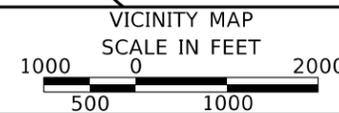
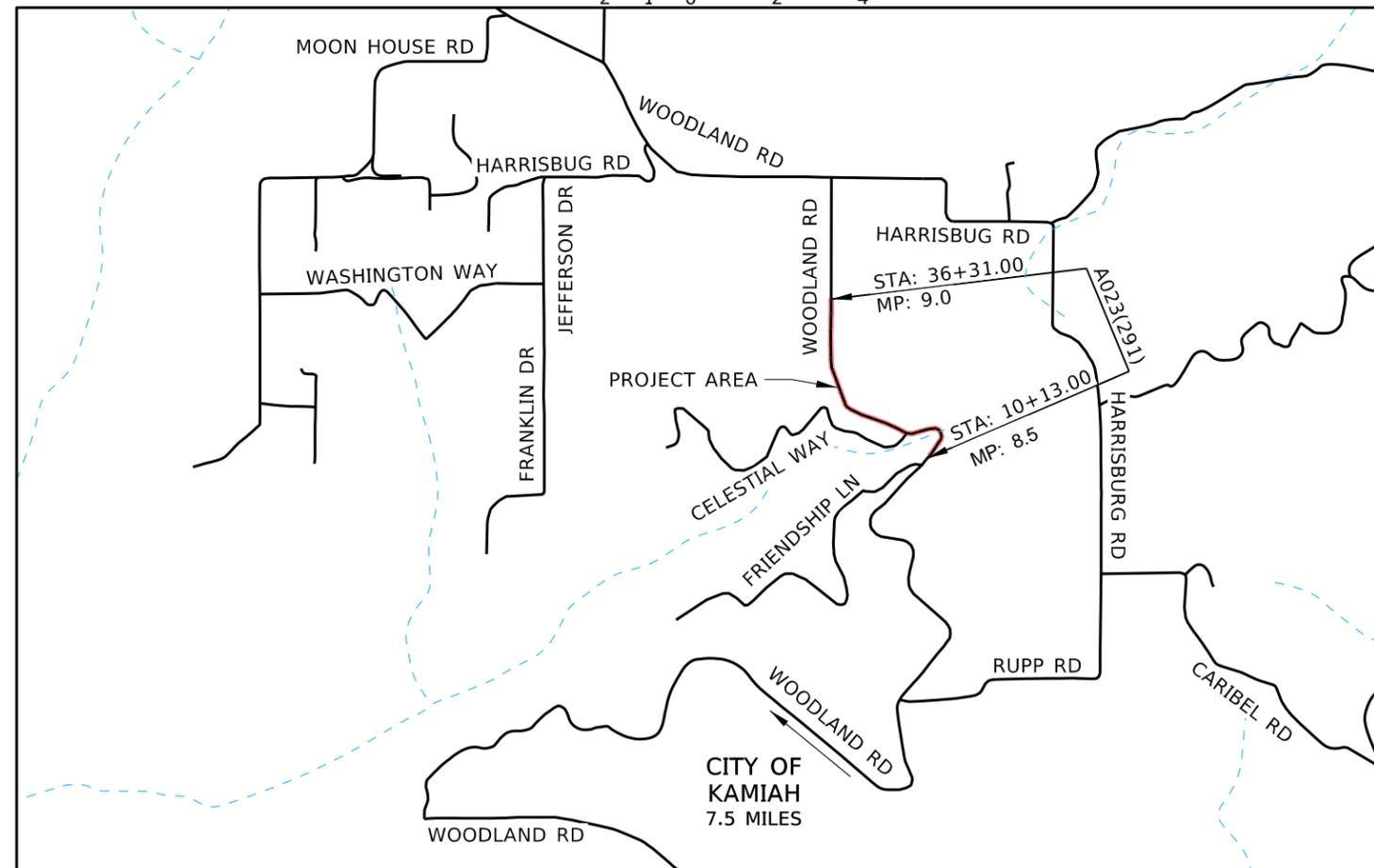
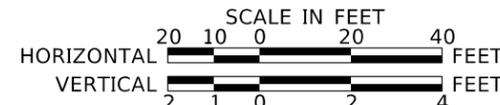
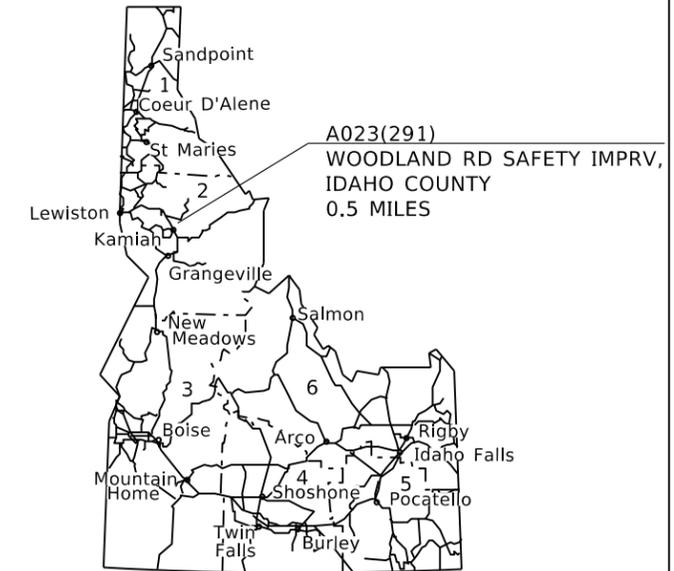


# IDAHO TRANSPORTATION DEPARTMENT

## PLAN AND PROFILE OF PROPOSED WOODLAND RD SAFETY IMPRV, IDAHO CO FEDERAL AID PROJECT NO. A023(291) KEY NO.23291 IDAHO COUNTY APRIL 2025

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 10	TOPOGRAPHIC SURVEY AND CONTROL
11 - 14	RIGHT OF WAY PLANS
15	TYPICAL SECTIONS
16	PROJECT CLEARANCE SUMMARY
17	PIPE CULVERT SUMMARY
18	STORM SEWER PIPE SUMMARY
19 - 20	ROADWAY SUMMARY
21 - 23	REMOVAL PLAN
24 - 29	ROADWAY PLAN
30	ROADWAY DETAILS
31 - 33	POLLUTION PREVENTION PLAN
34 - 36	DRAINAGE PLAN
37	SIGNING ERECTION SPECIFICATIONS
38 - 39	SIGNING PLAN
40	TRAFFIC CONTROL PLAN
41 - 42	UTILITY PLAN
1 - 19	ITD STANDARD DRAWINGS



### DESIGN DESIGNATION

ADT 2023	1010
ADT 2043	1232
DHV 2023	140
DHV 2043	172
D	
V	35 MPH
TRUCKS:	1.0%
ADT 2023	10
ADT 2043	12
DHV 2023	1
DHV 2043	1

REVISIONS			
NO.	DATE	BY	DESCRIPTION

THE DIMENSIONS SHOWN ON THE PLANS SHALL BE ATTAINED WITHIN LIMITS OF PRECISION THAT GOOD CONSTRUCTION PRACTICES WILL PERMIT

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 23291\_TITL\_001.DGN  
DRAWING DATE: APRIL 2025

**IDAHO TRANSPORTATION DEPARTMENT**  
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**J-U-B ENGINEERS, INC.**

PROJECT NO.  
A023(291)

TITLE SHEET  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO

**ENGLISH**  
COUNTY IDAHO  
KEY NUMBER 23291  
SHEET 1 OF 42

*Monica Crider*  
Approved for Advertising  
**10/20/2025**  
Date Approved

**METHOD OF SURVEY**

THE PROJECT CONTROL WAS ESTABLISHED USING RTK GPS (TRIMBLE R10 AND R12) AND A ROBOTIC TOTAL STATION INSTRUMENT (TRIMBLE S-6). PRIMARY CONTROL POINTS 2-11 WERE ESTABLISHED USING RTK METHODS WITH REDUNDANT TIES OR TOTAL STATION ROUNDS.

**BASIS OF BEARINGS**

ESTABLISHED BY GPS OBSERVATIONS. NAD 83 (2011) MODIFIED IDAHO STATE PLANE COORDINATE SYSTEM (WEST ZONE 1103)(EPOCH:2010.0000). BEARINGS SHOWN ARE AT GRID, ALL DISTANCES ARE PROJECTED TO GROUND VALUES.

**LOCAL GROUND CONSTANTS**

A RECIPROCAL COMBINATION SCALE FACTOR OF 1.0002071127 WAS APPLIED AT LATITUDE N46°17'46.24903" AND LONGITUDE W116°01'06.91945" (N:1687643.78' & E:2556776.07') TO CREATE A LOCAL GROUND COORDINATE SYSTEM.

TO CALCULATE GRID COORDINATES, SCALE PROJECT COORDINATES BY THE COMBINED SCALE FACTOR OF 0.999792930 ABOUT LATITUDE N46°17'46.24903" AND LONGITUDE W116°01'06.91945" (N:1687643.78' & E:2556776.07')

THE CONVERGENCE ANGLE AT LATITUDE N46°17'46.24903" AND LONGITUDE W116°01'06.91945" (N:1687643.78' & E:2556776.07') = -00°11'39.01"

VERTICAL DATUM = NAVD88' (GEOID18)

		EXISTING			
	1/16 LINE		TOE OF SLOPE		PIPE END
	QUARTER LINE		TOP OF CUT		RAILROAD PROTECT DEVICE
	SECTION LINE		IRRIGATION PIPE		RAILROAD SIGNAL LIGHT
	TOWNSHIP RANGE LINE		WATERLINE		RAILROAD SWITCH
	TEMPORARY EASEMENT		MARSH		SIGN ONE POST
	PERMANENT EASEMENT		SIGNAL INTRCNCT CONDUIT		SIGN TWO POST
	RAILROAD R/W		SIGNAL CONDUIT		SIPHON
	RIGHT-OF-WAY		SIGNAL RAIL CONDUIT		MANHOLE
	PROPERTY LINE		NORTH ARROW		STUMP
	FENCE		FOUND SECTION CORNER		TELEPHONE MANHOLE
	CL OF DIRT ROAD		FOUND QUARTER CORNER		TREE
	EDGE OF PAVEMENT PAVEMENT MARKINGS		CONCRETE MONUMENT		WETLAND SYMBOL
	ROADWAY SHOULDER		FOUND BRASS CAP		GUYWIRE
	COMBINATION CURB AND GUTTER		FOUND PLASTIC CAP		JUNCTION BOX
	CURB		FOUND IRON PIP		POWER MANHOLE
	GUTTER		MEASUREMENT POINT		METER
	TOP OF CURB		PK NAIL FOUND		POWER POLE
	METAL GUARDRAIL		FOUND NO. 4 REBAR		TRANSFORMER
	CONC. GUARDRAIL		FOUND NO. 5 REBAR		POWER VAULT
	RETAINING WALL		FOUND NO. 6 REBAR		FIRE HYDRANT
	RAILROAD TRACK		RW MARKER EXISTING		GAS PUMP
	TOP OF RAIL		SPIKE FOUND		RISER
	DITCH FLOW LINE		FOUND SET STONE		VALVE
	DRAINAGE FLOW LINE		BUSH		IRRIG. BOX
	BUSH BOUNDARY		CATCH BASIN		IRRIG. PUMP
	CULTIVATION BOUNDARY		DELINEATOR		LUMINARE/TELE. POLE
	TREE BOUNDARY		NATURAL DRAINAGE DIRECTION		SPRINKLER
	WATERWAY\DITCH BTM\ HIGH WATER LINE		EMBANKMENT PROTECTOR		TELEPHONE BOOTH
	OVERHEAD ELE. LINE		FLOW INDICATOR		WELL
	ELECTRIC CABLE		GPS CONTROL POINT		PROPERTY CONTINUATION
	GAS LINE		HEAD GATE		
	OIL LINE		INLET		
	SANITARY SEWER		MAILBOX		
	OVERHEAD TELE. LINE		MARSHLAND SYMBOL		
	UNDERGROUND TELE CABLE		MANHOLE		
	UNDERGROUND FO CABLE				
	STORM SEWER				
	TOE OF FILL				

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED GJR	
DETAILED JJS	CADD FILE NAME 23091_LGND_001.DGN
DRAWING CHECKED GJR	DRAWING DATE: AUGUST 2023

**IDAHO  
TRANSPORTATION  
DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.	A023(291)
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TOPOGRAPHIC SURVEY AND CONTROL	WOODLAND ROAD SAFETY IMPROVEMENT IDAHO COUNTY
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<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 2 OF 42



S.13 & S.18, T34., R3E.

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10	1684793.78'	2558018.17'	3080.86'	PK MAG NAIL
11	1684618.52'	2558017.30'	3089.52'	PK MAG NAIL
12	1684357.32'	2557762.27'	3102.96'	PK MAG NAIL
205	1684573.26'	2558064.76'	3105.45'	ALUMINUM CAP 2.5"



<i>C1</i>	<i>C2</i>
<i>PI 2+50.70</i>	<i>PI 5+10.28</i>
<i>Δ 23°07'49" LT</i>	<i>Δ 127°23'47" LT</i>
<i>L 116.12'</i>	<i>L 222.35'</i>
<i>R 287.63'</i>	<i>R 100.00'</i>

BEGIN ALIGNMENT  
STA. 0+00  
N:1684435.44  
E:2557847.65

CENTERLINE LOCATION ACCORDING TO THE  
PLAT OF 'ALMOST HEAVEN II SUBDIVISION'  
RECORDED MAY 12, 1998, INSTRUMENT NO. 399698

CMP 36"  
IE:3068.37'

THE AS-CONSTRUCTED LOCATION OF THE ROAD  
IN THIS AREA FALLS OUTSIDE THE RIGHT-OF-WAY  
AS SHOWN ON THE PLAT OF 'ALMOST HEAVEN II  
SUBDIVISION'. THEREFORE, THE NORTHEASTERLY  
RIGHT-OF-WAY IS ESTABLISHED BY PRESCRIPTION  
AND IS SHOWN TO THE LIMIT OF ROAD  
MAINTENANCE IN THIS AREA.

CHRISTOPHER A. KOEHN  
RP34N03E137210A

CHRISTOPHER A. KOEHN  
RP34N04E183010A

#205  
1/4 CORNER SECTION 18  
CP&F #414158

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS
DESIGN CHECKED GJR
DETAILED JJS
DRAWING CHECKED GJR

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
CADD FILE NAME 23091_SURV_001.dgn
DRAWING DATE: AUGUST 2023

**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**  
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**J-U-B ENGINEERS, INC.**



PROJECT NO.
A023(291)

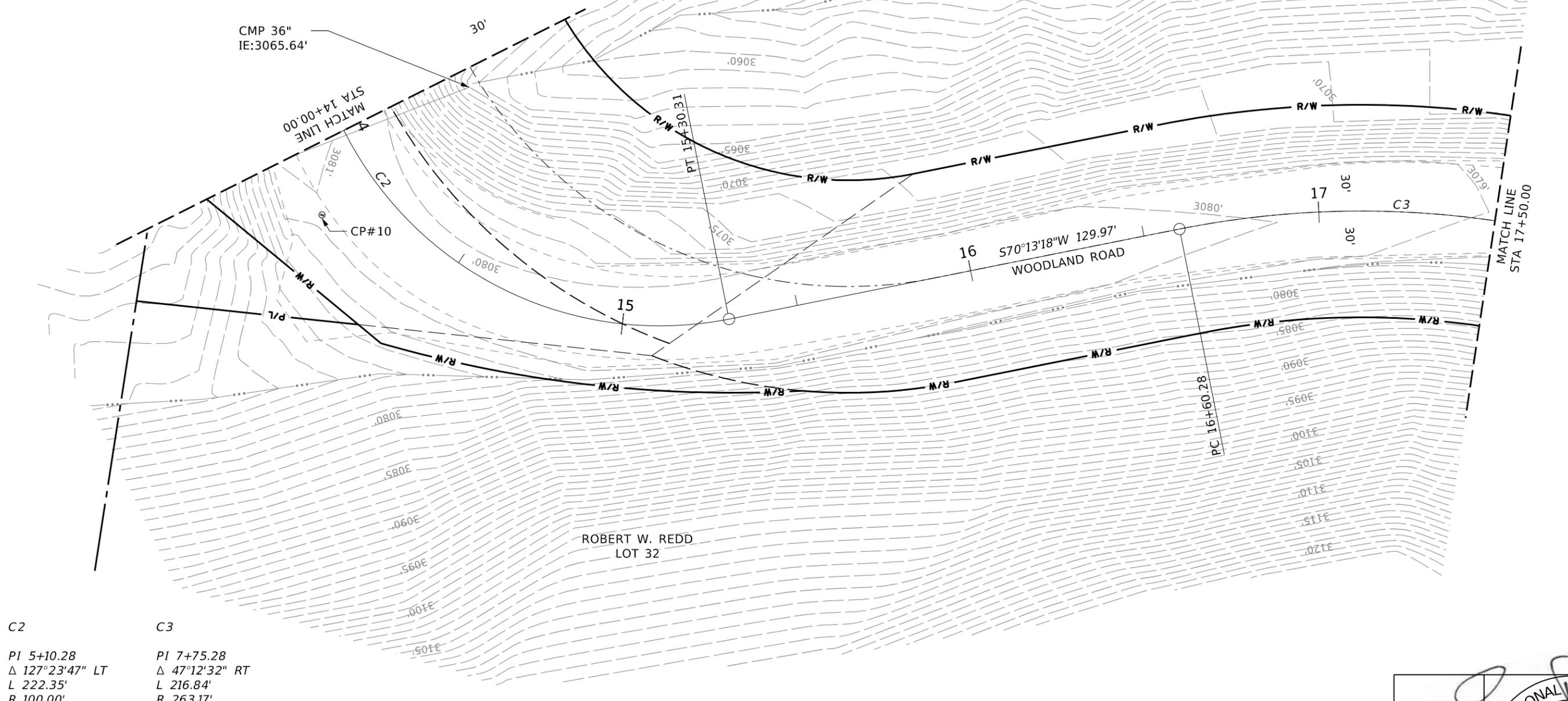
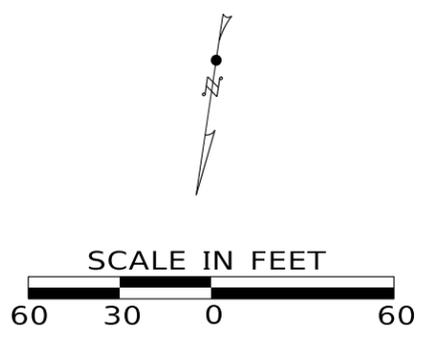
TOPOGRAPHIC SURVEY AND CONTROL
WOODLAND ROAD SAFETY IMPROVEMENT
IDAHO COUNTY

<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 3 OF 42

S.13 & S.18, T34., R3E.

ALMOST HEAVEN II SUBDIVISION

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10	1684793.78'	2558018.17'	3080.86'	PK MAG NAIL



C2  
 PI 5+10.28  
 Δ 127°23'47" LT  
 L 222.35'  
 R 100.00'

C3  
 PI 7+75.28  
 Δ 47°12'32" RT  
 L 216.84'  
 R 263.17'

REVISIONS				DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY	<b>IDAHO</b> <b>TRANSPORTATION</b> <b>DEPARTMENT</b> <small>YOUR Safety→YOUR Mobility→YOUR Economic Opportunity</small>	PROJECT NO.  A023(291)	TOPOGRAPHIC SURVEY AND CONTROL  WOODLAND ROAD SAFETY IMPROVEMENT  IDAHO COUNTY	<b>ENGLISH</b> COUNTY IDAHO KEY NUMBER 23291 SHEET 4 OF 42	PROFESSIONAL LAND SURVEYOR REGISTERED <b>13419</b> 4/9/25 STATE OF IDAHO GEREY J. RUSSELL
NO.	DATE	BY	DESCRIPTION							
				DESIGN CHECKED GJR						
				DETAILED JJS	CADD FILE NAME 23091_SURV_002.dgn					
				DRAWING CHECKED GJR	DRAWING DATE: AUGUST 2023					

S,13, T.34N., R.3E.

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
8	1684734.26'	2557635.71'	3077.95'	PK MAG NAIL

WENDY PROSKINE  
LOT 16

ALMOST HEAVEN II SUBDIVISION

DAVID SINGLETON  
LOT 14

CELESTIAL WAY

WOODLAND ROAD

ROBERT W. REDD  
LOT 32

C3  
PI 7+75.28  
Δ 47°12'32" RT  
L 216.84'  
R 263.17'

C4  
PI 11+21.87  
Δ 11°55'18" LT  
L 119.57'  
R 574.63'

MATCH LINE  
STA 17+50.00

MATCH LINE  
STA 21+00.00



REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS
DESIGN CHECKED GJR
DETAILED JJS
DRAWING CHECKED GJR

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY

CADD FILE NAME  
23091\_SURV\_003.dgn

DRAWING DATE:  
AUGUST 2023

**IDAHO  
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DEPARTMENT**



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**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

TOPOGRAPHIC SURVEY AND CONTROL

WOODLAND ROAD  
SAFETY IMPROVEMENT

IDAHO COUNTY

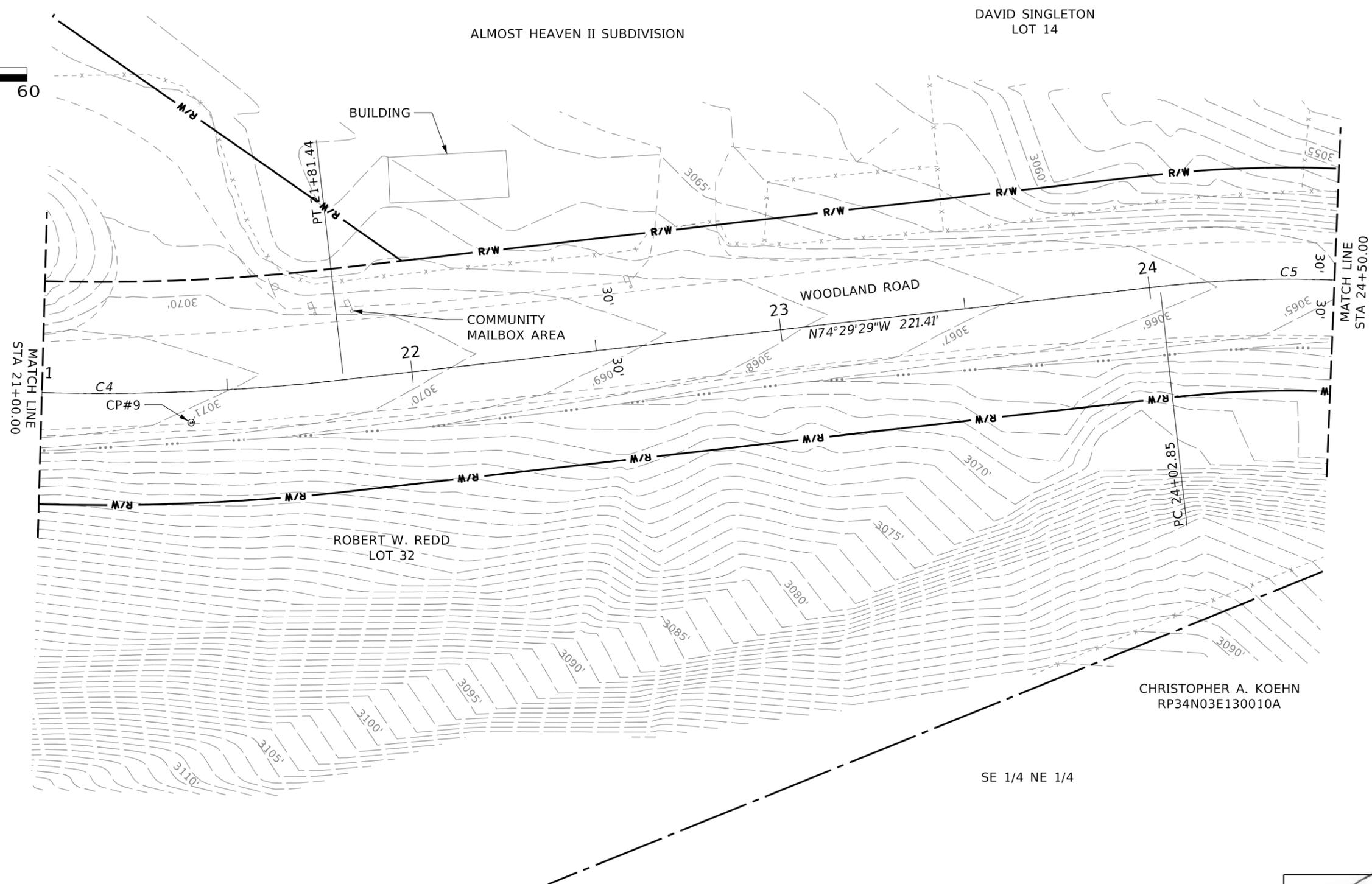
**ENGLISH**

COUNTY  
IDAHO

KEY NUMBER  
23291

SHEET 5 OF 42

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
9	1684900.01'	2557334.69'	3070.94'	PK MAG NAIL



C4  
 PI 11+21.87  
 $\Delta 11^\circ 55' 18''$  LT  
 L 119.57'  
 R 574.63'

C5  
 PI 15+59.06  
 $\Delta 53^\circ 56' 53''$  RT  
 L 288.98'  
 R 306.92'

CHRISTOPHER A. KOEHN  
 RP34N03E130010A

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  CADD FILE NAME 23091_SURV_004.dgn  DRAWING DATE: AUGUST 2023
DESIGN CHECKED GJR	
DETAILED JJS	
DRAWING CHECKED GJR	

**IDAHO TRANSPORTATION DEPARTMENT**

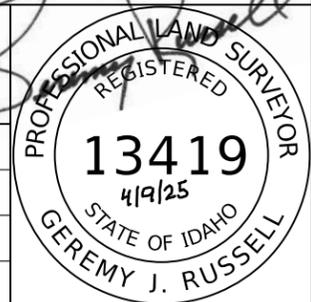
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.	A023(291)
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TOPOGRAPHIC SURVEY AND CONTROL	WOODLAND ROAD SAFETY IMPROVEMENT
	IDAHO COUNTY

<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 6 OF 42



S.13, T.34N., R.3E.

ALMOST HEAVEN II SUBDIVISION

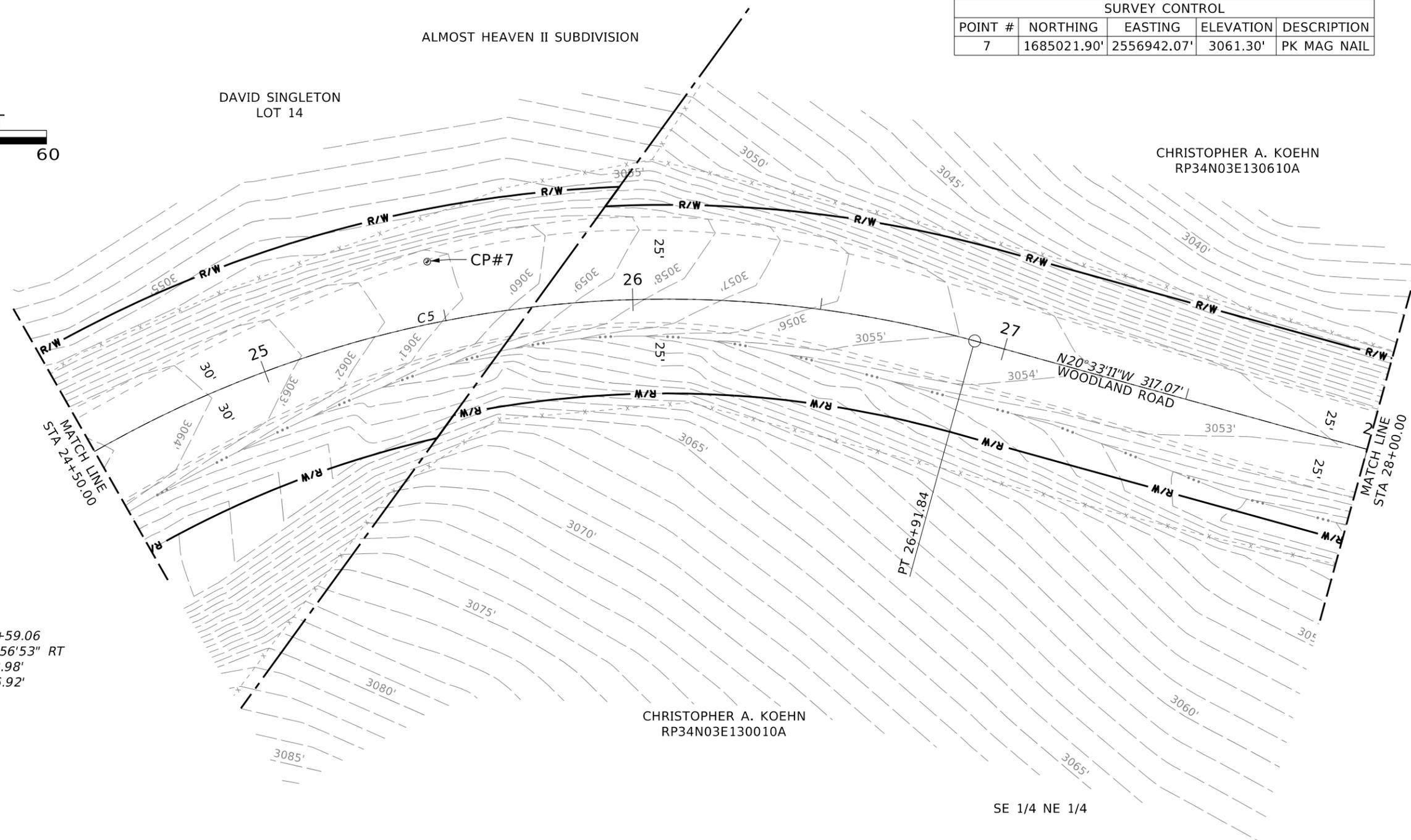
DAVID SINGLETON  
LOT 14

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
7	1685021.90'	2556942.07'	3061.30'	PK MAG NAIL

CHRISTOPHER A. KOEHN  
RP34N03E130610A

CHRISTOPHER A. KOEHN  
RP34N03E130010A

SE 1/4 NE 1/4



C5  
PI 15+59.06  
Δ 53°56'53" RT  
L 288.98'  
R 306.92'

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS
DESIGN CHECKED GJR
DETAILED JJS
DRAWING CHECKED GJR

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY

CADD FILE NAME  
23091\_SURV\_005.dgn

DRAWING DATE:  
AUGUST 2023

**IDAHO  
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DEPARTMENT**

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**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

TOPOGRAPHIC SURVEY AND CONTROL

WOODLAND ROAD  
SAFETY IMPROVEMENT

IDAHO COUNTY

**ENGLISH**

COUNTY  
IDAHO

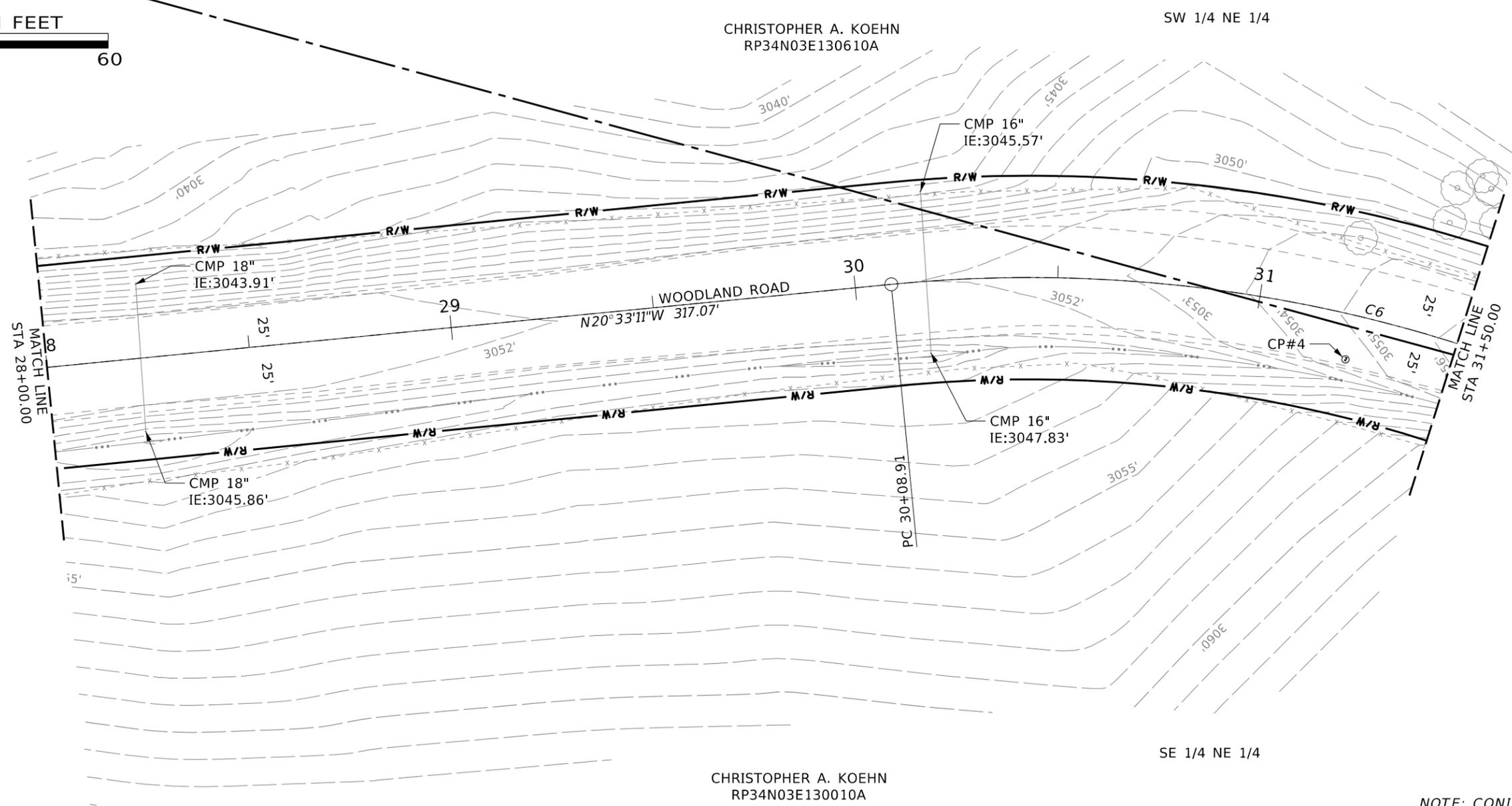
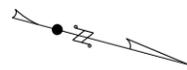
KEY NUMBER  
23291

SHEET 7 OF 42



S.13, T.34N., R.3E.

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
4	1685561.67'	2556751.27'	3054.64'	PK MAG NAIL



C6  
 PI 20+96.52  
 Δ 28°06'22" RT  
 L 171.69'  
 R 350.00'

NOTE: CONIFER TREE SIZES RANGING FROM 8" TO 36" DIAMETER

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
JJS  
 DESIGN CHECKED  
GJR  
 DETAILED  
JJS  
 DRAWING CHECKED  
GJR

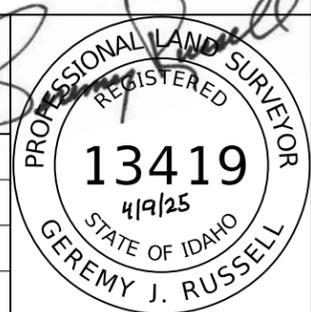
SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY  
 CADD FILE NAME  
23091\_SURV\_006.dgn  
 DRAWING DATE:  
AUGUST 2023

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PROJECT NO.  
A023(291)

TOPOGRAPHIC SURVEY AND CONTROL  
 WOODLAND ROAD  
 SAFETY IMPROVEMENT  
 IDAHO COUNTY

**ENGLISH**  
 COUNTY IDAHO  
 KEY NUMBER 23291  
 SHEET 8 OF 42

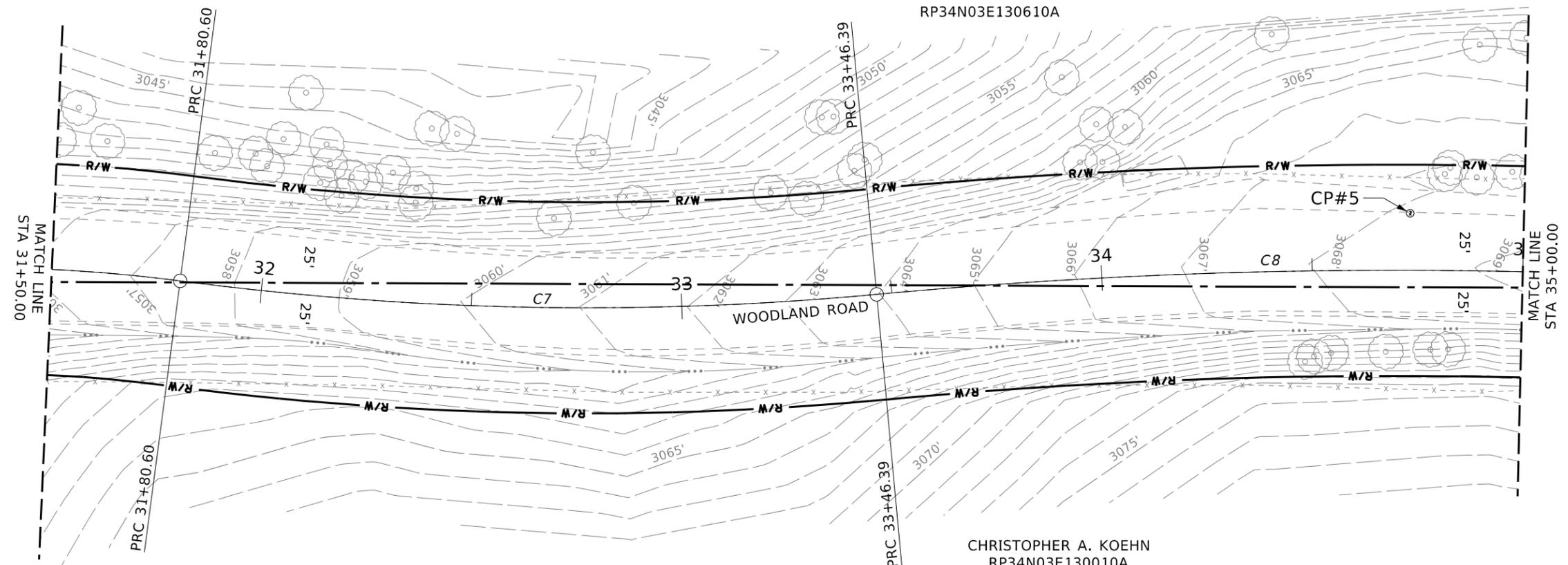


SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
5	1685909.87'	2556727.28'	3068.25'	PK MAG NAIL



SW 1/4 NE 1/4

CHRISTOPHER A. KOEHN  
RP34N03E130610A



C7  
PI 22+63.84  
Δ 12°50'38" LT  
L 165.79'  
R 739.56'

C8  
PI 24+25.49  
Δ 06°50'17" RT  
L 158.02'  
R 1324.07'

C9  
PI 24+25.49  
Δ 06°50'17" RT  
L 158.02'  
R 1324.07'

SE 1/4 NE 1/4

CHRISTOPHER A. KOEHN  
RP34N03E130010A

NOTE: CONIFER TREE SIZES RANGING FROM 8" TO 36" DIAMETER

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
JJS  
DESIGN CHECKED  
GJR  
DETAILED  
JJS  
DRAWING CHECKED  
GJR

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY  
CADD FILE NAME  
23091\_SURV\_007.dgn  
DRAWING DATE:  
AUGUST 2023

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PROJECT NO.  
  
A023(291)

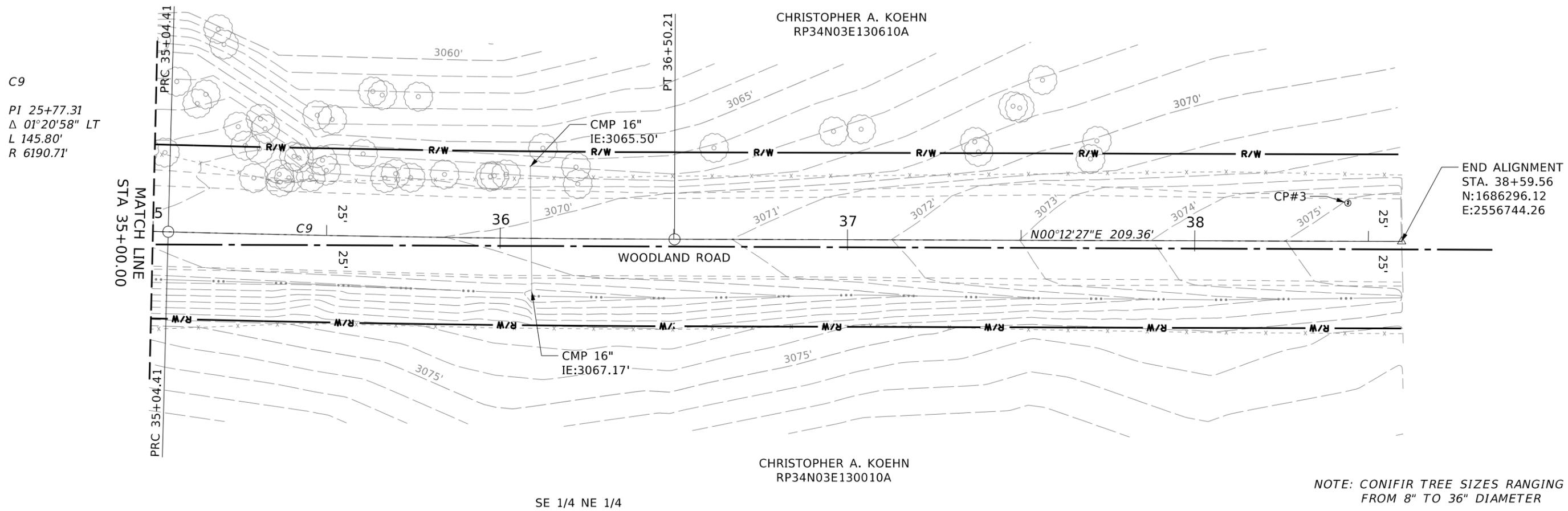
TOPOGRAPHIC SURVEY AND CONTROL  
  
WOODLAND ROAD  
SAFETY IMPROVEMENT  
  
IDAHO COUNTY

**ENGLISH**  
COUNTY  
IDAHO  
KEY NUMBER  
23291  
SHEET 9 OF 42

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1687643.78'	2556776.07'	3104.02'	5/8" REBAR WITH RED PLASTIC CAP MARKED 'JUB CONTROL'
3	1686280.65'	2556733.21'	3075.12'	PK MAG NAIL



SW 1/4 NE 1/4



NOTE: CONIFER TREE SIZES RANGING FROM 8" TO 36" DIAMETER

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  CADD FILE NAME 23091_SURV_008.dgn  DRAWING DATE: AUGUST 2023
DESIGN CHECKED GJR	
DETAILED JJS	
DRAWING CHECKED GJR	

**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**  
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity  
**J-U-B ENGINEERS, INC.**



PROJECT NO.	A023(291)
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TOPOGRAPHIC SURVEY AND CONTROL	WOODLAND ROAD SAFETY IMPROVEMENT IDAHO COUNTY
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ENGLISH
COUNTY IDAHO
KEY NUMBER 23291
SHEET 10 OF 42

SECTION 13, TOWNSHIP 34 NORTH, RANGE 3 EAST, B.M.  
SECTION 18, TOWNSHIP 34 NORTH, RANGE 4 EAST, B.M.

**METHOD OF SURVEY**

THE PROJECT CONTROL WAS ESTABLISHED USING RTK GPS (TRIMBLE R10 AND R12) AND A ROBOTIC TOTAL STATION INSTRUMENT (TRIMBLE S-6). PRIMARY CONTROL POINTS 2-11 WERE ESTABLISHED USING RTK METHODS WITH REDUNTANT TIES OR TOTAL STATION ROUNDS.

**BASIS OF BEARINGS**

ESTABLISHED BY GPS OBSERVATIONS. NAD 83 (2011) MODIFIED IDAHO STATE PLANE COORDINATE SYSTEM (WEST ZONE 1103)(EPOCH:2010.0000). BEARINGS SHOWN ARE AT GRID, ALL DISTANCES ARE PROJECTED TO GROUND VALUES.

**LOCAL GROUND CONSTANTS**

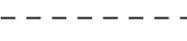
A RECIPROCAL COMBINATION SCALE FACTOR OF 1.0002071127 WAS APPLIED AT LATITUDE N46°17'46.24903" AND LONGITUDE W116°01'06.91945" (N:1687643.78' & E:2556776.07') TO CREATE A LOCAL GROUND COORDINATE SYSTEM.

