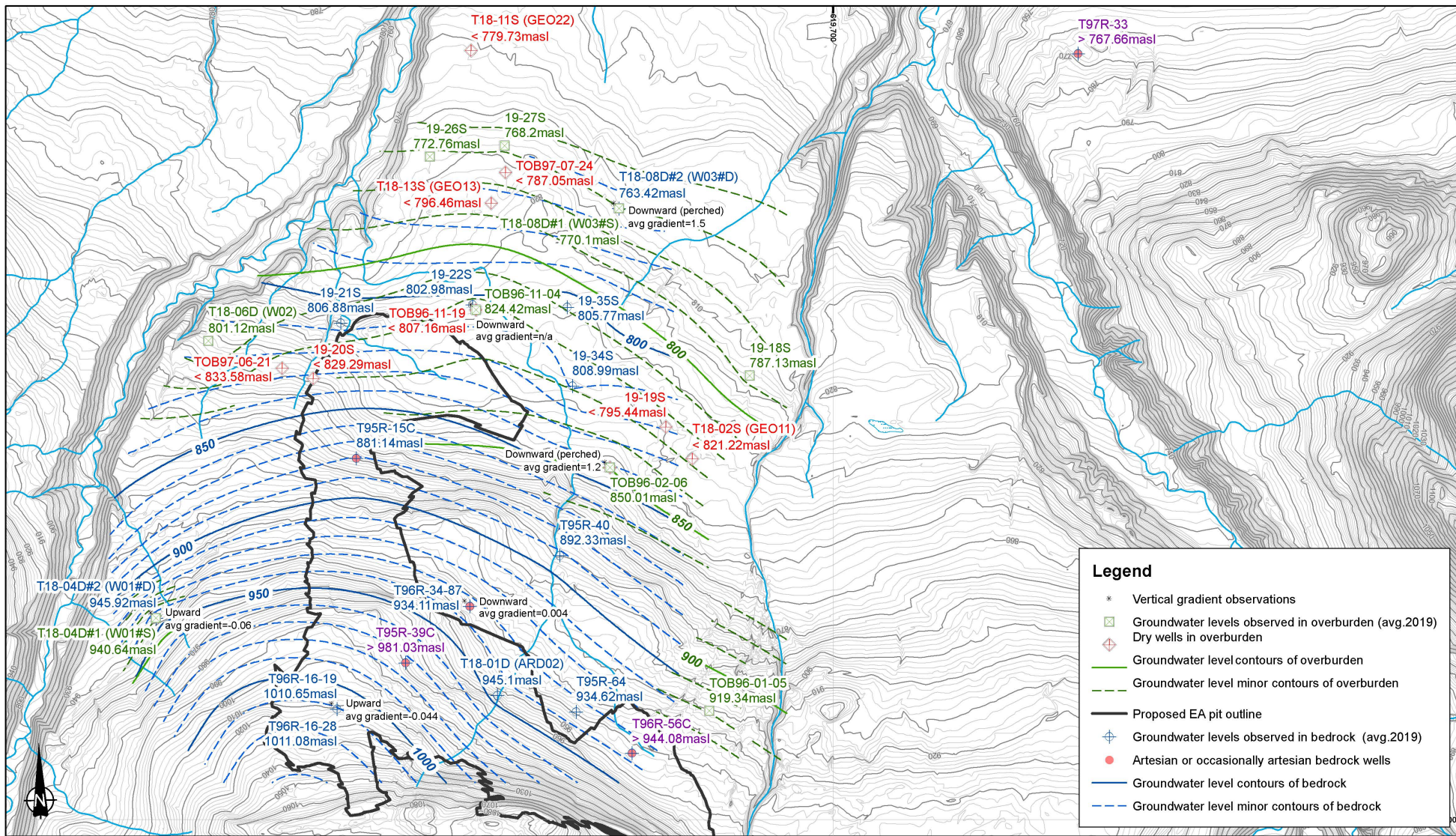




0 0.325 0.65 1.3 Kilometers

Coordinate System: NAD 1983 UTM Zone 9N
Projection: Transverse Mercator
Datum: North American 1983



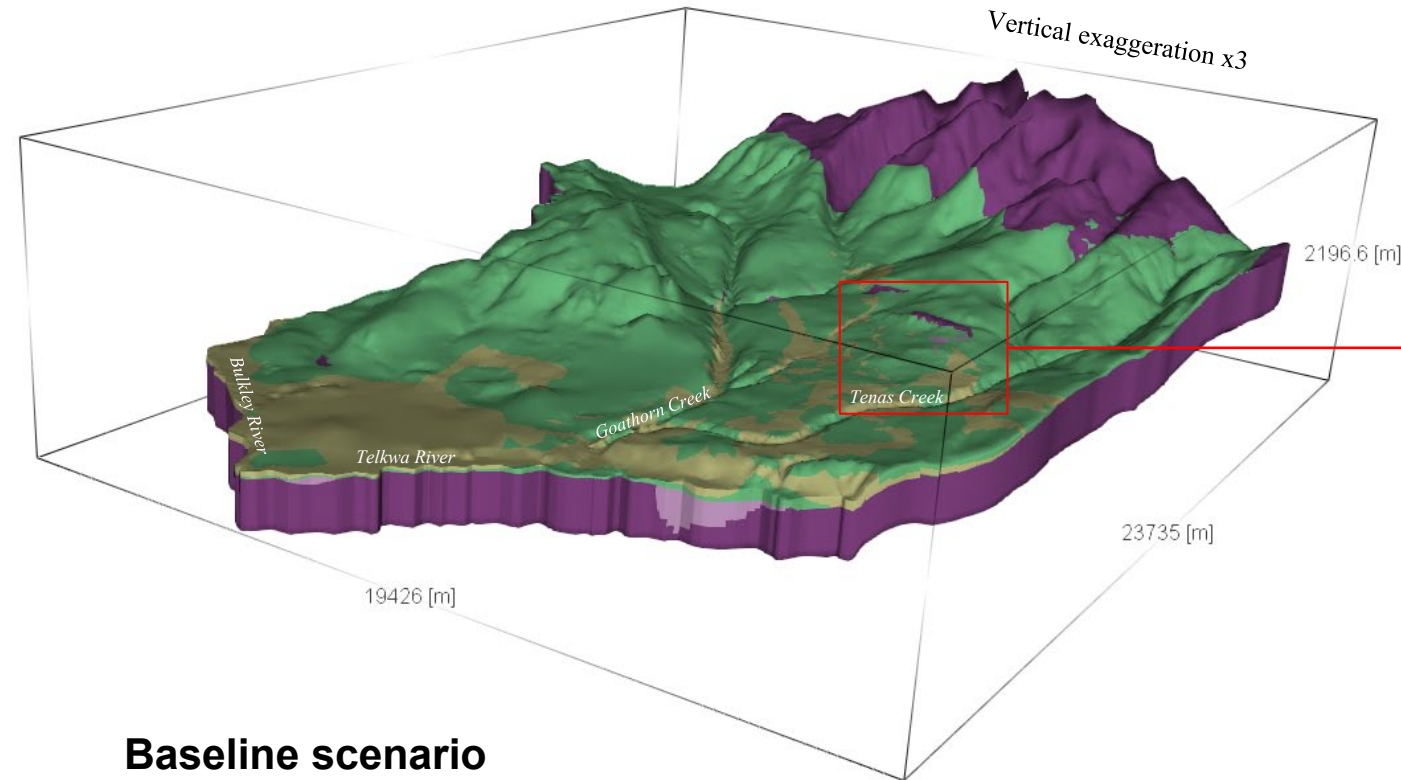
Job No: 1CT027.004
Filename: Fig30_Groundwater Tenas 2019.pptx



