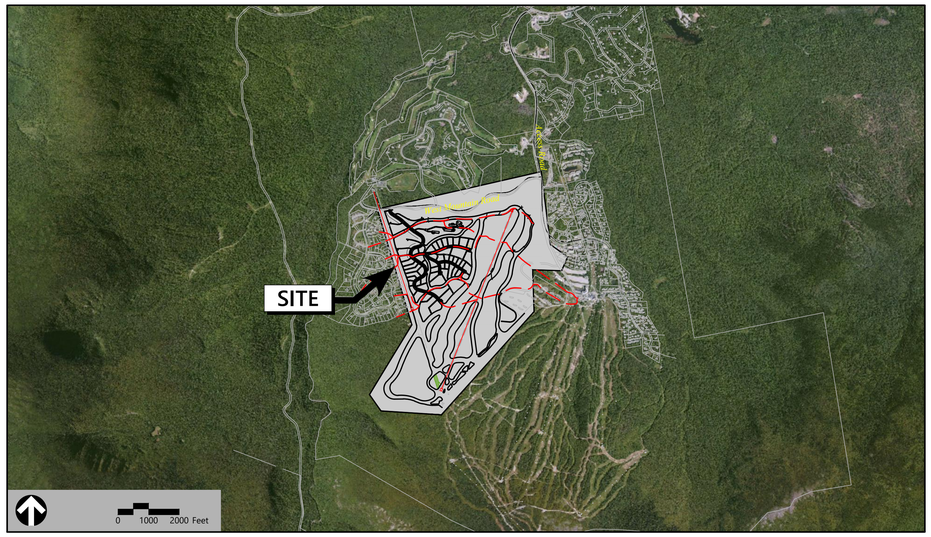
Site Plans

Issued for	**Review**
Date Issued	**April 29, 2022**
Latest Issue	**April 29, 2022**

Sugarloaf West Mountain Development

5092 Sugarloaf Access Road
Carrabassett Valley, ME 04947



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Owner

Sugarloaf Mountain Corporation
c/o Boyne USA, Inc.
3951 Charlevoix Avenue
Petoskey, MI 49770

Applicant

Sugarloaf Mountain Corporation
c/o Boyne USA, Inc.
3951 Charlevoix Avenue
Petoskey, MI 49770

Sheet Index

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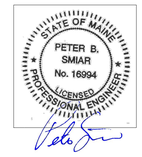
Reference Drawings

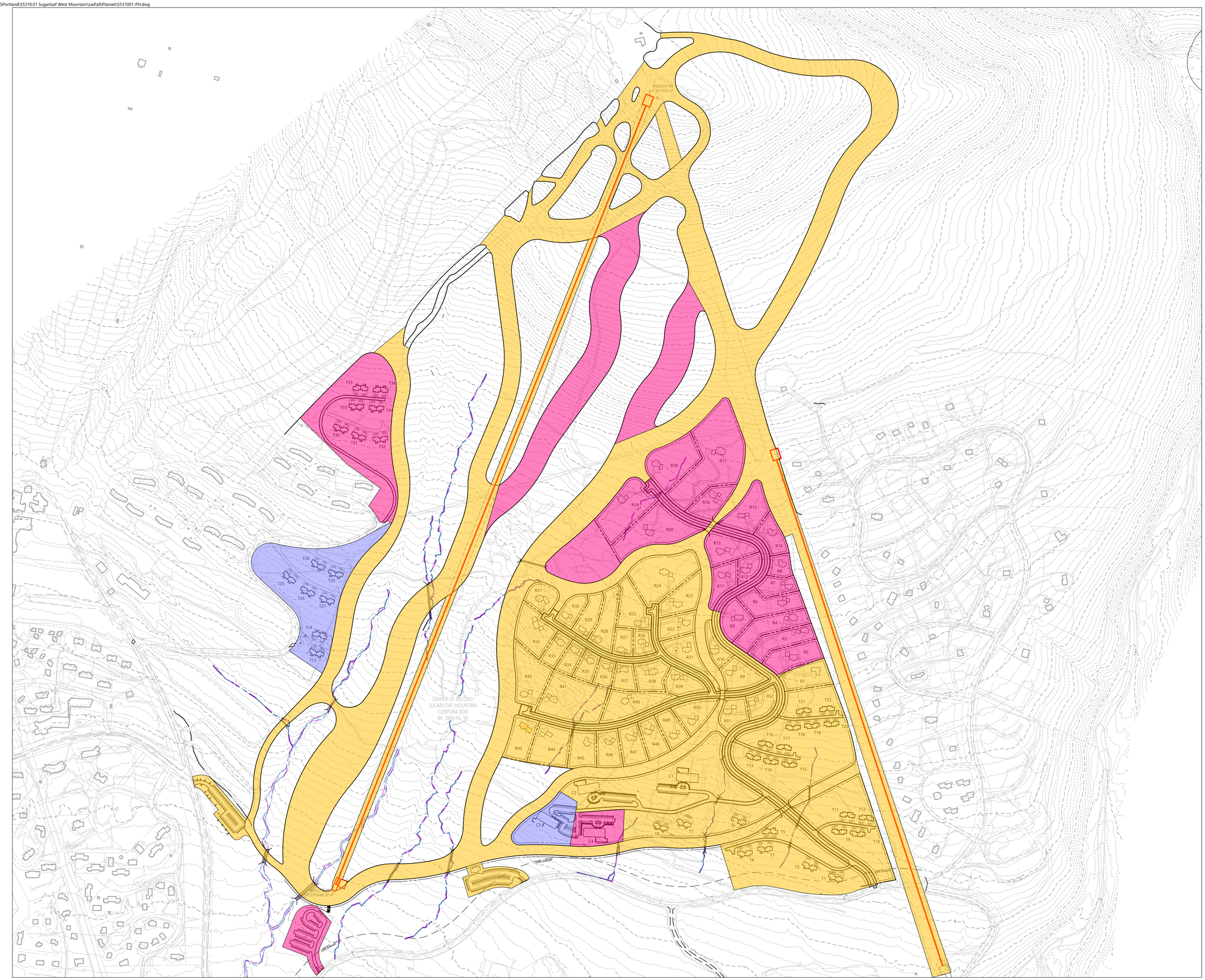
SD-1 through SD-8 Subdivision Plan of Land, by VHB, Dated August 20, 2021

Notes

Drawings indicated with ~~strike through~~ are not included with these revised submitted plans.



VHB Project :
55310.01 Sugarloaf West Mountain
Issued for :
Review 09/24/2022



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SUGARLOAF

LEGEND

- Phase One
- Phase Two
- Phase Three

0 125 250 500 Feet

Sugarloaf Mtn Corp
West Mountain Expansion

5092 Access Road
Carrabassett Valley, ME 04947

No.	Revision	Date	Appvd.

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Issued for: Review

Date: April 29, 2022

Not For Construction

Drawing Title: Phasing Plan

Drawing Number: LA-2.00

Sheet of 63

Project Number: 55310.01

STATE OF MAINE
PETER B. SIMIAR
No. 16994
LICENSED
PROFESSIONAL ENGINEER

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ENDANGERED, THREATENED, AND SPECIAL CONCERN WILDLIFE (BICKNELL'S THRUSH)

REGROWTH AREA

Trail 10

Upper West Mountain Trail

Trail 4

Trail 5

Trail 7

Trail 8

Trail 2

Trail 3

Trail 1

WETLANDS OF SPECIAL SIGNIFICANCE (TYP)

TIMBERS TOWNHOMES

EXISTING BASE VILLAGE

EXISTING MULTI-FAMILY HOUSING DEVELOPMENT

Hardwood Ridge Road

Fast Track Lane

Buckskaw Drive

TRAIL TYP.

EXISTING SINGLE FAMILY HOME DEVELOPMENT

EXISTING PARKING LOT E

EXISTING PARKING LOT F

PARKING LOT G (100 SPACES)

OWNER OF RECORD: SUGARLOAF MOUNTAIN CORPORATION BK 39844 PG 90

Ski Back Trail 2

Ski Back Trail 1

Road C

Road B

Road A

CONDOMINIUMS

TOWNHOMES

SKIER SERVICES

PARKING LOT H (173 SPACES)

West Mountain Road

DROP OFF PARKING (93 SPACES)

0 125 250 500 Feet

Sugarloaf Mtn Corp West Mountain Expansion

5092 Access Road
Carrabassett Valley, ME 04947

No.	Revision	Date	Appvd.

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Drawing Title: Overall Ski Trails Grading

Drawing Number: CG-1.00

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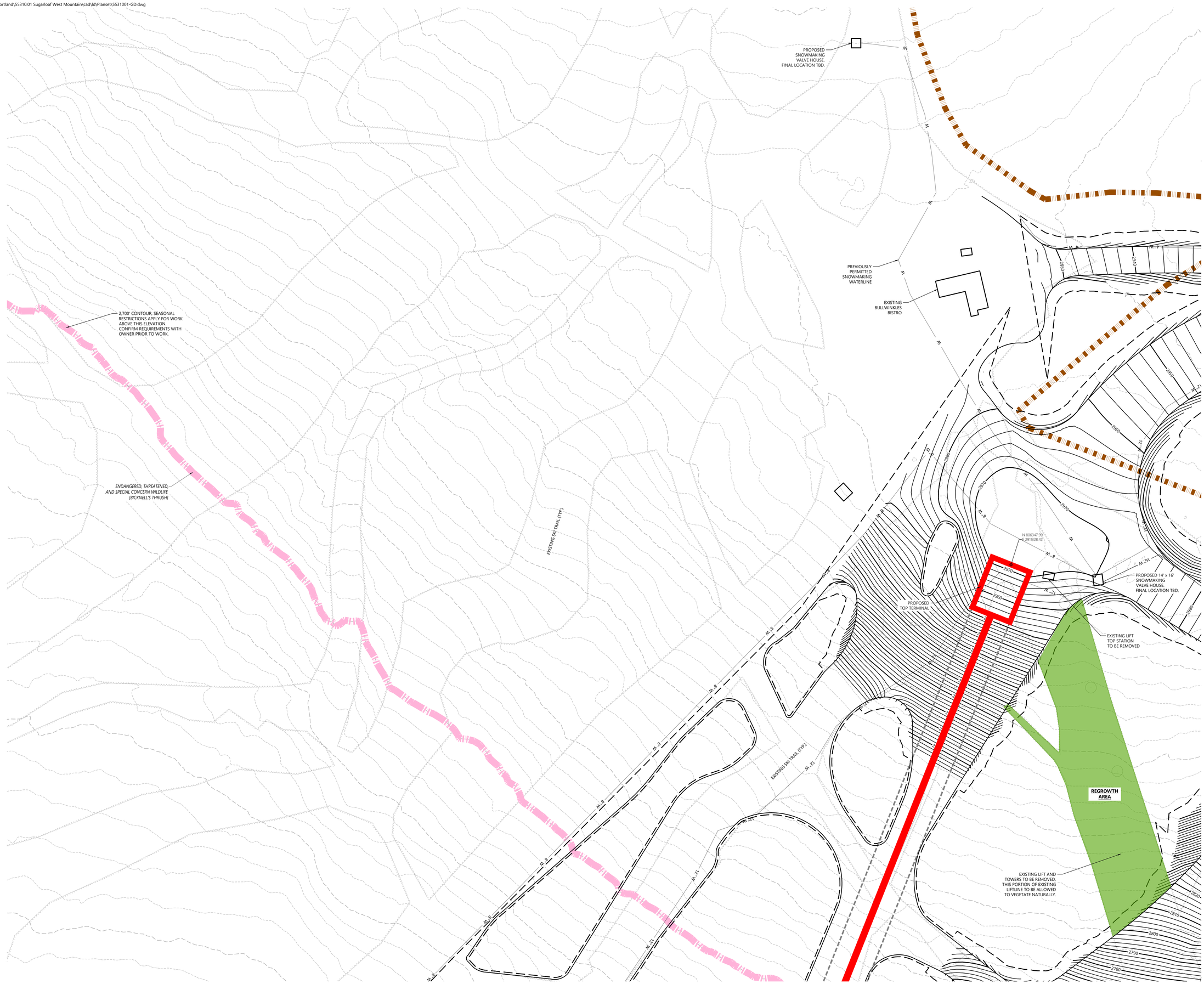
Project Number: 55310.01



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0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.01

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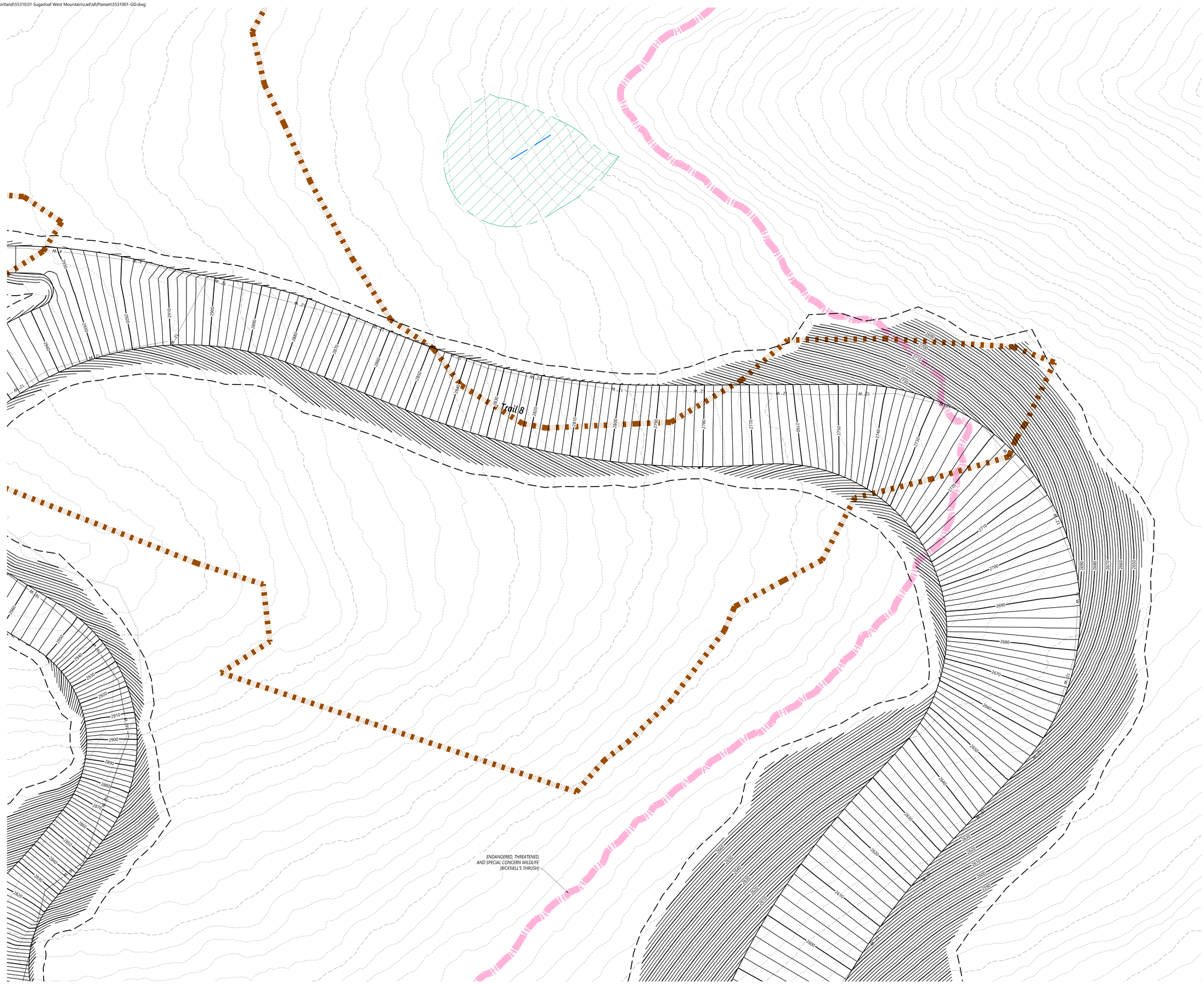
Project Number: 55310.01



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0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.02

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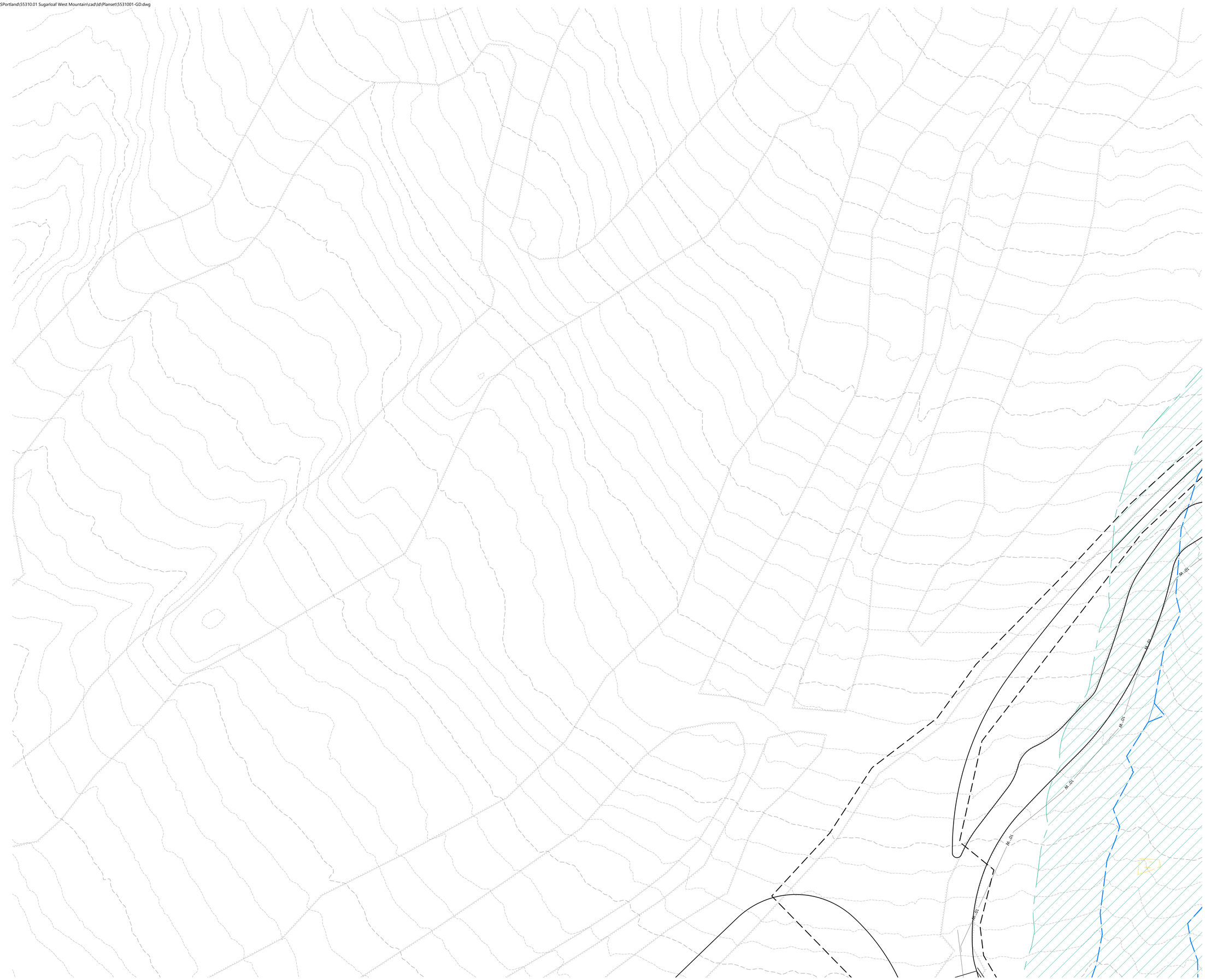
Project Number: 55310.01



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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.03

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Project Number: 55310.01

WETLAND IMPACTS
FEATURE ID 2020-1
7,354 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-1
30 SF

PROPOSED 14' x 14'
SNOWMAKING
VALVE HOUSE.
FINAL LOCATION TBD.

