Exhibit K

Whipple Consulting Engineers, Inc.

August 25, 2025
W.O. No. 2024-3776

Liberty Lake Planning, Engineering & Building Services
22710 E. Country Vista Drive
Liberty Lake, WA 99019
Attn: Lisa Key, Director/Planner

Re: Legacy Ridge West – A Residential Subdivision (2014.PL0003)
Reasonable Use Exception – Response to Comments from July 7, 2025

Dear Ms. Key:

Greetings, thank you for your comments from early July, 2025, WCE in conjunction with Budinger have worked toward answering these comments noted below, which are copied from an email chain dated July 7, 2025. ***WCE responses are in bold underlined italics***.

That said, we *(City of Liberty Lake)* offer the following comments:

- The current plans show the roadway profile grades steeper than the City's design standards (8.0%) in many locations. The plans should be modified to our current standards to show accurately what grading will be required in the geohazard areas. If grades or any other design standards cannot be met, it should be discussed and justified in the RUE request.

  Upon receipt of this comment, we revised all new roadway profiles to no more than 8.0-percent slope, see grading plans attached. Since this comment post dated the response letter we received from Budinger, attached, we sent the revised grading plans to Budinger to see if it would materially change their report, the response is attached, but Budinger states no change to the updated report. It should be noted that Valley Vista Drive was approved and installed in a previous time in order to install water and sewer. The slope on this roadway will not be changed and since it was a previously approved plan, no design deviation is included.

- After the grading plan is revised, Budinger needs to review the most recent grading plan and modify their Geohazard Evaluation and Engineering Report accordingly (all of their reports are currently based on old plans). They can make the judgement call whether they have enough data with the previous explorations or whether additional exploration is needed. This is not only for the western part of the site, but also for the NE and SE portions of the site that were changed after Budinger's original report/exploration.

See the attached Budinger report and email commentary, their report and commentary are up to date with the current proposed grading plan.

- In order for me to make the required finding detailed in City Development Code 10-6B-2(B)(1)(c), the revised Geotech Engineer needs to make a finding in their report that the proposed construction "will not result in any damage to other property and will not threaten the public health, safety, or welfare on or off the property", This statement can be conditioned on specific geo-hazard mitigations as may be identified by the engineer stamping the Geohazard Evaluation and Engineering Report.

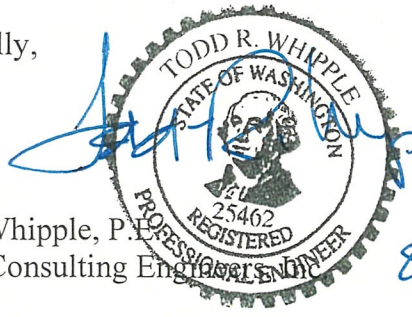
The following statement is from the Budinger Letter of July 24, 2025, attached to this response.

> *Closing*
> Provided the GEOR is retained to confirm that conditions anticipated are actually encountered during construction, and the recommendations in the previous geotechnical reports are implemented, we conclude that the proposed improvements will are not expected to result in damages to existing properties outside of the site and will not threaten the public health, safety, or welfare on or off the property.

Based on the responses above and the attachments, we respectfully urge and request that the City of Liberty Lake approve this Reasonable Use Exception, confident that it aligns with the City's goals and broader regional needs. We are committed to addressing any additional conditions or requirements to ensure this development succeeds as a safe, sustainable, and community-enhancing project.

If you have any questions or comments regarding this letter, please feel free to contact us at (509) 893-2617.

Respectfully,



8/25/25

Todd R. Whipple, P.E.
Whipple Consulting Engineers, Inc.
TRW/trw

CC: File
Sponsor

DIVIDER
PAGE

BUDINGER UPDATE REPORT

Budinger & Associates
Proudly serving the Inland Northwest for over 40 years

Geotechnical Engineering
Environmental Engineering
Construction Materials Testing
Subsurface Exploration
Special Inspection

TECHNICAL MEMORANDUM

To: Whipple Consulting Engineers (WCE), Inc.
Todd R. Whipple, PE, President
From: Budinger & Associates, Inc.
Jason Pritzl, LG
John Finnegan, PE
Date: July 24, 2025
Project: Legacy Phase F
Liberty Lake, WA
BAI# S241121
Subject: Review of Updated Grading Plans

7/24/2025

This memorandum addresses our opinions and limited recommendations pertaining to feasibility of the site to support the proposed improvements.

Project Considerations

We previously completed geotechnical evaluations of the 93-acre site including the following:

- *Geotechnical Engineering Report, Legacy Ridge F*, dated April 9, 2022;
- *Geohazard Evaluation Report, Legacy Phase F*, dated December 23, 2024; and,
- *Geotechnical Engineering Report, Legacy Ridge Phase F*, dated February 28, 2025.

In the time since the previous geotechnical evaluations were completed, adjustments have been made to the proposed road alignments and lot configurations as shown in plans provided by WCE, dated May 15, 2025, and the attached *Figures R2-1* to *R2-3*. We understand City of Liberty Lake (COLL) requires review of updated plans by the geotechnical engineer of record (GEOR) prior to granting a *Reasonable Use Exception* as defined in *COLL Development Code Title 10-6B-2(B)*.

Discussion

Current plans show Road A as a singular alignment generally in a southwest/northeast orientation with one switchback instead of the two north/south oriented alignments previously proposed. The alignment for Road B has been straightened and extended approximately 500 feet to the east. The length of Road C will be nearly half of that previously proposed, and the alignment has been shifted slightly to the east in the southeast corner of the site. The alignment of Valley Vista Drive appears to be unchanged. Proposed maximum cut and fill thicknesses will be slightly greater at approximately 44 and 22 feet, respectively. The number of lots has been reduced, and lot sizes increased from an average of 0.2 acres originally proposed to 0.5 acres or greater.

In our opinion, the current plans appear to offer greater benefit to the project than previous drawings, at least from a geotechnical perspective. The total length of proposed roadway within the site has been decreased by approximately 100 feet, and the alignments are configured in a manner that complements the natural contours of the site. Reconfiguration of the design has resulted in a decrease of total cut and fill quantities required for construction – approximately 83,700 and 17,100 cubic yards, respectively.

Although the maximum cut/fill thicknesses increased, the maximum permanent slope inclination is still proposed as 2H:1V. The increase to lots sizes may result in lesser square footage of impermeable surfaces constructed, therefore likely decreasing the volume of stormwater runoff that will need to be treated and disposed of.

Closing

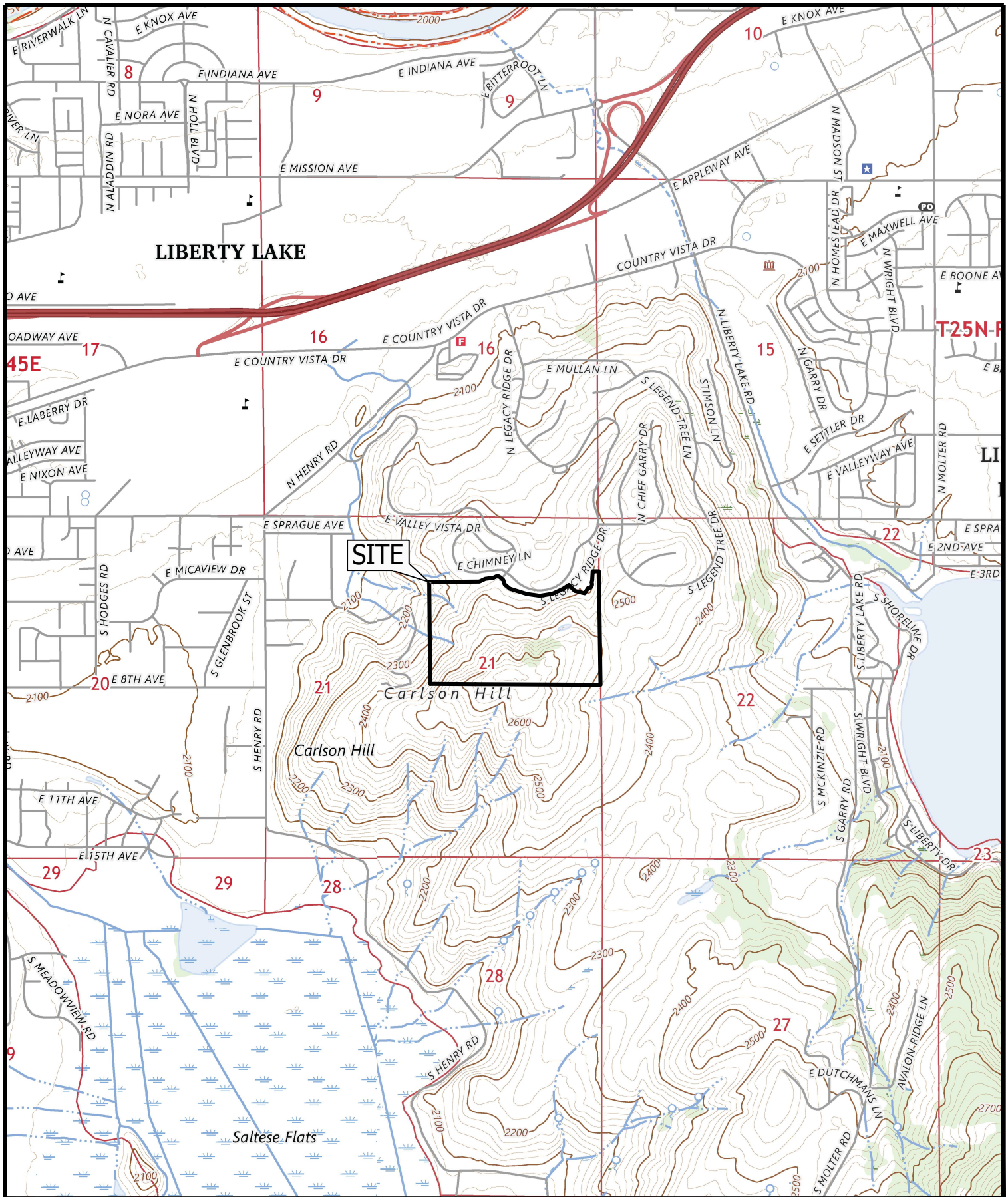
Provided the GEOR is retained to confirm that conditions anticipated are actually encountered during construction, and the recommendations in the previous geotechnical reports are implemented, we conclude that the proposed improvements will are not expected to result in damages to existing properties outside of the site and will not threaten the public health, safety, or welfare on or off the property.

Attached is a document titled *"Important Information About Your Geotechnical Engineering Report,"* which we recommend you review carefully to better understand the context within which these services were completed.

Thank you for the opportunity to provide these services.

Attachments:

Figure R1: Vicinity Map
Figures R2-1 to R2-3: Site Plans
Figures R3-1 to R3-6: Profiles
Appendix A: S211189 Legacy Ridge Phase F – Subsurface Exploration Logs
Appendix B: S241121 Legacy Phase F – Subsurface Exploration Logs
Appendix C: GBC - *Important Information about This Geotechnical-Engineering Report*

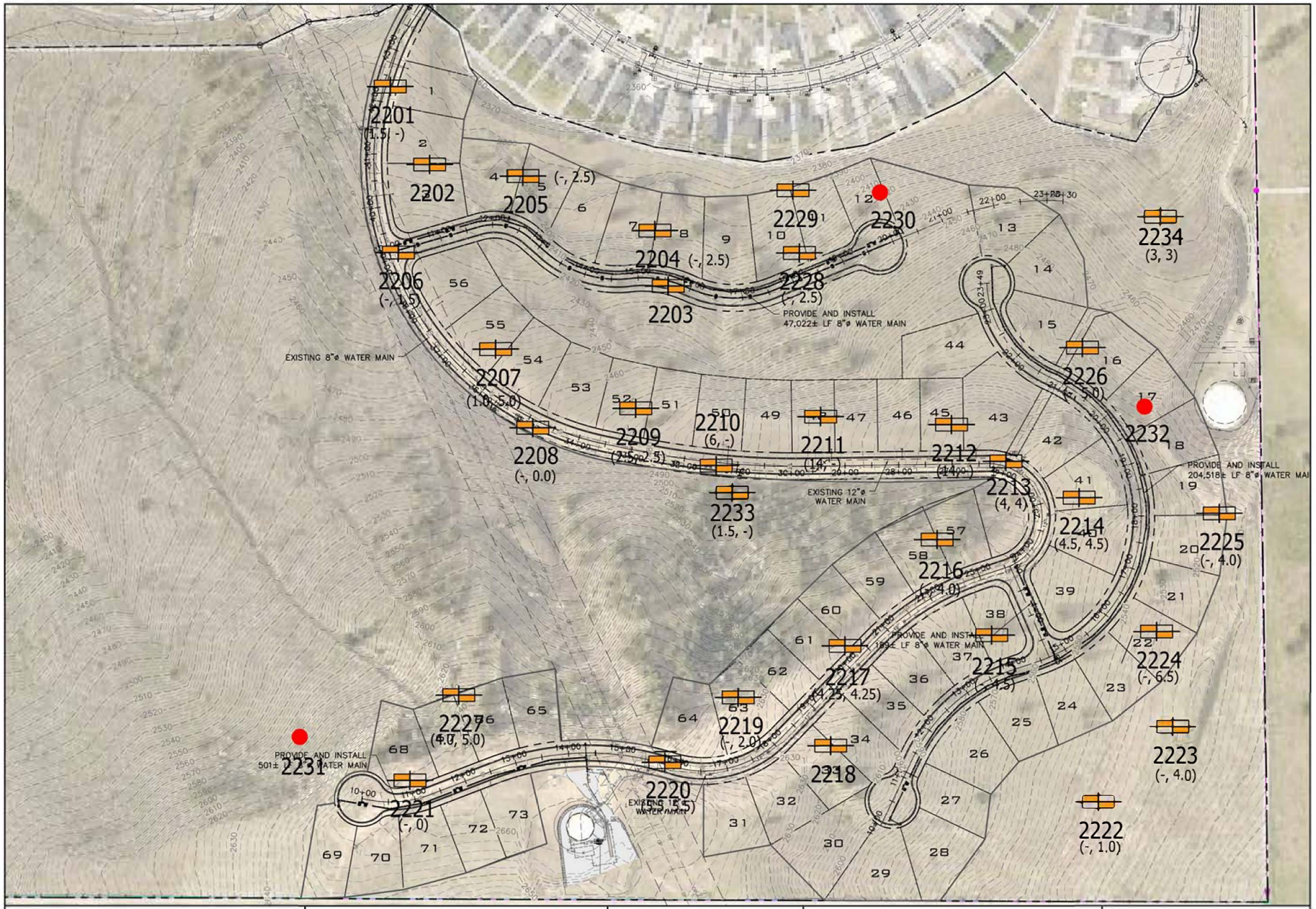


SCALE: 1"=2000'
0 1000 2000

SECTION 21
T 25 N R 45 E
USGS 2023

Budinger & Associates

VICINITY MAP	FIGURE R1
LEGACY PHASE F LIBERTY LAKE, WASHINGTON	PROJECT NUMBER S241121 DATE: 7/2025



TEST PIT LOCATION

DCP LOCATION

(2.5, 8.5) DEPTH OF FILL, DEPTH TO ROCK (FEET)

N

SCALE: 1"=240'

0 120 240

BASE PLAN PROVIDED BY WCE DATED 3/04/22
AERIAL IMAGERY PROVIDED BY MAPSPOKANE

Budinger & Associates

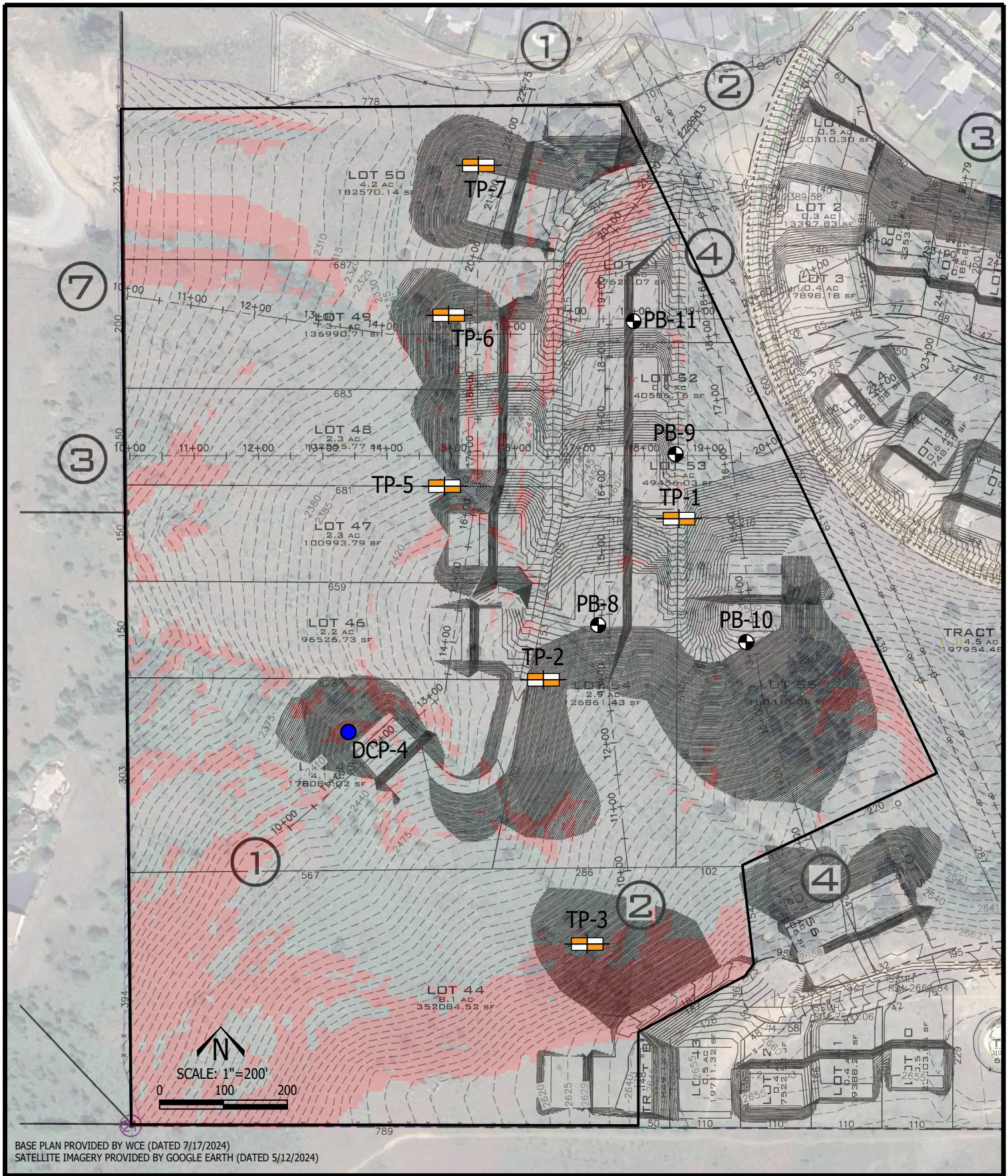
PREVIOUS SITE PLAN

LEGACY RIDGE PHASE F
LIBERTY LAKE, WASHINGTON

FIGURE R2-1

PROJECT NUMBER S211189

DATE: 6/2022



BASE PLAN PROVIDED BY WCE (DATED 7/17/2024)
SATELLITE IMAGERY PROVIDED BY GOOGLE EARTH (DATED 5/12/2024)

PROBE BORING LOCATION (PB-8)

TEST PIT LOCATION (TP-1)

DYNAMIC CONE PENETROMETER LOCATION (DCP-4)

AREAS LIGHTLY SHADED RED INDICATE SLOPES 40 PERCENT OR GREATER

Budinger & Associates

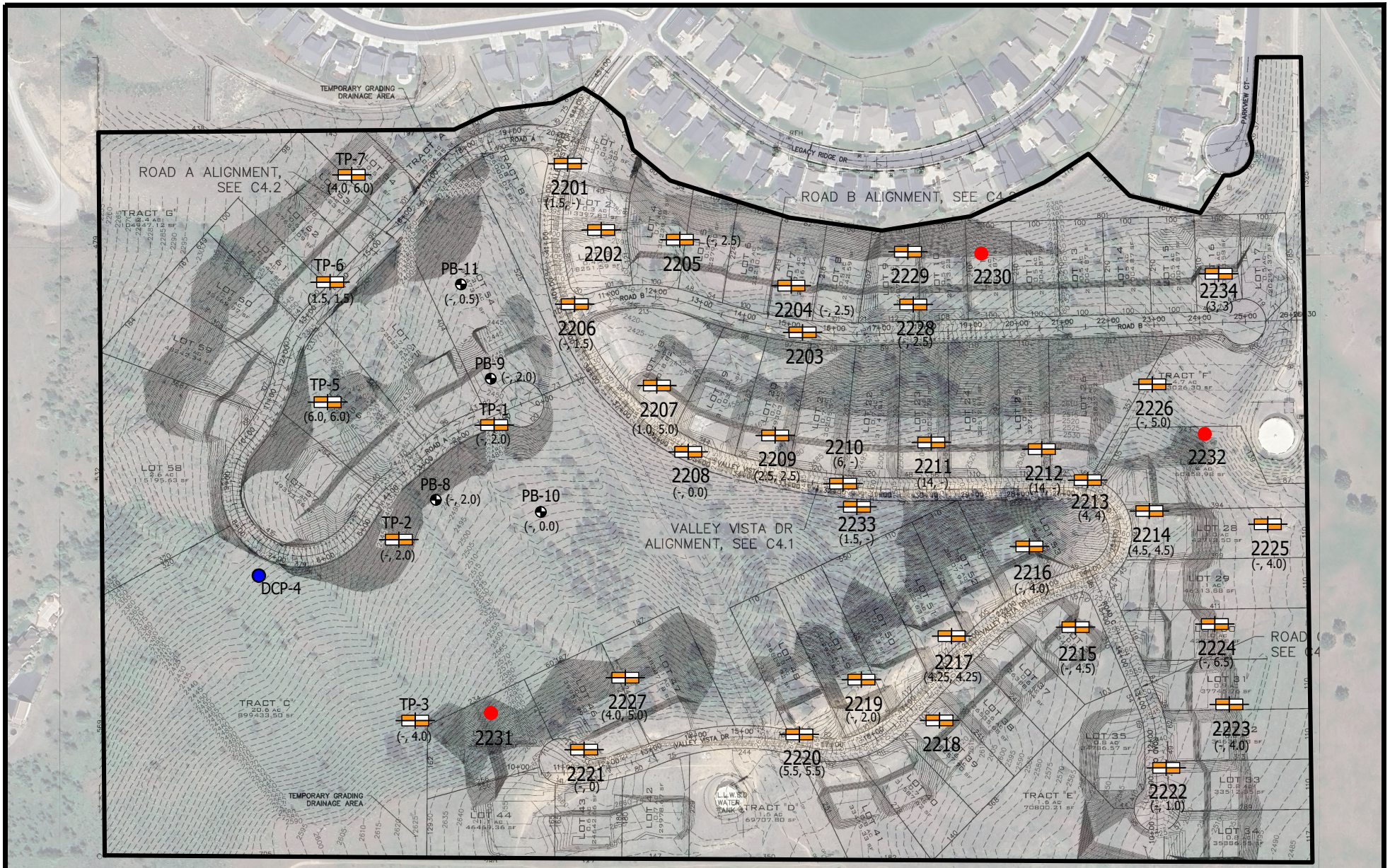
PREVIOUS SITE PLAN

FIGURE R2-2

LEGACY PHASE F
LIBERTY LAKE, WASHINGTON

PROJECT NUMBER S241121

DATE: 2/2025



BASE PLAN PROVIDED BY WCE (DATED 5/15/2025)
SATELLITE IMAGERY PROVIDED BY GOOGLE EARTH (DATED 5/12/2024)

TEST PIT LOCATION
(2.5, 8.5) DEPTH OF EXISTING FILL, DEPTH TO ROCK (FEET)
WILDCAT DCP LOCATION
KESSLER DCP LOCATION

N
SCALE: 1"=300'
0 150 300

Budinger & Associates

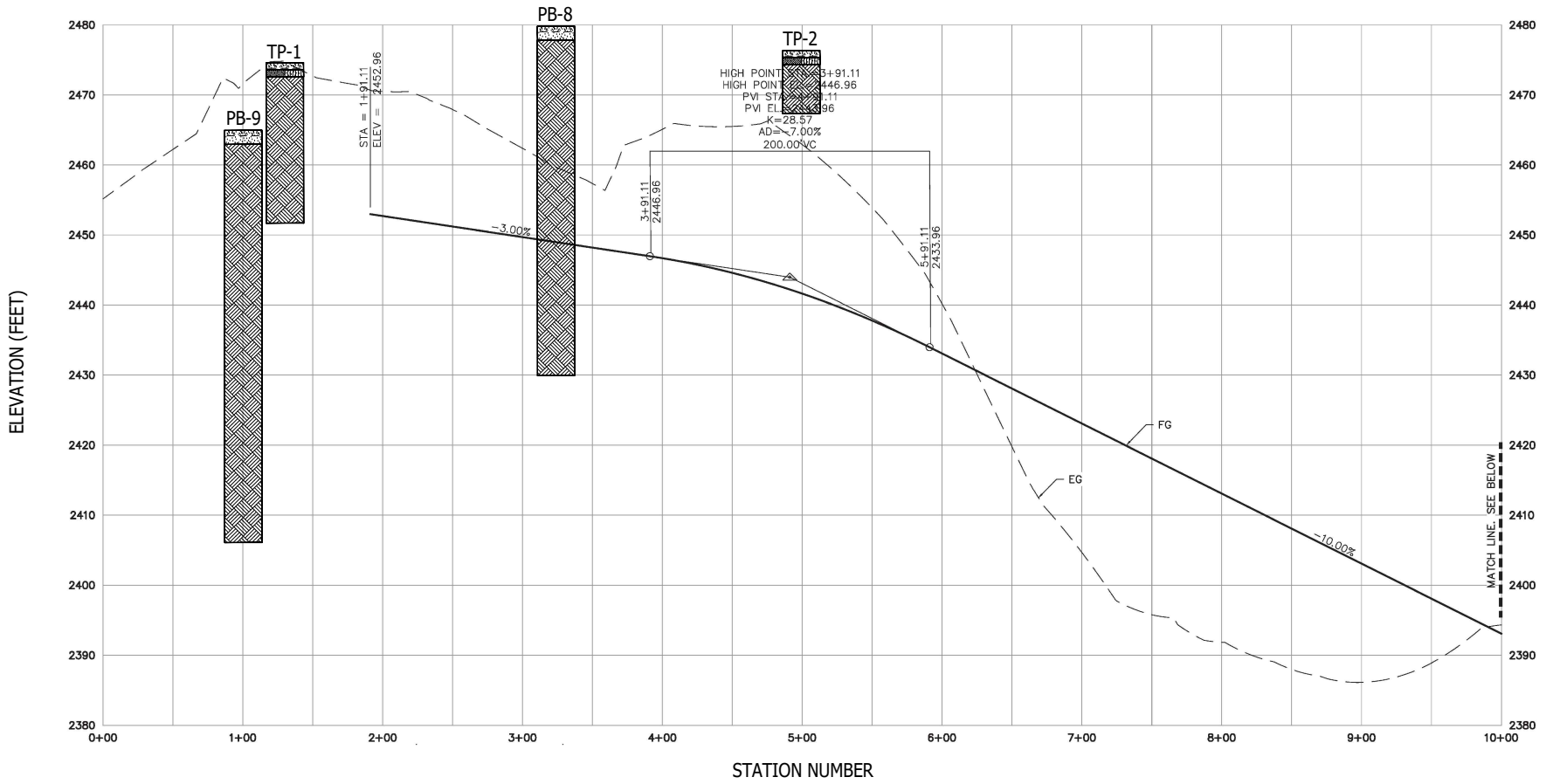
SITE PLAN

LEGACY PHASE F
LIBERTY LAKE, WASHINGTON

FIGURE R2-3

PROJECT NUMBER S241121

DATE: 7/2025



LITHOLOGY GRAPHICS

TOPSOIL | SILTY SAND | GNEISS

EXPLORATION OFFSETS FROM STA CENTERLINE

TP-2: 95 FEET LEFT PB-9: 70 FEET RIGHT

PB-8: 95 FEET LEFT

HORIZONTAL SCALE: 1"=120'

0 60 120

VERTICAL EXAGGERATION 5X

Budinger & Associates

ROAD A PROFILE STA 0+00 - 10+00

LEGACY PHASE F

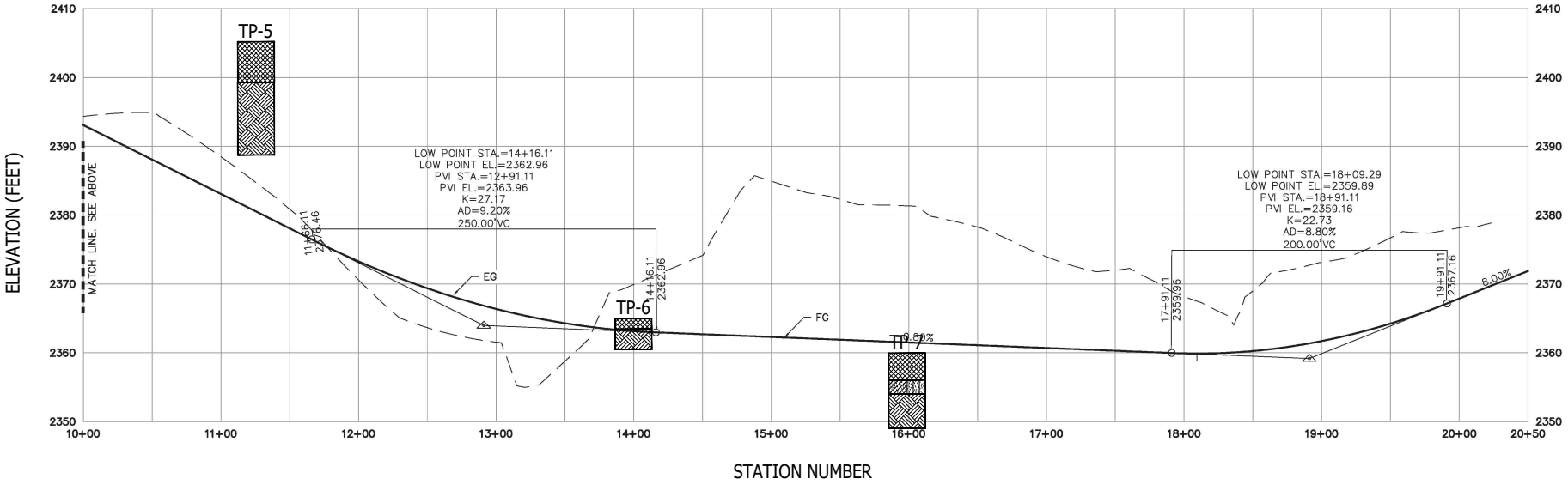
LIBERTY LAKE, WASHINGTON

BASED ON PLANS PROVIDED BY WCE (DATED 5/15/2025)

FIGURE R3-1

PROJECT NUMBER S241121

DATE: 7/2025



LITHOLOGY GRAPHICS

EXISTING FILL | SILTY SAND | GNEISS

EXPLORATION OFFSETS FROM STA CENTERLINE

TP-5: 110 FEET RIGHT TP-7: 155 FEET LEFT

TP-6: 30 FEET LEFT

HORIZONTAL SCALE: 1"=120'

0 60 120

VERTICAL EXAGGERATION 5X

Budinger & Associates

ROAD A PROFILE STA 10+00 - 20+50

LEGACY PHASE F

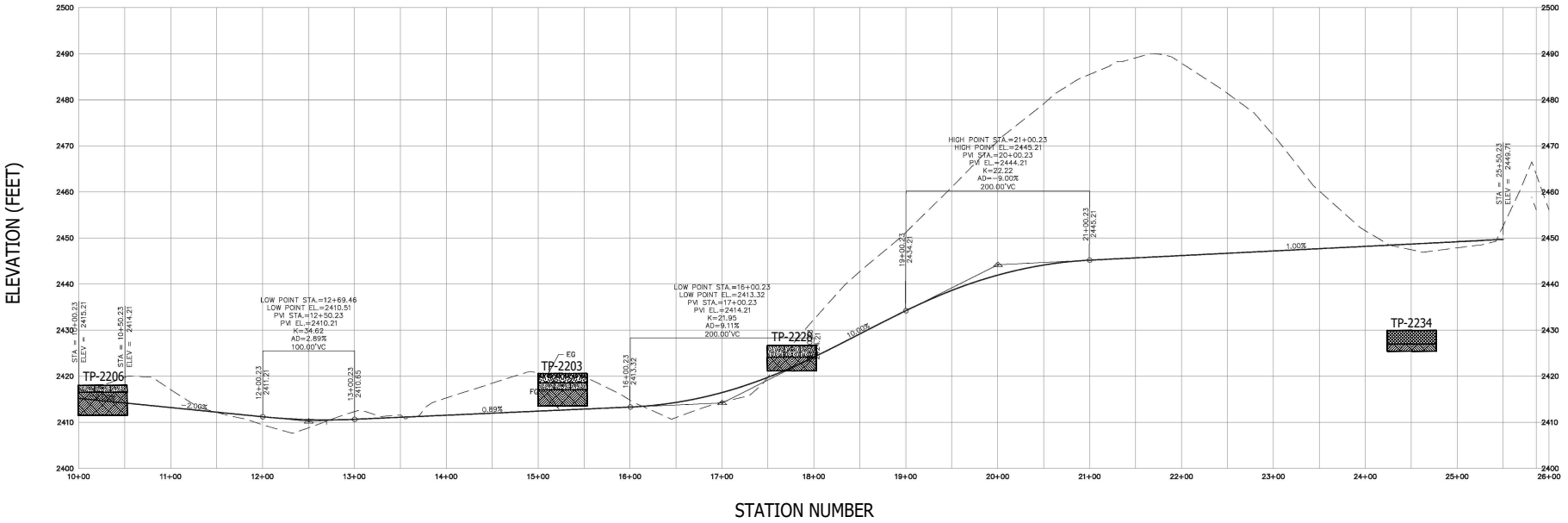
LIBERTY LAKE, WASHINGTON

BASED ON PLANS PROVIDED BY WCE (DATED 5/15/2025)

FIGURE R3-2

PROJECT NUMBER S241121

DATE: 7/2025



LITHOLOGY GRAPHICS

EXISTING FILL

TOPSOIL

SILTY SAND

GNEISS

EXPLORATION OFFSETS FROM STA CENTERLINE

TP-2228: 60 FEET LEFT TP-2234: 100 FEET LEFT

HORIZONTAL SCALE: 1"=180'

