BRITISH COLUMBIA

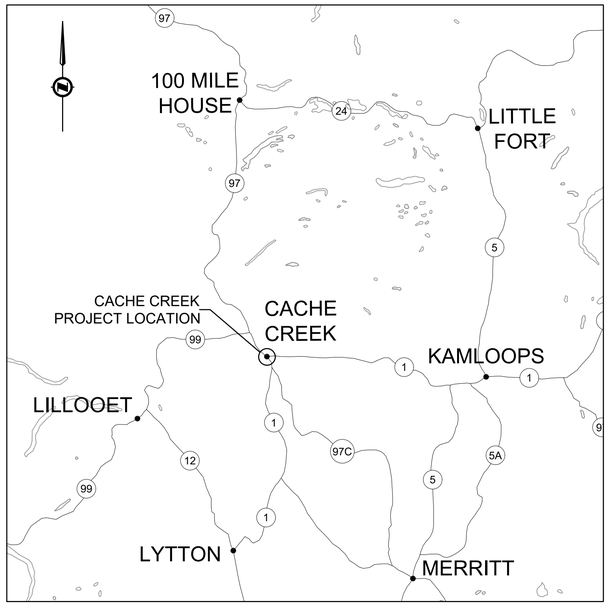
Ministry of Transportation and Infrastructure

PROJECT NO. 26239-0000

CACHE CREEK CULVERT REPLACEMENT

DRAWING NUMBER R2-1239-000

REV



LOCATION MAP
NTS

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

DRAWING INDEX

PROJECT NO. 26239-0000

CACHE CREEK CULVERT REPLACEMENT

STA 100+70.000 - STA 101+25.000 (0.055km)
Landmark Kilometre Inventory Segment 1131
km 12.34 to km 12.39

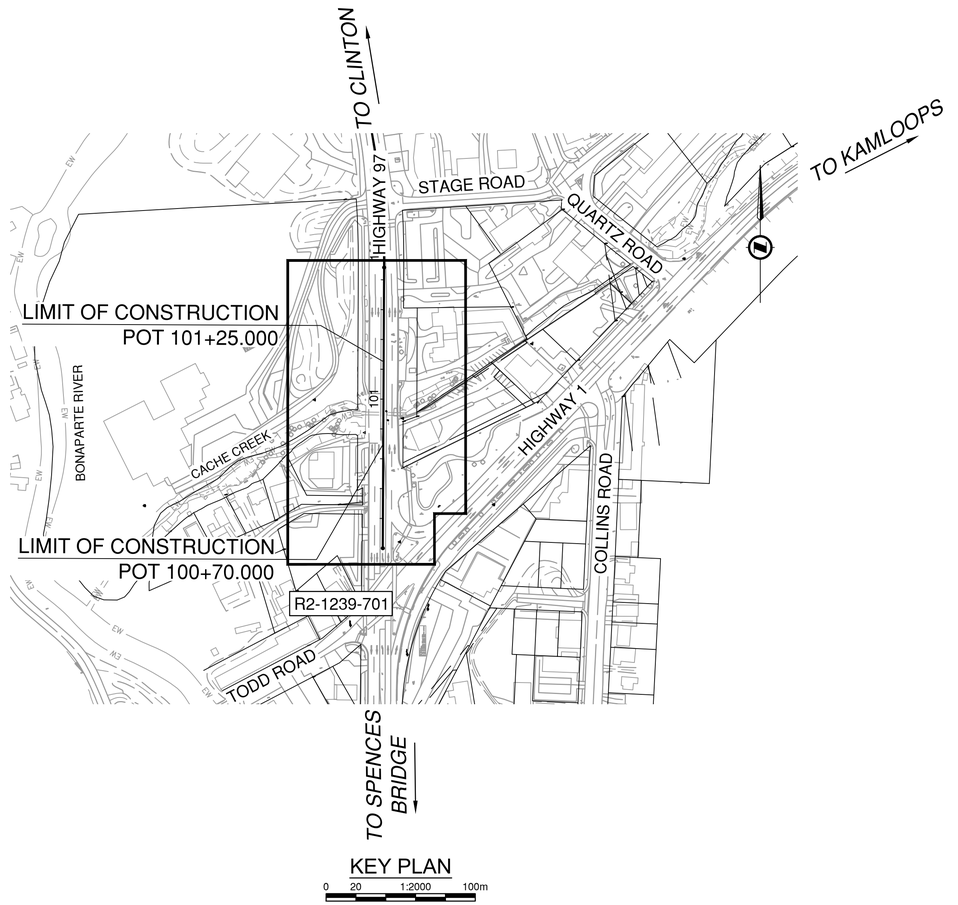
Date: September 20, 2021	Origin: Derived from Static GPS observations and PPP solutions at G11493-19	
Project: HWY 97 & HWY1 Cache Creek DQ Culvert Survey	Tack Point: G11493-19	ACSF: 0.999700
Horizontal Datum: UTM 10N NAD83 CSRS	Vertical Datum: CGVD28 HT2.0	