Trail 10

ENDANGERED, THREATENED, AND SPECIAL CONCERN WILDLIFE
(BICKNELL'S THRUSH)

WETLAND IMPACTS
FEATURE ID 2020-119
1,429 SF

WETLAND IMPACTS
FEATURE ID 2020-7
713 SF

WETLAND IMPACTS
FEATURE ID 2020-102
2,065 SF

INDIAN HILL

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0 25 50 100 Feet

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Drawing Title
Ski Trails Grading

Drawing Number
CG-1.04

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0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.05

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0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.06

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Project Number: 55310.01

WETLANDS OF SPECIAL SIGNIFICANCE (TYP.)

WETLANDS (TYP.)

TRAIL TYP.

Trail 4

Trail 5

Trail 7

WETLAND IMPACTS
FEATURE ID 2020-201
731 SF

WETLAND IMPACTS
FEATURE ID 2020-5
420 SF

WETLAND IMPACTS
FEATURE ID 2020-101
1,066 SF

WETLAND IMPACTS
FEATURE ID 2020-39
751 SF

WETLAND IMPACTS
FEATURE ID 2020-38
4,986 SF

WETLAND IMPACTS
FEATURE ID 2020-37
1,298 SF

WETLAND IMPACTS
FEATURE ID 2020-124
1,674 SF

WETLAND IMPACTS
FEATURE ID 2020-123
2,192 SF

WETLAND IMPACTS
FEATURE ID 2020-402
2,949 SF

WETLAND IMPACTS
FEATURE ID 2020-407
4,318 SF

WETLAND IMPACTS
FEATURE ID 2020-121
4,154 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-202
14 SF

WETLAND IMPACTS
FEATURE ID 2020-203
1,201 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-204
315 SF

WETLAND IMPACTS
FEATURE ID 2020-204
85 SF

WETLAND IMPACTS
FEATURE ID 2020-402
3,464 SF

WETLAND IMPACTS
FEATURE ID 2020-11
491 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-35
17 SF

WETLAND IMPACTS
FEATURE ID 2020-35
27,173 SF

R18

R19

R20

Road A

0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.07

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Project Number: 55310.01

WETLAND IMPACTS
FEATURE ID 2020-401
532 SF

PROPOSED
SNOWMAKING
VALVE HOUSE
FINAL LOCATION TBD

WETLAND IMPACTS
FEATURE ID 2020-200
812 SF

NEW WEST MOUNTAIN
LIFT TOP TERMINAL

West Mountain Trail

Bridge 3
(Ski Only)

R17

R16

R15

R14

R13

EXISTING SINGLE FAMILY
HOME DEVELOPMENT

0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.08

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Project Number: 55310.01

T28

T29

T25

T26

T27

T24

T23

TIMBERS TOWNHOMES

Timbers Trail

Trail 2

Bucksaw Drive

TRAIL, TYP.

EXISTING PARKING LOT E

CULVERT #1910 (CPP)
00 FT. LENGTH, 10%

CULVERT #1913 (CPP)
24 IN. DIA., 200 FT. LENGTH, 5%

CULVERT #1911 (CPP)
24 IN. DIA., 60 FT. LENGTH, 3%

UNKNOWN CULVERT

WETLAND IMPACTS
FEATURE ID 2020-403
1,042 SF

VERNAL POOL LOCATION (TYP)

WETLAND IMPACTS
FEATURE ID 2020-116
400 SF

WETLAND IMPACTS
FEATURE ID 2020-48
2,066 SF

NEW LOOP

TRAIL, TYP.

UNKNOWN CULVERT

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0 25 50 100 Feet

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.09

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Project Number: 55310.01

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R31
R30
R29
R28
R27
R26
R25
R24
R22
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R48
R49

Ski Back Trail 3
Trail 3
Road E
Road D
Road C

WETLAND IMPACTS
FEATURE ID 2020-35
27,173 SF

WETLAND IMPACTS
FEATURE ID 2020-42
1,174 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-43
637 SF

WETLAND IMPACTS
FEATURE ID 2020-43
450 SF

WETLAND IMPACTS
FEATURE ID 2020-44
6,270 SF

WETLAND IMPACTS
FEATURE ID 2020-417
815 SF

WETLAND IMPACTS
FEATURE ID 2020-45
70 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-416
7 SF

WETLAND IMPACTS
FEATURE ID 2020-53
4,790 SF

WETLAND IMPACTS
FEATURE ID 2020-12
10,441 SF

WETLAND IMPACTS
FEATURE ID 2020-126
365 SF

0 25 50 100 Feet

Sugarloaf Mtn Corp
West Mountain Expansion

5092 Access Road
Carrabassett Valley, ME 04947

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Drawing Title
Ski Trails Grading

Drawing Number
CG-1.10

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Project Number
55310.01

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-12
2,505 SF

WETLAND IMPACTS
FEATURE ID 2020-12
10,441 SF

WETLAND IMPACTS
FEATURE ID 2020-13
58 SF

WETLANDS OF SPECIAL SIGNIFICANCE (TYP)

R8

R7

R11

R23

R6

WETLAND IMPACTS
FEATURE ID 2020-302
837 SF

WETLAND IMPACTS
FEATURE ID 2020-12
10,441 SF

Ski Back Trail 2

R4

R5

WETLANDS (TYP)

WETLAND IMPACTS
FEATURE ID 2020-127
3,154 SF

WETLAND IMPACTS
FEATURE ID 2020-208
3,183 SF

WETLAND IMPACTS
FEATURE ID 2020-209
676 SF

R3

WETLAND IMPACTS
FEATURE ID 2020-404
12,881 SF

R2

R21

R10

Road A

EXISTING SINGLE FAMILY
HOME DEVELOPMENT

TRAIL TYP.

R9

WETLAND
IMPACTS
FEATURE ID
2020-16
926 SF

R1

WETLAND IMPACTS
FEATURE ID 2020-404
12,881 SF

Bridge 2
(Ski Under)

R52

WETLAND IMPACTS
FEATURE ID 2020-404
12,881 SF

T21

T22

R50

WETLAND IMPACTS
FEATURE ID 2020-130
560 SF

R51

T20

T19

T18

T16

T17

WETLANDS (TYP)

SPECIAL SIGNIFICANCE (TYP)

TOWNHOMES

0 25 50 100 Feet

Sugarloaf Mtn Corp
West Mountain Expansion

5092 Access Road
Carrabassett Valley, ME 04947

No.	Revision	Date	Apprvd.

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Drawing Title: Ski Trails Grading

Drawing Number: CG-1.11

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Project Number: 55310.01

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EXISTING
PARKING LOT F

PARKING LOT G
(100 SPACES)

DROP OFF
PARKING
(93 SPACES)

WETLAND IMPACTS
FEATURE ID 2020-117
421 SF

WETLAND IMPACTS
FEATURE ID 2020-33
615 SF

WETLAND IMPACTS
FEATURE ID 2020-32
10,304 SF

WETLANDS OF SPECIAL
SIGNIFICANCE (TYP)

Trail 3

N 812278.17
E 2913688.32

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0 25 50 100 Feet

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Drawing Title:
Ski Trails Grading

Drawing Number

CG-1.12

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R43 R44 R45 R46 R47

C1 C2 C3 C4 T8

CONDOMINIUMS

CONDOMINIUMS

SKIER SERVICES

PARKING LOT H
(173 SPACES)

Ski Back Trail2

100ft Setback

West Mountain Road

WETLAND IMPACTS
FEATURE ID 2020-52
1,645 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-40
5 SF

WETLAND IMPACTS
FEATURE ID 2020-226
4,496 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-51
6 SF

WETLAND IMPACTS
FEATURE ID 2020-30
11,740 SF

WETLAND IMPACTS
FEATURE ID 2020-412
264 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-411
10 SF

WETLAND IMPACTS
FEATURE ID 2020-411
1,794 SF

WETLAND IMPACTS
FEATURE ID 2020-31
650 SF

WETLAND IMPACTS
FEATURE ID 2020-227
1,051 SF

UNKNOWN CULVERT

UNKNOWN CULVERT

UNKNOWN CULVERT

UNKNOWN CULVERT

UNKNOWN CULVERT

CULVERT #11 (CMP)
18 IN. DIA., 35 FT. LENGTH, 3%
REPLACE EXISTING CULVERT AT ROAD WITH NEW 36" HDPE. FIELD VERIFY INVERTS

CULVERT #10 (CMP)
18 IN. DIA., 45 FT. LENGTH, 5%

CULVERT #9 (CMP)
18 IN. DIA., 40 FT. LENGTH, 5%

CULVERT #8 (CMP)
24 IN. DIA., 45 FT. LENGTH, 3%

CULVERT #12 (CPP)
24 IN. DIA., 40 FT. LENGTH, 2%

CULVERT #13 (CPP)
24 IN. DIA., 30 FT. LENGTH, 2%

CULVERT #14 (CPP)
24 IN. DIA., 40 FT. LENGTH, 2%

REPLACE EXISTING CULVERT AT ROAD WITH NEW 36" HDPE. FIELD VERIFY INVERTS

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0 25 50 100 Feet

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Drawing Title
Ski Trails Grading

Drawing Number
CG-1.13

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Project Number
55310.01

T13
T14
T15
T11
T12
T9
T10
T6
T7
T5
T3
T4
T2
T1

Road F
Road A
Road B1
Road B2
Ski Back Trail 1
Bridge
100' Buffer
100ft Setback

TOWNHOMES
TOWNHOMES

WETLAND IMPACTS
FEATURE ID 2020-420
824 SF

WETLAND IMPACTS
FEATURE ID 2020-19
1,068 SF

WETLAND IMPACTS
FEATURE ID 2020-20
251 SF

WETLAND IMPACTS
FEATURE ID 2020-21
4,747 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-21
365 SF

WETLAND IMPACTS
FEATURE ID 2020-300
3,666 SF

WETLAND IMPACTS (WOSS)
FEATURE ID 2020-300
231 SF

PROPOSED 10' x 10'
SNOWMAKING
VALVE HOUSE.
FINAL LOCATION TBD

UNKNOWN CULVERT

UNKNOWN CULVERT

CULVERT #17 (CMP)
24 IN. DIA., 40 FT. LENGTH, 3%

CULVERT #16 (CMP)
18 IN. DIA., 45 FT. LENGTH, 3%

CULVERT #18 (CMP)
24 IN. DIA., 40 FT. LENGTH, 3%

CULVERT #19 (CMP)
24 IN. DIA., 45 FT. LENGTH, 4%

CULVERT #15 (CMP)
36 IN. DIA., 40 FT. LENGTH, 1.5%

CULVERT #20 (CMP)
24 IN. DIA., 50 FT. LENGTH, 3%

CULVERT #21 (CMP)
36 IN. DIA., 60 FT. LENGTH, 3%

CULVERT REPLACE EXISTING
24 IN. DI CULVERT AT ROAD
WITH NEW 36" HDPE.
FIELD VERIFY INVERTS

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0 25 50 100 Feet

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Drawing Title
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Drawing Number
CG-1.14

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0 125 250 500Feet

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Date: April 29, 2022

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Drawing Title: Overall Stream Crossing Plan

Drawing Number: CG-2.00

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Project Number: 55310.01

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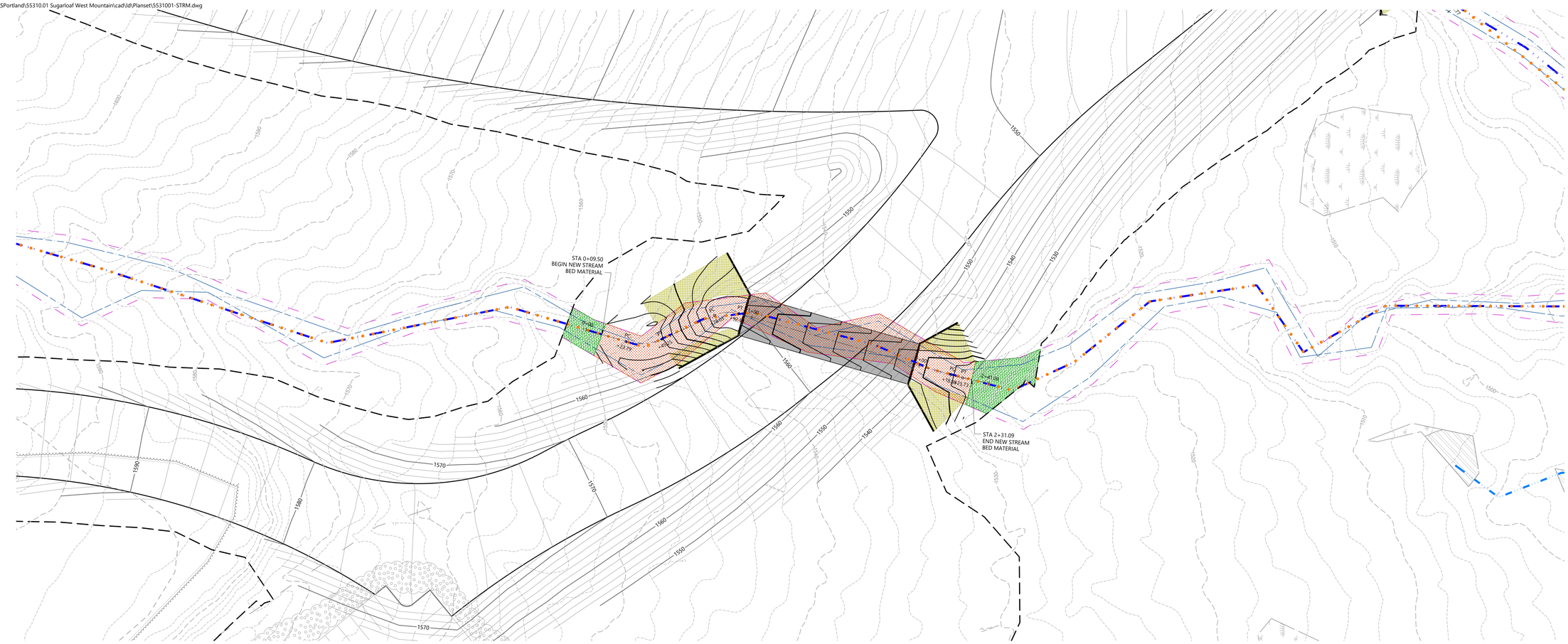

