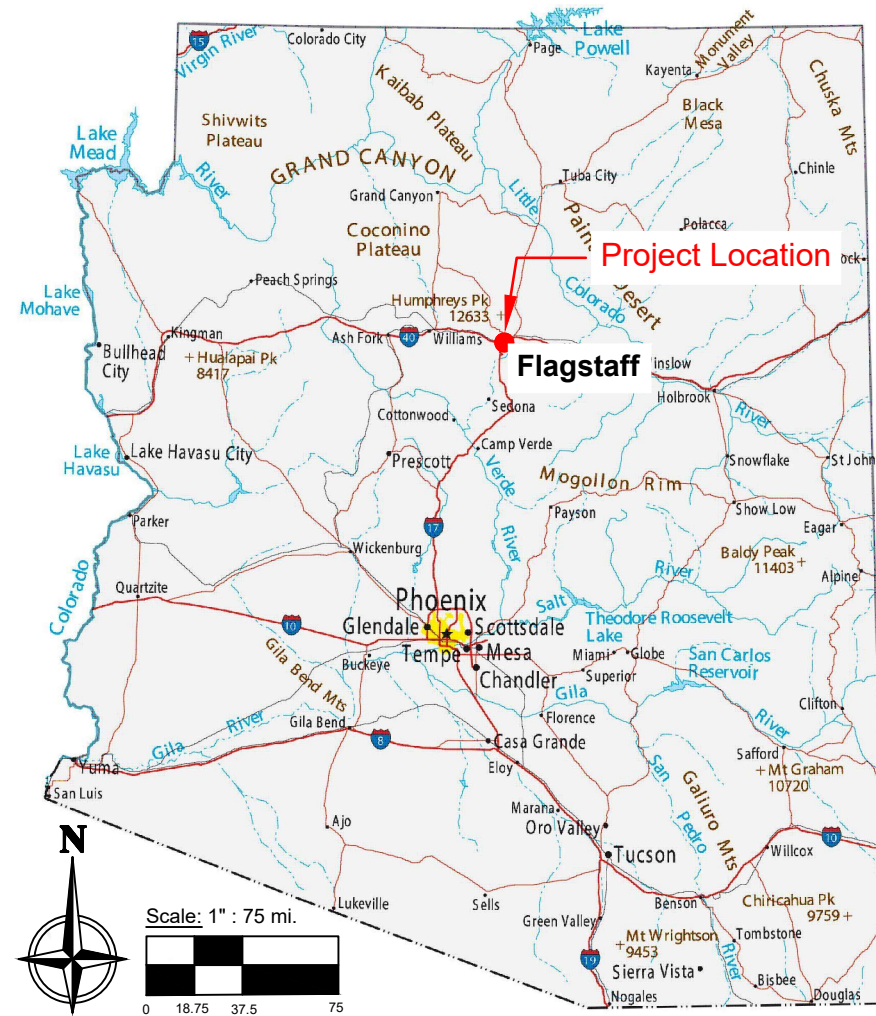
# Construction Plans for John Wesley Powell Blvd. West Extension Design Project - City of Flagstaff

Located between  
South Pulliam Drive & Lake Mary Road  
West of Flagstaff, Arizona  
35°8'39.39"N 111°40'44.25W & 35°9'14.02"N 111°39'26.14"