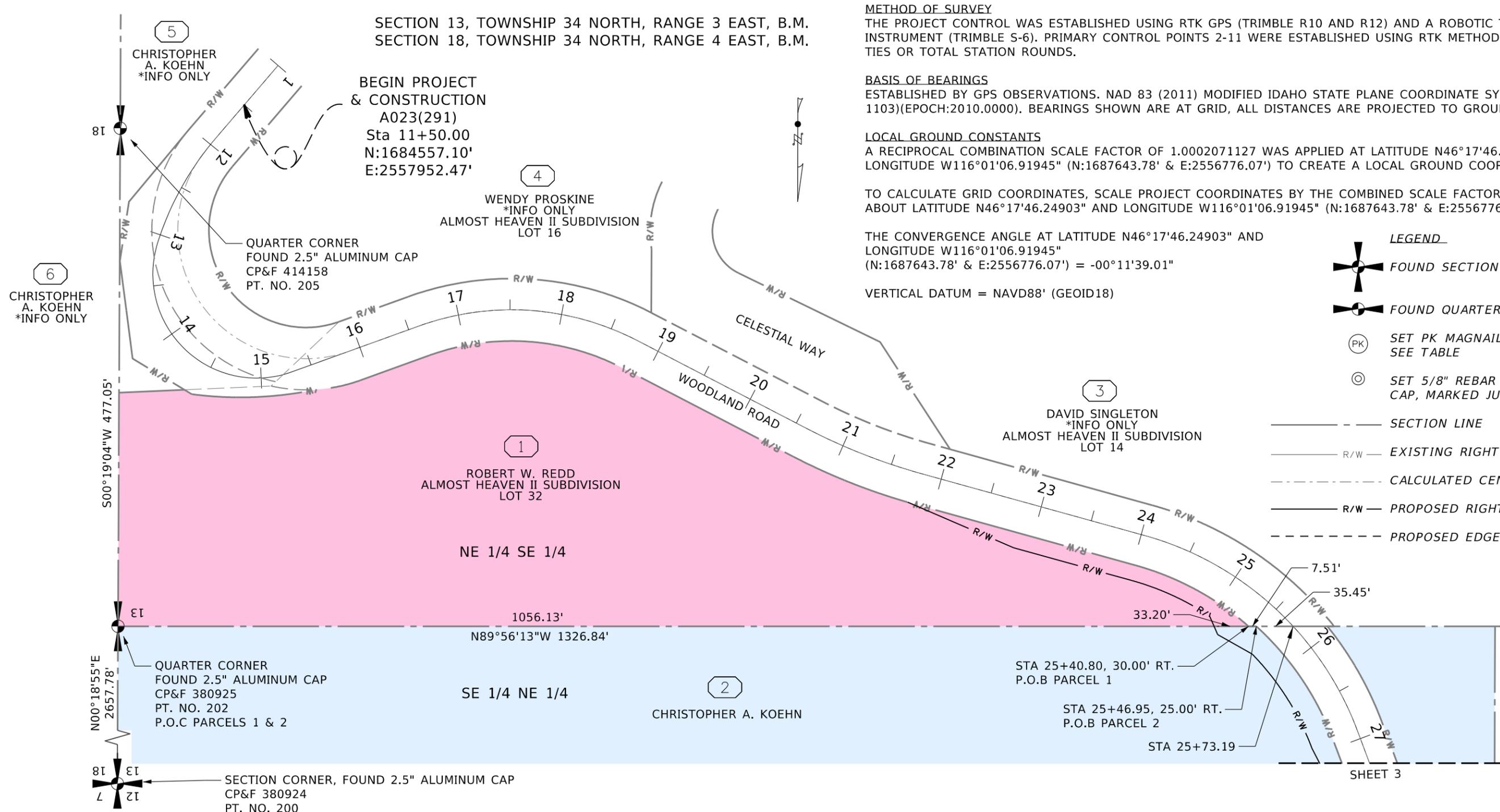
TO CALCULATE GRID COORDINATES, SCALE PROJECT COORDINATES BY THE COMBINED SCALE FACTOR OF 0.999792930 ABOUT LATITUDE N46°17'46.24903" AND LONGITUDE W116°01'06.91945" (N:1687643.78' & E:2556776.07')

THE CONVERGENCE ANGLE AT LATITUDE N46°17'46.24903" AND LONGITUDE W116°01'06.91945" (N:1687643.78' & E:2556776.07') = -00°11'39.01"

VERTICAL DATUM = NAVD88' (GEOID18)

**LEGEND**

-  FOUND SECTION CORNER
-  FOUND QUARTER CORNER
-  SET PK MAGNAIL, SURVEY CONTROL, SEE TABLE
-  SET 5/8" REBAR WITH YELLOW PLASTIC CAP, MARKED JUB PLS 13419
-  SECTION LINE
-  EXISTING RIGHT-OF-WAY
-  CALCULATED CENTERLINE OF ROAD
-  PROPOSED RIGHT-OF-WAY
-  PROPOSED EDGE OF PAVEMENT



PARCEL NO.	PARCEL I.D. NO.	RECORD OWNER	TOTAL OWNERSHIP ASSESSED AC.	RIGHT OF WAY		REMAINDER		EASEMENT	
				REQ'D	EXIST. AC.	LEFT AC.	RIGHT AC.	PERM. AC.	TEMP AC.
1	RP001030000320A	ROBERT W. REDD	4.41	0.099	0.0	0.0	4.311	0.0	0.0
2	RP34N03E130010A	CHRISTOPHER A. KOEHN	77.73	0.250	0.0	0.062	77.41	0.0	0.0
*3	INFO ONLY	DAVID SINGLETON		0.0	0.0	0.0	0.0	0.0	0.0
*4	INFO ONLY	WENDY PROSKINE		0.0	0.0	0.0	0.0	0.0	0.0
*5	INFO ONLY	CHRISTOPHER A. KOEHN		0.0	0.0	0.0	0.0	0.0	0.0
*6	INFO ONLY	CHRISTOPHER A. KOEHN		0.0	0.0	0.0	0.0	0.0	0.0

**NOTE:**  
1. TOTAL OWNERSHIP AREAS SHOWN REPRESENT THE AREAS AS LISTED ON THE COUNTY ASSESSORS' REPORTS AND ARE APPROXIMATE. REMAINDER AREAS WERE CALCULATED BY DEDUCTING ANY ACQUISITIONS FOR THE PROJECT FROM THOSE AREAS AND ARE ALSO APPROXIMATE.

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED GJR	
DETAILED JJS	CADD FILE NAME 23091_TOM_100.dgn
DRAWING CHECKED GJR	DRAWING DATE: AUGUST 2023

**IDAHO TRANSPORTATION DEPARTMENT**

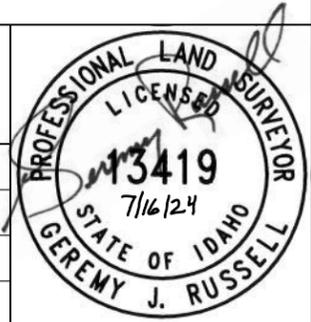
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

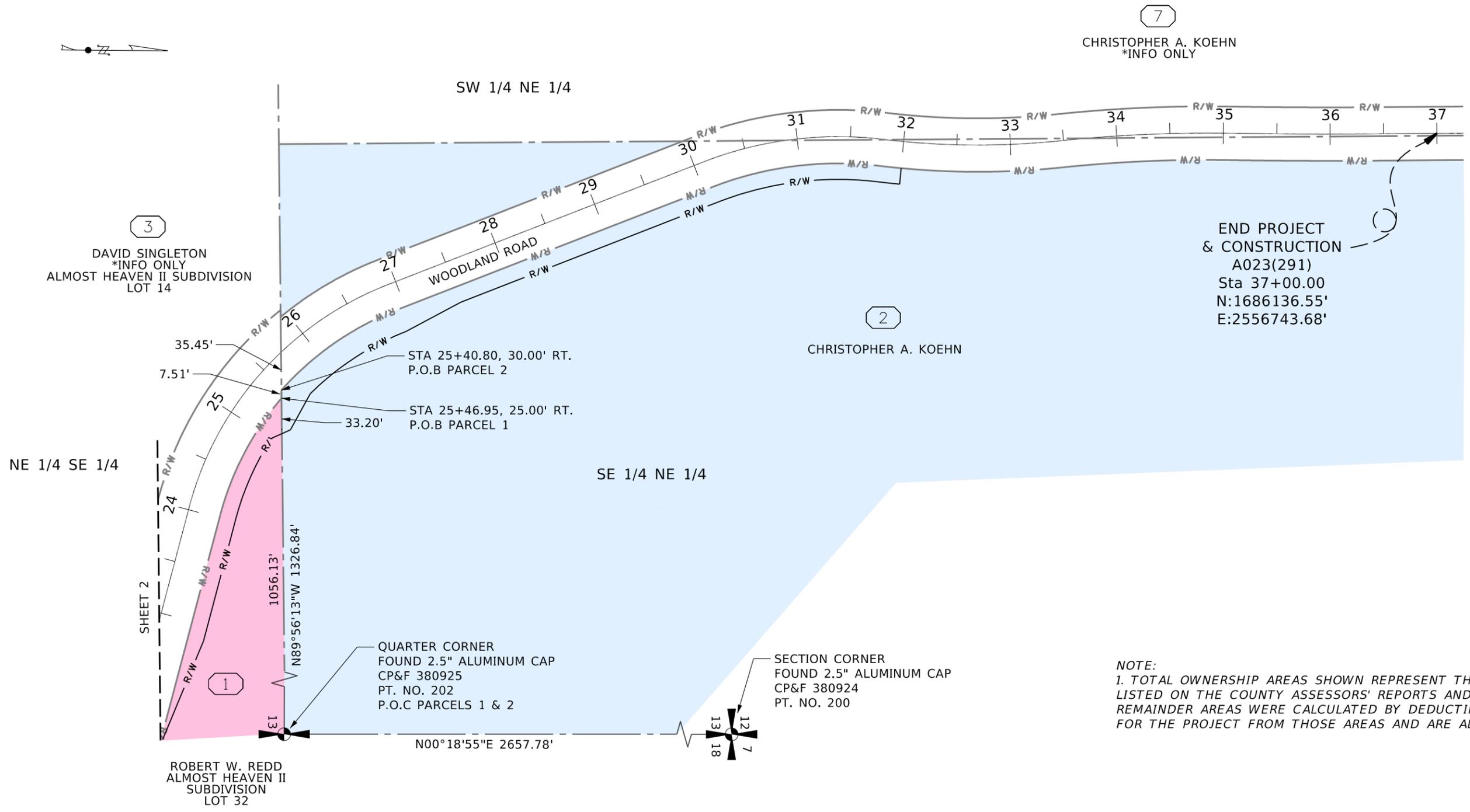
PROJECT NO.	A023(291)
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TOTAL OWNERSHIP MAP	WOODLAND ROAD SAFETY IMPROVEMENT
	IDAHO COUNTY

ENGLISH
COUNTY IDAHO
KEY NUMBER 23291
SHEET 11 OF 42



SECTION 13, TOWNSHIP 34 NORTH, RANGE 3 EAST, B.M.



NOTE:  
 1. TOTAL OWNERSHIP AREAS SHOWN REPRESENT THE AREAS AS LISTED ON THE COUNTY ASSESSORS' REPORTS AND ARE APPROXIMATE. REMAINDER AREAS WERE CALCULATED BY DEDUCTING ANY ACQUISITIONS FOR THE PROJECT FROM THOSE AREAS AND ARE ALSO APPROXIMATE.

PARCEL NO.	PARCEL I.D. NO.	RECORD OWNER	TOTAL OWNERSHIP ASSESSED AC.	RIGHT OF WAY		REMAINDER		EASEMENT	
				REQ'D	EXIST. AC.	LEFT AC.	RIGHT AC.	PERM. AC.	TEMP AC.
1	RP001030000320A	ROBERT W. REDD	4.41	0.099	0.0	0.0	4.311	0.0	0.0
2	RP34N03E130010A	CHISTOPHER A. KOEHN	77.73	0.250	0.0	0.062	77.41	0.0	0.0
*3	INFO ONLY	DAVID SINGLETON		0.0	0.0	0.0	0.0	0.0	0.0
*7	INFO ONLY	CHISTOPHER A. KOEHN		0.0	0.0	0.0	0.0	0.0	0.0

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED GJR	
DETAILED JJS	
DRAWING CHECKED GJR	

**IDAHO TRANSPORTATION DEPARTMENT**  
 YOUR Safety→YOUR Mobility→YOUR Economic Opportunity  
**J-U-B ENGINEERS, INC.**

PROJECT NO.	A023(291)
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TOTAL OWNERSHIP MAP	WOODLAND ROAD SAFETY IMPROVEMENT
	IDAHO COUNTY

ENGLISH
COUNTY IDAHO
KEY NUMBER 23291
SHEET 12 OF 42

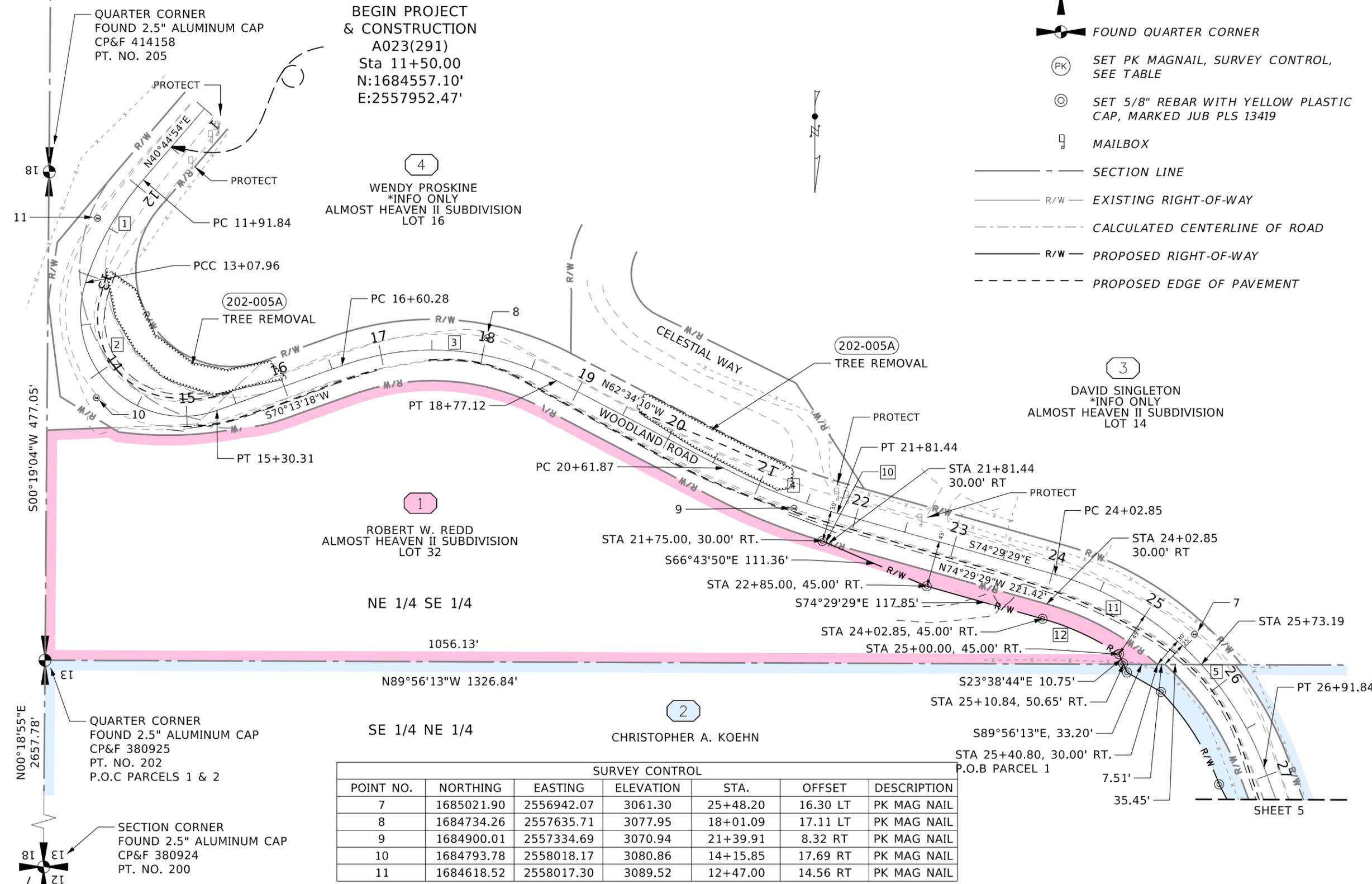


SECTION 13, TOWNSHIP 34 NORTH, RANGE 3 EAST, B.M.  
SECTION 18, TOWNSHIP 34 NORTH, RANGE 4 EAST, B.M.

**LEGEND**

- FOUND SECTION CORNER
- FOUND QUARTER CORNER
- SET PK MAGNAIL, SURVEY CONTROL, SEE TABLE
- SET 5/8" REBAR WITH YELLOW PLASTIC CAP, MARKED JUB PLS 13419
- MAILBOX
- SECTION LINE
- R/W EXISTING RIGHT-OF-WAY
- CALCULATED CENTERLINE OF ROAD
- R/W PROPOSED RIGHT-OF-WAY
- PROPOSED EDGE OF PAVEMENT

<b>CURVE 1</b> PI STA 12+50.70 Δ = 23°07'49" LT T = 58.86' L = 116.12' R = 287.63' CH = 115.33' CH BRG = N29°11'00"E PI N. 1684625.37' E. 2558011.29'	<b>CURVE 5</b> PI STA 25+59.06 Δ = 53°56'53" RT T = 156.21' L = 288.98' R = 306.92' CH = 278.43' CH BRG = N47°31'02"W PI N. 1685005.68' E. 2556928.44'
<b>CURVE 2</b> PI STA 15+10.28 Δ = 127°23'47" LT T = 202.32' L = 222.35' R = 100.00' CH = 179.29' CH BRG = N46°04'48"W PI N. 1684874.30' E. 2558090.34'	<b>CURVE 10</b> Δ = 00°38'34" LT T = 3.39' L = 6.78' R = 604.64' CH = 6.78' CH BRG = N74°10'12"W
<b>CURVE 3</b> PI STA 17+75.28 Δ = 47°12'32" RT T = 115.00' L = 216.84' R = 263.17' CH = 210.76' CH BRG = N86°10'26"W PI N. 1684722.94' E. 2557669.43'	<b>CURVE 11</b> Δ = 25°45'08" RT T = 63.30' L = 124.46' R = 276.92' CH = 123.42' CH BRG = N61°36'55"W
<b>CURVE 4</b> PI STA 21+21.87 Δ = 11°55'18" LT T = 60.00' L = 119.57' R = 574.63' CH = 119.35' CH BRG = N68°31'49"W PI N. 1684888.67' E. 2557350.13'	<b>CURVE 12</b> Δ = 18°08'09" LT T = 41.80' L = 82.90' R = 261.92' CH = 82.56' CH BRG = S65°25'24"E



202-005A SELECTIVE REMOVAL OF TREES INCLUDING STUMPS  
15 EA STA 12+93.46, 23.40 LT TO STA 15+50.00, 28.34 LT  
7 EA STA 19+62.05, 10.08' LT TO STA 21+12.34, 22.17' LT

SURVEY CONTROL						
POINT NO.	NORTHING	EASTING	ELEVATION	STA.	OFFSET	DESCRIPTION
7	1685021.90	2556942.07	3061.30	25+48.20	16.30 LT	PK MAG NAIL
8	1684734.26	2557635.71	3077.95	18+01.09	17.11 LT	PK MAG NAIL
9	1684900.01	2557334.69	3070.94	21+39.91	8.32 RT	PK MAG NAIL
10	1684793.78	2558018.17	3080.86	14+15.85	17.69 RT	PK MAG NAIL
11	1684618.52	2558017.30	3089.52	12+47.00	14.56 RT	PK MAG NAIL

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
JJS  
DESIGN CHECKED  
GJR  
DETAILED  
JJS  
DRAWING CHECKED  
GJR

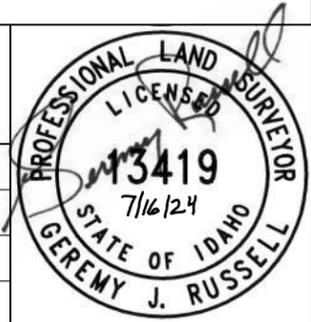
SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME 23091\_ROW\_001.dgn  
DRAWING DATE: AUGUST 2023

**IDAHO TRANSPORTATION DEPARTMENT**  
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity  
**J-U-B ENGINEERS, INC.**

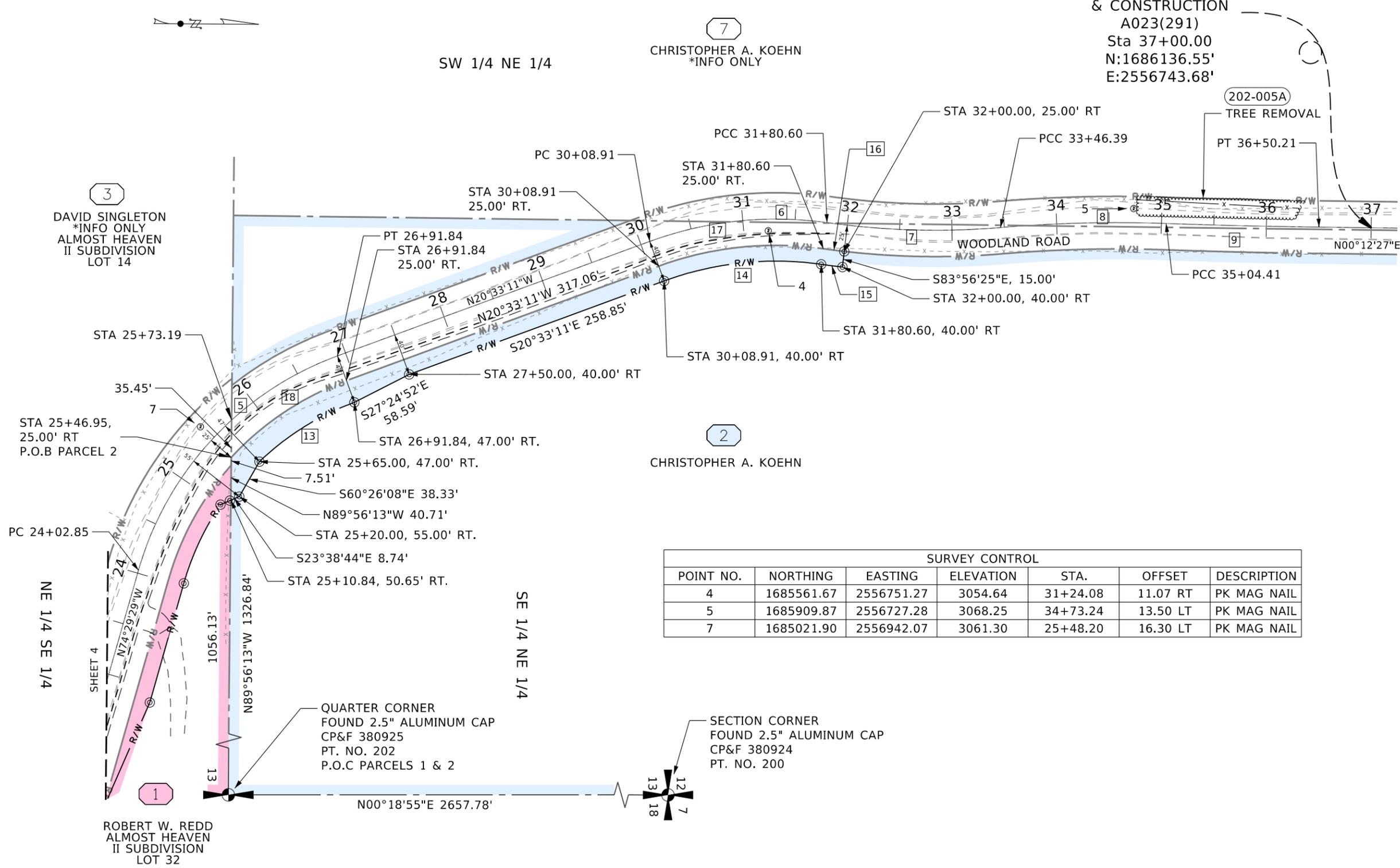
PROJECT NO.  
A023(291)

RIGHT-OF-WAY PLAN  
WOODLAND ROAD SAFETY IMPROVEMENT  
IDAHO COUNTY

ENGLISH  
COUNTY IDAHO  
KEY NUMBER 23291  
SHEET 13 OF 42



SECTION 13, TOWNSHIP 34 NORTH, RANGE 3 EAST, B.M.



END PROJECT  
& CONSTRUCTION  
A023(291)  
Sta 37+00.00  
N:1686136.55'  
E:2556743.68'

<b>CURVE 5</b> PI STA 25+59.06 Δ = 53°56'53" RT T = 156.21' L = 288.98' R = 306.92' CH = 278.43' CH BRG = N47°31'02"W PI N. 1685005.68' E. 2556928.44'	<b>CURVE 13</b> Δ = 23°40'39" LT T = 54.48' L = 107.41' R = 259.92' CH = 106.65' CH BRG = S32°22'56"E
<b>CURVE 6</b> PI STA 30+96.52 Δ = 28°06'22" RT T = 87.61' L = 171.69' R = 350.00' CH = 169.97' CH BRG = N06°29'25"W PI N. 1685530.88' E. 2556731.56'	<b>CURVE 14</b> Δ = 28°06'57" LT T = 77.62' L = 152.12' R = 310.00' CH = 150.60' CH BRG = S06°29'42"E
<b>CURVE 7</b> PI STA 32+63.84 Δ = 12°50'38" LT T = 83.24' L = 165.79' R = 739.56' CH = 165.44' CH BRG = N01°08'27"W PI N. 1685700.25' E. 2556754.05'	<b>CURVE 15</b> Δ = 01°30'11" RT T = 10.23' L = 20.45' R = 779.56' CH = 20.45' CH BRG = S06°48'41"W
<b>CURVE 8</b> PI STA 34+25.49 Δ = 06°50'17" RT T = 79.10' L = 158.02' R = 1324.07' CH = 157.93' CH BRG = N01°51'44"W PI N. 1685861.91' E. 2556739.11'	<b>CURVE 16</b> Δ = 01°30'11" LT T = 10.03' L = 20.06' R = 764.56' CH = 20.06' CH BRG = N06°48'41"E
<b>CURVE 9</b> PI STA 35+77.31 Δ = 01°20'58" LT T = 72.90' L = 145.80' R = 6190.71' CH = 145.80' CH BRG = N00°52'56"E PI N. 1686013.86' E. 2556743.24'	<b>CURVE 17</b> Δ = 28°06'22" RT T = 81.35' L = 159.42' R = 325.00' CH = 157.83' CH BRG = N06°29'24"W
	<b>CURVE 18</b> Δ = 27°01'39" RT T = 67.80' L = 132.99' R = 281.92' CH = 131.76' CH BRG = N34°04'36"W

202-005A SELECTIVE REMOVAL OF TREES INCLUDING STUMPS  
23 EA STA 34+75.00, 24.05' LT TO STA 36+25.52, 8.56' LT

POINT NO.	NORTHING	EASTING	ELEVATION	STA.	OFFSET	DESCRIPTION
4	1685561.67	2556751.27	3054.64	31+24.08	11.07 RT	PK MAG NAIL
5	1685909.87	2556727.28	3068.25	34+73.24	13.50 LT	PK MAG NAIL
7	1685021.90	2556942.07	3061.30	25+48.20	16.30 LT	PK MAG NAIL

NO.	DATE	BY	DESCRIPTION

DESIGNED JJS	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED GJR	CADD FILE NAME 23091_ROW_002.dgn
DETAILED JJS	DRAWING DATE: AUGUST 2023
DRAWING CHECKED GJR	

**IDAHO TRANSPORTATION DEPARTMENT**

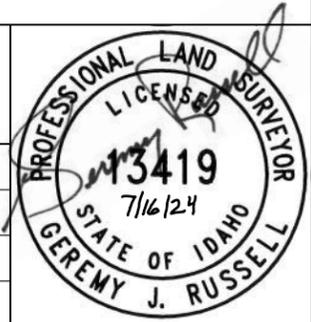
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

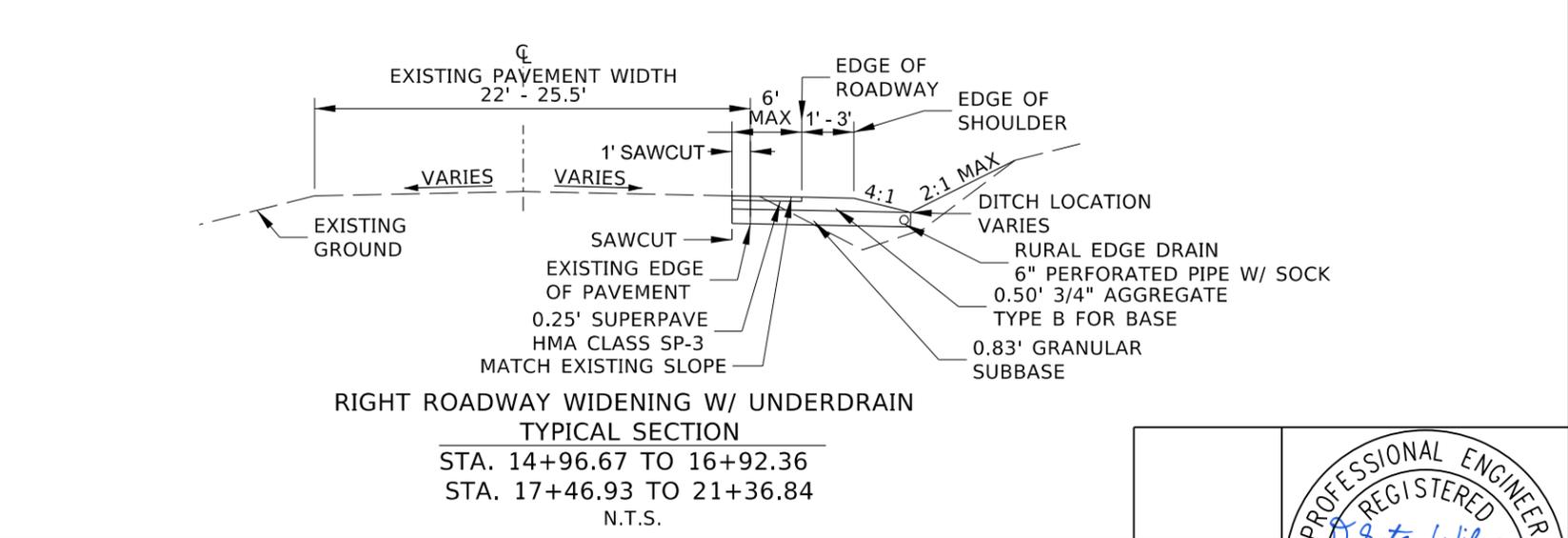
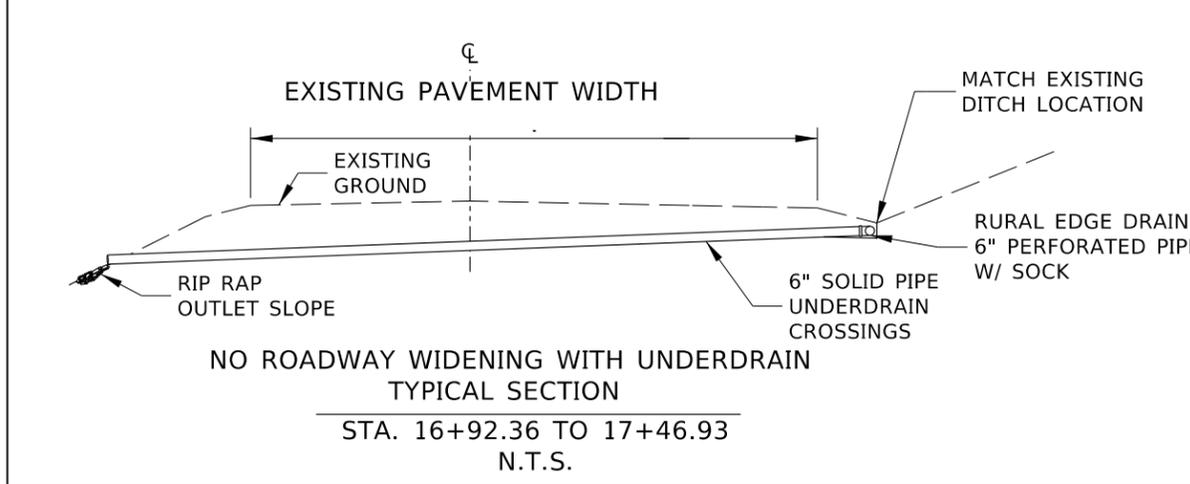
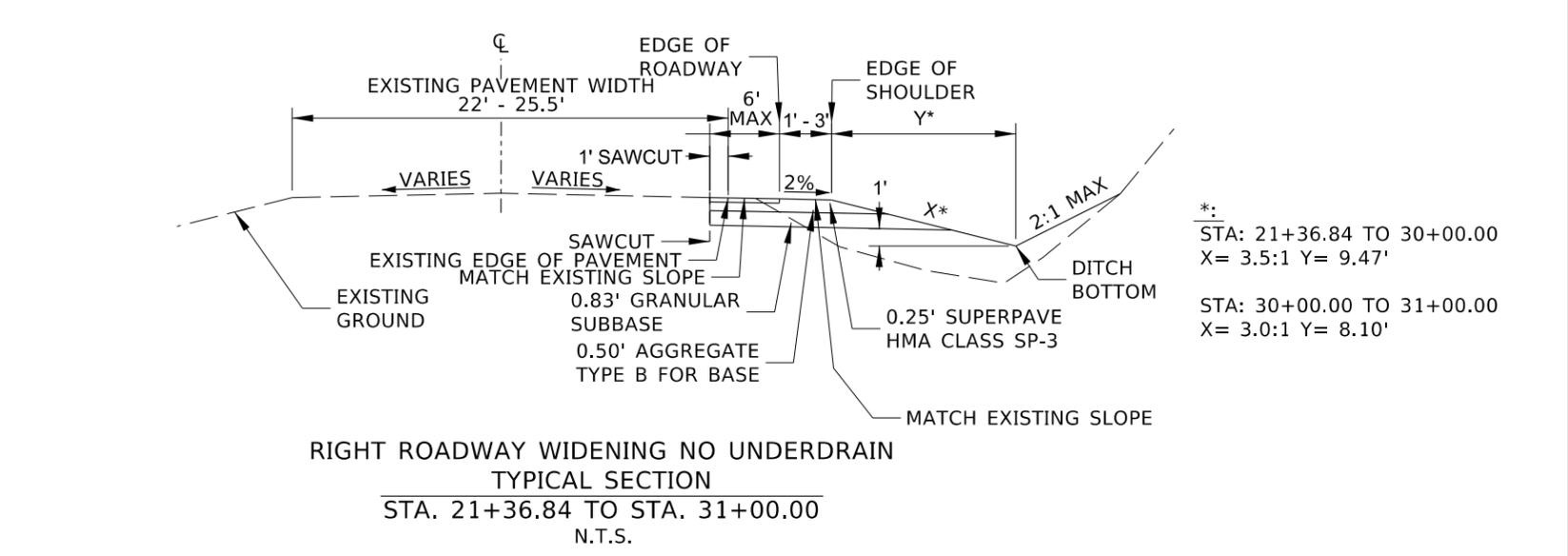
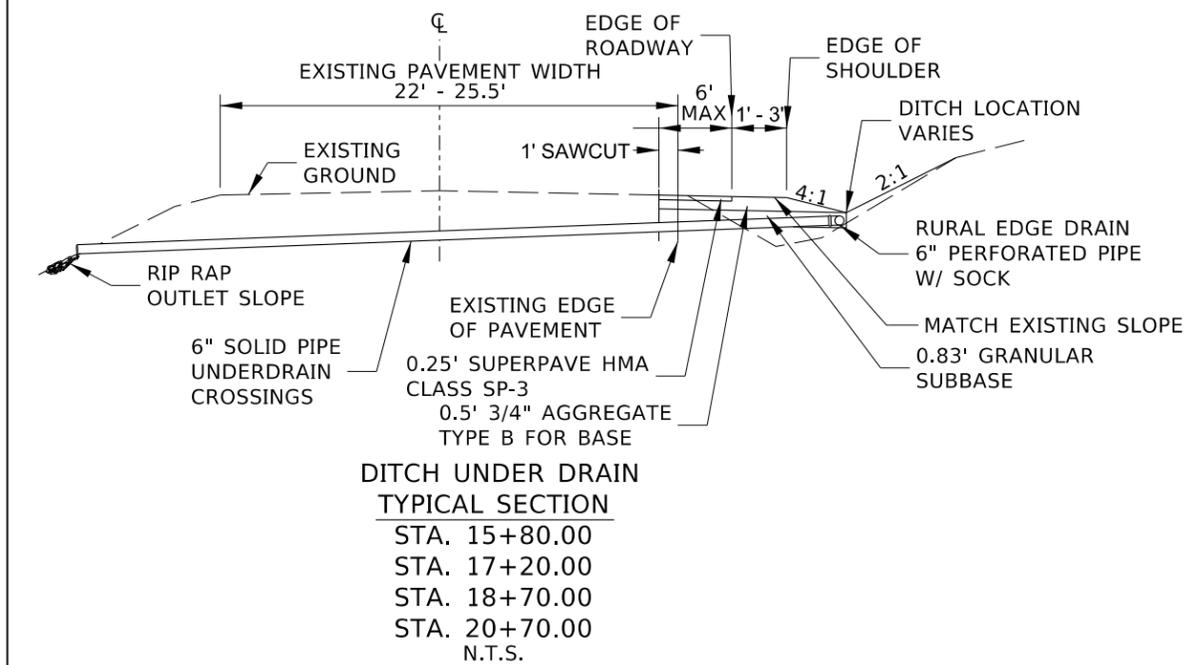
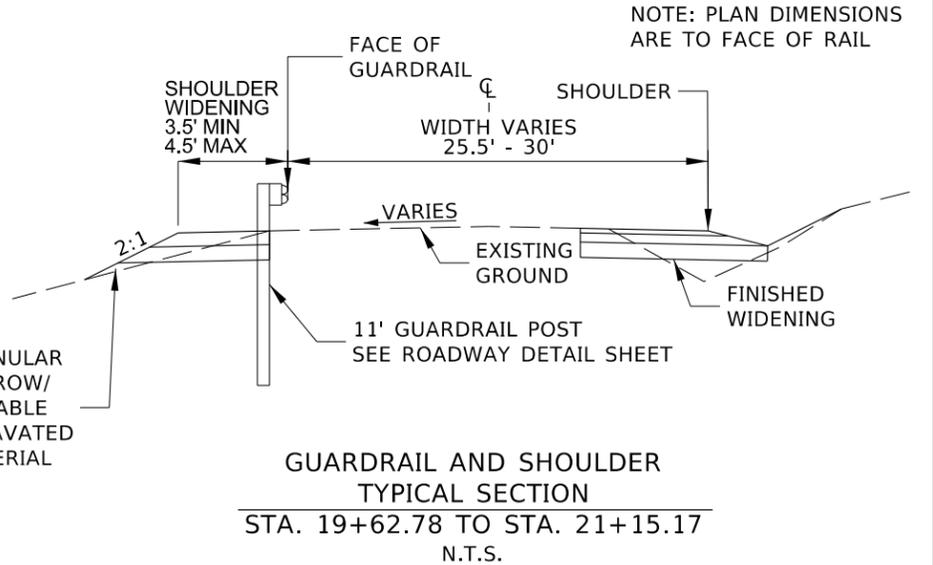
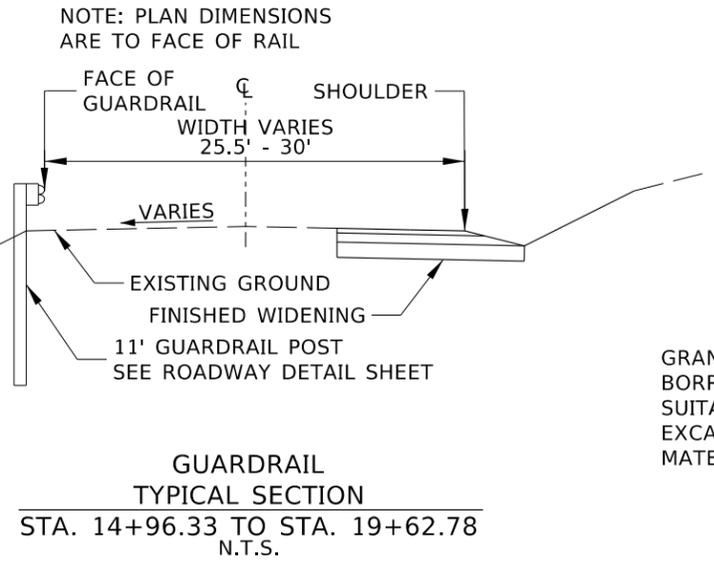
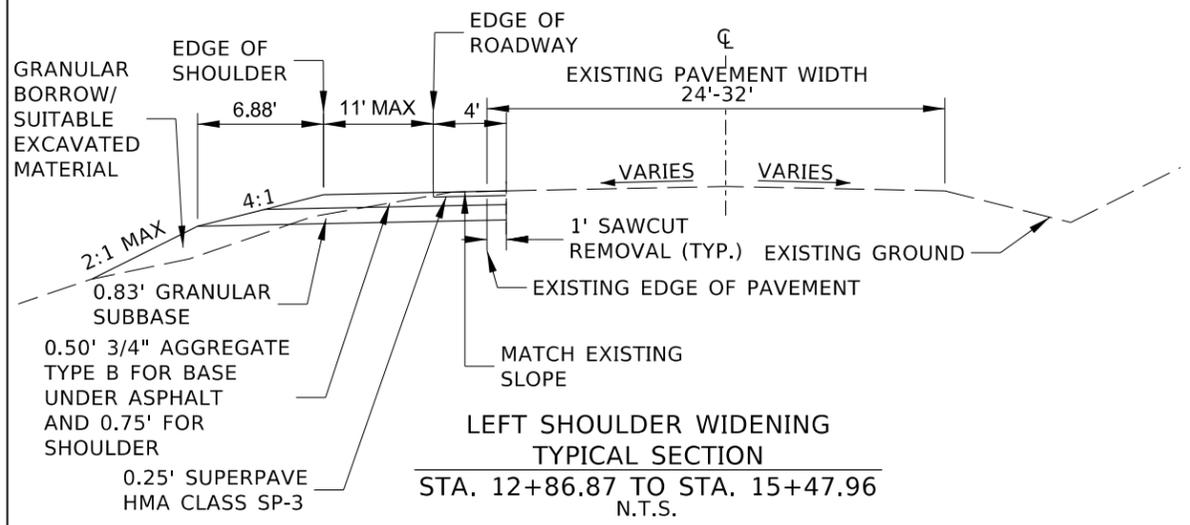
**J-U-B ENGINEERS, INC.**

PROJECT NO.  
**A023(291)**

RIGHT-OF-WAY PLAN  
**WOODLAND ROAD SAFETY IMPROVEMENT**  
IDAHO COUNTY

**ENGLISH**  
COUNTY IDAHO  
KEY NUMBER 23291  
SHEET 14 OF 42





REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR  
DESIGN CHECKED DJW  
DETAILED SMGC  
DRAWING CHECKED JRW

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME 23091\_TYP\_001.DGN  
DRAWING DATE: APRIL 2025

**IDAHO TRANSPORTATION DEPARTMENT**  
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO. A023(291)

TYPICAL SECTIONS  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO

ENGLISH  
COUNTY IDAHO  
KEY NUMBER 23291  
SHEET 15 OF 42



CLEARANCES

PROJECT STANDARDS

CHARTER APPROVAL  AASHTO  3R  1R  STATE
 PP  OTHER

PUBLIC HEARING WAIVER

PUBLIC HEARING DATE (Latest hearing date held or scheduled for opportunity)

DESIGN APPROVAL

RECLAMATION PLAN APPROVAL NO(S)

AIRPORT

Land Survey Monument Search and Documentation (I.C.55-1613)

R/W CERTIFICATE: Issued by  HQ  DISTRICT

TRIBAL LANDS:  AGREEMENT REQUIRED  SPECIAL PROVISIONS FOR CONTRACT PROPOSAL

BRIDGE PS & E

ENVIRONMENTAL DECISION: TYPE  CAT-EX  FONSI  ROD

ENVIRONMENTAL RE-EVALUATION

+ CLEARED UNDER PROJECT NO. + APPROVAL DATE

Table with 2 columns: Project No., Approval Date. Rows include A023(291), N/A, A023(291), 9/24/2024, etc.

ESTIMATING BASIS

AGGREGATE:

GRANULAR SUBBASE AT AN ESTIMATED 142 PCF, INCLUDING 7% MOISTURE CONTENT (ESTIMATED).
3/4" AGGREGATE TYPE B FOR BASE AT AN ESTIMATED 145 PCF, INCLUDING 7% MOISTURE CONTENT (ESTIMATED).

PERMITS

IDAHO DEPARTMENT OF WATER RESOURCES PERMIT NO(S)

US ARMY CORPS OF ENGINEERS 404 PERMIT NO(S)

OTHER

DEQ SECTION 401 WATER QUALITY CERTIFICATION  YES  NO
NPDES GENERAL PERMIT/SWPPP REQUIRED  YES  NO
POLLUTION PREVENTION PLAN REQUIRED  YES  NO

Table with 3 columns: Project No., Approval Date, Expiration Date. Rows include N/A, N/A, N/A.

AGREEMENTS (List Appropriate Name)

LOCAL:

CITY
COUNTY
HIGHWAY DISTRICT
ROAD CLOSURE AND MAINTENANCE
STATE/LOCAL CONSTRUCTION IDAHO COUNTY

IRRIGATION DISTRICT(S): Crossing Agreement Required  YES  NO
(Signatures Required on either Structure Drawing or Bridge Sheet)

UTILITIES:

List all Utilities shown on plans
Co. IDAHO COUNTY LIGHT & POWER COOPERATIVE ASSOCIATION, INC.  RETAIN & PROTECT
Co. LUMEN 
Co. 
Co. 
Co. 
Co. 
Co.

Table with 3 columns: Utility Hearing Waiver, Agreement, Agreement No. Rows include 5/7/2024, N/A, N/A, etc.

RAILROAD

List all Railroads encroached upon
Co.
Co.

Table with 3 columns: Agreement For, Effective Date, No. Rows include N/A, N/A, N/A.

