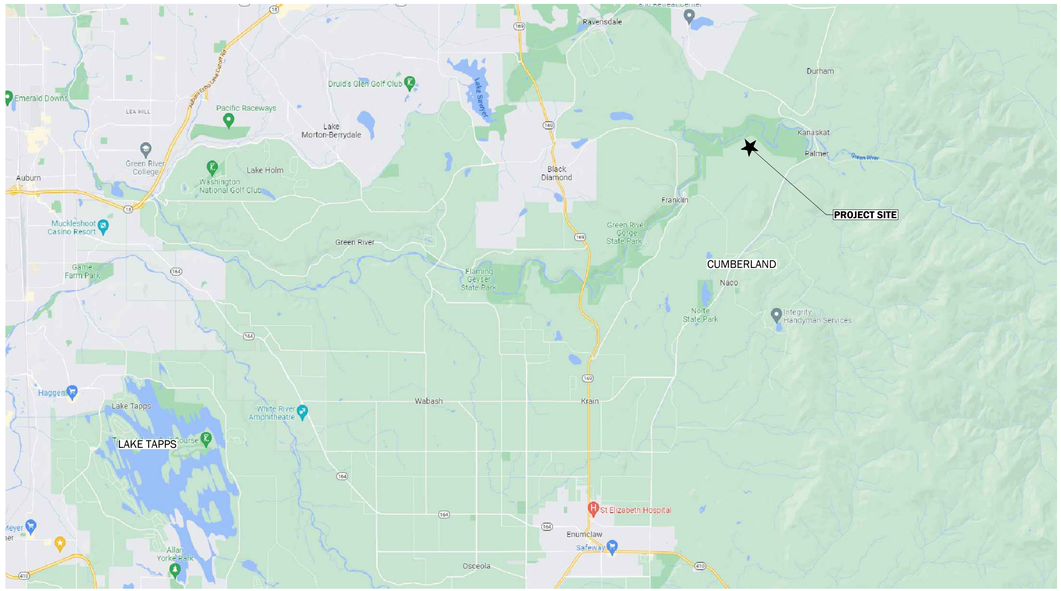
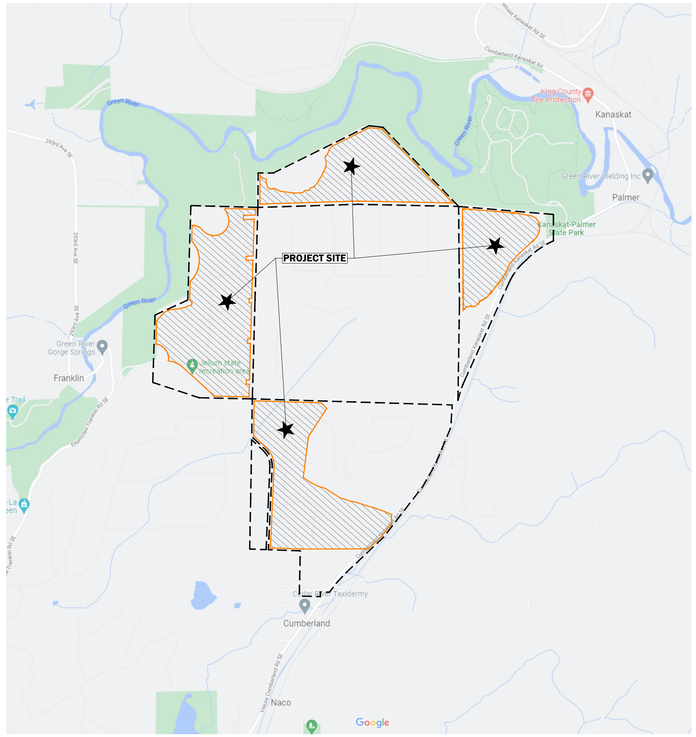
SITE IMPROVEMENT PLAN

CUMBERLAND PROPERTY AGGREGATE MINE
KING COUNTY, WASHINGTON 98022



VICINITY MAP
(NOT TO SCALE)



PROJECT LOCATION MAP
SCALE: 1" = 800'

GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE 2023 EDITION OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION, THE COORDINATION OF ALL WORK, SAFETY OF ALL PERSONS AT THE PROJECT SITE, AND SHALL COMPLY WITH ALL JOB RELATED SAFETY STANDARDS.
3. A COPY OF THESE APPROVED PLANS AND ANY REQUIRED PERMITS MUST BE ON SITE AT ALL TIMES.
4. REFERENCE DATA: THE EXISTING SITE, TOPOGRAPHIC, UTILITY DATA, AND THE PROPOSED GRADES AND ELEVATIONS ARE BASED ON THE FOLLOWING ELECTRONIC DRAWINGS: AERIAL TOPOGRAPHIC SURVEY BY DAVID SMITH AND ASSOCIATES, FLIGHT DATE 1/30/2007.
5. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

PARCELS OWNED BY SEGALE PROPERTIES LLC

1721079001
0921079001
1521079007
1521079009
1521079008 (incl. 152107UNKN)
1521079020
2121079001
2121079005
2121079006
2121079008
2121079009*
2121079015*
2121079016
2121079029
2121079030

Note:
*No mine or mine related activity proposed on parcel

9/6/23

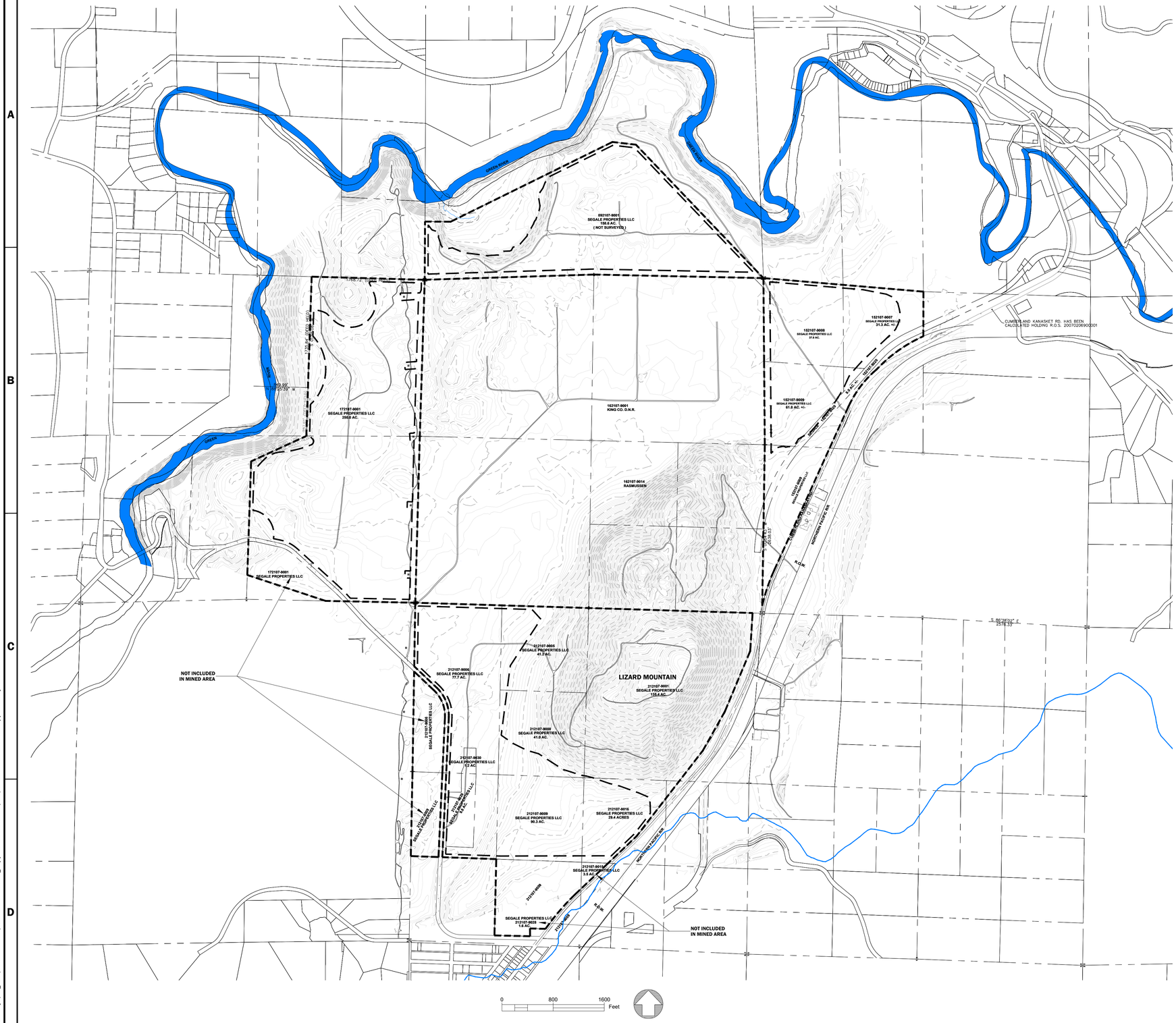
REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

Aspect CONSULTING

COVER SHEET AND GENERAL INFORMATION
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
G-01
SHEET **1** *OF* **13**



LEGEND

- Property Boundary
- Parcel Boundary
- Proposed Mine Limit
- Existing Major Topographic Contour (25')
- Existing Minor Topographic Contour (5')
- Road

BASIS OF BEARING

BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON THE WASHINGTON COORDINATE SYSTEM, NAD 83/2011 EPOCH 2010, NORTH ZONE, DERIVED FROM GLOBAL POSITIONING SYSTEM SURVEY METHODS.

ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES.

THE BASIS OF POSITION FOR THIS PROJECT IS BASED UPON WASHINGTON STATE DEPARTMENT OF TRANSPORTATION SURVEY MONUMENT I.D. NO. 5522 DESIGNATION NAME "CUMBERLAND". THE MONUMENT IS A BRASS DISK SET IN THE TOP OF A ROUND CONC. MONUMENT UNDER A WSDOT MON. CASE SET LEVEL WITH THE SURFACE OF THE GROUND.

NORTHING = 105338.26 (US FT) EASTING = 1368710.461 (US FT)
ELEVATION DATUM = NAVD 88 (ELEV. = 834.145')

BASES OF BEARING = S 01°33'28"W BETWEEN THE FOUND MONUMENTS AT THE WEST QUARTER CORNER AND THE SOUTHWEST CORNER OF SECTION 16, TOWNSHIP 21 NORTH, RANGE 7 EAST, W.M.

CONTROL SPECIFICATIONS, METHOD OF SURVEY, EQUIPMENT USED, AND ACCURACY

CONTROL WAS ESTABLISHED USING A TOPCON GR5 GNSS RECEIVER REAL TIME KINEMATIC (RTK) GPS UTILIZING THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION SURVEY PUBLISHED NETWORK.

CONVENTIONAL SURVEY TRAVERSES METHODS WERE UTILIZED USING A TOPCON GTS-225 (5") TOTAL STATION. ALL CONTROL TRAVERSES WERE CLOSED INTO KNOWN POINTS AND/OR CLOSED LOOPED TRAVERSE AND HAVE MET OR EXCEEDED THE STANDARDS ESTABLISHED IN WAC 332-130-080/090

CUMBERLAND AERIAL MAPPING

AERIAL MAPPING OF THIS PROJECT WAS PERFORMED BY DAVID SMITH AND ASSOCIATES.
THE DATE OF FLIGHT WAS 01/30/2007.
MAPPING WAS DESIGNED TO MEET OR EXCEED NATIONAL MAP ACCURACY STANDARDS FOR A 1"=100' 2' CONTOUR INTERVAL MAP DATA INSIDE OF THE OBSCURE LINES AND DENSE TREE AREAS MAY NOT MEET EXPECTED ACCURACY

REGISTERED PROFESSIONAL ENGINEER
38380
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

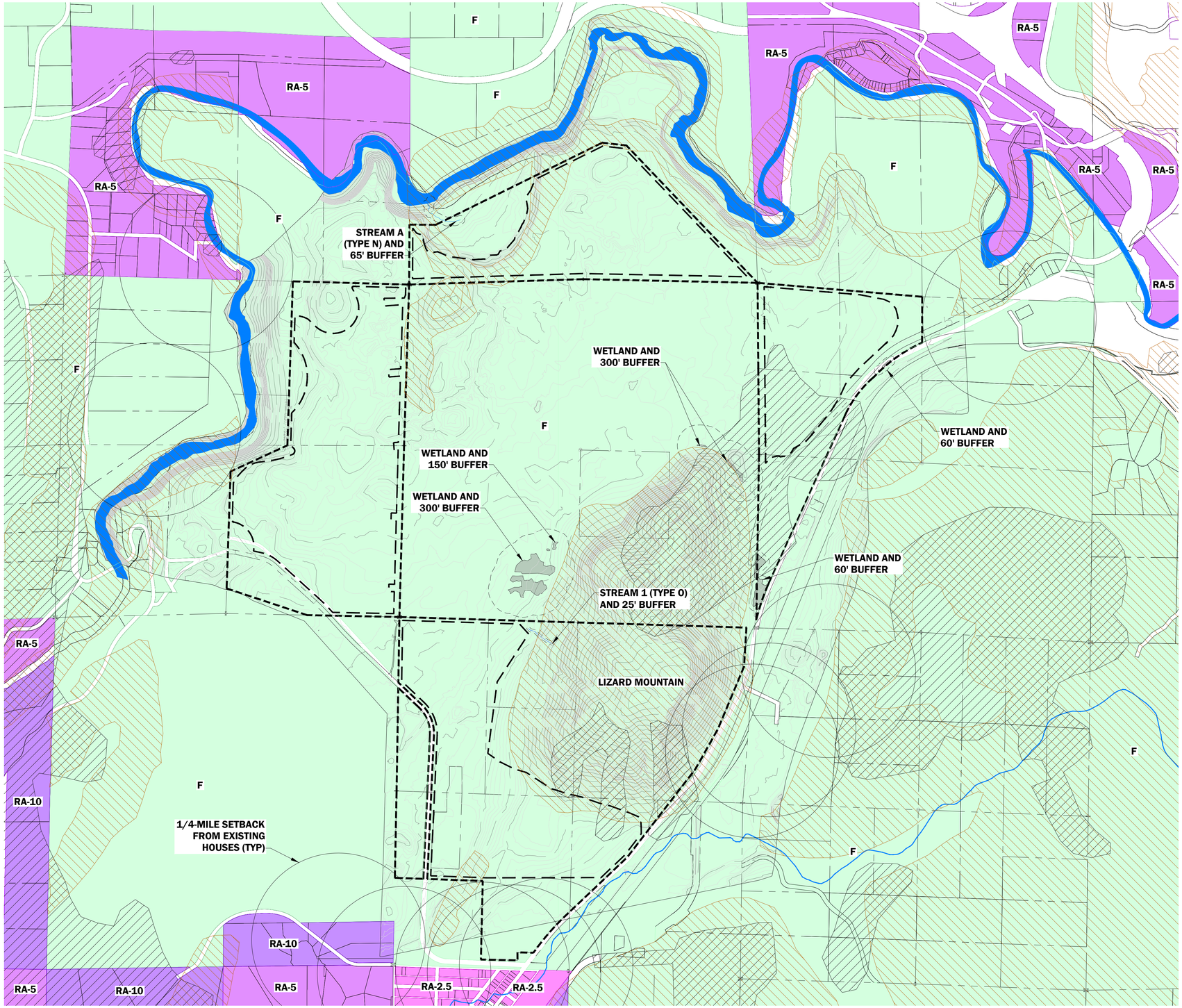
REVISED BY: OGR
DRAWN BY: JPR/CJP
DESIGNED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

Aspect CONSULTING

EXISTING TOPOGRAPHIC SURVEY
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
G-02
SHEET **2** *OF* **13**

Appendix A: Mining/Grading & Drainage Plan Set



LEGEND

- Property Boundary
- Parcel Boundary
- Proposed Mine Limit
- Existing Major Topographic Contour (25')
- Existing Minor Topographic Contour (5')
- Road
- Wetland
- Wetland Buffer
- Stream
- Stream Buffer
- Coal Mine Hazard Area
- Erosion Hazard Area

Zones:

- F - Forest
- RA-2.5 - Rural Area ~2.5 Acres per Lot
- RA-5 - Rural Area ~5 Acres per Lot
- RA-10 - Rural Area ~10 Acres per Lot

REGISTERED PROFESSIONAL ENGINEER
OLIVER G. RAMEY
38380
STATE OF WASHINGTON
9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

