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3	SURVEY CONTROL/MONUMENT SHEET
4	PROJECT CLEARANCE SUMMARY
5	TYPICAL SECTION
6	ROADWAY SUMMARY
7	PIPE SUMMARY
8 - 9	PLAN AND PROFILE SHEETS
10	DETAILS SHEET
11	TRAFFIC CONTROL PLAN
1 - 5	ITD STANDARD DRAWINGS

IDAHO TRANSPORTATION DEPARTMENT

PLAN AND PROFILE OF PROPOSED

BIRCH CREEK ROAD SAFETY IMPROVEMENT, OAKLEY HD

FEDERAL AID PROJECT NO. A023(295)

KEY NO. 23295

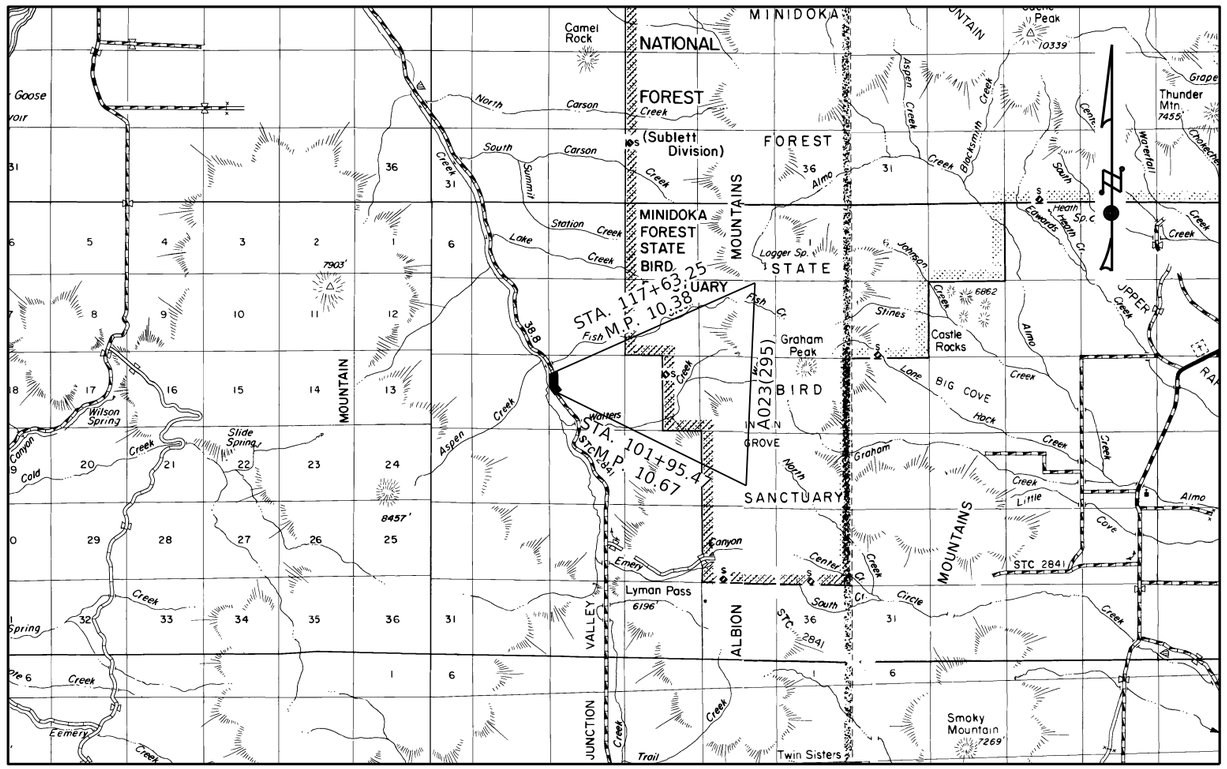
CASSIA COUNTY

DECEMBER 2025

SCALES IN FEET

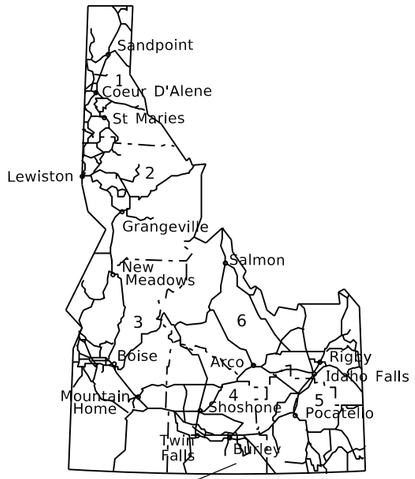
HORIZONTAL 20 10 0 20 40 FEET

VERTICAL 4 2 0 4 8 FEET



VICINITY MAP

2 1 0 2 4 MILES



SLOPE FLATTENING

BIRCH CREEK ROAD SAFETY IMPROVEMENT
M.P. 10.67 M.P. 10.38
SEGMENT CODE 005080

DESIGN DESIGNATION

ADT 2025	252
ADT 2047	374
DHV 2025	31
DHV 2047	45
D	50/50%
V	40 MPH
TRUCKS:	18%
ADT 2025	45
ADT 2047	67
DHV 2025	6
DHV 2047	8

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 23295 titl 001.DGN

DRAWING DATE: 29-SEP-2025

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

CIVIL SCIENCE

PROJECT NO. A023(295)

TITLE SHEET: BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH

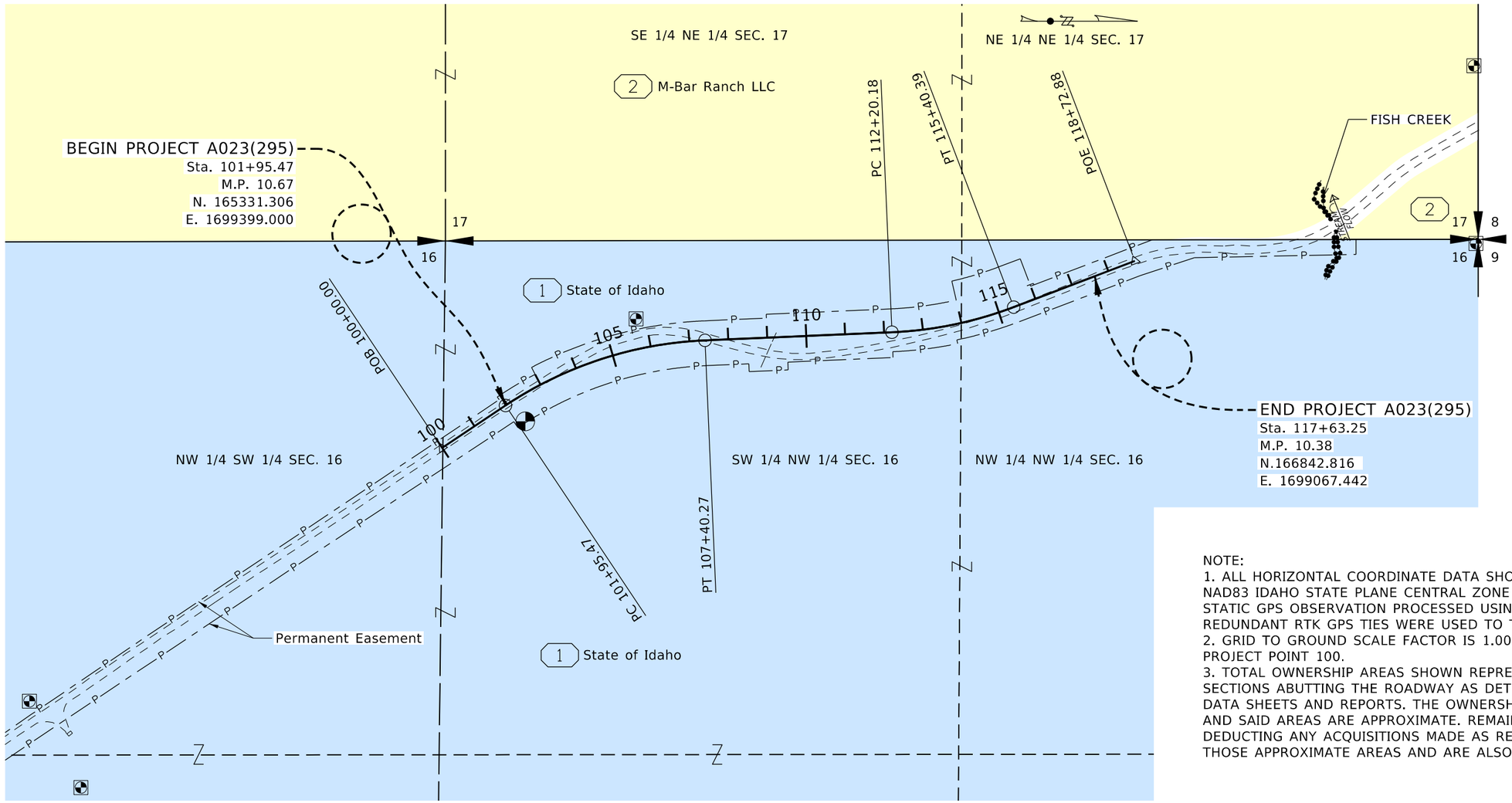
COUNTY CASSIA

KEY NUMBER 23295

SHEET 1 OF 11

Laila Kral
Approved for Advertising
02/11/2026
Date Approved

T. 15 S, R. 23 E, B.M.



NOTE:
1. ALL HORIZONTAL COORDINATE DATA SHOWN IS BASED UPON MODIFIED NAD83 IDAHO STATE PLANE CENTRAL ZONE 1102 OBTAINED FROM A 4+ HOUR STATIC GPS OBSERVATION PROCESSED USING OPUS ON PROJECT POINT 100. REDUNDANT RTK GPS TIES WERE USED TO TIE POINTS 101-105.
2. GRID TO GROUND SCALE FACTOR IS 1.0003296159 COMPUTED FROM PROJECT POINT 100.
3. TOTAL OWNERSHIP AREAS SHOWN REPRESENT THE AREAS WITHIN THE SECTIONS ABUTTING THE ROADWAY AS DETERMINED FROM ASSESSOR'S FIELD DATA SHEETS AND REPORTS. THE OWNERSHIP PARCELS WERE NOT SURVEYED AND SAID AREAS ARE APPROXIMATE. REMAINDER AREAS WERE CALCULATED BY DEDUCTING ANY ACQUISITIONS MADE AS RESULT OF THIS PROJECT FROM THOSE APPROXIMATE AREAS AND ARE ALSO APPROXIMATE.