+ ENTER "N/A" WHEN NOT APPLICABLE
++ LPA PROJECTS - DATE ENTERED BY ROADWAY DESIGN WHEN PROJECT SENT TO PS&E.

Table with 4 columns: No., Date, By, Description. Header: REVISIONS

DESIGNED BPRR
DETAILED SMGC
DRAWING CHECKED DJW
CADD FILE NAME 23091\_PCSM\_001.DGN

IDAHO TRANSPORTATION DEPARTMENT logo and J-U-B ENGINEERS, INC. text.

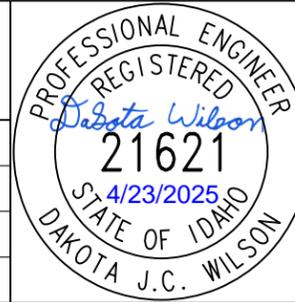
PROJECT NO. A023(291)

PROJECT CLEARANCE SUMMARY WOODLAND RD SAFETY IMPRV, IDAHO CO

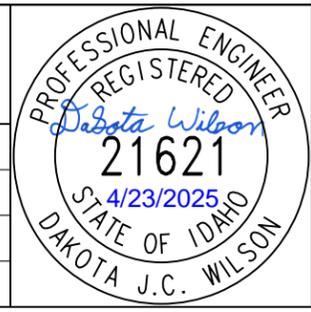
ENGLISH COUNTY IDAHO KEY NUMBER 23291 SHEET 16 OF 42



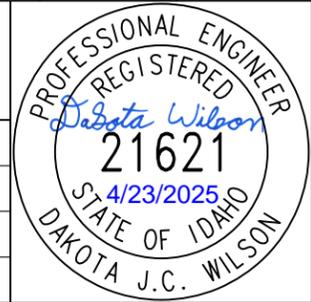
STATION	PIPE CULVERT (LENGTH IN FEET)				PLASTIC PIPE			METAL PIPE									CONCRETE PIPE		MINOR STRUCTURES						APRONS	INLETS	CATCH BASINS	REMARKS ( INDICATE ELONGATION) ( WHEN REQUIRED)			
	PIPE SIZE ( INCHES)				RIBBED POLYETHYLENE (PE)	CORRUGATED POLYETHYLENE (PE)	RIBBED POLYVINYL CHLORIDE ( PVC )	GALVANIZED STEEL	ALUMINIZED STEEL	STEEL PIPE			ALUMINUM PIPE			REINFORCED CLASS	IRRIGATION OR DRAINAGE	RUBBER GASKET JOINTS REQUIRED	FILL HEIGHT	STR. EXC.	COMP. BKFILL	DRAWING NUMBER	STRUCTURE	CONCRETE	METAL REINF.	TIMBER	GRATES		EA.	TYPE _____	TYPE _____
	12"	18"	36"							GAGE	COATED	ANNULAR CORR.	HELICAL CORR.	" CORRUGATION DEPTH	" CORRUGATION LENGTH								THICK. (")	COATED	ANNULAR CORR.	HELICAL CORR.	EA.				
14+07.91			20'		X		X			14 GAGE				X																	CONNECT TO EXISTING 36" PIPE
23+46.55	26'				X		X			16 GAGE				X																APPROACH CULVERT	
28+23.20		45'			X		X			16 GAGE				X																ROAD CROSS CULVERT	
30+17.59		44'			X		X			16 GAGE				X																ROAD CROSS CULVERT	
SHEET TOTAL	26'	89'	20'																												
PROJ. TOTAL	26'	89'	20'																												

<b>REVISIONS</b> NO. DATE BY DESCRIPTION				DESIGNED BPRR DESIGN CHECKED DJW DETAILED SMGC DRAWING CHECKED JRW	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY CADD FILE NAME 23091_PIPESM_001.DGN DRAWING DATE: APRIL 2025	<b>IDAHO TRANSPORTATION DEPARTMENT</b>  YOUR Safety→YOUR Mobility→YOUR Economic Opportunity <b>J-U-B ENGINEERS, INC.</b>	PROJECT NO.  A023(291)	PIPE CULVERT SUMMARY  WOODLAND RD SAFETY IMPRV, IDAHO CO	<b>ENGLISH</b> COUNTY IDAHO KEY NUMBER 23091 SHEET 17 OF 42	
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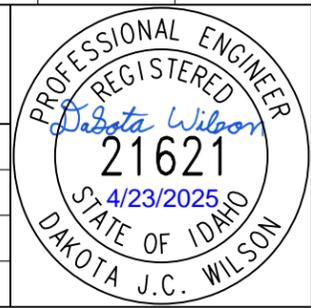
STATION TO STATION	SANITARY/STORM SEWER PIPE (LENGTH IN FEET)					PLASTIC PIPE				SIPHON TYPE METAL PIPE + COATING IS REQUIRED IF CHECKED				CONCRETE PIPE			MAN-HOLES		CATCH BASINS			INLETS			REMARKS
						CORRUGATED POLYETHYLENE (PE)	PERFORATED CORRUGATED POLYETHYLENE (PE) W/ SOCK	SOLID WALL POLYVINYL CHLORIDE ( PVC )	ABS COMPOSITE	STEEL		ALUM.		BITUMINOUS OR + POLYMER COATING	REINFORCED CLASS	NON-REINFORCED CLASS	TYPE OF BEDDING	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	
	1/2 IN CORR. DEPTH	CORR. DEPTH	1/4 IN TO 1/2 IN CORR. DEPTH	CORR. DEPTH	EA.					EA.	EA.	EA.	EA.					EA.	EA.						
PIPE SIZE ( INCHES )					X	X	X	X	THICKNESS (INCHES)				X	II-V	X	1,2,3	EA.	EA.	EA.	EA.	EA.	EA.	EA.		
14+96.89 - 21+36.84	635					X																			RURAL EDGE DRAIN
15+80.00	32					X																			UNDERDRAIN CROSSING
17+20.00	33					X																			UNDERDRAIN CROSSING
18+70.00	32					X																			UNDERDRAIN CROSSING
20+70.00	46					X																			UNDERDRAIN CROSSING
SHEET TOTAL	778'																								
PROJECT TOTAL	778'																								

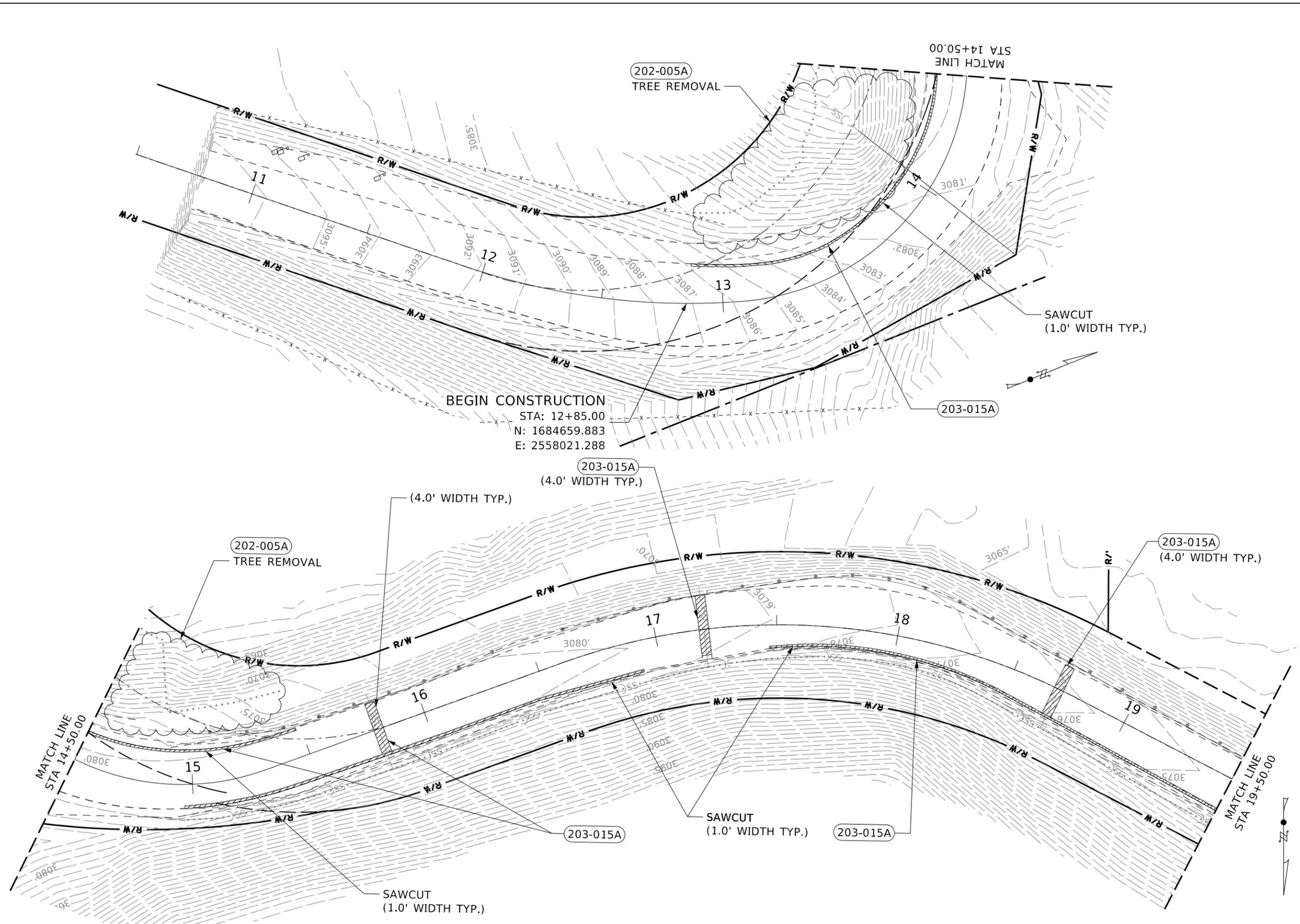
<b>REVISIONS</b> NO. DATE BY DESCRIPTION				DESIGNED BPRR DESIGN CHECKED DJW DETAILED SMGC DRAWING CHECKED JRW	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY CADD FILE NAME 23291_SPSM_001.DGN DRAWING DATE: APRIL 2025	<b>IDAHO TRANSPORTATION DEPARTMENT</b>  YOUR Safety→YOUR Mobility→YOUR Economic Opportunity <b>J-U-B ENGINEERS, INC.</b>	PROJECT NO. A023(291)	STORM SEWER PIPE SUMMARY WOODLAND RD SAFETY IMPRV, IDAHO CO	<b>ENGLISH</b> COUNTY IDAHO KEY NUMBER 23291 SHEET 18 OF 42	
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SHEET NUMBER				REMOVAL	REMOVAL	REMOVAL	PLAN	PLAN	PLAN	PLAN	PLAN	PLAN	PPP	PPP	PPP
STATION - STATION				17	18	19	20	21	22	23	24	25	27	28	29
ITEM NO.	ITEM	UNIT	TOTAL	10+50 TO 19+50	19+50 TO 29+50	29+50 TO 38+50	11+50 TO 15+50.00	15+50 TO 19+50	19+50 TO 23+50	23+50 TO 27+50	27+50 TO 32+20	32+20 TO 36+80	11+50 TO 19+50	19+50 TO 29+50	29+50 TO 38+50
201-010A	CLEARING AND GRUBBING	LS	1												
202-005A	SELECTIVE REMOVAL OF TREES INCLUDING STUMPS (10"-36" DIAMETER)	EACH	45	15	7	23									
203-015A	REMOVAL OF BITUMINOUS SURFACE	SY	275	100	134	41									
203-075A	REMOVAL OF FENCE	FT	840		443	397									
203-123A	REMOVAL OF MISCELLANEOUS ITEM - PIPE CULVERT	FT	76		36	40									
205-005A	EXCAVATION	CY	2128				105	77	321	1075	550				
205-040A	GRANULAR BORROW	CY	150				50		50	15	35				
212-011A	FIBER WATTLE	FT	485										191	222	72
212-020A	SILT FENCE	FT	326										163	163	
301-005A	GRANULAR SUBBASE	TON	1200												
303-022A	3/4" AGGREGATE TYPE B FOR BASE	TON	700												
602-025A	12" PIPE CULVERT	FT	26												
602-035A	18" PIPE CULVERT	FT	89												
602-065A	36" PIPE CULVERT	FT	20												
606-010A	6" PIPE UNDERDRAIN	FT	143												
606-120A	RURAL EDGE DRAIN	FT	635												
610-045A	FENCE TYPE 5 B	FT	157									157			
612-005A	W-BEAM GUARDRAIL	FT	613				48	415	150						
612-110A	GUARDRAIL ANCHOR	EACH	1				1								
612-115C	GUARDRAIL TERMINAL, TANGENT	EACH	1						1						
616-010A	SIGN TY B-1	SF	90.5												
616-040K	BRKAWAY STEEL SIGN POST TY E-2	FT	155												
624-005A	LOOSE RIPRAP	CY	4.2										2.8	0.7	0.7
626-100A	MISCELLANEOUS TEMPORARY TRAFFIC CONTROL ITEMS	CA	5000												
675-005A	SURVEY	LS	1												
S900-50A	CONTINGENCY AMOUNT - MISCELLANEOUS WORK	CA	5000												
S904-05A	SP - TEMPORARY TRAFFIC CONTROL	LS	1												
S904-05B	SP-SEEDING	LS	1												
S912-05A	SP-SUPERPAVE HMA PAV INCL ASPH &ADD CL SP-3	SY	820												
Z629-05A	MOBILIZATION	LS	1												

<b>REVISIONS</b> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				NO.	DATE	BY	DESCRIPTION																	DESIGNED BPRR DESIGN CHECKED DJW DETAILED SMGC DRAWING CHECKED JRW	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY CADD FILE NAME 23091_RDSM_001.DGN DRAWING DATE: APRIL 2025	<b>IDAHO TRANSPORTATION DEPARTMENT</b>  YOUR Safety→YOUR Mobility→YOUR Economic Opportunity <b>J-U-B ENGINEERS, INC.</b>	PROJECT NO.  A023(291)	ROADWAY SUMMARY  WOODLAND RD SAFETY IMPRV, IDAHO CO	ENGLISH COUNTY IDAHO KEY NUMBER 23291 SHEET 19 OF 42	
NO.	DATE	BY	DESCRIPTION																											

SHEET NO.	DRAIN	DRAIN	DRAIN																
STA.-STA.	30	31	32																
ITEM NO.	10+50 TO 19+50	19+50 TO 29+50	29+50 TO 34+50																
201-010A																			
202-005A																			
203-015A																			
203-075A																			
203-123A																			
205-005A																			
205-040A																			
212-011A																			
212-020A																			
301-005A																			
303-022A																			
602-025A		26																	
602-035A		45	44																
602-065A	20																		
606-010A	97	46																	
606-120A	447	188																	
610-045A																			
612-005A																			
612-110A																			
612-115C																			
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626-100A																			
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S900-50A																			
S904-05A																			
S904-05B																			
S912-05A																			
Z629-05A																			

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				JRW	APRIL 2025																																																																												



- 202-005A SELECTIVE REMOVAL OF TREES INCLUDING STUMPS
- 7 EACH STA 12+93.46, 23.40 LT TO STA 14+50.00, 32.42 LT
- 8 EACH STA 14+50.00, 36.97 LT TO STA 15+50.00, 28.34 LT
  
- 203-015A REMOVAL OF BITUMINOUS SURFACE
- 25 SY STA 12+86.87, 15.22' LT TO STA 15+47.96, 10.93' LT
- 23 SY STA 14+96.67, 9.88' RT TO STA 16+92.36, 12.99' RT
- 10 SY STA 15+78.00 (11.47' LT, 10.33' RT) TO STA 15+82.00 (11.40' LT, 10.37' RT)
- 11 SY STA 17+18.00 (13.86' LT, 10.67' RT) TO STA 17+22.00 (14.00' LT, 10.57' RT)
- 21 SY 17+46.93, 9.70' RT TO 19+50.00, 13.51' RT
- 10 SY STA 18+68.00 (10.30' LT, 11.69' RT) TO STA 18+72.00 (10.15' LT, 11.87' RT)

REVISIONS			
NO.	DATE	BY	DESCRIPTION

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BPRR

DESIGN CHECKED  
DJW

DETAILED  
SMGC

DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY

CADD FILE NAME  
23291\_DEMO\_001.dgn

DRAWING DATE:  
APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

REMOVAL PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 10+50.00 TO STA. 19+50.00

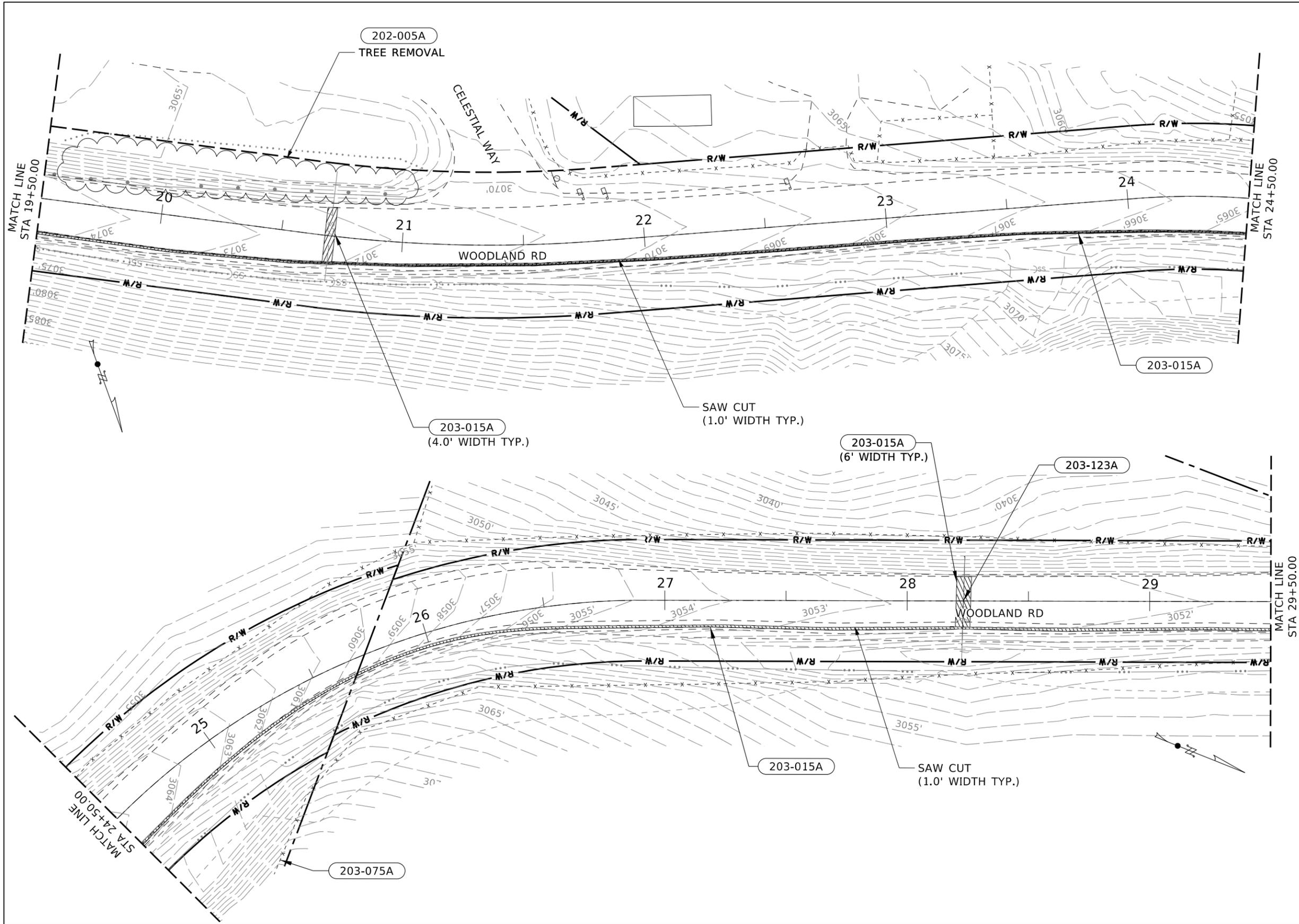
**ENGLISH**

COUNTY  
IDAHO

KEY NUMBER  
23291

SHEET 21 OF 42





- 202-005A SELECTIVE REMOVAL OF TREES INCLUDING STUMPS  
7 EACH STA 19+62.05, 10.08' LT TO STA 21+12.34, 22.17' LT
- 203-015A REMOVAL OF BITUMINOUS SURFACE  
55 SY STA 19+50.00, 13.48' RT TO STA 24+50.00, 14.08' RT  
55 SY STA 24+50.00, 14.08' RT TO STA 29+50.00, 11.04' RT  
10 SY STA 20+68.00 (10.56' LT, 10.86' RT) TO STA 20+72.00 (10.94' LT, 10.53' RT)  
14 SY STA 28+20.00 (10.07' LT, 10.70' RT) TO STA 28+26.00 (10.06' LT, 10.77' RT)
- 203-075A REMOVAL OF FENCE  
443 FT 24+93.82, 57.01' RT TO 29+50.00, 24.31' RT
- 203-123A REMOVAL OF MISC. ITEM - PIPE CULVERT  
36 FT STA 28+22.66, 18.02' RT TO STA 28+23.72, 18.21' LT

REVISIONS			
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**IDAHO  
TRANSPORTATION  
DEPARTMENT**

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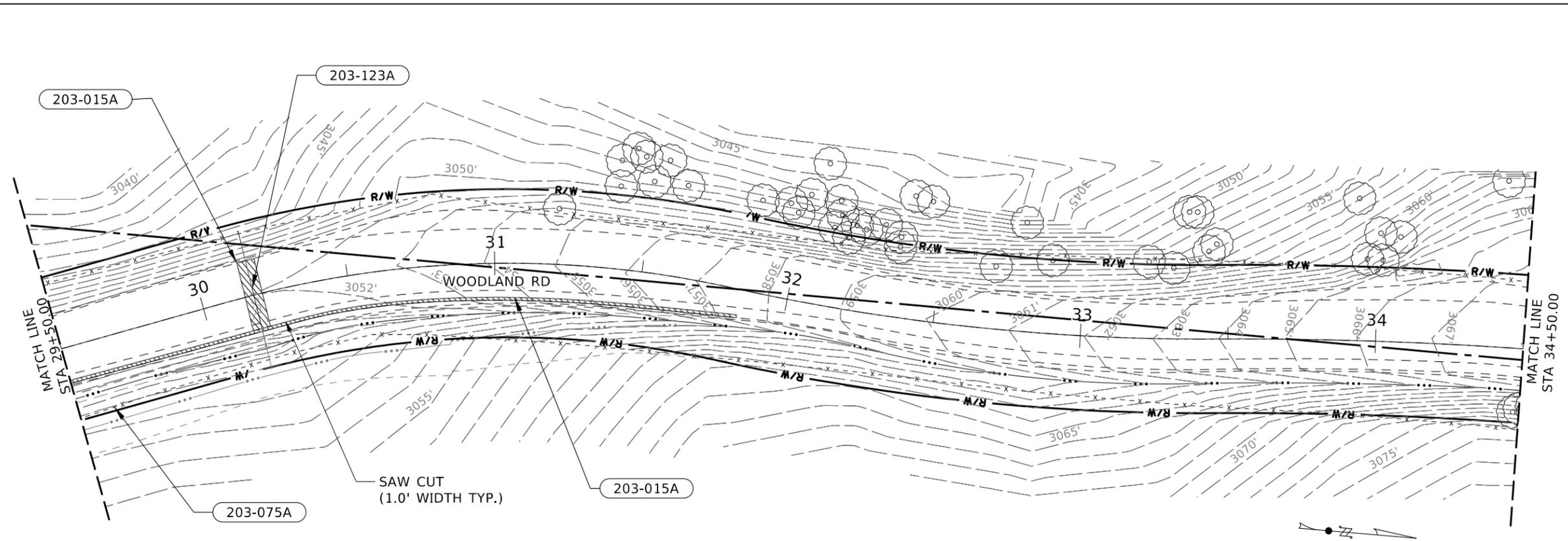
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PROJECT NO.  
  
A023(291)

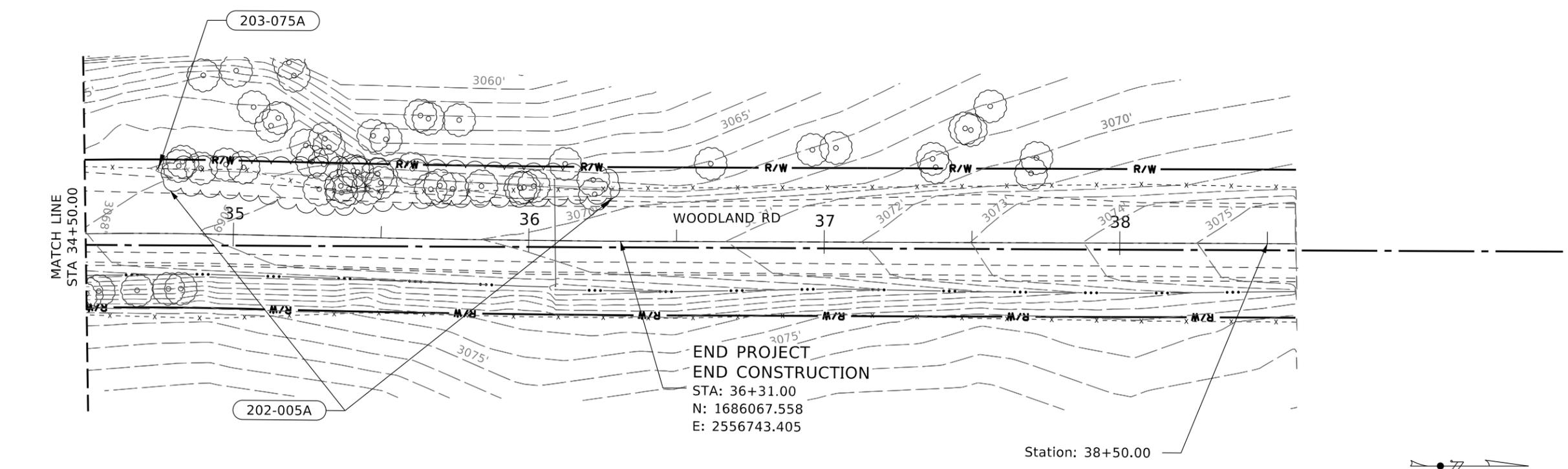
REMOVAL PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 19+50.00 TO STA. 29+50.00

**ENGLISH**  
COUNTY  
IDAHO  
KEY NUMBER  
23291  
SHEET 22 OF 42





- 202-005A SELECTIVE REMOVAL OF TREES INCLUDING STUMPS  
23 EACH STA 34+75.00, 24.05' LT TO STA 36+25.52, 8.56' LT
- 203-015A REMOVAL OF BITUMINOUS SURFACE  
25 SY STA 29+50.00, 11.02' RT TO STA 31+84.32, 8.56' RT  
16 SY STA 30+14.58 (11.91' LT, 11.65' RT) TO STA 30+26.58 (12.02' LT, 11.55' RT)
- 203-075A REMOVAL OF FENCE  
240 FT STA 29+50.00, 24.31' RT TO STA 32+00.00, 22.19' RT  
157 FT STA 34+74.50, 21.94' LT TO STA 36+30.90, 17.76' LT
- 203-123A REMOVAL OF MISC. ITEM - PIPE CULVERT  
40 FT STA 30+17.59, 17.65' RT TO STA 30+17.53, 22.05' LT



END PROJECT  
END CONSTRUCTION  
STA: 36+31.00  
N: 1686067.558  
E: 2556743.405

Station: 38+50.00

REVISIONS			
NO.	DATE	BY	DESCRIPTION

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DJW  
DETAILED  
SMGC  
DRAWING CHECKED  
JRW

SCALES SHOWN  
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TRANSPORTATION  
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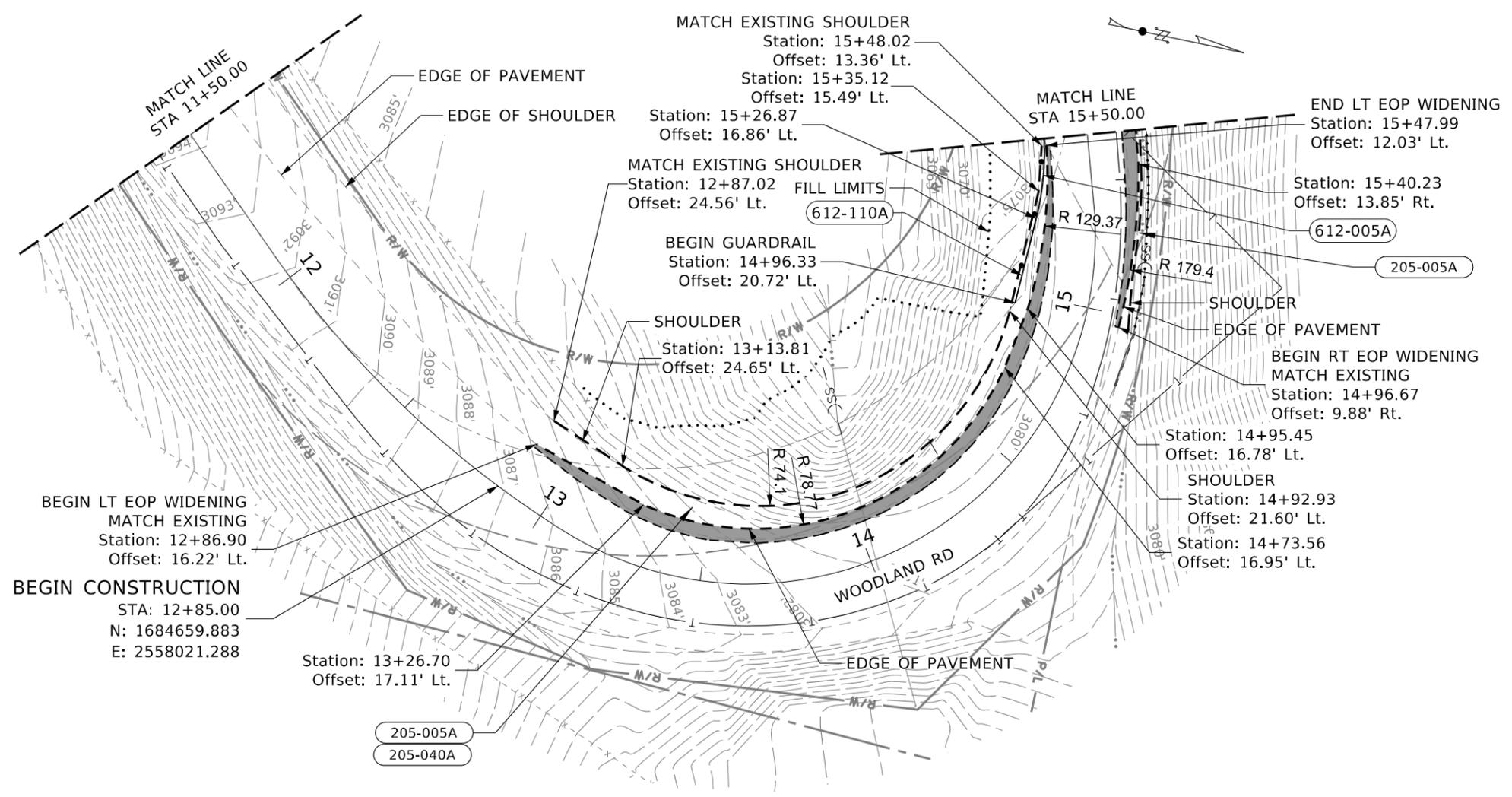
**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

REMOVAL PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 29+50.00 TO STA. 38+50.00

**ENGLISH**  
COUNTY  
IDAHO  
KEY NUMBER  
23291  
SHEET 23 OF 42





205-005A	EXCAVATION	83 CY	STA 12+86.90, 16.22' LT TO STA 15+48.02, 13.36' LT
22 CY			STA 14+96.67, 9.88' RT TO STA 15+50.00, 14.02' LT
205-040A	GRANULAR BORROW	50 CY	STA 12+86.90, 16.22' LT TO STA 15+48.02, 13.36' LT
612-005A	W-BEAM GUARDRAIL	48 FT	STA 14+96.33, 20.72' LT TO STA 15+50.00, 12.51' LT
612-110A	GUARDRAIL ANCHOR	1 EA	STA 14+96.33, 20.72' LT

BEGIN LT EOP WIDENING  
MATCH EXISTING  
Station: 12+86.90  
Offset: 16.22' Lt.

BEGIN CONSTRUCTION  
STA: 12+85.00  
N: 1684659.883  
E: 2558021.288

Station: 13+26.70  
Offset: 17.11' Lt.

MATCH EXISTING SHOULDER  
Station: 15+48.02  
Offset: 13.36' Lt.

Station: 15+35.12  
Offset: 15.49' Lt.

Station: 15+26.87  
Offset: 16.86' Lt.

MATCH EXISTING SHOULDER  
Station: 12+87.02  
Offset: 24.56' Lt.

BEGIN GUARDRAIL  
Station: 14+96.33  
Offset: 20.72' Lt.

SHOULDER  
Station: 13+13.81  
Offset: 24.65' Lt.

MATCH LINE  
STA 15+50.00

END LT EOP WIDENING  
Station: 15+47.99  
Offset: 12.03' Lt.

Station: 15+40.23  
Offset: 13.85' Rt.

Station: 14+95.45  
Offset: 16.78' Lt.

BEGIN RT EOP WIDENING  
MATCH EXISTING  
Station: 14+96.67  
Offset: 9.88' Rt.

SHOULDER  
Station: 14+92.93  
Offset: 21.60' Lt.

Station: 14+73.56  
Offset: 16.95' Lt.

NOTE: BACKFILL HOLES FROM STUMP REMOVAL WITH EXCAVATED MATERIAL ON SHOULDER/SLOPE

LEGEND  
[Hatched Box] ASPHALT

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED DJW	CADD FILE NAME 23291_PLAN_001.dgn
DETAILED SMGC	DRAWING DATE: APRIL 2025
DRAWING CHECKED JRW	

**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**  
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity



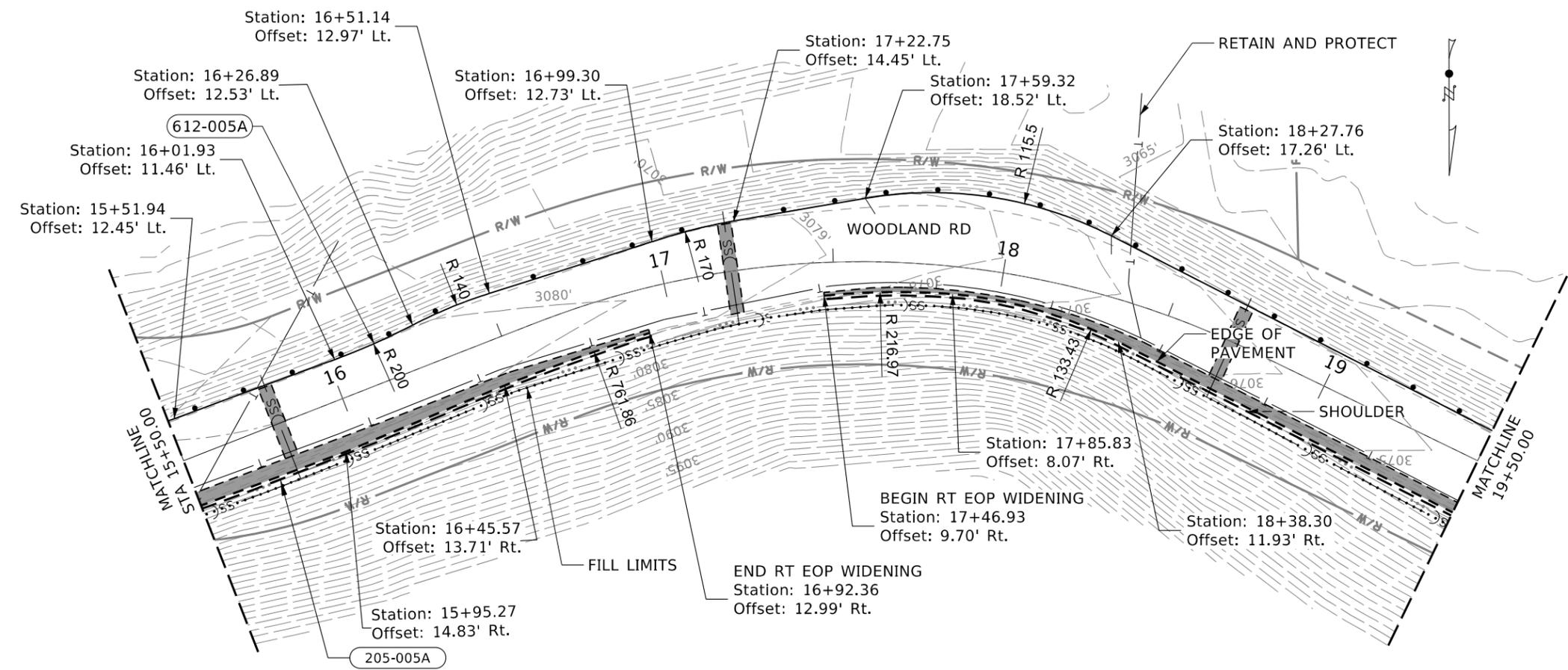
**J-U-B ENGINEERS, INC.**

PROJECT NO.	A023(291)
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ROADWAY PLAN	WOODLAND RD SAFETY IMPRV, IDAHO CO STA. 11+50.00 TO STA. 15+50.00
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ENGLISH
COUNTY IDAHO
KEY NUMBER 23291
SHEET 24 OF 42

205-005A	EXCAVATION	77 CY	STA 15+50.00, 14.08' RT TO STA 19+50.00, 16.78' RT
612-005A	W-BEAM GUARDRAIL	415 FT	STA 15+50.00, 12.51' LT TO STA 19+50.00, 9.76' LT



NOTE: BACKFILL HOLES FROM STUMP REMOVAL WITH EXCAVATED MATERIAL ON SHOULDER/SLOPE

LEGEND  
 ASPHALT



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**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**

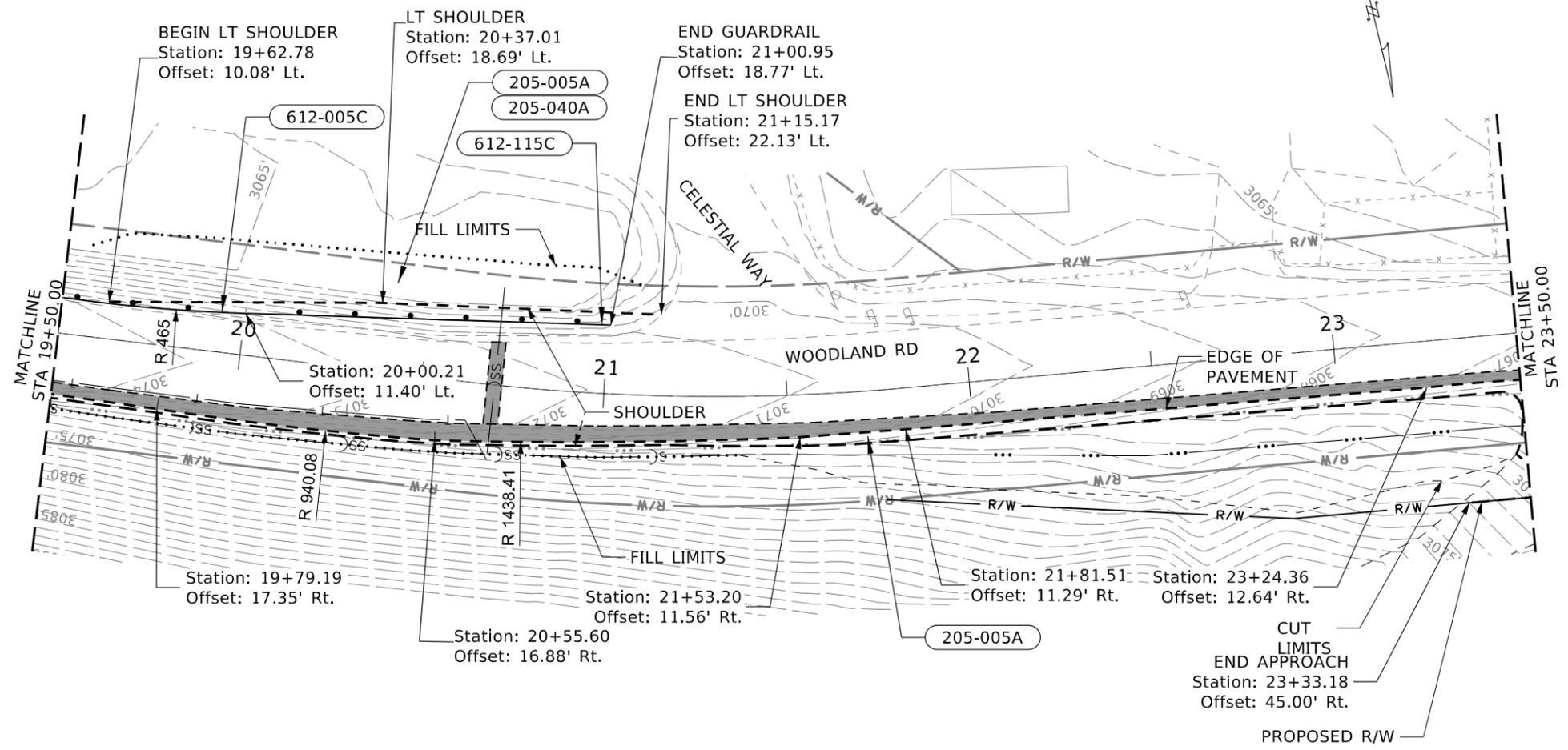
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

ROADWAY PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 15+50.00 TO STA. 19+50.00

**ENGLISH**  
 COUNTY  
IDAHO  
 KEY NUMBER  
23291  
 SHEET 25 OF 42



- 205-005A EXCAVATION  
308 CY STA 19+50.00, 16.78' RT TO STA 23+50.00, 12.78' RT
- 13 CY STA 19+62.78, 10.08' LT TO STA 21+15.17, 22.13' LT
- 205-040A GRANULAR BORROW  
50 CY STA 19+62.78, 10.08' LT TO STA 21+15.17, 22.13' LT
- 612-005A W-BEAM GUARDRAIL  
150 FT STA 19+50.00, 9.76' LT TO STA 21+01.15, 18.77' LT
- 612-115C GUARDRAIL TERMINAL TANGENT  
1 EA STA 21+01.15, 18.77' LT

NOTE: BACKFILL HOLES FROM STUMP REMOVAL WITH EXCAVATED MATERIAL ON SHOULDER/SLOPE

LEGEND  
 ASPHALT

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**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**

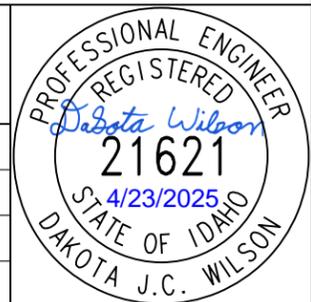
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**J-U-B ENGINEERS, INC.**

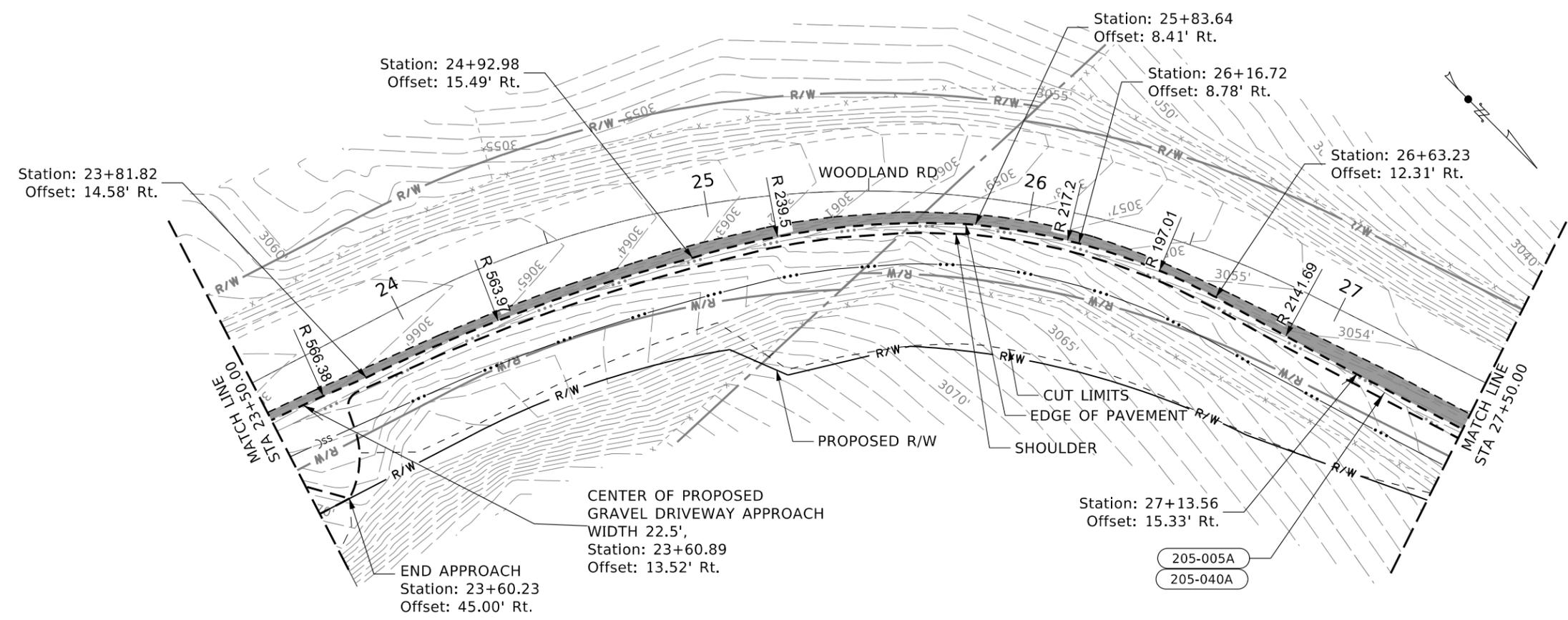
PROJECT NO.  
  