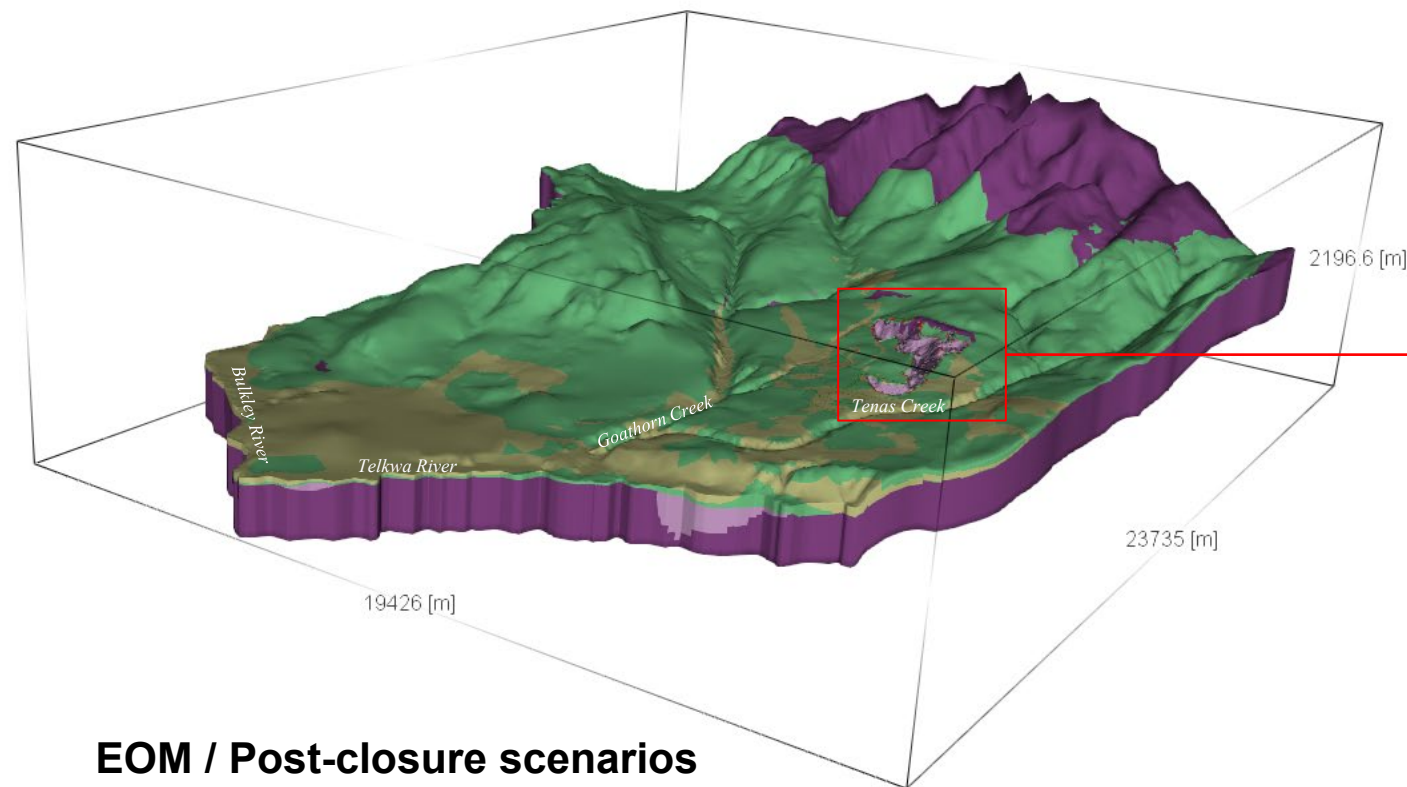
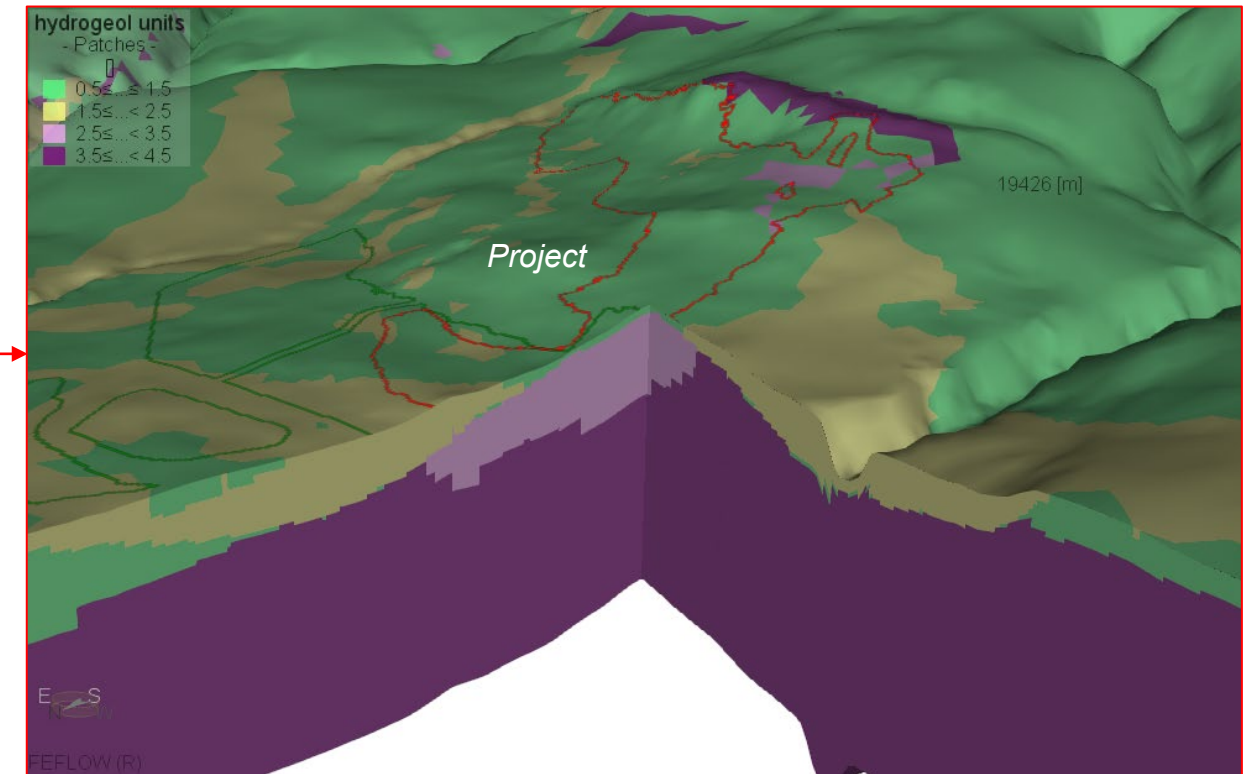
Tenas Project

Groundwater tables in overburden and bedrock with the Environmental Assessment (EA) open pit shown

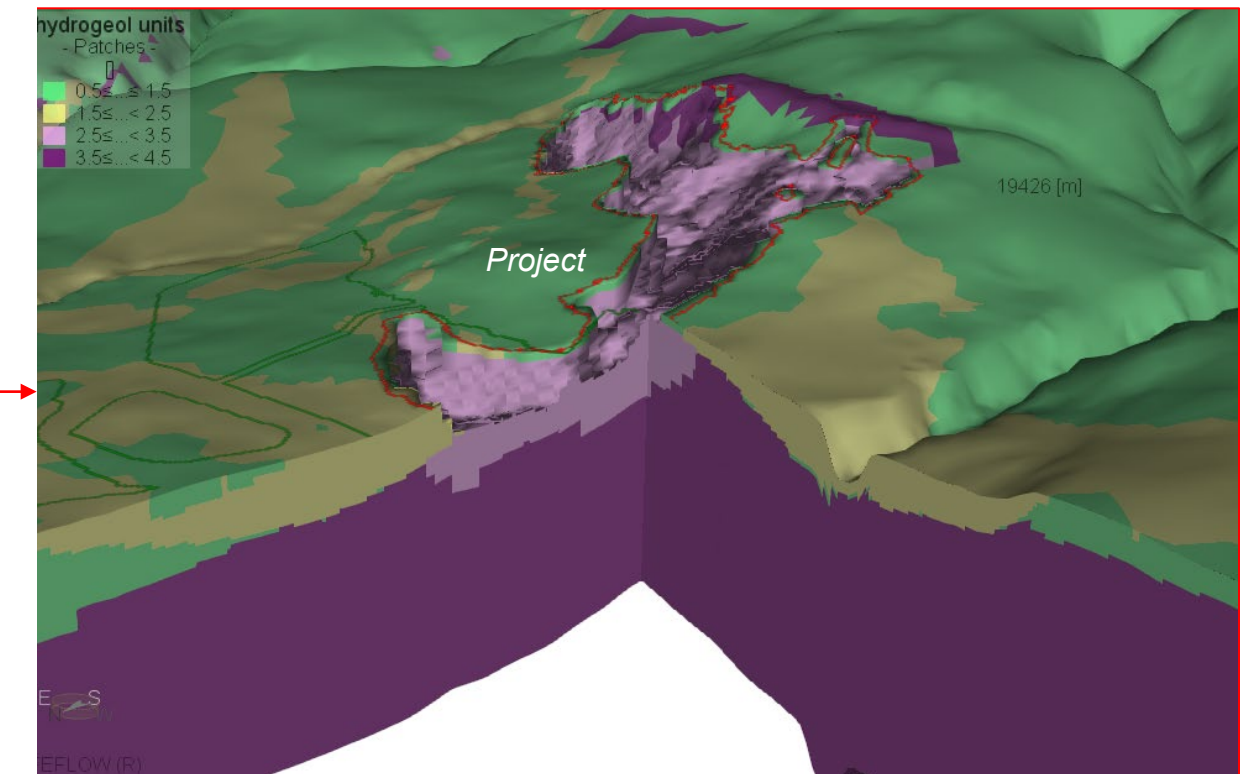
Date: Nov 2020
Approved: GF
Figure: 1.17-14