LEGEND
- FOUND SECTION CORNER
- FOUND QUARTER CORNER
- SET CONTROL POINT
- FOUND BRASS CAP

300 150 0 300

Parcel No.	Parcel I.D. No.	Record Owner	Total Ownership Assessed Ac.	Right of Way		Remainder		Easement	
				Req'd Ac	Exist Ac	Left Ac	Right Ac	Perm Ac	Temp Ac
1	Info Only	State of Idaho	Info Only						
2	Info Only	M-Bar Ranch LLC	Info Only						

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED B. BINGHAM	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED R. RAMSEY	
DETAILED B. SOBBI	CADD FILE NAME 23295 omap 001.DGN
DRAWING CHECKED B. BINGHAM	DRAWING DATE: 29-SEP-2025

IDAHO TRANSPORTATION DEPARTMENT
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
CIVIL SCIENCE

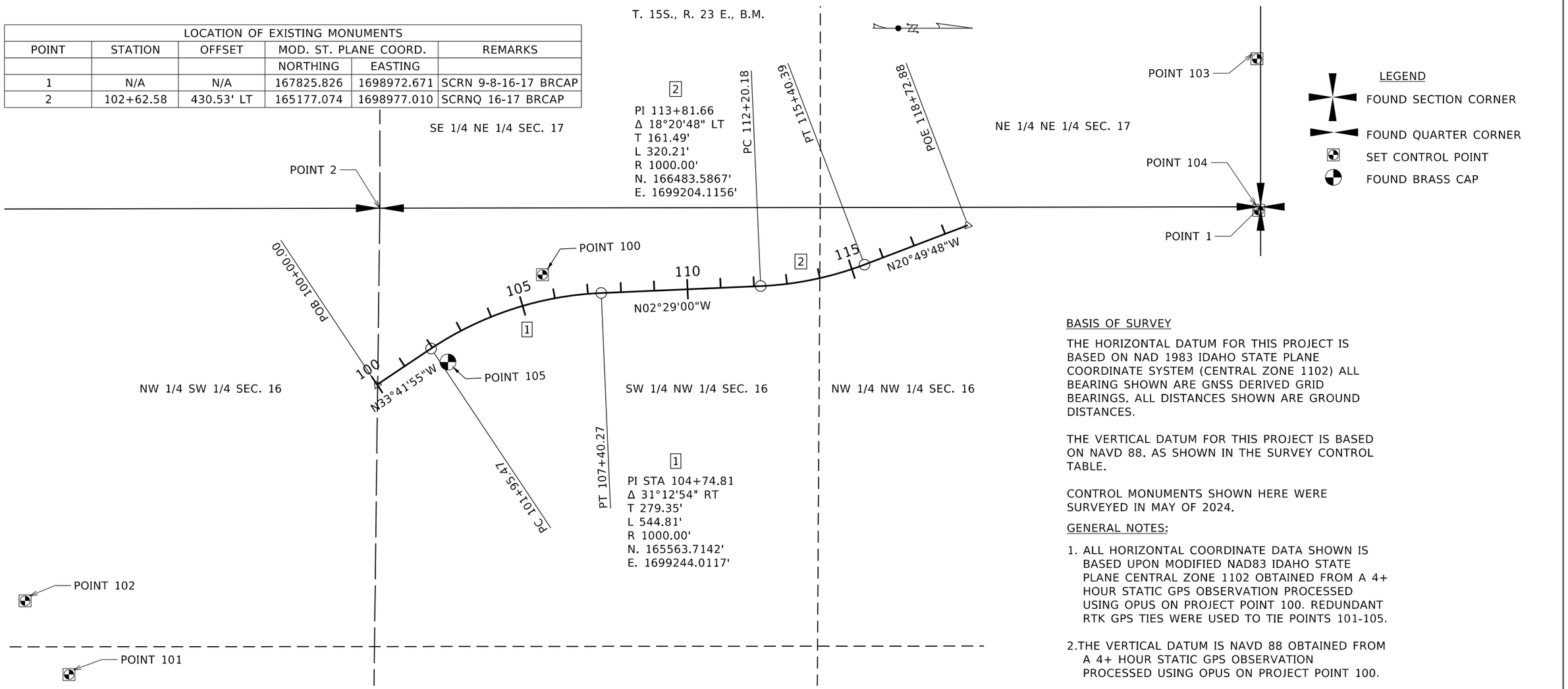
PROJECT NO.
A023(295)

OWNERSHIP MAP
BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH
COUNTY CASSIA
KEY NUMBER 23295
SHEET 2 OF 11

PROFESSIONAL LAND SURVEYOR
REGISTERED
Mitch Barrera
13024
8/22/2025
STATE OF IDAHO
MITCH BARRERA

LOCATION OF EXISTING MONUMENTS					
POINT	STATION	OFFSET	MOD. ST. PLANE COORD.		REMARKS
			NORTHING	EASTING	
1	N/A	N/A	167825.826	1698972.671	SCRN 9-8-16-17 BRCAP
2	102+62.58	430.53' LT	165177.074	1698977.010	SCRNQ 16-17 BRCAP



BASIS OF SURVEY

THE HORIZONTAL DATUM FOR THIS PROJECT IS BASED ON NAD 1983 IDAHO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE 1102) ALL BEARING SHOWN ARE GNSS DERIVED GRID BEARINGS. ALL DISTANCES SHOWN ARE GROUND DISTANCES.

THE VERTICAL DATUM FOR THIS PROJECT IS BASED ON NAVD 88. AS SHOWN IN THE SURVEY CONTROL TABLE.

CONTROL MONUMENTS SHOWN HERE WERE SURVEYED IN MAY OF 2024.

GENERAL NOTES:

1. ALL HORIZONTAL COORDINATE DATA SHOWN IS BASED UPON MODIFIED NAD83 IDAHO STATE PLANE CENTRAL ZONE 1102 OBTAINED FROM A 4+ HOUR STATIC GPS OBSERVATION PROCESSED USING OPUS ON PROJECT POINT 100. REDUNDANT RTK GPS TIES WERE USED TO TIE POINTS 101-105.

2. THE VERTICAL DATUM IS NAVD 88 OBTAINED FROM A 4+ HOUR STATIC GPS OBSERVATION PROCESSED USING OPUS ON PROJECT POINT 100.

3. GRID TO GROUND SCALE FACTOR IS 1.0003296159 COMPUTED FROM PROJECT POINT 100.

SURVEY CONTROL POINTS								
POINT	STATION	OFFSET	LATITUDE	LONGITUDE	MOD. ST. PLANE COORD		ELEVATION	REMARKS
					NORTHING	EASTING		
100	105+77.86	76.804 LT	42°7'15.996" N	-113°46'58.7994" W	165666.133	1699176.877	5924.381	
101	N/A	N/A	42°7'1.884" N	-113°46'44.3994" W	164242.392	1700378.871	6007.523	
102	N/A	N/A	42°7'0.588" N	-113°46'48" W	164110.349	1700157.383	5984.318	
103	N/A	N/A	42°7'37.2" N	-113°47'9.6" W	167814.829	1698527.848	5776.406	
104	N/A	N/A	42°7'37.272" N	-113°47'2.4" W	167819.931	1698983.505	5867.927	
105	102+16.50	61.8132 RT	42°7'13.1514" N	-113°46'55.1994" W	165382.131	1699439.653	5945.314	BRC BM USCGS L29

LOCATION OF PI'S		
STATION	MOD. ST. PLANE COORD	
	NORTHING	EASTING
100+00.00	165168.684	1699507.450
104+74.81	165563.714	1699244.012
113+81.66	166483.587	1699204.116
118+72.88	166945.284	1699028.456

300 150 0 300

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED B. BINGHAM	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED R. RAMSEY	
DETAILED B. SOBBI	CADD FILE NAME 23295 rsrv 001.DGN
DRAWING CHECKED B. BINGHAM	DRAWING DATE: 29-SEP-2025

IDAHO TRANSPORTATION DEPARTMENT
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
CIVIL SCIENCE

PROJECT NO.
A023(295)

SURVEY CONTROL/MONUMENT SHEET
BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH

COUNTY	CASSIA
KEY NUMBER	23295
SHEET	3 OF 11

PROFESSIONAL LAND SURVEYOR
REGISTERED
Mitch Barreras
13024
8/22/2025
STATE OF IDAHO
MITCH BARRERAS

CLEARANCES

	+ CLEARED UNDER PROJECT NO.	+ APPROVAL DATE
PROJECT STANDARDS	A023(295)	7/24/2024
CHARTER APPROVAL ☐ AASHTO ☐ 3R ☐ 1R ■ STATE	N/A	N/A
☐ PP ☐ OTHER	N/A	N/A
DESIGN EXCEPTIONS:	N/A	N/A
PUBLIC HEARING WAIVER	A023(295)	8/26/2025
PUBLIC HEARING DATE (Latest hearing date held or scheduled for opportunity)	N/A	N/A
DESIGN APPROVAL	A023(295)	8/26/2025
RECLAMATION PLAN APPROVAL NO(S)	N/A	N/A
AIRPORT	N/A	N/A
Land Survey Monument Search and Documentation (I.C.55-1613)	A023(295)	5/20/2024
R/W CERTIFICATE: Issued by ■ HQ ☐ DISTRICT	A023(295)	9/4/2025
TRIBAL LANDS: ☐ AGREEMENT REQUIRED ☐ SPECIAL PROVISIONS FOR CONTRACT PROPOSAL	N/A	N/A
BRIDGE PS & E	N/A	N/A
ENVIRONMENTAL DECISION: TYPE ■ CAT-EX ☐ FONSI ☐ ROD	A023(295)	6/02/2025
ENVIRONMENTAL RE-EVALUATION	A023(295)	12/03/2025

PERMITS

			+ EXPIRATION DATE
IDAHO DEPARTMENT OF WATER RESOURCES PERMIT NO(S)	N/A	N/A	N/A
US ARMY CORPS OF ENGINEERS 404 PERMIT NO(S) NWP 14	A023(295)		3/14/2026
OTHER	N/A	N/A	N/A

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

AGREEMENTS (List Appropriate Name)

LOCAL: CITY	N/A	N/A
COUNTY	N/A	N/A
HIGHWAY DISTRICT	N/A	N/A
ROAD CLOSURE AND MAINTENANCE	N/A	N/A
STATE/LOCAL CONSTRUCTION Oakley Highway District	A023(295)	11/23/2025

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

UTILITIES: List all Utilities shown on plans	RETAIN & PROTECT	+ APPROVAL DATES: UTILITY HEARING WAIVER	+ APPROVAL DATES: AGREEMENT	+ AGREEMENT NO.
Co.	☐			
Co.	☐			
Co.	☐			
Co.	☐			
Co.	☐			
Co.	☐			
Co.	☐			

RAILROAD List all Railroads encroached upon	+ AGREEMENT FOR	+ AGREEMENT: EFFECTIVE DATE	+ AGREEMENT: NO.
Co.			
Co.			

ESTIMATING BASIS

Aggregate:

3/4" Aggr Type B for Untreated Base @ 142 lb/cf including 7% moisture.

Base:

Granular Subbase @ 135 lb/cf including 7% moisture.

NOTES

The Contractor will be required to furnish a source for all items in the contract.

Class A compaction is specified.

Subgrade Separation Geotextile Type III to be used for Soft Spot Repair

+ ENTER "N/A" WHEN NOT APPLICABLE

++ LPA PROJECTS - DATE ENTERED BY ROADWAY DESIGN WHEN PROJECT SENT TO PS&E.

PROFESSIONAL ENGINEER LICENSED Benjamin A. Bingham 19331 9/29/2025 STATE OF IDAHO BENJAMIN A. BINGHAM

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED B. BINGHAM
DETAILED A. JOHNSON
DRAWING CHECKED B. BINGHAM
CADD FILE NAME 23295 prsm 001.DGN

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DRAWING DATE: 29-SEP-2025

IDAHO TRANSPORTATION DEPARTMENT
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
CIVIL SCIENCE

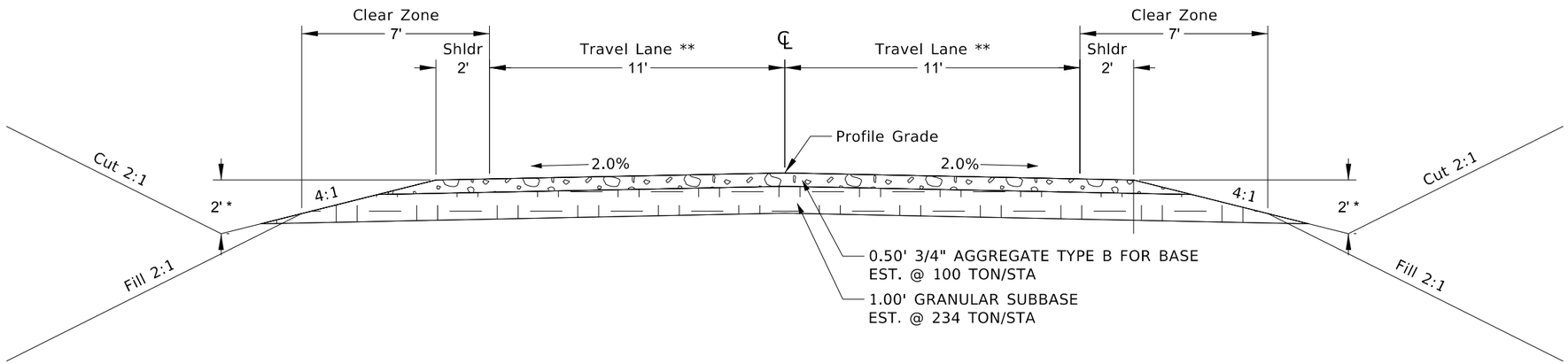
PROJECT NO. A023(295)

PROJECT CLEARANCE SUMMARY
BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH
COUNTY CASSIA
KEY NUMBER 23295

BIRCH CREEK RD

Sta 101+95.47 to 117+63.25



* 2' UNLESS STATED OTHERWISE BELOW.

