

**North West Community Council  
May 5, 2011**

**TO:** Chair and Members of North West Community Council



**SUBMITTED BY:** \_\_\_\_\_  
Ken Reashor, P.Eng., Director, Transportation & Public Works

**DATE:** April 21, 2011

**SUBJECT:** Hammonds Plains Road Street Lighting

**INFORMATION REPORT**

**ORIGIN**

At the November 25, 2010 convening of the North West Community Council, item 7.1.1 (i) it was moved by Councillor Lund, seconded by Councillor Johns, that staff reconsider improving street lighting along the Hammonds Plains Road.

## **BACKGROUND**

Hammonds Plains Road is an arterial roadway carrying between 11,000 and 13,000 vehicles per day on the section between Nottingham Drive and Pockwock Road. Requests to upgrade the street lighting have been received by Traffic and Right of Way Services beginning in 2008. Traffic and Right of Way Services has responded to these concerns, most recently, in reports to the North West Community Council on January 27, 2011 and to the Western Region Community Council on July 26, 2010.

In preparing the detailed report for the Western Region Community Council dated July 26, 2010, Traffic and Right of Way Services performed a Transportation Association of Canada (TAC) Street Lighting Warrant. This warrant found that lighting of the entire stretch of Hammonds Plains Road was not warranted based on rural road classification, traffic volumes and road geometry. Staff further requested and obtained collision statistics from the RCMP for 2007 to 2009, inclusive. Over this three year period, there were 41 collisions, 19 of which occurred at night. Of these night time collisions, all 19 occurred at or near an intersection. When the July 2010 report was written, every intersection had street lighting, as did all driveways. Finally, in preparing the 2010 report, an independent street lighting specialist was retained by HRM. The specialist made recommendations regarding upgrading lighting at the intersections.

Due to the lack of night time collisions on the unlit portions of the road and the failure to meet the TAC Warrant for the provision of street lighting, the staff report recommended that lighting should not be upgraded, except for the since completed improvements at intersections, as recommended by the lighting specialist.

## **DISCUSSION**

The response to the July 2010 staff report came from the Highland Park Ratepayers Association and was dated September 20, 2010. The major arguments put forward in the correspondence from the Ratepayers Association were:

1. Hammonds Plains Road is an urban arterial based on it being within the urban core boundary as well as its traffic volumes and roadway characteristics;
2. In 2007, the Provincial Government rescinded its responsibility to the municipality as Hammonds Plains Road had become urban in nature;
3. It is unfathomable that HRM Traffic Authority is basing its decision on history of night time collisions;
4. As there are few civic addresses along the controlled access portion, the RCMP has to use the nearest point of reference, and these are of course the nearest intersections;
5. The Traffic Authority only gets a snapshot of what really happens, but not the overall picture;
6. The HRM Traffic Authority decided to refer to the TAC Guidelines for street lighting instead of the HRM Guidelines for street lighting;
7. It is dangerous for residents waiting at a bus stop; and,
8. The TAC Warrant for Street Lighting is merely a guideline.

This report will deal with each point sequentially, but it should be noted that the Traffic Authority is not responsible for street lighting, and all references to the Traffic Authority have been changed to the responsible authority, which is Traffic and Right of Way Services.

1. *“Hammonds Plains Road is an urban arterial because it is an arterial located within the urban core boundary, as well as its traffic volumes and roadway characteristics.”*

There are many rural roadways for which the HRM has jurisdiction that are located within the urban core boundary. Roadways are classified as rural or urban not by location on a map but based on engineering factors including, but not limited to: cross-section, vehicular and non-vehicular traffic volumes (such as pedestrians and bicycles), frequency of access points, and adjacent land use.

Hammonds Plains Road is a controlled access, arterial roadway with wide gravel shoulders, and roadside ditches. Appendix A shows the typical cross-sections of rural arterial, urban major collector and urban arterial roadways as shown in the HRM Municipal Design Guidelines. Traffic and Right of Way Services note that Hammonds Plains Road is most similar to the rural arterial cross section.

The segment of Hammonds Plains Road from Westwood Boulevard to the north access of Yankeetown Road is 5.2 kilometres long. In this segment there are seven intersections with public roads, one intersection with a private road, three residential driveways, and one commercial driveway. The adjacent land uses consist of low density single family homes while the major employment centre along Hammonds Plains Road is IMP Group which employs 200 persons.