A023(291)

ROADWAY PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 19+50.00 TO STA. 23+50.00

**ENGLISH**  
 COUNTY  
IDAHO  
 KEY NUMBER  
23291  
 SHEET 26 OF 42



- 205-005A EXCAVATION  
1075 CY STA 23+50.00, 12.78' RT TO  
STA 27+50.00, 18.80' RT
- 205-040A GRANULAR BORROW  
15 CY STA 23+50.00, 12.78' RT TO  
STA 27+50.00, 18.80' RT



- 205-005A
- 205-040A

NOTE: GRAVEL DRIVEWAY WILL BE PAID FOR UNDER 303-022A

BACKFILL HOLES FROM STUMP REMOVAL WITH EXCAVATED MATERIAL ON SHOULDER/SLOPE

LEGEND  
 ASPHALT

REVISIONS			
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DESIGNED BPRR	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
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DRAWING CHECKED JRW	

**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**

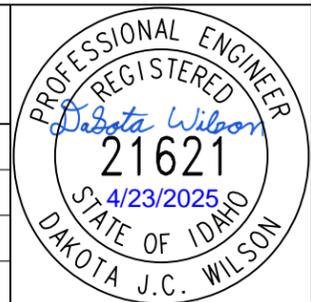
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**J-U-B ENGINEERS, INC.**

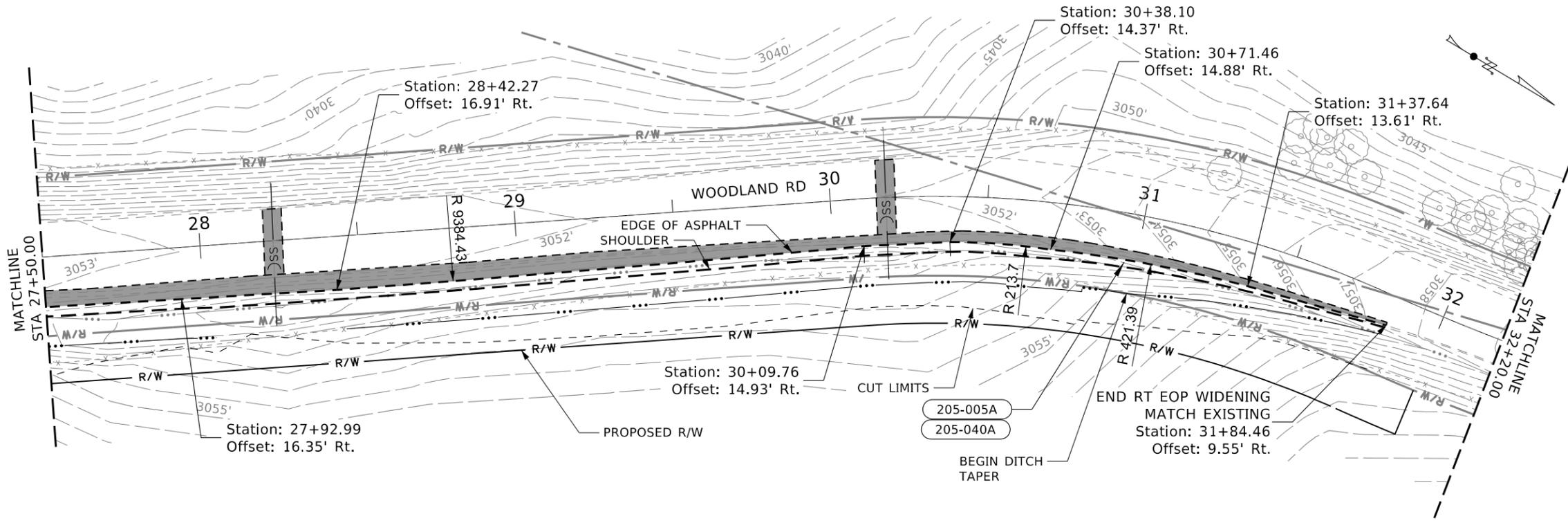
PROJECT NO.  
  
A023(291)

ROADWAY PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 23+50.00 TO STA. 27+50.00

**ENGLISH**  
 COUNTY  
IDAHO  
 KEY NUMBER  
23291  
 SHEET 27 OF 42



- 205-005A EXCAVATION  
550 CY STA 27+50.00, 18.80' RT TO  
STA 31+84.46, 9.55' RT
- 205-040A GRANULAR BORROW  
35 CY STA 27+50.00, 18.80' RT TO  
STA 31+84.46, 9.55' RT



NOTE: BACKFILL HOLES FROM STUMP REMOVAL WITH EXCAVATED MATERIAL ON SHOULDER/SLOPE

LEGEND  
 ASPHALT

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YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

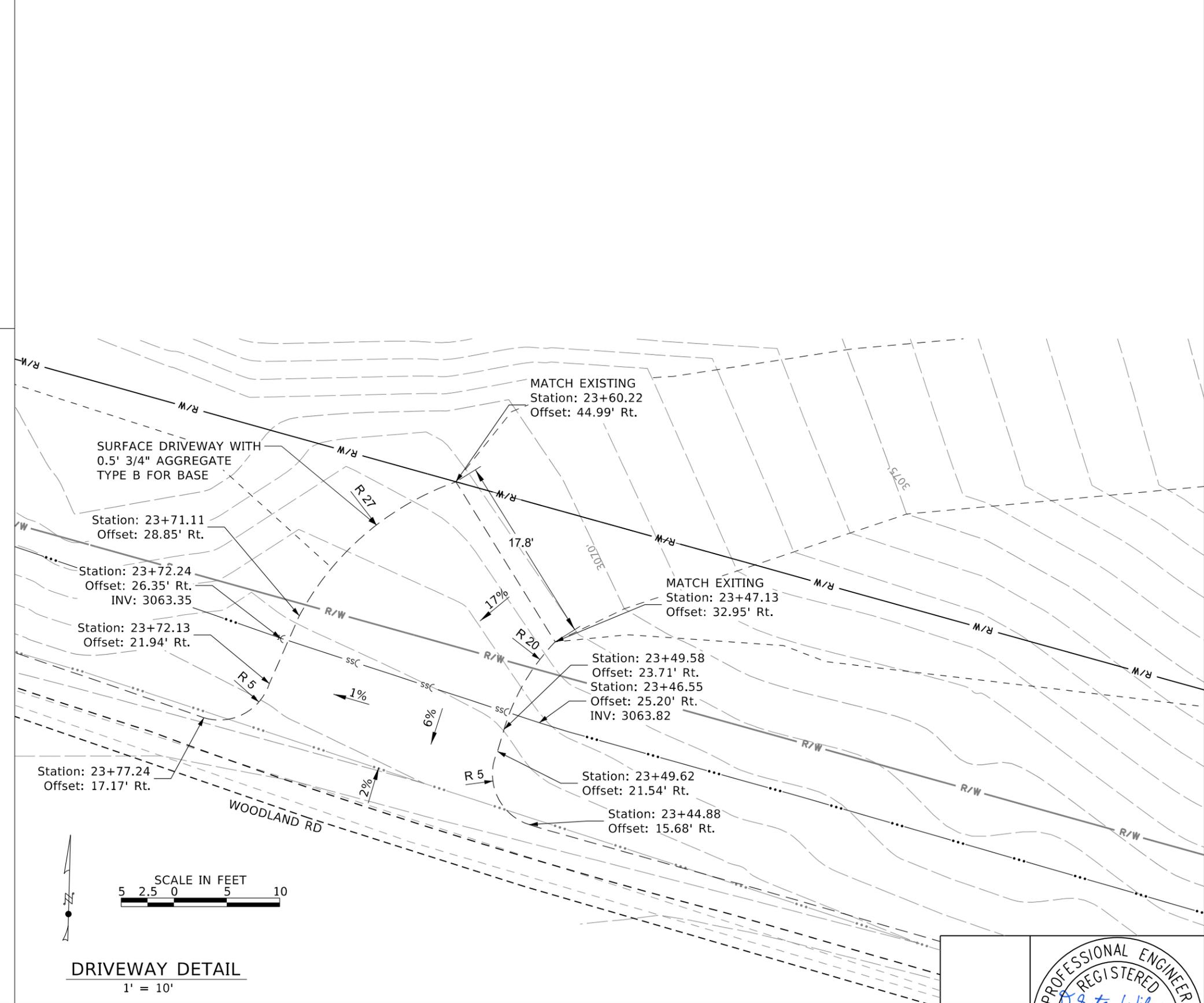
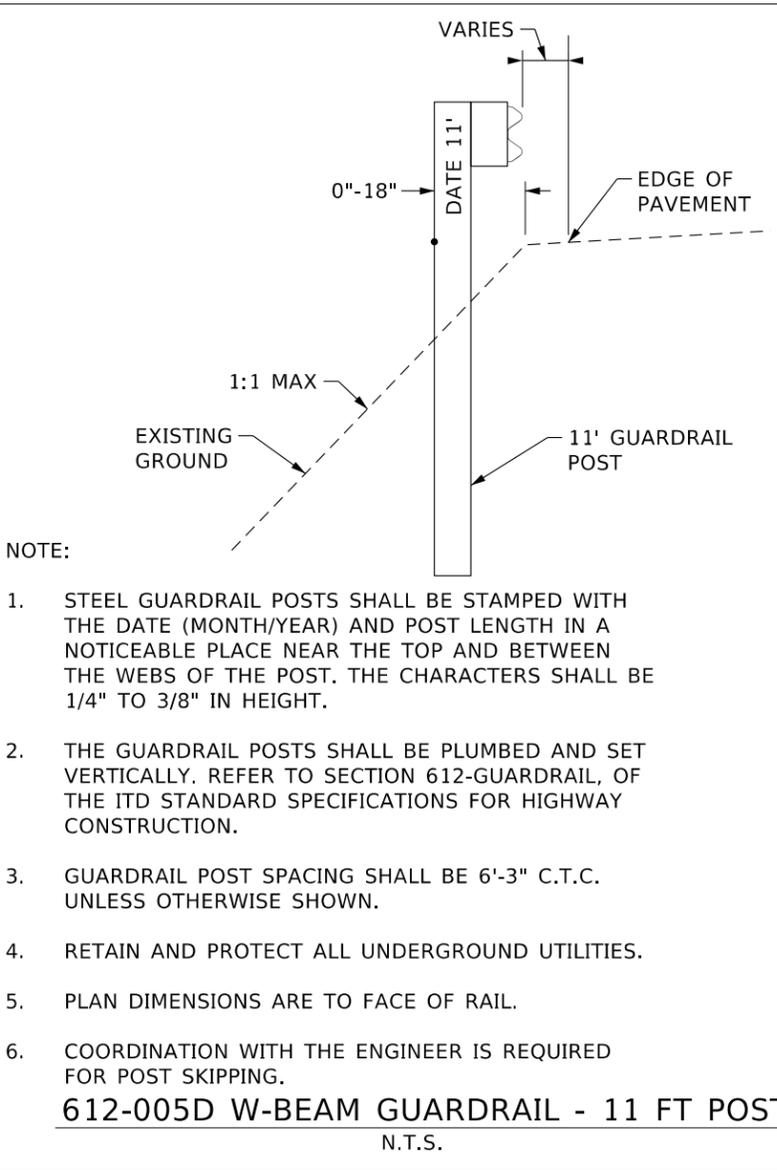
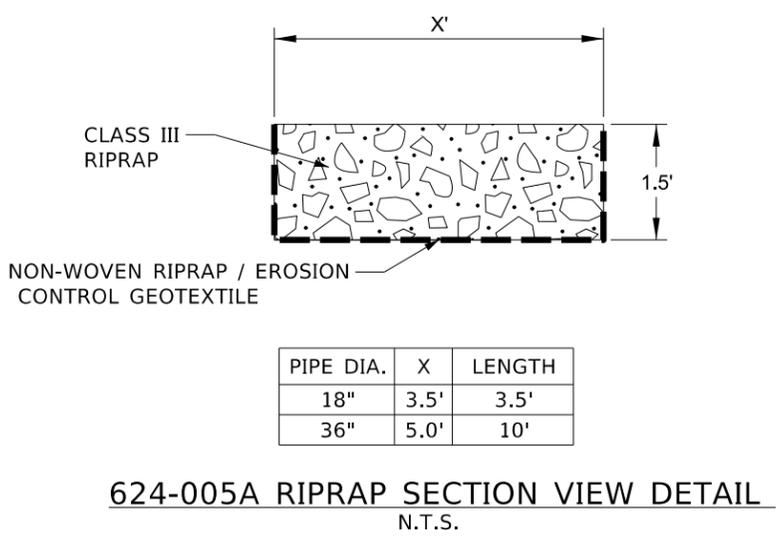
PROJECT NO.  
  
A023(291)

ROADWAY PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 27+50.00 TO STA. 32+20.00

**ENGLISH**  
 COUNTY  
IDAHO  
 KEY NUMBER  
23291  
 SHEET 28 OF 42







REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED DJW	CADD FILE NAME 23291_RDTL_001.DGN
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DRAWING CHECKED JRW	

**IDAHO TRANSPORTATION DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

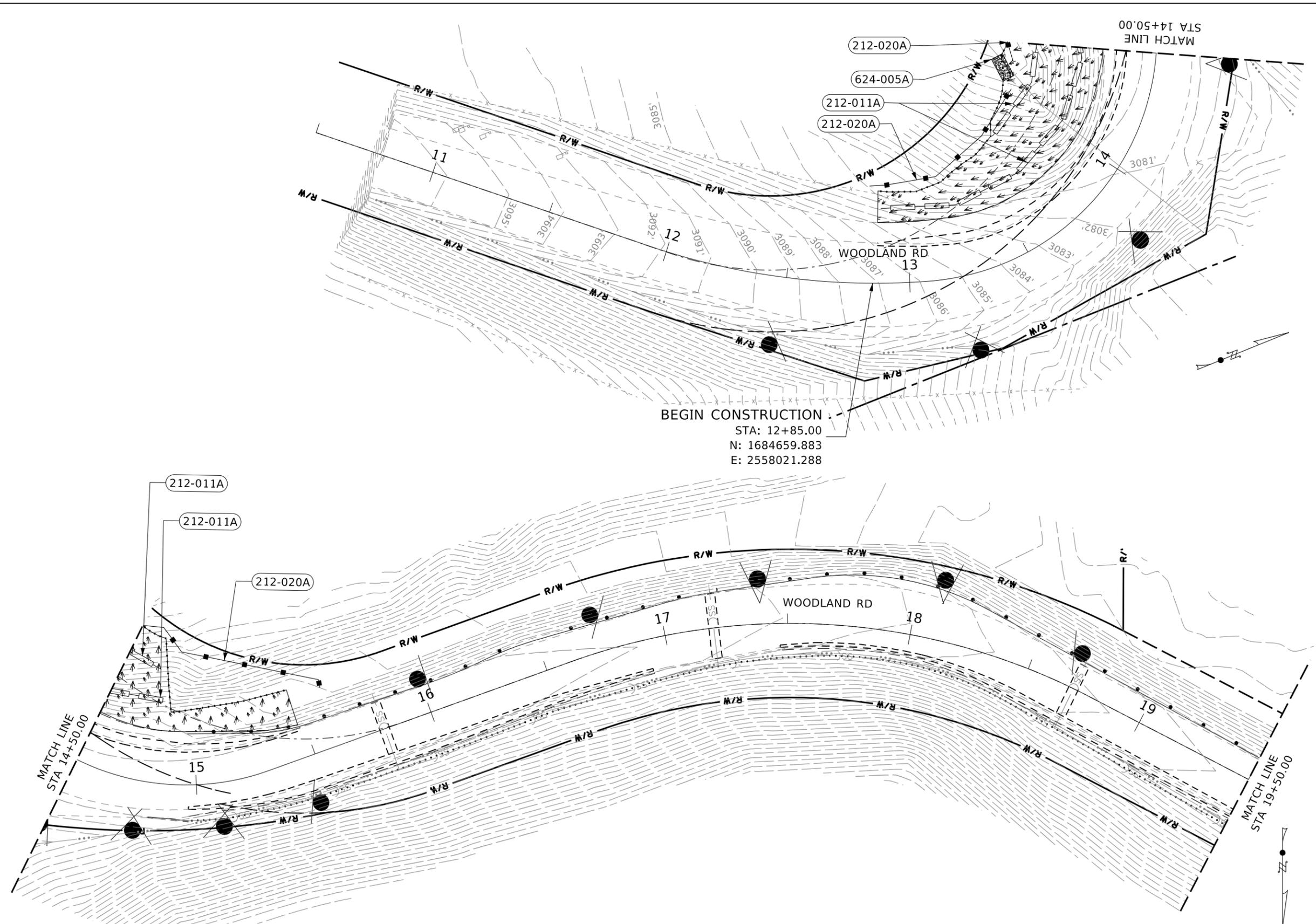
**J-U-B ENGINEERS, INC.**

PROJECT NO.  A023(291)
------------------------------

ROADWAY DETAILS  WOODLAND RD SAFETY IMPRV, IDAHO CO
--

<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 30 OF 42





BEGIN CONSTRUCTION  
 STA: 12+85.00  
 N: 1684659.883  
 E: 2558021.288

212-011A	FIBER WATTLE
43 FT	STA 13+71.47, 47.54' LT TO STA 14+50.00, 48.67' LT
10 FT	STA 14+50.00, 48.67' LT TO STA 14+77.25, 45.88' LT
118 FT	STA 12+89.00, 30.22' LT TO STA 14+50.00, 31.07' LT
20 FT	STA STA 14+50.00, 31.07' LT TO STA 14+82.00, 33.62' LT
212-020A	SILT FENCE
74 FT	STA 12+83.42, 39.33' LT TO STA 14+08.23, 53.59' LT
9 FT	STA 14+32.00, 56.98' LT TO STA 14+50.00, 63.66' LT
80 FT	STA 14+50.00, 63.66' LT TO STA 15+61.00, 24.59' LT
624-005A	LOOSE RIPRAP
2.8 CY	STA 14+11.01, 57.96' LT TO STA 14+20.07, 54.89' LT

NOTE: SEE ROADWAY DETAIL SHEET FOR LOOSE RIPRAP DETAIL

APPROXIMATE TOTAL SEEDING AREA IS 0.65 ACRE

LEGEND

	212-020A SILT FENCE
	212-011A FIBER WATTLE
	9S04-05B SEEDING
	624-005A LOOSE RIPRAP

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR
DESIGN CHECKED DJW
DETAILED SMGC
DRAWING CHECKED JRW

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
CADD FILE NAME 23091_PPP_001.dgn
DRAWING DATE: APRIL 2025

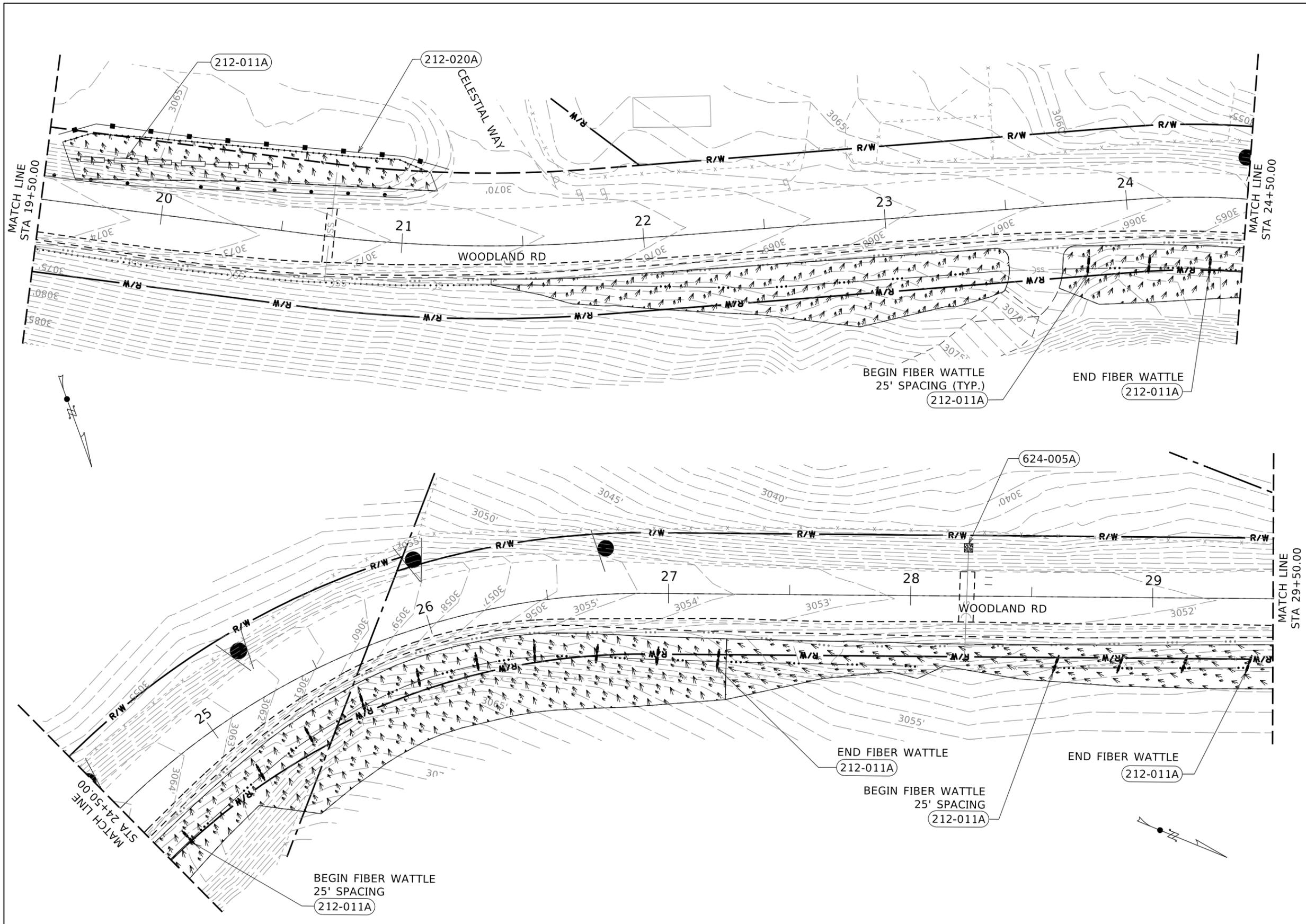
**IDAHO TRANSPORTATION DEPARTMENT**  
 YOUR Safety → YOUR Mobility → YOUR Economic Opportunity  
  
**J-U-B ENGINEERS, INC.**

PROJECT NO.  A023(291)
------------------------------

POLLUTION PREVENTION PLAN  WOODLAND RD SAFETY IMPRV, IDAHO CO STA. 10+50.00 TO STA. 19+50.00
--

<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 31 OF 42





212-011A	FIBER WATTLE	86 FT	STA 19+59.90 , 18.08' LT TO STA 20+45.37, 25.86' RT STA 23+82.87, 21.69' RT TO STA 23+82.87, 29.69' RT STA 24+08.40, 23.18' RT TO STA 24+08.40, 31.18' RT STA 24+35.54, 24.32' RT TO STA 24+35.54, 32.32' RT STA 24+62.05, 24.29' RT TO STA 24+62.05, 32.29' RT STA 25+07.03, 21.49' RT TO STA 25+07.03, 29.49' RT STA 25+33.94, 18.85' RT TO STA 25+33.94, 26.85' RT STA 25+62.15, 16.70' RT TO STA 25+62.15, 24.70' RT STA 25+89.22, 15.56' RT TO STA 25+89.22, 23.56' RT STA 26+15.66, 15.99' RT TO STA 26+15.66, 23.99' RT STA 26+41.65, 17.44' RT TO STA 26+41.65, 25.44' RT STA 26+69.54, 20.30' RT TO STA 26+69.54, 28.30' RT STA 26+96.09, 21.86' RT TO STA 26+96.09, 29.86' RT STA 27+21.15, 22.57' RT TO STA 27+21.15, 30.57' RT STA 28+61.47, 23.96' RT TO STA 28+61.47, 31.96' RT STA 28+88.00, 23.83' RT TO STA 28+88.00, 31.83' RT STA 29+14.58, 23.55' RT TO STA 29+14.58, 31.55' RT STA 29+41.16, 23.26' RT TO STA 29+41.16, 31.26' RT
212-020A	SILT FENCE	163 FT	STA 19+53.55 27.34' LT TO STA 21+18.64, 31.25' LT
624-005A	LOOSE RIPRAP	0.7 CY	STA 28+23.73, 18.09' LT TO STA 28+23.83, 21.59' LT

NOTE: SEE ROADWAY DETAIL SHEET FOR LOOSE RIPRAP DETAIL

APPROXIMATE TOTAL SEEDING AREA IS 0.65 ACRE

LEGEND

- 212-020A SILT FENCE
- 212-011A FIBER WATTLE
- S904-05B SEEDING
- 624-005A LOOSE RIPRAP

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
BPRR

DESIGN CHECKED  
DJW

DETAILED  
SMGC

DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY

CADD FILE NAME  
23091\_PPP\_002.dgn

DRAWING DATE:  
APRIL 2025

**IDAHO TRANSPORTATION DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.  
**A023(291)**

POLLUTION PREVENTION PLAN

**WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 19+50.00 TO STA. 29+50.00**

**ENGLISH**

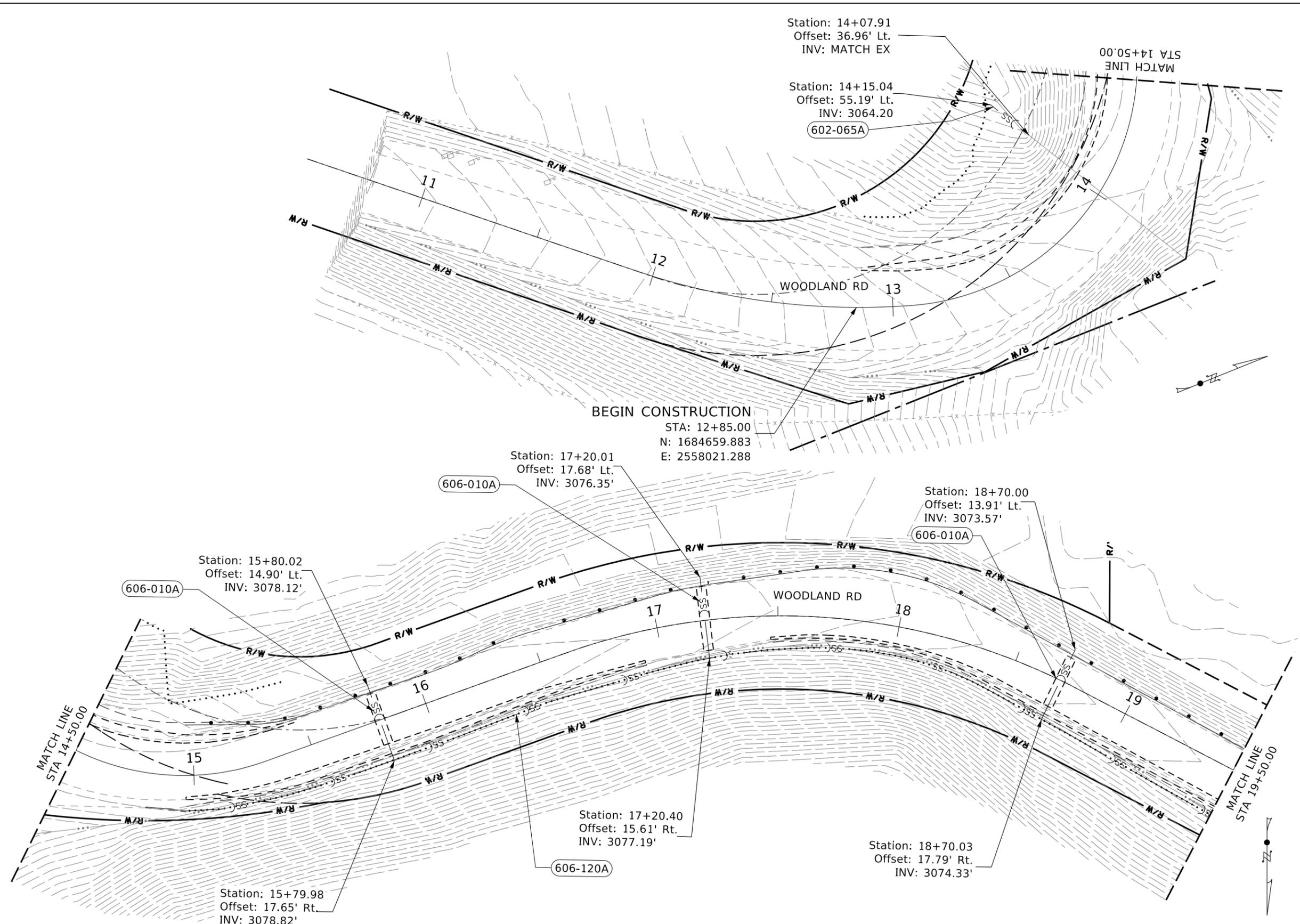
COUNTY  
IDAHO

KEY NUMBER  
23291

SHEET 32 OF 42







- 602-065A 36" PIPE CULVERT  
20 FT STA 14+07.91, 36.96' LT TO STA 14+15.04, 55.19' LT
- 606-010A 6" PIPE UNDERDRAIN  
32 FT STA 15+80.00, 14.90' LT, TO STA 15+80.00, 17.65' RT  
33 FT STA 17+20.00, 17.68' LT, TO STA 17+20.00, 15.61' RT  
32 FT STA 18+70.00, 13.91' LT, TO STA 18+70.00, 17.79' RT
- 606-120A RURAL EDGE DRAIN  
447 FT STA 14+96.86, 14.53' RT TO STA 19+50.00, 21.16' RT

BEGIN CONSTRUCTION  
STA: 12+85.00  
N: 1684659.883  
E: 2558021.288

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
BPRR  
DESIGN CHECKED  
DJW  
DETAILED  
SMGC  
DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY  
CADD FILE NAME  
23091\_DRAIN\_001.dgn  
DRAWING DATE:  
APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**



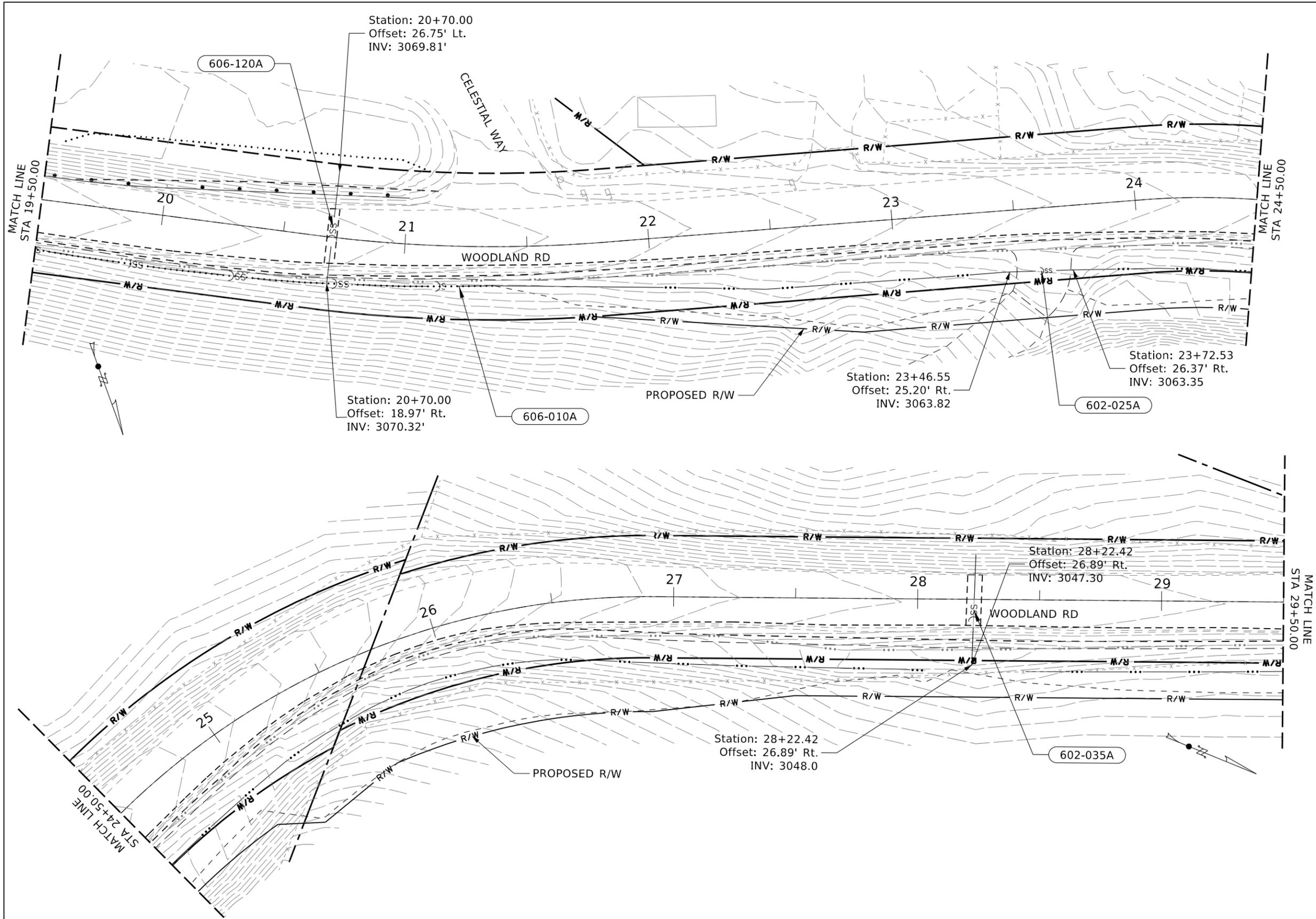
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

DRAINAGE PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 10+50.00 TO STA. 19+50.00

**ENGLISH**  
COUNTY  
IDAHO  
KEY NUMBER  
23291  
SHEET 34 OF 42



602-025A	12" PIPE CULVERT	26 FT	STA 23+46.55, 25.20' RT TO STA 23+72.53, 26.37' RT
602-035A	18" PIPE CULVERT	45 FT	STA 28+22.42, 26.89' RT TO STA 28+23.73, 18.09' RT
606-010A	6" PIPE UNDERDRAIN	46 FT	STA 20+70.00, (26.75' LT, 18.97' RT)
606-120A	RURAL EDGE DRAIN	188 FT	STA 19+50.00, 20.83' RT TO STA 21+36.84, 16.03' RT

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR
DESIGN CHECKED DJW
DETAILED SMGC
DRAWING CHECKED JRW

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
CADD FILE NAME 23091_DRAIN_002.dgn
DRAWING DATE: APRIL 2025

**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

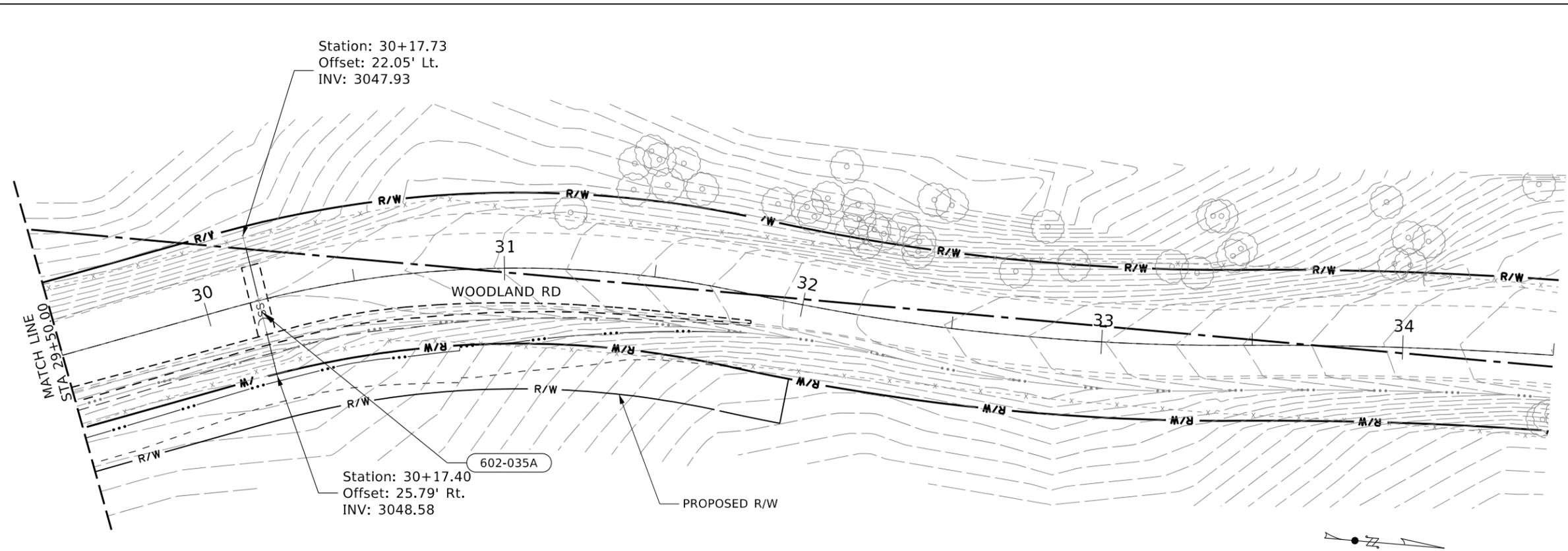
**J-U-B ENGINEERS, INC.**

PROJECT NO.	A023(291)
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DRAINAGE PLAN	WOODLAND RD
	SAFETY IMPRV, IDAHO CO
	STA. 19+50.00 TO STA. 29+50.00

ENGLISH
COUNTY IDAHO
KEY NUMBER 23291
SHEET 35 OF 42





602-035A 18" PIPE CULVERT  
 44 FT STA 30+17.40, 25.79' RT TO  
 STA 30+17.71, 18.21' LT

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
BPRR

DESIGN CHECKED  
DJW

DETAILED  
SMGC

DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY

CADD FILE NAME  
23091\_DRAIN\_003.dgn

DRAWING DATE:  
APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**



YOUR Safety→YOUR Mobility→YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

DRAINAGE PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO  
STA. 29+50.00 TO STA. 34+50.00

**ENGLISH**

COUNTY  
IDAHO

KEY NUMBER  
23291

SHEET 36 OF 42

SIGN ASSEMBLY NO.	STATION LT. OR RT.	RAMP NO.	FOUNDATION SIZE	POST TYPE	NO. OF POSTS	POST SPACING	APPROX. LENGTH OF 1st POST	APPROX. LENGTH OF 2nd POST	C	E	SIGN TYPE	SIGN DETAIL NUMBERS	SIGN SIZE W" x H"	APPROX. SQ. FT. OF SIGN	SIGN BACKGROUND COLOR	SIGN BRACKETS & BRACE ANGLES WEIGHT (LBS)	BRACKET NO.	REMARKS
1	10+13.27 21.40 RT		E-2	E-2	1		10'-0"		7'-6"	4'-0"	B	W1-11	30" x 30"	6.3	YELLOW			HAIRPIN CORNER
												W13-1P	24" x 18"	3.0	YELLOW			20 MPH ADVISORY SPEED PLAQUE
2	12+46.73 27.79 RT		E-2	E-2	1		9'-0"		12'-9"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
3	13+22.39 30.75 RT		E-2	E-2	1		9'-0"		15'-0"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
4	13+84.68 24.91 RT		E-2	E-2	1		9'-0"		10'-2"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
5	14+48.30 29.92 RT		E-2	E-2	1		9'-0"		15'-3"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
6	14+77.64 20.29 RT		E-2	E-2	1		9'-0"		9'-0"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
7	15+09.08 17.83 RT		E-2	E-2	1		9'-0"		7'-5"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
8	15+45.67 19.37 RT		E-2	E-2	1		9'-0"		5'-5"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
9	15+99.39 14.46 LT		E-2	E-2	1		10'-0"		3'-2"	4'-0"	B	W1-11	30" x 30"	6.3	YELLOW			HAIRPIN CORNER
												W13-1P	24" x 18"	3.0	YELLOW			20 MPH ADVISORY SPEED PLAQUE
10	16+73.18 15.58 LT		E-2	E-2	1		9'-0"		4'-5"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
11	17+38.69 18.29 LT		E-2	E-2	1		9'-0"		3'-8"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
12	18+09.31 24.45 LT		E-2	E-2			9'-0"		7'-6"	5'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
13	18+67.26 14.37 LT		E-2	E-2			9'-0"		0'-0"	4'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
14	24+48.53 17.14 LT		E-2	E-2			9'-0"		7'-3"	4'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
15	25+26.02 21.71 LT		E-2	E-2			9'-0"		7'-0"	4'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
16	26+00.79 27.38 LT		E-2	E-2			9'-0"		9'-0"	4'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON
												W1-8	18" x 24"	3.0	YELLOW			CHEVRON
17	26+74.92 18.93 LT		E-2	E-2			9'-0"		5'-4"	4'-0"	B	W1-8	18" x 24"	3.0	YELLOW			CHEVRON

CONSTRUCT SIGNS IN ACCORDANCE TO THE LATEST FHWA'S PUBLICATION OF STANDARD HIGHWAY SIGNS (SHS) AND SUPPLEMENT, THE IDAHO SUPPLEMENT TO THE SHS OR AS SPECIFIED.

COLUMN C, DISTANCE FROM EDGE OF SHOULDER TO CENTER LINE OF FIRST POST  
 COLUMN E, THE HEIGHT ABOVE THE EDGE OF FINISHED SHOULDER TO THE BOTTOM OF LOWEST SIGN.