RIGHT DITCH
TRANSITION FROM 0' TO 2' FROM STA 101+00.00 TO STA 101+95.47
TRANSITION FROM 2' TO 0' FROM STA 116+50.00 TO STA 117+63.25

LEFT DITCH
TRANSITION FROM 0' TO 2' FROM STA 101+95.47 TO STA 103+50.00
TRANSITION FROM 2' TO 0' FROM STA 116+50.00 TO STA 117+63.25

** 11' UNLESS STATED OTHERWISE BELOW.

RIGHT TRAVEL LANE
TRANSITION FROM EXISTING LANE WIDTH TO 11' FROM STA 101+95.47 TO 102+50.00
TRANSITION FROM 11' TO EXISTING LANE WIDTH FROM STA 116+00.00 TO 117+63.25

LEFT TRAVEL LANE
TRANSITION FROM EXISTING LANE WIDTH TO 11' FROM STA 101+95.47 TO 102+50.00
TRANSITION FROM 11' TO EXISTING LANE WIDTH FROM STA 116+70.00 TO 117+63.25

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED B. BINGHAM	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY	IDAHO TRANSPORTATION DEPARTMENT YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
DESIGN CHECKED R. RAMSEY		
DETAILED Z. BYINGTON	CADD FILE NAME 23295 typi 001.DGN	
DRAWING CHECKED B. BINGHAM	DRAWING DATE: 29-SEP-2025	CIVIL SCIENCE

PROJECT NO.	TYPICAL SECTION SHEET
A023(295)	BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH

COUNTY CASSIA

KEY NUMBER 23295

SHEET 5 OF 11

PROFESSIONAL ENGINEER
LICENSED
19331
9/29/2025
STATE OF IDAHO
BENJAMIN A. BINGHAM

SHEET NUMBER				SHEET 8	SHEET 9										
STATION - STATION				101+95.47 - 112+00	112+00 - 117+63.25										
ITEM NO.	ITEM	UNIT	TOTAL	1,005 PLPR	563 PLPR										
107-019A	SURVEY MONUMENT PRESERVATION	CA	5,000												
201-005A	CLEARING AND GRUBBING	ACRE	1.783												
203-123A	REMOVAL OF MISCELLANEOUS ITEMS (PIPE)	FT	98	98											
204-006A	OBLITERATION OF OLD ROAD	LS	1												
205-005A	EXCAVATION	CY	8,759	8,359	400										
205-060A	WATER FOR DUST ABATEMENT	MG	110												
205-071A	EXCAVATION AND REPAIR OF SOFT SPOTS	CY	100												
212-011A	FIBER WATTLE	FT	2,654	1,748	906										
212-105A	WATER AND POLLUTION	CA	5,000												
301-005A	GRANULAR SUBBASE	TON	4,310												
303-022A	3/4" AGGREGATE TYPE B FOR BASE	TON	2,230												
405-245B	APPROACH (GRAVEL)	EACH	1	1											
602-025A	12" PIPE CULVERT	FT	105	105											
602-035A	18" PIPE CULVERT	FT	181	126	55										
608-035A	18" APRON FOR PIPE	EACH	4	2	2										
621-005A	SEED BED PREPARATION	ACRE	1.6												
621-010A	SEEDING	ACRE	1.6												
624-005A	LOOSE RIPRAP	CY	9.3	6.3	3.0										
626-010A	TEMPORARY TRAFFIC CONTROL SIGNS	SF	235												
626-050A	DRUMS	EACH	14												
626-100A	MISCELLANEOUS TEMPORARY TRAFFIC CONTROL ITEMS	CA	5,000												
626-105A	TEMPORARY TRAFFIC CONTROL MAINTENANCE	HR	50												
626-115A	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)	DAY	70												
626-120A	FLAGGER CONTROL	HR	80												
626-130B	TEMPORARY TRAFFIC CONTROL SIGNAL	DAY	70												
626-135A	WEIGHTED BASE TUBULAR MARKERS	EACH	27												
640-010A	RIPRAP/EROSION CONTROL GEOTEXTILE	SY	44	30	14										
640-015A	SUBGRADE SEPARATION GEOTEXTILE (TYPE III)	SY	300												
654-025A	COMPOST	ACRE	3.2												
675-005A	SURVEY	LS	1												
675-010A	DIRECTED SURVEY	CA	10,000												
677-005A	RECORD DRAWINGS	LS	1												
S900-50A	CONTINGENCY AMOUNT MISCELLANEOUS WORK	CA	5,000												
Z629-05A	MOBILIZATION	LS	1												

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGNED	B. BINGHAM
DESIGN CHECKED	R. RAMSEY
DETAILED	A. JOHNSON
DRAWING CHECKED	B. BINGHAM

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME 23295 rsum 001.DGN

DRAWING DATE: 29-SEP-2025

IDAHO TRANSPORTATION DEPARTMENT

YOUR Safety→YOUR Mobility→YOUR Economic Opportunity

CIVIL SCIENCE

PROJECT NO.

A023(295)

ROADWAY SUMMARY

BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH

COUNTY CASSIA

KEY NUMBER 23295

SHEET 6 OF 11

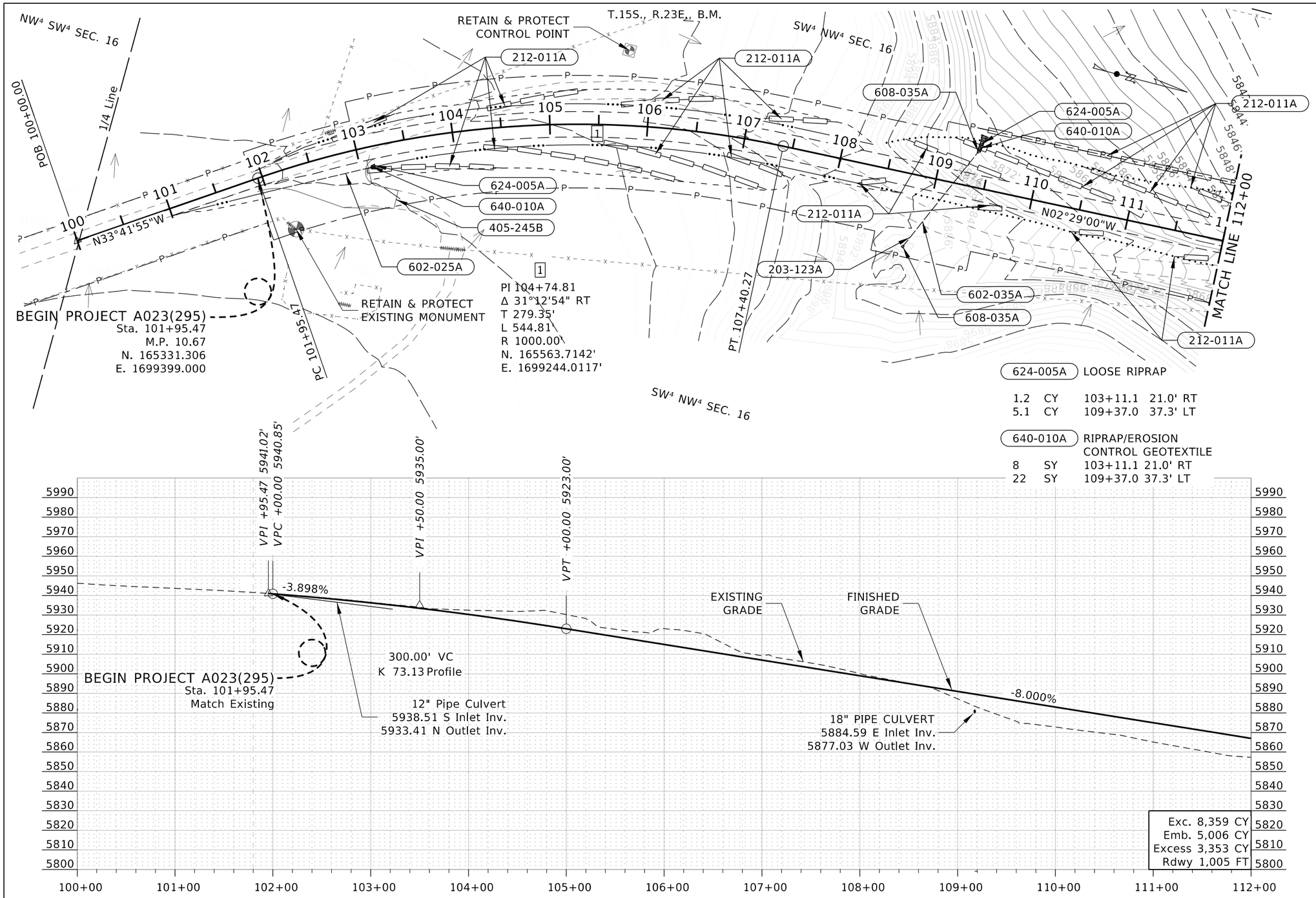
PROFESSIONAL ENGINEER LICENSED 19331 9/29/2025 STATE OF IDAHO BENJAMIN A. BINGHAM

STATION	PIPE CULVERT (LENGTH IN FEET) PIPE SIZE (INCHES) 12	18				PLASTIC PIPE: POLYPROPYLENE (PP) X	RIBBED POLYETHYLENE (PE) X	STEEL REINFORCED RIBBED POLYETHYLENE (SRRPE) X	CORRUGATED POLYETHYLENE (PE) X	RIBBED POLYVINYL CHLORIDE (PVC) X	METAL PIPE: STEEL PIPE: GALVANIZED STEEL X	ALUMINIZED STEEL X	2 2/3" CORRUGATION DEPTH 1/2" CORRUGATION LENGTH GAGE	COATED X	ANNULAR CORR. X	HELICAL CORR. X	ALUMINUM PIPE: 2 2/3" CORRUGATION DEPTH 1/2" CORRUGATION LENGTH THICK. (")	COATED X	ANNULAR CORR. X	HELICAL CORR. X	CONCRETE PIPE: REINFORCED CLASS II-V	IRRIGATION OR DRAINAGE X	RUBBER GASKET JOINTS REQUIRED X	FILL HEIGHT FT.	STR. EXC. C.Y.	COMP. BKFILL C.Y.	MINOR STRUCTURES: DRAWING NUMBER	STRUCTURE EA.	CONCRETE C.Y.	METAL REINF. LBS.	TIMBER MFBM	GRATES EA.	APRONS EA.	INLETS TYPE____	CATCH BASINS TYPE____	REMARKS (INDICATE ELONGATION) (WHEN REQUIRED)
102+60	105										X		16			X									1.3													Lateral
109+18		126									X		16			X									7.9										2			Cross Culvert
113+57		55									X		16			X									3.3										2			Cross Culvert
SHEET TOTAL	105	181																																4			
PROJ. TOTAL	105	181																																4			