The argument that municipal government is responsible for urban roads and the provincial government is responsible for rural roads and freeways is a fundamentally incorrect one. The rural cross-section, the extremely low number of parked vehicles, low volumes of pedestrians and other non-motorized users, the 80km/h posted speed, the wide spacing of driveways and intersections, and the low density of adjacent land uses classify this roadway as rural. HRM is responsible for many rural roadways within its core boundary and Hammonds Plains Road is one such roadway, as are Windgate Drive, Cow Bay Road and Bissett Road.

2. *“In 2007, the Provincial Government rescinded its responsibility to the municipality as Hammonds Plains Road had become urban in nature.”*

On the 6<sup>th</sup> of March, 2006 the Province of Nova Scotia enacted an agreement with the HRM regarding the transfer of 79.2 km of roads, including 8.4 km of unmaintained roads, from the Province to the HRM. Most of these roads were in the area of Hammonds Plains and 10.72 km of Hammonds Plains Road were included in this transfer of ownership, as were Pockwock Road, Lucasville Road, Yankeetown Road, and many others. 9.86 km of roads were transferred from the HRM to the Province in this same agreement.

By enacting this transfer of ownership, the Provincial Government was downloading these roadways onto the municipality along with the responsibility for maintenance of same. At no time does the agreement suggest that any of the roads transferred to the HRM were urban in nature, nor does it suggest that the roads transferred to the Province were once urban and are now rural. These transfers of ownership occur on occasion and at no time do they presuppose or change the classification of the roadways involved.

3. *“It is unfathomable that Traffic and Right of Way Services is basing its decision on history of night time collisions.”*

Traffic and Right of Way Services did not base its decision on the history of night time collisions. The history of night time collisions was merely one of the important considerations that Traffic and Right of Way assessed. Staff also performed a Traffic Lighting Warrant as outlined by the TAC standards, and even retained an independent lighting expert. The TAC warrant considers Geometric, Operational, Environmental and Collision Factors and is a very important tool in prioritizing street lighting improvements.

This section of Hammonds Plains Road is a very long, straight, controlled access roadway with extremely low pedestrian volumes and with low density residential and sparse commercial land uses. Because all intersections, including those with private roads as well as residential and commercial driveways are currently lit, all turning vehicles already benefit from street lighting.

The primary concern of the traffic engineer is to ensure that roadways are safe for all users. The analyst, therefore, analyzes collision data to determine where resources can best be used to improve safety. Given that there were no recorded collisions on the unlit portions of Hammonds Plains Road in the most recent three years of data, adding street lights between intersections will not measurably improve safety.

The history of night time collisions is only one of the factors that Traffic and Right of Way analyzed in considering whether to install street lighting, however staff would have been remiss had they not analyzed night time collision statistics, as the primary reason behind installing street lighting is to improve safety at night.

4. *“As there are few civic addresses along the controlled access portion, the RCMP has to use the nearest point of reference, and these are of course the nearest intersections.”*

Traffic and Right of Way Services can appreciate that this could be seen as an issue given the lack of civic addresses along this controlled access roadway. If this is indeed the case then this means that the set of collision statistics cannot be used to determine the location of the collisions and therefore there is no collision data available that determines the locations of the night time collisions.

As was discussed in item three above, the collision data was just one of the factors analyzed by Traffic and Right of Way Services and did not form the basis of any decision on street lighting. In spite of the concerns surrounding the locations shown in the collision data, the data is usable

to determine the number of collisions and the day/night breakdown of collisions. Using the data, it is noted that there were 19 collisions that occurred at night within a three year period on a 5.2 km long segment of roadway that has an average night time volume of 4344 vehicles. This translates to a night time collision rate of 0.77 collisions per million vehicle kilometres. Similarly, using the average daily traffic volumes for Hammonds Plains Road, it was found that the overall collision rate for the roadway was 0.57 collisions per million vehicle kilometres. A report written by the Fraser Institute in 2008 comparing Provincial collision rates found that Nova Scotia had the second lowest passenger vehicle collision rate at 0.82 collisions per million vehicle kilometres. The collision statistics provided by the RCMP show that both the night time and overall collision rates for this road were below the Provincial average rate.

