



Maintenance Services Reporting Manual

HIGHWAY MAINTENANCE AGREEMENTS

Round 6 (2018-2019)

November 25, 2020 – Version 3.01



Ministry of
Transportation
and Infrastructure



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Transportation
and Infrastructure

MAINTENANCE SERVICES
REPORTING MANUAL

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AGREEMENTS

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Revisions to the Maintenance Services Reporting Manual – from version 3.0

PAGE	SECTION	REVISION
21	Appendix B	<p>Changed the name of activities 301200 from “Highway Snow Removal” to “Highway Snow Removal – Numbered Routes” and 302200 from “Salt/De-icing Application” to “Salt/De-icing Application – Numbered Routes” and 302201 from “Winter Abrasive Application” to “Winter Abrasive Application – Numbered Routes” and 302202 from “Anti-icing Application” to “Anti-icing Application – Numbered Routes” and 302205 from “Compact Surface Maintenance” to “Compact Surface Maintenance – Numbered Routes”.</p> <p>Note: a list of Highway Unique Identifiers associated with numbered routes is published on the reporting website).</p>
21	Appendix B	<p>Added activities 301204 (“Highway Snow Removal – Non-Numbered Routes”), 302206 (“Salt/De-icing Application – Non-Numbered Routes”), 302207 (“Winter Abrasive Application – Non-Numbered Routes”), 302208 (“Anti-icing Application – Non-Numbered Routes”) and 302209 (“Compact Surface Maintenance – Non-Numbered Routes”).</p>
22	Appendix B	<p>Changed the feature type from “Point” to “Point/Line” for activity 401302 (“cut vegetation (Raised Hard Surfaced Infrastructure)”).</p>

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1.0 INTRODUCTION

The Data Room contains a series of video modules entitled “Maintenance Services Reporting Manual – Video Overview” found in the “Forms and Reporting” section of the “Maintenance and Operations” category.

The modules review the requirements for the Contractor’s reports, including information about collecting records using GPS coordinates and other tips for collecting, compiling, and submitting records.



Accessing the Highway Maintenance Contract Reporting (HMCR) Application

To access the HMCR application, where the Contractor submits reports, the Contractor’s contact person must submit the Business BCeIDs of individuals who need access to Maintenance.Programs@gov.bc.ca.

Reporting of Maintenance Services is a requirement outlined in the Highway Maintenance Agreement (the “Agreement”) that requires the Contractor to follow the standardized format and submission process outlined in this manual.

Capitalized terms used but not defined within this manual have the meanings ascribed to such terms in the Agreement, as the context requires. Highway, highway, Road and road have the same meaning as Highway in the Agreement. Some requirements of the Agreement may be re-stated throughout this manual for context, but in the event of a discrepancy between this manual and the Agreement, the Agreement shall prevail.

The Contractor is responsible for the selection of equipment and computer hardware and software adequate to meet the requirements enumerated in this manual. All costs related to the requirements outlined in this manual are the responsibility of the Contractor, including but not limited to acquiring appropriate equipment and computer hardware and software, as well as all administrative and overhead costs related to development, operation, training, future modification, upkeep and communication with the Province.

The Province may change this manual from time to time, and the Contractor must adapt or change its reporting to meet updated manual requirements at no cost to the Province. If the Province determines that changes to this manual are required, it will update this manual and advise the Contractor accordingly.



The video module in the Data Room entitled “Maintenance Services Reporting Process Overview” provides an overview of the process for reporting of Maintenance Services, as well as the creation and submission of records.



2.0 Reporting Requirements



Reports of completed Maintenance Services, unless otherwise specified in this manual, must be submitted by the Contractor to the Highway Maintenance Contract Reporting (HMCR) application, located at <https://hmcr.th.gov.bc.ca/>. Reports must reach the “data validation successful” submission status within the HMCR application.

The Contractor is responsible for ensuring the report format and quality meets the requirements detailed in this manual. Should either the Province or the Contractor identify inconsistencies or errors within reports submitted by the Contractor, the Contractor is expected to take prompt action to verify and correct such inconsistencies or errors and provide updated reports in a timely manner.

The Data Room may contain information the Contractor might need to complete Maintenance Services reports. The “Data Room” is the secure website, <https://engineering.sp.th.gov.bc.ca/sites/service-areas-portal/>, established by the Province containing information relevant to the Agreement.

2.1 Maintenance Services Reporting

The Contractor is required to create its reports of completed Maintenance Services using the format detailed in the appendices to this manual:

- ▶ **Appendix A** – Definitions and Conventions
- ▶ **Appendix B** – Activity Tables
- ▶ **Appendix C** – Local Area Specifications Activity Tables
- ▶ **Appendix D** – Data Requirements
- ▶ **Appendix E** – Alternative Conventions for Reporting





- ▶ **Appendix F** – Additional Maintenance Services

2.2 Supplementary Reporting

The Contractor is required to create its reports of major events, rockfall and wildlife accidents using the format detailed in the appendices to this manual:

- ▶ **Appendix G** – Major Events Reporting
- ▶ **Appendix H** – Rockfall Reporting
- ▶ **Appendix I** – Wildlife Reporting

2.3 Inventory Updating

The Contractor is required to report on updates to three types of inventory:

- ▶ Signs
- ▶ Culverts
- ▶ Cattle Guards

The Province's Corporate Highway and Resource Information System ("CHRIS") is the inventory management system utilized by the Province. Generally, CHRIS holds records of all highways, roads, bridges and structures as well as the corresponding features of such items under the Province's jurisdiction.

The Province must update CHRIS in response to any changes to the above inventory items resulting from the Contractor carrying out Maintenance Services, including the new installation, replacement or removal of such inventory items. It is the responsibility of the Contractor to supply the updated information to the Province

3.0 APPENDICES



using the format detailed in **Appendix J – CHRIS Inventory Updates**.

The remainder of this manual contains the following appendices that detail the format and requirements for reporting of services completed under the Agreement.

APPENDIX A – Definitions and Conventions

APPENDIX B – Activity Tables

APPENDIX C – Local Area Specifications Activity Tables

APPENDIX D – Data Requirements

APPENDIX E – Alternative Conventions for Reporting

APPENDIX F – Additional Maintenance Services

APPENDIX G – Major Events

APPENDIX H – Rockfall Reporting

APPENDIX I – Wildlife Reporting

APPENDIX J – CHRIS Inventory Updates



Definitions and Conventions

ACTIVITY NUMBERS

The “activity number” is the tracking number assigned by the Province for Maintenance Services activities undertaken by the Contractor. Appendices B and C of this manual list all activity numbers, and each is associated with different reporting parameters that the Contractor must follow, as summarized in [Appendices B](#) and [C](#).

Routine Maintenance Services and Quantified Maintenance Services

Activity numbers for Routine Maintenance Services and Quantified Maintenance Services activities follow the format shown in Figure A1. The “specification category” and “activity category,” however, do not correspond in the same way to Local Area Specification activities or Additional Maintenance Services activities.

Additional Maintenance Services

The activity numbers for the reporting of Additional Maintenance Services correspond to the five categories included on the Additional Maintenance Services Approval Form H0200. These activity numbers are

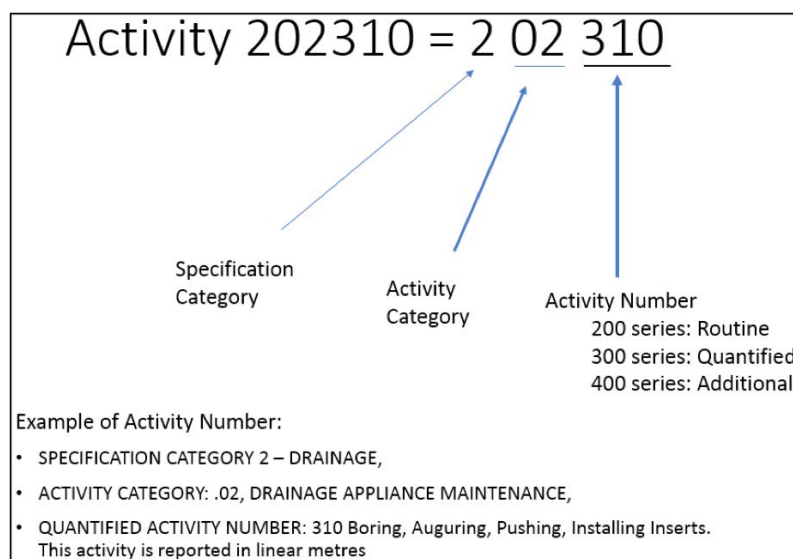


Figure A1: Example of Coding for Typical Activity Number

included in the list of activity numbers in [Appendix B](#).

DATE AND TIME CONVENTIONS

Daily

Daily refers to the 24-hour period starting at 00:00 hours and ending at 23:59, every day.

Start Date and End Date

The start and end dates are the dates Maintenance Services activities are started and completed. The start and end date reported by the Contractor cannot span multiple Contract Years and thus cannot include in the span of time the Anniversary Date of the Agreement. Services, for any given Contract Year, must begin no earlier than the Anniversary Date and end no later than the day before the following Anniversary Date. Separate records for each Contract Year may be required when services begin before and end after the Anniversary Date

HIGHWAY UNIQUE

The Province will provide reports to the Contractor generated from CHRIS that contains the highway unique identifiers for all highways within a Service Area. Each highway unique identifier follows the same format with the following attributes: service area, area manager area, sub-area, highway number and alpha.

For Example: The section of Highway 97A within Service Area 18, area manager area A, sub-area N (for north) is formatted as 18-A-N-00097A.

Area Manager Area

The area manager area of the service area is assigned by the Province and may correspond to the section of the service area under the administrative jurisdiction of one of the Province’s road area managers or under the management of one of the Contractor’s road foremen or superintendents.

The video module in the Data Room entitled “Activity Numbers” discusses activity numbers and how they relate to the specifications and the performance measures.





Sub Area

The Province may further divide an area manager area into sub-areas, consisting of north, south, east, west or other provincially-developed divisions

Highway Number

The highway number is the route number assigned by the Province.

LOCATION CONVENTIONS

All records require location information. [Appendices B](#) and [C](#) include an indicator of what location information the records associated with each activity number require. The following three categories outline these indicators, referred to as 'location codes,' for which the specific data requirements are detailed in [Appendix D](#):

- a) Service area wide
- b) Service area and highway unique
- c) Highway unique, service area, GPS location information and structure or site number (if applicable)

RECORDS

A record is a line item in the report. A record is the basic documentation unit for Maintenance Services activities

The amount of information that a single record can include depends on the activity number, associated location convention, location(s) of the Maintenance Services activity and start and end dates.

SITE NUMBER

Non-linear features such as Rest Areas are assigned site numbers by the Province, which the Contractor must report with the records for certain activities, as detailed in [Appendix D](#).

Site numbers consist of an alpha character, followed by up to six numeric digits. The alpha character can be any of the following for different types of sites:

- A Avalanche
- B Arrestor bed/dragnet barrier
- D Debris and/or rockfall
- L Landscape
- R Rest Area
- S Signalized intersection
- T Traffic patrol
- W Weather station
- X Railway crossing

Rest Areas and landscape features already include the alpha character in the site number assigned by the Province. For site numbers for other types of sites, the Contractor needs to add the alpha character for reporting.

STRUCTURE NUMBER

The Province assigns structures (i.e. bridges, culverts 3.0 metres or greater in diameter, retaining walls 2.0 metres or greater in length and cattle guards 3.0 metres or greater in length) with a unique structure number tracked in the Bridge Management Information System (BMIS). The Contractor must include in its reports the structure number for certain Maintenance Services activities, as detailed in [Appendix D](#). The Province will provide to the Contractor lists of structure numbers.

GPS DATA COLLECTION CONVENTIONS

GPS location referencing is the required method of spatially locating certain records of Maintenance Services by the Contractor. [Appendices B](#), [C](#) and [D](#) detail the Maintenance Services activities that require the Contractor to include GPS location information.

If GPS data is unavailable, then the Contractor must seek approval from the Province to use the alternate conventions described in [Appendix E](#). The Contractor must have the Province's permission to submit records that require GPS location information using any method other than GPS.

GPS information reported by the contractor must follow the following conventions in addition to the formatting and requirements outlined in [Appendix D](#):



- ▶ The Contractor can record GPS data points indicative of either point or line features. Point features require the Contractor to either only include in the record the start GPS fields or, if the Contractor includes both the start and end GPS fields, to report the same values in both sets of fields. The Contractor must report a different start and end GPS point in records for linear features.
- ▶ For some activities, the Contractor must always report the associated GPS location as only one of the line or point feature types. For other activities, the Contractor determines whether to report the associated GPS location as either a line or point, based on the activity length along a road. For these activities that allow either line or point feature types, if the Contractor completes an activity at a single point or if the activity is linear but shorter than 30 metres, the Contractor may report it as a point. Otherwise, the Contractor must report a line. [Appendices B](#) and [C](#) list

The video module in the Data Room entitled “Reporting Summer Activities” outlines the reporting requirements and provides examples for various summer Maintenance Services.



the allowed feature types for all activity numbers.

- ▶ The Contractor should report start and end GPS points in the same direction as the highway.
- ▶ The Contractor should record the GPS location of any point feature at its centre or if greater than one square metre in size, on the side closest to the road.
- ▶ For point features that are located beneath or span the width of a road, such as a small culvert or cattle guard system,

The video module in the Data Room entitled “Reporting Winter Activities” outlines the reporting requirements and provides examples for various winter Maintenance Services.



the Contractor should record the GPS location at the centreline of the road.

- ▶ Continuous linear activities can span landmarks, but not two highway unique identifiers.
- ▶ Continuous linear activities can be as recorded as one record, regardless of length, along the same highway unique identifier.
- ▶ If a continuous linear activity is intermittent and has gaps exceeding 100 metres, another record is required.

APPENDIX A

Location Convention Diagrams for GPS Based Data Collection

The following diagrams illustrate the convention for collecting location data:

[Diagram A.1:](#) Single Point Features – GPS Data Collection

[Diagram A.2:](#) Roadside Linear Features – GPS Data Collection

[Diagram A.3:](#) Linear Features – Continuous Activities – GPS Data Collection

[Diagram A.4:](#) Linear Features – Continuous Activities with Intermittent Gaps – GPS Data Collection

[Diagram A.5:](#) Linear Features – Divided and Four Lane Highways with Median – GPS Data Collection

Turn off the cellular network in areas with poor cell coverage if using a cell phone to collect GPS coordinates.

This practice will force the phone to use its GPS satellite connection rather than a combination of GPS satellite and cellular tower connection to locate the GPS position.



[Diagram A.6:](#) Linear Features – Divided and Four Lane Highways without Median – GPS Data Collection

[Diagram A.7:](#) Single Point Features – Divided and Four Lane Highways with Median – GPS Data Collection

[Diagram A.8:](#) Features within Structures or Sites – GPS Data Collection

The video module in the Data Room entitled “Data Collection Conventions includes an overview of the GPS data collection conventions and reviews the location convention diagrams.



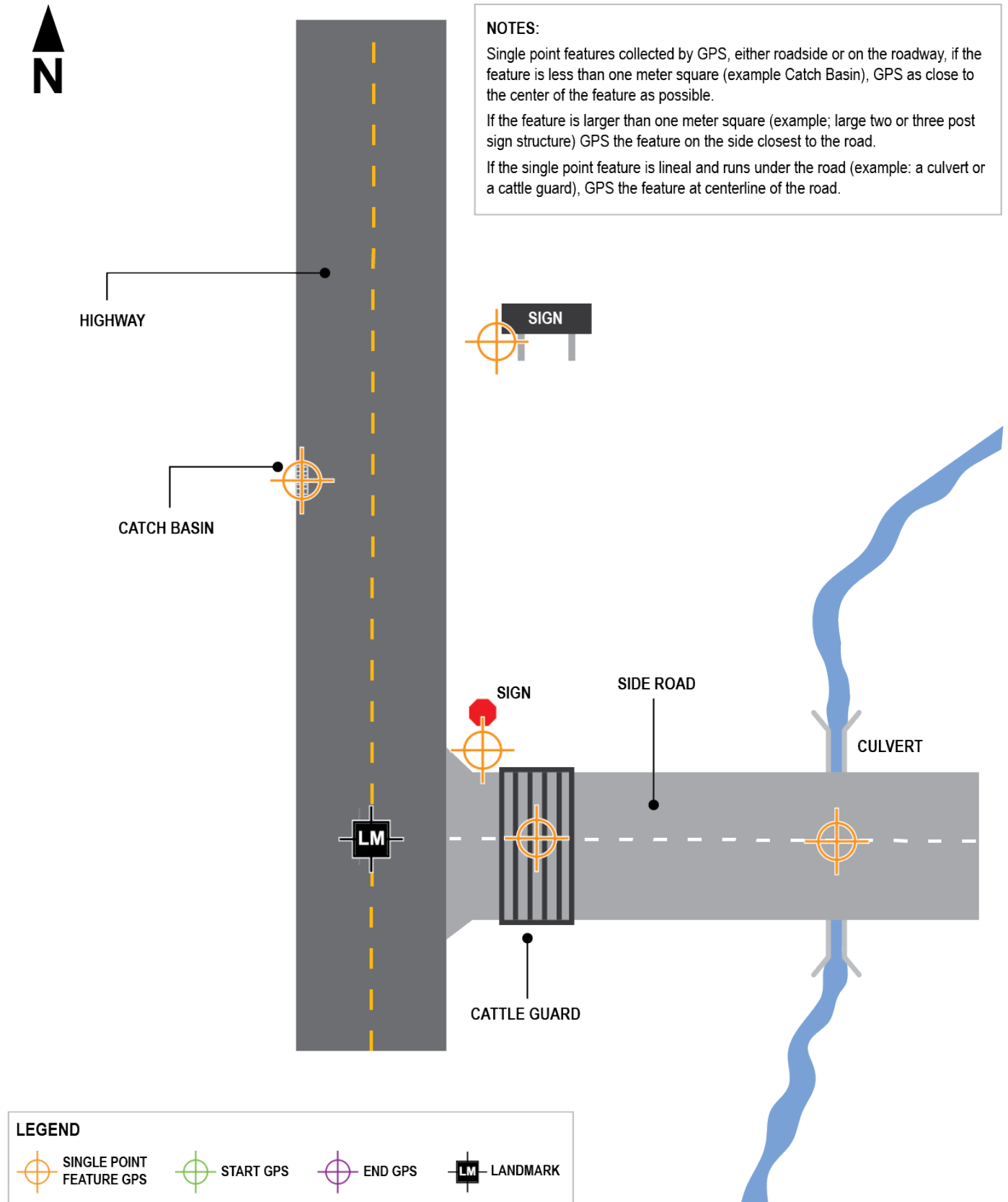
Diagram A.1: Single Point Features – GPS Data Collection

Diagram A.2: Roadside Linear Features – GPS Data Collection



NOTES:

Roadside Linear Features (example, Guardrail, Fencing, Ditching) are captured using a Start GPS and an End GPS.

The data should be collected as close to the physical feature as possible.

Generally, data is collected in a Northerly direction [or Easterly direction], so the south end [or West end] will be the Start GPS point.