Point ID	Local		Orthometric Height		UTM		Ellipsoidal Height	C.S.F.	Class	Type
	Northing	Easting	HT2.0	CGG2013a	Northing	Easting				
TACK POINT	629942.423	617999.980	-	-	5629942.423	617999.980	-	-	TACK POINT	G11493-19
G66190-21	629765.760	620227.399	535.901	-	5629765.811	620226.730	520.828	0.999696	Corridor	GCM-66C190
G5573-21	630238.448	618352.918	475.278	-	5630238.359	618352.812	460.337	0.999700	Project	REBAR
G5574-21	630132.219	618190.728	468.197	-	5630132.162	618190.671	453.248	0.999701	Project	REBAR
G5575-21	630075.221	618088.668	465.403	-	5630075.181	618088.641	450.224	0.999701	Project	REBAR
G5576-21	630025.224	618001.988	462.914	-	5630025.199	618001.987	447.955	0.999701	Project	REBAR
G5577-21	630037.690	617942.906	460.842	-	5630037.661	617942.923	445.783	0.999701	Project	REBAR
G5578-21	629966.704	617828.950	456.701	-	5629966.697	617829.001	441.754	0.999701	Project	REBAR
G11493-19	629942.423	617999.980	461.264	-	5629942.423	617999.980	446.331	0.999701	Project	NAIL
P11494-19	629967.361	618063.061	462.678	-	5629967.354	618063.042	-	-	Project	NAIL
P11495-19	630015.684	617976.441	462.684	-	5630015.662	617976.448	-	-	Project	NAIL

All local coordinates are derived by first scaling from the Tack Point and then removing the millionth digit from the Northing

Notes:

* The CGG2013a Geoid uses the CGVD2013 vertical datum and the HT2_0 Geoid uses the CGVD28 vertical datum
* Corridor control can be derived from robust network adjustments using sources such as Mascot, active, and/or PPP for valid absolute accuracies.
* Project control originates from a corridor point and closes to a network confined within the specific project to provide survey grade relative accuracies.
* "name"static brass cap monuments-year. "G" static tag #-year. "K" multi epoch rtk, "P"closed total station traverse.



KEY PLAN
0 20 1:2000 100m

URBAN SYSTEMS

DRAWING NUMBER R2-1239-001 REV

LEGEND

EXISTING SYMBOLS

AERIAL UTILITIES

- POWER POLE
- POWER POLE WITH TRANSFORMER
- POWER / TELEPHONE POLE WITH TRANSFORMER
- POWER GUY POLE
- POWER / TELEPHONE POLE
- POWER / TELEPHONE GUY POLE
- ANCHOR OR GUY WIRE
- DEADMAN
- TELEPHONE POLE
- TELEPHONE GUY POLE
- HIGH TENSION POLE
- HIGH TENSION TOWER
- UTILITY POLE

SURVEY

- CONTROL POINT
- CONTROL MONUMENT
- LEGAL MONUMENT
- STANDARD IRON PIN FOUND
- CAPPED IRON PIN
- LEAD PLUG
- BENCHMARK
- SPOT ELEVATION

GEOTECHNICAL

- TESTPIT
- TESTHOLE
- OBSERVATION WELL

DETAIL

- GATE POST
- MAILBOX
- OLD POST
- DELINEATOR POST
- FLAGPOLE
- DECORATIVE TREE
- TREE
- PILING
- CONCRETE PILLAR
- WELL
- SWAMP
- DIRECTIONAL ARROW