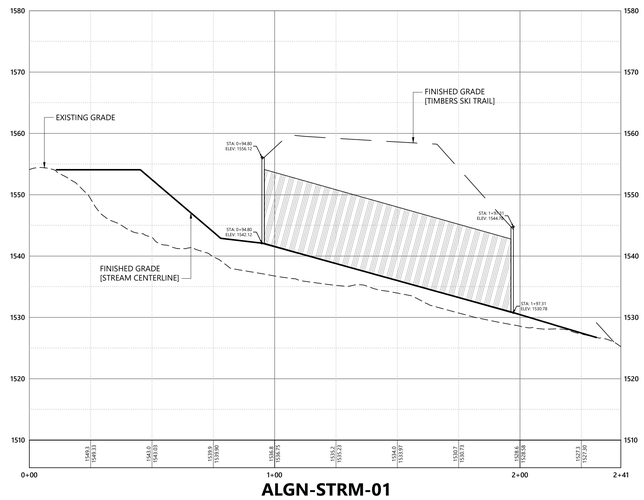

ALGN-STRM-01

STREAM CROSSING 1

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	102.5± Feet
PIPE DIMENSIONS	24' SPAN X 12' RISE
UPSTREAM INVERT	1542.12± Feet
DOWNSTREAM INVERT	1530.78± Feet
SLOPE	0.11 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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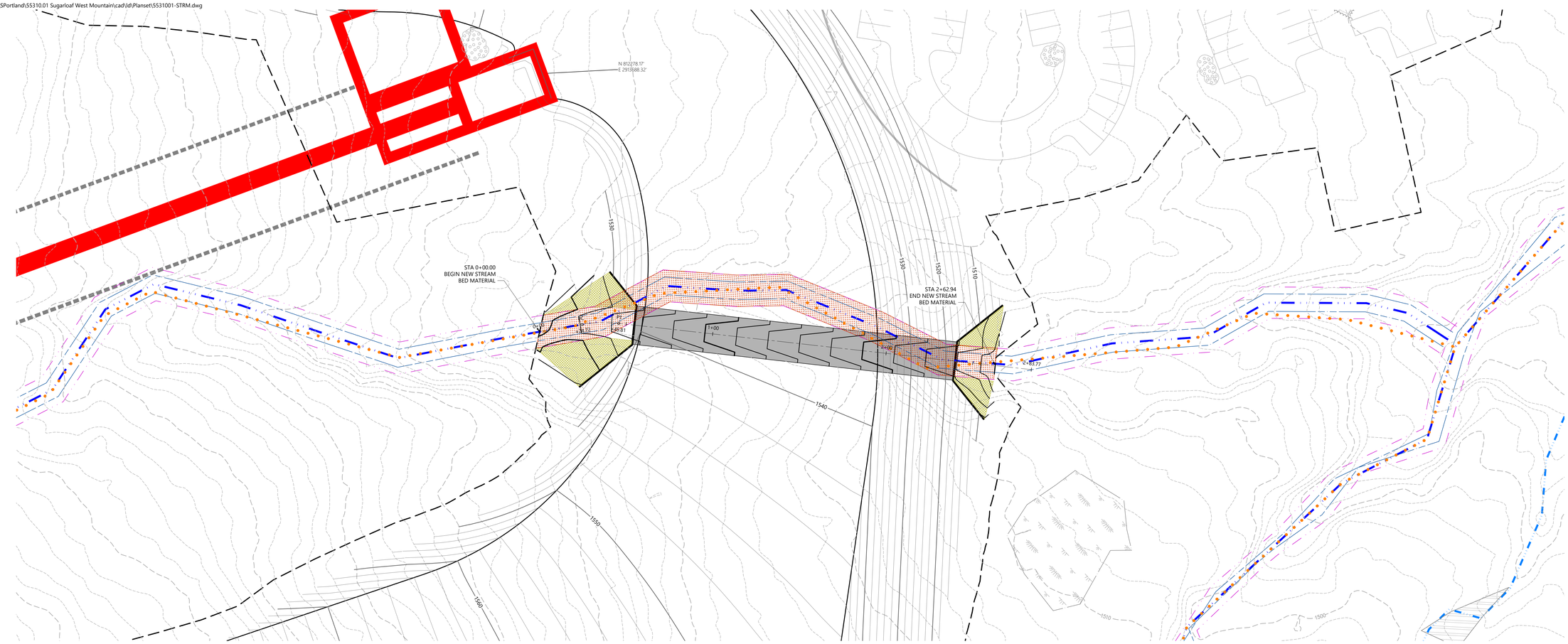

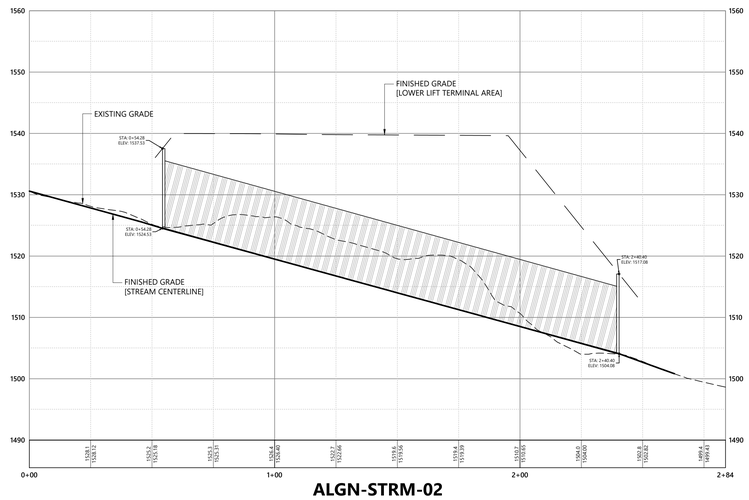

ALGN-STRM-02

STREAM CROSSING 2

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	186.0± Feet
PIPE DIMENSIONS	22' SPAN X 11' RISE
UPSTREAM INVERT	1524.53± Feet
DOWNSTREAM INVERT	1504.08± Feet
SLOPE	0.11 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

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TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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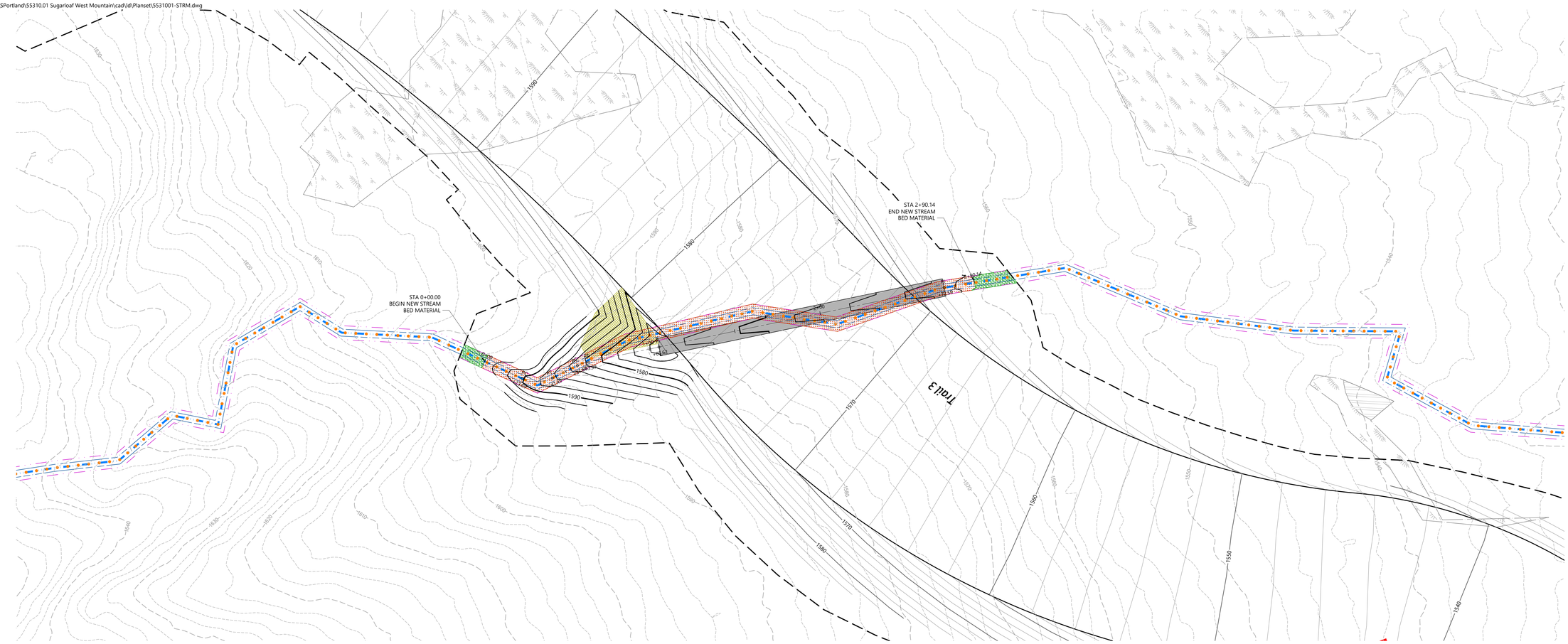

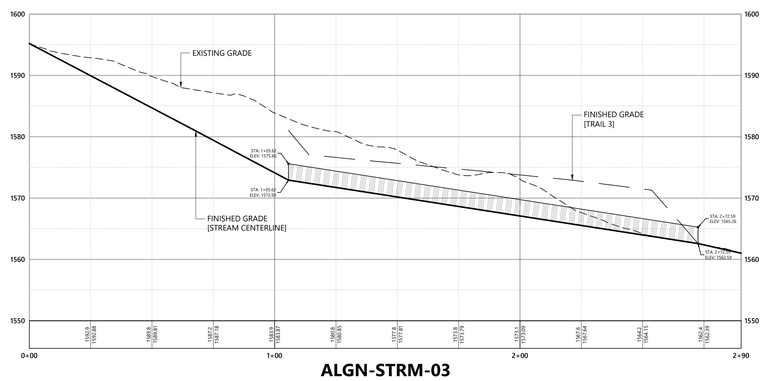

ALGN-STRM-03

STREAM CROSSING 3

BOX

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	167.0± Feet
PIPE DIMENSIONS	10.17' SPAN X 2.67' RISE
UPSTREAM INVERT	1572.93± Feet
DOWNSTREAM INVERT	1562.59± Feet
SLOPE	0.06 FT/FT
WINGWALLS	N/A
UPSTREAM ENDWALL DIMENSION	N/A
DOWNSTREAM ENDWALL DIMENSION	N/A

TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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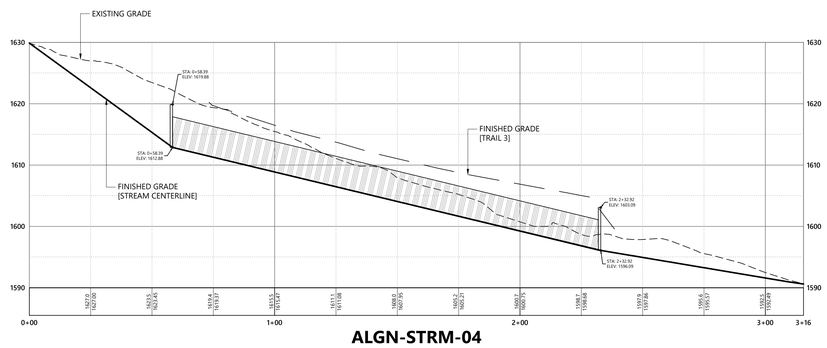

ALGN-STRM-04

STREAM CROSSING 4

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	174.5± Feet
PIPE DIMENSIONS	9' SPAN X 5' RISE
UPSTREAM INVERT	1612.88± Feet
DOWNSTREAM INVERT	1596.09± Feet
SLOPE	0.10 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

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TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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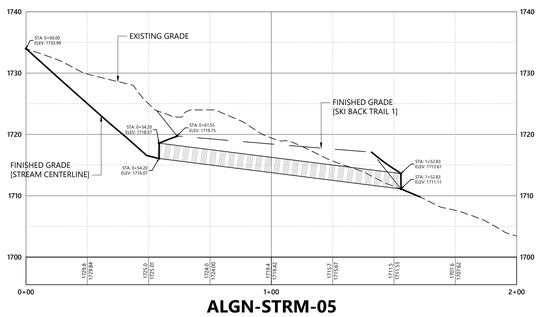

ALGN-STRM-05

STREAM CROSSING 5

BOX

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	98.5± Feet
PIPE DIMENSIONS	8.75' SPAN X 2.50' RISE
UPSTREAM INVERT	1716.07± Feet
DOWNSTREAM INVERT	1711.11± Feet
SLOPE	0.05 FT/FT
WINGWALLS	N/A
UPSTREAM ENDWALL DIMENSION	N/A
DOWNSTREAM ENDWALL DIMENSION	N/A

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TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

STREAM CROSSING 6A

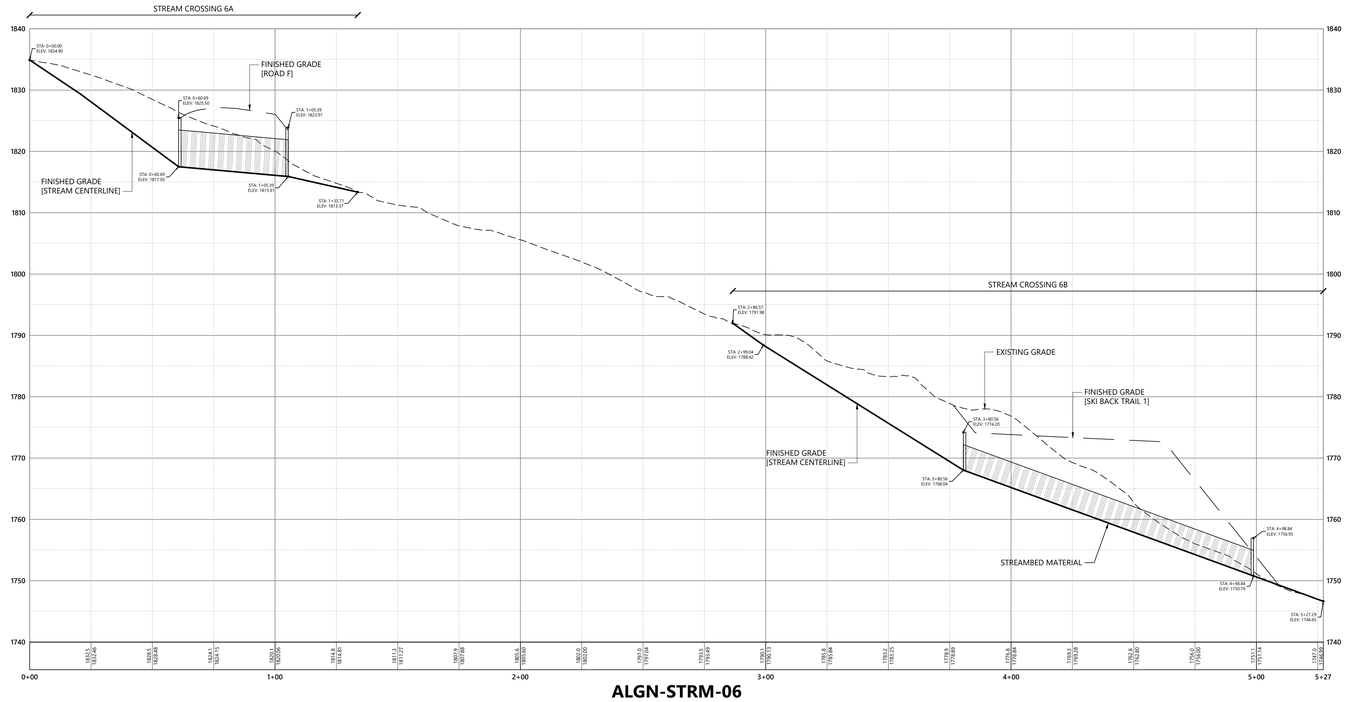
SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	12
PIPE LENGTH	44.5± Feet
PIPE DIMENSIONS	6' SPAN X 3.2' RISE
UPSTREAM INVERT	1817.50± Feet
DOWNSTREAM INVERT	1815.91± Feet
SLOPE	0.04 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

STREAM CROSSING 6B

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	118.5± Feet
PIPE DIMENSIONS	8' SPAN X 4.2' RISE
UPSTREAM INVERT	1768.04± Feet
DOWNSTREAM INVERT	1750.79± Feet
SLOPE	0.15 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD



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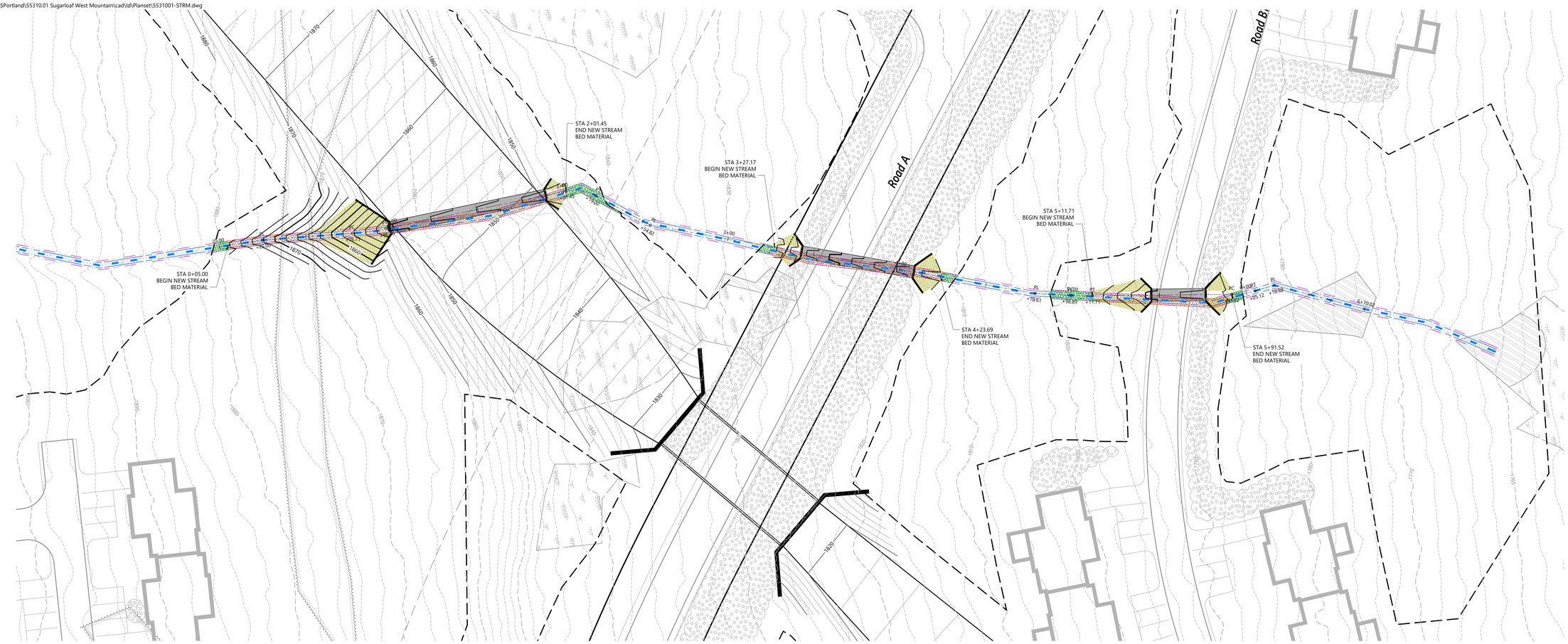


STREAM CROSSING 7A

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	92.5± Feet
PIPE DIMENSIONS	7' SPAN X 3.7' RISE
UPSTREAM INVERT	1849.85± Feet
DOWNSTREAM INVERT	1842.92± Feet
SLOPE	0.07 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

STREAM CROSSING 7B

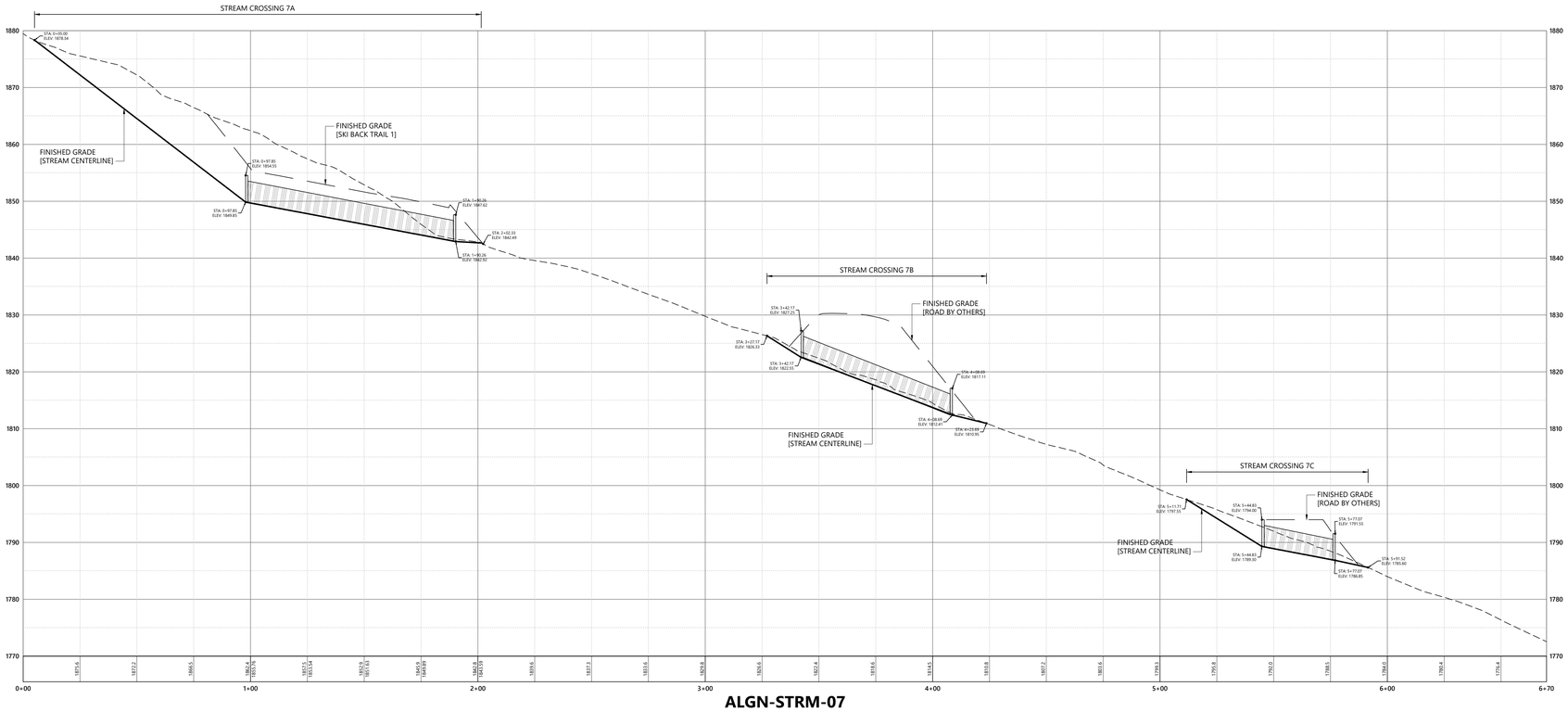
SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	66.5± Feet
PIPE DIMENSIONS	7' SPAN X 3.7' RISE
UPSTREAM INVERT	1823.29± Feet
DOWNSTREAM INVERT	1813.86± Feet
SLOPE	0.15 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

STREAM CROSSING 7C

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	32.0± Feet
PIPE DIMENSIONS	7' SPAN X 3.7' RISE
UPSTREAM INVERT	1789.30± Feet
DOWNSTREAM INVERT	1786.85± Feet
SLOPE	0.08 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD



TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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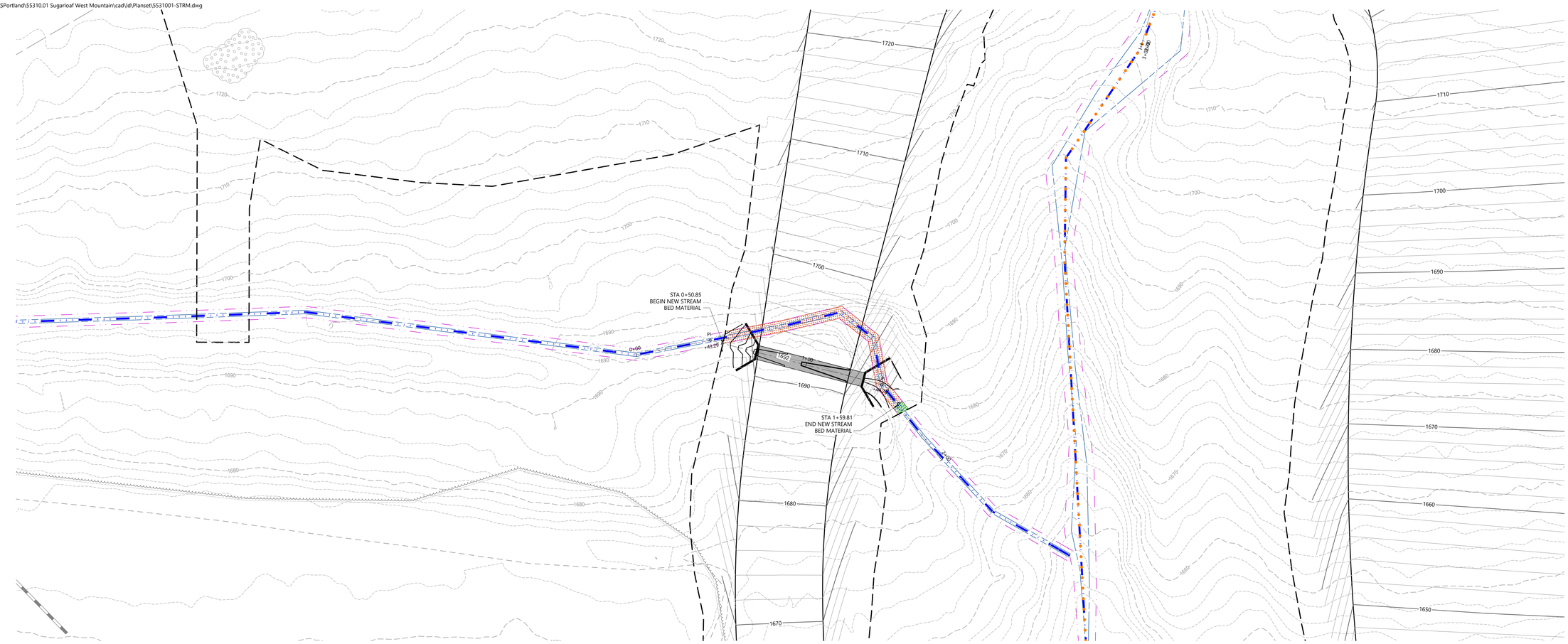

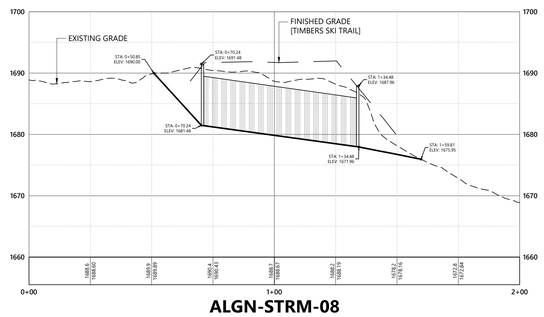

ALGN-STRM-08

STREAM CROSSING 8

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	64.0± Feet
PIPE DIMENSIONS	8' SPAN X 4.2' RISE
UPSTREAM INVERT	1681.48± Feet
DOWNSTREAM INVERT	1677.96± Feet
SLOPE	0.06 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

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Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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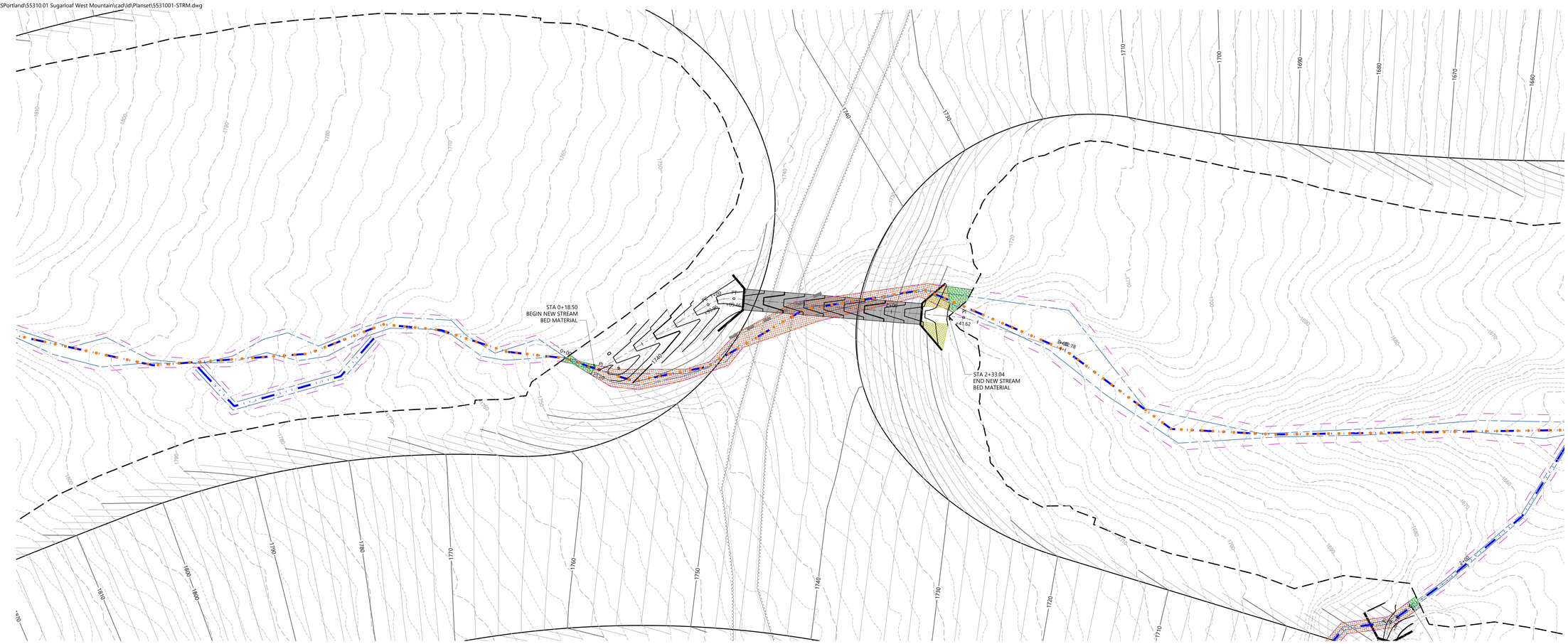

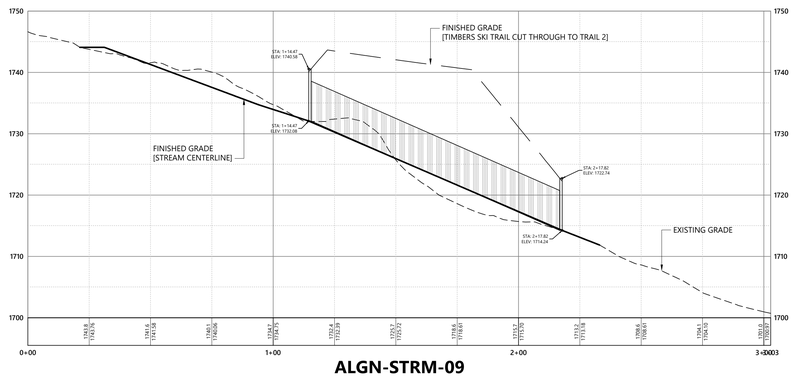

ALGN-STRM-09

STREAM CROSSING 9

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	103.0± Feet
PIPE DIMENSIONS	12' SPAN X 6.5' RISE
UPSTREAM INVERT	1732.08± Feet
DOWNSTREAM INVERT	1714.24± Feet
SLOPE	0.18 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

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Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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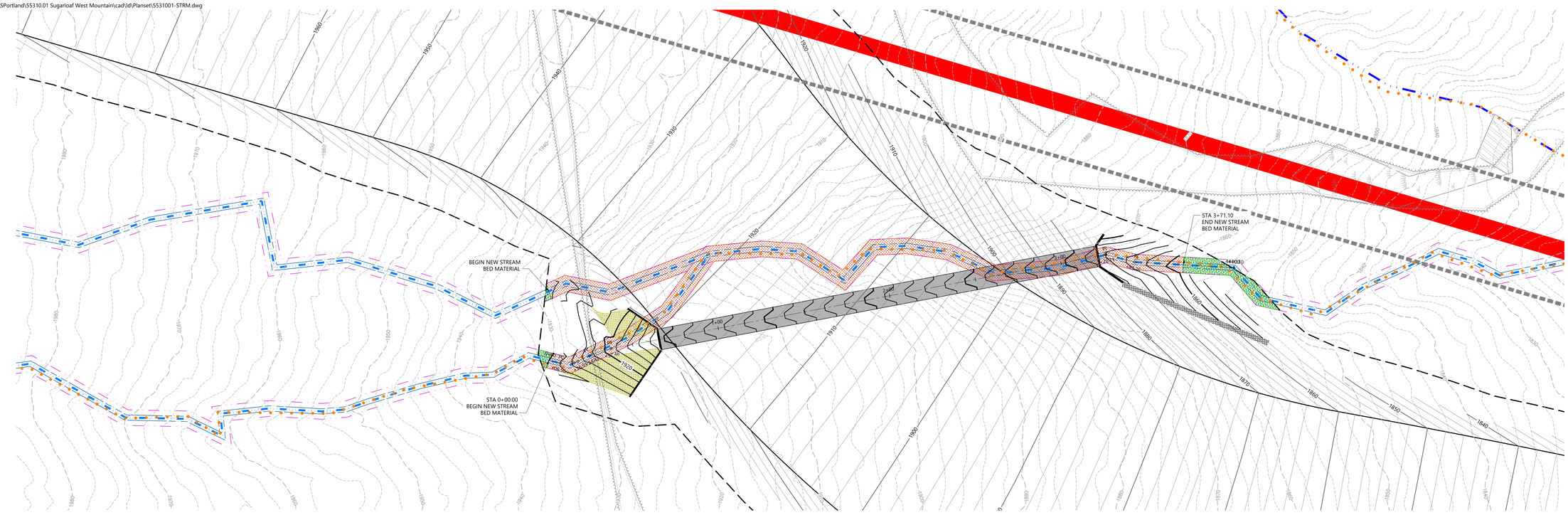
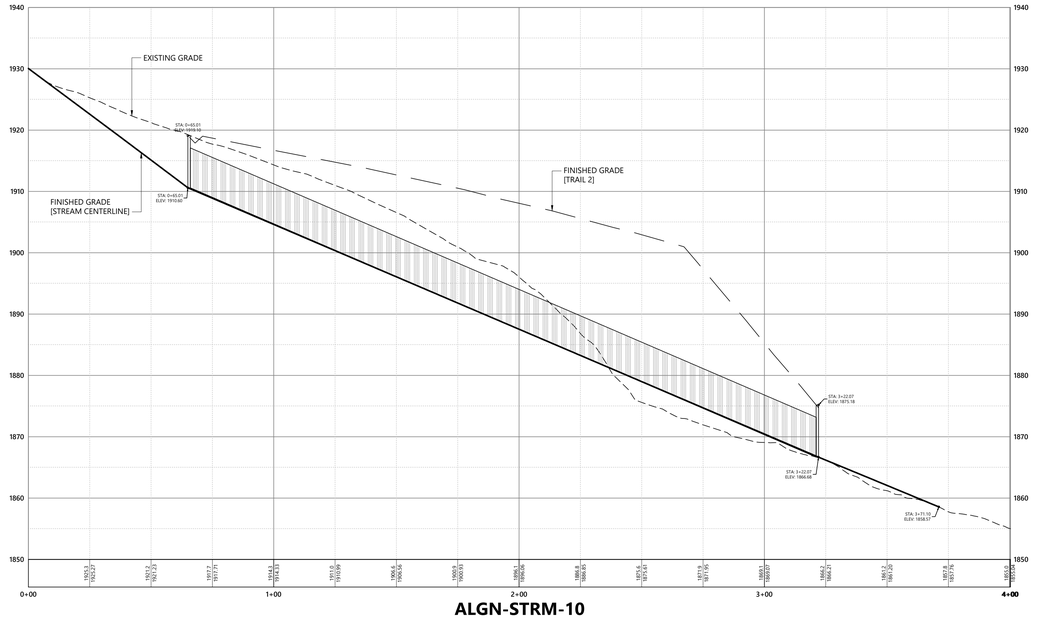