Vicinity Map: Flagstaff, Arizona



State Map of Arizona



**Prepared for Jeff Baumen  
PE, PTOE, Traffic Engineer, C.O.F**

\_\_\_\_\_

*Cristine Aguila - Pavement Design Manager*

\_\_\_\_\_

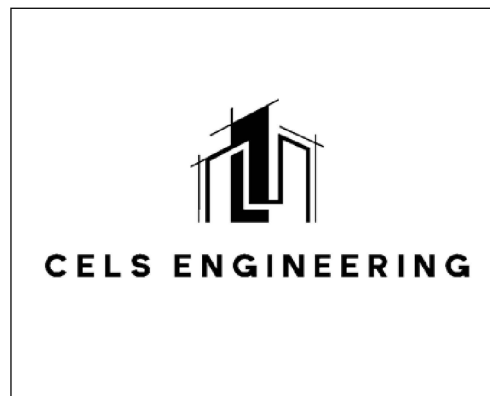
*Elijah Begay - Hydraulics Engineer*

\_\_\_\_\_

*Logan McFarland - Head Engineer*

\_\_\_\_\_

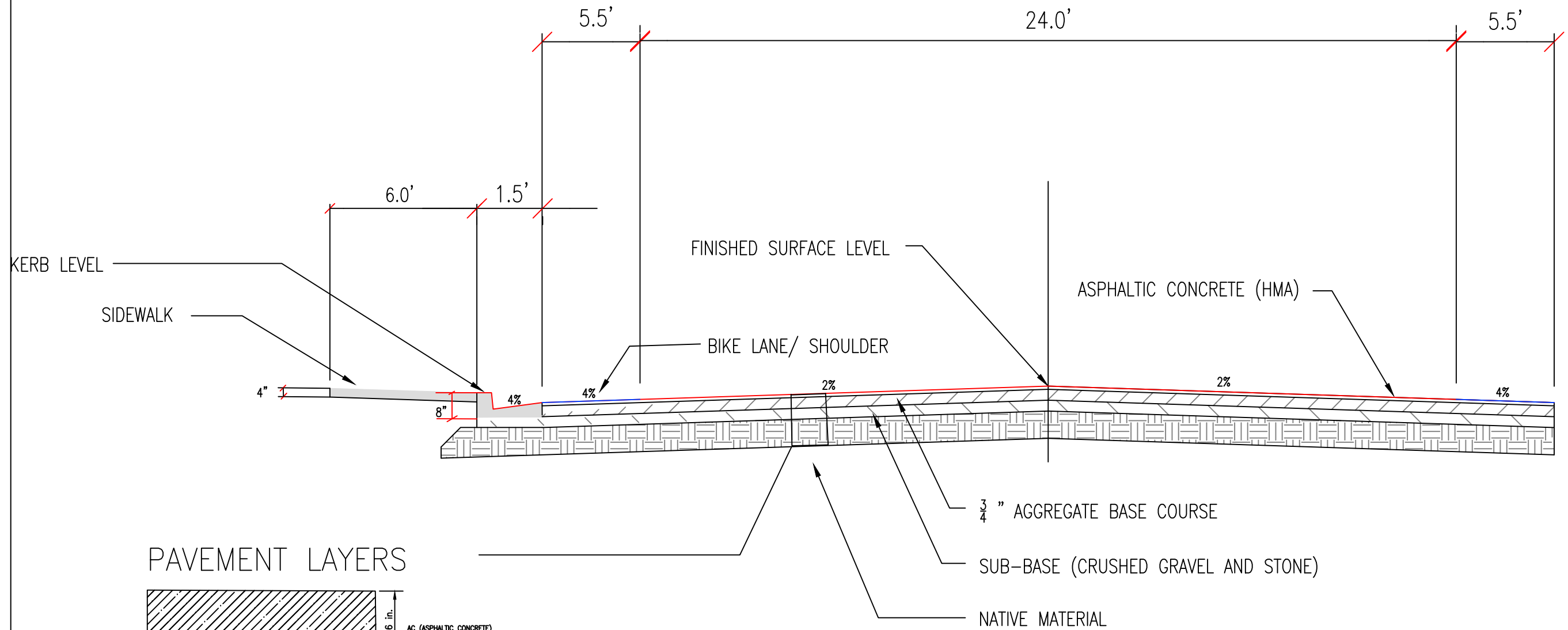
*Steven McKimney - Highway Engineer*



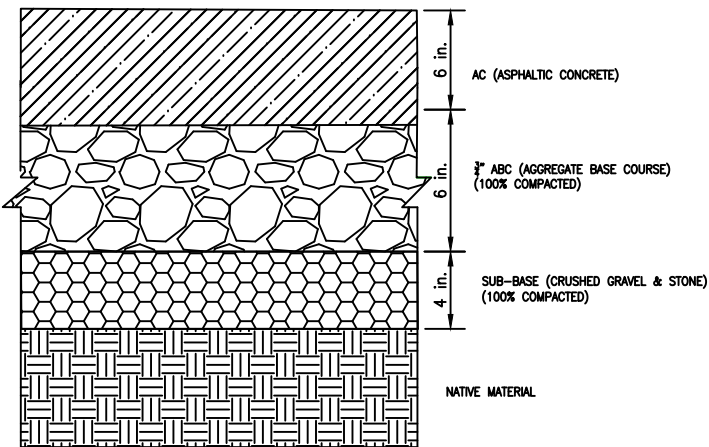
Sheet Index	
Sheet No.	Description
1	Cover Sheet
2	Roadway Cross Section
3	Typical Roadway Plan View
4	Vertical Profile with Alignment
5	Horizontal Alignments
6	Horizontal Alignments cont.
7	Horizontal Alignments cont.
8	Lake Mary Rd. and JWP Intersection
9	S. Pulliam Dr. and JWP Intersection
10	Culvert Structure Plan & Profile
11	Typical Inlet/Outlet of Culvert
12	Hydraulic Structure & JWP Blvd

JWP West Road Extension		Cover Sheet	
SCALE: Varies	DATE: 4/25/2024	DRAWN: EAB	DESIGN: EAB
1900 S KNOLES DR. FLAGSTAFF, AZ, 86011			
Revisions	DESCRIPTION	DATE	BY
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SHT. NO	1	OF	12

# ROADWAY CROSS SECTION

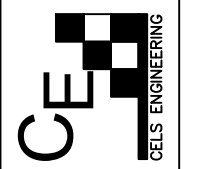


## PAVEMENT LAYERS



SCALE: 1' = 40'	FLAGSTAFF
DATE: 03/17/2024	ROADWAY
DRAWN: CMA	
DESIGN: CMA	
CHECKER: SJM	

1900 S. KNOWLES DR.  
FLAGSTAFF, AZ, 86011



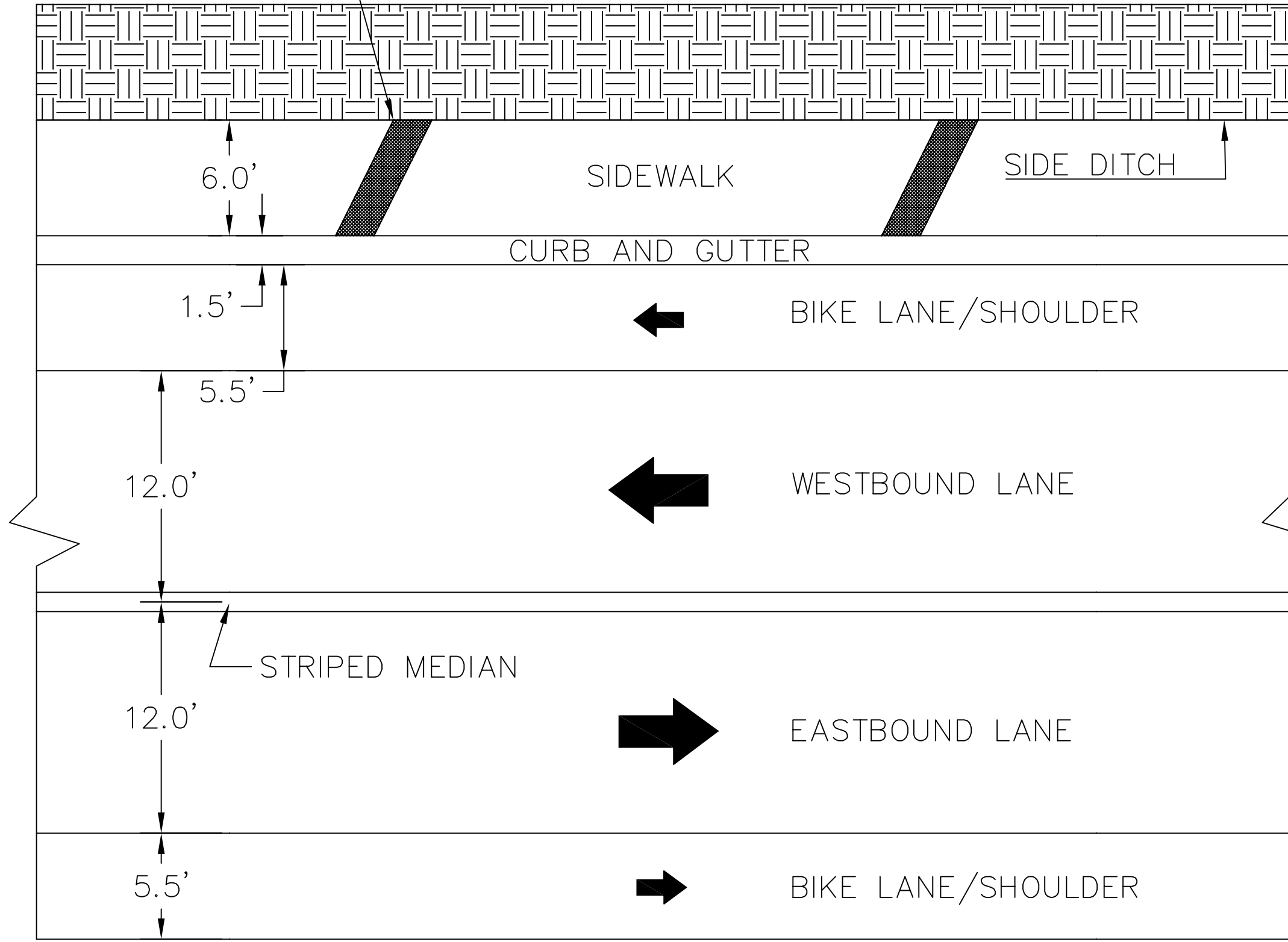
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TRENCH DRAIN (TYP.)

