

Subject: Chatelaine road resurface project

9/1/2010

S & ME engineering consultants was contracted to submit a Pavement Assessment Report for Chatelaine Homeowners Association. The report presented a description of the project, evaluation methods used and conclusions and recommendations.

Subsequent to the evaluation report S & ME was contracted to prepare bid specifications, construction a bidder list and bid analysis.

The bid analysis was then turned over to the Chatelaine Road Committee for conformation of scope of work, reference checks. In addition the Committee reviewed the viability of road transfer to the County.

The following material is posted on the Chatelaine web site.

1. Pavement Assessment Report.
2. Bid Specifications.
3. Bid list: King, Venesky, Ashmore, Panagakos
4. Bid Analysis (not available until negotiations are completed)
5. Transfer to County Report
6. Project Time Table

**PAVEMENT ASSESSMENT REPORT
CHATELAIN TOWNHOMES
CASTELLAN DRIVE
GREENVILLE, SOUTH CAROLINA
S&ME PROJECT NO. 1263-09-457**

Prepared For:

**CHATELAIN TOWNHOMES ASSOCIATION
POST OFFICE BOX 5593
GREENVILLE, SOUTH CAROLINA 29606**

Prepared By:



**301 Zima Park Drive
Spartanburg, South Carolina**

January 2010



January 13, 2010

Mr. Taylor Davis
Chatelaine Townhomes Association
Post Office Box 5539
Greenville, South Carolina 29606

Reference: **PAVEMENT ASSESSMENT REPORT**
Chatelaine Townhomes
Greenville, South Carolina
S&ME Project No. 1263-09-457

Ladies and Gentlemen:

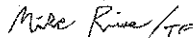
S&ME is pleased to submit this Pavement Assessment Report for the Chatelaine Townhomes Community. These services were performed in general accordance with our Proposal No. 09846, dated November 17, 2009. They included evaluating the pavement condition of Castellan Drive and providing recommendations for road maintenance and repair. The report presents a brief description of the project, the evaluation methods used, and our conclusions and recommendations.


We appreciate the opportunity to work with Chatelaine Townhomes Association by providing our services for this project. Should you have any questions concerning the contents of this report, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

S&ME, Inc.


Lance Davis, P.E.
Project Engineer


Mike Revis, P.E.
Senior Engineer


William C. Schwartz, Jr., P.E.
Branch Manager

LD\MR\log\Construct\2009\proj\5309457\Pavement Assessment.rvt



1.0 INTRODUCTION

The purpose of this project was to evaluate the pavement condition along Castellan Drive, including the three traffic circles and divided entrance, to help determine appropriate repair and rehabilitation activities. This report presents our procedures, findings, and conclusions and recommendations. Representative photographs, existing pavement core and subgrade soil data (Asphalt Core and Hand Auger Boring Record) are included in the Appendix.

2.0 PROCEDURES

2.1 EVALUATION PROCEDURES

Visual surveys were performed by walking the road. The road dimensions were measured with a measuring wheel and pavement distress was photographed and noted in general accordance with ASTM D6433. In conjunction with the visual assessments, several core samples of the in-place asphalt section of the roadway were obtained to help determine the in-place pavement sections (i.e., thickness and material type). Hand auger borings with DCP testing was then performed to help determine the condition of the underlying subgrade soils. This data was used to help determine pavement repair options. (Reference Figure 1 – "Asphalt Core Location Plan" for core locations.)

2.2 FINDINGS

Three major types of cracking were observed: minor to severe alligator cracking with some areas of settlement and rutting, longitudinal and transverse cracking, and block cracking. Each of these is discussed below. Photographs of representative distress types were taken and are included in the Appendix.

Alligator Cracking - Alligator cracking is a series of interconnected cracks caused by fatigue failure of the asphalt concrete surface under repeated traffic loading. This type of cracking is typically indicative of an unstable subgrade or an insufficient asphalt pavement structure for the traffic loading. A full-depth patch is typically required to repair alligator cracked areas. For very large areas, cold process recycling may be more feasible. Additionally for areas of significant settlement, undercut of unsuitable subgrade soils could be required.

Longitudinal and Transverse Cracking - Longitudinal and transverse cracks are straight cracks parallel or perpendicular, respectively, to the pavement centerline. Longitudinal and transverse cracking is caused mainly by shrinkage of the asphalt concrete and daily temperature cycling, and it is indicative of aged, hardened asphalt. With time this cracking can intersect and become block cracking.

Block Cracking – As stated above, block cracking occurs when longitudinal and transverse cracking continues to the point of intersection. This type of cracking is indicative of aged, hardened asphalt.

Six (6) core samples were obtained on the roadway to help determine the in-place pavement sections. The core samples revealed a 3.0 to 4.25-inch asphalt layer with no stone base present. The asphalt layer averaged 3.5 inches.

Our visual observations revealed multiple locations of significant alligator cracking and settlement on the eastern portion of Castellán Drive and areas of transverse and longitudinal cracking were observed throughout. The pavement on the western portion of Castellán Drive appeared to be in mostly fair condition with only areas of longitudinal and transverse cracking and block cracking present. Two isolated areas of alligator cracking and minor settlement were also present in the ending traffic circle and adjacent to the entrance traffic circle with heavy alligator cracking and rutting observed in the divided entrance. In some locations crack widths exceed 1 inch.

The subgrade soils were evaluated at the core locations. The hand auger borings in deteriorated pavement areas revealed soils unsuitable to support the pavement section, due to poor compactive effort and high moisture content. The alligator cracking with settlement observed appears to be in areas mainly over utility trenches. Typically, cracking in the asphaltic concrete pavement will allow rainwater penetration to the subgrade soil, which can propagate deterioration of the pavement system. The hand auger borings in the pavement areas in fair condition encountered residual soils suitable for support of the roadway.