STREAM CROSSING 10

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	257.0± Feet
PIPE DIMENSIONS	12' SPAN X 6.5' RISE
UPSTREAM INVERT	1910.60± Feet
DOWNSTREAM INVERT	1866.68± Feet
SLOPE	0.17 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD



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TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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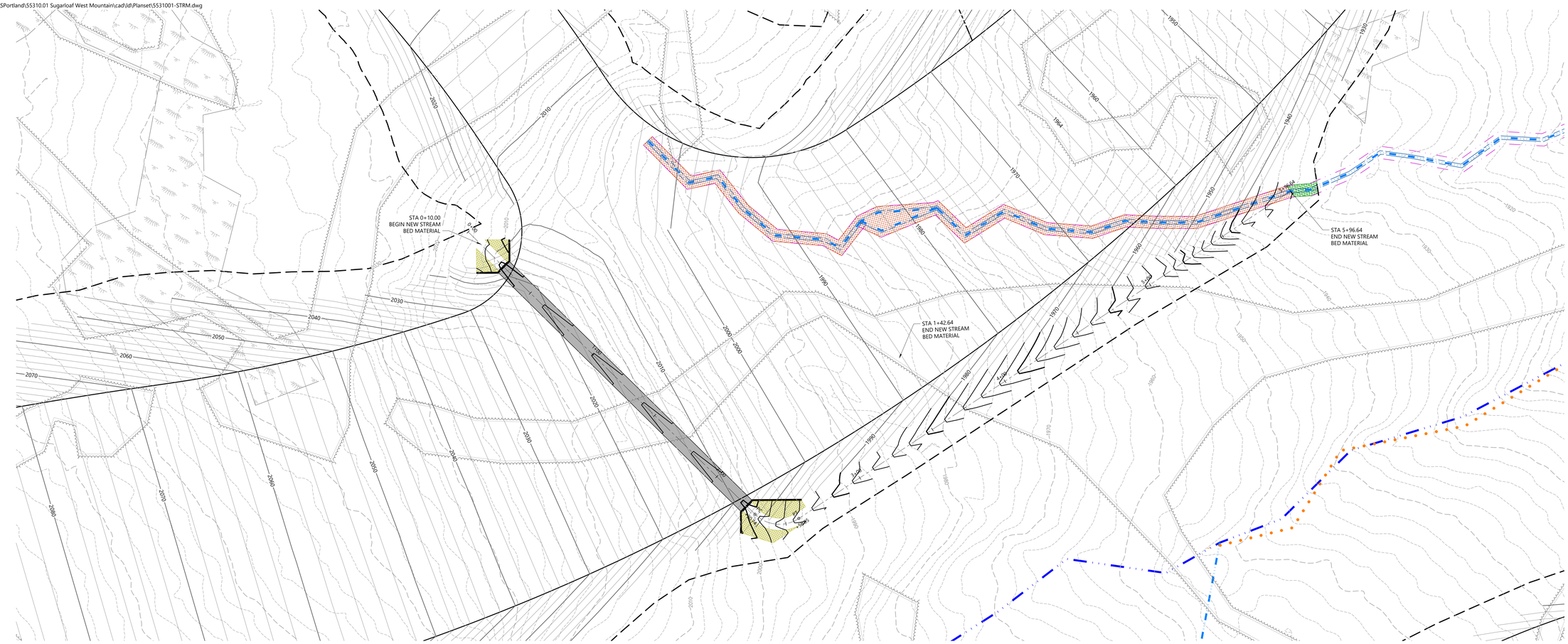

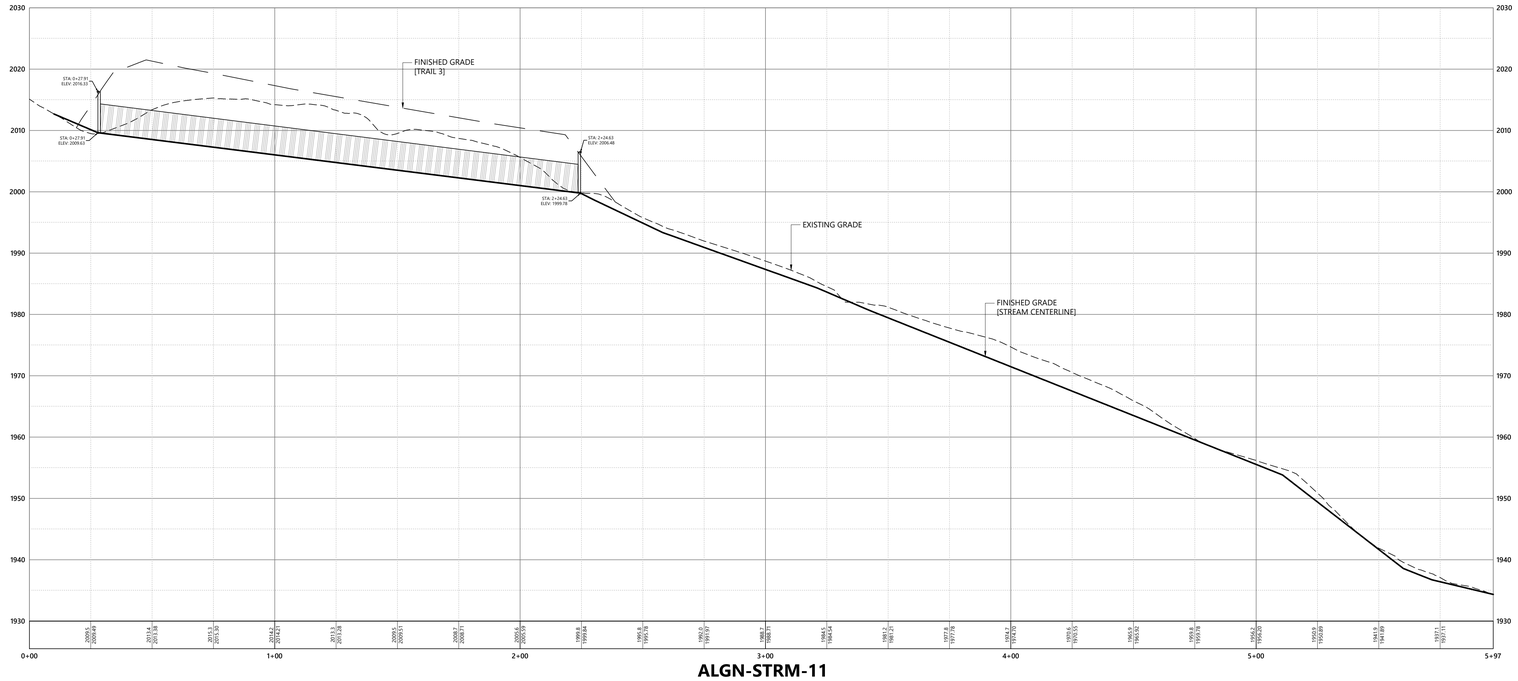

STREAM CROSSING 11

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	197.0± Feet
PIPE DIMENSIONS	9' SPAN X 4.7' RISE
UPSTREAM INVERT	2009.63± Feet
DOWNSTREAM INVERT	1999.78± Feet
SLOPE	0.05 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

TEMPORARY STREAM IMPACT AREAS

PERMANENT STREAM IMPACT AREAS

RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
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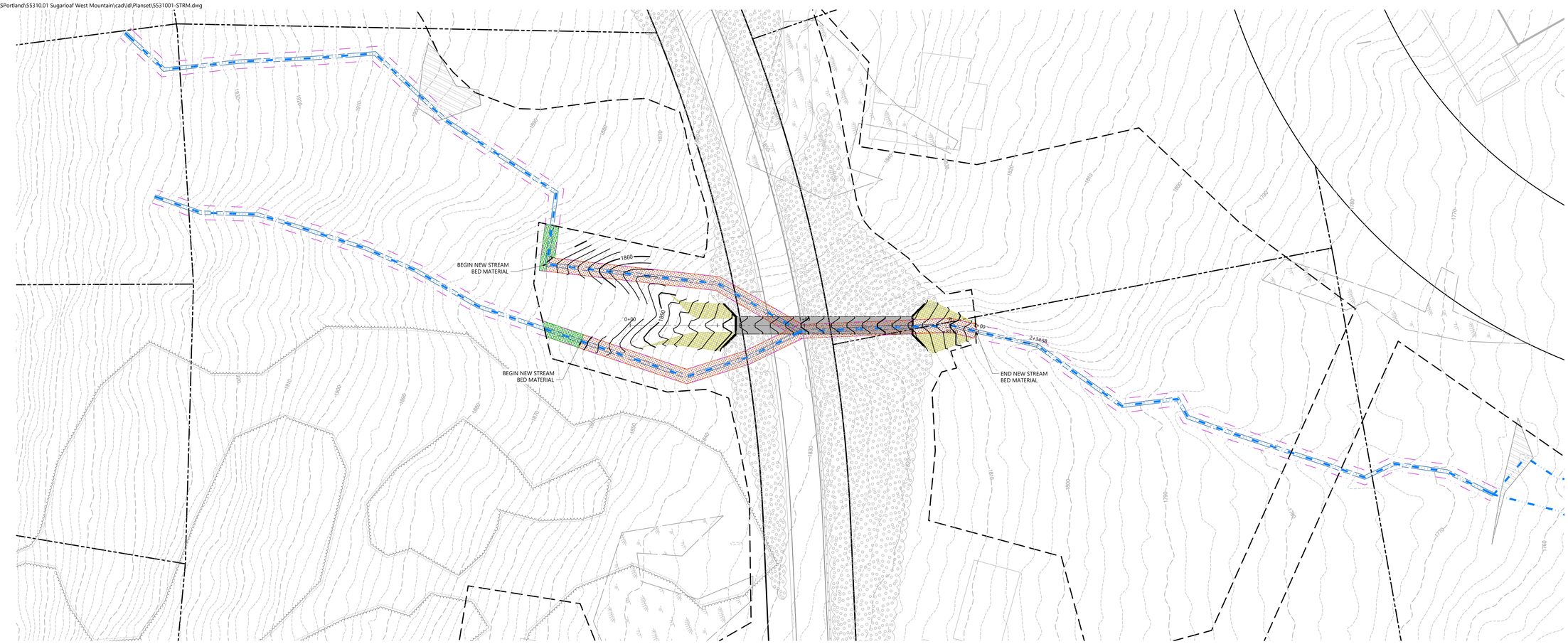

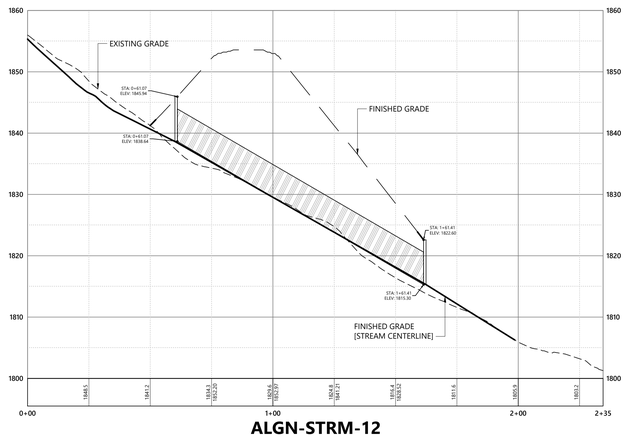

ALGN-STRM-12

STREAM CROSSING 12

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	100.0± Feet
PIPE DIMENSIONS	10' SPAN X 5.3' RISE
UPSTREAM INVERT	1838.64± Feet
DOWNSTREAM INVERT	1815.30± Feet
SLOPE	0.23 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

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TEMPORARY STREAM IMPACT AREAS

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RIPRAP SLOPE STABILIZATION

Vert. 0 5 10 20 Feet
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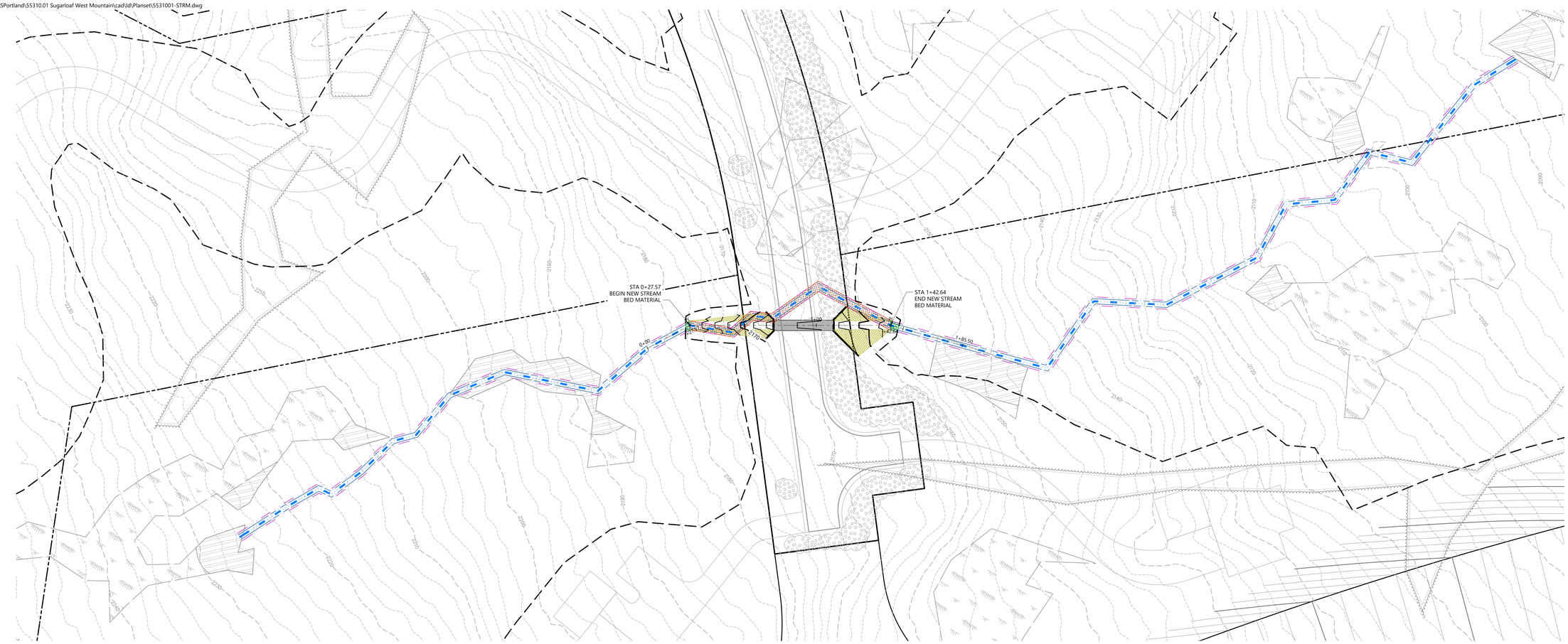

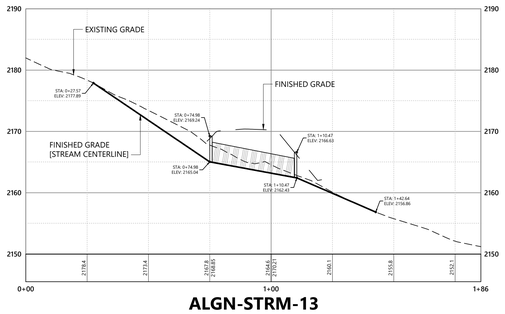

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STREAM CROSSING 13

SINGLE RADIUS ARCH

PIPE MATERIAL	TBD
PIPE GAGE	TBD
PIPE LENGTH	35.5± Feet
PIPE DIMENSIONS	6' SPAN X 3.2' RISE
UPSTREAM INVERT	2165.04± Feet
DOWNSTREAM INVERT	2162.43± Feet
SLOPE	0.08 FT/FT
WINGWALLS	TBD
UPSTREAM ENDWALL DIMENSION	TBD
DOWNSTREAM ENDWALL DIMENSION	TBD