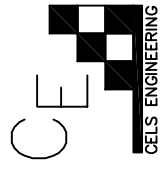
### Typical Roadway Plan View



SIDE DITCH

NOTES:  
 -SIDE DITCH IS TRAPEZIODAL WITH 3 FT. WIDE BOTTOM AND 3 FT. SIDES AT 6:1 SLOPES  
 -TRENCH DRAINS ARE SPACED 230' APART



JWP WEST EXT.		SCALE: 1" = 6'		
DATE: 04/14/2024		DRAWN: SJM		
DESIGN: SJM		CHECKER: SJM		
1900 S KNOLES DR. FLAGSTAFF, AZ, 86011				
				
Revisions	NO.	DESCRIPTION	DATE	BY
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SHT. NO	3	OF	12	

# JWP West Alignment PROFILE

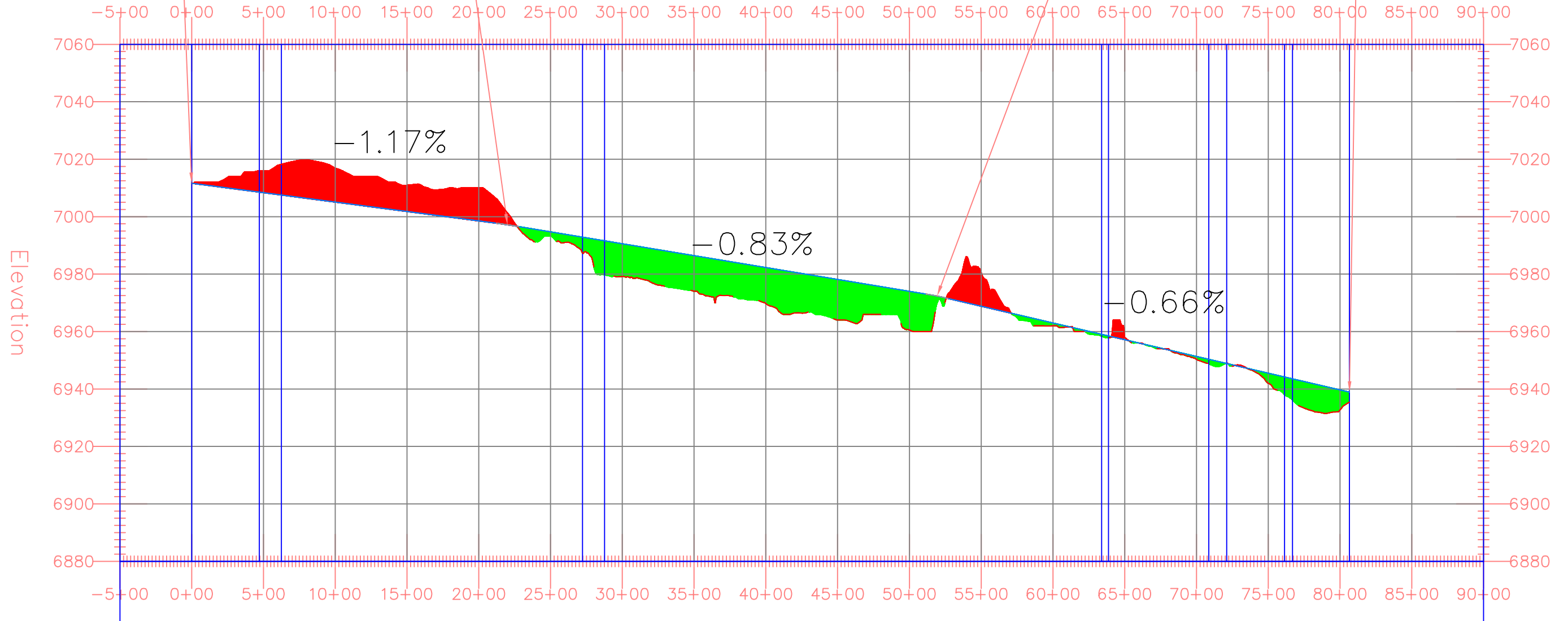
PVI STA: 22+00.00  
 PVI ELEV: 6997.18  
 K: 867.49  
 LVC: 150.00  
 BVCS: 21+25.00  
 BVCE: 6997.68  
 EVCS: 22+75.00  
 EVCE: 6996.56

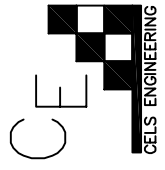
PVI STA: 51+93.00  
 PVI ELEV: 6972.38  
 K: 445.07  
 LVC: 150.00  
 BVCS: 51+18.00  
 BVCE: 6973.00  
 EVCS: 52+68.00  
 EVCE: 6971.51

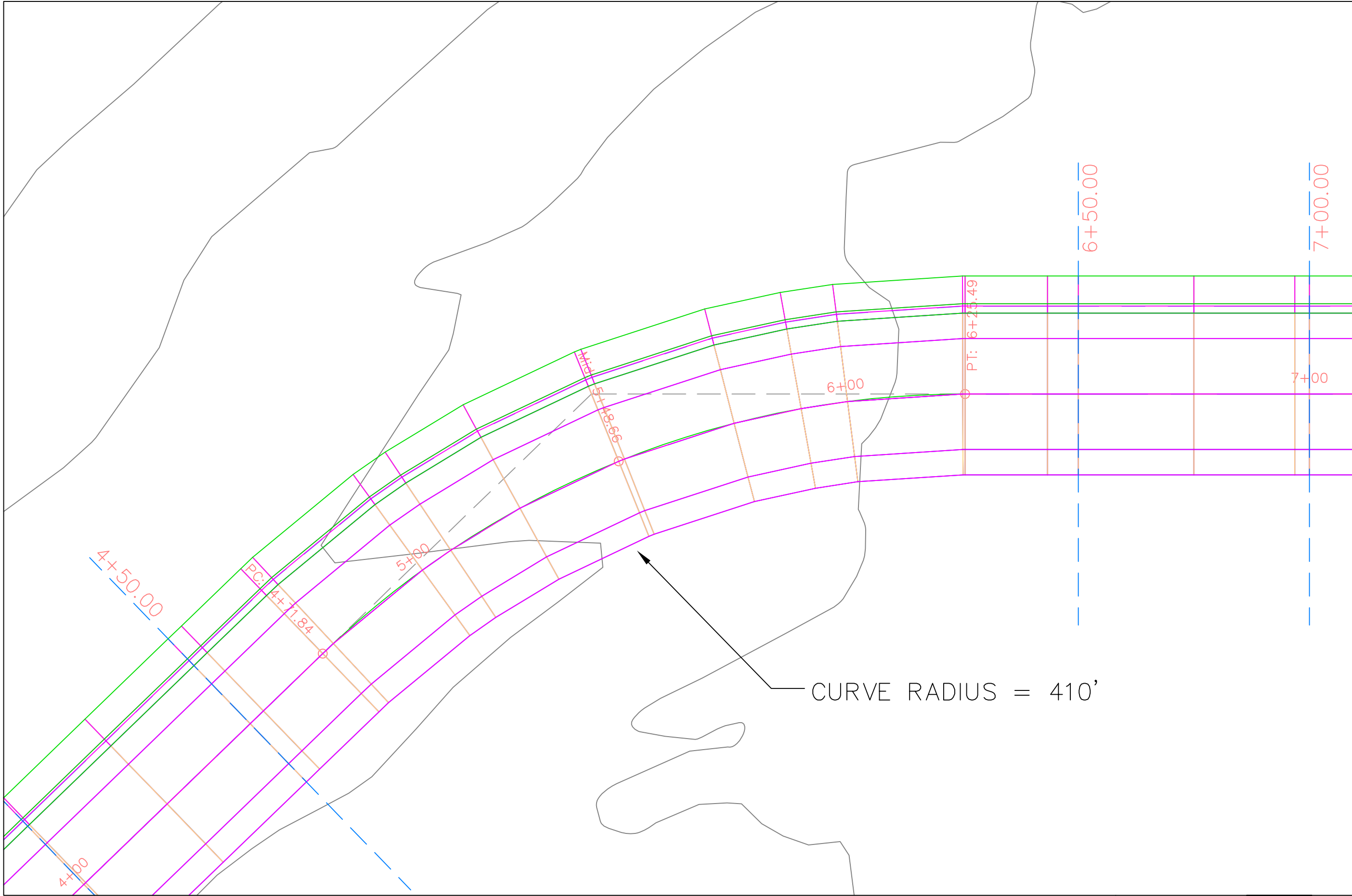
GRADE BREAK STA = 0+00.00  
 ELEV = 7011.611