Baseline scenario



EOM / Post-closure scenarios



- | | |
|---|---|
|  Silt-clay-rich till |  Sedimentary rocks |
|  Sand-gravel-rich till |  Volcanic rocks |



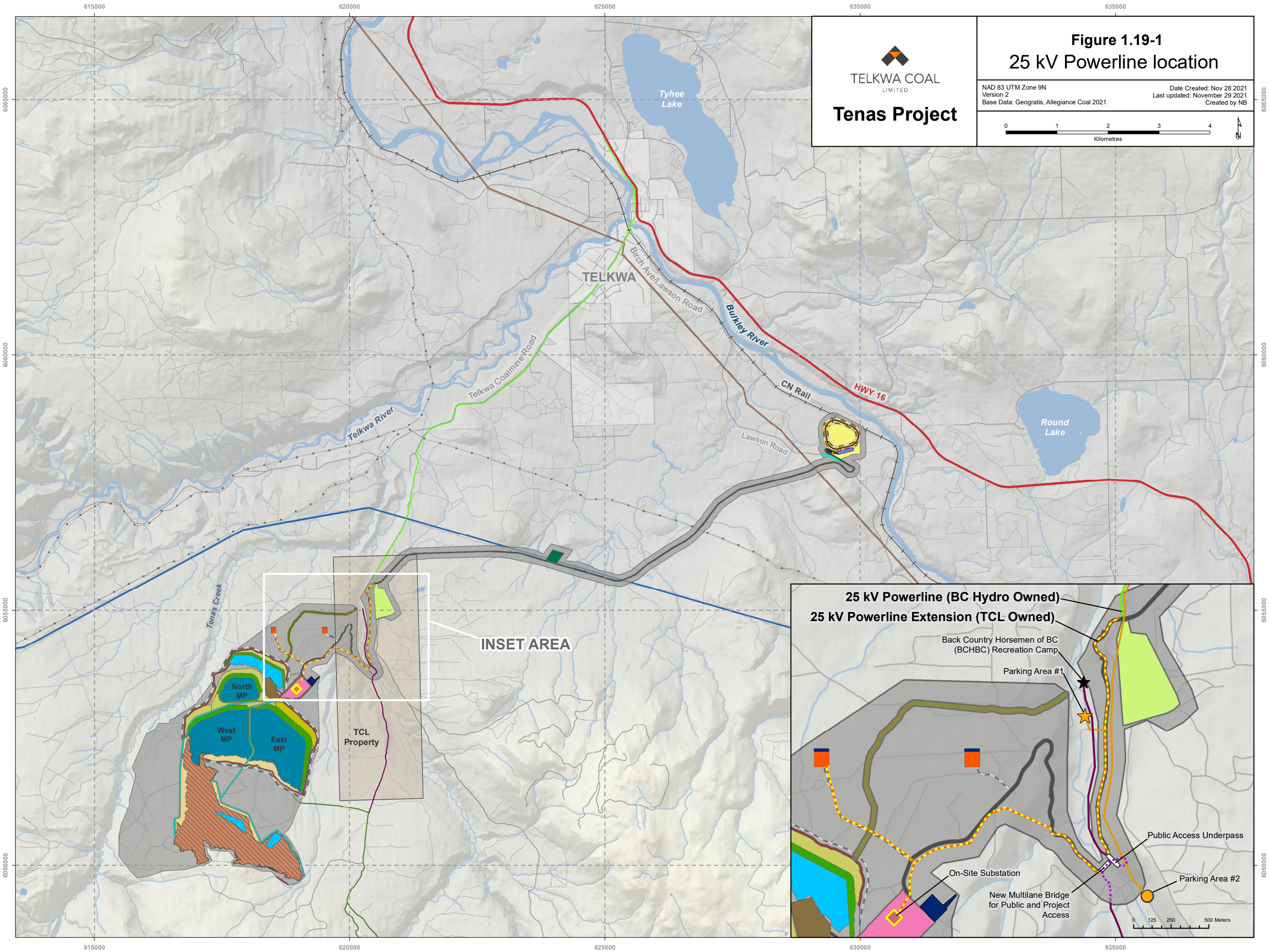
Job No: 1CT027.004
Filename: Fig54_3D view HydrostatGwModel_rev1.pptx



Tenas Project

**Tenas Project groundwater
numerical model isometric views**

Date: Nov 2020	Approved: GF	Figure: 1.17-15
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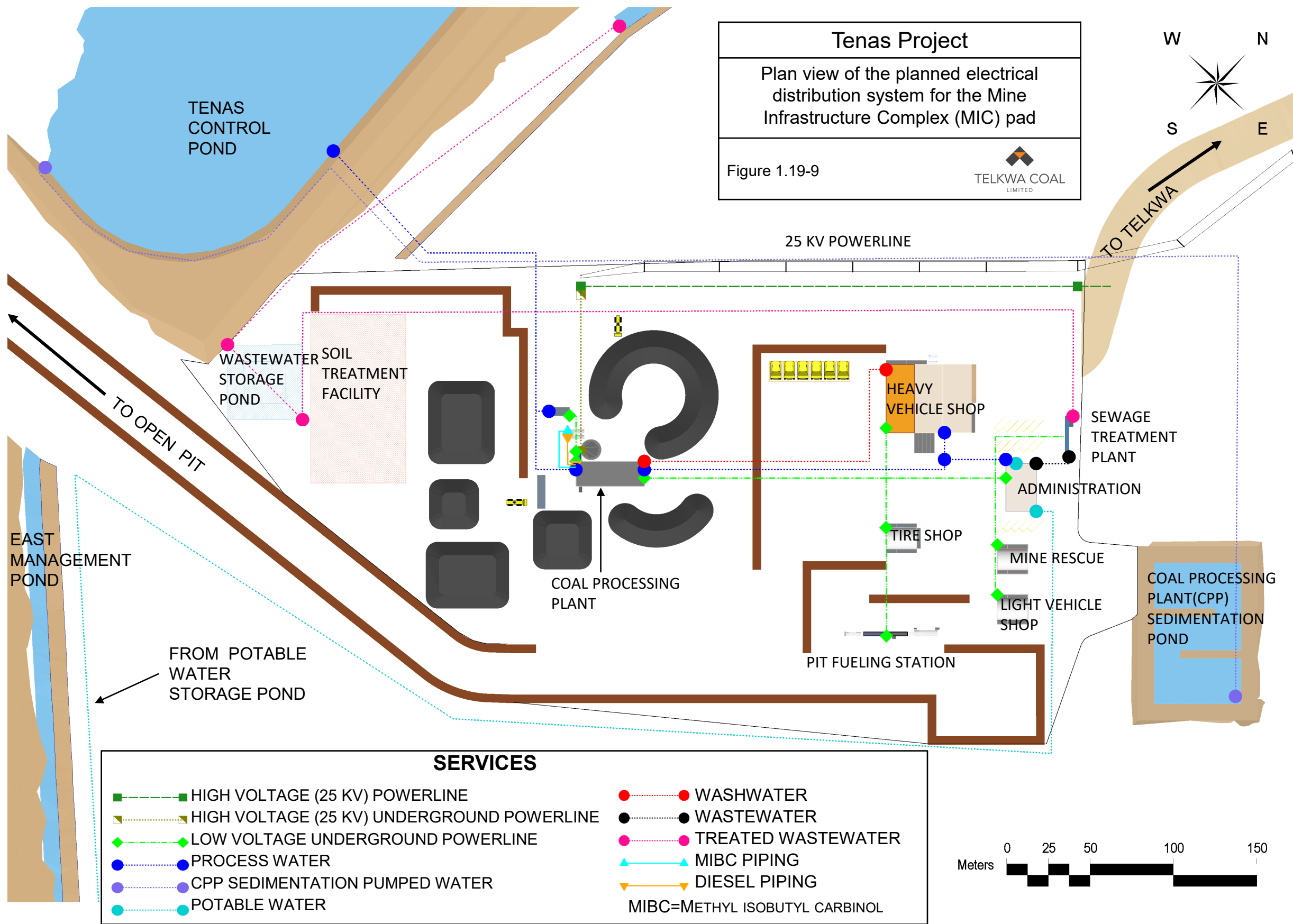
Tensas Access Corridor Features