POST LENGTHS SHOWN ARE APPROXIMATE. DETERMINE FINAL VALUES IN THE FIELD PRIOR TO FABRICATION

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED DJW	
DETAILED SMGC	CADD FILE NAME 23291_SNER_001.DGN
DRAWING CHECKED JRW	DRAWING DATE: APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

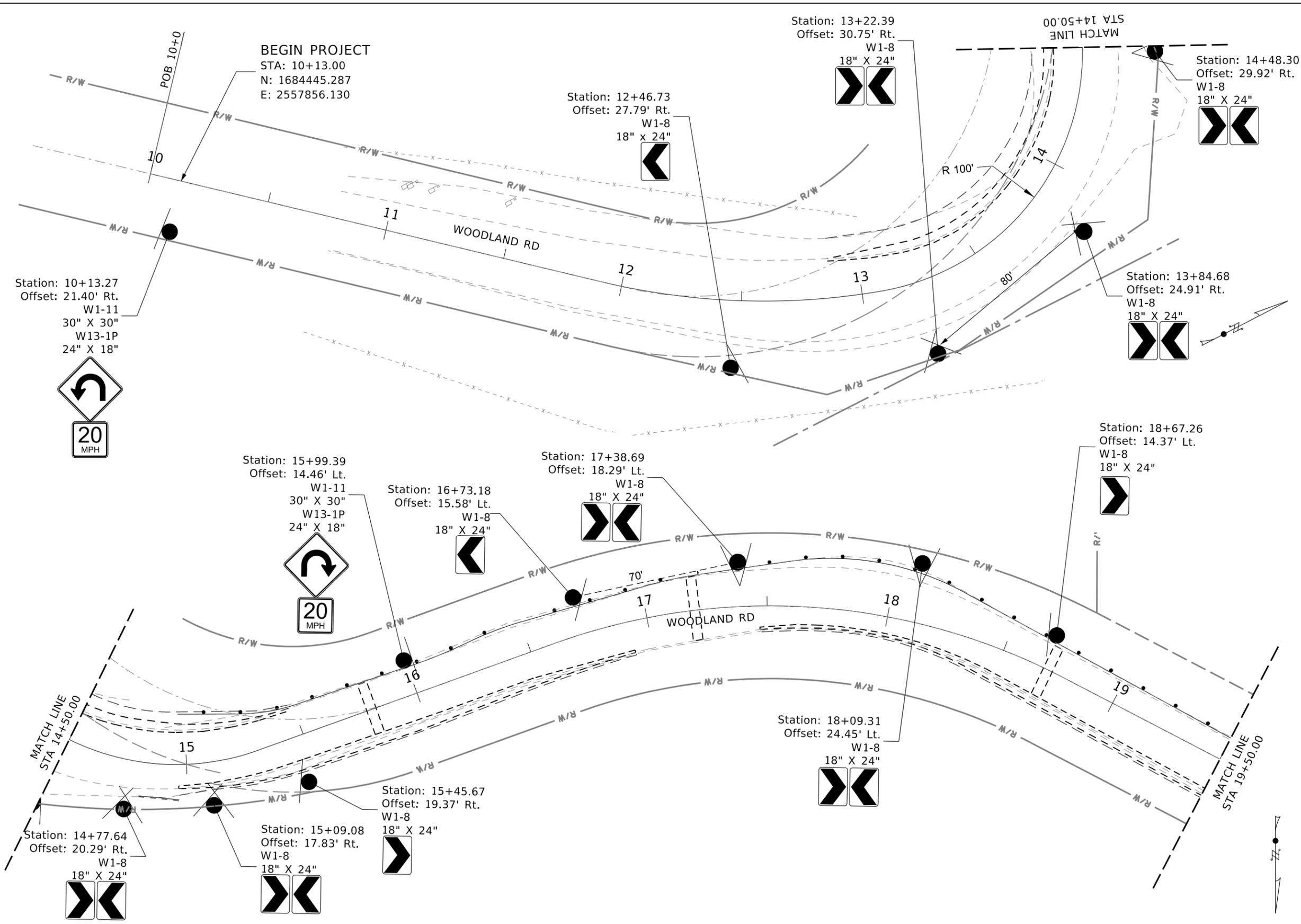


PROJECT NO.	A023(291)
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SIGNING ERECTION SPECIFICATIONS	WOODLAND RD SAFETY IMPRV, IDAHO CO
---------------------------------	---------------------------------------

<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 37 OF 42





REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
BPRR  
DESIGN CHECKED  
DJW  
DETAILED  
SMGC  
DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY  
CADD FILE NAME  
23291\_SIGN\_001.dgn  
DRAWING DATE:  
APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**

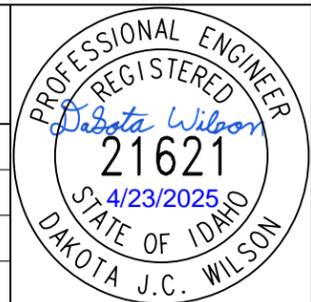
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

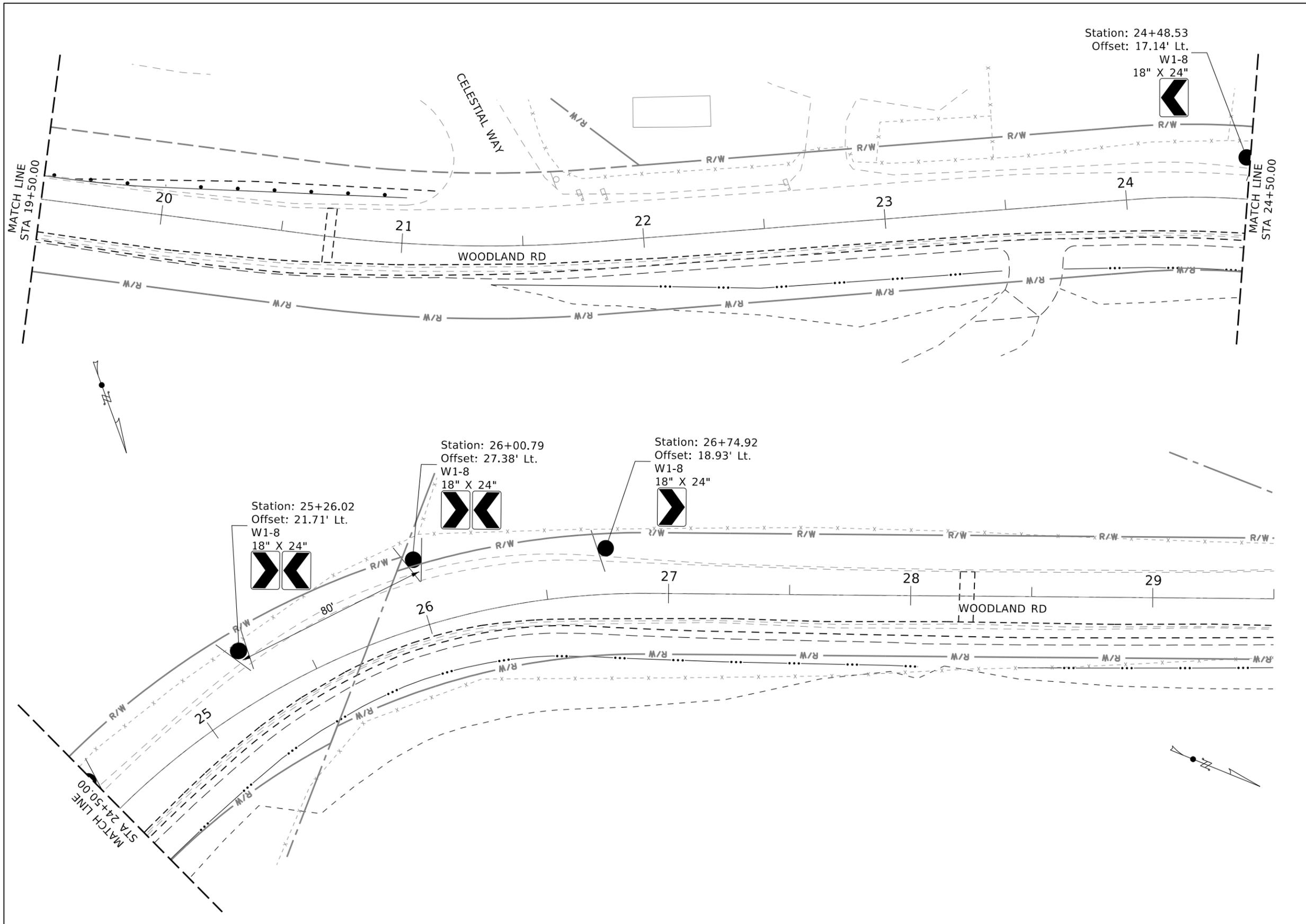
**J-U-B ENGINEERS, INC.**

PROJECT NO.  
  
A023(291)

SIGNING PLAN  
  
WOODLAND RD  
SAFETY IMPRV, IDAHO CO

**ENGLISH**  
COUNTY  
IDAHO  
KEY NUMBER  
23291  
SHEET 38 OF 42





REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BPRR
DESIGN CHECKED DJW
DETAILED SMGC
DRAWING CHECKED JRW

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
CADD FILE NAME 23291_SIGN_002.dgn
DRAWING DATE: APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**

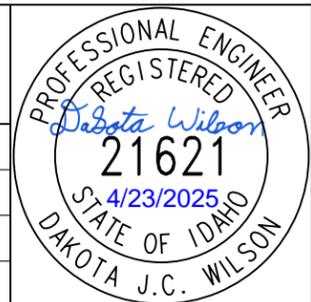
YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

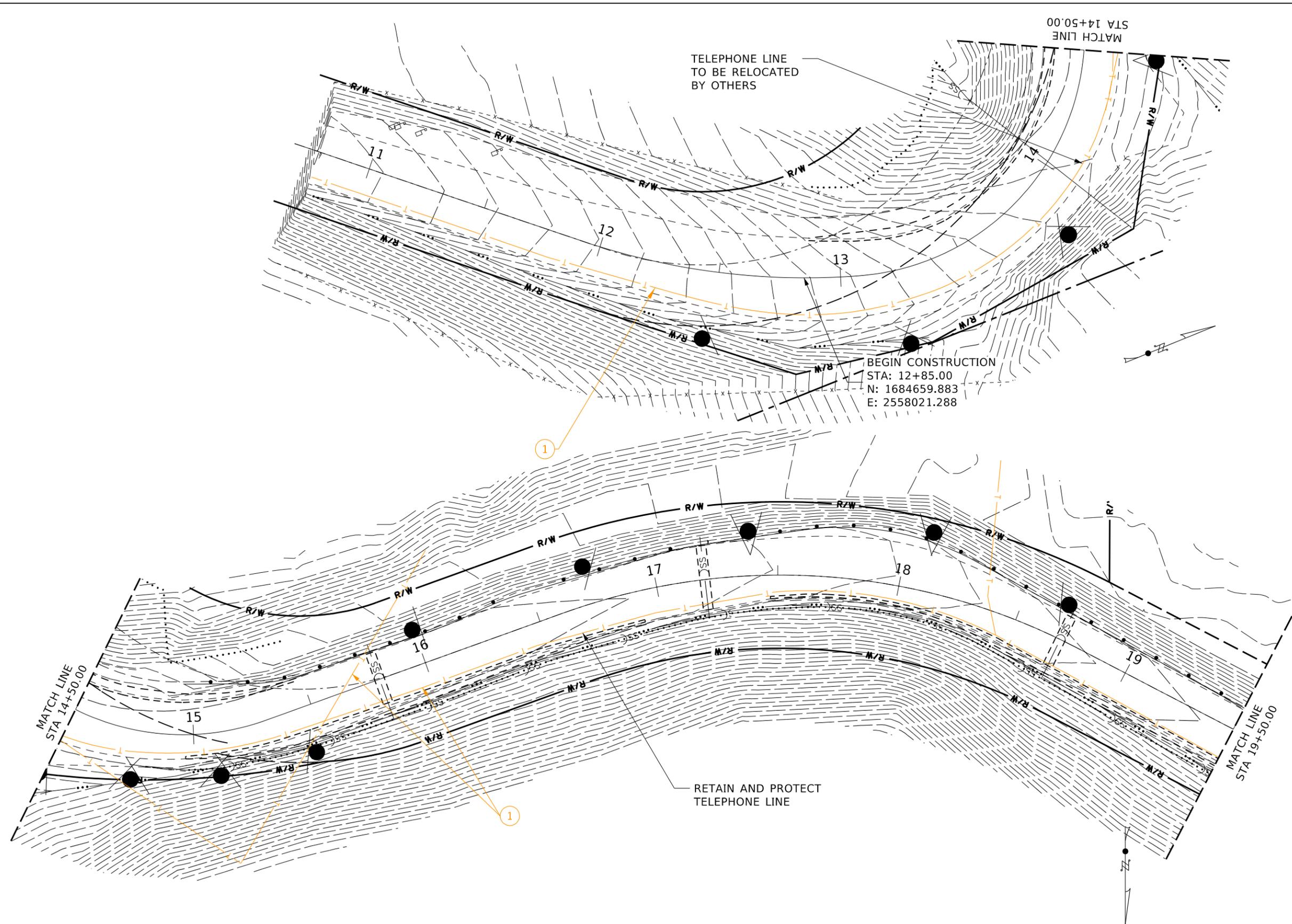
PROJECT NO.  A023(291)
------------------------------

SIGNING PLAN  WOODLAND RD SAFETY IMPRV, IDAHO CO
---

<b>ENGLISH</b>
COUNTY IDAHO
KEY NUMBER 23291
SHEET 39 OF 42







GENERAL NOTES:  
 UTILITY LOCATIONS ARE APPROXIMATE AND ARE BASED ON SOURCES OF VARYING ACCURACY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING UTILITY LOCATIONS AND PROTECTING THE UTILITIES IN PLACE. THE CONTRACTOR SHALL CALL ONE-CALL TO FIELD LOCATE ALL UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.

① COPPER TELEPHONE LINE (LUMEN)

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
BPRR  
 DESIGN CHECKED  
DJW  
 DETAILED  
SMGC  
 DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY  
 CADD FILE NAME  
23091\_UTIL\_001.dgn  
 DRAWING DATE:  
APRIL 2025

**IDAHO  
TRANSPORTATION  
DEPARTMENT**

YOUR Safety → YOUR Mobility → YOUR Economic Opportunity

**J-U-B ENGINEERS, INC.**

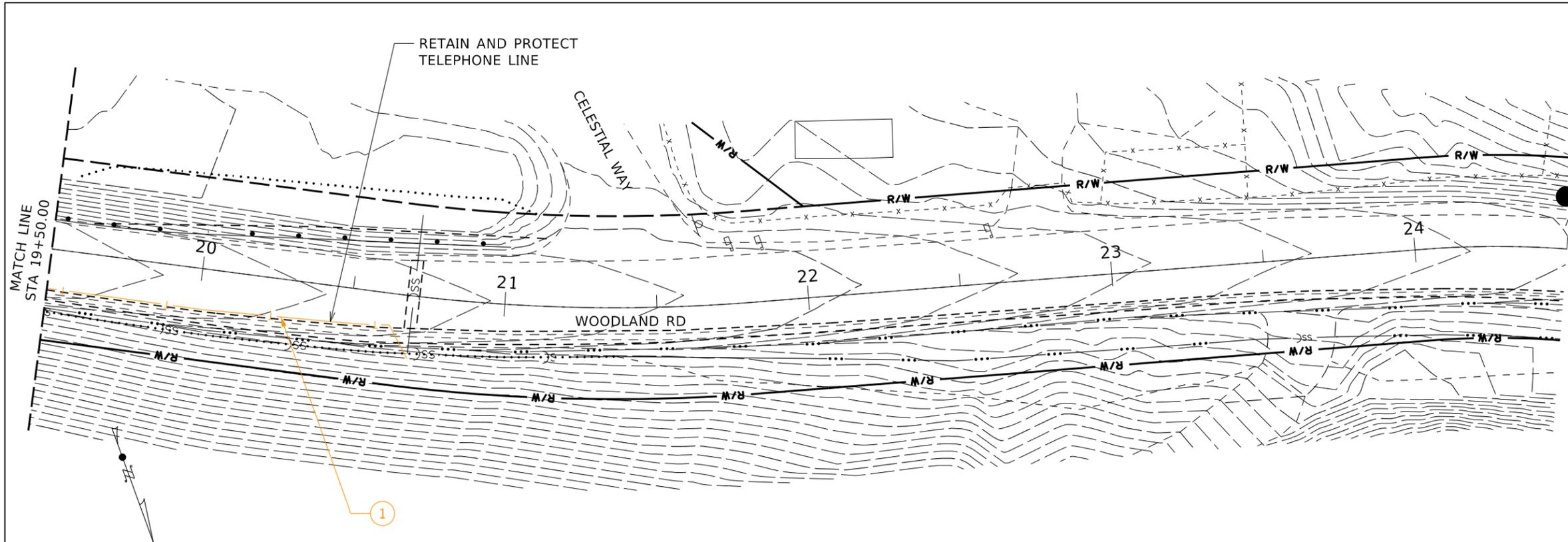


PROJECT NO.  
  
A023(291)

UTILITY PLAN  
 WOODLAND ROAD  
 IDAHO COUNTY  
 STA. 10+50.00 TO STA. 19+50.00

**ENGLISH**  
 COUNTY  
IDAHO  
 KEY NUMBER  
23291  
 SHEET 41 OF 42





GENERAL NOTES:  
 UTILITY LOCATIONS ARE APPROXIMATE AND ARE BASED ON SOURCES OF VARYING ACCURACY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING UTILITY LOCATIONS AND PROTECTING THE UTILITIES IN PLACE. THE CONTRACTOR SHALL CALL ONE-CALL TO FIELD LOCATE ALL UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.

1 COPPER TELEPHONE LINE (LUMEN)

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED  
BPRR  
 DESIGN CHECKED  
DJW  
 DETAILED  
SMGC  
 DRAWING CHECKED  
JRW

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY  
 CADD FILE NAME  
23091\_UTIL\_002.dgn  
 DRAWING DATE:  
APRIL 2025

**IDAHO**  
**TRANSPORTATION**  
**DEPARTMENT**  
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity  
**J-U-B ENGINEERS, INC.**

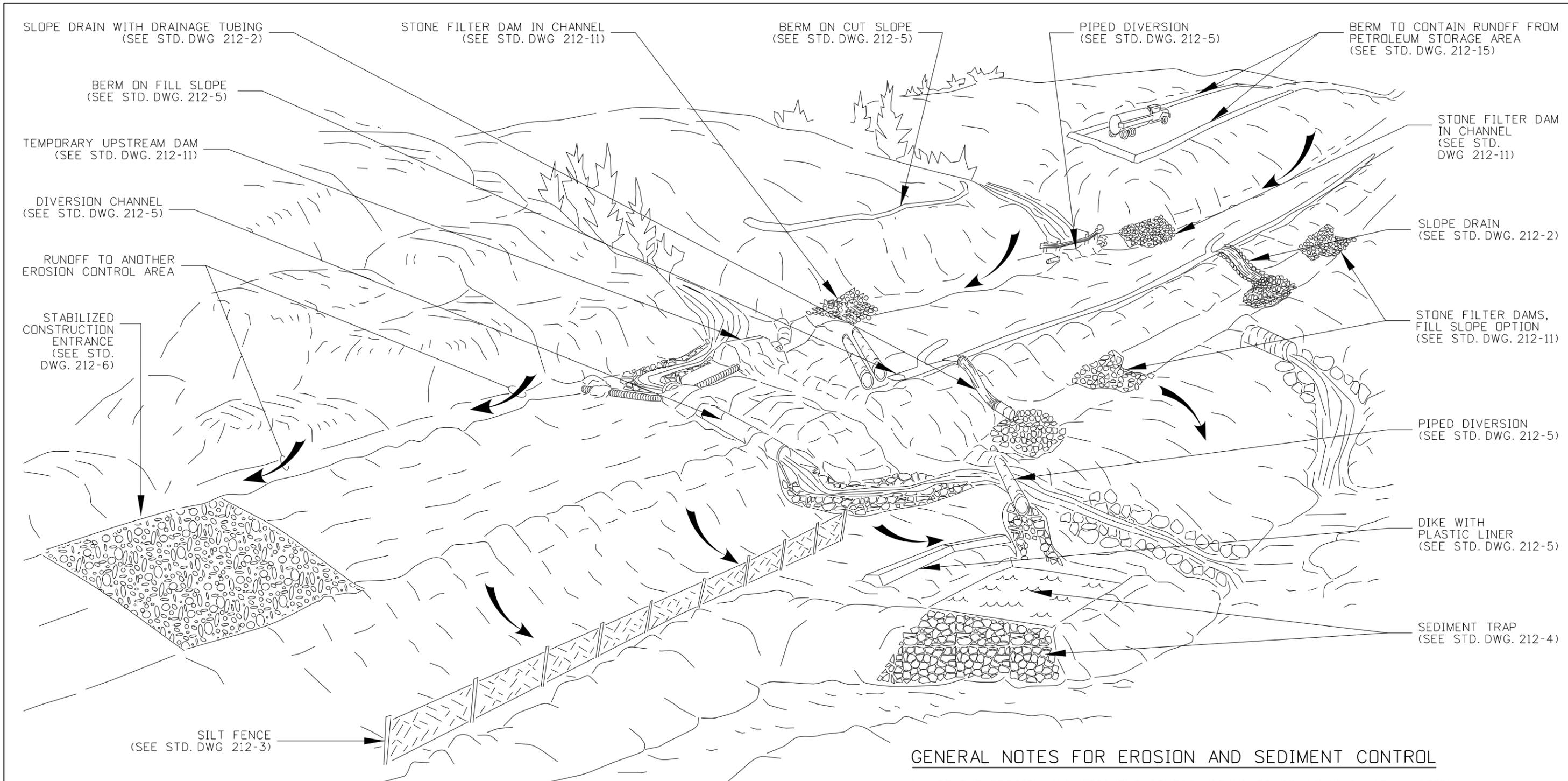


PROJECT NO.  
  
A023(291)

UTILITY PLAN  
 WOODLAND ROAD  
 IDAHO COUNTY  
 STA. 19+50.00 TO STA. 24+50.00

**ENGLISH**  
 COUNTY  
IDAHO  
 KEY NUMBER  
23291  
 SHEET 42 OF 42





**GENERAL NOTES FOR EROSION AND SEDIMENT CONTROL**

1. USE THE EROSION AND SEDIMENT CONTROL STANDARD DRAWINGS IN CONJUNCTION WITH THE ITD BEST MANAGEMENT PRACTICES MANUAL.
2. THE PLACEMENT OF EROSION CONTROL MEASURES IS SITE SPECIFIC. OBTAIN THE ENGINEER'S APPROVAL OF THE EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO INSTALLATION.
3. EROSION AND SEDIMENT CONTROL MEASURES PLACEMENT AND INSTALLATION MAY BE CONTROLLED BY THE NPDES, 404 PERMIT OR CONTRACT SPECIFICATIONS.
4. DRAWING NOT TO SCALE

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	9-93	MSM	6	12-16	RDL			
2	6-96	MSM	7	02-21	TWF			
3	10-10	KEH						
4	10-11	KEH						
5	12-12	RDL						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
 CADD FILE NAME: 212-01\_0421.dgn  
 DRAWING DATE: APRIL, 1993

**IDAHO TRANSPORTATION DEPARTMENT**

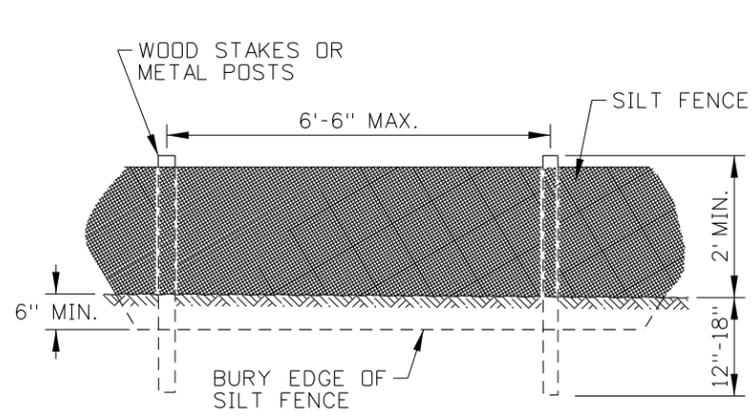


BOISE IDAHO

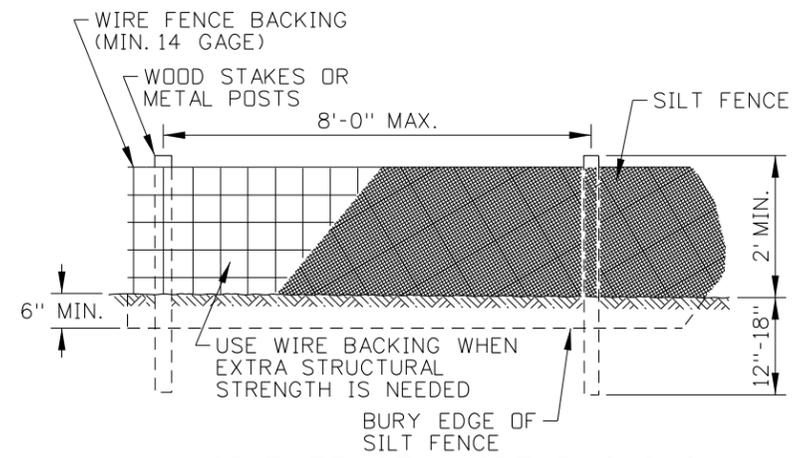
ORIGINAL SIGNED BY: KEVIN SABLAN  
 DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING  
**EROSION AND SEDIMENT CONTROL**  
 EXAMPLE APPLICATIONS

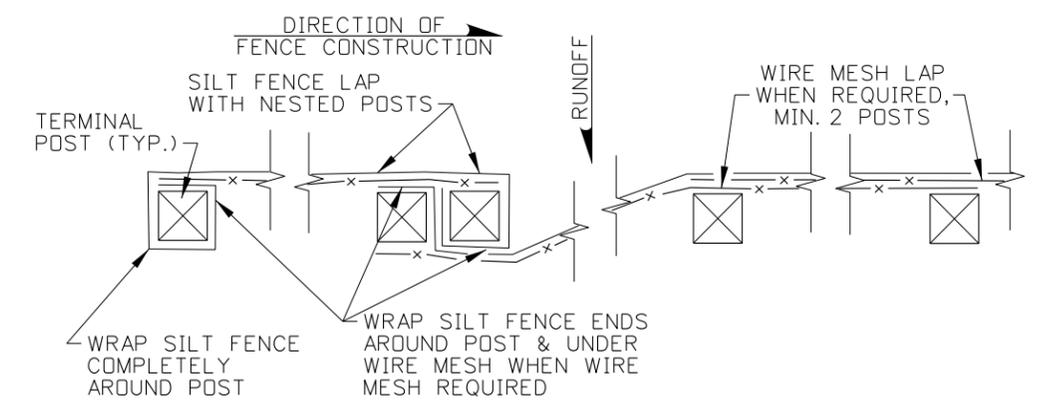
**English**  
 STANDARD DRAWING NO.  
 212-1  
 SHEET 1 OF 1



**SILT FENCE (NO WIRE BACKING)**



**SILT FENCE (WIRE BACKING)**



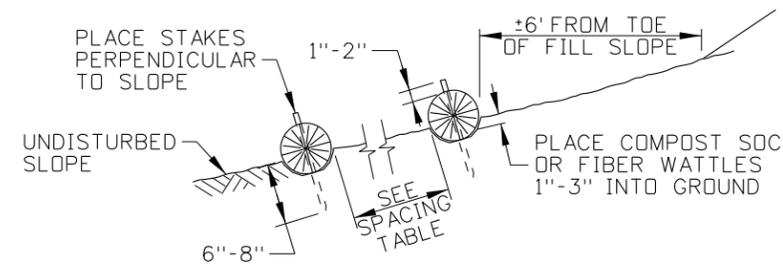
**SILT FENCE LAP DETAIL**

SLOPE	WATTLE SIZE			
	6"	9"	12"	20"
1:1	5 FT	10 FT	15 FT	20 FT
2:1	10 FT	20 FT	30 FT	40 FT
3:1	15 FT	30 FT	45 FT	60 FT
4:1 OR FLATTER	20 FT	40 FT	60 FT	80 FT

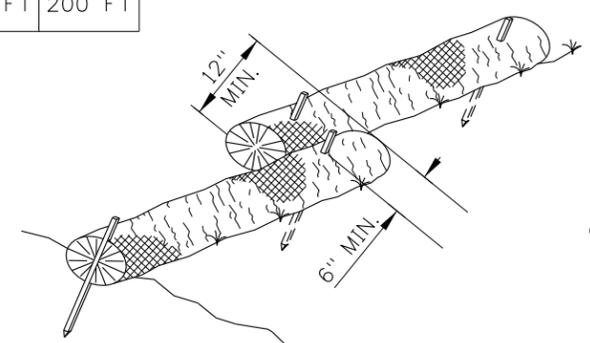
SLOPE	SOIL TYPE		
	SILTY	CLAYS	SANDY
1:1	50 FT	75 FT	100 FT
2:1	75 FT	100 FT	125 FT
4:1	100 FT	125 FT	150 FT
10:1 OR FLATTER	125 FT	150 FT	200 FT

**NOTES**

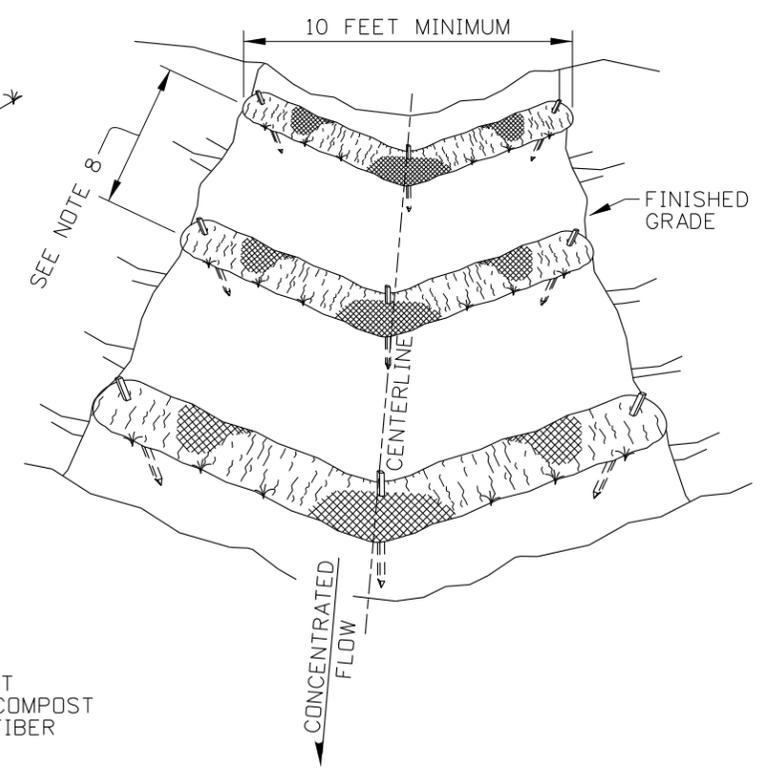
- SEE THE GENERAL NOTES FOR EROSION CONTROL STANDARD DRAWINGS ON 212-1.
- THE NEED FOR TEMPORARY SEDIMENT CONTROL DEVICES ARE DETERMINED BY SITE DESIGN. SPACE SILT FENCES, COMPOST SOCKS, AND FIBER WATTLES IN ACCORDANCE WITH THE SILT FENCE SPACING TABLE AND FIBER WATTLE & COMPOST SOCK SPACING TABLE.
- INSTALL TEMPORARY SEDIMENT CONTROL BARRIERS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND SPECIFICATIONS. THE DIMENSIONS SHOWN ARE GENERAL GUIDELINES.
- PLACE SEDIMENT BARRIERS TO FOLLOW THE SLOPE CONTOURS. USE EITHER METAL POSTS OR WOOD STAKES.
- ENSURE RUNOFF PASSES THROUGH THE SILT FENCE AND NOT AROUND THE FENCE.
- GROUND SILT FENCES WITH WIRE MESH IN ACCORDANCE WITH THE GROUNDING DETAIL SHOWN ON STANDARD DRAWING 610-1.
- EXTEND OR JOIN SILT FENCE USING SILT FENCE LAP WITH NESTED POSTS.
- SPACE CHECK DAMS ACCORDING TO THE HEIGHT OF THE DAM AND THE SLOPE OF THE CHANNEL SO THE BACKWATER FROM THE DOWNSTREAM DAM REACHES THE TOE OF THE UPSTREAM DAM.
- ON SLOPES, TURN THE ENDS OF EACH ROW OF COMPOST SOCKS AND FIBER WATTLES UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE SOCK OR WATTLE.
- REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF SILT FENCES, COMPOST SOCKS, AND FIBER WATTLES WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE BARRIER.
- DRAWING NOT TO SCALE.



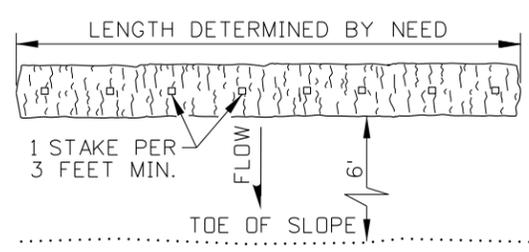
**COMPOST SOCK AND FIBER WATTLE SIDE VIEW**



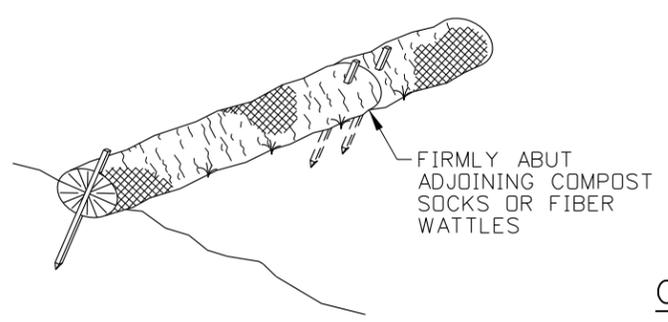
**COMPOST SOCK AND FIBER WATTLE OVERLAPPING DETAIL**



**COMPOST SOCK AND FIBER WATTLE TEMPORARY CHECK DAM DETAIL**



**COMPOST SOCK AND FIBER WATTLE PLAN VIEW**



**COMPOST SOCK AND FIBER WATTLE ABUTTING DETAIL**

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	09-93	MSM	6	01-13	RDL			
2	12-94	MSM	7	03-21	TWF			
3	06-96	GFK						
4	10-10	KEH						
5	10-11	KEH						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
 CADD FILE NAME: 212-03\_0421.dgn  
 DRAWING DATE: APRIL, 1993

**IDAHO TRANSPORTATION DEPARTMENT**

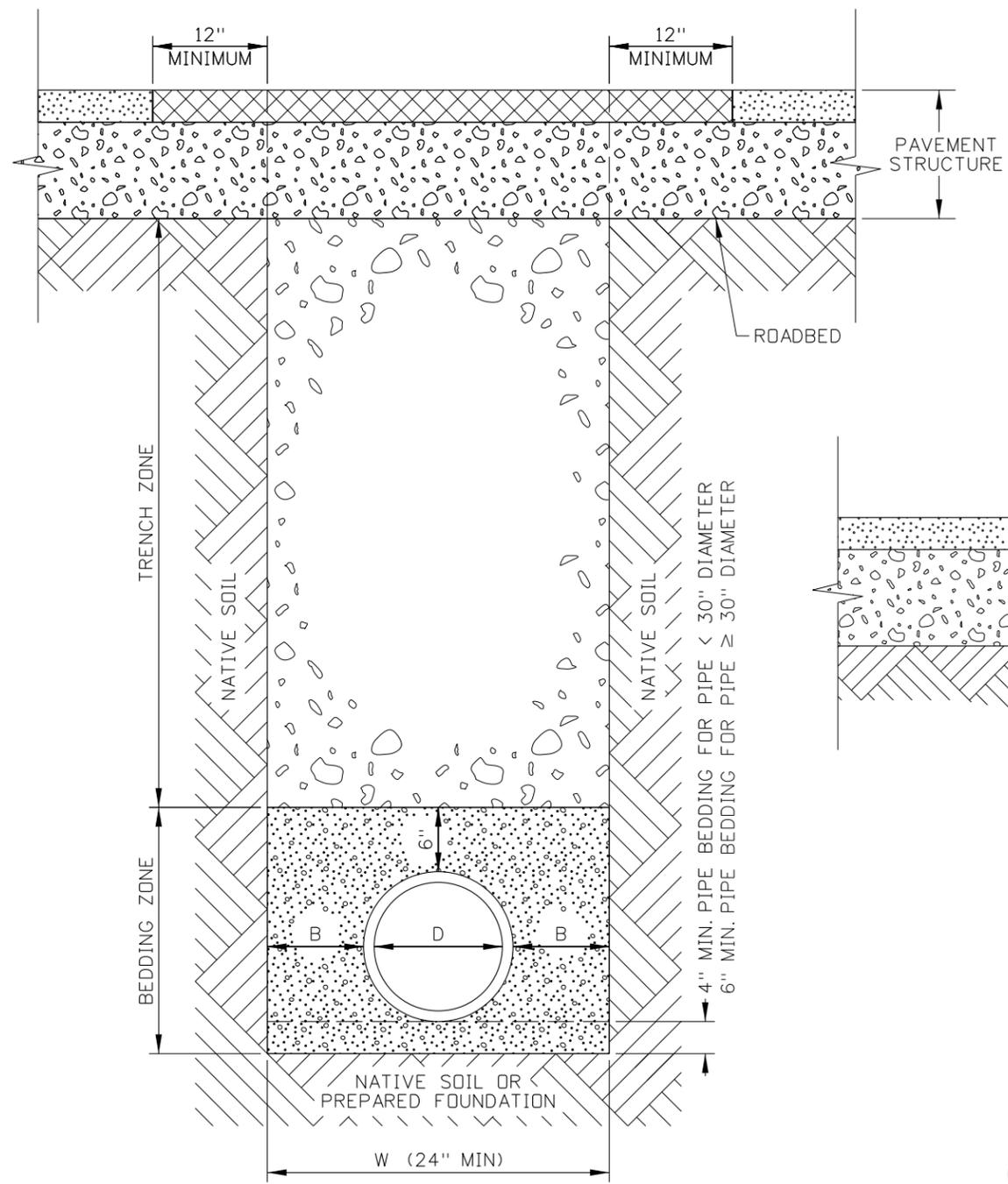
BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
 DESIGN/TRAFFIC SERVICES ENGINEER

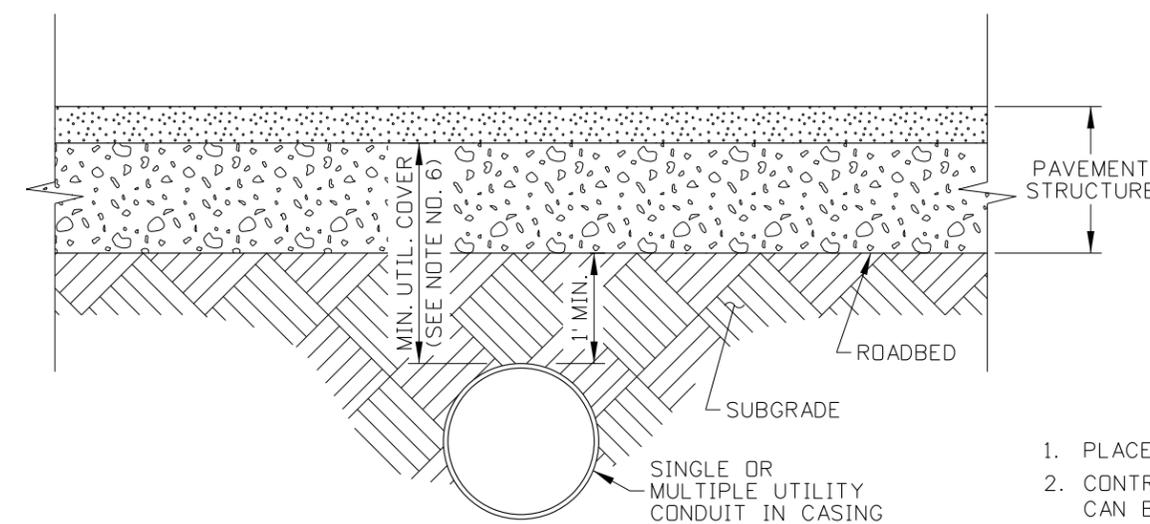
STANDARD DRAWING  
**TEMPORARY EROSION AND SEDIMENT CONTROL**  
 SILT FENCE, FIBER WATTLE, AND COMPOST SOCK  
 REQUIRES STD. DWG. 212-1

**English**  
 STANDARD DRAWING NO.  
**212-3**  
 SHEET 1 OF 1

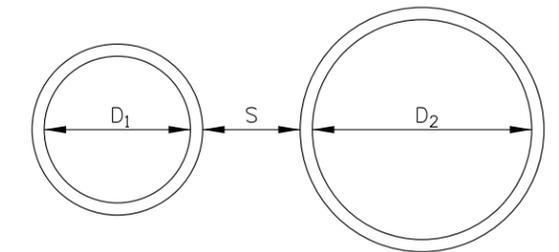
ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho



**TRENCHING**



**JACKING, DRIVING, OR BORING**



**MULTIPLE PIPE INSTALLATION DETAIL**  
(SEE NOTE NO. 4)

MATERIALS AND COMPACTION TABLE				
PIPE LOCATION	BEDDING ZONE		TRENCH ZONE	
	MATERIAL REQUIREMENT	COMPACTION REQUIREMENT	MATERIAL REQUIREMENT	COMPACTION REQUIREMENT
INSIDE ROADWAY PRISM	COARSE AGGREGATE FOR CONCRETE SIZE NO. 1, NO. 2A, OR NO. 2B (SUBSECTION 703.02)	ENGINEER ACCEPTANCE	3/4" AGGREGATE FOR BASE (SUBSECTION 703.04) (SEE NOTE NO. 1)	CLASS A COMPACTION (SECTION 205) OR 95% OF IT-74
OUTSIDE ROADWAY PRISM	COARSE AGGREGATE FOR CONCRETE SIZE NO. 1, NO. 2A, OR NO. 2B (SUBSECTION 703.02)	ENGINEER ACCEPTANCE	GRANULAR BORROW OR NATIVE MATERIALS WITH MAXIMUM SIZE OF 6" AND FREE FROM WOOD WASTE OR DELETERIOUS MATERIALS. (SEE NOTE NO. 1)	CLASS D COMPACTION (SECTION 205)

MINIMUM DIMENSION TABLE (SEE NOTE NOS. 3 AND 4)		
D (INCHES)	B (INCHES)	S (INCHES)
≤ 6	10	24
7 TO 15	12	24
16 TO 30	18	24
> 30	24	GREATER OF 24 OR D/2

**NOTES**

1. PLACE MATERIAL IN ACCORDANCE WITH SECTION 210.
2. CONTROLLED DENSITY FILL (CDF) IN ACCORDANCE WITH SECTION 522 CAN BE USED IF APPROVED BY THE ENGINEER.
3. LOOSE LIFT THICKNESS DIRECTLY ON TOP OF PIPE MAY BE INCREASED WITH APPROVAL TO PREVENT DAMAGE TO PIPE DURING COMPACTION.
4. WHEN TWO DIFFERENT DIAMETER PIPES ARE INSTALLED, USE THE LARGER D DIMENSION TO DETERMINE THE S DIMENSION.
5. WHEN THE PIPE DIAMETER IS 36 INCHES OR GREATER AND THE PIPE IS INSTALLED DURING EMBANKMENT CONSTRUCTION, USE B DIMENSION EQUAL TO THE PIPE DIAMETER.
6. PROVIDE THE FOLLOWING MINIMUM COVER DEPTHS:  
 WATER: 4'  
 LIQUID OR GAS PETROLEUM: 4'  
 ELECTRICAL MAIN LINE: 4'  
 COMMUNICATIONS OR ELECTRONICS: 2'  
 UTILITY OWNERS AND LOCAL PUBLIC AGENCIES MAY HAVE DIFFERENT MINIMUM COVER DEPTHS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE REQUIRED COVER DEPTHS.
7. PERFORM TRENCHING PER OSHA REQUIREMENTS.
8. DO NOT DISTURB THE INSTALLED PIPE OR CONDUIT, OR LEAVE VOIDS WHEN USING TRENCH BOXES OR SHIELDS.
9. DRAWINGS NOT TO SCALE.