REVISED BY: OGR
DRAWN BY: JPR/CJP
DESIGNED BY: OGR

Aspect CONSULTING

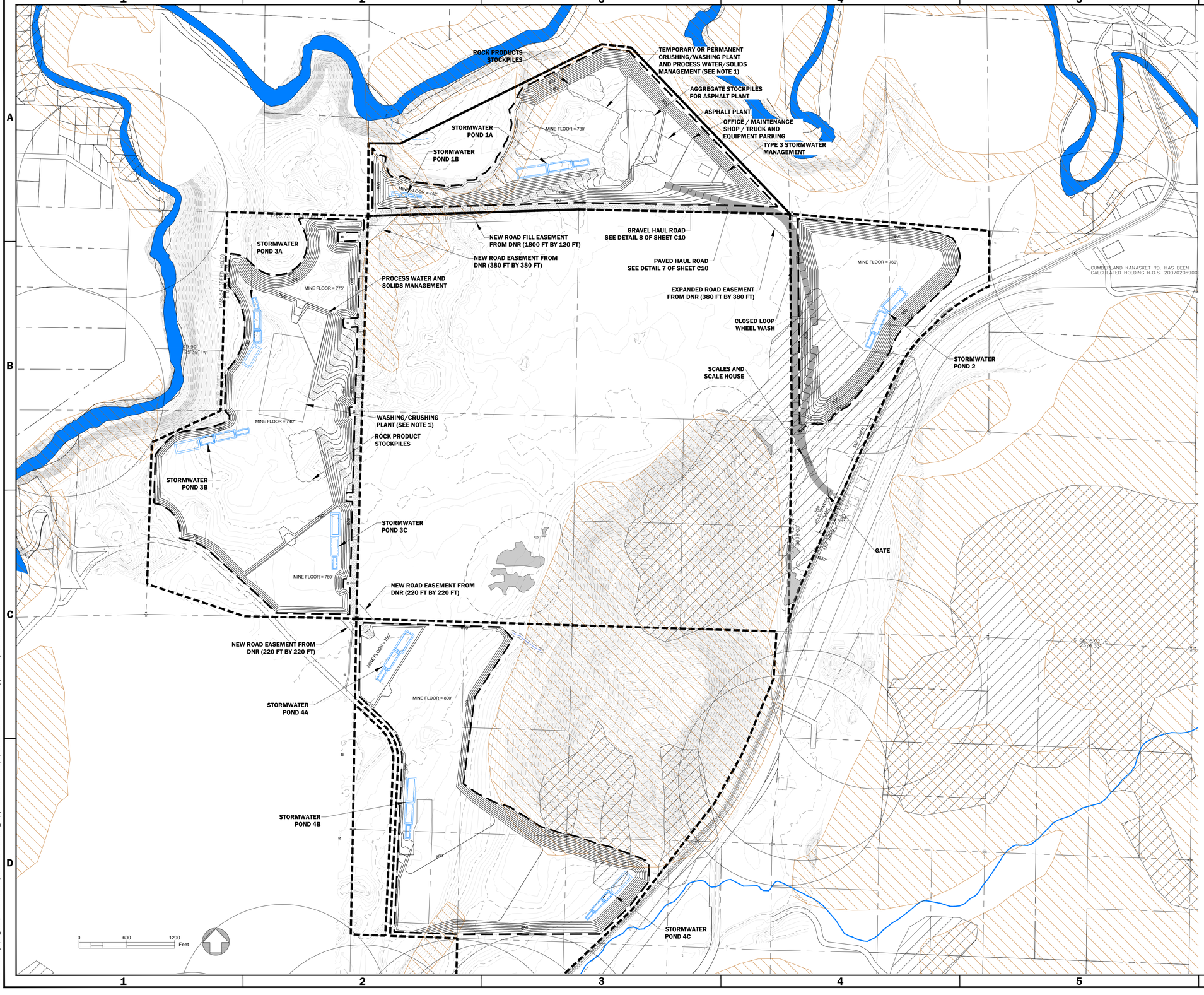
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

PARCELS, ZONING, AND CRITICAL AREAS
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
G-03
SHEET **3** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 G-03.dwg | | Date Saved: 8/22/2023 3:40:59 PM | | User: jreinhardt

Appendix A: Mining/Grading & Drainage Plan Set



LEGEND

- Property Boundary
- Limit of Mining
- Proposed Contour (Major)
- Proposed Contour (Minor)
- Existing Contour (Major)
- Existing Contour (Minor)
- Wetland
- Wetland Buffer
- Stream
- Stream Buffer
- Coal Mine Hazard Area
- Erosion Hazard Area

NOTES:

1. Initially, limited processing (e.g. crushers, screens) will be performed on site. As mining progresses, an aggregate processing plant (including crushers, screens, a wash plant, and water and fines management) and an asphalt plant will be established in M-1. The asphalt plant will remain in M-1. The aggregate processing plant may remain in M-1 or may be relocated to M-3, once its northern portion has reached final grade.

OLIVER G. REINHARDT — 28380 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON

9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

Aspect CONSULTING

DATE: 9/6/2023
REVISION: 0
PROJECT NUMBER: 220395-B
DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR

OVERALL SITE PLAN

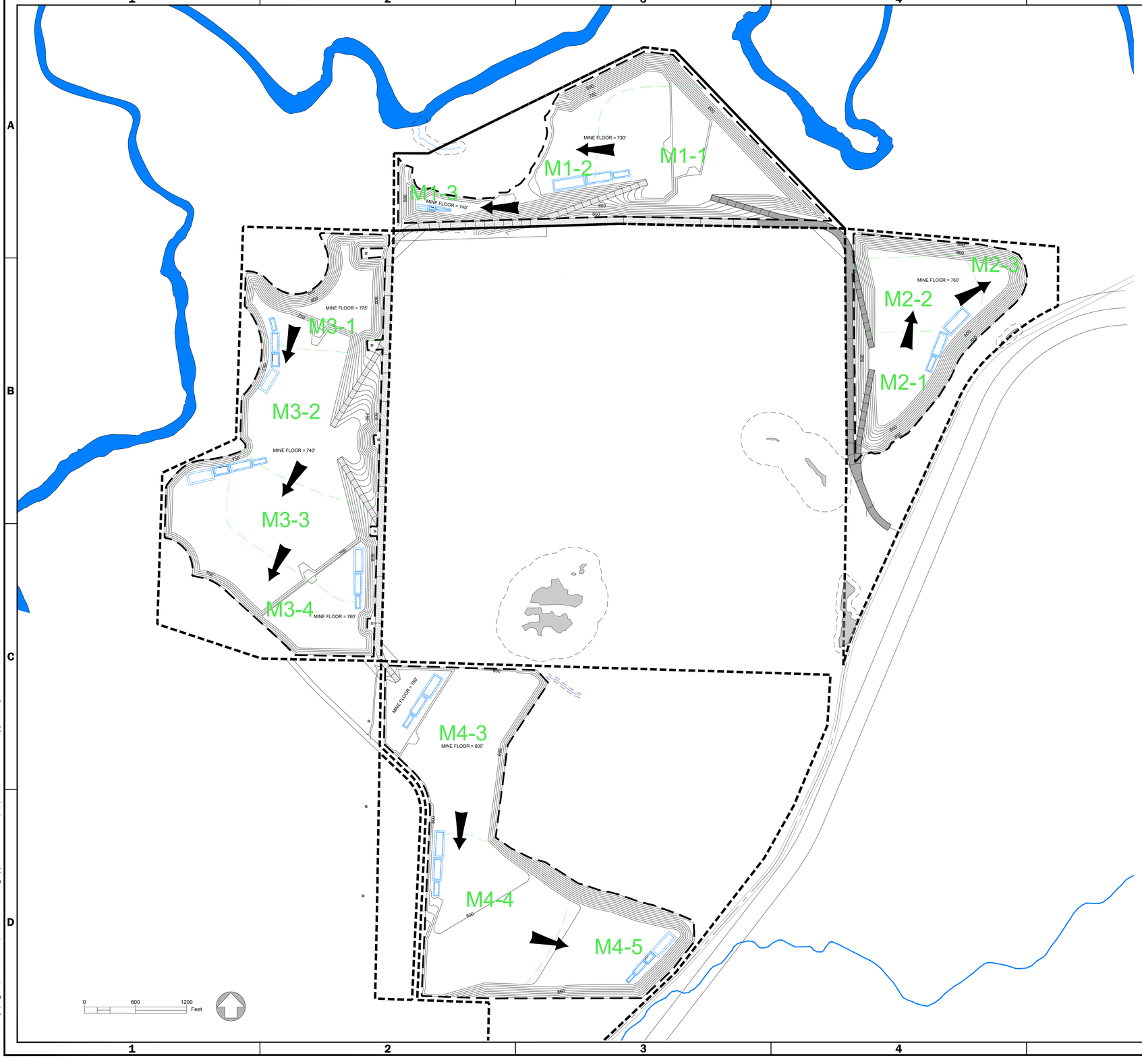
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:

C-01

SHEET **4** *OF* **13**

Appendix A: Mining/Grading & Drainage Plan Set



LEGEND

- Property Boundary
- Limit of Mining
- Proposed Contour (Major)
- Proposed Contour (Minor)
- M1-1 Mine Stage
- Mine Segment Number
- Mine Stage Boundary
- Mining Sequence
- Wetland
- Wetland Buffer
- Stream
- Stream Buffer

GRADING VOLUMES

Total Sand and Gravel Extracted	53.47	MILLION CY CUT
Mine Area 1	13.63	MILLION CY CUT
Topsoil Stripping	0.29	MILLION CY CUT
Sand and Gravel	13.34	MILLION CY CUT
Mine Area 2	8.92	MILLION CY CUT
Topsoil Stripping	0.21	MILLION CY CUT
Sand and Gravel	8.71	MILLION CY CUT
Mine Area 3	21.31	MILLION CY CUT
Topsoil Stripping	0.49	MILLION CY CUT
Sand and Gravel	20.82	MILLION CY CUT
Mine Area 4	11.02	MILLION CY CUT
Topsoil Stripping	0.43	MILLION CY CUT
Sand and Gravel	10.59	MILLION CY CUT
Haul Road		
Cut	4,375	CY CUT
Fill	940	CY FILL
Net	3,435	CY CUT

MINING SEQUENCE

The mine plan has been divided into mine areas (M1 to M4) geographically and mine stages (Stage 1 through 5) temporally. Each mine area may not have activity during each stage.

Mining is anticipated to proceed according to the following sequence:
Stage 1: M1-1 --> M2-1 --> M3-1
Stage 2: M1-2 --> M3-2 --> M2-2
Stage 3: M3-3 --> M2-3 --> M1-3 --> M4-3
Stage 4: M3-4 --> M4-4
Stage 5: M4-5

Mining will occur in multiple mine segements at any one time, depending on market conditions, variations in the aggregate deposits to be mined, and operational needs.

