Version 1.0
August 29, 2022 Matrix 26388-512

Travis Coates
BURNCO ROCK PRODUCTS LTD.
155 Glendeer Cir. SE, Box 1480, Station T
Calgary, AB T2H 2P9

Subject: Erosion and Sediment Control Plan, BURNCO West Cochrane Gravel Pit, NE 15-026-05 W5M, NE 14-026-05 W5M, and NW 14-026-05 W5M

Dear Travis Coates:

This Erosion and Sediment Control (ESC) Plan has been prepared for the BURNCO West Cochrane Gravel Pit project. It outlines high-level control measures for proposed project activities during active gravel pit operation and post-development site reclamation. ESC measures are proposed for installation as the phase enters active pit operation. Removal of ESC measures is proposed after re-establishment of vegetation.

Drainage patterns must be reasonably returned to existing or pre-development conditions to prevent problematic drainage issues when landscape alterations occur. Preferable drainage patterns include effective infiltration and temporary storage in small depressions, which is supported by proper ESC measures. The purpose of this ESC plan is to support proposed restored drainage patterns to ensure there is no risk of sediment laden drainage entering adjacent sensitive/protected watercourses.

With this objective in mind, recommended ESC measures include the following:

- Sediment wattles and silt fences are recommended to be used for sheet flow (non-channelized flow) only to promote sediment deposition where velocity is low.
- Ditches and slope breaks (small/shallow ditches that break up a steep slope) are recommended to slow water down. For longer/steeper slopes, more velocity control is needed (silt fences/sediment wattles are not recommended for these conditions).
- Ditches are recommended to be positioned in low lying areas and should not extend upslope (to avoid accelerated drainage within the ditch to the lowest lying point of the ditch, leading to a potential ditch breach).
- Ditches and wattles must follow contour lines to function as effective small “check dams.”
- To better protect against ditch breaches, it is recommended that a berm be located directly downslope of the ditch in some areas. The addition of a silt fence downslope of the berm is recommended to act a silt barrier only, while the ditch and berm are recommended to function as flow energy dissipators.

- As each phase undergoes reclamation, a key objective will be to prevent unwanted run-on from entering active phases and phases undergoing reclamation. This objective should be addressed to prevent unplanned drainage stressors on active phases and phases undergoing reclamation. Straw wattles and silt fences are recommended for low-lying perimeter areas that are relatively flat, but are not recommended for perimeter protection in steeper areas. In steeper areas, diversion ditches or berms are recommended to be utilized to divert stormwater around any active phases or phases undergoing reclamation.

- ESC measures are recommended to be more protective for perimeter control adjacent to sensitive undisturbed land (sensitive water bodies), to support sediment contamination avoidance versus sediment remediation.

- With visibility berms remaining as a permanent feature, ESC measures downslope of the culvert will need to be adjusted accordingly. Due to the localized flow condition combined with steep slope conditions downstream of the culvert, sized gravel bedding material, and riprap are recommended, with a slope break (small ditch/berm) at the base of the slope.

- Cattle crossings are recommended to consider drainage impacts due to localized drainage conditions/steep slopes and require appropriate ESC measures.

- For final vegetation establishment, mulch and tackifier are recommended to be used for large areas. ESC blanket is recommended for steep high-risk areas (adjacent to sensitive undisturbed land) to ensure rapid and effective vegetation growth.

- Proper topsoil salvage will play a critical role in the final remediation condition. If replaced topsoil depths are inadequate to support proper vegetation regrowth, then erosion risks increase over large areas significantly. Soil amendments may need to be applied to ensure an adequate reclamation condition.

Several federal and provincial acts and regulations are applicable to activities that could result in erosion, sedimentation, and harm to the environment. One or more acts could apply depending on the watercourse in question. This Plan recognizes that appropriate design, implementation, and maintenance of ESC measures are required to mitigate potential impacts to watercourses. Understanding the proximity of the West Cochrane Gravel Pit to the Bow River, this ESC plan addresses the project setting, the adjacent riparian area, and the associated environmental constraints.

We trust that this letter report suits your present requirements. If you have any questions or comments, please call either of the undersigned at 403.390.2234.

Yours truly,

MATRIX SOLUTIONS INC.

Thomas Schaepsmeyer, M.Eng., E.I.T., CPESC
Water Resources Engineer-in-Training

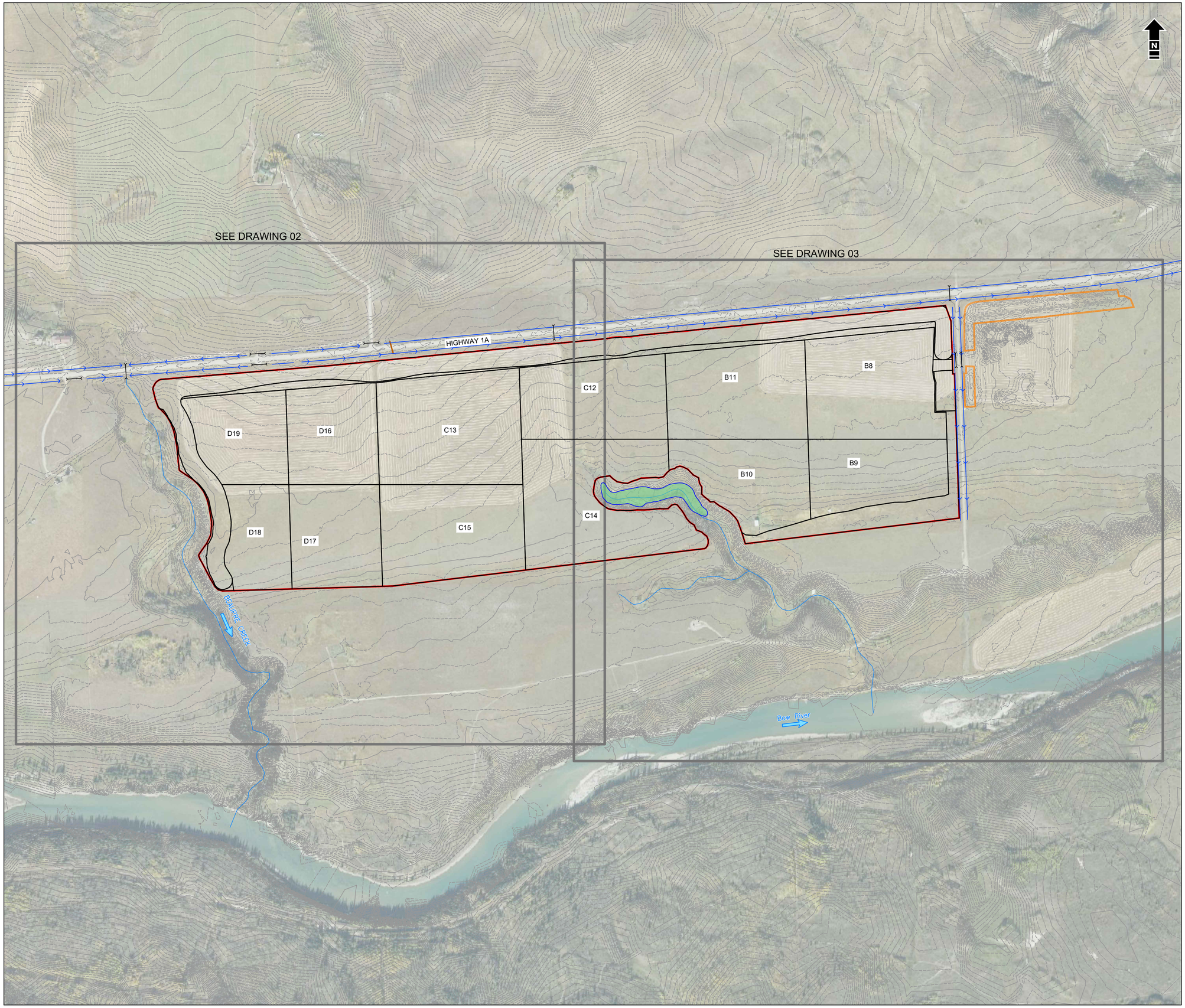
Reviewed by

Allisha Sordi, M.Sc., P.Eng., ENV SP
Water Resources Engineer

TS/jp
Attachments

VERSION CONTROL

Version	Date	Issue Type	Filename	Description
V0.1	19-Aug-2022	Draft	26388-512 Cover Letter 2022-08-19 draft V0.1	Issued to client for review
V1.0	29-Aug-2022	Final	26388-512x LR 2022-08-29 final V1.0.docx	Issued to client



LEGEND

- EXISTING MAJOR CONTOUR (5 m INTERVAL)
- EXISTING MINOR CONTOUR (1 m INTERVAL)
- WEST COCHRANE #2 GRAVEL PIT (DISTURBANCE AREA)
- B1 PLANNED PHASES
- EXISTING WETLAND
- WATERCOURSE FLOW DIRECTION
- EXISTING CULVERT
- EXISTING DITCH FLOW PATH
- EXISTING CATTLE CROSSING
- EXISTING VISIBILITY BERM (VEGETATED)

ESC CONSULTANT:
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1-403-237-0606

DEVELOPMENT PERMIT:
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CPESC
Thomas Schaepsmeyer
No. 9682
Exp. 2-20-2023

NOT FOR CONSTRUCTION

REFERENCE:
AERIAL PHOTOGRAPH OBTAINED FROM VALTUS IMAGERY SERVICES, DATED JULY 20 TO OCTOBER 14, 2013. EXISTING CONTOURS DERIVED FROM LIDAR, PROVIDED BY BURNCO, DATE UNKNOWN.