0 90 180

VERTICAL EXAGGERATION 5X

Budinger & Associates

ROAD B PROFILE STA 10+00 - 26+00

LEGACY PHASE F

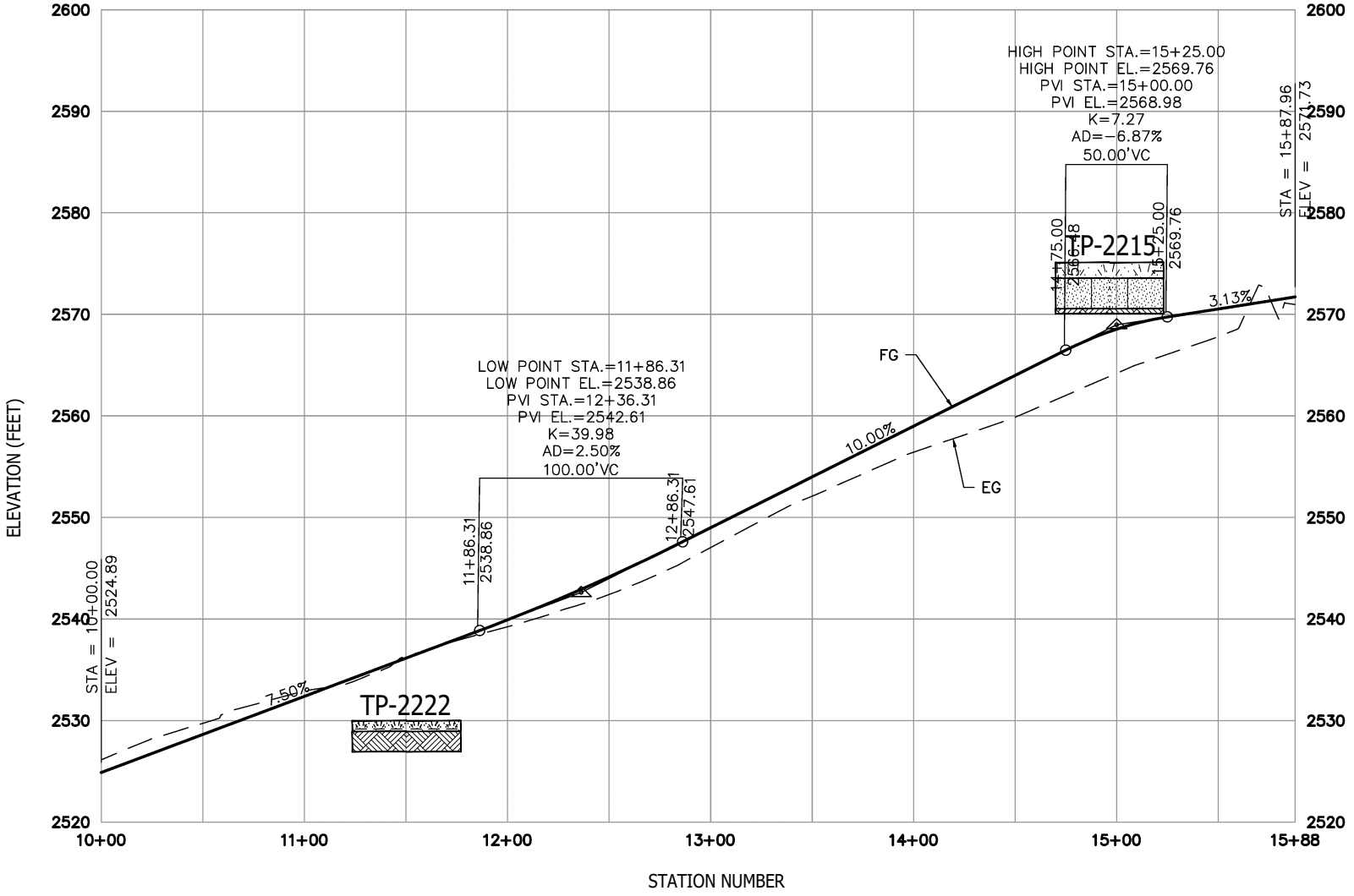
LIBERTY LAKE, WASHINGTON

BASED ON PLANS PROVIDED BY WCE (DATED 5/15/2025)

FIGURE R3-3

PROJECT NUMBER S241121

DATE: 7/2025



LITHOLOGY GRAPHICS

TOPSOIL

SILTY SAND

GNEISS

EXPLORATION OFFSETS FROM STA CENTERLINE

TP-2215: 80 FEET LEFT TP-2222: 20 FEET RIGHT

HORIZONTAL SCALE: 1"=80'

0 40 80

VERTICAL EXAGGERATION 5X

Budinger & Associates

ROAD C PROFILE STA 10+00 - 15+88

LEGACY PHASE F

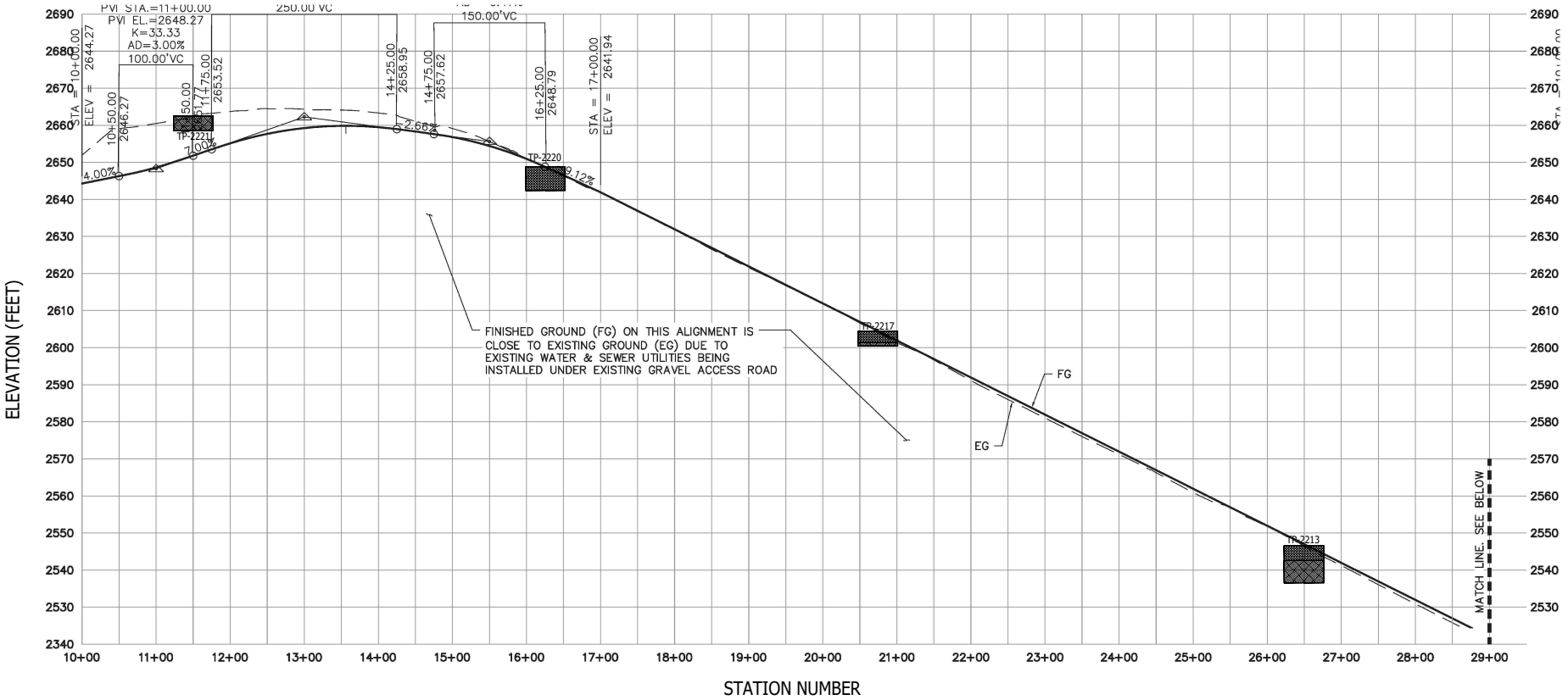
LIBERTY LAKE, WASHINGTON

BASED ON PLANS PROVIDED BY WCE (DATED 5/15/2025)

FIGURE R3-4

PROJECT NUMBER S241121

DATE: 7/2025



LITHOLOGY GRAPHICS

EXISTING FILL

GNEISS

EXPLORATION OFFSETS FROM STA CENTERLINE

TP-2213: 20 FEET RIGHT

TP-2220: 20 FEET LEFT

TP-2217: 50 FEET LEFT

TP-2221: 50 FEET LEFT

HORIZONTAL SCALE: 1"=220'

0 110 220

VERTICAL EXAGGERATION 5X

Budinger & Associates

VALLEY VISTA DRIVE PROFILE STA 10+00 - 29+00

LEGACY PHASE F

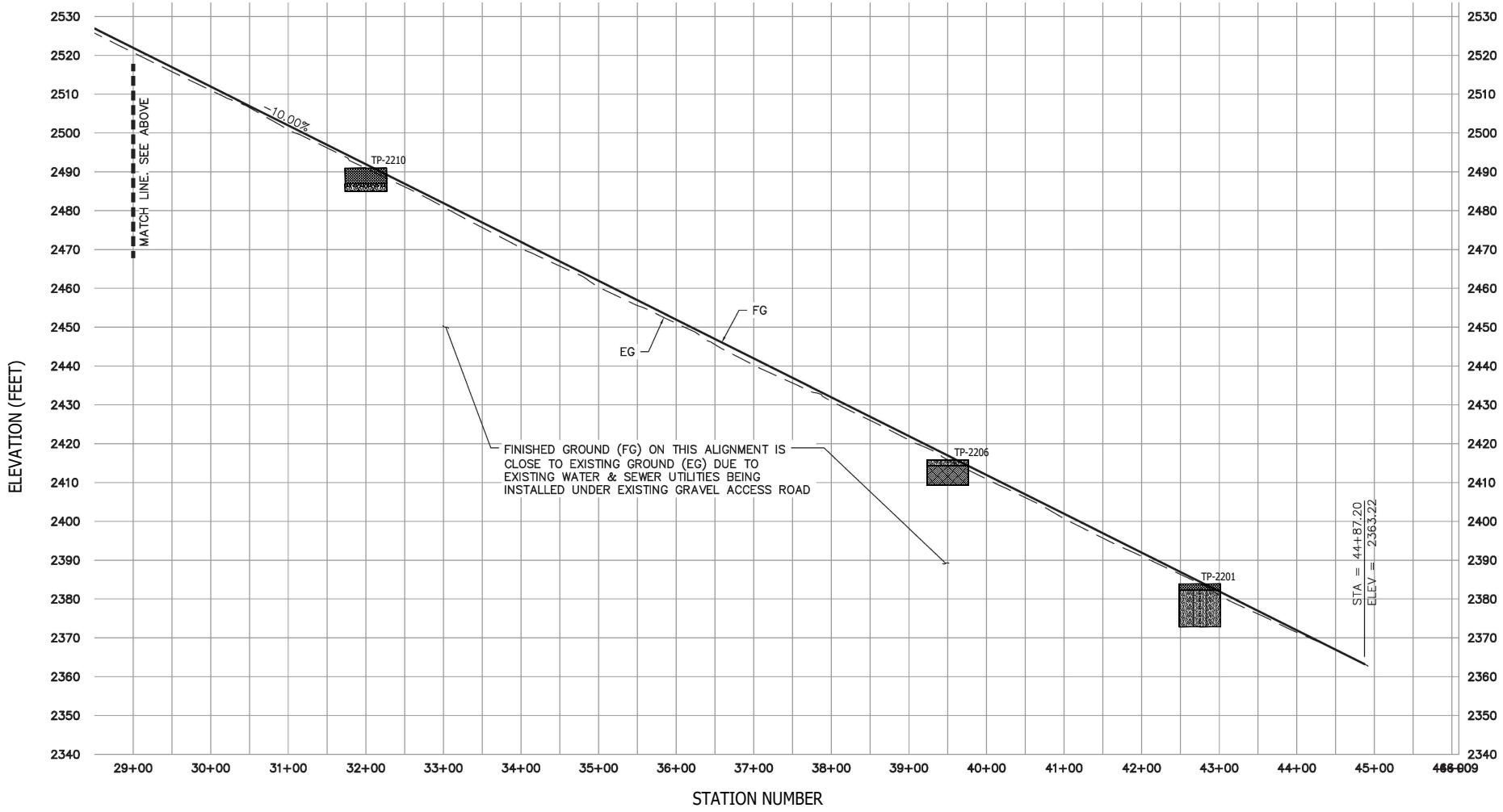
LIBERTY LAKE, WASHINGTON

BASED ON PLANS PROVIDED BY WCE (DATED 5/15/2025)

FIGURE R3-5

PROJECT NUMBER S241121

DATE: 7/2025



LITHOLOGY GRAPHICS

EXISTING FILL

TOPSOIL

SILTY SAND

GNEISS

EXPLORATION OFFSETS FROM STA CENTERLINE

TP-2201: 15 FEET RIGHT TP-2206: 25 FEET RIGHT

HORIZONTAL SCALE: 1"=200'

0 100 200

VERTICAL EXAGGERATION 5X

Budinger & Associates

VALLEY VISTA DRIVE PROFILE STA 29+00 - 46+00

LEGACY PHASE F

LIBERTY LAKE, WASHINGTON

BASED ON PLANS PROVIDED BY WCE (DATED 5/15/2025)

FIGURE R3-6

PROJECT NUMBER S241121

DATE: 7/2025

Appendix A: S211189 Legacy Ridge Phase F – Subsurface Exploration Logs

TEST PIT 2201

Date: 2-22-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: Centerline of road at lots 1
Surface: bare

Elevation: 2384 ft
Logged by: R. Lloyd
Size of hole: 10 x 4 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG	TEST RESULTS
0		moist, brown, medium dense	SILTY SAND with Gravel, coarse to fine, micaceous (POSSIBLE FILL)		ATTERBERG LIMITS PL — LL; WATER CONTENT ○; 10 20 30 40 50 60 70 80 90
		moist, brown, medium dense	SILTY SAND with Gravel, coarse to fine, micaceous (NATIVE)		
5					
10					
		no free groundwater observed	End of Excavation @ 11 ft		
15					
20					

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-1**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2202

Date: 2-22-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 2 & 3
Surface: snow

Elevation: 2393 ft
Logged by: R. Lloyd
Size of hole: 15 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG	TEST RESULTS
0		moist, brown, loose	SAND with Silt and occasional Gravel, coarse to fine, angular, micaceous		ATTERBERG LIMITS PL — LL; WATER CONTENT ○; 10 20 30 40 50 60 70 80 90
		medium dense	1.5-feet: communications wire in 3/4-inch gray conduit		
5		dense			
10			(moderate effort required to excavate)		
		no free groundwater observed	End of Excavation @ 12 ft		
15					
20					

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-2**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2203

Date: 2-22-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: Centerline of road at lot 8
Surface: grass and weeds

Elevation: 2421 ft
Logged by: R. Lloyd
Size of hole: 11 x 5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		moist, brown, medium dense	SILTY SAND with occasional gravel, coarse to fine, angular, micaceous	
5		moist, orangish brown, dense	SAND with Silt, coarse to fine, angular, micaceous (COMPLETELY WEATHERED GNEISS) (considerable effort required to excavate)	
		no free groundwater observed	End of Excavation @ 7 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-3**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2204

Date: 2-22-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 7 & 8
Surface: snow

Elevation: 2397 ft
Logged by: R. Lloyd
Size of hole: 11 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, orangish brown, dense	SILTY SAND, coarse to fine, angular, micaceous (COMPLETELY WEATHERED GNEISS)	
5		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
10		no free groundwater observed	Excavator Refusal End of Excavation @ 5 ft	
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-4**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2205

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 4 & 5
Surface: snow

Elevation: 2387 ft
Logged by: R. Lloyd
Size of hole: 13 x 5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, medium dense	SAND with Silt, coarse to fine, angular, micaceous	
		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2) (considerable effort required to excavate)	
5		no free groundwater observed	Excavator Refusal End of Excavation @ 5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-5**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2206

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: intersection at north road
Surface: patchy snow

Elevation: 2415 ft
Logged by: R. Lloyd
Size of hole: 14 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, medium dense	SILTY SAND, coarse to fine, angular, micaceous (FILL)	
		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2) (considerable effort required to excavate)	
5			pocket penetrometer (pp) = 4.5 tsf	
		no free groundwater observed	End of Excavation @ 6.5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-6**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2207

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 55
Surface: sparse weeds

Elevation: 2447 ft
Logged by: R. Lloyd
Size of hole: 10 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, loose	SILTY SAND, coarse to fine, angular, micaceous (FILL)	
		moist, brown, medium dense	SAND with Silt, coarse to fine, angular (COMPLETELY WEATHERED GNEISS)	
5		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 7 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-7**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2208

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: centerline of road at lot 53
Surface: bare

Elevation: 2458 ft
Logged by: R. Lloyd
Size of hole: n/a

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG	TEST RESULTS
0		moist, orangish brown no free groundwater observed	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2) Excavator Refusal (possible frost) End of Excavation @ 0.25 ft		ATTERBERG LIMITS PL — LL WATER CONTENT ○ 10 20 30 40 50 60 70 80 90
5					
10					
15					
20					

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-8**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2209

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 52
Surface: sparse weeds

Elevation: 2373 ft
Logged by: R. Lloyd
Size of hole: 13 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND, stratified in approximately 1-inch intervals with gray Silty Sand (FILL)	
		medium dense		
		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
5			(considerable effort required to excavate)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-9**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2210

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: centerline of road at lot 50
Surface: bare

Elevation: 2493 ft
Logged by: R. Lloyd
Size of hole: 6 x 4.3 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, loose	SAND with occasional gravel, coarse to fine, angular (FILL) (frost to 12-inches)	
5		moist, dark brown, medium dense	SILTY SAND with organics (likely trench backfill)	
		no free groundwater observed	(6-feet: water line marking found in excavation, hole abandoned to avoid damage) End of Excavation @ 6 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-10**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2211

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 48
Surface: snow

Elevation: 2511 ft
Logged by: R. Lloyd
Size of hole: 17 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG	TEST RESULTS
0		moist, brown, loose	SILTY SAND with Gravel, Cobbles, and occasional Boulders, coarse to fine, angular (FILL)		ATTERBERG LIMITS PL — LL; WATER CONTENT ○
		medium dense			
5					
		dense			
10					
15		no free groundwater observed	Maximum Reach End of Excavation @ 14 ft		
20					

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-11**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2212

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 45
Surface: snow

Elevation: 2534 ft
Logged by: R. Lloyd
Size of hole: 18 x 5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, loose	SILTY SAND with Gravel, occasional cobbles and boulders, anthropogenic debris as PVC pipe (FILL)	
		medium dense		
5				
		moist, olive brown, dense	SILTY SAND with Gravel, Cobbles, and occasional boulders (FILL)	
10				
		no free groundwater observed	Maximum Reach End of Excavation @ 14 ft	
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-12**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2213

Date: 2-23-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: centerline road at lots 42 & 43
Surface: patchy snow

Elevation: 2547 ft
Logged by: R. Lloyd
Size of hole: 10 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, orangish brown, loose	SILTY SAND with Gravel, coarse to fine, angular (FILL)	
		medium dense		
5		moist, orangish gray	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
10			(becomes strong R4)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 10 ft	
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-13**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2214

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 41
Surface: sparse weeds and snow

Elevation: 2559 ft
Logged by: R. Lloyd
Size of hole: 16 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, loose	SILTY SAND with Gravel, coarse to fine, angular (FILL)	
		medium dense		
		dense		
			4.5-feet: two 6-inch diameter steel pipes at north end of test pit	
5		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
		no free groundwater observed	End of Excavation @ 5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-14**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2215

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: Lots 38
Surface: grass and weeds

Elevation: 2575 ft
Logged by: R. Lloyd
Size of hole: 16 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILT with Sand and organics as roots (TOPSOIL)	
		moist, brown, medium dense	SILTY SAND with Gravel, coarse to fine, angular	
		moist, orangish brown, dense	SILTY SAND, coarse to fine, angular, micaceous (COMPLETELY WEATHERED GNEISS)	
5		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-15**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2216

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 57 & 58
Surface: snow

Elevation: 2580 ft
Logged by: R. Lloyd
Size of hole: 13 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		moist, light brown, loose	SILTY SAND with occasional Gravel, coarse to fine, angular to subrounded pp=0.75 tsf	
5		moist, orangish brown	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 5.5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

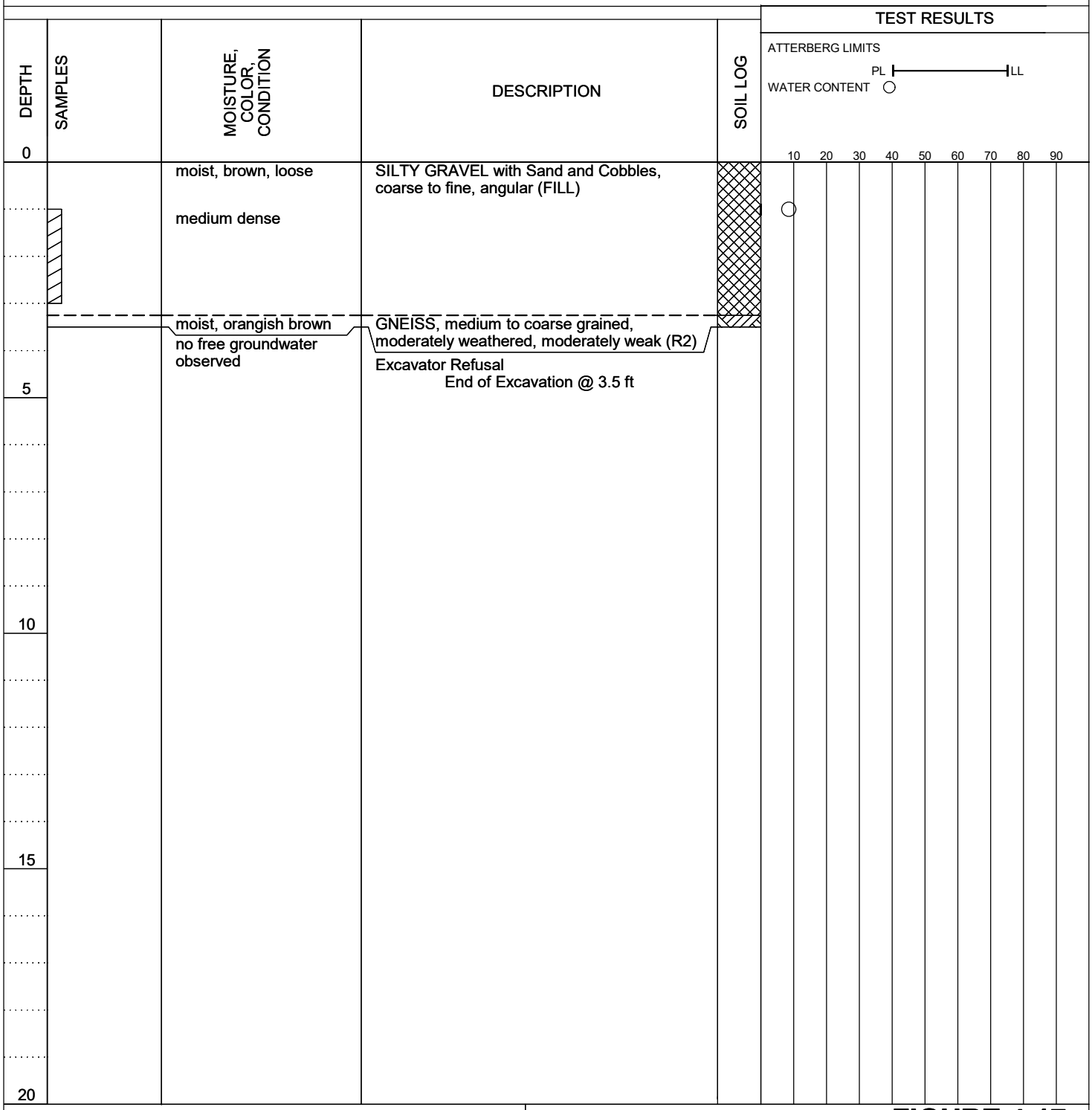
TEST PIT LOGS **FIGURE 4-16**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2217

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 60 & 61
Surface: bare

Elevation: 2604 ft
Logged by: R. Lloyd
Size of hole: 11 x 5 feet



Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-17**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2218

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 33 & 34
Surface: sparse weeds and snow

Elevation: 2627 ft
Logged by: R. Lloyd
Size of hole: 14 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILT with Sand and organics as roots (TOPSOIL)	
		moist, brown, stiff	SANDY SILTY CLAY, weakly cemented with CaCO3 (LOESS)	
5		medium stiff		
		brown, medium stiff	SANDY CLAY, weakly cemented with CaCO3 (LOESS)	
10		moist, orangish brown, dense	SILTY SAND with Gravel, fine, angular (POSSIBLE GLACIOFLUVIAL)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 12.5 ft	
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-18**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2219

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 63
Surface: bare

Elevation: 2637 ft
Logged by: R. Lloyd
Size of hole: 10 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, orangish gray, dense	SILTY SAND with Gravel, fine, micaceous (COMPLETELY WEATHERED GNEISS)	
		moist, orangish gray	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
5				
		no free groundwater observed	Excavator Refusal End of Excavation @ 6.5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-19**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2220

Date: 2-24-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: centerline road at lot 64
Surface: bare

Elevation: 2648 ft
Logged by: R. Lloyd
Size of hole: 8 x 4 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG	TEST RESULTS
0		moist, orangish brown, dense	GRAVEL with Silt, Sand, Boulders, and Cobbles, coarse to fine, angular (FILL)		ATTERBERG LIMITS PL LL WATER CONTENT
5					10 20 30 40 50 60 70 80 90
10		no free groundwater observed	End of Excavation @ 6.5 ft		
15					
20					

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-20**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2221

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: north of road at lot 68
Surface: grass and weeds

Elevation: 2660 ft
Logged by: R. Lloyd
Size of hole: 12 x 5.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, orangish grey	GNEISS, medium to coarse grained, moderately to slightly weathered, moderately weak (R2) to moderately strong (R3)	
5		no free groundwater observed	Excavator Refusal End of Excavation @ 4 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-21**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2222

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: south east parcel
Surface: sparse grass and weeds

Elevation: 2530 ft
Logged by: R. Lloyd
Size of hole: 11 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		dry, orangish gray	GNEISS, medium to coarse grained, fresh to completely weathered, moderately weak (R2) to moderately strong (R3)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 3 ft	
5				
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-22**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2223

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: south east of lot 23
Surface: sparse weeds and snow

Elevation: 2531 ft
Logged by: R. Lloyd
Size of hole: 15 x 5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		moist, brown, medium dense	SAND with SILT and Gravel, coarse to fine, angular	
5		orangish brown	GNEISS, medium to coarse grained, completely weathered, moderately weak (R2) (considerable effort required from excavator)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 6 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-23**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2224

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 22
Surface: grass and weeds

Elevation: 2531 ft
Logged by: R. Lloyd
Size of hole: 13 x 5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG	TEST RESULTS
0		moist, brown, medium dense	SILTY SAND with Gravel, coarse to fine, angular (FILL)		ATTERBERG LIMITS PL LL; WATER CONTENT; 10 20 30 40 50 60 70 80 90
5		moist, orangish brown, medium dense	SAND with SILT and Gravel, coarse, angular, micaceous (COMPLETELY WEATHERED GNEISS)		
10		no free groundwater observed	Excavator Refusal End of Excavation @ 6.5 ft		
15					
20					

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-24**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2225

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 19 & 20
Surface: sparse weeds and snow

Elevation: 2516 ft
Logged by: R. Lloyd
Size of hole: 14 x 5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		moist, orangish brown, medium dense dense	SILTY SAND with Gravel, coarse to fine, angular, micaceous (COMPLETELY WEATHERED GNEISS)	
		orangish gray	GNEISS, medium to coarse grained, moderately weathered, moderately strong (R3)	
5		no free groundwater observed	Excavator Refusal End of Excavation @ 4 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-25**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2226

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lot 16
Surface: sparse weeds and snow

Elevation: 2490 ft
Logged by: R. Lloyd
Size of hole: 11 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, medium dense	SILTY SAND, coarse to fine, angular (FILL)	
5		moist, orangish brown, dense	SAND with SILT and Gravel, coarse to fine, angular, micaceous (COMPLETELY WEATHERED GNEISS)	
		no free groundwater observed	Excavator Refusal End of Excavation @ 5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-26**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2227

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: northwest corner lot 66
Surface: sparse weeds and snow

Elevation: 2634 ft
Logged by: R. Lloyd
Size of hole: 14 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, loose	SILTY SAND with Gravel and occasional cobbles, organics as fine roots (FILL)	
5		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		orangish gray	GNEISS, medium to coarse grained, moderately weathered, moderately weak (R2)	
10		no free groundwater observed	Excavator Refusal End of Excavation @ 7 ft	
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-27**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2228

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: southeast corner of lot 10
Surface: sparse weeds and snow

Elevation: 2416 ft
Logged by: R. Lloyd
Size of hole: 8.5 x 4 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown, loose	SILTY SAND with organics as roots (TOPSOIL)	
		moist, brown, medium dense	SILTY SAND with organics as fine roots, fine, subangular to subrounded	
		moist, orangish brown, dense	GRAVEL with CLAY and Sand, fine, angular (COMPLETELY WEATHERED GNEISS)	
5		no free groundwater observed	Excavator Refusal End of Excavation @ 5.5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-28**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2229

Date: 2-25-22
Excavator: Budinger & Assoc., Inc.
Equipment: CAT 315 Excavator w/42" bucket
Location: lots 10 & 11 north
Surface: sparse weeds and snow

Elevation: 2388 ft
Logged by: R. Lloyd
Size of hole: 13 x 4.5 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, brown, loose	SAND with Gravel, coarse to fine, angular (FILL)	
		moist, dark brown, medium dense	GRAVEL with CLAY and SAND, fine, subangular to sub rounded, organics as roots (TOPSOIL)	
		moist, brown, medium dense	SILTY SAND, coarse to medium, subangular to subrounded	
5		moist, olive gray, medium dense	Boulders and Cobbles in sand matrix (GLACIOFLUVIAL)	
		moist, olive gray, loose	SILTY SAND with Gravel, coarse to fine, angular to subrounded (GLACIOFLUVIAL)	
		medium dense		
10		moist, orangish brown, medium dense	SILTY SAND with Gravel, coarse to fine, angular, micaceous (COMPLETELY WEATHERED GNEISS)	
		no free groundwater observed	End of Excavation @ 13 ft	
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-29**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2233

Date: 6-1-22
Excavator: Selland Construction, Inc
Equipment: Yanmar ViO 50 Excavator
Location: accross road from lot 50
Surface: pine needles

Elevation: 2495 ft
Logged by: R. Lloyd
Size of hole: 7 x 4 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, moderate brown	SILTY SAND with Gravel, medium to fine, angular, organics as roots up to 1-inch diameter (fill)	
		moist, dark brown	SILTY SAND with occasional Gravel, medium to fine, organics as fine roots and roots up to 1-inch diameter (possible fill)	
		moist, moderate brown	SILTY SAND with Gravel, medium to fine, angular (possible fill)	
5		moist, orangish brown	SILTY SAND with Gravel, coarse to fine, angular (native)	
		moist, tan	SILTY SAND, coarse to fine, angular (completely weathered gneiss)	
		no free groundwater observed	terminated due to maximum equipment reach End of Excavation @ 8 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-30**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

TEST PIT 2234

Date: 6-1-22
Excavator: Selland Construction, Inc
Equipment: Yanmar ViO 50 Excavator
Location: 240 feet south of Skyview Court cul de sac
Surface: grass and weeds

Elevation: 2430 ft
Logged by: R. Lloyd
Size of hole: 7 x 4 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, moderate brown	SAND with Silt and Gravel, medium to fine, angular, organics as fine roots in upper 6-inches (fill)	
		moist, orangish brown	SILTY SAND with Gravel, coarse to fine, angular (completely weathered gneiss)	
5		no free groundwater observed	excavation refusal End of Excavation @ 4.5 ft	
10				
15				
20				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-31**

Project: Legacy Ridge Phase F
Location: Liberty Lake, WA
Number: S211189

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc
1101 N Fancher Rd.
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2202
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2393
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
- 1 ft	10	44.4	••••••••••••	12	MEDIUM DENSE	STIFF
-	15	66.6	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	14	62.2	•••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
- 2 ft	13	57.7	••••••••••••••••	16	MEDIUM DENSE	VERY STIFF
-	10	44.4	••••••••••••	12	MEDIUM DENSE	STIFF
-	11	48.8	••••••••••••••	13	MEDIUM DENSE	STIFF
- 3 ft	17	75.5	•••••••••••••••••••	21	MEDIUM DENSE	VERY STIFF
- 1 m	33	146.5	••	25+	DENSE	HARD
-	39	150.5	••	25+	DENSE	HARD
- 4 ft	50	193.0	••	25+	VERY DENSE	HARD
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-1

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2204
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2397
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	3	13.3	•••	3	VERY LOOSE	SOFT
- 1 ft	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 2 ft	12	53.3	•••••••••••••••	15	MEDIUM DENSE	STIFF
-	14	62.2	•••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
-	15	66.6	•••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
- 3 ft	15	66.6	•••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
- 1 m	16	71.0	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	20	77.2	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
- 4 ft	39	150.5	•••	25+	DENSE	HARD
-	36	139.0	•••	25+	DENSE	HARD
-	50	193.0	•••	25+	VERY DENSE	HARD
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2205
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2387
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	12	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
- 1 ft	19	84.4	••••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
-	18	79.9	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
-	30	133.2	••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 2 ft	47	208.7	••	25+	VERY DENSE	HARD
-	50	222.0	••	25+	VERY DENSE	HARD
-						
- 3 ft						
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-3

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2207
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2447
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 1 ft	9	40.0	••••••••••	11	MEDIUM DENSE	STIFF
-	26	115.4	••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	50	222.0	••	25+	VERY DENSE	HARD
- 2 ft						
-						
-						
- 3 ft						
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-4

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2209
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2373
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
- 1 ft	10	44.4	••••••••••••	12	MEDIUM DENSE	STIFF
-	14	62.2	••••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
-	18	79.9	••••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
- 2 ft	15	66.6	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	15	66.6	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	50	222.0	••	25+	VERY DENSE	HARD
- 3 ft						
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-5

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2211
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2511
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
- 1 ft	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
-	15	66.6	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	22	97.7	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 2 ft	23	102.1	•••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	21	93.2	••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	19	84.4	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
- 3 ft	18	79.9	•••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
- 1 m	20	88.8	•••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
-	22	84.9	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
- 4 ft	22	84.9	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
-	30	115.8	••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	25	96.5	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 5 ft	32	123.5	••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	22	84.9	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
-	12	46.3	••••••••••••••	13	MEDIUM DENSE	STIFF
- 6 ft	10	38.6	••••••••••••	11	MEDIUM DENSE	STIFF
-	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
- 2 m	42	162.1	•••	25+	DENSE	HARD
- 7 ft	32	109.4	••••••••••••••••••••••••••••	25+	DENSE	HARD
-	34	116.3	••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	39	133.4	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 8 ft	50	171.0	•••	25+	DENSE	HARD
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-6

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2212
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2534
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
- 1 ft	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
-	29	128.8	•••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	33	146.5	•••	25+	DENSE	HARD
- 2 ft	26	115.4	••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	28	124.3	•••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	32	142.1	••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 3 ft	30	133.2	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 1 m	34	151.0	•••	25+	DENSE	HARD
-	20	77.2	••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
- 4 ft	26	100.4	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	17	65.6	•••••••••••••••••	18	MEDIUM DENSE	VERY STIFF
-	28	108.1	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 5 ft	19	73.3	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	16	61.8	••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
-	26	100.4	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 6 ft	18	69.5	•••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	28	108.1	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 2 m	27	104.2	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 7 ft	21	71.8	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	19	65.0	••••••••••••••••••	18	MEDIUM DENSE	VERY STIFF
-	16	54.7	••••••••••••••	15	MEDIUM DENSE	STIFF
- 8 ft	15	51.3	•••••••••••••	14	MEDIUM DENSE	STIFF
-	33	112.9	•••••••••••••••••••••••••••••	25+	DENSE	HARD
-	38	130.0	••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 9 ft	62	212.0	•••	25+	VERY DENSE	HARD
-	50	171.0	•••	25+	DENSE	HARD
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-7