The mine sequence is intended to be illustrative and represents the best estimate based on information available at this time. The actual mine sequence may vary depending on aggregate market conditions, operational planning needs, conditions encountered during mining, and other factors.

Initially, limited processing (e.g. crushers, screens) will be performed on site. As mining progresses, an aggregate processing plant (including crushers, screens, a wash plant, and water and fines management) and an asphalt plant will be established in M-1. The asphalt plant will remain in M-1. The aggregate processing plant may remain in M-1 or may be relocated to M-3, once its northern portion has reached final grade

Registered Professional Engineer
State of Washington
38380
Registered
Professional Engineer
9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

REVISED BY: OGR
DRAWN BY: JPR/CJP
DESIGNED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

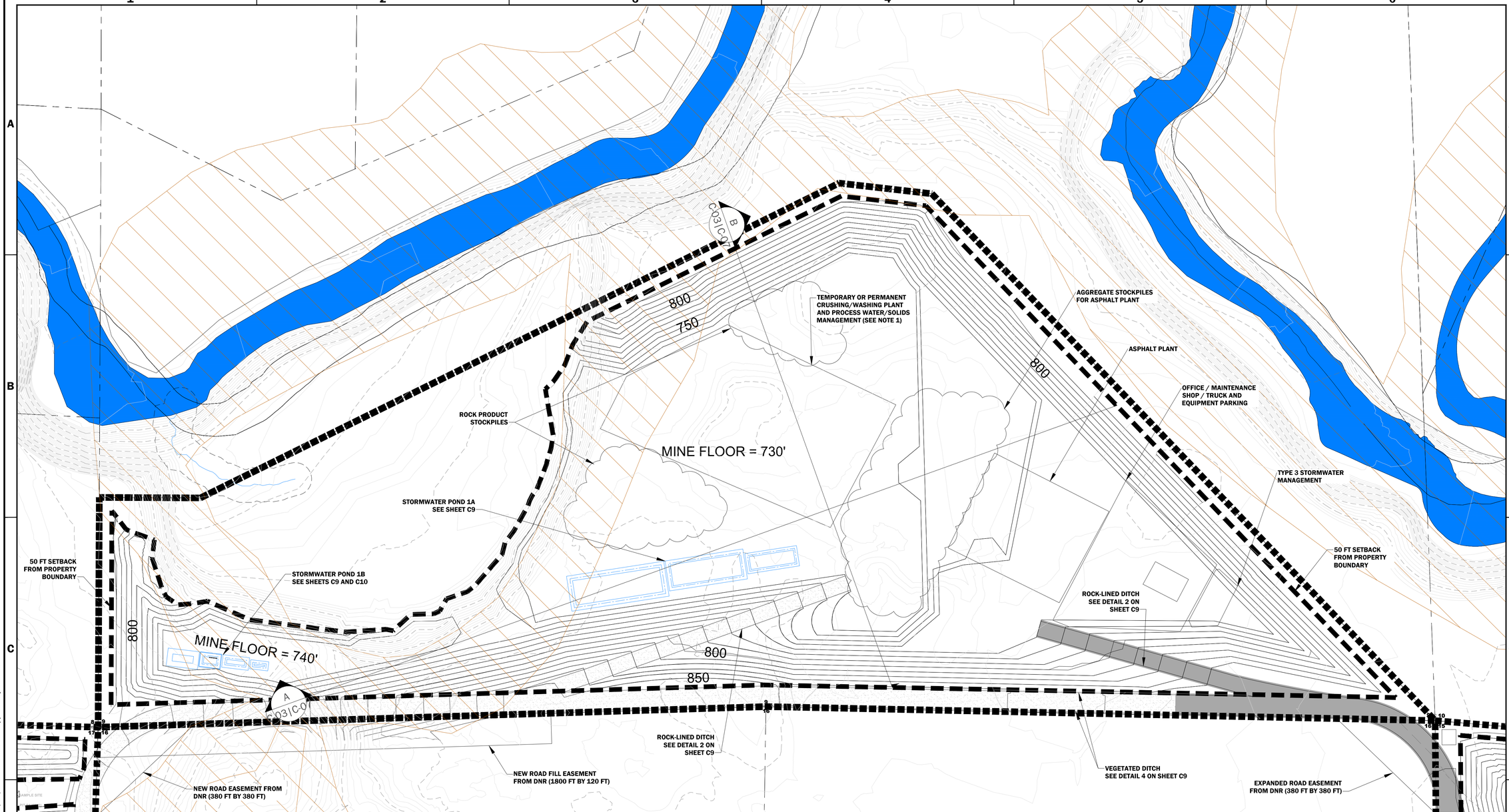
Aspect CONSULTING

MINING SEQUENCE
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
C-02
SHEET **5** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-02.dwg || Date Saved: 8/25/2023 2:36:07 PM || User: jreinhardt

Appendix A: Mining/Grading & Drainage Plan Set



LEGEND

- Property Boundary
- Parcel Boundary
- Limit of Mining
- Proposed Major Topographic Contour (50')
- Proposed Minor Topographic Contour (10')
- Existing Major Topographic Contour (25')
- Existing Minor Topographic Contour (5')
- Wetland
- Wetland Buffer
- Stream
- Stream Buffer
- Coal Mine Hazard Area
- Erosion Hazard Area
- Approximate Stockpile Location
- Approximate Processing Location

NOTES:

1. Initially, limited processing (e.g. crushers, screens) will be performed on site. As mining progresses, an aggregate processing plant (including crushers, screens, a wash plant, and water and fines management) and an asphalt plant will be established in M-1. The asphalt plant will remain in M-1. The aggregate processing plant may remain in M-1 or may be relocated to M-3, once its northern portion has reached final grade.
2. Stockpile locations are approximate and may vary based on market conditions and operational needs.

0 200 400 Feet

9/6/23

REV.	DESCRIPTION	DATE	APPR.
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DRAWN BY: JPR/CJP
DESIGNED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

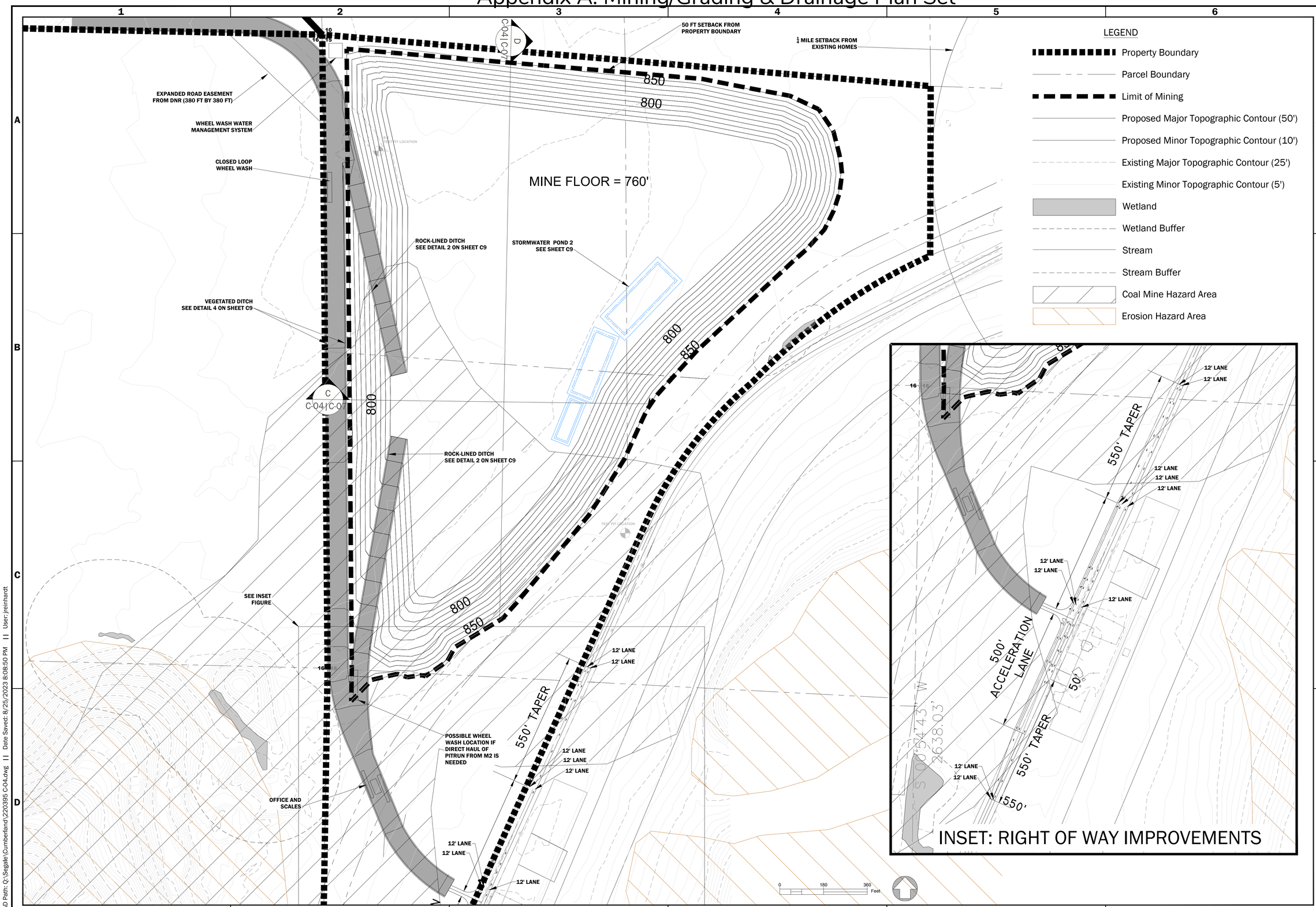
Aspect CONSULTING

GRADING AND DRAINAGE PLAN
MINE AREA M1
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
C-03
SHEET **6** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-03.dwg || Date Saved: 8/25/2023 6:04:35 PM || User:jreinhardt