1 : 5,000 metres
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REVISION

No.	DATE	DESCRIPTION	BY	CHK.	DRN.
A	2022-08-12	ISSUED AS FINAL	TS	AYS	CW

Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

BURNCO
EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

SITE PLAN
EXISTING CONDITIONS

DATE:	TECHNICAL:	REVIEWER:	DRAWN:
AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK

PROJECT:	REVISION:	SHEET:
26388-512	A	01

= 20 mm WHEN PRINTED ON ISO A1 - 841 mm x 594 mm (L)

LEGEND

- EXISTING MAJOR CONTOUR (5 m INTERVAL)
- EXISTING MINOR CONTOUR (1 m INTERVAL)
- WEST COCHRANE #2 GRAVEL PIT (DISTURBANCE AREA)
- B1 — PLANNED PHASES
- EXISTING DRAINAGE BOUNDARY
- EXISTING WETLAND
- WATERCOURSE FLOW DIRECTION
- EXISTING CULVERT
- EXISTING DITCH FLOW PATH
- EXISTING CATTLE CROSSING
- EXISTING VISIBILITY BERM (VEGETATED)
- FUTURE VISIBILITY BERM
- A1 — RUSLE LOCATION REFERENCE
- RUSLE SLOPE SEGMENT
- 2265 — PHOTO NUMBER AND DIRECTION

NOTES

1. REFER TO SHEET 07 FOR RUSLE TABLE DATA.

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BURNCO
EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

ESC PLAN 1 OF 2
EXISTING CONDITIONS

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AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK

PROJECT:	REVISION:	SHEET:
26388-512	A	02

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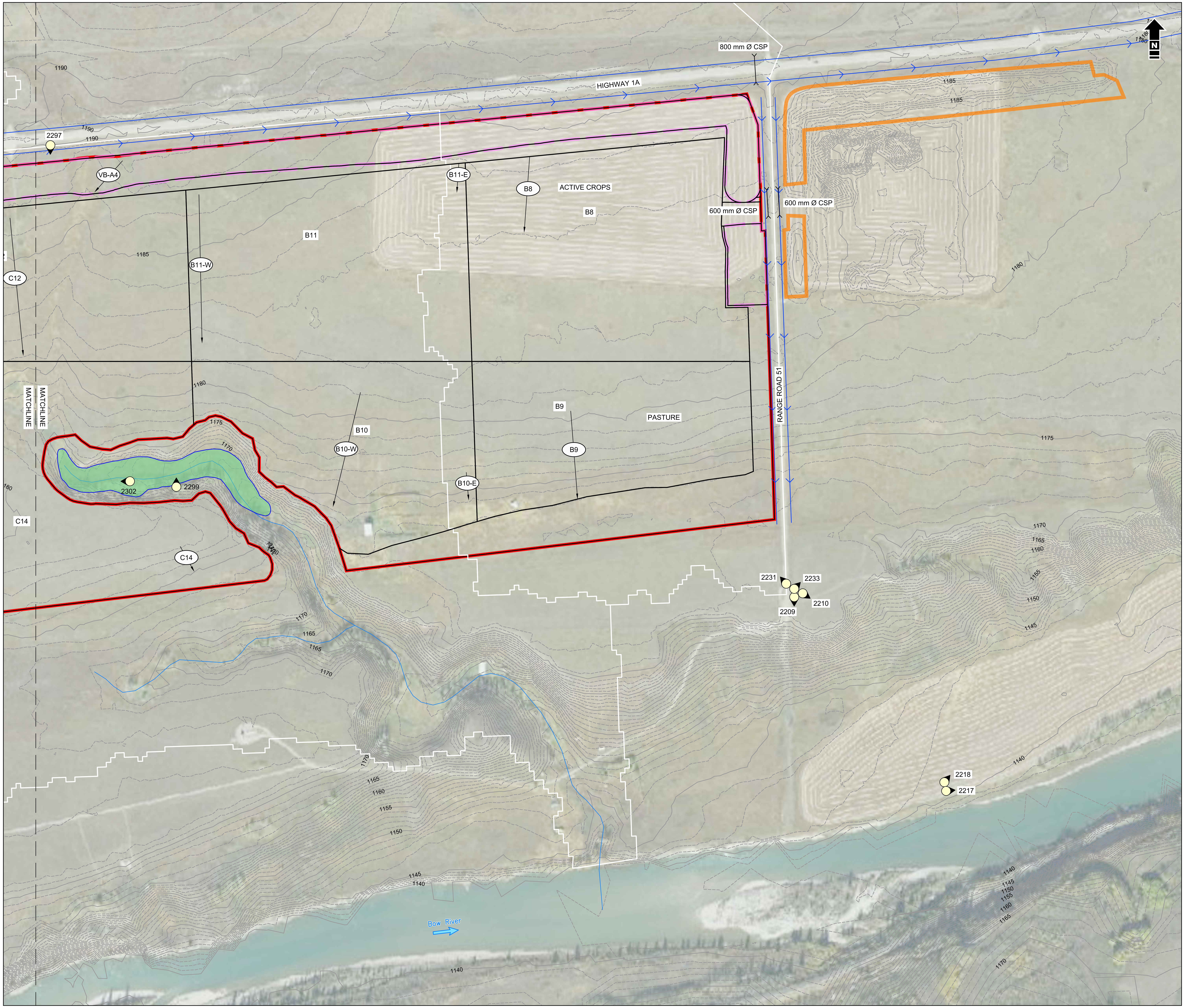

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BURNCO
EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

ESC PLAN 2 OF 2
EXISTING CONDITIONS

DATE:	TECHNICAL:	REVIEWER:	DRAWN:
AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK
PROJECT: 26388-512		REVISION: A	SHEET: 03

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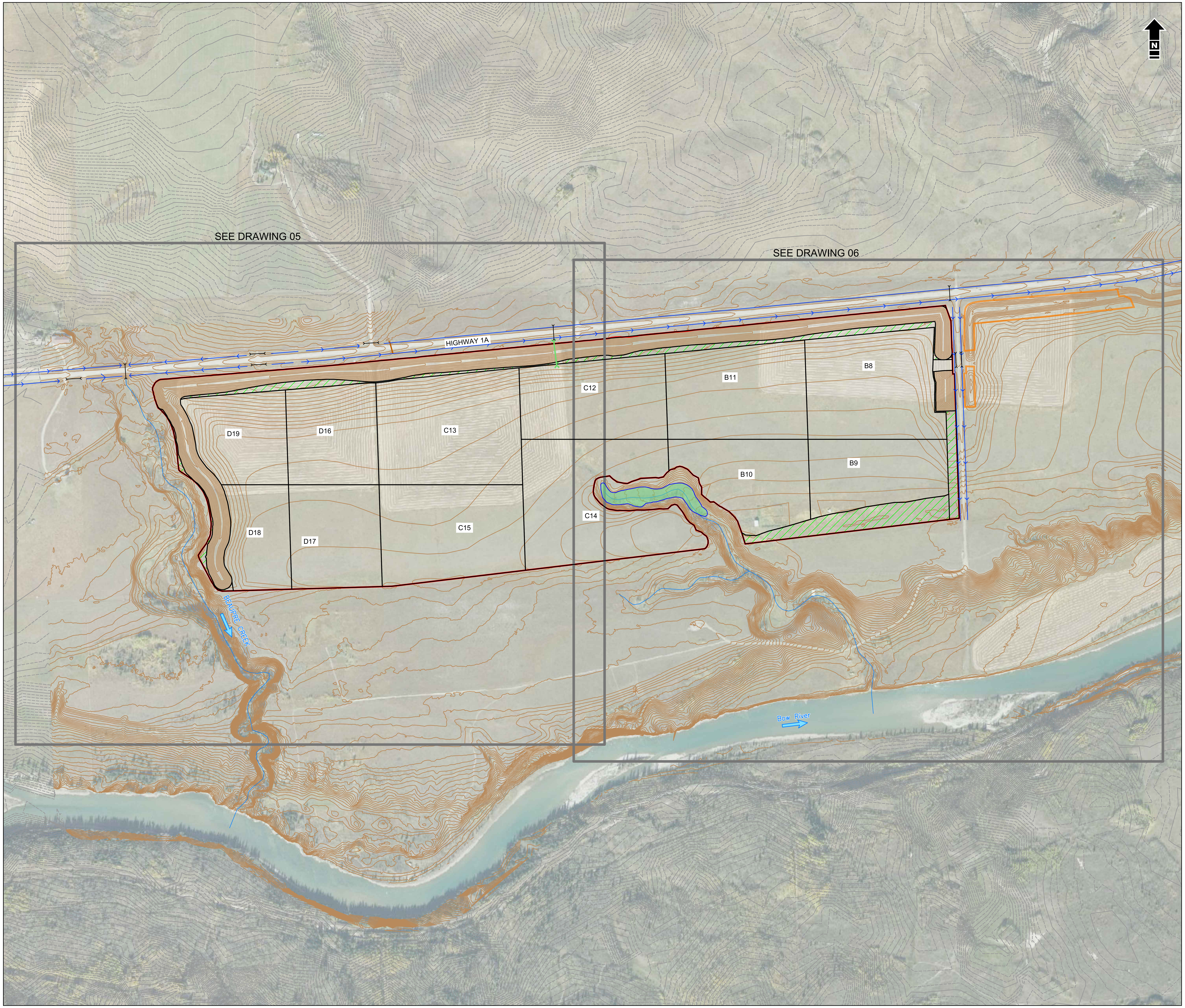

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SITE PLAN
POST-DEVELOPMENT CONDITIONS