REVISIONS NO.	DATE	BY	DESCRIPTION

DESIGNED B. BINGHAM	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY	IDAHO TRANSPORTATION DEPARTMENT YOUR Safety→YOUR Mobility→YOUR Economic Opportunity	PROJECT NO. A023(295)
DESIGN CHECKED R. RAMSEY			PIPE CULVERT SUMMARY SHEET BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD
DETAILED B. SOBBI	CADD FILE NAME 23295_pcsm_001.DGN	CIVIL SCIENCE	ENGLISH
DRAWING CHECKED B. BINGHAM	DRAWING DATE: 29-SEP-2025		COUNTY CASSIA
			KEY NUMBER 23295
			SHEET 7 OF 11

PROFESSIONAL ENGINEER LICENSED Benjamin A Bingham 19331 9/29/2025 STATE OF IDAHO BENJAMIN A. BINGHAM



624-005A LOOSE RIPRAP

1.2	CY	103+11.1 21.0' RT
5.1	CY	109+37.0 37.3' LT

640-010A RIPRAP/EROSION CONTROL GEOTEXTILE

8	SY	103+11.1 21.0' RT
22	SY	109+37.0 37.3' LT

203-123A REMOVAL OF MISCELLANEOUS ITEMS (PIPE)

98	FT	STA 108+81 76' RT
		TO STA 109+24 11' LT

212-011A FIBER WATTLE

58	FT	STA 102+95 18' LT
	TO	STA 103+46 28' LT
139	FT	STA 103+46 15' RT
	TO	STA 104+49 42' RT
199	FT	STA 104+44 20' RT
	TO	STA 106+43 52' RT
103	FT	STA 104+44 20' LT
	TO	STA 105+38 36' LT
163	FT	STA 105+72 20' RT
	TO	STA 107+33 47' RT
110	FT	STA 105+72 19' LT
	TO	STA 106+72 37' LT
99	FT	STA 106+97 19' LT
	TO	STA 107+89 36' LT
63	FT	STA 106+97 20' RT
	TO	STA 107+32 27' RT
10	FT	STA 108+22 21' RT
113	FT	STA 108+61 33' LT
	TO	STA 109+72 13' LT
190	FT	STA 109+10 46' LT
	TO	STA 110+97 13' LT
268	FT	STA 109+32 60' LT
	TO	STA 112+00 60' LT
10	FT	STA 109+38 21' RT
158	FT	STA 110+44 44' LT
	TO	STA 112+00 18' LT
10	FT	STA 110+45 24' RT
10	FT	STA 111+55 26' RT
45	FT	STA 111+56 46' LT
	TO	STA 112+00 39' LT

405-245B APPROACH (GRAVEL)

1	EACH	STA 103+30.0 58.3' RT

602-025A 12" PIPE CULVERT

105	FT	STA 102+04.1 16.8' RT
	TO	STA 103+11.1 21.0' RT

602-035A 18" PIPE CULVERT

126	FT	STA 108+81.8 73.3' RT
	TO	STA 109+35.9 35.0' LT

608-035A 18" APRON FOR PIPE

1	EA	STA 108+81.8 73.3' RT
1	EA	STA 109+35.9 35.0' LT

NOTES:
FIBER WATTLE TO BE PLACED ON EVERY 10' VERTICAL DESIGN CONTOUR.
INSTALL FIBER WATTLE AS DIRECTED BY THE ENGINEER.

PROFESSIONAL ENGINEER LICENSED
Benjamin A Bingham
19331
9/29/2025
STATE OF IDAHO
BENJAMIN A. BINGHAM

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED	B. BINGHAM
DESIGN CHECKED	R. RAMSEY
DETAILED	S. BURBANK
DRAWING CHECKED	B. BINGHAM

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME 23295 plpr base.DGN

DRAWING DATE: 29-SEP-2025

IDAHO TRANSPORTATION DEPARTMENT
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
CIVIL SCIENCE

PROJECT NO.
A023(295)

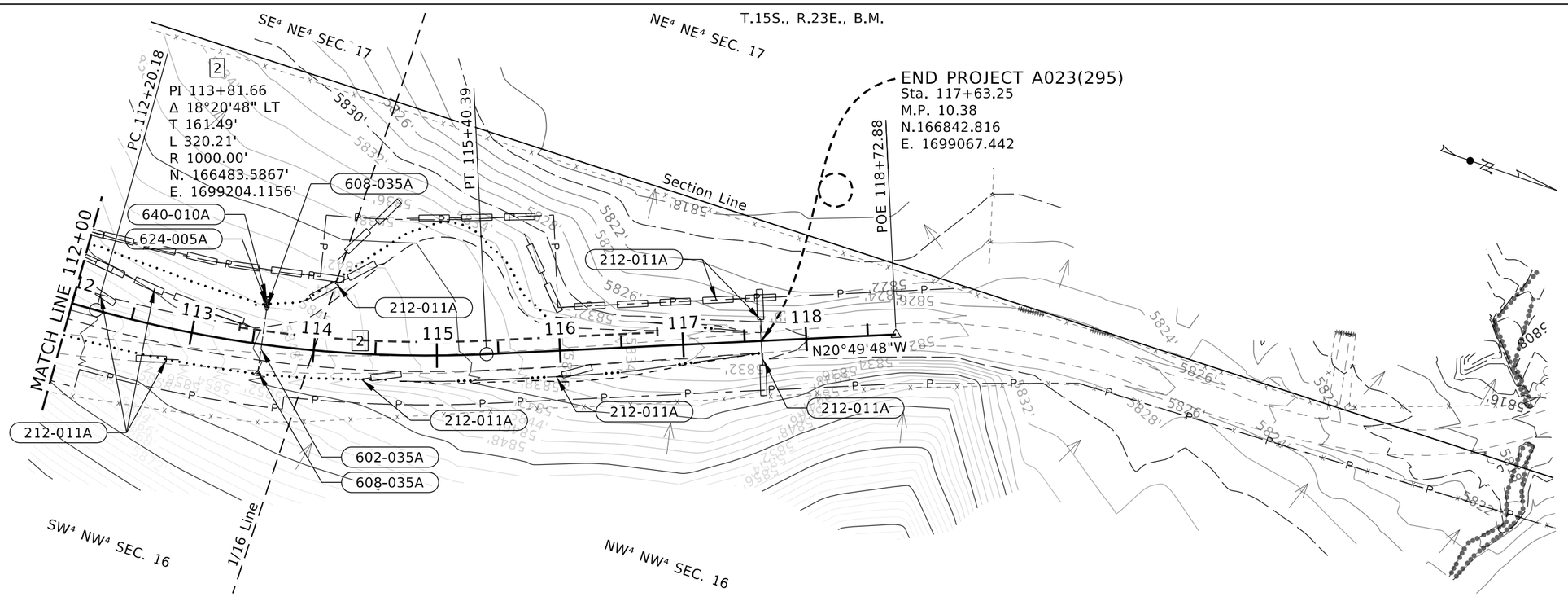
PLAN SHEET
BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD
STA 101+95.47 TO 112+00

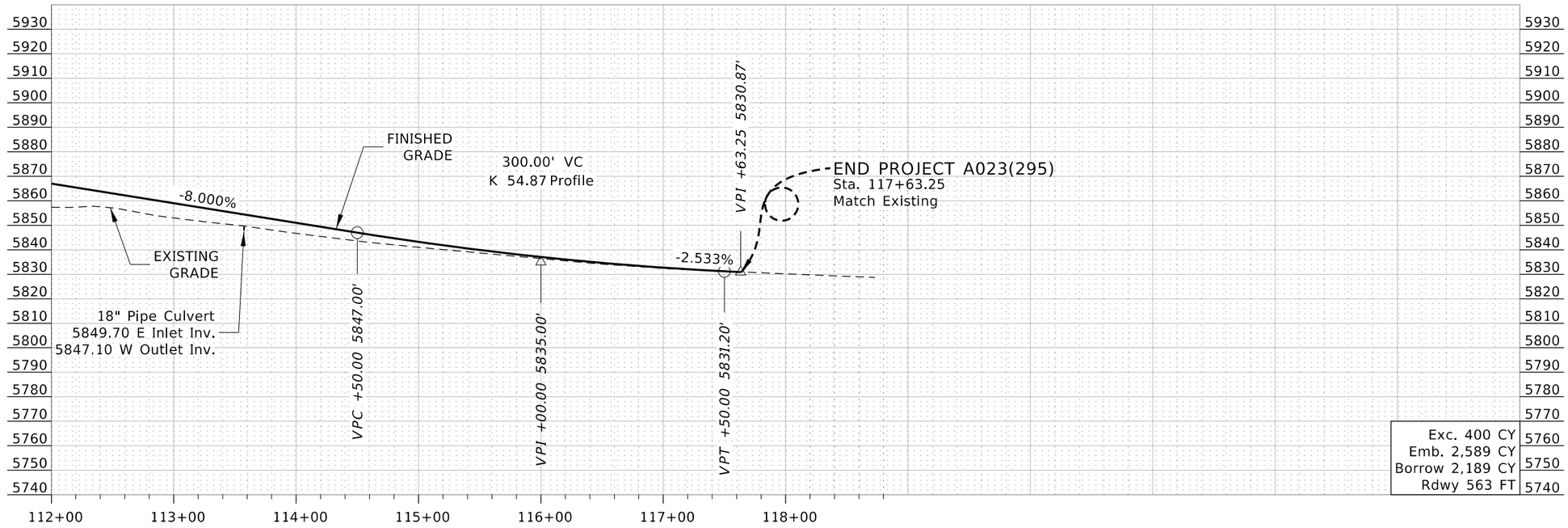
ENGLISH

COUNTY CASSIA

KEY NUMBER 23295

SHEET 8 OF 11





212-011A	FIBER WATTLE	
23	FT	STA 112+00 19' LT
	TO	STA 112+22 13' LT
146	FT	STA 112+00 39' LT
	TO	STA 113+46 13' LT
610	FT	STA 112+00 39' LT
	TO	STA 117+63 35' LT
10	FT	STA 112+84 25' RT
77	FT	STA 113+84 38' LT
	TO	STA 114+55 74' LT
10	FT	STA 114+38 21' RT
10	FT	STA 115+96 21' RT
10	FT	STA 117+64 10' RT
10	FT	STA 117+64 10' LT
602-035A	18" PIPE CULVERT	
55	FT	STA 113+57.4 21.6' RT
	TO	STA 113+57.6 30.4' LT
608-035A	18" APRON FOR PIPE	
1	EA	STA 113+57.4 21.6' R
1	EA	STA 113+57.6 30.4' LT
624-005A	LOOSE RIPRAP	
3.0	CY	STA 113+57.7 30.3' LT
640-010A	RIPRAP/EROSION CONTROL GEOTEXTILE	
14	SY	STA 113+57.7 30.4' LT

NOTES:
FIBER WATTLE TO BE PLACED ON EVERY 10' VERTICAL DESIGN CONTOUR.
INSTALL FIBER WATTLE AS DIRECTED BY THE ENGINEER.