The subgrade soils should be evaluated during the selected repair procedure, and any unsuitable subgrade should be removed or stabilized prior to asphalt placement. Due to the severity of settlement in some locations the extent of undercut and method of backfill should be determined during construction. Coring performed in areas of pavement in fair condition revealed subgrade soils suitable for pavement support. However, as previously stated, infiltration of rainwater runoff can significantly deteriorate subgrade soils over time which may require remedial measures at the time of repair.

2.3 CONCLUSION AND RECOMMENDATION

Our evaluation revealed minor to moderate pavement deterioration throughout Castellán Drive. Isolated areas of severe deterioration were also observed. Due to the existing thickness of pavement, the absence of stone base, and the low rolled curb in place maintaining a suitable base and pavement thickness was the determining factor in our recommendations. Traffic loading was not available at the time of our evaluation; however, the development is almost complete so a typical light duty pavement section for roads subjected to mainly automobile with an occasional heavy truck is suggested. We recommend the following options for repair and rehabilitation of Castellán Drive:

- Option 1. Perform finish full-depth patching (2 inches of binder course and 2 inches of surface course) in the areas of moderate to severe alligator cracking and settlement. This process includes saw cutting around the distressed area and removing the asphalt and unstable subgrade soils that may be present. Due to the apparent presence of poorly compacted utility backfill in some locations, undercuts of 1 to 2 feet or more may be necessary. The area is then reconstructed with the appropriate thicknesses of crushed stone and asphalt surface course. After completion of the major defect repairs, the remaining cracks should be cleaned and sealed with crack sealant. This method of repair would be the most cost effective and have the least impact on the residents. The ride quality of the roadway would be improved, but the more wide spread transverse and longitudinal cracking and block cracking would remain visible. The crack sealing should help reduce future water infiltration and slow pavement deterioration, extending the service life of the existing pavement. However, this method will only delay the need for more aggressive and costly rehabilitation, possibly up to and including removal and replacement of the existing pavement.
- Option 2. The existing pavement could be milled and bladed toward the center of the road to allow the underlying subgrade soils, adjacent to the curb, to be graded to allow for a 4 inch cold process recycled (CPR) base with a 2 inch surface course of asphalt pavement at the curb. (Grading of subgrade soils should only be necessary adjacent to the curb, the remaining portion of the road could receive the appropriate amount of base and asphalt by exaggerating the crown.) CPR involves reclaiming the existing asphalt concrete, grinding the material, adding an asphalt emulsion, and replacing the mixture as a base course. The asphalt emulsion is added to increase the stability of the base material. Prior to placement of asphalt, unstable areas of subgrade should be undercut and replaced to provide a suitable base. Undercut should be expected in the previously noted areas of significant settlement and severe asphalt deterioration. Although this process would be labor intensive, saving the milled asphalt on site would limit the amount of new base materials required to prepare a suitable base layer.
- Option 3. The existing pavement could be milled and removed from site. Once removed, the subgrade soils should be graded to allow for a 2 inch binder course of asphalt and a 2 inch surface course of asphalt. Prior to asphalt placement, any unstable areas of subgrade should be undercut and replaced with crushed stone to provide a suitable subgrade. Undercut should be expected in the previously noted areas of significant settlement and severe asphalt deteriorations. This method of repair would most likely be the most costly; however the finished

pavement would be more aesthetically pleasing, and should not affect the existing drainage on the roadway.

In the bid process to select a repair contractor for this project, the road should be evaluated and measured by the proposed repair Contractors prior to submitting a bid to help determine the appropriate repair method. If S&ME, can be of any help during this process, please feel free to contact us.



April 28, 2010

Mr. Taylor Davis
Chatelaine Townhomes Association
Post Office Box 5539
Greenville, South Carolina 29606

Reference: **PAVEMENT REPAIR BID DOCUMENTS**
Chatelaine Townhomes Pavement Rehabilitation
Greenville, South Carolina
S&ME Project No. 1263-09-457B

Mr. Davis:

This letter presents bid documents necessary to solicit bid proposals from Qualified Contractors to complete a pavement repair for Castellan Drive as selected by Chatelaine Townhomes Association from our Pavement Assessment Report dated January 13, 2010. This work was performed in general accordance with our Proposal No. 10313, dated April 12, 2010. Attached to this letter for distribution to the bidding contractors is a project description, related specifications for the completion of the work, and estimated quantities and bid sheets. Also included on the bid sheets are some additional unit rate items that may be needed depending on conditions encountered during the completion of the work.

We appreciate the opportunity to be of service to you on this project. Should you have any questions regarding the content of these documents, please do not hesitate to contact us.

Sincerely,

S&ME, Inc.

Handwritten signature of Lance Davis in cursive.

Lance Davis, P.E.
Project Engineer

LD\csg\Construct2009\proj\6309457B\Bid Document

Attachments: Project Description
Project Specifications
Estimated Quantities and Bid Sheets

PROJECT DESCRIPTION

Based on the Pavement Assessment Report dated January 13, 2010, Chatelaine Townhomes Association will proceed with the procurement of bids for pavement rehabilitation of Castellan Drive. Castellan Drive is a curbed, residential street located off Old Boiling Springs Road in Greenville, South Carolina. The road consists of a divided entrance leading to a central traffic circle. From the central traffic circle the road continues in two directions terminating in traffic circles at each end. The work will consist of the following:

- Milling and removal of all existing asphalt to exposed the subgrade soils.
- Grading the exposed subgrade soils for the placement of 4 inches of new asphalt.
- Based on observations of the existing pavement, undercut/subgrade repair will be necessary in areas. After initial subgrade preparation the exposed soils will be proofrolled to determine necessary areas of undercut. Undercut will be backfilled with crushed stone or asphalt. Placement of geotextile grid may also be necessary in some locations.
- Placement of a 2-inch compacted asphalt binder course.
- Placement of 2-inch compacted asphalt surface course.