DRAINAGE & UTILITIES

- STORM MANHOLE
- STANDARD CATCH BASIN
- ROUND CATCH BASIN
- DRYWELL
- CB MANHOLE
- CULVERT INLET

DRAINAGE & UTILITIES

- CULVERT OUTLET
- SANITARY MANHOLE
- UTILITY MANHOLE
- WATER MANHOLE
- MANHOLE UNKNOWN

ELECTRICAL

- JUNCTION BOX
- UTILITY VAULT
- LAMP STANDARD
- UTILITY KIOSK
- UTILITY PEDESTAL
- TRAFFIC COUNTER
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL CONTROLLER

METERS

- VALVE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- WELL
- STANDPIPE / WATER BLOW OFF
- AIR VALVE
- GAS VALVE
- SERVICE METER

UNDERGROUND

- VENT/BREATHER PIPE
- FILLER CAP
- FUEL / GAS PUMP
- FUEL TANK
- SEPTIC TANK
- UNDERGROUND MARKER (MISC)
- IRRIGATION JUNCTION BOX
- IRRIGATION SPRINKLER HEAD

ROAD SIGNS

- STANDARD SIGN
- COMMERCIAL SIGN
- SIGN BRIDGE STRUCTURE
- CANTILEVER STRUCTURE
- TWO POST SIGN
- TWO POST SIGN (BREAKAWAY)
- STANDARD DAVIT POLE - TYPE 3
- STANDARD COMBINATION POLE - TYPE 1
- HEAVY DUTY DAVIT POLE - TYPE 6
- HEAVY DUTY COMBINATION POLE - TYPE 7
- HEAVY POLE - TYPE H
- HEAVY COMBINATION POLE - TYPE H

EXISTING LINE TYPES

LOT BOUNDARIES

- SECTION LINE / DISTRICT LOT
- 1/4 SECTION BOUNDARY
- LOT BOUNDARY
- EASEMENTS

EXISTING LINE TYPES

MAN-MADE FEATURES

- RAILWAY TRACKS
- RAILWAY BALLAST
- ROAD MARKING - YELLOW
- ROAD MARKING - WHITE
- ROAD MARKING - BROKEN
- CROSSWALK
- STOP LINE
- EDGE OF ROAD - PAVED
- EDGE OF ROAD GRAVEL
- GRAVEL SHOULDER
- DIRT ROAD
- GRAVEL ROAD
- EDGE OF GRAVEL
- SIDEWALK
- CONCRETE PAD
- FENCE
- TOP OF CURB
- CL OF GUTTER
- CONCRETE ROAD BARRIER
- TOP OF FILL
- RIP RAP
- BUILDING
- TREE LINE
- LAWN LINE

HYDRAULIC

- CULVERT
- DITCH CENTER
- DITCH EDGE
- CENTER OF CREEK
- HIGH WATER
- EDGE OF WATER
- HIGH WATER MARK (EXTREME)
- SEEPAGE LINE

TOPOGRAPHY

- BASE OF SLOP
- MARSH
- TOP OF ROCK
- SLIDE
- TALUS
- TRAIL
- TOP OF SLOPE

UTILITIES

- OVERHEAD UTILITY
- PIPELINE (GAS)
- UG ELECTRIC
- UG COMMUNICATION
- STORM SEWER
- SANITARY SEWER
- WATER MAIN
- MISCELLANEOUS UNDERGROUND

PROPOSED SYMBOLS

AERIAL UTILITIES

- POWER POLE
- POWER POLE WITH TRANSFORMER
- POWER / TELEPHONE POLE WITH TRANSFORMER
- POWER GUY POLE
- POWER / TELEPHONE POLE
- POWER / TELEPHONE GUY POLE
- ANCHOR OR GUY WIRE
- DEADMAN
- TELEPHONE POLE
- TELEPHONE GUY POLE
- HIGH TENSION POLE
- HIGH TENSION TOWER

DETAIL

- GATE POST
- MAILBOX
- POST
- POST MOUNTED DELINEATOR
- FLAGPOLE
- DIRECTIONAL ARROW

DRAINAGE & UTILITIES

- MANHOLE
- STORM MANHOLE
- STANDARD CATCH BASIN
- VARIABLE DEPTH CATCH BASIN
- INLET STRUCTURE
- SPILLWAY
- HEADWALL
- DRYWELL
- TELEPHONE MANHOLE
- POWER MANHOLE
- SANITARY MANHOLE
- UTILITY MANHOLE
- WATER MANHOLE
- MANHOLE UNKNOWN

