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TRANSPORTATION SOLUTIONS LIMITED



Beatty Line North, Fergus Transportation Impact Study Peer Review Comment Response

Paradigm Transportation Solutions Limited

December 2018

17 December 2018
Project: 180135

Mr. Jeff Buisman, OLS
VanHarten Surveying Inc.
424 Woolwich Street
Guelph, ON N1H 3X3

Dear Mr. Buisman:

**RE: BEATTY LINE NORTH, FERGUS TRANSPORTATION IMPACT STUDY – PEER
REVIEW COMMENT RESPONSE**

In July 2018, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Study (TIS)¹. Since submission of the study, County of Wellington consultant Triton Engineering (Triton) peer reviewed the report. The following summarizes our responses/clarification to the 22 October 2018 Triton memorandum². The Triton comments are included for clarity.

Comment 1.1: Sight Distance – The proposed easterly entrance to the apartment building appears to be located near a crest vertical curve on Farley Road. Provide a profile to demonstrate sight distances at the proposed entrance location

Drawings SD1 and SD2 (Attachment A) illustrate the sight distance profiles for the two (2) proposed Farley Road driveway connections. The drawings indicate that both driveways satisfy the Transportation Association of Canada³ (TAC) sight distance requirements for a 60 km/h design speed.

Comment 1.2: The Report should identify the distances between the Beatty Line / Farley Road intersection and locations of the proposed entrances. Comment on the suitability of the entrance spacings and any impact on the intersection operations, considering that future improvements including signalization may be required at the Beatty Line / Farley / SR 18 in the future.

¹ Beatty Line North, Fergus Transportation Impact Study, July 2018. Paradigm Transportation Solutions Limited. Project Number: 180135

² Triton Engineering Services Ltd. Memorandum Transportation Impact Study Beatty Line North. File: A6750A

³ Canada, Transportation Association of Canada. Geometric Design Guide for Canadian Roads (2017)

The spacing of the site driveways relative to the Beatty Line intersection with Farley Road are noted as follows:

- ▶ Phase 1 – Semi-detached and single detached residential lots
 - Farley Road Driveway – approximately 130 metres west of Beatty Line (CL to CL)
 - Beatty Line Driveway – approximately 115 metres south of Farley Road/Sideroad 18 (CL to CL)
- ▶ Phase 2 – Apartment block
 - Farley Road Driveway – approximately 80 metres west of Beatty Line (CL to CL)
 - Beatty Line Driveway – approximately 70 metres south of Farley Road/Sideroad 18 (CL to CL)

Intersection improvements at Beatty Line North and Sideroad 18/Farley Road were not identified as a requirement in the North West Fergus Secondary Plan (NWFSP) traffic study. The intersection capacity analysis outlined in the July 2018 TIS (Table 4.6) notes the intersection is forecast to operate at level of services (LOS) B or better during the weekday peak hours under the 2026 total traffic volumes. The operational conditions do not suggest the need for a traffic control signal.

TAC⁴ has been reviewed to determine sufficiency of the corner clearance from a major intersection. The suggested corner clearances are recommended to be at least 25 metres, whereas the site plan provides for at least 70 metres of spacing. The spacing between the proposed driveways provides no less than 40 metres of separation between adjacent driveways, which also exceeds the TAC guideline regarding driveway spacing⁵.

Comment 1.3: Entrances should be to the minor road where possible. The proposed entrance to Beatty Line to the Apartment Building is in close proximity to the Farley / SR 18 intersection, and may interfere with future turn lane/taper. Access to Farley Road only is preferred, assuming the Farley apartment entrance is feasible (i.e. Comment 1.2). Ideally, providing access to the apartment building should be by connecting to the “Common Element” road rather than Beatty Line or Farley Road.

Refer to comment 1.2. The number of driveways proposed to the adjacent roadways based on site’s frontage is inline with the TAC guidelines for number of driveways⁶. No auxiliary turn lanes are recommended that the site driveway connections.

⁴ TAC Figure 8.8.2: Suggested Minimum Corner Clearances to Accesses or Public Lanes at Major Intersections

⁵ TAC Section 8.9.8: Spacing of Adjacent Driveways

⁶ TAC Table 8.9.2: Maximum Number of Driveways Based on Property Frontage



Comment 1.4: Daylight triangle (9m x 9m) is required in the SW quadrant of Beatty Line and Farley intersection. Also, sight lines will need to be confirmed at all access locations to the development and appropriate Daylightings provided. We note that the common road is located adjacent to the south property line which may require that an easement be secured from the adjacent private property. The size and control method used for the development entrance Daylightings is to be confirmed as part of Site Plan Approval.

The Site Plan includes a 9.0 m x 9.0 m daylight triangle at the Beatty Line intersection with Farley Road as required. Appropriate daylight triangles on the site driveway connections will be provided to the satisfaction of the Town Engineer at Site Plan Approval.