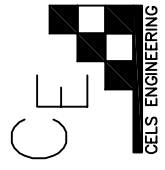
GRADE BREAK STA = 80+65.11  
 ELEV = 6938.904

Station

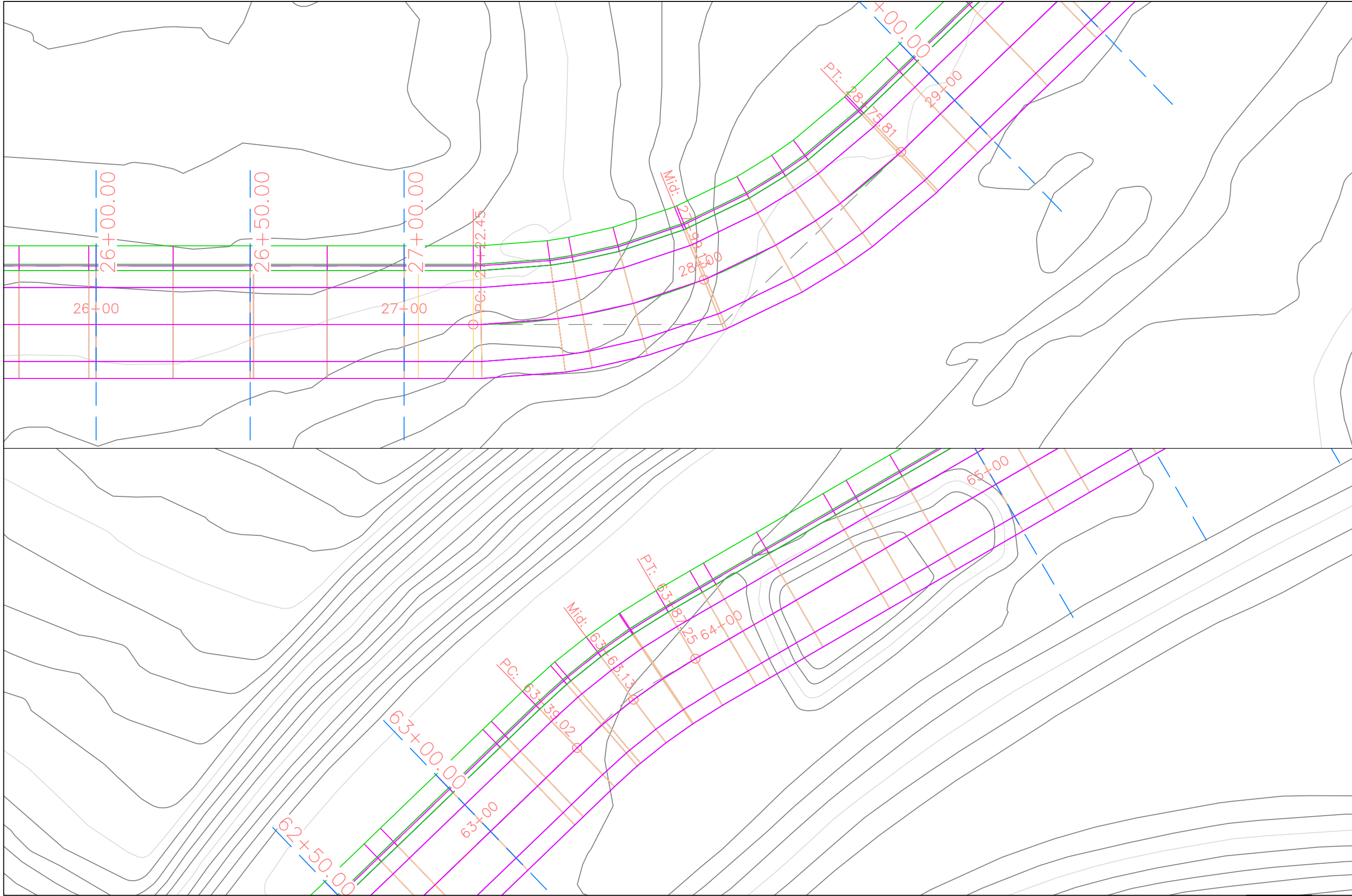


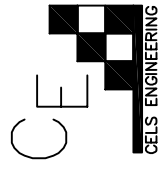
SCALE: NTS		JWP WEST EXT.	
DATE: 04/14/2024		Vertical Alignment Profile	
DRAWN: SJM		DESIGN: SJM	
CHECKER: LSM			
1900 S KNOLES DR. FLAGSTAFF, AZ, 86011			
			
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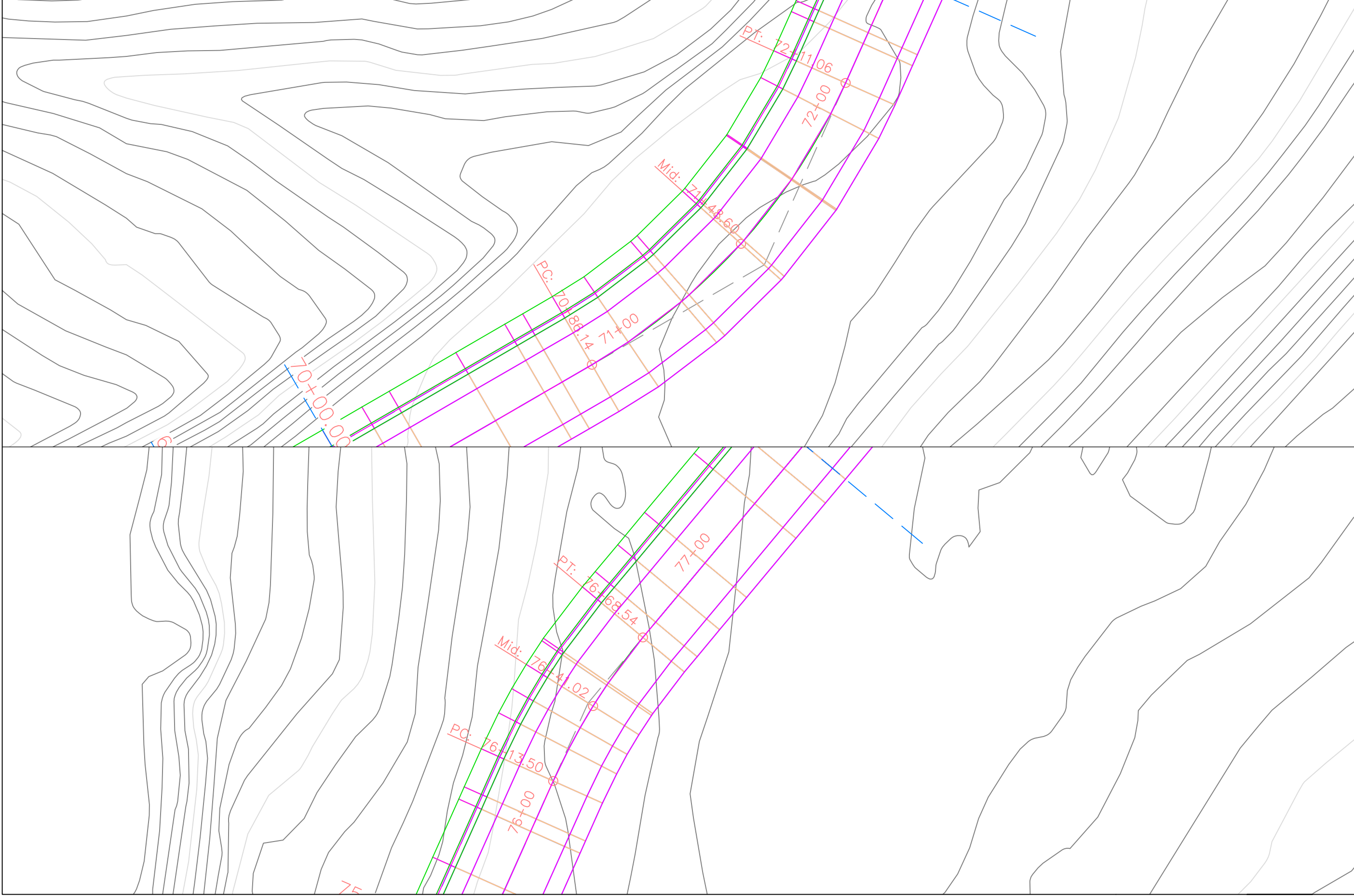