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2214
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2559
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	10	44.4	••••••••••••	12	MEDIUM DENSE	STIFF
- 1 ft	16	71.0	••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	21	93.2	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	25	111.0	••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 2 ft	40	177.6	••	25+	DENSE	HARD
-	50	222.0	••	25+	VERY DENSE	HARD
-						
- 3 ft						
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-8

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2215
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2575
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
- 1 ft	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
- 2 ft	12	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
-	20	88.8	••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
-	27	119.9	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 3 ft	50	222.0	••	25+	VERY DENSE	HARD
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-9

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2216
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2580
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	3	13.3	•••	3	VERY LOOSE	SOFT
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
- 1 ft	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 2 ft	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 3 ft	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 1 m	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
- 4 ft	12	46.3	••••••••••••	13	MEDIUM DENSE	STIFF
-	11	42.5	••••••••••••	12	MEDIUM DENSE	STIFF
-	21	81.1	•••••••••••••••••••••	23	MEDIUM DENSE	VERY STIFF
- 5 ft	29	111.9	•••••••••••••••••••••••••••••	25+	DENSE	HARD
-	39	150.5	•••	25+	DENSE	HARD
-	48	185.3	•••	25+	VERY DENSE	HARD
- 6 ft	50	193.0	•••	25+	VERY DENSE	HARD
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-10

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2218
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2627
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	8	35.5	••••••••••	10	LOOSE	STIFF
- 1 ft	11	48.8	••••••••••••••	13	MEDIUM DENSE	STIFF
-	8	35.5	••••••••••	10	LOOSE	STIFF
-	10	44.4	•••••••••••••	12	MEDIUM DENSE	STIFF
- 2 ft	10	44.4	•••••••••••••	12	MEDIUM DENSE	STIFF
-	10	44.4	•••••••••••••	12	MEDIUM DENSE	STIFF
-	10	44.4	•••••••••••••	12	MEDIUM DENSE	STIFF
- 3 ft	11	48.8	••••••••••••••	13	MEDIUM DENSE	STIFF
- 1 m	13	57.7	•••••••••••••••••	16	MEDIUM DENSE	VERY STIFF
-	9	34.7	•••••••••••	9	LOOSE	STIFF
- 4 ft	9	34.7	•••••••••••	9	LOOSE	STIFF
-	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
-	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
- 5 ft	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
-	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
-	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
- 6 ft	4	15.4	••••	4	VERY LOOSE	SOFT
-	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
- 2 m	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
- 7 ft	7	23.9	••••••	6	LOOSE	MEDIUM STIFF
-	7	23.9	••••••	6	LOOSE	MEDIUM STIFF
-	9	30.8	••••••••	8	LOOSE	MEDIUM STIFF
- 8 ft	8	27.4	•••••••	7	LOOSE	MEDIUM STIFF
-	7	23.9	••••••	6	LOOSE	MEDIUM STIFF
-	7	23.9	••••••	6	LOOSE	MEDIUM STIFF
- 9 ft	7	23.9	••••••	6	LOOSE	MEDIUM STIFF
-	12	41.0	••••••••••••	11	MEDIUM DENSE	STIFF
-	31	106.0	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 3 m 10 ft	50	171.0	••	25+	DENSE	HARD
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-11

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2223
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2531
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
- 1 ft	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	3	13.3	•••	3	VERY LOOSE	SOFT
-	3	13.3	•••	3	VERY LOOSE	SOFT
- 2 ft	8	35.5	••••••••••	10	LOOSE	STIFF
-	20	88.8	••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
-	15	66.6	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
- 3 ft	12	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
- 1 m	14	62.2	••••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
-	17	65.6	••••••••••••••••••	18	MEDIUM DENSE	VERY STIFF
- 4 ft	23	88.8	••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
-	19	73.3	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	50	193.0	••	25+	VERY DENSE	HARD
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-12

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2225
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2516
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	3	13.3	•••	3	VERY LOOSE	SOFT
- 1 ft	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
-	20	88.8	•••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
- 2 ft	19	84.4	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
-	31	137.6	••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	33	146.5	••	25+	DENSE	HARD
- 3 ft	50	222.0	••	25+	VERY DENSE	HARD
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-13

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2226
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2490
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
-	14	62.2	••••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
- 1 ft	18	79.9	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
-	23	102.1	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	43	190.9	••	25+	VERY DENSE	HARD
- 2 ft	59	262.0	••	25+	VERY DENSE	HARD
-	50	222.0	••	25+	VERY DENSE	HARD
-						
- 3 ft						
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-14

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2227
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2634
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	3	13.3	•••	3	VERY LOOSE	SOFT
-	8	35.5	••••••••••	10	LOOSE	STIFF
- 1 ft	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 2 ft	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
- 3 ft	9	40.0	••••••••••••	11	MEDIUM DENSE	STIFF
- 1 m	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
-	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
- 4 ft	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
-	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
-	37	142.8	••	25+	DENSE	HARD
- 5 ft	50	193.0	••	25+	VERY DENSE	HARD
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-15

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2228
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2416
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	7	31.1	••••••••	8	LOOSE	MEDIUM STIFF
-	10	44.4	••••••••••••	12	MEDIUM DENSE	STIFF
- 1 ft	8	35.5	•••••••••	10	LOOSE	STIFF
-	9	40.0	••••••••••	11	MEDIUM DENSE	STIFF
-	16	71.0	••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
- 2 ft	21	93.2	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	28	124.3	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	35	155.4	••	25+	DENSE	HARD
- 3 ft	24	106.6	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 1 m	23	102.1	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	50	193.0	••	25+	VERY DENSE	HARD
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-16

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP @ TP-2229
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2388
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	11	48.8	•••••••••••••	13	MEDIUM DENSE	STIFF
- 1 ft	14	62.2	•••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
-	15	66.6	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	16	71.0	•••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
- 2 ft	16	71.0	•••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	18	79.9	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
-	13	57.7	••••••••••••••••	16	MEDIUM DENSE	VERY STIFF
- 3 ft	12	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
- 1 m	10	44.4	••••••••••••	12	MEDIUM DENSE	STIFF
-	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
- 4 ft	10	38.6	••••••••••	11	MEDIUM DENSE	STIFF
-	9	34.7	•••••••••	9	LOOSE	STIFF
-	10	38.6	••••••••••	11	MEDIUM DENSE	STIFF
- 5 ft	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
-	11	42.5	•••••••••••	12	MEDIUM DENSE	STIFF
-	10	38.6	••••••••••	11	MEDIUM DENSE	STIFF
- 6 ft	9	34.7	•••••••••	9	LOOSE	STIFF
-	9	34.7	•••••••••	9	LOOSE	STIFF
- 2 m	10	38.6	••••••••••	11	MEDIUM DENSE	STIFF
- 7 ft	10	34.2	•••••••••	9	LOOSE	STIFF
-	12	41.0	••••••••••	11	MEDIUM DENSE	STIFF
-	15	51.3	••••••••••••••	14	MEDIUM DENSE	STIFF
- 8 ft	25	85.5	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
-	28	95.8	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	25	85.5	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
- 9 ft	31	106.0	•••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	54	184.7	••	25+	VERY DENSE	HARD
-	50	171.0	••	25+	DENSE	HARD
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-17

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP-30
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2495
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	3	13.3	•••	3	VERY LOOSE	SOFT
-	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
- 1 ft	8	35.5	••••••••••	10	LOOSE	STIFF
-	12	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
-	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 2 ft	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
-	13	57.7	••••••••••••••	16	MEDIUM DENSE	VERY STIFF
-	14	62.2	•••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
- 3 ft	14	62.2	•••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
- 1 m	50	222.0	••	25+	VERY DENSE	HARD
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-18

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP-31
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2595
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
- 1 ft	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
-	2	8.9	••	2	VERY LOOSE	SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
- 2 ft	3	13.3	•••	3	VERY LOOSE	SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
-	1	4.4	•	1	VERY LOOSE	VERY SOFT
- 3 ft	2	8.9	••	2	VERY LOOSE	SOFT
- 1 m	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	3	11.6	•••	3	VERY LOOSE	SOFT
- 4 ft	9	34.7	•••••••••	9	LOOSE	STIFF
-	14	54.0	••••••••••••••	15	MEDIUM DENSE	STIFF
-	23	88.8	••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
- 5 ft	15	57.9	••••••••••••••	16	MEDIUM DENSE	VERY STIFF
-	21	81.1	••••••••••••••••••••••	23	MEDIUM DENSE	VERY STIFF
-	19	73.3	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
- 6 ft	28	108.1	••••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	14	54.0	••••••••••••••	15	MEDIUM DENSE	STIFF
- 2 m	18	69.5	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
- 7 ft	16	54.7	••••••••••••••	15	MEDIUM DENSE	STIFF
-	13	44.5	•••••••••••	12	MEDIUM DENSE	STIFF
-	26	88.9	•••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
- 8 ft	24	82.1	••••••••••••••••••••••	23	MEDIUM DENSE	VERY STIFF
-	35	119.7	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	34	116.3	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 9 ft	41	140.2	••••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	50	171.0	••	25+	DENSE	HARD
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-19

WILDCAT DYNAMIC CONE LOG

Budinger and Associates, Inc.
1101 N Fancher Rd
Spokane Valley, WA, 99212

PROJECT NUMBER: S211189
DATE STARTED: 03-08-2022
DATE COMPLETED: 03-08-2022

HOLE #: DCP-32
CREW: Cameron Andrews
PROJECT: Legacy Ridge West Phase F
ADDRESS: unassigned
LOCATION: Liberty Lake, WA

SURFACE ELEVATION: 2420
WATER ON COMPLETION: N/A
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	20	88.8	••••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
-	43	190.9	••	25+	VERY DENSE	HARD
- 1 ft	50	222.0	••	25+	VERY DENSE	HARD
-						
-						
- 2 ft						
-						
-						
- 3 ft						
- 1 m						
-						
- 4 ft						
-						
-						
- 5 ft						
-						
-						
- 6 ft						
-						
- 2 m						
- 7 ft						
-						
-						
- 8 ft						
-						
-						
- 9 ft						
-						
-						
- 3 m 10 ft						
-						
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
-						
- 4 m 13 ft						

C:\My Documents\Wildcat\WC_XL97.XLS

Figure 5-20

DCP TEST DATA

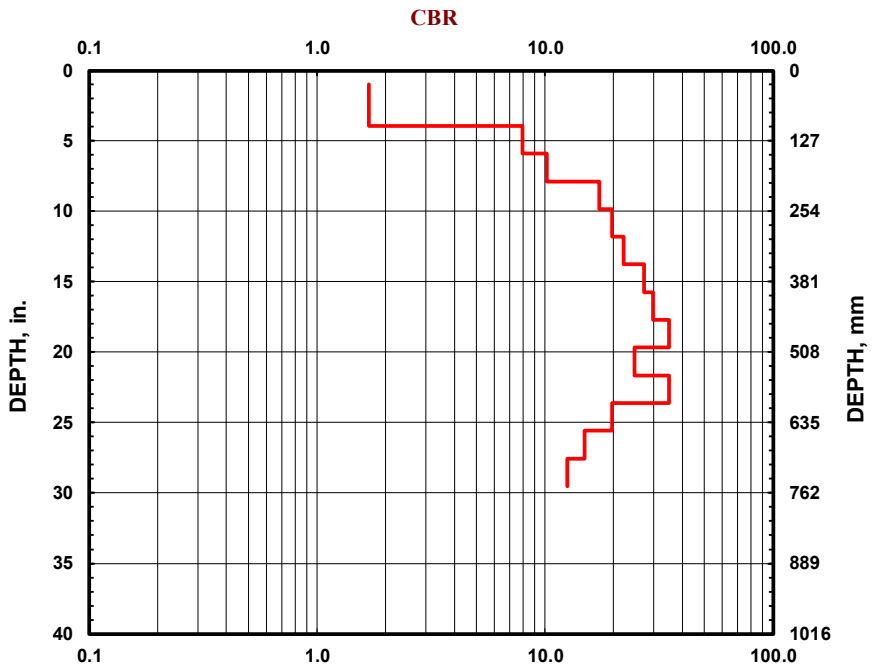
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2201 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
0.5	75	2
0.5	100	2
2	125	2
2	150	2
2.5	175	2
2.5	200	2
4	225	2
4	250	2
4.5	275	2
4.5	300	2
5	325	2
5	350	2
6	375	2
6	400	2
6.5	425	2
6.5	450	2
7.5	475	2
7.5	500	2
5.5	525	2
5.5	550	2
7.5	575	2
7.5	600	2
4.5	625	2
4.5	650	2
3.5	675	2
3.5	700	2
3	725	2
3	750	2



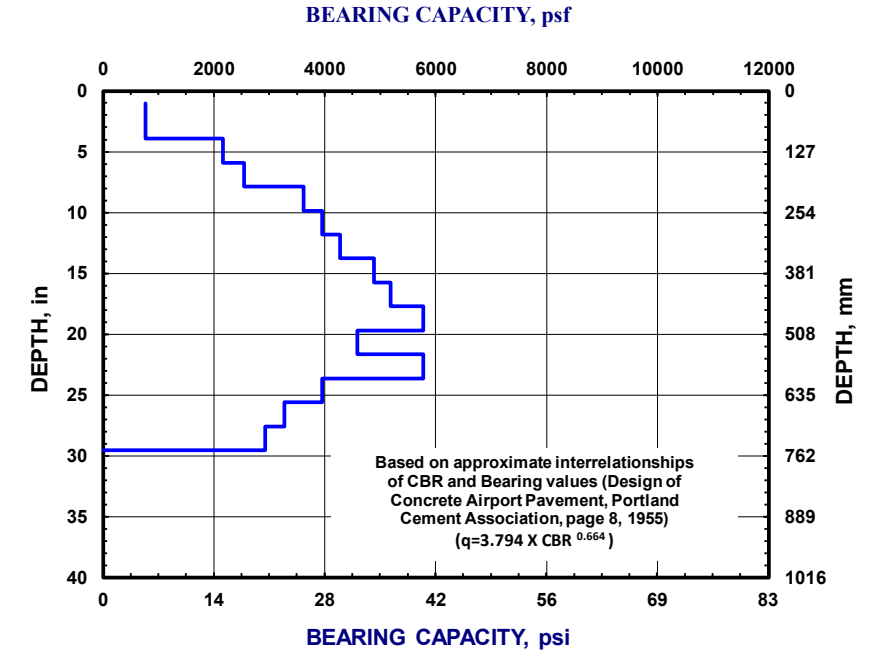


Figure 6-1

DCP TEST DATA

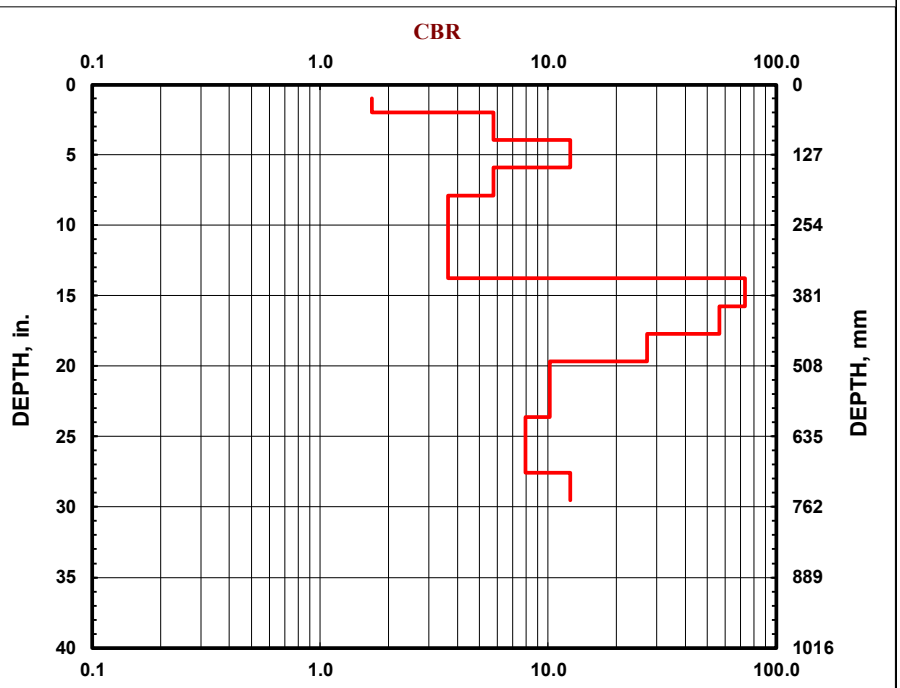
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2203 **Soil Type(s):** ML

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
1.5	75	2
1.5	100	2
3	125	2
3	150	2
1.5	175	2
1.5	200	2
1	225	2
1	250	2
1	275	2
1	300	2
1	325	2
1	350	2
14.5	375	2
14.5	400	2
11.5	425	2
11.5	450	2
6	475	2
6	500	2
2.5	525	2
2.5	550	2
2.5	575	2
2.5	600	2
2	625	2
2	650	2
2	675	2
2	700	2
3	725	2
3	750	2



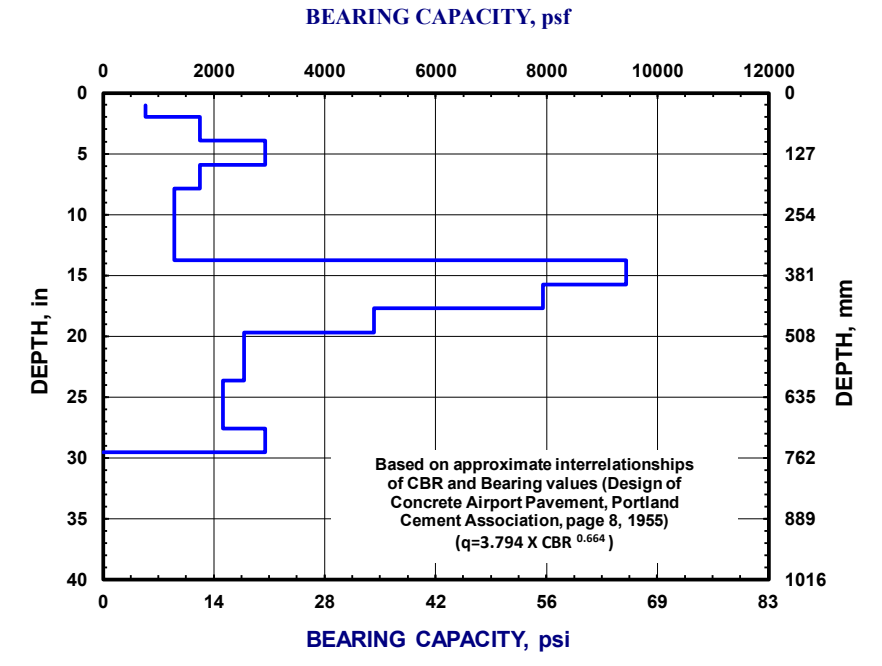


Figure 6-2

DCP TEST DATA

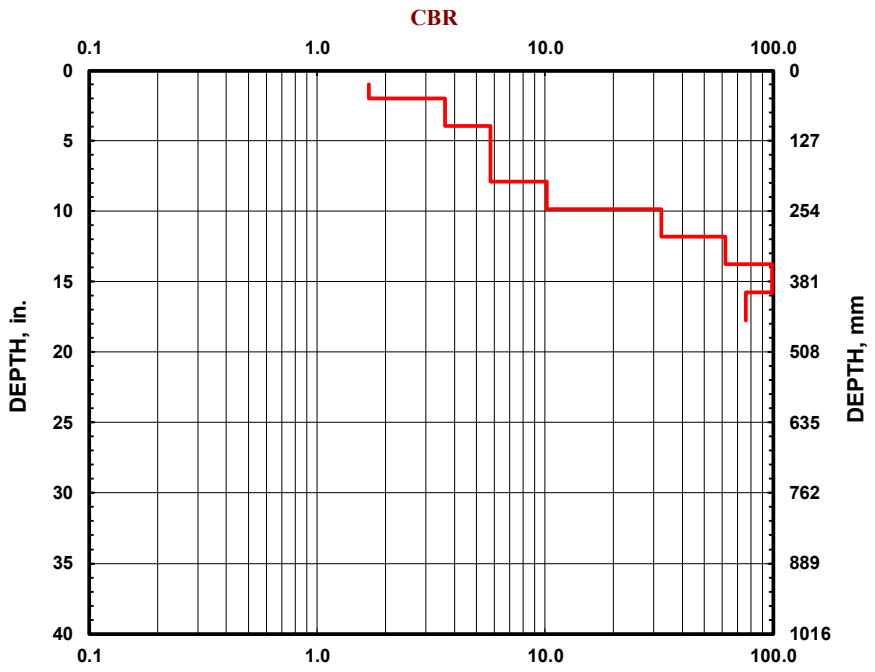
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2206 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
1	75	2
1	100	2
1.5	125	2
1.5	150	2
1.5	175	2
1.5	200	2
2.5	225	2
2.5	250	2
7	275	2
7	300	2
12.5	325	2
12.5	350	2
22.5	375	2
22.5	400	2
15	425	2
15	450	2



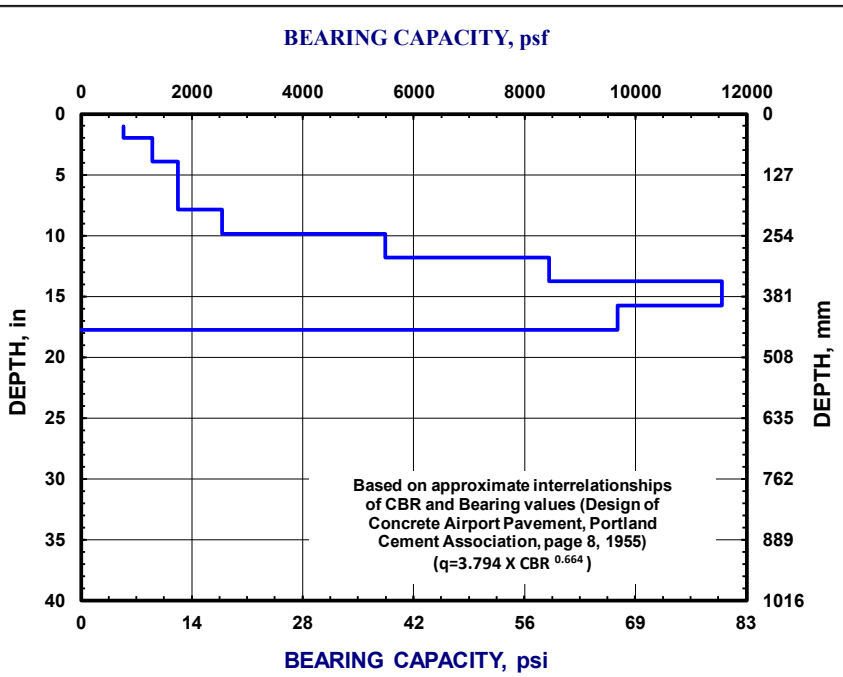


Figure 6-3

DCP TEST DATA

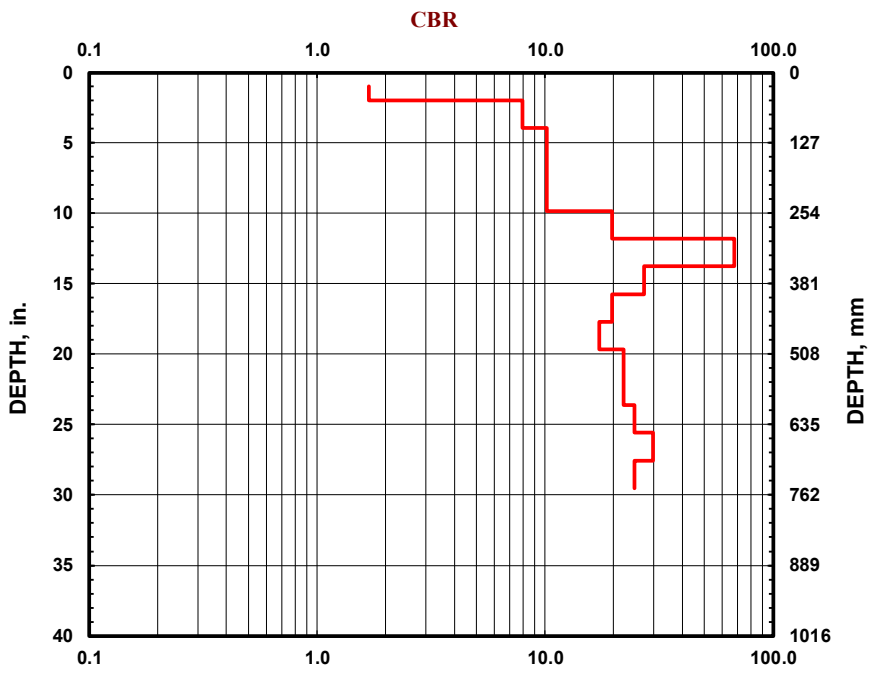
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2208 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
2	75	2
2	100	2
2.5	125	2
2.5	150	2
2.5	175	2
2.5	200	2
2.5	225	2
2.5	250	2
4.5	275	2
4.5	300	2
13.5	325	2
13.5	350	2
6	375	2
6	400	2
4.5	425	2
4.5	450	2
4	475	2
4	500	2
5	525	2
5	550	2
5	575	2
5	600	2
5.5	625	2
5.5	650	2
6.5	675	2
6.5	700	2
5.5	725	2
5.5	750	2



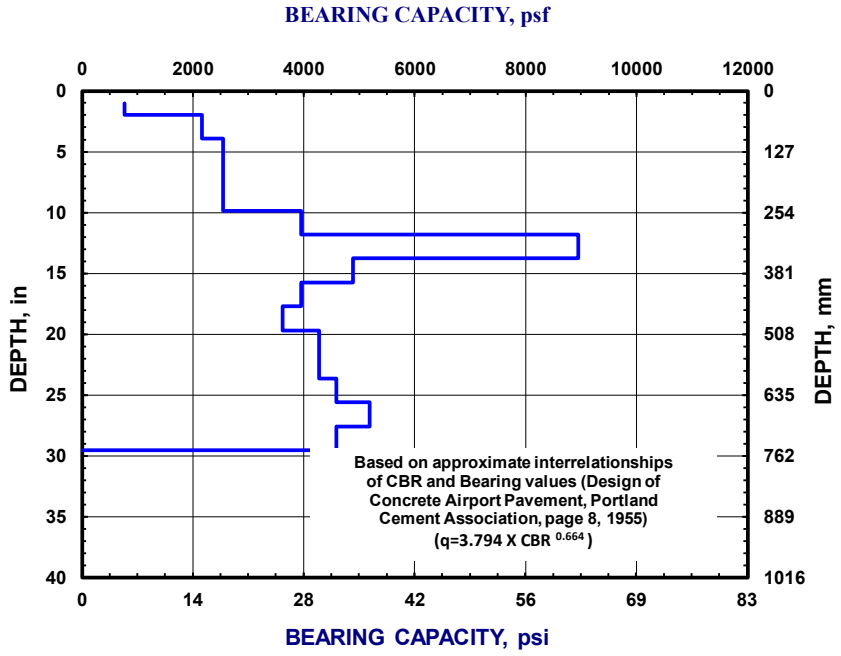


Figure 6-4

DCP TEST DATA

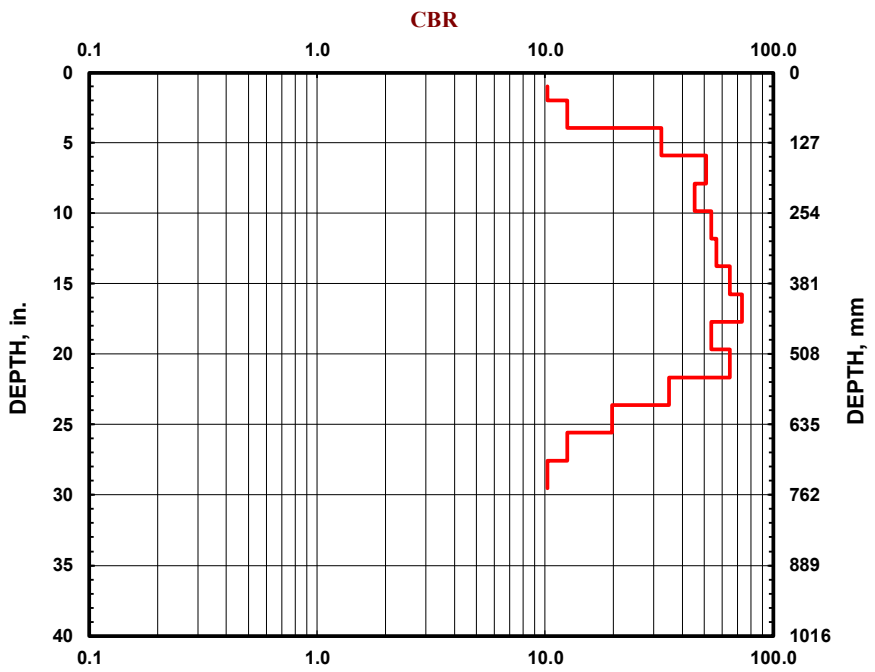
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2210 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
2.5	25	2
2.5	50	2
3	75	2
3	100	2
7	125	2
7	150	2
10.5	175	2
10.5	200	2
9.5	225	2
9.5	250	2
11	275	2
11	300	2
11.5	325	2
11.5	350	2
13	375	2
13	400	2
14.5	425	2
14.5	450	2
11	475	2
11	500	2
13	525	2
13	550	2
7.5	575	2
7.5	600	2
4.5	625	2
4.5	650	2
3	675	2
3	700	2
2.5	725	2
2.5	750	2



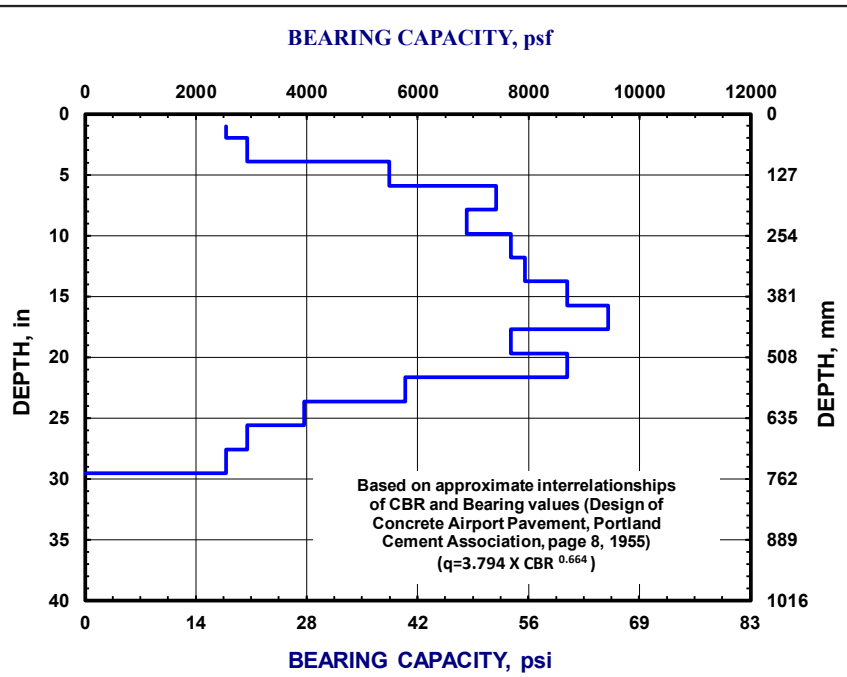


Figure 6-5

DCP TEST DATA

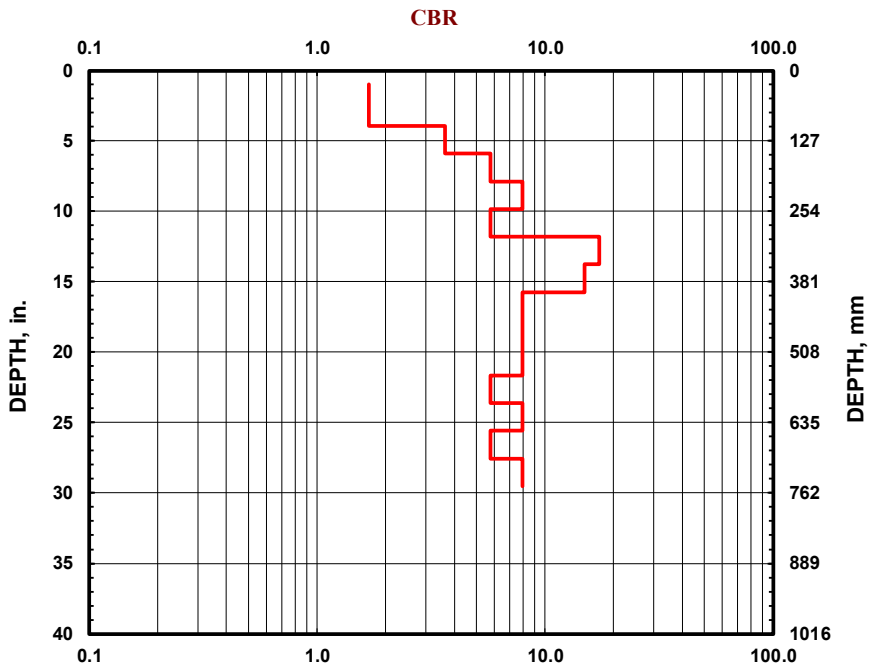
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2213 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
0.5	75	2
0.5	100	2
1	125	2
1	150	2
1.5	175	2
1.5	200	2
2	225	2
2	250	2
1.5	275	2
1.5	300	2
4	325	2
4	350	2
3.5	375	2
3.5	400	2
2	425	2
2	450	2
2	475	2
2	500	2
2	525	2
2	550	2
1.5	575	2
1.5	600	2
2	625	2
2	650	2
1.5	675	2
1.5	700	2
2	725	2
2	750	2



