

Long Grove Community Engagement Workshops
Infrastructure Session
Session #1
8-18-14

This summary is intended to be included as further detail to the approved meeting minutes for the August 18, 2014 Workshop by reference.

QUESTIONS RAISED AND DISPOSITION.

There were thirty-nine (39) questions raised during the workshop session. Upon review at the end of the workshop, the members agreed that Gewalt-Hamilton & Associates (GHA) sufficiently answered thirty (30) of these thirty nine (39) questions. The following presents the questions raised and then briefly summarizes the responses.

ANSWERED QUESTIONS. The following thirty (30) questions were raised and answered during the workshop, include:

1. Can you compare unit costs of report with recent repairs/private bid for a Long Grove HOA road project? We have lower “unit “costs” for our repairs.*
(A) Although we did not inspect the subdivision in question, we were informed by a representative from the HOA that the subdivision in question was a curb and gutter pavement section and is less than 10 years old since the final surface was installed. It should be in much better condition and therefore require less work. It is not an “apples to apples” comparison.

2. Ninety-five percent (95%) of our roads are rated poor or worse per your team’s assessment. How does that compare to other villages? How fast (years) will a road deteriorate from a “serious to fail” condition rating for example. Are there other cost options to consider?
(A) Based on a number of similar Villages we represent, it would indicate that the Roads in the Village of Long Grove are in worse shape than many similar communities. The change from “serious to fail” has many different variables that affect the pavement that is not uniform between road sections (ie drainage, pavement cross section, Average Daily Traffic (ADT), base soils, etc). There are numerous cost options to consider which would be done at the time the roads are in design based on additional information that would be gathered (current pricing, pavement borings, drainage work). The cost options provided allow for two different methods depending on the existing conditions that should both work very well.

3. Did I hear correctly that surface patching is not included in the G H A long-term Road Program estimates presented tonight? It seems like, without annual patching needs tallied,-we don’t have a total dollar requirement for our roads just yet?
(A) Surface patching was not included in the estimate, but there is a contingency that might allow for this depending on the bidding climate.

*Note: all responses to questions and technical data or illustrations provided by GHA Engineering
denotes a similar question or topic raised at the Village’s previous workshops Spring of 2014

4. Why has the Village only budgeted/spent \$400,000 per year on roads historically?*

(A) The Village's prior presentations from the Town Hall meetings includes a summary of prior road paving expenses which averages \$374K during the years of 2002-2012. The Village's total expenses for road paving plus all other road maintenance items such as snow removal, rock salt purchase, pothole patching, etc. averaged \$806K during this ten year periods. The General Fund budget during this ten year period averaged \$2.5M. The Village's is mandated to have a balanced budget and has adjusted the road paving expenses during these years to maximize the amount of road paving possible while maintaining a balanced budget. Most recently, in 2013 when new home building permit revenues grew more than anticipated the Village increased road paving expenses to \$600K. The materials for the 2012-2013 Town Hall Meetings and Village Budget information are posted on the Village website under the "Village Infrastructure" quicklink tab and under the "Village Finances" pull down menu. Village Finances will be reviewed in further detail during the third workshop meeting.
5. Would all roads be repaired in the fifteen (15) year life of the proposed program presented in your preliminary report/program plan?*

(A) All Public and throughfare roads as shown on the Village exhibit.
6. Isn't there a road repair agreement on Cuba Road for the Lake Zurich sewer easement?

(A) Nothing on-going. The easement granted for the installation of the sanitary sewer on Cuba Road required that the road be restored following construction and repaired when any repairs necessary to the sanitary sewer were completed that would affect the pavement.
7. What did you use for the price of a barrel of oil as your starting point for commodity costs and road repairs in present dollars?

(A) Although the Village's previous analysis from the Town Hall meetings included a comparison of the price of oil vs. cost of paving that appears to support a direct correlation between each other, it was not the basis for this analysis.
8. Are you assuming SSA's?*

(A) We only looked at Roads that would be rehabilitated with public funds.
9. Do we have to pay union rates and prevailing wages for contracts/contractors that work on Village roads and projects?