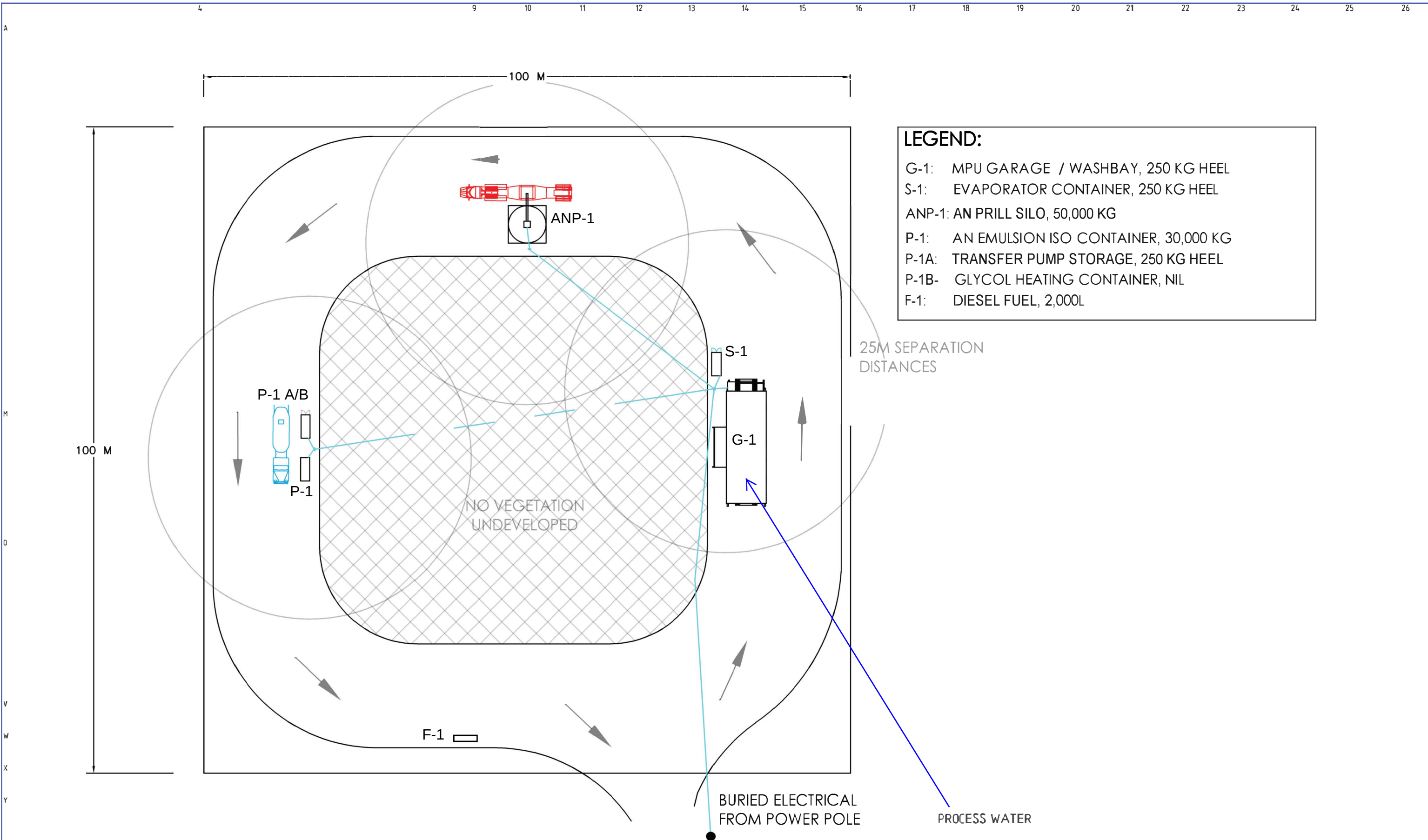
- | | |
|--|----------------------------------|
| Open Pit | Cleared Areas for Access |
| Backfilled Areas | Topsoil Stockpiles |
| Explosive Infrastructure | End Pit Lakes |
| Water Discharge Route | Management Pond - Covers |
| Mine Infrastructure Complex
(Coal Processing Plant, Maintenance Facility, and Pit Fueling Station, Administration and Mine Dry Building, Mine Rescue and Light Vehicle Maintenance Buildings) | Management Pond - Dams |
| Gravel Quarry | Management Pond - Buttresses |
| Rock Quarry | Rail Infrastructure |
| TCL Private Land | Rail Loop |
| | Rail Infrastructure Loading Area |

- | |
|---|
| Sedimentation Ponds
(Coal Processing Plant, Rail Infrastructure, Explosive Facility, and Explosive Magazine) |
| On-site Substation |
| 25 kV Powerline Extension (TCL Owned) |
| Haul Roads |
| Tensas Access Corridor |
| Channels (Ditches) |
| Service Roads |
| Alternate Access to Recreational Sites Beyond the Project |

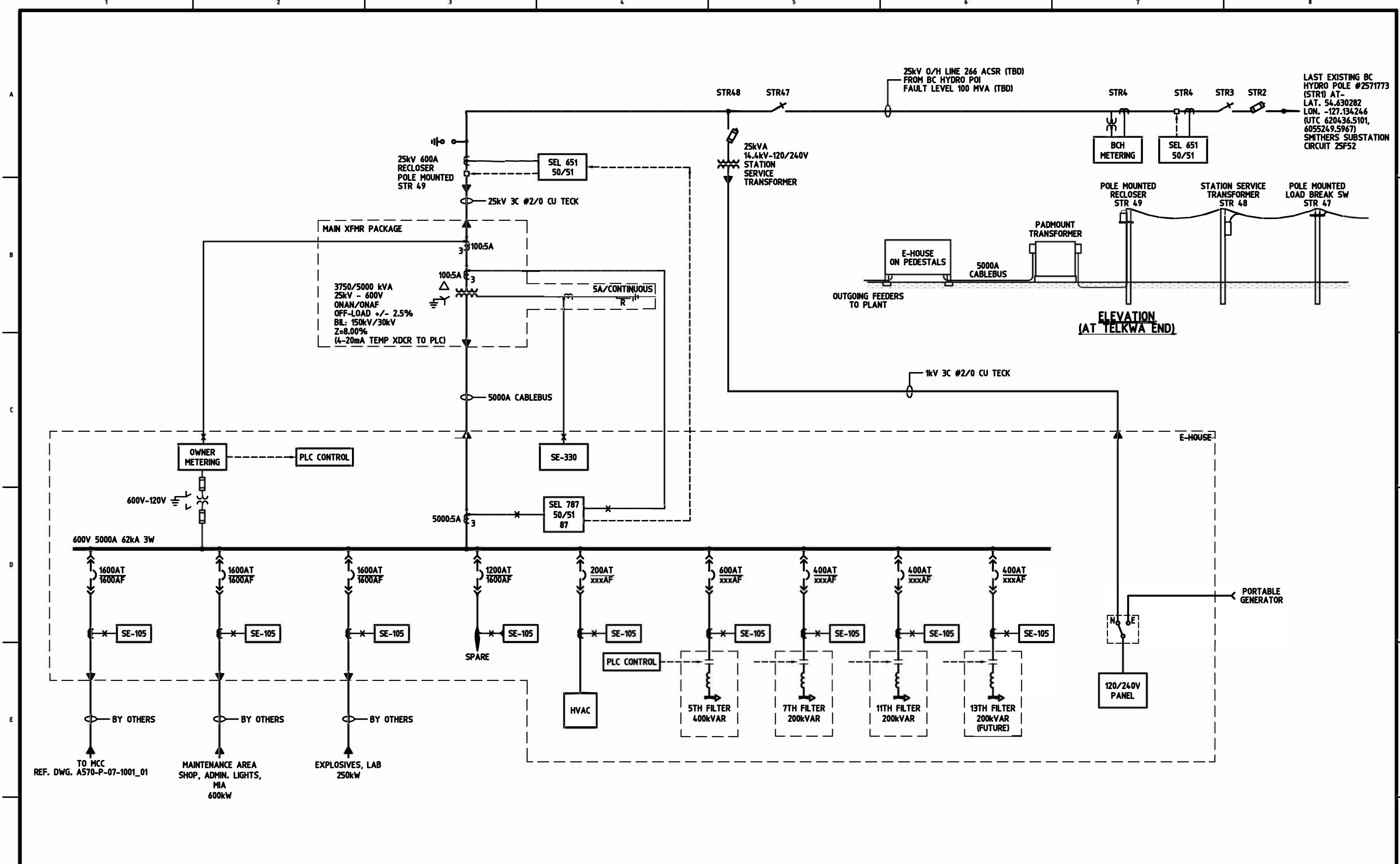
Base Features

- | | |
|----------------------------------|-------------------------|
| Rail Line | Waterbody |
| Highway | Telkwa Village Boundary |
| Watercourse | |
| Secondary Roads and Trails | |
| Pacific Natural Gas Pipeline | |
| 500 kV Transmission Line | |
| 138 kV Transmission Line | |
| 25 kV Powerline (BC Hydro Owned) | |