PROJECT SPECIFICATIONS
Castellan Drive
Chatelaine Townhomes Association
April 26, 2010

A. Existing Asphalt Milling and Removal

1. Description – Removal of existing asphalt pavement from Castellan Drive, including pavement in all traffic circles and the divided entrance. At the completion of the project, all work shall have been performed and finished in a clean, neat, attractive and workmanlike manner, in a safe condition and in compliance with applicable laws.

2. Construction Process – The deteriorated pavement shall be removed to the face of the existing curbs. The pavement shall be removed completely to expose the existing subgrade soils. After removal of the existing asphalt the contractor shall grade the exposed subgrade soils to allow for placement of four inches (4") of asphalt pavement as indicated in the asphalt specification. Based on our road assessment the existing asphalt should be approximately 4" in depth. If existing pavement thickness exceeds 4", additional pavement should be removed to expose subgrade soils, unless the inspector determines it can remain. If pavement thickness is less than 4", additional soils shall be removed to allow for the placement of the new pavement thickness. The work shall be completed in a manner such that traffic can be maintained to the residence at all times. Access shall be maintained to driveways and Old Boiling Springs Road by placement of maintenance stone or other suitable material during construction. Prior to placement of asphalt pavement, materials used at access points shall be removed.

3. Measurement and Payment – The square yards of pavement milling and removal are estimated in the Appendix __. Actual pay quantities may vary. The quantity to be measured for payment shall be the number of square yards of pavement milling and removal completed and accepted. The price and payment shall be full compensation for furnishing all materials including excavating and disposing of all materials, grading of exposed subgrade soils for asphalt placement, maintenance stone at access points, labor, equipment, tools, and incidentals necessary to safely and effectively complete the work as indicated on Exhibits, attached hereto.

Any additional asphalt encountered in excess of 4" that is removed will be measured for payment by cubic yards of additional milling and removal completed and accepted.

B. SUBGRADE REPAIR (UNDERCUT AND BACKFILL)

1. Description – Repair of unstable subgrade soils after initial subgrade preparation, prior to asphalt placement, by undercutting and backfilling to initial subgrade elevation. Subgrade repairs will be made to specified distressed areas. At the completion of the project, all work shall have been performed and finished in a clean, neat, attractive and workmanlike manner, in a safe condition and in compliance with applicable laws.

2. Construction Process – The unstable subgrade area shall be removed to the width and length indicated by the inspector. After the contractor has completed initial subgrade preparation, the exposed subgrade soils shall be proofrolled using a loaded tandem axle dump truck. The inspector will observe the proofroll of the exposed subgrade soils and mark any areas not suitable for pavement support. The inspector will use a small diameter rod and hand auger to determine depth of undercut. The inspector will accept undercut dimension and depth upon completion, prior to beginning backfill. If after undercut of 2 feet, conditions remain unsuitable for backfill and asphalt placement the use of geotextile grid may be requested by the inspector. Geotextile grid shall be Tensar BX1200, or equivalent. Once accepted, the volume of material removed shall be backfilled with crushed stone and/or asphaltic concrete binder mix thoroughly compacted in layers with vibratory compactors. The work shall be conducted in a timely manner such that the undercut areas are removed and backfilled the same day, and the roadway opened to residential traffic during operations. No excavated areas shall remain open after daily operations have ceased.

3. Measurement and Payment – The square yards of undercut area are estimated in the Appendix. Depths and actual quantities may vary. The quantity to be measured for payment shall be the number of cubic yards of undercut completed and accepted. The quantity to be measure for payment of backfill material shall by cubic yards of crushed stone or asphalt completed and accepted. If required, geotextile grid will be measured for payment by square yards. The price and payment shall be full compensation for furnishing all materials including asphaltic concrete plant mix, asphalt cement, excavating and disposing of all materials, labor, equipment, tools, and incidentals necessary to safely and effectively complete the work as indicated on Exhibits, attached hereto.

Construction equipment designed to provide mechanical compaction shall be used on all undercut areas (i.e. mechanical hand tamps, walk behind vibratory rollers, etc.). The use of a backhoe/grade-all (bucket, tires) as a compaction method will not be permitted.

surface course, Type 3, for each road shall be 220 pounds per square yard for surface courses. The finished compacted in-place thickness shall be 2 inches.

An emulsified asphalt tack coat shall be used where applicable. Additional preparatory work may be required when directed by the Engineer.

Asphaltic concrete surface and binder courses shall be compacted to a density of at least 95% in accordance with the Marshall Method of Testing (as determined by ASTM D-1559-89) or a test strip determination at the discretion of the Engineer.

Pavement smoothness specifications are not contained herein; however, the lack of such specifications does not relieve the Contractor of responsibility for proper rolling and workmanship.

4. Measurement and Payment – The square yards of pavement area included in Appendix . The quantity for payment of Hot Laid Asphalt Concrete shall be on per ton basis. The unit price for asphalt shall be full compensation for furnishing all materials including asphaltic concrete plant mix, asphalt cement, excavating and disposing of all materials, labor, equipment, tools, and incidentals necessary to safely and effectively complete the work as indicated on Exhibits, attached hereto.