Appendix A: Mining/Grading & Drainage Plan Set



9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

Aspect CONSULTING

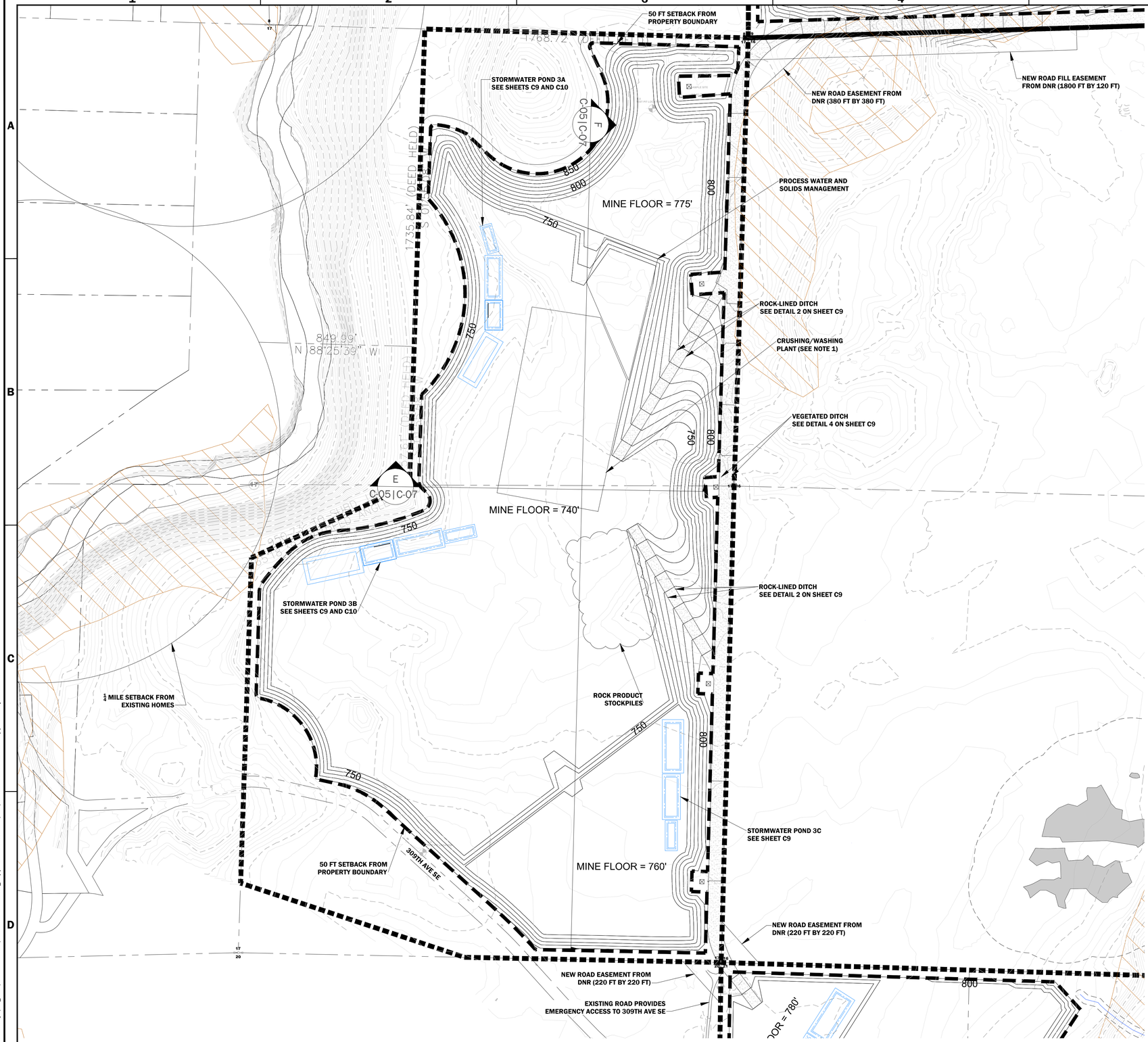
DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

GRADING AND DRAINAGE PLAN
MINE AREA M2
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
C-04
SHEET **7** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-04.dwg | | Date Saved: 8/25/2023 8:08:50 PM | | User: jreinhardt

Appendix A: Mining/Grading & Drainage Plan Set



LEGEND

- Property Boundary
- Parcel Boundary
- Limit of Mining
- Proposed Major Topographic Contour (50')
- Proposed Minor Topographic Contour (10')
- Existing Major Topographic Contour (25')
- Existing Minor Topographic Contour (5')
- Wetland
- Wetland Buffer
- Stream
- Stream Buffer
- Coal Mine Hazard Area
- Erosion Hazard Area
- Approximate Stockpile Location
- Approximate Processing Location

NOTES:

1. Initially, limited processing (e.g. crushers, screens) will be performed on site. As mining progresses, an aggregate processing plant (including crushers, screens, a wash plant, and water and fines management) and an asphalt plant will be established in M-1. The asphalt plant will remain in M-1. The aggregate processing plant may remain in M-1 or may be relocated to M-3, once its northern portion has reached final grade.
2. Stockpile locations are approximate and may vary based on market conditions and operational needs.

REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
38380
REGISTERED
PROFESSIONAL ENGINEER
9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

Aspect CONSULTING

GRADING AND DRAINAGE PLAN
MINE AREA M3
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
C-05
SHEET **8** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-05.dwg || Date Saved: 8/25/2023 7:37:41 PM || User:jreinhardt

Appendix A: Mining/Grading & Drainage Plan Set

VEGETATED DITCH
SEE DETAIL 4 ON SHEET C9
NEW ROAD EASEMENT FROM
DNR (220 FT BY 220 FT)
ROCK-LINED DITCH
SEE DETAIL 2 ON SHEET C9
C05|C09
H
800
EXISTING GATE
NEW ROAD EASEMENT FROM
DNR (220 FT BY 220 FT)
EXISTING ROAD PROVIDES
EMERGENCY ACCESS
309TH AVE SE
MINE FLOOR = 780'
STORMWATER POND 4A
SEE SHEET C9
TEST PIT LOCATION
EXISTING GATE
MINE FLOOR = 800'
800
50 FT SETBACK FROM
PROPERTY BOUNDARY
800
STORMWATER POND 4B
SEE SHEET C9
2021
800
G
C-06|C-08
¼ MILE SETBACK FROM
EXISTING HOMES
STORMWATER POND 4C
SEE SHEETS C9 AND C10
¼ MILE SETBACK FROM
EXISTING HOMES
850

LEGEND

- Property Boundary
- Parcel Boundary
- Limit of Mining
- Proposed Major Topographic Contour (50')
- Proposed Minor Topographic Contour (10')
- Existing Major Topographic Contour (25')
- Existing Minor Topographic Contour (5')
- Wetland
- Wetland Buffer
- Stream
- Stream Buffer
- Coal Mine Hazard Area
- Erosion Hazard Area

0 240 480 Feet

REGISTERED PROFESSIONAL ENGINEER
38380
9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

REVISED BY: OGR
DRAWN BY: JPR/CJP
DESIGNED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

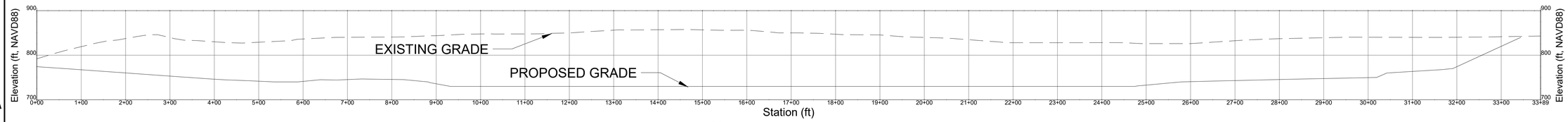
Aspect CONSULTING

GRADING AND DRAINAGE PLAN
MINE AREA M4
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