The sight distances at the Farley Road driveways is discussed in Comment 1.1. Beatty Line North is considered straight and flat; no sight distance issues are expected at the proposed driveway connections.

The need for an easement regarding the location of the Common Element Road along the south property line is to be investigated by others. Stop control is assumed for all driveway approaches to the external road network.

Comment 1.5: The trip distribution (Section 3.3) used the same distribution as the NWFSP report. As this is a more localized development, it should have considered its own distribution. The 25% traffic distribution to Colborne Street does not seem realistic.

Table 1 compares the NWFSP report trip distribution to the local distribution pattern present in the existing traffic volumes. The localized distribution could result in approximately 10 percent more traffic using the Colborne Street corridor.

In our opinion, the residents of the Beatty Line development would likely have similar travel patterns as residents of the NWFSP development. Residents of the both sites would likely work, shop and attend the same schools. The estimated distribution, which was approved for the NWFSP study is considered appropriate for this development.

TABLE 1: TRIP DISTRIBUTION COMPARISON

Route	Dirction	to/from	
		NWFSP	Existing Traffic
Beatty Line	North	10%	17%
Sideroad 18	East	10%	11%
Colborne Street	West	25%	34%
Beatty Line	South	55%	38%
Total		100%	100%



Comment 1.6: The report has identified future increased delays for SB traffic at the Beatty Line / St. Andrew Street intersection (LOS E with v/c ratio of 0.78 during the pm peak in 2021). This is largely due to the traffic from adjacent developments, with minor contribution from this development. Signalization of this intersection has been included in Wellington County's DC bylaw.

Acknowledged.

Comment 1.7: The report has identified future increased delays for EB traffic on Colborne Street at Beatty Line by 2026 (LOS E with v/c ratio of 0.78 during the pm peak). This is largely due to the traffic from adjacent developments, with minor contribution from this development. This LOS is generally acceptable during peak hours.

Acknowledged.

Comment 1.8: The TIS has not considered pedestrian movements or crossing requirements. Comments should be provided on pedestrian connectivity, desire lines (e.g. school locations) and whether some form of pedestrian crossing is required at the intersection of Beatty Line and Farley/Sideroad 18.

The site plan illustrates sidewalk connections between the apartment building and the existing sidewalks along Beatty Line. An existing sidewalk is present on the west side of Beatty Line from Farley Road to Sideroad 19. From Sideroad 19 south to Millage Lane a sidewalk is present on the east side of Beatty Line. No pedestrian crossing treatment is provided on the south leg of Beatty Line and Sideroad 19 where pedestrians would cross.

An existing sidewalk is present on the south side of Sideroad 19 between Beatty Line and St. David Street North (Highway 6). Commercial and institutional land uses located near the intersection with St. David Street North (Highway 6) could potentially attract walking trips generated by the subject site. An existing sidewalk is present on the south side of Sideroad 18 between Beatty Line and St. David Street North (Highway 6).

Should a traffic control signal be implemented, as suggested by Triton, at the Beatty Line intersection with Farley Road appropriate crosswalks, pedestrian signal heads and pedestrian signal timing to connect all existing and future sidewalks at the intersection should be designed for and provided.

Until the area develops (Beatty Line North, NWFSP, and the Beatty Hollow development) the pedestrian volumes and the associated desire lines are unknown. The existing turning movement count data collected as part of this study indicates very low pedestrian volumes at the study area intersections.

It is recommended that the Town of Fergus monitor the pedestrian activity in this area as the Beatty Line North, NWFSP, and the Beatty Hollow developments build-out. Additional studies could be completed in the future by the Town of Fergus to identify possible locations for improvements to the pedestrian crossing treatments. All future traffic control signals should be designed to include crosswalks, pedestrian signal head and pedestrian signal timing phasing.



We trust that this response is sufficient at this time. Please feel free to contact me should you have any questions.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED



Scott Catton, Dipl.T., C.E.T. MITE
Senior Project Manager



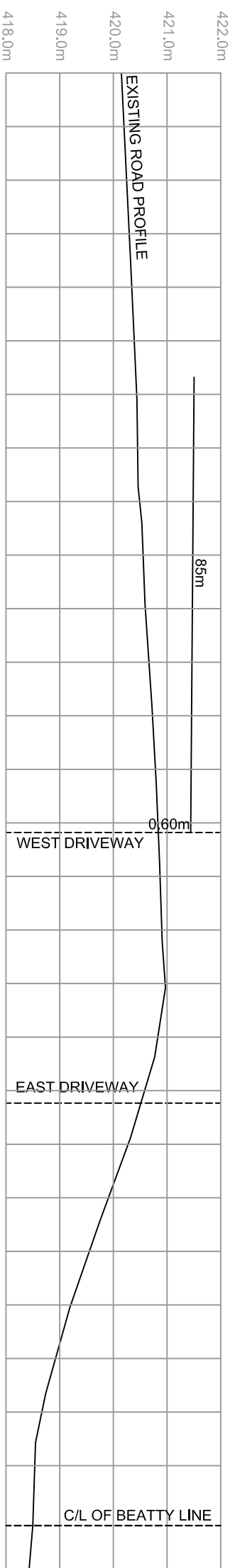
Stew Elkins, B.E.S., MITE
Vice President