- LEGEND:**
- G-1: MPU GARAGE / WASHBAY, 250 KG HEEL
 - S-1: EVAPORATOR CONTAINER, 250 KG HEEL
 - ANP-1: AN PRILL SILO, 50,000 KG
 - P-1: AN EMULSION ISO CONTAINER, 30,000 KG
 - P-1A: TRANSFER PUMP STORAGE, 250 KG HEEL
 - P-1B- GLYCOL HEATING CONTAINER, NIL
 - F-1: DIESEL FUEL, 2,000L



F										CLIENT TELKWA COAL LTD	DRAWN	PJA	08.08.18	 SEDGMAN	TENAS COAL PROJECT Single line diagram for the Tenas Project	PROJECT NO A570-002
									 TELKWA COAL LIMITED	CHECKED						
								DESIGNED								
								LEAD ENG								
								APPROVED								
DRAWING NO	TITLE	A	PRELIMINARY INFORMATION	PJA						CLIENT DRAWING NO	SCALE	NTS	OR AS SHOWN		FIGURE 1.19-11	REVISION A
REFERENCE DRAWINGS				DRAWING REVISIONS						DO NOT SCALE	A1					

Tenas Project

Figure 1.20-1

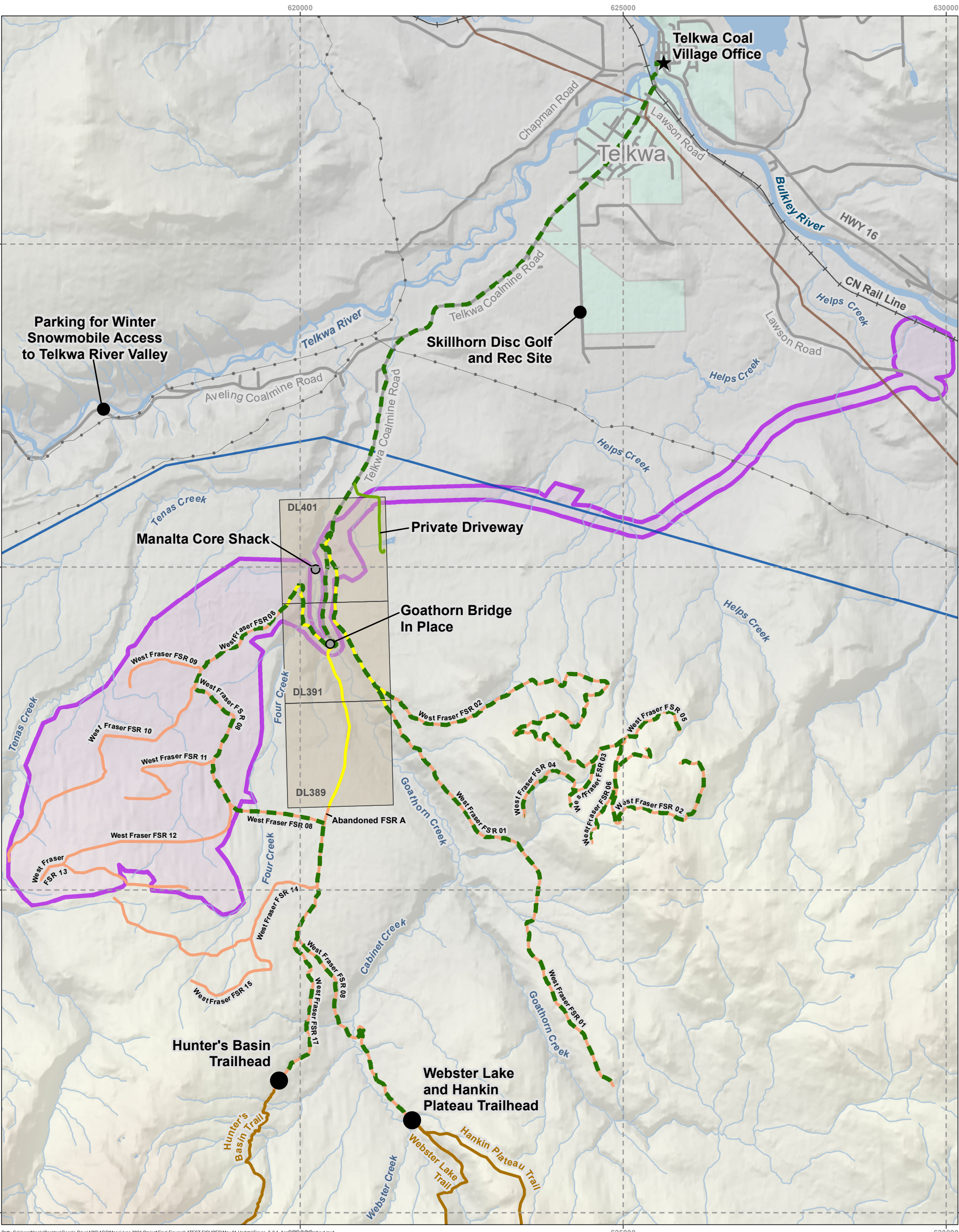
Historical public access with
road regulatory ownership

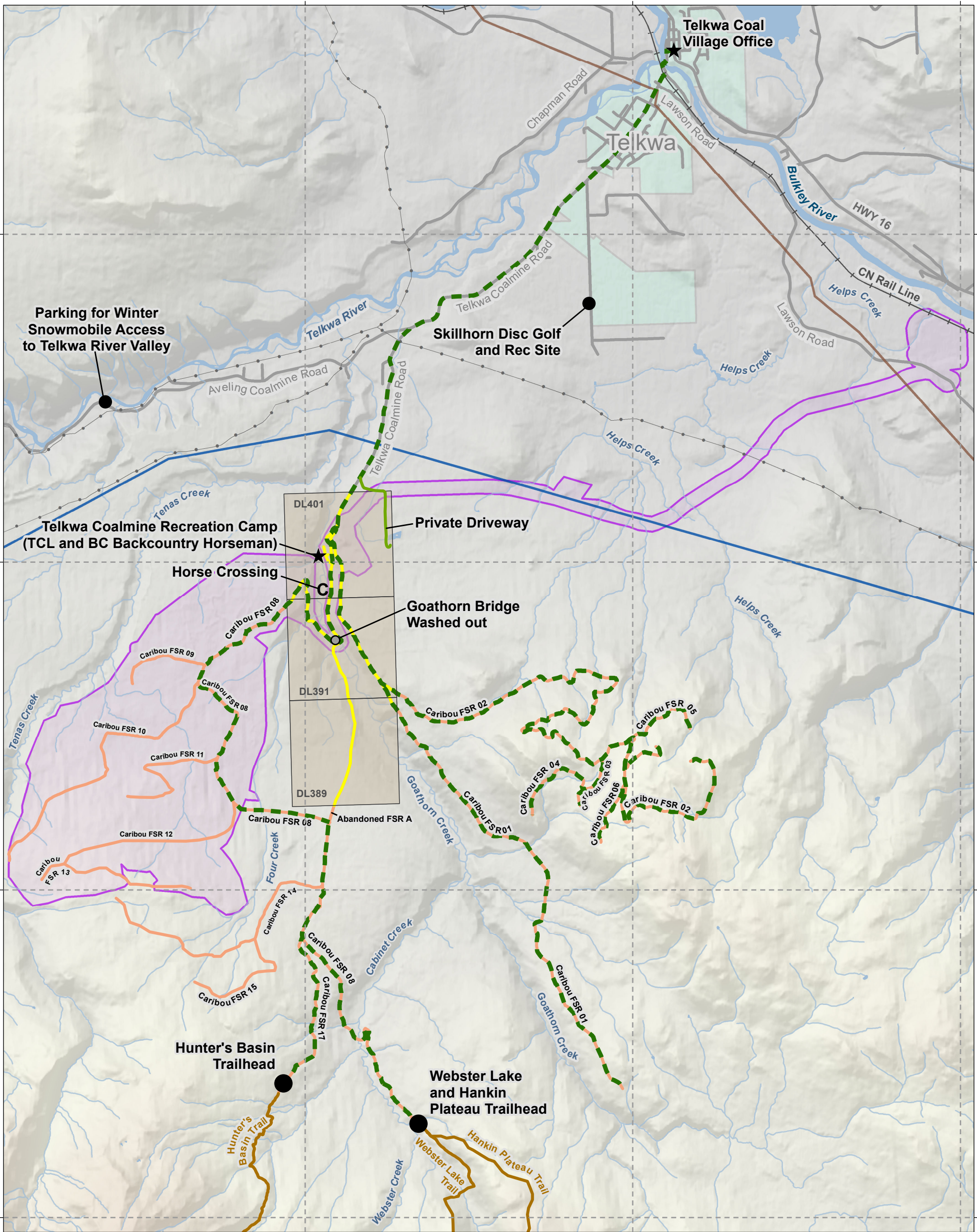
NAD 83 UTM Zone 9N
Date Created: March 26 2022
Last updated: May 02 2022
Version: 11
Created by NB

