

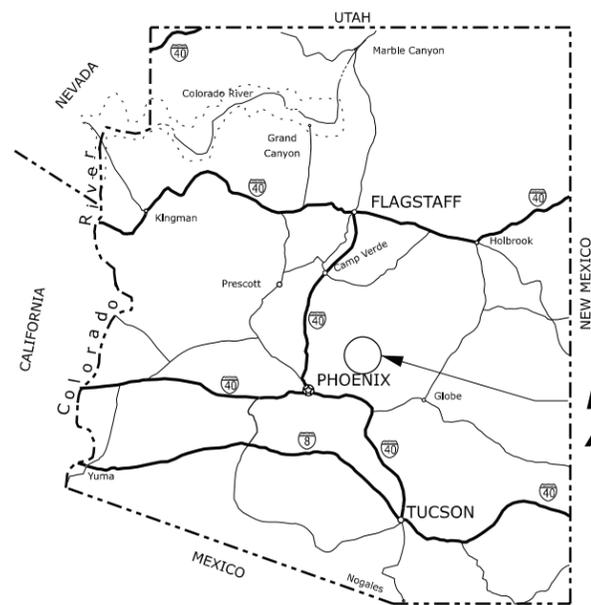
STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A1

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

PLANS FOR PROPOSED AZ FTBR SALT 80(1) **HORSE MESA BRIDGE**

TONTO NATIONAL FOREST
MARICOPA COUNTY
LENGTH 0.057 miles

INDEX TO SHEETS	
SHEET	DESCRIPTION
A1	TITLE SHEET
A2-A3	CONVENTIONAL PLAN SYMBOLS & ABBREVIATIONS
A4	SURVEY CONTROL SHEET
A5	SITE MAP
A6-A7	TYPICAL SECTIONS
B1-B2	SUMMARY OF QUANTITIES
B3	GRADING AND SURFACING SUMMARIES
B4-B5	MISCELLANEOUS SUMMARIES
C1	ROADWAY PLAN AND PROFILE SHEET
C2	APPROACH ROADS AND PULLOUT GRADING PLAN SHEET
G1	REINFORCED CONCRETE RETAINING WALL SPECIAL 258-A
S1-S11	BRIDGE SHEETS
T1-T4	TEMPORARY TRAFFIC CONTROL STANDARD SHEETS 635-1, 5, 13, 14
X1-X14	MAINLINE CROSS SECTIONS



Project Location
AZ FTBR SALT 80(1)

KEY MAP OF ARIZONA

TYPE OF CONSTRUCTION:

Bridge replacement, road realignment, and gravel surfacing.

DESIGN DESIGNATIONS:

ADT (2022)	<100
ADT (2032)	<100
DHV	15
T	<1%
V	25 mph
e(max)	6%

U.S. CUSTOMARY DIMENSIONS:

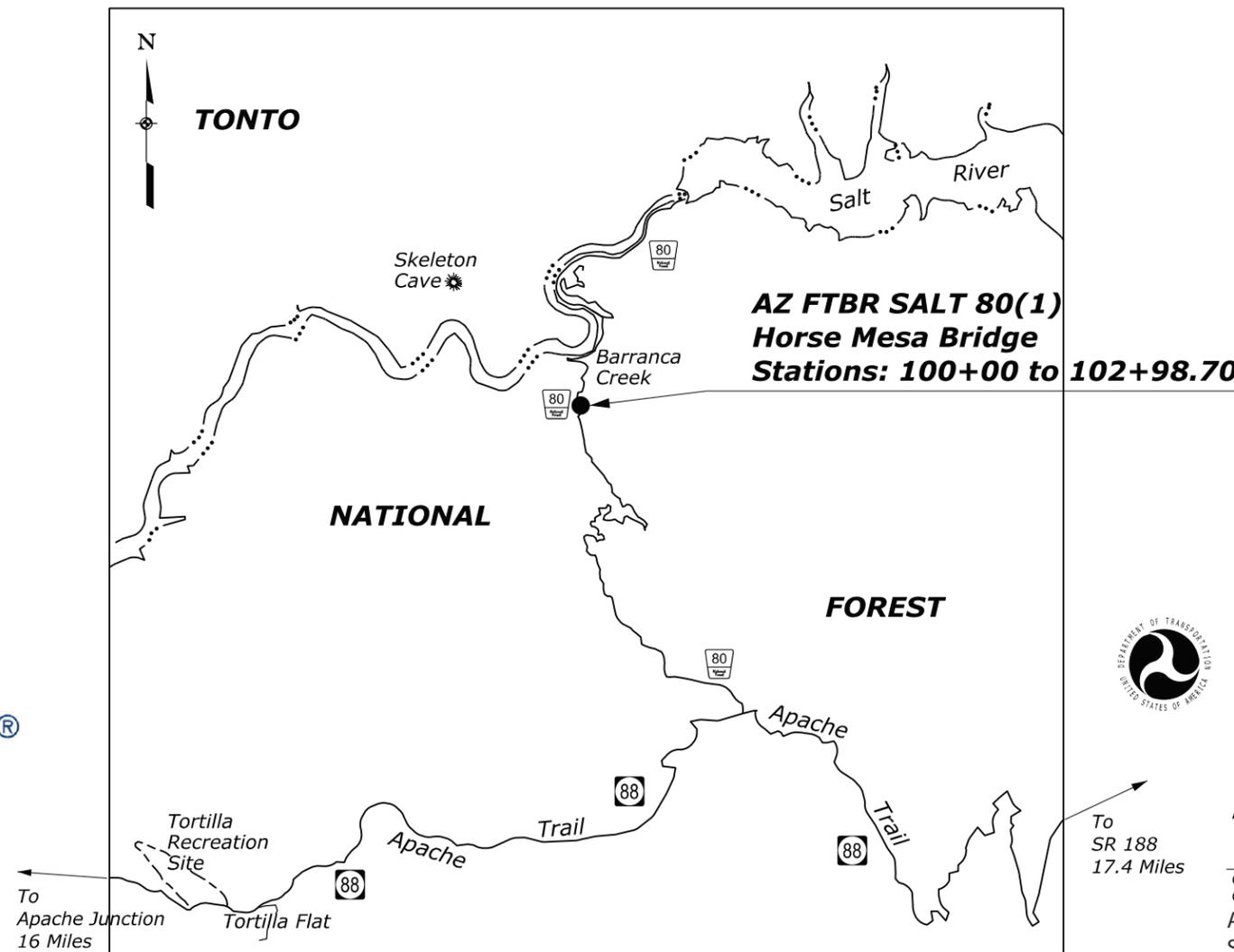
Slopes are expressed as RISE:RUN

SPECIFICATIONS:

"STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14"



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PLANS PREPARED BY

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION
DENVER, CO

APPROVED:

CURTIS R SCOTT Digitally signed by CURTIS R SCOTT
Date: 2022.08.24 15:10 -06'00'

CHIEF OF ENGINEERING
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

ALEXANDER SMITH Digitally signed by ALEXANDER SMITH
Date: 2022.08.11 09:11:41 -07'00'

PHOENIX AREA OFFICE MANAGER
BUREAU OF RECLAMATION

Alexander Smith
HYDRO DIRECTOR
SALT RIVER PROJECT

DATE: 8/5/2022

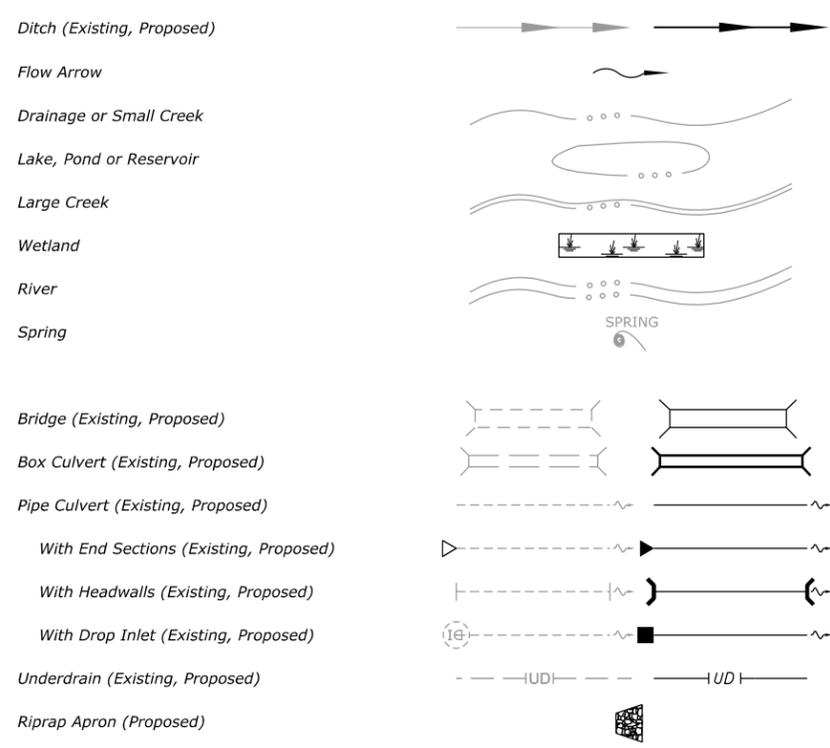
PROJECT MANAGER	LEAD DESIGNER
T. Kubicz	W. Valentin

ABBREVIATIONS

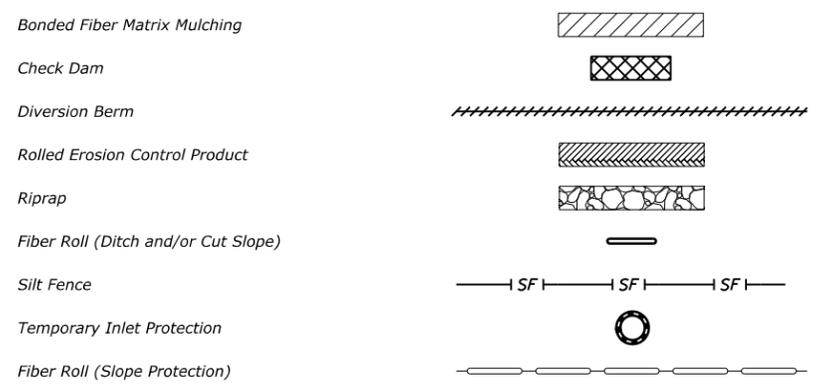
C	centerline
Δ	curve delta
\emptyset	diameter
A	abut.
ADT	average daily traffic
aggr.	aggregate
AH	ahead
alt.	alternate
appr.	approach
asph.	asphalt
B	b.f.
beg.	beginning, begin
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
C	CBC
c-c	center to center
clr.	clear
CMP	corrugated metal pipe
Co.	county
col.	column
conc.	concrete
constr.	construction
constr. jt.	construction joint
cont.	continuous
corr.	corrugated
cr.	creek
CS	point of curve to spiral
ctrs.	centers
CTSM	contingent sum
culv.	culvert
D	decr.
DHV	design hour volume
DI	drop inlet
dia. or D	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
Dist.	district
DLC	donation land claim
dwg(s).	drawing(s)
E	E
e	east
e	superelevation rate
El. 94.066	elevation with number
elev.	elevation
emb.	embankment
engr(s).	Engineer(s)
EOP	edge of pavement
EQ or eq.	equation
ER	edge of road
et al	and others
et ux	and wife
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
ext.	exterior
F	f.f.
Fed.	federal
FES	flared end section
fin.	finish
ftg.	footing
G	ga.
galv.	galvanized
gdr.	girder
H	hdwl.
HES	homestead entry survey
hex.	hexagon
horiz.	horizontal
HW	high water
hwy.	highway
I	ID
incl.	inclusive, including
incr.	increment
int.	interior
J	jt.
	joint

L	L	length of curve
lam.	lamination	
lat.	latitude	
long.	longitudinal	
LPSM	lump sum	
Lt. or LT	left	
LW	low water	
M	mag.	magnetic
maint.	maintenance	
matl.	material	
max.	maximum	
min.	minimum	
mon.	monument	
mtn(s).	mountain(s)	
N	N	north
NC	normal crown	
neg.	negative	
no. or #	number	
O	o.c.	on centers
o.f.	other face	
OD	outside diameter	
P	PC	point of curve
PCC	point of compound curve	
perf.	perforate	
PI	point of intersection	
pl.	plate	
POC	point on curve	
POS	point on spiral	
POT	point on tangent	
proj.	project	
psi	pounds per square inch	
PT	point of tangent	
pvmt.	pavement	
Q	quant., Qty	quantities
R	R	radius
R.	range	
R/W	right-of-way	
rd.	road	
rdwy.	roadway	
reconst.	reconstruction	
rein.	reinforcement	
reqd.	required	
res.	reservoir	
Res.	Reservation	
ret. wall	retaining wall	
RH	reference hub	
Rt. or RT	right	
rte.	route	
S	S	south
SADT	seasonal average daily traffic	
SC	point of spiral to curve	
sec.	section	
shldr.	shoulder	
spa.	spacing, Spaces or Spaced	
spec.	specification	
st.	street	
ST	point of spiral to tangent	
sta.	station	
std.	standard	
stiff.	stiffener	
str.	straight	
struc.	structural	
sym.	symmetrical	
T	T	tangent length
T.	township	
tan.	tangent	
TBM	temporary bench mark	
TCE	temporary construction easement	
transv.	transverse	
TS	point of tangent to spiral	
typ.	typical	
V	V	design speed
vert.	vertical	
vph	vehicles per hour	
VPI	vertical point of intersection	
W	W	west

DRAINAGE SYMBOLS



EROSION & SEDIMENT CONTROL SYMBOLS



FENCE & CATTLEGUARD SYMBOLS



GEOLOGIC SYMBOLS



STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A2

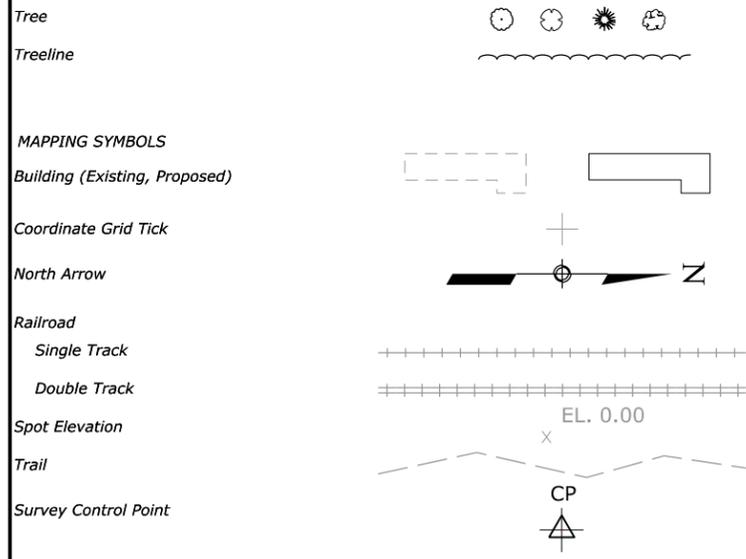
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OFFICE OF FEDERAL LANDS HIGHWAY

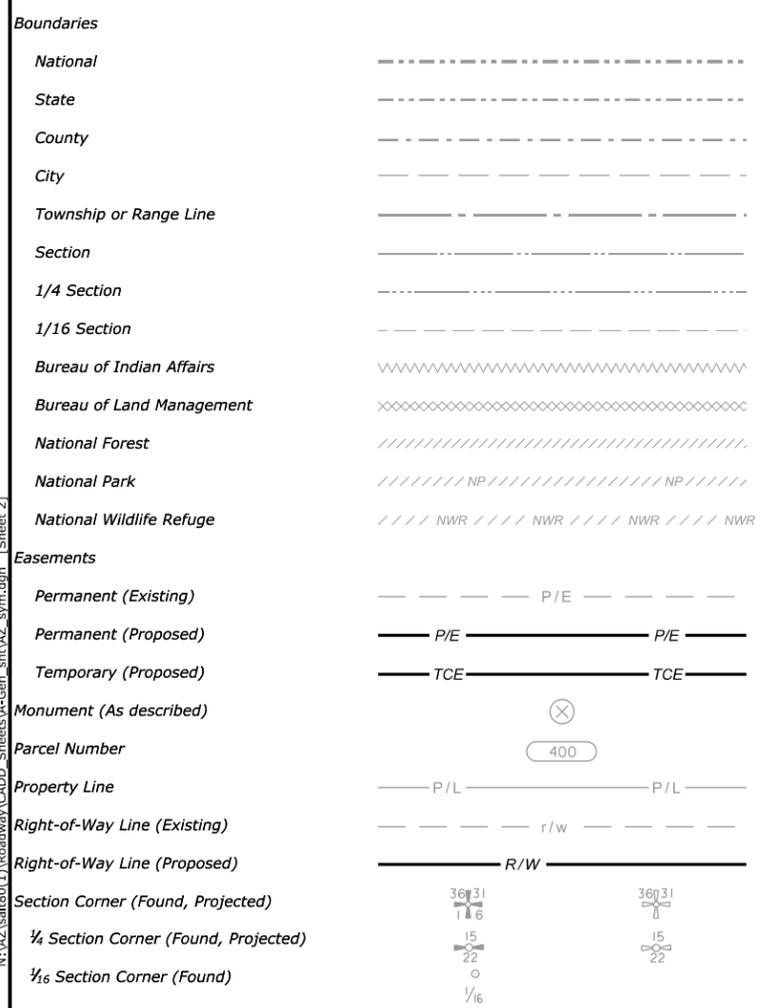
**CONVENTIONAL PLAN
SYMBOLS AND ABBREVIATIONS**
Sheet 1 of 2

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A3

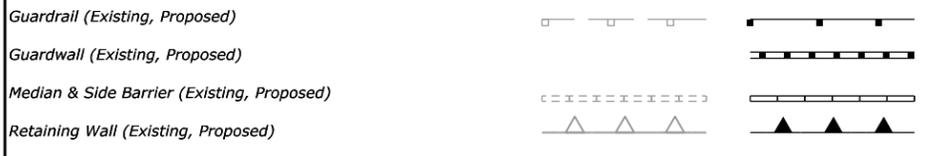
LANDSCAPING & VEGETATION SYMBOLS



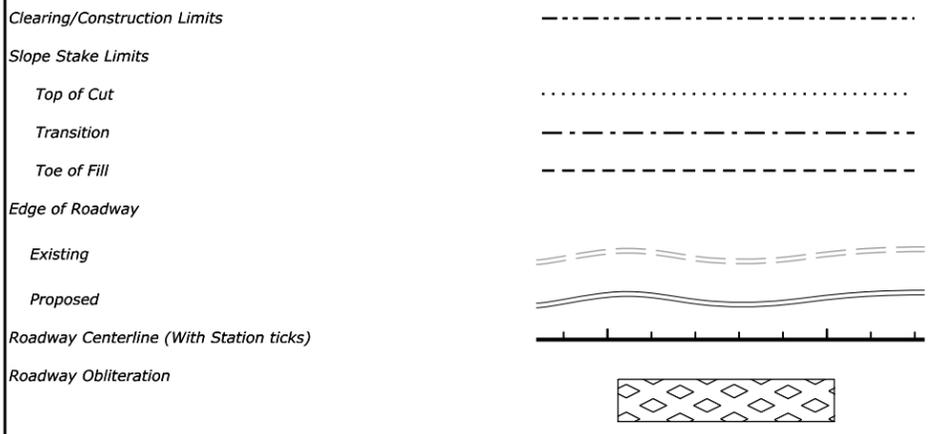
RIGHT-OF-WAY SYMBOLS



GUARDRAIL, BARRIER & WALL SYMBOLS



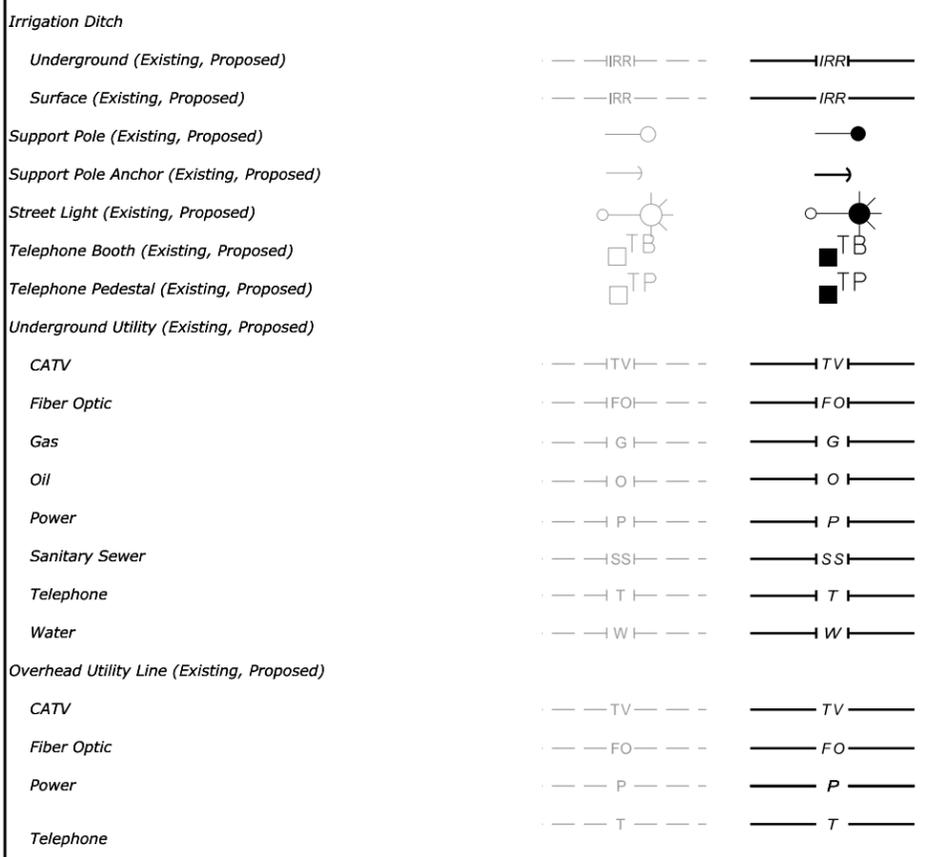
ROADWAY SYMBOLS



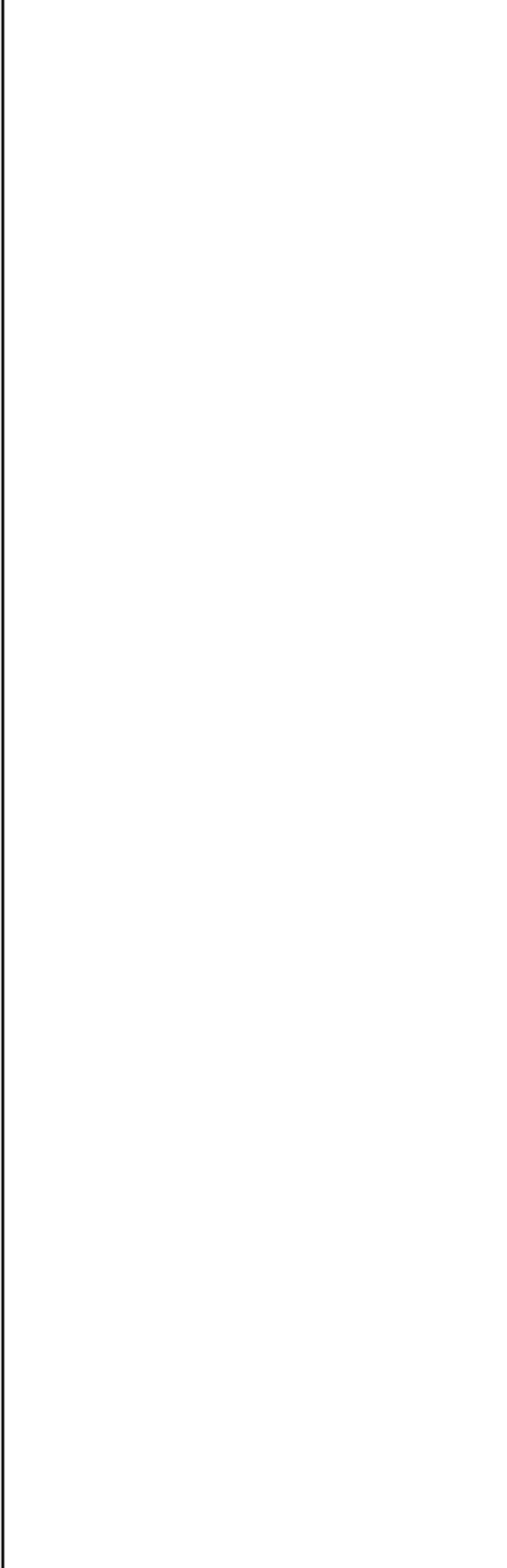
SIGN SYMBOLS



UTILITY SYMBOLS



PROJECT SPECIFIC SYMBOLS



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**CONVENTIONAL PLAN
SYMBOLS AND ABBREVIATIONS**
Sheet 2 of 2

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A4

Project : AZ SALT 80(1) Horse Mesa Bridge

Review FP14, Section 152.02

Date Of Field Work : December, 2021
Date Of Final Adjustment : January, 2022

Project Units : US Survey Feet
Datum: Nad 1983 (Conus)
Zone: Arizona Central zone 0202
Geoid: Geoid12B (Conus)
Opus Epc Date : 2010.0000
Vertical Datum : Navd88 All Elevations Are Modeled using Geoid12B holding OPUS on point 1001

ALI File Dated : 2/20/22
ALI File Name : ALI_SALT80(1).dgn Alignment : BL

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES			MAPPING ANGLE	COMBINED FACTOR	STATION	OFFSET	DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT					
1001	936929.80	871175.18	1837.10	33°34'27.30000"N	111°21'16.74000"W	1743.30	0°18'40"	0.99985014	off alignment	off alignment	Found PC SGI
1002	937183.80	871216.04	1813.02	33°34'29.82000"N	111°21'16.23600"W	1719.23	0°18'40"	0.99985131	102+31.94	34.6	Found AC SGI
4001	937167.09	871192.39	1812.00	33°34'29.64000"N	111°21'16.52400"W	1718.22	0°18'40"	0.99985135	102+14.19	16.5	Found AC SGI
4002	937107.58	871133.07	1818.99	33°34'29.06400"N	111°21'17.20800"W	1725.20	0°18'40"	0.99985099	101+37.44	-17.7	BOLT
4003	937064.85	871149.39	1826.30	33°34'28.63200"N	111°21'17.02800"W	1732.51	0°18'40"	0.99985065	101+02.58	12.7	BOLT
4004	937068.70	871198.81	1813.05	33°34'28.66800"N	111°21'16.45200"W	1719.26	0°18'40"	0.99985130	101+24.54	57.5	BOLT

PROJECT AVERAGES = 0.99985096

NOTE: TO PRECISELY CHECK DISTANCES BETWEEN POINTS AS MEASURED ON THE GROUND :
INVERSE THE STATE PLANE COORDINATES AND DIVIDE THE COMPUTED DISTANCE
BY A MEAN COMBINED FACTOR OF THE TWO POINTS.