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED	B. BINGHAM
DESIGN CHECKED	R. RAMSEY
DETAILED	S. BURBANK
DRAWING CHECKED	B. BINGHAM

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: 23295 plpr base.DGN

DRAWING DATE: 29-SEP-2025

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

CIVIL SCIENCE

PROJECT NO.: A023(295)

PLAN SHEET: BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD STA 112+00 TO 117+63.25

ENGLISH

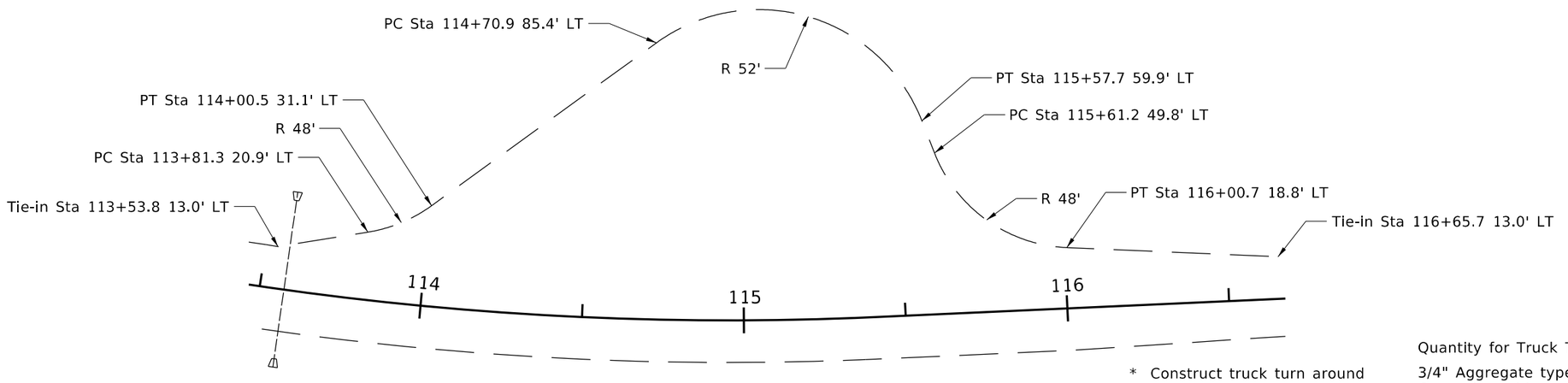
COUNTY: CASSIA

KEY NUMBER: 23295

SHEET 9 OF 11

PROFESSIONAL ENGINEER LICENSED 19331 9/29/2025 STATE OF IDAHO BENJAMIN A. BINGHAM

TRUCK TURN AROUND DETAIL*
N.T.S

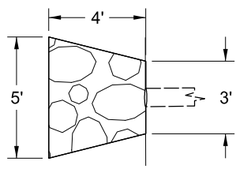


* Construct truck turn around with same ballast section specified for the roadway.

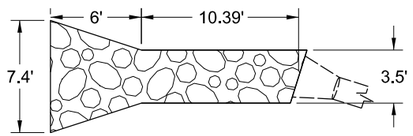
Quantity for Truck Turn Around

3/4" Aggregate type B for base..... 329 Tons
Grannular subbase..... 625 Tons

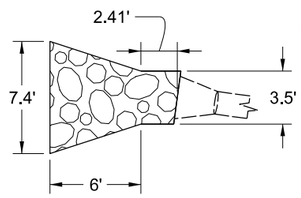
RIPRAP DETAIL 1
STA 103+11.1
OFFSET 21.0'
N.T.S.



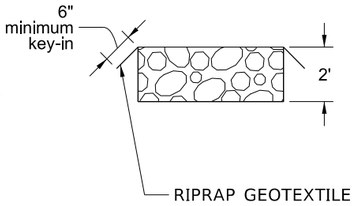
RIPRAP DETAIL 2
STA 109+37.0
OFFSET 37.3'
N.T.S.



RIPRAP DETAIL 3
STA 113+57.6
OFFSET 30.4'
N.T.S.



RIPRAP CROSS SECTION DETAIL
N.T.S.



REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED	B. BINGHAM
DESIGN CHECKED	R. RAMSEY
DETAILED	S. BURBANK
DRAWING CHECKED	B. BINGHAM

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME 23295 rdtl 001.DGN

DRAWING DATE: 29-SEP-2025

IDAHO TRANSPORTATION DEPARTMENT
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CIVIL SCIENCE

PROJECT NO.
A023(295)

DETAIL SHEET
BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH

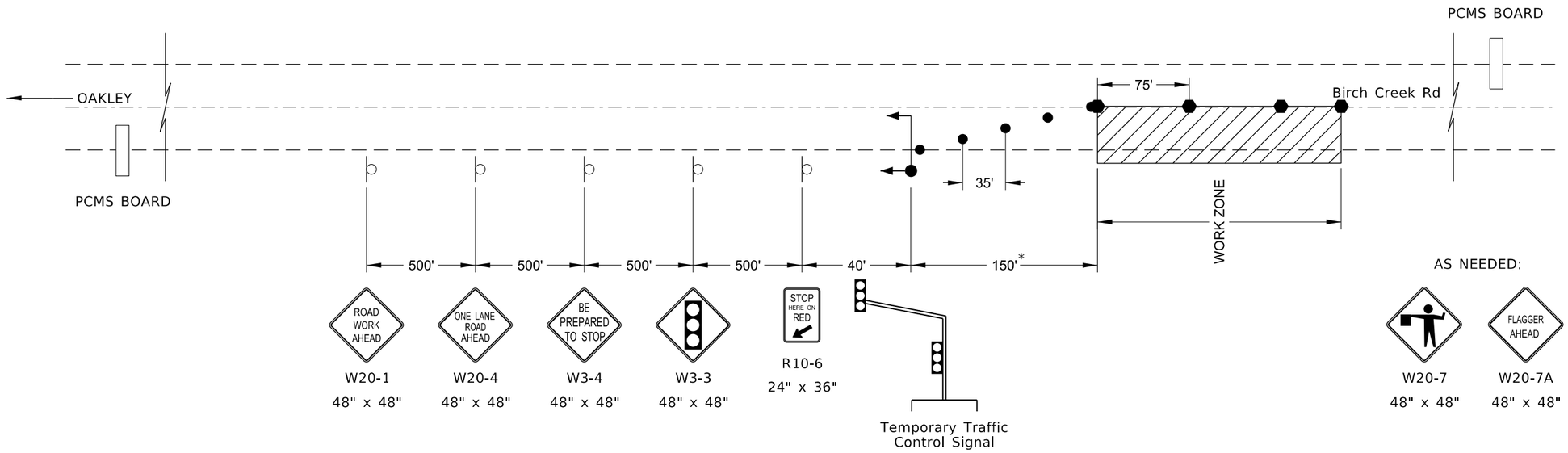
COUNTY CASSIA

KEY NUMBER 23295

SHEET 10 OF 11

PROFESSIONAL ENGINEER LICENSED
Benjamin A Bingham
19331
9/29/2025
STATE OF IDAHO
BENJAMIN A. BINGHAM

TYPICAL TRAFFIC CONTROL SET UP



GENERAL NOTES:

Signing, Temporary Traffic Control Signal, and flagging is for one direction only. The same sequence shall be required for both directions.

The Contractor will maintain one lane of traffic at all times. The minimum width for the travel lane is 11 feet.

Two PCMS boards will be installed for the project. As directed by the Engineer, install the PCMS boards north and south of the project. The PCMS boards must be in place for the duration of the project.

All construction signing shall meet or exceed the requirements of the MUTCD, as adopted by the State.

If the traffic control plan, as shown, does not conform to the contractor's method of operation, the contractor shall submit new traffic control plans for approval.

All distances between signs, tubular markers, and drums shall meet the MUTCD and State requirements.

All construction signing shall be in place prior to diversion of traffic.

When construction signs are not applicable, these shall be either covered or removed.

The contractor shall coordinate with emergency medical services, mail carriers, and school bus routes as necessary.

Double bases for drums and tubular markers to be used as requested by the Engineer.

Use of flaggers will require approval from the Engineer.

* Minimum distance. Actual distance may vary. Verify location of traffic signal with the Engineer prior to sign placement. Verify stop location isn't on a steep grade.

TEMPORARY TRAFFIC CONTROL SIGNS

SIGN	SIZE IN	AREA SF	QTY	TOTAL SF
W20-1	48X48	16	2	32
W20-4	48X48	16	2	32
W3-3	48X48	16	2	32
W20-7	48X48	16	2	32
W20-7A	48X48	16	2	32
W3-4	48X48	16	2	32
R10-6	24X36	6	2	12
				204
			15% CONTINGENCY	31
				235

(626-010A) TEMPORARY TRAFFIC CONTROL SIGNS
235 SF

(626-050A) DRUMS
14 EACH

(626-105A) TEMPORARY TRAFFIC CONTROL MAINTENANCE
50 HR

(626-115A) PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
70 DAY

(626-120A) FLAGGER CONTROL
80 HR

(626-130B) TEMPORARY TRAFFIC CONTROL SIGNAL
70 DAY

(626-135A) WEIGHTED BASE TUBULAR MARKERS
27 EACH

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED B. BINGHAM	SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
DESIGN CHECKED R. RAMSEY	
DETAILED B. BINGHAM	CADD FILE NAME 23295 trcp 001.DGN
DRAWING CHECKED R. RAMSEY	DRAWING DATE: 29-SEP-2025

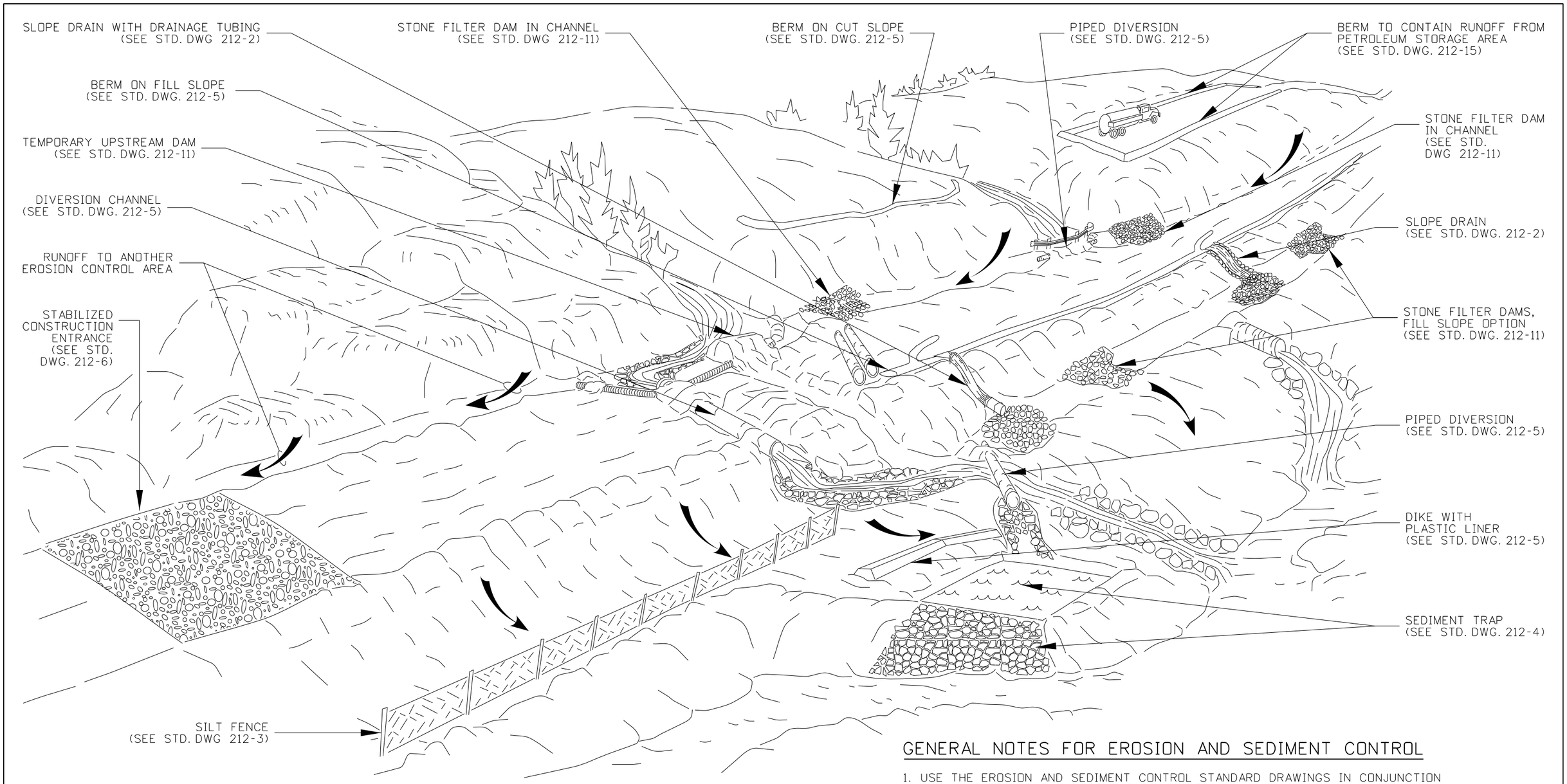
IDAHO TRANSPORTATION DEPARTMENT
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
CIVIL SCIENCE