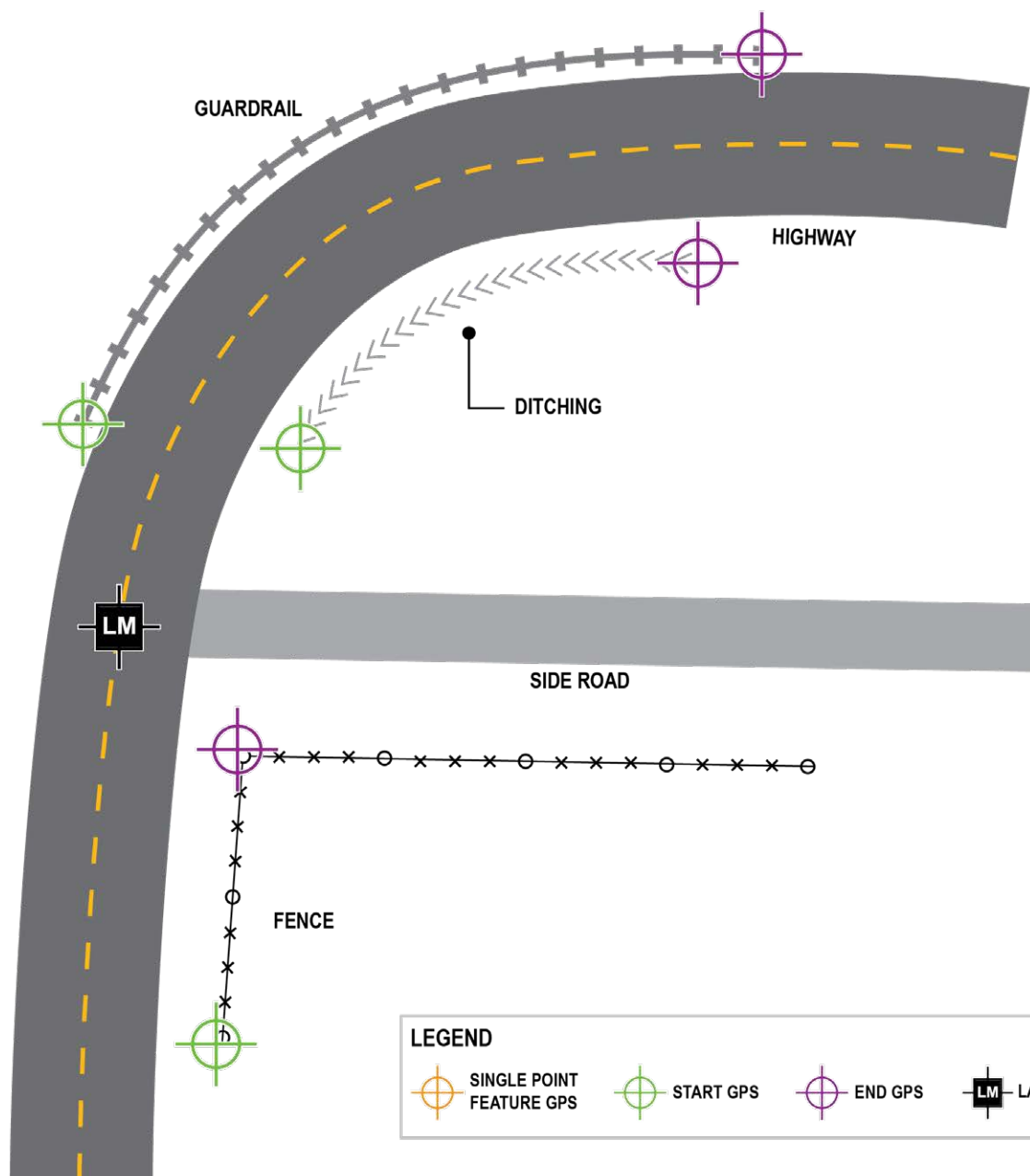


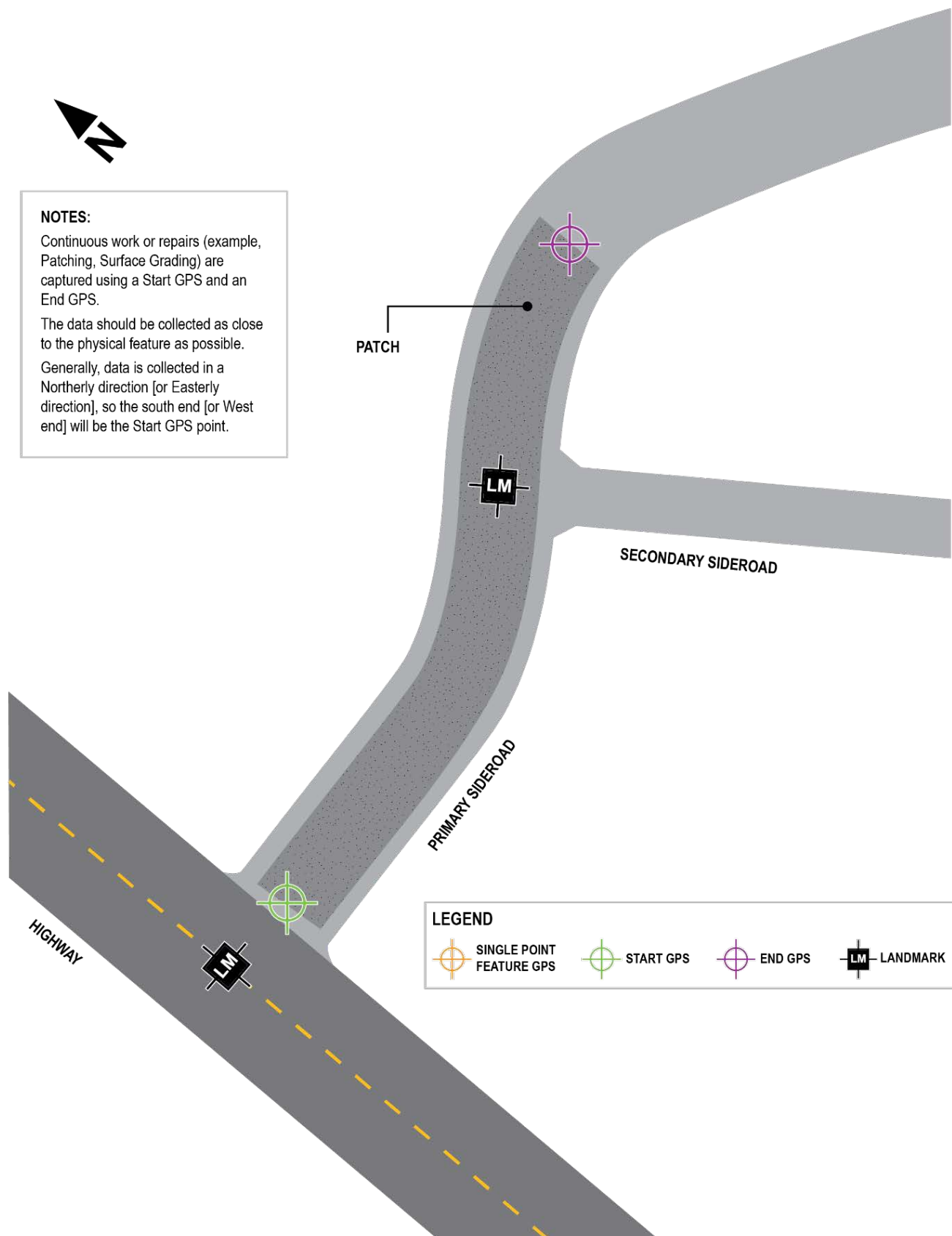
Diagram A.3: Linear Features – Continuous Activities – GPS Data Collection

Diagram A.4: Linear Features – Continuous Activities with Intermittent Gaps – GPS Data Collection

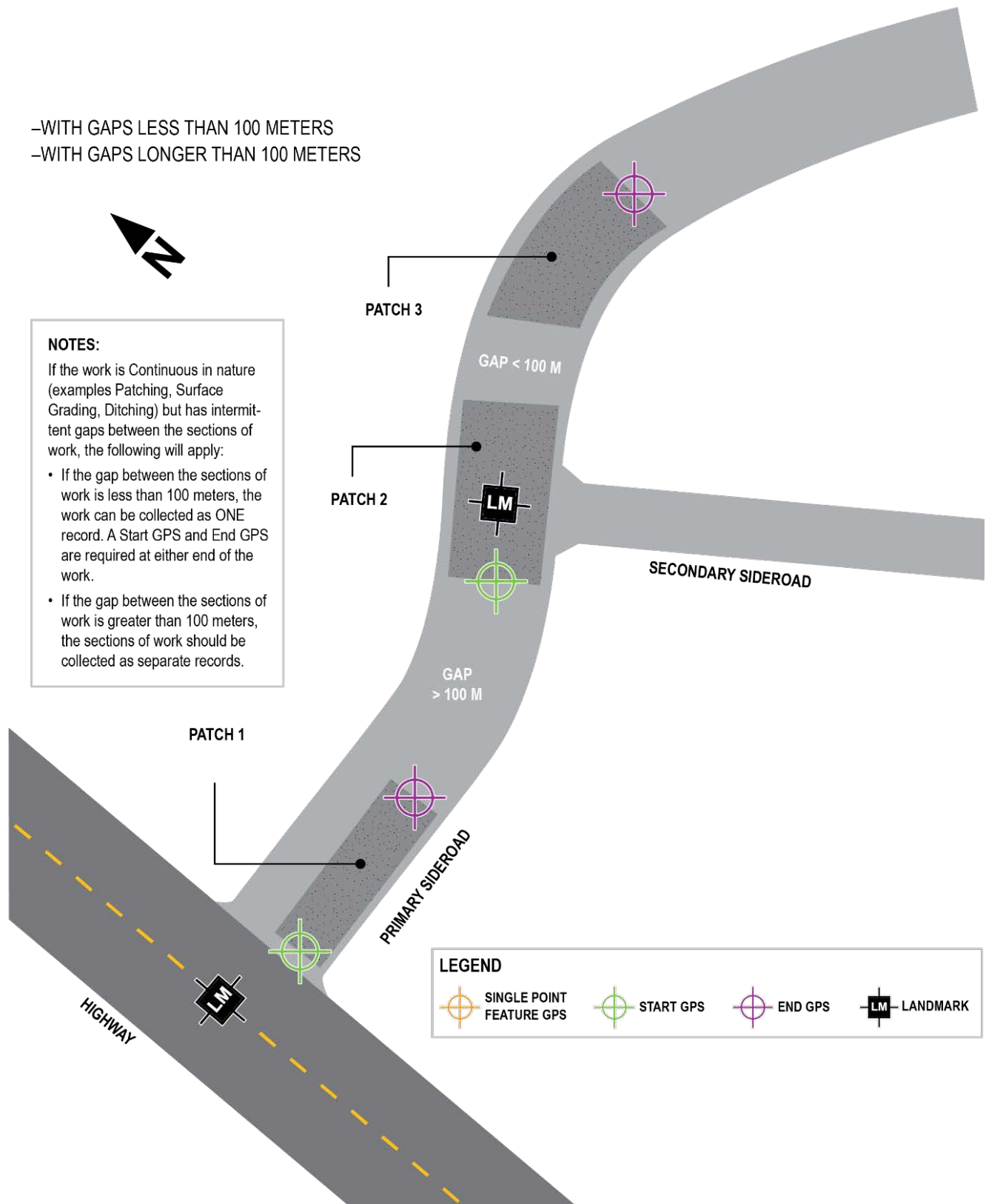
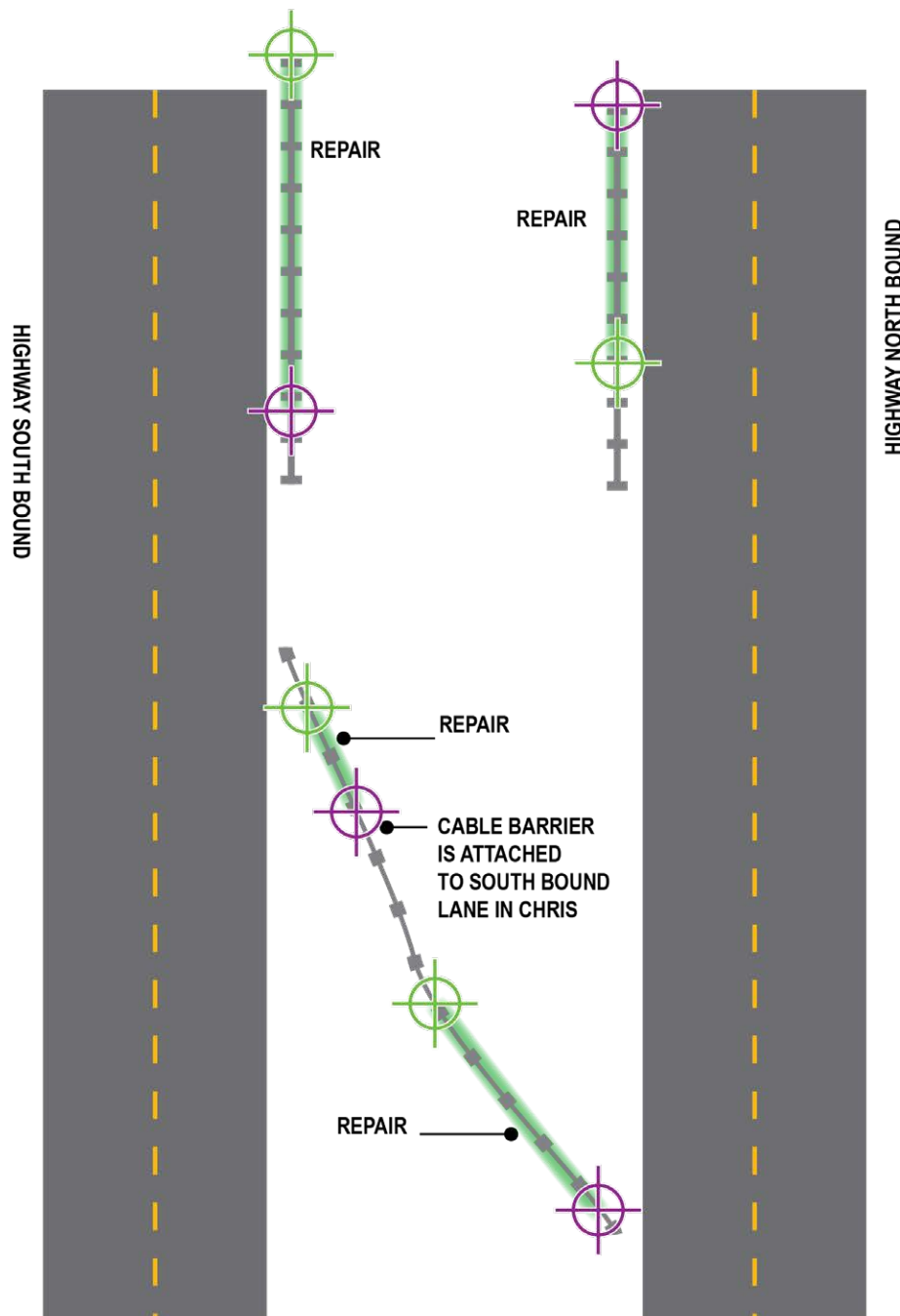


Diagram A.5: Linear Features –Divided and Four Lane Highways with Median – GPS Data Collection**NOTES:**

- Highway typically will be collected in CHRIS as two separate roads (for example Northbound and Southbound).
- The Feature being repaired will be attached to one of the Highways in CHRIS, either Northbound or Southbound. The Start GPS and End GPS should go in the same direction as the Highway. For example, if the Highway is Southbound, the northern end of the work should be captured as the Start GPS.
- Usually this is apparent in the field (example, Concrete Roadside Barrier) however some features span the median and may be shared by both roadways (example Cable Barrier, ditching). CHRIS data should be checked to determine the association between the Highway and the feature.
- If there are multiple, overlapping repairs (Example Concrete Median Barrier and Concrete Roadside Barrier replacements near or at same location) then two separate records will be required.

LEGEND

Diagram A.6: Linear Features – Divided and Four Lane Highways without Median – GPS Data Collection

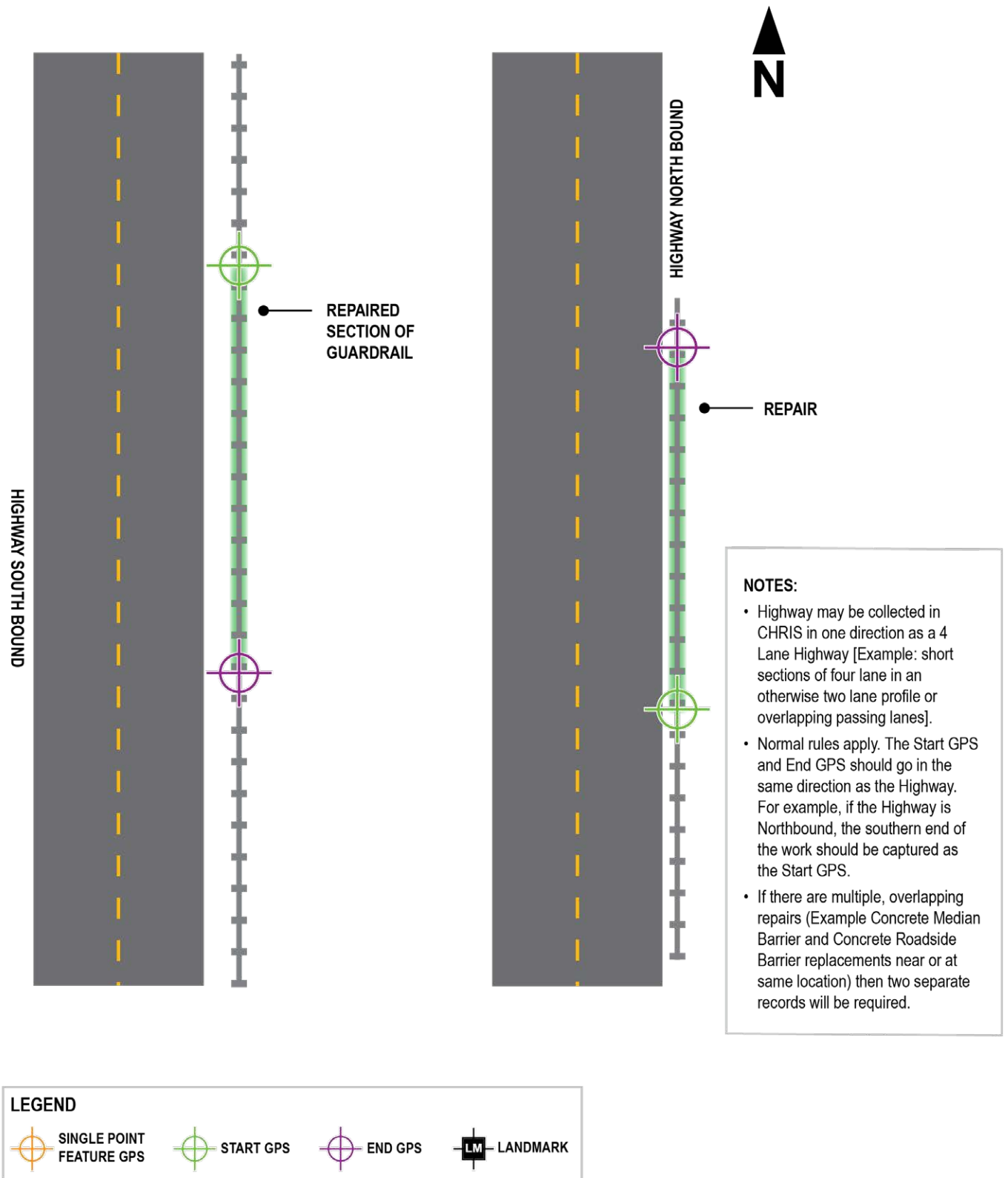


Diagram A.7: Single Point Features – Divided and Four Lane Highways with Median – GPS Data Collection