TO COMPUTE GEODETIC AZIMUTHS USE THE FOLLOWING FORMULA :
GEODETIC AZIMUTH = GRID AZIMUTH + MAPPING ANGLE

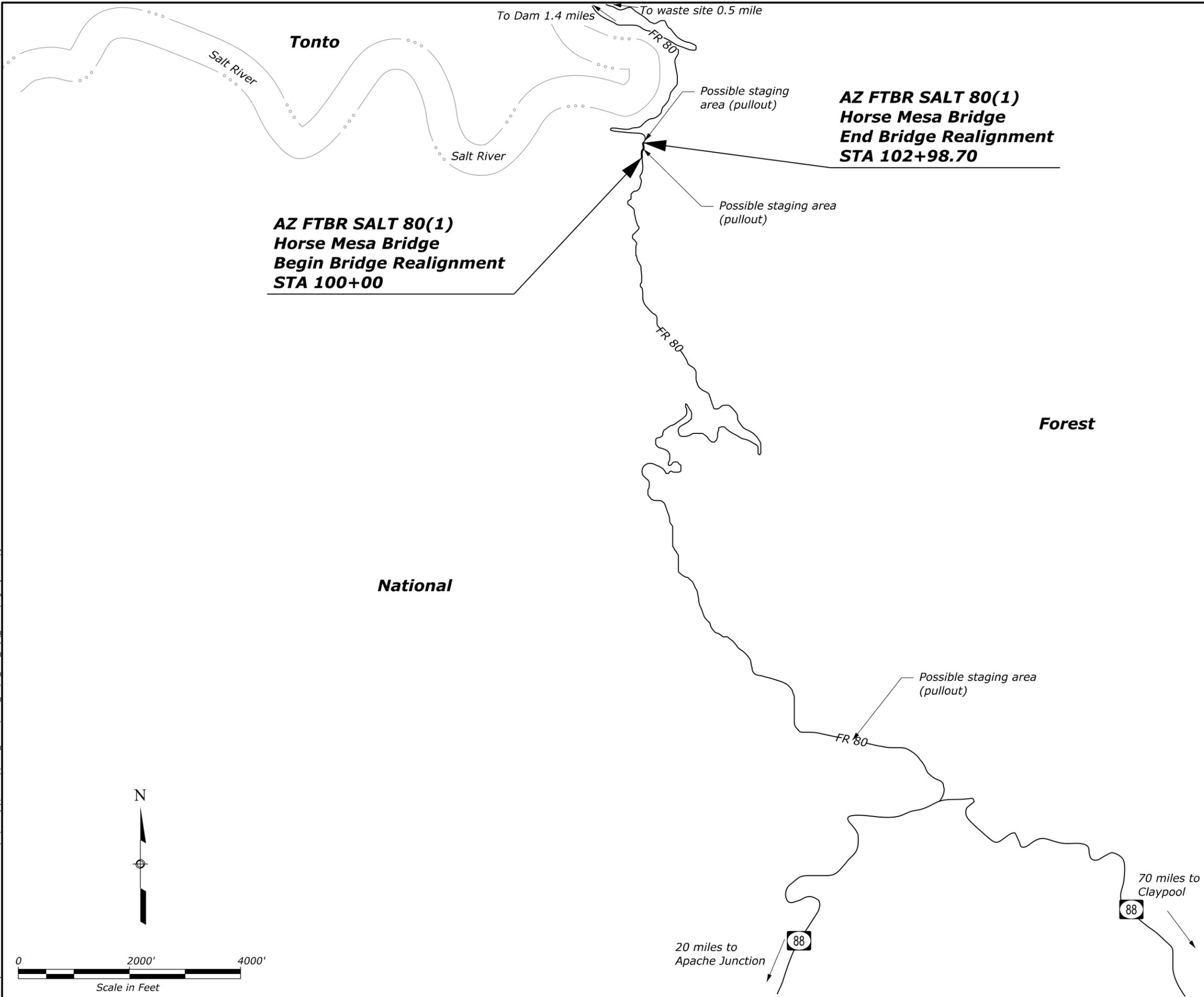
6			
5			
4			
3			
2			
1	Created	2/22/22	SJS
NO.	DESCRIPTION REVISIONS (OR CHANGE NOTICES)	DATE	INIT.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

SURVEY CONTROL SHEET

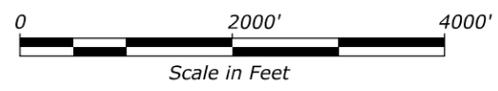
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STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A5



**AZ FTBR SALT 80(1)
Horse Mesa Bridge
Begin Bridge Realignment
STA 100+00**

**AZ FTBR SALT 80(1)
Horse Mesa Bridge
End Bridge Realignment
STA 102+98.70**



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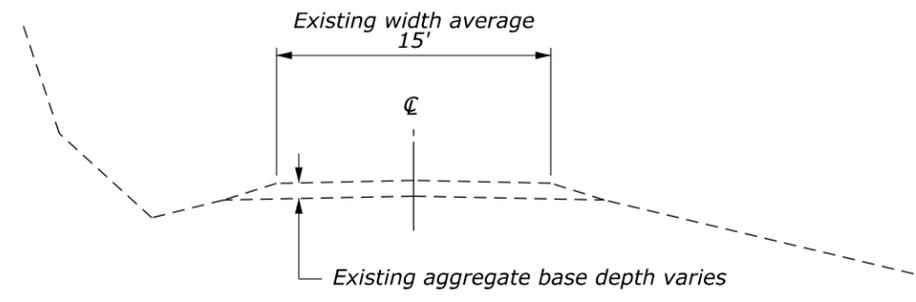
SITE MAP

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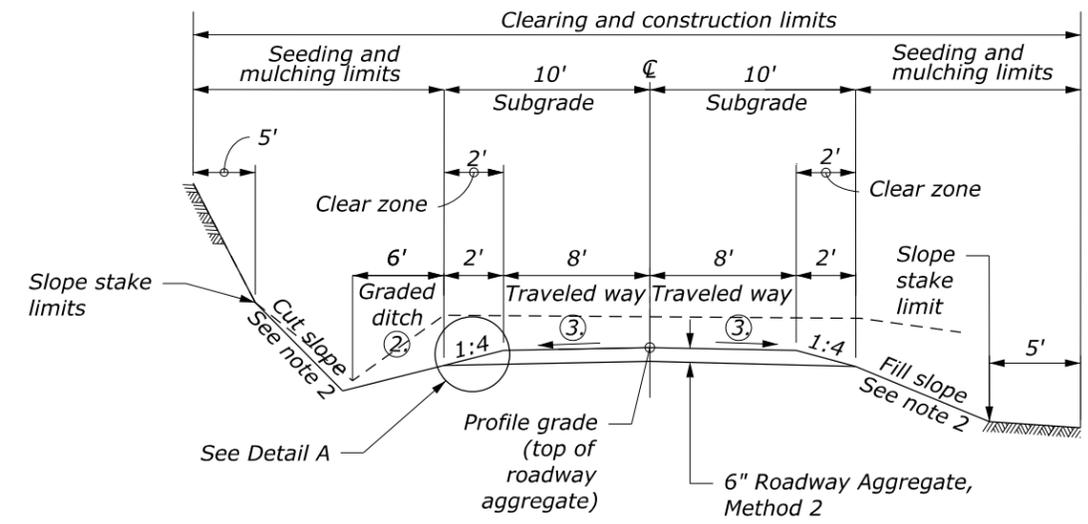
STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A6

NOTE:

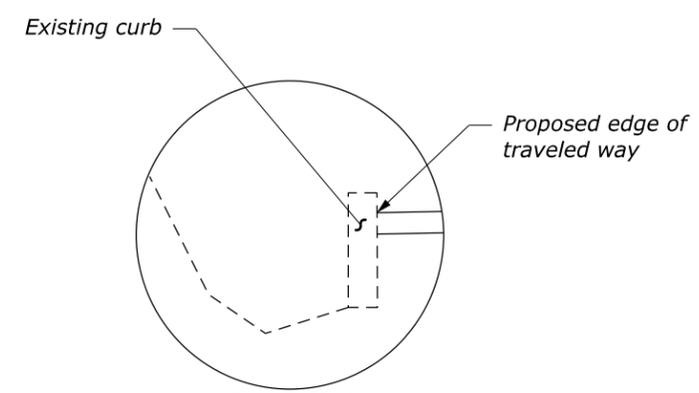
1. The gradient and width of roadway ditches and the excavation and embankment slope ratios may be adjusted by the CO to assure adequate drainage and stability.
- ② See the cross sections for cut and fill slope ratios.
- ③ See the cross sections for cross slopes.



EXISTING TYPICAL SECTION
Sta 100+00 to 102+98.70



TYPICAL SECTION
Sta 100+00 to 101+07.86
Sta 102+07.86 to 102+98.70



Detail A
Sta 102+88 to 102+98.70

LENGTH OF PROJECT		
Station to Station	Roadway (ft)	Bridge (ft)
100+00 to 101+07.86	107.86	
101+07.86 to 102+07.86		100
102+07.86 to 102+98.70	90.84	
TOTALS (ft)	198.70	100
TOTALS (mi)	0.038	0.019

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

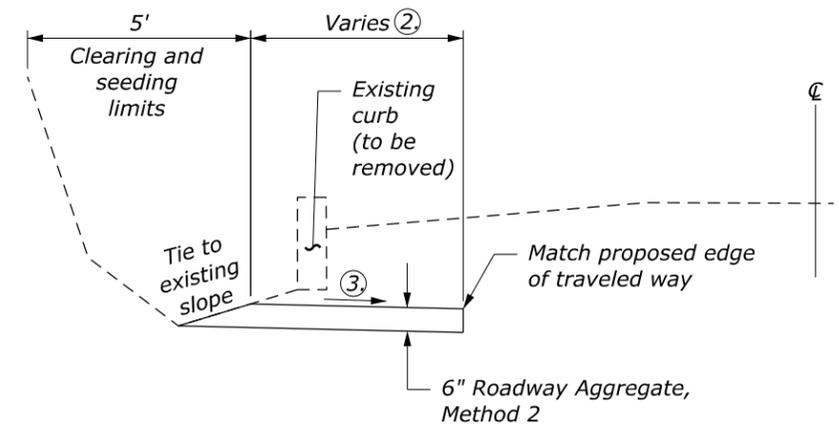
TYPICAL SECTIONS

3 August 2022 7:51 AM N:\AZ\salt80(1)\Roadway\CADD_Sheets\A-gen_sht\AZ_Typical_section.dgn [Untitled-4] [Sheet]

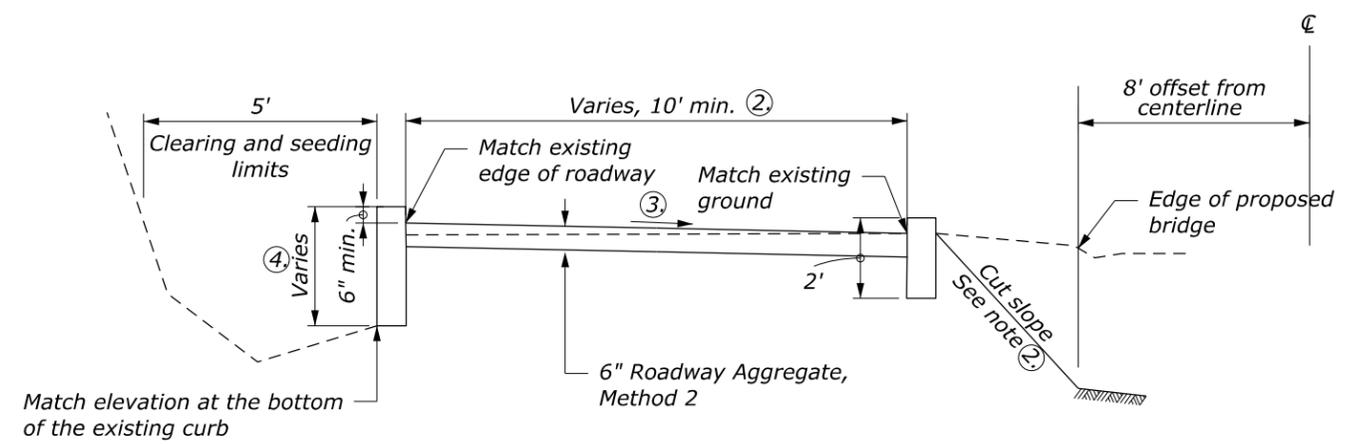
STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	A7

NOTE:

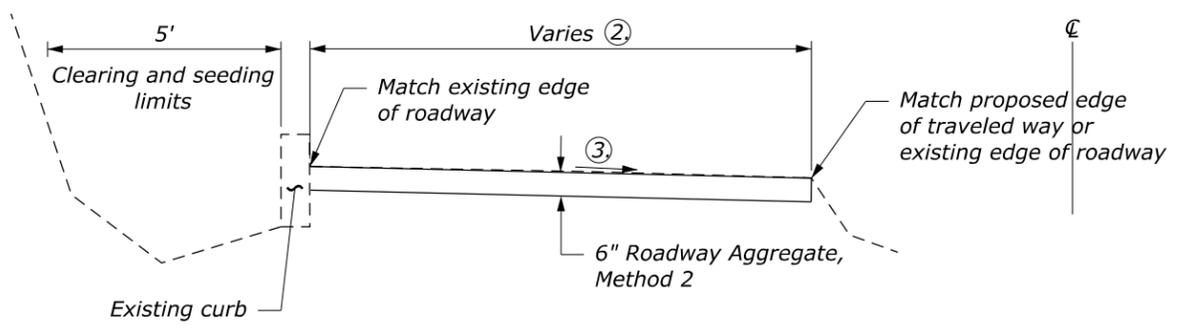
- The gradient and width of roadway ditches and the excavation and embankment slope ratios may be adjusted by the CO to assure adequate drainage and stability.
- See Approach Roads And Pullouts Grading Plan Sheet for widths, elevations and offsets.
- See the cross sections for cross slopes.
- See Special 258-A for more details on the construction and dimensions of the proposed reinforced concrete retaining wall.



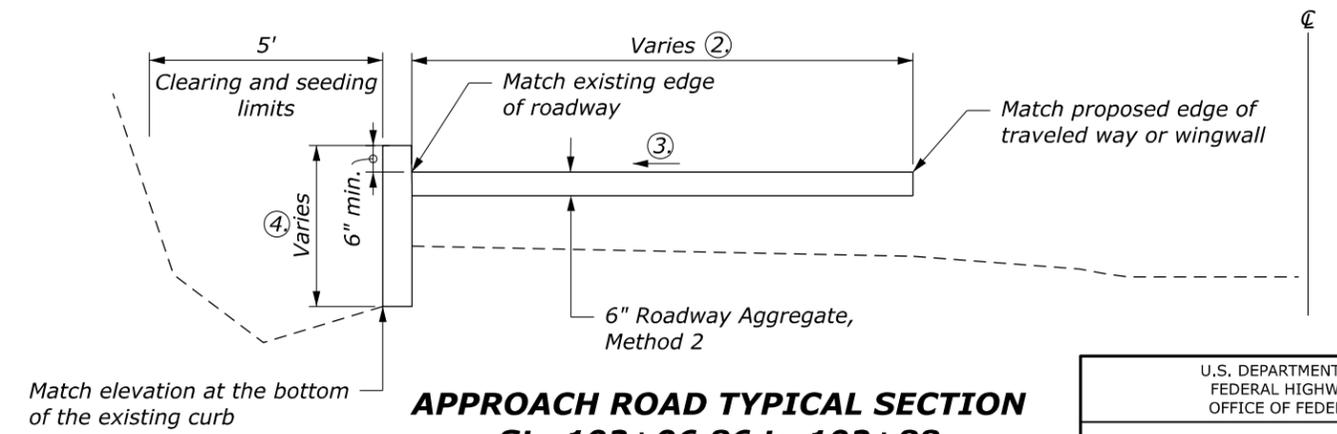
**APPROACH ROAD TYPICAL SECTION
Sta 100+72 to 100+95**



**APPROACH ROAD TYPICAL SECTION
Sta 101+82 to 102+06.86**



**APPROACH ROAD TYPICAL SECTION
Sta 100+95 to 101+17**



**APPROACH ROAD TYPICAL SECTION
Sta 102+06.86 to 102+88**

NO SCALE

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OFFICE OF FEDERAL LANDS HIGHWAY

**APPROACH ROAD
TYPICAL SECTIONS**

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SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	B1

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity		
					B3	B4	B5	S2							ALLOWANCE		Bid Schedule	
					GRADING AND SURFACING SUMMARIES	MISCELLANEOUS SUMMARIES	MISCELLANEOUS SUMMARIES	BRIDGE SUMMARY										
	A0001	15101-0000	MOBILIZATION	LPSM													ALL	
	A0021	15214-1000	SURVEY AND STAKING, BRIDGE	LPSM				All									ALL	
	A0041	15215-1000	SURVEY AND STAKING, APPROACH ROAD	EACH		2											2	
	A0061	15225-0000	SLOPE, REFERENCE, AND CLEARING AND GRUBBING CONTROL	MILE		0.037											0.037	
	A0081	15236-2000	SURVEY CONTROL, GRADE FINISHING	MILE		0.037											0.037	
	A0101	15301-0000	CONTRACTOR QUALITY CONTROL	LPSM													ALL	
	A0121	15401-0000	CONTRACTOR TESTING	LPSM													ALL	
	A0141	15501-0000	CONSTRUCTION SCHEDULE	LPSM													ALL	
	A0161	15701-0000	SOIL EROSION CONTROL	LPSM													ALL	
	A0181	15802-0000	WATERING FOR DUST CONTROL	LPSM													ALL	
	A0201	20101-0000	CLEARING AND GRUBBING	ACRE			0.33							0.02			0.35	
	A0221	20301-2300	REMOVAL OF SIGN/MARKER	EACH		3											3	
	A0241	20302-0500	REMOVAL OF CURB, CONCRETE	LNFT		157								8			165	
	A0261	20302-1200	REMOVAL OF GUARDRAIL	LNFT		6.5								3.5			10.0	
	A0281	20401-0000	ROADWAY EXCAVATION	CUYD	336									34			370	
	A0301	20801-0000	STRUCTURE EXCAVATION	CUYD				130									130	Contract Quantity
	A0321	20803-0000	STRUCTURAL BACKFILL	CUYD				45									45	Contract Quantity
	A0341	25801-0000	REINFORCED CONCRETE RETAINING WALL	SQFT			398							12			410	
	A0361	30202-2100	ROADWAY AGGREGATE, METHOD 2, SURFACE COURSE	TON	230									12			242	
	A0381	55201-0200	STRUCTURAL CONCRETE, CLASS A (AE)	CUYD				28									28	Contract Quantity
	A0401	55401-1000	REINFORCING STEEL	LB				3,600									3,600	Contract Quantity
	A0421	55504-0000	PRE-FABRICATED STEEL BRIDGE (16'x98')	LPSM				All									ALL	
	A0441	60101-0000	CONCRETE	CUYD				10									10	
	A0461	62201-0200	DUMP TRUCK, 8 CUBIC YARD MINIMUM CAPACITY	HOUR													20	
	A0481	62201-0550	BACKHOE LOADER, 6 CUBIC FOOT MINIMUM RATED CAPACITY BUCKET, 24-INCH WIDTH	HOUR													20	
	A0501	62201-0950	WHEEL LOADER, 3 CUBIC YARD MINIMUM RATED CAPACITY	HOUR													20	
	A0521	62201-2750	MOTOR GRADER	HOUR													20	
	A0541	62201-3350	HYDRAULIC EXCAVATOR, 1 CUBIC YARD MINIMUM CAPACITY	HOUR													20	
	A0561	62301-0000	GENERAL LABOR	HOUR													40	

MileStone: 100%
 Date Completed: 08/03/22
 Report Date: 08/03/22

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SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	B2

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity		
					B3	B4	B5	S2							ALLOWANCE		Bid Schedule	
					GRADING AND SURFACING SUMMARIES	MISCELLANEOUS SUMMARIES	MISCELLANEOUS SUMMARIES	BRIDGE SUMMARY										
	A0581	62302-1000	SPECIAL LABOR, HIRED TECHNICAL SERVICES	HOUR													40	
	A0601	62302-1100	SPECIAL LABOR, HIRED SURVEY SERVICES	HOUR													40	
	A0621	62303-1000	SPECIAL LABOR, HIRED TECHNICAL SERVICES (BIOLOGIST)	LPSM													ALL	
	A0641	62511-2000	SEEDING, HYDRAULIC METHOD	SQYD			814							41		855		
	A0661	62516-2000	MULCHING, HYDRAULIC METHOD	SQYD			814							41		855		
	A0681	63308-3000	OBJECT MARKER, TYPE 3	EACH			4									4		
	A0701	63309-0000	DELINEATOR	EACH			1									1		
	A0721	63316-1000	REMOVE AND RESET SIGN	EACH		1										1		
	A0741	63501-0000	TEMPORARY TRAFFIC CONTROL	LPSM												ALL		

N:\AZ\visit80(1)\Roadway\CADD_Sheets\B-Summ\SOQ_95%_SALT80(1).xltm\Sheet (2)

MileStone: 100%
Date Completed: 08/03/22
Report Date: 08/03/22

GRADING SUMMARY										
Item Number		Roadway Excavation	Pay Item 20401-0000	For info only		Embankment For info only	For info only			Remarks
Station to Station		Prismoidal Volume	ROADWAY EXCAVATION	Shrink/Swell Factor	Total Excavation Available For Fills	Prismoidal Volume	Total Embankment	Excavation-Embankment	WASTE (see note 2)	
		BCY	CUYD		CCY	CCY	CCY	CCY	CUYD	
100+00	- 101+07.86	310	310	0.9	279	1	1	277		Quantities include approach roads grading
102+07.86	- 102+98.70	26	26	0.9	24	155	155	-131		
TOTALS		336	336		303	156	156	146	146	

NOTE:

1. Quantities based on prismoidal (surface to surface) volumes.
2. Waste quantity calculated using volumes adjusted for shrink/swell. The average shrink/swell factor shown is computed by taking an average of recommended values over the specified range. Refer to the FHWA Geotechnical Memorandum for recommended shrink/swell factors.
3. The quantities shown herein are approximations. Payment will be made for the actual quantities of work performed.
4. BCY = Bank cubic yard - one cubic yard of material as it lies in the natural state.
CCY = Compacted cubic yard - one cubic yard of material after it has been compacted to specification density.

SURFACING SUMMARY		
Item Number	30202-2100	
Station to Station	ROADWAY AGGREGATE, METHOD 2, SURFACE COURSE	Remarks
		TON
100+00	- 101+07.86	100
102+07.86	- 102+98.70	130
TOTALS		230

Values used for estimating purposes:

Aggregate base 139 lb/ft3

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

GRADING AND SURFACING SUMMARIES

SURVEY AND STAKING SUMMARY						
Item Number		15215-1000	15225-0000	15236-2000		
Station to Station		Side	SURVEY AND STAKING, APPROACH ROAD	SLOPE, REFERENCE, AND CLEARING AND GRUBBING CONTROL	SURVEY CONTROL, GRADE FINISHING	Remarks
			EACH	MILE	MILE	
100+00	-	101+07.86		0.020	0.020	
100+67	-	101+17	LT	1		Access to existing bridge
101+82	-	102+98.70	LT	1		Access to existing bridge
102+07.86	-	102+98.70		0.017	0.017	
TOTAL			2	0.037	0.037	

REMOVALS SUMMARY						
Item Number		20301-2300	20302-0500	20302-1200	63316-1000	
Station to Station		Side	REMOVAL OF SIGN/MARKER	REMOVAL OF CURB, CONCRETE	REMOVAL OF GUARDRAIL	REMOVE AND RESET SIGN
			EACH	LNFT	LNFT	EACH
100+00	-	100+28	LT	28		
100+36		RT				1
100+72	-	100+95	LT	23		
100+98		LT	1			
101+81.5	-	101+88	LT		6.5	
101+82	-	102+36	LT	54		
101+88		LT	1			
102+36	-	102+88	LT	52		
102+61		RT	1			
TOTAL			3	157	6.5	1

CLEARING AND SEEDING SUMMARY				
Item Number	20101-0000	62511-2000	62516-2000	
Station to Station	CLEARING AND GRUBBING	SEEDING, HYDRAULIC METHOD	MULCHING, HYDRAULIC METHOD	Remarks
	ACRE	SQYD	SQYD	
100+00 - 101+07.86	0.16	454	454	
102+07.86 - 102+98.70	0.17	360	360	
TOTAL	0.33	814	814	

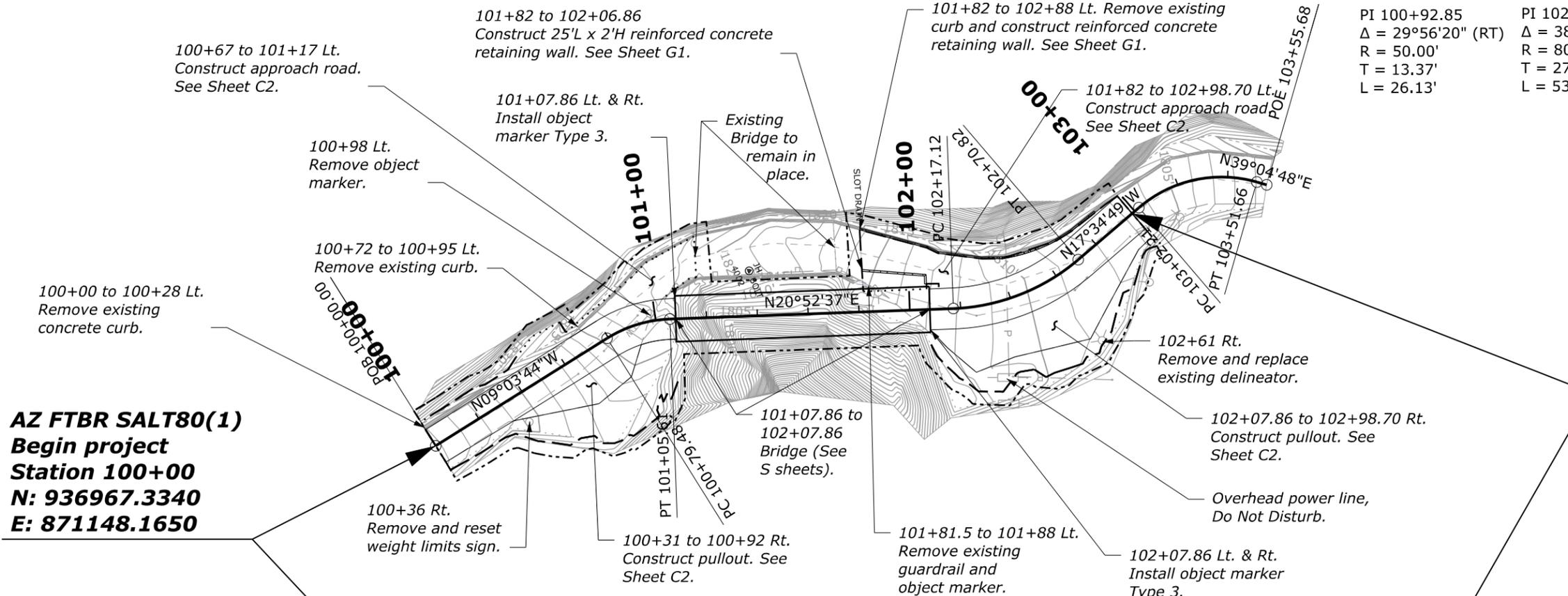
PERMANENT SIGN SUMMARY							
Station	Side	MUTCD Reference	Description	Item Number	63308-3000	63309-0000	Remarks
				Sign Panel	OBJECT MARKER, TYPE 3	DELINEATOR	
				in x in	EACH	EACH	
101+07.86	Rt	OM3-R	Object Marker Type 3	12 x 36	1		
101+07.86	Lt	OM3-L	Object Marker Type 3	12 x 36	1		
102+07.86	Rt	OM3-R	Object Marker Type 3	12 x 36	1		
102+07.86	Lt	OM3-L	Object Marker Type 3	12 x 36	1		
102+61	Rt			12 x 6		1	
TOTALS					4	1	

WALL SUMMARY				
Item Number		25801-0000		
Station to Station	Side	REINFORCED CONCRETE RETAINING WALL		Remarks
		SQFT		
101+82 - 102+06.86	LT	50		
101+82 - 102+36	LT	150		
102+36 - 102+88	LT	198		
TOTAL		398		