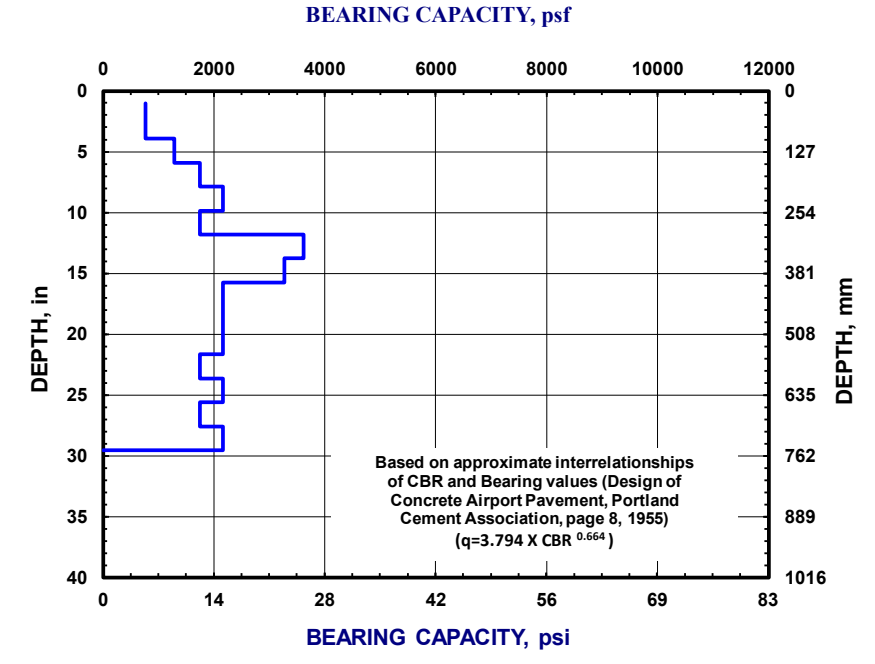


Figure 6-6

DCP TEST DATA

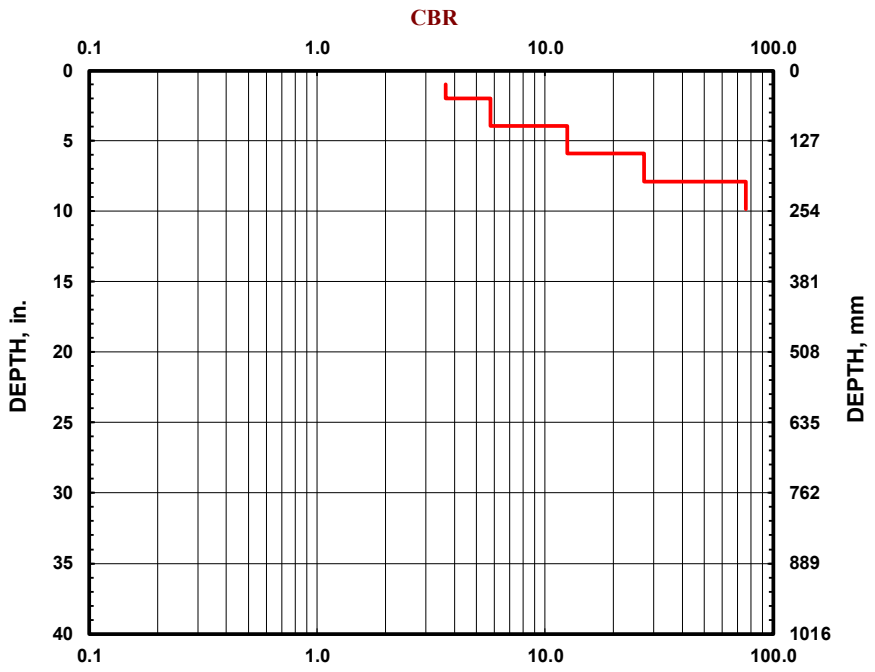
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2217 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
1	25	2
1	50	2
1.5	75	2
1.5	100	2
3	125	2
3	150	2
6	175	2
6	200	2
15	225	2
15	250	2



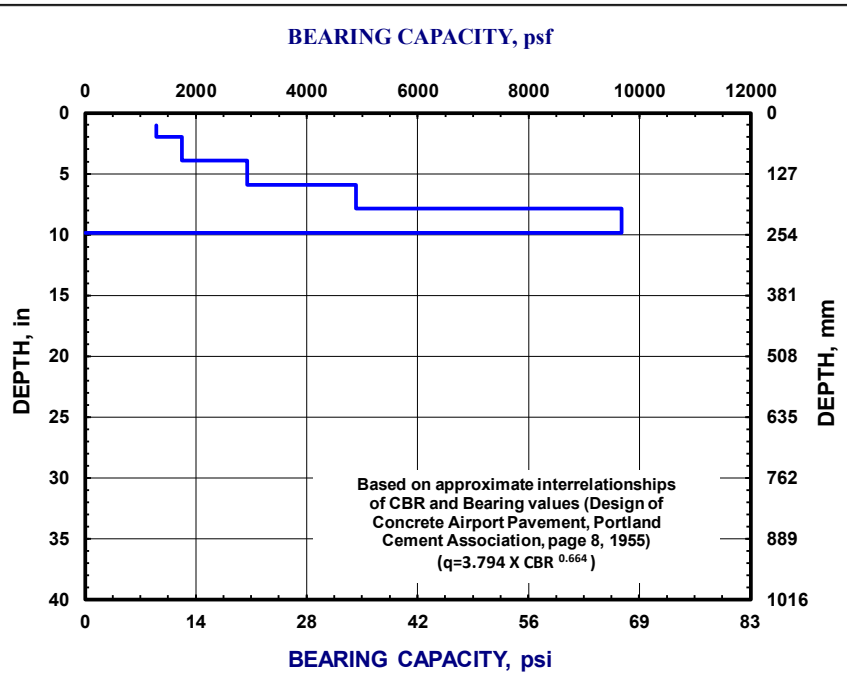


Figure 6-7

DCP TEST DATA

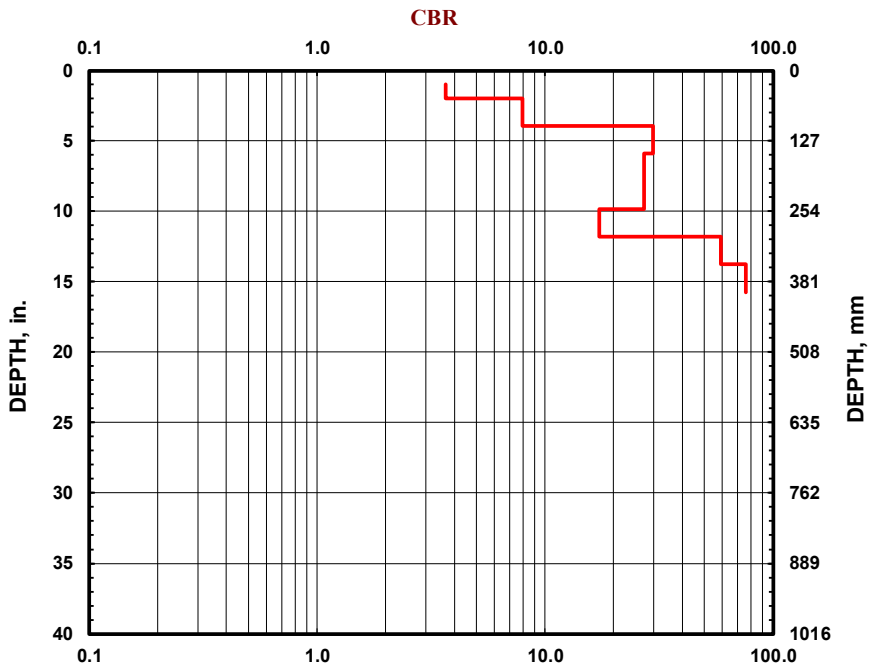
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2220 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
1	25	2
1	50	2
2	75	2
2	100	2
6.5	125	2
6.5	150	2
6	175	2
6	200	2
6	225	2
6	250	2
4	275	2
4	300	2
12	325	2
12	350	2
15	375	2
15	400	2



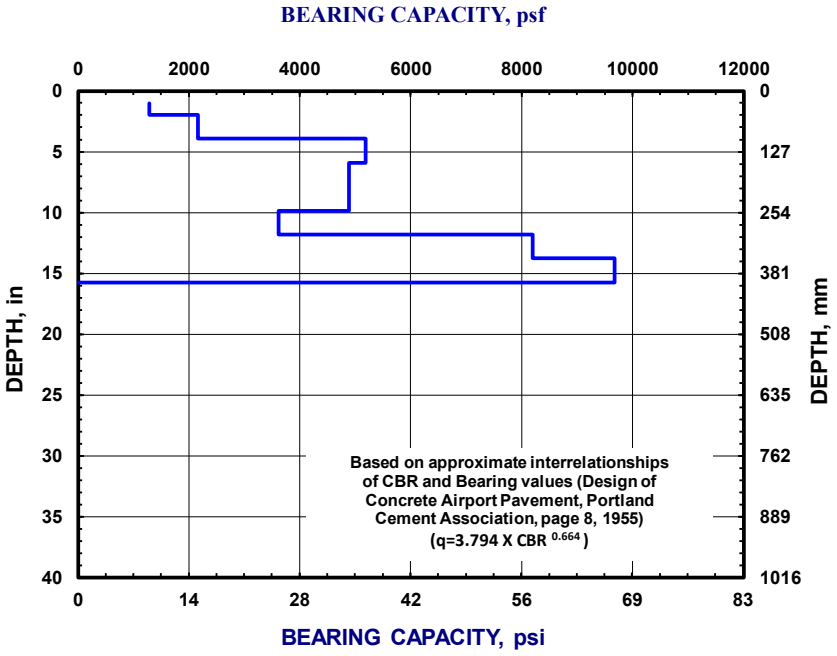


Figure 6-8

DCP TEST DATA

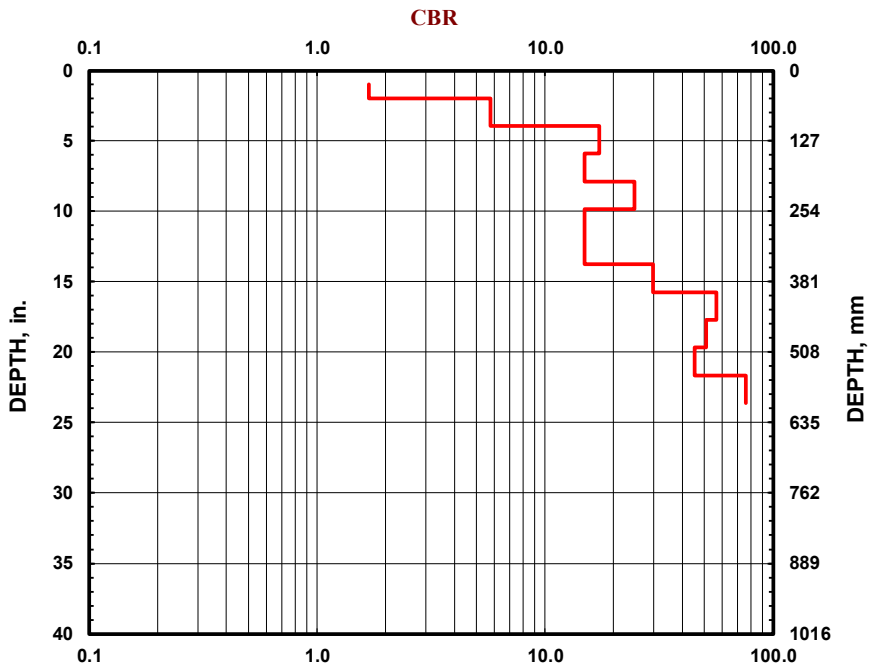
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2221 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
1.5	75	2
1.5	100	2
4	125	2
4	150	2
3.5	175	2
3.5	200	2
5.5	225	2
5.5	250	2
3.5	275	2
3.5	300	2
3.5	325	2
3.5	350	2
6.5	375	2
6.5	400	2
11.5	425	2
11.5	450	2
10.5	475	2
10.5	500	2
9.5	525	2
9.5	550	2
15	575	2
15	600	2



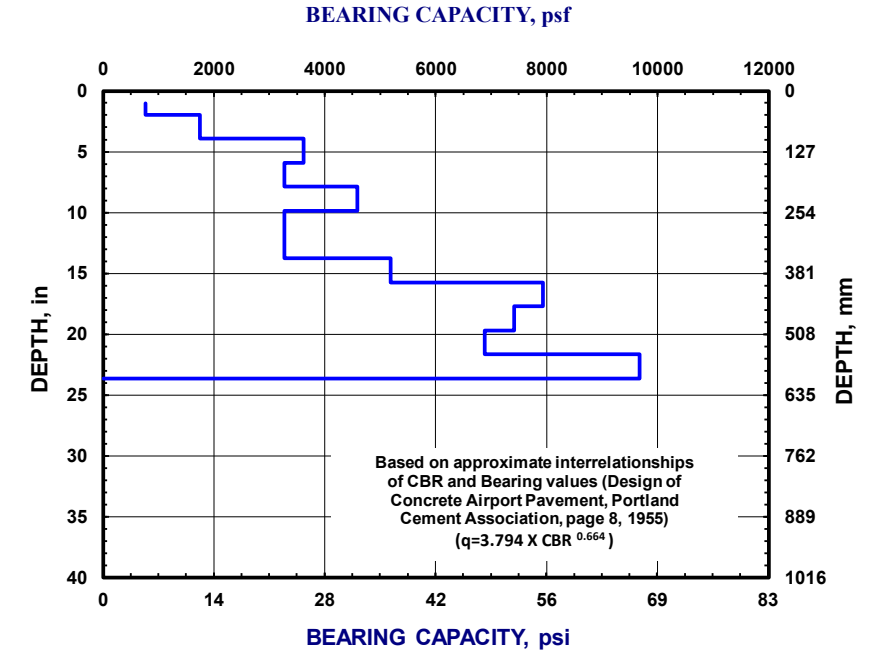


Figure 6-9

DCP TEST DATA

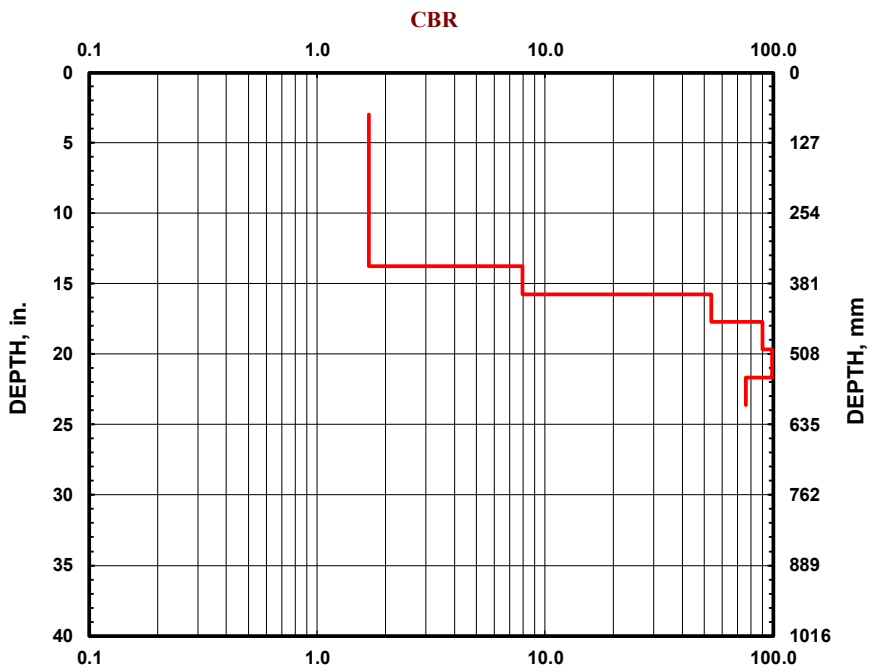
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2222 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	75	2
0.5	100	2
0.5	125	2
0.5	150	2
0.5	175	2
0.5	200	2
0.5	225	2
0.5	250	2
0.5	275	2
0.5	300	2
0.5	325	2
0.5	350	2
2	375	2
2	400	2
11	425	2
11	450	2
17.5	475	2
17.5	500	2
21.5	525	2
21.5	550	2
15	575	2
15	600	2



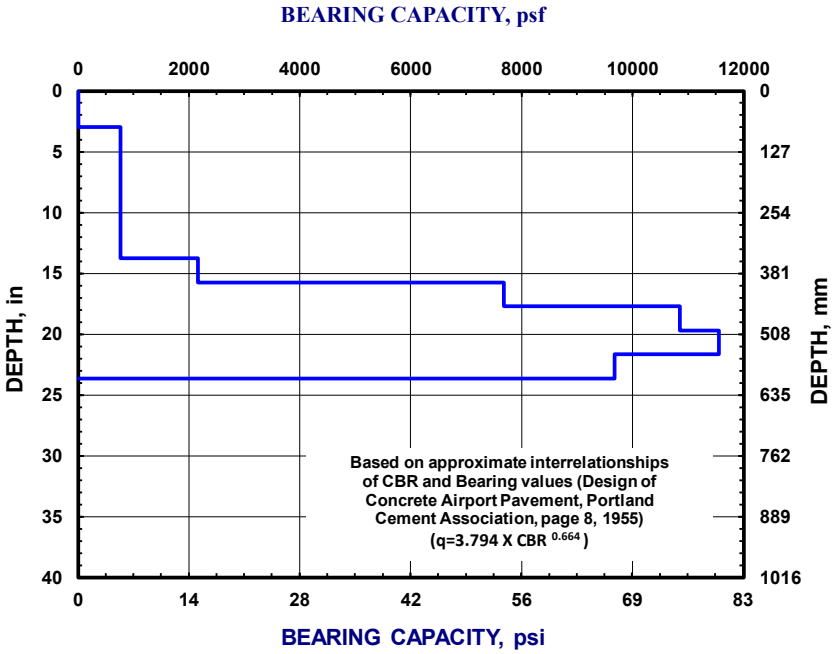


Figure 6-10

DCP TEST DATA

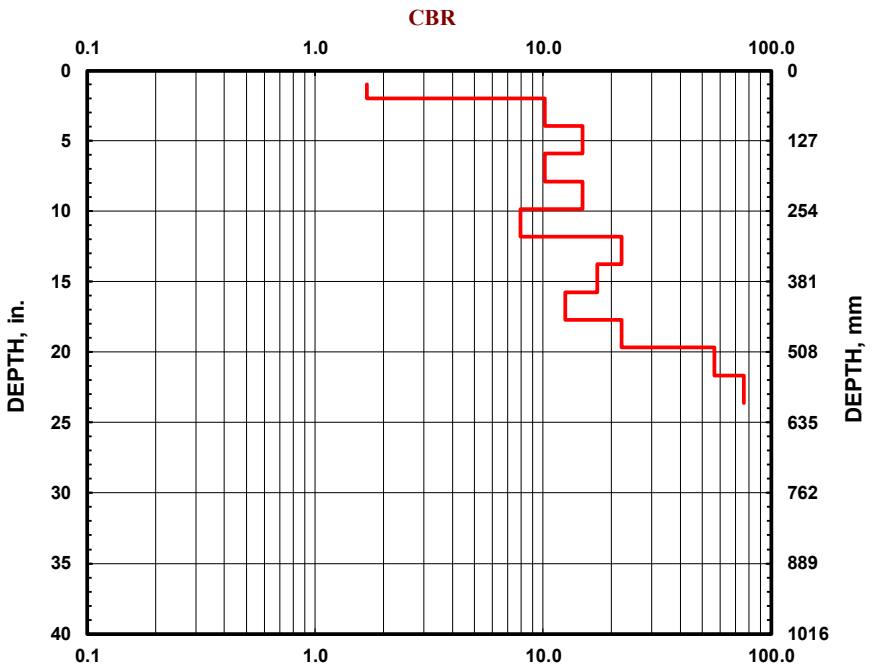
Project: *S211189 Legacy Ridge Phase F* **Date:** 8-Mar-22

Location: TP-2224 **Soil Type(s):** SM

Hammer
- (●) 10.1 lbs.
- ( ) 17.6 lbs.
- ( ) Both hammers used

Soil Type
- ( ) CH
- ( ) CL
- (●) All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0.5	25	2
0.5	50	2
2.5	75	2
2.5	100	2
3.5	125	2
3.5	150	2
2.5	175	2
2.5	200	2
3.5	225	2
3.5	250	2
2	275	2
2	300	2
5	325	2
5	350	2
4	375	2
4	400	2
3	425	2
3	450	2
5	475	2
5	500	2
11.5	525	2
11.5	550	2
15	575	2
15	600	2



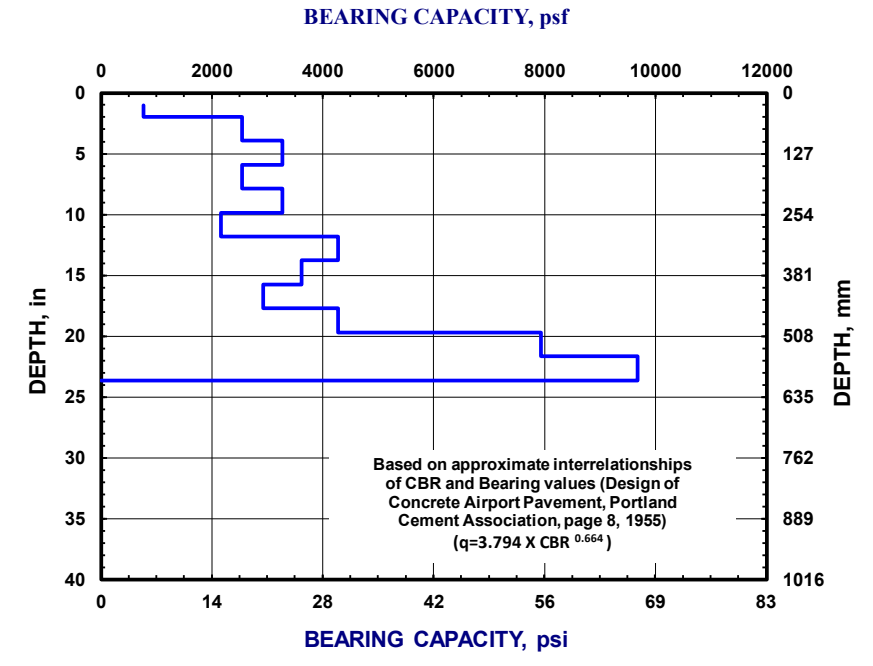


Figure 6-11

Appendix B: S241121 Legacy Phase F – Subsurface Exploration Logs

TEST PIT 1

Date: 2-5-25
Excavator: Copenhaver Construction, Inc
Equipment: Komatsu PC 490 LC w/48" bucket
Location: Section Line 4 - STA 15+25; 90 feet Left
Surface: snow, grass and weeds

Elevation: 2475 ft
Logged by: L. Long
Size of hole: 8 x 24 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown	SILTY SAND, with Gravel and Cobbles, coarse to fine, subangular, organics as fine roots, 6 inches of frozen soil (topsoil)	
		moist, orangish brown		
		tanish brown to orangish white	SILTY, CLAYEY SAND with Gravel and Cobbles, occasional Boulders, coarse to fine, angular to subangular, organics as fine roots	
5			GNEISS, highly weathered, very weak to moderately weak rock (R1-R2), characteristics are similar to Sand and Gravel with Silt upon excavation	
10				
15				
20		orangish white	becoming moderately to slightly weathered, moderately strong to strong (R3-R4), characteristics are similar to Gravel with Silt, Sand, and Cobbles upon excavation (maximum digging reach)	
		no free groundwater observed	End of Excavation @ 23 ft	
25				
30				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-1**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

TEST PIT 2

Date: 2-5-25
Excavator: Copenhaver Construction, Inc
Equipment: Komatsu PC 490 LC w/48" bucket
Location: Section Line 2 - STA 13+00; 100 feet Left
Surface: snow, grass and weeds

Elevation: 2476 ft
Logged by: L. Long
Size of hole: 7 x 20 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown	SILTY SAND with Gravel, coarse to fine, subangular, organics as fine roots, 4 inches of frozen soil (topsoil)	
		moist, orangish brown	SILTY, CLAYEY SAND with Gravel, coarse to fine, angular to subangular, organics as fine roots	
		orangish brown to tanish orange	GNEISS, highly weathered, very weak to moderately weak rock (R1-R2), characteristics are similar to Sand and Gravel with Silt upon excavation	
5		orangish white	becoming moderately to slightly weathered, moderately strong to strong (R3-R4), characteristics are similar to Gravel with Silt, Sand, and Cobbles upon excavation	
			(digging refusal on stronger Gneiss)	
10		no free groundwater observed	End of Excavation @ 9 ft	
15				
20				
25				
30				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-2**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

TEST PIT 3

Date: 2-5-25
Excavator: Copenhaver Construction, Inc
Equipment: Komatsu PC 490 LC w/48" bucket
Location: Proposed Lot 44; central portion of east half
Surface: snow, grass and weeds

Elevation: 2560 ft
Logged by: L. Long
Size of hole: 7 x 24 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown	SILTY SAND with Gravel, coarse to fine, subangular, organics as fine roots, 4 inches of frozen soil (topsoil)	
		moist, orangish brown	SILTY, CLAYEY SAND with Gravel, coarse to fine, angular to subangular, organics as fine roots	
5		orangish brown to tanish orange	GNEISS, highly weathered, very weak to moderately weak rock (R1-R2), characteristics are similar to Sand and Gravel with Silt upon excavation	
10				
15		orangish brown to greenish gray		
20				
25		orangish white	becoming moderately to slightly weathered, moderately strong to strong (R3-R4), characteristics are similar to Gravel with Silt, Sand, and Cobbles upon excavation (maximum digging reach)	
30		no free groundwater observed	End of Excavation @ 25 ft	

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-3**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

TEST PIT 5

Date: 2-5-25
Excavator: Copenhaver Construction, Inc
Equipment: Komatsu PC 490 LC w/48" bucket
Location: Section Line 3 - STA 15+00; 50 feet Right
Surface: snow, grass and weeds

Elevation: 2405 ft
Logged by: L. Long
Size of hole: 7 x 20 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark to moderate brown	GRAVEL with Sand and Cobbles, coarse to fine, angular to subrounded, organics as fine roots, 9 inches of frozen soil (existing fill)	
		moist, dark to moderate brown	SILTY GRAVEL with Sand and Cobbles, coarse to fine, angular to subangular (existing fill)	
5		orangish brown to tanish orange	GNEISS, highly weathered, very weak to moderately weak rock (R1-R2), characteristics are similar to Sand and Gravel with Silt upon excavation	
10				
		orangish white	becoming moderately to slightly weathered, moderately strong to strong (R3-R4), characteristics are similar to Gravel with Silt, Sand, and Cobbles upon excavation (digging refusal on stronger Gneiss)	
15		no free groundwater observed	End of Excavation @ 16.5 ft	
20				
25				
30				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-4**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

TEST PIT 6

Date: 2-5-25
Excavator: Copenhaver Construction, Inc
Equipment: Komatsu PC 490 LC w/48" bucket
Location: Section Line 7 - STA 15+00; 30 feet Left
Surface: snow, grass and weeds

Elevation: 2360 ft
Logged by: L. Long
Size of hole: 7 x 20 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, dark brown	SILTY SAND with Gravel and Cobbles, coarse to fine, subangular, organics as fine roots, 9 inches of frozen soil (existing fill)	
		tanish orange	GNEISS, moderately to slightly weathered, moderately strong to strong rock (R3-R4), characteristics are similar to Gravel with Silt, Sand, and Cobbles upon excavation (digging refusal on stronger Gneiss)	
5		no free groundwater observed	End of Excavation @ 4.5 ft	
10				
15				
20				
25				
30				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-5**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

TEST PIT 7

Date: 2-5-25
Excavator: Copenhaver Construction, Inc
Equipment: Komatsu PC 490 LC w/48" bucket
Location: Section Line 1 - STA 21+50; 45 feet Left
Surface: snow, grass and weeds

Elevation: 2350 ft
Logged by: L. Long
Size of hole: 7 x 23 feet

DEPTH	SAMPLES	MOISTURE, COLOR, CONDITION	DESCRIPTION	SOIL LOG
0		moist, gray	GRAVEL with Silt and Sand, medium to fine, subrounded, 9 inches of frozen soil (existing fill)	
		moist, dark brown to orangish brown	SILTY, CLAYEY SAND with Gravel, Cobbles and Boulders, coarse to fine, angular to subangular, possible re-worked native soil (existing fill)	
5		moist, orangish brown	SILTY, CLAYEY SAND with Gravel, coarse to fine, angular to subangular, occasional Cobbles	
		orangish brown to tanish orange	GNEISS, highly weathered, very weak to moderately weak rock (R1-R2), characteristics are similar to Sand and Gravel with Silt upon excavation	
10		dark tanish orange	becoming moderately to slightly weathered, moderately strong to strong (R3-R4), characteristics are similar to Gravel with Silt, Sand, and Cobbles upon excavation	
		no free groundwater observed	(digging refusal on stronger Gneiss)	
			End of Excavation @ 11 ft	
15				
20				
25				
30				

TEST RESULTS

ATTERBERG LIMITS
PL — LL
WATER CONTENT ○

10 20 30 40 50 60 70 80 90

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

TEST PIT LOGS **FIGURE 4-6**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

PROBE BORING 8

Date of Boring: 2-6-25
Driller: McCallum Rock Drilling
Type of Drill: Furukawa HCR900
Location: Section Line 2 - STA 13+75; 20 feet Left
Surface: snow, grass and weeds

Elevation: 2480
Logged by: K. Savage
Size of hole: 4-inch-diameter button bit

DEPTH	SAMPLES (% RECOVERY)	MOISTURE, COLOR, CONDITION (Note: if soil/rock is not highly permeable, determination of depth to groundwater may not be possible)	DESCRIPTION (Note: descriptions from probe borings are approximate - based only on advancement rate & view of pulverized cuttings)	SOIL LOG	ADVANCEMENT RATE
0		dark brown	SILTY SAND with Gravel (topsoil)		
5			GNEISS, highly to slightly weathered, very weak to moderately strong rock (R1-R3) (hammer percussion required 2 to 4 feet)		
10					2 to 11 feet: 2 minutes, 10 seconds
15			(hammer percussion required 11 to 16 feet)		
20			(hammer percussion required 19 to 23 feet)		
25					11 to 23 feet: 3 minutes, 50 seconds
30			(hammer percussion required 23 to 35 feet)		
35					23 to 35 feet: 2 minutes, 48 seconds
40			(hammer percussion required 35 to 47 feet)		
45					
50					35 to 47 feet: 2 minutes, 50 seconds
			End of Boring @ 50 ft		
55					
60					
65					

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

PROBE LOGS **FIGURE 4-7**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

PROBE BORING 9

Date of Boring: 2-6-25
Driller: McCallum Rock Drilling
Type of Drill: Furukawa HCR900
Location: Section Line 3 - STA 18+50
Surface: snow, grass and weeds

Elevation: 2465
Logged by: K. Savage
Size of hole: 4-inch-diameter button bit

DEPTH	SAMPLES (% RECOVERY)	MOISTURE, COLOR, CONDITION (Note: if soil/rock is not highly permeable, determination of depth to groundwater may not be possible)	DESCRIPTION (Note: descriptions from probe borings are approximate - based only on advancement rate & view of pulverized cuttings)	SOIL LOG	ADVANCEMENT RATE
0		dark brown	SILTY SAND with Gravel (topsoil)		
5			GNEISS, highly to slightly weathered, very weak to moderately strong rock (R1-R3)		
10			Driller reports "really hard rock" from 6 to 7 feet		
15			(hammer percussion required 11 to 13 feet)		2 to 11 feet: 3 minutes, 49 seconds
20			(hammer percussion required 14 to 23 feet)		
25			(hammer percussion required 23 to 28 feet)		11 to 23 feet: 3 minutes, 58 seconds
30			(hammer percussion required 30 to 35 feet)		
35					23 to 35 feet: 3 minutes, 45 seconds
40			(hammer percussion required 35 to 47 feet)		
45			Driller reports rock is "a little harder" from 47 to 59 feet		35 to 47 feet: 3 minutes, 55 seconds
50			(hammer percussion required 47 to 59 feet)		
55					47 to 59 feet: 4 minutes, 01 second
60			End of Boring @ 59 ft		
65					

LOGS - ADVANCEMENT S241121.GPJ GINT STD US.GDT 2/20/25

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

PROBE LOGS **FIGURE 4-8**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

PROBE BORING 10

Date of Boring: 2-6-25
Driller: McCallum Rock Drilling
Type of Drill: Furukawa HCR900
Location: Section Line 4 - STA 13+25
Surface: snow, grass and weeds

Elevation: 2520
Logged by: K. Savage
Size of hole: 4-inch-diameter button bit

DEPTH	SAMPLES (% RECOVERY)	MOISTURE, COLOR, CONDITION (Note: if soil/rock is not highly permeable, determination of depth to groundwater may not be possible)	DESCRIPTION (Note: descriptions from probe borings are approximate - based only on advancement rate & view of pulverized cuttings)	SOIL LOG	ADVANCEMENT RATE
0			GNEISS, highly to slightly weathered, very weak to moderately strong rock (R1-R3)		
5			(hammer percussion required 0 to 7 feet)		
10					0 to 11 feet: 2 minutes, 59 seconds
15			(hammer percussion required 12 to 21 feet)		
20					11 to 23 feet: 4 minutes, 9 seconds
25			(hammer percussion required 25 to 35 feet)		
30					23 to 35 feet: 3 minutes, 25 seconds
35			(hammer percussion required 35 to 47 feet)		
40					35 to 47 feet: 3 minutes, 11 seconds
45			(hammer percussion required 47 to 59 feet)		
50			Driller reports "harder rock" beginning at 55 feet		47 to 59 feet: 3 minutes, 45 seconds
55					
60			End of Boring @ 59 ft		
65					

LOGS - ADVANCEMENT S241121.GPJ GINT STD US.GDT 2/20/25

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

PROBE LOGS **FIGURE 4-9**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

PROBE BORING 11

Date of Boring: 2-6-25
Driller: McCallum Rock Drilling
Type of Drill: Furukawa HCR900
Location: Section Line 7 - STA 18+00
Surface: snow, grass and weeds

Elevation: 2435
Logged by: K. Savage
Size of hole: 4-inch-diameter button bit

DEPTH	SAMPLES (% RECOVERY)	MOISTURE, COLOR, CONDITION (Note: if soil/rock is not highly permeable, determination of depth to groundwater may not be possible)	DESCRIPTION (Note: descriptions from probe borings are approximate - based only on advancement rate & view of pulverized cuttings)	SOIL LOG	ADVANCEMENT RATE
0		dark brown	SILTY SAND with Gravel (topsoil)		
5			GNEISS, highly to slightly weathered, very weak to moderately strong rock (R1-R3)		
			(hammer percussion required 0 to 11 feet)		
10					0 to 11 feet: 3 minutes, 49 seconds
15			Driller reports "very hard rock" from 14 to 26 feet		
			(hammer percussion required 11 to 23 feet)		
20					
25					11 to 23 feet: 4 minutes, 15 seconds
			Driller reports "softer rock" 26 to 30 feet		
30			(hammer percussion required 23 to 35 feet)		
			Driller reports "hard rock" 30 to 33 feet		
35			Driller reports "softer rock" 33 to 37 feet		
					23 to 35 feet: 4 minutes, 9 seconds
40			Driller reports "very hard rock" from 37 to 47 feet		
			(hammer percussion required 35 to 47 feet)		35 to 47 feet: 5 minutes, 10 seconds
45					
			End of Boring @ 47 ft		
50					
55					
60					
65					

LOGS - ADVANCEMENT S241121.GPJ GINT STD US.GDT 2/20/25

Budinger & Associates
1101 North Fancher Road
Spokane Valley, WA 99212

PROBE LOGS **FIGURE 4-10**

Project: Legacy Phase F
Location: Liberty Lake, WA
Number: S241121

Appendix C: GBC - Important Information about This Geotechnical-Engineering Report

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

DIVIDER
PAGE

BUDINGER RESPONSE TO REVISED GRADES FROM 10% TO 8%

From: Jason Pritzl
To: Justin Penner
Cc: Save; Ryan Andrade; Tom Black; Rikki Andrews; Casey Mason; Todd Whipple
Subject: RE: [EXT] -RE: 3776 Legacy Ridge F response
Date: Wednesday, August 20, 2025 12:38:32 PM
Attachments: image009.png
image010.jpg
image011.gif
image012.gif
image013.png
image014.jpg
image015.png
image016.png
image017.png

Justin,

I took a look at the updated grading plans and it doesn't seem to me like we'd need to revise the technical memo. Looks like the deepest cut is still approximately 44 feet but will occur on "Road A" instead of "Road B;" both on generally north-facing slopes with similar inclinations. Maximum fill thickness appears to have been reduced by 10 feet or so. From a geotechnical perspective, I like the plans dated 8/18 a little more than the 5/15 set because it looks like you'll have more wiggle room to lay those bigger cut slopes back if you need to. Hope this one is settled into place for you but let me know if there's anything else we can do to help.