ELECTRICAL

- JUNCTION BOX
- UTILITY VAULT
- LAMP STANDARD
- UTILITY KIOSK
- UTILITY PEDESTAL
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL CONTROLLER
- UNDERGROUND ELECTRICAL TRANSFORMER

METERS

- VALVE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- STANDPIPE / WATER BLOW OFF
- AIR VALVE
- GAS VALVE
- SERVICE METER

UNDERGROUND

- VENT/BREATHER PIPE
- FILLER CAP
- FUEL / GAS PUMP
- FUEL TANK
- SEPTIC TANK
- UNDERGROUND MARKER (MISC)

ROAD SIGNS

- STANDARD SIGN
- BARRIER MOUNTED DELINEATOR
- RELOCATED OVERHEAD SIGN
- TWO POST SIGN
- TWO POST SIGN (BREAKAWAY)
- STANDARD DAVIT POLE - TYPE 3
- STANDARD COMBINATION POLE - TYPE 1
- HEAVY DUTY DAVIT POLE - TYPE 6
- HEAVY DUTY COMBINATION POLE - TYPE 7
- HEAVY POLE - TYPE H
- HEAVY COMBINATION POLE - TYPE H
- CANTILEVER STRUCTURE
- SIGN BRIDGE STRUCTURE

PATTERNS

- PAVEMENT MILLING
- FULL DEPTH PAVEMENT REMOVAL
- FULL DEPTH PAVEMENT CONSTRUCTION
- INSULATION
- 100kg RIPRAP
- 250kg RIPRAP

PROPOSED LINE TYPES

FEATURES

- HIGHWAY CONTROL LINE (100+00)
- MINOR CONTROL LINE (100+00)
- CLEARING AND GRUBBING (CL. & GR.)
- PAVEMENT EDGE
- SHOULDER EDGE
- CURB AND GUTTER
- RAISED ISLAND
- SAWCUT
- RUMBLE STRIP
- RETAINING WALL
- FENCE
- TOP OF CUT / BOTTOM OF FILL (TOES) (CUT, C/F, FILL)
- 100mm - YELLOW PAINT LINE (SOLID)
- 100mm - WHITE PAINT LINE (SOLID)
- 100mm - CONTINUITY PAINT LINE (BROKEN) (3, 3, 3)
- 100mm - LANE PAINT LINE (BROKEN) (8, 5, 8)
- CONCRETE BARRIER
- CONCRETE DRAINAGE BARRIER AND/OR RIPRAP OUTFALL (100+000)
- DITCH CENTER / ADDITIONAL DITCHING
- DITCH EDGE

BOUNDARIES

- RIGHT OF WAY
- TEMPORARY LICENCE TO CONSTRUCT (T.L.T.C.)

UTILITIES

- OVERHEAD UTILITY
- PIPELINE (GAS)
- SERVICE LINE (GAS)
- UG ELECTRIC
- UG COMMUNICATION
- STORM SEWER
- SUB DRAIN
- CULVERT
- SANITARY SEWER
- WATER MAIN
- MISCELLANEOUS UNDERGROUND

REMOVALS / RELOCATES

- POWER POLE
- TELEPHONE POLE
- HYDRO POWER/ TELEPHONE POLE
- HIGHWAY SIGNS
- UTILITY REMOVAL
- ABANDON UTILITY

NOTE: NOT ALL SYMBOLS AND LINE TYPES ILLUSTRATED IN THIS LEGEND ARE UTILIZED IN THE FOLLOWING DRAWINGS

REV	DATE	REVISIONS	NAME

URBAN SYSTEMS

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTHERN INTERIOR REGION
HIGHWAY ENGINEERING AND GEOMATICS

CAD FILENAME	000_COVER_CACHECREEK - WATERMAIN
FILE NUMBER	1961.0516.12
PLOT DATE	2023-09-22

DESIGNED	J. BRUINEMAN	DATE 2023-09-12
QUALITY CONTROL	T. BLACKBURN	DATE 2023-09-12
QUALITY ASSURANCE	M. GABELHEI	DATE 2023-09-12
DRAWN	J. BRUINEMAN	DATE 2023-09-12