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OFFICE OF FEDERAL LANDS HIGHWAY

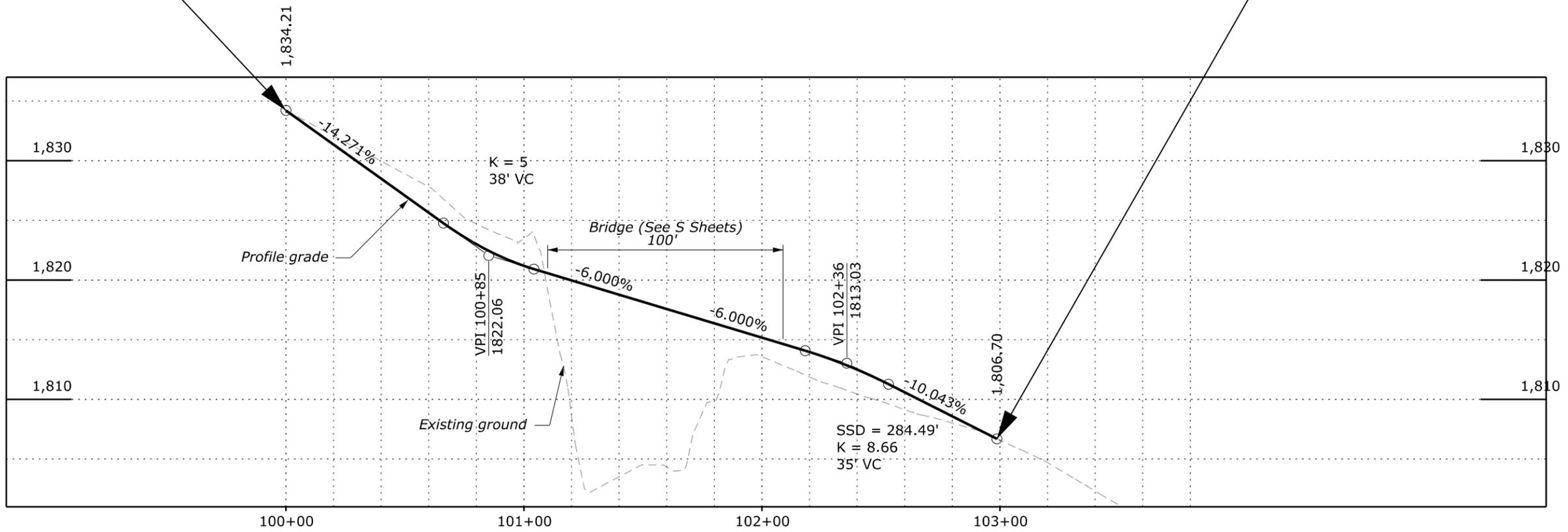
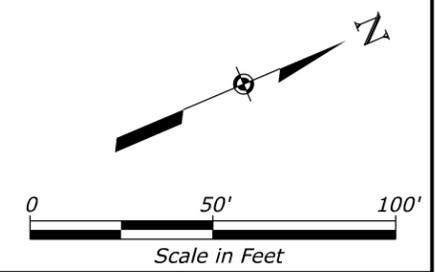
STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	C1

PI 100+92.85 PI 102+45.02
 $\Delta = 29^\circ 56' 20''$ (RT) $\Delta = 38^\circ 27' 26''$ (LT)
 R = 50.00' R = 80.00'
 T = 13.37' T = 27.90'
 L = 26.13' L = 53.70'



AZ FTBR SALT80(1)
End project
Station 102+98.70
N: 937254.9593
E: 871171.1374

AZ FTBR SALT80(1)
Begin project
Station 100+00
N: 936967.3340
E: 871148.1650



ROADWAY PLAN AND PROFILE SHEET

**HORSE MESA BRIDGE
100+00 TO 102+98.70**

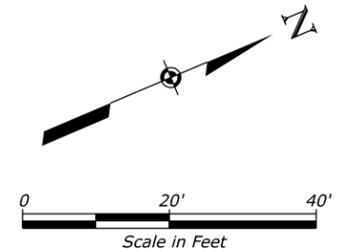
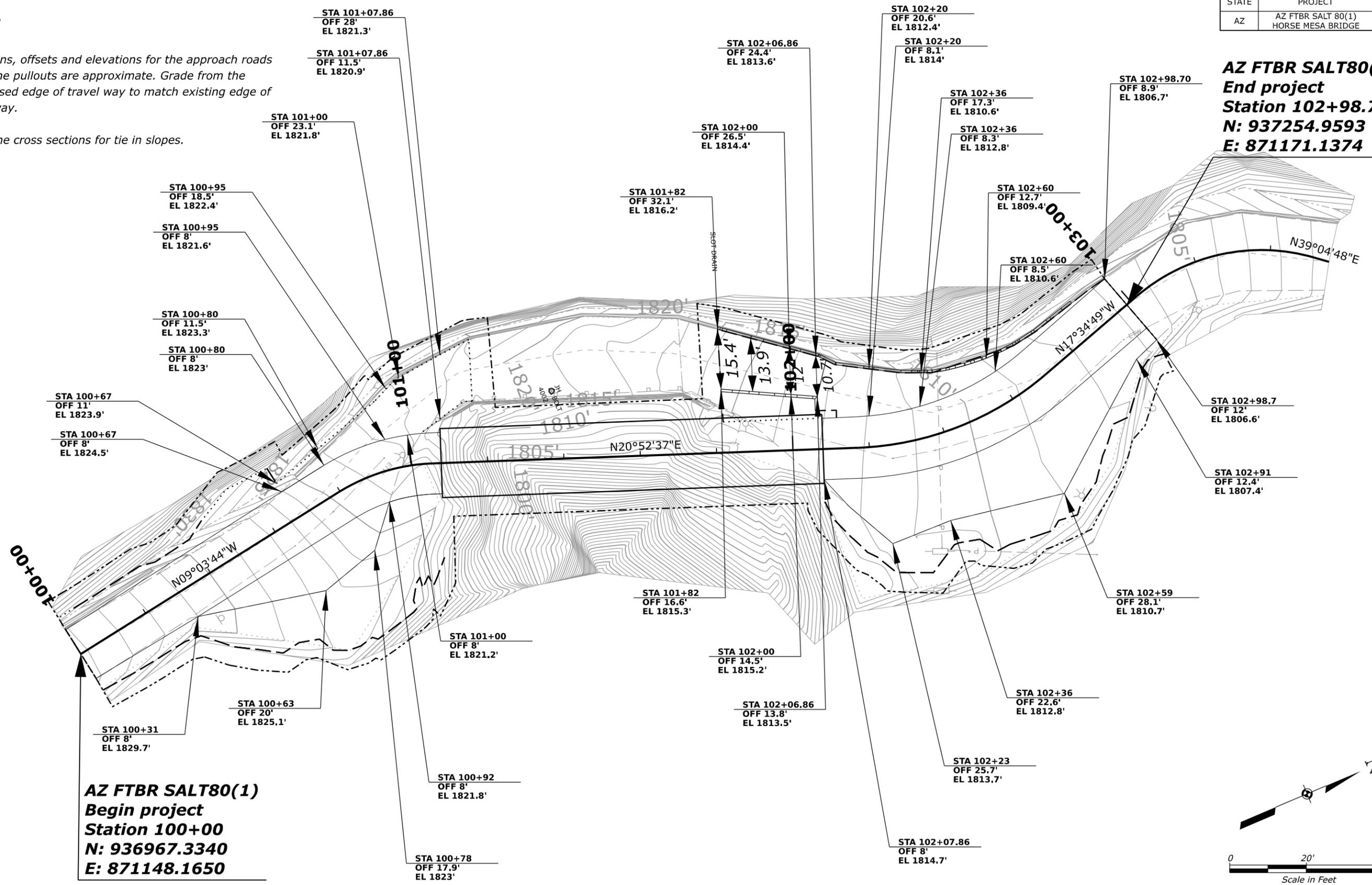
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 4 August 2022 9:28 AM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	C2

NOTE:

1. Stations, offsets and elevations for the approach roads and the pullouts are approximate. Grade from the proposed edge of travel way to match existing edge of roadway.
2. See the cross sections for tie in slopes.

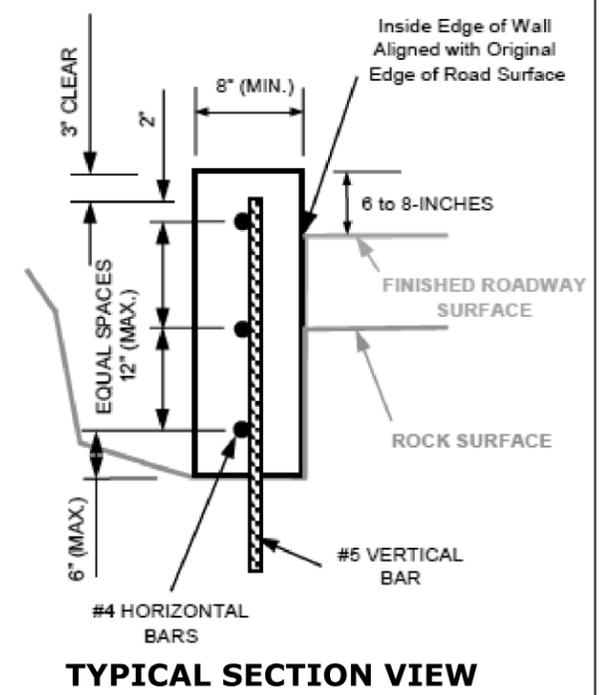
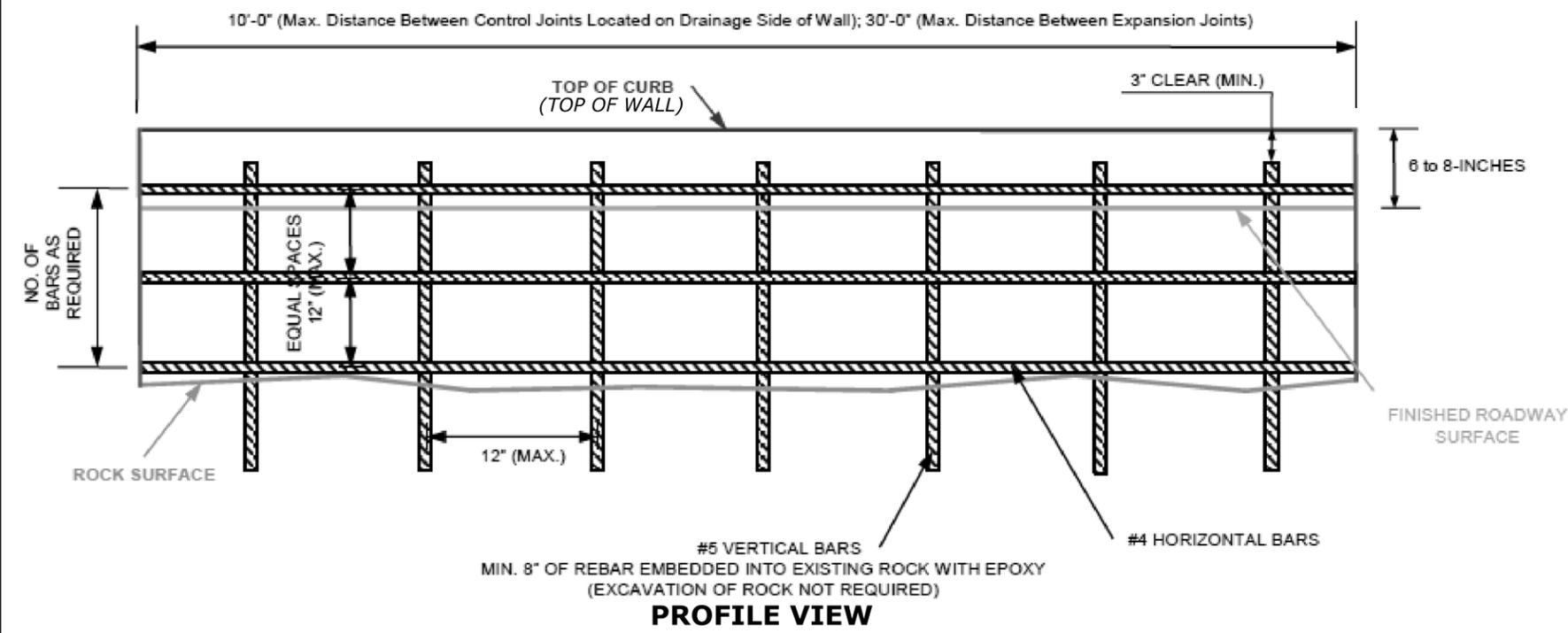
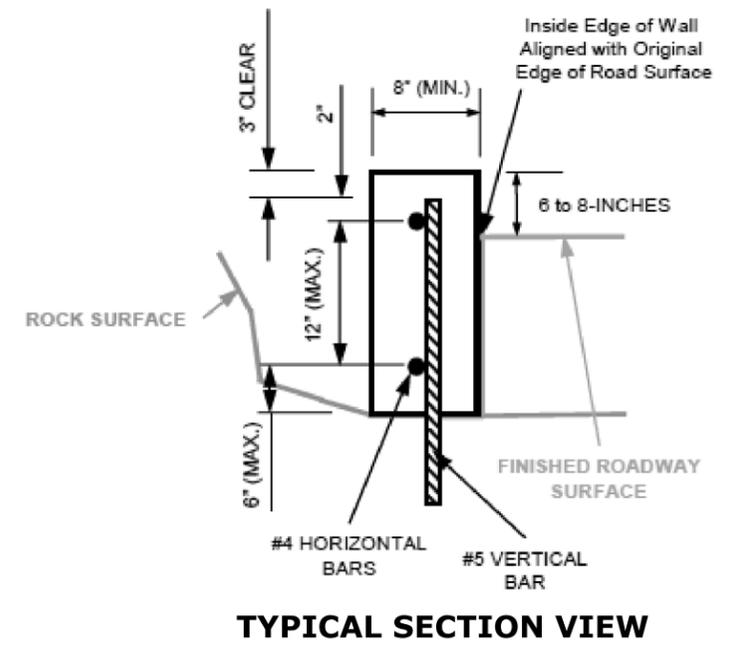
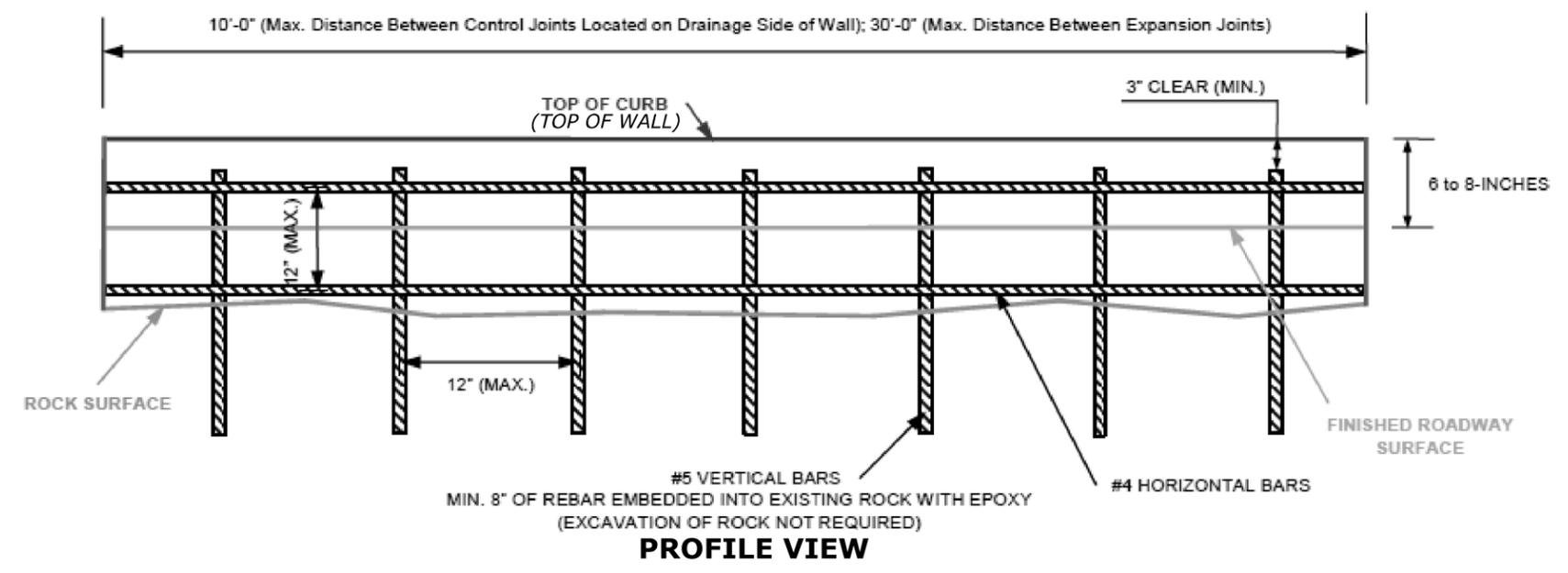
AZ FTBR SALT80(1)
End project
Station 102+98.70
N: 937254.9593
E: 871171.1374



APPROACH ROADS AND PULLOUTS GRADING PLAN SHEET

**HORSE MESA BRIDGE
100+00 TO 102+98.70**

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 4 August 2022 9:21 AM



- NOTES: 1) A MINIMUM CLEAR DISTANCE OF 3-INCHES IS REQUIRED BETWEEN EDGE OF REBAR AND ALL CONCRETE SURFACES.
 2) ALL REBAR MAY BE FIELD CUT.
 3) ALL EXPOSED CONCRETE SURFACES TO BE FORMED.

Not to Scale SRP - Civil Eng. Services

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 OFFICE OF FEDERAL LANDS HIGHWAY

CFLHD SPECIAL

**REINFORCED CONCRETE
 RETAINING WALL**

SPECIAL
 258-A

ADOPTED FROM SRP-CIVIL ENGINEERING SERVICES
 NO SCALE

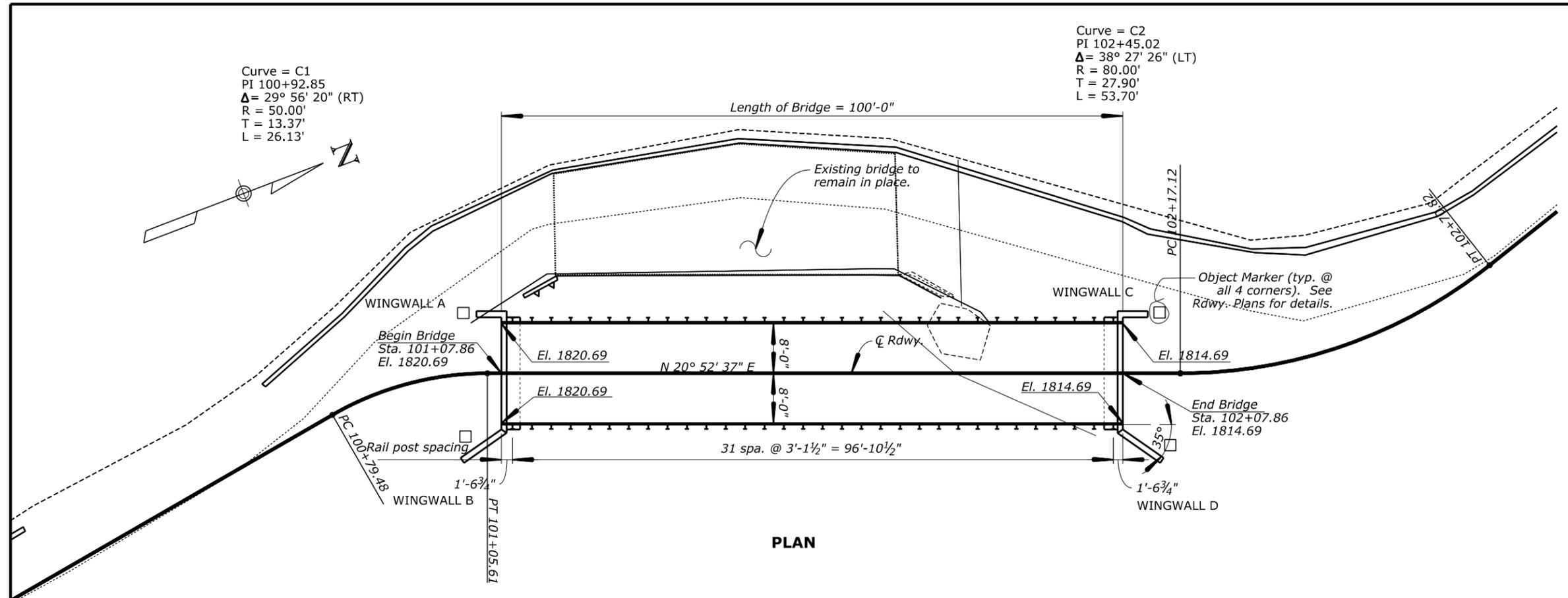
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STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S1

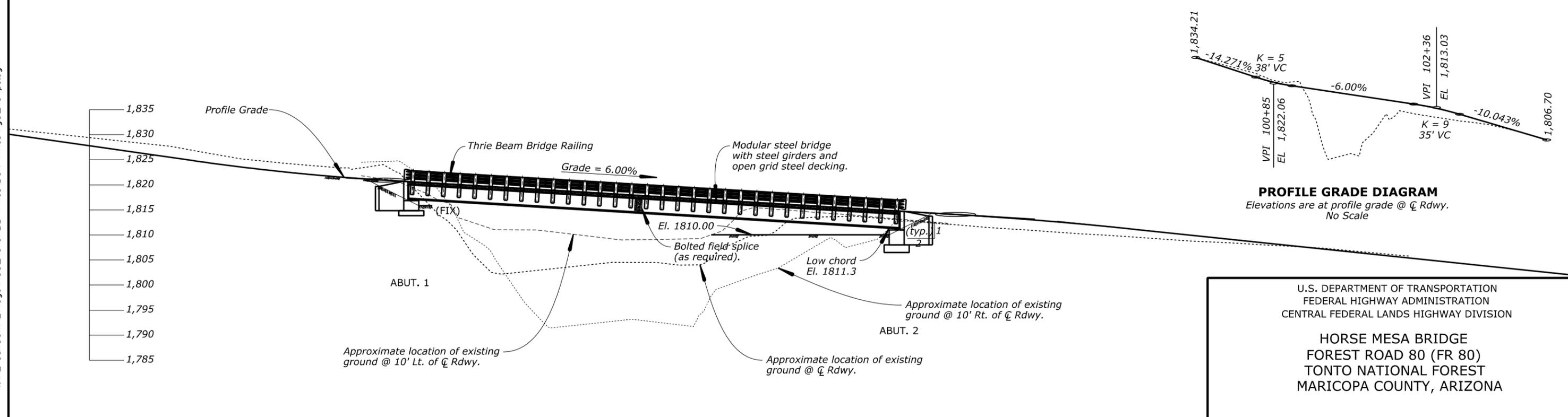
BRIDGE DRAWING INDEX	
Drawing No.	Description
RG3249-A	PLAN AND ELEVATION
RG3249-B	GENERAL NOTES & ESTIMATE
RG3249-C	FOUNDATION PLAN
RG3249-D	ABUTMENT 1
RG3249-E	ABUTMENT 2
RG3249-F	ABUTMENT 1 WINGWALLS
RG3249-G	ABUTMENT 2 WINGWALLS
RG3249-H	TYPICAL SECTION
RG3249-I-K	REBAR LIST

Curve = C1
 PI 100+92.85
 $\Delta = 29^\circ 56' 20''$ (RT)
 R = 50.00'
 T = 13.37'
 L = 26.13'

Curve = C2
 PI 102+45.02
 $\Delta = 38^\circ 27' 26''$ (LT)
 R = 80.00'
 T = 27.90'
 L = 53.70'



PLAN



ELEVATION

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

PLAN AND ELEVATION

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	B. ROBINSON S. BELCHER	D. GERMANI	1" = 20'-0"	KARL EIKERMANN	1 of 11	JUNE 2022	RG3249- A

N:\AZ\salt80(1)\Bridge\RG3249\CADD Files\DWG Files\rg3249 pe.dgn

7/28/2022

GENERAL NOTES:

SPECIFICATIONS:

DESIGN: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017.

CONSTRUCTION: Federal Highway Administration Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14 (dual units).

DEAD LOAD:

CONCRETE: 150 lbs. per cubic foot.

STRUCTURAL STEEL: 490 lbs. per cubic foot.

SOIL: 125 lbs. per cubic foot.

No allowance for future wearing surface

LIVE LOAD:

HL-93, single lane. Maximum Dynamic Load Allowance (Impact), IM = 33%.

LATERAL EARTH PRESSURE:

ACTIVE PRESSURE: Equivalent to a fluid unit weight of soil = 35 lbs. per cubic foot.

AT REST PRESSURE: Equivalent to a fluid unit weight of soil = 50 lbs. per cubic foot.

LIVE LOAD SURCHARGE: Equivalent to a height of soil. For Abutments $h_{eq} = 3$ feet.

For wingwalls $h_{eq} = 2$ feet.

WIND LOAD:

Design Wind Speed (Strength III Limit State), V = 110 mph, Wind Exposure Category = C.

SEISMIC:

Peak Ground Acceleration (PGA = 0.074 g), modified by the Site Coefficient ($F_{PGA} = 1.0$) to give a spectrum acceleration, $A_s = 0.074$ g.

Short period acceleration at 0.2 seconds ($S_S = 0.172$ g) modified by the Site Coefficient ($F_a = 1.0$) to give the short period spectrum acceleration, $S_{DS} = 0.172$ g.

Long period acceleration at 1.0 seconds ($S_1 = 0.050$ g) modified by the Site Coefficient ($F_v = 1.0$) to give the long period spectrum acceleration, $S_{D1} = 0.050$ g.

Site Class = B. Seismic Zone = A.

DESIGN CRITERIA:

CONCRETE:

All cast in place concrete shall be Structural Concrete, Class A(AE), with a minimum 28-day compressive strength, $f'_c = 4500$ psi. Chamfer exposed edges of all concrete $\frac{3}{4}$ inch, unless noted otherwise on the plans. All concrete shall be made with Type II cement.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322, Grade 60 deformed. The minimum concrete covering to the face of any bar shall be 2 inches, unless noted otherwise on the plans. Minimum splice lengths for all bar sizes shall be as shown on the plans. Bar splices other than those shown on the plans will not be paid for.

PREFABRICATED STEEL BRIDGE:

Provide modular steel girder bridge with open grid steel decking, and steel vehicular railing as shown on the plans. See Section 555 of the Special Contract Requirements for additional requirements.

The steel fabricating company shall be Certified Bridge Fabricator - Intermediate under the AISC Quality Certification Program. All structural steel for girders, diaphragms, and bridge rail posts shall be high-strength low alloy steel conforming to AASHTO M270, Grade 50 (ASTM A709, Grade 50) unless otherwise shown on the plans. The contractor shall be responsible for the stability of the structure during all phases of construction. All field connections shall be designed as slip critical, friction type, and shall be made with fasteners conforming to ASTM F3125, Grade A325, Type 3. All structural steel components of bridge including girder, diaphragms, splices and connection bolts shall be galvanized after fabrication according to AASHTO M111 or AASHTO M232, as applicable. All welding shall conform to the ANSI/AASHTO/AWS D1.5, and shall be by a certified welder.

Open grid steel decking shall conform to ASTM A709, Grade 50, or ASTM A572, Grade 50. All deck components and hardware shall be galvanized after fabrication according to AASHTO M111 or AASHTO M232, as applicable.

Thrie-beam guardrail elements shall be galvanized steel conforming to AASHTO M180, Type I, Class B (10 gauge).

Guardrail shall provide a minimum TL-2 crash test level rating.