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Vert. 0 5 10 20 Feet
Horiz. 0 12.5 25 50 Feet

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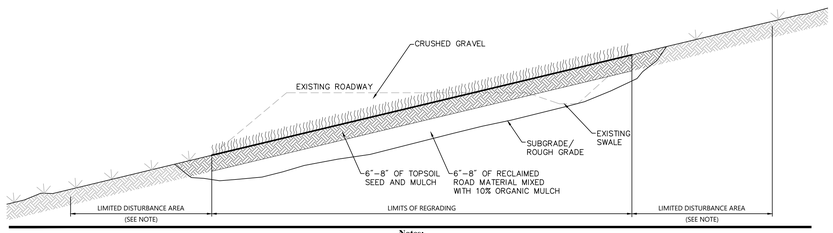
Project Number
55310.01



Notes:

RECLAMATION PROCEDURE:

1. REMOVE ROAD MATERIAL USING A BULLDOZER TO A DEPTH OF 12 INCHES BELOW APPROXIMATE FINAL GRADE. TEMPORARY STOCKPILE MATERIAL IN AN UPLAND AREA FOR USE IN ACHIEVING FINAL GRADE (SEE ATTACHED ROADWAY RECLAMATION – TYPICAL SECTION);
   a. INSTALL SILT FENCE TO SURROUND SOIL STOCKPILE(S)
   b. IF STOCKPILED MATERIAL WILL NOT BE USED WITHIN 14 DAYS, APPLY MULCH FOR TEMPORARY STABILIZATION
2. STOCKPILED MATERIAL SHOULD BE MIXED WITH APPROXIMATELY 10% COMPOSTED ORGANIC MATTER U.S. ARMY CORPS OF ENGINEERS (USACE) – NEW ENGLAND DISTRICT – REGULATORY DIVISION. 2010. NEW ENGLAND DISTRICT COMPENSATORY MITIGATION GUIDANCE., AND PLACED TO A DEPTH OF 8 TO 6 INCHES WITHIN THE EXCAVATED AREA;
   a. THIS MATERIAL SHOULD BE LIGHTLY COMPACTED TO MINIMIZE THE EFFECT OF LATER SETTLING (I.E., WITH A LIGHT WEIGHT TRACKED VEHICLE SUCH AS A BOBCAT).
3. CLEAN TOPSOIL (I.E., REASONABLY FREE OF NONORGANIC REFUSE SUCH AS PLASTICS, AS WELL AS CHEMICAL CONTAMINANTS SUCH AS HERBICIDES) AND WITH AN ORGANIC MATTER CONTENT OF BETWEEN 10 AND 20%, SHOULD BE PLACED TO A DEPTH OF 6 TO 8 INCHES ON THE SUB-GRADE MATERIAL TO ACHIEVE FINAL GRADE;
   a. THE TOPSOIL SHOULD BE LIGHTLY COMPACTED IN A SIMILAR MANNER TO THE SUB-GRADE MATERIAL; THE BOBCAT SHOULD MOVE IN A DIRECTION THAT IS PERPENDICULAR TO THE SLOPE TO CREATE MICROTOPOGRAPHY WHICH WILL INHIBIT DIRECTED RUNOFF AND POTENTIALLY EROSIVE RILLS.
4. THE GRADED AREA SHOULD BE SEEDED AS SOON AS POSSIBLE TO ENSURE SITE STABILIZATION.
5. THE SEED MIX SHOULD INCLUDE A MIX OF NATIVE SPECIES WHICH CONTAIN BOTH ANNUAL AND PERENNIAL SPECIES TO ENSURE QUICK AND LASTING COVERAGE (SEE TABLE 1 FOR REPRESENTATIVE SEED MIX).
   a. SEED MIX MAY BE APPLIED BY HYDRO-SEEDING, BY MECHANICAL SPREADING, OR BY HAND (FOR SMALLER AREAS).
   b. IF SEED IS APPLIED BY MECHANICAL OR HAND SPREADING METHODS, THE RESTORED AREA SHOULD BE MULCHED IMMEDIATELY USING STRAW MULCH TO MINIMIZE THE PRESENCE OF UNDESIRABLE SPECIES (I.E., INVASIVE SPECIES); MULCH SHOULD BE APPLIED AT A RATE OF 2 TONS (100–200 BALES) PER ACRE.

TABLE 1

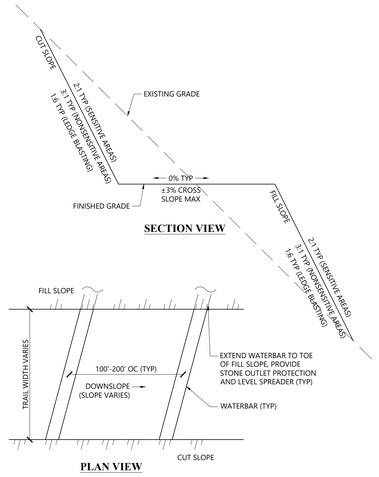
PROPOSED SEED MIX FOR ROAD RECLAMATION

COMMON NAME	SCIENTIFIC NAME
RED FESCUE	FESTUCA RUBA
LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM
SWITCH GRASS	PANICUM VIRGATUM
ANNUAL RYE	ELYMUS VIRGINICUS
BIG BLUESTEM	ANDROPOGON GERARDII
INDIAN GRASS	SORGHASTRUM NUTANS
DEER TONGUE	PANICUM CLANDESTINUM
PARTRIDGE PEA	CHAMAECRISTA FASCICULATA
SOFT RUSH	JUNCUS EFFUSUS
PATH RUSH	JUNCUS TENUIS
ROUGH BENTGRASS	AGROSTIS SCABRA

- SPECIFIED SEED MIX IS THE NEW ENGLAND LOGGING ROAD MIX (PROPRIETARY BLEND) FROM NEW ENGLAND WETLAND PLANTS, INC. HTTP://WWW.NEWP.COM – OR APPROVED EQUAL
- SEED SHOULD BE APPLIED AT A MINIMUM RATE OF 20 LBS/ACRE (1 LB / 2,000 SF)

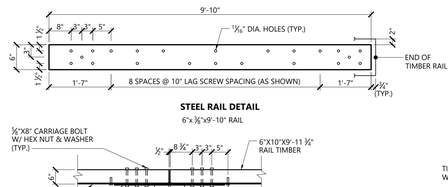
Roadway Reclamation Detail — ST-06

N.T.S. Source: VHB

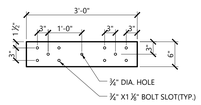


Typical Ski Trail Design — 6/16

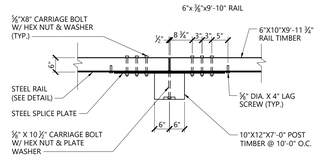
N.T.S. Source: VHB VT_LD



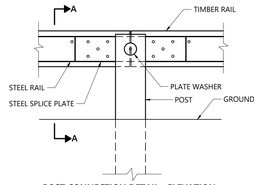
STEEL RAIL DETAIL
6"x ⅜"x9'-10" RAIL



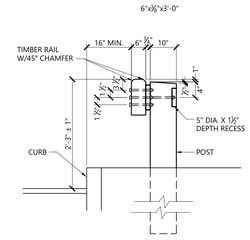
STEEL SPLICE PLATE DETAIL
6"x⅜"x3'-0"



POST CONNECTION DETAIL - TOP VIEW



POST CONNECTION DETAIL - ELEVATION



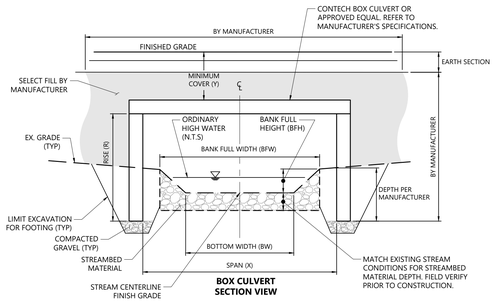
SECTION A-A

NOTES

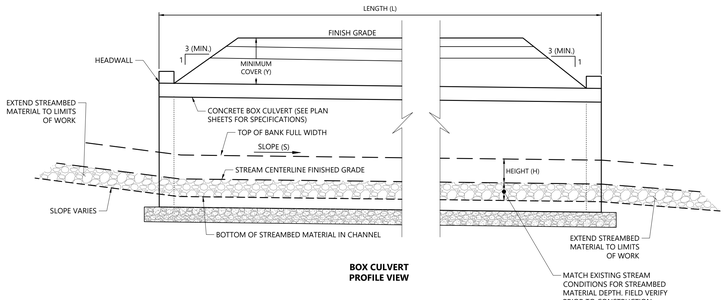
1. TIMBER RAILS AND POSTS SHALL BE PLANED ON THE FACE AND TOP AND THEN PRESSURE TREATED.
2. STEEL RAILS, SPLICE PLATES, BOLTS, SCREWS, NUTS AND WASHERS SHALL BE GALVANIZED.
3. AT END POSTS, PROVIDE FULL COVERAGE OF POST FACE WITH TIMBER RAIL AND SPLICE PLATE.

Steel-Backed Wood Guardrail — 1/16

N.T.S. Source: VHB LD_452



BOX CULVERT SECTION VIEW



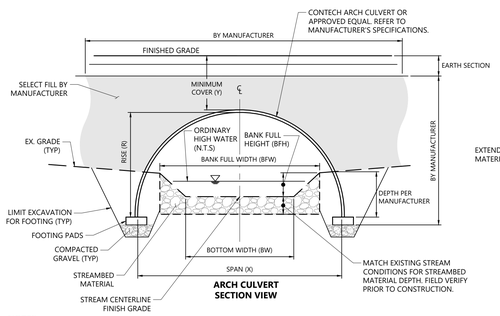
BOX CULVERT PROFILE VIEW

NOTES

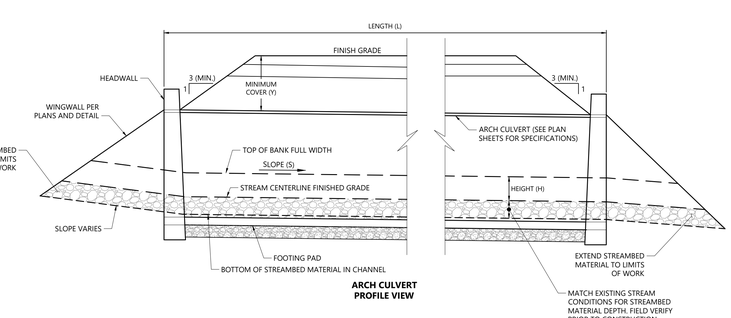
1. CULVERT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. BOX CULVERT DIMENSIONS (WIDTH x HEIGHT) NOTED ON PLANS ARE FOR CLEAR OPENING AND DO NOT INCLUDE BURIED (SUBGRADE) PORTIONS OF CULVERTS.
3. THE CULVERT SHALL BE ASSEMBLED IN ACCORDANCE WITH THE SHOP DRAWINGS PROVIDED BY THE MANUFACTURER AND PER THE MANUFACTURER'S RECOMMENDATIONS.
4. FOR CULVERT NOMINAL DIMENSIONS, REFER TO PLAN SHEETS

Typical Stream Crossing (Box Culvert)

N.T.S. Source: VHB/CONTECH



ARCH CULVERT SECTION VIEW



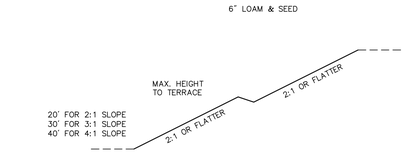
ARCH CULVERT PROFILE VIEW

NOTES

1. CULVERT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. CULVERT DESIGN SHALL BE HS-20 LOADING OR GREATER.
3. CULVERT HEADWALLS SHALL INCLUDE WING-WALLS AS MAY BE REQUIRED AND/OR AS INDICATED ON SITE PLANS.
4. FOR CULVERT NOMINAL DIMENSIONS, REFER TO PLAN SHEETS

Typical Stream Crossing (Arch Culvert)

N.T.S. Source: VHB/CONTECH

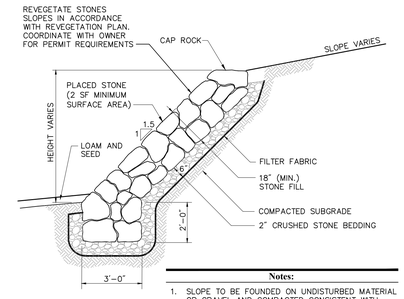


Notes:

1. SEE EROSION CONTROL BLANKET DETAIL FOR SLOPES STEEPER THAN 3 HORIZONTAL: 1 VERTICAL
2. LONGITUDINAL BENCH GRADE ALONG TERRACE TO BE 2% TO 3%, AND MAXIMUM FLOW LENGTH ALONG BENCH SHALL NOT EXCEED 800 FT.
3. VEGETATED SLOPES MAY BE USED IN PLACE OF STONE SLOPES WHERE FLATTER SLOPES WOULD NOT SIGNIFICANTLY ALTER LIMITS OF CLEARING, AND WHERE APPROVED BY ENGINEER.

Vegetated Slopes (2:1 or Flatter) — EV-10

N.T.S. Source: VHB



Notes:

1. SLOPE TO BE FOUNDED ON UNDISTURBED MATERIAL OR GRAVEL AND COMPACTED CONSISTENT WITH GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
2. REQUIRED FOR ALL SLOPES STEEPER THAN 2:1(H:V)
3. SLOPES MAY BE ADJUSTED WHERE APPROVED BY GEOTECHNICAL ENGINEER.

Placed Stone Slope — EV-11

N.T.S. Source: VHB LD_760

STREAMBED MATERIAL FOR CHANNEL FORMATION AND OUTLET PROTECTION

THE BOULDER-COBBLE-GRAVEL-SAND MATERIAL SPECIFIED BELOW MUST BE APPROVED BY THE ENGINEER AT THE CONTRACTOR'S PROPOSED SOURCE PRIOR TO BEING PLACED IN THE STREAM CHANNEL.

Cumulative Percent of particles finer than indicated particle size	PARTICLE SIZE (inches)	PARTICLE TYPE
D10	< 0.04	sand
D16	1.0-2.0	gravel
D35	3.0-4.0	cobble
D50	8.0-10.0	cobble
D84	14.0-16.0	boulder

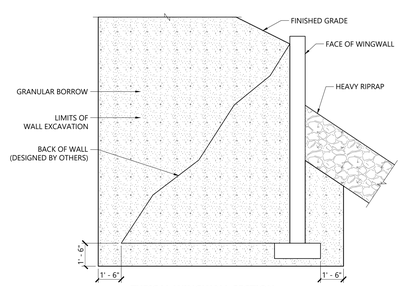
DESCRIPTION	SIZE	BUCKETS	PERCENT
ROCK/BOULDER	WELL GRADED 12-16"	0.5	7 - 12%
ROCK/COBBLE	WELL GRADED 8 - 12"	2	35 - 40%
BANK RUN GRAVEL	0.08 - 2.5"	2	35 - 40%
COURSE SAND	0.04 - 0.08" (1 - 2 MM)	0.75	12 - 17%

NOTES

1. ALL IMPORTED BEDDING MATERIAL SHALL CONSIST OF FIELD STONE OR NATURAL RIVER ROCK SIMILAR IN COLOR AND APPEARANCE TO IN-SITU MATERIALS.
2. CRUSHED STONE SHALL NOT BE PERMITTED.
3. BANK RUN GRAVEL MAY INCLUDE UP TO 5% CLAY, SILT, AND/OR SAND, AND UP TO 25% COBBLE AND SHALL HAVE NATURAL COLOR (BROWN, TAN, YELLOW, OR WHITE).
4. SAND SHALL BE WELL MIXED AND PREDOMINANTLY 1.0 TO 2.0 MILLIMETERS IN SIZE AND HAVE NATURAL COLOR (BROWN, TAN, YELLOW, OR WHITE).
5. THE GRADATION OF IMPORTED MATERIALS SHALL FALL WITHIN THE ENVELOPE AS INDICATED IN THE TABLE ABOVE.
6. COBBLE-GRAVEL VOID RATIO IS ESTIMATED AT 20%. THEREFORE, 20% BY VOLUME OF CL MATERIAL SHALL BE ADDED TO THE COBBLE-GRAVEL-SAND MATERIAL PRIOR TO PLACEMENT IN THE DESIGNATED AREAS. SEE CONSTRUCTION SPECIFICATIONS FOR DETAILS RELATIVE TO MIXING, PLACING, AND COMPACTING STREAMBED MATERIAL.

Streambed Material

N.T.S. Source: VHB



TYPICAL WINGWALL SECTION

NOTES

1. THE CONTRACTOR SHALL PROVIDE PRECAST CONCRETE WINGWALLS IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 534. THE WALLS SHALL BE DESIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND THE DESIGN SHALL BE SUBMITTED TO THE RESIDENT FOR REVIEW. PLAN DETAILS ARE SHOWN FOR ESTIMATING PURPOSES ONLY. COST OF WINGWALLS INCLUDED IN ITEM 534.71.

2. THE PRECAST UNITS SHALL BE ONE OF THE FOLLOWING, OR APPROVED EQUAL:

"T-WALL" AS MANUFACTURED BY A LICENSED MANUFACTURER OF NEEL COMPANY.

"DOUBLEWAL" AS MANUFACTURED BY A LICENSED MANUFACTURER OF DOUBLEWAL CORP., PLAIN, CONNECTICUT.