Thanks,

Jason Pritzl, LG, PG
Professional Geologist
Budinger & Associates, Inc.
Office: 509.535.8841 **Direct**: 509.425.4952 **Mobile**: 509.951.2401

From: Justin Penner <jpenner@whipplece.com>
Sent: Tuesday, August 19, 2025 9:21 AM
To: Rikki Andrews <randrews@budingerinc.com>; Todd Whipple <toddw@whipplece.com>; Jason Pritzl <jpritzl@budingerinc.com>; Casey Mason <caseym@legacylw.com>
Cc: Save <save@whipplece.com>; Ryan Andrade <randrade@whipplece.com>; Tom Black <tblack@budingerinc.com>
Subject: RE: [EXT] -RE: 3776 Legacy Ridge F

Rikki, good morning. I made some revisions to the grading plan by reducing some of the roads that had a 10% grade to an 8% grade per City comment. This changed the grading some in these areas, this does **not** include Valley Vista Dr as that road is existing and has utilities in it. Please review the attached grading plans and respond back if the memorandum you previously sent dated 7/24/25 is still satisfactory or if Budinger thinks a revised memorandum is warranted, please update as necessary. Let me know if you have any questions or need anything else. Thanks.

Justin Penner, P.E.
Civil Project Engineer
Whipple Consulting Engineers, Inc.
Phone: 509.893.2617 | Cell: 509.655.0282

From: Rikki Andrews <randrews@budingerinc.com>
Sent: Tuesday, August 5, 2025 2:02 PM

To: Todd Whipple <toddw@whipplece.com>; Jason Pritzl <jpritzl@budingerinc.com>; Casey Mason <caseym@legacylw.com>
Cc: Save <save@whipplece.com>; Ryan Andrade <randrade@whipplece.com>; Justin Penner <jpenner@whipplece.com>; Tom Black <tblack@budingerinc.com>
Subject: RE: [EXT] -RE: 3776 Legacy Ridge F

This is what I needed. Thanks, Todd!

Rikki Andrews
Project Coordinator
Budinger & Associates, Inc.
Office: 509.535.8841 **Mobile**: 509.981.2913 **Direct**: 509.425.4961

From: Todd Whipple <toddw@whipplece.com>
Sent: Tuesday, August 5, 2025 1:54 PM
To: Rikki Andrews <randrews@budingerinc.com>; Jason Pritzl <jpritzl@budingerinc.com>; Casey Mason <caseym@legacylw.com>
Cc: Save <save@whipplece.com>; Ryan Andrade <randrade@whipplece.com>; Justin Penner <jpenner@whipplece.com>
Subject: FW: [EXT] -RE: 3776 Legacy Ridge F

Rikki,

Here is maybe what you didn't get, see the comments from the City.

Sincerely,
Whipple Consulting Engineers, Inc.

Todd R. Whipple, PE
President

toddw@whipplece.com

Whipple Consulting Engineers, Inc.
Phone: 509.893.2617 | Fax: 509.926.0227

Email Signature 2

From: Lisa Key <LKey@libertylakewa.gov>
Sent: Monday, July 7, 2025 5:58 PM

To: Todd Whipple <toddw@whipplece.com>
Cc: Save <save@whipplece.com>; Shannon Schutz <sschutz@whipplece.com>; Permit Center <permitcenter@libertylakewa.gov>; Luke Michels <lmichels@libertylakewa.gov>; Amy Mullerleile <amullerleile@libertylakewa.gov>; Lance Mueller <lmueller@libertylakewa.gov>
Subject: RE: [EXT] -RE: 3776 Legacy Ridge F

Hi Todd-

We are getting closer on this Reasonable Use Exception request.

You have provided a defensible argument that the denial of this request would deny the reasonable use of the subject property, and I think the reduction in impact to the geo-hazardous areas based upon your revised plan lays the foundation for finding that this is the minimum impact necessary to allow the reasonable use of the property.

That said, we offer the following comments:

- The current plans show the roadway profile grades steeper than the City's design standards (8.0%) in many locations. The plans should be modified to our current standards to show accurately what grading will be required in the geohazard areas. If grades or any other design standards cannot be met, it should be discussed and justified in the RUE request.
- After the grading plan is revised, Budinger needs to review the most recent grading plan and modify their Geohazard Evaluation and Engineering Report accordingly (all of their reports are currently based on old plans). They can make the judgement call whether they have enough data with the previous explorations or whether additional exploration is needed. This is not only for the western part of the site, but also for the NE and SE portions of the site that were changed after Budinger's original report/exploration.
- In order for me to make the required finding detailed in City Development Code 10-6B-2(B)(1)(c), the revised Geotech Engineer needs to make a finding in their report that the proposed construction "will not result in any damage to other property and will not threaten the public health, safety, or welfare on or off the property", This statement can be conditioned on specific geo-hazard mitigations as may be identified by the engineer stamping the Geohazard Evaluation and Engineering Report.

Please let me know if you have any questions.

Lisa D. Key
City of Liberty Lake
Community Development Director

22710 E. Country Vista Drive
Liberty Lake, WA 99019
(509) 755-6708

Website: **www.libertylakewa.gov**

From: Todd Whipple <toddw@whipplece.com>
Sent: Friday, June 27, 2025 1:06 PM
To: Lisa Key <LKey@libertylakewa.gov>
Cc: Save <save@whipplece.com>; Shannon Schutz <sschutz@whipplece.com>; Permit Center <permitcenter@libertylakewa.gov>; Luke Michels <lmichels@libertylakewa.gov>; Amy Mullerleile <amullerleile@libertylakewa.gov>; Amy Mullerleile <amullerleile@libertylakewa.gov>; Lance Mueller <lmueller@libertylakewa.gov>
Subject: RE: [EXT] -RE: 3776 Legacy Ridge F

Lisa,

I will check with Shannon, but I believe that this go around, this is a more correct version since she had to insert all of the other plats and measure all of the perspective values. One of the biggest changes was probably in Legacy D, but I'll visit with her and see what's what.

It will probably be Monday.

Sincerely,
Whipple Consulting Engineers, Inc.

Todd R. Whipple, PE
President

toddw@whipplece.com

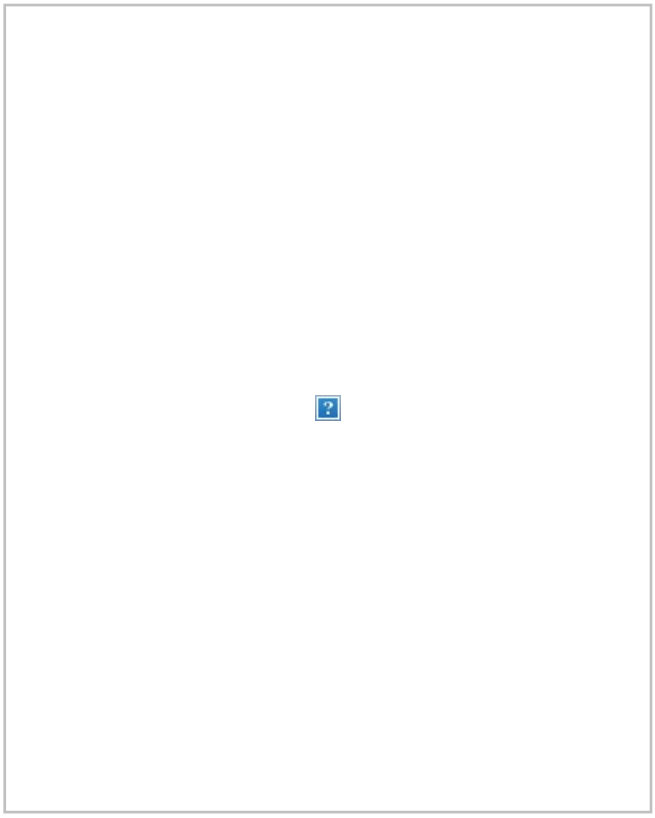
Whipple Consulting Engineers, Inc.
Phone: 509.893.2617 | Fax: 509.926.0227
Email Signature 2

From: Lisa Key <LKey@libertylakewa.gov>
Sent: Friday, June 27, 2025 12:41 PM
To: Todd Whipple <toddw@whipplece.com>
Cc: Save <save@whipplece.com>; Shannon Schutz <sschutz@whipplece.com>; Permit Center <permitcenter@libertylakewa.gov>; Luke Michels <lmichels@libertylakewa.gov>; Amy Mullerleile <amullerleile@libertylakewa.gov>; Amy Mullerleile <amullerleile@libertylakewa.gov>; Lance Mueller <lmueller@libertylakewa.gov>

Subject: [EXT] -RE: 3776 Legacy Ridge F

Todd-

In your prior submittal for this minor modification, you indicated that that the private road tracts were only 11.66 acres(see below); this submittal indicates that private road tracts are only 9.25 (see PP1, Site Data); your e-mail below indicates that the private road tracts are 14.5 acres, the same as proposed for the original plat.



On the face of it, you are proposing two new roads, in Phase F, but at the same time, the roads in Legacy Ridge 2nd Addition (Phase C) ended up being public.

I can't verify your open space calculations until you can provide me with the correct road calculation (both tracts and public roads), do not appear to jive from one submittal to the next.

Please advise.

Lisa D. Key
City of Liberty Lake
Community Development Director

22710 E. Country Vista Drive
Liberty Lake, WA 99019
(509) 755-6708

Website: **www.libertylakewa.gov**

From: Todd Whipple <toddw@whipplece.com>
Sent: Monday, June 23, 2025 1:01 PM
To: Lisa Key <LKey@libertylakewa.gov>
Cc: Save <save@whipplece.com>; Shannon Schutz <sschutz@whipplece.com>; Permit Center <permitcenter@libertylakewa.gov>
Subject: RE: 3776 Legacy Ridge F

Lisa,

Nothing like a sea of pdf's on your desktop, sorry about that.

Sincerely,
Whipple Consulting Engineers, Inc.

Todd R. Whipple, PE
President

toddw@whipplece.com

Whipple Consulting Engineers, Inc.
Phone: 509.893.2617 | Fax: 509.926.0227

Email Signature 2

From: Lisa Key <LKey@libertylakewa.gov>
Sent: Monday, June 23, 2025 12:58 PM
To: Todd Whipple <toddw@whipplece.com>
Cc: Save <save@whipplece.com>; Shannon Schutz <sschutz@whipplece.com>; Permit Center

<permitcenter@libertylakewa.gov>
Subject: RE: 3776 Legacy Ridge F

Todd-

You did not attach the revised Minor Map modification. It appears you inadvertently attached a document from a different project.

Lisa D. Key
City of Liberty Lake
Community Development Director

22710 E. Country Vista Drive
Liberty Lake, WA 99019
(509) 755-6708

Website: **www.libertylakewa.gov**

From: Todd Whipple <toddw@whipplece.com>
Sent: Monday, June 23, 2025 12:08 PM
To: Lisa Key <LKey@libertylakewa.gov>
Cc: Save <save@whipplece.com>; Shannon Schutz <sschutz@whipplece.com>
Subject: FW: 3776 Legacy Ridge F

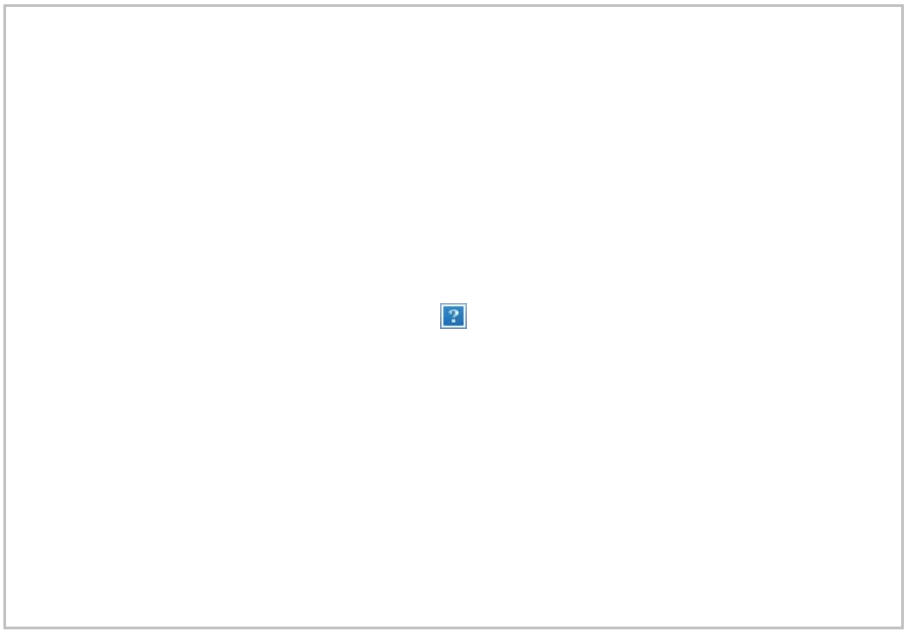
Lisa,

Per a recent inquiry, we have evaluated the open space commitments for the requested Minor Map modification. Attached is the revised Minor Map Modification as well as an additional sheet. This sheet is intended to mimic that sheet from the original application.

It took longer than anticipated due to having to recreate all of the previous plats electronically to determine what was constructed and what was available for open space.

The result is that the original plat had the following information, attached.

The requested change has the following calculations, also attached.



From this you can see that the Common open space as presented is approximately 1.6 acres larger and the net area for lots is a bit smaller at 55.46 vs 56.6.

I hope that this answers any opens space questions that you may have.

Sincerely,
Whipple Consulting Engineers, Inc.

Todd R. Whipple, PE
President

toddw@whipplece.com

Whipple Consulting Engineers, Inc.
Phone: 509.893.2617 | Fax: 509.926.0227

Email Signature 2

From: Shannon Schutz <sschutz@whipplece.com>
Sent: Monday, June 23, 2025 11:01 AM

To: Todd Whipple <toddw@whipplece.com>
Cc: Save <save@whipplece.com>
Subject: 3776 Legacy Ridge F

Your door is closed, so hear is the revised PPlat for Legacy **F**

Shannon Schutz
Drafting/Design Technician
Whipple Consulting Engineers, Inc.
Phone: 509.893.2617 | Fax: 509.926.0227

DIVIDER
PAGE

REVISED GRADING PLAN - MAXIMUM SLOPES AT 8%

NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.

MASS GRADING PLANS

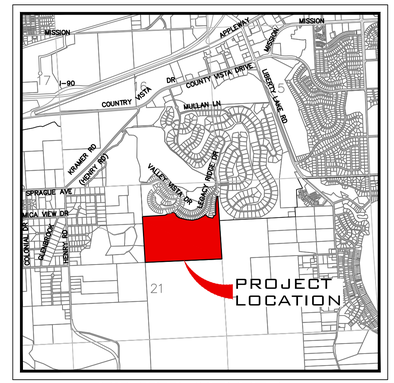
LEGACY PHASE "F"

VALLEY VISTA DRIVE

LIBERTY LAKE, WASHINGTON

NE 1/4 OF SEC. 21, T. 25 N., R. 45 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



VICINITY MAP

COVER PLAN

SCALE: 1" = 200'

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	ROADWAY CENTER LINE	
	RIGHT OF WAY LINE	
	PROPERTY LINE	
	EASEMENT LINE	
	FENCE	
	CURB	
	PAVEMENT	
	GRAVEL	
	CONCRETE	
	BUILDINGS & STRUCTURES	
	MONUMENT	
	SEWER	
	SANITARY SEWER	
	MANHOLE	
	CLEANOUT	
	SEWER SERVICE	
	WATER	
	WATER LINE	
	VALVE	
	FIRE HYDRANT	
	SERVICE	
	WATER METER	
	BLOWOFF	
	AIR VACUUM RELIEF STATION	
	DRAINAGE	
	DRAINAGE LINE	
	MANHOLE	
	DRYWELL	
	CATCH BASIN	
	DITCH	
	GAS	
	GAS LINE	
	VALVE	
	METER	
	TELE-POWER	
	BURIED TELEPHONE	
	POWER OR TELEPHONE POLE	
	BURIED POWER	
	TRANSFORMER PAD	
	TELEPHONE RISER	
	TELEPHONE VAULT	
	OVERHEAD POWER	
	GUY ANCHOR	
	POWER VAULT	
	LIGHT POLE	

ABBREVIATIONS

ACT. LEN.	ACTUAL LENGTH	MH	MANHOLE
BCR	BEGINNING OF CURVE RADIUS	MCR	MIDDLE OF CURVE RADIUS
BDRY.	BOUNDARY	PC	POINT OF CURVATURE
CO.	SEWER CLEANOUT	PET.	PETROLEUM
CSTC	CRUSHED SURFACE TOP COURSE	PI	POINT OF INTERSECTION
		PRC	POINT OF REVERSE CURVE
CT.	COURT	PT	POINT OF TANGENCY
DIA.	DIAMETER	RIM EL.	RIM ELEVATION
ECR	END OF CURVE RADIUS	RD	ROAD
EXIST.	EXISTING	RT.	RIGHT
G	GRADE	SI	STREET INTERSECTION
GB	GRADE BREAK	SS	SANITARY SEWER
FT./FT.	FEET PER FOOT	STA.	STATION
HYD.	HYDRANT	STA. LEN.	STATION LENGTH
I.E.	INVERT ELEVATION	TG	TOP OF GRATE
LN.	LANE	TC	TOP OF CURB
LT.	LEFT		

INDEX TO PLAN SHEETS

HAUL NOTE:

ALL EXCESS MATERIAL TO REMAIN ONSITE. NO HAUL OFF OF MATERIAL IS PROPOSED.

SEWER / WATER
LIBERTY LAKE SEW&WAT DIST. 1
22510 E MISSION AVENUE
LIBERTY LAKE, WA 99019
PHONE: 922-5443
CONTACT: BIJAY ADAMS

FIRE DEPARTMENT
SPOKANE VALLEY FIRE DEPT.
10319 E SPRAGUE AVE.
SPOKANE VALLEY, WA 99206
PHONE: 928-1700
CONTACT: TRACI HARVEY

STREETS
CITY OF LIBERTY LAKE
22710 E COUNTRY VISTA DR
LIBERTY LAKE, WA 99019
PHONE: 755-6730
CONTACT: LUKE MICHELS

BLDG. & PLANNING
CITY OF LIBERTY LAKE
22710 E COUNTRY VISTA DR
LIBERTY LAKE, WA 99019
PHONE: 755-6708
CONTACT: LISA KEY

OWNER
MTK MANAGEMENT, LLC ET AL
PO BOX 935
OTIS ORCHARDS, WA 99027
PHONE: 509-590-8383
CONTACT: CASEY MASON

HEALTH
SPOKANE REGIONAL HEALTH
1101 WEST COLLEGE AVE. #402
SPOKANE, WA 99260
PHONE: 324-1578
CONTACT: PAUL SAVAGE

POWER / GAS
AVISTA UTILITIES
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220
PHONE: 495-8610
CONTACT: KEN CARLSON

TELEPHONE
CENTURY LINK
904 NORTH COLUMBUS
SPOKANE, WASHINGTON, 99202
PHONE: 623-0304
CONTACT: DEBORAH GEIST

CABLE
COMCAST BROADBAND
1717 EAST BUCKEYE
SPOKANE, WASHINGTON, 99207
PHONE: 755-4717
CONTACT: BRYAN RICHARDSON

SOLID WASTE
WASTE MANAGEMENT
PHONE: 1-800-909-4458

LANDSCAPE
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: SUSAN MOSS, PLA

SURVEYOR
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: BRETT GRIFFITH, P.L.S.

ENGINEERING
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: TODD WHIPPLE, P.E.

GEOTECH REPORT
AVAILABILITY
☐ NO, OWNER DEFERRED
☒ YES, PROVIDED BY ALLWEST
DATED 09/06/24

N
W E
S

GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200 ft.

TODD R. WHIPPLE — STATE OF WASHINGTON — 25462 — REGISTERED PROFESSIONAL ENGINEER
08/19/25

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 200'
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
COVER SHEET
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET C0.0

JOB NUMBER 24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

NE¼, SEC.21, T.25N., R.45E., W.M.

WCE GENERAL NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE WSDOT /APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CURRENT EDITION AS MODIFIED BY THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE CITY OF LIBERTY LAKE REGULATIONS AND OTHER APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK WITHIN PUBLIC R.O.W. OR EASEMENTS SHALL BE INSPECTED AND APPROVED BY THE CITY OF LIBERTY LAKE INSPECTOR. INSPECTION SERVICES AND CONSTRUCTION CERTIFICATION TO BE PROVIDED BY DESIGNEE OF PROJECT SPONSOR/OWNER.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY OF LIBERTY LAKE INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.

4. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE CITY OF LIBERTY LAKE AND ALL UTILITY COMPANIES WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION, AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.

5. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND ONE (1) COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON-SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO: EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

7. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.

8. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.

9. FOR WORK AFFECTING PUBLIC ROADWAYS OR IF REQUIRED BY THE CITY OF LIBERTY LAKE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL AND PHASING PLAN IN ACCORDANCE WITH M.U.T.C.D. FOR APPROVAL. PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY SAID PLANS. PRIOR TO INSTALLATION. A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CITY OF LIBERTY LAKE.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED OR RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.

11. PER AGENCY STANDARDS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING RECORD INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE AND AVAILABLE TO THE CITY OF LIBERTY LAKE INSPECTOR AT ALL TIMES.

13. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. FOR ADDITIONAL INFORMATION CONTACT THE ENGINEER FOR CLARIFICATION AND NOTE ON THE RECORD DRAWINGS.

14. ALL EROSION AND SEDIMENT CONTROL (E.S.C.) MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION PRIOR TO GROUND DISTURBING ACTIVITY. ALL E.S.C. MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.

15. THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN, AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY IS SUBJECT TO THE JURISDICTION OF THE CITY OF LIBERTY LAKE ENGINEERING DEPARTMENT STANDARD DETAILS AND SPECIFICATIONS.

17. ALL CONSTRUCTION OPERATIONS, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED EQUIPMENT SHALL GENERALLY BE LIMITED TO THE TIME PERIOD APPROVED BY THE CITY OF LIBERTY LAKE.

18. BASED ON REQUIREMENTS FROM CITY OF LIBERTY LAKE, THE ENGINEER OR HIS DESIGNEE SHALL PERFORM MATERIALS TESTING AND QUALITY CONTROL ON THE PROJECT AND SHALL SUBMIT COPIES OF DAILY REPORTS, TEST REPORTS, PROJECT CERTIFICATION AND RECORD DRAWINGS TO CITY OF LIBERTY LAKE ENGINEER.

19. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT APPROVAL OF THE CITY OF LIBERTY LAKE ENGINEERS AND NOTIFICATION OF THE ENGINEER OF RECORD.

20. ON-SITE GRADING SHALL BE IN ACCORDANCE WITH THE APPROVED GRADING PLAN AND E.S.C. PLAN. ANY IMPORT OR EXPORT OF MATERIAL SHALL BE FROM A PREAPPROVED SOURCE/DESTINATION AND COORDINATED WITH THE CITY OF LIBERTY LAKE DEPARTMENT OF BUILDING AND PLANNING AT 509-755-6700. GRADING ON THIS SITE OR ANY OTHER SITE MUST COMPLY WITH ALL DEVELOPMENT REGULATIONS INCLUDING, BUT NOT LIMITED TO , GRADING PERMITS, S.E.P.A. REVIEW, TIMBER HARVEST PERMITS, CRITICAL AREAS, FLOOD PLAINS, DESIGNATED DRAINAGE WAYS, ETC.

21. THE CONTRACTOR IS CAUTIONED THAT IT IS THE UNDERSTANDING OF THE OWNER AND THE ENGINEER THAT SHOULD A CONFLICT OR DISCREPANCY IN THESE PLANS, SPECIFICATIONS, GENERAL NOTES OR PLANS ET.AL. DETERMINED TO BE PART OF THE OVERALL PROJECT, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL PLANS, MECHANICAL PLANS, ELECTRICAL PLANS, LANDSCAPE PLANS, GENERAL SPECIAL PROVISIONS, ETC., THAT WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER, OWNER OR OTHER PROFESSIONAL, DURING THE BIDDING PROCESS, THAT IN ALL INSTANCES THE CONTRACTOR WILL BE REQUIRED TO BID THE HIGHER STANDARD. FAILURE TO DO SO MAY RESULT IN THE HIGHER STANDARD BEING REQUIRED BY THE OWNER, ENGINEER OR OTHER PROFESSIONAL WITH NO CHANGE IN VALUE TO THE CONTRACT VIA CHANGE ORDER OR OTHER MECHANISM.

22. CONSTRUCTION OF EVERY DRYWELL, INCLUDING FABRIC AND DRAINROCK, SHALL BE OBSERVED BY THE ON-SITE INSPECTOR TO CONFIRM THAT IT MEETS THE DESIGN DETAILS AND SPECIFICATIONS. DRYWELLS NOT OBSERVED SHALL HAVE THEIR PERFORMANCE VERIFIED BY A FULL-SCALE DRYWELL TEST.

23. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ANY AND ALL INCONSISTENCIES BETWEEN THESE PLANS AND CONSTRUCTION STAKING. CONTRACTOR ASSUMES RESPONSIBILITY TO CONSTRUCT TO THESE PLANS IN LIEU OF FIELD STAKING. SHOULD INCONSISTENCIES BE APPARENT THE CONTRACTOR SHALL CONTACT THE ENGINEER, OWNER, AND SURVEYOR TO RECTIFY THE DISCREPANCY PRIOR TO CONSTRUCTION EFFORT BEING APPLIED.

24. FAIR HOUSING ACT – SAFE HARBORS FOR COMPLIANCE

WHIPPLE CONSULTING ENGINEERS, INC. FOR THE PROJECT CONTAINED WITHIN THESE PLANS HAS USED THE FOLLOWING SAFE HARBOR FOR ADA ACCESSIBILITY FOR THOSE ISSUES CONSIDERED SITE DEVELOPMENT ISSUES.

ICC/ANSI A117.1 (2003), ALONG WITH THE FAIR HOUSING ACT, HUD'S FAIR HOUSING ACT REGULATIONS, AND GUIDELINES.

25. ALL FIRE LINES MUST BE INSTALLED BY AN APPROVED LEVEL "U" CONTRACTOR OR A LEVEL 3 FIRE PROTECTION CONTRACTOR. SEPARATE PERMITS MUST BE DRAWN THROUGH LOCAL JURISDICTION FOR ALL UNDERGROUND FIRE LINES TO INCLUDE SPRINKLER AND FIRE HYDRANT WATER LINES. THESE UNDERGROUND LINES MAY REQUIRE A LEVEL 3 OR 'U' LICENSE DEPENDING ON INSTALLATION.

26. CONTRACTOR IS NOTIFIED THAT SOME OR ALL OF THE PAVEMENT CUTS TO INSTALL DRY UTILITIES, SEWER, WATER, STORM OR OTHER TIE-INS SHALL BE COORDINATED WITH THE CITY OF LIBERTY LAKE AS SPECIFIC PAVEMENT CUT POLICIES MAY BE IN EFFECT THAT ARE NOT NOTED ON THE PLANS.

27. THE CONTRACTOR IS NOTED THAT IT IS NOT THE OWNERS, ENGINEERS, CITY'S NOR THE INSPECTION AND TESTING COMPANY'S (THE PARTIES) RESPONSIBILITY TO ANTICIPATE WHEN CONSTRUCTED ELEMENTS WILL BE READY FOR INSPECTION AND TESTING. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL PARTIES THAT CERTAIN CONSTRUCTED ELEMENTS ARE BEING INSTALLED AND ON WHAT DATE THEY WILL BE INSTALLED. IF SUCH FAILURE TO NOTIFY THEN RESULTS IN LACK OF INSPECTIONS AND TESTING SERVICES FOR CERTAIN ELEMENTS, THE CONTRACTOR SHOULD NOT EXPECT THAT THIS LACK OF INSPECTION AND TESTING WILL RESULT IN THE BLANKET APPROVAL OF SUCH ITEM. THE CONTRACTOR IS NOTIFIED THAT SUBSEQUENT REMOVAL AND RECONSTRUCTION OF SUCH ELEMENTS IS TO BE BORNE BY THE CONTRACTOR AND OR THEIR SUB-CONTRACTOR PROVIDING THE SERVICE AND THE INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE THAT ALL PARTIES ARE ADEQUATELY NOTIFIED, NOTIFICATION WILL BE BY TWO MEANS FOR EACH REQUEST/OCCURRENCE THE ACCEPTABLE MEANS ARE AS FOLLOWS, EMAIL, TEXT, FAX OR PHONE, NOTIFICATION SHALL INCLUDE ELEMENT, DATE AND CONSTRUCTION START TIME. EXCESSIVE STANDBY TIME ON THE PART OF THE PARTIES MAY RESULT IN A BACK CHARGE TO THE CONTRACTOR.

WCE GRADING NOTES

1. CONTOURS AND / OR ELEVATIONS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.

2. ALL DISTURBED AREAS THAT ARE SUBSURFACE OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.

3. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.

4. UNLESS OTHERWISE SHOWN, NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.

5. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.

6. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS THAT DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB, GUTTER, AND UTILITIES.

7. BENCHMARK VERIFICATION: CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCH MARK'S, BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.

8. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.

9. GRADES WITHIN ASPHALT PARKING AREAS SHALL BE CONSTRUCTED TO WITHIN 0.10 FEET OF THE DESIGN GRADE. HOWEVER, THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL PAVEMENT AREAS AND ALONG ALL CURBS. ALL CURBS SHALL BE BUILT IN ACCORDANCE TO THE PLAN. CURBS OR PAVEMENT AREAS WHICH DO NOT PROVIDE PROPER DRAINAGE MUST BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

10. SPOT ELEVATIONS REPRESENT FLOW LINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.

11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.

12. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT OR CONCRETE PAVEMENT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY THE GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT THE APPROVAL OF THE ENGINEER.

13. THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS.

14. PRE CAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.

15. EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.

16. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.

17. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.

18. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.

19. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.

20. TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PROVIDED BY THE OWNER . IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS. WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.

21. ALL SUBSURFACE AREA DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. (CONTRACTOR SHALL PLACE SOD OR HYDROSEED DISTURBED AREAS IN ACCORDANCE WITH CITY/COUNTY SPECIFICATIONS AND MAINTAINED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.) HYDROSEED WITH TACKIFIER OVER A CORDUROY SLOPE MAY BE ACCEPTABLE, THE SITE GEOTECHNICAL ENGINEER MUST BE CONSULTED.

22. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND SITE SHALL BE CONSTRUCTED TO SAME.

23. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES AND NOTIFYING THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION.

24. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

25. ENGINEER SHALL BE NOTIFIED WHEN 'CURBING STRING LINE' HAS BEEN SET, PRIOR TO CURBING BEING INSTALLED.

26. ALL DRYWELLS TO BE INSTALLED TO HAVE (1') ONE OF VERTICAL ADJUSTMENT.

27. ENGINEERING OR THE OWNER'S INSPECTION REPRESENTATIVE SHALL BE ON SITE, AND SHALL COLLECT TRUCK TICKETS FOR DRYWELL ROCK, AND SOIL.

28. ALL PIPE SHALL BE INSTALLED WITH EITHER A SAND COLLAR, KOR-N-SEAL OR APPROVED EQUIVALENT.

WCE STORM DRAINAGE NOTES

1. SEE STREET PLAN AND PROFILE SHEETS FOR DRYWELL AND CATCH BASIN TYPES AND LOCATIONS.

2. SWALE/PONDS SHALL BE CONSTRUCTED PER THE REQUIREMENTS OF THESE DRAWINGS INCLUDING GRADING, SOD, AND DRYWELL INSTALLATION. ALL SWALES/PONDS WITH IN TRACTS SHALL INCLUDE AN IRRIGATION SYSTEM, ALL IRRIGATION SHALL CONFORM TO CITY OF LIBERTY LAKE SWALE/POND IRRIGATION SYSTEM GUIDELINES.

3. ALL SWALES/PONDS SHOWN SHALL BE ROUGH GRADED PRIOR TO PAVING OF ADJACENT ROADWAY.

4. CONTRACTOR SHALL PROVIDE CITY OF LIBERTY LAKE WITH AS-BUILT IRRIGATION PLANS UPON COMPLETION OF ALL SWALE/POND CONSTRUCTION.

5. INSTALL "AMOCO" #4545 FILTER FABRIC (OR APPROVED EQUAL) BETWEEN THE NATIVE SOIL AND WASHED DRAIN ROCK, FOR ALL DRYWELLS. SEE CITY OF LIBERTY LAKE STANDARD SHEET B-1a FOR INSTALLATION LOCATIONS.

6. ALL SWALES/PONDS WITHIN THE RIGHT-OF-WAY, IN THE AREA ASSOCIATED WITH THIS PROJECT, SHALL BE COMPLETED DURING THE CONSTRUCTION OF THE ROADWAY. THE CONTRACTOR SHALL PERFORM THE SWALE/POND GRADE WORK, INSTALL THE IRRIGATION SYSTEM, AND PLACE THE SOD WITHIN THE SWALES/PONDS FOLLOWING THE ROAD PAVING WORK.

7. THE CONTRACTOR SHALL MAKE AN EFFORT TO PROTECT ALL DRAINAGE STRUCTURES FROM BEING CONTAMINATED WITH SILT BY INSTALLING FILTER FABRIC UNDER THE LID FOR AT LEAST 6 WEEKS, OR UNTIL THE ESTABLISHMENT OF GRASS AND/OR OTHER SITE CONSTRUCTION WORK HAS ENDED. IN THE EVENT THAT SILT OR OTHER DELETERIOUS MATERIAL IS ALLOWED TO ENTER THE DRYWELL OR CATCH BASIN THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE DRYWELL OR CATCH BASIN OUT TO THE SATISFACTION OF THE CERTIFYING ENGINEER,

8. ALL LANDSCAPE AREAS (INCLUDING SWALES/PONDS) ARE TO BE IRRIGATED BY AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED BY OR UNDER THE DIRECTION OF THE LANDSCAPE CONTRACTOR. THE IRRIGATION SYSTEM SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES (90 DAY GUARANTEE). AN APPROVED BACKFLOW DEVICE SHALL BE INSTALLED TO PREVENT WATER FOR GOING BACK INTO THE WATER SUPPLY.

9. THE FLOOR OF ALL GRASSED PERCOLATION AREAS (GPA) (SWALES/PONDS) INCLUDES THE LEVEL PORTION OF THE FLOOR OF THE SWALES, AND THE SIDE SLOPES OF THE SWALE UP TO THE GPA OVERFLOW ELEVATION OR TOP OF DRYWELL. THE SOIL LOCATED IN THE FLOOR OF THE THE GPA SWALE SHALL BE A MEDIUM TO WELL-DRAINING MATERIAL, WITH A MINIMUM INFILTRATION RATE OF 0.5 INCHES PER HOUR. THE ENGINEER SHALL PROVIDE A WRITTEN STATEMENT WHICH VERIFIES THAT ALL GPA SWALES CONFORM TO THIS REQUIREMENT. THIS WRITTEN STATEMENT SHALL BE SUBMITTED TO THE CITY OF LIBERTY LAKE ENGINEER'S OFFICE PRIOR TO INSTALLING FINISHED LANDSCPING/SOD AND PRIOR TO FINAL ACCEPTANCE. THE SWALE FLOOR MATERIAL SHALL BE INSTALLED TO A NATIVE SOIL STRATUM WHICH ALSO MEETS OR EXCEEDS THIS MINIMUM PERCOLATION RATE OF 0.5 INCHES PER HOUR, OR AS APPROVED BY SITE GEOTECHNICAL ENGINEER.