Anchor bolts shall conform to ASTM F1554, Grade 55 or 105. Hex nuts shall conform to ASTM A563, Grade A. All anchor bolt hardware shall be galvanized.

Steel reinforced bearing pads shall conform to AASHTO M251, 60 Durometer hardness, elastomer grade 2 or higher. Design pads per AASHTO LRFD Design Method A.

DRAINAGE:

Drainage pipe shall conform to AASHTO M252.

EXISTING BRIDGE:

For existing bridge plans see Salt River Project Drawing No. A-650-6 "Horse Mesa Dam Access Road Crevice Crossing Bridge", final revision dated 06/2010.

STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S2

ESTIMATE				
Item No.	Item	Quantity	Unit	Notes
15214-1000	Survey and staking, bridge	All Req'd	LPSM	
20801-0000	Structure excavation	130	CUYD	(1)
20803-0000	Structural backfill	45	CUYD	(1)(4)
55201-0200	Structural concrete, class A(AE)	28	CUYD	(2)(1)
55401-1000	Reinforcing steel	3600	LB	(1)
55504-0000	Pre-fabricated steel bridge (16' wide x 98' long modular steel vehicular bridge)	All Req'd	LPSM	(3)
60101-0000	Concrete	10	CUYD	(5)

ESTIMATE NOTES

- (1) Contract Quantity.
- (2) Includes cost of furnishing and installing geocomposite sheet drain, (est. qty. = 25 square yards), weepholes, and drain grates.
- (3) Includes cost of furnishing and erecting modular steel bridge including structural steel girders and diaphragms, steel railing posts, thrie beam railing, open steel grid decking, splice plates, elastomeric bearing pads, bearing plates, anchor bolts, and all associated hardware.
- (4) Includes cost of furnishing and placing section 704.03 backfill material.
- (5) Includes cost of minor concrete as required to meet footing embedment requirements.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HORSE MESA BRIDGE
FOREST ROAD 80 (FR 80)
TONTON NATIONAL FOREST
MARICOPA COUNTY, ARIZONA

GENERAL NOTES & ESTIMATE

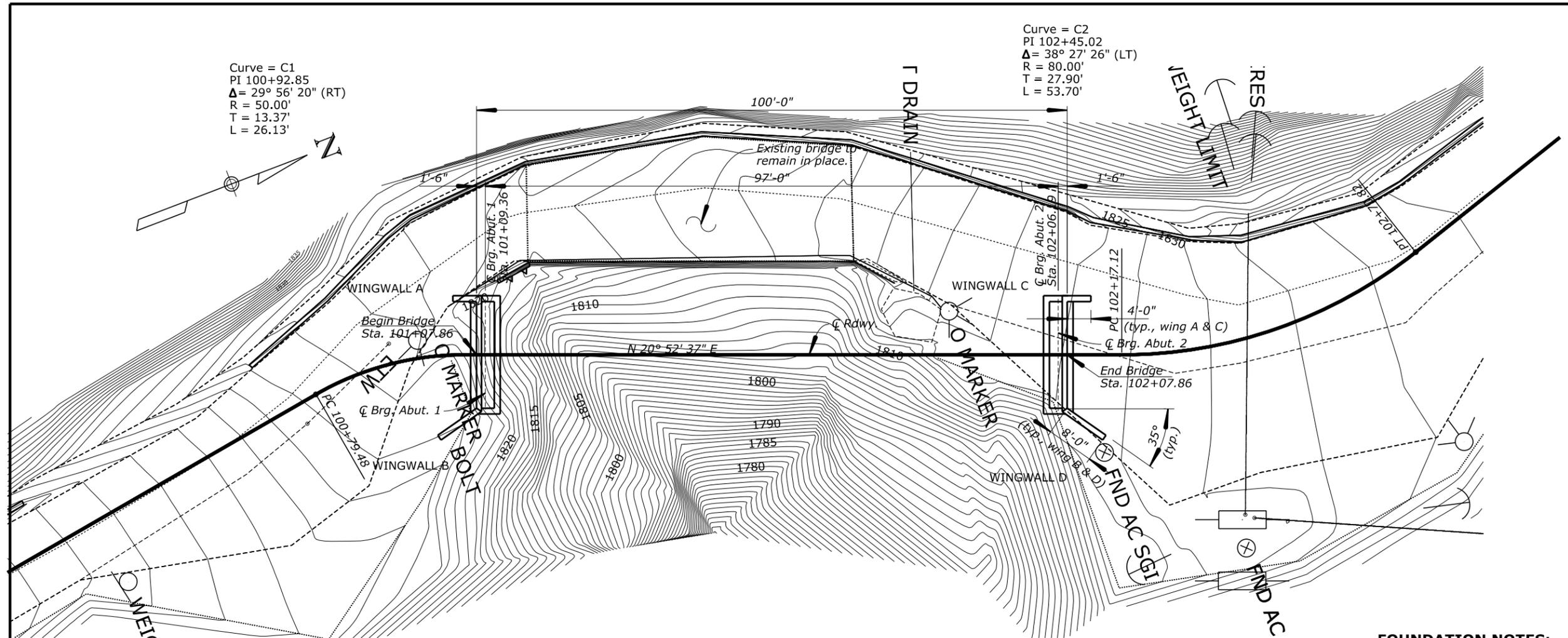
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								S. BELCHER	B. ROBINSON	D. GERMANI	NONE	KARL EIKERMANN	2 of 11	JUNE 2022	RG3249- B

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7/28/2022

Curve = C1
 PI 100+92.85
 $\Delta = 29^\circ 56' 20''$ (RT)
 R = 50.00'
 T = 13.37'
 L = 26.13'

Curve = C2
 PI 102+45.02
 $\Delta = 38^\circ 27' 26''$ (LT)
 R = 80.00'
 T = 27.90'
 L = 53.70'



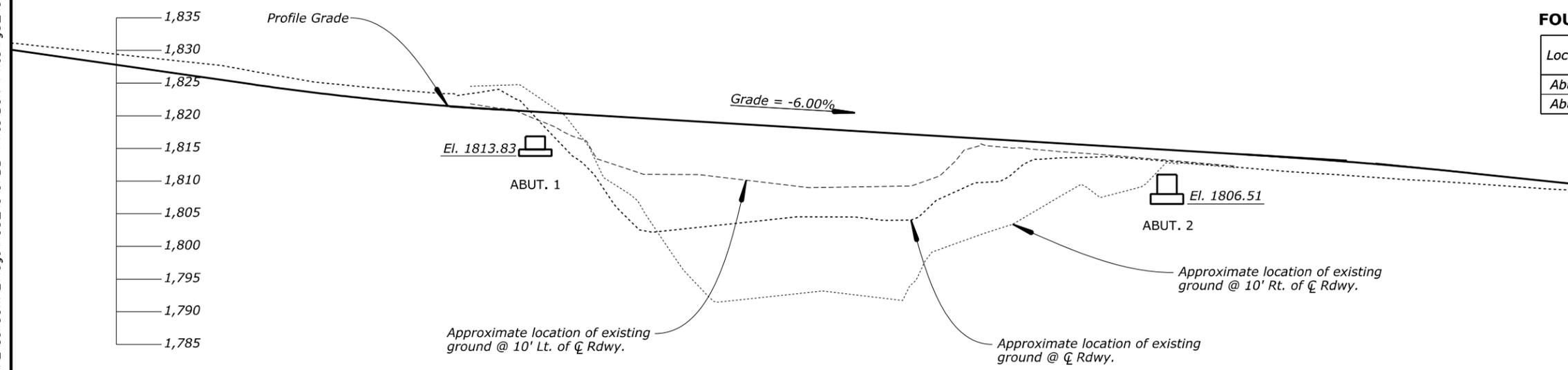
FOUNDATION PLAN

FOUNDATION NOTES:

See Geotechnical Technical Memorandum: Horse Mesa Bridge, dated July 18, 2022, prepared by U.S. Dept. of Transportation, Federal Highway Administration, Central Federal Lands Highway Division, Geotechnical Services Branch, Lakewood, Colorado.

FOUNDATION TABLE

Location	Max. Bearing Pressure
Abut. 1	5.5 ksf (Strength I)
Abut. 2	5.9 ksf (Strength I)



ELEVATION

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

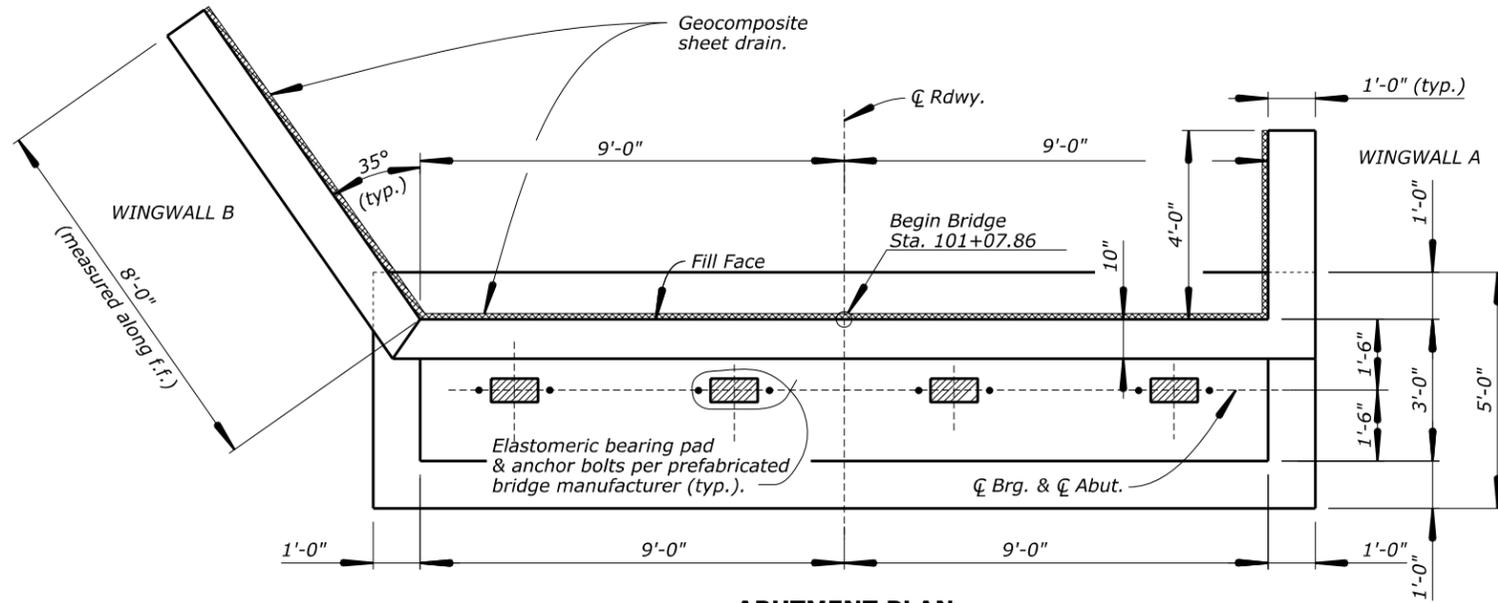
FOUNDATION PLAN

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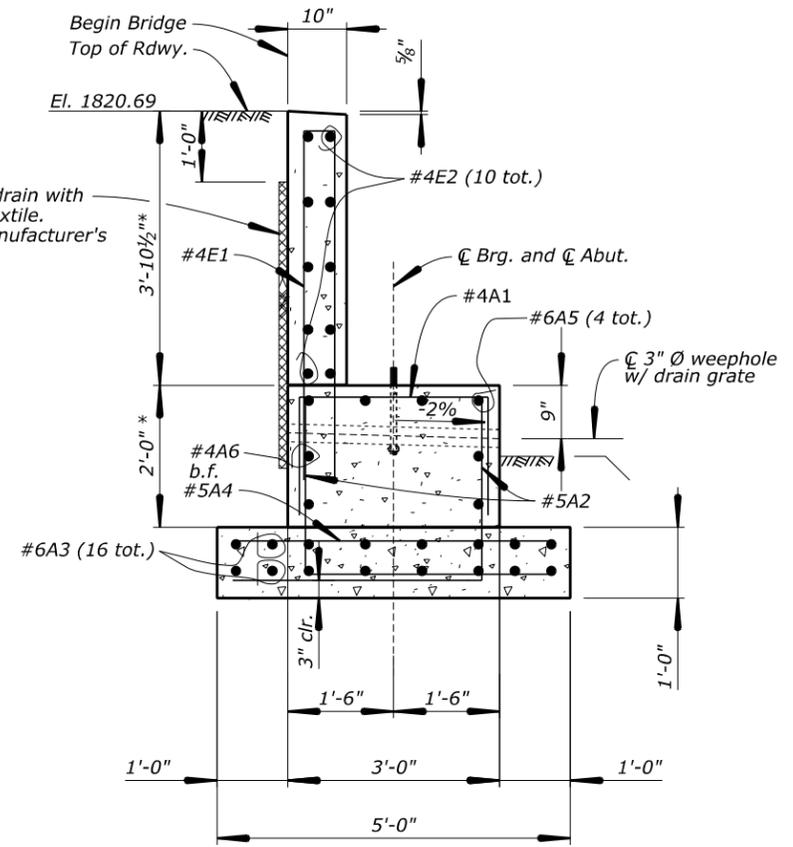
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7/28/2022

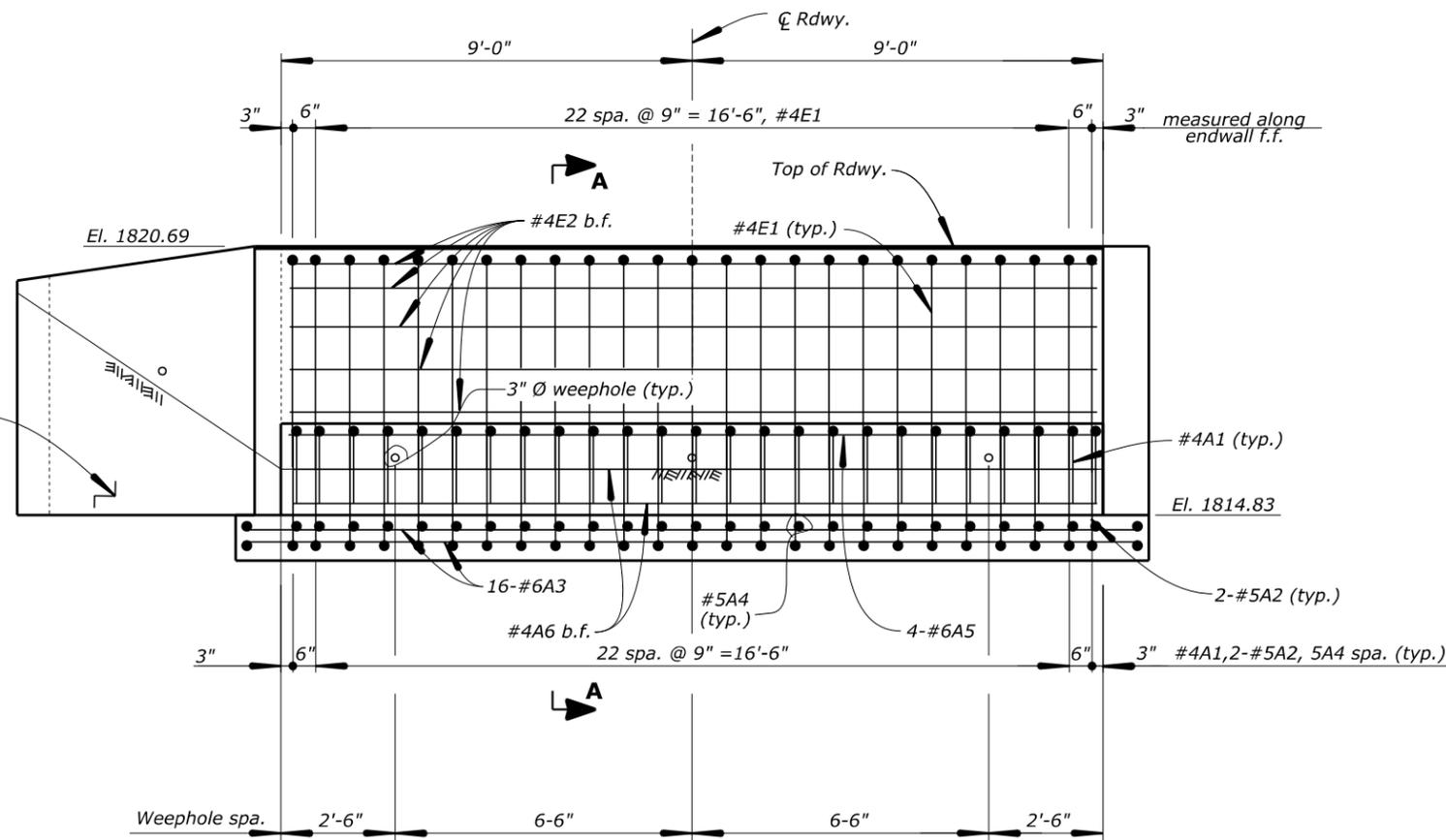
STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S4



ABUTMENT PLAN



SECTION A-A
No Scale



ABUTMENT ELEVATION

ABBREVIATIONS:
f.f. = Fill face
o.f. = Other face
b.f. = Both faces

* Final dimensions & elevations to be coordinated with bridge manufacturer prior to ordering materials and constructing abutments.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

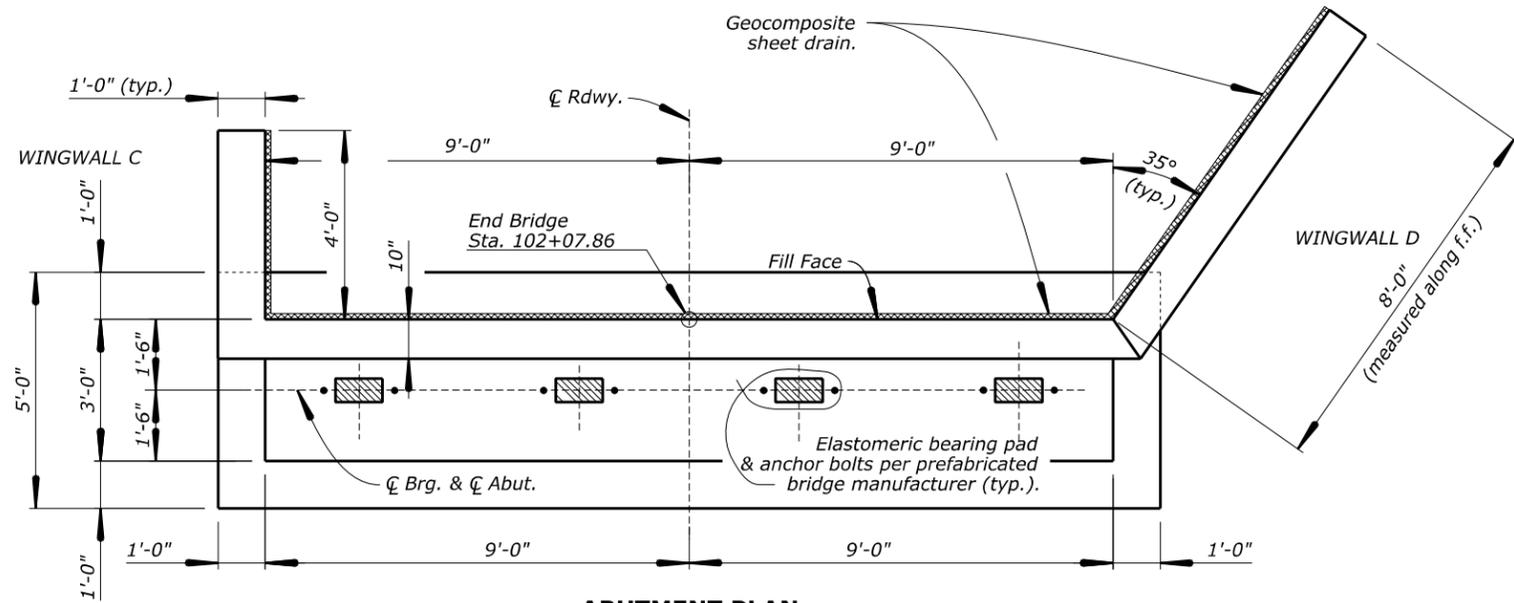
HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

ABUTMENT 1

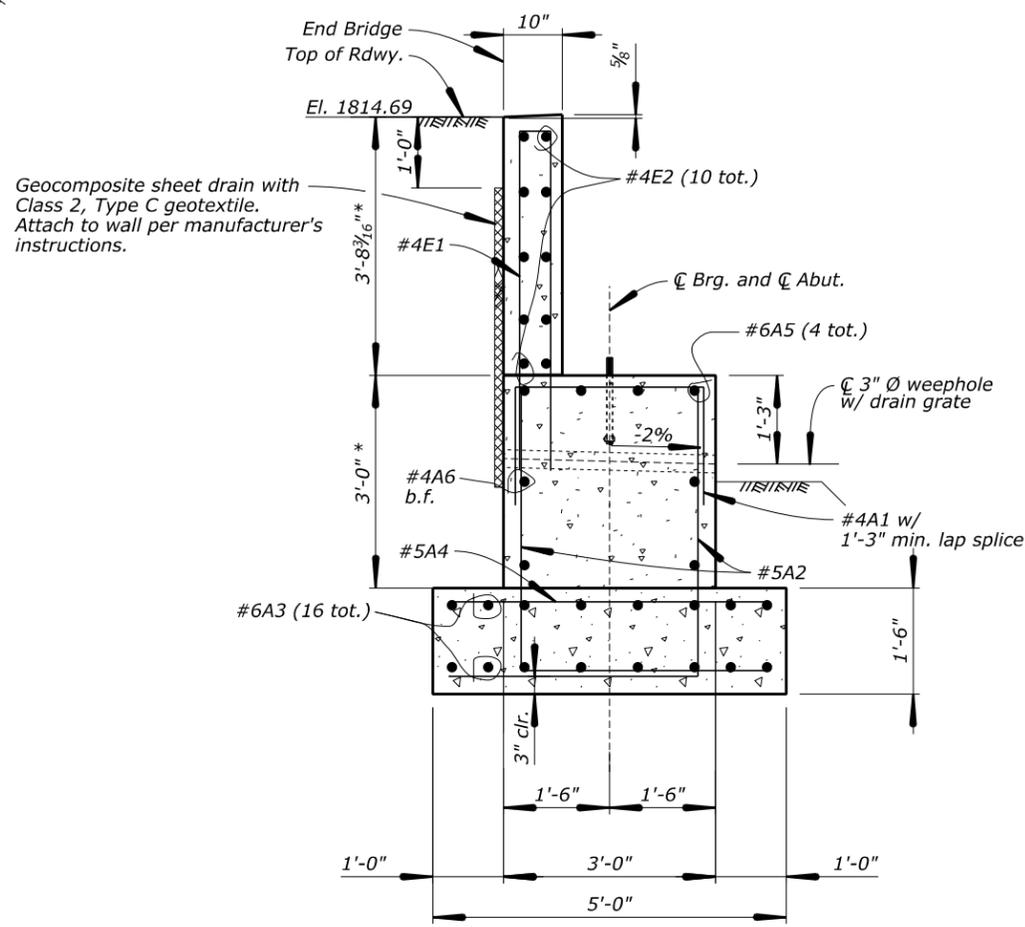
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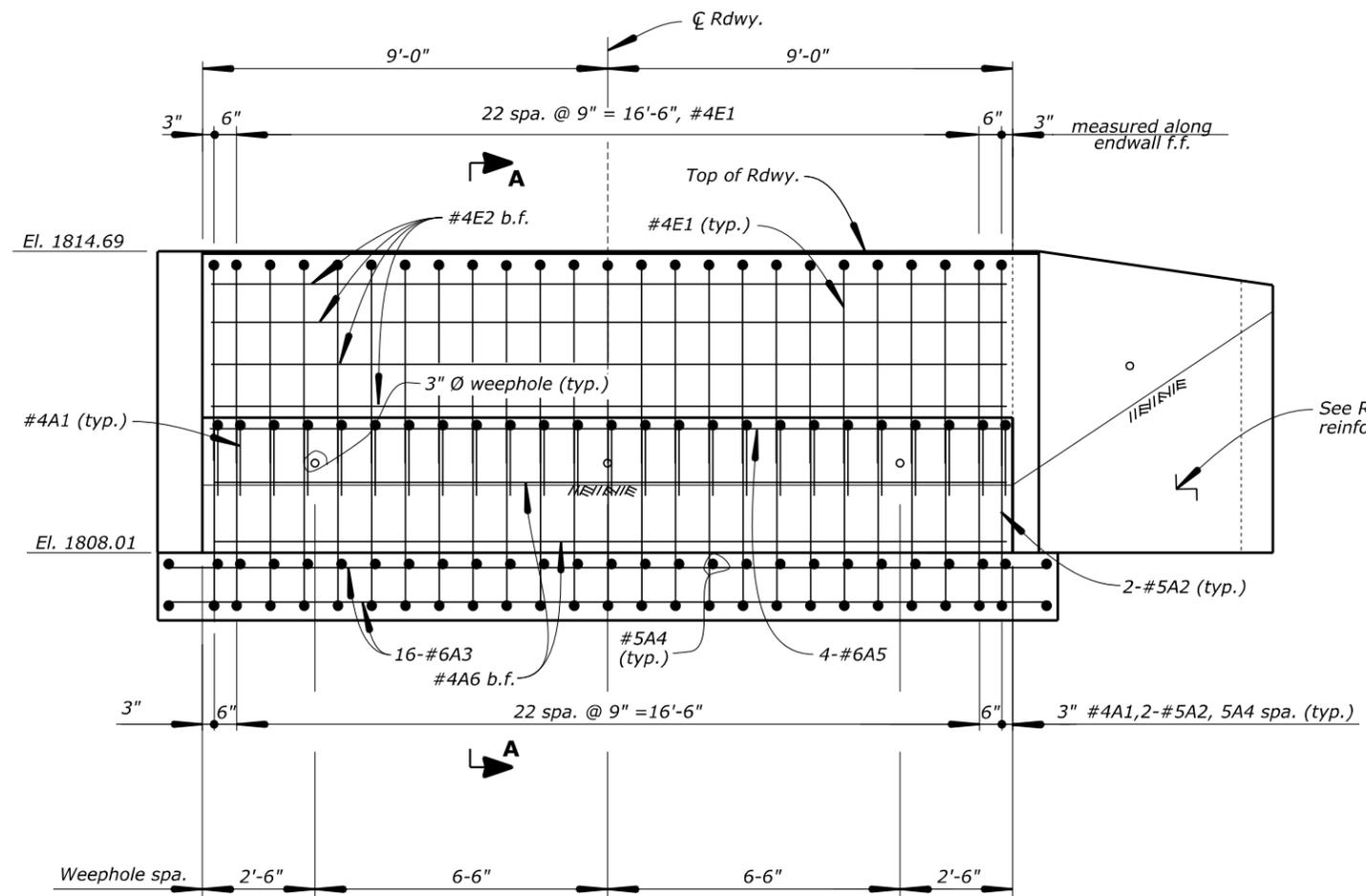
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								S. BELCHER	S. BELCHER	D. GERMANI	1/4" = 1'-0" UNLESS NOTED	KARL EIKERMANN	4 of 11	JUNE 2022	RG3249-D



ABUTMENT PLAN



SECTION A-A
No Scale



ABUTMENT ELEVATION

ABBREVIATIONS:
f.f. = Fill face
o.f. = Other face
b.f. = Both faces

* Final dimensions & elevations to be coordinated with bridge manufacturer prior to ordering materials and constructing abutments.