3. THE MAXIMUM FACTORED BEARING RESISTANCE FOR THE WINGWALLS IS 5 KSF FOR THE SERVICE CONDITION. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR FACTORED BEARING RESISTANCE FOR THE STRENGTH CONDITION BASED ON STEM LENGTH RANGES.

4. ELEVATION AT BOTTOM OF WALLS MAY BE LOWERED FOR CONSTRUCTABILITY AT NO ADDITIONAL COST TO THE DEPARTMENT.

Typical Wingwall

N.T.S. Source:

vhb.com
500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Sugarloaf Mtn Corp West Mountain Expansion

5092 Access Road
Carrabassett Valley, ME 04947

No.	Revision	Date	Appvd.

Designed by RWN Checked by PS

Issued for: Review — Date: April 29, 2022

Not For Construction

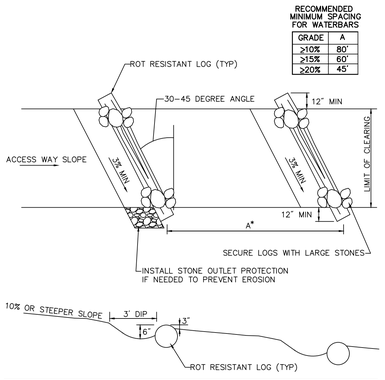
Drawing Title: Site Details

Drawing Number: C-1.02

Sheet 58 of 63

Project Number: 55310.01

STATE OF MAINE PETER B. SMIAR No. 16994 LICENSED PROFESSIONAL ENGINEER

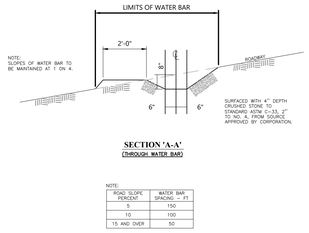


Notes:

1. WATERBARS SHOULD BE INSTALLED IN SECTIONS WITH SLOPES GREATER THAN OR EQUAL TO 10%.
2. WATERBARS SHALL BE CONSTRUCTED WITH 10" DIAMETER MINIMUM PEELED LOGS, HELD IN PLACE WITH LARGE STONES. APPROPRIATE SPECIES INCLUDE SPRUCE, HEMLOCK, BEECH, AND OAK.
3. CONTRACTOR TO OBSERVE THE CLEARINGS DURING A RAINSTORM TO DETERMINE IF ADDITIONAL WATERBARS OR ADJUSTMENTS TO WATERBARS ARE NEEDED.
4. WATERBAR DESIGN AND SPACING PROVIDED FOR GUIDANCE TO CONTROL EROSION ALONG CROSS-COUNTRY CLEARINGS. THE CONTRACTOR SHALL DETERMINE IF OTHER APPROPRIATE MEASURES ARE REQUIRED TO CONTROL RUNOFF AND EROSION IN CLEARING AREAS.
5. FOR WIDER LIMITS OF CLEARING MULTIPLE LOG LENGTHS MAY BE REQUIRED. ANCHOR ALL LOG ENDS WITH LARGE STONES AS SHOWN.

Waterbars - For Cross-Country Utility Clearings ER-03

N.T.S. Source: VHB



SECTION 'A-A'
(THROUGH WATER BAR)

NOTE:

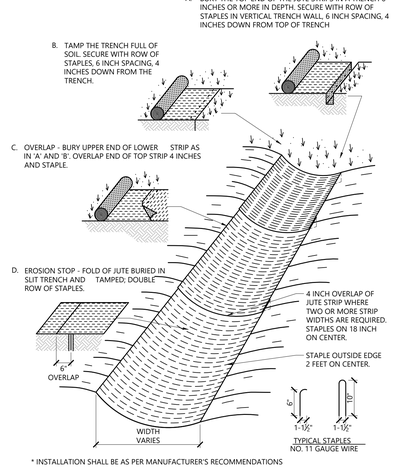
ROAD SLOPE PERCENT	WATER BAR SPACING — FT
5	150
10	100
15 AND OVER	50

Notes:

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. STRIP EXISTING SOD FROM BASE OF DIVERSION RIDGE PRIOR TO PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL.
5. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL CONDITIONS ARE NOT ADEQUATE.
7. INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.
8. WATERBAR SLOPE SHALL NOT EXCEED 2% AS SHOWN.
9. FEDERAL, STATE, AND/OR LOCAL REQUIREMENTS MAY OVERRIDE THESE SPECIFICATIONS AND/OR THE USE OF THIS MEASURE.

Typical Water Bar Detail ER-04

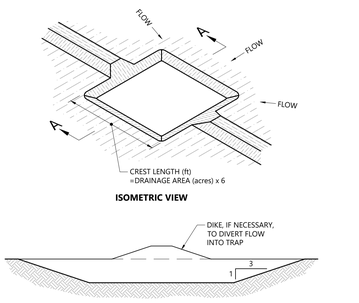
N.T.S. Source: VHB LD_



* INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS

Erosion Control Blanket Swale Installation 1/16

N.T.S. Source: VHB LD_681



ISOMETRIC VIEW

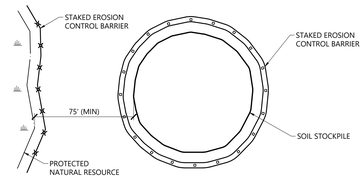
SECTION A-A

NOTES

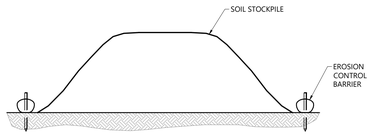
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE .
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.
8. TEMPORARY SEDIMENT TRAPS SHALL BE PLACED A MINIMUM OF 75 FEET AWAY FROM PROTECTED NATURAL RESOURCES. ENSURE DOWN GRADIENT SLOPE IS WELL VEGETATED.

Temporary Sediment Trap

N.T.S. Source: VHB



PLAN VIEW



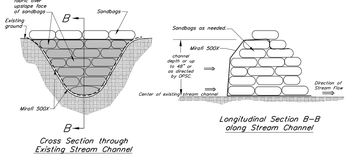
SECTION A-A

NOTES

1. STOCKPILES SHALL BE PLACED A MINIMUM OF 75 FEET AWAY FROM PROTECTED NATURAL RESOURCES.
2. STOCKPILES REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 15 DAYS SHALL BE TEMPORARILY MULCHED.
3. SOIL STOCKPILES SHALL BE INSPECTED WEEKLY AT A MINIMUM AND BEFORE AND WITHIN 24 HOURS AFTER ALL STORM EVENTS (RAINFALL). IF REPAIR IS REQUIRED, REPAIR WORK SHALL BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

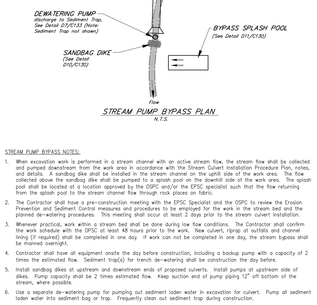
Soil Stockpile Sediment Control

N.T.S. Source: VHB



Stream Channel Sandbag Dike Detail EV-02

N.T.S. Source: VHB LD_



STREAM PUMP BYPASS NOTES:

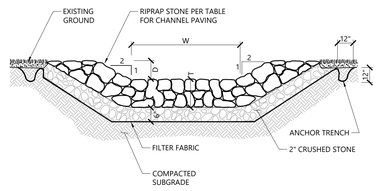
1. When excavation work is performed in a stream channel with an active stream flow, the stream flow shall be collected and pumped downstream from the work area in accordance with the Stream Culvert Installation Procedure Plan, notes, and details. A sandbag dike shall be installed in the stream channel on the uphill side of the work area. The flow collected above the sandbag dike shall be pumped to a splash pool on the downhill side of the work area. The splash pool shall be located at a location approved by the OSPC and/or the EPSC specialist such that the flow returning from the splash pool to the stream channel flow through rock places on fabric.
2. The Contractor shall have a pre-construction meeting with the EPSC Specialist and the OSPC to review the Erosion Prevention and Sediment Control measures and procedures to be employed for the work in the stream bed and the planned de-watering procedures. This meeting shall occur at least 2 days prior to the stream culvert installation.
3. Wherever practical, work within a stream bed shall be done during low flow conditions. The Contractor shall confirm the work schedule with the OPSC at least 48 hours prior to the work. New culvert, riprap at outfalls and channel lining (if required) shall be completed in one day. If work can not be completed in one day, the stream bypass shall be manned overnight.
4. Contractor shall have all equipment onsite the day before construction, including a backup pump with a capacity of 2 times the estimated flow. Sediment trap(s) for trench de-watering shall be construction the day before.
5. Install sandbag dikes at upstream and downstream ends of proposed culverts. Install pumps at upstream side of dikes. Pump capacity shall be 2 times estimated flow. Keep suction end of pump piping 12" off bottom of the stream, where possible.
6. Use a separate de-watering pump for pumping out sediment laden water in excavation for culvert. Pump all sediment laden water into sediment bag or trap. Frequently clean out sediment trap during construction.

Stream Culvert Installation Procedure EV-07

N.T.S. Source: VHB LD_

TABLE

CHANNEL DESIGNATION	W	T	D	STONE DIA. (D_{50})



Riprap Channel 1/16

N.T.S. Source: VHB LD_170

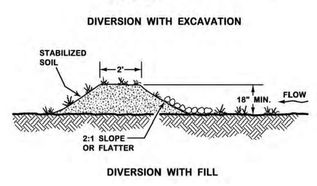
MULCH MATERIAL AND APPLICATION				
MULCH MATERIAL	QUALITY STANDARDS	PER 1,000 SQ-FT	PER ACRE	DEPTH OF APPLICATION
WOOD CHIPS OR SHAVINGS	AIR DRIED, FREE OF OBJECTIONABLE MATERIAL	500 – 900 LBS	10 – 20 TONS	2±0"?"
WOOD FIBER CELLULOSE (PARTIALLY DIGESTED WOOD FIBERS)	MADE FROM NATURAL WOOD USUALLY WITH GREEN DYE AND DISPERSING AGENT	50 LBS	2,000 LBS	N/A
GRAVEL, CRUSHED STONE OR SLAG	WASHED; SIZE 2B OR 3A – 1 1/2"	9 CY	405 CY	3"
HAY OR STRAW	AIR-DRIED; FREE OF UNDESIRABLE SEEDS AND COURSE MATERIALS	90 – 100 LBS, 2–3 BALES	2 TONS (100–120 BALES)	COVER ABOUT 90% SURFACE
COMPOST	UP TO 3" PIECES, MODERATELY TO HIGHLY STABLE	3 – 9 CY	3 – 9 CY	1–3"
Erosion Control Mix	WELL-GRADED MIXTURE OF PARTICLE SIZES, ORGANIC CONTENT BETWEEN 80–100% DRY WEIGHT, PARTICLE SIZE SHALL PASS 6" SCREEN (100%)	*Slopes 3(Hz.):1(Vert.) = 2 inch depth plus additional 1/2 inch depth per 20 ft. of slope up to 100 ft. **Slopes between 3(Hz.):1(Vert.) and 2(Hz.):1(Vert.) = 4 inch depth plus additional 1/2 inch per 20 ft. of slope up to 100 ft. ***Slopes steeper than 2(Hz.):1(Vert.) applicability to specific site and mulch depth to be reviewed and approved prior to use by OPSC or EPSC Specialist		

Notes:

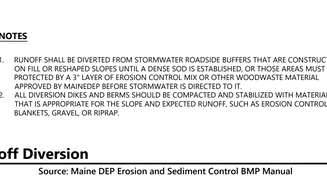
1. APPLY TACKIFIER AS NEEDED TO MINIMIZE POTENTIAL FOR MULCH TO BLOW AWAY.
2. MULCH MUST NOT CONTAIN INVASIVE PLANT SPECIES. (SEEDS OR SEEDLINGS)
3. TACKIFIER MAY BE WATER, NETTING, OR SIMILAR.

Mulch Table EV-08

N.T.S. Source: VHB LD_



DIVERSION WITH EXCAVATION



DIVERSION WITH FILL

NOTES

1. RUNOFF SHALL BE DIVERTED FROM STORMWATER ROADSIDE BUFFERS THAT ARE CONSTRUCTED ON FILL OR RESHAPED SLOPES UNTIL A DENSE SOD IS ESTABLISHED, OR THOSE AREAS MUST BE PROTECTED BY A 3" LAYER OF EROSION CONTROL MIX OR OTHER WOODWASTE MATERIAL APPROVED BY MAINEDEP BEFORE STORMWATER IS DIRECTED TO IT.
2. ALL DIVERSION DIKES AND BERMS SHOULD BE COMPACTED AND STABILIZED WITH MATERIAL THAT IS APPROPRIATE FOR THE SLOPE AND EXPECTED RUNOFF, SUCH AS EROSION CONTROL BLANKETS, GRAVEL, OR RIPRAP.

Runoff Diversion

N.T.S. Source: Maine DEP Erosion and Sediment Control BMP Manual

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

INSTALLATION

1. INSTALL SEDIMENT BARRIERS ON YOUR SITE BEFORE DISTURBING SOILS. SEE THE "SEDIMENT BARRIERS" MEASURE FOR DETAILS ON INSTALLATION AND MAINTENANCE.
2. CONSTRUCT A DIVERSION DITCH TO KEEP UPSLOPE RUNOFF OUT OF WORK AREA.
3. MARK CLEARING LIMITS ON THE SITE TO KEEP EQUIPMENT OUT OF AREAS WITH STEEP SLOPES, CHANNELIZED FLOW, OR ADJACENT SURFACE WATERS.
4. PRESERVE BUFFERS BETWEEN THE WORK AREA AND ANY DOWNSTREAM SURFACE WATERS AND WETLANDS.
5. USE TEMPORARY MULCH AND RYE-SEED TO PROTECT DISTURBED SOILS OUTSIDE THE ACTIVE CONSTRUCTION AREA. SEE THE "MULCHING" MEASURE AND "RE-VEGETATION" MEASURES FOR DETAILS AND SPECIFICATIONS FOR THESE CONTROLS.
6. PERMANENTLY SEED AREAS NOT TO BE PAVED WITHIN SEVEN DAYS OF COMPLETING FINAL GRADING. SEE "RE-VEGETATION" MEASURE FOR INFORMATION ON PROPER SEEDING.
7. GRADE DEVELOPMENT TO DRAIN TO RAIN GARDEN. ENSURE AREAS UPHILL OF THE DEVELOPMENT ARE DIVERTED AWAY FROM THE RAIN GARDEN.

MAINTENANCE

ALL MEASURES WILL BE INSPECTED WEEKLY AND BEFORE AND AFTER EVERY SIGNIFICANT STORM EVENT DURING CONSTRUCTION.

EVERY MONTH THE FIRST YEAR AFTER CONSTRUCTION AND YEARLY THEREAFTER, INSPECT FOR AREAS SHOWING EROSION OR POOR VEGETATION GROWTH. FIX THESE PROBLEMS AS SOON AS POSSIBLE. EACH SPRING REMOVE ANY ACCUMULATION OF DEBRIS OR WINTER SAND THAT WOULD IMPEDE RUNOFF FROM ENTERING A RAIN GARDEN OR DITCH.

NOTE: PLEASE REFERENCE THE WRITTEN EROSION AND SEDIMENTATION CONTROL PLAN FOR ADDITIONAL GUIDANCE.