PROJECT NO.	TRAFFIC CONTROL PLAN
A023(295)	BIRCH CREEK ROAD SAFETY IMPROVEMENTS, OAKLEY HD

ENGLISH

COUNTY	CASSIA
KEY NUMBER	23295
SHEET	11 OF 11

PROFESSIONAL ENGINEER LICENSED
Benjamin A Bingham
19331
9/29/2025
STATE OF IDAHO
BENJAMIN A. BINGHAM



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

PROFESSIONAL ENGINEER LICENSED RYAN D. LANCASTER 13683 STATE OF IDAHO
ORIGINAL SIGNED AND SEALED MARCH 18, 2021

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

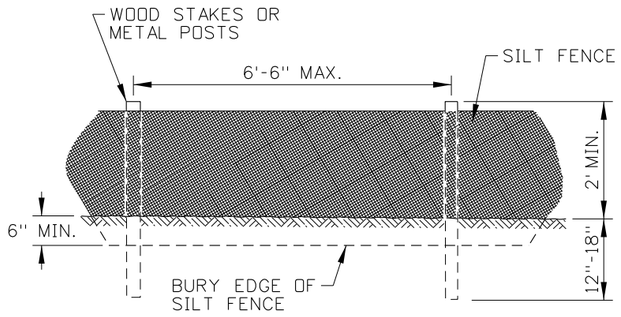
STANDARD DRAWING

EROSION AND SEDIMENT CONTROL EXAMPLE APPLICATIONS

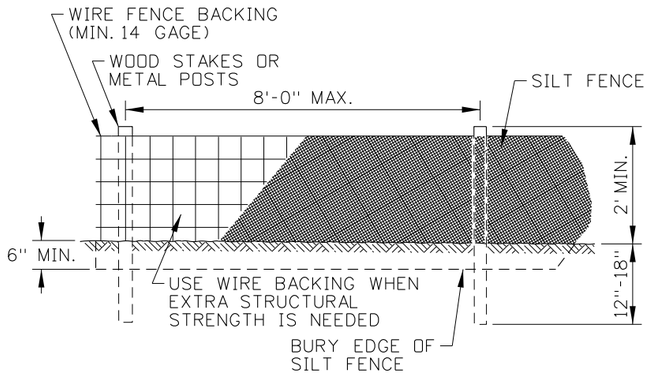
English

STANDARD DRAWING NO. 212-1

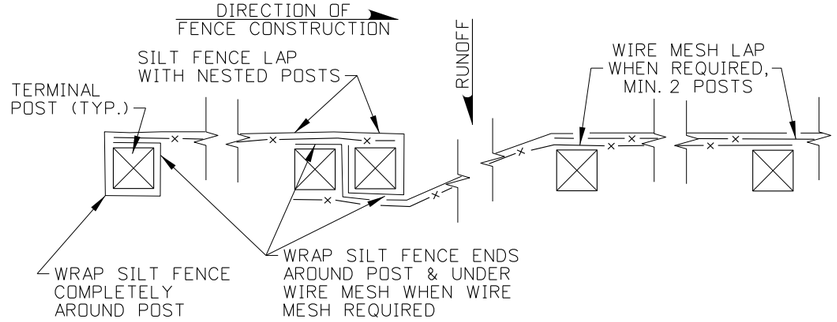
SHEET 1 OF 1



SILT FENCE (NO WIRE BACKING)



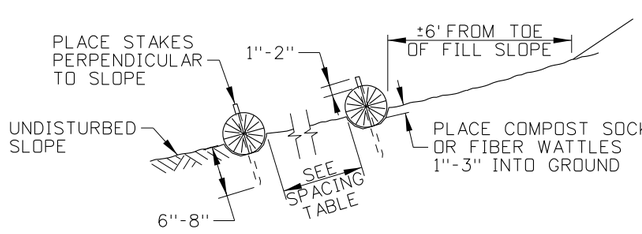
SILT FENCE (WIRE BACKING)



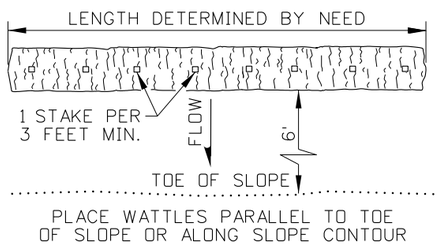
SILT FENCE LAP DETAIL

FIBER WATTLE & COMPOST SOCK SPACING TABLE				
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

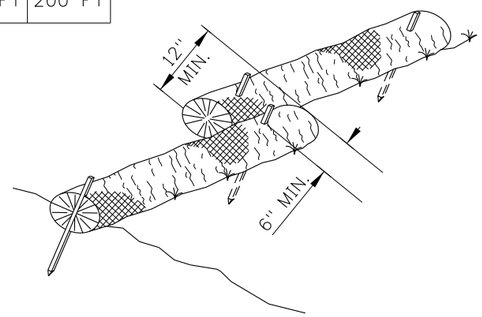
SILT FENCE SPACING TABLE			
SLOPE	SOIL TYPE		
	SILTY	CLAYS	SANDY
1:1	50 FT	75 FT	100 FT
2:1	75 FT	100 FT	125 FT
4:1	100 FT	125 FT	150 FT
10:1 OR FLATTER	125 FT	150 FT	200 FT



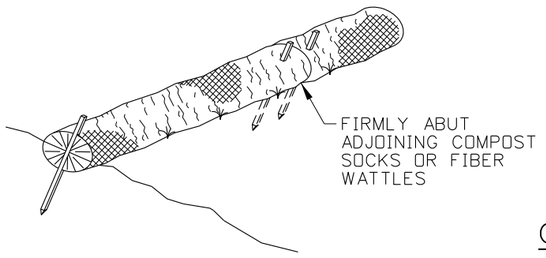
COMPOST SOCK AND FIBER WATTLE
SIDE VIEW



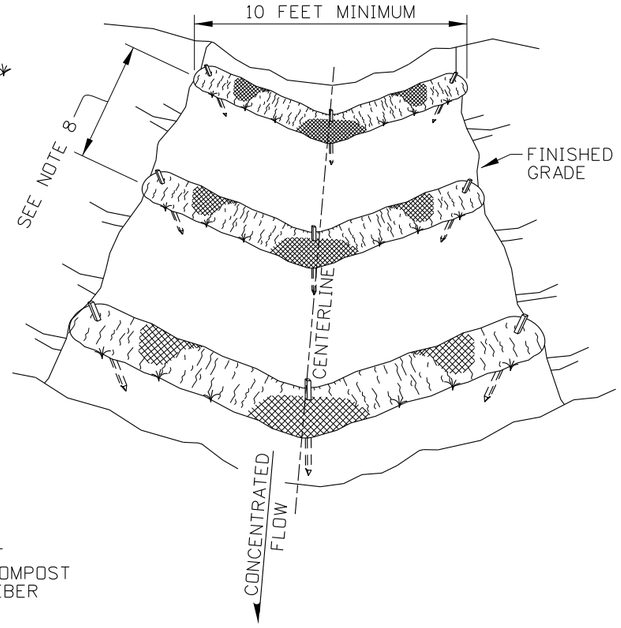
COMPOST SOCK AND FIBER WATTLE
PLAN VIEW



COMPOST SOCK AND FIBER WATTLE OVERLAPPING DETAIL



COMPOST SOCK AND FIBER WATTLE ABUTTING DETAIL



COMPOST SOCK AND FIBER WATTLE TEMPORARY CHECK DAM DETAIL

NOTES

1. SEE THE GENERAL NOTES FOR EROSION CONTROL STANDARD DRAWINGS ON 212-1.
2. 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.
3. INSTALL TEMPORARY SEDIMENT CONTROL BARRIERS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND SPECIFICATIONS. THE DIMENSIONS SHOWN ARE GENERAL GUIDELINES.
4. PLACE SEDIMENT BARRIERS TO FOLLOW THE SLOPE CONTOURS. USE EITHER METAL POSTS OR WOOD STAKES.
5. ENSURE RUNOFF PASSES THROUGH THE SILT FENCE AND NOT AROUND THE FENCE.
6. GROUND SILT FENCES WITH WIRE MESH IN ACCORDANCE WITH THE GROUNDING DETAIL SHOWN ON STANDARD DRAWING 610-1.
7. EXTEND OR JOIN SILT FENCE USING SILT FENCE LAP WITH NESTED POSTS.
8. 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.
9. 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.
10. 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.
11. DRAWING NOT TO SCALE.

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

PROFESSIONAL ENGINEER LICENSED RYAN D. LANCASTER ORIGINAL SIGNED DATE OF ORIGINAL SIGNATURE MARCH 18, 2021 13683 STATE OF IDAHO RYAN D. LANCASTER

REVISIONS									
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

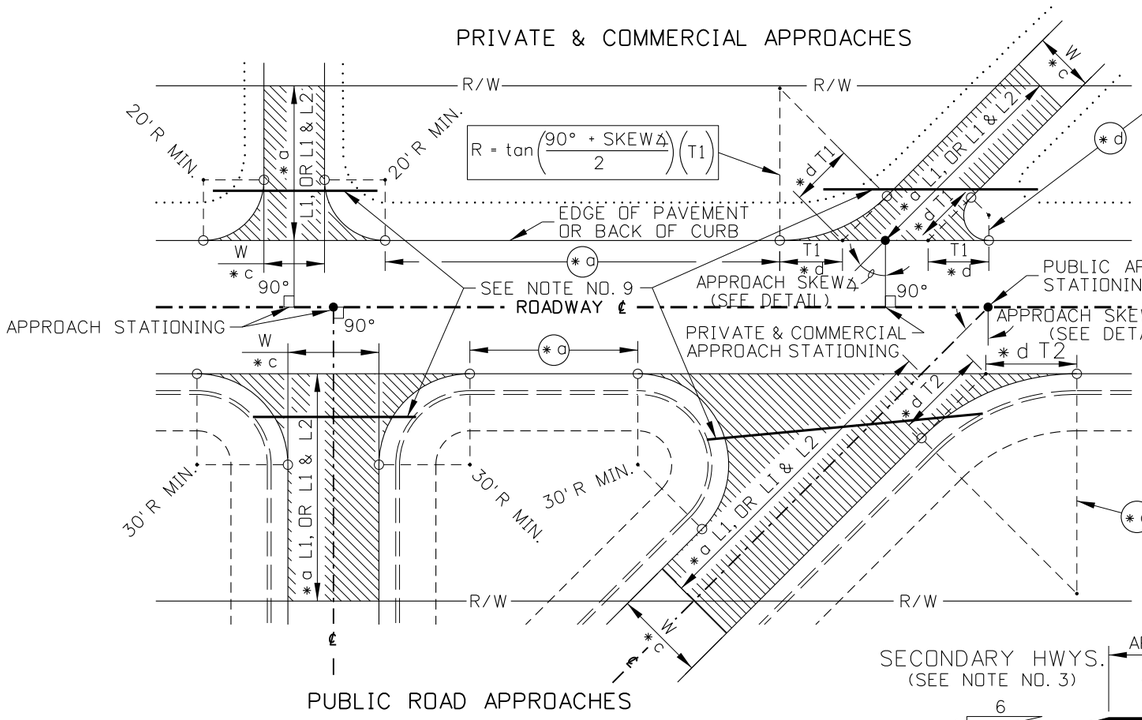
English

STANDARD DRAWING NO.