DATE: AUGUST 2022	TECHNICAL: T. SCHAEPSMEYER	REVIEWER: A. SORDI	DRAWN: C. WELK
PROJECT: 26388-512		REVISION: A	SHEET: 04

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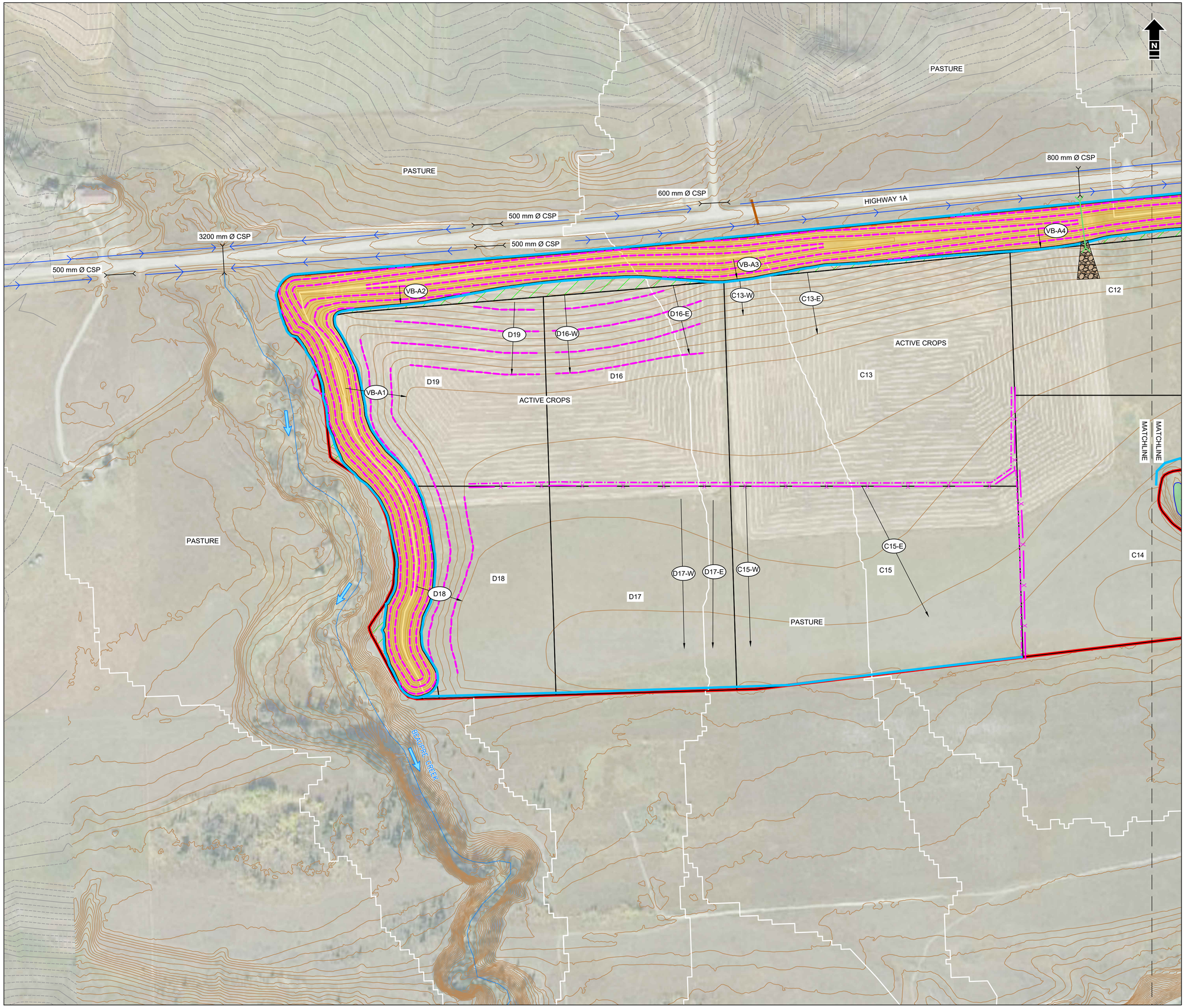

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- PROPOSED STRAW WATTLE WITH SILT FENCE
- RIPRAP PLACED ON GRANULAR BEDDING MATERIAL

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BURNCO
EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

ESC PLAN 1 OF 2
POST-DEVELOPMENT CONDITIONS

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AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK

PROJECT:	REVISION:	SHEET:
26388-512	A	05

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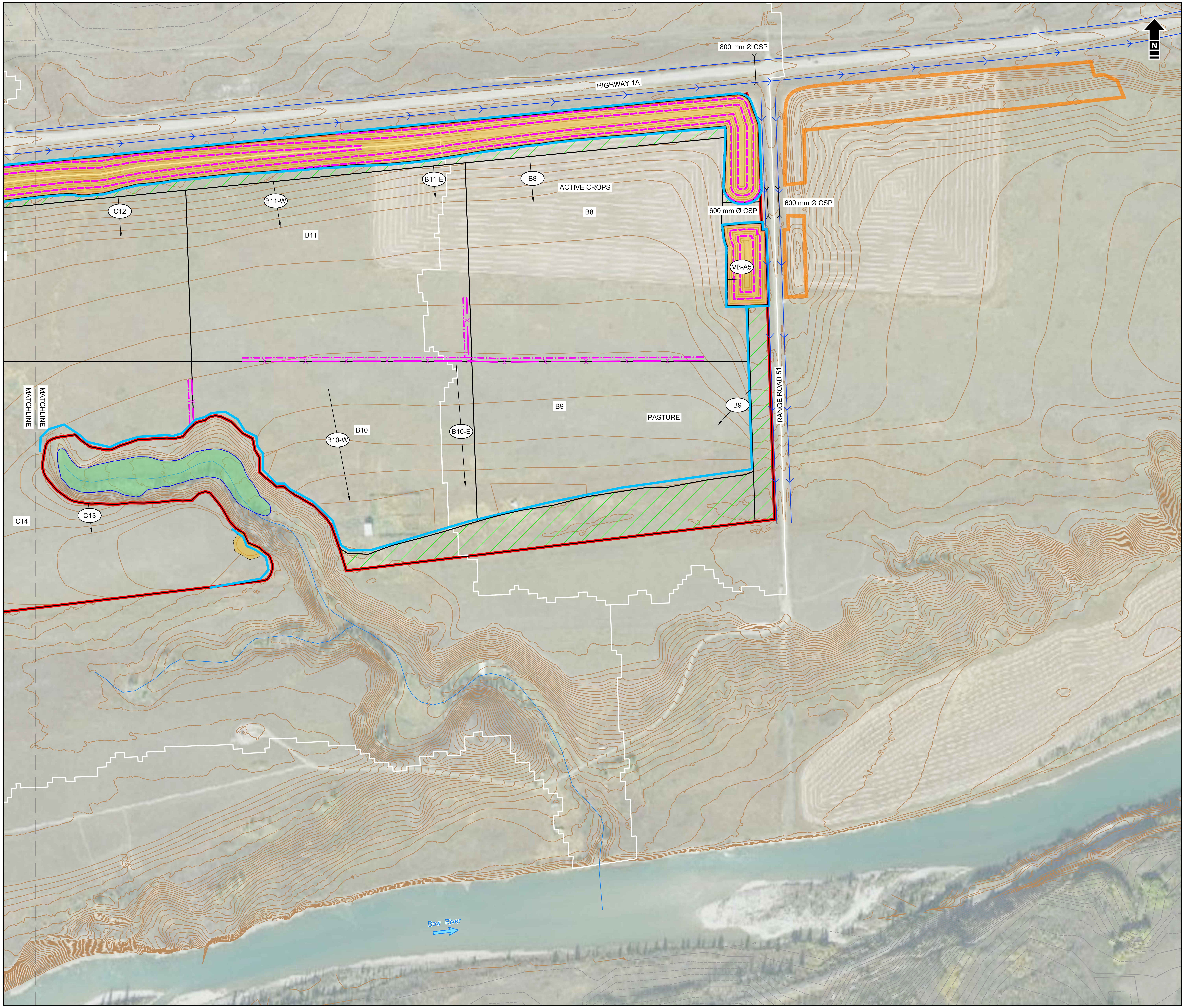

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BURNCO
EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

ESC PLAN 2 OF 2
POST-DEVELOPMENT CONDITIONS

DATE:	TECHNICAL:	REVIEWER:	DRAWN:
AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK
PROJECT: 26388-512		REVISION: A	SHEET: 06

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RUSLE TABLE - EXISTING CONDITIONS