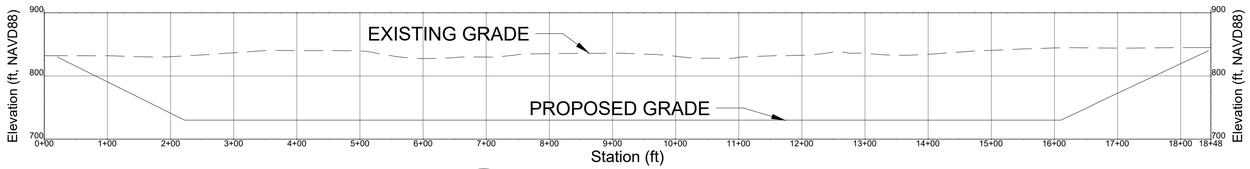
SHEET REFERENCE NUMBER:
C-06
SHEET **9** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-06.dwg || Date Saved: 8/25/2023 6:19:47 PM || User: jreinhardt

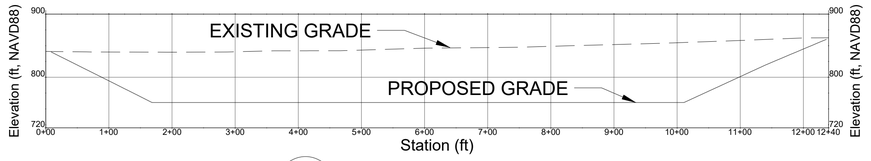
Appendix A: Mining/Grading & Drainage Plan Set



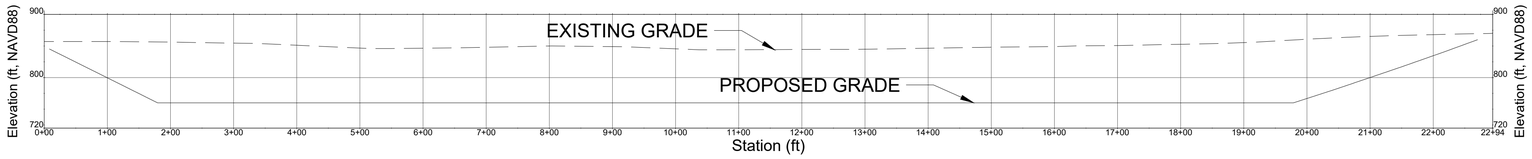
A **M-1: West-East Cross-section**
C-03|C-07 SCALE: 1" =120'



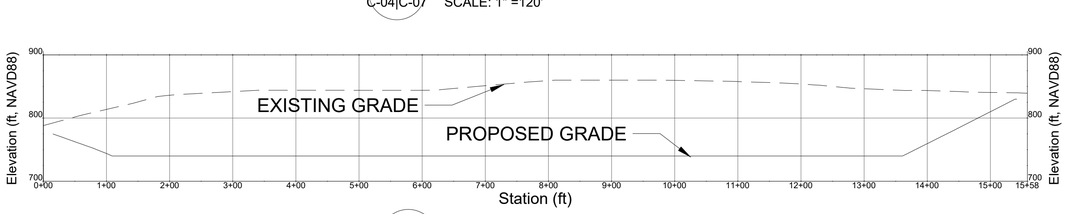
B **M-1: North-South Cross-section**
C-03|C-07 SCALE: 1" =120'



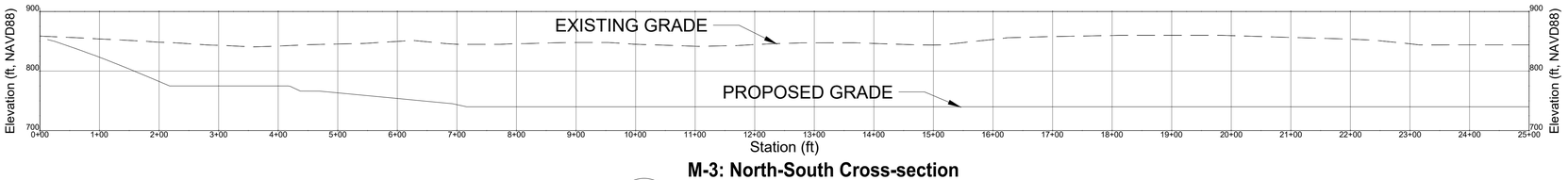
C **M-2: West-East Cross-section**
C-04|C-07 SCALE: 1" =120'



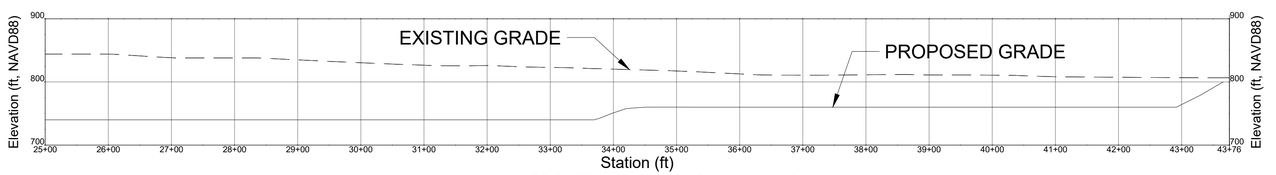
D **M-2: North-South Cross-section**
C-04|C-07 SCALE: 1" =120'



E **M-3: West-East Cross-section**
C-05|C-07 SCALE: 1" =120'



F **M-3: North-South Cross-section**
STA 0+00'-STA 25+00'
C-05|C-07 SCALE: 1" =120'



F **M-3: North-South Cross-section**
STA 25+00'-STA 43+76'
C-05|C-07 SCALE: 1" =120'

9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

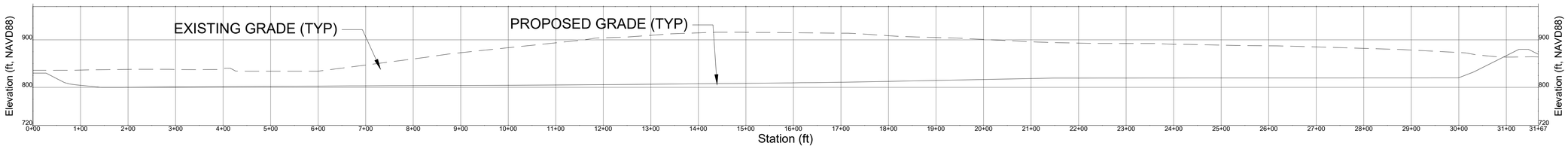
REVISED BY: OGR
DRAWN BY: JPR/CJP
DESIGNED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

CROSS-SECTIONS
MINE AREAS M1, M2 & M3
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

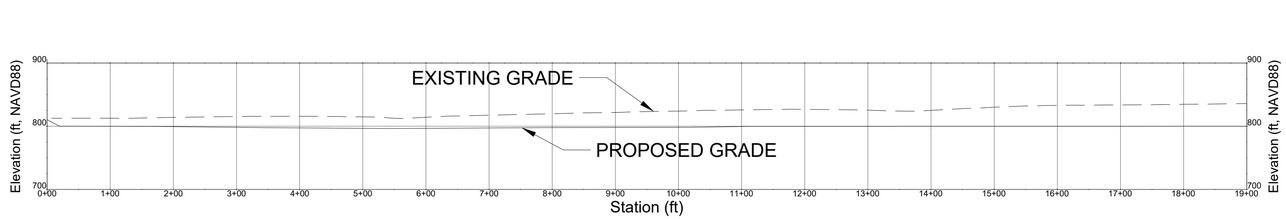
SHEET REFERENCE NUMBER:
C-07
SHEET **10** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-07.dwg || Date Saved: 5/25/2023 7:11:00 PM || User: jreinhardt

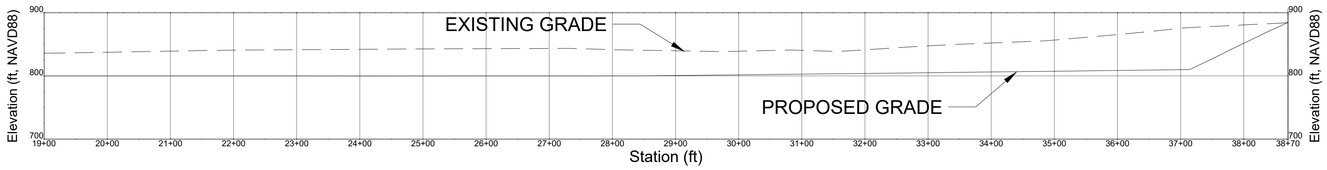
Appendix A: Mining/Grading & Drainage Plan Set



G **M-4: West-East Cross-section**
C-06|C-08 SCALE: 1" =120'



H **M-4: North-South Cross-section**
STA 0+00'-STA 19+00'
C-06|C-08 SCALE: 1" =120'



H **M-4: North-South Cross-section**
STA 19+00'-STA 38+70'
C-06|C-08 SCALE: 1" =120'