212-3

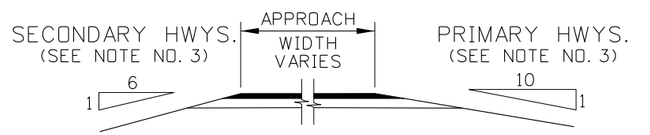
SHEET 1 OF 1

PRIVATE & COMMERCIAL APPROACHES



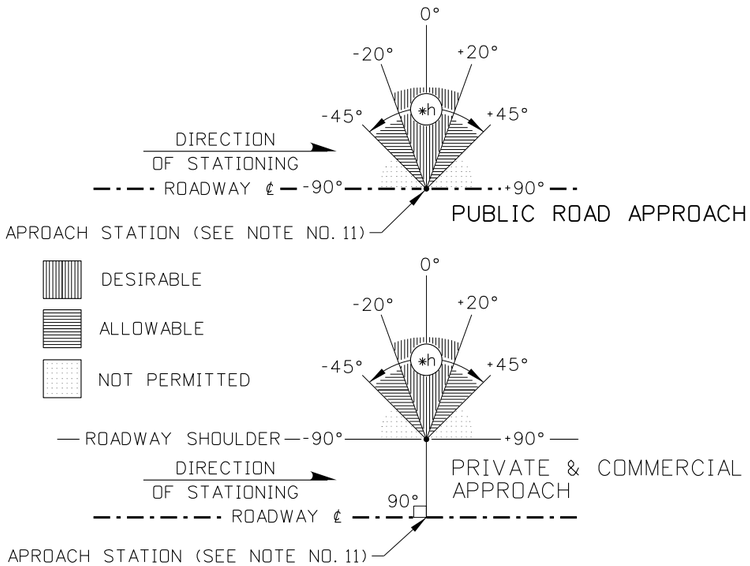
APPROACH PLAN TYPICALS

APPROACH PLAN LEGEND & APPROACH NOMENCLATURE	
CUT	– – – –
FILL	.....
PROPOSED DITCH	═ ═ ═
PROPOSED CULVERT	———
SKEW Δ	SEE NOTE NO. 10
R	RADIUS OF SHD. CURVE
T1 & T2	TANGENT OF SHD. CURVE
W	APPROACH WIDTH
G1 & G2	APPR. GRADES 1 & 2 (%)
C	CHANGE IN GRADE (%)
L1 & L2	HORZ. LENGTH OF GRADE



APPROACH TYPICAL - CLEARZONE SLOPES

(PUBLIC & PRIVATE)

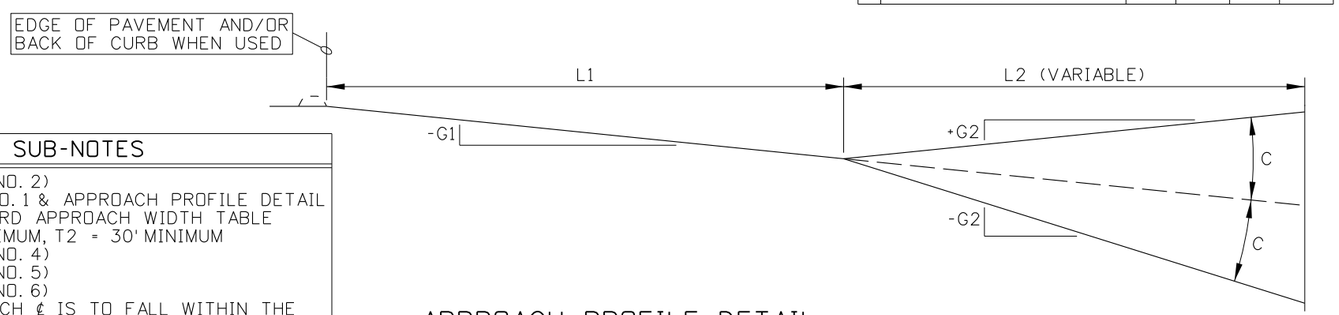


APPROACH SKEW ANGLE

(SEE NOTE NO. 10)

APPROACH GRADE TABLE				
TRAFFIC TYPE	GRADE PARAMETER G1 (RANGE)	GRADE PARAMETER G2 (MAX.)	MAX. CHANGE IN GRADE C (*e)	MINIMUM LENGTH L1
HIGH VOLUME (COMMERCIAL, INDUSTRIAL)	-2% TO -3%	±5%	±3%	40'
LOW VOLUME (COMMERCIAL, INDUSTRIAL)	-2% TO -5%	±8%	±6%	40'
SINGLE RESIDENTIAL, FARMYARD, FIELD	-2% TO -8%	±15% * g	VEHICLE CLEARANCE	10'
MULTIPLE RESIDENTIAL	-2% TO -8%	±15% * g	±6%	20'
PUBLIC ROAD	-2%	* f	±2%	20'

(*a) STANDARD APPROACH WIDTH TABLE					
POSTED SPEED (mph)		≤35		>35	
MIN./MAX. WIDTH		MIN.	MAX.	MIN.	MAX.
APPR. TYPE	MULTIPLE RESIDENTIAL	28'	40'	28'	40'
	SINGLE RESIDENTIAL, FARMYARD, FIELD	12'	40'	20'	40'
	COMMERCIAL (ONE-WAY)	15'	30'	20'	30'
	COMMERCIAL (TWO-WAY)	25'	40'	25'	40'
	PUBLIC ROAD	28'	N/A	28'	N/A



APPROACH PROFILE DETAIL

SUB-NOTES

- * a (SEE NOTE NO. 2)
- * b SEE NOTE NO. 1 & APPROACH PROFILE DETAIL
- * c SEE STANDARD APPROACH WIDTH TABLE
- * d T1 = 20' MINIMUM, T2 = 30' MINIMUM
- * e (SEE NOTE NO. 4)
- * f (SEE NOTE NO. 5)
- * g (SEE NOTE NO. 6)
- * h THE APPROACH ℄ IS TO FALL WITHIN THE ALLOWABLE OR DESIRABLE LIMITS. THE DESIRABLE LIMIT IS CONSIDERED THE "SAFEST OPTION."

NOTES

1. RURAL PRIVATE, COMMERCIAL, AND PUBLIC APPROACHES SHALL BE PAVED TO THE RIGHT-OF-WAY LINE OR TO THE BACK OF THE SHOULDER CURVE (APPROACH RADIUS). FARMYARD AND FIELD APPROACHES THAT ARE OCCASIONALLY USED MAY BE PAVED A MINIMUM OF 5' FROM THE SHOULDER LINE. APPROACHES ON EXISTING UNPAVED HIGHWAYS ARE EXEMPT.
2. REFER TO THE ITD ADMINISTRATIVE POLICY 5005 FOR ADDITIONAL INFORMATION ON LOCATION OF APPROACHES.
3. WITHIN THE CLEARZONE THE SIDE SLOPES OF APPROACHES SHALL BE A MINIMUM OF 6:1 OF SECONDARY HIGHWAYS AND A MINIMUM OF 10:1 ON PRIMARY HIGHWAYS.
4. WHEN THE "MAXIMUM CHANGE IN GRADE" (APPROACH GRADE TABLE) "C" IS EXCEEDED, A MINIMUM 10' VERTICAL CURVE SHALL BE USED IN THE APPROACH PROFILE.
5. THE % GRADE OF "G2" SHALL BE A MAXIMUM OF 7% FOR FLAT TERRAIN, 11% FOR ROLLING TERRAIN, OR 15% FOR MOUNTAINOUS.
6. APPROACH GRADES EXCEEDING 10% ARE NOT RECOMMENDED BECAUSE EMERGENCY VEHICLES MAY BE IMPEDED.
7. THE BALLAST REQUIREMENTS OF RURAL APPROACHES SHALL BE AS SHOWN ON THE PLANS.
8. WHEN A MAILBOX TURNOUT IS INSTALLED WITH A RURAL APPROACH, STD. DWG. 405-2 IS REQUIRED.
9. ALL RURAL PRIVATE AND COMMERCIAL APPROACHES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT THE APPROACH DRAINAGE IS INDEPENDENT AND DOES NOT CONTRIBUTE TO EXISTING HIGHWAY DRAINAGE. ALL RURAL PUBLIC APPROACHES SHALL BE DESIGNED AND CONSTRUCTED TO ADDRESS BOTH THE MAIN HIGHWAY AND APPROACH DRAINAGE.
10. THE APPROACH SKEW ANGLE IS THE DEFLECTION ANGLE BETWEEN A LINE PERPENDICULAR TO THE HIGHWAY CENTERLINE AND THE APPROACH CENTERLINE.
11. RURAL PRIVATE AND COMMERCIAL APPROACHES ARE REFERENCED LEFT OR RIGHT OF THE HIGHWAY CENTERLINE STATION TO THE CENTER OF THE APPROACH OPENING WHICH IS AT THE EDGE OF PAVEMENT OR BACK OF CURB. A PUBLIC APPROACH STATION OCCURS WHERE THE PUBLIC APPROACH CENTERLINE INTERSECTS THE HIGHWAY CENTERLINE.
12. NOT TO SCALE.

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

PROFESSIONAL ENGINEER * LAND SURVEYOR REGISTERED ORIGINAL SIGNED AT: MILFORD MILLER DATE ORIGINAL SIGNED: JUNE 19, 2007 STATE OF IDAHO MILFORD MILLER 2240

REVISIONS									
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	01-00	MSM	6	12-05	MSM			
2	01-02	MSM	7	06-07	MSM			
3	07-02	MSM						
4	10-02	MSM						
5	08-04	MSM						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: 405-1_0607.dgn