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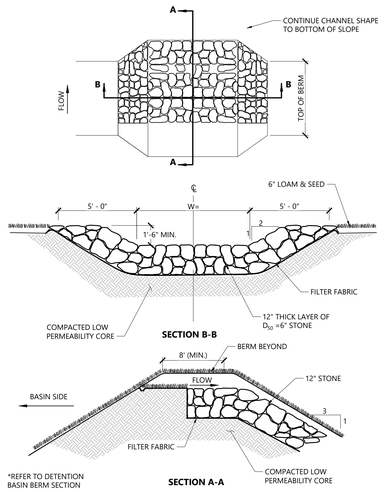
Drawing Number: **C-1.05**

Sheet 61 of 63

Project Number: **55310.01**

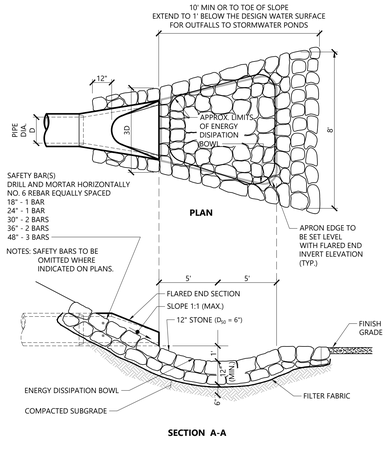
STATE OF MAINE PETER B. SMIAR No. 16994 LICENSED PROFESSIONAL ENGINEER



Overflow Stone Spillway

1/16

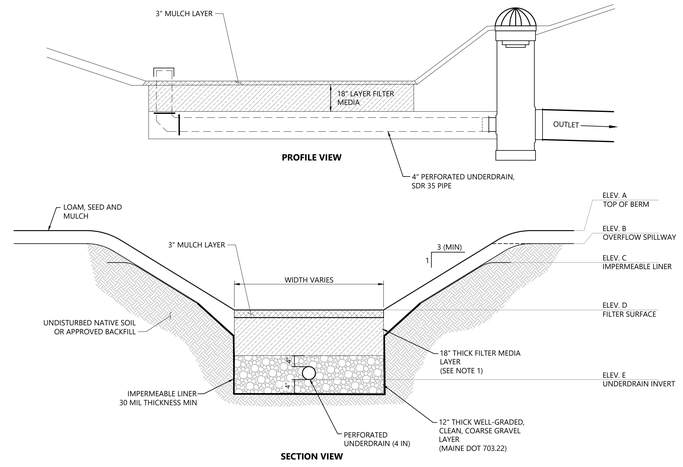
N.T.S. Source: VHB LD_161



Flared End Section (FES) with Stone Protection

1/16

N.T.S. Source: VHB LD_134



Vegetated Soil Filter (VSF) Detail

2/17

N.T.S. Source: VHB

NOTES

1. VEGETATED SOIL FILTER REQUIREMENTS PER MAINE DEP CHAPTER 500 AND MAINE STORMWATER MANAGEMENT DESIGN MANUAL VOLUME III, LATEST EDITIONS, MINIMUM REQUIREMENTS PER THE DEVELOPMENT:
   - DRAIN TIME = 24-48 HOURS, ASSUMES RATE OF 3 INCHES/HOUR.
2. FILTER MEDIA SHALL CONSIST (BY VOLUME) OF:
   - 50% SAND (ASTM C-33 CONCRETE SAND),
   - 20% SANDY LOAM TO FINE SANDY LOAM CONFORMING TO THE FOLLOWING GRADATION:

SIEVE (ASTM D422)	PERCENT PASSING BY WEIGHT
NO. 4	75-95
NO. 10	60-90
NO. 40	35-85
NO. 200	20-70
200 (CLAY SIZE)	< 2.0

   - 30% MATURE COMPOSTED WOODY FIBERS AND FINE SHREDDED BARK MULCH, SUPERHUMUS OR EQUIVALENT.
   - RESULTING MIXTURE SHALL HAVE 8% TO 12% PASSING THE NO. 200 SIEVE AND A CLAY CONTENT OF LESS THAN 2%.
   - FILTER MEDIA SHALL BE FIELD TESTED TO INSURE DRAINAGE WITHIN 24 TO 48 HOURS AND HAVE SUFFICIENT FINES TO ENSURE FILTRATION OF FINE PARTICLES. GRADATION SHALL BE ADJUSTED, IF REQUIRED, TO MEET THE REQUIRED DRAW DOWN TIME. ADJUSTED GRADATIONS AND DRAINAGE TIME SHALL BE SUBMITTED TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.
3. SURFACE AND SIDE SLOPES OF FILTER SHALL BE SEEDED WITH A CONSERVATION TYPE SEED MIX AND MULCHED.
4. PERFORATED UNDERDRAIN PIPE SHALL BE LAID AS SHOWN IN PLAN VIEW, NO GREATER THAN 15' ON CENTER, TO DRAIN THE ENTIRE FILTER AREA.

VEGETATED SOIL FILTER ELEVATION TABLE

VSF #	A	B	C	D	E
P4	1808.00	1805.80	1805.80	1802.00	1799.33
P5	1838.00	1837.00	1837.00	1834.00	1831.33
P6	1828.00	1827.80	1827.80	1826.00	1823.33
P9	1950.00	1945.80	1945.80	1944.00	1941.33
P12	1474.00	1473.00	1473.00	1469.00	1466.33
P15	2090.00	2088.30	2088.30	2086.00	2083.33
P16	2125.00	2124.00	2124.00	2430.00	2119.33

NOTES

1. LOW PERMEABILITY CORE MATERIAL IS CONTINUOUS FOR THE FULL LENGTH OF THE EMBANKMENT.
2. WHERE PIPES PENETRATE THE LOW PERMEABILITY CORE, PIPE SHALL BE BEDDED IN THE LOW PERMEABILITY CORE MATERIAL.
3. THE BERM SECTION IS SUBJECT TO CHANGE AND WILL BE BASED ON THE RESULTS OF FURTHER GEOTECHNICAL INVESTIGATIONS.

Detention Basin Berm Section

1/16

N.T.S. Source: VHB LD_160

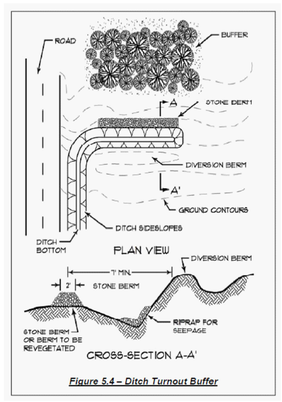


Figure 5.4 – Ditch Turnout Buffer

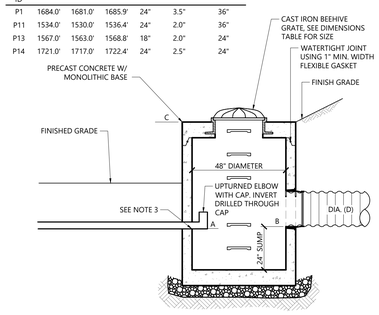
- *Stone Berm Specifications*: The stone berm to which the ditch turn-out delivers the runoff must be at least 20 feet in length and must be constructed along the contour. It must be at least one- foot high and two feet across the top with 2:1 side slopes.
- *Stone Size*: The stone must be coarse enough that it will not clog with sediment. Stone for stone bermed level lip spreaders must consist of sound durable rock that will not disintegrate by exposure to water or weather. Fieldstone, rough quarried stone, blasted ledge rock or tailings may be used. The rock must be well graded with a median size of approximately 3 inches and a maximum size of 6 inches. See Table 5.4 above.

Ditch Turnout Buffer

N.T.S. Source: MDEP

DIMENSIONS TABLE

WET POND ID	A	B	C	D	ORIFICE "A" DIAMETER	BEEHIVE GRATE SIZE
P1	1684.0'	1681.0'	1685.9'	24"	3.5"	36"
P11	1534.0'	1530.0'	1536.4'	24"	2.0"	36"
P13	1567.0'	1563.0'	1568.8'	18"	2.0"	24"
P14	1721.0'	1717.0'	1722.4'	24"	2.5"	24"



NOTES:

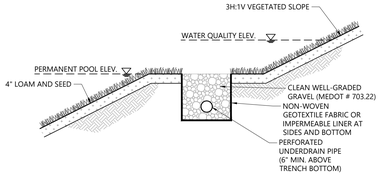
1. ALUMINUM "DROP-FRONT" MANHOLE STEPS, CAST IN PLACE, SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
2. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER
3. MANHOLE OPENING SHALL BE SET IN STRUCTURE COVER AS ALIGNED WITH LADDER ACCESS.

Wet Pond Outlet Control Structure

1/16

N.T.S. Source: VHB LD_171

MEDOT SPECIFICATIONS FOR TYPE B UNDERDRAINS (MEDOT # 703.22)	
SIEVE SIZE	% BY WEIGHT
1"	90-100
½"	75-100
NO. 4	50-100
NO. 20	15-80
NO. 50	0-15
NO. 200	0-5



Wet Pond Gravel Bench

N.T.S. Source: VHB

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Sheet 62 of 63

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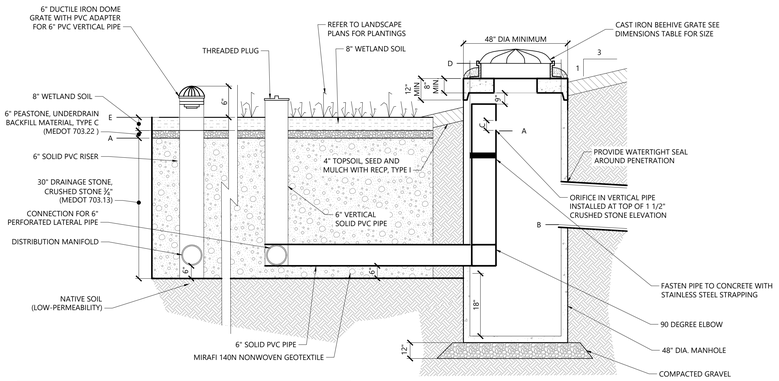


GRAVEL WETLAND ELEVATION TABLE

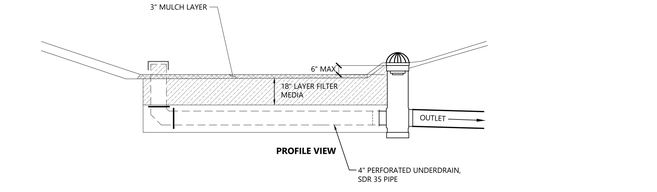
GW #	A	B	C	D	E	Beehive Grate Size
P2	1746.66	1746.00	1" Ø	1749.00	1747.00	24" Ø
P3	1750.66	1750.00	1" Ø	1754.60	1752.50	24" Ø
P7	1878.66	1878.00	1" Ø	1882.00	1879.00	24" Ø
P8	1932.66	1932.00	1" Ø	1935.50	1933.00	24" Ø
P10	1977.66	1977.00	1" Ø	1983.00	1978.00	30" Ø
P17	1874.66	1874.00	1" Ø	1877.70	1875.00	24" Ø

GRAVEL WETLAND TYPICAL

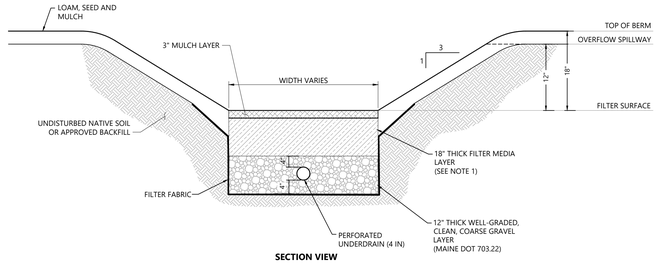
Gravel Wetland (Single Bay)

10/21

N.T.S. Source: VHB LD_VT



PROFILE VIEW



SECTION VIEW

NOTES

1. RAINGARDEN REQUIREMENTS PER MAINE DEP CHAPTER 500 AND MAINE STORMWATER MANAGEMENT DESIGN MANUAL VOLUME III, LATEST EDITIONS. MINIMUM REQUIREMENTS PER THE DEVELOPMENT:
   - DRAIN TIME = 24-48 HOURS, ASSUMES RATE OF 3 INCHES/HOUR.
2. FILTER MEDIA SHALL CONSIST (BY VOLUME) OF:
   - 70-80% COARSE LOAMY SAND, MEETING THE FOLLOWING GRADATION:

SIEVE (ASTM D422)	PERCENT PASSING BY WEIGHT
NO. 10	85-100
NO. 20	70-100
NO. 60	15-40
NO. 200	8-10

   - 20-30% MULCH, MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NO. 200 SIEVE.
   - RESULTING MIXTURE SHALL HAVE NO MORE THAN 10% PASSING THE NO. 200 SIEVE.
   - FILTER MEDIA SHALL BE FIELD TESTED TO INSURE DRAINAGE WITHIN 24 TO 48 HOURS AND HAVE SUFFICIENT FINES TO ENSURE FILTRATION OF FINE PARTICLES. GRADATION SHALL BE ADJUSTED, IF REQUIRED, TO MEET THE REQUIRED DRAW DOWN TIME. ADJUSTED GRADATIONS AND DRAINAGE TIME SHALL BE SUBMITTED TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.
3. SURFACE AND SIDE SLOPES OF FILTER SHALL BE SEEDED WITH A CONSERVATION TYPE SEED MIX AND MULCHED.
4. PERFORATED UNDERDRAIN PIPE SHALL BE LAID AS SHOWN IN PLAN VIEW, NO GREATER THAN 15' ON CENTER, TO DRAIN THE ENTIRE FILTER AREA.
5. MINIMUM FILTER BED SURFACE SHALL BE 7% OF THE CONTRIBUTING IMPERVIOUS AREA PLUS 3% OF THE CONTRIBUTING LANDSCAPING AREA.
6. MAXIMUM CONTRIBUTING AREA TO ANY SINGLE RAINGARDEN = 1 ACRE.
7. RUNOFF FROM OFFSITE DRAINAGE AREAS SHALL BE DIVERTED AROUND THE FILTER.
8. AVOID COMPACTING UNDERDRAIN BEDDING AND SOIL FILTER MEDIA DURING CONSTRUCTION. OVER-COMPACTED SOILS WILL NOT ALLOW PROPER WATER MIGRATION THROUGH THE SOIL SECTION; FILTER BEDS ARE INTENDED TO DRAIN DRY WITHIN 24 HOURS.
9. ALL DEVELOPED AREA ON THE LOT MUST DRAIN TO A RAIN GARDEN. PROVIDE ONE FILTER FOR THE LOT WITH THE TOTAL AREA NOTED, OR SPLIT THE AREA INTO MULTIPLE SMALLER GARDENS. SHAPES CAN VARY TO ACCOMMODATE NATIVE TERRAIN AND/OR LANDSCAPING.
10. EACH HOMEOWNER OF A LOT THAT REQUIRES A RAIN GARDEN MUST CHOOSE BETWEEN A GRASSED GARDEN OR A PLANTED GARDEN. SEE NOTES TO RIGHT.
11. CONSTRUCT FILTER SUCH THAT BERM IS NO MORE THAN 18" ABOVE THE MULCH SURFACE.
12. UNDERDRAIN GRANULAR MATERIAL SHALL BE WELL GRADED, CLEAN, COARSE GRAVEL MEETING THE MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B FOR UNDERDRAIN BACKFILL

SIEVE (ASTM D422)	PERCENT PASSING BY WEIGHT
1"	90-100
½"	75-100
NO. 4	50-100
NO. 20	15-80
NO. 50	0-15
NO. 200	0-5

13. UNDERDRAINS SHALL MAINTAIN A MINIMUM OF 1% FOR POSITIVE DRAINAGE.

Rain Garden (RG) Detail

2/17

N.T.S. Source: VHB

RAIN GARDEN ELEVATION TABLE

Lot ID	Rain Garden ID	Max Impervious Surface (SF)	Max Landscaped Area - Lawn (SF)	Max Total Drainage Area (SF)	Min. Filter Surface Area (SF)	Orifice Diameter (in.)	WQv (CF)
R1	RG 1	10,000	20,700	30,700	1,321	1	1,523
R2	RG 2	10,000	20,700	30,700	1,321	1	1,523
R3	RG 3	7,000	10,000	17,000	790	1	917
R4	RG 4	7,000	10,000	17,000	790	1	917
R6	RG 6	7,000	10,000	17,000	790	1	917
R7	RG 7	7,000	10,000	17,000	790	1	917
R8	RG 8	7,000	10,000	17,000	790	1	917
R9	RG 9	7,000	10,000	17,000	790	1	917
R10	RG 10	7,000	10,000	17,000	790	1	917
R11	RG 11	7,000	10,000	17,000	790	1	917
R12	RG 12	10,000	20,700	30,700	1,321	1	1,523
R13	RG 13	10,000	20,700	30,700	1,321	1	1,523
R14	RG 14	13,000	24,000	37,000	1,630	1	1,883
R15	RG 15	13,000	24,000	37,000	1,630	1	1,883
R16	RG 16	13,000	24,000	37,000	1,630	1	1,883
R17	RG 17A	15,250	28,300	43,550	1,917	1	2,214
R17	RG 17B	15,250	28,300	43,550	1,917	1	2,214
R18	RG 18	13,000	24,000	37,000	1,630	1	1,883
R19	RG 19	13,000	24,000	37,000	1,630	1	1,883
R20	RG 20	13,000	24,000	37,000	1,630	1	1,883
R21	RG 21	10,000	20,700	30,700	1,321	1	1,523
R22	RG 22	10,000	20,700	30,700	1,321	1	1,523
R23	RG 23	10,000	20,700	30,700	1,321	1	1,523
R24	RG 24	13,000	24,000	37,000	1,630	1	1,883
R25	RG 25	7,000	10,000	17,000	790	1	917
R26	RG 26	7,000	10,000	17,000	790	1	917
R27	RG 27	7,000	10,000	17,000	790	1	917
R28	RG 28	7,000	10,000	17,000	790	1	917
R29	RG 29	7,000	10,000	17,000	790	1	917
R30	RG 30	7,000	10,000	17,000	790	1	917
R31	RG 31	10,000	20,700	30,700	1,321	1	1,523
R32	RG 32	10,000	20,700	30,700	1,321	1	1,523
R33	RG 33	7,000	10,000	17,000	790	1	917
R34	RG 34	7,000	10,000	17,000	790	1	917
R35	RG 35	7,000	10,000	17,000	790	1	917
R36	RG 36	7,000	10,000	17,000	790	1	917
R37	RG 37	7,000	10,000	17,000	790	1	917
R38	RG 38	10,000	20,700	30,700	1,321	1	1,523
R39	RG 39	10,000	20,700	30,700	1,321	1	1,523
R40	RG 40	10,000	20,700	30,700	1,321	1	1,523
R41	RG 41	7,000	10,000	17,000	790	1	917
R42	RG 42	10,000	20,700	30,700	1,321	1	1,523
R43	RG 43	10,000	20,700	30,700	1,321	1	1,523
R44	RG 44	10,000	20,700	30,700	1,321	1	1,523
R45	RG 45	10,000	20,700	30,700	1,321	1	1,523
R46	RG 46	10,000	20,700	30,700	1,321	1	1,523
R47	RG 47	10,000	20,700	30,700	1,321	1	1,523
R48	RG 48	10,000	20,700	30,700	1,321	1	1,523
R49	RG 49	10,000	20,700	30,700	1,321	1	1,523
R50	RG 50	10,000	20,700	30,700	1,321	1	1,523
R51	RG 51	7,000	10,000	17,000	790	1	917
R52	RG 52	7,000	10,000	17,000	790	1	917

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