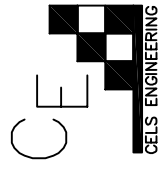
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1	BY	MBC	MBC
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3	BY	MBC	MBC
			
1900 S KNOLES DR. FLAGSTAFF, AZ, 86011			
SCALE: 1" = 20'		DATE: 5/6/2024	
DRAWN: SJM		DESIGN: SJM	
CHECKER: LSM		JWP WEST EXT.	
HORIZONTAL ALIGNMENTS			



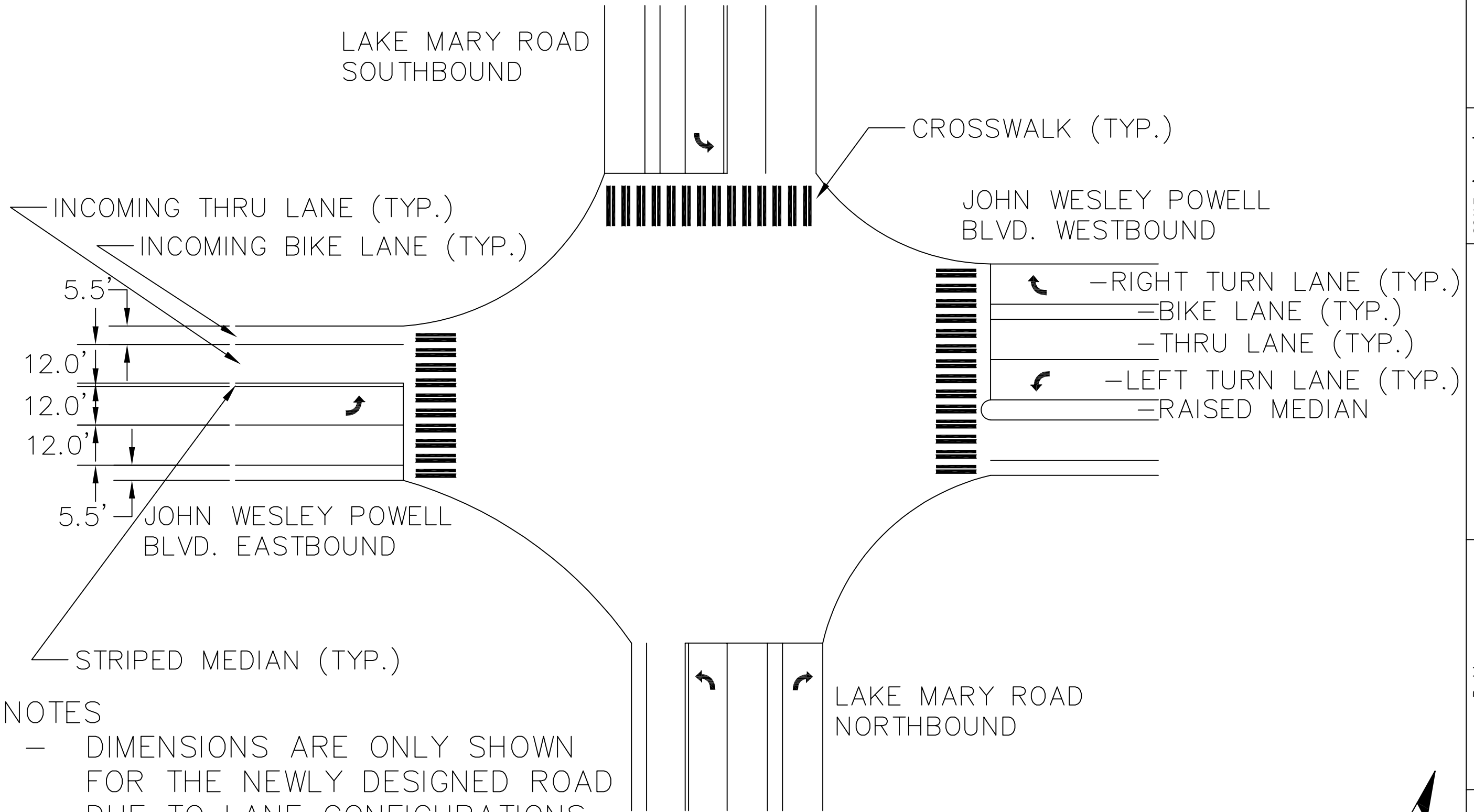


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1900 S KNOLES DR. FLAGSTAFF, AZ, 86011			
SCALE: 1" = 30'		DATE: 5/6/2024	
DRAWN: SJM		DESIGN: SJM	
CHECKER: LSM		JWP WEST EXT.	
HORIZONTAL ALIGNMENTS			



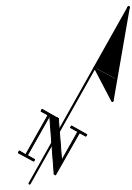
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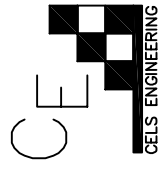
JWP BLVD. AND LAKE MARY RD.  
INTERSECTION PLAN VIEW