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	12-15	RDL	6	03-21	TWF			
2	03-16	RDL						
3	06-17	RDL						
4	06-18	HEB						
5	11-18	TWF						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
 CADD FILE NAME: 601-1\_0421.dgn  
 DRAWING DATE: MAY 2014

**IDAHO TRANSPORTATION DEPARTMENT**



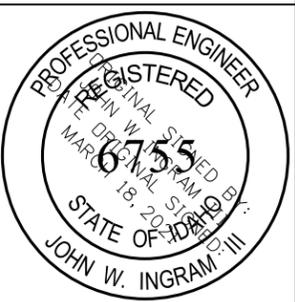
BOISE IDAHO

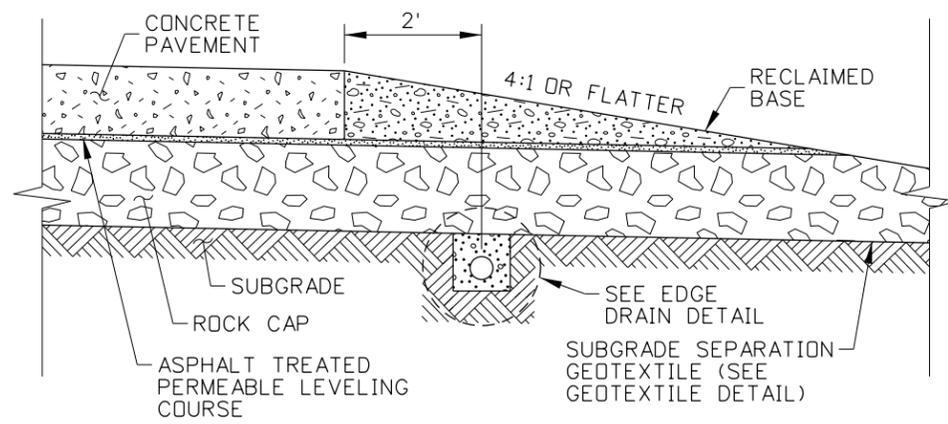
ORIGINAL SIGNED BY: KEVIN SABLAN  
 DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING  
**PIPE AND CONDUIT INSTALLATION**

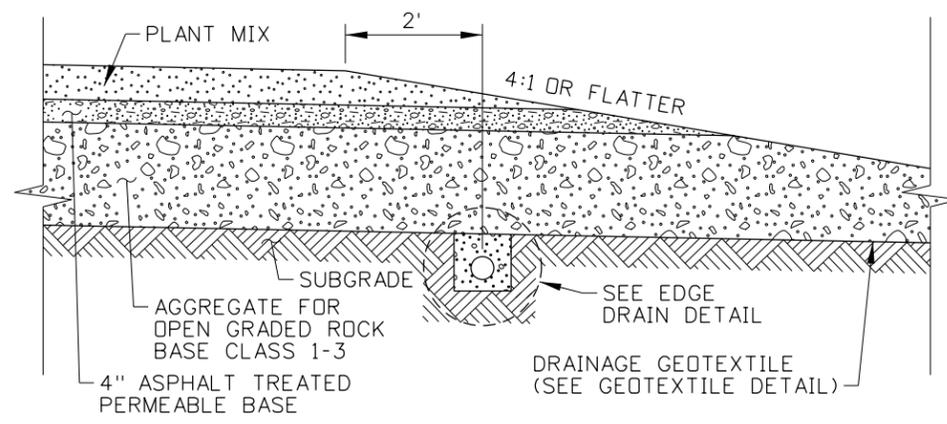
**English**  
 STANDARD DRAWING NO.  
**601-1**  
 SHEET 1 OF 1

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

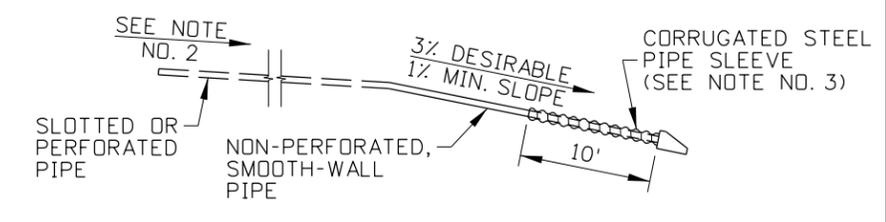




ROCK CAP

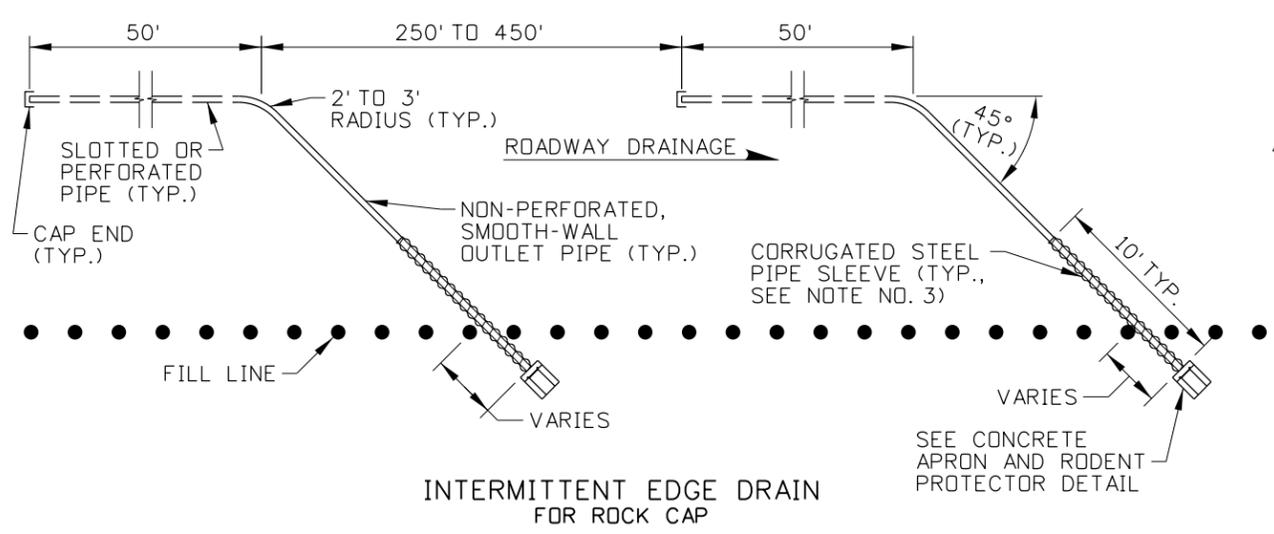


ASPHALT TREATED PERMEABLE BASE LAYER

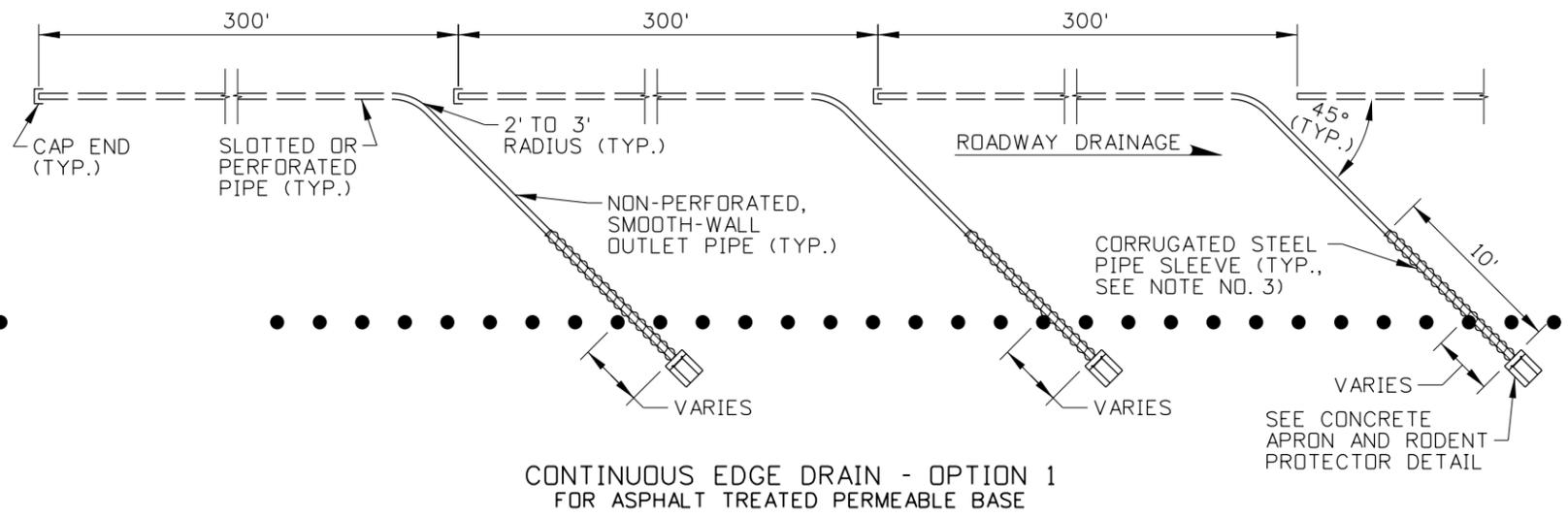


RURAL EDGE DRAIN PIPE PROFILE  
(SEE NOTE NO. 5)

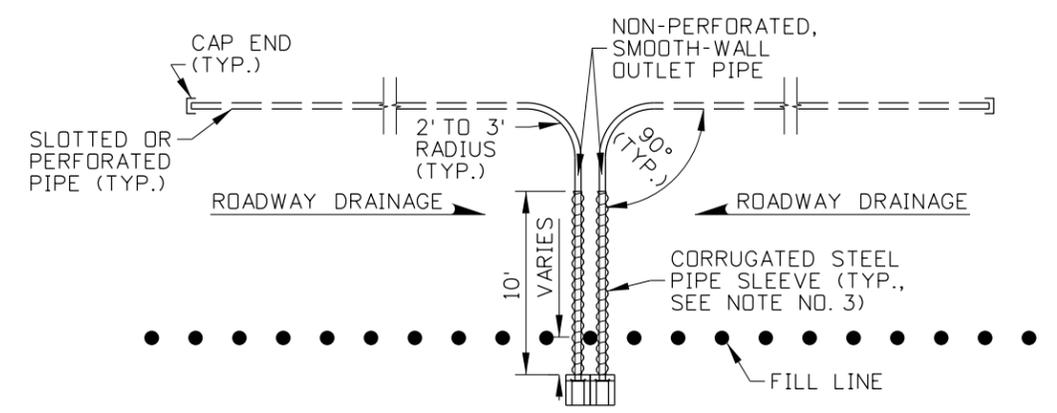
RURAL EDGE DRAIN PLACEMENT



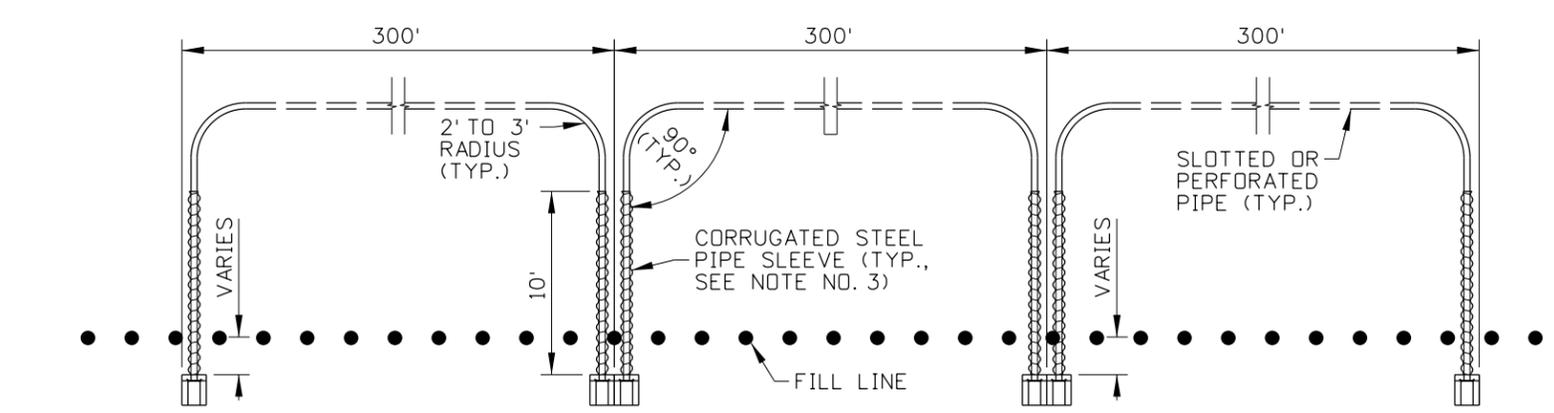
INTERMITTENT EDGE DRAIN FOR ROCK CAP



CONTINUOUS EDGE DRAIN - OPTION 1 FOR ASPHALT TREATED PERMEABLE BASE



EDGE DRAIN AT SAG VERTICAL CURVE FOR ROCK CAP OR ASPHALT TREATED PERMEABLE BASE (SEE NOTE NO. 4)



CONTINUOUS EDGE DRAIN - OPTION 2 FOR ASPHALT TREATED PERMEABLE BASE

RURAL EDGE DRAINS  
PLAN VIEW

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	02-22	RDL						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 606-2\_0422.dgn  
DRAWING DATE: FEBRUARY, 2014

**IDAHO TRANSPORTATION DEPARTMENT**



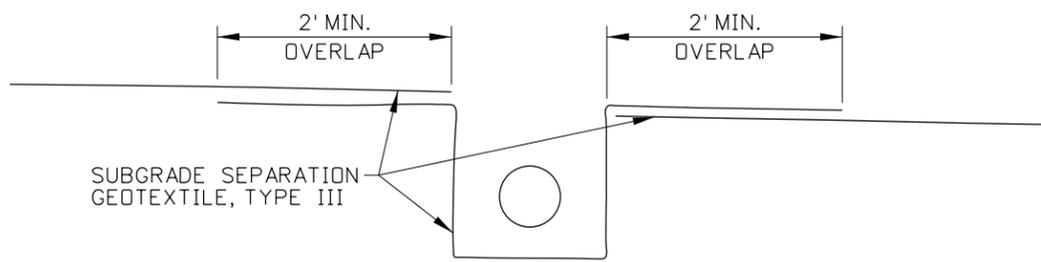
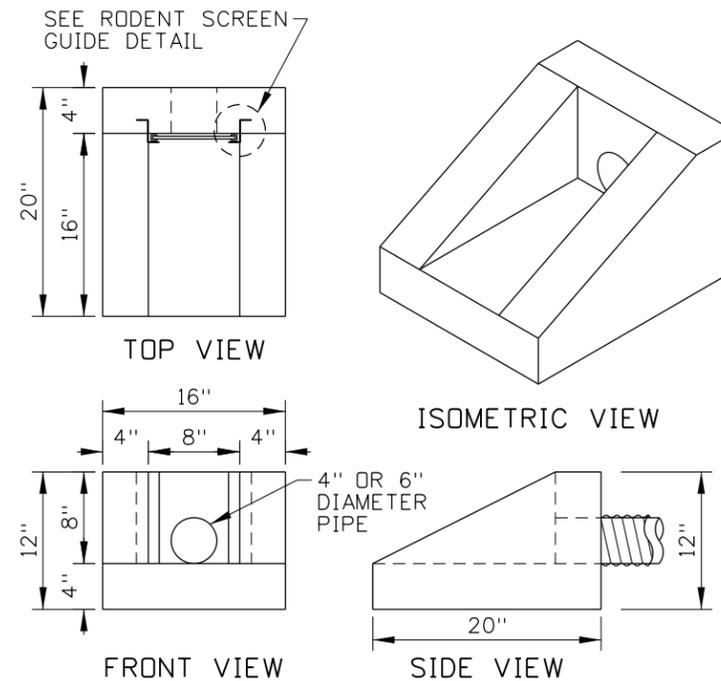
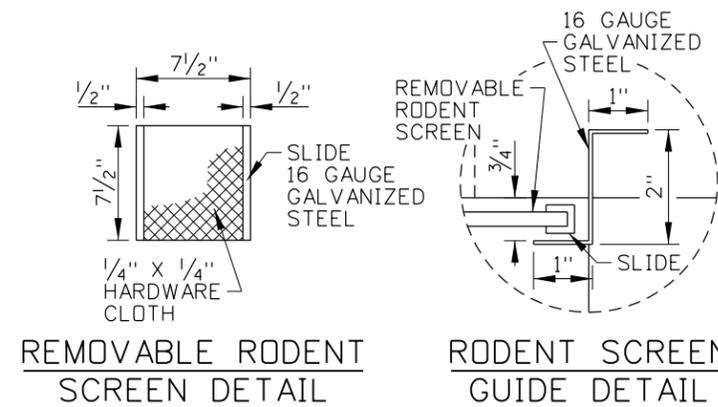
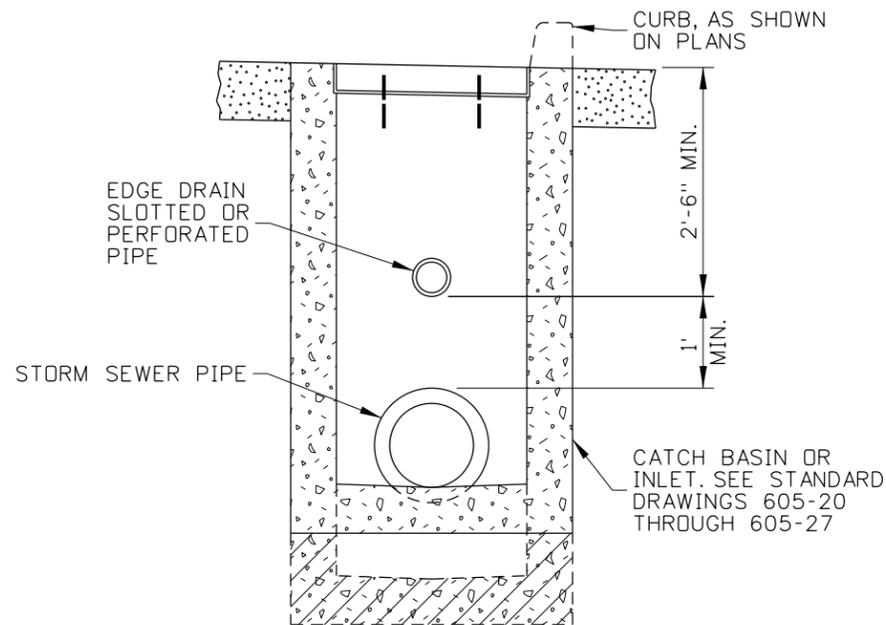
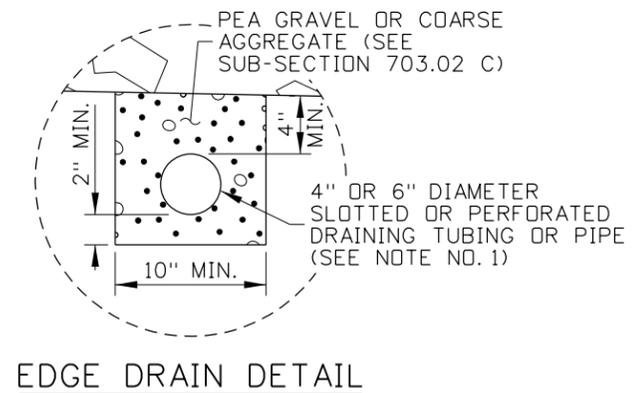
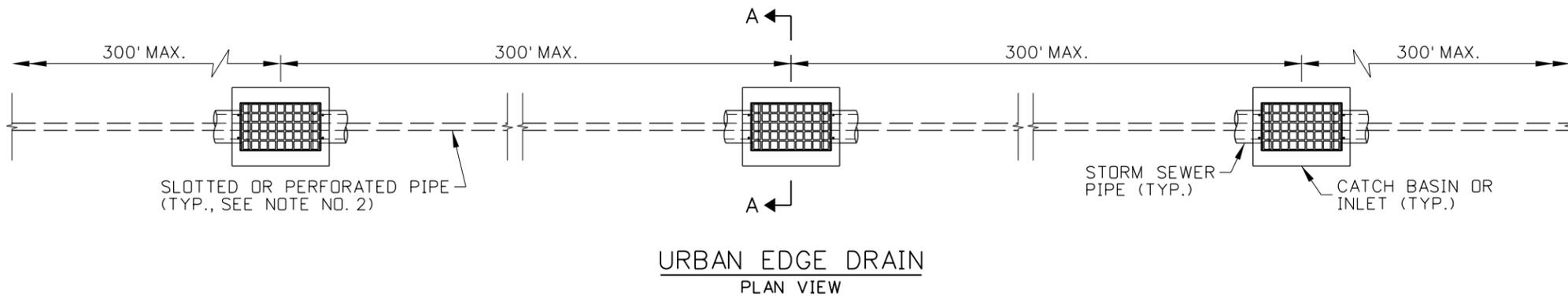
BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING  
**EDGE DRAIN**

English  
STANDARD DRAWING NO.  
**606-2**  
SHEET 1 OF 2

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho



**NOTES**

1. PROVIDE CORRUGATED POLYETHYLENE DRAINAGE TUBING IN ACCORDANCE WITH 706.10 OR CLASS PS 46 POLYVINYL CHLORIDE (PVC) PIPE IN ACCORDANCE WITH 706.14.
2. MINIMUM 0.5 PERCENT PIPE GRADE. EDGE DRAIN GRADIENTS MAY BE AS FLAT AS 0.2 PERCENT IF PIPE DIAMETERS GREATER THAN 6 INCHES ARE USED.
3. PLACE OUTLET PIPES IN 10 FOOT LONG CORRUGATED STEEL PIPE SLEEVES EXTENDING FROM THE CONCRETE APRON. USE PIPE JUST LARGE ENOUGH TO ALLOW THE OUTLET PIPES TO FIT THROUGH.
4. PROVIDE OUTLET PIPES AT THE BOTTOM OF SAG VERTICAL CURVES.
5. PROVIDE 6 INCH MINIMUM FREEBOARD BETWEEN THE DITCH BOTTOM AND PIPE OUTLET. WHERE THIS IS NOT PRACTICAL, PROVIDE A COLLECTION AND DISPOSAL SYSTEM.
6. USE COUPLINGS TO JOIN PIPES. MINIMIZE EDGE DRAIN AND OUTLET PIPE JOINTS.
7. PRECAST OR CAST-IN-PLACE CONCRETE APRON AND RODENT PROTECTORS. PROVIDE REMOVABLE RODENT SCREEN.
8. VIDEO INSPECT FINISHED EDGE DRAIN AND OUTLET PIPES. REPLACE DAMAGED PIPE.
9. DRAWING NOT TO SCALE.

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	02-22	RDL						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: 606-2\_0422.dgn

DRAWING DATE: FEBRUARY, 2014

**IDAHO TRANSPORTATION DEPARTMENT**

BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING

**EDGE DRAIN**

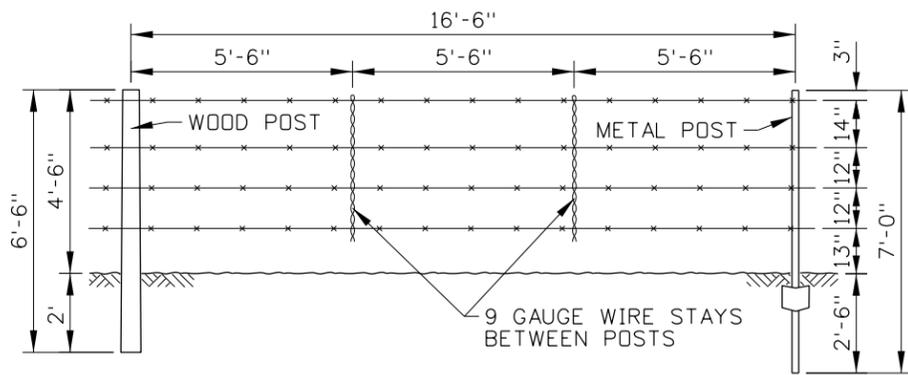
ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

**English**

STANDARD DRAWING NO. **606-2**

SHEET 2 OF 2

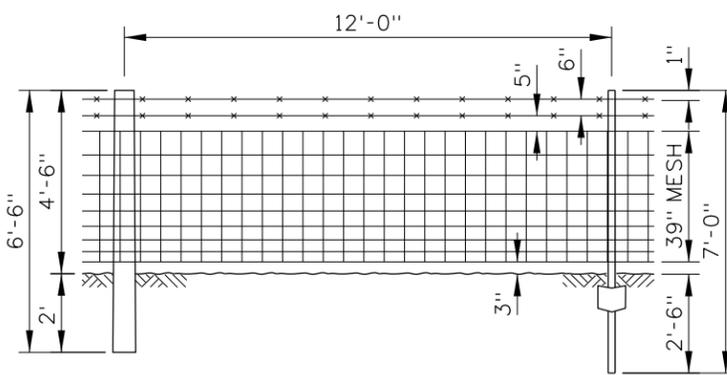
PROFESSIONAL ENGINEER  
LICENSED  
13683  
RYAN D. LANCASTER  
STATE OF IDAHO



1A (WOOD)

FENCE TYPE 1

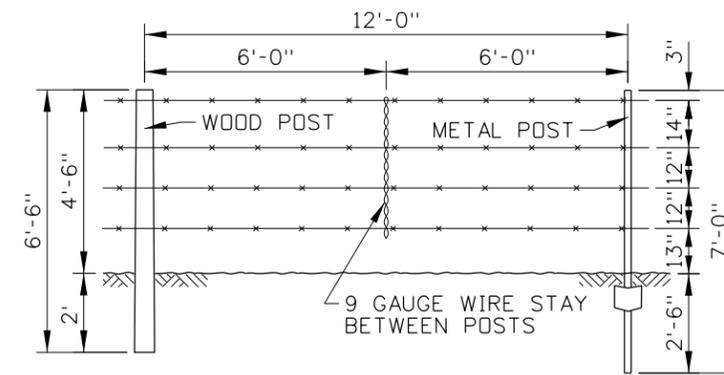
1B (METAL)



3A (WOOD)

FENCE TYPE 3

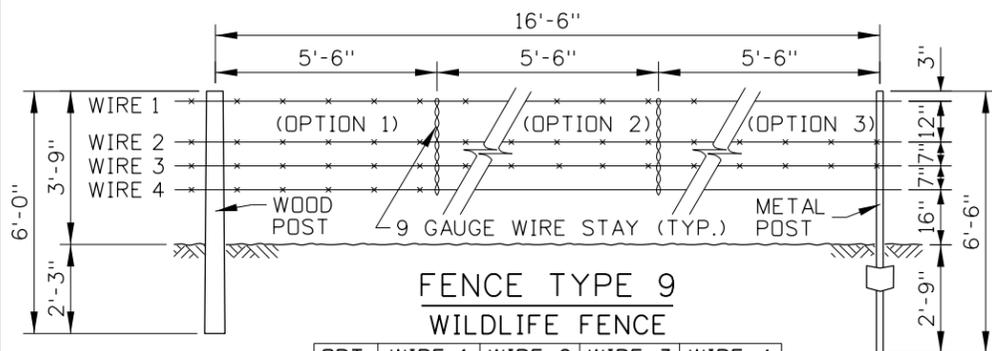
3B (METAL)



5-A (WOOD)

FENCE TYPE 5

5-B (METAL)

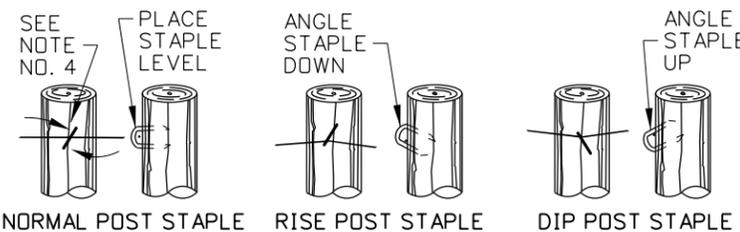


FENCE TYPE 9  
WILDLIFE FENCE

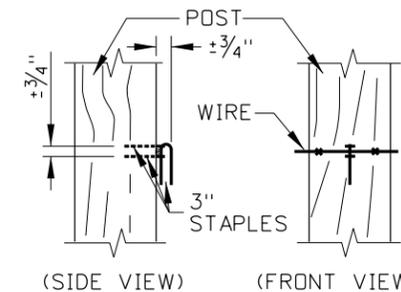
9-A  
(WOOD)

9-B  
(METAL)

OPT.	WIRE 1	WIRE 2	WIRE 3	WIRE 4
1	BARBED	BARBED	BARBED	BARBED
2	BARBED	BARBED	BARBED	SMOOTH
3	SMOOTH	BARBED	BARBED	SMOOTH

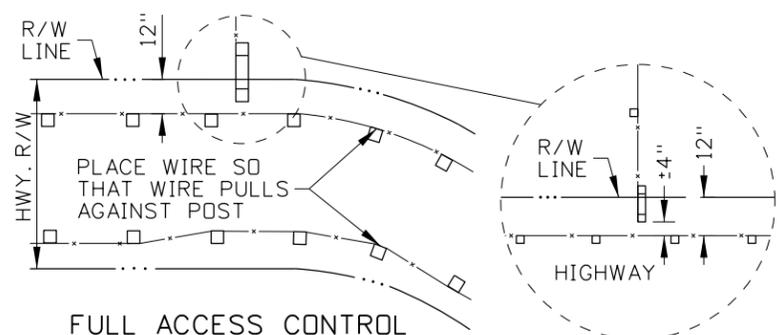


WOOD FENCE POST STAPLE DETAILS  
(SEE NOTE NO. 4)

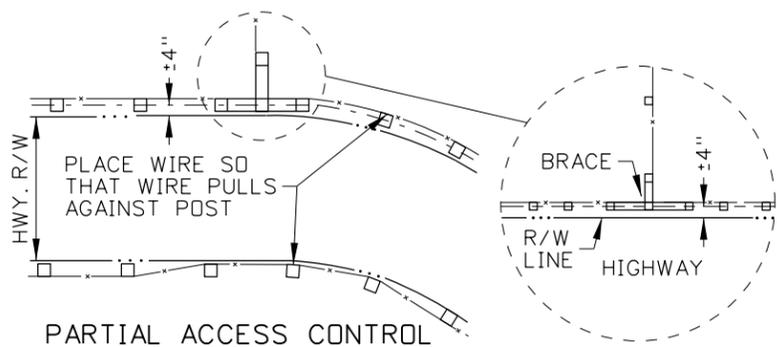


DROP FENCE STAPLE DETAIL  
(SEE NOTE NO. 1)

FENCE DIST. FROM TRANSMISSION LINE	kV	POST MATERIAL	GROUNDING INTERVAL
0' - 100'	500	ALL	200'
100' - 200'	500	ALL	500'
0' - 100'	345	ALL	400'
100' - 150'	345	ALL	1,000'
50' - 100'	230	ALL	500'

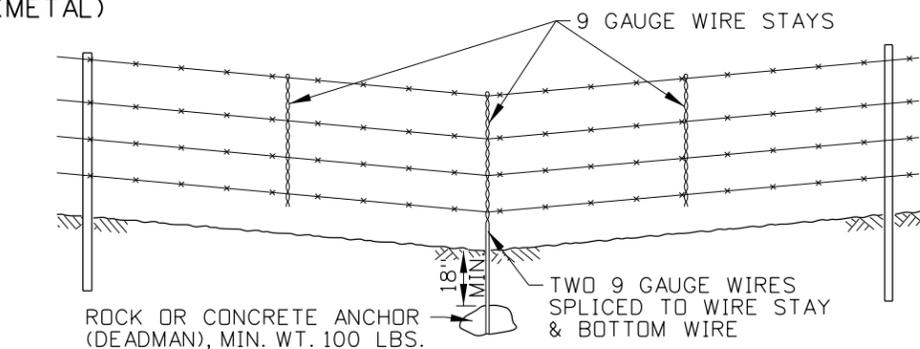


FULL ACCESS CONTROL

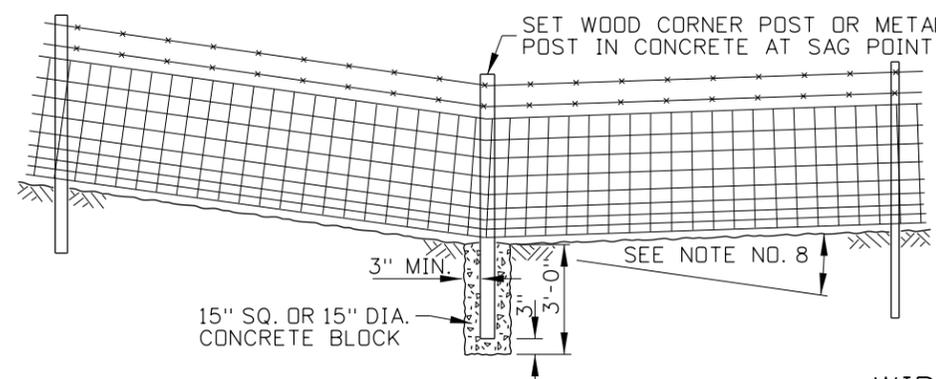


PARTIAL ACCESS CONTROL

RIGHT-OF-WAY FENCE LOCATION DETAILS

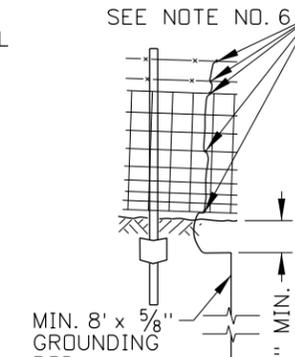
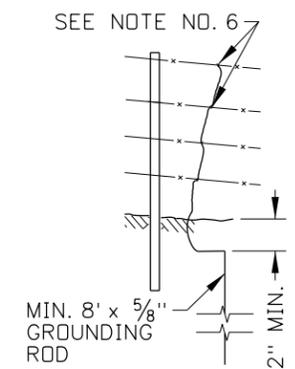


ROCK OR CONCRETE ANCHOR (DEADMAN), MIN. WT. 100 LBS.



15" SQ. OR 15" DIA. CONCRETE BLOCK

SAG DETAILS

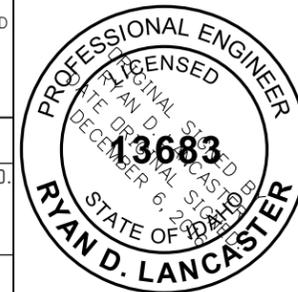


WIRE AND WIRE MESH FENCE GROUNDING DETAILS

BARBED OR WOVEN WIRE FENCE NOTES

1. DESIGNATE POST MATERIAL ON PROJECT PLANS. INDICATE WHETHER THE FENCE WILL BE A DROP FENCE AND THE LOCATION WHERE DROP FENCE STAPLES WILL BE USED.
2. DESIGNATE OPTION 1, 2, OR 3 FOR FENCE TYPE 9 - WILDLIFE FENCE - ON PROJECT PLANS.
3. ATTACH ANCHOR PLATES TO METAL POSTS UNLESS THE POST IS SET IN SOLID ROCK. GROUT DRILL HOLES WHEN METAL POSTS ARE SET IN SOLID ROCK.
4. STAPLE EACH WIRE TO EACH WOOD POST. STAPLE ALTERNATING WIRES ON MESH WIRE FENCES. USE TWO STAPLES ON BRACES AND IN SAG SECTIONS. ROTATE THE STAPLES TO STRADDLE ACROSS THE WOOD GRAIN. ALLOW ENOUGH SPACE FOR WIRE TO SLIDE THROUGH THE STAPLE.
5. ATTACH FENCE WIRE OR WIRE MESH TO STEEL POSTS WITH WIRE CLAMPS. USE ONE WIRE CLAMP PER WIRE. ON WIRE MESH, USE FOUR WIRE CLAMPS PER POST OR EIGHT WIRE CLAMPS PER POST IN SAG SECTIONS.
6. GROUND WIRE AND WIRE MESH FENCES THAT ARE NEAR POWER TRANSMISSION LINES OR THAT PASS UNDER TRANSMISSION LINES. SEE THE WIRE AND WIRE MESH FENCE GROUNDING TABLE AND WIRE AND WIRE MESH FENCE GROUNDING DETAILS. TO GROUND, CONNECT EACH FENCE WIRE TO 6 GAUGE BRAIDED GROUND CABLE WITH SPLIT BOLT CABLE CONNECTORS. FOR WIRE MESH FENCE, CONNECT THE BRAIDED GROUND CABLE EVERY 18". GROUND THE FENCE ONCE IF THE FENCE SECTION IS SHORTER THAN THE GROUNDING INTERVAL.
7. WHEN THE FENCE TERMINATES AT A BRIDGE, ENSURE THAT THE TOP OF THE FENCE DOES NOT EXTEND BEYOND THE TOP OF THE PARAPET OR RAILING.
8. ON THE SAG DETAIL, INSTALL CORNER BRACE IN ADDITION TO THE CONCRETE BASE WHEN THE ANGLE IS GREATER THAN 20°.

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho



NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY

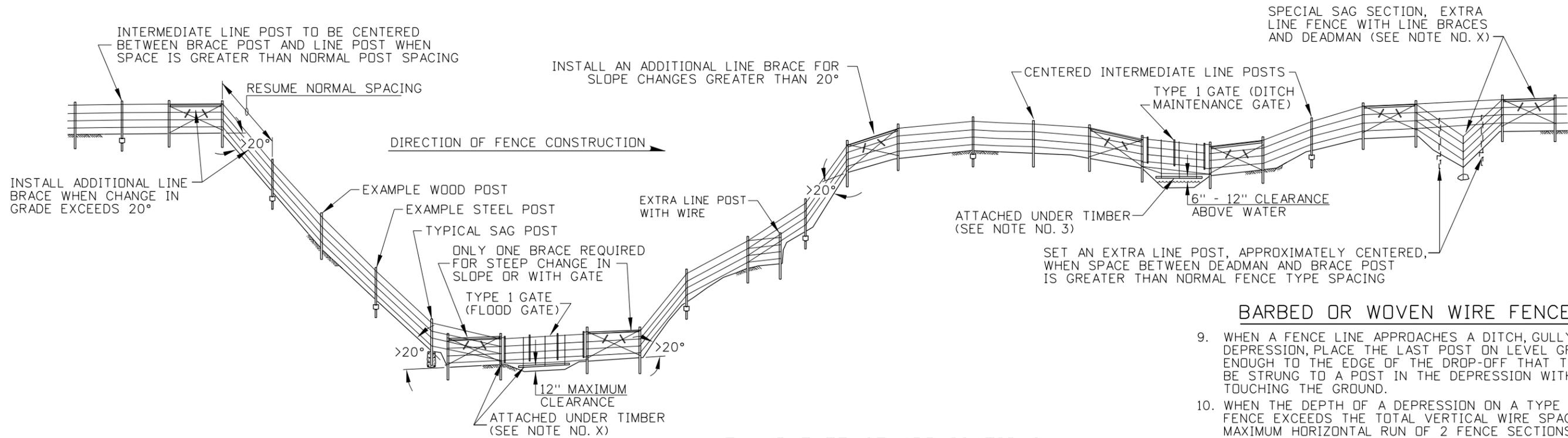
SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 610-1\_1216.dgn  
DRAWING DATE: NOVEMBER, 2016

IDAHO TRANSPORTATION DEPARTMENT  
BOISE IDAHO

ORIGINAL SIGNED BY: TED MASON  
DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING  
FENCES

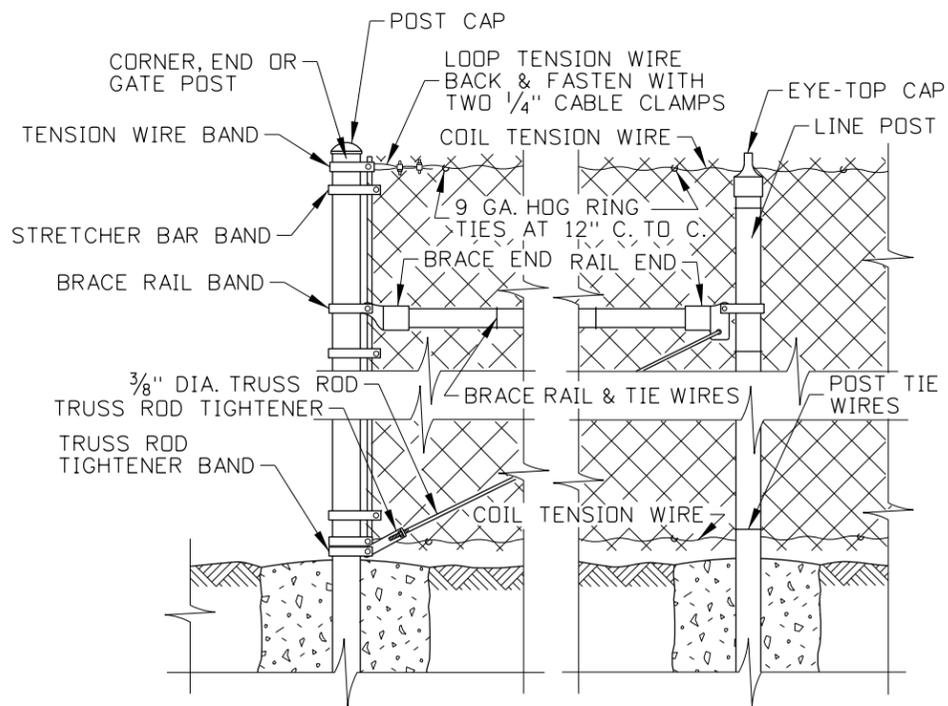
English  
STANDARD DRAWING NO. 610-1  
SHEET 1 OF 3



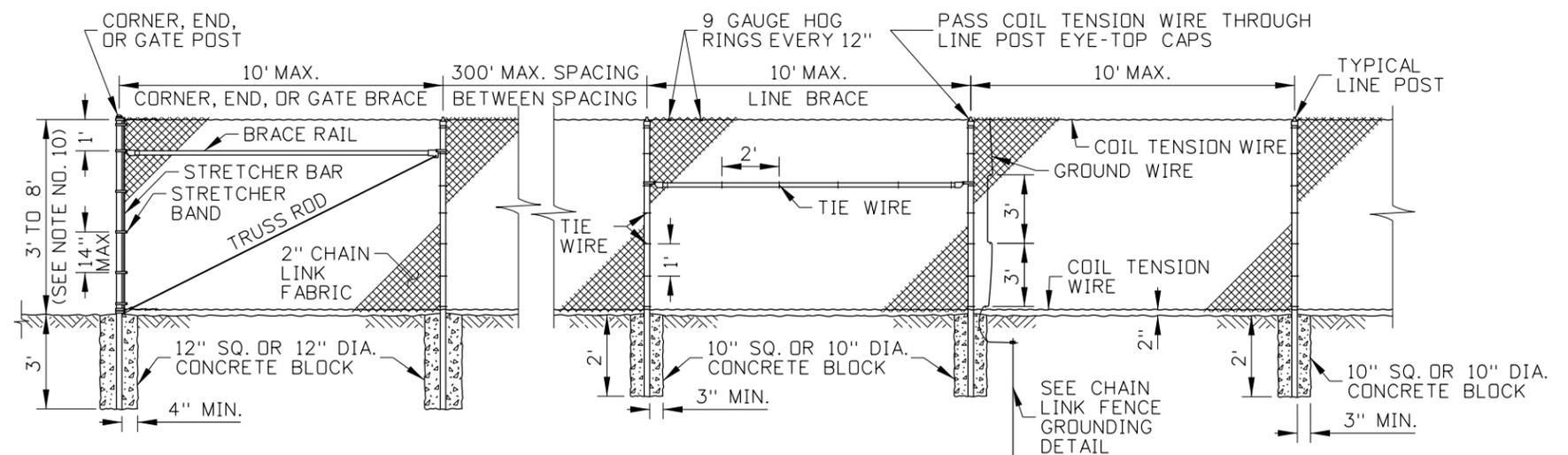
EXAMPLE FENCE APPLICATIONS  
FOR FENCE TYPES 1, 3, 5, & 9

**BARBED OR WOVEN WIRE FENCE NOTES**

9. WHEN A FENCE LINE APPROACHES A DITCH, GULLY, OR DEPRESSION, PLACE THE LAST POST ON LEVEL GROUND CLOSE ENOUGH TO THE EDGE OF THE DROP-OFF THAT THE WIRE MAY BE STRUNG TO A POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.
10. WHEN THE DEPTH OF A DEPRESSION ON A TYPE 1, 5, OR 9 FENCE EXCEEDS THE TOTAL VERTICAL WIRE SPACING OVER A MAXIMUM HORIZONTAL RUN OF 2 FENCE SECTIONS, CONSTRUCT AN EXTRA FENCE SECTION THROUGH THE DEPRESSION. SEE THE EXAMPLE FENCE APPLICATIONS.
11. IF THE DISTANCE BETWEEN THE GROUND AND THE BOTTOM WIRE OF A TYPE 1 GATE IS GREATER THAN 16", INSTALL AN UNDER TIMBER, ADDITIONAL WIRE, AND WIRE STAYS, AND BRACES.

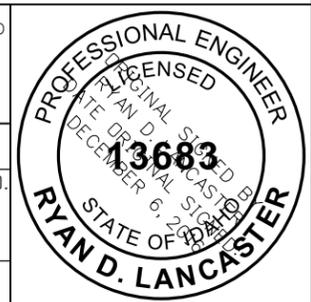


FENCE TYPE 4  
CHAIN LINK FENCE



FENCE TYPE 4 - CHAIN LINK FENCE DETAILS

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho



REVISIONS							
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 610-1\_1216.dgn  
DRAWING DATE: NOVEMBER, 2016

**IDAHO TRANSPORTATION DEPARTMENT**  
BOISE IDAHO

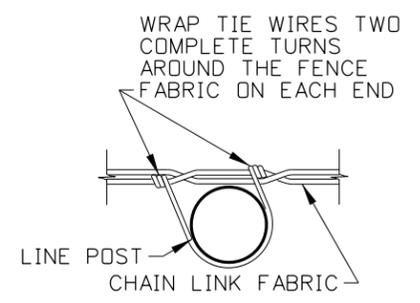
ORIGINAL SIGNED BY: TED MASON  
DESIGN/TRAFFIC SERVICES ENGINEER

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**FENCES**

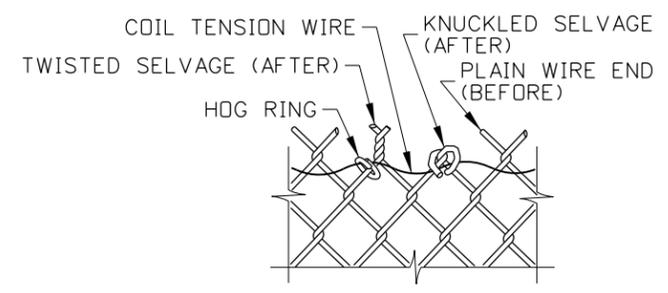
**English**  
STANDARD DRAWING NO.  
**610-1**  
SHEET 2 OF 3

CHAIN LINK FENCE HARDWARE TABLE		
CORNER, END AND GATE POSTS		SEE STANDARD SPECIFICATIONS FOR HIGHWAY CONST.
LINE POST		SEE STANDARD SPECIFICATIONS FOR HIGHWAY CONST.
BRACE RAIL/TOP RAIL		SEE STANDARD SPECIFICATIONS FOR HIGHWAY CONST.
POST CAP		CAST NON-FERROUS ALLOY OR GALVANIZED PRESSED STEEL CAP. MUST FIT SNUGGLY ON POST.
EYE-TOP CAP		GALVANIZED PRESSED STEEL MIN. 3/32" THICKNESS OR GALVANIZED MALLEABLE FERROUS ALLOY
STRECHER BAR BAND		CLASS 1 - MIN. 1/8" x 3/4" MIN. GALVANIZED STEEL CLASS 2 - MIN. 3/32" x 5/16" MIN. GALVANIZED STEEL
TENSION WIRE/BRACE BAND		CLASS 1 - MIN. 1/8" x 3/4" MIN. GALVANIZED STEEL CLASS 2 - MIN. 3/32" x 5/16" MIN. GALVANIZED STEEL
BAND BOLT		CLASS 1 - 5/16" DIA. x 1 3/4" GALV. CARRIAGE BOLT CLASS 2 - 3/8" DIA. x 1 1/4" GALV. CARRIAGE BOLT, (LOCK WASHER & FLAT WASHER FOR EACH BAND)
RAIL END		GALVANIZED PRESSED STEEL OR GALVANIZED MALLEABLE FERROUS ALLOY MIN. 3/8" THICKNESS ON BACK BOLTING APPENDAGE
BRACE END		GALVANIZED PRESSED STEEL OR GALVANIZED MALLEABLE FERROUS ALLOY MIN. 3/8" THICKNESS ON BACK BOLTING APPENDAGE
TRUSS ROD TIGHTENER		CLASS 1 - MIN. 3/8" FORMED GALVANIZED STEEL CLASS 2 - MIN. 1/4" FORMED GALVANIZED STEEL
TRUSS ROD		3/8" GALVANIZED, NC TREADED ROD, LOCK WASHER, & FLAT WASHER WITH TWO 90° BENDS OPPOSITE OF TREADED END
TOP RAIL SLEEVE		GALVANIZED STEEL, NOT TO BE USED ON R/W FENCES, MUST MEET REQUIRED PIPE THICKNESSES
TENSION BAR		CLASS 1 - MIN. 1/8" x 3/4" GALVANIZED STEEL CLASS 2 - MIN. 1/8" x 5/16" GALVANIZED STEEL
FENCE FABRIC		2" GALVANIZED DIAMOND MESH STEEL FABRIC
TIE WIRES		MIN. 9 GAUGE ALUMINUM WITH ONE HOOKED END
COIL TENSION WIRE		MIN. 7 GAUGE
BARBED WIRE & 3-WIRE BARBARM		BARBED WIRE: 14 GAUGE SPACED GALVANIZED MEDIUM CARBON STEEL WIRE WITH BARBS SPACED AT 5" C. TO C. GALVANIZING SHALL CONFORM TO APPLICABLE A.S.T.M. DES. A-121-66 FOR ZINC-COATED & AASHTO M 280 SPECIFICATIONS. 3-WIRE BARBARM: BARBWIRE ARM (ONE PIECE "Z" CUT) FITS 1 5/8" O.D. POST, 1 5/8" TOP RAIL" FITs 2" O.D. POST, 1 5/8" TOP RAIL" FITs 2 1/2" O.D. POST, 1 5/8" TOP RAIL" FITs 3" O.D. POST, 1 5/8" TOP RAIL"

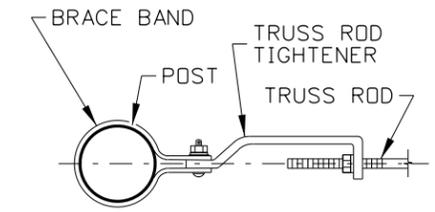
CHAIN LINK FENCE GROUNDING TABLE		
FENCE DIST. FROM TRANSMISSION LINE	kV	GROUNDING INTERVAL
0' - 100'	500	200'
100' - 200'	500	500'
0' - 100'	345	400'
100' - 150'	345	1,000'
50' - 100'	230	500'



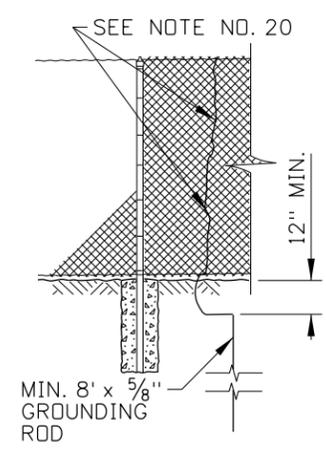
CHAIN LINK FENCE TIE DETAIL



WIRE SELVAGE DETAIL (SEE NOTE NO. 16)



TRUSS ROD TIGHTENER DETAIL



CHAIN LINK FENCE GROUNDING DETAIL

CHAIN LINK FENCE NOTES

- THE MINIMUM FENCE HEIGHT IS 8' WHEN BARBED WIRE AND THE 3-WIRE BARBARM ARE USED. DO NOT USE RAZOR WIRE WITH THE 3-WIRE BARBARM.
- SPACE POSTS EQUAL DISTANCES APART, 10' MAXIMUM SPACING.
- ADJUST THE POST TOP ELEVATIONS TO PROVIDE A SMOOTH VISUAL FENCE PROFILE. INSTALL CORNER POSTS AT HORIZONTAL BREAKS IN THE FENCE OF 15° OR MORE.
- STRETCH THE FENCE FABRIC SMOOTH SO THAT IT HAS A UNIFORM APPEARANCE.
- SELVAGE THE PLAIN WIRE ENDS ON THE TOP AND BOTTOM OF THE CHAIN LINK FABRIC BY THE TWISTED OR KNUCKLED METHOD. SEE WIRE SELVAGE DETAIL.
- CHAIN LINK FENCE HARDWARE MAY VARY SOMEWHAT FROM THAT SHOWN IN THE CHAIN LINK FENCE HARDWARE TABLE. ENSURE THAT HARDWARE AND MATERIALS USED ARE UNIFORM AND COMPATIBLE.
- INSTALL A TOP RAIL WHEN BARBED WIRE AND THE 3-WIRE BARBARM ARE USED.
- INSTALL PRIVACY FENCE SLATS IF SHOWN ON PROJECT PLANS.
- GROUND CHAIN LINK FENCES THAT ARE NEAR POWER TRANSMISSION LINES OR THAT INTERSECT TRANSMISSION LINES. SEE THE CHAIN LINK FENCE GROUNDING TABLE AND CHAIN LINK FENCE GROUNDING DETAILS. TO GROUND, CONNECT 6 GAUGE BRAIDED GROUND CABLE TO THE CHAIN LINK FABRIC EVERY 36". GROUND THE FENCE ONCE IF THE FENCE SECTION IS SHORTER THAN THE GROUNDING INTERVAL.
- DRAWING NOT TO SCALE.