LEGEND

CACHE CREEK CULVERT REPLACEMENT

SCALE	PROJECT NUMBER	REG	DRAWING NUMBER	REV
N/A	26239-0000	2	R2-1239-002	

PLOT DATE: 2023-09-22 11:30:47 AM jbruinemon \\usl.urban-systems.com\projects\Projects_KEL\1961\0516\12\D-Design\CAD\DrawingProduction\000_CoverKeyPlanLegend\000_COVER_CACHECREEK - WATERMAIN.dwg

1. GENERAL

a) All works to conform to the Contract Drawings (drawings) and the Master Municipal Construction Documents (MMCD standards) and standard detail drawings unless otherwise specified. All works to conform with MoTI Utility Policy Manual and permit requirements.
b) Contractor shall request a utility locate through BC 1 Call before excavating.
c) Worksafe BC is to be notified prior to the start of construction and Contractor shall be registered with WorkSafe BC.
d) Contractor to expose all ex. utilities at all utility crossings prior to construction. Contractor is to verify location and inverts and report any conflicts or discrepancies.
e) The Village of Cache Creek, along with residents and business owners affected by the proposed construction, are to be notified by the Contractor in writing 48 hours prior to the start of construction and provided with the Contractor's phone number and schedule.
f) The Contractor will be responsible for the repair of any damage caused to existing streets or services by construction equipment and/or trucks hauling materials to the site. This will include daily cleaning or sweeping all existing roads of dirt and debris caused by construction activity.
g) Legal survey monuments are to be protected. Should disturbance be unavoidable, the Contractor must notify the Ministry Representative at least 72 hours in advance of scheduling work affecting them.
h) Pipe bedding to be MMCD Type 1 granular pipe bedding compacted to 95% modified proctor density.
i) After construction, Contractor to submit as-built redline drawings and as-built survey to the Ministry Representative.
j) After construction, restore work areas and existing features to their original condition or better.
k) Adjust all proposed and existing appurtenances to meet final design grades.

2. WATERMAIN NOTES

a) Watermain and service connection materials shall conform to the Master Municipal Construction Documents (MMCD standards).
b) Tie-ins of proposed watermains to existing watermains are to be performed by the Contractor and witnessed by the Village of Cache Creek public works and Ministry Representative at the contractor's expense unless otherwise noted. The Contractor shall provide minimum 48 hours notice to the Village of Cache Creek and Ministry Representative prior to completing the tie-in.
c) Temporary by-pass for Cache Creek to be in accordance with Ministry of Forest, Department of Fisheries and Oceans and Ministry of Transportation Infrastructure.
d) Contractor to provide a minimum 1.8m cover over all proposed watermains.
e) A minimum of 1.5m horizontal centre to centre and 150mm clear vertical separation shall be maintained between watermains and electrical conduits, gas mains, and telephone conduits except where noted.
f) Watermain testing to be completed as per MMCD watermain disinfection and testing procedures. Submit to Village of Cache Creek and Ministry Representative for approval of the watermain disinfection and testing plan and watermain tie-in plan. Contractor to provide minimum 5 business days for review.
g) Chlorine solutions shall be neutralized in accordance with Ministry of the Environment and Department of Fisheries and Oceans prior to discharge to any drainage course.

URBAN SYSTEMS

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QUALITY ASSURANCE M. GABELHEI DATE 2023-09-12
DRAWN J. BRUINEMAN DATE 2023-09-12

SPECIFICATIONS

CACHE CREEK CULVERT REPLACEMENT

SCALE	PROJECT NUMBER	REG	DRAWING NUMBER	REV
N/A	26239-0000	2	R2-1239-701	

ASSUMED LOCATION OF EX. WATER SERVICE TO SCHOOL. CONTRACTOR TO EXPOSE SERVICE TO CONFIRM LOCATION, DEPTH, SIZE, AND MATERIAL TYPE.

APPROX. 9m OF EX. 3000Ø CSP CULVERT TO BE TEMPORARILY REMOVED FOR CONSTRUCTION OF WATERMAIN

BEGIN GAS CASING
100+87.000
-16.350

STEPHENSON ROAD

CACHE CREEK

EX. ISOLATION VALVE AND SERVICE TO BE REMOVED AFTER NEW GATE VALVE HAS BEEN INSTALLED AND TESTED.