C. Hot Laid Asphalt Concrete Surface/Binder

1. Description – This work shall consist of overlaying prepared and compacted subgrade soil with an asphalt course of Hot Laid Asphaltic Concrete Binder Course, in accordance with all applicable portions of the SCDOT Standard Specifications. As well as overlaying Binder Course with an asphalt wearing course of Hot Laid Asphaltic Concrete Surface Course Type C, in accordance with all applicable portions of the SCDOT Standard Specifications. The Contractor shall furnish all equipment, tools, labor, and any other appurtenances necessary to complete the work within the contract time frame. Additional preparatory work may be required when directed by the Engineer. At the completion of the project, all work shall have been performed and finished in a clean, neat, attractive and workmanlike manner, in a safe condition and in compliance with all applicable laws.

2. Materials – The applicable portions of Section 400, Bituminous Pavements of the SCDOT Standard Specifications for Highway Construction, as revised/amended, shall apply to this contract.

At least fifteen (15) days prior to the beginning of the work, the Contractor shall furnish to the Engineer the SCDOT approved Job Mix Formula(s) for the materials he intends to supply in conjunction with the performance of this contract.

The Contractor may incorporate Recycled Asphalt Pavement (RAP), up to a maximum of ten (10%) percent, into asphalt pavement surface and base courses. Job Mix Formula(s) containing RAP may be designed and certified by an Independent Engineering Firm for approval by the Engineer when approval by the SCDOT cannot be readily secured. Job Mix Formula(s) with a higher rate of (10%) incorporated RAP may be used, with Engineer authorization. The Contractor may submit documents (*written proof*) of the cost effectiveness of using a Job Mix Formula with an increased RAP content and apply that cost savings to reduce the (virgin) asphalt concrete mix unit bid price. However, no design Job Mix Formula used in the completion of this contract shall exceed the maximum RAP incorporated content established by the Engineer. All job mix formula(s) must be submitted by an independent engineering firm and have a stamp of a Professional Engineer registered in the State of South Carolina.

3. Construction Requirements – All work shall include, but is not limited to, the cleaning, preparation, and application/compaction of asphaltic concrete; testing, and other work as deemed appropriate.

The application rate of hot laid asphaltic concrete, binder course shall be 220 pounds per square yard for binder course. The finished compacted in-place thickness shall be 2 inches. The application rate of hot laid asphaltic concrete,

Appendix



**QUANTITY AND BID SHEET
 CHATELAINE TOWNHOMES ASSOCIATION
 CASTELLAN DRIVE
 S&ME PROJECT NO. 1263-09-457B**

MILLING AND REMOVAL

Road Name	Approximate Length (ft)	Estimate Milling Area (sq)	Activity	Total Units	Unit Cost	Cost
Castellan Drive	1825	4696	Milling and Removal (sq)	4696		
			Asphalt Exceeding 4" (cy)			
			Total Cost			

** Include milling at the tie-in to the main loop road.

SUBGRADE REPAIR (UNDERCUT AND BACKFILL)

Road Name	Estimate Undercut Area (sq)	Estimated Average Undercut Depth (ft)	Activity	Total Units	Unit Cost	Cost
Castellan Drive	724	1.5	Undercut (cy)			
			Crushed Stone (cy)			
			Asphalt Binder (cy)			
			Total Cost			

ASPHALT BINDER/SURFACE

Road Name	Approximate Length (ft)	Estimate Pavement Area (sq)	Activity	Total Units	Unit Cost	Cost
Castellan Drive	1825	4696	Asphalt Binder (ton)			
			Asphalt Surface (ton)			
			Total Cost			

Lance Davis

From: Lance Davis
Sent: Monday, April 19, 2010 10:52 AM
To: 'patmcswain@bellsouth.net'
Cc: Patrick Mcswain
Subject: Pavement Evaluation

1263-09-457C
Chatahola Townhomes Pavement Rehabilitation

Castellan Drive



4/20/2010

Area for 0+00 - 4+42

Main Line

Length: <u>50</u>	Width: <u>22</u>	Total Square Yards: <u>122.22</u>
Length: <u>54</u>	Width: <u>25</u>	Total Square Yards: <u>150.00</u>
Length: <u>320</u>	Width: <u>29</u>	Total Square Yards: <u>817.78</u>

Radius #1

Full Width: <u>61</u>	Length From Start To Tie In With Main Line <u>18</u>
Main Line Width: - <u>25</u>	Total Square Yards: <u>36.00</u>
<u>36</u>	

/ by 2 = X^1 and X^2 : $X^1 = 18$
 $X^2 = 18$

Radius #2

Full Width: <u>36</u>	Length From Start To Tie In With Main Line <u>10</u>
Main Line Width: - <u>25</u>	Total Square Yards: <u>5.56</u>
<u>10</u>	

/ by 2 = X^1 and X^2 : $X^1 = 5$
 $X^2 = 5$

Total Square Yards for Above: 1131.56

Area for 4+42 - 12+50

Main Line:

Length: 808 Width: 23 Total Square Yards: 2084.89

Radius #1

Full Width: 45 Length From Start To Tie In With Main Line 8

Main Line Width: - 23 Total Square Yards: 9.78

22

/ by 2 = X^1 and X^2 : $X^1 = 11$
 $X^2 = 11$

Radius #2

Full Width: 30 Length From Start To Tie In With Main Line 3

Main Line Width: - 23 Total Square Yards: 1.17

7

/ by 2 = X^1 and X^2 : $X^1 = 3.6$
 $X^2 = 3.5$

Total Square Yards for Above: 2075.83

Area for 12+50 - 18+25:

Main Line

Length: 575 Width: 23 Total Square Yards: 1469.44

Radius #1

Full Width: 63 Length From Start To Tie In With Main Line 10

Main Line Width: 23 Total Square Yards: 16.67

30

/ by 2 = X^1 and X^2 : $X^1 = 15$
 $X^2 = 15$

Radius #2

Full Width: 28 Length From Start To Tie In With Main Line 10

Main Line Width: 23 Total Square Yards: 2.78

5

/ by 2 = X^1 and X^2 : $X^1 = 2.5$
 $X^2 = 2.5$

Total Square Yards for Above: 1488.89

Road Name:

Chatelaine

FULL DEPTH CUTS (NO UNDERCUTS)							
	From STA	To STA	Off Set From	Off Set To	Width (ft)	Area (SY)	Depth (in)
1	4	26	0	14	14	34.22	
2	26	35	6	14	8	10.67	
3	38	72	0	11	11	41.58	
4	17	77	14	22	11	73.33	
5	109	110	0	8	8	4.44	
6	105	126	10	23	13	30.33	
7	135	141	0	12	12	9.00	
8	141	143	6	12	6	1.39	
9	217	220	3	13	10	3.33	
10	290	295	13	15	2	1.11	
11	238	245	3	12	9	11.00	
12	273	282	3	13	10	10.00	
13	282	300	3	15	15	30.00	
14	300	301	3	13	10	1.11	
15	577	582	0	7	7	3.89	
16	621	629	0	23	23	20.44	
17	629	638	9	23	14	14.00	
18	638	649	9	15	7	6.58	
19	664	672	6	23	23	20.44	
20	690	710	0	23	23	51.11	
21	717	724	9	23	14	10.89	
22	735	746	13	23	10	8.89	
23	787	793	11	23	12	8.00	
24	819	824	0	7	7	3.89	
25	831	836	4	10	6	4.67	
26	845	858	0	11	11	12.22	
27	903	908	0	9	9	5.00	
28	917	920	0	15	15	5.00	
29	920	923	0	23	23	7.67	
30	923	928	0	11	11	5.11	
31	931	936	0	14	14	7.78	
32	936	940	10	14	4	1.78	
33	950	968	0	23	23	20.44	
34	974	982	0	13	13	11.56	
35	1250	1266	0	14	14	23.33	
36	1265	1265	0	23	23	51.11	
37	1285	1299	0	13	13	20.22	
38	1299	1306	0	14	14	10.89	
39	1306	1309	7	14	7	2.33	
40	1309	1316	7	13	6	4.67	
41	1350	1355	5	17	12	8.00	
42	1382	1453	0	7	7	55.22	
43	1463	1474	0	11	11	13.44	
44	1504	1510	9	23	14	9.33	
45	1540	1547	0	14	14	10.89	
46	1570	1575	16	23	7	4.67	
47	1651	1658	3	9	6	4.67	
48	1690	1695	7	15	9	5.00	
49	1707	1720	18	23	5	7.22	

Total Square Yards:

723.78

6/21/2010
RPH.

TRANSFER OWNERSHIP OF CHATELAINE DEVELOPMENT ROADS TO GREENVILLE COUNTY

The purpose of this review is to determine if it economically feasible to transfer ownership of the now privately held and maintained roads in Chatelaine Development to Greenville County inventory. The affect of this transfer would move the responsibility of future road maintenance to County jurisdiction.

Background

In 1990 Chatelaine was approved for construction by the Greenville County Building Department. The original developer, Lawrence Associates, Inc., filed Chatelaine construction plans and was approved as a "Private Unit Development" (PUD).

Approval as a PUD allowed the builder a great deal latitude with respect to infrastructure: roads, drainage, set backs, etc. Variance from building codes for structures remained in place for both Public and Private Developments and was enforced. The approval as a PUD allowed the developer to reduce cost by designing for aesthetics the actual private use rather than the demands of public domain use.

PUD Modification

The conversion of a PUD to public use has never taken place due to the cost of infrastructure modifications, impact on aesthetics, land owner rights, and County resistance to grant waivers for non-compliance to codes. The following is a sample of issues and costs associated conversion compliance;

1. **Exiting roadway-entrance island** *ITEM A & B.*

- a. **“Pavement width shall be 20 feet in lane exiting subdivision and 16 feet in the lane entering the subdivision”**

Chatelaine has less than 10'-9" feet for each, exit and entrance. Removal of Center Island would be required to comply with code. (See plan)

- b. **“curb radius at the intersection shall be no less than 35 feet”**

Chatelaine must remove side column at entrance to comply. (See plan) Remove and replace entrance estimated \$15K-20K.

2. **Road right-of-way** *ITEM C, D & E*

- a. **Street right-of-way (min 41 feet or 55 feet) must be deeded to the County.**

Chatelaine residents must unanimously agree to deed to the County approximately 7' feet or 14.5' feet of their property (front lawn and driveways). This is not an easement; it is a title of ownership to the County. Estimated cost per engineering group, Fant, Riechart, & Fogleman, \$15K-\$20K to survey and file deeds for 61 lots

3. **Cul-de-sac Islands**

- a. **“all cul-de-sac islands must be under drained in accordance with Article 10, Subsurface Drainage, Greenville County Land Development Regulations.”**

Chatelaine has (3) islands without drainage. Estimate from Chamber Construction without surface repairs \$30K-\$50K.