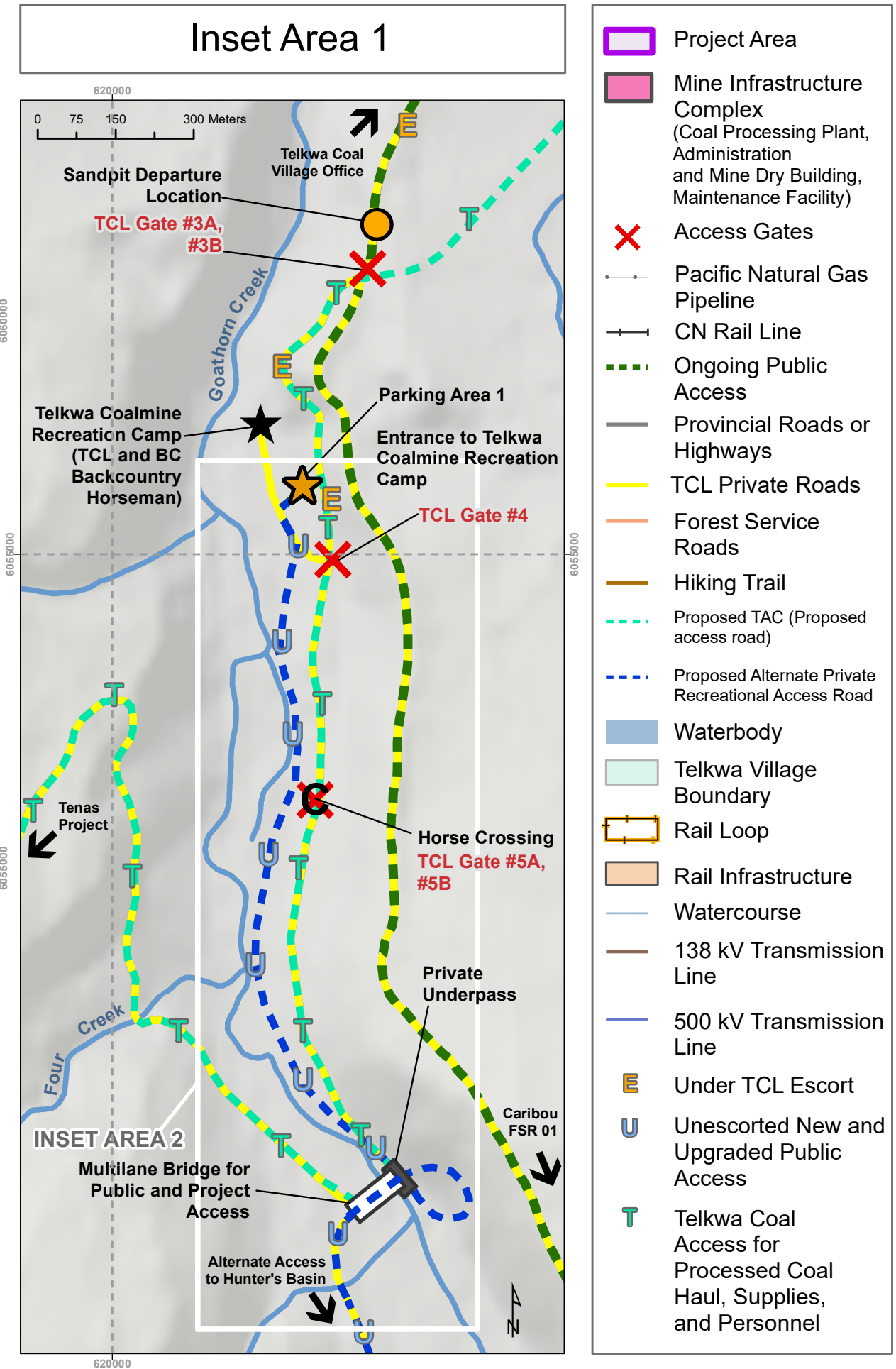
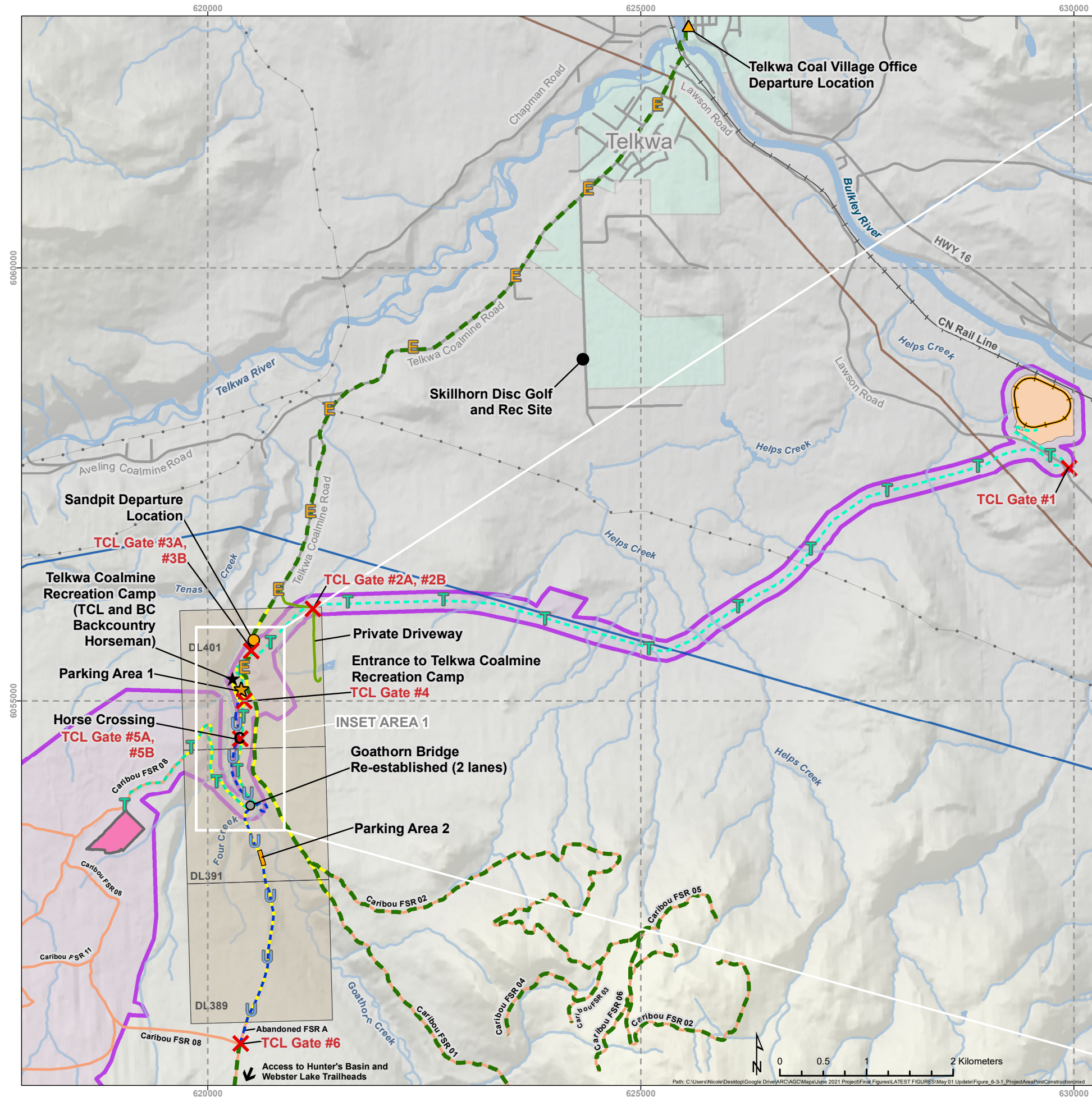
Base Data: Geogratis, Allegiance Coal 2022