- SPANNING EACH HIGHWAY
- SPANNING BOTH HIGHWAYS

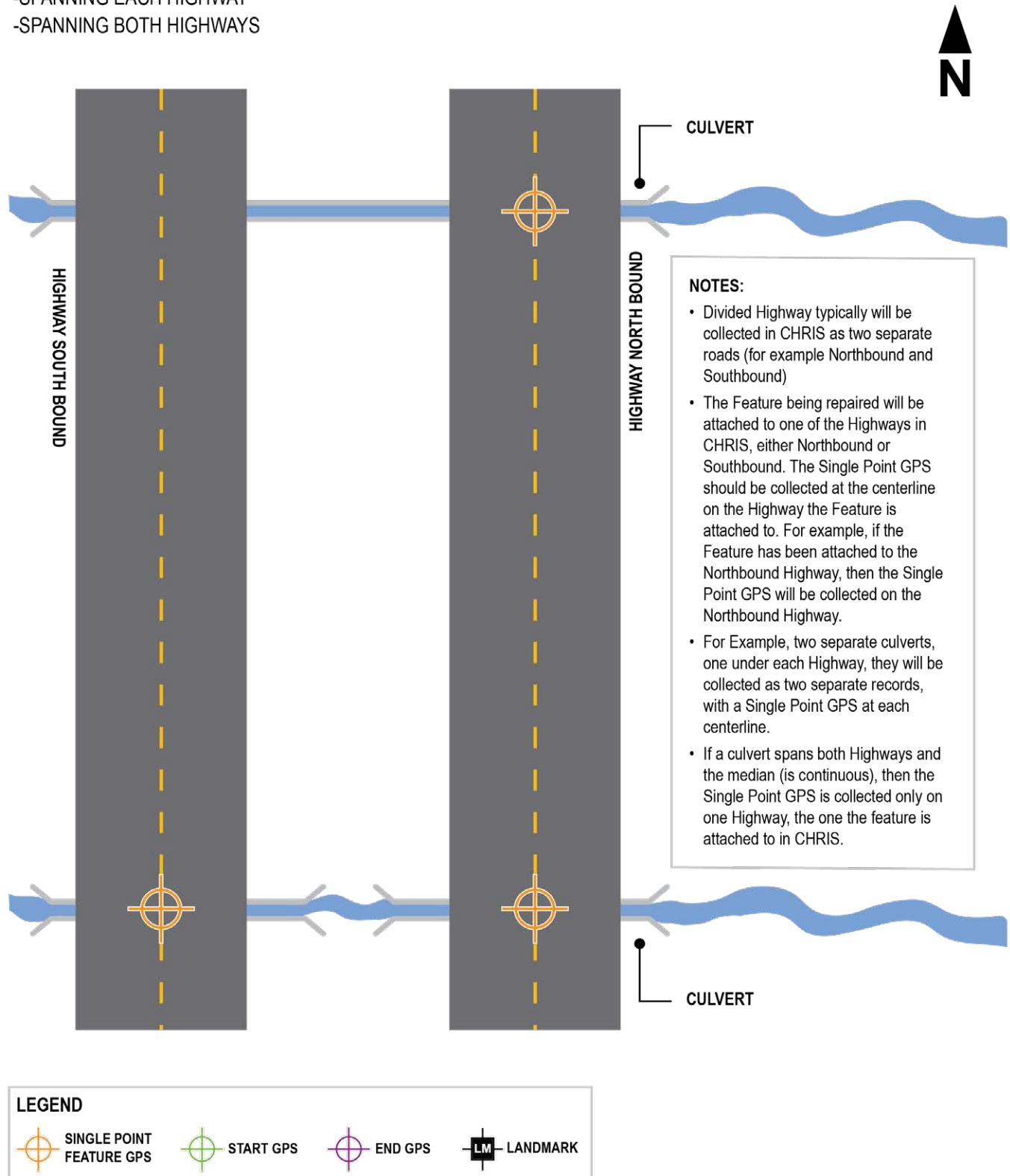
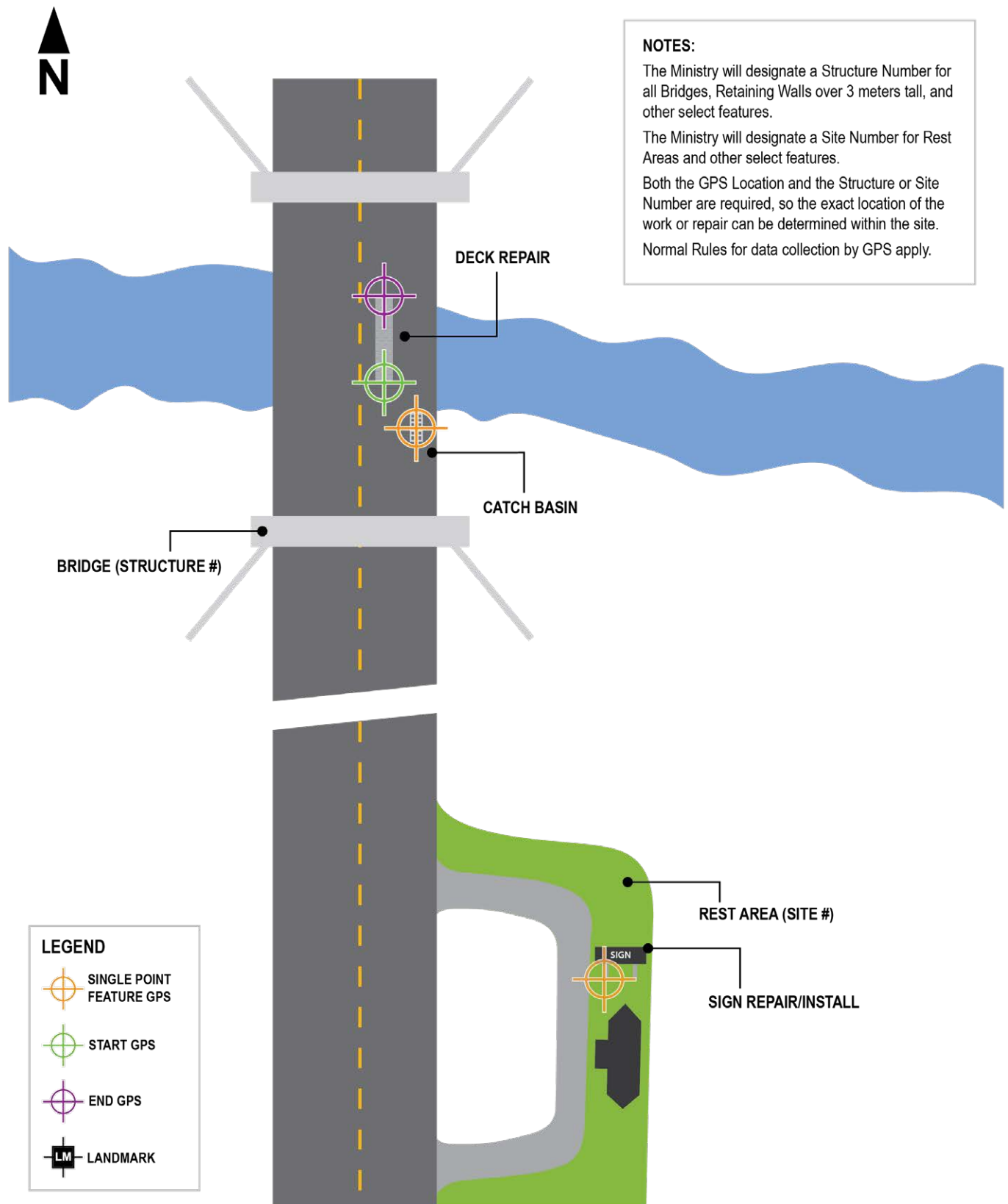


Diagram A.8: Features within Structures or Sites – GPS Data Collection



APPENDIX B

ACTIVITY TABLES

This appendix lists in Table B1 the Maintenance Services activities the Contractor is to report to the Province associated with the General Specifications (including both Routine Maintenance Services and Quantified Maintenance Services) and for Additional Maintenance Services. The maintenance type, location code and feature type associated with each activity number determine what

information the Contractor is required to include for each record. [Appendix D](#) contains information regarding the format and requirements for each record

Table B1: Activity Details

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
101200	Temporary Patching	num	Routine	A	N/A
101300	Overlay Patch	tonne	Quantified	C	Point/Line
101301	Overlay Patch Isolated	tonne	Quantified	C	Point/Line
101302	Overlay Patch (handwork)	tonne	Quantified	C	Point/Line
101303	Overlay Patch - Isolated (handwork)	tonne	Quantified	C	Point/Line
101304	Replacement Patch	tonne	Quantified	C	Point/Line
101305	Replacement Patch (handwork)	tonne	Quantified	C	Point/Line
101306	Spray Patching	litre	Quantified	C	Point/Line
101307	Spray Patching - Isolated	litre	Quantified	C	Line
101308	Crack Sealing	litre	Quantified	C	Line
101309	Crack Filling	litre	Quantified	C	Line
102300	Graded Aggregate Seal	m2	Quantified	C	Line
102301	Graded Aggregate Seal - Isolated	m2	Quantified	C	Line
102302	Sand Seal	m2	Quantified	C	Line
103300	Grading	rd km	Quantified	C	Line
103301	Grading (Re-shaping)	rd km	Quantified	C	Line
103302	Shoulder Grading	sh km	Quantified	C	Line
103303	Shoulder Grading (Re-shaping)	sh km	Quantified	C	Line
104300	Dust Control	litre	Quantified	C	Point/Line
104301	Base Stabilization	litre	Quantified	C	Line

APPENDIX B

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
105300	Surface Graveling - Crush	m3	Quantified	C	Point/Line
105301	Surface Graveling - Crush - Isolated	m3	Quantified	C	Point/Line
105302	Surface Graveling - Pit Run	m3	Quantified	C	Point/Line
105303	Surface Graveling - Pit Run - Isolated	m3	Quantified	C	Point/Line
105304	Shoulder Graveling - Crush	m3	Quantified	C	Point/Line
105305	Shoulder Graveling - Crush - Isolated	m3	Quantified	C	Point/Line
105306	Shoulder Graveling - Pit Run	m3	Quantified	C	Point/Line
105307	Shoulder Graveling - Pit Run - Isolated	m3	Quantified	C	Point/Line
106300	Road Base Repair	m3	Quantified	C	Point/Line
107200	Machine Surface Cleaning	lkm	Routine	B	N/A
107201	Hand Surface Cleaning	hours	Routine	A	N/A
107202	Surface Cleaning Pedestrian Path	hours	Routine	A	N/A
107203	Surface Cleaning Bicycle path	hours	Routine	A	N/A
107204	Blockage Removal	hours	Routine	A	N/A
107205	Clean Annually Openings	hours	Routine	A	N/A
107206	Barrier Accumulations Removal	hours	Routine	A	N/A
107300	Surface Cleaning Remove Accumulations (barrier)	lin m	Quantified	C	Point/Line
107301	Surface Cleaning Remove Accumulations (additional)	sh km	Quantified	C	Line
108200	Debris removal	num	Routine	A	N/A
108201	Debris removal exceeding 1000 cc on travelled lanes and sidewalks	num	Routine	A	N/A
108202	Debris equal to or less than 1000 cc on travelled lanes or sidewalks	num	Routine	A	N/A
108203	Debris exceeding 1000 cc on shoulders	num	Routine	A	N/A
108204	Debris equal to or less than 1000 cc on shoulders	num	Routine	A	N/A
108205	Dead animals on travelled lanes, shoulders or sidewalks	num	Routine	A	N/A
108206	Dead animals on the Right-of-Way excluding Travelled Lanes, Shoulders and sidewalks	num	Routine	A	N/A

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
109200	Cattle Guard Clean Debris	num	Routine	A	N/A
109201	Cattle Guard Repair	num	Routine	A	N/A
109300	Cattleguard System replace, new, elevation correct	ea	Quantified	C	Point
110200	Barrier Maintenance	lin m	Routine	A	N/A
110201	Traffic Islands	m2	Routine	A	N/A
110202	Curb Maintenance	lin m	Routine	A	N/A
110203	Roundabout Maintenance	hours	Routine	A	N/A
110204	Other Raised Hard Surface Infrastructure Maintenance	hours	Routine	A	N/A
110205	Safety Devices Maintenance	hours	Routine	B	N/A
110300	barrier cable - replace	lin m	Quantified	C	Point/Line
110301	barrier cable - new	lin m	Quantified	C	Point/Line
110302	barrier concrete - replace	ea	Quantified	C	Point/Line
110303	barrier concrete - new	lin m	Quantified	C	Point/Line
110304	barrier steel - replace	lin m	Quantified	C	Point/Line
110305	barrier steel - new	lin m	Quantified	C	Point/Line
110306	traffic island - replace	m2	Quantified	C	Point
110307	traffic island - new	m2	Quantified	C	Point
110308	curb asphalt - replace	lin m	Quantified	C	Point/Line
110309	curb asphalt - new	lin m	Quantified	C	Point/Line
110310	curb concrete - replace	lin m	Quantified	C	Point/Line
110311	curb concrete - new	lin m	Quantified	C	Point/Line
110312	Impact Attenuator - replace, new	ea	Quantified	C	Point
110313	anti-glare screen - replace, new	ea	Quantified	C	Point
110314	sidewalks - replace	ea	Quantified	C	Point/Line
110315	pedestrian paths - replace, new	ea	Quantified	C	Point
110316	spillways - replace, new	ea	Quantified	C	Point
111200	Maintain Railway Crossing Approaches (pavement)	m2	Routine	A	N/A

APPENDIX B

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
111201	Maintain Railway Crossing Approaches (graveling)	m3	Routine	A	N/A
111202	Maintain Railway Crossing Approaches Sight Lines	hours	Routine	A	N/A
201200	Debris Removal by Handwork	hours	Routine	A	N/A
201300	Ditching – 0 to 30 km one-way haul distance	lin m	Quantified	C	Line
201301	Ditching – 31 to 60 km one-way haul distance	lin m	Quantified	C	Line
201302	Ditching – 61 to 100 km one-way haul distance	lin m	Quantified	C	Line
201303	Ditch construction new, repair embankments/ back slopes, widen/deepen collection areas	lin m	Quantified	C	Line
201304	Ditching – remove localized minor rock	m3	Quantified	C	Point/Line
201305	Ditch Side-casting	lin m	Quantified	C	Line
202200	Roadway Culverts Repair by Handwork	num	Routine	A	N/A
202201	Entrance Culverts Repair by Handwork	num	Routine	A	N/A
202202	Slope Flume Repair by Handwork	num	Routine	A	N/A
202203	Catch Basins/Manholes by Handwork	num	Routine	A	N/A
202204	Other Drainage by Handwork	num	Routine	A	N/A
202205	Trash Rack Repair by Handwork	site	Routine	C	Point
202206	Culvert Stakes and Markers	num	Routine	A	N/A
202301	Removal of Debris/obstructions	ea	Quantified	C	Point/Line
202302	Culvert Install (to 400mm) max. 2m height of cover	lin m	Quantified	C	Point
202303	Culvert Install (401mm to 600mm) max. 2m height of cover	lin m	Quantified	C	Point
202304	Culvert Install (601mm to 1200mm) max. 2m height of cover	lin m	Quantified	C	Point
202305	Culvert Install (to 2999mm)	lin m	Quantified	C	Point
202306	Flume install (to 2999mm)	lin m	Quantified	C	Point
202307	Re-setting, repair, replace and new other Drainage Appliances	ea	Quantified	C	Point
202308	Culvert inserts boring, auguring, pushing, installing	lin m	Quantified	C	Point
202309	Install rip-rap or other suitable material	m3	Quantified	C	Point
202310	Trash racks – clean	m3	Quantified	C	Point

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
202311	Trash racks – repair	ea	Quantified	C	Point
202312	Trash racks – replace, new	ea	Quantified	C	Point
202313	catch basin install (metal, concrete)	ea	Quantified	C	Point
203200	Debris Removal Water Course by Handwork	site	Routine	A	N/A
203201	Install Rip-rap by Handwork	hours	Routine	A	N/A
203300	removal of Debris/obstructions, provide catchment areas	m3	Quantified	C	Point
203301	install rip-rap or other suitable material	m3	Quantified	C	Point
301200	Highway Snow Removal – Numbered Routes	pk	Routine	B	N/A
301204	Highway Snow Removal – Non-Numbered Routes	pk	Routine	A	N/A
302200	Salt/De-icing Application – Numbered Routes	lkm	Routine	B	N/A
302201	Winter Abrasive Application – Numbered Routes	lkm	Routine	B	N/A
302202	Anti-icing Application – Numbered Routes	litre	Routine	B	N/A
302205	Compact Surface Maintenance – Numbered Routes	pk	Routine	B	N/A
302206	Salt/De-icing Application – Non-Numbered Routes	lkm	Routine	A	N/A
302207	Winter Abrasive Application – Non-Numbered Routes	lkm	Routine	A	N/A
302208	Anti-icing Application – Non-Numbered Routes	litre	Routine	A	N/A
302209	Compact Surface Maintenance – Non-Numbered Routes	pk	Routine	A	N/A
303200	Pedestrian Accessed Areas Winter Accumulations removal	m2	Routine	B	N/A
303201	Cattle/Ungulate Guard, Barrier and Other Winter Accumulations Removal	hours	Routine	A	N/A
303202	Snow Fencing/Berms Installation and Removal	lin m	Routine	B	N/A
303205	Ditches and Drainage Appliances Snow/Ice Removal	num	Routine	A	N/A
303206	Snow Blowing	pk	Routine	B	N/A
304200	Highway Snow Avalanche Deposits Removal	hours	Routine	C	Point/Line
401300	cut vegetation (Shoulder top and 0 - 1.8m)	sh km	Quantified	C	Line

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ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
401301	cut vegetation (Rest Areas/other specified locations)	m2	Quantified	C	Point/Line
401302	cut vegetation (Raised Hard Surfaced Infrastructure)	m2	Quantified	C	Point/Line
402300	brushing (machine)	sh km	Quantified	C	Line
402301	brushing (hand cutting)	m2	Quantified	C	Point/Line
402302	brushing (hand cutting individual tree), Danger Tree removal, overhanging trees/limbs	ea	Quantified	C	Point/Line
403200	Highway Litter Removal	hours	Routine	B	N/A
403201	Receptacles – Litter Removal	num	Routine	B	N/A
403202	Adopt-a-Highway Program Bags Removal	hours	Routine	A	N/A
403203	Graffiti Removal	hours	Routine	A	N/A
404200	Rest Area Maintenance	num	Routine	C	Point
404201	Rest Area Repairs/replace	num	Routine	C	Point
405300	Schedule 1 and 2 Fences Temporary Repairs	lin m	Quantified	C	Point/Line
405301	Schedule 1 and 2 Fences Permanent Repairs	lin m	Quantified	C	Point/Line
405302	Specialty Fences – temporary and permanent repair, new	lin m	Quantified	C	Point/Line
406300	Roadside Catchment Appurtenances Repair/replace	ea	Quantified	C	Point
406301	Crack seal/repairs	litre	Quantified	C	Line
406302	rock/sediment/debris removal	m3	Quantified	C	Point
406303	Relief Wells – Clean	ea	Quantified	C	Point
501200	Sign Systems Maintenance	num	Routine	A	N/A
501201	Sign Systems Temporary Repair/Placement/Re-paint	ea	Routine	A	N/A
501202	Sign Cleaning	num	Routine	A	N/A
501300	delineator system install - plastic post/ fibreglass post, telspar, u channel post, Shoulder mount	ea	Quantified	C	Point/Line
501301	delineator install – barrier, top mount or side mount, W055, shoulder mount	ea	Quantified	C	Point/Line
501302	1 Post Sign System Install (< 1.09 m2)	ea	Quantified	C	Point
501303	1 Post Sign System Install (> 1.09 m2)	ea	Quantified	C	Point
501304	2 Post Sign System Install (< 3.2 m2)	ea	Quantified	C	Point

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
501305	2 Post Sign System Install (> 3.2m2)	ea	Quantified	C	Point
501306	3 Post Sign System Install (< 10.1 m2)	ea	Quantified	C	Point
501307	3 Post Sign System Install (> 10.1 m2)	ea	Quantified	C	Point
501308	Sign install (< 1.09 m2)	ea	Quantified	C	Point
501309	Sign install (1.1 m2 to 3.2 m2)	ea	Quantified	C	Point
501310	Sign install (3.3 m2 to 7.1 m2)	ea	Quantified	C	Point
501311	Sign install (7.2 m2 to 10.1 m2)	ea	Quantified	C	Point
501312	Sign install (> 10.1 m2)	ea	Quantified	C	Point
501313	Sign Face Overlay install (< 1.09 m2)	ea	Quantified	C	Point
501314	Sign Face Overlay install (1.1 m2 to 3.2 m2)	ea	Quantified	C	Point
501315	Sign Face Overlay install (3.3 m2 to 7.1 m2)	ea	Quantified	C	Point
501316	Sign Face Overlay Install (7.2 m2 to 10.1 m2)	ea	Quantified	C	Point
501317	Sign Face Overlay Install (> 10.1 m2)	ea	Quantified	C	Point
501318	Sign install (ministry-supplied materials)	ea	Quantified	C	Point
502200	Temporary Line Marking	lin m	Routine	A	N/A
502201	Line Pavement Marking Eradication	lin m	Routine	A	N/A
502300	restore or new temporary line markings	line km	Quantified	C	Point/Line
502301	restore or new temporary pavement markings	m2	Quantified	C	Point
502302	eradicate temporary line markings	line km	Quantified	C	Point/Line
502303	eradicate temporary pavement markings	m2	Quantified	C	Point
502304	eradicate permanent line markings	line km	Quantified	C	Point/Line
502305	eradicate permanent pavement markings	m2	Quantified	C	Point
503200	Traffic Management	hours	Routine	A	N/A
601200	Concrete Surface temporary repair	m2	Routine	A	N/A
601201	Timber/Asphalt Plank temporary repair	m2	Routine	C	Point
601202	Steel Deck temporary repair	m2	Routine	C	Point
601300	timber Re-decking (Minor)	m2	Quantified	C	Point
601301	timber Re-decking (Major)	m2	Quantified	C	Point