Even without the locations of the night time collisions, the collision statistics clearly indicate that this is a very safe segment of roadway. It is not possible to completely eliminate all collisions simply by providing street lighting, as the 22 day time collisions would be unaffected, but intersections typically have higher collision potentials due to the crossing traffic volumes. Having further upgraded the street lighting at the intersections, Traffic and Right of Way Services strive to further reduce the collision potential on this roadway.

5. *“Traffic and Right of Way Services only gets a snapshot of what really happens, but not the overall picture.”*

This is an ongoing consideration of Traffic and Right of Way Services that is not isolated to Hammonds Plains Road; it is something that staff must deal within all districts. Traffic and Right of Way Services staff visit the sites that they are reviewing to better enable them to use engineering judgement, but they rely on warrants to ensure that service is provided equally and without prejudice, to all residents in an economically responsible manner. In this case, a TAC Warrant was performed and collision data was analyzed and it was determined that the provision of street lighting on the entirety of Hammonds Plains Road was not required at this time due to the rural nature of the roadway and the existing and now upgraded lighting at intersections. Staff cannot and do not make recommendations without first performing engineering analysis objectively to ensure that the improvement will provide significant benefit.

Staff will continue to monitor this roadway and if the risk profile of night time driving on Hammonds Plains Road changes in the future, then these warrants and collision history will be reassessed. Under the existing conditions however, the provision of street lighting is not warranted for the entire segment.

6. *“Traffic and Right of Way Services decided to refer to the TAC Guidelines for street lighting instead of the HRM Guidelines for street lighting.”*

The HRM Guidelines for Street Lighting to which the Highland Park Ratepayers Association refers is Section 9.0 of the HRM Municipal Design Guidelines. The Guidelines are primarily used for new development because quite often it is not feasible, or in some cases it is even impossible, to upgrade or alter all existing roadways and intersections to comply with the HRM

Guidelines. One clear example of this difficulty is Section 5.2.6.1 of the Guidelines which states:

*The maximum number of street approaches to any intersection shall be four.*

Peninsular Halifax has several intersections with more than four approaches and it is not feasible, nor is it recommended, that approaches at these intersections be closed simply to achieve compliance with the Guidelines. HRM staff consider the Guidelines as a whole when major geometric improvements are proposed and strive to meet the Guidelines, if feasible, when these improvements proceed. In this way, the application of the Guidelines to Hammonds Plains Road was not performed in the July 2010 information report. In spite of this, for this current information report Traffic and Right of Way Services have performed an analysis using the design criteria as outlined in the HRM Street Lighting Guidelines. The design criteria are outlined below:

- i. Type of land-use abutting street;
- ii. Night pedestrian and vehicular volumes;
- iii. Night time traffic accident potentials;
- iv. Night time crime experience and security problems;
- v. Type speed and turning movements of vehicles at night;
- vi. Parking practices; and,
- vii. Roadway construction features such as width of pavement, character of pavement surface, grades and curves, location of sidewalks, off street access locations, medians, intersections, special structures, signs, night time maintenance, and snow clearing operations, etc.

The unlit 5.2 kilometres of Hammonds Plains Road from the north intersection with Yankeetown Road to the intersection with Westwood Boulevard was assessed using the Municipal Design Criteria as specified above. The results of this assessment are found below:

- i. Land use: **LOW**  
Land use proximate to this street is low density residential and sparse low density commercial.
- ii. Volumes: **MEDIUM TO LOW**  
Negligible to zero non-motorized vehicular and pedestrian night time volumes. July 2010 traffic volumes show that 35% of daily traffic volumes occur between 6pm and 8am.
- iii. Accident Potential: **LOW**  
Intersections are by nature more dangerous than non-intersections as crossing vehicles create significant hazards for one another. Lighting is already provided at all intersections and driveways. Collision data obtained from RCMP show collision rates are well below the Provincial average. As with all roadways, there is potential for collisions at night, however this is a very straight roadway with few hills and there are good sight lines.
- iv. Crime and security: **VERY LOW TO NONE**

This is a rural, controlled access arterial roadway with very low pedestrian and non-vehicular volumes; crime data is unavailable, however crime along its length is anticipated to be very low to nil.