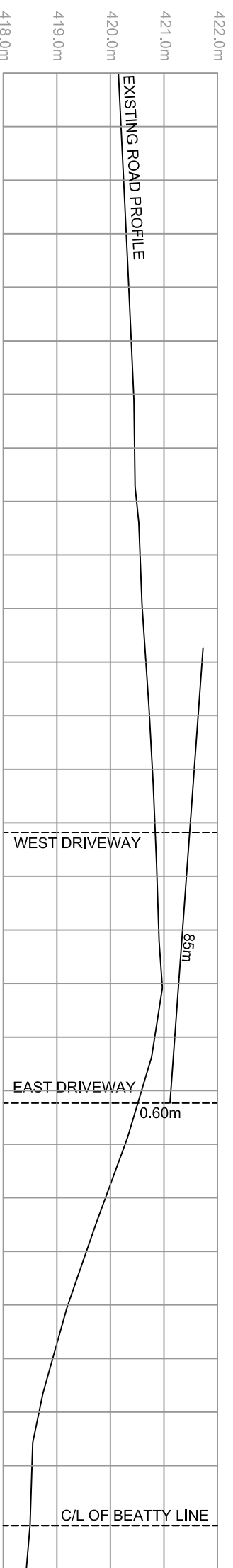
Attachment A

Farley Road Vertical Profile Drawings

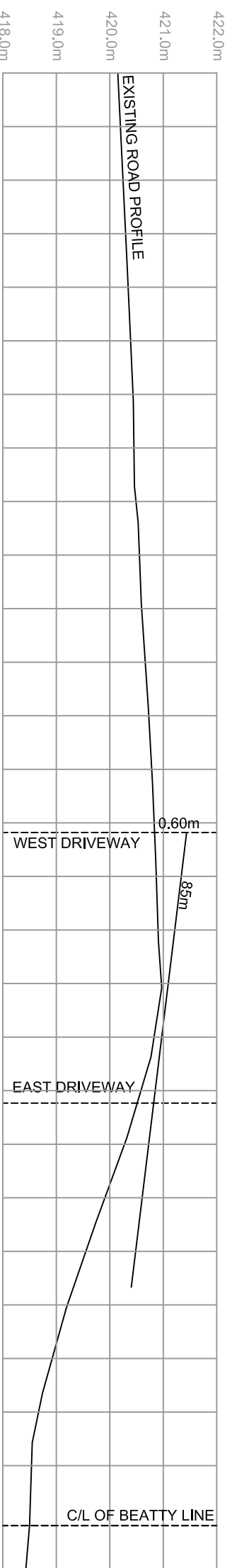
STOPPING SIGHT DISTANCE
EASTBOUND - 60 KM/H
TAC TABLE 2.5.2: STOPPING SIGHT
DISTANCE ON LEVEL ROADWAYS
FOR AUTOMOBILES



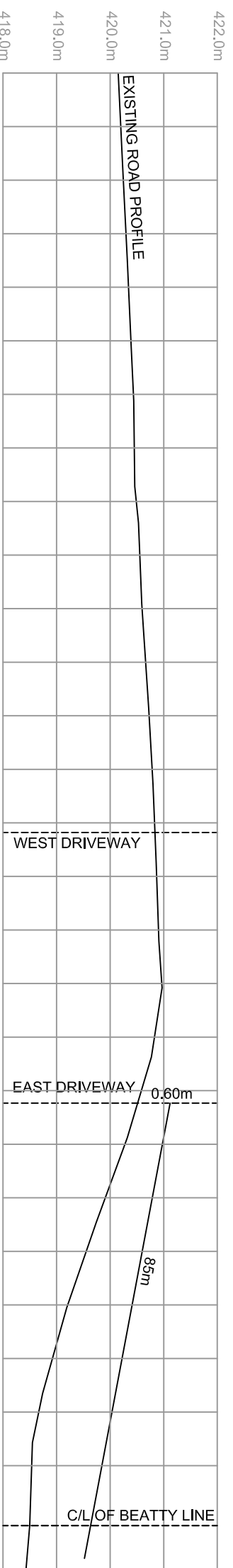
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STOPPING SIGHT DISTANCE
WESTBOUND - 60 KM/H
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APPROVAL:

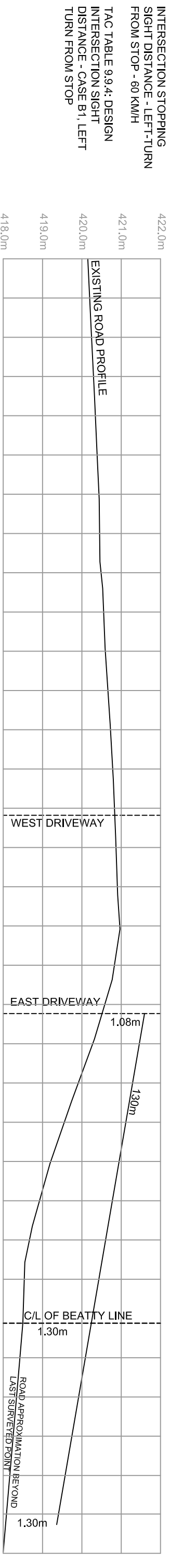
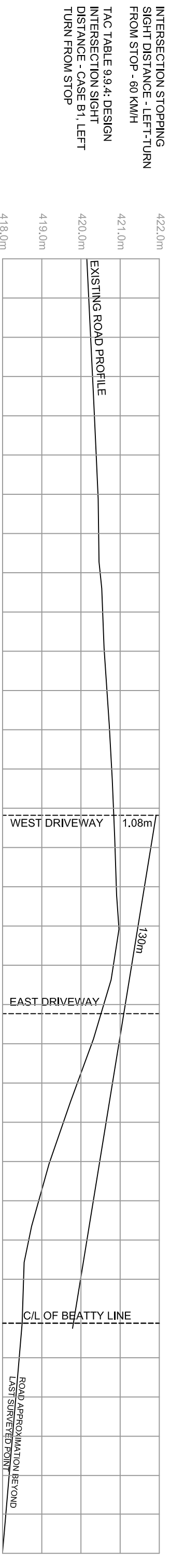
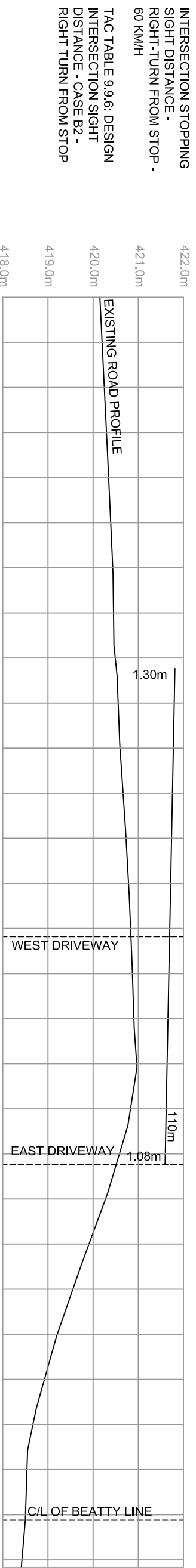
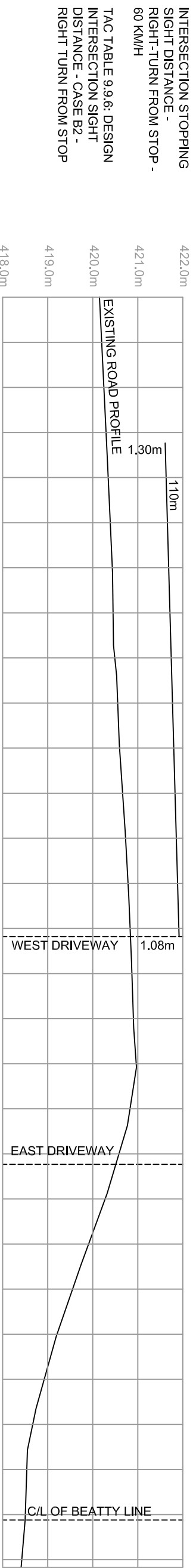
**FARLEY ROAD SIGHT DISTANCE
PROPOSED RESIDENTIAL DEVELOPMENT
FERGUS, ON**


NO.	DATE	INITIAL	REVISION DETAIL



SCALE: H: 1:1, V: 10:1
DRAWN: SH DESIGN: SH PROJECT: 180135

DATE: DECEMBER 2018
DWG SD 1



		APPROVAL:	
		<p>FARLEY ROAD SIGHT DISTANCE</p> <p>PROPOSED RESIDENTIAL DEVELOPMENT</p> <p>FERGUS, ON</p>	
NO.	DATE	INITIAL	REVISION DETAIL
			
SCALE: H: 1:1, V: 10:1		DATE: DECEMBER 2018	
DRAWN: SH		DESIGN: SH	
		PROJECT: 180135	
		DWG	
		SD 2	