APPENDIX B

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
601302	linseed oil/mineral spirit treatment	m2	Quantified	C	Point
601303	Deck - concrete repair	m3	Quantified	C	Point
601304	Deck - crack seal	lin m	Quantified	C	Point
601305	Deck - crack repair	lin m	Quantified	C	Point
602200	Bridge Cleaning	site	Routine	C	Point
602201	Joint/Bearing/Drain Cleaning	site	Routine	C	Point
603200	Drain/Pipe/Flume Maintenance -BR	site	Routine	C	Point
604200	Bridge Joint Maintenance	site	Routine	C	Point
604300	Bridge Joint Armour / Joint seal replace	lin m	Quantified	C	Point
604301	Bridge Joint seal replace	lin m	Quantified	C	Point
605200	Bridge Bearing Maintenance	site	Routine	C	Point
605300	Bridge Bearing and components replace	ea	Quantified	C	Point
606200	Bailey/Acrow Parts/Maintenance	site	Routine	C	Point
607300	Coating steel/timber surfaces, steel/timber rail systems	m2	Quantified	C	Point
608300	Concrete structure, crack seal repair	m3	Quantified	C	Point
609200	Steel/aluminum Structure repair	site	Routine	C	Point
610200	Bridge Piling/Bracing	site	Routine	C	Point
610300	Bridge Pile replace	ea	Quantified	C	Point
611300	Retaining Wall/components - repair, replace	m2	Quantified	C	Point
612200	Bridge Posts Maintenance	site	Routine	C	Point
612201	Bridge Railing Permanent Repairs	ea	Routine	C	Point
612202	Bridge Rail Maintenance	site	Routine	C	Point
613200	Truss timber Maintenance	site	Routine	C	Point
613300	Truss Rods, Lateral Rods, End Posts, Main Braces, Counter Braces, Floor Beams, Corbels - replace	ea	Quantified	C	Point
613301	Truss Rods or Camber - adjust	ea	Quantified	C	Point
614200	Timber and Log Bridge Repair	ea	Routine	C	Point
614300	Timber and Log, components - replace	ea	Quantified	C	Point

ACTIVITY NUMBER	ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
701200	Vehicle Accident Response	hours	Routine	A	N/A
701201	Surface Spill Clean	hours	Routine	A	N/A
701202	Cargo / Incident Debris Removal	ea	Routine	A	N/A
702200	Major Event Response	dollars	Routine	C	Point
703200	Highway Inspection	km	Routine	A	N/A
703201	Bridge Structure Inspection	hours	Routine	C	Point
703202	Safety Device Inspection	ea	Routine	A	N/A
704200	Highway Patrol	hours	Routine	A	N/A
705200	Public and stakeholder communications	hours	Routine	A	N/A
999400	H0200 – Routine Maintenance Services above RMSC	dollars	Additional	C	Point/Line
999401	H0200 – Major Event Response	dollars	Additional	C	Point/Line
999402	H0200 – Maintenance Services on Class 8/F	dollars	Additional	C	Point/Line
999403	H0200 – More Quantified	dollars	Additional	C	Point/Line
999404	H0200 – Designated First Nations Services	dollars	Additional	C	Point/Line
999405	H0200 – Other	dollars	Additional	C	Point/Line



APPENDIX C

LOCAL AREA SPECIFICATIONS ACTIVITY TABLES

This appendix lists in Table C1 the Maintenance Services activities the Contractor is to report to the Province associated with the Local Area Specifications (including both Routine and Quantified Maintenance Services). The maintenance type, location code and feature type associated with each activity number determine what information the Contractor is required to include for each

record. [Appendix D](#) contains information regarding the format and requirements for each record.

Since Local Area Specifications vary by Agreement, many of the activities listed in this appendix do not apply to all service areas.

Table C1: Activity Details

LAS ACTIVITY NUMBER	LAS ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
901200	Arrestor Bed Incident Response	ea	Routine	C	Point
901201	Arrestor Bed Aggregate Maintenance	ea	Routine	A	N/A
901202	Arrestor Bed Winter Monitoring & Maintenance	ea	Routine	B	N/A
902200	Barrier Kootenay Pass - Remove and Store Barrier	ea	Routine	A	N/A
902202	Barrier Kootenay Pass - Re-establish Barrier	ea	Routine	A	N/A
904200	Bridge and Tunnel Mechanical System Failures Repair/Maintenance	ea	Routine	A	N/A
904201	Bridge and Tunnel - Certify Sprinkler System	ea	Routine	C	Point
904202	Bridge and Tunnel Computer Workstation Components Cleaning	ea	Routine	C	Point
905200	Bridge Traveller Repair or Replace Components	ea	Routine	A	N/A
905201	Bridge Traveller Annual Certification	ea	Routine	A	N/A
905202	Bridge Traveller Monthly Operational Test	ea	Routine	A	N/A
906200	Car Pool Parking Lot Surface Maintenance	ea	Routine	C	Point
908200	Maintain or Repair Dock	ea	Routine	C	Point
908201	Dock and Ramp Removal and Return	ea	Routine	C	Point
909200	Dragnet Vehicle Arresting Barrier Incident Response	ea	Routine	C	Point
909201	Dragnet Vehicle Arresting Barrier Inspect, Repair, Replace and Adjust, Quarterly	ea	Routine	C	Point
909202	Dragnet Vehicle Arresting Barrier Annual Maintenance	ea	Routine	C	Point

LAS ACTIVITY NUMBER	LAS ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
909203	Dragnet Vehicle Arresting Barrier Winter Maintenance Response	ea	Routine	B	N/A
910200	Graveyard Cut Vegetation	ea	Routine	C	Point
910201	Graveyard Fence repair or paint	ea	Routine	C	Point
911200	Highway Crossing Infrastructure Restrict Access as directed	ea	Routine	C	Point
911201	Highway Crossing Infrastructure Repair or Replace Components	ea	Routine	C	Point
911202	Highway Crossing Infrastructure Accumulation or Debris Removal	ea	Routine	C	Point
911300	Highway Crossing Infrastructure - surface repairs	ea	Quantified	C	Point
912200	Horizontal Drain System Repair or Replace Components	ea	Routine	C	Point
912201	Horizontal Drain System Cut Vegetation	ea	Routine	C	Point
912202	Horizontal Drain System Annual Inspection	ea	Routine	C	Point
912203	Horizontal Drain System Flush and Clean as directed	ea	Routine	C	Point
913200	Invasive Plants Management Annual Agency meeting	ea	Routine	A	N/A
913201	Invasive Plants Management Gravel Pit inspections	ea	Routine	A	N/A
913300	Invasive Plants Management Re-vegetation seeding	m2	Quantified	C	Point/Line
916200	Movable Bridge Repair or Replace Components	ea	Routine	C	Point
916201	Movable Bridge Maintain deck joints annually	ea	Routine	C	Point
917300	Pavement surface reflectors - replace, new	ea	Quantified	C	Point/Line
918200	repair or replace Reaction Ferry Vessel components.	hours	Routine	A	N/A
918201	repair or replace the shore based Ramp System	hours	Routine	A	N/A
918202	Ferry Facility Maintenance - repair or replace	hours	Routine	A	N/A
919200	Salt Containment Infrastructure Maintenance for steel/fabric annually	ea	Routine	A	N/A
919201	Salt Containment Infrastructure Repair or Replace Salt Containment Components	ea	Routine	C	Point

APPENDIX C

LAS ACTIVITY NUMBER	LAS ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
919202	Salt Containment Infrastructure Regenerate Evapotranspiration surface annually	ea	Routine	A	N/A
920200	Snow Avalanche Deposit Removal from Highway	ea	Routine	C	Point
920201	Snow Avalanche Deposit Removal from catchment areas, static defence structures	ea	Routine	C	Point
920202	Snow Avalanche Increased Patrols at Hazard Level Moderate or Higher	hours	Routine	C	Point/Line
922200	Snow Shed Maintain, repair or replace Snow Shed components	ea	Routine	C	Point
923300	Sound Wall and components - repair, replace	ea	Quantified	C	Point/Line
924200	Vehicle Inspection Station Remove Winter Accumulations	ea	Routine	B	N/A
925200	Repair or Replace Components Wildlife Exclusion System	ea	Routine	C	Point/Line
925201	Accumulation or Debris Removal - Wildlife Exclusion System	ea	Routine	C	Point/Line
925202	Inspect Condition annually -Wildlife Exclusion System	ea	Routine	A	N/A
925300	repairs - Wildlife Exclusion System	ea	Quantified	C	Point/Line
925301	Remove Brush -Wildlife Exclusion System	m2	Quantified	C	Point/Line
925302	Restore height- Wildlife Exclusion System	ea	Quantified	C	Point
926200	Bridge Patrol	hours	Routine	C	Point/Line
927300	Bridge Deck repair - Bridge Deck Inspection, Maintenance and Traffic Management	ea	Quantified	A	N/A
928200	Refuse Site Maintenance – Receiving, Sorting, Depositing, & Covering Local waste	hours	Routine	A	N/A
928201	Refuse Site Maintenance – Sorting & Preparing & Transferring General Recyclable Materials	hours	Routine	A	N/A
928202	Refuse Site Maintenance – Sorting & Preparing & Transferring Scrap Metal Recyclable Materials	hours	Routine	A	N/A
929200	Small Airport Winter Maintenance – Snow Removal	hours	Routine	A	N/A

LAS ACTIVITY NUMBER	LAS ACTIVITY NAME	UNIT CODE	MAINTENANCE TYPE	LOCATION CODE	FEATURE TYPE
929201	Small Airport Winter Maintenance – Compact Snow Mtce	hours	Routine	A	N/A
929202	Small Airport Winter Maintenance – Edge Markers	hours	Routine	A	N/A
929203	Small Airport Winter Maintenance – Surface Cleaning	hours	Routine	A	N/A
929204	Small Airport Winter Maintenance – Chemical (Urea) Application	litre	Routine	A	N/A
930200	Median & interchange vegetation control	site	Routine	C	Point/Line
931200	Median cleaning	site	Routine	C	Point/Line
932300	Refuse and trash – removal – demonstration site clean up	ea	Quantified	C	Point/Line
933300	Reclaimed Asphalt Pavement	tonne	Quantified	C	Point/Line

APPENDIX D

DATA REQUIREMENTS

This appendix outlines the data format requirements for reports the Contractor submits to the Province. Using the information outlined in this appendix, the Contractor must report completed Maintenance Services activities listed in [Appendices B](#) and [C](#).

The Contractor must prepare its reports for completed Maintenance Services in a comma-separated values (CSV) format. Each CSV file must contain the fields outlined in the “Column Name” column of either Table D2, D3 or D4 (as summarized in Table D1).

The Contractor shall include in each record within the CSV file the appropriate information within the fields marked as mandatory and may include information in the fields marked as optional. The Contractor may include, when not mandatory, those fields in Tables D2 through D4 denoted as mandatory only in specified instances. Fields that are not required should be left blank, where applicable. Information within each field, for any given record, must follow the data format requirements outlined in the “Format” column of Table D1.

The location code determines which set of fields the Contractor must use to report each record of completed Maintenance Services. Thus, the use of fields from either Table D2, D3 or D4 for each activity depends on the location code, as further outlined in Table D5. [Appendices B](#) and [C](#) list the location codes associated with each activity number.

Table D1: Summary Data Fields

This table provides a quick reference for data fields that are common to Tables D2, D3 and D4, and compares which fields are mandatory, optional or not required for each report.

Table D2: Reporting – General Location

Table D2 describes the requirements for the Contractor to report records of activities with a location code of A or B. The Contractor must also report location code A activities as a monthly rollup associated with the Service Area. Additionally, the Contractor must report location code B activities as a daily rollup associated with any given highway unique identifier. This table provides the data fields to report on most routine activities. **Reports prepared using the information outlined in this table should follow the naming convention: SAXX_D2_YYYYMM.csv.**

Table D3: Reporting – Location Specific

Table D3 describes the requirements for reporting any activity with a location code of C. The Contractor must also report location code C activities based on activity completion. This table provides the data fields to report on some routine activities and generally all quantified activities where the primary method for locating such activities is by GPS coordinates. **Reports prepared using the information outlined in this table should follow the naming convention: SAXX_D3_YYYYMM.csv.**

Table D4: Alternative Reporting – Location Specific

This table is used as a substitute for Table D3 if GPS data is unavailable. The Maintenance Branch of the Province must pre-approve the Contractor to use Table D4 for reporting. **Reports prepared using the information in this table should follow the naming convention: SAXX_D4_YYYYMM.csv.**

Table D5: Location and Recording Frequency Codes

This table directs the Contractor to use either Table D2 or D3 based on the location code of any activity number. Also, this table summarizes the required recording frequency for each record.



Table D1: Summary of Data Fields

COLUMN NAME		TABLE D2	TABLE D3	TABLE D4
Applicable Location Codes		A and B	C	C
Table Name	Format	Reporting – General Location	Reporting – Location Specific	Alternative Reporting – Location Specific
RECORD TYPE	VARCHAR (1)	mandatory	mandatory	mandatory
SERVICE AREA	NUMBER (2,0)	mandatory	mandatory	mandatory
RECORD NUMBER	VARCHAR (12)	mandatory	mandatory	mandatory
TASK NUMBER	VARCHAR (12)	optional	optional	optional
ACTIVITY NUMBER	NUMBER (6,0)	mandatory	mandatory	mandatory
START DATE	DATE (YYYY-MM-DD)	optional	optional	optional
END DATE	DATE (YYYY-MM-DD)	mandatory	mandatory	mandatory
ACCOMPLISHMENT	NUMBER (9,2)	mandatory	mandatory	mandatory
UNIT OF MEASURE	VARCHAR (8)	mandatory	mandatory	mandatory
POSTED DATE	DATE (YYYY-MM-DD)	mandatory	mandatory	mandatory
HIGHWAY UNIQUE	VARCHAR (16)	mandatory for location code B	mandatory	mandatory
LANDMARK	VARCHAR (8)	no	no	mandatory
START OFFSET	NUMBER (6,3)	no	no	mandatory
END OFFSET	NUMBER (6,3)	no	no	mandatory for line feature type activities
START LATITUDE	NUMBER (9,6)	no	mandatory	no
START LONGITUDE	NUMBER (9,6)	no	mandatory	no
END LATITUDE	NUMBER (9,6)	no	mandatory for line feature type activities	no
END LONGITUDE	NUMBER (9,6)	no	mandatory for line feature type activities	no
STRUCTURE NUMBER	VARCHAR (6)	no	mandatory for all record type C 600000 series activity numbers	mandatory for all record type C 600000 series activity numbers
SITE NUMBER	VARCHAR (7)	no	mandatory as described in Table D3	mandatory as described in Table D4
VALUE OF WORK	NUMBER (9,2)	no	mandatory for record type Q activity numbers	mandatory for record type Q activity numbers
COMMENTS	VARCHAR (1024)	optional	optional	optional

Data Format Definitions

VARCHAR (X): A variable character data field that can include both characters and numbers with a maximum length represented by X. For example, VARCHAR (8) can contain any alphanumeric combination to a maximum length of 8.

NUMBER (P,S): A numeric data field with a specific precision (P) and scale (S). Precision is the total number of numeric digits allowed, and scale is the number of digits allowed to the right of the decimal point. The decimal point and negative sign, if applicable, are neither included in the precision nor scale. Number fields may include dollar signs but no other special characters.

DATE (YYYY-MM-DD): A date represented in the form “year-month-day” with date values in numbers only. Inclusive of dashes, the length of date fields are always exactly ten characters.

The Contractor must use a unique record number for each record, per service area, for the life of the contract.

CSV reports cannot contain commas within any field.

The Province's systems will interpret a comma to indicate a new field, and the data will not import correctly.



Table D2: Reporting – General Location

Column Name	Description	Mandatory	Sample Data
RECORD TYPE	Code to represent quantified, routine or additional Maintenance Services. Allowed values: Q, R or A	mandatory	R
SERVICE AREA	Service area number. Allowed values: 1 through 28, and 43	mandatory	11
RECORD NUMBER	Unique record number from the Contractor's maintenance management system	mandatory	3976981
TASK NUMBER	Contractor task number	optional	A23456
ACTIVITY NUMBER	Code which uniquely identifies the Maintenance Services activity. Allowed values: see reference tables in Appendices B and C	mandatory	202310
START DATE	Date when the activity commenced	optional	2019-11-20
END DATE	Date when the activity was completed	mandatory	2019-11-21
ACCOMPLISHMENT	The number of units completed for the activity	mandatory	1.20
UNIT OF MEASURE	The code which represents the unit of measure for the specified activity, matching that in Appendix B or C . Allowed values: see Table D6 for a list of valid unit codes.	mandatory	sh km
POSTED DATE	Date data posted into Contractor's maintenance management system	mandatory	2019-12-09
HIGHWAY UNIQUE	The highway unique identifier from CHRIS that identifies the section of road on which the activity occurred (comprised of [service area]-[area manager area]-[sub area]-[highway number])	mandatory for activity numbers with a location code B	11-A-N-00097A
COMMENTS	Multi-purpose text field for notes pertinent to the specified activity	optional	Completed by John Smith

Table D3: Reporting – Location Specific

Column Name	Description	Mandatory	Sample Data
RECORD TYPE	Code to represent quantified, routine or additional Maintenance Services. Allowed values: Q, R or A	mandatory	Q
SERVICE AREA	Service area number. Allowed values: 1 through 28, and 43	mandatory	11
RECORD NUMBER	Unique record number from the Contractor's maintenance management system	mandatory	3976981
TASK NUMBER	Contractor task number	optional	A23456
ACTIVITY NUMBER	Code which uniquely identifies the Maintenance Services activity. Allowed values: see reference tables in Appendices B and C	mandatory	202310
START DATE	Date when the activity commenced	optional	2016-09-02
END DATE	Date when the activity was completed	mandatory	2016-10-01
ACCOMPLISHMENT	The number of units completed for the activity	mandatory	1.2
UNIT OF MEASURE	The code which represents the unit of measure for the specified activity, matching that in Appendix B or C . Allowed values: see Table D6 for a list of valid unit codes	mandatory	sh km
POSTED DATE	Date data posted into Contractor's maintenance management system	mandatory	2017-01-09
HIGHWAY UNIQUE	The highway unique identifier from CHRIS that identifies the section of road on which the activity occurred (comprised of [service area]-[area manager area]-[sub area]-[highway number])	mandatory	11-A-N-00097A
START LATITUDE	The M (northing) portion of the activity start coordinate. Specified as a latitude in decimal degrees. Positive numbers are indicative of the Northern Hemisphere. Coordinate is to be reported using the WGS84 datum.	mandatory	54.578151
START LONGITUDE	The X (easting) portion of the activity start coordinate. Specified as a longitude in decimal degrees. Negative numbers are indicative of the Western Hemisphere. Coordinate is to be reported using the WGS84 datum.	mandatory	-122.568931
END LATITUDE	The M (northing) portion of the activity end coordinate. Specified as a latitude in decimal degrees. Positive numbers are indicative of the Northern Hemisphere. Coordinate is to be reported using the WGS84 datum.	mandatory for line feature type activity numbers	54.578151

APPENDIX D

Column Name	Description	Mandatory	Sample Data
END LONGITUDE	The X (easting) portion of the activity end coordinate. Specified as a longitude in decimal degrees. Negative numbers are indicative of the Western Hemisphere. Coordinate is to be reported using the WGS84 datum.	mandatory for line feature type activity numbers	-122.568931
STRUCTURE NUMBER	From list of structures provided by the Province.	mandatory for all record type C 600000 series activity numbers	6663
SITE NUMBER	Contains a site type code followed by a site number. Allowed values: six digits preceded by: A – Avalanche B – Arrestor Bed/Dragnet Barrier D – Debris and/or Rockfall L – Landscape R – Rest Area S – Signalized Intersection T – Traffic Patrol W – Weather Station X – Railway Crossing	mandatory for activity numbers 404200 and 404201	R1106
VALUE OF WORK	Total dollar value of the activity being reported	mandatory for record type Q	9000.00
COMMENTS	Multi-purpose text field for notes pertinent to the specified activity	optional	Rest Area maintenance