- v. Type, speed and turning vehicles: **MEDIUM TO LOW**  
Posted speed of 80km/h, Hammonds Plains Road is not a truck route and truck traffic should be local only, all turns on and off the roadway are performed at lit access points.
- vi. Parking: **VERY LOW TO NONE**  
Although this is not signed as a no-parking zone, there is very little demand for parking on this roadway, especially at night. Bus stops do exist and buses will stop temporarily but do not park.
- vii. Construction features: **MEDIUM TO LOW**  
Relatively narrow pavement, smooth asphalt pavement surface, infrequent wide-radius horizontal curves with some hills, no sidewalks but wide shoulders, no medians, sparse and lit intersections, no special structures, few signs and all sign poles are breakaway telspar, no night time maintenance except snow clearing, previously raised issue with snow clearing is addressed in transit report prepared under separate cover.

This roadway does not meet any of the design criteria for street lighting as specified in the HRM Municipal Design Guidelines. Some of the factors within each criterion are deemed medium, however, these guidelines are typically not used on existing roadways and too few of them are met to merit further consideration.

If the design criteria of the HRM Guidelines were met, these, like TAC, are merely guidelines and do not compel the provision of street lighting on Hammonds Plains Road, or any other roadway.

7. *“It is dangerous for residents waiting at a bus stop”*

Traffic and Right of Way Services direct the reader to refer to the report prepared by the appropriate authority on this matter, Metro Transit, under separate cover, and submitted to the North West Community Council.

8. *“The TAC Warrant for Street Lighting is merely a guideline.”*

Traffic and Right of Way Services (TROW) agrees with this. TROW staff use this warrant as a prioritization tool to enable them to perform an unbiased analysis as to which roadways are in the greatest need of upgraded street lighting. The TAC Warrant itself states:

*It is important to note that this is a guideline, and does not represent a minimum acceptable street light standard. Rather it is a tool for assisting jurisdictions with prioritizing various roadway lighting applications, and allocating limited roadway lighting resources.*

The fact that the warrant is merely a guideline is the reason that other factors were considered. In the July 2010 report, TROW had analyzed RCMP collision data over a three year period and have visited, and will continue to visit, Hammonds Plains Road to better assess the conditions of

the road and enable them to use their engineering judgement. TROW also retained an independent street lighting specialist and street lighting has been upgraded to his recommendations. In this report, TROW included a more detailed analysis of the collision data and an analysis of the design criteria for street lighting as laid out in the HRM Guidelines.

The primary concern of Traffic and Right of Way Services is the safe use of HRM roadways by all users. This is why collision data was obtained and analyzed. The secondary concern for TROW is to ensure that improvements are made available on an equitable and objective basis to all areas of the HRM. Warrants are the best way to assess the need for street lighting, factoring in all design and operational criteria. By applying warrants to requests for street lights, regardless of the location of the roadway, TROW is ensuring that upgrades are made as needed and without prejudice to the location within HRM.

### **CONCLUSION**

The correct classification of Hammonds Plains Road is rural arterial and therefore, the already performed TAC warrant accurately assessed the need for street lighting. Collision data obtained from the RCMP indicates a very low collision rate. The HRM retained an independent street lighting specialist and lighting at intersections has been upgraded to meet the recommendations of the specialist. Although the HRM Municipal Design Guidelines are not typically used to assess existing roadways for reasons previously stated, the analysis of the design criteria for the provision of street lighting show that the criteria are not met. There is no objective justification which Traffic and Right of Way Services can use to support the provision of street lighting along Hammonds Plains Road at this time.

It should be further noted that the July 2010 information report included a preliminary estimate of the cost of installing lighting on the unlit portion of Hammonds Plains Road of \$445,000, with an annually recurring operating cost of \$18,500. This estimate assumes that the Right of Way has sufficient width to install the light poles beyond the roadside ditch, so as not to create a new hazard for vehicles, and therefore assumes that no land acquisition is required. Furthermore, the estimate assumes that there are no trees, hedges or other objects in or beyond the roadside ditch that would need to be cleared before the installation of light poles or electrical conduits may begin.

At no time does Traffic and Right of Way Services suggest that the provision of street lighting outside of the roadside ditches along Hammonds Plains Road would reduce safety or be a detriment in any way. It was merely found to be unwarranted and therefore does not justify capital expenditure under existing conditions.

### **BUDGET IMPLICATIONS**

There are no budget implications.



**FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN**

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Project and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Project and Operating reserves, as well as any relevant legislation.

**COMMUNITY ENGAGEMENT**

Community engagement was not deemed to be necessary in this process because decisions were based on operational procedures.

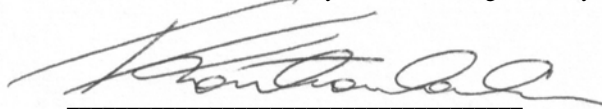
**ATTACHMENTS**

Appendix A: Standard cross-sections for urban major collectors, urban arterials and rural arterials, taken from the HRM Municipal Service Systems Standards

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A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/cc.html> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

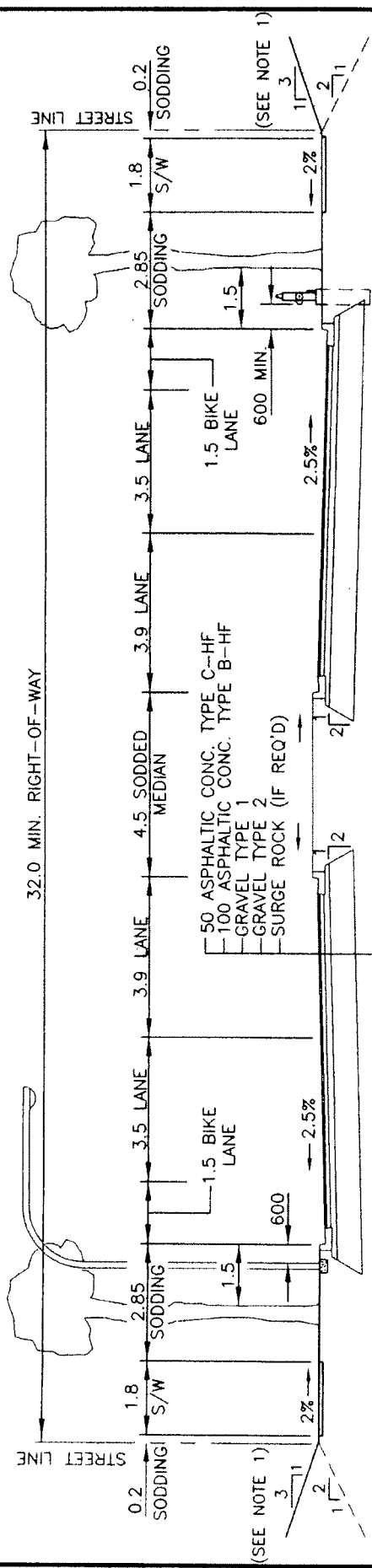
Report Prepared by: Patrick Hatton, Traffic Analyst, Traffic & Right of Way, 490-6644



Report Approved by: Taso Koutroulakis, P.Eng., A/Manager, Traffic & Right of Way, 490-4816

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**CROSS SECTION**

**NOTES:**

- 1) ADDITIONAL SLOPE STABILIZATION AS PER GEOTECHNICAL REPORT.
- 2) MINIMUM TYPE 2 GRAVEL THICKNESS. A GEOTECHNICAL REPORT IS REQUIRED TO DETERMINE THE SUBGRADE TYPE FOR THE PAVEMENT STRUCTURE. (SEE TABLE BELOW)

SUBGRADE TYPE	ROADBED GRAVELS		
	TYPE 1	TYPE 2	SURGE ROCK
SILT/CLAY, OPTION 1	200	725	0
SILT/CLAY, OPTION 2	200	450	500
GRANULAR TILL	200	550	0
ROCK FILL	200	400	0

- 3) ASPHALT DESIGN, SPECIFYING TYPE AND THICKNESS OF ASPHALTIC CONCRETE REQUIRED, MAY BE CONSIDERED.
- 4) SLOPE GUTTER PLATE OF MEDIAN CURB AND GUTTER TO MATCH CROSS SLOPE OF PAVEMENT.