Location (referenced on Drawings)	Construction Stage	Slope and Slope Length (worst case LS Value for area)	R-Value	K-Value	Length	US Elev	DS Elev	Slope	LS-Value	Description of Control Practices	C-Value	P-Value	A-Value (Tonnes/ ha*yr)
B10-E	Pre-Construction	38.35 m @ 6%	320	0.05	38.35	1176.486	1174.018	6.4%	1.03	C – Agricultural Land P – None	0.04	1.00	0.66
B10-W	Pre-Construction	162.07 m @ 4%	320	0.05	162.07	1181.004	1174.031	4.3%	1.48	C – Agricultural Land P – None	0.04	1.00	0.95
B11-E	Pre-Construction	40.05 m @ 1%	320	0.05	40.05	1183.879	1183.502	0.9%	0.15	C – Agricultural Land P – None	0.04	1.00	0.10
B11-W	Pre-Construction	204.94 m @ 2%	320	0.05	204.94	1186.513	1181.496	2.4%	0.79	C – Agricultural Land P – None	0.04	1.00	0.50
B8	Pre-Construction	104.9 m @ 1%	320	0.05	104.90	1184.263	1182.999	1.2%	0.25	C – Agricultural Land P – None	0.04	1.00	0.16
B9	Pre-Construction	121.92 m @ 6%	320	0.05	121.92	1180.502	1172.966	6.2%	1.98	C – Agricultural Land P – None	0.04	1.00	1.27
C12	Pre-Construction	190.78 m @ 3%	320	0.05	190.78	1186.484	1180.995	2.9%	0.94	C – Agricultural Land P – None	0.04	1.00	0.60
C13-E	Pre-Construction	329.57 m @ 2%	320	0.05	329.57	1190.016	1182.498	2.3%	0.83	C – Agricultural Land P – None	0.04	1.00	0.53
C13-W	Pre-Construction	255.98 m @ 2%	320	0.05	255.98	1189.498	1184.991	1.8%	0.55	C – Agricultural Land P – None	0.04	1.00	0.35
C14	Pre-Construction	39.48 m @ 8%	320	0.05	39.48	1178.018	1175.008	7.6%	1.25	C – Agricultural Land P – None	0.04	1.00	0.80
C15-E	Pre-Construction	56.33 m @ 5%	320	0.05	56.33	1180.005	1177.206	5.0%	0.97	C – Agricultural Land P – None	0.04	1.00	0.62
C15-W	Pre-Construction	73.21 m @ 4%	320	0.05	73.21	1180.997	1178.009	4.1%	0.90	C – Agricultural Land P – None	0.04	1.00	0.57
D16-E	Pre-Construction	111.73 m @ 4%	320	0.05	111.73	1192.506	1188.499	3.6%	0.95	C – Agricultural Land P – None	0.04	1.00	0.61
D16-W	Pre-Construction	81.45 m @ 4%	320	0.05	81.45	1193.005	1189.478	4.3%	1.02	C – Agricultural Land P – None	0.04	1.00	0.65
D17-E	Pre-Construction	60.79 m @ 5%	320	0.05	60.79	1181.504	1178.482	5.0%	1.01	C – Agricultural Land P – None	0.04	1.00	0.65
D17-W	Pre-Construction	102.68 m @ 4%	320	0.05	102.68	1182.997	1178.512	4.4%	1.16	C – Agricultural Land P – None	0.04	1.00	0.74
D18-E	Pre-Construction	56.95 m @ 5%	320	0.05	56.95	1182.494	1179.603	5.1%	1.00	C – Agricultural Land P – None	0.04	1.00	0.64
D18-W	Pre-Construction	26.98 m @ 5%	320	0.05	26.98	1182.5	1181.134	5.1%	0.65	C – Agricultural Land P – None	0.04	1.00	0.41
D19-E	Pre-Construction	107.2 m @ 4%	320	0.05	107.20	1192.499	1188.499	3.7%	1.00	C – Agricultural Land P – None	0.04	1.00	0.64
D19-W	Pre-Construction	17.29 m @ 12%	320	0.05	17.29	1185.007	1182.959	11.8%	1.24	C – Agricultural Land P – None	0.04	1.00	0.79
VB - A1	Pre-Construction	44.7 m @ 7%	320	0.05	44.70	1190	1187	6.7%	1.17	C – Agricultural Land P – None	0.04	1.00	0.75
VB - A2	Pre-Construction	51.9 m @ 3%	320	0.05	51.90	1193	1191.5	2.9%	0.53	C – Agricultural Land P – None	0.04	1.00	0.34
VB - A3	Pre-Construction	62.77 m @ 4%	320	0.05	62.77	1194	1191.4	4.1%	0.84	C – Agricultural Land P – None	0.04	1.00	0.54
VB - A4	Pre-Construction	57.68 m @ 3%	320	0.05	57.68	1188	1186.5	2.6%	0.48	C – Agricultural Land P – None	0.04	1.00	0.31

RUSLE TABLE - POST DEVELOPMENT

Location (referenced on Drawings)	Construction Stage	Slope and Slope Length (worst case LS Value for area)	R-Value	K-Value	Length	US Elev	DS Elev	Slope	LS-Value	Description of Control Practices	C-Value	P-Value	A-Value (Tonnes/ ha*yr)
B10-E	Final Reclamation	168.5 m @ 2%	320	0.05	168.50	1176	1173	1.8%	0.47	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**0.70**	0.21
B10-W	Final Reclamation	158.14 m @ 2%	320	0.05	158.14	1176.003	1172.992	1.9%	0.50	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**1.00**	0.32
B11-E	Final Reclamation	45.04 m @ 9%	320	0.05	45.04	1183.949	1179.996	8.8%	1.55	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**1.00**	0.99
B11-W	Final Reclamation	64.18 m @ 9%	320	0.05	64.18	1185.83	1179.993	9.1%	2.08	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**1.00**	1.33
B8	Final Reclamation	63.72 m @ 8%	320	0.05	63.72	1184.245	1179.006	8.2%	1.75	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**0.70**	0.78
B9	Final Reclamation	68.2 m @ 7%	320	0.05	68.20	1180	1174.998	7.3%	1.68	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**1.00**	1.07
C12	Final Reclamation	57.11 m @ 9%	320	0.05	57.11	1186.302	1181.012	9.3%	1.98	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**1.00**	1.27
C13-E	Final Reclamation	86.32 m @ 9%	320	0.05	86.32	1190.007	1181.998	9.3%	2.63	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**1.00**	1.68
C13-W	Final Reclamation	47.55 m @ 10%	320	0.05	47.55	1189.75	1184.998	10.0%	1.97	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**1.00**	1.26
C14	Final Reclamation	40.73 m @ 10%	320	0.05	40.73	1179.141	1175	10.2%	1.82	C-Seeded cover, tall grasses P-Erosion Control Blanket	0.04	**0.70**	0.82
C15-E	Final Reclamation	202.56 m @ 1%	320	0.05	202.56	1179.908	1178	0.9%	0.23	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**0.70**	0.10
C15-W	Final Reclamation	221.56 m @ 1%	320	0.05	221.56	1180.206	1178	1.0%	0.25	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**0.80**	0.13
D16-E	Final Reclamation	97.47 m @ 9%	320	0.05	97.47	1191	1182	9.2%	2.83	C-Seeded cover, tall grasses P-Straw Wattles	0.04	**0.80**	1.45
D16-W	Final Reclamation	107.91 m @ 10%	320	0.05	107.91	1193	1182	10.2%	3.56	C-Seeded cover, tall grasses P-Straw Wattles	0.04	**0.70**	1.60
D17-E	Final Reclamation	204.19 m @ 1%	320	0.05	204.19	1180.001	1178	1.0%	0.24	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**0.70**	0.11
D17-W	Final Reclamation	206.74 m @ 1%	320	0.05	206.74	1180	1178	1.0%	0.24	C-Seeded cover, tall grasses P-V-ditch and berm with check dams and storage for 150 m3/ha	0.04	**1.00**	0.15
D18	Final Reclamation	55.91 m @ 9%	320	0.05	55.91	1184.191	1178.999	9.3%	1.96	C-Seeded cover, tall grasses P-Tackifier and hydroseed	0.04	**1.00**	1.26
D19	Final Reclamation	99.94 m @ 10%	320	0.05	99.94	1192.002	1181.997	10.0%	3.28	C-Seeded cover, tall grasses P-Straw Wattles	0.04	**0.80**	1.68
VB - A1	Final Reclamation	84.69 m @ 13%	320	0.05	84.69	1199	1188	13.0%	4.35	C-Seeded cover, tall grasses P-TV-ditch and berm with check dams and storage for 200 m3/ha	0.04	**0.60**	1.67
VB - A2	Final Reclamation	24.58 m @ 33%	320	0.05	24.58	1198	1190	32.5%	5.11	C-Seeded cover, tall grasses P-TV-ditch and berm with check dams and storage for 200 m3/ha	0.04	**0.60**	1.96
VB - A3	Final Reclamation	27.43 m @ 33%	320	0.05	27.43	1199	1190	32.8%	5.62	C-Seeded cover, tall grasses P-TV-ditch and berm with check dams and storage for 300 m3/ha	0.04	**0.50**	1.80
VB - A4	Final Reclamation	26.93 m @ 33%	320	0.05	26.93	1195	1186	33.4%	5.65	C-Seeded cover, tall grasses P-TV-ditch and berm with check dams and storage for 300 m3/ha	0.04	**0.50**	1.81
VB - A5	Final Reclamation	24.19 m @ 33%	320	0.05	24.19	1190	1182	33.1%	5.13	C-Seeded cover, tall grasses P-TV-ditch and berm with check dams and storage for 200 m3/ha	0.04	**0.60**	1.97

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THOMAS SCHAEPSMEYER
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1-403-237-0606

DEVELOPMENT PERMIT:
PHASE 1: 2012-DP-15078

CERTIFIED PROFESSIONAL IN EROSION & SEDIMENT CONTROL
CPESC
Thomas Schaepsmeyer
No. 9682
Exp. 2-20-2023

NOT FOR CONSTRUCTION

REVISION

No.	DATE	DESCRIPTION	BY	CHK.	DRN.
A	2022-08-12	ISSUED AS FINAL	TS	AYS	CW

Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

BURNCO
EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

RUSLE TABLES

DATE:	TECHNICAL:	REVIEWER:	DRAWN:
AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK

PROJECT: 26388-512 | REVISION: A | SHEET: 07

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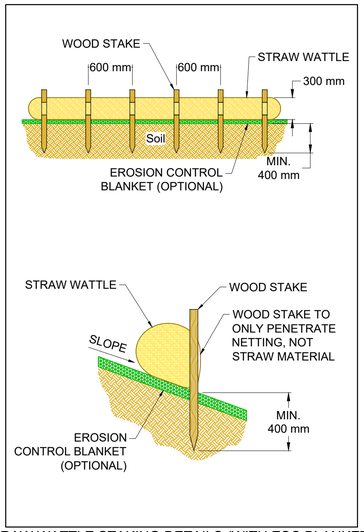

STRAW WATTLE STAKING DETAILS (WITH ESC BLANKET)

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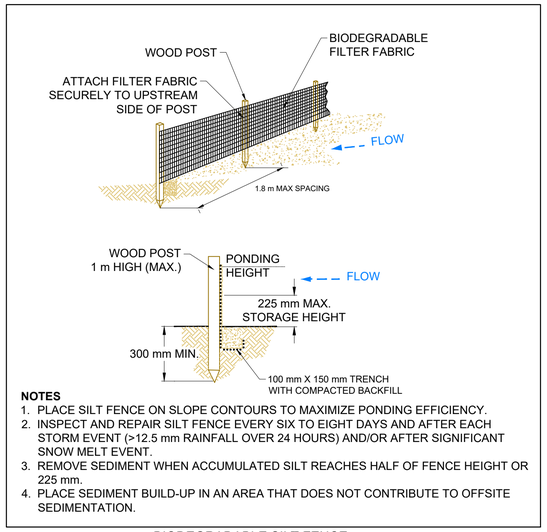

NOTES

1. PLACE SILT FENCE ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR SILT FENCE EVERY SIX TO EIGHT DAYS AND AFTER EACH STORM EVENT (>12.5 mm RAINFALL OVER 24 HOURS) AND/OR AFTER SIGNIFICANT SNOW MELT EVENT.
3. REMOVE SEDIMENT WHEN ACCUMULATED SILT REACHES HALF OF FENCE HEIGHT OR 225 mm.
4. PLACE SEDIMENT BUILD-UP IN AN AREA THAT DOES NOT CONTRIBUTE TO OFFSITE SEDIMENTATION.