200mm DR11 HPDE CASING FOR FUTURE GAS RELOCATION

END GAS CASING
101+08.000
-16.350

31m WATER SERVICE PER MMCD DETAIL W2B

RECONFIGURATION OF WATER SERVICE TO SCHOOL TO BE FIELD-FIT BASED ON CONFIRMED LOCATION, DEPTH, SIZE AND MATERIAL TYPE OF EX. SERVICE

EX. 200Ø PVC WATERMAIN

CONNECT TO EX. WM
STA. 100+70.00
-14.726
SEE CONNECTION DETAIL ON SHEET R2-1239-702

CONNECT TO EX. WM
STA. 101+21.76
-14.750
SEE CONNECTION DETAIL ON SHEET R2-1239-702

EX. 200 Ø PVC WATERMAIN

200Ø DR18 PVC WM

300 × 200 REDUCER H × H
100+72.23

300Ø DR18 PVC WM

300Ø PVC TO HDPE TRANSITION COUPLING
100+74.17

300Ø DR11 HDPE WM

EX. 200Ø ISOLATION VALVE

EX. 60 DP GAS LINE TO BE RELOCATED (BY OTHERS)

TELUS POLE TO BE SUPPORTED DURING CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.

xxxØ WATER SERVICE SADDLE
101+23.76

200Ø INSERT GATE VALVE
101+22.76

PROP. GATE VALVE TO BE INSTALLED USING INSERT VALVE TO PREVENT SERVICE INTERRUPTION TO THE VILLAGE OF CACHE CREEK.