0 0.5 1 2 Kilometers

- | | | | | | |
|---|------------------------------|---|-------------------------|---|------------------------------|
|  | Project Area |  | CN Rail Line |  | Ongoing Public Access |
|  | 138 kV Transmission Line |  | Watercourse |  | Forest Service Roads |
|  | 500 kV Transmission Line |  | Waterbody |  | Provincial Roads or Highways |
|  | Pacific Natural Gas Pipeline |  | Telkwa Village Boundary |  | Hiking Trail |
| | | | |  | TCL Private Roads |





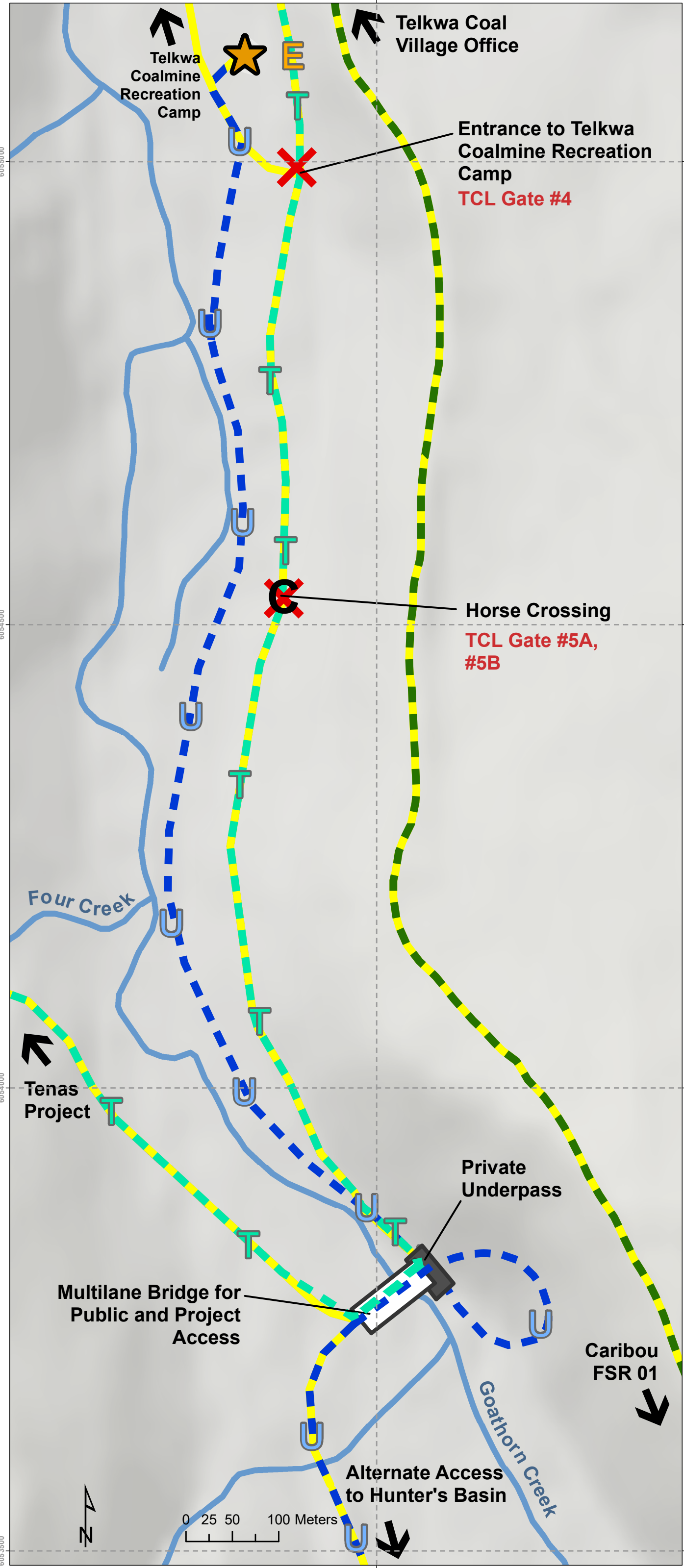


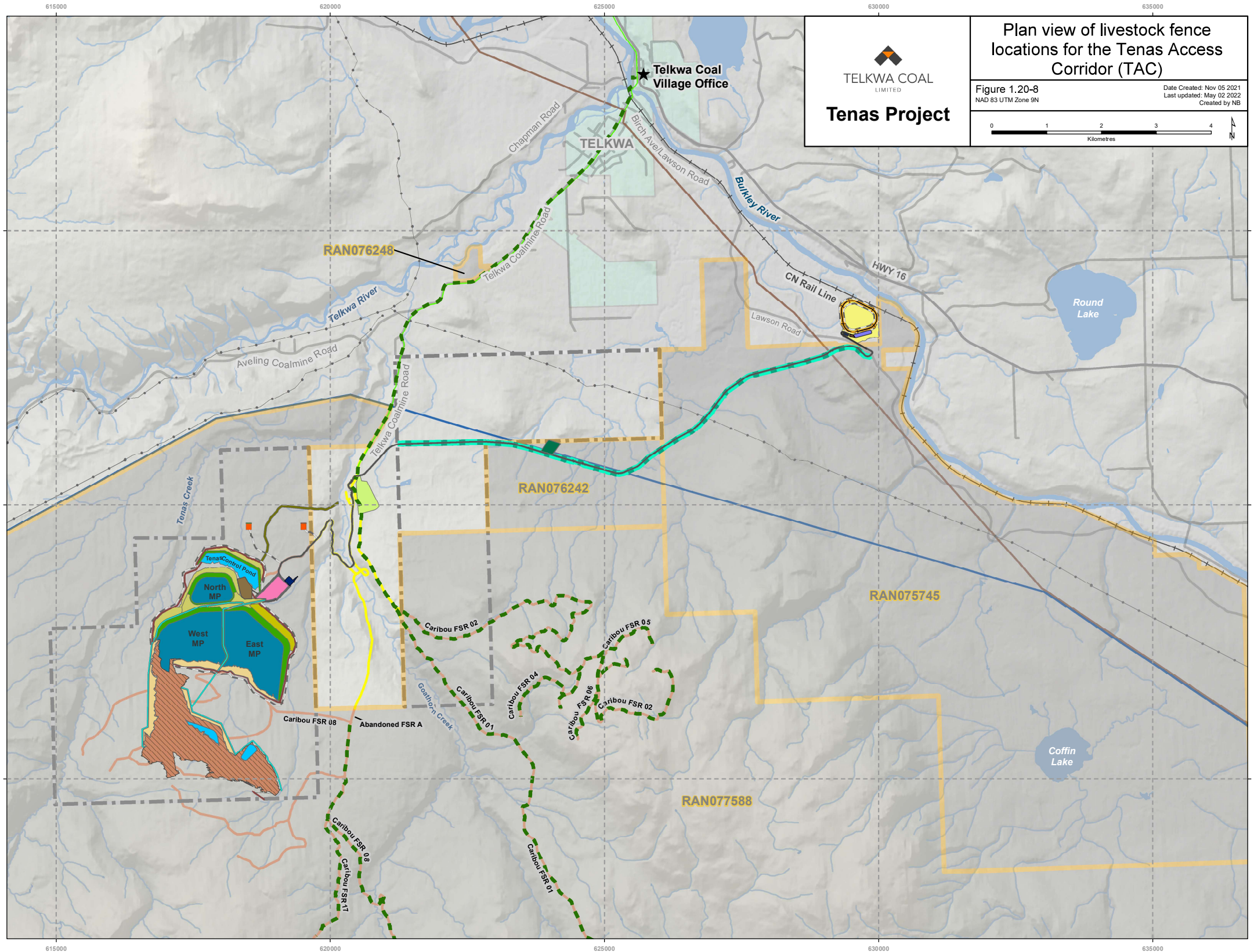
Tenas Project

Figure 1.20-4

Public and Project Access with
road regulatory ownership
for Inset 2

- TCL Private Roads
- Proposed TAC (Proposed access road)
- Proposed Alternate Private Recreational Access Road
- Ongoing Public Access
- Access Gates
- Parking Area 1
- Horse Crossing
- Under TCL Escort
- Unescorted New and Upgraded Public Access
- Telkwa Coal Access for Coal Haul, Supplies, and Personnel
- Watercourse