4. Pavement Requirements

- a. **Low / Local volume residential street specifications require 2" surface course, 2" intermediate course, and 4" or 8" base course.**

Chatelaine has no base course. Cost to add 4" or 8" base course \$30K to \$60K (Quote: King Asphalt Inc)

Conclusion

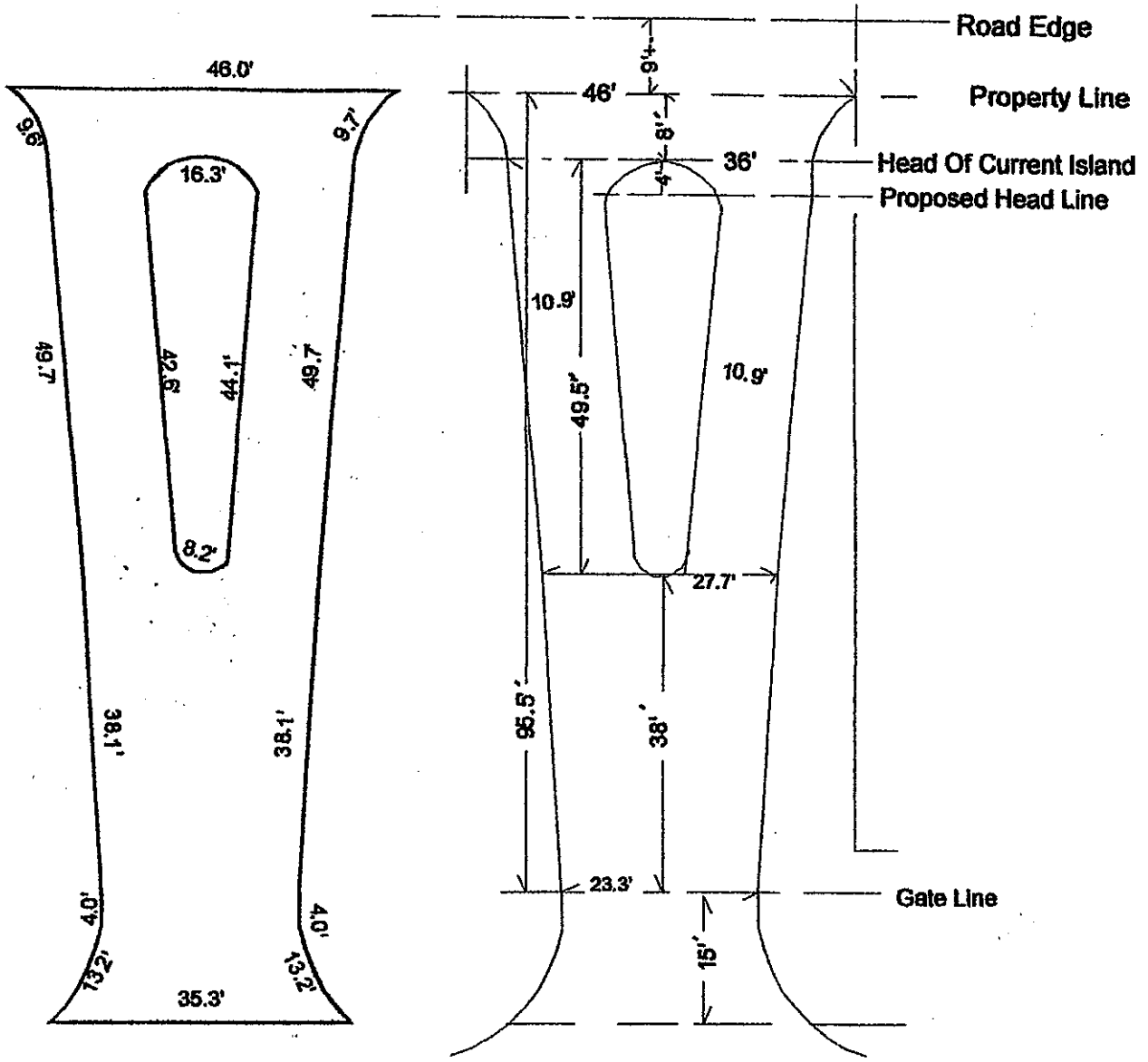
The Chatelaine road committee concludes that an extensive engineering study would be required to fully dimension the scope and cost of transferring ownership of roads in Chatelaine to County responsibility. While this would establish a conclusive cost, preliminary cost estimates indicate code compliance would increase project costs by an additional \$150K to \$300K.

In addition, the Greenville Planning and Land use Department would be required to view the application in a very benevolent posture issuing extensive waivers. A conversation with the Planning Department confirmed their reluctance to issue such waivers. (A.J.Hamam, Chief Inspector, Land Development Division).

Based on this information the transfer of Chatelaine road to Greenville County is **not a viable option** and not further action should be taken.