BIODEGRADABLE SILT FENCE

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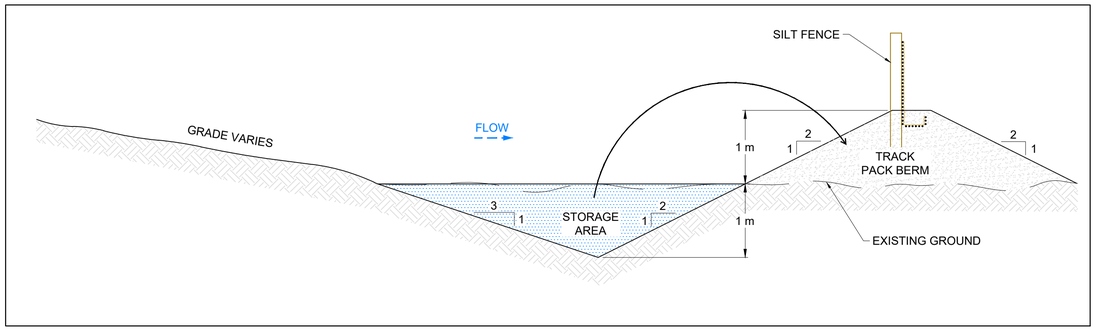

DITCH AND BERM AND BIODEGRADABLE SILT FENCE

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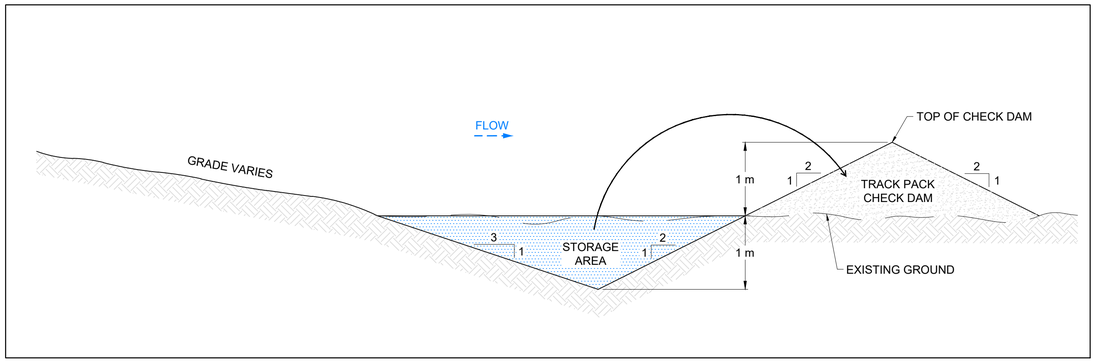

DIVERSION DITCH WITH CHECK DAM

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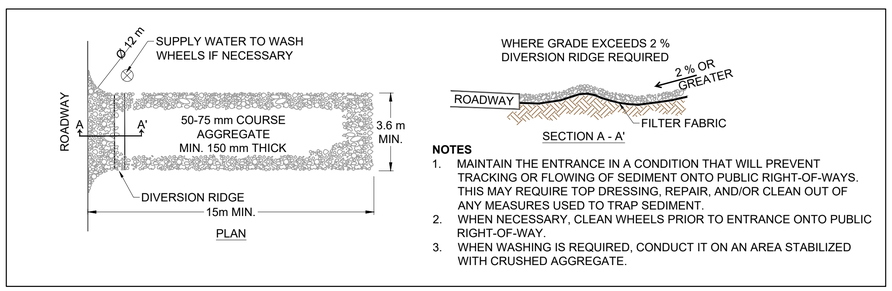


NOTES

1. MAINTAIN THE ENTRANCE IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR, AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, CLEAN WHEELS PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, CONDUCT IT ON AN AREA STABILIZED WITH CRUSHED AGGREGATE.

GRAVEL ACCESS PAD

N.T.S.

BEST MANAGEMENT PRACTICES

1. ENSURE THAT SPILL CONTAINMENT MATERIALS ARE READILY AVAILABLE (E.G. SPILL KITS IN ALL ONSITE VEHICLE AND MACHINERY) AND THAT OPERATORS ARE TRAINED IN CONTAINMENT AND CLEANUP OF SPILLS.
2. PLACE STOCKPILES ON FLAT SURFACES AND SET BACK FROM STANDING TREES. SEPARATE TOPSOIL AND SUBSOIL STOCKPILES BY A MINIMUM DISTANCE OF 1 m. SHAPE STOCKPILES TO A STABLE SLOPE GRADIENT.
3. VEGETATE (SEED) ALL STOCKPILES AS EARLY AS POSSIBLE AFTER STOCKPILES HAVE BEEN ESTABLISHED. USE ONLY AN APPROVED NATIVE GRASS SEED MIX.
4. HALT WORK DURING HEAVY RAINS/SNOWFALL.

DUST CONTROL

5. DUST CONTROL IS THE RESPONSIBILITY OF BURNCO.
6. TARP ALL TRUCKS LEAVING SITE WITH FULL LOADS.
7. WHILE OPERATING IN PIT AREA, ADHERE TO 20 km/h SPEED LIMIT.
8. USE WATER TRUCK(S) IN THE ACTIVE PIT AREA AND DURING OVERBURDEN STRIPPING OPERATIONS.
9. WHEN NECESSARY, APPLY CALCIUM CHLORIDE (A SOIL BINDING AGENT) IN THE AGGREGATE STOCKPILE AREA AND ON THE PIT ROAD.
10. REDUCE DUST EMISSIONS PRODUCED BY THE CRUSHER BY:
    a. ENCLOSING EACH CRUSHER COMPONENT (E.G., CONE, JAW AND SCREEN DECK) WITH A BLANKET SYSTEM
    b. ENCLOSING EACH TRANSFER POINT WITH A BLANKET SYSTEM
    c. USING WATER SPRAYS AT VARIOUS TRANSFER POINTS
    d. CLEARING THE DUST THAT SETTLES AROUND THE CRUSHER ON A DAILY BASIS.

ESC MONITORING AND MAINTENANCE

11. CLOSED PHASES UNDERGOING RECLAMATION WILL ADHERE TO WEEKLY SITE INSPECTIONS TO MINIMIZE RISKS DURING SENSITIVE VEGETATION ESTABLISHMENT PERIODS. CONDUCT AN EROSION AND SEDIMENT INSPECTION AND REPORT WEEKLY (EVERY 6-8 DAYS) AND AFTER SIGNIFICANT PRECIPITATION EVENTS. MONITORING OF ESC MEASURES WILL BE CONDUCTED BY BURNCO. COMPLETE AND DOCUMENT INSPECTIONS OF ALL ESC PRACTICES AT LEAST EVERY 6-8 DAYS AND AT CRITICAL TIMES WHEN EROSION OR SEDIMENT RELEASES COULD OCCUR. INSPECTIONS MUST BE COMPLETED AND DOCUMENTED DURING, OR WITHIN 24 HOURS OF, HEAVY SNOWMELT AND HEAVY AND/OR PROLONGED RAINFALL (DEFINED AS >12 MM PRECIPITATION WITHIN ANY 24-HOUR PERIOD, OR PRECIPITATION OR SNOWMELT ON WET OR THAWING SOILS). INSPECTION REPORTS OF THE ESC MEASURES WILL BE COMPLETED AND KEPT ONSITE TO BE MADE AVAILABLE TO ROCKY VIEW COUNTY UPON REQUEST.
12. ACTIVE PHASES WILL ADHERE TO MONTHLY SITE INSPECTIONS AND ADDITIONAL INSPECTIONS AFTER HEAVY OR PROLONGED PRECIPITATION EVENTS (>12 mm OF RAINFALL OVER A 24 HOUR PERIOD).
13. KEEP AN APPROVED COPY OF THE ESC PLAN AND COMPLETED SITE INSPECTION REPORTS ONSITE. IF SITE CONDITIONS WARRANT AMENDMENTS TO THE ESC PLAN, A REVISED COPY WILL BE FORWARDED TO THE ROCKYVIEW COUNTY INSPECTOR RESPONSIBLE FOR APPROVING THE ORIGINAL ESC PLAN.
14. MAINTAIN ESC CONTROLS BY REMOVING COLLECTED WATER AND SEDIMENT AT 1/3 THE DEVICE HEIGHT.
15. INSPECTIONS MUST BE DONE BY A QUALIFIED PERSON WHO HAS TRAINING IN ESC, OR BY SOMEONE WHO IS DIRECTLY UNDER THE SUPERVISION OF A QUALIFIED PERSON.
16. A PRE-WINTER INSPECTION WILL BE REQUIRED TO NOTE ANY DEFICIENCIES THAT NEED TO BE ADDRESSED BEFORE FREEZE-UP. INSPECTION AND MAINTENANCE OF THE SITE WILL BE REQUIRED THROUGHOUT THE WINTER (EVERY 6-8 DAYS).