Tenas Access Corridor Features

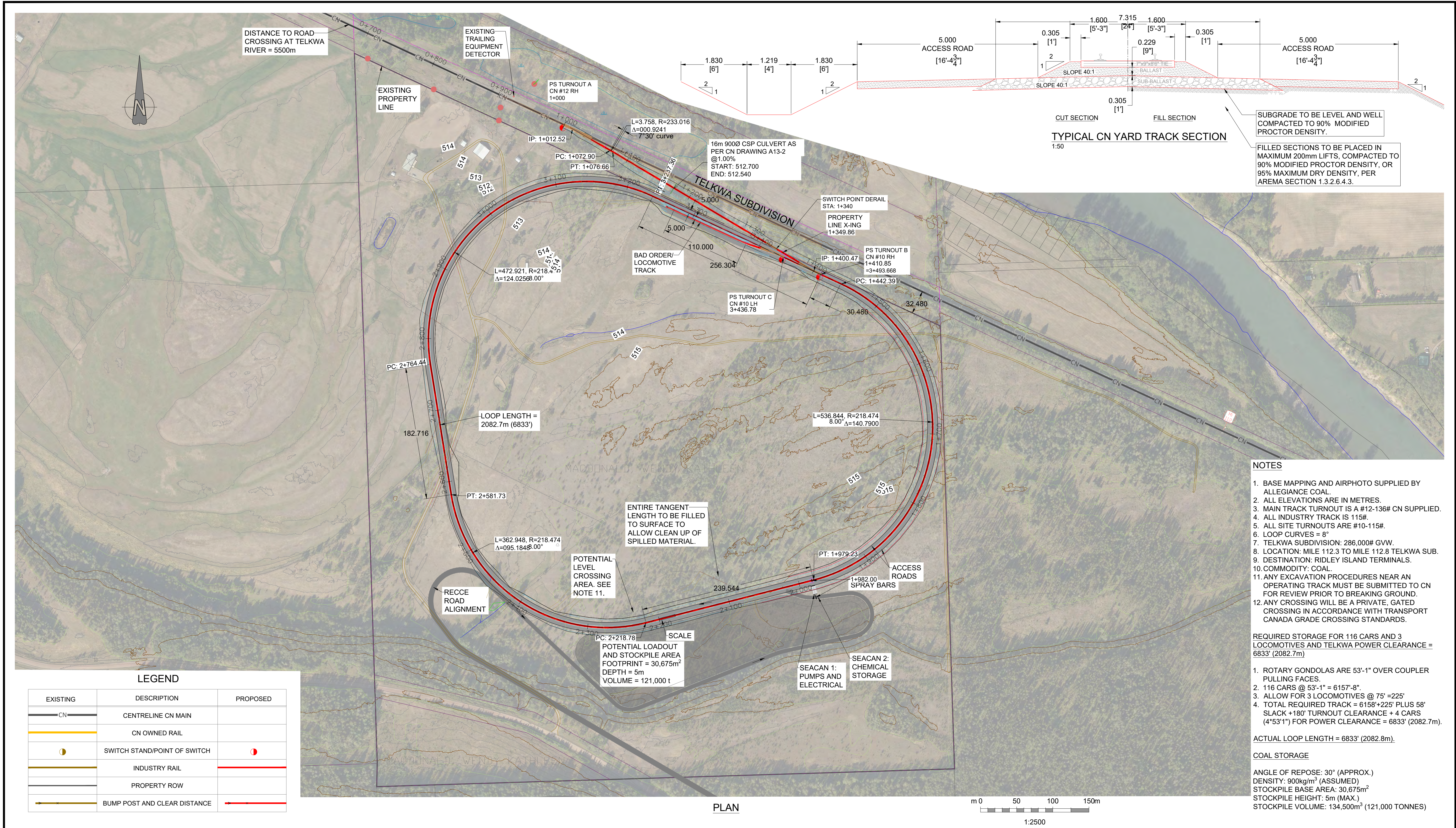
- Open Pit
- Backfilled Areas
- Explosive Infrastructure
- Water Discharge Route
- Mine Infrastructure Complex
(Coal Processing Plant, Maintenance Facility, and Pit Fueling Station, Administration and Mine Dry Building, Mine Rescue and Light Vehicle Maintenance Buildings)
- Gravel Quarry
- Rock Quarry
- Cleared Areas for Access
- Topsoil Stockpiles

- End Pit Lakes
- Management Pond - Covers
- Management Pond - Dams
- Management Pond - Buttresses
- Rail Infrastructure
- Rail Loop
- Rail Infrastructure Loading Area
- Sedimentation Ponds
(Coal Processing Plant, Rail Infrastructure, Explosive Facility, and Explosive Magazine)
- Project Coal Licenses
- Grazing Leases

- Ongoing Public Access
- Provincial Roads or Highways
- TCL Private Roads
- Forest Service Roads
- Service Roads
- Haul Roads
- Tenas Access Corridor (TAC)
- Channels (Ditches)
- Livestock Fence Location
- 25 kV Powerline Extension

Base Features

- Watercourse
- Waterbody
- Rail Line
- Pacific Natural Gas Pipeline
- 500 kV Transmission Line
- 138 kV Transmission Line
- Telkwa Village Boundary



- NOTES**
1. BASE MAPPING AND AIRPHOTO SUPPLIED BY ALLEGIANCE COAL.
 2. ALL ELEVATIONS ARE IN METRES.
 3. MAIN TRACK TURNOUT IS A #12-136# CN SUPPLIED.
 4. ALL INDUSTRY TRACK IS 115#.
 5. ALL SITE TURNOUTS ARE #10-115#.
 6. LOOP CURVES = 8°
 7. TELKWA SUBDIVISION: 286,000# GVW.
 8. LOCATION: MILE 112.3 TO MILE 112.8 TELKWA SUB.
 9. DESTINATION: RIDLEY ISLAND TERMINALS.
 10. COMMODITY: COAL
 11. ANY EXCAVATION PROCEDURES NEAR AN OPERATING TRACK MUST BE SUBMITTED TO CN FOR REVIEW PRIOR TO BREAKING GROUND.
 12. ANY CROSSING WILL BE A PRIVATE, GATED CROSSING IN ACCORDANCE WITH TRANSPORT CANADA GRADE CROSSING STANDARDS.
- REQUIRED STORAGE FOR 116 CARS AND 3 LOCOMOTIVES AND TELKWA POWER CLEARANCE = 6833' (2082.7m)
1. ROTARY GONDOLAS ARE 53'-1" OVER COUPLER PULLING FACES.
 2. 116 CARS @ 53'-1" = 6157'-8".
 3. ALLOW FOR 3 LOCOMOTIVES @ 75' = 225'
 4. TOTAL REQUIRED TRACK = 6158'+225' PLUS 58' SLACK +180' TURNOUT CLEARANCE + 4 CARS (4'53'1") FOR POWER CLEARANCE = 6833' (2082.7m).
- ACTUAL LOOP LENGTH = 6833' (2082.8m).
- COAL STORAGE**
- ANGLE OF REPOSE: 30° (APPROX.)
DENSITY: 900kg/m³ (ASSUMED)
STOCKPILE BASE AREA: 30,675m²
STOCKPILE HEIGHT: 5m (MAX.)
STOCKPILE VOLUME: 134,500m³ (121,000 TONNES)

LEGEND		
EXISTING	DESCRIPTION	PROPOSED
	CN	
	CENTRELINE CN MAIN	
	CN OWNED RAIL	
	SWITCH STAND/POINT OF SWITCH	
	INDUSTRY RAIL	
	PROPERTY ROW	
	BUMP POST AND CLEAR DISTANCE	

REFERENCE DRAWINGS							CLIENT:		TITLE:		Rail Infrastructure design for the Project	
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF										
1												
2												
3												
4												
5												
6												
7												
8												

PRELIMINARY - NOT FOR CONSTRUCTION

F	19/02/07	ISSUED FOR CLIENT REVIEW	DMM	NH
E	18/12/07	ADDED TELKWA POWER CLEARANCE	DMM	NH
D	18/11/29	STORAGE NOTES/DERAIL ADDED	DMM	NH
C	18/11/01	TURNOUT DETAIL ADDED, LIDAR ADDED	DMM	NH
B	18/10/11	ISSUED FOR PERMIT	DMM	NH
A	18/09/10	ISSUED FOR CLIENT REVIEW	DMM	DMM
REV	YYMMDD	DESCRIPTION	DRWN	APVD

TELKWA COAL LIMITED

Morch Engineering Inc.
Civil Engineering Consulting Services
Nanaimo, BC (250)-713-8905

CLIENT NO:	-	DRWN:	DMM	DATE:	18/09/05
PROJECT NO:	18012	DSGN:	DMM	DATE:	-
DRAWING SIZE:	22x34	CHKD:	-	DATE:	-
SCALE:	1:2500H 1:250V	APVD:	-	DATE:	-

FIGURE

1.21-1

REV: **F**

2018/02/08 18/12/01 Rev F.dwg