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HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

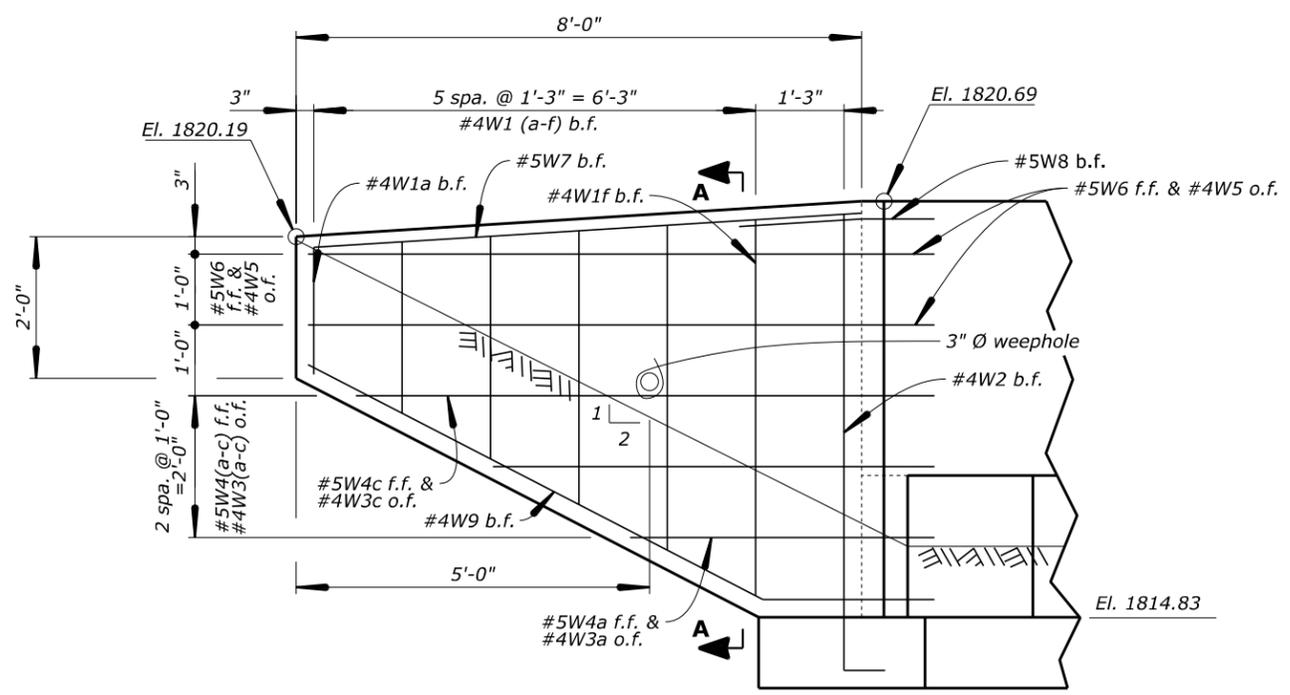
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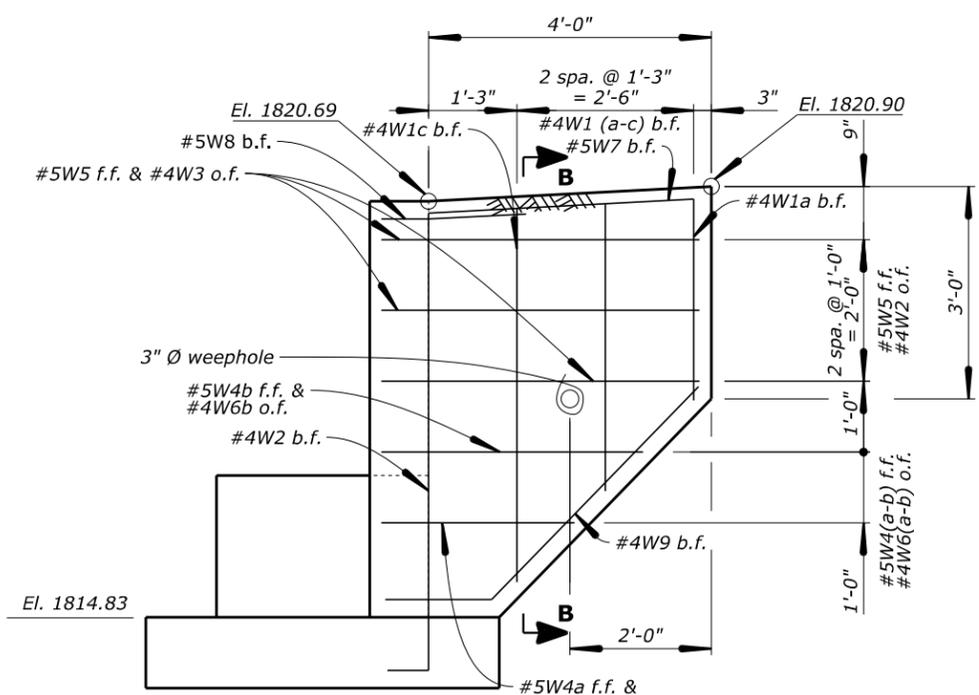
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								S. BELCHER	S. BELCHER	D. GERMANI	1/4" = 1'-0" UNLESS NOTED	KARL EIKERMANN	5 of 11	JUNE 2022	RG3249- E

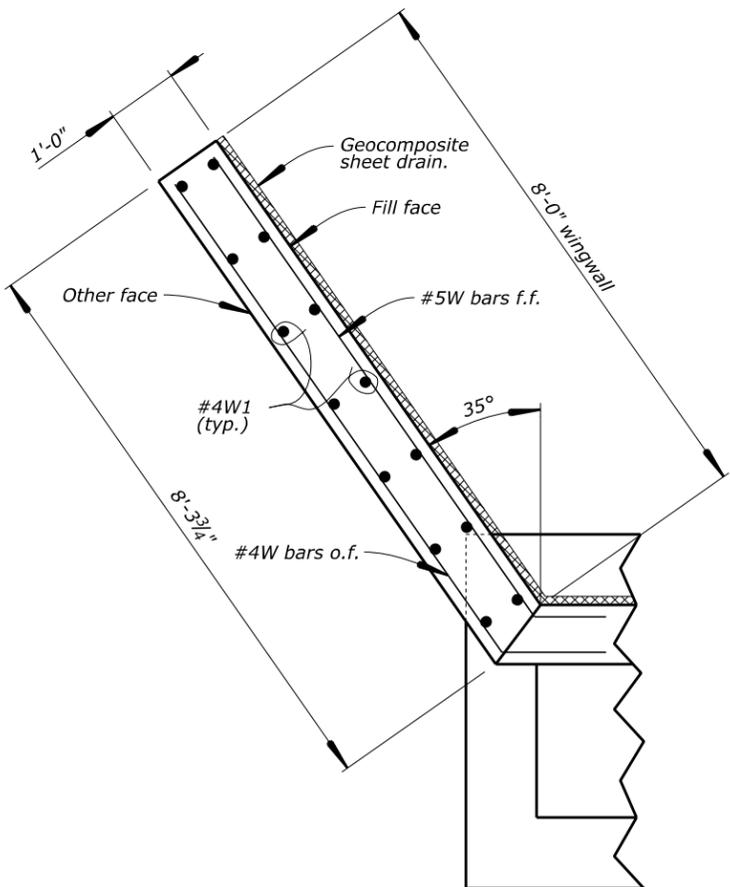
STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S6



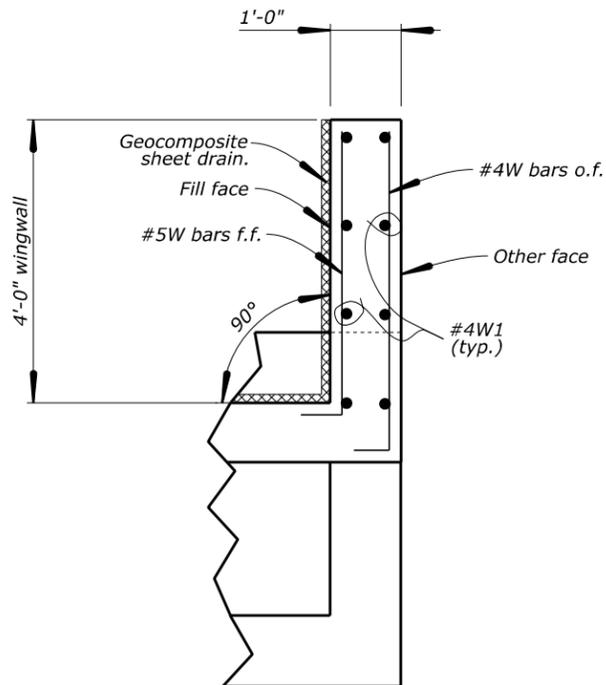
WINGWALL B ELEVATION



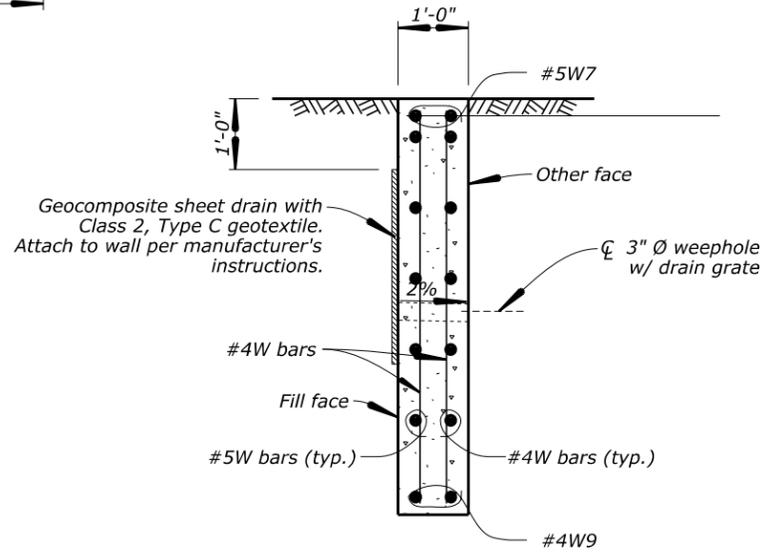
WINGWALL A ELEVATION



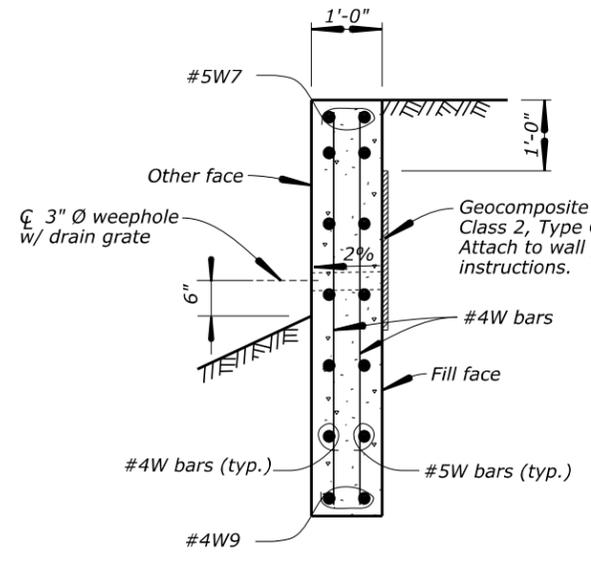
WINGWALL B PLAN



WINGWALL A PLAN



SECTION B-B



SECTION A-A

ABBREVIATIONS:
 f.f. = Fill face
 o.f. = Other face
 b.f. = Both faces

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

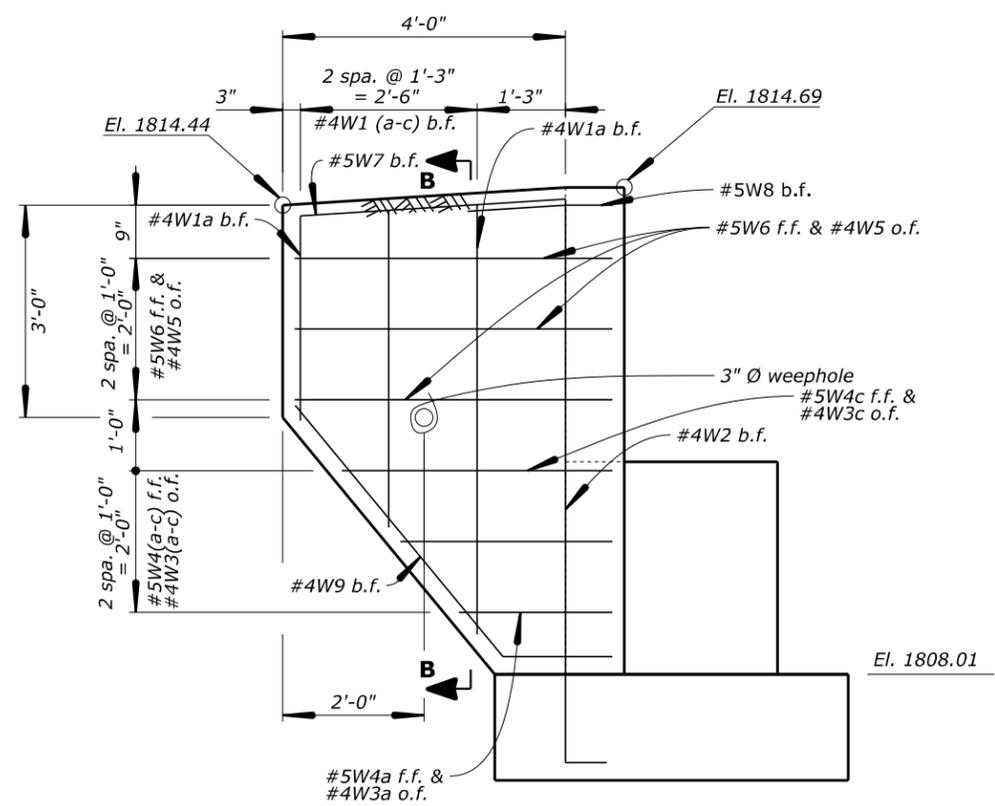
ABUTMENT 1 WINGWALLS

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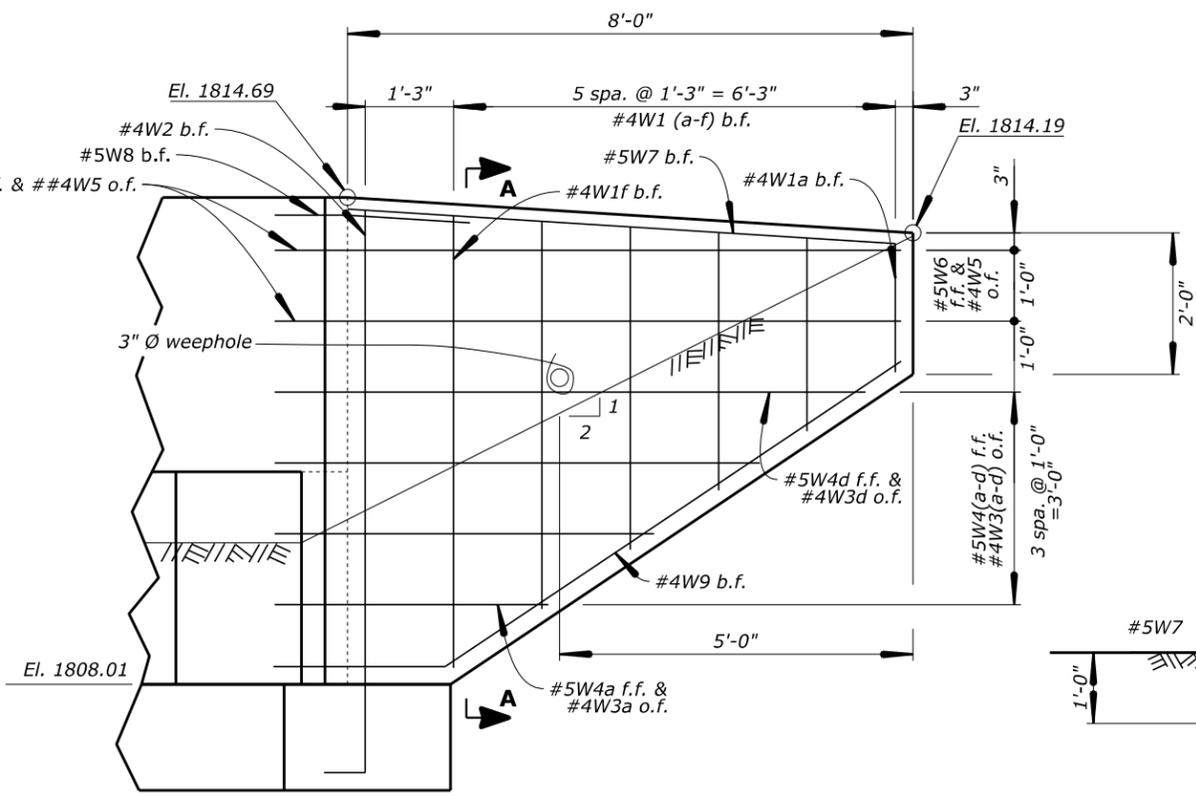
7/28/2022

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	S. BELCHER	D. GERMANI	3/8" = 1'-0"	KARL EIKERMANN	6 of 11	JUNE 2022	RG3249-F

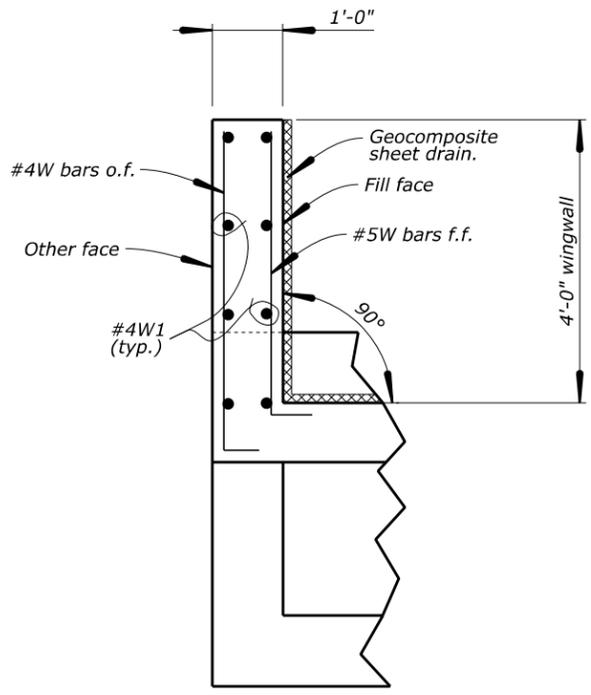
STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S7



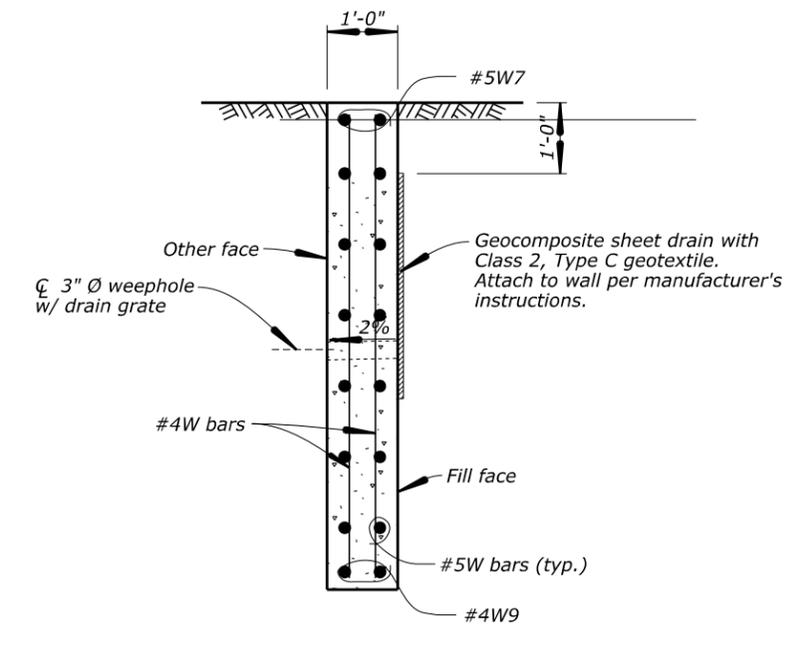
WINGWALL C ELEVATION



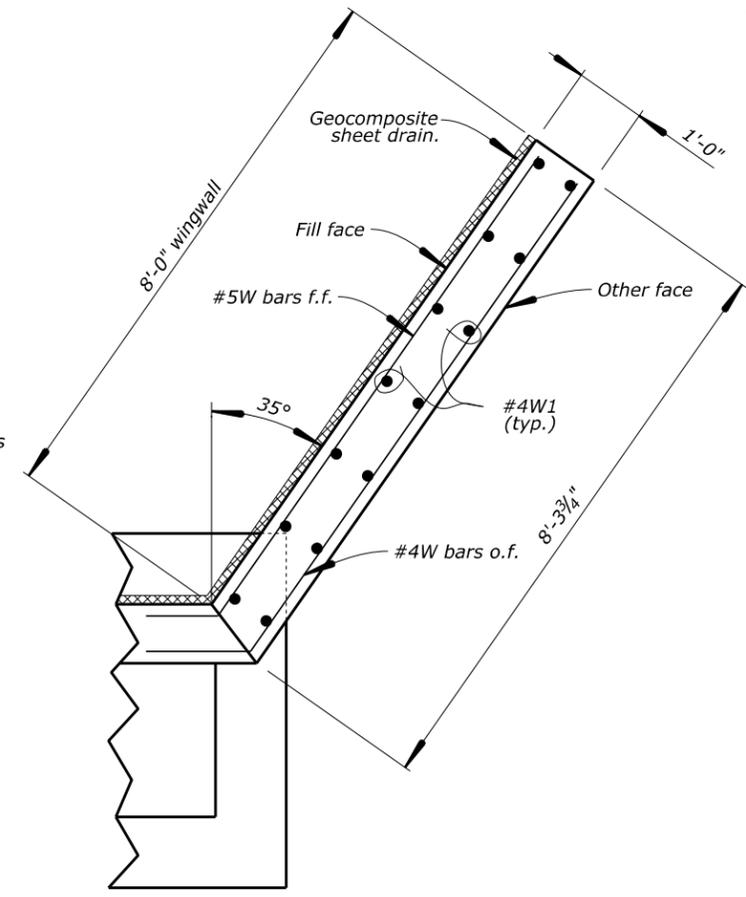
WINGWALL D ELEVATION



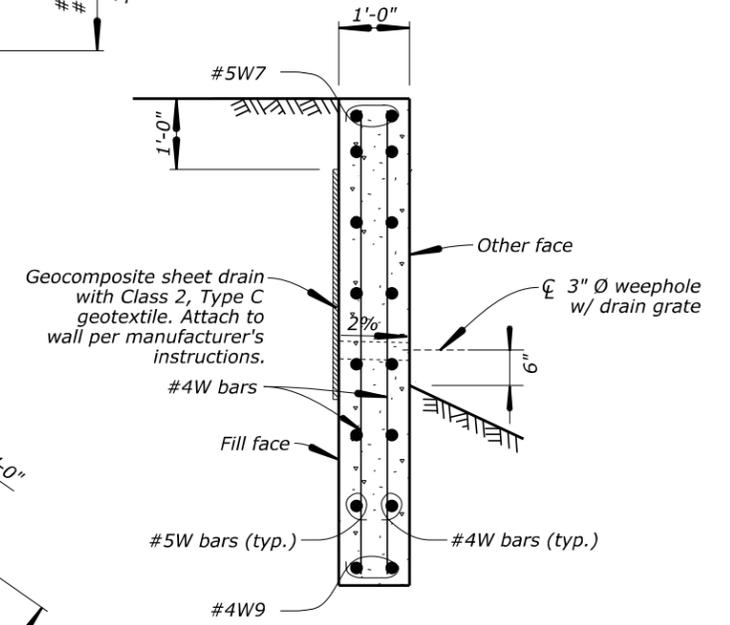
WINGWALL C PLAN



SECTION B-B



WINGWALL D PLAN



SECTION A-A

ABBREVIATIONS:
 f.f. = Fill face
 o.f. = Other face
 b.f. = Both faces

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

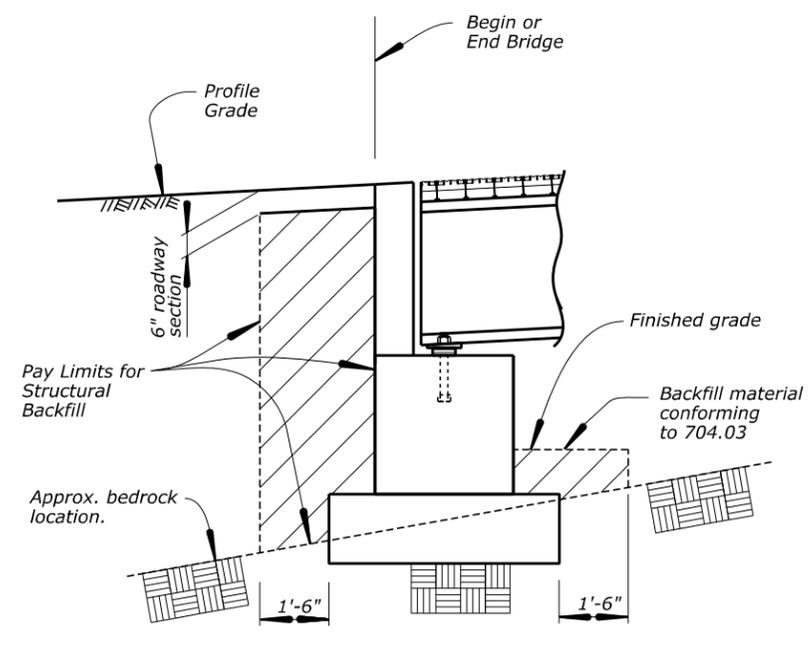
HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

ABUTMENT 2 WINGWALLS

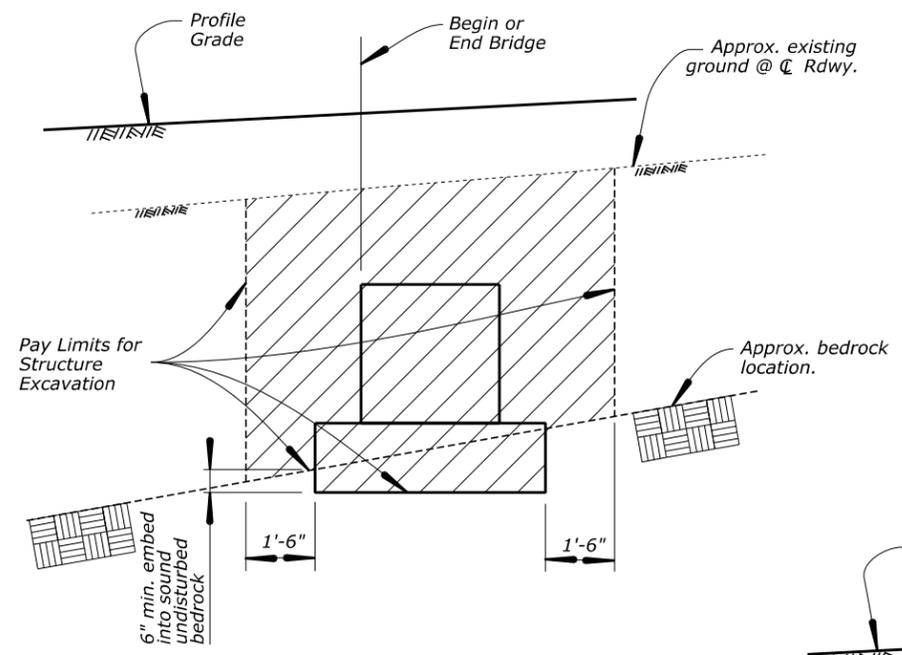
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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	S. BELCHER	D. GERMANI	3/8" = 1'-0"	KARL EIKERMANN	7 of 11	JUNE 2022	RG3249-G