9/6/23

REV.	DATE	APPR.
0	9/6/2023	OGR

FOR SUBMITTAL TO KING COUNTY

DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR

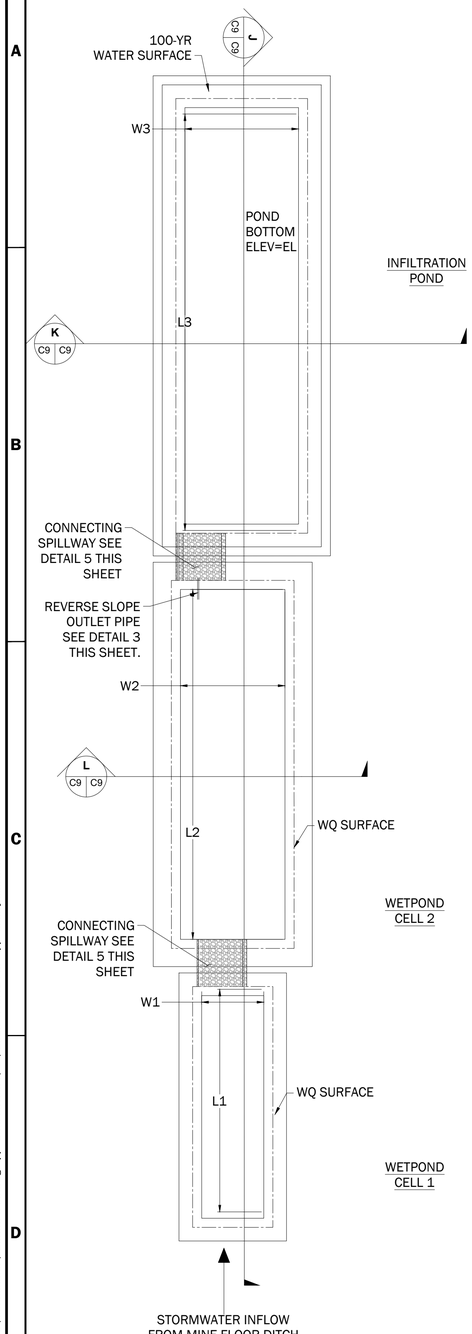
Aspect CONSULTING

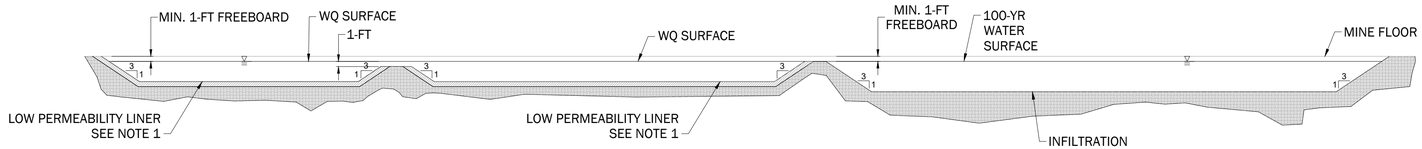
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

CROSS-SECTIONS
MINE AREA M4
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

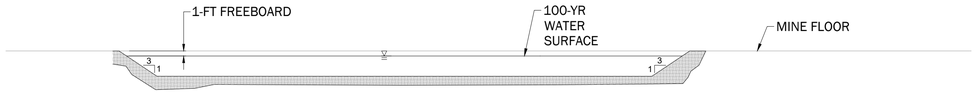
SHEET REFERENCE NUMBER:
C-08
SHEET **11** *OF* **13**

CAD Path: Q:\Seggale\Cumberland\220395 C-08.dwg || Date Saved: 7/26/2023 9:56:16 AM || User: jreinhardt

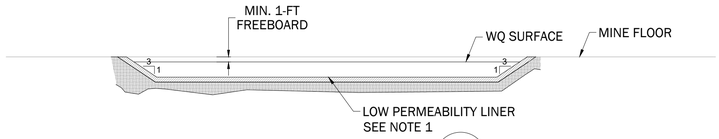




SECTION J - INFILTRATION PONDS J C9 C9



SECTION K - INFILTRATION POND K C9 C9

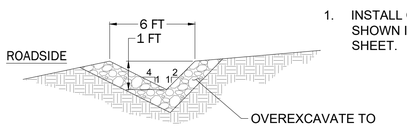


SECTION L - WETPOND POND L C9 C9

FACILITY DIMENSIONS										
POND	WETPOND				INFILTRATION POND			OUTLET PIPE	CONNECTING SPILLWAY	
	CELL 1		CELL 2							
	LENGTH	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH	BOTTOM ELEV	DIAM.	HEIGHT	WIDTH
	L1	W1	L2	W2	L3	W3	EL	D	H	W
1A	42 FT	6 FT	72 FT	16 FT	83 FT	28 FT	723.00 FT	12 IN	0.7 FT	7.8 FT
1B	177 FT	51 FT	276 FT	84 FT	348 FT	98 FT	724.80 FT	12 IN	1.0 FT	40.1 FT
2	165 FT	47 FT	261 FT	79 FT	300 FT	100 FT	753.00 FT	12 IN	1.0 FT	31.0 FT
3A	129 FT	35 FT	204 FT	60 FT	250 FT	75 FT	733.00 FT	12 IN	1.0 FT	24.7 FT
3B	147 FT	41 FT	232.5FT	69.5 FT	275 FT	100 FT	733.00 FT	12 IN	1.0 FT	24.7 FT
3C	135 FT	37 FT	213 FT	63 FT	250 FT	75 FT	755.78 FT	12 IN	1.0 FT	22.4 FT
4A	141 FT	39 FT	222 FT	66 FT	245 FT	85 FT	773.00 FT	12 IN	1.0 FT	22.9 FT
4B	147 FT	41 FT	231 FT	69 FT	275 FT	75 FT	792.89 FT	12 IN	1.0 FT	25.4 FT
4C	99 FT	25 FT	157.5 FT	44.5 FT	275 FT	75 FT	812.82 FT	12 IN	0.9 FT	17.2 FT
5	63 FT	13 FT	105 FT	27 FT	250 FT	75 FT	753.00 FT	12 IN	0.8 FT	11.5 FT

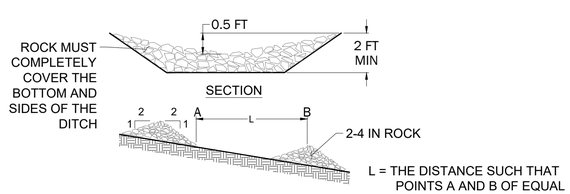
NOTE: LOCATION OF PONDS WITHIN EACH MINE SEGMENT MAY BE REASONABLY ADAPTED TO CONDITIONS ENCOUNTERED DURING MINING AS LONG AS FACILITY DIMENSIONS ARE PRESERVED AND THE INTENDED AREA DRAINS TO THE POND

1. BOTH CELLS OF A TWO-CELL WETPOND AND THE SINGLE CELL OF A ONE CELL WETPOND MUST RETAIN A PERMANENT POOL OF WATER THROUGHOUT THE WET SEASON. A WETPOND IS CONSIDERED NON-COMPLIANT IF THE POND LEVEL DROPS MORE THAN 12" IN ANY 7 DAY MEASUREMENT PERIOD. A LOW PERMEABILITY LINER PER SECTION 6.2.4 OF THE 2021 KING CO. SURFACE WATER DESIGN MANUAL WILL BE REQUIRED TO ACHIEVE THIS STANDARD IN INFILTRATIVE SOILS.



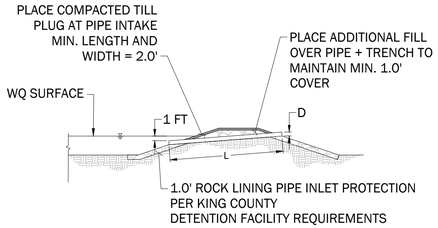
1. INSTALL CHECKDAMS AS SHOWN IN DETAIL 2 THIS SHEET.

ROCK-LINED DITCH 1 C9

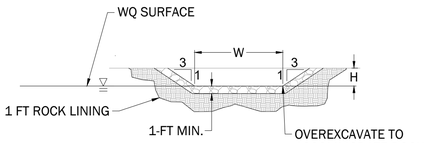


PROFILE ALONG DRAINAGE DITCH

ROCK CHECK DAM 2 C9

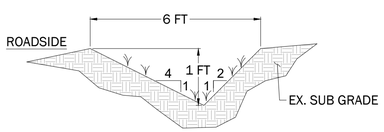


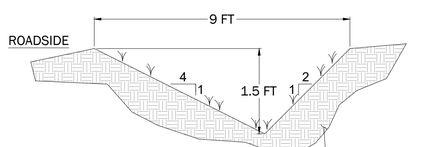
REVERSE SLOPE OUTLET PIPE 3 C9



CONNECTING SPILLWAY 5 C9

VEGETATED DITCH 4 C9





1. HYDROSEED VEGETATED DITCHES ACCORDING TO SPECIFICATIONS IN THE EROSION AND SEDIMENT CONTROL PLAN.
2. MINIMUM GRADE IS 0.5 PERCENT.
3. WHERE GRADE EXCEEDS 5 PERCENT INSTALL CHECKDAMS AS SHOWN IN DETAIL 2 THIS SHEET.