REVISIONS							
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 610-1\_1216.dgn  
DRAWING DATE: NOVEMBER, 2016

**IDAHO TRANSPORTATION DEPARTMENT**

BOISE IDAHO

ORIGINAL SIGNED BY: TED MASON  
DESIGN/TRAFFIC SERVICES ENGINEER

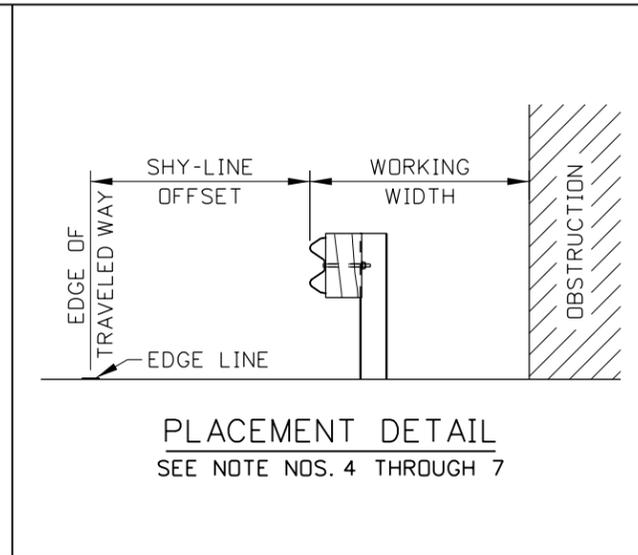
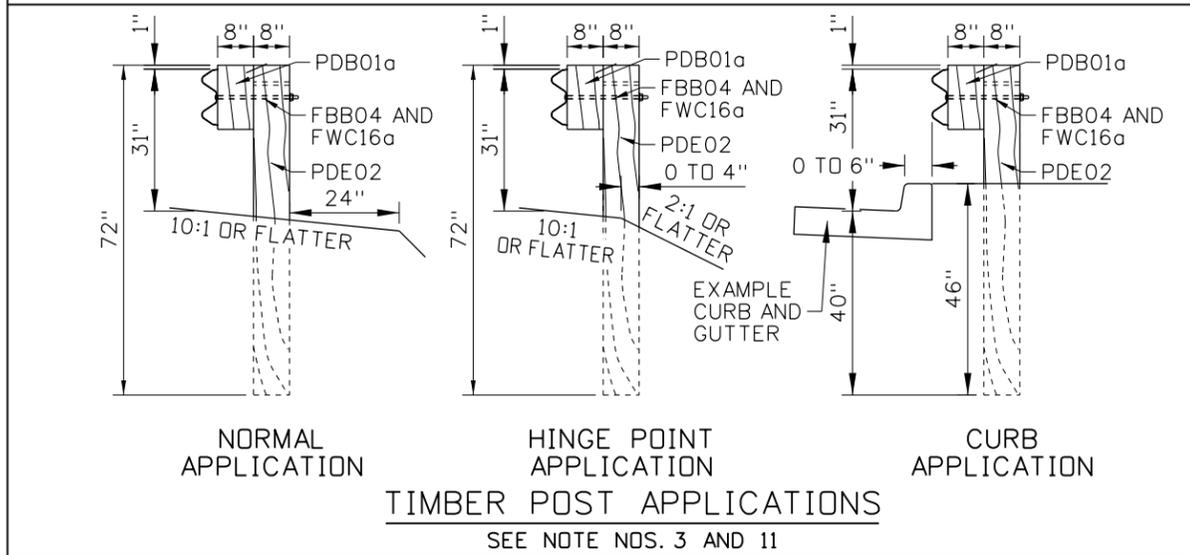
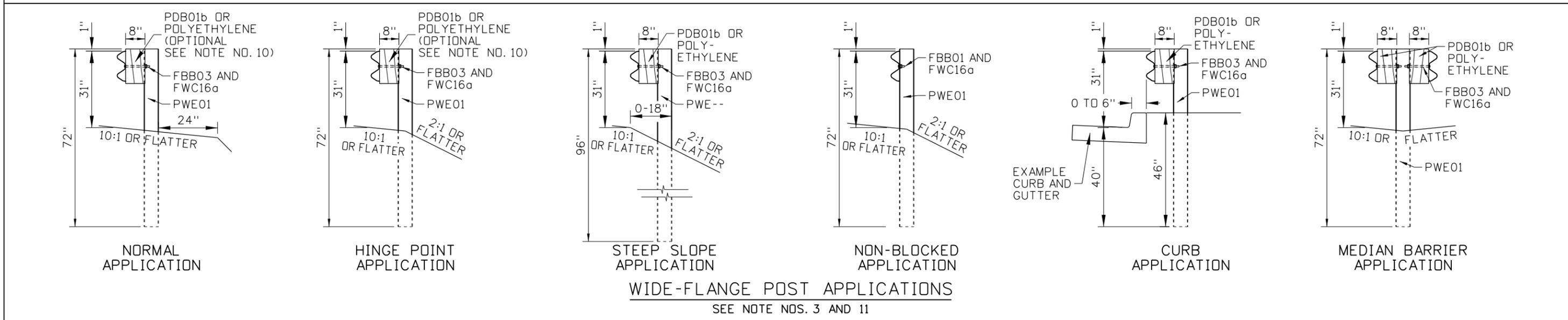
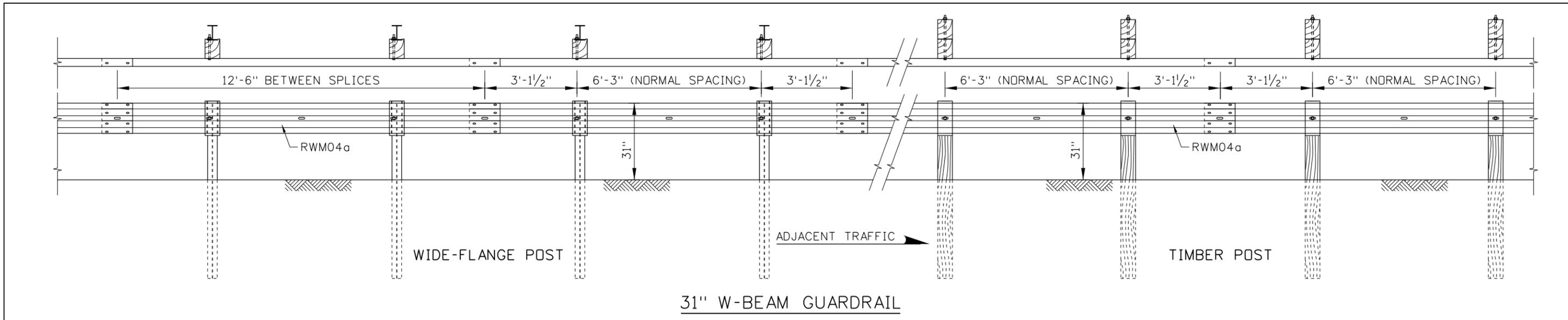
STANDARD DRAWING  
**FENCES**

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

**English**

STANDARD DRAWING NO. **610-1**

SHEET 3 OF 3



**SHY-LINE OFFSET AND FLARE RATE TABLE**

DESIGN SPEED (MPH)	SHY-LINE OFFSET (FT)	BARRIER FLARE RATE	
		INSIDE SHY LINE	AT OR BEYOND SHY LINE
80	12	30:1	15:1
70	9	30:1	15:1
60	8	26:1	14:1
55	7	24:1	12:1
50	6.5	21:1	11:1
45	6	18:1	10:1
40	5	16:1	8:1
30	4	13:1	7:1

**DEFLECTION TABLE**

APPLICATION	POST SPACING	WORKING WIDTH
NORMAL SPACING	6'-3"	54"
1/2 SPACING	3'-1 1/2"	46"
1/4 SPACING	1'-6 3/4"	38"
STEEP SLOPE	6'-3"	56"
HINGE POINT	6'-3"	78"
LONG SPAN	≤ 25'	96"

**REVISIONS**

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	08-18	RDL						
2	03-19	RDL						
3	03-20	RDL						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: 612-1\_0420.dgn

DRAWING DATE: JUNE, 2017

**IDAHO TRANSPORTATION DEPARTMENT**

BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING

**31" W-BEAM GUARDRAIL**

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

**English**

STANDARD DRAWING NO. 612-1

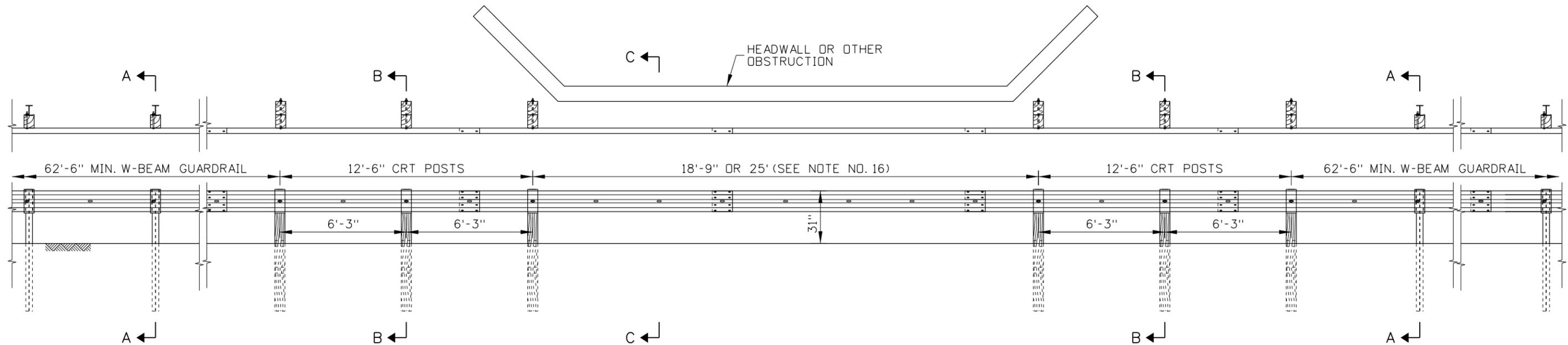
SHEET 1 OF 5

PROFESSIONAL ENGINEER

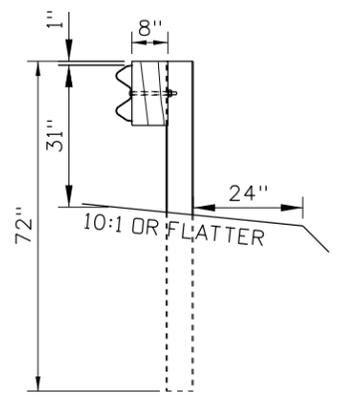
RYAN D. LANCASTER

13683

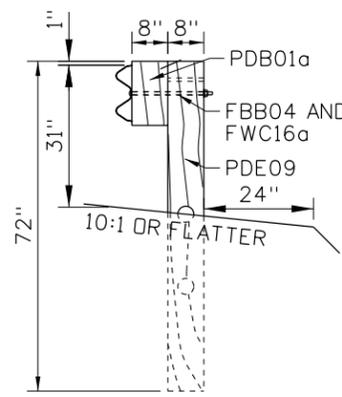
STATE OF IDAHO



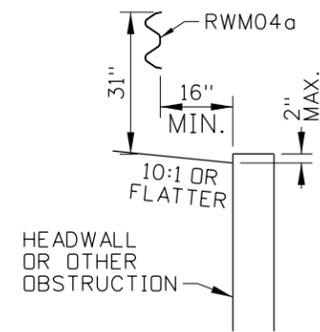
**31" LONG-SPAN APPLICATION**  
SEE NOTE NOS. 17 AND 18



SECTION A-A  
WIDE-FLANGE OR TIMBER POST



SECTION B-B



SECTION C-C

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	08-18	RDL						
2	03-19	RDL						
3	03-20	RDL						

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CADD FILE NAME: 612-1\_0420.dgn  
DRAWING DATE: JUNE, 2017

**IDAHO TRANSPORTATION DEPARTMENT**



BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
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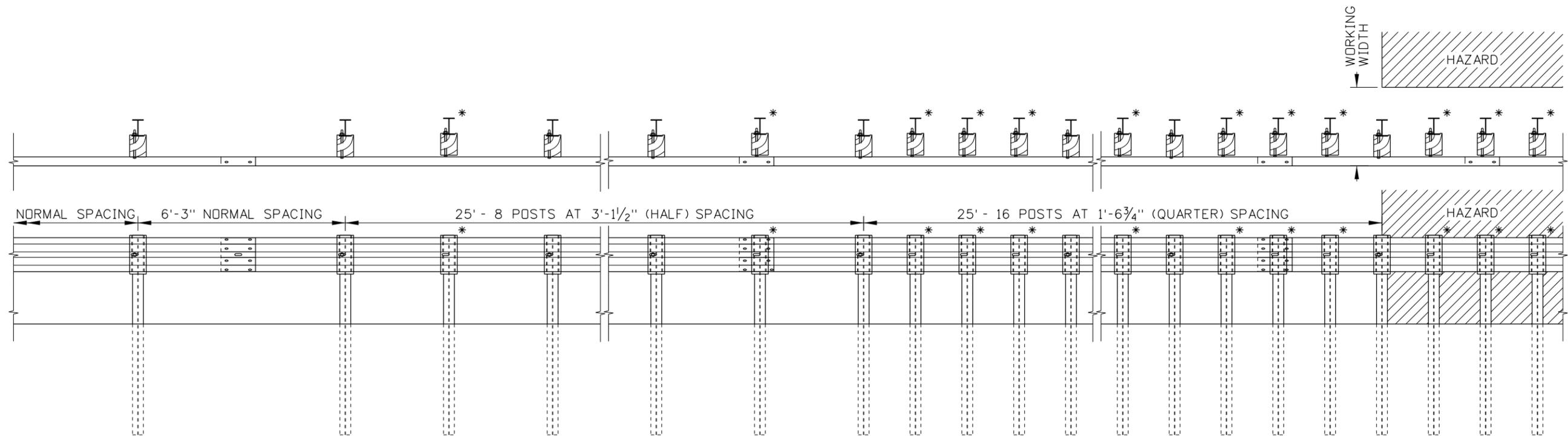
STANDARD DRAWING  
**31" W-BEAM GUARDRAIL**

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

**English**

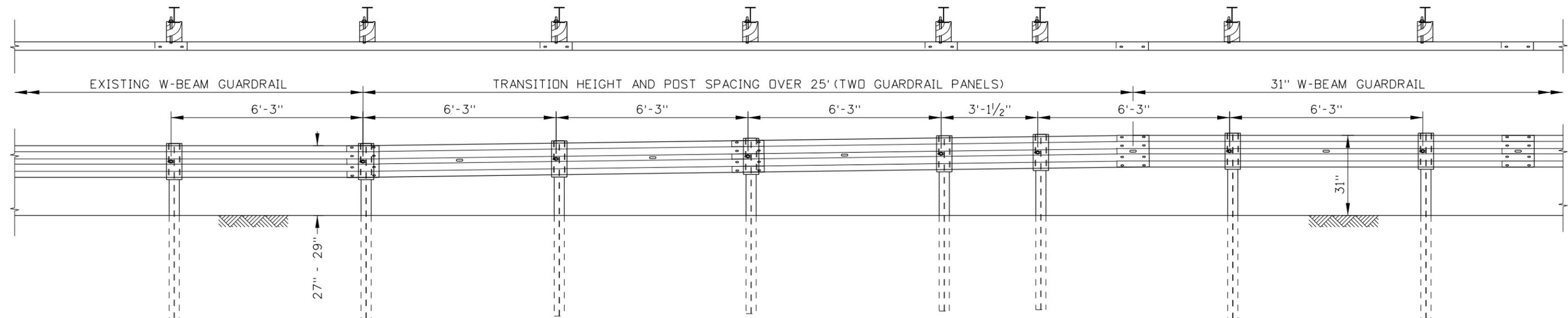
STANDARD DRAWING NO.  
**612-1**

SHEET 2 OF 5



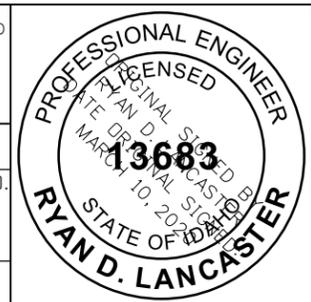
**REDUCED POST SPACING**  
SEE NOTE NO. 7

LEGEND:  
\* EXTRA POSTS.  
BOLT BLOCKOUT TO POST, BUT  
DO NOT BOLT TO GUARDRAIL



**TRANSITION TO 31" W-BEAM GUARDRAIL**  
SEE NOTE NO. 19

ORIGINAL STORED  
AT: ITD,  
Headquarters  
3311 West State  
Boise, Idaho



REVISIONS								
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1	08-18	RDL						
2	03-19	RDL						
3	03-20	RDL						

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CADD FILE NAME:  
612-1\_0420.dgn  
DRAWING DATE:  
JUNE, 2017

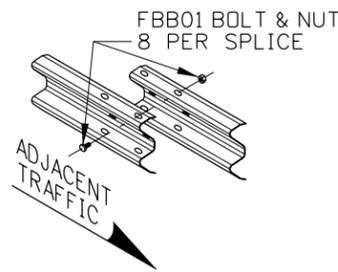
**IDAHO  
TRANSPORTATION  
DEPARTMENT**  
BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

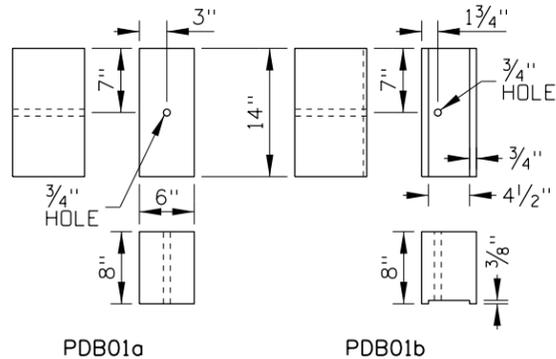
STANDARD DRAWING  
**31" W-BEAM GUARDRAIL**

**English**  
STANDARD DRAWING NO.  
**612-1**  
SHEET 3 OF 5

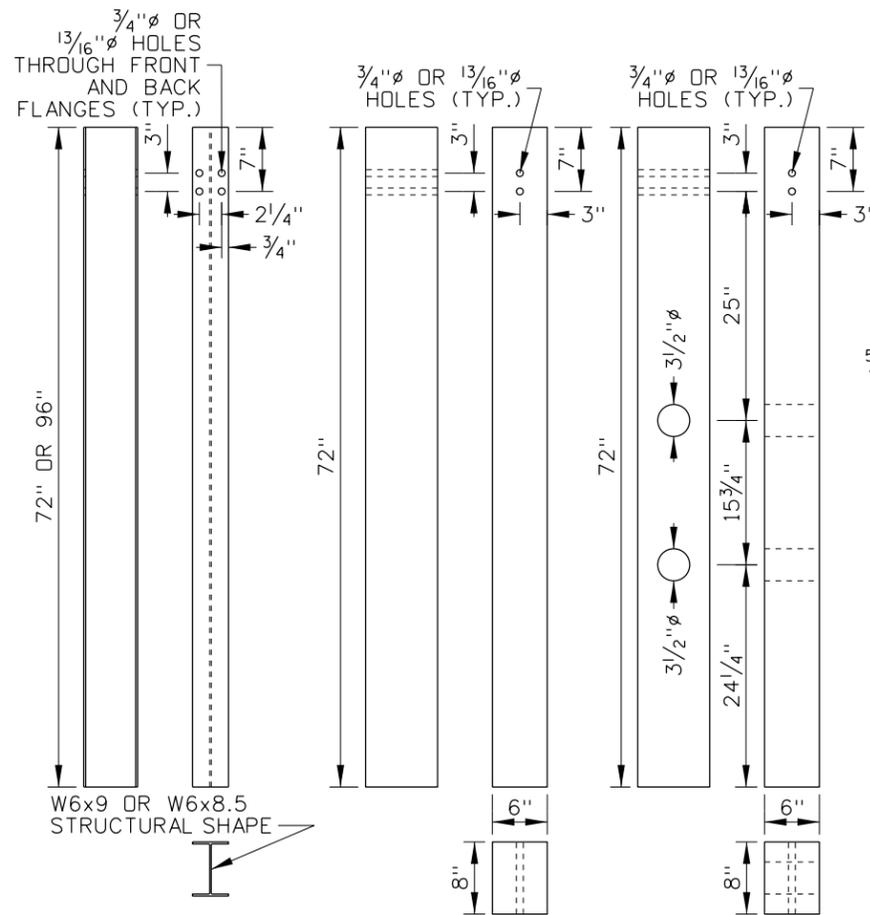




**W-BEAM SPLICE DETAIL**  
SEE NOTE NO. 14

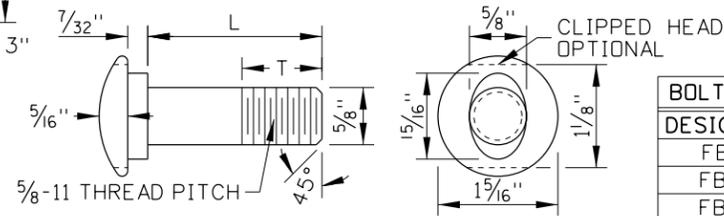


**W-BEAM TIMBER BLOCKOUTS**



**WIDE-FLANGE PWE01, PWE--**  
**TIMBER PDE02, PDE--**  
**CRT TIMBER POST PDE09**

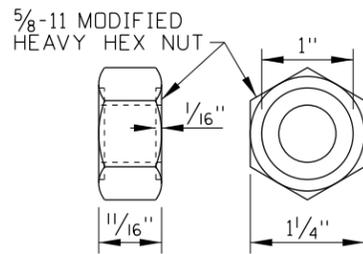
**GUARDRAIL POSTS**



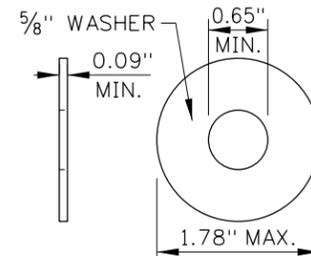
**GUARDRAIL BOLT (BUTTON-HEADED)**

FBB01, FBB03, FBB04

BOLT DIMENSION TABLE		
DESIGNATOR	L	T
FBB01	1 1/4"	1 1/8"
FBB03	10"	1 3/4"
FBB04	18"	4"



**RECESSED NUT**



**PLAIN ROUND WASHER**

FWC16a

**NOTES**

1. THE 31" W-BEAM GUARDRAIL SYSTEM SHOWN IS A MASH TEST LEVEL 3 BARRIER SYSTEM.
2. PROVIDE BARRIER HARDWARE AS SHOWN AND AS SPECIFIED IN THE PUBLICATION "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE." WHERE THE GUIDE AND PLANS CONFLICT, PROVIDE HARDWARE COMPONENTS AS SHOWN ON THE PLANS.
3. INSTALL GUARDRAIL AS SHOWN IN THE NORMAL APPLICATION UNLESS OTHERWISE INDICATED ON THE PROJECT PLANS. THE CURB APPLICATIONS CAN BE USED WITH ANY OF THE CURB AND GUTTER OR CURB TYPES SHOWN ON THE CURB AND GUTTER STANDARD DRAWING.
4. PLACE 31" W-BEAM GUARDRAIL AS FAR FROM THE TRAVELED WAY AS PRACTICAL. WHERE PRACTICAL PROVIDE THE SHY-LINE OFFSET DISTANCE SHOWN IN THE SHY-LINE OFFSET TABLE.
5. WHERE PRACTICAL, FLARE THE 31" W-BEAM GUARDRAIL AWAY FROM THE TRAVELED WAY. SEE THE SHY-LINE OFFSET AND FLARE RATE TABLE.
6. PROVIDE ADEQUATE DEFLECTION DISTANCE TO OBSTRUCTIONS BEHIND THE GUARDRAIL BY PROVIDING THE WORKING WIDTH SHOWN ON THE PLACEMENT DETAIL AND IN THE DEFLECTION TABLE.
7. DECREASE DEFLECTION BY REDUCING POST SPACING. INTRODUCE EACH REDUCTION IN POST SPACING OVER 25' OR MORE. DO NOT BOLT THE GUARDRAIL TO THE EXTRA POSTS.
8. WIDE-FLANGE OR TIMBER POSTS MAY BE USED UNLESS OTHERWISE INDICATED ON THE PROJECT PLANS. USE THE SAME POST MATERIAL FOR THE PROJECT LENGTH (EXCEPT IN THE 31" LONG-SPAN APPLICATION).
9. REMOVE PAVEMENT AND ROCK AROUND GUARDRAIL POSTS.
10. USE TIMBER OR POLYETHYLENE BLOCKOUTS WITH WIDE-FLANGE POSTS. USE TIMBER BLOCKOUTS WITH TIMBER POSTS. USE THE SAME BLOCKOUT MATERIAL FOR THE PROJECT LENGTH (EXCEPT IN THE 31" LONG-SPAN APPLICATION). THE WIDE-FLANGE POST NORMAL APPLICATION CAN BE CONSTRUCTED WITHOUT BLOCKOUTS IF INDICATED ON THE PROJECT PLANS OR IF APPROVED BY THE ENGINEER.
11. INSTALL THE BLOCKOUT AND W-BEAM GUARDRAIL USING THE HOLE 7" FROM THE TOP OF THE POST. THE HIGHER HOLE IS RESERVED FOR FUTURE GUARDRAIL HEIGHT ADJUSTMENT.
12. NAIL TIMBER BLOCKOUTS TO TIMBER POSTS TO RESTRICT BLOCK ROTATION. NAIL THROUGH THE SIDES OF THE BLOCKOUT AND POST.
13. WHEN WIDE-FLANGE POSTS ARE USED AND WHEN PRACTICAL, INSTALL THE BOLT (FBB03) ON THE UPSTREAM SIDE OF THE POST IN RELATION TO THE ADJACENT TRAFFIC.
14. SPLICE 31" W-BEAM GUARDRAIL BETWEEN POSTS. OVERLAP SPLICES SO THAT THE EXPOSED W-BEAM EDGE IS DOWNSTREAM OF THE ADJACENT TRAFFIC.
15. BEGIN AND END 31" W-BEAM GUARDRAIL WITH A TERMINAL, ANCHOR, OR TRANSITION. CONSTRUCT TERMINALS OR TRANSITIONS USING THE SAME POST MATERIAL AS THE GUARDRAIL WHEN PRACTICAL. SOME ANCHORS AND TERMINALS ARE ONLY AVAILABLE WITH TIMBER OR WIDE-FLANGE POSTS.
16. DELINEATE GUARDRAILS WITH TYPE 9 DELINEATORS. SEE THE DELINEATOR STANDARD DRAWING FOR DELINEATOR SPACING.
17. ONE POST CAN BE OMITTED WITHOUT OTHER MODIFICATION IF APPROVED BY THE ENGINEER. THE LONG-SPAN APPLICATION CAN BE USED WHERE TWO POSTS (18'-9" SPAN) OR THREE POSTS (25' SPAN) ARE OMITTED.
18. WHEN THE LONG-SPAN APPLICATION (18'-9", OR 25') IS USED, INSTALL THREE CRT TIMBER POSTS (PDE09) WITH TIMBER BLOCKOUTS ADJACENT TO THE UPSTREAM AND DOWNSTREAM ENDS OF THE UNSUPPORTED SECTION. DO NOT NEST THE 4-SPACE W-BEAM GUARDRAIL IN THE UNSUPPORTED SECTION. INSTALL AT LEAST 62'-6" OF 31" W-BEAM GUARDRAIL UPSTREAM AND DOWNSTREAM OF THE CRT POSTS.
19. WHEN CONNECTING TO EXISTING GUARDRAIL, TRANSITION THE GUARDRAIL HEIGHT TO 31". REPLACE THE EXISTING W-BEAM GUARDRAIL IF THE TOP OF GUARDRAIL HEIGHT IS LESS THAN 27".
20. DRAWING NOT TO SCALE.

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	08-18	RDL						
2	03-19	RDL						
3	03-20	RDL						

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CADD FILE NAME: 612-1\_0420.dgn  
DRAWING DATE: JUNE, 2017

**IDAHO TRANSPORTATION DEPARTMENT**

BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

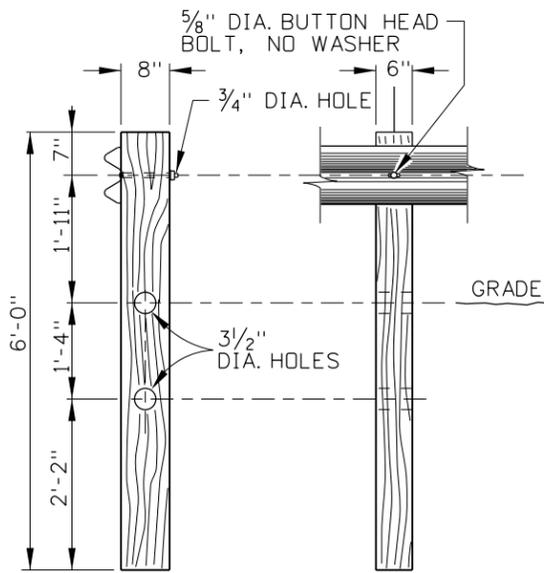
STANDARD DRAWING  
**31" W-BEAM GUARDRAIL**

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

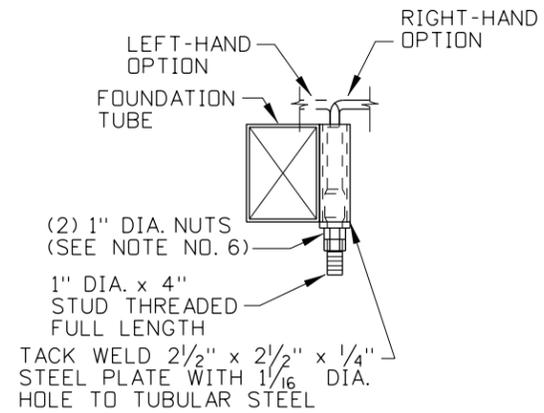
**English**

STANDARD DRAWING NO. **612-1**

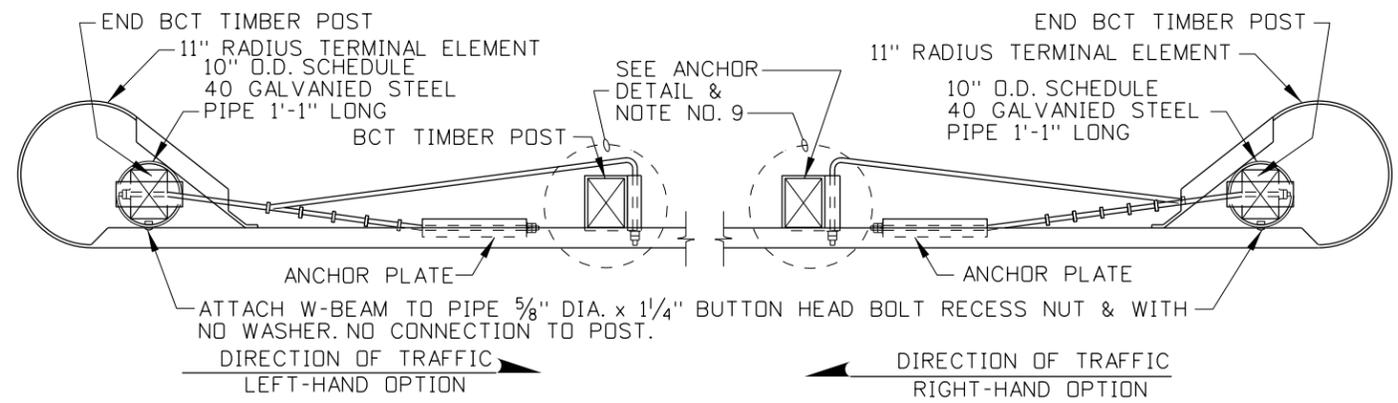
SHEET 5 OF 5



**MODIFIED CRT TIMBER POST**



**ANCHOR DETAIL**  
(SEE NOTE NO. 9)



**TABLE OF MAXIMUM TAPERS**

DESIGN SPEED	TAPER
70	15:1
60	13:1
50	11:1
40	9:1

**PLACEMENT TABLE**

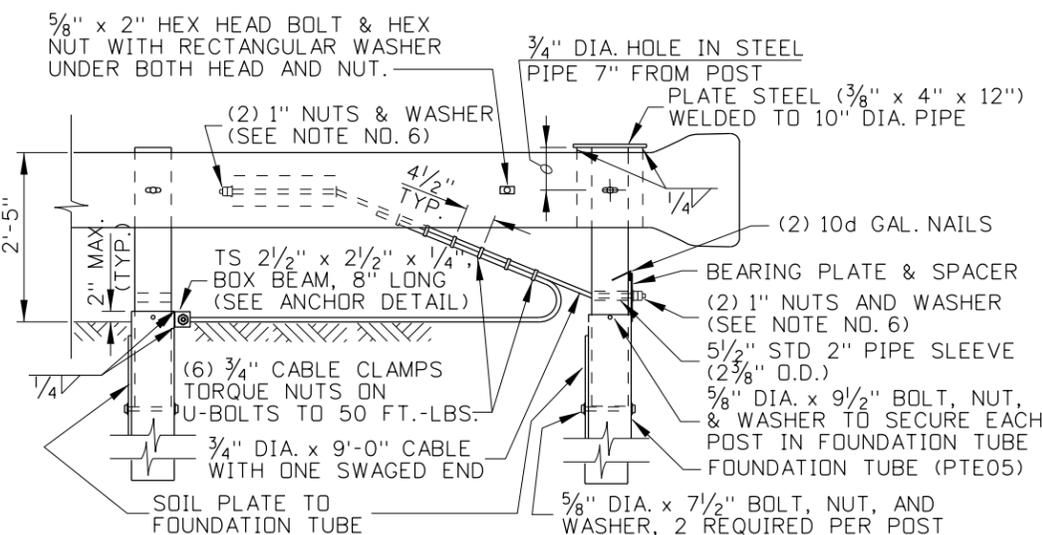
DELTA ANGLE	RAIL RADIUS	NO. RAIL SECTIONS	NO. CRT POSTS	AREA FREE OF FIXED OBJECTS	
				L	W
75° -105°	8'	1	5	25'	15'
75° -105°	16'	2	7	30'	15'
75° -105°	24'	3	9	40'	20'
75° -80°	32'	3	9	40'	20'
>80° -100°	32'	4	11	40'	20'
>100° -105°	32'	5	13	40'	20'

**NOTES**

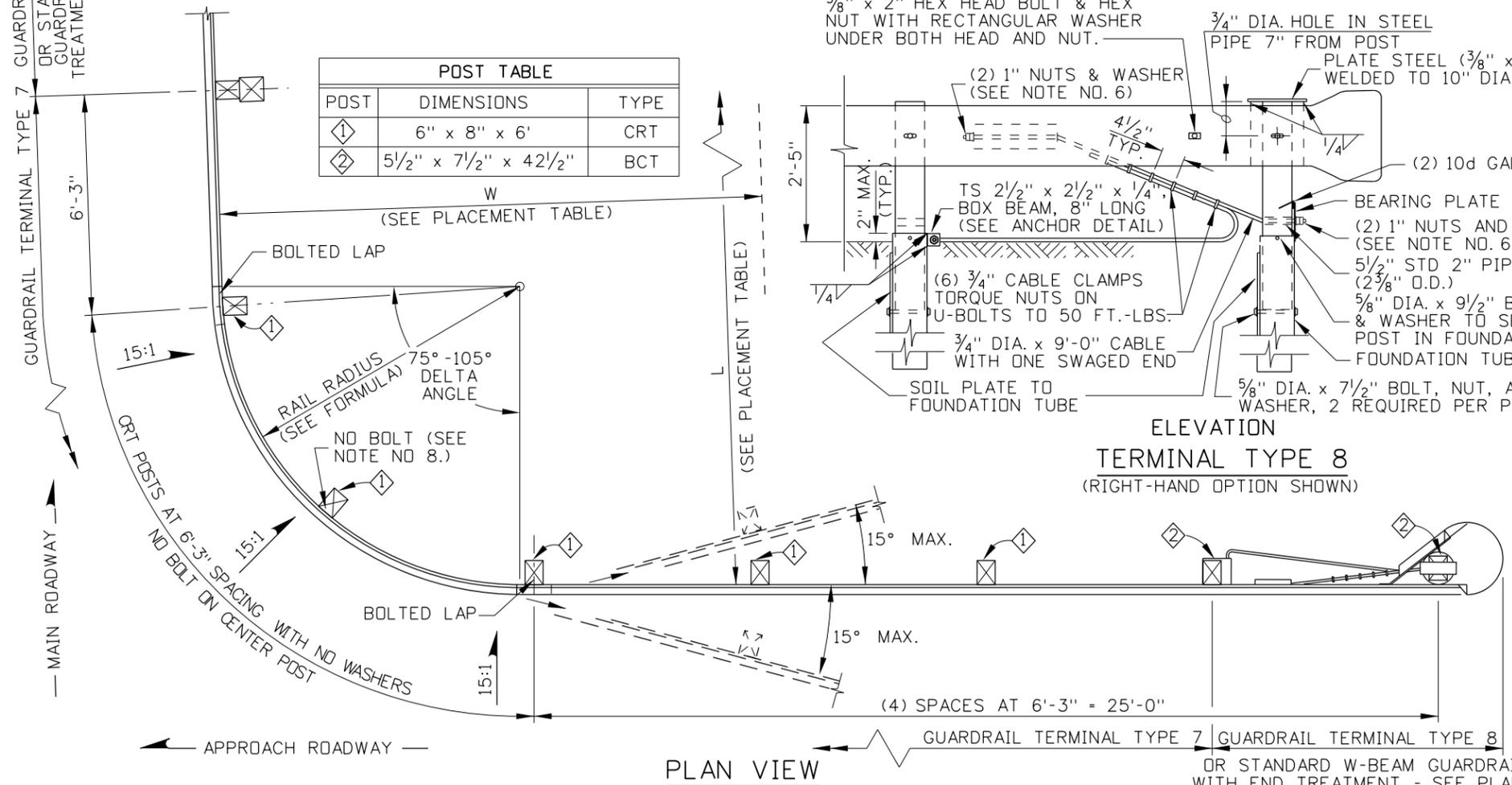
1. THE TYPE 8 TERMINAL SHALL ONLY BE USED OUTSIDE THE CLEAR ZONE OR WHEN THE APPROACH ROADWAY SPEED IS 35 MPH OR LESS. OTHERWISE AN APPROPRIATE NCHRP 350 TERMINAL IS REQUIRED.
2. THE GUARDRAIL ALONG THE APPROACH ROADWAY MAY BE ANGLED 15° TO EITHER SIDE OF THE PERPENDICULAR AXIS TO THE MAIN ROADWAY. HOWEVER, FLARE RATES ALONG ROADWAYS WITH 35 MPH OR GREATER SPEEDS MUST FOLLOW STANDARD TAPER RATES (SEE "TABLE OF MAXIMUM TAPERS").
3. THE ROADWAY IN FRONT THE CURVED PORTION OF THE TERMINAL SHALL BE 15:1 OR FLATTER. GRADE TERRAIN TO A 10:1 SLOPE OR FLATTER FOR 2' BEYOND THE GUARDRAIL POST, THEN A 2:1 OR FLATTER SLOPE. A 6:1 OR FLATTER SLOPE IS DESIRABLE. IF THE FILL HEIGHT IS GREATER THAN 30' OTHER SOLUTIONS SHOULD BE CONSIDERED. AN AREA FREE OF FIXED OBJECTS SHALL BE MAINTAINED BEHIND THE GUARDRAIL.
4. THIS DRAWING REQUIRES STANDARD DRAWING 612-1 AND IS SUBJECT TO THE W-BEAM GUARDRAIL INSTALLATION REQUIREMENTS AND HARDWARE/ACCESSORY SPECIFICATIONS.
5. ALL TERMINAL HARDWARE ITEMS SHALL MEET THE SPECIFICATIONS IN THE "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE" (CURRENT EDITION). ALL WELDING SHALL MEET THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY.
6. WHEN FASTENING THE CABLE ENDS THE OUTSIDE NUTS SHALL BE TORQUED AGAINST INSIDE NUTS A MINIMUM OF 100 FT.-LBS.
7. ALL CURVED GUARDRAIL SHALL BE SHOP BENT, FIELD BENDING WILL NOT BE ALLOWED.
8. ALL CURVED RAIL SECTIONS SHALL BE 12'-6" IN LENGTH AND BOLTED TO THE POSTS ONLY AT THE LAPS.
9. THE ANCHOR CABLE FROM POST #1 TO POST #2 MUST BE ATTACHED ON THE FAR SIDE OF THE FOUNDATION TUBE FOR LEFT-HAND INSTALLATIONS.
10. NOT TO SCALE.