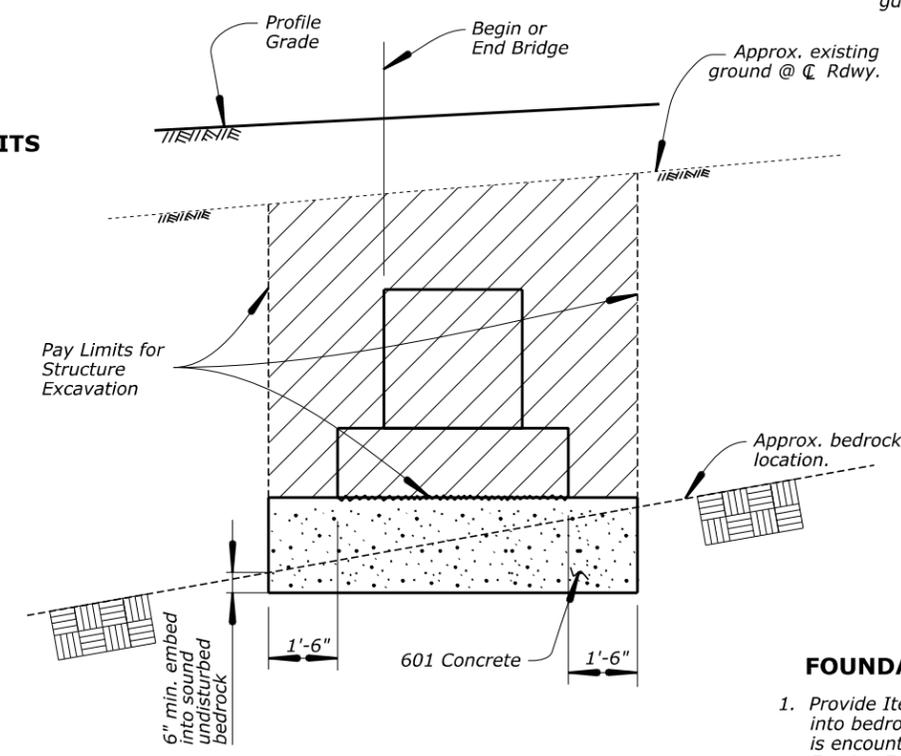
STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S8



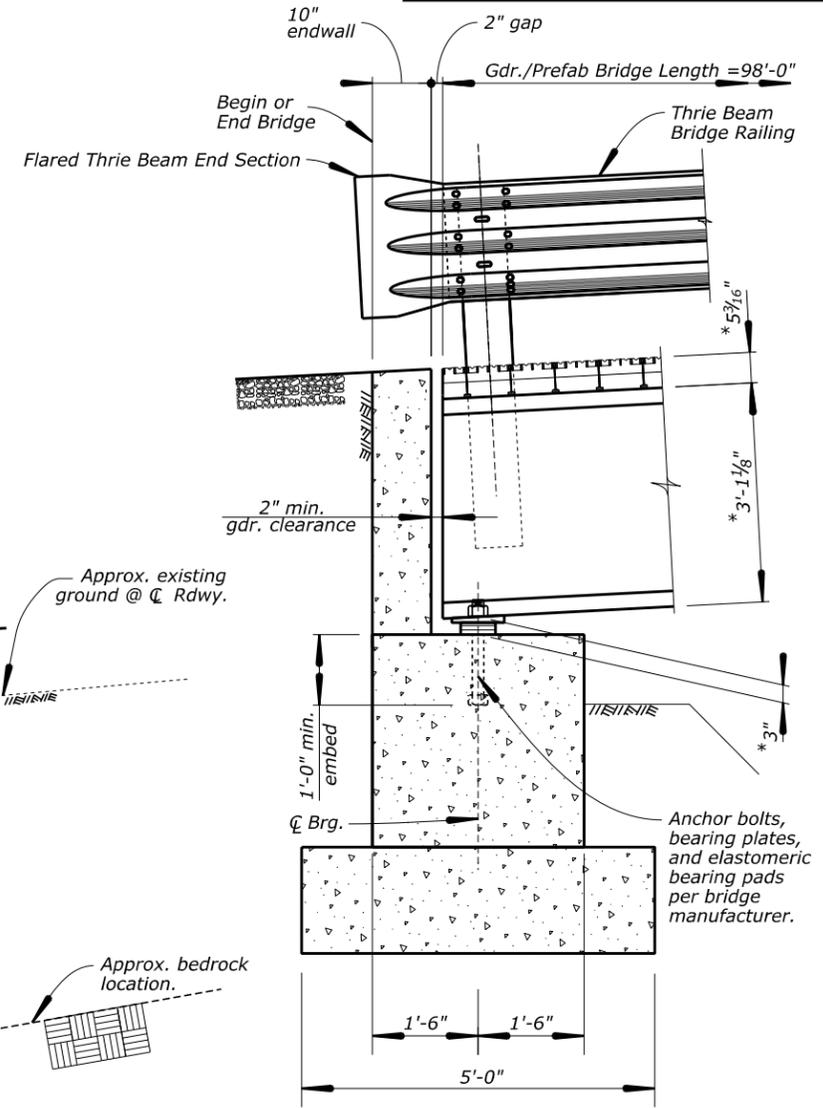
STRUCTURAL BACKFILL PAY LIMITS
Abutment 2 shown, Abutment 1 similar
No Scale



STRUCTURE EXCAVATION PAY LIMITS
Abutment 2 shown, Abutment 1 similar
No Scale



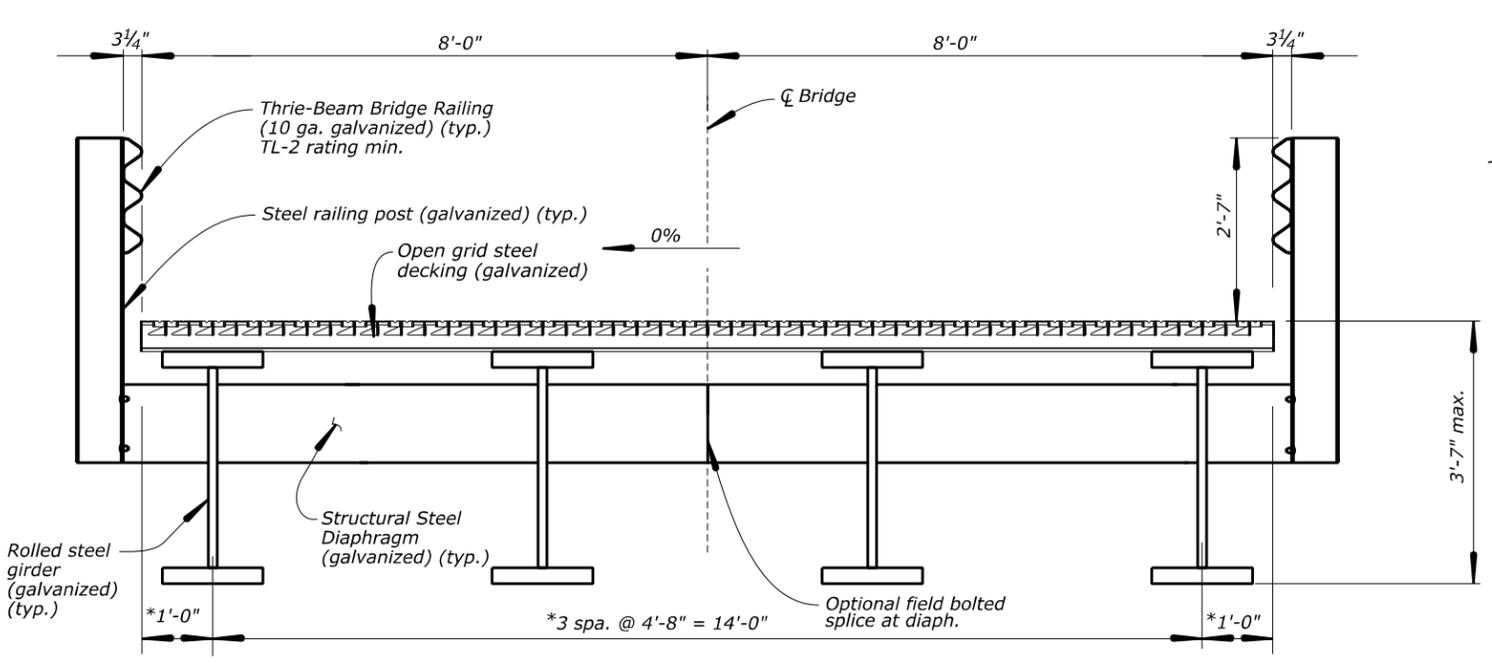
ALTERNATE FOOTING EMBEDMENT DETAIL
Abutment 2 shown, Abutment 1 similar
No Scale



TYPICAL SECTION @ ABUTMENT

FOUNDATION NOTES:

1. Provide Item 601 concrete where footing embedment into bedrock requirements can not be met (i.e. bedrock is encountered below specified depths). See Alternate Footing Embedment Detail.
2. Excavation and removal of material below specified footing depths required for placement of 601 concrete shall be included in pay item for "Concrete". If depth of 601 concrete is found to exceed 3' notify CO prior to construction.



TYPICAL SECTION

* Final dimensions & elevations to be coordinated with bridge manufacturer prior to ordering materials and constructing abutments.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HORSE MESA BRIDGE
FOREST ROAD 80 (FR 80)
TONTON NATIONAL FOREST
MARICOPA COUNTY, ARIZONA

TYPICAL SECTION

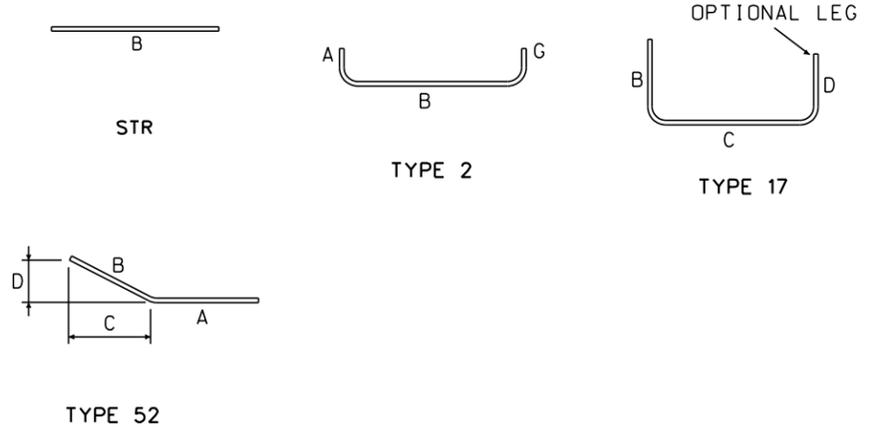
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7/28/2022

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	S. BELCHER	D. GERMANI	3/8" = 1'-0" UNLESS NOTED	KARL EIKERMANN	8 of 11	JUNE 2022	RG3249-H

N:\AZ\Isalt180(1)\Bridge\RG3249\CADD Files\RG3249 rebar.dgn 7/28/2022

REINFORCING STEEL SCHEDULE							DIMENSION TABLE													
ABUTMENT 1																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*4A1	4	17	0'-3"	Stirrups	25	5'-10"	97		1'-7"	2'-8"	1'-7"									
*5A2	5	17	0'-3 3/4"	Vert.b.f.	50	6'-3"	326		3'-8"	2'-7"										
*6A3	6	STR		Long.top & bot.	16	19'-8"	473		19'-8"											
*5A4	5	STR		Trans.top	29	4'-8"	141		4'-8"											
*6A5	6	STR		Horiz.top	4	17'-8"	106		17'-8"											
*4A6	4	STR		Horiz.b.f.	4	17'-8"	47		17'-8"											
SUBTOTAL							1190	LBS												
ABUTMENT 2																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*4A1	4	17	0'-3"	Stirrups	25	7'-10"	131		2'-7"	2'-8"	2'-7"									
*5A2	5	17	0'-3 3/4"	Vert.b.f.	50	7'-3"	378		3'-8"	3'-7"										
*6A3	6	STR		Long.top & bot.	16	19'-8"	473		19'-8"											
*5A4	5	STR		Trans.top	29	4'-8"	141		4'-8"											
*6A5	6	STR		Horiz.top	4	17'-8"	106		17'-8"											
*4A6	4	STR		Horiz.b.f.	4	17'-8"	47		17'-8"											
SUBTOTAL							1276	LBS												
ENDWALL 1																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*4E1	4	17	0'-3"	Stirrups	25	10'-2"	170		4'-10"	0'-6"	4'-10"									
*4E2	4	STR		Horiz.b.f.	10	17'-8"	118		17'-8"											
SUBTOTAL							288	LBS												
ENDWALL 2																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*4E1	4	17	0'-3"	Stirrups	25	11'-5 1/2"	191		5'-5 3/4"	0'-6"	5'-5 3/4"									
*4E2	4	STR		Horiz.b.f.	10	17'-8"	118		17'-8"											
SUBTOTAL							309	LBS												
WINGWALL A																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*4W1	4	STR		Vert.b.f.	2 sets of 3	5'-3" to 2'-10" at 1'-2 1/2" Incr.	16		5'-3" to 2'-10" at 1'-2 1/2" Incr.											
*4W2	4	2	0'-3"	Vert.b.f.	2	7'-1 1/2"	10	0'-8"	6'-5 1/2"											
*4W3	4	2	0'-3"	Horiz.of.	3	5'-2"	10	0'-8"	4'-6"											
*5W4	5	2	0'-3 3/4"	Horiz.f.f.	1 set of 2	3'-0 1/2" to 4'-0" at 0'-11 1/2" Incr.	7	0'-10"	2'-2 1/2" to 3'-2 1/4" at 0'-11 3/4" Incr.											
*5W5	5	2	0'-3 3/4"	Horiz.f.f.	3	4'-10"	15	0'-10"	4'-0"											
*4W6	4	2	0'-3"	Horiz.of.	1 set of 2	3'-4 1/2" to 4'-4" at 0'-11 1/2" Incr.	5	0'-8"	2'-8 1/2" to 3'-8 1/4" at 0'-11 3/4" Incr.											
*5W7	5	STR		Horiz.b.f.	2	3'-8"	8		3'-8"											
*5W8	5	17	0'-3 3/4"	Horiz.b.f.	2	2'-0"	4		1'-0"	1'-0"										
*4W9	4	52	0'-3"	Diagonal	2	5'-9 1/2"	8	4'-2"	1'-7 1/4"	1'-1 1/4"	1'-2"									
SUBTOTAL							83	LBS												
WINGWALL B																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*4W1	4	STR		Vert.b.f.	2 sets of 6	1'-9 1/2" to 5'-4 1/2" at 0'-8 1/2" Incr.	29		1'-9 1/2" to 5'-4 1/2" at 0'-8 1/2" Incr.											
*4W2	4	2	0'-3"	Vert.b.f.	2	7'-1 1/2"	10	0'-8"	6'-5 1/4"											



NOTE:
 Dimensions in bending diagrams are out-to-out of bars

 Abbreviations:
 f.f. = fill face
 o.f. = other face
 b.f. = both faces

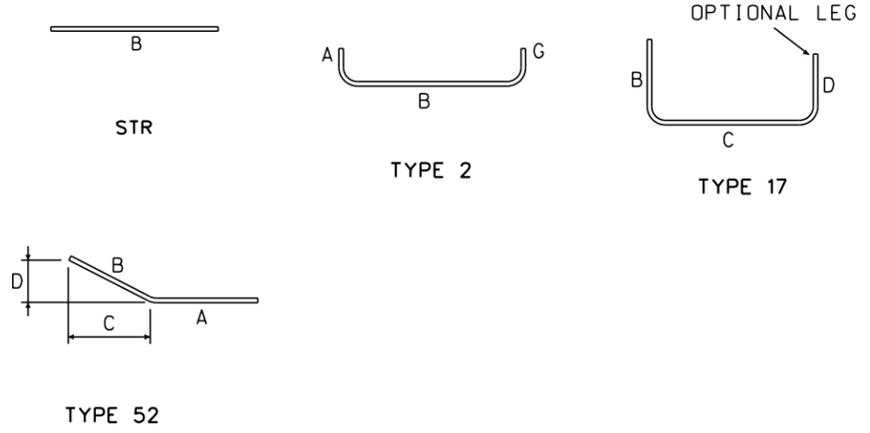
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

REBAR LIST (1 OF 3)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	B. ROBINSON	D. GERMANI	NONE	KARL EIKERMANN	9 of 11	JUNE 2022	RG3249-I

REINFORCING STEEL SCHEDULE						DIMENSION TABLE															
WINGWALL B (CONTINUED)																					
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N	
*4W3	4	52	0'-3"	Horiz.of.	1 sets of 3	4'-4 1/2" to 8'-3 1/2" at 1'-11 1/2" Incr.	13	3'-4 3/4" to 7'-3 1/4" at 1'-11 1/4" Incr.	1'-0"	0'-7"	0'-10"										
*5W4	5	52	0'-3 3/4"	Horiz.f.f.	1 sets of 3	4'-0 1/2" to 7'-11 1/2" at 1'-11 1/2" Incr.	19	3'-0 3/4" to 6'-11 1/4" at 1'-11 1/4" Incr.	1'-0"	0'-7"	0'-10 1/4"										
*4W5	4	52	0'-3"	Horiz.of.	2	9'-1"	12	8'-0 3/4"	1'-0"	0'-7"	0'-10"										
*5W6	5	52	0'-3 3/4"	Horiz.f.f.	2	8'-11 1/2"	19	7'-11 1/4"	1'-0"	0'-7"	0'-10 1/4"										
*5W7	5	STR		Horiz.b.f.	2	7'-8"	16		7'-8"												
*5W8	5	52	0'-3 3/4"	Horiz.b.f.	2	3'-0"	6	1'-6"	1'-6"	0'-10 1/4"	1'-3"										
*4W9	4	52	0'-3"	Diagonal	2	8'-5 1/2"	11	7'-2 1/2"	1'-3"	1'-1 1/4"	0'-7 1/4"										
SUBTOTAL						134 LBS															
WINGWALL C																					
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N	
*4W1	4	STR		Vert.b.f.	2 sets of 3	2'-10 1/2" to 6'-0 1/2" at 1'-7" Incr.	18		2'-10 1/2" to 6'-0 1/2" at 1'-7" Incr.												
*4W2	4	2	0'-3"	Vert.b.f.	2	8'-7 1/2"	12	0'-8"	7'-11 1/2"												
*4W3	4	2	0'-3"	Horiz.of.	1 sets of 3	2'-10" to 4'-5 1/2" at 0'-9 3/4" Incr.	7	0'-8"	2'-1 3/4" to 3'-9 3/4" at 0'-10" Incr.												
*5W4	5	2	0'-3 3/4"	Horiz.f.f.	1 sets of 3	2'-6" to 4'-1 1/2" at 0'-9 3/4" Incr.	10	0'-10"	1'-7 3/4" to 3'-3 3/4" at 0'-10" Incr.												
*4W5	4	2	0'-3"	Horiz.of.	3	5'-2"	10	0'-8"	4'-6"												
*5W6	5	2	0'-3 3/4"	Horiz.f.f.	3	5'-4"	17	0'-10"	4'-6"												
*5W7	5	STR		Horiz.b.f.	2	3'-8"	8		3'-8"												
*5W8	5	17	0'-3 3/4"	Horiz.b.f.	2	2'-0"	4		1'-0"	1'-0"											
*4W9	4	52	0'-3"	Diagonal	2	6'-1 1/2"	8	4'-6 3/4"	1'-7"	1'-0 1/4"	1'-3"										
SUBTOTAL						94 LBS															
WINGWALL D																					
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N	
*4W1	4	STR		Vert.b.f.	2 sets of 6	6'-4 1/2" to 1'-9 1/2" at 0'-11" Incr.	33		6'-4 1/2" to 1'-9 1/2" at 0'-11" Incr.												
*4W2	4	2	0'-3"	Vert.b.f.	2	8'-7 1/2"	12	0'-8"	7'-11 1/2"												
*4W3	4	52	0'-3"	Horiz.of.	1 sets of 4	3'-11 1/2" to 8'-5 1/2" at 1'-6" Incr.	16	2'-11 1/2" to 7'-5 1/2" at 1'-6" Incr.	1'-0"	0'-7"	0'-10"										
*5W4	5	52	0'-3 3/4"	Horiz.f.f.	1 sets of 4	3'-7 1/2" to 8'-1 1/2" at 1'-6" Incr.	24	2'-7 1/2" to 7'-1 1/2" at 1'-6" Incr.	1'-0"	0'-7"	0'-10 1/4"										
*4W5	4	52	0'-3"	Horiz.of.	2	9'-1"	12	8'-0 3/4"	1'-0"	0'-7"	0'-10"										



NOTE:
 Dimensions in bending diagrams are out-to-out of bars

Abbreviations:
 f.f. = fill face
 o.f. = other face
 b.f. = both faces

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

REBAR LIST (2 OF 3)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	B. ROBINSON	D. GERMANI	NONE	KARL EIKERMANN	10 of 11	JUNE 2022	RG3249-J

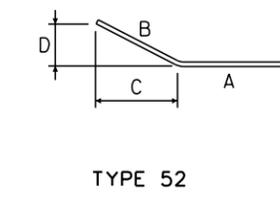
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 7/28/2022

REINFORCING STEEL SCHEDULE

DIMENSION TABLE

STATE	PROJECT	SHEET NO.
AZ	AZ FTBR SALT 80(1) Horse Mesa Bridge	S11

WINGWALL D (CONTINUED)																				
BAR MK	SIZE	TYPE	PIN SZ	LOCATION	QTY	LENGTH	WEIGHT	A	B	C	D	E	F	G	H	J	K	O	R	V or N
*5W6	5	52	0'-3 ³ / ₄ "	Horiz.f.f.	2	8'-11 ¹ / ₂ "	19	7'-11 ¹ / ₄ "	1'-0"	0'-7"	0'-10 ¹ / ₄ "									
*5W7	5	STR		Horiz.b.f.	2	7'-8"	16		7'-8"											
*5W8	5	52	0'-3 ³ / ₄ "	Horiz.b.f.	2	3'-0"	6	1'-6"	1'-6"	0'-10 ¹ / ₄ "	1'-3"									
*4W9	4	52	0'-3"	Diagonal	2	9'-0"	12	7'-8 ³ / ₄ "	1'-3"	1'-0 ¹ / ₄ "	0'-8 ³ / ₄ "									
SUBTOTAL							150 LBS													



NOTE:
 Dimensions in bending diagrams are out-to-out of bars

Abbreviations:
 f.f. = fill face
 o.f. = other face
 b.f. = both faces

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

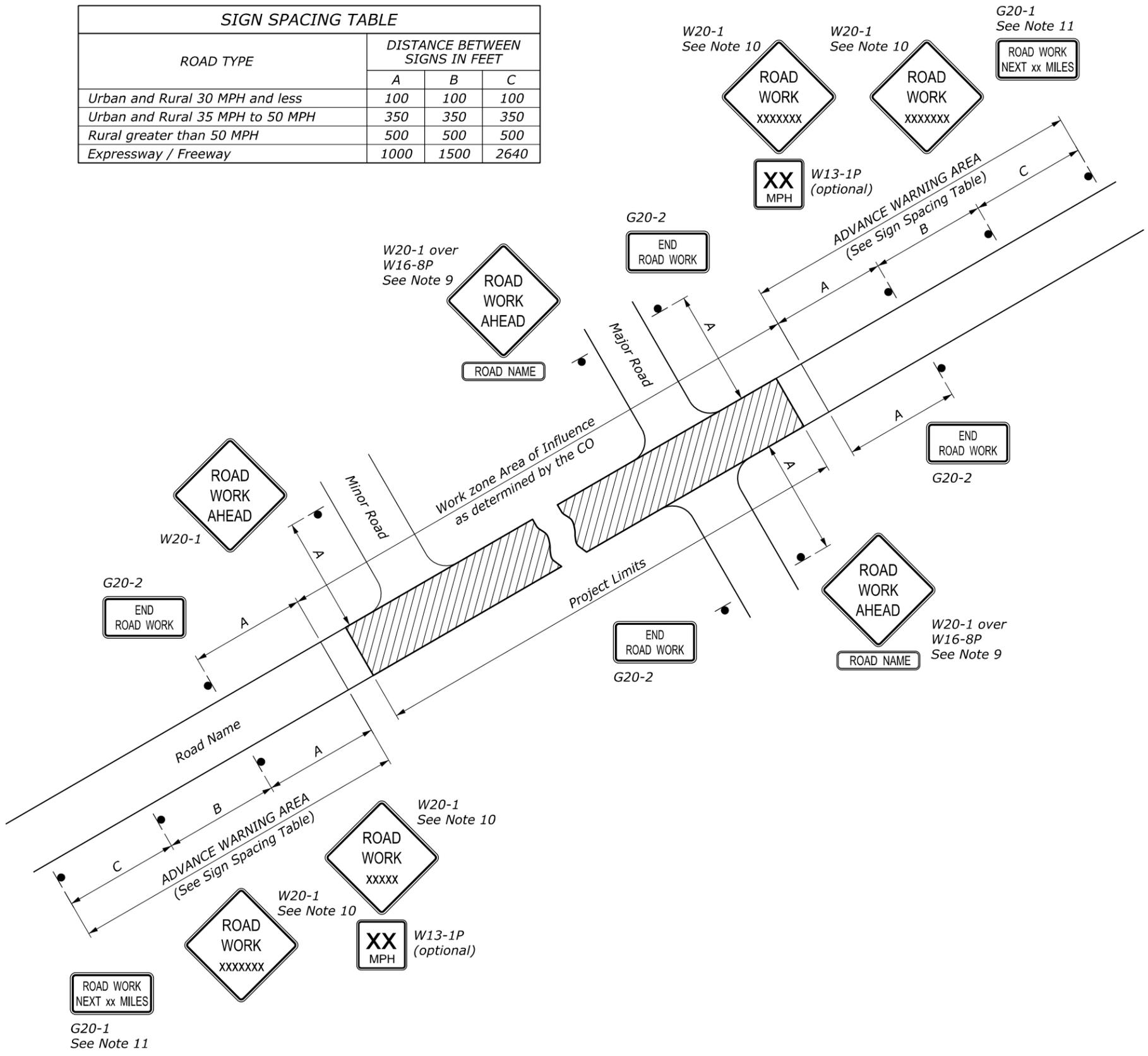
HORSE MESA BRIDGE
 FOREST ROAD 80 (FR 80)
 TONTO NATIONAL FOREST
 MARICOPA COUNTY, ARIZONA

REBAR LIST (3 OF 3)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								S. BELCHER	B. ROBINSON	D. GERMANI	NONE	KARL EIKERMANN	11 of 11	JUNE 2022	RG3249-K

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SIGN SPACING TABLE			
ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban and Rural 30 MPH and less	100	100	100
Urban and Rural 35 MPH to 50 MPH	350	350	350
Rural greater than 50 MPH	500	500	500
Expressway / Freeway	1000	1500	2640



- NOTE:**
- Erect all project advance warning signs before starting construction work.
 - Not all details shown on the temporary traffic control sheets may be applicable to this project. The Contractor may add or delete information and details in this traffic control plan as necessary to accommodate actual operations.
 - Where advance warning signs, placed as shown, interfere with permanent signs, locate the warning signs as determined by the CO for best results. Vary messages as required.
 - Additional or different message signs may be required to fit the actual construction conditions.
 - Install advisory speed plates under the W20 series warning signs as needed to indicate a maximum recommended speed through the construction area.
 - Ensure all sign supports exposed to impact by traffic meet the requirements of NCHRP-350 or MASH for crashworthiness.
 - Maintain two-way traffic during all non-work hours except as approved by the CO.
 - Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.
 - If W20-1 is placed on a roadway other than that on which the actual construction work occurs, include a supplementary plaque indicating the name of the road on which the construction does occur (applies to major roads only).
 - The message on the W20-1 signs may be "ROAD WORK AHEAD" or may specify the distance to the work area in feet or in miles. Install an additional W20-1 sign when approach speeds exceed 50 MPH. When used place the two W20-1 signs "B" feet apart according to the Sign Spacing Table.
 - For work zones that are 2 miles or more in length, install G20-1 signs at each end of the project. Show the distance on the G20-1 sign to the nearest whole mile.
 - If signing on a roadway under a jurisdiction other than the client agency, verify that an encroachment permit has been obtained.
 - State standards may be used as an alternative if approved by the CO.
 - Refer to the Section 635 of the Special Contract Requirements for allowable retroreflective sheeting types.