UNIVERSAL ESC REQUIREMENTS:

17. INSTALL ESC CONTROLS AS PER THE MANUFACTURER'S SPECIFICATIONS.
18. SLOPES GREATER THAN 10:1 MUST HAVE CONTOUR FURROWS.
19. DISTURBED AREAS THAT ARE UP-GRADIENT OF UNDISTURBED AREAS MUST BE CONTAINED WITH A DITCH, BERM AND BIODEGRADABLE SILT FENCE TO ENSURE SEDIMENT DOES NOT ESCAPE ONTO UNDISTURBED AREAS.
20. INSTALL DITCH-BERM-BIODEGRADABLE SILT FENCE COMBINATION AT PERIMETER OF EACH PHASE WHERE FLOW IS DRAINING TOWARDS A WATERCOURSE, AND WHERE INDICATED.
21. PERIMETER EROSION PROTECTION MEASURES AT THE DOWNSTREAM END OF A PHASE ARE TO BE SET BACK FROM THE PROJECT BOUNDARY BY 3-5 METERS.

TEMPORARY (INTERIM) ESC MEASURES

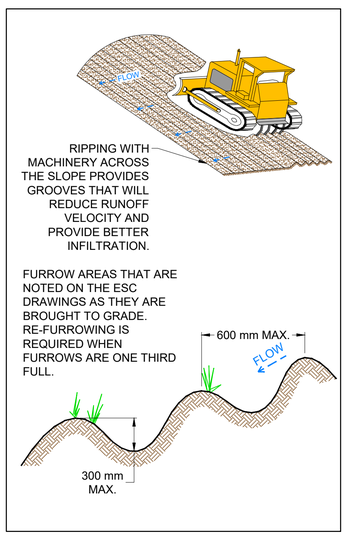
22. BEFORE STRIPPING OPERATIONS, INSTALL TEMPORARY GRAVEL PADS AT ALL INGRESS/EGRESS (ACCESS) POINTS.
23. CONTROL MUD TRACK OUT DURING CONSTRUCTION; ENSURE GRAVEL PADS (OR MUD MATS) ARE WELL-MAINTAINED AT ALL ACCESS LOCATIONS. WHEN REQUIRED, EMPLOY STREET SWEEPING: ENSURE ANY DIRT TRACKED ONTO ADJACENT PAVED ROADWAYS IS IMMEDIATELY CLEANED UP.
24. PLACE STOCKPILES ON SITE SO MATERIAL WILL NOT BE ERODED TO OFF-SITE AREAS.
25. INSTALL DOWN-GRADIENT PERIMETER PROTECTION FOR EACH PHASE (SUCH AS BERM WITH SILT FENCE ON DOWN GRADIENT SIDE) TO PROTECT OFF-SITE AREAS FROM STORMWATER RUNOFF AND SEDIMENTATION DURING CONSTRUCTION.
26. IMPLEMENT APPROVED DUST CONTROL AS REQUIRED, PARTICULARLY TO THE INTERNAL HAUL ROADS AND VARIOUS AGGREGATE STOCKPILES (RESPONSIBILITY OF CONTRACTOR). CONTINUE TO IMPLEMENT DUST CONTROL REGULARLY, WITH INCREASED FREQUENCY DURING STRONG WIND CONDITIONS.
27. RECLAIMED AREAS (PHASES) MUST HAVE PERIMETER CONTROL TO PREVENT SURFACE RUNOFF FROM ENTERING DISTURBED AREAS DOWN GRADIENT. THE LOCATION OF PERIMETER CONTROL IS TO BE ADJUSTED AS NEEDED. STRAW WATTLES ARE TO BE USED OFFSET UPGRADIENT FROM SILT FENCE BY 1-2 m. WATTLES ARE TO BE DUG INTO THE GROUND TO SECURE THEM, UNLESS ON TOP OF EROSION CONTROL BLANKET.

PERMANENT (FINAL) ESC MEASURES

28. THE ESC MEASURES IN THIS PLAN WERE DEVELOPED ON THE ASSUMPTION THAT THE RECLAIMED CONDITION WILL BE CONSTRUCTED ACCORDING TO THE SURFACE PROVIDED BY BURNCO.
29. ANY REMAINING SLOPES WITHIN THE DESIGNATED BORROW AREAS MUST BE STABILIZED AND THE ESC MEASURES MUST BE IMPLEMENTED ACCORDINGLY TO PREVENT UNWANTED SEDIMENT TRANSPORT INTO FINAL RECLAIMED PHASES. RUSLE CALCULATIONS WILL NEED TO BE CARRIED OUT TO DETERMINE WHICH ESC MEASURES ARE THE MOST APPROPRIATE.
30. RECLAIM AREAS THROUGH RE-GRADING AND RE-VEGETATING AS SOON AS OPERATIONS ARE COMPLETE.
31. HYDROSEED APPROVED TACKIFIER, MULCH AND SEED MIX SLURRY TO SPECIFIED AREAS.
32. ALL SLOPES TO BE SURFACE TRACKED WITH ONE PASS (ROUGHENED), ENSURING THE TOPSOIL IS NOT OVERLY COMPACTED PRIOR TO SEEDING.
33. INSTALL EROSION CONTROL BLANKET WHERE INDICATED AND TO ANY SLOPES GREATER THAN 5:1; BROADCAST OR DRILL SEED ENTIRE AREA PRIOR TO INSTALLING BLANKET.
34. DO NOT REMOVE ESC CONTROLS ONCE THE SITE HAS REVEGETATED AND ACHIEVED FINAL STABILIZATION. PLAN FOR FULLY BIODEGRADABLE ESC PRODUCTS (SEDIMENT WATTLE, ECB AND SILT FENCE) TO REMAIN IN PLACE PERMANENTLY FOR FINAL RECLAMATION PURPOSES.
35. ESC CONTROLS ARE TO BE APPLIED TO THE VISIBILITY BERMS IMMEDIATELY UPON CONSTRUCTION, COMPLETE WITH SEED AND TACKIFIER BENEATH THE EROSION CONTROL BLANKET.
36. RIPRAP PLACED ON GRANULAR BEDDING MATERIAL TO BE PLACED AT ALL CULVERT OUTLETS DISCHARGING TO DISTURBED AREAS. ADEQUATE RIPRAP AND GRANULAR BEDDING MATERIAL DESIGN SIZING WILL BE REQUIRED ONCE CULVERT SIZING IS COMPLETE.

ESC CONSULTANT: THOMAS SCHAEPSMEYER, tschaepsmeyer@matrix-solutions.com, 1-403-237-0606

DEVELOPMENT PERMIT: PHASE 1: 2012-DP-15078



CONTOUR FURROWING

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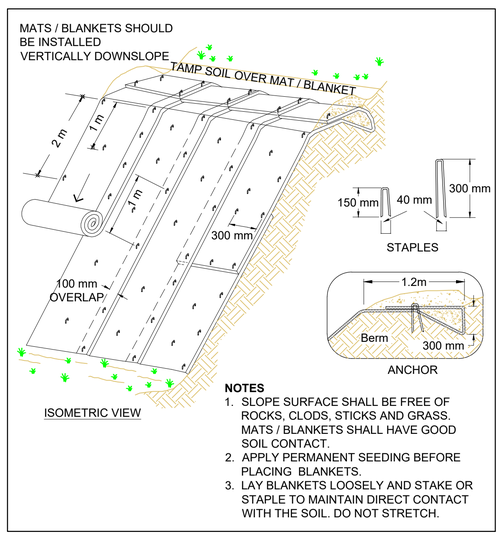

NOTES

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS / BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

EROSION BLANKET SLOPE INSTALLATION

N.T.S.

NOT FOR CONSTRUCTION

CERTIFIED PROFESSIONAL IN EROSION & SEDIMENT CONTROL
CPESC
Thomas Schaepsmeyer
No. 9982
Exp. 2-20-2022

REVISION					
A	2022-08-12	ISSUED AS FINAL	TS	AYS	CW
No.	DATE	DESCRIPTION	BY	CHK.	DRN.

Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

BURNCO

EROSION CONTROL PLAN, WEST COCHRANE #2 GRAVEL PIT

NOTES AND TYPICAL DETAILS

DATE:	TECHNICAL:	REVIEWER:	DRAWN:
AUGUST 2022	T. SCHAEPSMEYER	A. SORDI	C. WELK

PROJECT:	REVISION:	SHEET:
26388-512	A	08

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Appendix 1200A - Erosion & Sedimentation Control Template

GENERAL INFORMATION				
	Company & Contact Name	**Office Telephone #**	**Cellular Telephone #**	**E-mail**
Owner/Developer:	*BURNCO Rock Products Ltd. – Travis Coates*	*403.640.9217*	*403.640.9217*	*travis.coates@burnco.com*
Project Manager:	*BURNCO Rock Products Ltd. – Travis Coates*	*403.640.9217*	*403.640.9217*	*travis.coates@burnco.com*
Engineering Consultant:	*Matrix Solutions – Allisha Sordi*	*403.463.6130*	*403.463.6130*	*asordi@matrix-solutions.com*
ESC Consultant:	*Matrix Solutions – Thomas Schaepsmeyer*	*587.434.9765*	*587.434.9765*	*tschaepsmeyer@matrix-solutions.com*
Site Superintendent:	*N/A*			
ESC Implementation, Inspection & Maintenance Contact:	*BURNCO Rock Products Ltd. – Jeff Michaud*	*403.640.9241*	*403.510 6124*	*jeffrey.michaud@burnco.com*
Rocky View County Contact: ESC Review & Inspection:	Rocky View to insert			
Rocky View County Dewatering Contact:	Rocky View to insert			
Project Name: *BURNCO Rock Products – West Cochrane #2 Gravel Pit Expansion*				
Legal Land Location (ie.,NW-27-025-02-W5): (Lots 1 & 2 Block 5 Plan 7532 JK).	*NE-15-026-05 W5M* *NW-14-026-05 W5M* *NE-14-026-05 W5M*			

Project Address:	*NW 13-26-05 W5M*
Development Permit or Development Agreement/File reference number	Development permit application to be provided later

QUALIFICATIONS AND INSURANCE		
Name of Professional and General Liability Insurance Company. Minimum of **$2,000,000** (certificate of insurance)	Provided: ☒ Yes ☐ No	Commercial General Liability: Continental Casualty Company Professional Liability: XL Insurance Company
Qualifications, experience, certifications. Erosion & Sedimentation Control Consultant as per Section 100	Provided: ☒ Yes ☐ No	Thomas Schaepsmeyer, CPESC, E.I.T.
Letter from insurance provider indicating applicant is insured to complete erosion and sediment control plans, reports and inspections.	Provided: ☒ Yes ☐ No	See Attachment A
Professional License # Name of Licensing organization/association.	Provided: ☒ Yes ☐ No	APEGA Permit to Practice Permit No. P5540

Note: The information required in the general information and section 1.0 must be forwarded to be reviewed and accepted by Rocky View County prior to the applicant completing the report or plans for the first time. This information must then be sent to the County with every package.