Table D4: Alternative Reporting – Location Specific

Column Name	Description	Mandatory	Sample Data
RECORD TYPE	Code to represent quantified, routine or additional Maintenance Services. Allowed values: Q, R or A	mandatory	Q
SERVICE AREA	Service area number. Allowed values: 1 through 28, and 43	mandatory	11
RECORD NUMBER	Unique record number from the Contractor's maintenance management system	mandatory	3976981
TASK NUMBER	Contractor task number	optional	A23456
ACTIVITY NUMBER	Code which uniquely identifies the Maintenance Services activity. Allowed values: see reference tables in Appendices B and C	mandatory	202310
START DATE	Date when the activity commenced	optional	2016-09-28
END DATE	Date when the activity was completed	mandatory	2016-10-01
ACCOMPLISHMENT	The number of units completed for the activity	mandatory	1.2
UNIT OF MEASURE	The code which represents the unit of measure for the specified activity, matching that in Appendix A or B . Allowed values: see Table D6 for a list of valid unit codes	mandatory	sh km
POSTED DATE	Date data posted into Contractor's maintenance management system	mandatory	2017-01-09
HIGHWAY UNIQUE	The highway unique identifier from CHRIS that identifies the section of road on which the activity occurred (comprised of [service area]-[area manager area]-[sub area]-[highway number])	mandatory	11-A-N-00097A
LANDMARK	From the list of landmarks provided by the Province	mandatory	12345678
START OFFSET	Offset from beginning of segment	mandatory	0
END OFFSET	Offset from beginning of segment	mandatory for line feature type activity numbers	3.7
STRUCTURE NUMBER	From list of structures provided by the Province	mandatory for type C 600000 series activity numbers	6663

Column Name	Description	Mandatory	Sample Data
SITE NUMBER	Contains a site type code followed by a site number. Allowed values: six digits preceded by: A – Avalanche B – Arrestor Bed/Dragnet Barrier D – Debris and/or Rockfall L – Landscape R – Rest Area S – Signalized Intersection T – Traffic Patrol W – Weather Station X – Railway Crossing	mandatory for activity numbers 404200 and 404201	R1106
VALUE OF WORK	Total dollar value of the activity being reported	mandatory for record type Q	900000.00
COMMENTS	Multi-purpose text field for notes pertinent to the specified activity	optional	Rest Area maintenance

Table D5: Location and Recording Frequency Codes

A (TABLE D2)	B (TABLE D2)	C (TABLE D3)
Records to represent a monthly rollup of the activity, Service Area-wide	Records to represent a daily rollup of the activity associated with individual highway unique identifiers	Records to represent completed Maintenance Services based on activity completion with exact point or line location information

Table D6: Unit of Measurement Codes

UNIT OF MEASURE	UNIT CODE
dollars	dollars
each	ea
hours	hours
km	km
lane km	lkm
line km	line km
lineal metres	lin m
litre	litre
m ²	m2
m ³	m3
pass km	pk
road km	rd km
shoulder km	sh km
site	site
tonne	tonne
number	num

Requesting New Activity Numbers

The Contractor can only report using activity numbers identified in Tables B1 and C1 of this manual. Should either the Contractor or any ministry staff identify a need for a new activity number, they should email such a request to Maintenance.Programs@gov.bc.ca along with any background information. The Province evaluates activity number requests based on need at a provincial level.

The video module entitled “Compiling Records and Submitting Data” includes an overview of [Table D1 Summary of Data Fields](#), [Table D2 Reporting – General Location](#) and [Table D3 Reporting – Location Specific](#).



Use the “Unit Code” in the UNIT OF MEASURE field in the monthly CSV reports.

ALTERNATIVE CONVENTIONS FOR REPORTING

In the rare event that GPS coordinates are not available, and reporting using **Table D3** cannot be achieved, then these alternative location conventions must be used with approval of the Province.

LANDMARK

Landmarks are Province-created locational references along roads, used as reference points for in-field measurements. The Province maintains landmarks in CHRIS and will ensure to make available to the Contractor reports identifying landmark information.

Generally, landmarks are an identifiable feature in the field, such as the intersection of two Province-owned roads or the end of a bridge. Landmark names typically correspond to the identifiable feature and are uniquely numbered. Landmark numbers generally increase in a northerly

direction (for highways running north-south) or in an easterly direction (for highways running east-west).

Landmark and Offset Method for a Single Point Feature

The location for a single point feature activity, such as a catch basin installation, is measured by the Contractor as the offset distance in the direction of the highway (positive direction) from a landmark, measured to the metre (recorded to the nearest 0.001 km).

Landmark and Offset Method for a Linear Feature

The Contractor must record both a start offset and end offset for linear activities, referenced from the same landmark and each reported to the nearest 0.001 km. Even if a start offset and end offset of an activity span more than one landmark, the Contractor can only use one landmark

to measure both the start and end offset in the direction of the highway (positive direction). The start offset and end offset must fall on the same highway unique identifier.

LOCATION DATA COLLECTION CONVENTIONS for Landmark and Offset Data Collection

- ▶ The Contractor can record offsets indicative of either point or line features. Point features require the Contractor only include in the record the start offset field or if the Contractor includes both the start and end offset fields, the same value in both fields. The Contractor must report a different start and end offset in records for linear features.
- ▶ The Contractor should measure any offset to a location on the roadway perpendicular to the feature.





Location Convention Diagrams for Landmark and Offset-Based Data Collection

The following diagrams illustrate the convention for collecting location data:

[Diagram E.1](#): Single Point Features
– Landmark and Offset

[Diagram E.2](#): Roadside Linear Features
– Landmark and Offset

[Diagram E.3](#): Linear Features –
Continuous Activities – Landmark and
Offset

[Diagram E.4](#): Linear Features –
Continuous Activities with Intermittent
Gaps – Landmark and Offset

[Diagram E.5](#): Linear Features – Divided
and Four Lane Highways with Median
– Landmark and Offset

[Diagram E.6](#): Linear Features Divided
and Four Lane Highways without
Median – Landmark and Offset

[Diagram E.7](#): Single Point Features –
Divided and Four Lane Highways with
Median – Landmark and Offset

[Diagram E.8](#): Features within
Structures or Sites – Landmark and
Offset

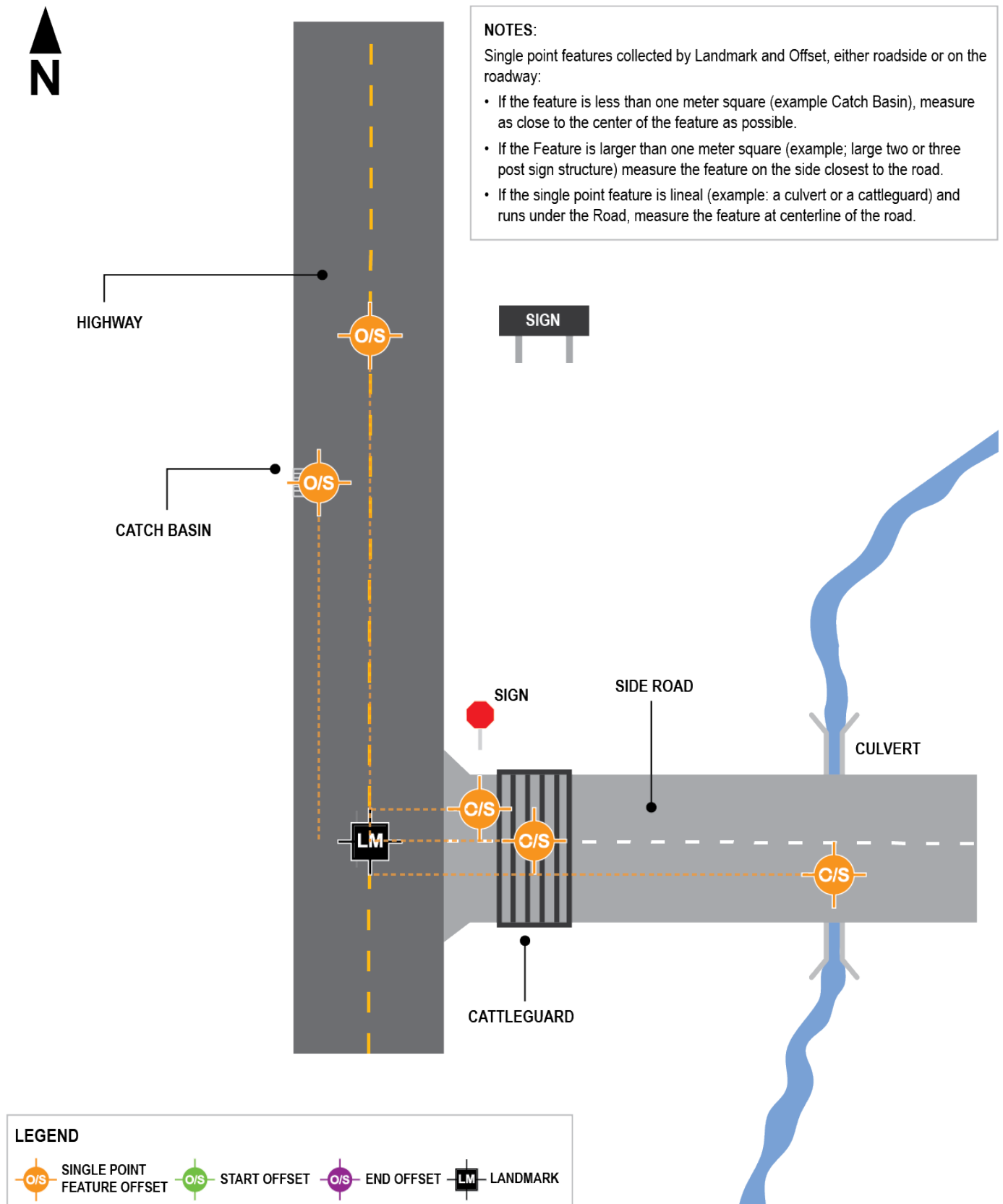
Diagram E.1: Single Point Features – Landmark and Offset

Diagram E.2: Roadside Linear Features – Landmark and Offset



NOTES:

Roadside Linear Features (example, Guardrail, Fencing, Ditching) are captured using a Start Offset and an End Offset.

The data should be collected as close to the physical feature as possible.

Generally, data is collected in a Northerly direction [or Easterly direction], so the south end [or West end] will be the Start Offset point.

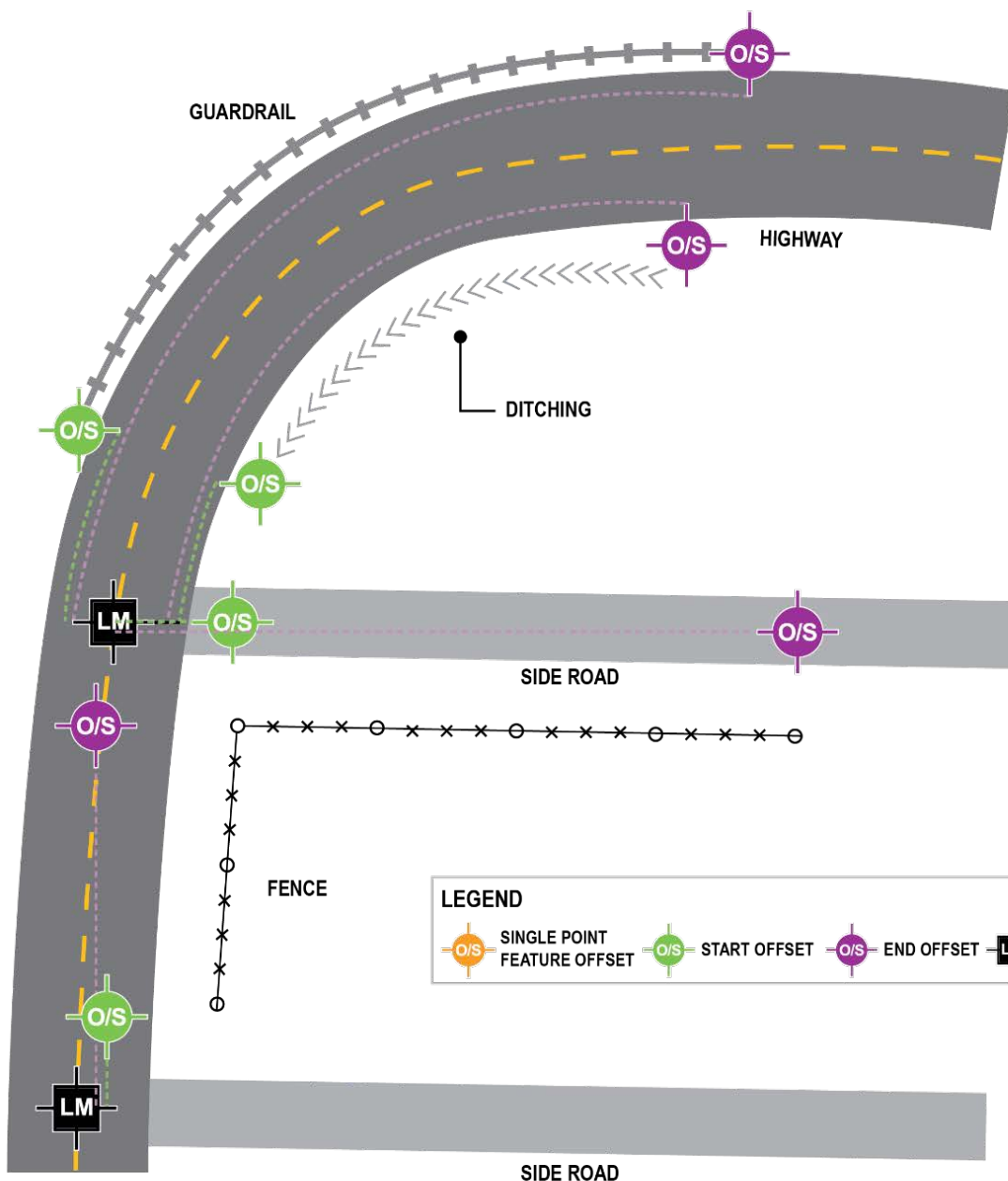


Diagram E.3: Linear Features – Continuous Activities – Landmark and Offset

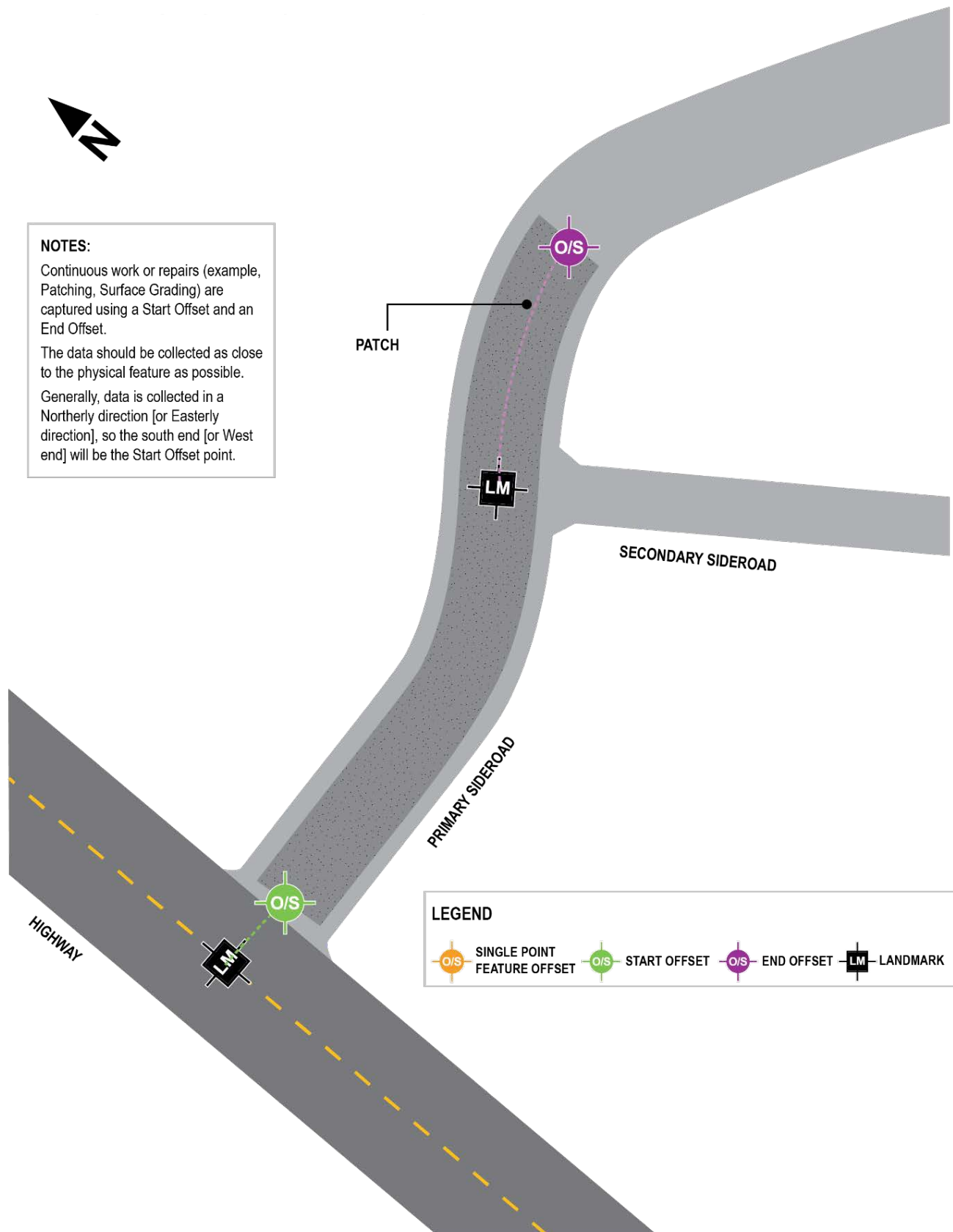


Diagram E.4: Linear Features – Continuous Activities with Intermittent Gaps – Landmark and Offset