NOTES

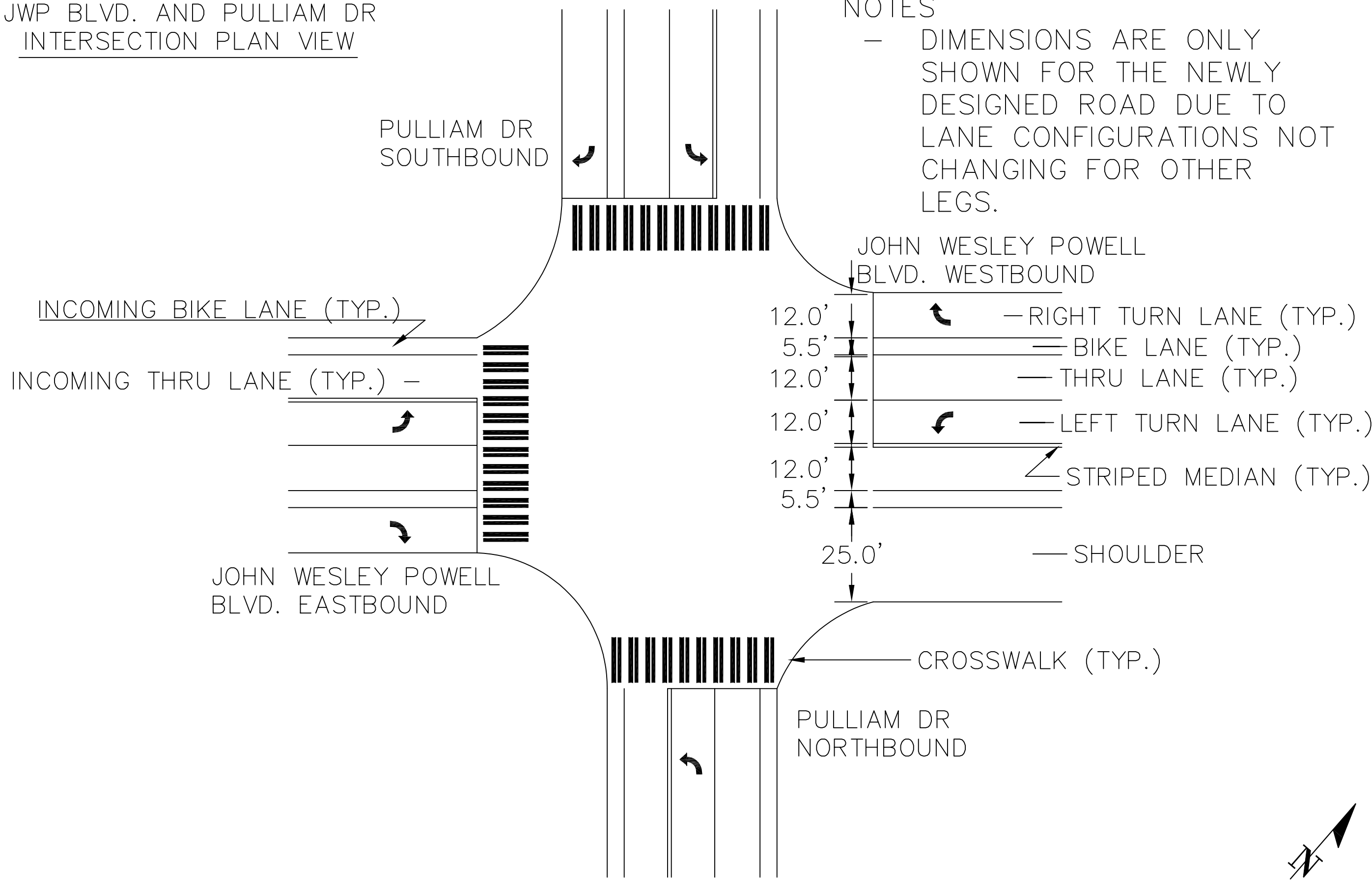
- DIMENSIONS ARE ONLY SHOWN FOR THE NEWLY DESIGNED ROAD DUE TO LANE CONFIGURATIONS NOT CHANGING FOR OTHER LEGS.



JWP WEST EXT.		JWP AND LAKE MARY	
SCALE: 1' = 30'	DATE: 4/7/2024	DRAWN: SJM	DESIGN: SJM
1900 S KNOLES DR. FLAGSTAFF, AZ, 86011		CHECKER: LSM	
			
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SHT. NO	8	OF	12



JWP BLVD. AND PULLIAM DR  
INTERSECTION PLAN VIEW



NOTES

- DIMENSIONS ARE ONLY SHOWN FOR THE NEWLY DESIGNED ROAD DUE TO LANE CONFIGURATIONS NOT CHANGING FOR OTHER LEGS.

JOHN WESLEY POWELL  
BLVD. WESTBOUND

- 12.0' — RIGHT TURN LANE (TYP.)
- 5.5' — BIKE LANE (TYP.)
- 12.0' — THRU LANE (TYP.)
- 12.0' — LEFT TURN LANE (TYP.)
- 12.0' — STRIPED MEDIAN (TYP.)
- 5.5' —
- 25.0' — SHOULDER

CROSSWALK (TYP.)

PULLIAM DR  
NORTHBOUND

JOHN WESLEY POWELL  
BLVD. EASTBOUND

INCOMING BIKE LANE (TYP.)

INCOMING THRU LANE (TYP.) -

PULLIAM DR  
SOUTHBOUND

JWP WEST EXT.

SCALE: 1" = 25'

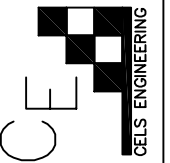
DATE: 4/7/2024

DRAWN: SJM

DESIGN: SJM

CHECKER: LSM

1900 S KNOLES DR.  
FLAGSTAFF, AZ, 86011

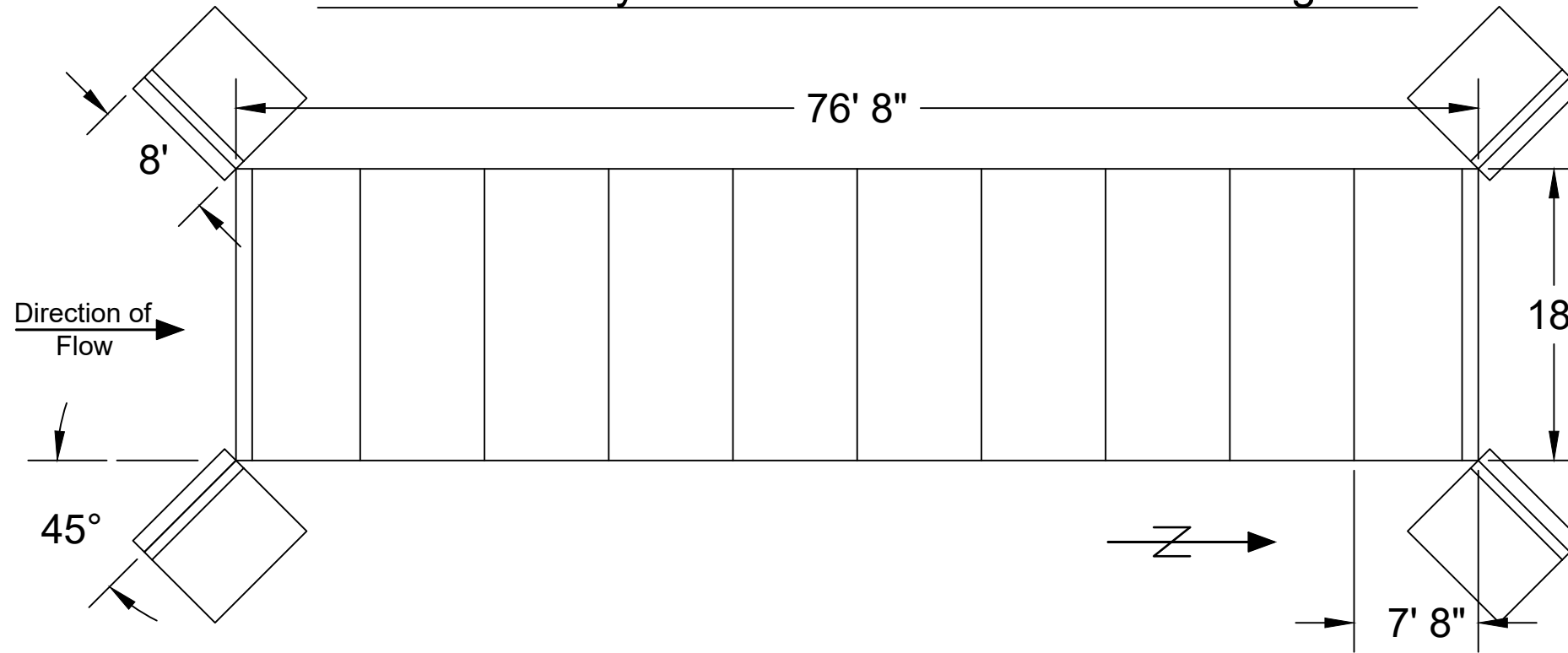


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DRAWING NO.