EXISTING SITE CHARACTERISTICS

Provide the date of the initial site inspection. Attach a CD with the jpeg photos (date stamped) and a plan noting the locations of the photos.

Date of initial inspection: *August 17, 2018*

☒ CD with jpeg photo files included
☒ Plan with photo locations included – See Drawing Package

Are there any areas within or around the site that may be critical and have a potential for serious erosion and/or sedimentation problems? (i.e., steep slopes, ravines). Are there existing eroded slopes or other areas where sediment deposition has occurred? (provide location and photos)

The Project Site is located on a large plateau north of the Bow River. Most of the Project Site slopes mildly to the south towards the Bow River at an average of 4.3%. There are two coulees (Beaupre Creek and an unnamed watercourse) with slopes between 2 and 15% that run west and south the Project Site. Natural buffers will be maintained between the gravel operations and these natural draws. Site grading will not permit surface water to leave active operations towards these draws, so there is minimal risk for serious erosion issues due to the gravel operations.

At the time of the ESC inspection, there was no evidence of existing eroded slopes or areas of sedimentation outside of the coulee systems.

Are there existing storm facilities (ponds or outfalls), storm manholes or inlets or sanitary sewer manholes within or around the site that may require protection prior to commencement of construction activities. (provide locations)
There are no existing underground storm facilities, ponds, or outfalls within the Project Site.
Identify neighboring areas. Include neighboring developments (residential, commercial or agricultural developments), roads (paved or graveled), rivers, streams, lakes, creeks, reserves, parks, storm ponds, etc.
The Project Site is located in Rocky View County, approximately 5 km west of the Town of Cochrane along Highway 1A. The Project Site is directly south of Highway 1A and located between 430 and 820 m north of the Bow River. Land immediately to the west and north of the Project Site is primarily used for agricultural purposes (mainly pasture with some cultivated land) with some private residences. Land immediately to the east comprises of the active BURNCO West Cochrane gravel pit and previously approved Phase A expansion area.
Describe existing topography. This section will describe the existing topography (direction of existing overland flows and slopes within and surrounding the site)
Under pre-development conditions. the majority of the Project Site slopes (~ 4% grade) to the south / southwest towards the Bow River. As described above, there are 2 identifiable coulees located to the west and south of the Project Site. Currently, surface drainage from the Project Site flows either into one of the coulees or directly drains to the Bow River. *Beaupre Creek, the main coulee located west of the Project Site, has an upstream drainage area approximately 31 km^2.*
Describe existing land use. This section will describe the land. Is it pasture, crop, bare, are there trees, grass, buildings, etc.? Include description of buildings adjacent to the development as well. Has any grading been done? Are there existing stockpiles.
The predominant land use of the Project Site is cultivation and pasture consisting primarily of native grasslands with small areas of riparian. *The active BURNCO West Cochrane gravel pit is located east of the Project Site (approximately 7.0 ha). The operational pit area has been stripped and graded to approximately 2-4 metres below the surrounding area. Activities within the pit are limited to dry pit excavation, dirt moving, aggregate crushing and screening, and sales of aggregates. In addition, several aggregate stockpiles are located within the operations area. A large vegetated visual berm surrounds the active pit to the north and west.* *Access to the active pit is via Range Road 51 from Highway 1A. This intersection was upgraded prior to operations.*
PROPOSED SITE CHARCTERISTICS
Provide a brief description of the purpose, nature and extent of the proposed development. This section will clarify what will be present on the site after the construction project is complete. Include phasing and timing for the proposed development.
BURNCO currently operates a Class 1 gravel pit to the east of the Project Site, which is located west of Cochrane, AB within Rocky View County. This application proposes the expansion of gravel pit. The majority of the Project Site will be mined for aggregate (gravel), with remaining areas proposed for borrow pit development and berm placement. The total size of the Project Site, including disturbance footprint outside of mining areas is approximately 125 ha. The project has a proposed operating lifespan of approximately 35 years. The extraction of aggregate material and reclamation of the Project Site will be completed in phases. *The existing active gravel pit and Phase A areas (approximately 31.5 ha) located east of the Project Site are included in a previously approved ESC plan created by FOCUS engineering, dated November 12, 2014.*
Where applicable, describe the permanent stormwater management system and its ultimate discharge location (with outfall numbers) to the river, stream, lake etc. (Permanent stormwater management facilities, storm ponds require an amending approval by Alberta Environment prior to use for sediment control).

All stormwater runoff generated from within the Project Site will be kept on site and collected in dewatering excavation pits. Collected water will be pumped to a dedicated recharge pond located a sufficient distance away to allow for groundwater infiltration. Groundwater inflows will also be collected in the dewatering excavation pits and pumped to the recharge pond. The recharge pond will be sized to accommodate stormwater runoff volumes from a 1:10 year, 24-hour design storm event plus pit water that would be pumped from the dewatering excavation. *Conveyance ditches and culverts will be constructed around the perimeter of the Project Site to prevent clean runoff from entering disturbed areas. One culvert will be provided through the north boundary visibility berm, to convey the 1:100 year design flows.* *The post-development reclaimed surface allows surface water to drain naturally to the Bow River.* *The stormwater drainage pattern will be similar to that of the existing, pre-development conditions.*
Describe the proposed general overland flow directions. Make special note of steeper slopes (over 10%) and any locations that drain towards adjacent properties, environmental areas or water bodies.
Under post-development conditions, the majority of the Project Site slopes (~ 7% grade) to the south / southwest towards the Bow River. *After extraction of aggregates from the Project Site has been completed, the site will be fully reclaimed to agricultural use. Final reclaimed areas will be contoured to re-establish the original drainage patterns (south to the Bow River or appropriate watercourses).*
Is ground water or surface water expected to be encountered? If so, what measures will be employed during the de-watering process?
Groundwater may be encountered within the Project Site during mining operations. Groundwater inflows to mining areas within the Project Site will be collected in the dewatering excavation pits and pumped to a recharge pond. *Matrix Solutions conducted a groundwater study ("Hydrogeology Framework and Impact Assessment" dated July 2022). Saturated gravel thicknesses between 0 to 2m are anticipated within Project Site phases B8, B9, B10, B11, and C12. Depths to groundwater in sand and gravel wells across site ranged from 4.06 to 12.79 mbgs between 2012 and 2022.*
Is bed rock expected to be encountered? If so, avoid locating sediment traps or basins in areas where bedrock exists.
It is not anticipated that bedrock will be an issue during extraction operations.
EROSION AND SEDIMENT CONTROLS
Provide a description of all temporary erosion and sediment control measures that are to be employed during and after construction. Include the RUSLE FAC values for C and P that will be assigned to these measures when soil loss calculations are completed. Source controls for erosion should be the first line of defense. Run-on and Run-off to and from the site must be addressed with perimeter controls.

Construction Access Protection:

- *Access will be through a single access at Range Road 51. A mud mat will be installed and maintained at this access point during mine development.*

Dust Control Plan:

- *The pit excavation area will be kept to a minimum.*
- *All trucks with full loads leaving the site will be tarped.*
- *While operating in the pit area a speed limit of 30 km/h will be enforced.*
- *Water trucks will be used to suppress dust in the active pit area and during overburden stripping operations.*
- *Reclamation of completed extraction areas will be an ongoing process.*
- *BURNCO will continue following a specific program to reduce dust emissions produced by the crusher which includes:*
    - *Enclosing each crusher component (i.e. cone, jaw and screen deck) with a blanket system*
    - *Enclosing each transfer point with a blanket system*
    - *Using water sprays at various transfer points*

- *Clearing the dust that settles around the crusher on a daily basis*

Additional ESC Protection:

- *ESC controls are recommended throughout the site to stabilize the visibility berm, the borrow areas, and the various phases as they are reclaimed. The ESC controls include*
  - *Erosion control blanket*
  - *Straw wattles*
  - *Ditch, berm and biodegradable silt fence*
  - *Rip-rap*
  - *Check dams*
  - *Stormwater recharge ponds*
  - *Small depression storage areas*

Two borrow areas exist on the site, with an unconfirmed extent of excavation. ESC controls will be implemented as appropriate. It is assumed that the borrow area adjacent to phases B9 and B10 will undergo minimal disturbance. Final grades will be similar to the pre-development conditions.

Include the RUSLE FAC values for R and K that will be assigned. For the K value, provide a description of the soils that will be encountered based on the geotechnical evaluation. Sieve tests are recommended (% of sand, silt, clay) for an accurate estimation of the K value. The most onerous value shall prevail. Porosity tests are recommended for infiltration values (slow, moderate, fast). Include % and size of rock.