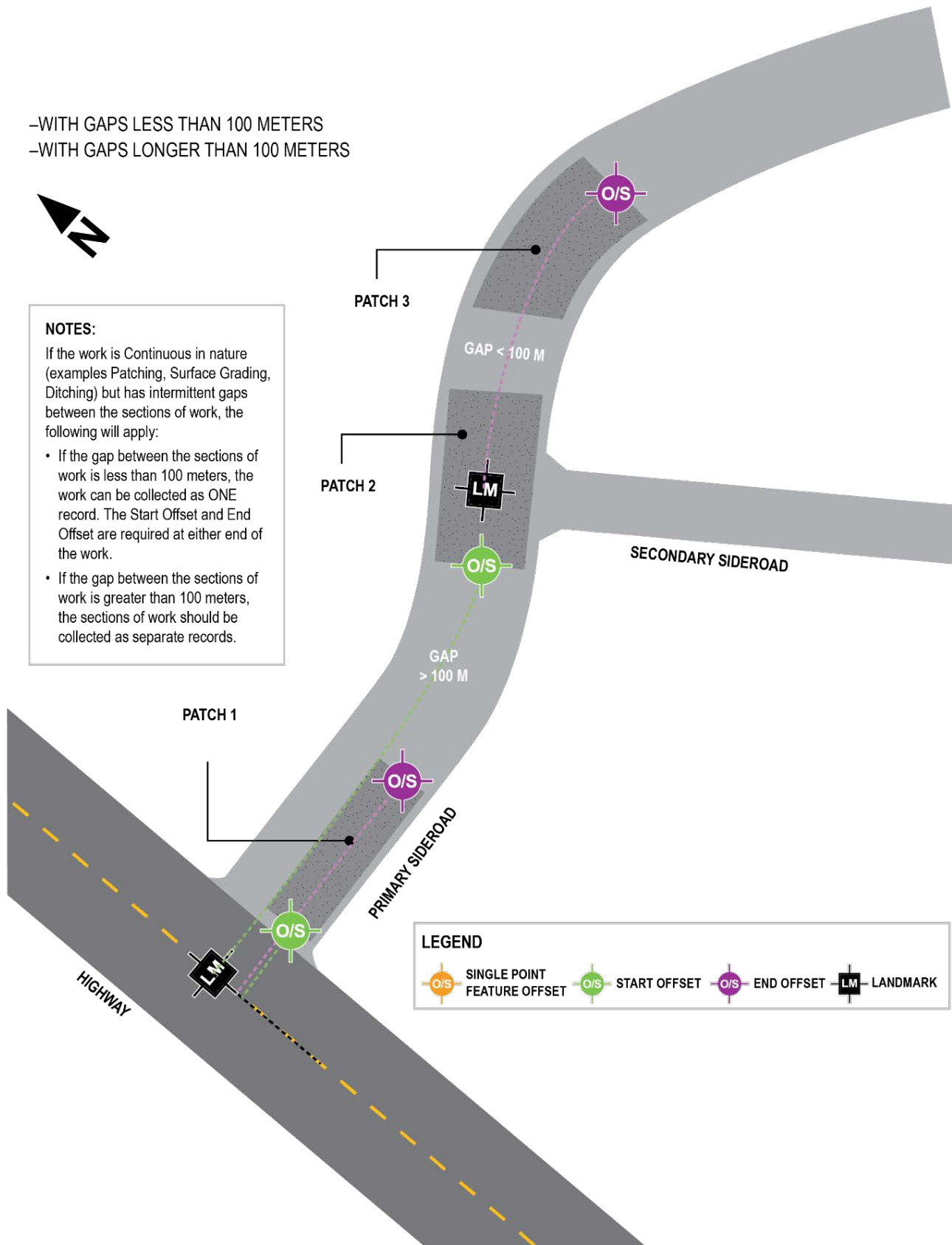


Diagram E.5: Linear Features – Divided and Four Lane Highways with Median – Landmark and Offset

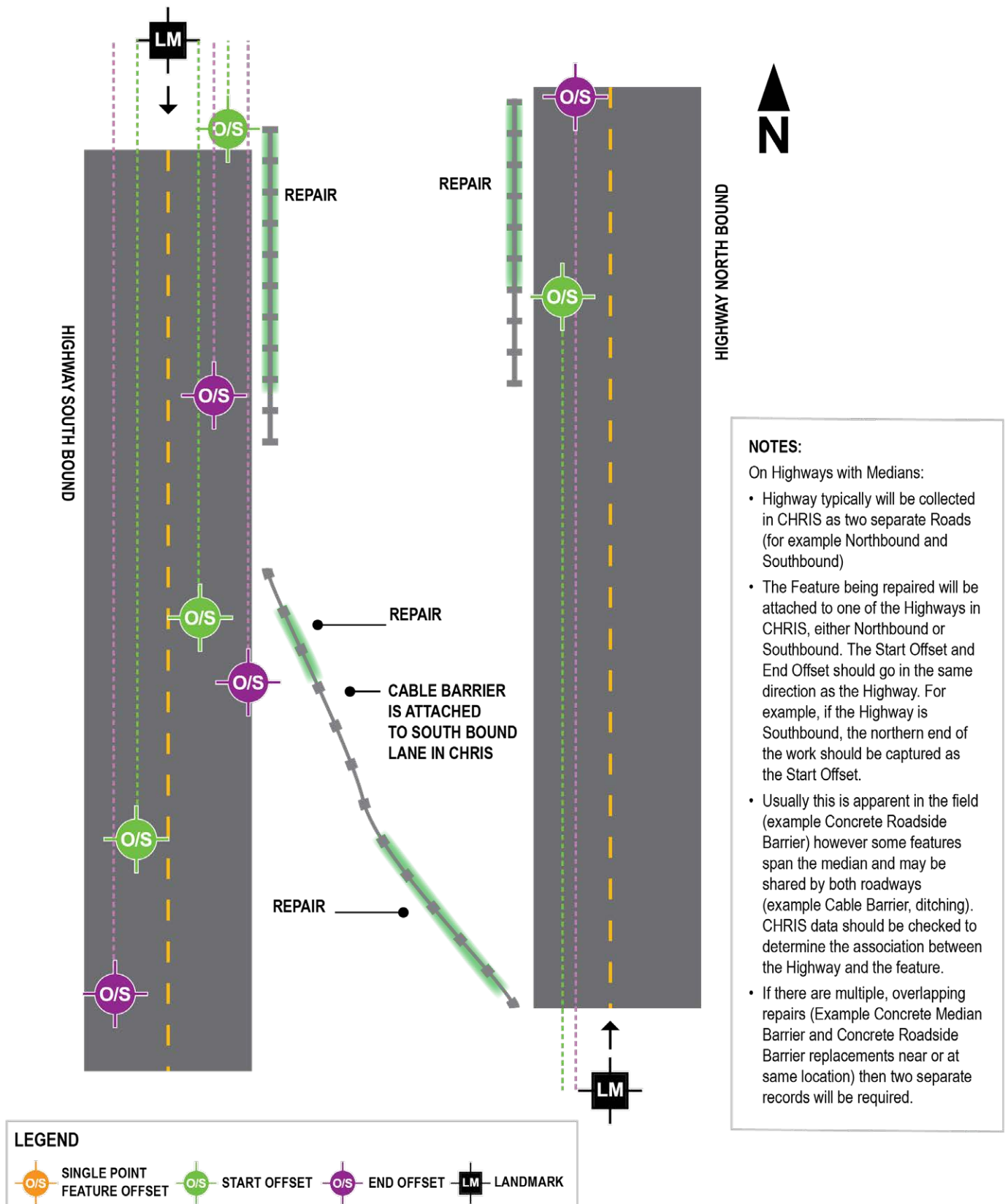


Diagram E.6: Linear Features – Divided and Four Lane Highways without Median – Landmark and Offset

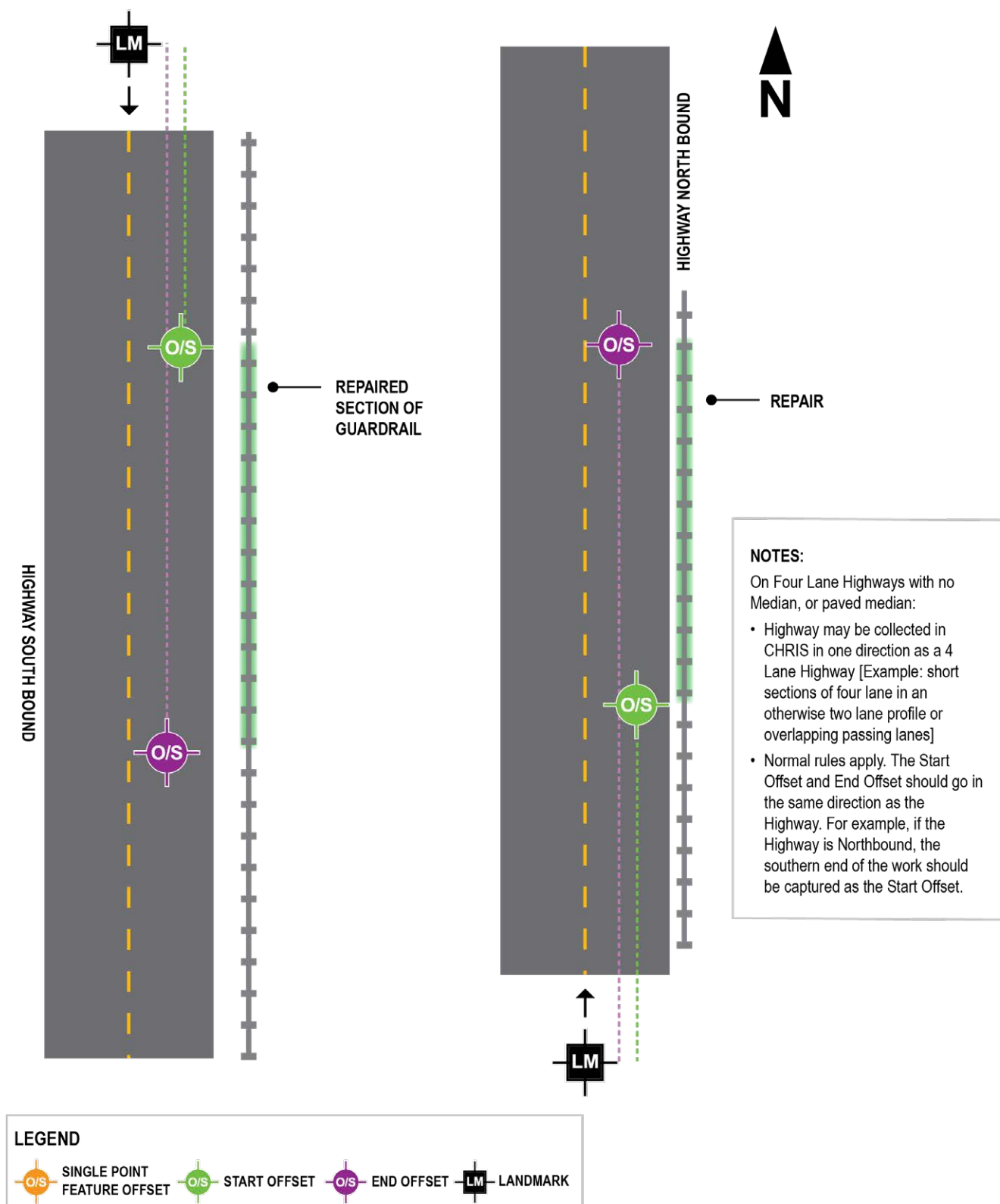


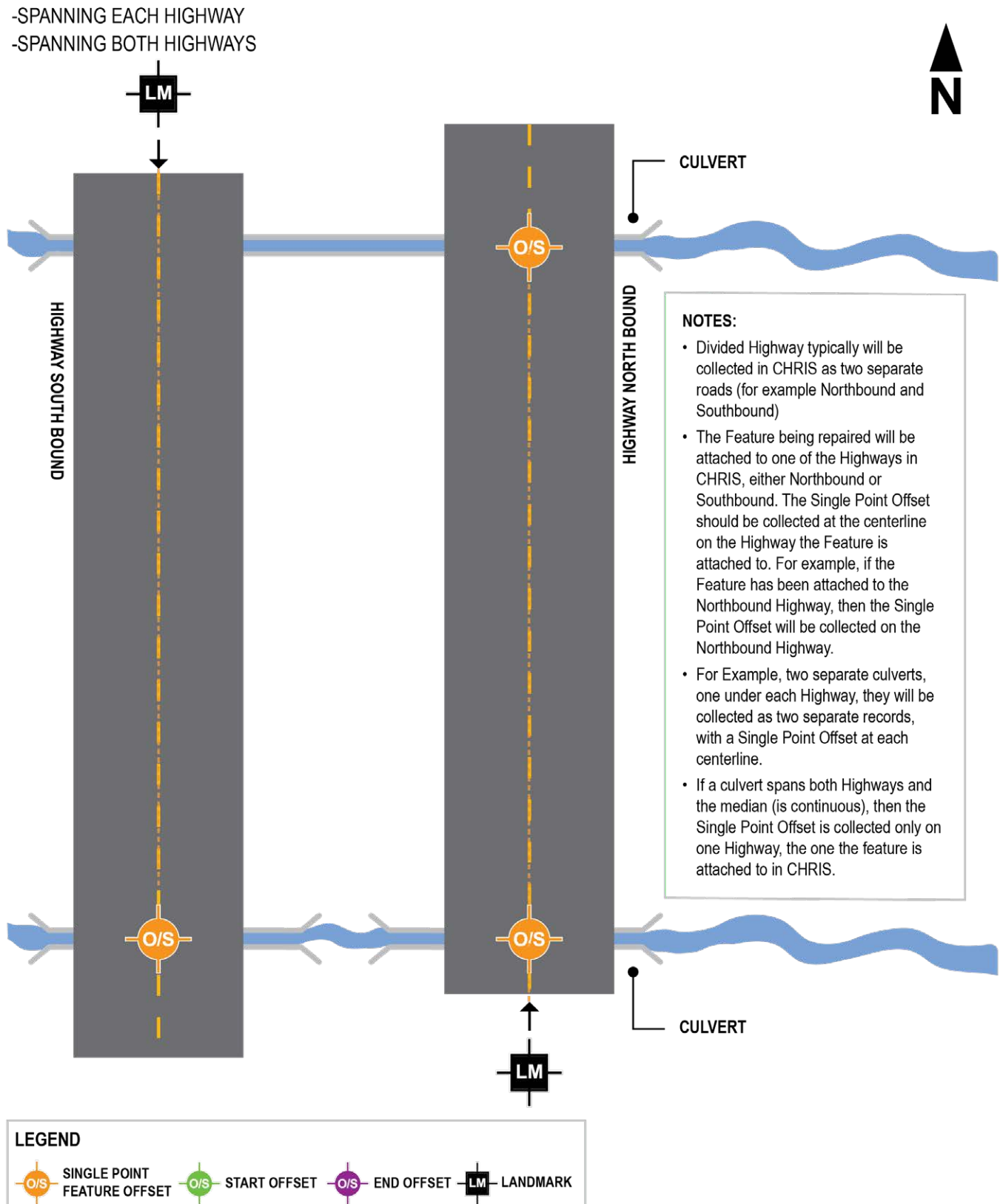
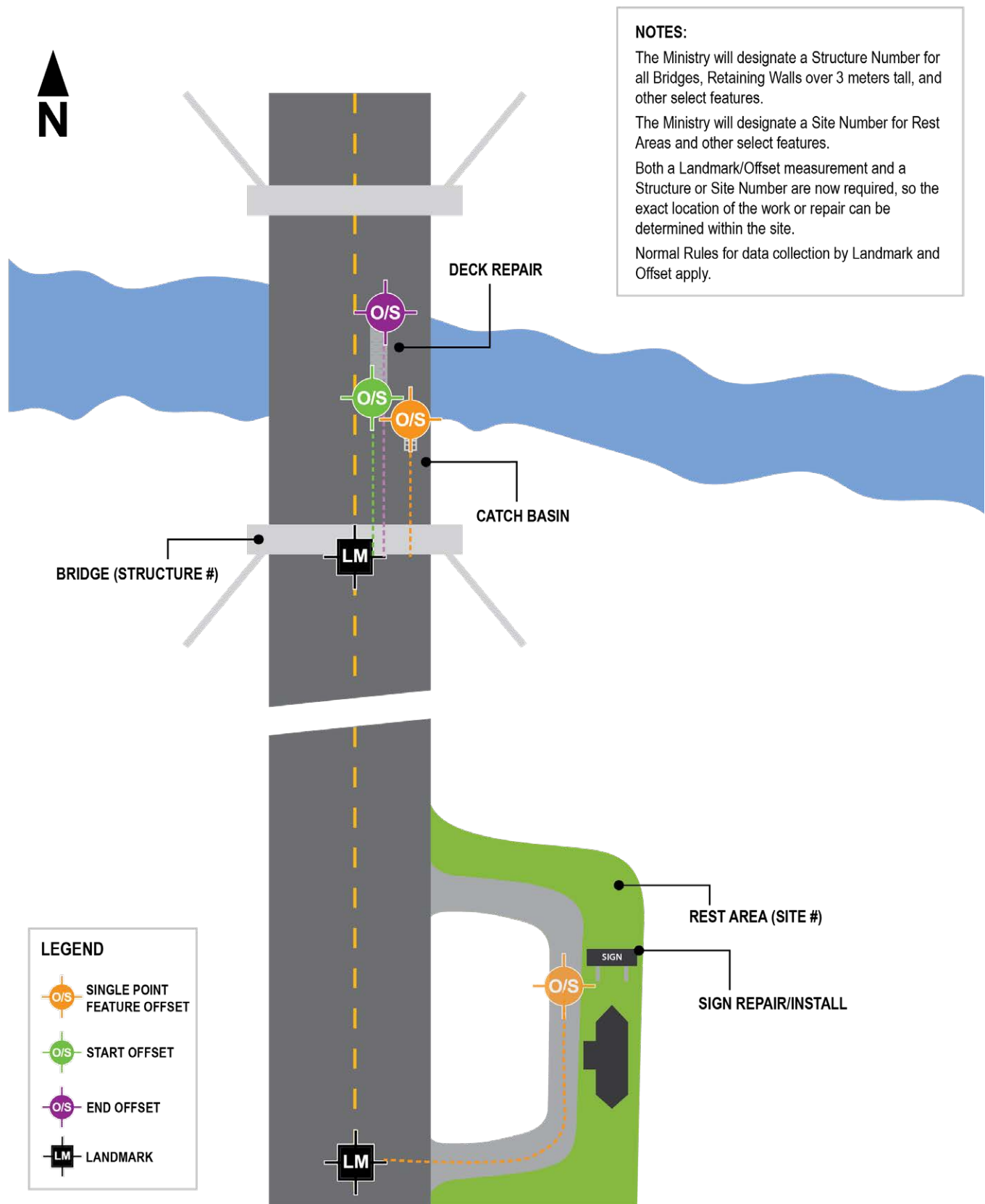
Diagram E.7: Single Point Features – Divided and Four Lane Highways with Median – Landmark and Offset

Diagram E.8: Features within Structures or Sites – Landmark and Offset



ADDITIONAL MAINTENANCE SERVICES

The Contractor will deliver Additional Maintenance Services per the Agreement, which process results in authorization by the Province using the H0200 form. Figure F1 displays the H0200 form template. Contractors must report on Additional Maintenance Services alongside the other Maintenance Services the Contractor reports. The Contractor and the Province will capture the specific details of completed Additional Maintenance Services activities within the H0200 form. However, the Contractor must complete its reports of Additional Maintenance Services based on the categories of the H0200 form, as follows:

- ▶ Routine Maintenance Services above any Routine Maintenance Services Cap (except Major Events)
- ▶ Major Events
- ▶ Class 8 or F
- ▶ More quantified
- ▶ Designated First Nations Services
- ▶ Other

[Appendix B](#) lists an activity number associated with each of the above categories, and the Contractor is to report using those activity numbers and the corresponding requirements detailed in Appendices A through D. Additionally, the Contractor should include the tracking number from the H0200 form in the comments field of records for Additional Maintenance Services



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H0200 WORK ORDER ADDITIONAL MAINTENANCE SERVICES APPROVAL

For use with the Highway Maintenance Agreements ONLY

This form contains hidden text in red font (will not print). To display or hide, go to Home Tab, Paragraph Section, click on the Show/Hide Icon "¶"

Project Name _____ Tracking # _____ Revision # _____

Service Area # _____ Maintenance Contractor _____

☐ Routine MS above the Cap ☐ Major Event ☐ Class 8 or F ☐ More Quantified ☐ Designated First Nations Services ☐ Other

Location <u>Hwy/Road at Intersection or Interchange</u>	Road Classification
From <u>Start</u> To <u>End</u> GPS Location: LAT _____ LONG _____	
Scope of Work: <u>Main project activity</u>	
<u>Main project activity description</u>	

Work Description: *(Be as detailed as possible— attach information as required)*

Itemize activities, sub-activities, and deliverables, including milestones, timelines and costs. If issuing a revision to a Work Order, include a description of the revised scope, schedule or budget associated with this revision. If the Work Order relates to Designated First Nations Services, indicate that the Contractor must provide a description of the First Nation Entity that will be involved in undertaking the Additional Maintenance Services in accordance with Section 7 of Schedule 18 ("Additional Maintenance Services") in the 2018/19 highway maintenance agreements.