SHT. NO 9 OF 2

## Plan View of Hydraulic Structures: Culvert & Wingwalls



### Notes:

- 10 sections will be placed continuously to connect both up & downstream at a total run length of: 76' 8" (each typical section measures: 7' 8")
- Culvert structure will be sloped at -0.05% to ensure calculated flow is maintained.

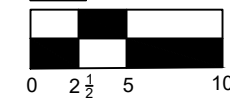
Inlet Elevation: **6525.90 ft.**

Outlet Elevation: **6925.51 ft.**

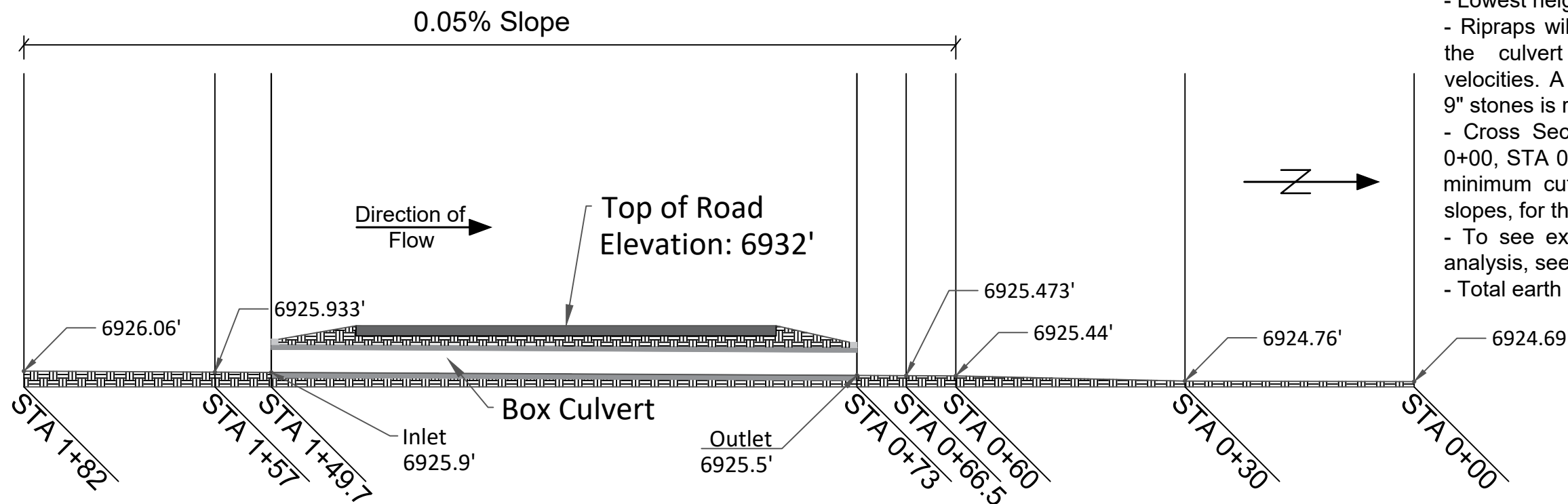
- Wingwalls are incorporated into as hydraulic structure. 4 walls will be used as a retaining wall, standing approximately equal to the top of the culvert. 2 walls are place both up & downstream. All walls will be flared 45° to the channel's flow direction. See next page for dimensions of wall.

- A headwall is incorporated into the design. It is placed at the top of the hydraulic structure to prevent excessive earth entering onto channel.

Scale: 1" : 10'



## Profile of Hydraulic Structure & Channel



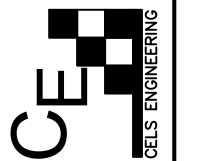
### Notes:

- Section between STA 0+60 and STA 1+82, will be sloped at -0.05%.
- Top of road elevation is 6932 ft.
- Lowest height to fill above culvert is 14"
- Ripraps will be placed at the outlet of the culvert to maintain high flow velocities. A run apron length of 9' with 9" stones is requested.
- Cross Sections at downstream (STA 0+00, STA 0+30, & STA 0+60) will have minimum cut and maintain 3H:1V side slopes, for these sections see report.
- To see excavation sheets and cut/fill analysis, see report.
- Total earth removal: **198.9 cyd.**

Culvert Structure  
Plan & Profile

SCALE: Varies  
DATE: 4/25/2024  
DRAWN: EAB  
DESIGN: EAB & LSM  
CHECKER: LSM

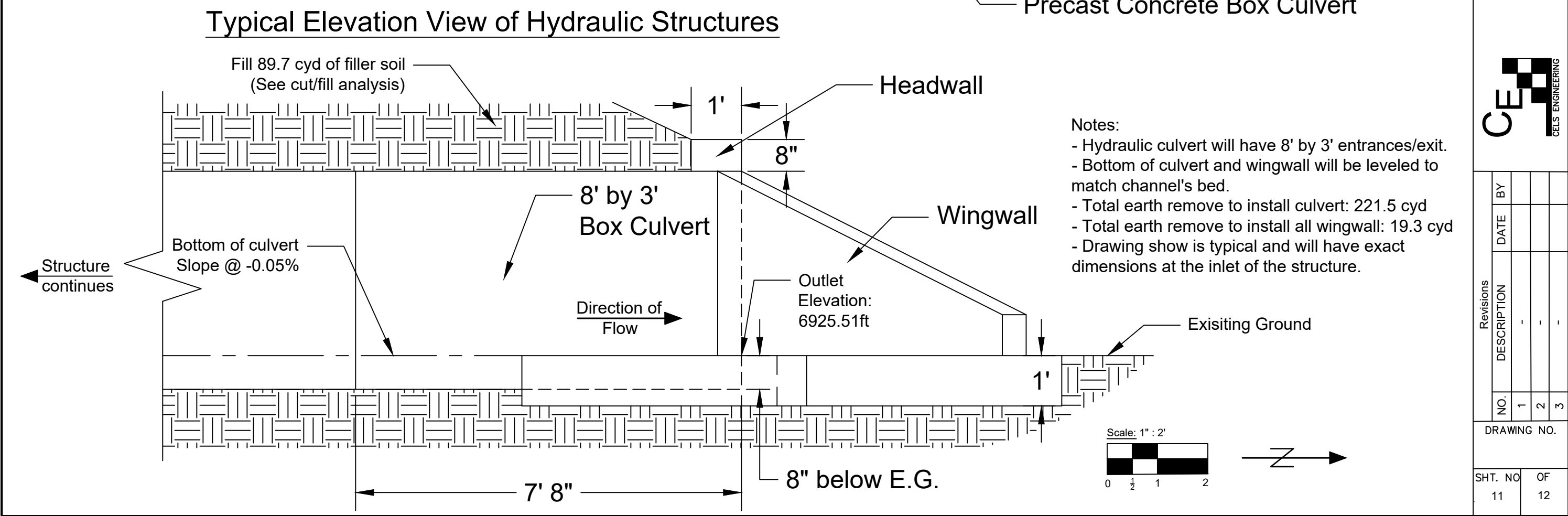
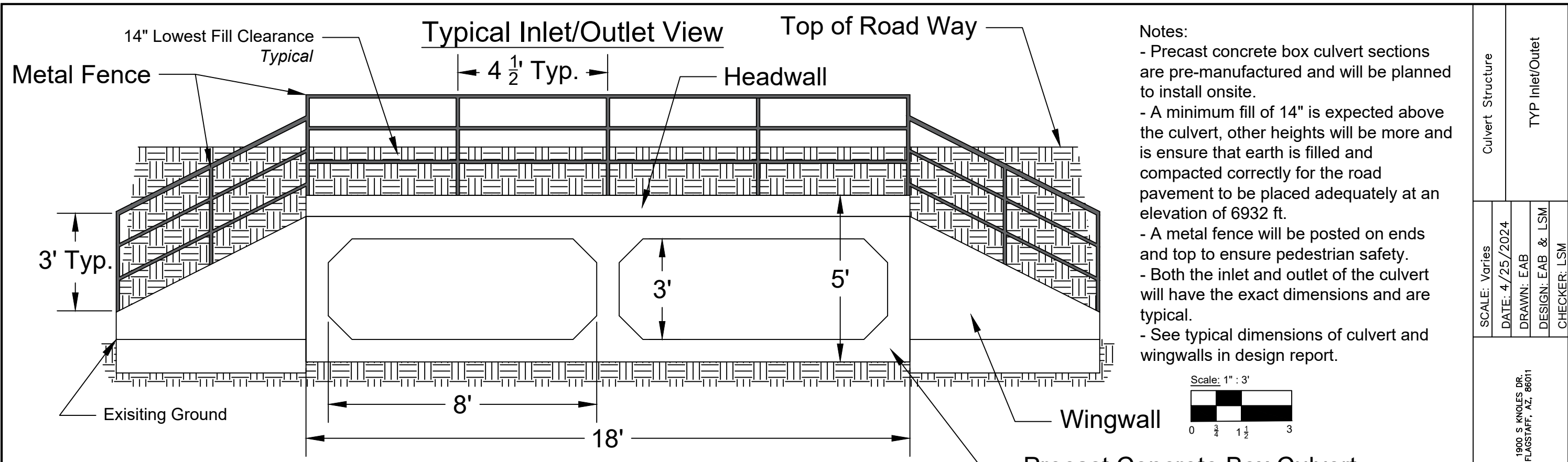
1900 S KNOLES DR.  
FLAGSTAFF, AZ, 86011