300 × 200 REDUCER H × H
101+21.76

300Ø PVC TO HDPE RESTRAINED TRANSITION COUPLING
101+20.76

100+00

101+00

LIMIT OF CONSTRUCTION
POT 100+70.000

LIMIT OF CONSTRUCTION
POT 101+25.000

HIGHWAY 97

BH21-02

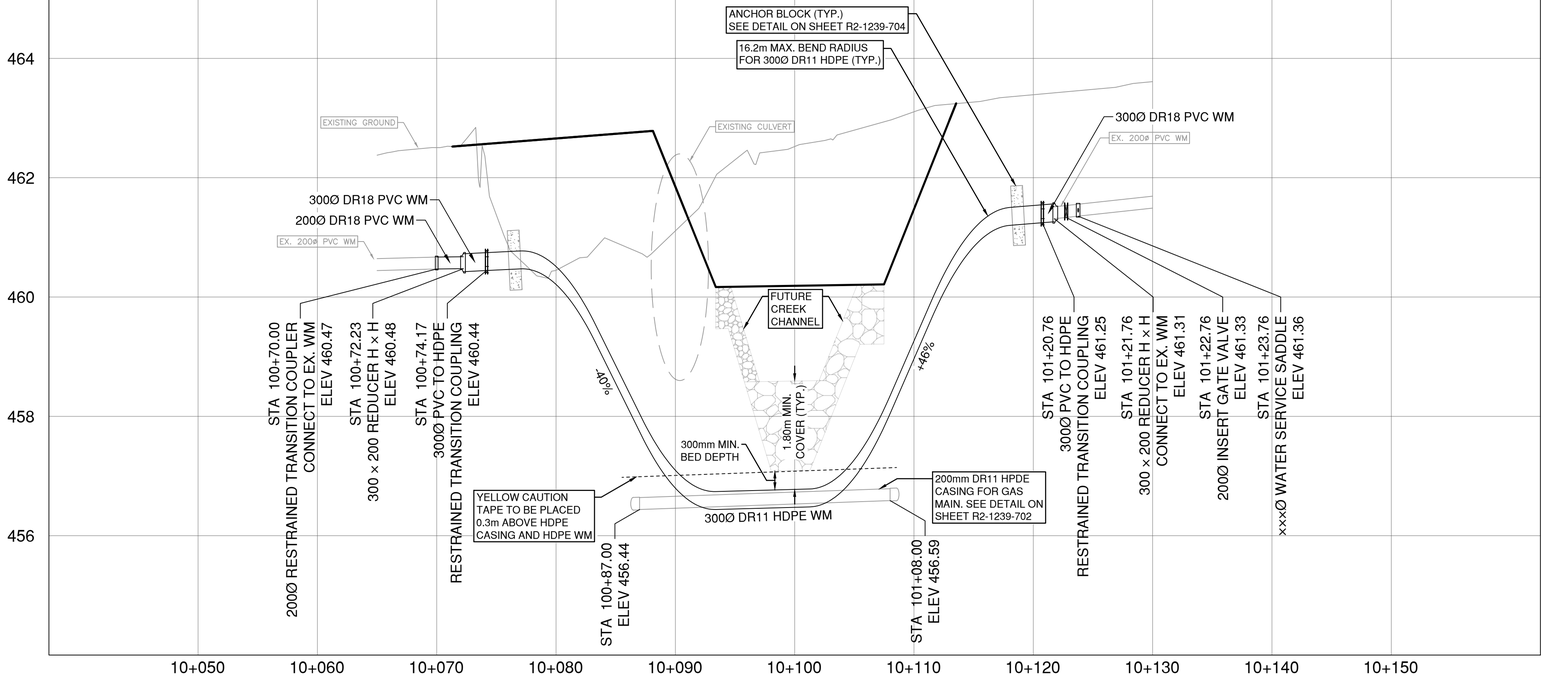
BH21-01

N 630008.148
E 617988.952

N 630063.148
E 617989.203

EX. ISOLATION VALVE (NOT OPERATIONAL)

466



GENERAL NOTES:
1. ALL WATERMAIN PIPE, FITTINGS, COUPLERS AND VALVES TO BE RATED TO A MINIMUM WORKING PRESSURE OF 70 PSI AND A TEST PRESSURE OF 150 PSI.

URBAN SYSTEMS

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SOUTHERN INTERIOR REGION
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WATERMAIN RELOCATION

CACHE CREEK CULVERT REPLACEMENT

STA 100+70.000 TO STA 101+25.000

SCALE 0 2 1:250 12m

PROJECT NUMBER	REG	DRAWING NUMBER	REV
26239-0000	2	R2-1239-702	

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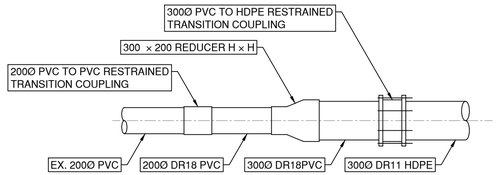
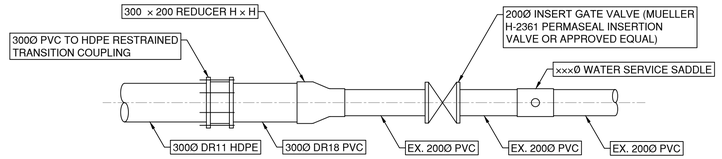