10. WHEN TWO OR MORE CURB INLETS ARE USED, SET POND BOTTOM WITH RESPECT TO THE LOWEST CURB INLET GUTTER FLOWLINE ELEVATION.

11. THE TOP 12" OF SOIL FOR ALL SWALE/POND BOTTOMS SHALL CONSIST OF THOROUGHLY BLENDED MIX OF 50% COMPOST WITH 50% NATIVE SOILS, OR AS APPROVED BY SITE GEOTECHNICAL ENGINEER.

12. PER THE S.R.S.M. ALL SWALES/PONDS SHALL HAVE 12" OF TREATMENT SOIL WITH AN INFILTRATION RATE OF 0.5 INCHES/HOUR AND AVERAGE CATION EXCHANGE CAPACITY OF AT LEAST 15 MILLIQUIVELENTS/100 GRAMS OR AT LEAST 2% OF ORGANIC MATER BY WEIGHT. SEE TABLE 6-1, PG. 6-16 OF THE SPOKANE REGIONAL STORMWATER MANUAL, OR AS APPROVED BY SITE GEOTECHNICAL ENGINEER.

13. WARNING: THE USE OF SILTY LOAM IS PROHIBITED AS SWALE/PONDS BOTTOM MATERIAL.

14. ALL DRYWELLS TO HAVE 1' ONE VERTICAL FOOT OF ADJUSTMENT

15. THE ENGINEER SHALL BE ON SITE, AND SHALL COLLECT TRUCK TICKETS FOR THE DRYWELL ROCK AND SOIL.

SLEEVING: PROVIDE SLEEVING AS REQUIRED UNDER SIDEWALKS, PATHS, CURBING, PAVING, ETC. AS NEEDED FOR IRRIGATION ACCESS. ALL SLEEVING TO BE 4" PVC WITH AT LEAST 12" OF COVER (1) FOOT BELOW FINISH GRADE. THE OWNER/GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING SLEEVING BEFORE CURBING, SIDEWALKS, PAVING, ETC. IS INSTALLED. PATCH ASPHALT AS NEEDED.

LAWN AREAS: LAWN AREAS ARE TO BE IRRIGATED WITH TORO POP-UP HEADS OR EQUIVALENT. (TEST SYSTEM BEFORE BACKFILLING).

ADJUSTMENT: AFTER INSTALLATION, ADJUST VALVES, HEADS, EMITTERS, ETC. TO PROVIDE UNIFORM COVERAGE AND TO MINIMIZE OVER SPRAY ON WALLS, FENCES, WALKS, DRIVES, ETC.

WATER POWER SUPPLY: THE OWNER/GENERAL CONTRACTOR IS TO SUPPLY WATER TAPS FOR HOOK-UP AND SUPPLY POWER FOR CONTROLLER.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

WCE GENERAL STORMWATER NOTES

1. PROVIDE FILTER FABRIC (AMOCO 4545 OR EQUAL) BETWEEN THE NATIVE SOIL AND THE WASHED DRAIN ROCK

2. IF TWO OR MORE CURB INLETS ARE USED, SET POND BOTTOM WITH RESPECT TO THE LOWEST CURB INLET GUTTER FLOWLINE ELEVATION

3. FOR ALL **BIO_INFILTRATION** SWALES AND PONDS, THE TOP 12 INCHES OF SOIL SHALL CONSIST OF A THOROUGHLY BLENDED MIX OF 50% COMPOST WITH 50% NATIVE SOILS.

4. WARNING – THE USE OF SILTY LOAM IS PROHIBITED AS POND BOTTOM MATERIAL.

5. PVC STORM PIPE ON THESE PLANS SHALL, AT A MINIMUM, BE ASTM D3034 INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

6. ALL STORM PIPES LINES LESS THAN THE MINIMUM 2% SIDE SLOPE MUST BE SURVEYED IN BY A PROFESSIONAL LICENSED SURVEYOR OF WASHINGTON STATE.

7. AT A MINIMUM, BOTTOM OF POND AND NON-BERM AREAS OF POND SHALL BE PLANTED WITH NATIVE-TYPE GRASSES ACCLIMATED TO ARID CONDITIONS (DRYLAND GRASSES). SEE LANDSCAPE PLAN FOR MORE INFORMATION.

8. ALL DRYWELLS TO BE INSTALLED TO HAVE (1') ONE VERTICAL FOOT OF ADJUSTMENT.

9. INSPECTION ENGINEER SHALL BE ON SITE, AND SHALL COLLECT TRUCK TICKETS FOR DRYWELL ROCK, AND SOIL.

10. STANDARD DENSITY SHALL BE IN ACCORDANCE WITH A.S.T.M. D-1557.

11. **TREATMENT SOIL SPECIFICATION**
THE TOP 18" OF SOIL FOR ALL **L.I.D**. POND BOTTOMS AND THE TOP 12" OF SOIL FOR ALL PGIS POND BOTTOMS SHALL CONSIST OF 40% COMPOST/60% MINERAL AGGREGATE; COMPOST CATION EXCHANGE CAPACITY (CEC) SHALL BE EQUAL TO OR GREATER THAN 5 MILLIEQUIVALENTS/100 GRAMS OF DRY SOIL; MINERAL AGGREGATE SHALL BE WELL-GRADED SAND PER ASTM D 2487-11 WITH COEFFICIENT OF UNIFORMITY CU = D60/D10 EQUAL TO OR GREATER THAN 4 AND COEFFICIENT OF CURVE CC = (D30)2/D60 X D10 GREATER THAN OR EQUAL TO 1 AND LESS THAN OR EQUAL TO 3. **A BIORETENTION SOIL MEDIA DATA SHEET SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND SPOKANE COUNTY FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.**
11.1. MINERAL AGGREGATE GRADATION

SIEVE SIZE	PERCENT PASSING
3/8"	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

SEEDING NOTE:

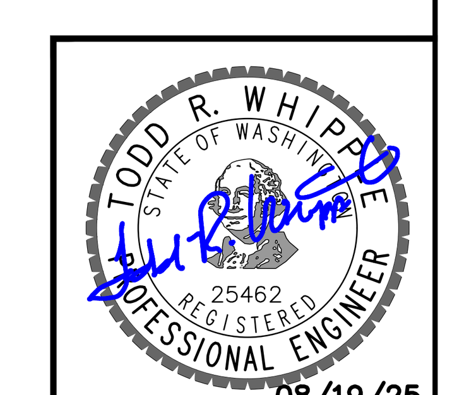
GRASS SEED: PROVIDE FRESH, CLEAN, NEW-CROP SEED COMPLYING WITH TOLERANCE OF PURITY AND GERMINATION ESTABLISHED BY THE OFFICIAL SEED ANALYSIS OF NORTH AMERICAN. PROVIDE SEED MIXTURE COMPOSED OF GRASS SPECIES AND PERCENTAGES AS FOLLOWS:

	ELKA PERENNIAL RYE
10 PER CENT	DURAR HARD FESCUE
25 PERCENT	COVAR SHEEP/FESCUE
50 PERCENT	REUBENS CANADIAN BLUEGRASS
15 PERCENT	

PROVIDE MIXTURE COMPOSED OF GRASS SEED AND FERTILIZER IN PERCENTAGES AS FOLLOWS:

	90 LBS. PER ACRE
GRASS SEED:	16-16-16 TIMED RELEASE COMPOSITION,
FERTILIZER:	300 LBS. PER ACRE

ALL SEEDING OF SLOPES SHALL SHALL BE DONE IN ACCORDANCE WITH THE W.S.D.O.T. STANDARD SPECIFICATIONS, SECTION 8-01.



NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

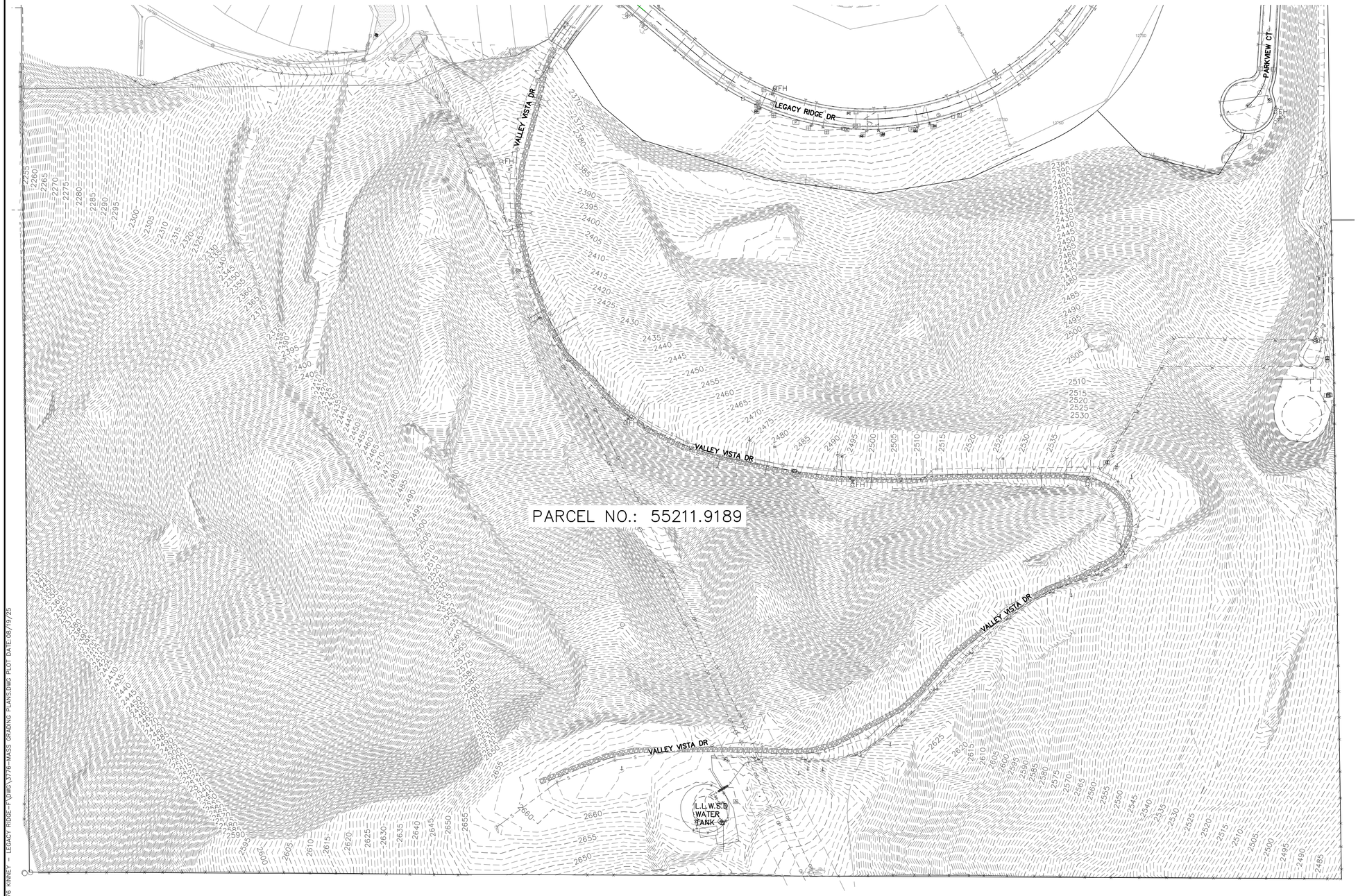
X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
GENERAL NOTES
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET C0.1
JOB NUMBER **24-3776**

NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.



UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

LEGEND

- FIRE HYDRANT
- WATER METER
- WATER VALVE
- WATER VALVE MARKER
- WELL
- WATER MANHOLE
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- GAS METER
- GAS MANHOLE
- GAS VALVE
- IRRIGATION CATCH BASIN
- IRRIGATION BOX
- IRRIGATION VALVE
- CATCH BASIN
- DRAINAGE MANHOLE
- DRYWELL
- CATCH BASIN
- ELECTRIC METER
- GUY WIRE
- POWER POLE
- POWER MANHOLE
- POWER VAULT
- POWER TRANSFORMER
- TE POLE
- TEL CABLE RISER
- TEL-JBOX
- TEL MANHOLE
- UTILITY MANHOLE
- UTILITY VAULT
- JUNCTION BOX
- JUNCTION BOX
- SIGN
- SIGN
- STREET LIGHT ASSEMBLY
- LIGHT POLE
- MAIL BOX
- ROCK
- RIPRAP
- SHRUB
- TREE (CONIFER)
- TREE (DECIDUOUS)
- RUMBLE BARS
- TEST WELL
- WETLAND FLAG
- RR CROSSING SIGNAL
- GATE POST
- BOLLARD

SURVEYORS NOTE:
1. UTILITIES SHOWN HEREON ARE FROM VISIBLE SURFACE EVIDENCE COLLECTED BY SURVEY. INVESTIGATION INTO RECORDS HELD BY UTILITY PURVEYORS HAS NOT BEEN PERFORMED. LOCATES FOR UNDERGROUND UTILITIES WERE ORDERED AND ARE SHOWN ON THIS MAP.

THIS MAP CORRECTLY REPRESENTS A TOPOGRAPHIC SURVEY PERFORMED BY ME, OR UNDER MY DIRECTION, IN APRIL OF 2023 AT THE REQUEST OF THE OWNER.

BRETT A. GRIFFITH, P.L.S.
CERTIFICATE NO. 20123194

10/17/2024

ABBREVIATIONS

ACT. LEN. .... ACTUAL LENGTH
BCR ..... BEGINNING OF CURVE RADIUS
BDRY. ..... BOUNDARY
CO. ..... SEWER CLEANOUT
CSTC ..... CRUSHED SURFACE TOP COURSE
CT. ..... COURT
DIA. ..... DIAMETER
ECR ..... END OF CURVE RADIUS
EXIST. ..... EXISTING
G ..... GRADE
GB ..... GRADE BREAK
FT./FT. ..... FEET PER FOOT
HYD. ..... HYDRANT
I.E. ..... INVERT ELEVATION
LN. ..... LANE
LT. ..... LEFT
MH ..... MANHOLE
MCR ..... MIDDLE OF CURVE RADIUS
PC ..... POINT OF CURVATURE
PET. ..... PETROLEUM
PI ..... POINT OF INTERSECTION
PRC ..... POINT OF REVERSE CURVE
PT ..... POINT OF TANGENCY
RIM EL. ..... RIM ELEVATION
RD ..... ROAD
RT. ..... RIGHT
SI ..... STREET INTERSECTION
SS ..... SANITARY SEWER
STA. ..... STATION
STA. LEN. ..... STATION LENGTH
TG ..... TOP OF GRATE
TC ..... TOP OF CURB

TODD R. WHIPPLE — STATE OF WASHINGTON — 25462 — REGISTERED PROFESSIONAL ENGINEER
08/19/25

TOPOGRAPHIC SURVEY

SCALE: 1" = 100'

N
W E
S

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

FOR REFERENCE ONLY

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 100'
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
TOPOGRAPHIC SURVEY - FOR REF. ONLY
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET C1.0
JOB NUMBER 24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.

SWPPP/EROSION CONTROL PLAN

LEGACY PHASE "F" MASS GRADING

VALLEY VISTA DRIVE

LIBERTY LAKE, WASHINGTON

NE 1/4 OF SEC. 21, T. 25 N., R. 45 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

WCE GENERAL NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE WSDOT /APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CURRENT EDITION AS MODIFIED BY THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE CITY OF LIBERTY LAKE REGULATIONS AND OTHER APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK WITHIN PUBLIC R.O.W. OR EASEMENTS SHALL BE INSPECTED AND APPROVED BY THE CITY OF LIBERTY LAKE INSPECTOR. INSPECTION SERVICES AND CONSTRUCTION CERTIFICATION TO BE PROVIDED BY DESIGNEE OF PROJECT SPONSOR/OWNER.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY OF LIBERTY LAKE INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.

4. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE CITY OF LIBERTY LAKE AND ALL UTILITY COMPANIES WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION, AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.

5. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND ONE (1) COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON-SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO: EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

7. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.

8. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.

9. FOR WORK AFFECTING PUBLIC ROADWAYS OR IF REQUIRED BY THE CITY OF LIBERTY LAKE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL AND PHASING PLAN IN ACCORDANCE WITH M.U.T.C.D. FOR APPROVAL. PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY SAID PLANS. PRIOR TO INSTALLATION. A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CITY OF LIBERTY LAKE.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED OR RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.

11. PER AGENCY STANDARDS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING RECORD INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE AND AVAILABLE TO THE CITY OF LIBERTY LAKE INSPECTOR AT ALL TIMES.

13. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. FOR ADDITIONAL INFORMATION CONTACT THE ENGINEER FOR CLARIFICATION AND NOTE ON THE RECORD DRAWINGS.

14. ALL EROSION AND SEDIMENT CONTROL (E.S.C.) MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION PRIOR TO GROUND DISTURBING ACTIVITY. ALL E.S.C. MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.

15. THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN, AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY IS SUBJECT TO THE JURISDICTION OF THE CITY OF LIBERTY LAKE ENGINEERING DEPARTMENT STANDARD DETAILS AND SPECIFICATIONS.

17. ALL CONSTRUCTION OPERATIONS, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED EQUIPMENT SHALL GENERALLY BE LIMITED TO THE TIME PERIOD APPROVED BY THE CITY OF LIBERTY LAKE.

18. BASED ON REQUIREMENTS FROM CITY OF LIBERTY LAKE, THE ENGINEER OR HIS DESIGNEE SHALL PERFORM MATERIALS TESTING AND QUALITY CONTROL ON THE PROJECT AND SHALL SUBMIT COPIES OF DAILY REPORTS, TEST REPORTS, PROJECT CERTIFICATION AND RECORD DRAWINGS TO CITY OF LIBERTY LAKE ENGINEER.

19. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT APPROVAL OF THE CITY OF LIBERTY LAKE ENGINEERS AND NOTIFICATION OF THE ENGINEER OF RECORD.

20. ON-SITE GRADING SHALL BE IN ACCORDANCE WITH THE APPROVED GRADING PLAN AND E.S.C. PLAN. ANY IMPORT OR EXPORT OF MATERIAL SHALL BE FROM A PREAPPROVED SOURCE/DESTINATION AND COORDINATED WITH THE CITY OF LIBERTY LAKE DEPARTMENT OF BUILDING AND PLANNING AT CITY OF LIBERTY LAKE, 509-625-6300. GRADING ON THIS SITE OR ANY OTHER SITE MUST COMPLY WITH ALL DEVELOPMENT REGULATIONS INCLUDING, BUT NOT LIMITED TO , GRADING PERMITS, S.E.P.A. REVIEW, TIMBER HARVEST PERMITS, CRITICAL AREAS, FLOOD PLAINS, DESIGNATED DRAINAGE WAYS, ETC.

21. THE CONTRACTOR IS CAUTIONED THAT IT IS THE UNDERSTANDING OF THE OWNER AND THE ENGINEER THAT SHOULD A CONFLICT OR DISCREPANCY IN THESE PLANS, SPECIFICATIONS, GENERAL NOTES OR PLANS ET.AL. DETERMINED TO BE PART OF THE OVERALL PROJECT, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL PLANS, MECHANICAL PLANS, ELECTRICAL PLANS, LANDSCAPE PLANS, GENERAL SPECIAL PROVISIONS, ETC., THAT WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER, OWNER OR OTHER PROFESSIONAL, DURING THE BIDDING PROCESS, THAT IN ALL INSTANCES THE CONTRACTOR WILL BE REQUIRED TO BID THE HIGHER STANDARD. FAILURE TO DO SO MAY RESULT IN THE HIGHER STANDARD BEING REQUIRED BY THE OWNER, ENGINEER OR OTHER PROFESSIONAL WITH NO CHANGE IN VALUE TO THE CONTRACT VIA CHANGE ORDER OR OTHER MECHANISM.

22. CONSTRUCTION OF EVERY DRYWELL, INCLUDING FABRIC AND DRAINROCK, SHALL BE OBSERVED BY THE ON-SITE INSPECTOR TO CONFIRM THAT IT MEETS THE DESIGN DETAILS AND SPECIFICATIONS. DRYWELLS NOT OBSERVED SHALL HAVE THEIR PERFORMANCE VERIFIED BY A FULL-SCALE DRYWELL TEST.

23. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ANY AND ALL INCONSISTENCIES BETWEEN THESE PLANS AND CONSTRUCTION STAKING. CONTRACTOR ASSUMES RESPONSIBILITY TO CONSTRUCT TO THESE PLANS IN LIEU OF FIELD STAKING. SHOULD INCONSISTENCIES BE APPARENT THE CONTRACTOR SHALL CONTACT THE ENGINEER, OWNER, AND SURVEYOR TO RECTIFY THE DISCREPANCY PRIOR TO CONSTRUCTION EFFORT BEING APPLIED.

24. FAIR HOUSING ACT – SAFE HARBORS FOR COMPLIANCE

WHIPPLE CONSULTING ENGINEERS, INC. FOR THE PROJECT CONTAINED WITHIN THESE PLANS HAS USED THE FOLLOWING SAFE HARBOR FOR ADA ACCESSIBILITY FOR THOSE ISSUES CONSIDERED SITE DEVELOPMENT ISSUES.

ICC/ANSI A117.1 (2003), ALONG WITH THE FAIR HOUSING ACT, HUD'S FAIR HOUSING ACT REGULATIONS, AND GUIDELINES.

25. ALL FIRE LINES MUST BE INSTALLED BY AN APPROVED LEVEL 'U' CONTRACTOR OR A LEVEL 3 FIRE PROTECTION CONTRACTOR.

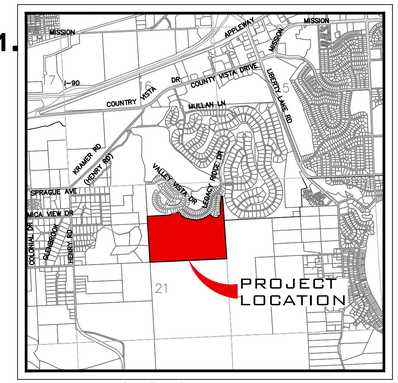
26. CONTRACTOR IS NOTIFIED THAT SOME OR ALL OF THE PAVEMENT CUTS TO INSTALL DRY UTILITIES, SEWER, WATER, STORM OR OTHER TIE-INS SHALL BE COORDINATED WITH THE CITY OF LIBERTY LAKE AS SPECIFIC PAVEMENT CUT POLICIES MAY BE IN EFFECT THAT ARE NOT NOTED ON THE PLANS

27. THE CONTRACTOR IS NOTED THAT IT IS NOT THE OWNERS, ENGINEERS, CITY'S NOR THE INSPECTION AND TESTING COMPANY'S (THE PARTIES) RESPONSIBILITY TO ANTICIPATE WHEN CONSTRUCTED ELEMENTS WILL BE READY FOR INSPECTION AND TESTING. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL PARTIES THAT CERTAIN CONSTRUCTED ELEMENTS ARE BEING INSTALLED AND ON WHAT DATE THEY WILL BE INSTALLED. IF SUCH FAILURE TO NOTIFY THEN RESULTS IN LACK OF INSPECTIONS AND TESTING SERVICES FOR CERTAIN ELEMENTS, THE CONTRACTOR SHOULD NOT EXPECT THAT THIS LACK OF INSPECTION AND TESTING WILL RESULT IN THE BLANKET APPROVAL OF SUCH ITEM. THE CONTRACTOR IS NOTIFIED THAT SUBSEQUENT REMOVAL AND RECONSTRUCTION OF SUCH ELEMENTS IS TO BE BORNE BY THE CONTRACTOR AND OR THEIR SUB-CONTRACTOR PROVIDING THE SERVICE AND THE INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE THAT ALL PARTIES ARE ADEQUATELY NOTIFIED, NOTIFICATION WILL BE BY TWO MEANS FOR EACH REQUEST/OCCURRENCE THE ACCEPTABLE MEANS ARE AS FOLLOWS, EMAIL, TEXT, FAX OR PHONE, NOTIFICATION SHALL INCLUDE ELEMENT, DATE AND CONSTRUCTION START TIME. EXCESSIVE STANDBY TIME ON THE PART OF THE PARTIES MAY RESULT IN A BACK CHARGE TO THE CONTRACTOR.

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

SWPPP PLAN

SCALE: 1" = 200'



VICINITY MAP

INDEX TO PLAN SHEETS

LEGEND

- STORM DRAINAGE POND – NO CONCRETE TRUCK WASHOUT AREA.
- BMP C233: SILT FENCE, SHEET C2.2.
- BMP C105: STABILIZED CONSTRUCTION ENTRY, SHEET C2.2
- BMP C220: STORM DRAIN INLET PROTECTION, SHEET C2.3.
- BMP C151: CONCRETE HANDLING – MAY ONLY TAKE PLACE ON UNCOMPACTED SUBGRADE AFTER ASPHALT REMOVAL, AND IN A NON-LANDSCAPED AREA. OTHERWISE ANY CONCRETE WASHOUT MUST BE OFF SITE. SHEET C2.3.
- LIMITS OF DISTURBANCE

N
W E
S
GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200 ft.

SEWER / WATER
LIBERTY LAKE SEW&WAT DIST. 1
22510 E MISSION AVENUE
LIBERTY LAKE, WA 99019
PHONE: 922-5443
CONTACT: BIJAY ADAMS

FIRE DEPARTMENT
SPOKANE VALLEY FIRE DEPT.
10319 E SPRAGUE AVE.
SPOKANE VALLEY, WA 99206
PHONE: 928-1700
CONTACT: TRACI HARVEY

STREETS
CITY OF LIBERTY LAKE
22710 E COUNTRY VISTA DR
LIBERTY LAKE, WA 99019
PHONE: 755-6730
CONTACT: LUKE MICHELS

BLDG. & PLANNING
CITY OF LIBERTY LAKE
22710 E COUNTRY VISTA DR
LIBERTY LAKE, WA 99019
PHONE: 755-6708
CONTACT: LISA KEY

OWNER
MTK MANAGEMENT, LLC ET AL
PO BOX 935
OTIS ORCHARDS, WA 99027
PHONE: 509-590-8383
CONTACT: CASEY MASON

HEALTH
SPOKANE REGIONAL HEALTH
1101 WEST COLLEGE AVE. #402
SPOKANE, WA 99260
PHONE: 324-1578
CONTACT: PAUL SAVAGE

POWER / GAS
AVISTA UTILITIES
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220
PHONE: 495-8610
CONTACT: KEN CARLSON

TELEPHONE
CENTURY LINK
904 NORTH COLUMBUS
SPOKANE, WASHINGTON, 99202
PHONE: 623-0304
CONTACT: DEBORAH GEIST

CABLE
COMCAST BROADBAND
1717 EAST BUCKEYE
SPOKANE, WASHINGTON, 99207
PHONE: 755-4717
CONTACT: BRYAN RICHARDSON

SOLID WASTE
WASTE MANAGEMENT
PHONE: 1-800-909-4458

LANDSCAPE
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: SUSAN MOSS, PLA

SURVEYOR
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: BRETT GRIFFITH, P.L.S.

ENGINEERING
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: TODD WHIPPLE, P.E.

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 200'
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
SWPPP COVER SHEET
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

TODD R. WHIPPLE
STATE OF WASHINGTON
25462
REGISTERED PROFESSIONAL ENGINEER
08/19/25

SHEET C2.0
JOB NUMBER 24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

EROSION & SEDIMENT CONTROL

GENERAL NOTES AND INFORMATION

1. AN EROSION/SEDIMENT CONTROL **(E.S.C.)** PLAN IS REQUIRED FOR THIS PROJECT. IMPLEMENTATION OF THE **E.S.C. PLAN,** AND CONSTRUCTION, MAINTENANCE, AND UPGRADING OF THE **E.S.C.** FACILITIES ARE THE RESPONSIBILITY OF THE DEVELOPER UNTIL ALL CONSTRUCTION IS COMPLETED AND ACCEPTED BY **THE CITY OF LIBERTY LAKE,** OR UNTIL VEGETATION IS ESTABLISHED THROUGHOUT THE SITE, AND ACCEPTED BY **CITY OF LIBERTY LAKE,** WHICHEVER IS LATER.
2. APPROVAL OF THE **E.S.C. PLAN** DOES NOT CONSTITUTE APPROVAL OF ANY OF THE PROPOSED ROAD, STORM DRAINAGE, GRADING OR UTILITY DESIGN ELEMENTS SHOWN ON THE **E.S.C. PLAN.**
3. THE EROSION/SEDIMENT CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. THE CONTRACTOR SHALL INSPECT AND MAINTAIN THESE **E.S.C.** MEASURES DAILY, AND SHALL MAINTAIN AND UPGRADE THESE MEASURES AS NECESSARY TO PREVENT SEDIMENT–LADEN WATER FROM EITHER FLOWING OFF SITE, OR INTO NEW/EXISTING STORM DRAINAGE FACILITIES, SUCH AS DRYWELLS, CULVERTS, OR GRAVEL GALLERIES.
4. GEOTEXTILE FABRIC IS TO BE PLACED ON THE RIMS, CATCH BASINS AND INLETS UNTIL SUCH TIME THAT THE VEGETATION ON THE SITE IS ESTABLISHED AND THE THREAT OF SEDIMENT DEPOSITION INTO THE DRAINAGE SYSTEM IS MITIGATED.
5. THE SILT FENCES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO OTHER SITE WORK, AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ROCK CONSTRUCTION ENTRIES AT ANY AND ALL LOCATIONS USED TO ENTER OR EXIT THE PROJECT SITE. SEE DETAIL,
7. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNATING A LOCATION WHERE CONCRETE TRUCKS AND EQUIPMENT CAN BE WASHED OUT, NOT LOCATED NEAR OR DRAINING INTO A STORM DRAINAGE AREA.
8. PROPERTY OWNER: **MTK MANAGEMENT, LLC ET AL**
   PERMIT APPLICANT: **WHIPPLE CONSULTING ENGINEERS, 509–893–2617**
   CONTACT PERSON ON SITE: **CASEY MASON**
9. PROJECT LOCATION: **IN LIBERTY LAKE, WASHINGTON IN THE NE 1/4 OF SECTION 21, TOWNSHIP 25 N., RANGE 45 E. W.M.**
10. PROJECT DESCRIPTION: **THIS PROJECT CONSISTS OF HAULING AND STOCK PILING MATERIAL FOR MASS GRADING CONSTRUCTION ACTIVITIES. FURTHER CONSTRUCTION WILL REQUIRE UPDATED EROSION CONTROL MEASURES.**
11. DESCRIPTION OF **E.S.C.** MEASURES: USE OF SILT FENCES AND SEDIMENTATION FILTERS. ALL **E.S.C.** MEASURES MENTIONED ABOVE ARE TEMPORARY AND WILL BE REMOVED AFTER SITE IS LANDSCAPED.
12. EXISTING VEGETATION: **TREES, WEEDS, SHRUBS**
13. PLAN PREPARATION DATE: **OCTOBER 2024**
14. SOILS: **PHOEBE–BATTLEPLAIN, MOIST COMPLEX, BATTLEPLAIN ASHY SANDY LOAM, SPOKANE–ROCK OUTCROP COMPLEX, SPOKANE–SWAKANE COMPLEX, LENZ–SPOKANE COMPLEX, LENZ–ROCK OUTCROP COMPLEX, KRAMERHILL–SPOKANE COMPLEX, 0 TO 30 PERCENT SLOPES**
15. **STABILIZATION OF DENUDED AREAS:**
    ANY DISTURBED AREAS, WHICH WOULD BE LEFT BARE FOR MORE THAN 7 DAYS AND ARE NOT INTENDED TO BE REWORKED WITHIN 30–45 DAYS SHALL BE SEEDED WITH A FAST STARTING NATIVE DRYLAND GRASS SUCH AS ANNUAL RYE, OR APPROVED EQUAL, AT A RATE OF 60 lbs/ACRE.
16. **CONTROL OF POLLUTANTS:**
    ANY SPILLS WILL BE HANDLED ACCORDING TO **D.O.E. AND D.O.H.** GUIDELINES.
17. **LIMITS OF GRADING:**
    DURING THE COURSE OF CONSTRUCTION, THE AMOUNT OF DISTURBED AREA SHALL BE KEPT TO A MINIMUM AND SHALL BE LIMITED TO THE AREA SHOWN AS "LIMITS OF GRADING" ON THIS SHEET OF THE EROSION CONTROL PLANS.

MAINTENANCE

1. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF THE TEMPORARY E.S.C.** MEASURES.
2. SEDIMENT BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RUNOFF–PRODUCING RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
3. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF FILTER FABRIC SHALL BE ACCOMPLISHED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RUNOFF–PRODUCING RAINFALL. DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE **E.S.C.** STRUCTURE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
6. ALL TEMPORARY AND PERMANENT **E.S.C.** PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
7. ALL TEMPORARY **E.S.C.** MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DIRT, MUD AND OTHER CONSTRUCTION DEBRIS WHICH MAY ACCUMULATE ON PAVED STREETS ADJACENT TO THE SITE AS A RESULT OF CONSTRUCTION ACTIVITY. CLEANING SHALL BE ON AN "AS NEEDED" BASIS USING SWEEPING AND WATER TO WASH THE CONSTRUCTION DEBRIS FROM THE STREET.
9. ON–SITE DUST CONTROL SHALL BE ACCOMPLISHED BY USING WATER. APPLICATIONS OF WATER MAY BE REQUIRED SEVERAL TIMES PER DAY DURING CONSTRUCTION ACTIVITY.

E.S.C. STANDARD PLAN NOTES FROM APPENDIX 9A OF THE SPOKANE REGIONAL STORMWATER MANUAL

1. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED IN ORDER TO BEST MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION CONTROL PROBLEMS.