JAMES L. REINHARDT
STATE OF WASHINGTON
38380
REGISTERED
PROFESSIONAL ENGINEER
9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

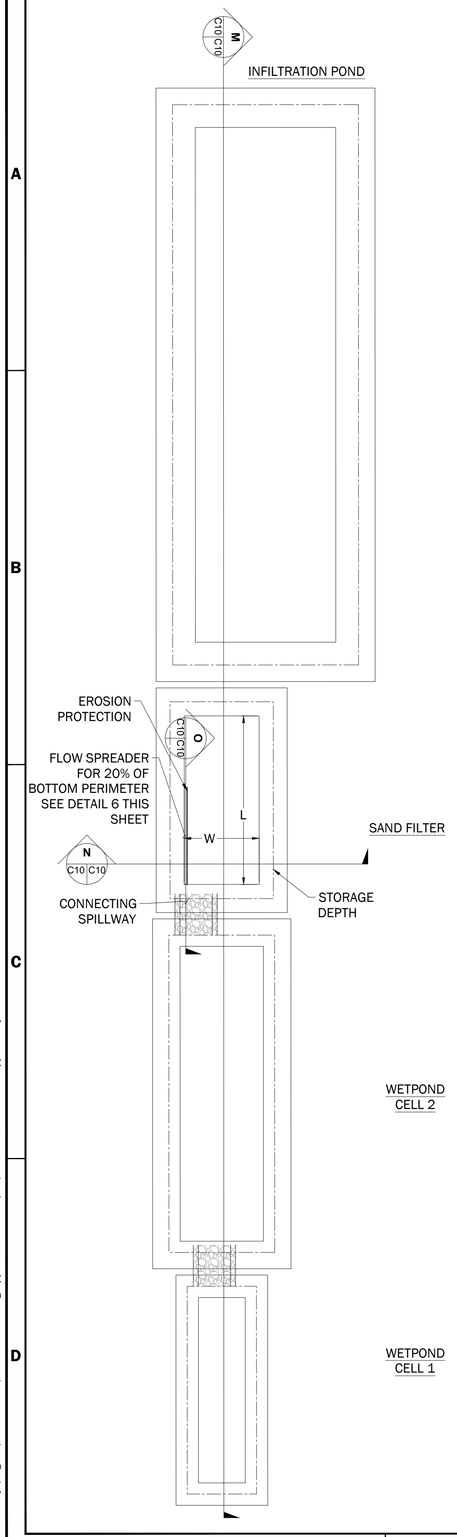
Aspect CONSULTING

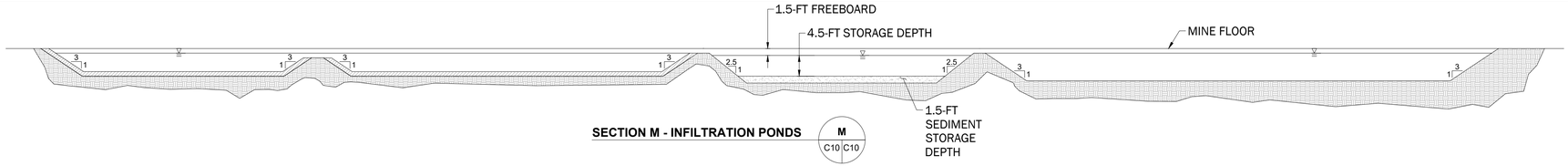
DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

DRAINAGE DETAILS
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

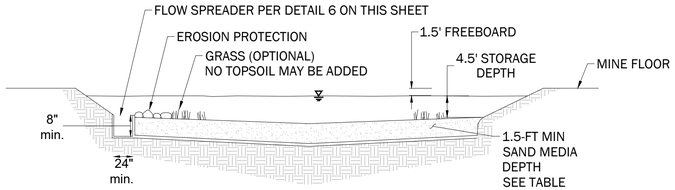
SHEET REFERENCE NUMBER:
C-09
SHEET **12** *OF* **13**

Appendix A: Mining/Grading & Drainage Plan Set

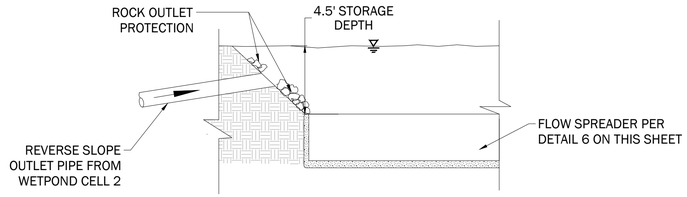




SECTION M - INFILTRATION PONDS (M, C10 | C10)



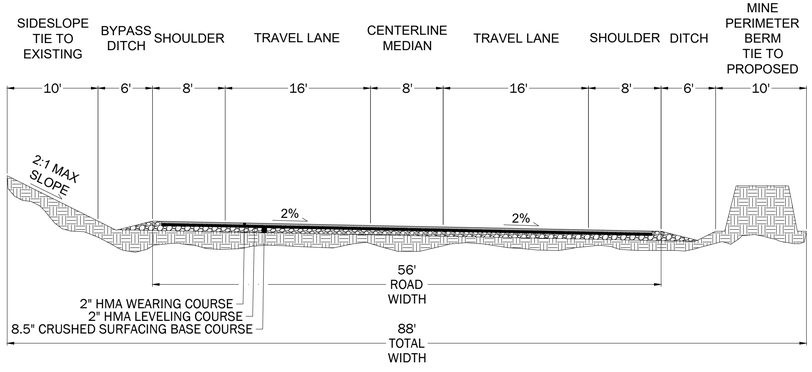
SECTION N - SAND FILTER POND (N, C10 | C10)



SECTION O - SAND FILTER WITH LEVEL SPREADER (O, C10 | C10)

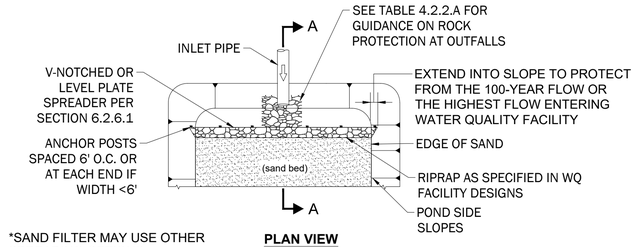
SAND FILTER DIMENSIONS			
POND	LENGTH	WIDTH	STORAGE DEPTH
	L	W	H
1A	52 FT	26 FT	4.5 FT
3A	130 FT	65 FT	4.5 FT
3B	150 FT	75 FT	4.5 FT
4C	100 FT	50 FT	4.5 FT

SAND MEDIA SPECIFICATIONS	
U.S. SIEVE SIZE	PERCENT PASSING
U.S. NO. 4	95 TO 100 PERCENT
U.S. NO. 8	70 TO 100 PERCENT
U.S. NO. 16	40 TO 90 PERCENT
U.S. NO. 30	25 TO 75 PERCENT
U.S. NO. 50	2 TO 25 PERCENT
U.S. NO. 100	LESS THAN 4 PERCENT
U.S. NO. 200	LESS THAN 2 PERCENT



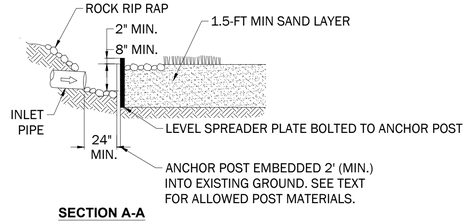
TYPICAL PAVED HAUL ROAD SECTION (7, C10)

EXAMPLE OF ANCHORED PLATE USED WITH A SAND FILTER* (MAY ALSO BE USED WITH OTHER WATER QUALITY FACILITIES).



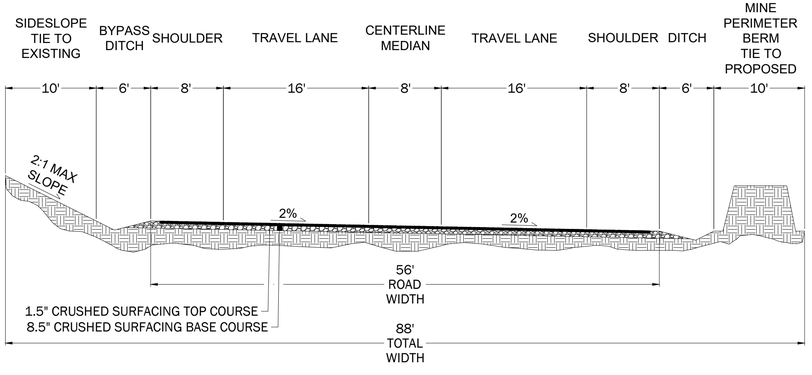
*SAND FILTER MAY USE OTHER SPREADING OPTIONS

PLAN VIEW
NTS



SECTION A-A
NTS

FLOW SPREADER: ANCHORED PLATE OR BOARD (6, C10)



TYPICAL UNPAVED HAUL ROAD SECTION (8, C10)

9/6/23

REV.	DESCRIPTION	DATE	APPR.
0	FOR SUBMITTAL TO KING COUNTY	9/6/2023	OGR

DESIGNED BY: OGR
DRAWN BY: JPR/CJP
REVISED BY: OGR
PROJECT NUMBER: 220395-B
REVISION: 0
DATE: 9/6/2023

Aspect CONSULTING

DRAINAGE AND ROADWAY DETAILS
SITE IMPROVEMENT PLANS
CUMBERLAND PROPERTY AGGREGATE MINE
Cumberland-Kanaskat Road
King County, Washington

SHEET REFERENCE NUMBER:
C-10
SHEET **13** *OF* **13**

CAD Path: Q:\Segale\Cumberland\220395 C-10.dwg || Date Saved: 8/23/2023 12:49:31 PM || User:jreinhardt