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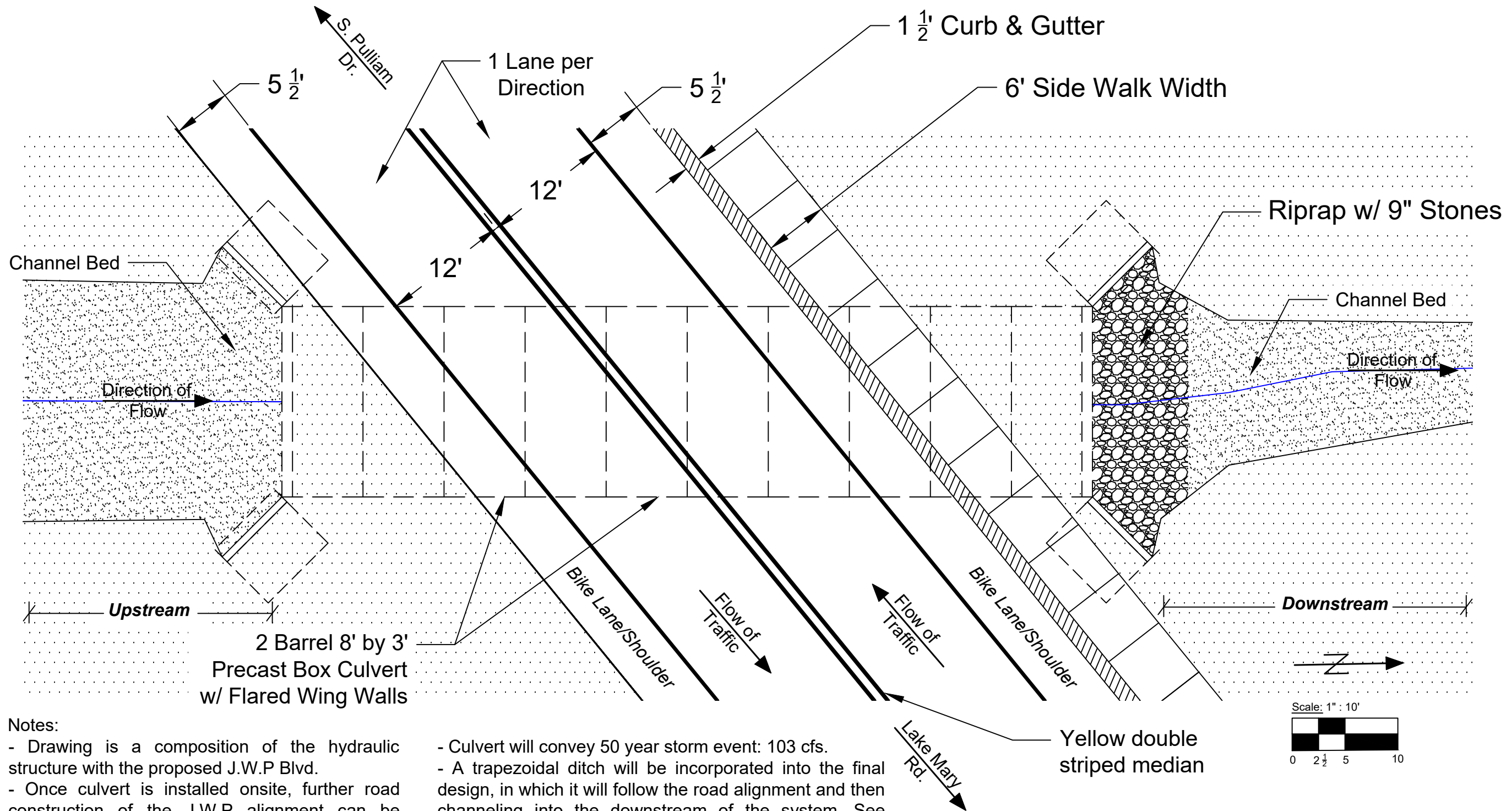
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Culvert Structure		TYP Inlet/Outlet	
SCALE: Varies	DATE: 4/25/2024	DRAWN: EAB	DESIGN: EAB & LSM
1900 S KNOLES DR. FLAGSTAFF, AZ, 86011			
Revisions	DESCRIPTION	DATE	BY
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DRAWING NO.			
SHT. NO	11	OF	12

# Hydraulic Structure & Proposed J.W.P Blvd.



**Notes:**

- Drawing is a composition of the hydraulic structure with the proposed J.W.P Blvd.
- Once culvert is installed onsite, further road construction of the J.W.P alignment can be continued
- See dimensions of hydraulic structures (i.e. culvert, wingwalls, headwalls) on sheet 10 & 11.
- Culvert will convey 50 year storm event: 103 cfs.
- A trapezoidal ditch will be incorporated into the final design, in which it will follow the road alignment and then channeling into the downstream of the system. See sheet 3 for ditch.
- J.W.P will have a typical cross section length of 42 1/2'
- Excavation will be done upstream to ease water flow in.

Composite Drawing

Hydraulic Structure & JWP

SCALE: Varies

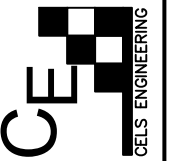
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DRAWN: EAB

DESIGN: EAB & LSM

CHECKER: LSM

1900 S KNOLES DR.  
FLAGSTAFF, AZ, 86011



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SHT. NO 12 OF 12