(A) CLEAR AND GRUB SUFFICIENTLY FOR INSTALL OF TEMPORARY **E.S.C.** BMP'S;

(B) INSTALL TEMPORARY **E.S.C.** BMPs, CONSTRUCTING SEDIMENT TRAPPING BMP'S AS ONE OF THE FIRST STEPS PRIOR TO GRADING;

(C) CLEAR, GRUB AND ROUGH GRADE FOR ROADS, TEMPORARY ACCESS POINTS AND UTILITY LOCATIONS;

(D) STABILIZE ROADWAY APPROACHES AND TEMPORARY ACCESS POINTS WITH THE APPROPRIATE CONSTRUCTION ENTRY BMP;

(E) CLEAR, GRUB AND GRADE INDIVIDUAL LOTS OR GROUPS OF LOTS;

(F) TEMPORARILY STABILIZE, THROUGH RE–VEGETATION OR OTHER APPROPRIATE BMP'S, LOTS OR GROUPS OF LOTS IN SITUATIONS WHERE SUBSTANTIAL CUT OR FILL SLOPES ARE A RESULT OF THE SITE GRADING;

(G) CONSTRUCT ROADS, BUILDINGS, PERMANENT STORMWATER FACILITIES. (I.E. INLETS, PONDS, U.I.C.FACILITIES, ETC.);

(H) PROTECT ALL PERMANENT STORMWATER FACILITIES UTILIZING THE APPROPRIATE BMP'S;

(I) INSTALL PERMANENT **E.S.C.** CONTROLS, WHEN APPLICABLE; AND,

(J) REMOVE TEMPORARY **E.S.C.** CONTROLS WHEN;

2. PERMANENT **E.S.C.** CONTROLS. WHEN APPLICABLE, HAVE BEEN COMPLETELY INSTALLED;
3. ALL LAND–DISTURBING ACTIVITIES THAT HAVE THE POTENTIAL TO CAUSE EROSION AND SEDIMENTATION PROBLEMS HAVE CEASED; AND,
4. VEGETATION HAD BEEN ESTABLISHED IN THE AREAS NOTED AS REQUIRING VEGETATION ON THE ACCEPTED **E.S.C.** PLAN ON FILE WITH THE LOCAL JURISDICTION.
5. INSPECT ALL ROADWAYS, AT THE END OF EACH DAY, ADJACENT TO THE CONSTRUCTION ACCESS ROUTE. IF IT IS EVIDENT THAT SEDIMENT HAS BEEN TRACKED OFF SITE AND/OR BEYOND THE ROADWAY APPROACH, CLEANING IS REQUIRED.
6. IF SEDIMENT REMOVAL IS NECESSARY PRIOR TO STREET WASHING, IT SHALL BE REMOVED BY SHOVELING OR PICKUP SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
7. IF STREET WASHING IS REQUIRED TO CLEAN SEDIMENT TRACKED OFF SITE, ONCE SEDIMENT HAS BEEN REMOVED, STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON–SITE OR OTHERWISE PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO WATERS OF THE STATE.
8. RESTORE CONSTRUCTION ACCESS ROUTE EQUAL TO OR BETTER THAN THE PRE–CONSTRUCTION CONDITION.
9. RETAIN THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION IN AND UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICAL.
10. INSPECT SEDIMENT CONTROL BMP'S WEEKLY AT A MINIMUM, DAILY DURING A STORM EVENT,'AND AFTER ANY DISCHARGE FROM THE SITE (STORMWATER OR NON–STORMWATER). THE INSPECTION FREQUENCY MAY BE REDUCED TO ONCE A MONTH IF THE SITE IS STABILIZED AND INACTIVE.
11. CONTROL FUGITIVE DUST FROM CONSTRUCTION ACTIVITY IN ACCORDANCE WITH THE STATE AND/OR LOCAL AIR QUALITY CONTROL AUTHORITIES WITH JURISDICTION OVER THE PROJECT AREA.
12. STABILIZE EXPOSED UNWORKED SOILS (INCLUDING STOCKPILES), WHETHER AT FINAL GRADE OR NOT WITHIN 10 DAYS DURING THE REGIONAL DRY SEASON (JULY 1 TO SEPTEMBER 30) AND WITHIN 5 DAYS DURING THE REGIONAL WET SEASON (OCTOBER 1 THRU JUNE 30). SOILS MUST BE STABILIZED AT THE END OF A SHIFT BEFORE A HOLIDAY WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. THE TIME LIMIT MAY ONLY BE ADJUSTED BY A LOCAL JURISDICTION WITH A "QUALIFIED LOCAL PROGRAM," IF IT CAN BE DEMONSTRATED THAT THE RECENT PRECIPITATION JUSTIFIES A DIFFERENT STANDARD AND MEETS THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STORMWATER GENERAL PERMIT.
13. PROTECT INLETS, DRYWELLS, CATCH BASINS AND OTHER STORMWATER MANAGEMENT FACILITIES FROM SEDIMENT, WHETHER OR NOT FACILITIES ARE OPERABLE,
14. KEEP ROADS ADJACENT TO INLETS CLEAN.
15. INSPECT INLETS WEEKLY AT A MINIMUM AND DAILY FOR STORM EVENTS.
16. CONSTRUCT STORMWATER CONTROL FACILITIES (DETENTION/RETENTION STORAGE POND OR SWALES) BEFORE GRADING BEGINS. THESE FACILITIES SHALL BE OPERABLE BEFORE THE CONSTRUCTION OF IMPERVIOUS SITE IMPROVEMENTS.
17. STOCKPILE MATERIALS (SUCH AS TOPSOIL) ON SITE, KEEPING OFF OF ROADWAY AND SIDEWALKS.
18. COVER, CONTAIN AND PROTECT ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCT, AND NON–INERT WASTES PRESENT ON SITE FROM VANDALISM (SEE CHAPTER 173–304 W.A.C. FOR THE DEFINITION OF INERT WASTE), USE SECONDARY CONTAINMENT FOR ON–SITE FUELING TANKS.
19. CONDUCT MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEMS REPAIRS, SOLVENT AND DEGREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES THAT MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF USING SPILL RECONVENTION MEASURES, SUCH AS DRIP PANS. CLEAN ALL CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. IF RAINING OVER EQUIPMENT OR VEHICLE, PERFORM EMERGENCY REPAIRS ON SITE USING TEMPORARY PLASTIC BENEATH THE VEHICLE.
20. CONDUCT APPLICATION OF AGRICULTURAL CHEMICALS, INCLUDING FERTILIZERS AND PESTICIDES, IN SUCH A MANNER, AND AT APPLICATION RATES, THAT INHIBITS THE LOSS OF CHEMICALS INTO STORMWATER RUNOFF FACILITIES. AMEND MANUFACTURER'S RECOMMENDED APPLICATION RATES AND PROCEDURES TO MEET THIS REQUIREMENT, IF NECESSARY.
21. INSPECT ON A REGULAR BASIS (AT A MINIMUM WEEKLY, AND DAILY DURING/AFTER A RUNOFF PRODUCING EVENT) AND MAINTAIN ALL **EROSION AND SEDIMENT CONTROL** BMP'S TO ENSURE SUCCESSFUL PERFORMANCE OF THE BMP'S. NOTE THAT INLET PROTECTIONS DEVICES SHALL BE CLEANED OR REMOVED AND REPLACE BEFORE SIX INCHES OF SEDIMENT CAN ACCUMULATE.
22. REMOVE TEMPORARY **E.S.C.** BMP'S WITHIN 30 DAYS AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. PERMANENTLY STABILIZE AREA THAT ARE DISTURBED DURING REMOVAL PROCESS.
23. A SITE LOG SHALL BE COMPLETE WITH THE PRODUCT.

SRCAA GENERAL NOTES

1. DUST EMISSIONS DURING DEMOLITION, CONSTRUCTION, AND EXCAVATION PROJECTS MUST BE CONTROLLED. THIS MAY REQUIRE THE USE OF WATER SPRAYS, TARPS, SPRINKLERS, OR SUSPENSION OF ACTIVITY DURING CERTAIN WEATHER CONDITIONS.
2. MEASURES MUST BE TAKEN TO AVOID THE DEPOSITION OF DIRT AND MUD FROM UNPAVED SURFACES ONTO PAVED SURFACES. IF TRACKING OR SPILLS OCCUR ON PAVED SURFACES, MEASURES MUST BE TAKEN IMMEDIATELY TO CLEAN THESE SURFACES.
3. DEBRIS GENERATED, AS A RESULT OF THIS PROJECT, MUST BE DISPOSED OF BY MEANS OTHER THAN BURNING (I.E., CONSTRUCTION WASTE, VEGETATIVE WASTE, ECT.).
4. SPOKANE CLEAN AIR (SRCAA) STRONGLY RECOMMENDS THAT ALL TRAVELED SURFACES (I.E., INGRESS, EGRESS, PARKING AREAS, ACCESS ROADS, ECT.) BE PAVED AND KEPT CLEAN TO MINIMIZE DUST EMISSIONS.
5. IF OBJECTIONABLE ODORS RESULT FROM THIS PROJECT, EFFECTIVE CONTROL APPARATUS AND MEASURES MUST BE TAKEN TO REDUCE ODORS TO A MINIMUM.
6. SPECIAL ATTENTION SHOULD BE GIVEN TO PROPER MAINTENANCE OF DIESEL POWERED CONSTRUCTION EQUIPMENT TO REDUCE THE IMPACT OF DIESEL EXHAUST, A SUSPECTED CARCINOGEN.
7. A NOTICE OF CONSTRUCTION AND APPLICATION FOR APPROVAL IS REQUIRED TO BE SUBMITTED AND APPROVED BY SRCAA PRIOR TO THE CONSTRUCTION, INSTALLATION, OR ESTABLISHMENT OF AN AIR POLLUTION SOURCE. THIS INCLUDES EMERGENCY GENERATORS RATED AT 500 HP(375 KW) OR HIGHER, NATURAL GAS HEATING EQUIPMENT UNITS RATED AT FOUR MMBTU/HOUR OR HIGHER (INPUT), AND HEATING EQUIPMENT UNITS FIRED WITH OTHER FUELS (E.G., DIESEL) RATED AT ONE MMBTU/HOUR (INPUT) OR HIGHER. CONTACT SPOKANE CLEAN AIR (SRCAA) FOR A NOTICE OF CONSTRUCTION APPLICATION.
8. NOTICE OF INTENT MUST BE SUBMITTED TO SRCAA PRIOR TO ANY DEMOLITION PROJECT OR ASBESTOS PROJECT. AN ASBESTOS SURVEY MUST BE DONE BY AN HERA–ACCREDITED BUILDING INSPECTOR PRIOR TO THE DEMOLITION OR RENOVATION OF BUILDINGS TO DETERMINE IF ASBESTOS–CONTAINING MATERIAL IS PRESENT AT THE SITE. CONTACT SPOKANE CLEAN AIR (SRCAA) FOR A NOTICE OF INTENT APPLICATION.

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

[X] CIVIL
[ ] STRUCTURAL
[ ] SURVEYING
[ ] TRAFFIC
[ ] PLANNING
[ ] LANDSCAPE
[ ] OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
SWPPP NOTES
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

TODD R. WHIPPLE — STATE OF WASHINGTON — 25462 — REGISTERED PROFESSIONAL ENGINEER
08/19/25

SHEET C2.1
JOB NUMBER 24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-FWDW\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

BMP C233: SILT FENCE

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE:

USE OF SILT FENCE REDUCES THE TRANSPORT OF COARSE SEDIMENT FROM A CONSTRUCTION SITE BY PROVIDING A TEMPORARY PHYSICAL BARRIER TO SEDIMENT AND REDUCING THE RUNOFF VELOCITIES OF OVERLAND FLOW. SEE FIGURE 7.3.20 OF THE EASTERN WASHINGTON STORMWATER MANUAL OR DETAIL BELOW FOR DETAILS ON SILT FENCE CONSTRUCTION.

CONDITIONS OF USE:

SILT FENCE MAY BE USED DOWNSLOPE OF ALL DISTURBED AREAS. SILT FENCE IS NOT INTENDED TO TREAT CONCENTRATED FLOWS, NOR IS IT INTENDED TO TREAT SUBSTANTIAL AMOUNTS OF OVERLAND FLOW. ANY CONCENTRATED FLOWS MUST BE CONVEYED THROUGH THE DRAINAGE SYSTEM TO A SEDIMENT POND. THE ONLY CIRCUMSTANCE IN WHICH OVERLAND FLOW CAN BE TREATED SOLELY BY A SILT FENCE, RATHER THAT BY A SEDIMENT POND, IS WHEN THE AREA DRAINING TO THE FENCE IS ONE ACRE OR LESS AND FLOW RATES ARE LESS THAN 0.5 CFS.

SILT FENCES SHOULD NOT BE CONSTRUCTED IN STREAMS OR USED IN V-SHAPED DITCHES. THEY ARE NOT AN ADEQUATE METHOD OF SILT CONTROL FOR ANYTHING DEEPER THAT SHEET OR OVERLAND FLOW.

DESIGN AND INSTALLATION:

DRAINAGE AREA OF 1 ACRE OR LESS OR IN COMBINATION WITH SEDIMENT BASIN IN A LARGER SITE.

MAXIMUM SLOPE STEEPNESS (NORMAL OR PERPENDICULAR TO FENCE LINE) 1:1.

MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE OF 100 FEET.

NO FLOWS GREATER THAN 0.5 CFS.

THE GEOTEXTILE USED SHALL MEET THE FOLLOWING STANDARDS. ALL GEOTEXTILE PROPERTIES LISTED BELOW ARE MINIMUM AVERAGE ROLL VALUES.

POLYMETRIC MESH AOS (ASTM D4751)	0.60MM MAX. FOR SLIT WOVENS (#30 SIEVE). 0.30MM MAX. FOR ALL OTHER GEOTEXTILE TYPES (#50 SIEVE). 0.15MM MAX. FOR ALL FABRIC TYPES (#100 SIEVE).
WATER PERMITTIVITY (ASTM D4491)	0.02/SEC MIN.
GRAB TENSILE STRENGTH (ASTM D4632)	180 LBS. MIN. FOR EXTRA STRENGTH FABRIC. 100 LBS. MIN. FOR STANDARD STRENGTH FABRIC
GRAB TENSILE ELONGATION (ASTM D4632)	30% MAX,
ULTRAVIOLET RESISTANCE (ASTM D4335)	70% MIN.

STANDARD STRENGTH FABRICS SHALL BE SUPPORTED WITH WIRE MESH, CHICKEN WIRE, 2-INCH X 2-INCH, SAFETY FENCE, OR JUST MESH TO INCREASE THE STRENGTH OF FABRIC. SILT FENCE MATERIALS ARE AVAILABLE THAT HAVE SYNTHETIC MESH BACKING ATTACHED.

FILTER FABRIC MATERIAL SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F. TO 120°F.

100 PERCENT BIODEGRADABLE SILT FENCE IS AVAILABLE THAT IS STRONG, LONG LASTING, AND CAN BE LEFT IN PLACE AFTER THE PROJECT IS COMPLETED, IF PERMITTED BY LOCAL REGULATIONS.

CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SILT FENCES AT THE LOCATIONS SHOWN IN THE PLANS. THE SILT FENCE SHALL BE CONSTRUCTED IN THE AREAS OF CLEARING, GRADING, OR DRAINAGE PRIOR TO STARTING THOSE ACTIVITIES. A SILT FENCE SHALL NOT BE CONSIDERED TEMPORARY IF THE SILT FENCE MUST OPERATE BEYOND THE LENGTH OF THE CONTRACT. THE SILT FENCE SHALL PREVENT SOIL CARRIED BY RUNOFF WATER FROM GOING BENEATH, THROUGH, OR OVER THE TOP OF THE SILT FENCE, BUT SHALL ALLOW WATER TO PASS THROUGH THE FENCE.

THE MINIMUM HEIGHT OF THE TOP OF SILT FENCE SHALL BE 2 FEET AND THE MAXIMUM SHALL BE 2.5 FEET ABOVE THE ORIGINAL GROUND SURFACE.

DESIGN AND INSTALLATION (CONTINUED):

THE GEOTEXTILE SHALL BE SEWN TOGETHER AT THE POINT OF MANUFACTURE, OR AT AN APPROVED LOCATION AS DETERMINED BY THE ENGINEER, TO FORM GEOTEXTILE LENGTHS AS REQUIRED. ALL SEWN SEAMS SHALL BE LOCATED AT A SUPPORT POST. ALTERNATIVELY, TWO SECTIONS OF SILT FENCE CAN BE OVERLAPPED, PROVIDED THE CONTRACTOR CAN DEMONSTRATE, TO THE SATISFACTION OF THE ENGINEER, THAT THE OVERLAP IS LONG ENOUGH AND THAT THE ADJACENT FENCE SECTIONS ARE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

THE GEOTEXTILE SHALL BE ATTACHED ON THE UP-SLOPE SIDE OF THE POSTS AND SUPPORT SYSTEM WITH STAPLES, WIRE, OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE GEOTEXTILE SHALL BE ATTACHED IN A MANNER THAT REDUCES THE POTENTIAL FOR GEOTEXTILE TEARING AT THE STAPLES, WIRE, OR OTHER CONNECTION DEVICE. SILT FENCE BACKUP SUPPORT FOR THE GEOTEXTILE IN THE FORM OF A WIRE OF PLASTIC MESH IS DEPENDENT ON THE PROPERTIES OF THE GEOTEXTILE SELECTED FOR SUE. IF WIRE OR PLASTIC BACK-UP MESH IS USED, THE MESH SHALL BE FASTENED SECURELY TO THE UP-SLOPE OF THE POSTS WITH THE GEOTEXTILE BEING UP-SLOPE OF THE MESH BACK SUPPORT.

THE GEOTEXTILE AT THE BOTTOM OF THE FENCE HALL BE BURIED IN A TRENCH TO A MINIMUM DEPTH OF 4" BELOW THE GROUND SURFACE. THE TRENCH SHALL BE BACKFILLED AND THE SOIL TAMPED IN PLACE OVER THE BURIED PORTION OF THE GEOTEXTILE, SUCH THAT NO FLOW CAN PASS BENEATH THE FENCE AND SCOURING CAN NOT OCCUR. WHEN WIRE OR POLYMETRIC BACK-UP SUPPORT MESH IS USED, THE WIRE OR POLYMERIC MESH SHALL EXTEND INTO THE TRENCH A MINIMUM OF 3".

THE FENCE POSTS SHALL BE PLACED OR DRIVEN A MIN. OF 18". A MIN. DEPTH OF 12" IS ALLOWED IF TOPSOIL OR OTHER SOFT SUBGRADE SOIL IS NOT PRESENT AND A MIN. DEPTH OF 18" CANNOT BE REACHED. FENCE POST DEPTHS SHALL BE INCREASED 6' IF THE FENCE IS LOCATED ON SLOPES PF 3;1 OR STEEPER AND THE SLOPE IS PERPENDICULAR TO THE FENCE. IF REQUIRED POST DEPTHS CANNOT BE OBTAINED, THE POSTS SHALL BE ADEQUATELY SECURED BY BRACING OR GUYING TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT LOADING.

SILT FENCES SHALL BE LOCATED ON CONTOUR AS MUCH AS POSSIBLE, EXCEPT AT THE ENDS OF THE FENCE, WHERE THE FENCE SHALL BE TURNED UPHILL SUCH THAT THE SILT FENCE CAPTURES THE RUNOFF WATER AND PREVENTS WATER FROM FLOWING AROUND THE END OF THE FENCE.

IF THE FENCE MUST CROSS CONTOURS, WITH THE EXCEPTION OF THE END OF THE FENCE, GRAVEL CHECK DAMS PLACED PERPENDICULAR TO THE BACK OF THE FENCE SHALL BE USED TO MINIMIZE CONCENTRATED FLOW AND EROSION ALONG THE BACK OF THE FENCE. THE GRAVEL CHECK DAMS SHALL BE APPROXIMATELY 1' DEEP AT THE BACK OF THE FENCE. IT SHALL BE CONTINUED PERPENDICULAR TO THE FENCE AT THE SAME ELEVATION UNTIL THE TOP OF THE CHECK DAM INTERCEPTS THE GROUND SURFACE BEHIND THE FENCE. THE GRAVEL CHECK DAMS SHALL CONSIST OF CRUSHED SURFACING TOP COURSE, GRAVEL BACKFILL FOR WALLS, OR SHOULDER BALLAST. THE GRAVEL CHECK DAMS SHALL BE LOCATED EVERY 10' ALONG THE FENCE WHERE THE FENCE MUST CROSS THE CONTOURS. THE SLOPE OF THE FENCE LINE WHERE THE CONTOURS MUST BE CROSSED SHALL NOT BE STEEPER THAN 3:1

WOOD, STEEL OR EQUIVALENT POSTS SHALL BE USED. WOOD POSTS SHALL HAVE MINIMUM DIMENSIONS OF 2"X2"X3' MIN. LENGTH, AND SHALL BE FREE OF DEFECTS SUCH AS KNOTS, SPLITS, OR GOUGES. STEEL POSTS SHALL CONSIST OF EITHER SIZE NO. 6 REBAR OR LARGER, ASTM A 120 STEEL PIPE WITH A MIN. DIAMETER. OR 1-INCH, U, T, L, OR C SHAPE STEEL POSTS WITH A MIN. WEIGHT OF 1.35 LBS./FT. OR OTHER STEEL POSTS HAVING EQUIVALENT STRENGTH AND BENDING RESISTANCE TO THE POST SIZES LISTED. THE SPACING OF THE SUPPORTS POSTS SHALL BE A MAXIMUM OR 6'.

FENCE BACK-UP SUPPORT, IF USED, SHALL CONSIST OF STEEL WIRE WITH A MAX. MESH SPACING OF 2', OR A PREFABRICATED POLYMERIC MESH. THE STRENGTH OF WIRE ON POLYMERIC MESH SHALL BE EQUIVALENT TO OR GREATER THAT 180 LBS. GRAB TENSILE STRENGTH. THE POLYMERIC MESH MUST BE AS RESISTANT TO ULTRAVIOLET. RADIATION AS THE GEOTEXTILE IT SUPPORTS.

SILT FENCE INSTALLATION USING THE SLICING METHOD SPECIFICATION DETAILS FOLLOW.

THE BASE OF BOTH END POSTS MUST BE AT LEAST 2-4"ABOVE THE TOP OF THE SILT FENCE FABRIC ON THE MIDDLE POSTS FOR DITCH CHECKS TO DRAIN PROPERLY. USE A HAND LEVEL OR STRING LEVEL, IF NECESSARY, TO MARK BASE POINTS BEFORE INSTALLATION.

INSTALL POSTS 3-4' APART IN CRITICAL RETENTION AREAS. AND 6-7' APART IN STANDARD APPLICATIONS.

INSTALL POSTS 24" DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC. ENABLING POSTS TO SUPPORT THE FABRIC FROM THE UPSTREAM WATER PRESSURE.

INSTALL POSTS WITH NIPPLES FACING AWAY FROM THE SILT FENCE FABRIC.

ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITH THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART, IN ADDITION, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENING TO PREVENT SAGGING.

WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.

NO MORE THEN 24" OF A 36" FABRIC IS ALLOWED ABOVE GROUND LEVEL.

THE ROPE LOCK SYSTEM MUST BE USED IN ALL DITCH CHECK APPLICATIONS.

THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATION BEFORE COMPACTION. USE A FLAT-BLADED SHOVEL TO TUCK FABRIC DEEPER INTO THE GROUND IF NECESSARY.

COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE WITH THE FRONT WHEEL OF A TRACTOR, SKID STEER, OR ROLLER EXERTING 60 PSI, COMPACT THE UPSTREAM SIDE FIRST AND THEN EACH SIDE TWICE FOR A TOTAL OF FOUR TRIPS

MAINTENANCE STANDARDS:

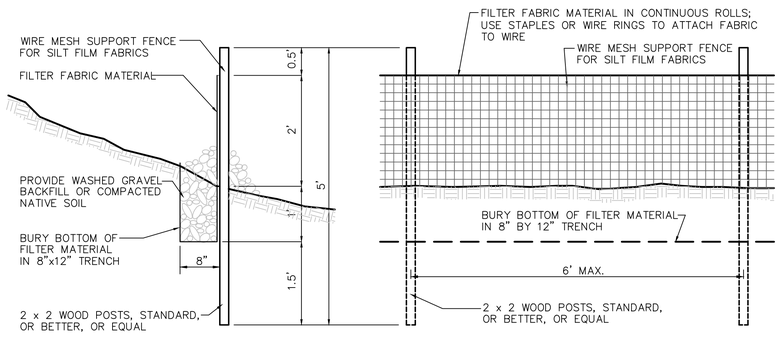
ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.

IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.

IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF THE FLOWS PARALLEL TO THE FENCE, IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.

SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE INSTALLED.

IF THE FILTER FABRIC OR GEOTEXTILE HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.



SILT FENCE DETAIL 1

NOT TO SCALE

BMP C105: STABILIZED CONSTRUCTION ENTRANCE

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE:

CONSTRUCTION ENTRANCES ARE STABILIZED TO REDUCE THE AMOUNT OF SEDIMENT TRANSPORTED ONTO PAVED ROADS BY VEHICLES OR EQUIPMENT BY CONSTRUCTING A STABILIZED PAD OF QUARRY SPALLS AT ENTRANCES TO CONSTRUCTION SITES.

CONDITIONS OF USE:

CONSTRUCTION ENTRANCES SHALL BE STABILIZED WHEREVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND TRAVELING ON PAVED ROADS OR OTHER PAVED AREAS WITHIN 1,000 FEET OF THE SITE.

ON LARGE COMMERCIAL, HIGHWAY, AND ROAD PROJECTS, THE DESIGNER AND OR CONTRACTOR SHOULD INCLUDE ENOUGH MATERIALS IN THE CONTRACT TO ALLOW FOR ADDITIONAL STABILIZED ENTRANCES NOT SHOWN IN THE INITIAL CONSTRUCTION SWPPP. IT IS DIFFICULT TO DETERMINE EXACTLY WHERE ACCESS TO THESE PROJECTS WILL TAKE PLACE; ADDITIONAL MATERIALS WILL ENABLE THE CONTRACTOR TO INSTALL THEM WHERE NEEDED.

DESIGN AND INSTALLATION:

SEE FIGURE 7.3.2 OF THE EASTERN WATER STORMWATER MANAGEMENT MANUAL OR DETAIL BELOW.

THE SURFACE MATERIAL SHALL BE 4"-8" QUARRY SPALLS. SMALLER CRUSHED ROCK SUCH AS BASE COURSE MAY BE APPROPRIATE IN SOME SITUATIONS BUT, SINCE IT IS MORE LIKELY TO BE TRACKED OFF-SITE, MUST BE APPROVED BY THE LOCAL JURISDICTION.

A SEPARATION GEOTEXTILE SHALL BE PLACED UNDER THE SPALLS TO PREVENT FINE SEDIMENT FROM PUMPING UP INTO THE ROCK PAD. THE GEOTEXTILE SHALL MEET THE FOLLOWING STANDARDS:

GRAB TENSILE STRENGTH (ASTM D4751)	200 PSI MIN.
GRAB TENSILE ELONGATION (ASTM D4632)	30% MAX.
MULLEN BURST STRENGTH (ASTM D3786-80A)	400 PSI MIN.
AOS (ASTM D4751)	20-45 (U.S. STANDARD SIEVE SIZE)

IF SITE CONDITIONS DO NOT WARRANT THE USE OF GEOTEXTILE, IT IS NOT REQUIRED.

MAINTENANCE STANDARDS:

IF QUARRY SPALLS (OR HOG FUEL) SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.

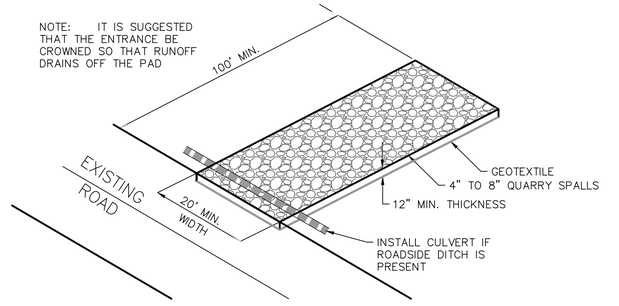
IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.

ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED BY SHOVELING OR STREET SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS. THE CONSTRUCTION OF A SMALL SUMP SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP WHERE IT CAN BE CONTROLLED.

ANY QUARRY SPALLS THAT ARE LOOSENED FROM THE PAD, WHICH END UP ON THE ROADWAY SHALL BE REMOVED IMMEDIATELY.

IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTRANCE(S), FENCING (SEE BMPS C103 AND C104) SHALL BE INSTALLED TO CONTROL TRAFFIC.

UPON PROJECT COMPLETION AND SITE STABILIZATION, ALL CONSTRUCTION ACCESSES INTENDED AS PERMANENT ACCESS FOR MAINTENANCE SHALL BE PERMANENTLY STABILIZED.



ROCK CONSTRUCTION ENTRY 2

NOT TO SCALE

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

TODD R. WHIPPLE — STATE OF WASHINGTON — 25462 — REGISTERED PROFESSIONAL ENGINEER
08/19/25

LEGACY PHASE 'F' MASS GRADING
SWPPP BMPs
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET C2.2

JOB NUMBER 24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

BMP C220: STORM DRAIN INLET PROTECTION

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE:

TO PREVENT COARSE SEDIMENT FROM ENTERING DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA

CONDITIONS OF USE:

WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF THE DISTURBED DRAINAGE AREA. PROTECTION SHOULD BE PROVIDED FOR ALL STORM DRAIN INLETS DOWNSLOPE AND WITHIN 500 FEET OF A DISTURBED OR CONSTRUCTION AREA, UNLESS THE RUNOFF THAT ENTERS THE CATCH BASIN WILL BE CONVEYED TO A SEDIMENT POND OR TRAP. INLET PROTECTION MAY BE USED ANYWHERE TO PROTECT THE DRAINAGE SYSTEM. IT IS LIKELY THAT THE DRAINAGE SYSTEM WILL REQUIRE CLEANING.

TABLE 7.3.9 (IN THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL) LISTS SEVERAL OPTIONS FOR INLET PROTECTION. ALL OF THE METHODS FOR STORM DRAIN INLET PROTECTION ARE PRONE TO PLUGGING AND REQUIRE A HIGH FREQUENCY OF MAINTENANCE. DRAINAGE AREAS SHOULD BE LIMITED TO 1 ACRE OR LESS. EMERGENCY OVERFLOWS MAY BE REQUIRED WHERE STORMWATER PONDING WOULD CAUSE A HAZARD. IF AN EMERGENCY OVERFLOW IS PROVIDED, ADDITIONAL END-OF-PIPE TREATMENT MAY BE REQUIRED.

DESIGN AND INSTALLATION:

EXCAVATED DROP INLET PROTECTION – AN EXCAVATED IMPOUNDMENT AROUND THE STORM DRAIN. SEDIMENT SETTLES OUT OF THE STORMWATER PRIOR TO ENTERING THE STORM DRAIN.

- DEPTH 1-2 FT AS MEASURED FROM THE CREST OF THE INLET STRUCTURE.
- SIDE SLOPES OF EXCAVATION NO STEEPER THAT 2:1
- MINIMUM VOLUME OF EXCAVATION 35 CUBIC YARDS
- SHAPE THE BASIN TO FIT THE SITE WITH THE LONGEST DIMENSION ORIENTED TOWARD THE LONGEST INFLOW AREA.
- INSTALL PROVISIONS FOR DRAINING TO PREVENT STANDING WATER PROBLEMS.
- CLEAR THE AREA OF ALL DEBRIS.
- GRADE THE APPROACH TO THE INLET UNIFORMLY.
- DRILL WEEP HOLES INTO THE SIDES OF THE INLET.
- PROTECT WEEP HOLES WITH SCREEN WIRE AND WASHED AGGREGATE.
- SEAL WEEP HOLES WHEN REMOVING STRUCTURE AND STABILIZING AREA.
- IT MAY BE NECESSARY TO BUILD A TEMPORARY DIKE TO THE DOWN SLOPE STRUCTURE TO PREVENT BYPASS FLOW.

BLOCK AND GRAVEL FILTER – A BARRIER FORMED AROUND THE STORM DRAIN INLET WITH STANDARD CONCRETE BLOCKS AND GRAVEL. SEE FIGURE 4.15 IN THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

- HEIGHT 1-2 FT ABOVE THE INLET.
- RECESS THE FIRST ROW 2" INTO THE GROUND FOR STABILITY.
- SUPPORT SUBSEQUENT COURSES BY PLACING A 2X4 THROUGH THE BLOCK OPENING.
- DO NOT USE MORTAR.
- LAY SOME BLOCKS IN THE BOTTOM ROW ON THEIR SIDE FOR DEWATERING THE POOL.
- PLACE HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS OVER ALL BLOCK OPENINGS.
- PLACE GRAVEL JUST BELOW THE TOP OF BLOCKS ON SLOPES 2:1 OR FLATTER.
- AN ALTERNATIVE DESIGN IN A GRAVEL DONUT.
- INLET SLOPE OF 3:1.
- OUTLET SLOPE OF 2:1.
- 1-FOOT WIDE LEVEL STONE AREA BETWEEN THE STRUCTURE AND THE INLET.
- INLET SLOPES STONES 3" IN DIAMETER OR LARGER.
- OUTLET SLOPE USE GRAVEL 1/2" TO 3/4" AT A MINIMUM THICKNESS OF 1 FOOT.

GRAVEL AND WIRE MESH INLET – A GRAVEL BARRIER PLACED OVER TOP OF THE INLET. THIS STRUCTURE DOES NOT PROVIDE AND OVERFLOW

- HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS.
- COARSE AGGREGATE.
- HEIGHT 1-FOOT OR MORE, 18" WIDER THAN INLET ON ALL SIDES.
- PLACE WIRE MESS OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1-FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE,
- IF MORE THAN ONE STRIP OF MESH IN NECESSARY, OVERLAP THE STRIPS.
- PLACE COARSE AGGREGATE OVER THE WIRE MESH.
- THE DEPTH OF THE GRAVEL SHOULD BE AT LEAST 12" OVER THE ENTIRE INLET OPENING AND EXTEND AT LEAST 18" ON ALL SIDES.

DESIGN AND INSTALLATION: CONTINUED

CATCH BASIN FILTERS – INSERTS SHOULD BE DESIGNED BY THE MANUFACTURER FOR USE AT CONSTRUCTION SITES. THE LIMITED SEDIMENT STORAGE CAPACITY INCREASES THE AMOUNT OF INSPECTION AND MAINTENANCE REQUIRED, WHICH MAY BE DAILY FOR HEAVY SEDIMENT LOADS. THE MAINTENANCE REQUIREMENTS CAB BE REDUCED BY COMBINING A CATCH BASIN FILTER WITH ANOTHER TYPE OF INLET PROTECTION. THIS TYPE OF INLET PROTECTION PROVIDES FLOW BYPASS WITHOUT OVERFLOW AND THEREFORE MAY BE A BETTER METHOD FOR INLETS LOCATED ALONG ACTIVE RIGHTS-OF-WAY.

- 5 CUBIC FEET OF STORAGE
- DEWATERING PROVISIONS
- HIGH-FLOW BYPASS THAT WILL NOT CLOG UNDER NORMAL USE AT A CONSTRUCTION SITE.
- THE CATCH BASIN FILTER IS INSERTED IN THE CATCH BASIN JUST BELOW THE GRATING.

CURB INLET PROTECTION WITH WOODED WEIR – BARRIER FORMED AROUND CURB INLET WITH A WOODEN FRAME AND GRAVEL.

- WIRE MESH WITH 1/2" OPENINGS.
- EXTRA STRENGTH FILTER FABRIC TO THE FRAME.
- PILE COARSE WASHED AGGREGATE AGAINST THE WIRE/FABRIC.
- PLACE WEIGHT ON FRAME ANCHORS.

BLOCK AND GRAVEL CURB INLET PROTECTION – BARRIER FORMED AROUND AN INLET WITH CONCRETE BLOCKS AND GRAVEL. SEE FIGURE 7.3.16 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

- WIRE MESH WITH 1/2" OPENINGS.
- PLACE 2 CONCRETE BLOCKS ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING. THESE ARE SPACER BLOCKS.
- PLACE A 2X4 STUD THROUGH THE OUT HOLES OF EACH SPACER BLOCK TO ALIGN THE FRONT BLOCKS.
- PLACE BLOCKS ON THEIR SIDES ACROSS THE FRONT OF THE INLET AND ABUTTING THE SPACER BLOCKS.
- PLACE WIRE MESH OVER THE OUTSIDE VERTICAL FACE.
- PILE COARSE AGGREGATE AGAINST THE WIRE TO THE TOP OF THE BARRIER.