DRAWING DATE: SEPTEMBER, 1993

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

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

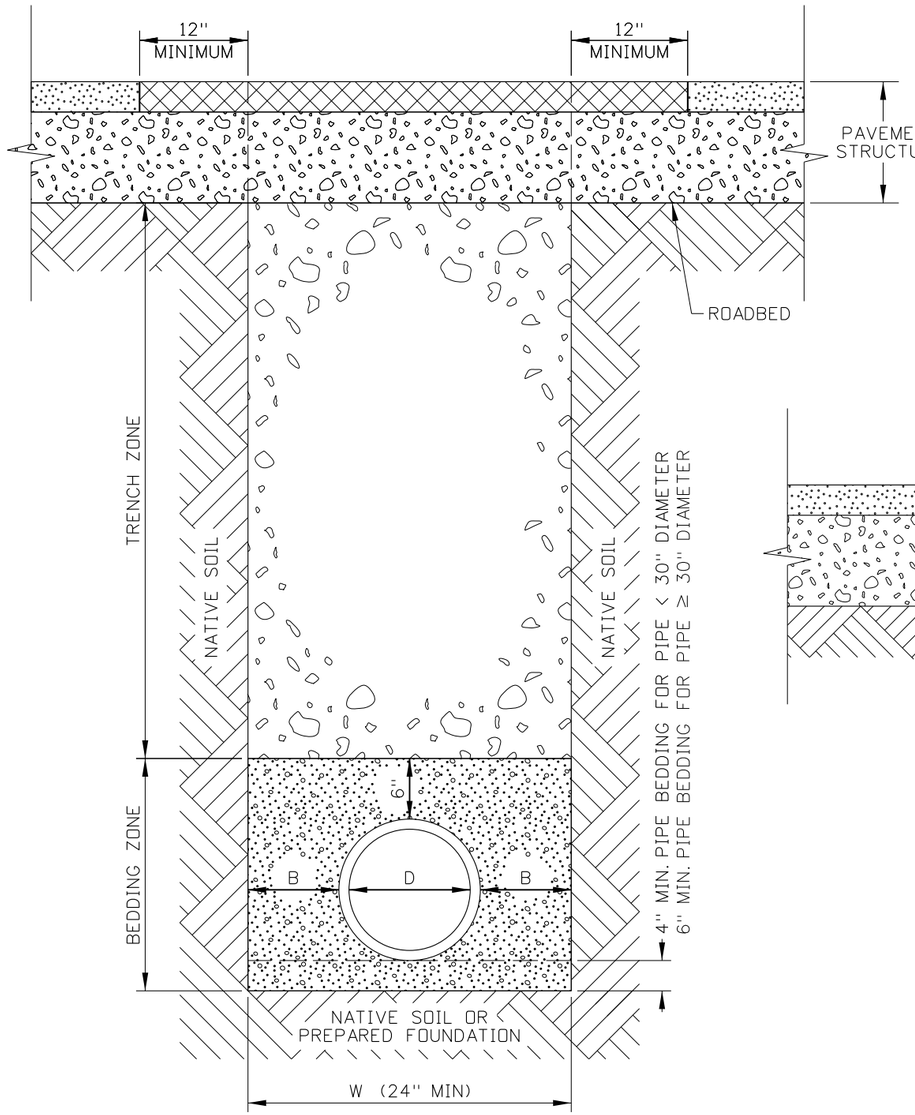
STANDARD DRAWING

RURAL APPROACHES

English

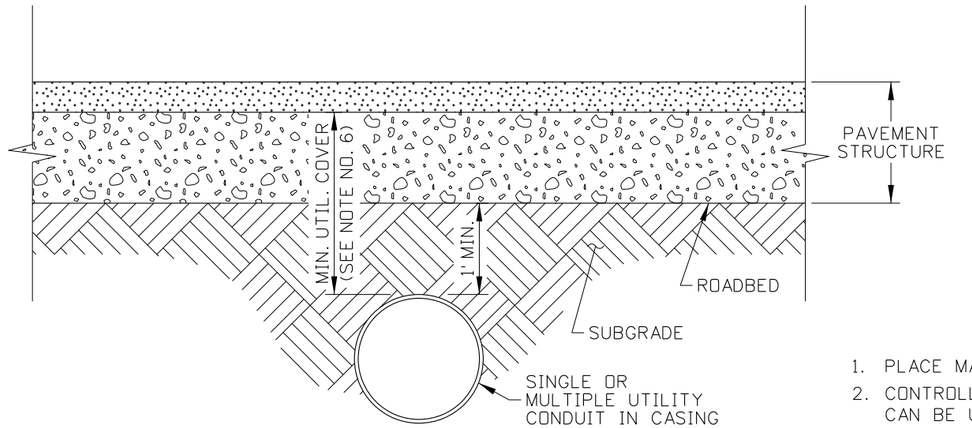
STANDARD DRAWING NO. 405-1

SHEET 1 OF 1

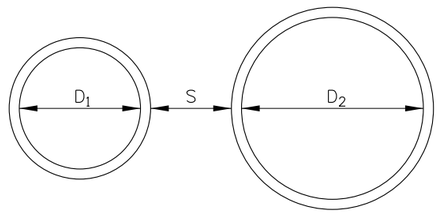


TRENCHING

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)



JACKING, DRIVING, OR BORING



MULTIPLE PIPE INSTALLATION DETAIL
(SEE NOTE NO. 4)

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 EMBANKEMENT 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.

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

PROFESSIONAL ENGINEER REGISTERED STATE OF IDAHO JOHN W. INGRAM III 6755 ORIGINAL SIGNED BY: JOHN W. INGRAM MARCH 18, 2020

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

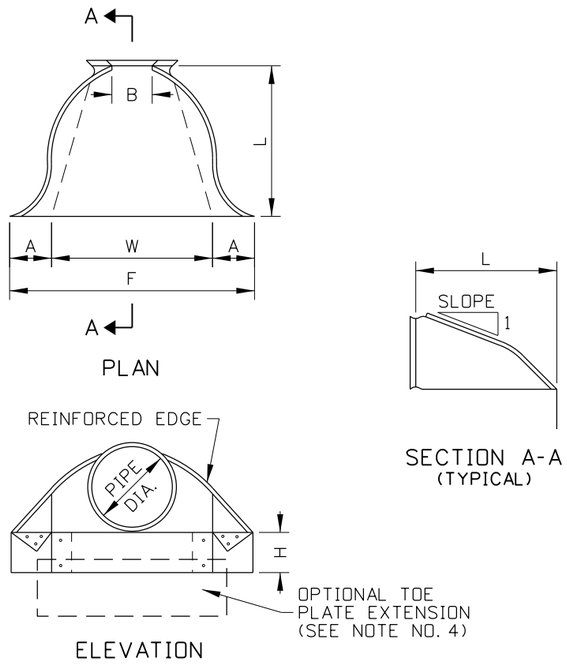
PIPE AND CONDUIT INSTALLATION

English

STANDARD DRAWING NO.

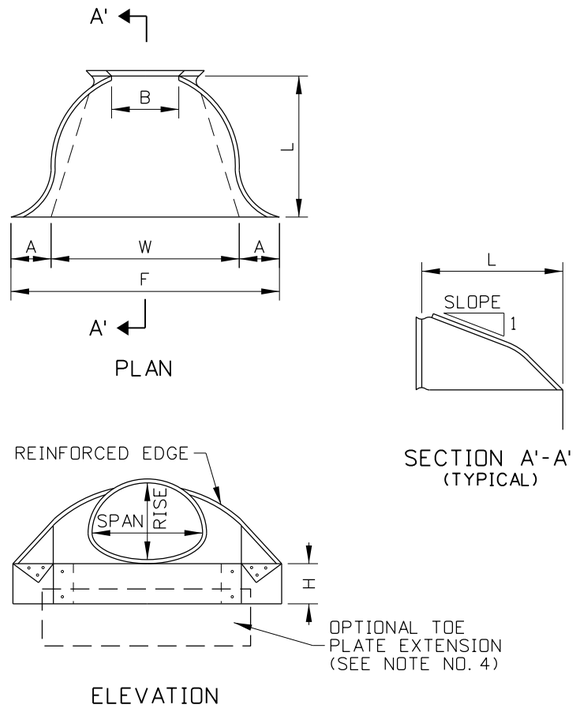
601-1

SHEET 1 OF 1



APRON FOR ROUND METAL PIPE

(GALVANIZED STEEL)



APRON FOR METAL ARCH PIPE

(GALVANIZED STEEL)

DIMENSIONS TABLE

PIPE DIA.	THICK-NESS (1000'S)	ALL DIMENSIONS ARE IN INCHES A (MIN.)	B	H (MIN.)	F (MIN.)	L ±2"	W (MAX.)	APPROX. SLOPE	BODY
12	0.064	5	7	6	22	21	24	2½:1	1 PC.
15	0.064	7	8	6	28	26	30	2½:1	1 PC.
18	0.064	7	10	6	34	31	36	2½:1	1 PC.
21	0.064	8	12	6	40	36	42	2½:1	1 PC.
24	0.064	9	13	6	46	41	48	2½:1	1 PC.
30	0.079	13	16	8	55	51	60	2½:1	1 PC.
36	0.079	11	19	9	70	60	72	2½:1	2 PC.
42	0.109	15	25	10	82	69	84	2½:1	2 PC.
48	0.109	17	29	12	88	78	90	2½:1	2 PC.
54	0.109	17	33	12	100	84	102	2:1	2 PC.
60	0.109	17	36	12	112	87	114	2½:1	3 PC.
66	0.109	17	39	12	118	87	120	2½:1	3 PC.
72	0.109	17	44	12	120	87	126	2½:1	3 PC.
78	0.109	17	48	12	130	87	132	2½:1	3 PC.
84	0.109	17	52	12	136	87	138	2½:1	3 PC.

DIMENSIONS TABLE

PIPE-ARCH SPAN IN.	PIPE-ARCH RISE IN.	THICK-NESS (1000'S)	ALL DIMENSIONS ARE IN INCHES A (MIN.)	B	H (MIN.)	F (MIN.)	L ±2"	W (MAX.)	APPROX. SLOPE	BODY
17	13	0.064	5	9	6	28	20	50	2½:1	1 PC.
21	15	0.064	6	11	6	34	24	58	2½:1	1 PC.
24	18	0.064	7	12	6	40	28	63	2½:1	1 PC.
28	20	0.064	7	16	6	46	32	70	2½:1	1 PC.
35	24	0.079	9	16	6	58	39	85	2½:1	1 PC.
42	29	0.079	11	18	8	73	46	104	2½:1	1 PC.
49	33	0.109	12	21	9	82	53	117	2½:1	2 PC.
57	38	0.109	16	26	10	88	62	130	2½:1	2 PC.
64	43	0.109	17	30	12	100	79	142	2¼:1	2 PC.
71	47	0.109	17	36	12	112	77	156	2¼:1	2 PC.
77	52	0.109	17	36	12	124	77	167	2:1	3 PC.
83	57	0.109	17	44	12	130	77	179	2:1	3 PC.

NOTES

1. ALL 3-PIECE BODIES (APRONS WITH PIPE DIA. 60 IN. & LARGER) TO HAVE 0.109 IN. SIDES AND 0.138 IN. CENTER PANELS. MULTIPLE PANEL BODIES TO HAVE LAP SEAMS WHICH ARE TO BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS.
2. THE REINFORCED EDGES OF GALVANIZED STEEL APRONS, FOR ROUND METAL PIPE SIZES 60 IN. THROUGH 84 IN. AND FOR ARCH METAL PIPE SIZES 77x62 IN. THROUGH 83x57 IN., ARE TO BE SUPPLEMENTED BY GALVANIZED STIFFENER ANGLES. THE ANGLES ARE TO BE ATTACHED BY GALVANIZED BOLTS AND NUTS.
3. ANGLE REINFORCEMENT WILL BE PLACED UNDER THE CENTER PANEL SEAMS ON ARCH PIPE SIZES 77x52 IN. THROUGH 83x57 IN.
4. A GALVANIZED TOE PLATE IS AVAILABLE AS AN ACCESSORY. WHEN SPECIFIED IT SHALL BE THE SAME GAGE AS THE APRON.
5. THE APRON SHALL BE CONNECTED TO PIPE BY USING EITHER CONNECTING BANDS, RODS, OR STRAPS.
5. NOT TO SCALE.

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

PROFESSIONAL ENGINEER * LAND SURVEYOR REGISTERED ORIGINAL SIGNED BY: MILFORD MILLER DATE OF ORIGINAL SIGNATURE: MARCH 4, 2005 2240 STATE OF IDAHO MILFORD MILLER

REVISIONS

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	09-64		6	06-84				
2	06-68		7	07-92	MSM			
3	04-70		8	11-01	MSM			
4	10-76		9	03-05	MSM			
5	07-78							

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

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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

GALVANIZED STEEL APRONS FOR PIPE CULVERTS

English

STANDARD DRAWING NO. 608-1

SHEET 1 OF 1