R value: 320
K value: 0.050
Surficial soils were generally classified as clay loam, sandy loam, or clay. The worst-case scenario was assumed from soil samples taken from the site, with the following characteristics:
Silt 47%
Sand 34%
Organic Material 0%
Soil Structure: Medium/Coarse Granular
Permeability: Moderate

Include RUSLE FAC or RUSLE 2.0 soil loss calculations for the site. **Annual soil loss cannot exceed 2.0 tonnes per hectare per year for any site that will have storm sewer infrastructure/storm ponds etc. installed or any site where storm water flows into any environmentally sensitive area. Annual soil loss cannot exceed 4 tonnes/hectare/year for sites where there is no, or will be no on-site or adjacent storm infrastructure and no drainage to any environmentally sensitive areas.** Use the Rocky View County templates when summarizing soil loss calculations. **Note: RUSLE 2.0 computer generated soil loss calculations can only be used by those who are approved for its use.** Those who wish to submit RUSLE 2.0 computer generated soil loss calculations must make a minimum of 5 submissions with both RUSLE FAC and RUSLE 2.0 calculations prior to Rocky View County accepting only RUSLE 2.0 soil loss calculations.

See attached table

Provide the proposed location, height and volume of proposed stockpiles. Indicate the length of time the stockpiles will be left in place. Indicate the erosion and sediment control measures that will be employed to stabilize the stockpiles for wind and water erosion. Indicate the timing of implementing those measures.

In the operations area, there will be several aggregate stockpiles.

Aggregate stockpiles are typically 7 to 10 meters in height and can vary in footprint. Stockpiles will typically be either conical in shape, with a diameter around 40 m, or will be a rectangular shape with dimensions around 40 m wide by 100 m long.

Overburden (topsoil and subsoil) stockpiles may be created between phases. If any overburden stockpiles are left in place for over 30 days, they must be seeded and watered to prevent erosion. The overburden stockpiles will be used in final reclamation of each phase.

Provide a description of the permanent erosion control measures to be employed (rip-rap, turf reinforcement matting, channel/slope stabilization).

Site Reclamation Plan:

- *BURNCO will continue with progressive reclamation of all disturbed areas with seeding, soil berms and conveyance ditches.*
- *All reclaimed areas will be contoured with grades that enable surface water to flow to pre-development drainage patterns.*
- *Upon final reclamation of the pit the following actions will take place:*
    - *All roads except for the main access to the site will be removed. All hard packed surfaces will be scarified to loosen soil for better root penetration and plant growth.*
    - *Topsoil and sub-soils will be evenly spread and thoroughly rock-picked.*
    - *Once topsoil has been placed, areas will be seeded with a certified weed-free grassland seed mix of the landowner's preference.*
    - *An aggressive weed control program will be maintained to control noxious weeds. Once a reclamation certificate from Alberta Environment and Parks has been granted, the weed control program will cease.*

INSPECTIONS AND MAINTENANCE

Provide a record sheet for inspections that includes the following information: **Include the initial inspection for this site in the space provided.** All inspections must include a description of each control measure, photographs, date of inspection, weather conditions, temperature, maintenance requirements, who it was sent to for maintenance and when it was sent to them. Indicate that the inspection report will be available upon request. Indicate that inspections will be completed each week (6-8 day window) and after significant precipitation events (12mm of rainfall or greater) and after thaw/melting events. **Rocky View County will provide a formatted inspection template for your use. (Sample Below) Inspection documentation formats may change. Please refer to the Rocky View County web site for the most updated version.**

General Inspection Information:

- *Although Rocky View County guidelines indicate that ESC site inspections should be conducted weekly (i.e. every 6-8 days), weekly inspections will not be necessary for this type of development operation (i.e. pit extractions), since all surface runoff from active mining will be contained within the Project Site boundary. We recommend monthly inspections and additional inspections after heavy or prolonged precipitation events (≥ 12 mm of rainfall over a 24 hour period) for active phases.*
- *Closed phases undergoing reclamation will adhere to weekly site inspections to minimize risks during sensitive vegetation establishment periods.*
- *During winter months, ESC inspections will be conducted only after a heavy snowmelt. In the event of a winter shutdown or a cessation of activity, the site owner is still responsible for inspection and maintenance of ESC measures.*
- *The ESC inspection report will consist of a written and photographic record of the condition of ESC measures and maintenance requirements for the measures.*
- *The site owner will keep a copy of the most current ESC Plan onsite and will make site inspection reports available to Rocky View County or any other regulatory bodies upon request.*
- ***Rocky View County requires that permission be obtained prior to pumping any surface runoff onto roadways or into an overland drainage conveyance system.***

INSPECTION COMPANY'S/ENGINEERING CONSULTANT'S NAME:
COMPANY ADDRESS:
OFFICE TELEPHONE, CELL PHONE, FAX NUMBER:
E-mail:
Erosion Control Inspection Report

Developer:	Site:
Inspection Date: Inspector:	Job Number:

Site conditions:
Weather conditions: ***Sunny/cloudy/windy, temp° C***

Installation/ Photo Number	Installation Type	Installation Date	Condition/recommendation	Sent to/Date

General:

- Note: A copy of this inspection report and the ESC plan must be available on site at all times reasonably possible. Rocky View County or other regulatory bodies may request a copy of inspection documents or plan at any time. Copies of inspection reports will be produced upon request. Copies may be requested by phoning (inspector's phone number) or by Email: (inspector's email address)
- Revisions to the ESC plans must be forwarded to Rocky View County Engineer responsible for the approval.
- **Rocky View County requires that permission be obtained prior to pumping any surface runoff into the storm sewer system. This includes pumping collected rainwater off of lots and into the street.**

Provide contact names, phone and fax numbers and email address for the inspection company and individual responsible for inspections on the site. **Please note: Inspections must be completed by the company that is responsible for the completion of this report and plan.** Inspections must be made available to the Rocky View County inspector on request.

Indicate how builders, contractors and sub-trades will be notified when they are causing erosion or sedimentation issues/infractions. Separate memos for builders, contractors and sub-trades must be completed by the erosion and sediment control inspector. They must include the site address, contact name and email/fax number, the date it was sent and what action was required.

Describe the consequences for non-compliance.

Builder/ Contractor	Builder/ Contractor Name	**Address: Civic Address**	
		Contact: contact name and email address/fax number	
Photo Date			
Photo #			
Condition			
Comments			
Outside contractor to be employed to clean lot		**Date**	

PLAN DESIGN CHECK LIST

Complete the check list and ensure all information noted is on the plans.

ESC Plan Check List (Legend on all drawings):

Name of the Development (phase # etc.)

- ☒ Developer's Name
- ☒ Name of the ESC consultant contact, email address and phone/fax number
- ☐ - **NA** Name of the engineering consultant contact, email address and phone/fax number
- ☒ Legal description and address (if applicable)
- ☒ Development Permit/Agreement Number
- ☒ Designed by, drawn by, checked by, base drawing provided by, scale, date drawn, job number, revision number, drawing number.
- ☒ Symbols for ESC measures to be implemented.
- ☐ - **NA** Symbols for existing storm inlets/manholes and sanitary sewer manholes
- ☐ - **NA** Symbol for RUSLE slope locations/numbers
- ☒ Symbol for development boundary
- ☒ Symbol for overland flow direction
- ☐ - **NA** Symbol for contour furrowing areas
- ☒ Revision box with number, date and type of revision
- ☒ Issued box with number, date and issued for box
- ☐ - **NA** Stormwater discharge schedule
- ☒ Notes: assessments and recommendations based on ESC guidelines; Trap low note; ESC removal timelines; inspection note (timing); inspection note indicating who will produce the inspections when required and where they will be kept; note indicating revisions will be forwarded to Rocky View County; note indicating plan to be available onsite at all times

ESC Plan Check List (Drawing esc 01, 02, etc.):

- ☒ Professional stamp, license number and signature of designer
- ☒ North arrow
- ☐ - **NA** Construction Schedule
- ☒ Site boundary
- ☐ - **NA** Drainage zone boundaries
- ☒ Site area
- ☐ - **NA** Back slope locations on adjacent properties. (note: these areas must be included in the drainage zones)
- ☐ - **NA** Drainage zone areas
- ☐ - **NA** Numbered RUSLE slope arrows indicating overland flow direction. Elevations are required at each end of slope. Slopes must be indicative of overland flows onsite after grading and utilities are installed but prior to finish grading around buildings.
- ☒ Street names within and surrounding the site. Indicate types of roads, i.e. paved, gravel etc.
- ☐ - **NA** Lanes must be labeled
- ☐ - **NA at this time** Proposed stockpile locations with note indicating quantity(s) and height(s) of stockpile(s).
- ☒ Locations (symbols) of ESC measures to be implemented.
- ☐ - **NA** Locations for existing and proposed storm inlets/manholes and sanitary sewer manholes within and surrounding the site
- ☐ - **NA** Storm inlets and manholes must have letters/numbers for inspection reference
- ☒ Perimeter contours (0.5 m contour intervals) or slope direction arrows (with % of slope) on areas surrounding the site. This will be used to evaluate runon/runoff conditions.
- ☒ Existing buildings on and surrounding the site
- ☒ Existing trees, steams, ponds etc. that will remain and must be protected

- ☐ **- NA** Proposed lot and block numbers if available. (show lotting boundaries)
- ☐ **- NA** Proposed lot types and their locations, i.e. commercial, residential, multi-family etc.
- ☐ **- NA** Municipal reserves, School sites, Environmental Reserves must be shown and labeled
- ☒ Additional notes for treatment of stockpiles, installation and maintenance of ESC measures
- ☒ Proprietary note

ESC Plan Check List (Detail drawing included in site plan)

- ☒ ESC detail schematics. Details must include dimensions, quantities if applicable and maintenance requirements
- ☒ RUSLE FAC/RUSLE 2.0 soil loss calculation tables. **Rocky View County will provide templates for your use.**
- ☒ Key Plan
- ☒ Temporary sediment trap/pond storage calculations with reference to site size. Minimum of 250 m^3 per hectare, temporary storage is required.

All of the information noted in this template has been completed and is true and correct.

Signature of Applicant Thomas Schaepsmeyer Date August 29, 2022

Report and plans to be signed and stamped by the ESC design consultant, indicating professional affiliations and permits to practice.