Approvals *(attach contractor's Estimated Cost details)*ESTIMATED COST \$ _____ ☐ Direct Cost Plus ☐ Unit Price ☐ Other

WORK START DATE	Year	Month	Day	WORK END DATE	Year	Month	Day
-----------------	------	-------	-----	---------------	------	-------	-----

X _____ x _____

Print Name: _____ Print Name: _____

 AUTHORIZED MINISTRY REPRESENTATIVE
 (Confirm limit with [Expense Authority Matrix](#) (Construction Contracts) or
[Corporate Signing Authority System](#))

AUTHORIZED CONTRACTOR'S REPRESENTATIVE

Date Signed: _____ Year _____ Month _____ Day _____
 Date Signed: _____ Year _____ Month _____ Day _____

MINISTRY'S CONTACT NAME _____ TELEPHONE _____
 CONTRACTOR'S CONTACT NAME _____ TELEPHONE _____

Progress Report: ☐ Daily ☐ Weekly ☐ Monthly ☐ Upon Completion ☐ Other
PAYMENT DETAILS Final Cost: \$ _____ *Attach backup documentation. Do not exceed approved estimate**
**A signed/approved revision is required if the original estimate is exceeded*

RESP <div style="border: 1px solid black; width: 40px; height: 20px; margin: 2px;"></div>	S/L <div style="border: 1px solid black; width: 40px; height: 20px; margin: 2px;"></div>	STOB <div style="border: 1px solid black; width: 40px; height: 20px; margin: 2px;"></div>	PROJECT NO. <div style="border: 1px solid black; width: 60px; height: 20px; margin: 2px;"></div>	FOR MINISTRY USE ONLY <input type="checkbox"/> Multi-line coding attached
CPS Coding: _____				
Product/Info 1: _____				
Business Type: _____				
Work Activity/Info 2: _____				
Cost Type/Info 3: _____				

Figure F1: Example of Coding for an H0200 Form

MAJOR EVENTS

Concerning Major Events, in addition to reporting completed Maintenance Services per Appendices A through F, the Contractor must also complete a "Major Events Tracking Report" and "Major Event Site Notification Report" at the required intervals indicated in the Agreement.

The “Major Events Tracking Report” tracks the cumulative value of Major

Events throughout each Contract Year to assist the Province in the administration of the associated annual Routine Maintenance Services Cap.

The “Major Event Site Notification Report” communicates important details regarding each Major Event to the appropriate district contacts.



Figures G1 and G2 include templates for both of the “Major Events Tracking Report” and the “Major Event Site Notification Report,” respectively. The Contractor must complete these forms, following any instructions included therein, and both reports are to be sent directly to the appropriate district contact(s) and are not submitted through the highway maintenance contract reporting application.

[illegible]

Figure G1: Example of Major Events Tracking Report Form

MAJOR EVENT SITE NOTIFICATION REPORT*

Service Area _____

*One report to be completed per site

Date of Event: _____ YYYY-MM-DD		Foreman Area: _____	
M/C Project #: _____	Infrastructure Name: _____	Infrastructure #: _____	
Landmark #: _____	Start O/S: _____	Finish O/S: _____	
GPS Coordinates {Lat/Long Format: d ' " (Deg Min Sec)}:			
Latitude: _____		Longitude: _____	
Site Number: _____			
Project Location Name: _____			
Project/ Location Description: _____			
Nearest Town: _____ Watercourse Name: _____			
Description of Site Infrastructure			
Road Name:	Road Number:	Road Type (eg. 2-Lane paved or Gravel)	
Bridge Name:	Type	Deck Length	
	Structure #	Deck Width	
Culvert(s):	Diameter	Length	
Multiplate Culvert(s):	Diameter	Headwalls	
Rip Rap:	Original Length	Original Vol (m3)	
Other: (eg. Trail, parking lot, campsite, walkways etc)			
Description of Damage:			
Description or Recommendation of Repairs:			
Estimated Cost of Repairs: _____			
Payment:			
MC Rep Name	Signature	Date	

Figure G2: Example of Major Event Site Notification Report Form

APPENDIX H

ROCKFALL REPORTING

Rockfall reporting is critical to the safety of highway users as it assists the Province in the identification of sites subject to frequent rockfall activity. Identification of these sites is important for establishing remedial work priorities.

► Reporting Requirements

The Contractor must report all rockfall events where rockfall reaches the travelled lanes and is greater than fist-size. The Contractor is not required to report rockfall events confined to the ditch or shoulder area.

► Monthly Reporting

The Contractor shall report all rockfall events meeting the reporting criteria above as individual line items in a comma-separated values (CSV) report. Table H1 outlines the data fields required for the CSV

report, and Figure H2 provides a sample CSV report.

Reports prepared using the information in this appendix should follow the naming convention: SA##ROCKYYYYMM.csv.

► 48-Hour Reporting

If the total volume from a rockfall event is greater than one cubic metre on the travelled lane of a highway or results in damage to a motor vehicle, the Contractor shall complete an **H0207** form as shown in [Figure H1](#). The Contractor must submit the completed H0207 form by e-mail to TRAN_ROCKFALL@gov.bc.ca within 48 hours after rockfall discovery.

The Province's Rockwork Engineering group monitors this rockfall mailbox and reviews

these reports to determine if a further geotechnical assessment is required.

The Contractor shall also include in monthly CSV reports information about rockfalls that required 48-hour reporting.

The rockfall reporting procedure described in this appendix is for rockfall events only. Contractors are not to use this reporting procedure for other geotechnical events, such as soil slides, debris flows, mudslides, icefall, tree fall, avalanche or other events.

CSV reports cannot contain superscript or other special characters.



Table H1: Rockfall Reporting Fields

Column Name	Description	Mandatory	Sample Data
RECORD TYPE	Allowed Value: F VARCHAR (1)	mandatory	F
SERVICE AREA	Service Area number. Allowed values 1–28. NUMBER(2,0)	mandatory	7
MCRR INCIDENT NUMBER	Rockfall reporting incident number. Unique record number from the Contractor's maintenance management system. VARCHAR (12).	mandatory	1364649
ESTIMATED ROCKFALL DATE	Estimated date of occurrence. DATE (YYYY-MM-DD).	mandatory	2019-07-31
ESTIMATED ROCKFALL TIME	Estimated time of occurrence using the 24-hour clock. TIME (HH:MM).	mandatory	21:00
START LATITUDE	The Y (northing) portion of the rockfall location coordinate. Specified as a latitude in decimal degrees with six decimal places of precision. Positive numbers are indicative of the Northern Hemisphere. Coordinate is to be reported using the WGS84 datum. NUMBER (9,6)	mandatory	49.257851
START LONGITUDE	The X (easting) portion of the rockfall location coordinate. Specified as a longitude in decimal degrees with six decimal places of precision. Negative numbers are indicative of the Western Hemisphere. Coordinate is to be reported using the WGS84 datum. NUMBER (9,6)	mandatory	-121.724607
END LATITUDE	The Y (northing) portion of the rockfall location coordinate. Specified as a latitude in decimal degrees with six decimal places of precision. Positive numbers are indicative of the Northern Hemisphere. Coordinate is to be reported using the WGS84 datum. If rockfall debris deposit on highway is less than 30m long, only report start latitude. NUMBER (9,6)	optional	49.258642
END LONGITUDE	The X (easting) portion of the rockfall location coordinate. Specified as a longitude in decimal degrees with six decimal places of precision. Negative numbers are indicative of the Western Hemisphere. Coordinate is to be reported using the WGS84 datum. If rockfall debris deposit on highway is less than 30m long, only report start longitude. NUMBER (9,6)	optional	-121.723813
HIGHWAY UNIQUE	Unique highway segment number sourced from the CHRIS RFI network data. VARCHAR (16)	mandatory	07-A-2-00007
HIGHWAY UNIQUE NAME	Road or Highway name sourced from the CHRIS RFI network data. VARCHAR (255)	optional	Rte 7 EB – Lougheed Highway
LANDMARK	Highway reference point (HRP landmark) from the CHRIS RFI network data. VARCHAR (8)	optional (mandatory when GPS is not available)	7365
LANDMARK NAME	Landmark name from CHRIS RFI network data or textual description. VARCHAR (255)	optional (mandatory when GPS is not available)	Seabird Island Rd

Column Name	Description	Mandatory	Sample Data
START OFFSET	Offset from HRP in km to rockfall start. This should be measured to an accuracy of +/-10 m. NUMBER (7,3)	optional (mandatory when GPS is not available)	1.258
END OFFSET	Offset from HRP in km to rockfall debris end. This should be measured to an accuracy of +/-10 m. If the rockfall debris deposit is less than 30m long, only enter the start offset. NUMBER (7,3)	optional	1.268
DIRECTION FROM LANDMARK	Direction of travel from landmark. Allowed values: E, W, N or S. VARCHAR(1).	optional (mandatory when GPS is not available)	N
LOCATION DESCRIPTION	Describe general location of rockfall (known bluff name or distance from familiar landmark or town) VARCHAR (1024).	optional	Hwy 07 Fraser Valley
DITCH VOLUME	Estimated volume of material in ditch (m ³) represented by a volume code – see Table H2 for allowed values. VARCHAR (8)	mandatory	>5.0
TRAVELLED LANES VOLUME	Estimated volume of on travelled lanes (m ³) represented by a volume code – see Table H2 for allowed values. VARCHAR (8)	mandatory	>5.0
OTHER DITCH VOLUME	Enter other volume (in m ³) when the estimated total volume in the ditch exceeds 5.0 m ³ . Leave blank if ditch volume does not exceed 5.0m ³ . NUMBER (6,1)	mandatory when DITCH VOLUME is >5.0	5.5
OTHER TRAVELLED LANES VOLUME	Enter other volume (in m ³) when the estimated total volume in the travelled lanes exceeds 5.0 m ³ . Leave blank if travelled lanes volume does not exceed 5.0 m ³ NUMBER (6,1)	mandatory when TRAVELLED LANES VOLUME is >5.0	6.0
HEAVY PRECIP	Heavy precipitation conditions present at rockfall site. Allowed values: Y or N. VARCHAR (1).	mandatory	Y
FREEZE/THAW	Freezing/thawing conditions present at rockfall site. Allowed values: Y or N. VARCHAR (1).	mandatory	N
DITCH SNOW/ICE	Ditch snow or ice conditions present at rockfall site. Allowed values: Y or N. VARCHAR(1).	mandatory	N
VEHICLE DAMAGE	Vehicle damage present at rockfall site. Allowed values: Y or N. VARCHAR (1).	mandatory	N
COMMENTS	Enter any factual comments or observations. VARCHAR (1024)	optional	Text
NAME	Name of person reporting occurrence. VARCHAR (150)	mandatory	John Smith
MC PHONE NUMBER	Phone number of person reporting. VARCHAR (12)	mandatory	123-456-7890
MC NAME	Name of Contractor reporting occurrence. VARCHAR(150)	M	ABC SERVICES INC
REPORT DATE	Date reported. DATE(YYYY-MM-DD).	M	2019-07-31

Note: When estimating the rockfall volume at a location, for repeat rockfalls, the Contractor should exclude from the report any remaining volume from previous falls in the same location.

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CONTRACTOR'S
ROCKFALL REPORT**

This rockfall report is only required for rockfall events greater than "fist" size reaching the travelled lanes.
This rockfall report does not need to be completed for rockfall events confined to the ditch or shoulder area.

Part 1	Highway Unique #:	Highway Unique Name:		HRP Landmark #:	HRP Landmark Name:
	07-A-2-00007	Rte 7 EB - Lougheed Highway		7365	SEABIRD ISLAND RD
		Latitude: (Decimal Degrees)	Longitude: (Decimal Degrees)	HRP Offset: (km)	MCRR Incident #:
	Rockfall Start:	51.274208	-116.765115	1.258	132587
Rockfall End:	52.413587	-116.547325	1.268		
Location: (describe)					Direction from landmark: (check only one)
7 m East of East end of guardrail					<input checked="" type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W
Part 2	Estimated rockfall date: (YYYY-MM-DD)	Site Conditions: (check if any apply)		Estimated Rockfall Volume: (see estimating guide below)	
	2017-12-25	<input type="checkbox"/> Heavy Precipitation in last 48 hrs <input type="checkbox"/> Freeze/Thaw conditions in last 48 hrs <input type="checkbox"/> Ditch filled with compact snow or ice <input type="checkbox"/> Vehicle Damage *			
	Estimated rockfall time: (24 hr Format ie 13:25)				
	06:00				
Comments:					
Part 3	Name:				Report Date: (YYYY-MM-DD)
	John Smith				2017-10-28
Phone #: (XXX-XXX-XXXX)		Name of Maintenance Contractor:			
555-717-4444		General Island Services Co.			

Submit to District Manager, Transportation within 7 days following the end of each month.

* For rockfall event greater than 1 m³ on travelled lanes or vehicle damage:

Email a copy of the completed report to TRAN_ROCKFALL@gov.bc.ca within 48 hrs following rockfall event.

E-mail Option for Digital Forms

If e-mail button does not work email to:
TRAN_ROCKFALL@gov.bc.ca

E-Mail Completed Report

H0207 2017/10

ESTIMATING ROCKFALL VOLUMES

< 0.03 m³	.....	5 Gallon Bucket (~ 0.02 m³)	
0.03 to 0.1 m³	.....	Mid-size Microwave Oven (~ 0.07 m³)	
0.1 to 0.3 m³	.....	45 Gallon Drum (~ 0.2 m³)	
0.3 to 0.5 m³	.....	Kitchen Stove (~ 0.4 m³)	
0.5 to 1.0 m³	.....	Mid-size Refrigerator (~ 0.75 m³)	
1.0 to 5.0 m³	.....	More Easily Estimated	
>5.0 m³	.....	More Easily Estimated	

Figure H1: Data Entry Form Rockfall Notification and Reporting

RECORD TYPE, SERVICE AREA, MCRR INCIDENT
 NUMBER, ESTIMATED ROCKFALL DATE, ESTIMATED
 ROCKFALL TIME, START LATITUDE, START LONGITUDE, END
 LATITUDE, END LONGITUDE, HIGHWAY UNIQUE
 NUMBER, HIGHWAY UNIQUE, LANDMARK, LANDMARK
 NAME, START OFFSET, END OFFSET, DIRECTION FROM
 LANDMARK, LOCATION DESCRIPTION, DITCH VOLUME, OTHER
 DITCH VOLUME, TRAVEL LANES VOLUME, OTHER TRAVELLED
 LANES VOLUME, HEAVY PRECIP, FREEZE/THAW, DITCH
 SNOW/ICE, VEHICLE DAMAGE, COMMENTS, NAME, MC PHONE
 NUMBER, MC NAME, REPORT DATE

*Copy and paste the above into a text editor and save as a .csv file to
 produce a CSV template for the monthly rockfall report.*

**Figure H2: Comma Separated Values (CSV) Sample MCRR
 Monthly Report**

Table H2: Rockfall Volume Data List

Volume	Volume Code
0 m ³	None
0 < 0.03 m ³	<0.03
0.03 to 0.1 m ³	0.03–0.1
0.1 to 0.3 m ³	0.1–0.3
0.3 to 0.5 m ³	0.3–0.5
0.5 to 1.0 m ³	0.5–1.0
1.0 to 5.0 m ³	1.0–5.0
> 5.0 m ³	>5.0

**Use the “Volume Code”
 in DITCH VOLUME and
 TRAVELLED LANES VOLUME
 fields in the monthly CSV
 rockfall report.**

APPENDIX I

WILDLIFE REPORTING

The Contractor's monthly reporting of wildlife accidents helps the Province's wildlife group maintain statistics about wildlife accidents on provincial highways through the use of its Wildlife Accident Reporting System (WARS).

The Contractor shall report all wildlife accidents as individual line items in a comma-separated values (CSV) report. Table I6 outlines the data fields required for the CSV report, and Figure I1 provides a sample CSV report.

Reports prepared using the information in this appendix should follow the naming convention: SAXX_YYYYMM_WARS.csv.



Table I1: WARS Species Data List

Species Code	Species
1	Deer
2	Moose
3	Elk
4	Bear
5	Sheep
6	Caribou
7	Coyote
8	Porcupine
9	Cougar
10	Raccoon
11	Bobcat
12	Skunk
13	Wolf
14	Fox
15	Beaver
16	Horned Owl

Species Code	Species
17	Muskrat
18	Eagle
19	Buffalo
20	Badger
21	Possum
22	Otter
23	Lynx
24	Marten
25	Rabbit
26	Other
27	Unknown
28	White Tail Deer
29	Mule Deer
30	Black Bear
31	Grizzly Bear

Table I2: WARS Time of Kill Data List

Time of Kill Code	Time of Day
1	Dawn
2	Dusk
3	Day
4	Dark
5	Unknown

**Table I3: WARS Wildlife Sign Data List**

Wildlife Sign Within 100m Code	Answer
Y	Yes
N	No
U	Unknown

Table I4: WARS Sex Data List

Sex Code	Answer
M	Male
F	Female
U	Unknown

Table I5: WARS Age Data List

Age Code	Answer
A	Adult
Y	Young
U	Unknown



Table I6: WARS Data Formats and Standards

Column Name	Description	Mandatory/Optional	Sample Data
RECORD TYPE	WARS = W / Allowed Values: W. VARCHAR (1)	Mandatory	W
SERVICE AREA	The Ministry Contract Service Area number. Allowed Values: 1 – 28. NUMBER (2,0)	Mandatory	11
ACCIDENT DATE	Date of accident. DATE (YYYY-MM-DD)	Mandatory	2017-07-31
TIME OF KILL	Allowed values: 1 – 5 (see Table I2). NUMBER (1,0)	Mandatory	2
LATITUDE	The Y (northing) portion of the accident coordinate. Specified as a Latitude in Decimal Degrees with 6 decimal places of precision. Positive numbers are indicative of the Northern Hemisphere. Coordinate is to be reported using the WGS84 datum. NUMBER (9,6)	Mandatory (unless reporting LANDMARK, OFFSET and NEAREST TOWN)	54.578151
LONGITUDE	The X (easting) portion of the accident coordinate. Specified as a Longitude in Decimal Degrees with 6 decimal places of precision. Negative numbers are indicative of the Western Hemisphere. Coordinate is to be reported using the WGS84 datum. NUMBER (9,6)	Mandatory (unless reporting LANDMARK, OFFSET and NEAREST TOWN)	-122.568931
HIGHWAY UNIQUE	Unique road/highway segment number. Source CHRIS RFI network data. VARCHAR (16)	Mandatory	07-A-2-00007
LANDMARK	Highway reference point (HRP Landmark). Source CHRIS HRP landmark data. VARCHAR (8)	Optional (mandatory when GPS is not available)	414834
OFFSET	Offset in km from HRP landmark. NUMBER (6,3)	Optional (mandatory when GPS is not available)	2.515
NEAREST TOWN	Name of nearest town to wildlife accident. VARCHAR (150)	Optional (mandatory when GPS is not available)	Elko
WILDLIFE SIGN	Wildlife sign within 100m. Allowed values: Y, N, U (See Table I3). VARCHAR (1)	Mandatory	Y
QUANTITY	Number of animals. NUMBER (2,0)	Mandatory	1
SPECIES	Allowed values: 1–31 (See Table I1). NUMBER (2,0)	Mandatory	1
SEX	Allowed values: M, F, U (See Table I4). VARCHAR (1)	Mandatory	M
AGE	Allowed values: A, Y, U (See Table I5). VARCHAR (1)	Mandatory	A
COMMENT	Other applicable text information. VARCHAR (1024)	Optional	carcass on road

Figure I1:
Comma Separated Values (CSV)
Sample WARS Monthly Report

RECORD TYPE, SERVICE AREA, ACCIDENT DATE, TIME
 OF KILL, LATITUDE, LONGITUDE, HIGHWAY
 UNIQUE, LANDMARK, OFFSET, NEAREST TOWN, WILDLIFE
 SIGN, QUANTITY, SPECIES, SEX, AGE, COMMENT

*Copy and paste the above values into a text editor and save as a .csv file
 to produce a CSV template for the Rockfall monthly report.*

CHRIS INVENTORY UPDATES

The Contractor is responsible for providing CHRIS (Corporate Highway and Resource Information System) inventory updates for three critical types. The opening inventory is collected by the Province and included in the CHRIS database at the Commencement of the Agreement. Updates on these items are supplied by the Contractor after installation, replacement, or removal has occurred as per reporting requirements in the Agreement. Contractors are required to pick up the changes to inventory using GPS coordinates.

The following sections detail the update record requirements for each inventory feature type, as well as other reference materials:

- ▶ Sign
- ▶ Culvert, and
- ▶ Cattle Guard

SIGNS

CHRIS Inventory Type Description:

A sign is a lettered board, message or other display which includes

all regulatory, warning, guide, informational, advisory, construction and maintenance and route markers, but excluding electronically controlled messages/displays. It is represented by a point feature. When the sign inventory changes, the Contractor is responsible for submitting this spreadsheet to the Province.