HALIFAX

REGIONAL MUNICIPALITY

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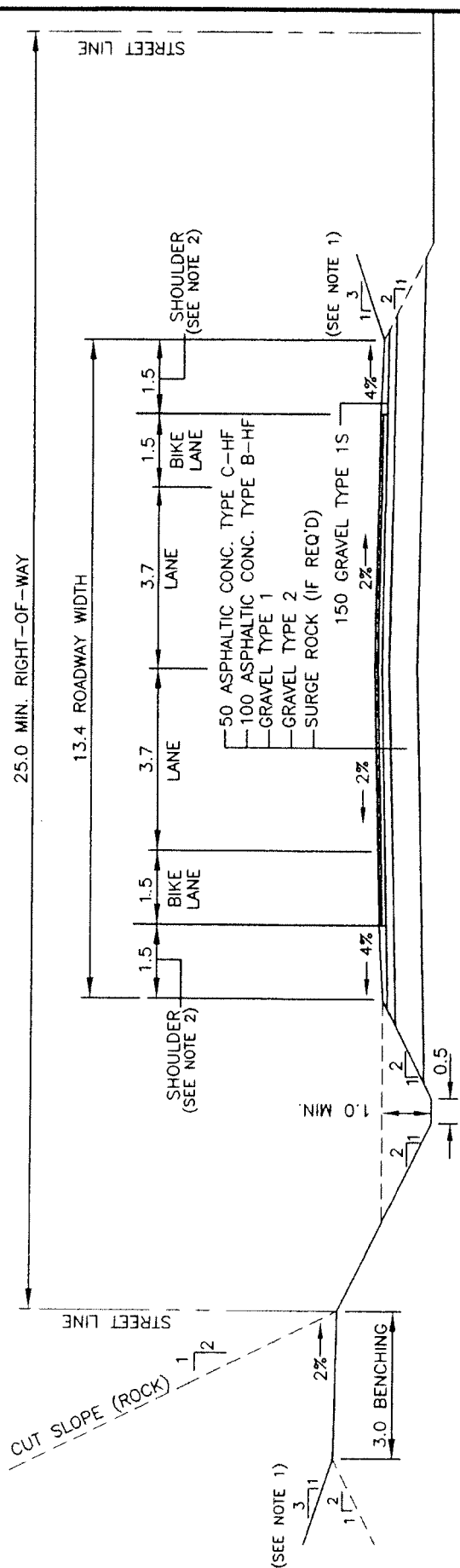
STANDARD DETAIL

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32.0 m URBAN ARTERIAL

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DATE: 2009	REFERENCE	APPROVED	
SCALE: NTS		FIG. NO. HRM 21	

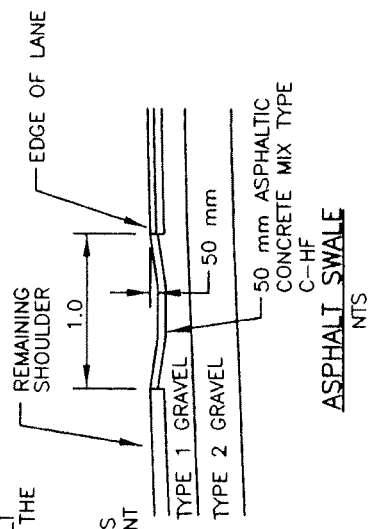


**CROSS SECTION**

**NOTES:**

- 1) ADDITIONAL SLOPE STABILIZATION AS PER GEOTECHNICAL REPORT.
- 2) FOR ALL RURAL ROADS HAVING A GRADE EXCEEDING 7%, ASPHALT SWALES ARE REQUIRED ON EACH SIDE OF THE ROAD (ABUTTING THE ASPHALT TRAVELLED WAY) WITH AN ASPHALT SWALE RUNOFF TO THE DITCH EVERY 30m.
- 3) MINIMUM TYPE 2 GRAVEL THICKNESS, A GEOTECHNICAL REPORT IS REQUIRED TO DETERMINE THE SUBGRADE TYPE FOR THE PAVEMENT STRUCTURE (SEE TABLE BELOW).
- 4) ASPHALT DESIGN, SPECIFYING TYPE AND THICKNESS OF ASPHALTIC CONCRETE REQUIRED, MAY BE CONSIDERED.

SUBGRADE TYPE	ROADBED GRAVELS		
	TYPE 1	TYPE 2	SURGE ROCK
SILT/CLAY, OPTION 1	200	725	0
SILT/CLAY, OPTION 2	200	450	500
GRANULAR TILL	200	550	0
ROCK FILL	200	400	0



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STANDARD DETAIL  
25.0 m RURAL  
ARTERIAL

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 34