N:\AZ\salt80(1)\Roadway\CADD_Sheets\T-600\Std635-1_2.dgn [USC]
3 August 2022 8:11 AM

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD TEMPORARY TRAFFIC CONTROL ADVANCE SIGNING	
STANDARD APPROVED FOR USE 6/2005	STANDARD
REVISED: DRAFT: 6/2014	635-1

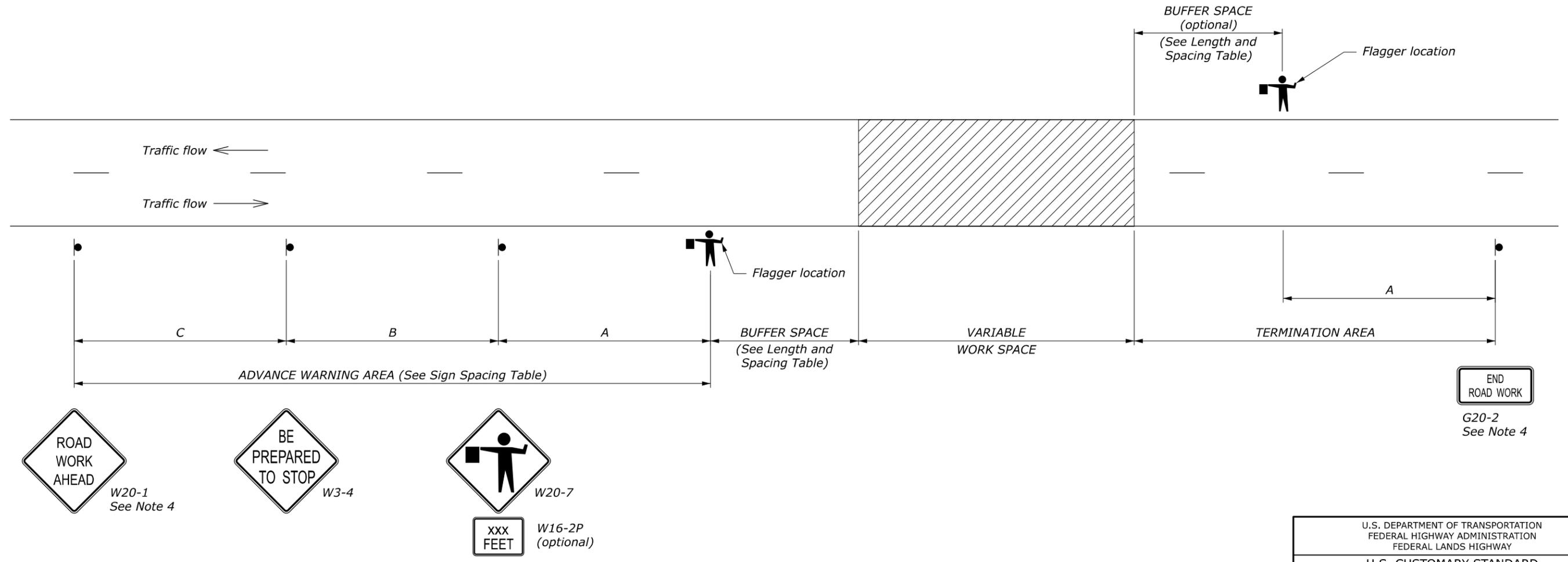
APPROACH SPEED*	BUFFER SPACE LENGTH
MPH	FEET
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

* Approach speed based on the regulatory posted speed, not the advisory speed.

ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban and Rural 30 MPH and less	100	100	100
Urban and Rural 35 MPH to 50 MPH	350	350	350
Rural greater than 50 MPH	500	500	500
Expressway / Freeway	1000	1500	2640

NOTE:

1. Signs are shown for one direction of travel only. Place devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. For pilot car operation, mount the "PILOT CAR FOLLOW ME" (G20-4) sign at a conspicuous location on the rear of vehicle. Prominently display the name of the Contractor on the pilot car.
4. If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



NO SCALE

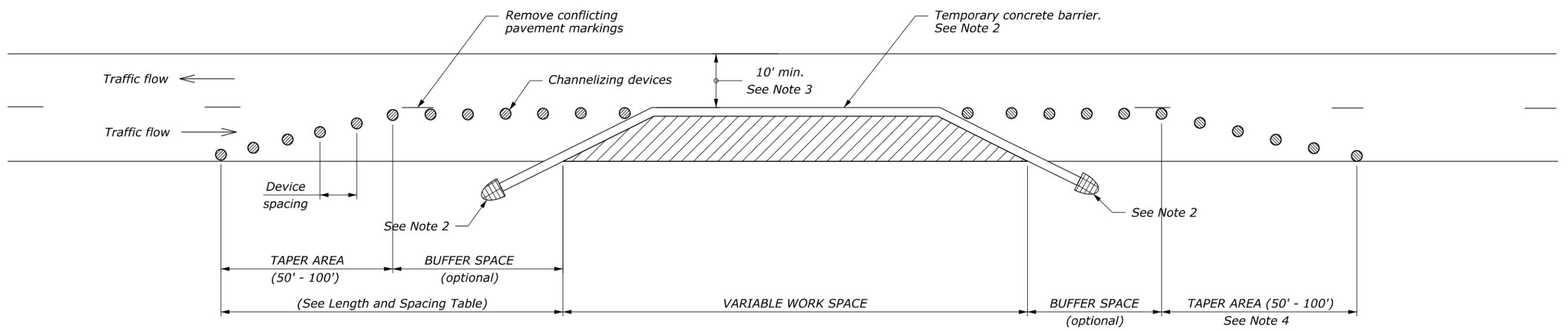
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD TEMPORARY TRAFFIC CONTROL ROAD CLOSURE LAYOUT (WITH FLAGGERS)	
STANDARD APPROVED FOR USE 6/2005	STANDARD
REVISED: DRAFT: 8/2013	635-5

LENGTH AND SPACING TABLE						
APPROACH SPEED*	BUFFER SPACE LENGTH	CHANNELIZING DEVICE			CONCRETE BARRIER FLARE RATE	WORK ZONE CLEAR ZONE WIDTH
		TAPER AREA	BUFFER SPACE	WORK SPACE		
MPH	FEET	SPACING IN FEET				FEET
20	115	20	40	40	1:8	10
25	155	20	50	50	1:8	10
30	200	20	60	60	1:8	10
35	250	20	70	70	1:9	10
40	305	20	80	80	1:10	15
45	360	20	90	90	1:12	20
50	425	20	100	100	1:14	20
55	495	20	110	110	1:16	20
60	570	20	120	120	1:16	30
65	645	20	130	130	1:16	30
70	730	20	140	140	1:16	30

* Approach speed based on the regulatory posted speed, not the advisory speed.

NOTE:

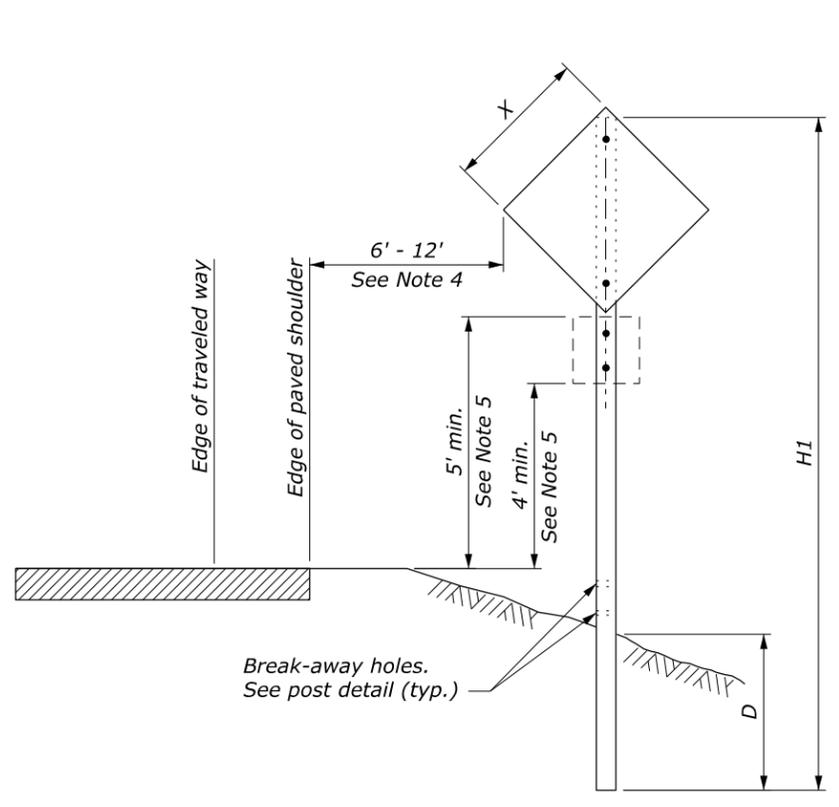
1. Install signs and other devices for single lane closure according to Standard 635-6, 7, 8, or 9. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
2. Place barrier according to the AASHTO Roadside Design Guide. Terminate barrier ends outside the work zone clear zone or protect the barrier ends with a crash cushion. Include reflectors on barrier at 25' intervals.
3. For project specific minimum width, refer to Special Contract Requirements, Section 156.
4. Place channelizing devices at downstream taper during non-work hours or when access is not needed.
5. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
6. Reduce or eliminate drums and barrier in downstream taper if necessary to provide access to work space.



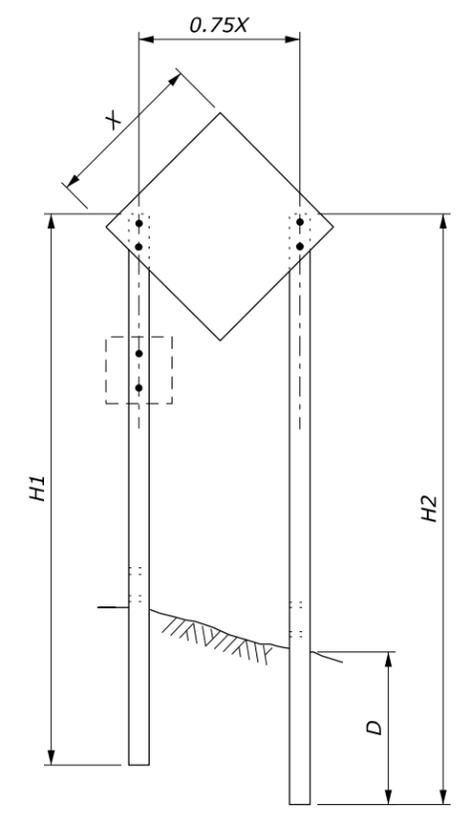
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NO SCALE

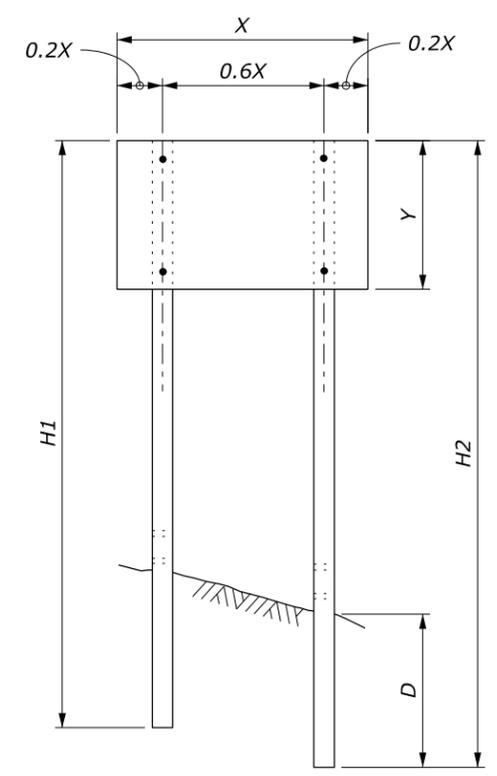
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH TEMPORARY BARRIER)	
STANDARD APPROVED FOR USE 6/2005	STANDARD
REVISED: DRAFT: 6/2015	635-13



SINGLE POST SIGN



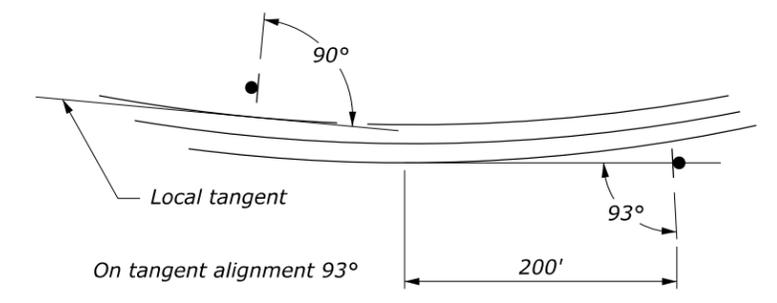
TWO POST SIGN



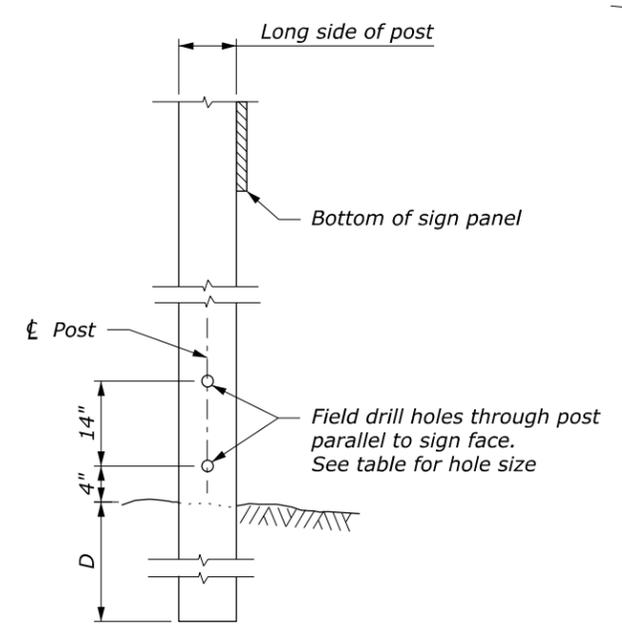
NOTE:

1. Attach sign panels with a minimum of 2 - $\frac{1}{4}$ " dia. bolts per post.
2. $H1$ and $H2$ = Overall post length. Select post lengths to fit field conditions.
3. D = Post embedment depth for average soil conditions.
4. In areas where lateral distance is limited, a minimum lateral offset of 2' may be used. In areas with curbs, a minimum lateral distance of 1' behind the face of the curb may be used.
5. In pedestrian locations, or in areas with obstructed views, use 7' minimum mounting height for main sign and 6' minimum mounting height for secondary sign.
6. Use 7' minimum spacing between posts for sign posts 6" x 6" or larger.
7. State standards may be used as an alternative if approved by the CO.

WOOD POST SELECTION TABLE					
WIDTH "X"	AREA (SQFT)	NUMBER OF POSTS	POST SIZE (INCH)	D (INCH)	HOLE SIZE (INCH)
Diamond $\leq 36"$ Other Shapes $\leq 48"$	< 10	1	4 x 4	36	0
		1	4 x 6	48	1.5
Diamond $\leq 48"$	10 - 20	1	6 x 6	48	2
		2	4 x 4	36	0
Diamond $\leq 48"$ Other Shapes $\leq 12'$	20 - 50	2	4 x 6	48	1.5
		2	6 x 6	48	2
$> 13'$	50 - 65	2	6 x 6	48	2
12' - 16'	50 - 65	3	4 x 6	48	1.5
$> 17'$	65 - 95	4	4 x 6	48	1.5
$> 30'$	65 - 95	3	6 x 6	48	2



SIGN INSTALLATION ANGLE



POST DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

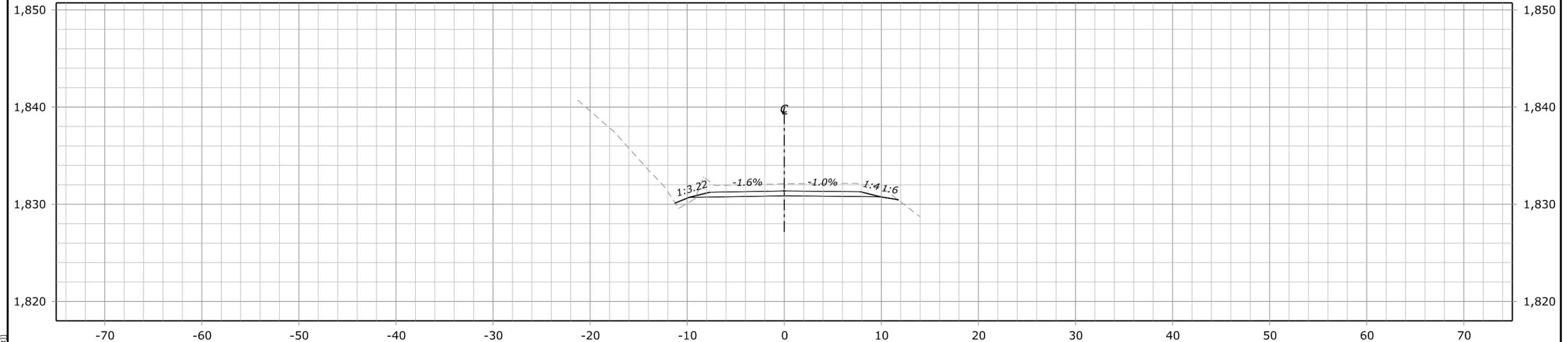
**TEMPORARY TRAFFIC CONTROL
SIGN INSTALLATION
WOOD POSTS**

STANDARD APPROVED FOR USE 6/2005

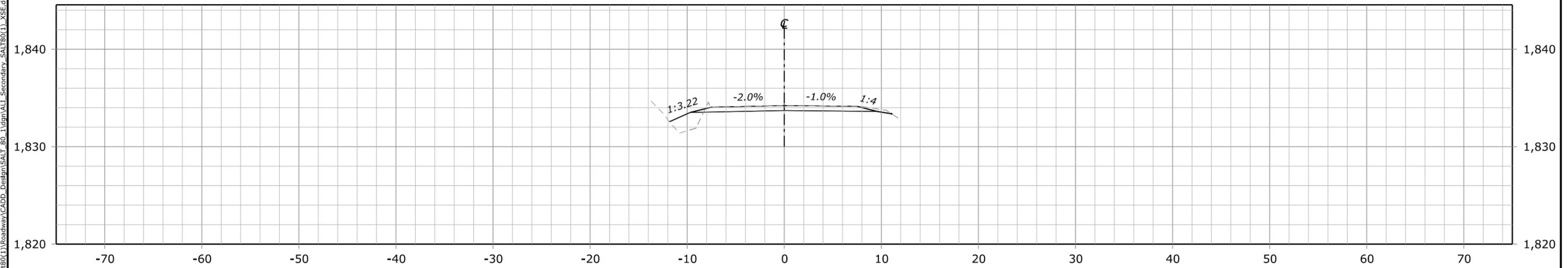
REVISID: 10/2017

STANDARD 635-14

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X1



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Subgrade = 1,830.86
Original Grnd = 1,832.09



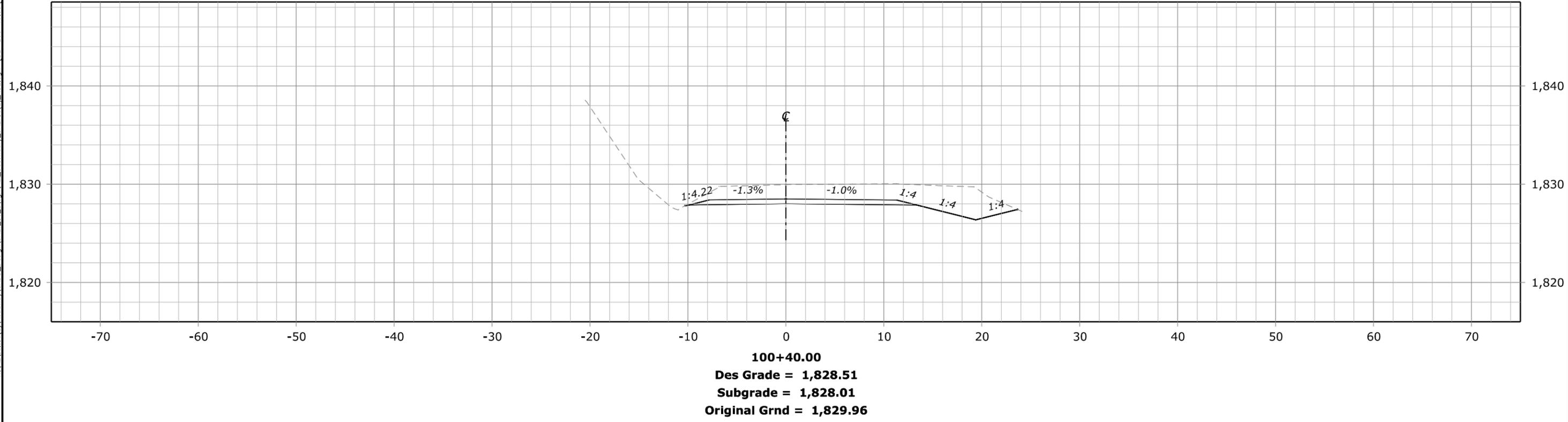
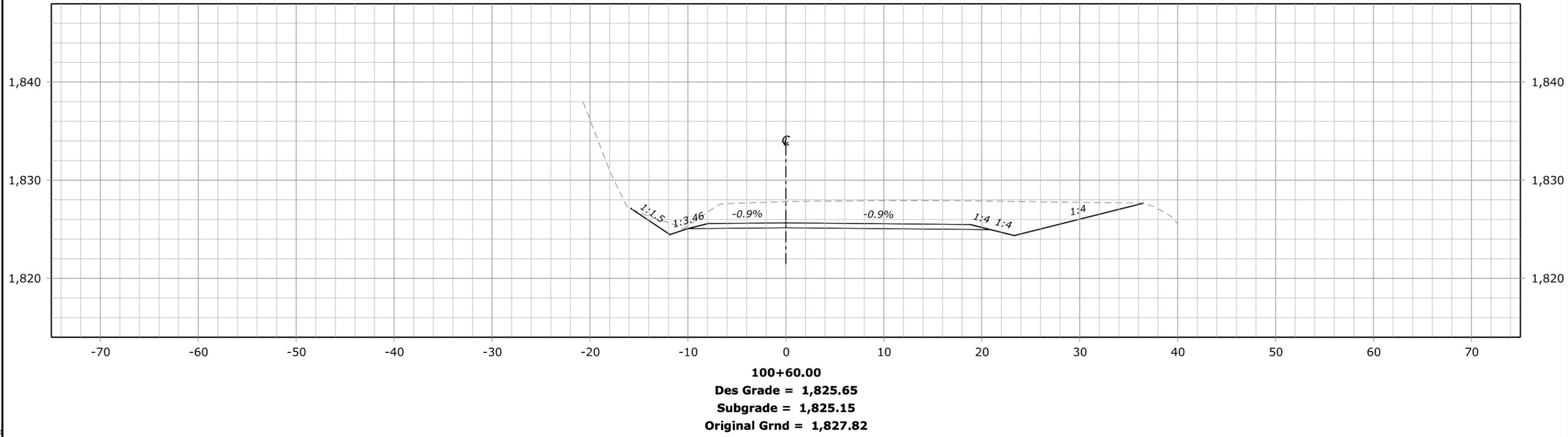
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Original Grnd = 1,834.21

FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division

X-SECTIONS
HORSE MESA BRIDGE

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STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X2

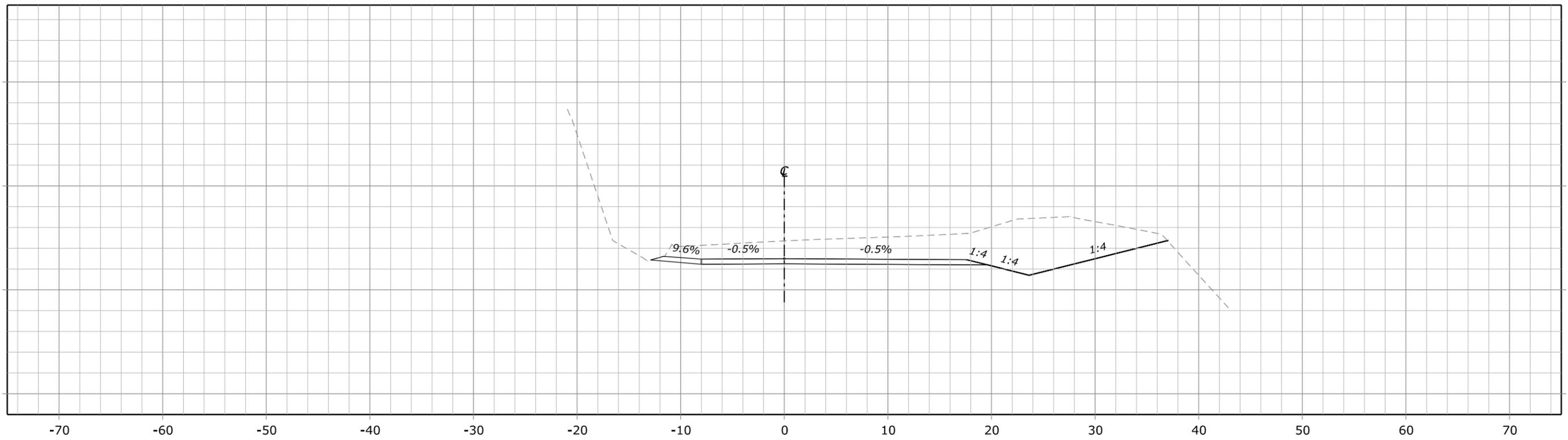


FHWA, Office of Federal Lands Highway
Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

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STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X3