The attributes for signs are to be used as shown in Table J1 and a sample CHRIS spreadsheet for signs is shown in Figure J1.

Service Area 1 - Signs (SIGN)															
RFI Route Unique Identifier	RFI Route Description	Start Chainage	End Chainage	Inventory Type Code	Primary Key (Inventory ID #)	Cross Sectional Position (XSP)	Start Date (dd-Mon-yyyy)	Catalog Number	Direction Facing	Sign Post Type	Number of Posts	Large Sign Flag	District Sign Number	Installation Date (yyyy-mm-dd)	Comments
01-A-C-00001	Rte 1 EB - TransCanada	0.000	0.000	SIGN	3746530	RS	24-Sep-2018	W-015	S	T	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.018	0.018	SIGN	3746532	LS	24-Sep-2018	W-054-L	S	T	0	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.018	0.018	SIGN	3746531	LS	24-Sep-2018	R-014-R	S	T	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.063	0.063	SIGN	3746533	LS	24-Sep-2018	R-016-R	S	T	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.146	0.146	SIGN	3746534	RS	24-Sep-2018	FB	S	W	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.149	0.149	SIGN	3746535	RS	24-Sep-2018	W-054-R	S	RS	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.182	0.182	SIGN	3746536	RS	24-Sep-2018	W-054-R	S	RS	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.183	0.183	SIGN	2481856	LS	3-Oct-2003	W-025	N	M	1	N		2003-10-03	ADVISORY EXIT SPEED 50KMH
01-A-C-00001	Rte 1 EB - TransCanada	0.236	0.236	SIGN	3746537	LS	24-Sep-2018	R-004	S	RS	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.272	0.272	SIGN	2481857	LS	3-Oct-2003	SA-R10	N	T	1	N	61-12-133	2003-10-03	CHECK THIS ONE
01-A-C-00001	Rte 1 EB - TransCanada	0.305	0.305	SIGN	3746538	RS	24-Sep-2018	R-004	S	RS	1	N			
01-A-C-00001	Rte 1 EB - TransCanada	0.340	0.340	SIGN	2481858	RS	3-Oct-2003	G-006	S	W	2	N		2003-10-03	
01-A-C-00001	Rte 1 EB - TransCanada	0.375	0.375	SIGN	3746539	RS	24-Sep-2018	SA-R10	S	W	2	N			

Figure J1: Sample CHRIS Spreadsheet for Signs

Indices are as follows:

The sign catalogue can be found online. Here are the links to the various sections:

- ▶ Standard Sign Index: contains graphics and information for all general regulatory and information signs (Index 1): [Regulatory Signs](#)
- ▶ Supplemental Sign Index: contains graphics and information for all service and attraction signs (Index 2): [Service and Attraction Signs](#)



Table J1: Sign Attributes (CHRIS)

Column Name	Data Type	Mandatory / Optional	Description / Comment
Inventory Type Code	Text	M	SIGN
RFI Unique Identifier	Text	M	RFI route (e.g. 24-B-@-00063)
Start Chainage	Num	M	Start Offset in kilometres to the third decimal place
End Chainage	Num	M	End Offset in kilometres to the third decimal place
Admin Unit	Num	M	Service Area admin unit (i.e. 401 to 428)
Start Date	Date	M	Collection Date – format dd-mmm-yyyy (e.g. 01-APR-2019)
XSP	LOV	M	Cross Sectional Position; leave blank, if not applicable, or as per Table J2 below
Catalog Number	LOV	M	As per list of values (LOV) which contains the Ministry standard signs. Refer to the attached sign catalogue below.
Direction Facing	LOV	M	The cardinal direction, relative to the predominant direction of the highway, that the outward face of the sign points toward as per Table J3 below.
Sign Post Type	LOV	M	as per Table J4
Number of Posts	Num	M	
Large Sign Flag	Flag	M	Yes/No; Yes-greater than 3.2m ²
District Sign Number	Text	O	The unique number that identifies this sign in the District – can be found on back of sign
Installation Date	Date	Leave Blank	
Comments	Text	O	Non-generic sign information; Enter Sign Post Type if Other is chosen; See Rules
X_Coord	Num	M	Longitude is the geographic coordinate, in decimal degrees (-ddd.dddddd) – WGS84 as a reference datum
Y_Coord	Num	M	Latitude is the geographic coordinate, in decimal degrees (dd.dddddd) – WGS84 as a reference datum

LIST OF VALUES (LOV)/Code Table Values – Catalog Number

- See the Sign Catalog

**Table J2: List of Values/Code Table Values
– Valid XSPs**

Species Code	Species
LD	Ditch – Left
LRW	Right of Way – Left
LS	Shoulder – Left
M	Division of Travel Direction/End of Road
O	Overhead
RD	Ditch – Right
RRW	Right of Way – Right
RS	Shoulder – Right

**Table J3: List of Values/Code Table Values
– Direction Facing Type**

Value	Meaning	Description
E	East	Facing east, relative to the predominant direction the road, for west bound traffic
N	North	Facing north, relative to the predominant direction of the road, for south bound traffic
S	South	Facing south, relative to the predominant direction of the road, for north bound traffic
W	West	Facing west, relative to the predominant direction of the road, for east bound traffic

Table J4: List of Values/Code Table Values – Sign Post Type

Value	Meaning	Description
B	Bridge	Bridge Structure including overpasses and sign bridges and end posts
G	Gate	Installed on a gate
I	Luminaire/ Davit	Light standard or davit
M	Metal	Metal U-channel type post
N	No Post	Used for multiple sign faces on one structure/support or for signs attached to poles, rockwalls, etc.
P	Plastic	Plastic or polypost
RS	Round Steel	Round steel post
RW	Retaining Wall	Installed on a retaining wall
SB	Steel Beam	Break away steel beam
T	Telspar	Metal telescopic style post
W	Wood	Wood post
X	Other	Sign post type information to be entered in the comments field

Rules for Signs:

- ▶ Inventory updates are required on all permanent or semi-permanent and seasonal Highway
- ▶ On arterial Highways, the Contractor is responsible for maintaining any regulatory, warning, route, and directional signs. The city maintains the parking and street name signs.
- ▶ Do not inventory construction signs, construction project signs or signs being maintained by construction crews.
- ▶ The direction facing should be relative to the highway direction. (e.g. If the sign is facing east bound traffic on highway one, then the sign is facing west, even if the compass direction is "north" for that portion of highway).
- ▶ If there are many signs on one post, then only one sign record is assigned a post count. All other sign records except the one, must be given a value of zero posts. All sign records for that one post may be given the same post type (e.g. telspar).
- ▶ Locate road name signs at an intersection against only one road.

Example: A stop sign with 'Smith' road name sign and 'Main' road name sign (one post) is located on Smith Road at its intersection with Main Road.

a) Where do you locate the R-001 stop sign and post?

b) Where do you locate the G-007 for Smith Road?

c) Where do you locate the G-007 for Main Road?

Procedure: All signs and post are located against Smith Road.

- ▶ Only give standards/davits a count if they do not have any electrical attachments.
 - If the sign post type (I-Luminaire/Davit) has electricity, then under the number of posts, the count would be 0 (zero). If the sign post type (I-Luminaire/Davit) does not have electricity, then under the number of posts, the count would be 1.
- ▶ Do not give bridge end posts a count, they are a part of the bridge.
- ▶ Catalogue numbers should be generic (e.g. G-007-1 is sufficient for a street name and doesn't need to be further defined by size).
- ▶ When choosing the catalogue number for parking, speed or distance related signs, enter the appropriate non-generic information in the **comments** field. For example:
 - P series – where applicable enter the **arrow direction** in the **comments** field
 - R-003 and R-004 – enter the **speed** in the **comments** field



- W-022 to W-025 – enter the **speed/distance** in the **comments** field

- ▶ Where there is a unique district sign number assigned to a sign, the following should be put in the catalogue number field:
 - PB for Parks Branch
 - SA for Service and Attraction
 - G-001 to G-006 for Guide Signs
 - LR for Local Radio Signs
- ▶ Catalog numbers with "DO NOT USE" in the description/number are signs that are being phased out through attrition. Ensure that the sign in the field is the old version before accepting this catalog number.
- ▶ Large Signs are those signs that are over 3.2m².
- ▶ Non-generic sign information should be added to the **comments** field.

Example: Overhead clearance sign W-018 would require a height “9.9m” to be added to the **inventory type code** field. This allows other business units who require specific information to query CHRIS directly without involving the districts for data requests.

- If **W-055 series** are being used to delineate/show alignment of curve or merging lanes or barriers and there are several/many of them, add them as "REFL" and in the attributes, indicate the product being used in the **comments** field:

Example: REFL Type = Roadway
Square, RS

Installation = PostColour =
White, White and Yellow, Yellow

Spacing = # m apart

Comments = "W-055-1 or -2"
(or if you not using the W-055 series, then the "Product code", or description "Button" – put the type of product you used in this field)

- ▶ If **W-055** series are being used to delineate (mark/indicate) an electrical junction, traffic counter, street lamp, drainage appliance, start of curbing, etc. (usually only one or two being used and they are not lineal in nature) then they should be added as a "SIGN".
- ▶ If the catalogue number for the MOTI-owned sign does not exist in CHRIS, then use **N-000-Other** and enter the information regarding the design of the sign in the **comments** field. Also, take a picture of the sign for follow-up.

CULVERTS

CHRIS Inventory Type Description:

A culvert is a pipe (less than 3m in diameter) or half-round flume used to transport or drain water under or away from the road and/or Right-of-Way. Culverts that are greater than or equal to 3m in diameter are described in BMIS and stored in the MOTI Road Structure Dataset. It is represented by a point feature.

The contractor is required to submit this spreadsheet when culvert inventory changes. This will be supplied by the Province as per the Agreement. The attributes that are indicated for culverts are to be used as shown in Table J5 and the sample spreadsheet shown in Figure J2.

[illegible]

Figure J2: Sample CHRIS Spreadsheet for Culverts

Table J5: Culvert Attributes (CHRIS)

Column Name	Data Type	Mandatory/Optional	Description / Comment
Inventory Type Code	Text	M	CULV
RFI Unique Identifier	Text	M	RFI route (e.g. 24-B-@-00063)
Start Chainage	Num	O, unless GPS unavailable	Start offset in kilometres to the third decimal place
End Chainage	Num	O, unless GPS is unavailable	End offset in kilometres to the third decimal place
Admin Unit	Num	M	Service Area admin unit (i.e. 401 to 428)

Column Name	Data Type	Mandatory/Optional	Description / Comment
Start Date	Date	M	Collection date – format dd-mmm-yyyy (e.g. 01-APR-2019)
XSP	LOV	M	Cross sectional position; leave blank, if not applicable or as per Table J6
Culvert Type	LOV	M	as per Table J7
Culvert Diameter (mm)	Num	M	Min=100mm; Max=2999mm
Culvert Material	LOV	M	as per Table J8
Confined Space	Flag	M	Yes/No (see rules / considerations for a definition of confined space)
Installation Date	Date	Leave Blank	
Fish Sensitive	LOV	Leave Blank	
Fish Passage Type	LOV	Leave Blank	
Grate	LOV	Leave Blank	
Flap Grate	LOV	Leave Blank	
Comments	Text	O	Enter culvert, material and/or fish passage type if “other” is chosen; see rules
X_Coord	Num	M	Longitude is the geographic coordinate, in decimal degrees (-ddd.dddddd) – WGS84 as a reference datum
Y_Coord	Num	M	Latitude is the geographic coordinate, in decimal degrees (dd.dddddd) – WGS84 as a reference datum

**Table J6: List of Values/Code Table Values
– Valid XSPs**

Species Code	Species
LD	Ditch – Left
LRW	Right of Way – Left
LS	Shoulder – Left
M	Division of Travel Direction/End of Road
RD	Ditch – Right
RRW	Right of Way – Right
RS	Shoulder – Right
X	All Lanes

**Table J7: List of Values/Code Table Values
– Culvert Type**

Value	Meaning	Description
D	Down Drain	Carries water over embankment
F	Flume	Half round culvert on surface – used to prevent slope erosion
H	Horizontal	The culvert relieves hydro-static pressure and can be located in retaining walls, rock faces and road beds in slip areas
N	Other	Culvert type information to be entered in the comments field
R	Roadway	The culvert crosses the Highway

Table J8: List of Values/Code Table Values – Culvert Material

Value	Meaning	Description
B	Box	Concrete formed allows passage way for water, pedestrians or animals
C	Concrete	Pre-cast concrete culvert
G	Galvanized	Galvanized steel culvert
L	Plastic	Polyethylene plastic drainage pipe
M	Multiplate	Galvanized steel plates either bolted or riveted together to form a culvert
N	Other	Culvert material information to be entered in the comments field
P	Galvanized Perforated Pipe	Perforated galvanized steel culvert
Q	Plastic Perforated Pipe	Perforated polyethylene plastic drainage pipe
W	Wood	Wood stave culvert

Rules for CULVERTS:

- ▶ Inventory updates are required for all culverts less than 3.0 metres in width at their widest horizontal point (regardless of height) are to be inventoried. (Culverts 3.0 metres or greater in width should be added to BMIS as a structure).
- ▶ Location information should be recorded at the end of the culvert on the right side of the Highway in the direction of highway travel.
- ▶ Down drains that are associated with catch basins should not be inventoried as a culvert. Down drains are usually paved aprons over an embankment that must be maintained to prevent erosion of the slope. Some down drains are a series of connected pipes and elbows used to carry water over the embankment in a closed system. Use the flumes option if the down drain is constructed of half round flume.
- ▶ Do not inventory the culverts under BC MOTI side streets as entrance culverts on another highway. They are roadway culverts to be inventoried with the side street.
- ▶ Culverts that are skewed may have the degree of skew entered in the **comments** field.
- ▶ Punchin culverts, log stringers covered with earth fill, are to be inventoried as wooden culverts if they are less than 3 m in width. If they are greater than 3 m, they should be added to BMIS as a structure.
- ▶ Enter the inside diameter (measured in millimetres) of each culvert. For non-round culverts (box culverts, arches) enter the widest opening measurement in the culvert diameter field, and put both measurements in the **comments** field.
- ▶ Culverts that cross two RFI Highways (e.g. a divided highway) should be picked up against each individual Highway as two separate records.
- ▶ Confined space is defined as an area that is enclosed or partially enclosed, not designed for human occupancy, and large enough so the worker can enter. Confined space has limited or restricted access or exit that could complicate first aid or the evacuation of an injured worker.



APPENDIX J

CATTLE GUARDS

CHRIS Inventory Type Description:

A Cattle Guard System is a barrier placed in the road surface to prevent the movement of livestock or wildlife from one side of the barrier to the other but allowing traffic to proceed without interruption. It is represented by a point feature.

The Contractor is required to submit this spreadsheet when cattle guard inventory changes. It will be supplied by the Province as per the Agreement. The Attributes that are indicated for Cattle Guard Systems are to be used as shown in Table J9 and the spreadsheet shown as Figure J3.



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Inventory Type	Leave Blank	Leave Blank	RFI Route Unique Identifier	Start Chainage	End Chainage	Admin Unit	Start Date (dd-Mon-yyyy)	XSP	Cattle Guard Type	Cattle Guard Width	Running Strips	Cattle Guard Base	Installation Date (yyyy-mm-dd)	Comments	X Coordinate	Y Coordinate

Figure J3: Sample CHRIS Spreadsheet for Cattle Guards

Table J9: Cattle Guard Attributes (CHRIS)

Column Name	Data Type	Mandatory / Optional	Description / Comment
Inventory Type Code	Text	M	CG
RFI Route Unique Identifier	Text	M	RFI route (e.g. 24-B-@-00063)
Start Chainage	Num	O	Start chainage in kilometres to the third decimal place
End Chainage	Num	O	End chainage in kilometres to the third decimal place
Admin Unit	Num	M	Service Area admin unit (i.e. 401 to 428)
Start Date	Date	M	Collection date – format dd-mmm-yyyy (e.g. 01-APR-2019)
XSP	LOV	M	Cross sectional position (leave blank, if not applicable) as per Table J10
Cattle Guard Type	LOV	M	as per Table J11
Cattle Guard Width	Num	M	Min=1.5m; Max=15.0m

Column Name	Data Type	Mandatory / Optional	Description / Comment
Cattle Guard Length	Num	M	Measure the length along the road. If it measures 3m or more, enter BMIS in the comments field
Running Strips	LOV	O	Yes/No as per Table J12
Cattle Guard Base	LOV	O	As per LOV as per Table J13
Installation Date	Date	Leave Blank	
Comments	Text	O	Enter cattle guard and/or cattle guard base type if "other" is chosen
X_Coord	Num	M	Longitude is the geographic coordinate, in decimal degrees (-ddd.ddddd) – WGS84 as a reference datum
Y_Coord	Num	M	Latitude is the geographic coordinate, in decimal degrees (dd.ddddd) – WGS84 as a reference datum

Table J10: List of Values/Code Table Values – Valid XSPs

Species Code	Species
LL2	First Lane – Left
LRW	Right of Way – Left
RL1	First Lane – Right
RRW	Right of Way – Right
X	All Lanes

Table J11: List of Values /Code Table Values – Cattle Guard Type

Value	Meaning	Description
C	Concrete	Concrete grid
M	Metal	Round metal bar grid
MR	Metal Rail	Metal rail grid
N	Other	Cattle guard type information to be entered in the comments field
U	Ungulate	Special grid design for wildlife
W	Wood	Wood grid

Table J12: List of Values/Code Table Values – Running Strips

Value	Meaning
Y	Yes
N	No

Table J13: List of Values /Code Table Values – Cattle Guard Base

Value	Meaning	Description
C	Concrete	
TW	Treated Wood	
UTW	Untreated Wood	
NB	No Base	
N	Other	Cattle guard base information to be entered in the comments field

Rules for CATTLE GUARDS:

- ▶ Location information should be recorded at the centre of the Cattle Guard System in the direction of highway travel.
- ▶ Width of the Cattle Guard System is the distance across the lane/all the lanes.
- ▶ Length of Cattle Guard System is the distance along the road (red above). Measure from the first abutment to the end. If the length is 3m or more, enter BMIS in the comments field.
- ▶ As per the Agreement, the Contractor maintains all Cattle Guard Systems under the Province's jurisdiction

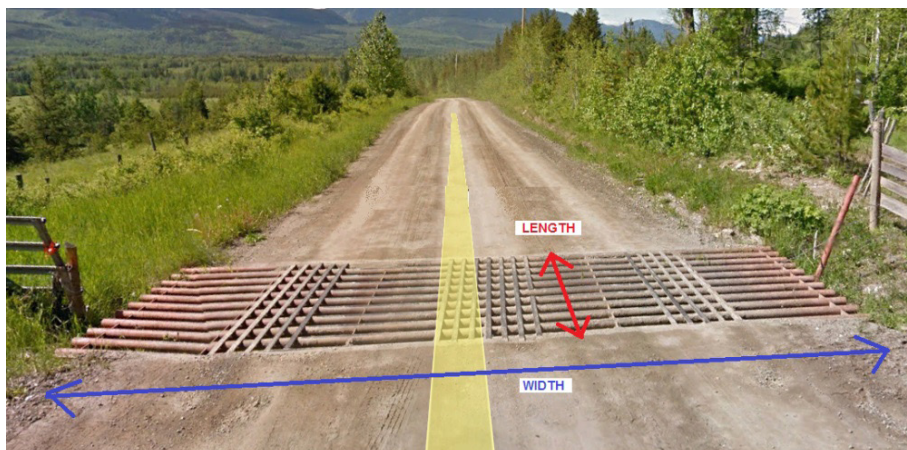


Figure J4: Width and Length of Cattle Guard

- ▶ Only those Cattle Guard Systems for which the Province has a maintenance responsibility should be added to CHRIS.
- ▶ Do not include Cattle Guard Systems at private entrances onto the Highways.
- ▶ Where two Cattle Guard Systems are situated side by side, inventory both.



MAINTENANCE SERVICES REPORTING MANUAL

Highway Maintenance Agreements

ROUND 6 (2018-2019)

November 25, 2020

Version 3.01



Ministry of
Transportation
and Infrastructure