CURB AND GUTTER SEDIMENT BARRIER – SANDBAG OR ROCK BERM (RIPRAP AND AGGREGATE) 3 FEET HIGH AND 3 FEET WIDE IN A HORSESHOE SHAPE. SEE FIGURE 7.3.17 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

- CONSTRUCT HORSESHOE SHAPED BERM, FACED WITH COARSE AGGREGATE IF USING RIPRAP, 3 FEET HIGH AND 3 FEET WIDE, AT LEAST 2 FEET FROM THE INLET.
- CONSTRUCT A HORSESHOE SHAPED SEDIMENTATION TRAP ON THE OUTSIDE OF THE BERM SIZED TO SEDIMENT TRAP STANDARDS FOR PROTECTING A CULVERT INLET.

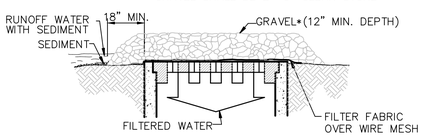
MAINTENANCE STANDARDS:

CATCH BASIN FILTERS SHOULD BE INSPECTED FREQUENTLY, ESPECIALLY AFTER STORM EVENTS. IF THE INSERT BECOMES CLOGGED, IT SHOULD BE CLEANED OR REPLACED.

FOR SYSTEMS USING STONE FILTERS: IF THE STONE FILTER BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY FROM THE INLET AND CLEANED OR REPLACED. SINCE CLEANING OF GRAVEL AT A CONSTRUCTION SITE MAY BE DIFFICULT, AN ALTERNATIVE APPROACH WOULD BE USED TO USE THE CLOGGED STONES FILL AND PUT FRESH STONE AROUND THE INLET.

DO NOT WASH SEDIMENT INTO STORM DRAINS WHILE CLEANING. SPREAD ALL EXCAVATED MATERIAL EVENLY OVER THE SURROUNDING LAND AREA OR STOCKPILE AND STABILIZE AS APPROPRIATE.

* GRAVEL SHALL BE 2"-3" CLEAN STONE



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED ACRES.

GRAVEL AND WIRE MESH INLET SEDIMENT FILTER

NOT TO SCALE

③

BMP C140: DUST CONTROL

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE:

DUST CONTROL PREVENTS WIND TRANSPORT OF DUST FROM DISTURBED SOIL SURFACES ONTO ROADWAYS, DRAINAGE WAYS, AND SURFACE WATERS. WIND EROSION IS A SIGNIFICANT CAUSE OF SOIL MOVEMENT FROM CONSTRUCTION SITES IN EASTERN WASHINGTON. ALTHOUGH WIND EROSION CAN CONTRIBUTE TO WATER QUALITY IMPACTS, DUST CONTROL IS REGULATED IN SOME AREAS OF EASTERN WASHINGTON PRIMARILY THROUGH LOCAL AIR QUALITY AUTHORITIES. WHERE SUCH AN ENTITY EXISTS, CONTACT THE LOCAL AIR QUALITY AUTHORITY FOR APPROPRIATE AND REQUIRED BMPS FOR DUST CONTROL TO IMPLEMENT AT YOUR PROJECT SITE.

CONDITIONS OF USE:

IN AREAS (INCLUDING ROADWAYS) SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON-SITE AND OFF-SITE IMPACTS TO ROADWAYS, DRAINAGE WAYS, OR SURFACE WATERS ARE LIKELY.

DESIGN AND INSTALLATION:

CONTACT YOUR LOCAL AIR POLLUTION CONTROL AUTHORITY FOR GUIDANCE AND TRAINING ON OTHER DUST CONTROL MEASURES. COMPLIANCE WITH THE LOCAL AIR POLLUTION CONTROL AUTHORITY CONSTITUTES COMPLIANCE WITH THIS BMP.

WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.

SEE ALSO "TECHNIQUES FOR DUST PREVENTION AND SUPPRESSION," ECOLOGY PUBLICATION NUMBER 96-433, REVISED APRIL 2002.

TECHNIQUES THAT CAN BE USED FOR CONSTRUCTION PROJECTS INCLUDE:

VEGETATE OR MULCH AREAS THAT WILL NOT RECEIVE VEHICLE TRAFFIC. IN AREAS WHERE PLANTING, MULCHING, OR PAVING IS IMPRACTICAL, APPLY GRAVEL OR LANDSCAPING ROCK.

LIMIT DUST GENERATION BY CLEARING ONLY THOSE AREAS WHERE IMMEDIATE ACTIVITY WILL TAKE PLACE, LEAVING THE REMAINDER AREA(S) IN THE ORIGINAL CONDITION, IF STABLE. MAINTAIN THE ORIGINAL GROUND COVER AS LONG AS PRACTICAL.

CONSTRUCT NATURAL OR ARTIFICIAL WINDBREAKS OR WINDSCREENS. THESE MAY BE DESIGNED AS ENCLOSURES FOR SMALL DUST SOURCES.

SPRINKLE THE SITE WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED. TO PREVENT CARRYOUT OF MUD ONTO STREET, REFER TO STABILIZED CONSTRUCTION ENTRANCE (BMP C105).

IRRIGATION WATER CAN BE USED FOR DUST CONTROL. IRRIGATION SYSTEMS SHOULD BE INSTALLED AS A FIRST STEP ON SITES WHERE DUST CONTROL IS A CONCERN.

SPRAY EXPOSED SOIL AREAS WITH A DUST PALLIATIVE, FOLLOWING THE MANUFACTURER'S INSTRUCTIONS AND CAUTIONS REGARDING HANDLING AND APPLICATION. USED OIL IS PROHIBITED FROM USE AS A DUST SUPPRESSANT. LOCAL GOVERNMENTS MAY APPROVE OTHER DUST PALLIATIVES SUCH AS CALCIUM CHLORIDE OR PAM.

PAM (BMPC126) ADDED TO WATER AT A RATE OF 0.5LBS PER 1,000 GALLONS OF WATER PER ACRE AND APPLIED FROM A WATER TRUCK IS MORE EFFECTIVE THAT WATER ALONE. THE IS DUE TO THE INCREASED INFILTRATION OF WATER INTO THE SOIL AND REDUCED EVAPORATION. IN ADDITION, SMALL SOIL PARTICLES ARE BONDED TOGETHER AND ARE NOT AS EASILY TRANSPORTED BY WIND. ADDING PAM MAY ACTUALLY REDUCE THE QUANTITY OF WATER NEEDED FOR DUST CONTROL, ESPECIALLY IN EASTERN WASHINGTON. SINCE THE WHOLESALE COST OF PAM IS ABOUT $4.00 PER POUND, THIS IS AN EXTREMELY COST-EFFECTIVE DUST CONTROL METHOD.

TECHNIQUES THAT CAN BE USED FOR UNPAVED ROADS AND LOTS INCLUDE:

- LOWER SPEED LIMITS. HIGH VEHICLE SPEEDS INCREASES THE AMOUNT OF DUST STIRRED UP FROM UNPAVED ROADS AND LOTS.
- UPGRADE ROAD SURFACE STRENGTH BY IMPROVING PARTICLE SIZE, SHAPE, AND MINERAL TYPES THAT MAKE UP THE SURFACE AND BASE MATERIALS.
- ADD SURFACE GRAVEL TO REDUCE THE SOURCE OF DUST EMISSION. LIMIT THE AMOUNT OF FINE PARTICLES (THOSE SMALLER THAN .075 MILLIMETERS) 10 TO 20 PERCENT.
- USE GEOTEXTILE FABRIC TO INCREASE THE STRENGTH OF NEW ROADS OR ROADS UNDERGOING RECONSTRUCTION.
- ENCOURAGE THE USE OF ALTERNATE, PAVED ROUTES, IF AVAILABLE.
- RESTRICT USE BY TRACKED VEHICLES AND HEAVY TRUCKS TO PREVENT DAMAGE TO ROAD SURFACE AND BASE.
- APPLY CHEMICAL DUST SUPPRESSANTS USING THE ADMIX METHOD, BLENDING THE PRODUCT WITH THE TOP FEW INCHES OF MATERIAL. SUPPRESSANTS MAY ALSO BE APPLIED AS SURFACE TREATMENTS.
- PAVE UNPAVED PERMANENT ROADS AND OTHER TRAFFICKED AREAS.
- USE VACUUM STREET SWEEPERS.
- REMOVED MUD AND OTHER DIRT PROMPTLY SO IT DOES NOT DRY AND THEN TURN INTO DUST.
- LIMIT DUST-CAUSEING WORK ON WINDY DAYS.

MAINTENANCE STANDARDS:

REPAY AREA AS NECESSARY TO KEEP DUST TO A MINIMUM. WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.

BMP C151: CONCRETE HANDLING

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE:

CONCRETE WORK CAN GENERATE PROCESS WATER AND SLURRY THAT CONTAIN FINE PARTICLES AND HIGH PH, BOTH OF WHICH CAN VIOLATE WATER QUALITY STANDARDS IN THE RECEIVING WATER. THIS BMP IS INTENDED TO MINIMIZE AND ELIMINATE CONCRETE PROCESS WATER AND SLURRY FROM ENTERING WATERS OF THE STATE.

CONDITIONS OF USE:

ANY TIME CONCRETE IS USED, THESE MANAGEMENT PRACTICES SHALL BE UTILIZED. CONCRETE CONSTRUCTION PROJECTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- CURBS
- SIDEWALKS
- ROADS
- BRIDGES
- FOUNDATIONS
- FLOORS
- RUNWAYS

DESIGN AND INSTALLATION:

CONCRETE TRUCK CHUTES, PUMPS, AND INTERNALS SHALL BE WASHED OUT ONLY INTO FORMED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT.

UNUSED CONCRETE REMAINING IN THE TRUCK AND PUMP SHALL BE RETURNED TO THE ORIGINATING BATCH PLANT FOR RECYCLING.

HAND TOOLS INCLUDING, BUT NOT LIMITED TO, SCREEDS, SHOVELS, RAKES, FLOATS, AND TROWELS SHALL BE WASHED OFF ONLY INTO FORMED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT.

EQUIPMENT THAT CANNOT BE EASILY MOVED, SUCH AS CONCRETE PAVERS, SHALL ONLY BE WASHED IN AREAS THAT DO NOT DIRECTLY DRAIN TO NATURAL OR CONSTRUCTED STORMWATER CONVEYANCES.

WASHDOWN FROM AREAS SUCH AS CONCRETE AGGREGATE DRIVEWAYS SHALL NOT DRAIN DIRECTLY TO NATURAL OR CONSTRUCTED STORMWATER CONVEYANCES.

WHEN NO FORMED AREAS ARE AVAILABLE, WASHWATER AND LEFTOVER PRODUCT SHALL BE CONTAINED IN A LINED CONTAINER. CONTAINED CONCRETE SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.

MAINTENANCE STANDARDS:

CONTAINERS SHALL BE CHECKED FOR HOLES IN THE LINER DAILY DURING CONCRETE POURS AND REPAIRED THE SAME DAY.

NAVD - 88

THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
SWPPP BMPs
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

TODD R. WHIPPLE STATE OF WASHINGTON 25462 REGISTERED PROFESSIONAL ENGINEER
08/19/25

SHEET C2.3

JOB NUMBER 24-3776

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

NE¼, SEC.21, T.25N., R.45E., W.M.

GRADING QUANTITIES

CUT: 322,435 CY
FILL: 372,552 CY

NET: 50,117 CY (FILL)

ABOVE QUANTITIES DOES NOT INCLUDE SHRINK/SWELL, OR IMPORTED MATERIAL.

N
W E
S

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

GRADING PLAN

SCALE: 1" = 100'

HAUL NOTE:

ALL EXCESS MATERIAL TO REMAIN ONSITE. NO HAUL OFF OF MATERIAL IS PROPOSED.

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE: 08/19/25

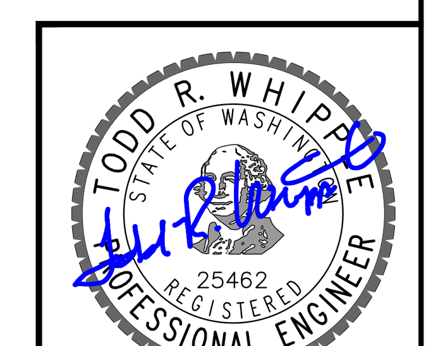
NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 100'
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227



08/19/25

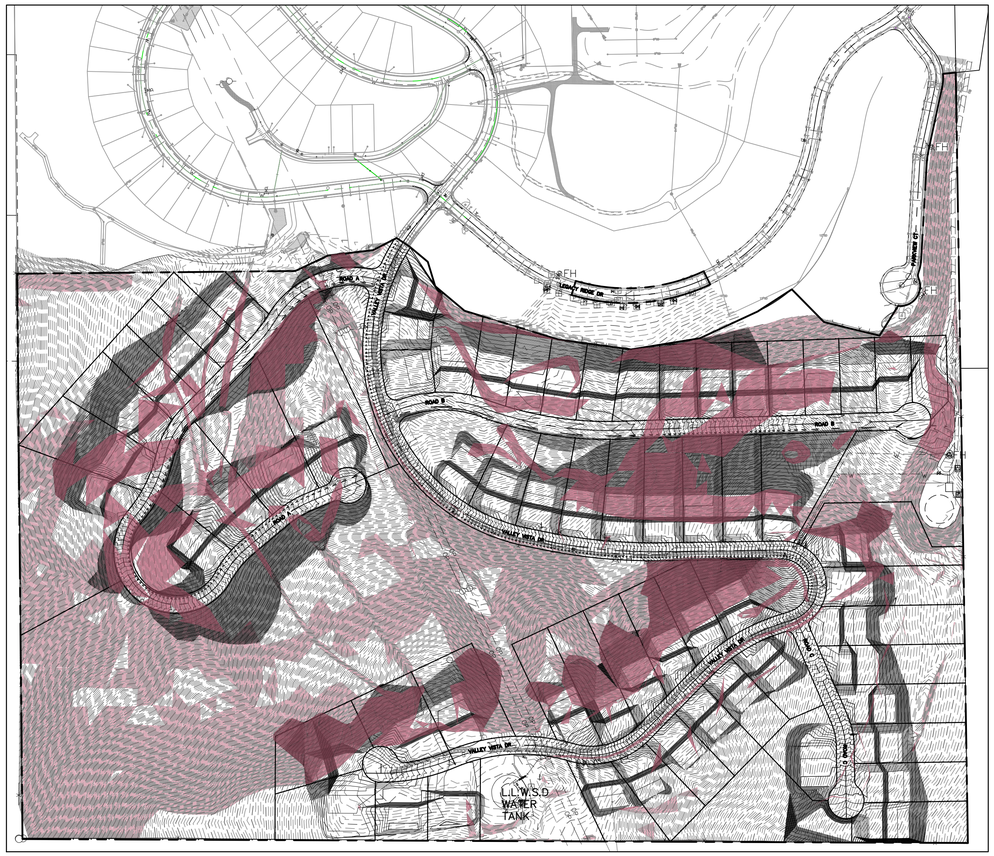
LEGACY PHASE 'F' MASS GRADING
GRADING PLAN
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET C4.0

JOB NUMBER 24-3776

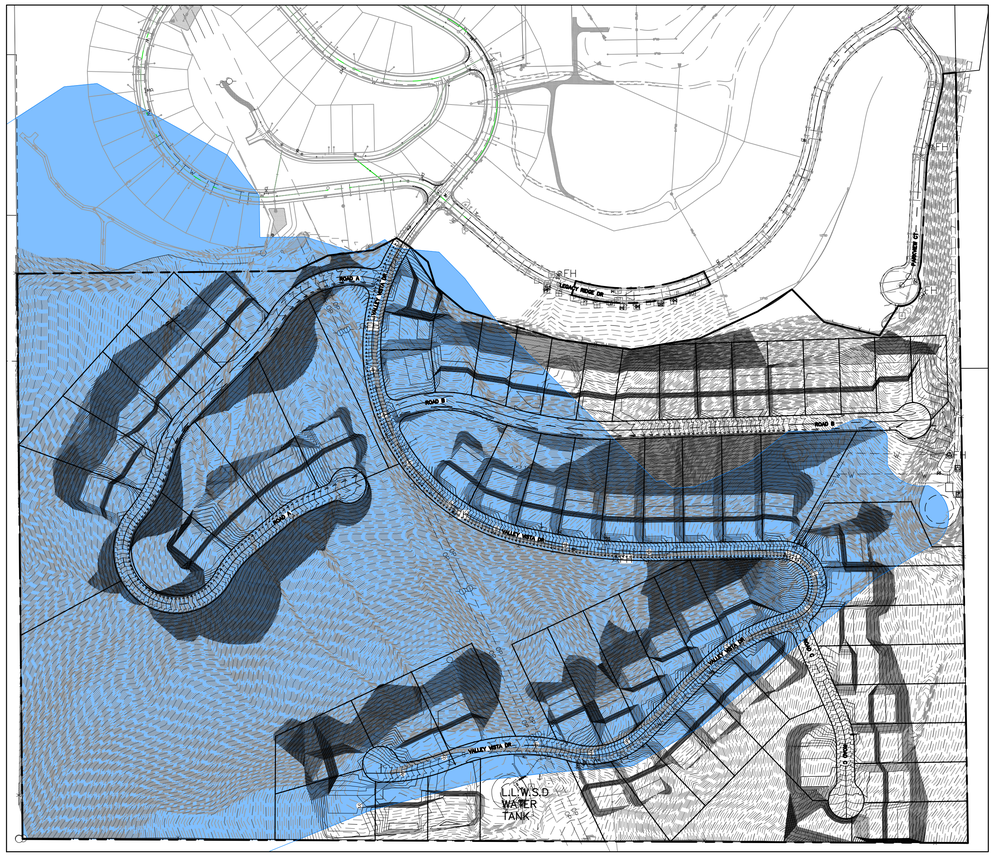
NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



STEEP SLOPES EXHIBIT

SCALE: 1" = 200'



ERODIBLE SOILS EXHIBIT

SCALE: 1" = 200'

N
W E
S

GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200 ft.

LEGEND

- AREA OF STEEP SLOPES, 30% OR GREATER
- ERODIBLE SOILS PER MAPSPOKANE ARCGIS.COM

GRADING DATA		
CUT (CY):	308,304	
FILL (CY):	342,882	
EXISTING AREA OF 30% SLOPES (SF/AC)	1,625,556	37.32
GRADING WITHIN EXISTING 30% SLOPES (SF/AC)	650,696	14.94
PROPOSED GRADING WITH 30% SLOPES (SF/AC)	885,710	20.33
INCREASE OF 30% SLOPE ONSITE	235,014	5.40
NET AREA OF 30% SLOPES ONSITE (SF/AC)	1,860,570	42.71
PROPOSED CUT WITHIN EX. 30% SLOPES (CY/%)	89,016	0.29
PROPOSED FILL WITHIN EX. 30% SLOPES (CY/%)	118,363	0.35

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 200'
VERTICAL: N/A

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: JPP
REVIEWED: TRW

- [X] CIVIL
- [ ] STRUCTURAL
- [ ] SURVEYING
- [ ] TRAFFIC
- [ ] PLANNING
- [ ] LANDSCAPE
- [ ] OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

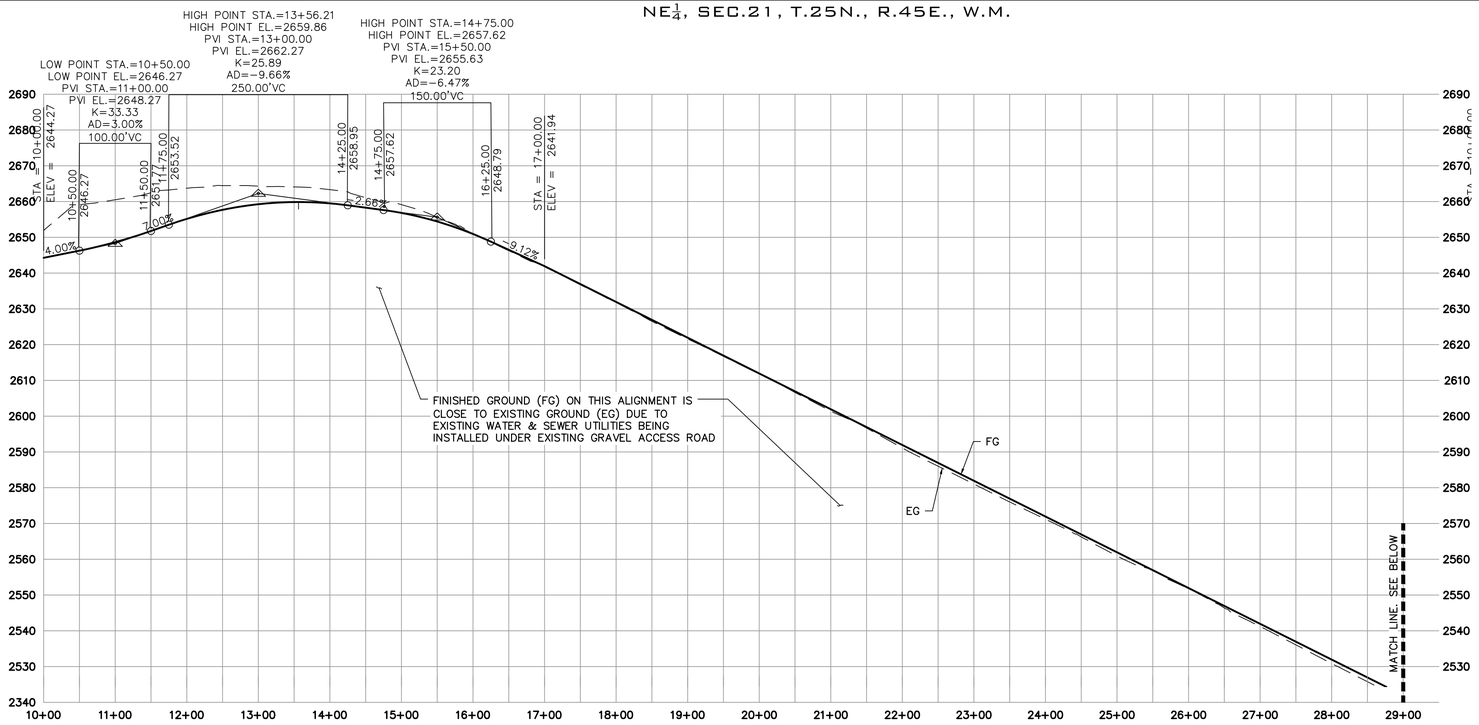
TODD R. WHIPPLE — STATE OF WASHINGTON — 25462 — REGISTERED PROFESSIONAL ENGINEER
08/19/25

LEGACY PHASE 'F' MASS GRADING
STEEP SLOPES & ERODIBLE SOILS MAP
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET C4.1
JOB NUMBER 24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.



FOR REFERENCE ONLY

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 100'
VERTICAL: 1" = 20'

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

TODD R. WHIPPLE
STATE OF WASHINGTON
25462
REGISTERED PROFESSIONAL ENGINEER
08/19/25

LEGACY PHASE 'F' MASS GRADING
VALLEY VISTA DRIVE PROFILE
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

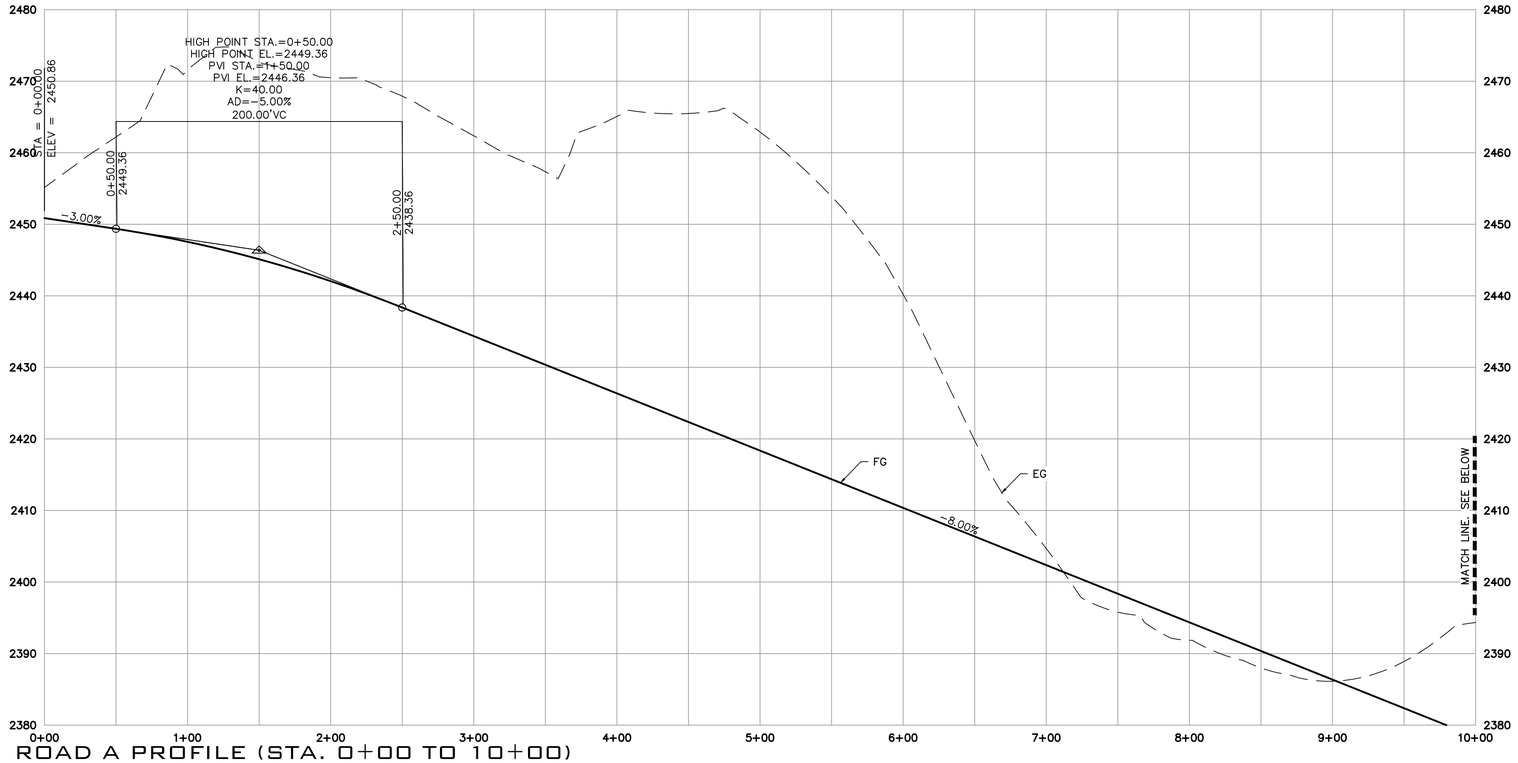
SHEET
C4.2

JOB NUMBER
24-3776

P:\WCE_WORK\2024_WCE_PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

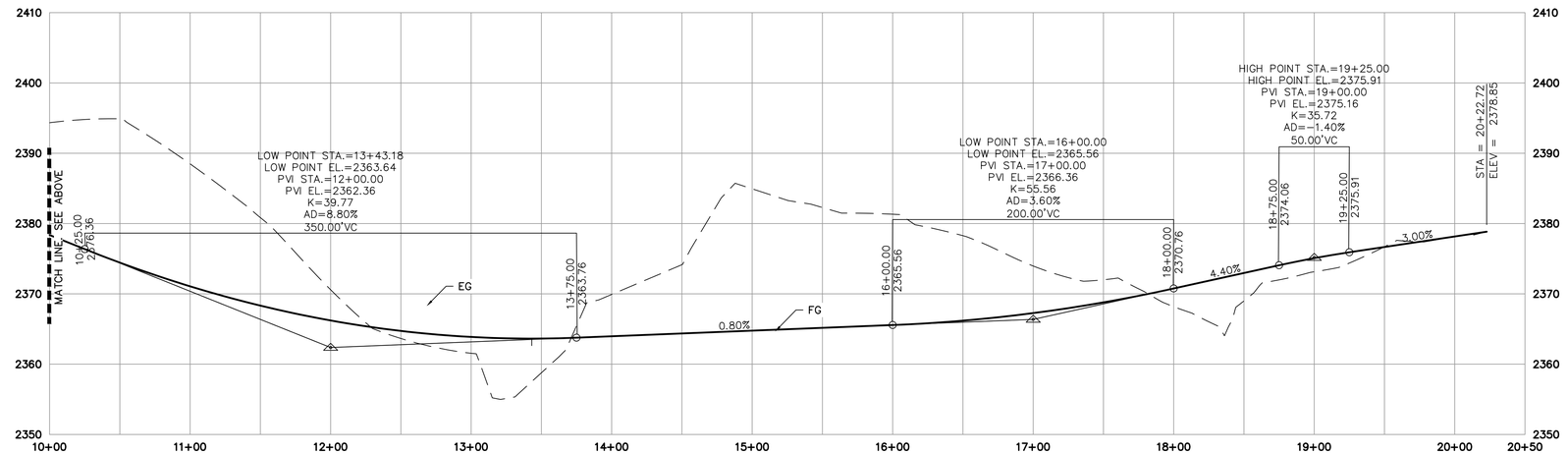
NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



ROAD A PROFILE (STA. 0+00 TO 10+00)

H SCALE: 1" = 50'
V SCALE: 1" = 10'



ROAD A PROFILE (STA. 10+00 TO 20+50)

H SCALE: 1" = 50'
V SCALE: 1" = 10'

FOR REFERENCE ONLY

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

TODD R. WHIPPLE
STATE OF WASHINGTON
25462
REGISTERED PROFESSIONAL ENGINEER
08/19/25

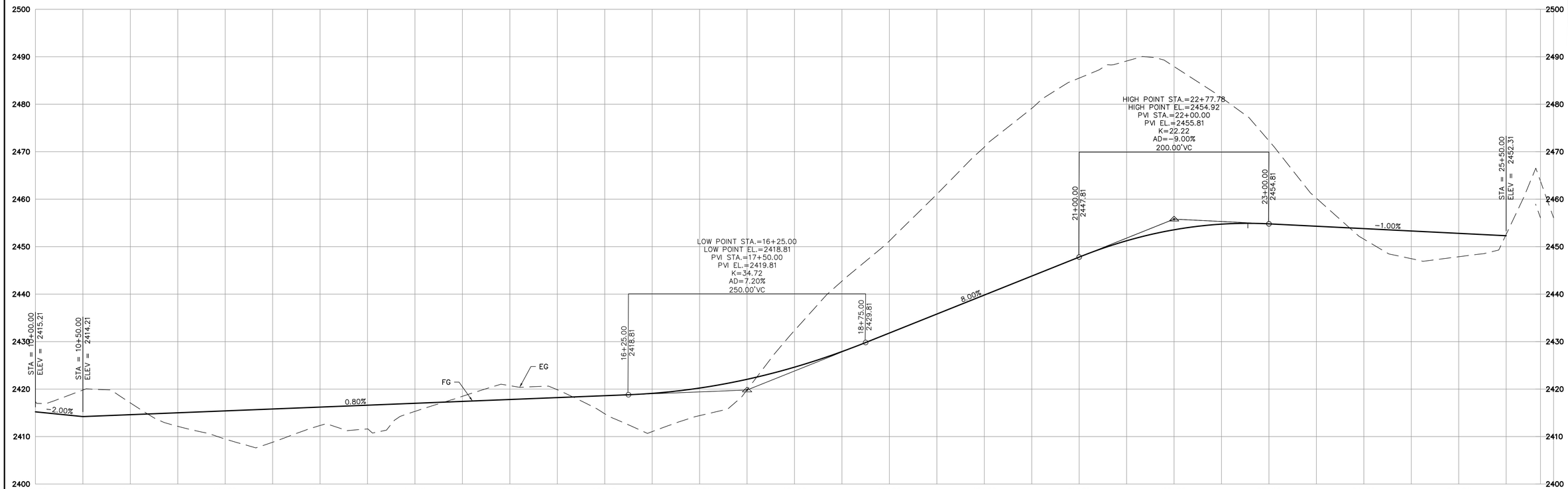
LEGACY PHASE 'F' MASS GRADING
ROAD A PROFILE
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET
C4.3

JOB NUMBER
24-3776

NE$\frac{1}{4}$, SEC.21, T.25N., R.45E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



ROAD B PROFILE

H SCALE: 1" = 50'
V SCALE: 1" = 10'

FOR REFERENCE ONLY

TODD R. WHIPPLE
STATE OF WASHINGTON
25462
REGISTERED
PROFESSIONAL ENGINEER
08/19/25

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

- [X] CIVIL
- [ ] STRUCTURAL
- [ ] SURVEYING
- [ ] TRAFFIC
- [ ] PLANNING
- [ ] LANDSCAPE
- [ ] OTHER

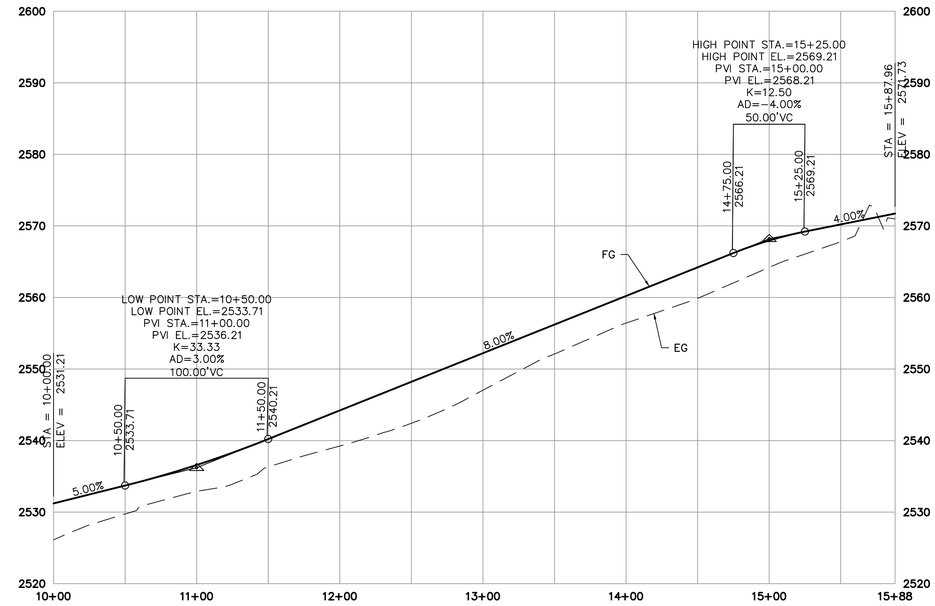
WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
ROAD B PROFILE
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET
C4.4

JOB NUMBER
24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25



ROAD C PROFILE

H SCALE: 1" = 50'
V SCALE: 1" = 10'

FOR REFERENCE ONLY

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET IN A CONCRETE MONUMENT AT GROUND LEVEL WITH AN ELEV. 2070.160 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
B	05/14/25	JPP	REVISION FOR R.U.E.
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 24-3776
DATE: 08/18/25
DRAWN: RMA
REVIEWED: TRW

- [X] CIVIL
- [ ] STRUCTURAL
- [ ] SURVEYING
- [ ] TRAFFIC
- [ ] PLANNING
- [ ] LANDSCAPE
- [ ] OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
ROAD C PROFILES
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

TODD R. WHIPPLE — STATE OF WASHINGTON — 25462 — REGISTERED PROFESSIONAL ENGINEER
08/19/25

SHEET
C4.5

JOB NUMBER
24-3776

P:\WCE_WORK\2024 WCE PROJECTS\2024-3776 KINNEY - LEGACY RIDGE-F\DWG\3776-MASS GRADING PLANS.DWG PLOT DATE:08/19/25