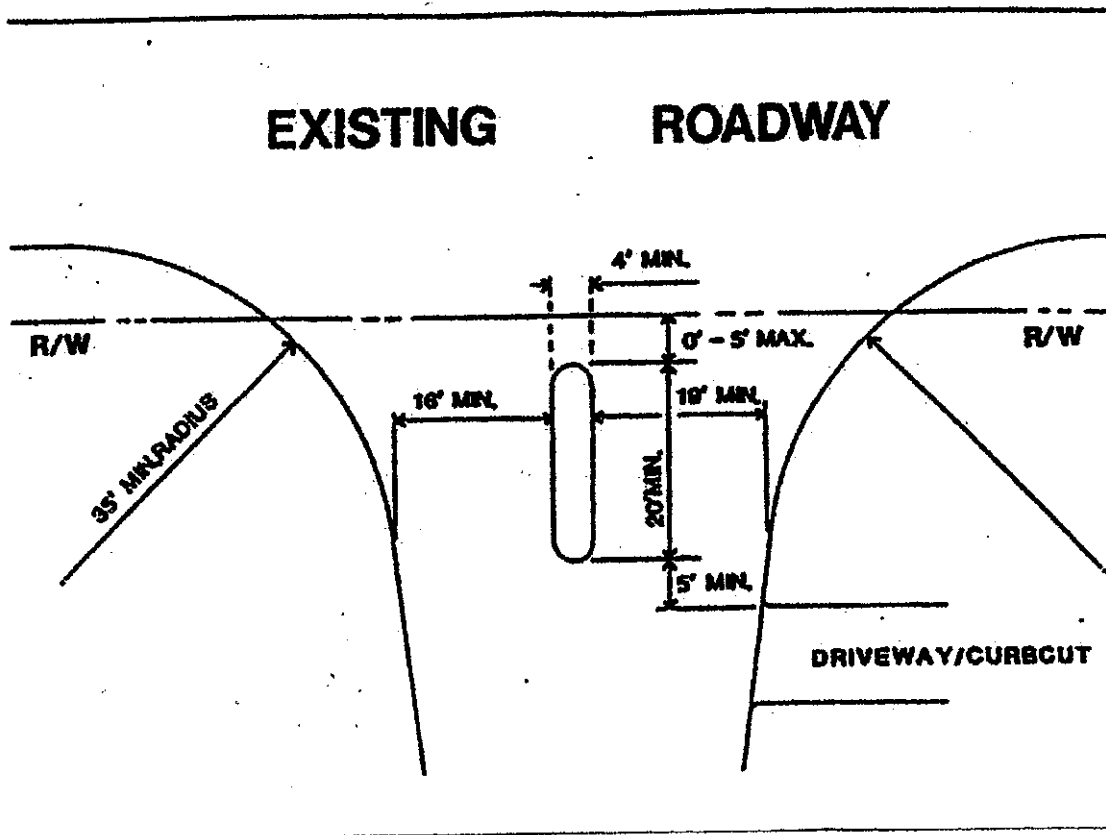
Road Committee members:

Ben Ingram
Larry Swan
Walter Gerus
Ken Daly

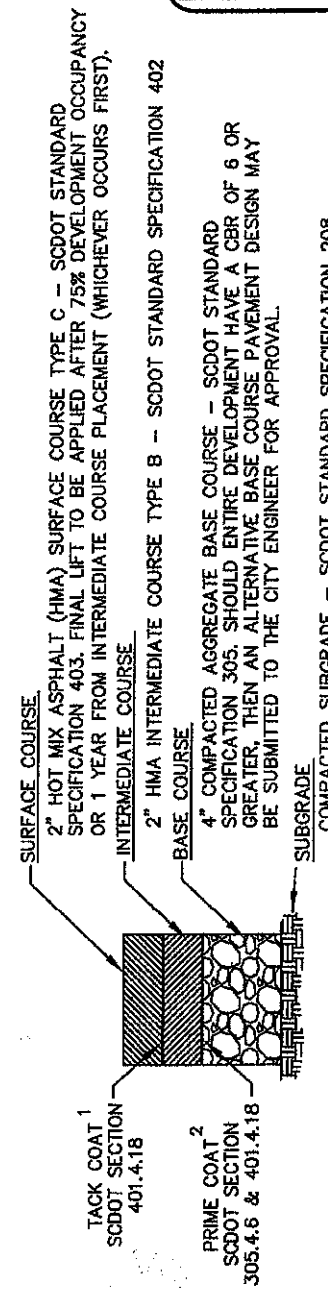
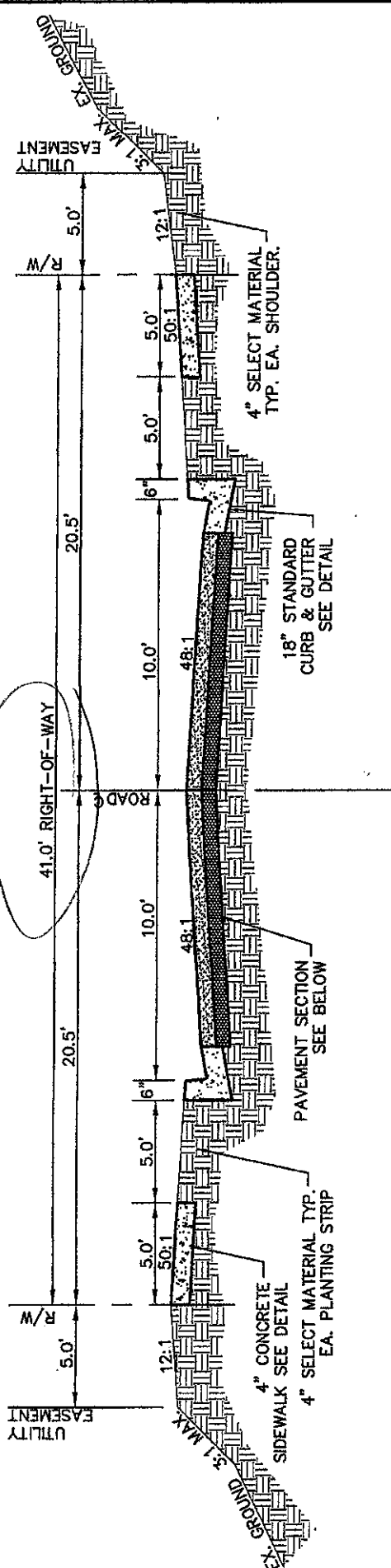


CHATELAIN - EXISTING
 ENTRANCE

ITEM-A



COUNTY REQUIREMENTS
CHATELAINÉ ENTRANCE
 ITEM - B



TYPICAL PAVEMENT SECTION

1. APPLICATION RATE FOR LAYING ANY HMA ON EXISTING PAVEMENTS SHALL BE 0.05 - 0.15 GAL PER SQUARE YARD
2. APPLICATION RATE FOR MACADAM AND RECYCLED PORTLAND CEMENT BASE COURSE SHALL BE 0.25 - 0.30 GAL PER SQUARE YARD