**POST TABLE**

POST	DIMENSIONS	TYPE
①	6" x 8" x 6"	CRT
②	5 1/2" x 7 1/2" x 42 1/2"	BCT



**ELEVATION**  
**TERMINAL TYPE 8**  
(RIGHT-HAND OPTION SHOWN)



**PLAN VIEW**

**REVISIONS**

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	05-90	GB	6	05-06	MSM			
2	04-93	MSM	7	11-06	MSM			
3	04-99	MSM	8	09-10	MGL			
4	03-03	MSM						
5	12-04	MSM						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 612-3\_1010.dgn  
DRAWING DATE: MAY, 1989

**IDAHO TRANSPORTATION DEPARTMENT**

BOISE IDAHO

ORIGINAL SIGNED BY: LOREN THOMAS  
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)

ORIGINAL SIGNED BY: TOM COLE  
CHIEF ENGINEER

STANDARD DRAWING

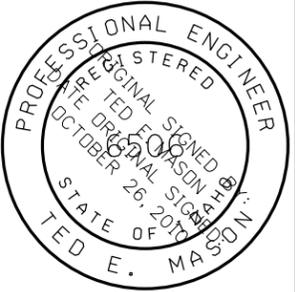
**GUARDRAIL TERMINAL TYPES 7 & 8**

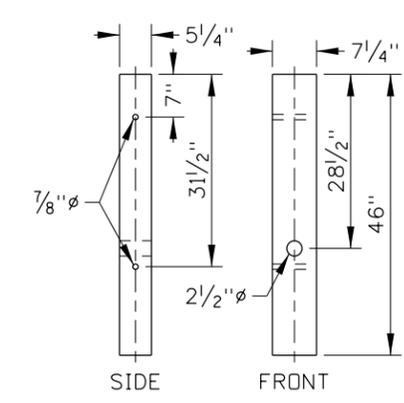
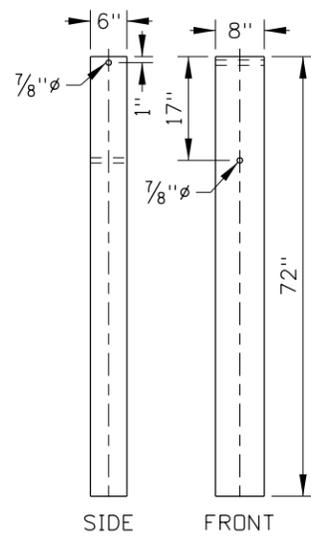
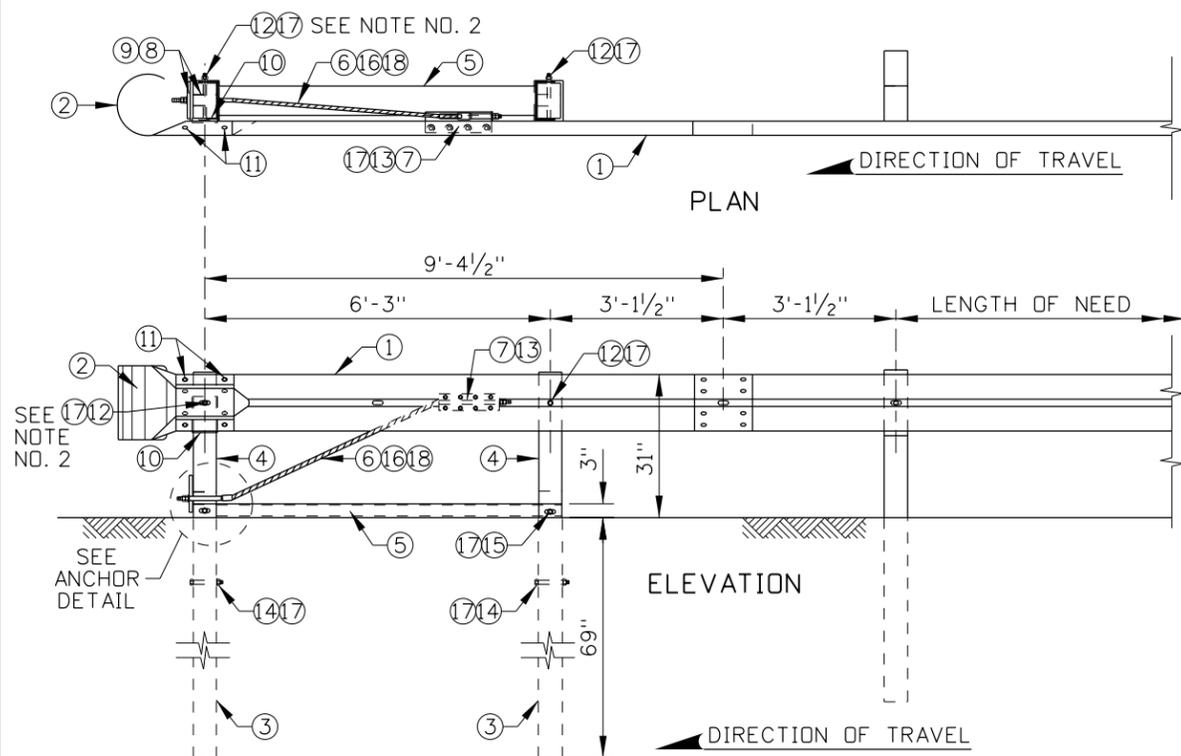
REQUIRES STD. DWG. 612-1

**English**

STANDARD DRAWING NO. **612-3**

SHEET 1 OF 1

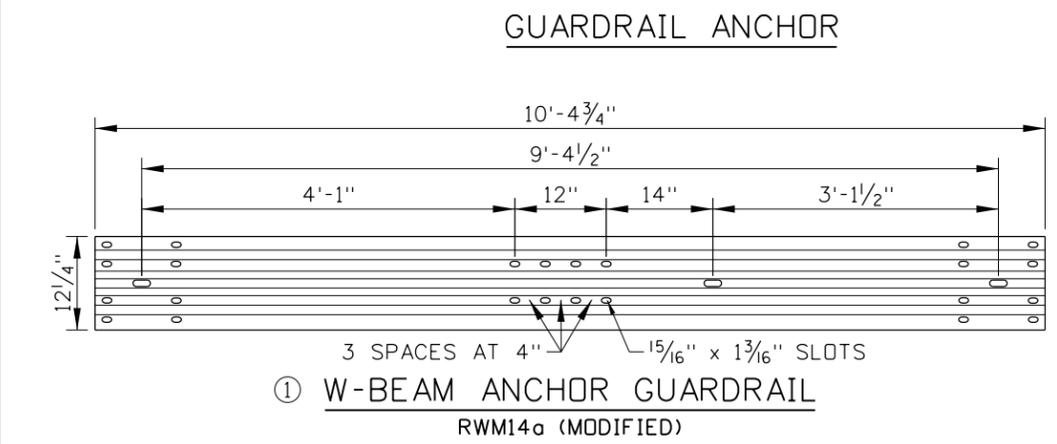




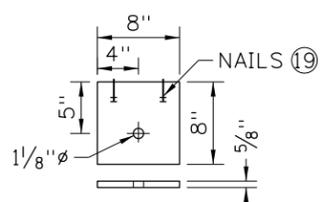
③ FOUNDATION TUBE DETAIL  
PTE06

④ BCT TIMBER POST DETAIL  
PDF--

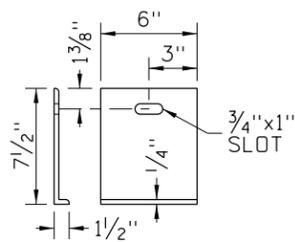
ANCHOR HARDWARE COMPONENTS TABLE			
ITEM NO.	COMPONENT DESCRIPTION	QTY.	TF-13 NAME
①	W-BEAM ANCHOR GUARDRAIL	1	RWM14a (MOD)
②	W-BEAM END SECTION (ROUNDED)	1	RWE03a
③	FOUNDATION TUBE	2	PTE06
④	BCT TIMBER POST	2	PDF--
⑤	STRUT AND YOKE ASSEMBLY	1	PFPO2
⑥	BCT CABLE ANCHOR ASSEMBLY	1	FCA01
⑦	GUARDRAIL ANCHOR BRACKET	1	FPA01
⑧	BCT POST SLEEVE	1	FMM02
⑨	BCT BEARING PLATE	1	FPB01
⑩	SHELF ANGLE BRACKET	1	FPP02
⑪	5/8" GUARDRAIL SPLICE BOLT AND RECESSED NUT	4	FBB01
⑫	10" GUARDRAIL BOLT & RECESSED NUT	2	FBB03
⑬	5/8" X 2" HEX HEAD BOLT & NUT	8	FBX16a
⑭	5/8" X 8" HEX HEAD BOLT & NUT	2	FBX16a
⑮	5/8" X 10" HEX HEAD BOLT & NUT	2	FBX16a
⑯	1" HEX NUTS	4	FNX24a
⑰	5/8" FLAT WASHER	22	FWC16a
⑱	1" FLAT WASHER	2	FWC24a
⑲	16D GALVANIZED NAIL	2	N/A



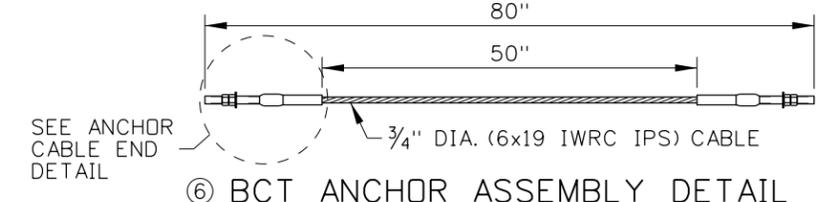
① W-BEAM ANCHOR GUARDRAIL  
RWM14a (MODIFIED)



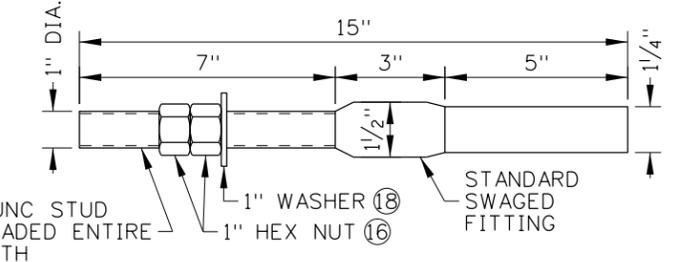
⑨ BCT BEARING PLATE DETAIL  
FPB01



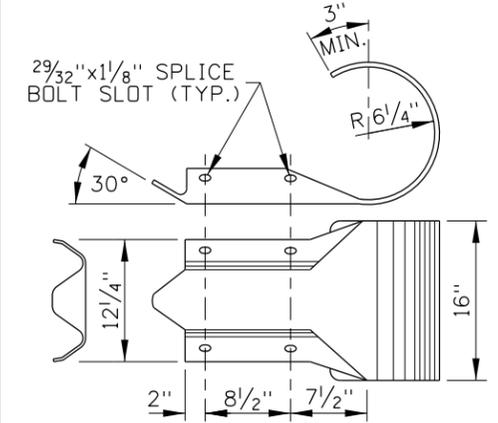
⑩ SHELF ANGLE BRACKET DETAIL  
FPP02



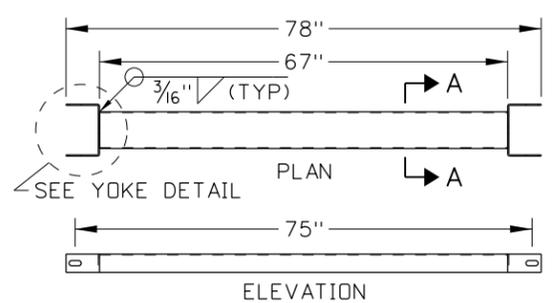
⑥ BCT ANCHOR ASSEMBLY DETAIL  
FCA01



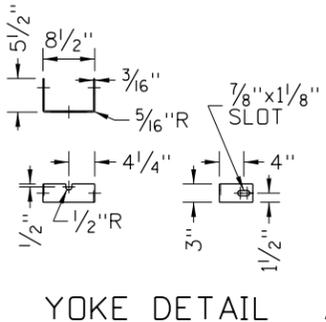
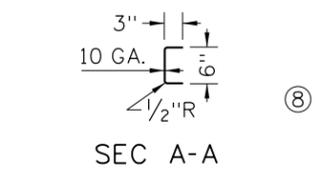
ANCHOR CABLE END DETAIL



② W-BEAM END SECTION DETAIL  
RWE03a



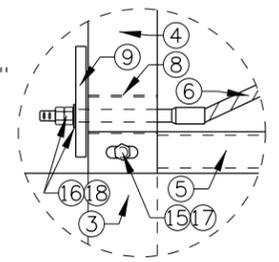
⑤ STRUT AND YOKE ASSEMBLY DETAIL  
PFPO2



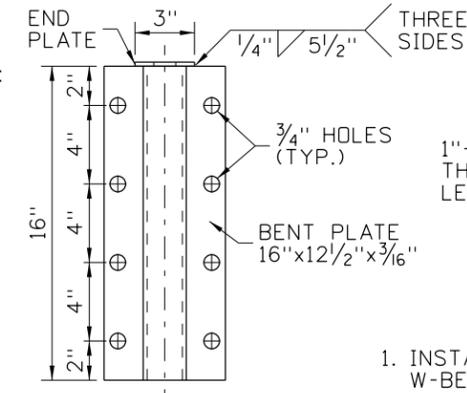
YOKE DETAIL



⑧ BCT POST SLEEVE DETAIL  
FMM02



ANCHOR DETAIL



⑦ GUARDRAIL ANCHOR BRACKET DETAIL  
FPA01

NOTES

1. INSTALL THE ANCHOR SYSTEM ON THE TRAILING END OF 31" W-BEAM GUARDRAIL, OUTSIDE OF THE CLEAR ZONE FOR APPROACHING TRAFFIC, OR BOTH.
2. SUPPORT THE W-BEAM ANCHOR GUARDRAIL AT THE END POST WITH THE SHELF ANGLE BRACKET. DO NOT BOLT THE W-BEAM GUARDRAIL TO THE POST.
3. ENSURE THAT THE FOUNDATION TUBES DO NOT EXTEND MORE THAN 3 3/4" ABOVE THE FINISHED GRADE.
4. INSTALL AN EXTRA HEX NUT ON EACH END OF THE BCT CABLE ANCHOR ASSEMBLY.
5. AFFIX A TYPE 3 OBJECT MARKER TO THE W-BEAM END SECTION WHEN THE ANCHOR IS USED ON AN UNDIVIDED HIGHWAY.
6. DRAWING NOT TO SCALE.

REVISIONS							
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 612-5\_0617.dgn  
DRAWING DATE: JUNE, 2017

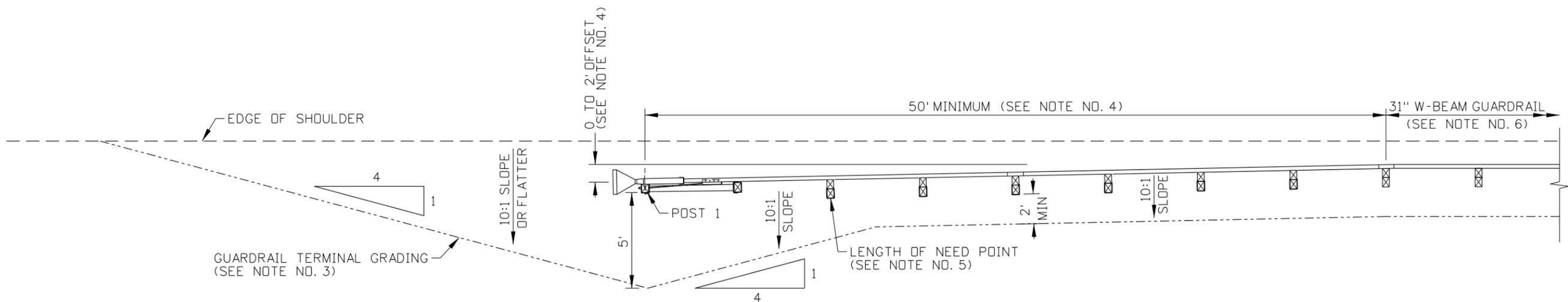
IDAHO TRANSPORTATION DEPARTMENT  
BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

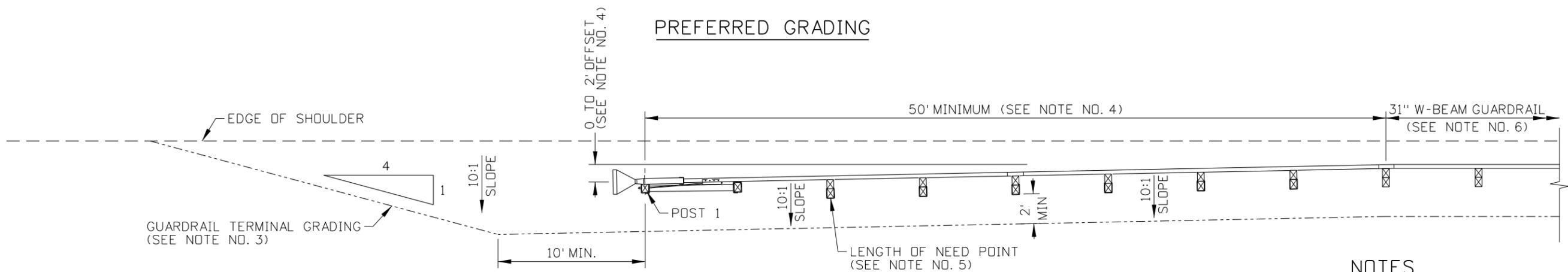
STANDARD DRAWING  
GUARDRAIL ANCHOR

English  
STANDARD DRAWING NO. 612-5  
SHEET 1 OF 1





PREFERRED GRADING



ALTERNATIVE GRADING

NOTES

1. THE TANGENT TERMINAL SHOWN IS AN EXAMPLE ONLY. TANGENT TERMINAL DESIGNS VARY BY PRODUCT AND MANUFACTURER.
2. USE THE PREFERRED GRADING LAYOUT WHEN PRACTICAL. THE ALTERNATIVE GRADING LAYOUT MAY BE USED WHEN UPGRADING AN EXISTING TERMINAL WITH SITE LIMITATIONS. DISTANCES SHOWN FROM THE TERMINAL POSTS TO THE GRADING EXTENTS ARE MEASURED FROM THE BACK OF THE POST.
3. PROVIDE A 4:1 OR FLATTER SLOPE OUTSIDE OF THE GUARDRAIL TERMINAL GRADING EXTENTS WHERE PRACTICAL.
4. INSTALL THE TERMINAL IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS. REFER TO THE INSTRUCTIONS FOR SYSTEM LENGTH, OFFSET, NUMBER OF POSTS, POST SPACING, AND WHEN A TANGENT TERMINAL IS TO BE INSTALLED ON A HORIZONTAL CURVE.
5. VERIFY THE LENGTH OF NEED POINT WITH MANUFACTURER INSTRUCTIONS FOR A SPECIFIC PRODUCT. ELEMENTS OF THE GUARDRAIL TERMINAL DOWNSTREAM OF THE LENGTH OF NEED POINT CAN BE INCLUDED AS PART OF THE LENGTH OF NEED.
6. PROVIDE A MINIMUM OF 12'-6" OF 31" W-BEAM GUARDRAIL BETWEEN THE GUARDRAIL TERMINAL AND A GUARDRAIL TRANSITION.
7. IF THE TANGENT TERMINAL DESIGN USES AN ANCHOR CABLE, INSTALL AN EXTRA HEX NUT ON EACH END OF THE CABLE.
8. AFFIX A TYPE 3 OBJECT MARKER TO THE TERMINAL END SECTION.
9. DRAWING NOT TO SCALE.

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	08-18	RDL						
2	03-21	PBH						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: 612-8\_0421.dgn

DRAWING DATE: JUNE, 2017

**IDAHO TRANSPORTATION DEPARTMENT**

BOISE IDAHO

ORIGINAL SIGNED BY: KEVIN SABLAN  
DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING

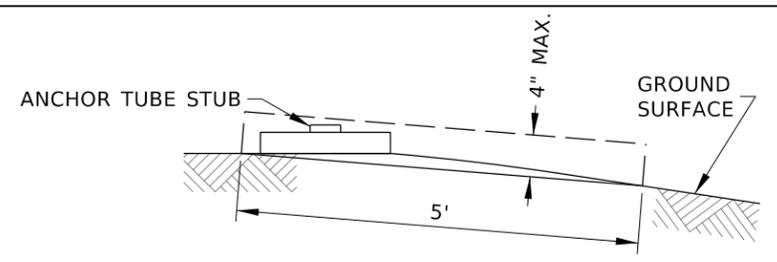
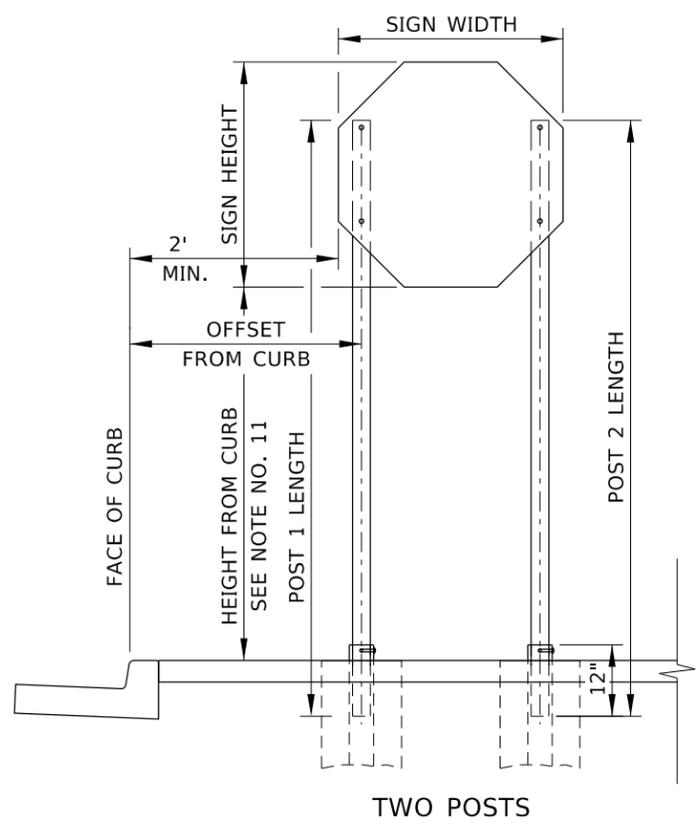
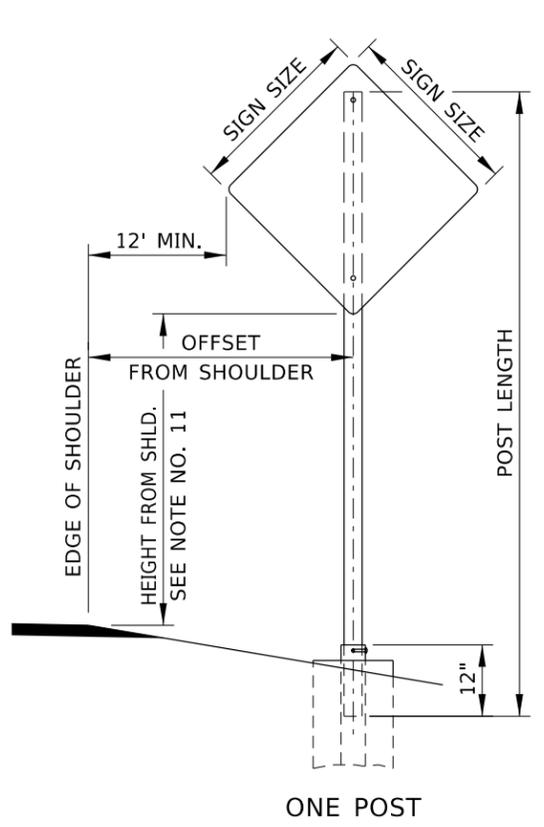
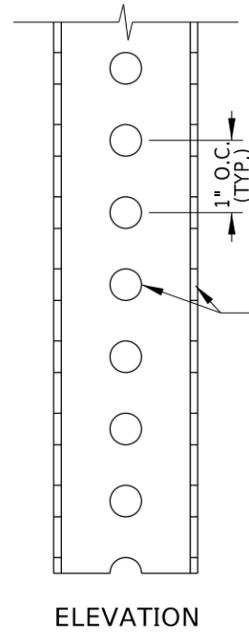
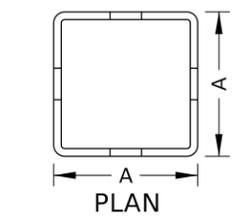
**GUARDRAIL TERMINAL TANGENT**

**English**

STANDARD DRAWING NO.  
**612-8**

SHEET 1 OF 1

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

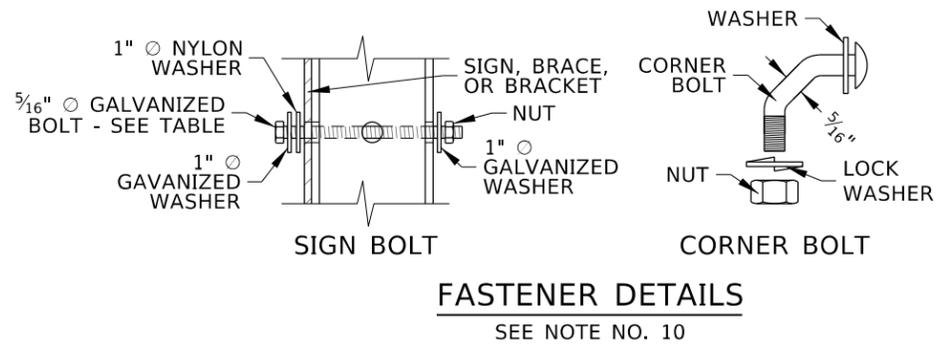


**FOUNDATION AND STUB HEIGHT DETAIL**  
SEE NOTE NO. 15

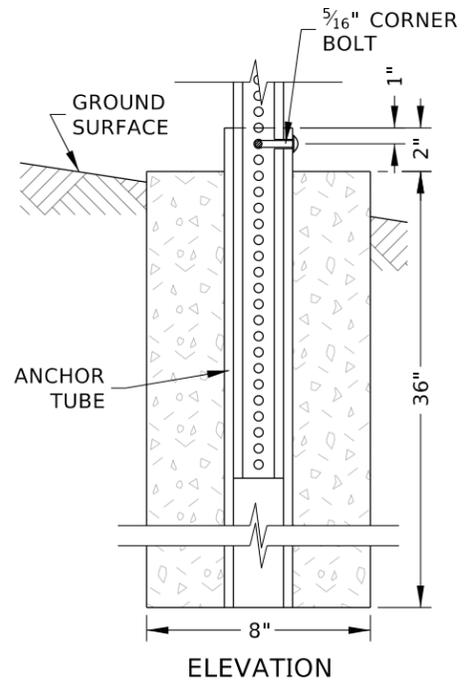
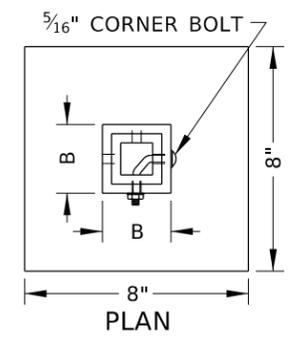
**NOTES**

- USE TYPE E - PERFORATED STEEL TUBE POSTS - WITH TYPE B - SHEET ALUMINUM AND TYPE E - HDO PLYWOOD SIGNS.
- SEE THE TRAFFIC MANUAL TO CALCULATE SIGN LOAD PER POST.
- SEE PROJECT SIGN SUMMARY FOR SIGN ASSEMBLY DIMENSIONS.
- USE ONE OR MORE TYPE E - PERFORATED STEEL TUBE POST. DO NOT MIX E-1 AND E-2 POSTS ON THE SAME SIGN ASSEMBLY.
- POST 1 IS CLOSEST TO THE HIGHWAY, WHETHER INSTALLED ON THE RIGHT OR LEFT SIDE.
- A BREAKAWAY DEVICE MUST BE INSTALLED IF THREE POSTS ARE USED. REFER TO THE ITD QUALIFIED PRODUCTS LIST FOR BREAKAWAY DEVICES.
- TYPE E - PERFORATED STEEL TUBE POSTS - DO NOT NEED TO BE SHIELDED BY GUARDRAIL OR BARRIER. WHEN PERFORATED STEEL POSTS ARE INSTALLED BEHIND GUARDRAIL OR BARRIER, ENSURE THE POSTS ARE OUTSIDE OF THE GUARDRAIL OR BARRIER WORKING WIDTH.
- SIGNS CAN BE MOUNTED BACK-TO-BACK IF THE SHAPE OF STOP, YIELD, OR WARNING SIGNS ARE NOT SHIELDED.
- SIGNS ARE INSTALLED WITH OR WITHOUT BRACES DEPENDENT ON SIGN SIZE AND APPLICATION.
- TYPE B - SHEET ALUMINUM - OR TYPE E - HDO PLYWOOD - SIGNS CAN BE AFFIXED TO THE POST OR THROUGH BRACES OR BRACKETS.
- INSTALL SIGNS AT THE FOLLOWING HEIGHTS:
  - IF INSTALLED IN A RURAL AREA, 5 FEET ABOVE THE PAVEMENT ELEVATION OR 4 FEET IF A SUPPLEMENTARY PLAQUE IS INSTALLED BELOW THE SIGN.
  - IF INSTALLED IN THE VICINITY OF A CURB OR IN A BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA WHERE PARKING OR PEDESTRIAN MOVEMENTS ARE LIKELY, 7 FEET ABOVE THE PAVEMENT ELEVATION OR 6 FEET IF A SUPPLEMENTARY PLAQUE IS INSTALLED BELOW THE SIGN. IF INSTALLED LOWER THAN 7 FEET, ENSURE SIGNS DO NOT PROJECT MORE THAN 4 INCHES INTO THE PEDESTRIAN FACILITY.
- PRECAST FOUNDATION OR CAST FOUNDATION IN PLACE. ENSURE THE BOTTOM OF THE FOUNDATION IS KEPT OPEN TO DRAIN. IF THE ANCHOR TUBE IS PERFORATED, ENSURE THE INSIDE OF THE ANCHOR REMAINS OPEN.
- IF SOLID BEDROCK IS ENCOUNTERED WITHIN THE FOUNDATION DEPTH, DRILL A 4.5 INCH VERTICAL HOLE AND SOCKET THE ANCHOR TUBE. FILL DRILLED HOLES WITH GROUT, TYPE B, CLASS 1. ENSURE THE INSIDE OF THE ANCHOR TUBE REMAINS OPEN. WHEN INSTALLED IN BEDROCK, ENSURE THE E-1 POST IS EMBEDDED 18 INCHES DEEP AND THE E-2 POST IS EMBEDDED 24 INCHES.
- WHEN THE SIGN IS INSTALLED ON A BACKSLOPE, ENSURE THE SIGN POST IS AT LEAST 5' HIGHER THAN THE GROUND SURFACE.
- ENSURE NO PART OF THE FOUNDATION OR SIGN POST STUB PROJECTS MORE THAN 4 IN. ABOVE ANY 5 FT. CHORD ALIGNED PERPENDICULARLY TO THE EDGE OF THE HIGHWAY BETWEEN A POINT ON THE GROUND SURFACE ON ONE SIDE OF THE SUPPORT TO A POINT ON THE GROUND SURFACE ON THE OTHER SIDE OF THE SUPPORT.
- DRAWING NOT TO SCALE.

**SIGN ASSEMBLY MEASUREMENTS**



**FASTENER DETAILS**  
SEE NOTE NO. 10



**FOUNDATION**  
SEE NOTE NOS. 12 & 13

SIGN POST AND FOUNDATION TABLE										
POST TYPE	TYPE E PERFORATED STEEL TUBE POST		POST WEIGHT (LB/FT)	MAXIMUM SIGN LOAD (SFxFT)	FOUNDATION		ANCHOR TUBE		FASTENERS	
	PERFORATED TUBE POST SIZE A (IN)	STEEL TUBE POST SIZE GAUGE			SIZE (INxINxIN)	CONCRETE (CY)	B (IN)	GAUGE	POST WEIGHT (LB/FT)	SIGN BOLT LENGTH (IN)
E-1	2	12	2.42	43	8x8x36	0.05	2 1/2x2 1/2	7	5.59	2 1/2
E-2	2 1/2	12	4.01	91	8x8x36	0.05	3x3	7	6.87	3

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	02-92	JEC	6	05-15	HEB			
2	12-94	HEB	7	12-16	HEB			
3	06-99	HEB	8	02-23	RDL			
4	12-01	NQB						
5	12-13	HEB						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 616-7\_0423.dgn  
DRAWING DATE: JULY, 1991

**IDAHO TRANSPORTATION DEPARTMENT**  
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity  
BOISE IDAHO

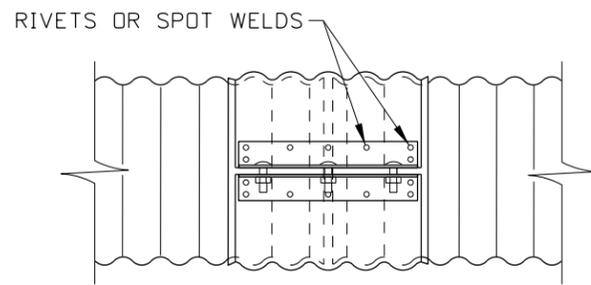
ORIGINAL SIGNED BY: MONICA CRIDER  
HIGHWAY DESIGN ENGINEER

STANDARD DRAWING  
STEEL SIGN POST AND FOUNDATION  
TYPE E - PERFORATED STEEL TUBE POST

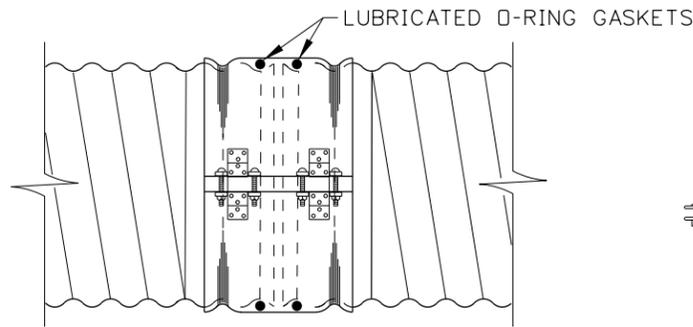
ENGLISH  
STANDARD DRAWING NO. 616-7  
SHEET 1 OF 1

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

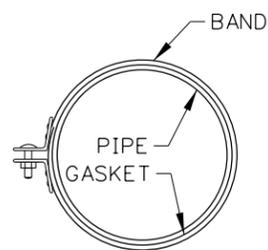




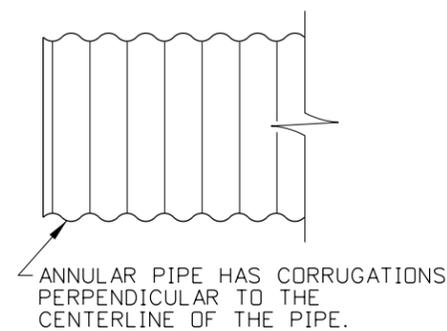
TYPES 1-A & 2-A  
ANNULAR COUPLING BAND



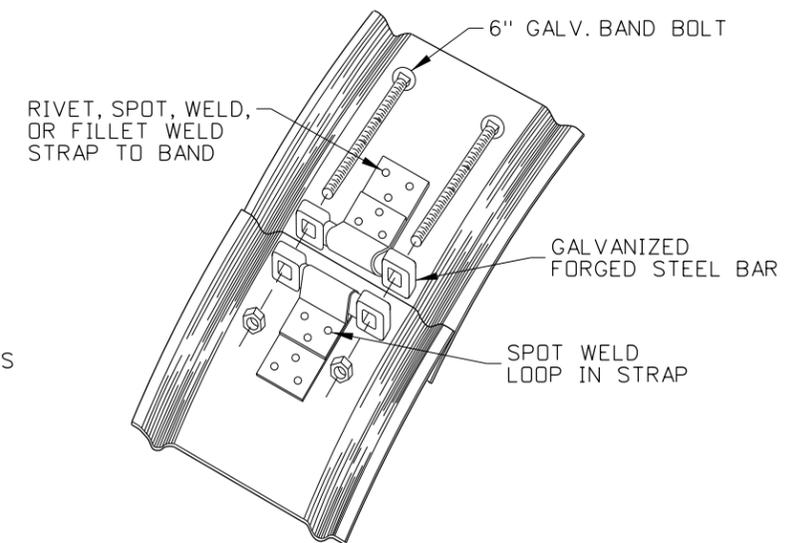
DOUBLE BAR AND STRAP-TYPE 3  
HUGGER COUPLING BAND



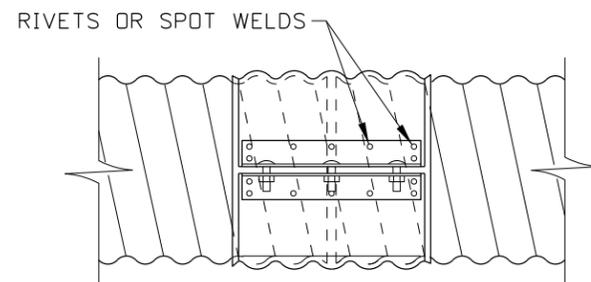
TYPE 1  
SINGLE PIECE BAND



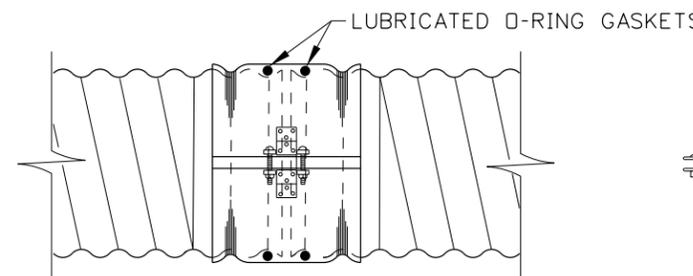
ANNULAR CMP



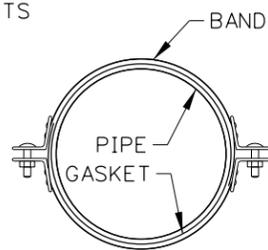
BAND TYPE 3  
BAR & STRAP COUPLING  
(SINGLE STRAP)



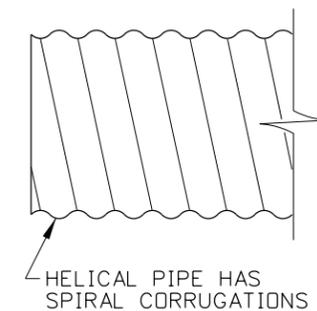
TYPES 1-B & 2-B  
HELICAL COUPLING BAND



SINGLE BAR AND STRAP-TYPE 3  
HUGGERL COUPLING BAND



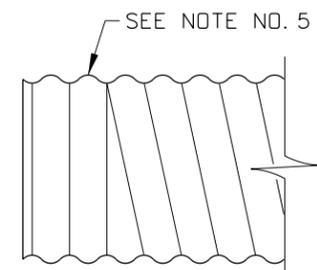
TYPE 2  
TWO PIECE BAND



HELICAL CMP

NOTES

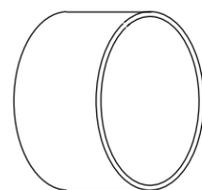
1. THE REFORMED ENDS OF HELICAL CORRUGATED METAL PIPE MADE TO ACCEPT ANNULAR COUPLING BANDS SHALL BE UNIFORM AND SMOOTH IN APPEARANCE. PIPE WITH IRREGULAR REFORMED ENDS ARE NOT ACCEPTABLE.
2. SLEEVE AND STRIP GASKETS FOR COUPLING BANDS TYPE 1-A AND 1-B SHALL EXCEED THE WIDTH OF THE BAND BY A MINIMUM OF 1/4" ON BOTH EDGES. THE GASKETS SHALL FIT SNUGLY AROUND THE PIPES PRIOR TO INSTALLATION OF THE BAND.
3. ALL WELDS AND/OR EXPOSED FERROUS METAL ON COUPLING BANDS AND BAND CONNECTING HARDWARE SHALL BE REPAIRED IN ACCORDANCE WITH AASHTO M 36.
4. STEEL BAND THICKNESS SHALL BE AT LEAST 1/2 THE THICKNESS OR GAUGE OF THE PIPE. ALUMINUM BANDS SHALL BE THE SAME THICKNESS AS THE PIPE.
5. THE JOINTS FOR SIPHONS AND SEWERS SHALL BE WATERTIGHT AND PRESSURE TESTED PRIOR TO ACCEPTANCE, AS REQUIRED IN THE STANDARD SPECIFICATIONS.
6. TO PREVENT GALVANIC ACTION WHEN BANDS AND PIPES ARE OF AN UNLIKE METAL, THE BANDS SHALL BE ASPHALT COATED.
7. GASKET MATERIALS ARE NOT TO BE ALTERED, SEWN, OR PATCHED. THE USE OF SEALANTS AND/OR LUBRICANTS WITH BAND GASKETS MUST BE AS THE MANUFACTURER SPECIFIES. THE QUALITY AND CHEMICAL COMPOSITION OF SEALANTS AND LUBRICANTS WILL BE AS THE MANUFACTURER REQUIRES. CONTACT THE MANUFACTURER FOR DETAILS.
8. SPOT WELDED OR FILLET WELDED STRAPS ON BANDS SHALL BE OF EQUAL STRENGTH TO RIVETED STRAPS.
9. ALL RECOMMENDATIONS IN THE PIPE COUPLING BAND TABLE ARE TO BE CONSIDERED MINIMAL.
10. NOT TO SCALE.



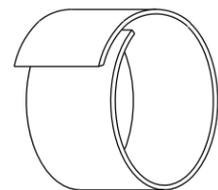
REFORMED HELICAL CMP



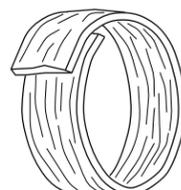
O-RING GASKET



SLEEVE GASKET



STRIP GASKET



MASTIC SEALANT GASKET

STANDARD CORRUGATED STEEL PIPE GASKET TYPES

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	02-76		6	03-05	MSM			
2	02-77							
3	09-93	MSM						
4	12-95	MSM						
5	06-02	MSM						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY  
CADD FILE NAME: 706-6\_0305.dgn  
DRAWING DATE: APRIL, 1961

IDAHO TRANSPORTATION DEPARTMENT  
BOISE IDAHO



ORIGINAL SIGNED BY: LOREN THOMAS  
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)  
ORIGINAL SIGNED BY: STEVEN HUTCHINSON  
CHIEF ENGINEER

STANDARD DRAWING  
CORRUGATED METAL PIPE  
WATERTIGHT COUPLING BANDS

English  
STANDARD DRAWING NO.  
706-6  
SHEET 1 OF 2

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

PIPE COUPLING BAND TABLE						PIPE CORRUGATION STYLE			SIPHON	* CULVERT	IRRIGATION	SEWER	UNDERDRAIN
COUPLING TYPE	CORRUGATIONS	PIPE SIZE	COUPLING WIDTH	COUPLING BOLTS (NO.) DIA.	GASKET TYPE	ANNULAR PIPE	REFORMED HELICAL	HELICAL PIPE					
TYPE 1-A ANNULAR COUPLING BAND	1/2" x 1/4" & 2 3/8" x 1/2"	6"-10"	7" (1 PIECE)	(3) 3/8"	SLEEVE	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	12"-15"	7" (1 PIECE)	(3) 1/2"	SLEEVE	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	18"-24"	12" (1 PIECE)	(3) 1/2"	SLEEVE	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	30"-42"	24" (1 PIECE)	(5) 5/8"	SLEEVE	X	X		X	X		X	
TYPE 1-B HELICAL COUPLING BAND	1/2" x 1/4" & 2 3/8" x 1/2"	6"-10"	7" (1 PIECE)	(3) 3/8"	SLEEVE OR STRIP			X	X	X		X	
	2 3/8" x 1/2" & 3" x 1"	12"-15"	7" (1 PIECE)	(3) 1/2"	SLEEVE OR STRIP			X	X	X		X	
	2 3/8" x 1/2" & 3" x 1"	18"-24"	12" (1 PIECE)	(3) 1/2"	SLEEVE OR STRIP			X	X	X		X	
	2 3/8" x 1/2" & 3" x 1"	30"-42"	24" (1 PIECE)	(5) 5/8"	SLEEVE OR STRIP			X	X	X		X	
TYPE 2-A ANNULAR COUPLING BAND	1/2" x 1/4" & 2 3/8" x 1/2"	6"-10"	7" (1 PIECE)	(4) 3/8"	SLEEVE, STRIP OR MASTIC	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	12"-15"	7" (1 PIECE)	(4) 3/8"	SLEEVE, STRIP OR MASTIC	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	18"-24"	12" (1 PIECE)	(6) 1/2"	SLEEVE, STRIP OR MASTIC	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	30"-42"	24" (1 PIECE)	(8) 1/2"	SLEEVE, STRIP OR MASTIC	X	X		X	X	X	X	
TYPE 2-B HELICAL COUPLING BAND	1/2" x 1/4" & 2 3/8" x 1/2"	6"-10"	7" (1 PIECE)	(4) 3/8"	SLEEVE, STRIP OR MASTIC			X	X	X		X	
	2 3/8" x 1/2" & 3" x 1"	12"-15"	7" (1 PIECE)	(4) 3/8"	SLEEVE, STRIP OR MASTIC			X	X	X		X	
	2 3/8" x 1/2" & 3" x 1"	18"-24"	12" (1 PIECE)	(6) 1/2"	SLEEVE, STRIP OR MASTIC			X	X	X		X	
	2 3/8" x 1/2" & 3" x 1"	30"-42"	24" (1 PIECE)	(8) 1/2"	SLEEVE, STRIP OR MASTIC			X	X	X		X	
TYPE 3 HUGGER COUPLING BAND	2 3/8" x 1/2" & 3" x 1"	12"-48" (GALV.)	7 1/2" (STRAP)	(2) 6" x 1/2"	O-RING	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	54"-96" (GALV.)	10 1/2" (2 STRAP)	(4) 6" x 5/8"	O-RING	X	X		X	X	X	X	
	2 3/8" x 1/2" & 3" x 1"	102"-144" (GALV.)	12" (3 STRAP)	(6) 6" x 7/8"	O-RING	X	X		X	X	X	X	

\* WATERTIGHT BANDS ARE NOT REQUIRED ON CULVERT INSTALLATIONS UNLESS SPECIFIED BY THE PLANS OR SPECIAL PROVISIONS

ORIGINAL STORED  
AT: ITD,  
Headquarters  
3311 West State  
Boise, Idaho

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	02-76		6	03-05	MSM			
2	02-77							
3	09-93	MSM						
4	12-95	MSM						
5	06-02	MSM						

SCALES SHOWN  
ARE FOR 11" X 17"  
PRINTS ONLY

CADD FILE NAME:  
706-6\_0305.dgn

DRAWING DATE:  
APRIL, 1961

**IDAHO  
TRANSPORTATION  
DEPARTMENT**



BOISE IDAHO

ORIGINAL SIGNED BY: LOREN THOMAS  
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)

ORIGINAL SIGNED BY: STEVEN HUTCHINSON  
CHIEF ENGINEER

STANDARD DRAWING

**CORRUGATED METAL PIPE  
WATERTIGHT COUPLING BANDS**

**English**

STANDARD DRAWING NO.  
**706-6**

SHEET 2 OF 2