SOUTH CONNECTION DETAIL

SCALE: NTS

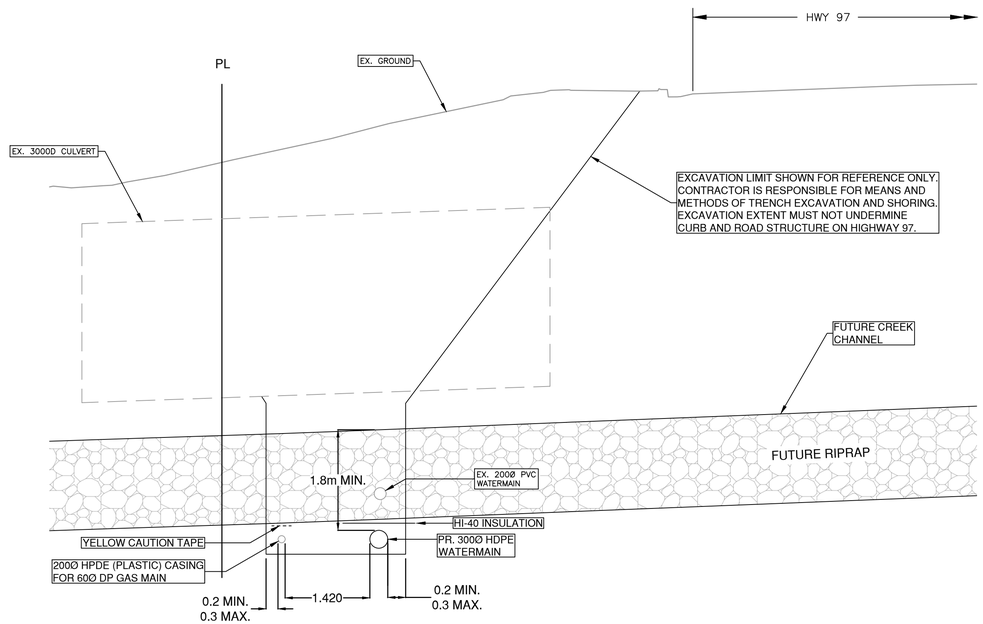


NORTH CONNECTION DETAIL

SCALE: NTS

DETAIL NOTES:

- ALL HDPE JOINTS TO BE FUSED



TYPICAL TRENCH SECTION

SCALE: NTS

WATERMAIN RESTRAINT LENGTH TABLE		
FITTING	SIZE (mm)	RESTRAINT LENGTH (m)
GATE VALVE	300	13.50
REDUCER	300 × 200	7.50

GENERAL NOTES:

1. ALL WATER PIPE, FITTINGS, COUPLERS AND VALVES TO BE RATED TO A MINIMUM WORKING PRESSURE OF 70 PSI AND A TEST PRESSURE OF 150 PSI.

URBAN SYSTEMS

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MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTHERN INTERIOR REGION
HIGHWAY ENGINEERING AND GEOMATICS

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WATERMAIN DETAILS

CACHE CREEK CULVERT REPLACEMENT

STA 100+70.000 TO STA 101+25.000

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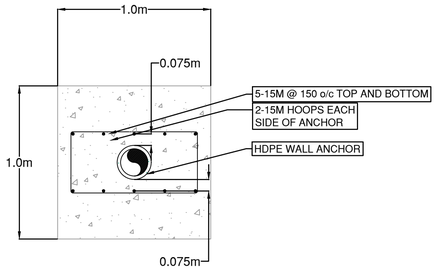
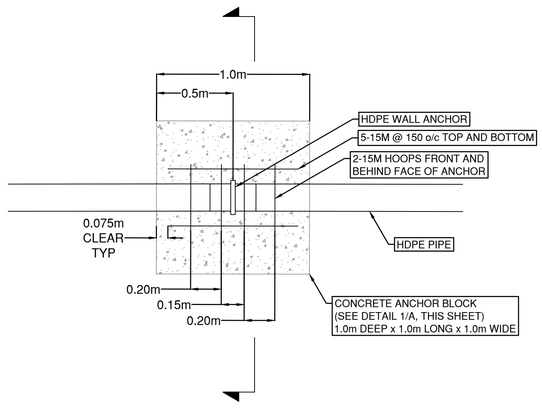
N/A	26239-0000	2	R2-1239-703	



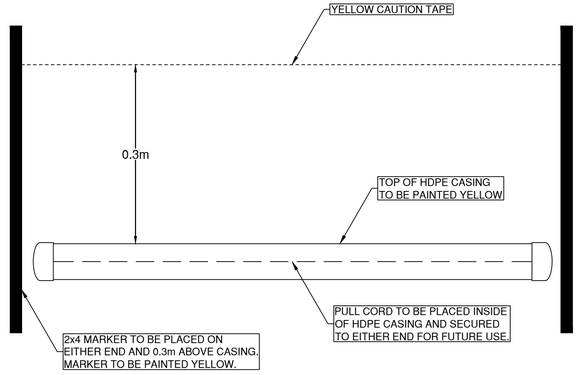
ANCHOR BLOCK SECTION

SCALE: NTS



HDPE ANCHOR BLOCKS

SCALE: NTS



GAS CASING DETAIL

SCALE: NTS

GENERAL NOTES:

1. ALL WATER PIPE, FITTINGS, COUPLERS AND VALVES TO BE RATED TO A MINIMUM WORKING PRESSURE OF 70 PSI AND A TEST PRESSURE OF 150 PSI.

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WATERMAIN DETAILS

CACHE CREEK CULVERT REPLACEMENT

STA 100+70.000 TO STA 101+25.000

SCALE	PROJECT NUMBER	REG	DRAWING NUMBER	REV
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