NOTE.
THIS TYPICAL SECTION MAY BE USED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:

1. SINGLE FAMILY R-9 OR NET DENSITIES ALONG THE STREET ARE BELOW 5 UNITS PER ACRE.
2. LOT FRONTAGE ALONG THE STREET IS AT LEAST 60' WIDE.
3. PREDICTED VOLUME IS EQUAL TO OR LESS THAN 300 VEHICLES PER DAY.
4. LOCAL LOW VOLUME RESIDENTIAL STREETS MAY NOT TERMINATE WITH A CUL-DE-SAC OR EQUIVALENT WITHOUT PRIOR APPROVAL BY THE CITY ENGINEER.

city of **greenville**
ENGINEERING DIVISION

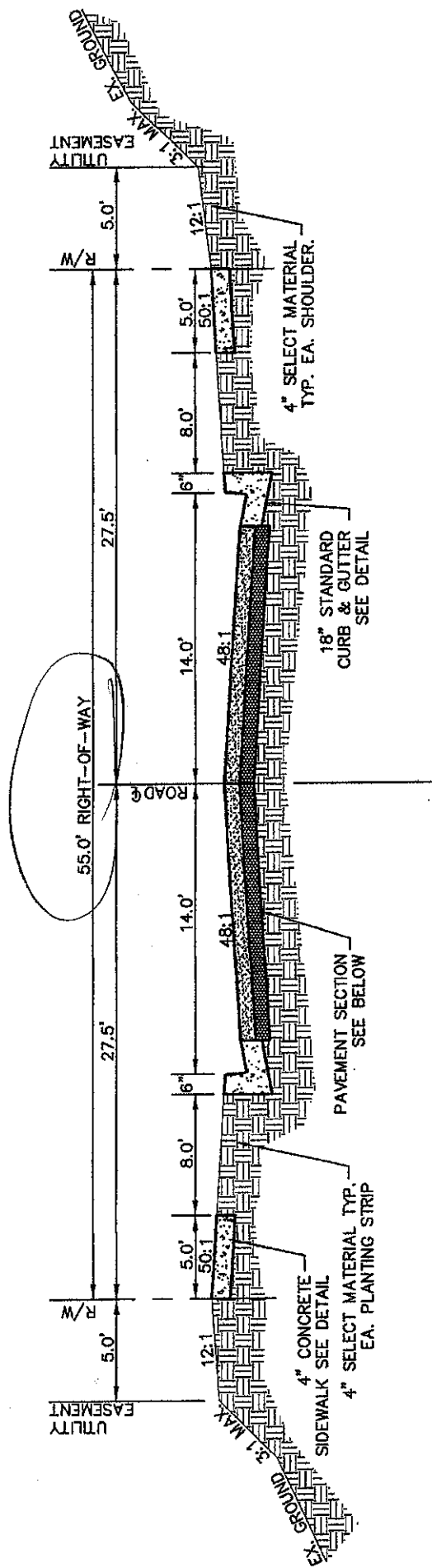
**LOCAL LOW VOLUME
RESIDENTIAL STREET**

SCALE: NO SCALE
DETAIL: 10:02

DATE APPROVED: AUG. 2008

OFFICE OF THE CITY ENGINEER: *Phillip R. Jindry*

ITEM - C



SURFACE COURSE

2" HOT MIX ASPHALT (HMA) SURFACE COURSE TYPE C - SCDOT STANDARD SPECIFICATION 403. FINAL LIFT TO BE APPLIED AFTER 75% DEVELOPMENT OCCUPANCY OR 1 YEAR FROM INTERMEDIATE COURSE PLACEMENT (WHICHEVER OCCURS FIRST).

BASE COURSE

8" COMPACTED AGGREGATE BASE COURSE - SCDOT STANDARD SPECIFICATION 305. SHOULD ENTIRE DEVELOPMENT HAVE A CBR OF 6 OR GREATER, THEN AN ALTERNATIVE BASE COURSE PAVEMENT DESIGN MAY BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.

SUBGRADE

COMPACTED SUBGRADE - SCDOT STANDARD SPECIFICATION 208

TACK COAT 1
SCDOT SECTION
401.4.1B

PRIME COAT 2
SCDOT SECTION
305.4.6 & 401.4.1B

NOTE
THIS TYPICAL SECTION MAY BE USED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:

1. SINGLE FAMILY NET DENSITIES ALONG THE STREET ARE BELOW 15 UNITS PER ACRE.
2. THERE IS SUFFICIENT ON-SITE PARKING TO ALLOW FOR 2 VEHICLES PER UNIT FOR SINGLE FAMILY DEVELOPMENT AND 1.5 VEHICLES PER UNIT FOR MULTIFAMILY DEVELOPMENTS.
3. PREDICTED VOLUME IS LESS THAN OR EQUAL TO 1500 VEHICLES PER DAY.

TYPICAL PAVEMENT SECTION

1. APPLICATION RATE FOR LAYING ANY HMA ON EXISTING PAVEMENTS SHALL BE 0.05 - 0.15 GAL PER SQUARE YARD
2. APPLICATION RATE FOR MACADAM AND RECYCLED PORTLAND CEMENT BASE COURSE SHALL BE 0.25 - 0.30 GAL PER SQUARE YARD

ITEM - D

city of **greenville**
ENGINEERING DIVISION

LOCAL RESIDENTIAL STREET

DATE APPROVED: AUG. 2008

OFFICE OF THE CITY ENGINEER
Phillip R. Findley

SCALE: NO SCALE
DETAIL:

10:01

ROAD PROJECT SCHEDULE