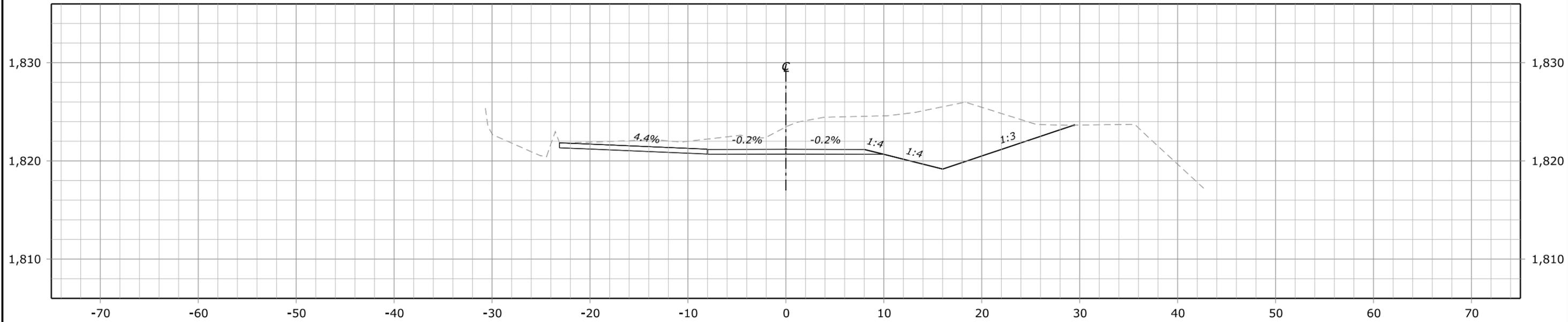
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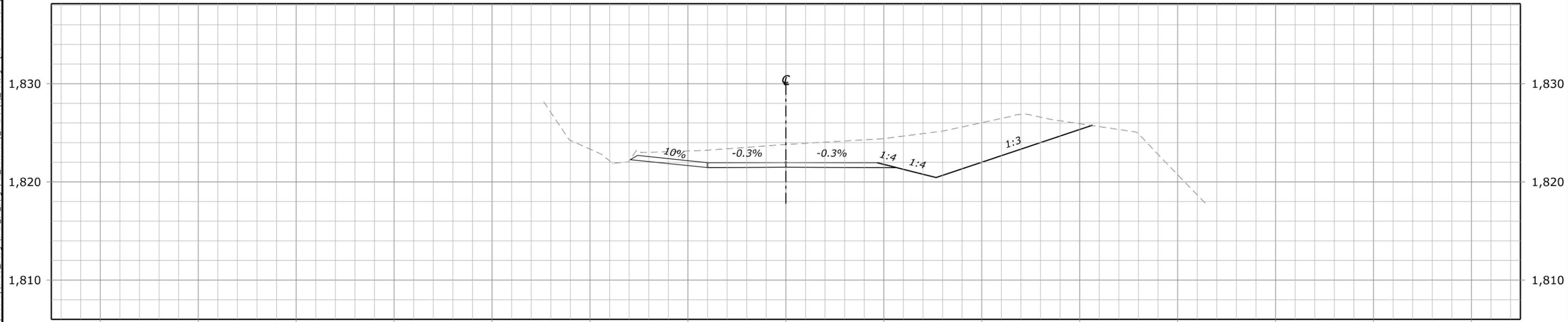
100+80.00
Des Grade = 1,823.01
Subgrade = 1,822.51
Original Grnd = 1,824.70

FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X4



101+00.00
Des Grade = 1,821.19
Subgrade = 1,820.69
Original Grnd = 1,823.46



100+90.00
Des Grade = 1,821.99
Subgrade = 1,821.49
Original Grnd = 1,823.81

FHWA, Office of Federal Lands Highway
Central Federal Lands Highway Division

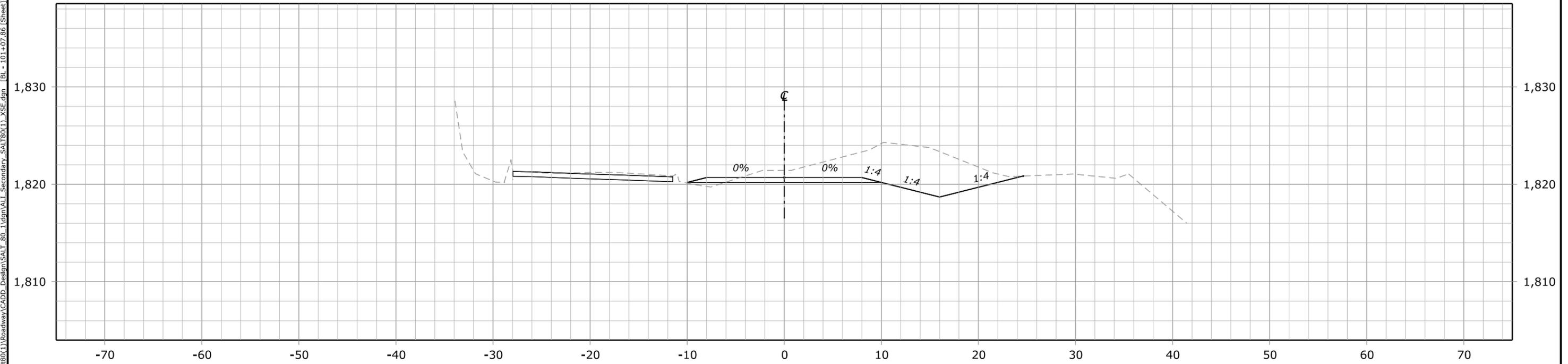
X-SECTIONS
HORSE MESA BRIDGE

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3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X5

BRIDGE STATIONS 101+07.86 TO 102+07.86

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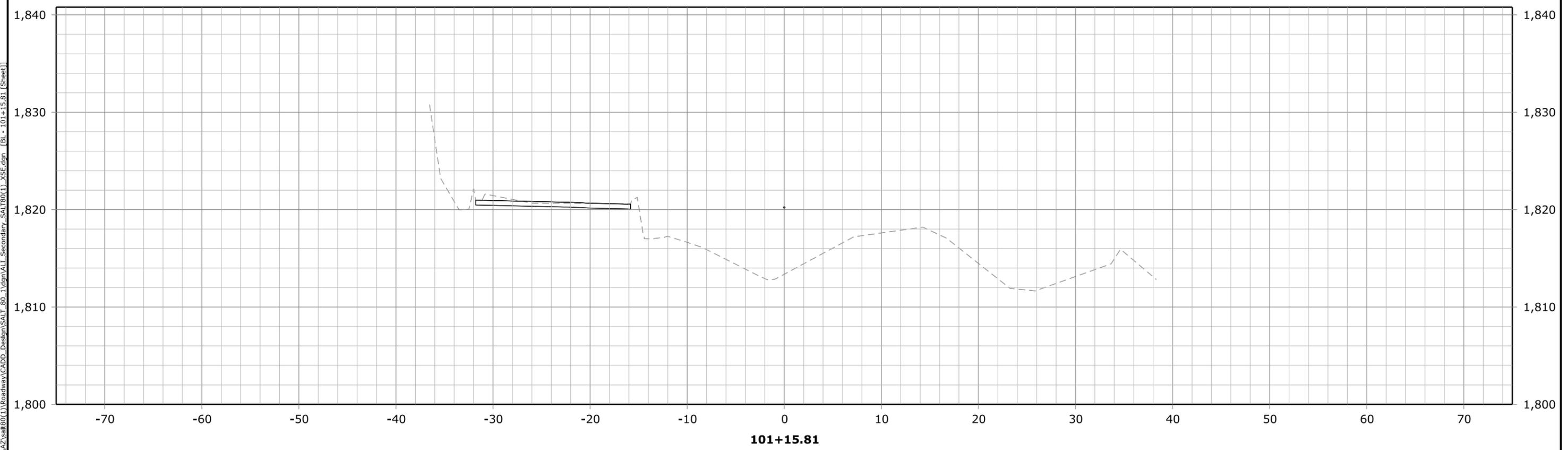
101+07.86
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FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X6

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101+15.81

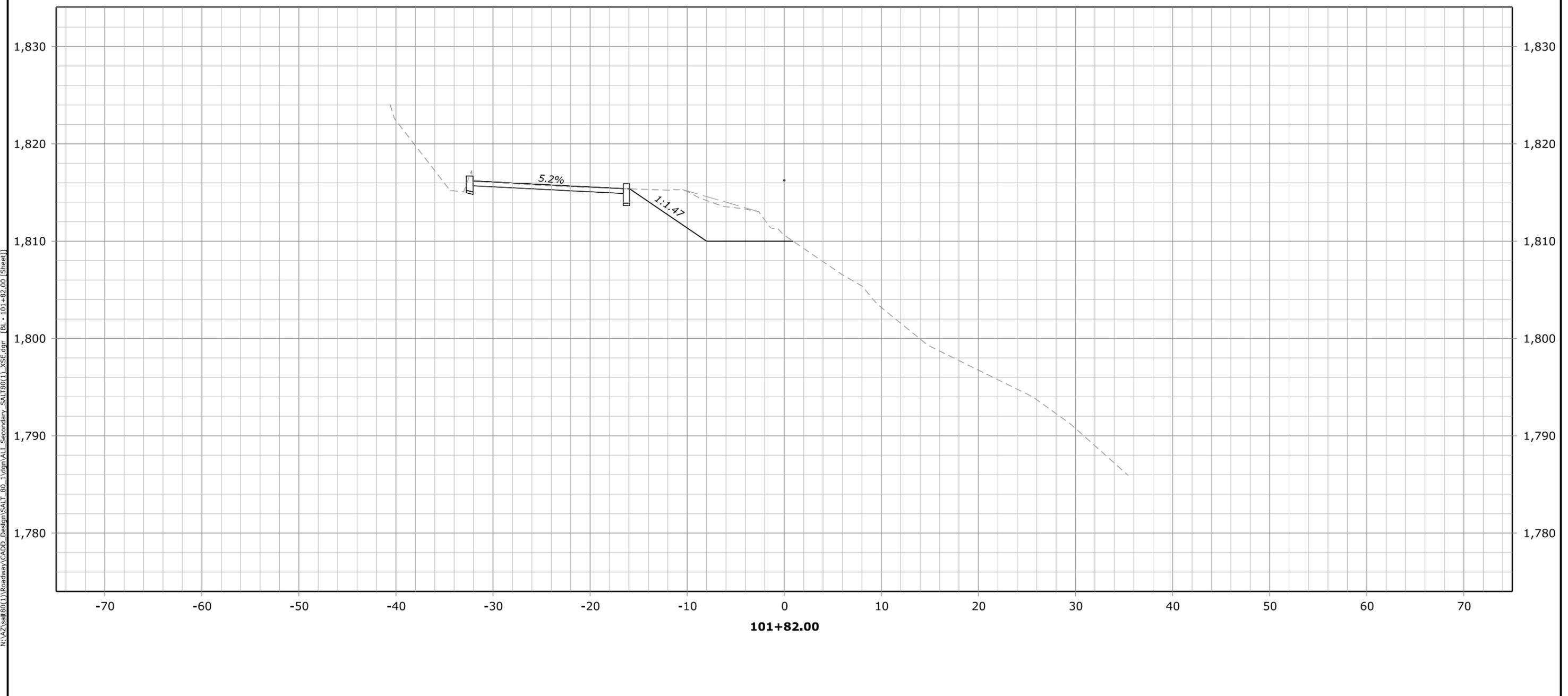
FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X7

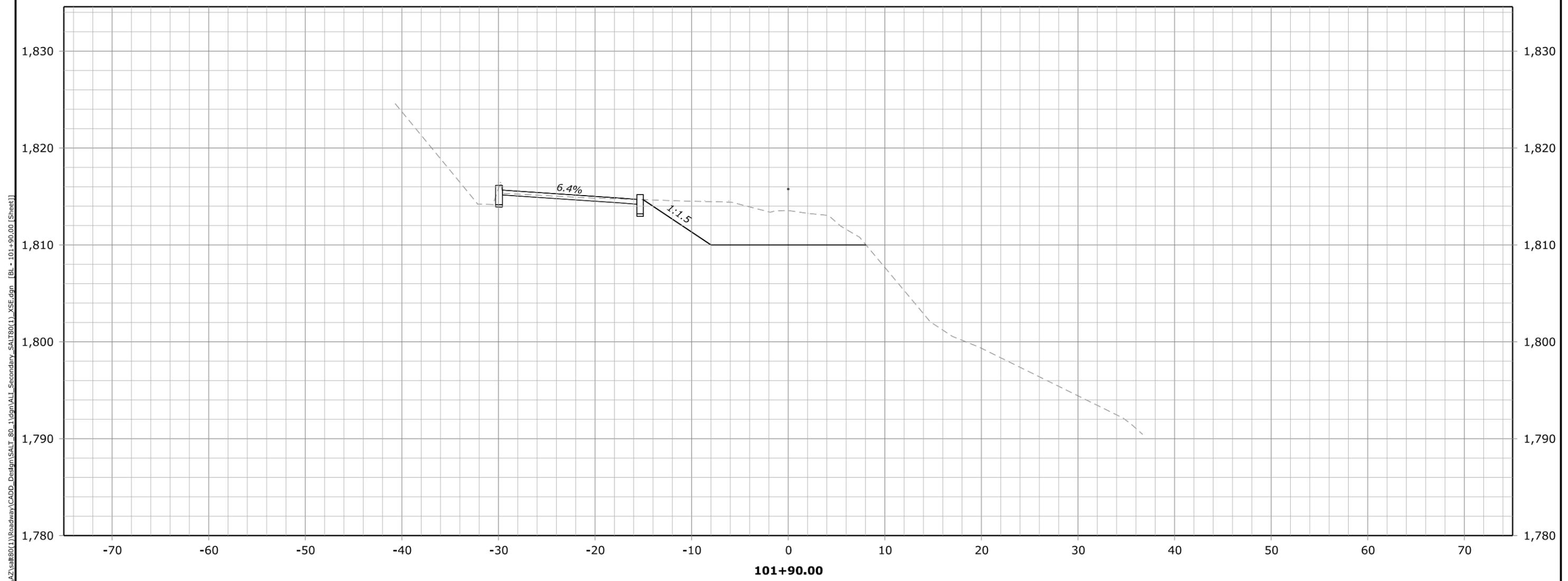
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3 August 2022 3:26 PM



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 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X8

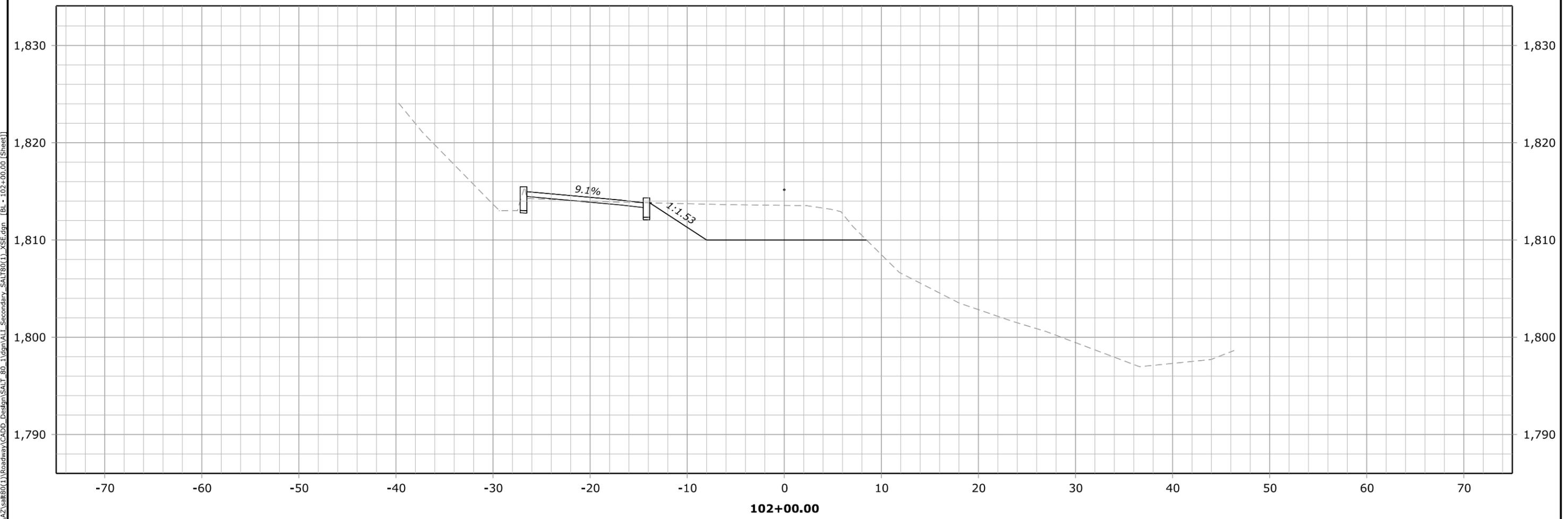


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X-SECTIONS
HORSE MESA BRIDGE

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STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X9

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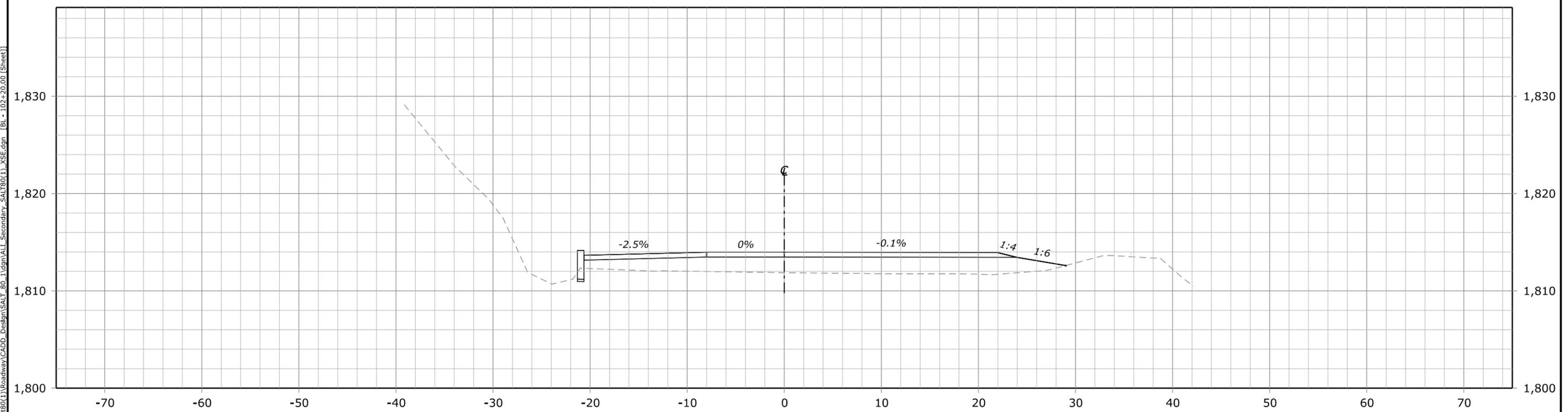


FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X10

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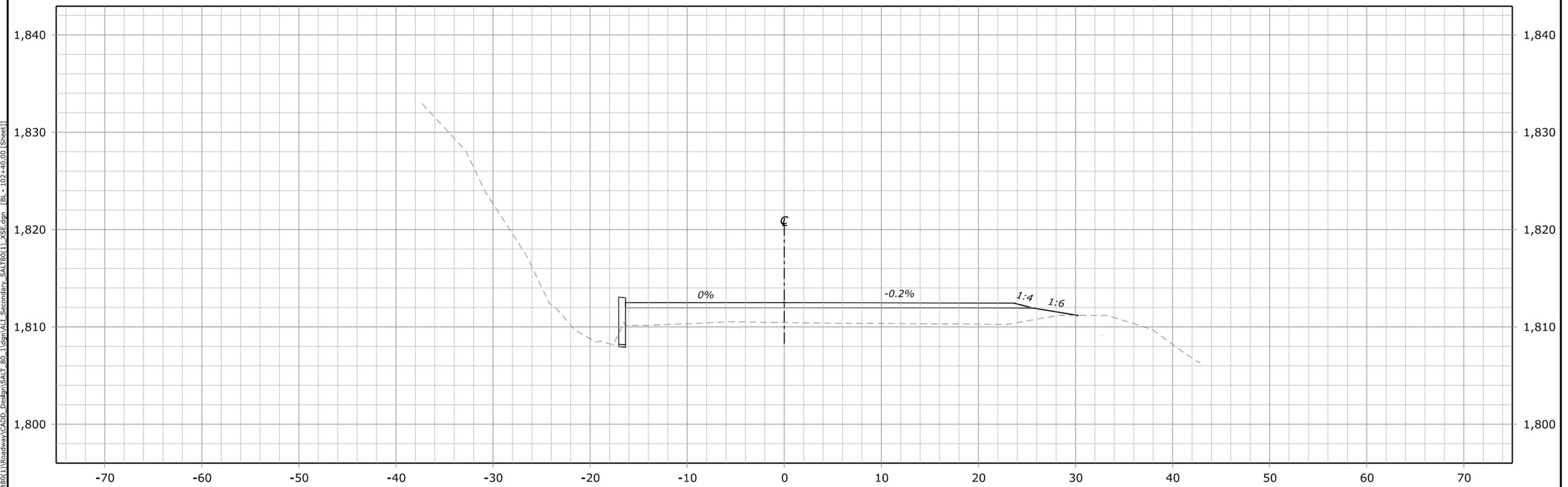
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Subgrade = 1,813.47
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FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X11

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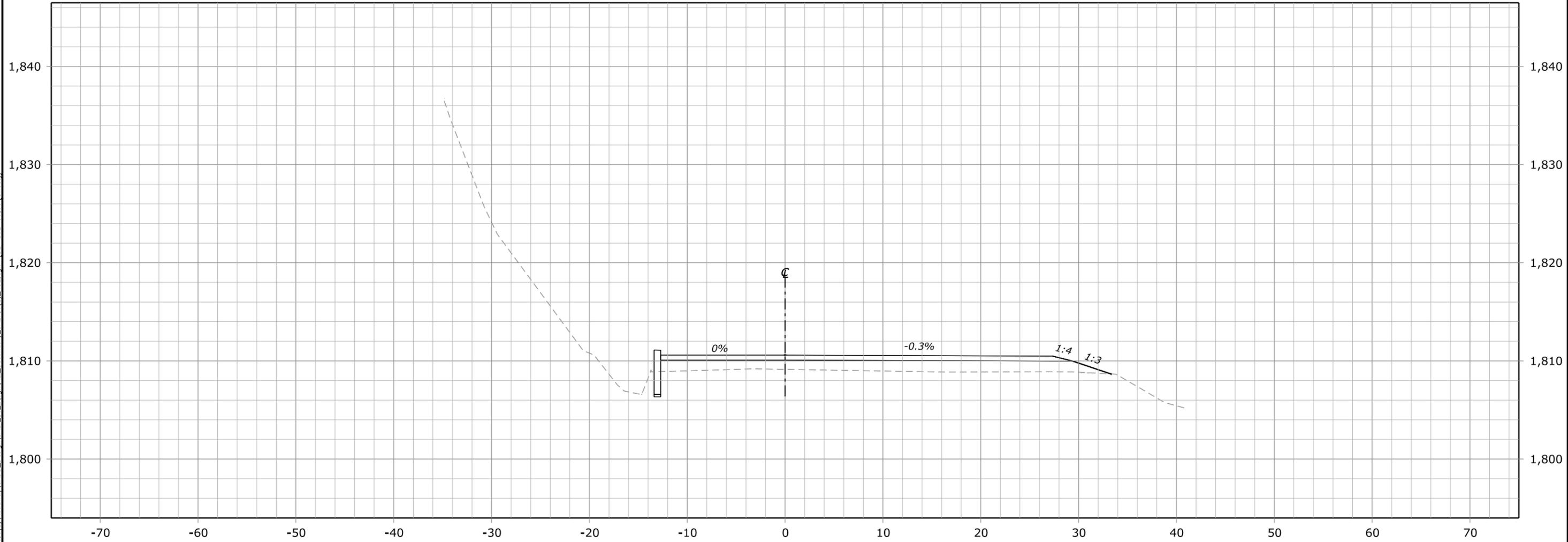
102+40.00
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Subgrade = 1,811.99
Original Grnd = 1,810.44

FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X12

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102+60.00
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Original Grnd = 1,809.14

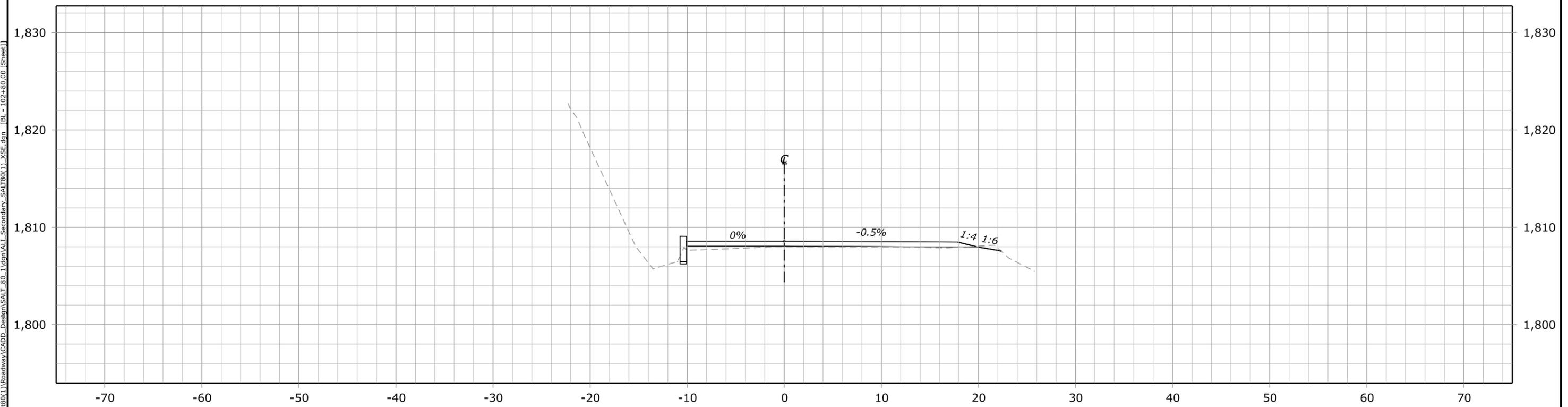
FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division

X-SECTIONS HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X13

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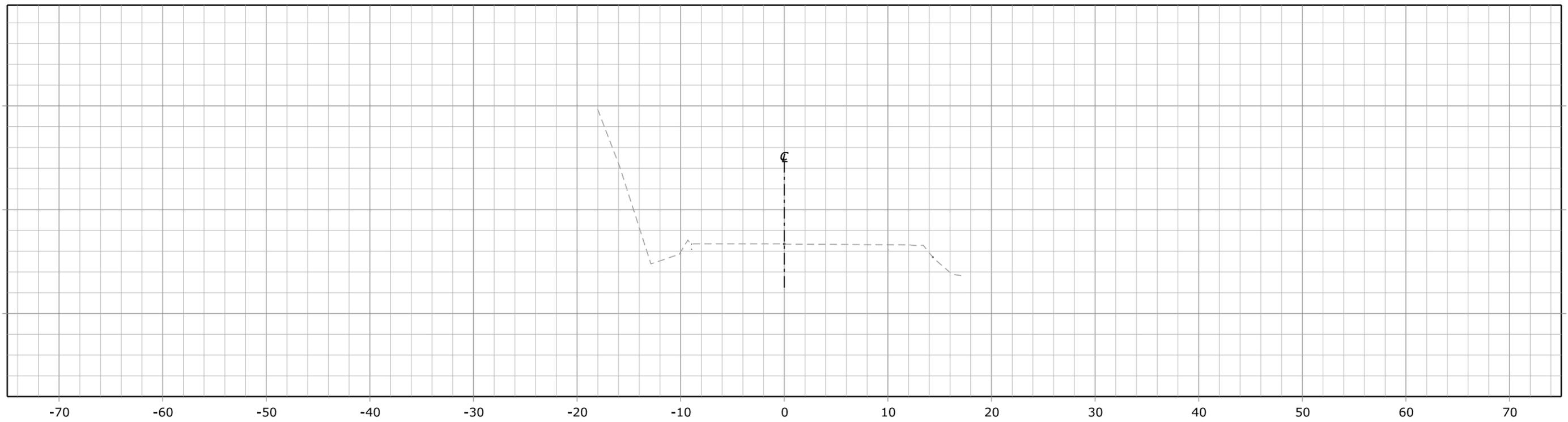
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FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 3:26 PM

STATE	PROJECT	SHEET NUMBER
AZ	AZ FTBR SALT 80(1) HORSE MESA BRIDGE	X14

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102+98.70
Des Grade = 1,806.70
Subgrade = 1,806.20
Original Grnd = 1,806.70

FHWA, Office of Federal Lands Highway
 Central Federal Lands Highway Division
X-SECTIONS
HORSE MESA BRIDGE

3 August 2022 1:19 PM