(A) Yes.
10. Do we have to use your design specs and full repair approach/ cross section options including reclamation when we repair our roads?*

(A) No, it is our recommendation to use this approach based on the current conditions of the roads if there is suitable base material. The other design Option includes patching, 1" of level binder and 2" of surface. The methodology chosen will depend on the factors discussed above

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11. Does Kildeer partner with other villages? Would they be open to this?*
- (A) They have not yet, but they have indicated a willingness to do so.*
12. How likely is it that we would get the Federal Funding and the FAU Grant dollars you've identified as possibilities for parts of our road system?*
- (A) Based on a conversation with LCDOT, the work is eligible, but funding is not guaranteed. It does appear that there is a good chance to receive some of these funds.*
13. Could we increase FAU Savings of about \$128k per year if we open Arlington Heights Road?
- (A) Savings to rehabilitate Arlington Heights Road would occur one time and would be about \$70,000 in 2015 dollars if it were opened and it kept the FAU designation.*
14. Do the State and County have different standards (construction/design) for different roads?
- (A) Attached are two exhibits for widening projects on State and County roadways. Typical State and County roadway cross sections for full reconstructions are based on numerous factors and are much more extensive than anything that would be proposed for Village streets.*
15. Is it possible to enhance a road's "profile or width", as part of the full depth redamation repair process? For example, what would the estimated additional cost of improvements like this on Krueger Road (e.g., three feet on each side) be?
- (A) Yes, if there are not other mitigating factors (ie wetlands, ROW, utility conflicts, grade transitions, etc.) Typical costs for this would be \$65/sy in 2015 dollars.*
16. The PCI rating tool is based on assumptions-did you check pavement depths, or, make use of depth estimates?
- (A) No pavement cores were completed at this time.*
17. Can more roads be designated as FAU's?
- (A) There is a potential for N. Krueger Road and S. Krueger Road to be designated as FAU routes.*
18. What is the Federal DOT definition of an FAU roadway or street? Connections; Traffic counts; Speed Limits.
- (A) The primary factors for an FAU route include connectivity, ADT and speed limits. The Village will be pursuing this designation for both Krueger Roads.*
19. Do you use historical context in your PCI model, e.g. – whether or not a specific section of road was repaired/resurfaced three years ago or fifteen years ago?
- (A) This data was not factored into the study.*

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20. Public versus private unit costs and specs seem different based on the earlier question and reply—HOA repair standards vs. Village/Public ROW. repairs and requirements. Can you explain these again?

(A) Oftentimes, private work administered without professional oversight is not held to the same standards for material testing and workmanship as public projects. In addition, roadway conditions and standards are not uniform (see response to Question 1).

21. Is your program full depth reclamation for all 29 miles? What are the relative costs if we had just a 2 inch resurfacing on the majority of the Village's roads and then came back and did them again when they needed it? What if we just did two inches with patching as our approach? We may need to do it more frequently, but the roads would be done and maybe done cheaper?

(A) We have two options shown in the report for rehabilitation that would each work well. They are similar in cost. The option that would be chosen would be based on additional information that was gathered during the design phase. You could cover more roadway if you complete a 2" resurfacing with some minor patching. The problem with that approach in the current state of the roads, is that it would not hold up well. Once the rehabilitations are completed, the option to do a more limited approach in the future and have the improvements hold up well is much greater.

22. If we use the reclamation approach, how long will it be before we would need to do the \$32.00 (est. cost) redamation approach again?

(A) With the right approach and maintenance (including resurfacing), between 35 and 45 years before a major reconstruction is required.

23. How does redamation compare to full road reconstruction?

(A) The existing stone and asphalt is pulverized into a fairly uniform gradation. It is then compacted and tested prior to asphalt being installed. Any areas that fail are undercut (remove 18" to 24" of material), compact the existing base, proof rolled again, geotextile fabric, new stone installed and then paved. Full reconstruction does not take advantage of the existing material. All existing stone and asphalt is removed and replaced. This process is approximately 2 to 2.5 times as expensive. It opens the road up to potential issues caused by rain during the time the clay is exposed. It creates a much longer disturbance time for the motoring public, as well as residents having access in and out of their driveways.

24. Who actually drove around and did the ratings on the roads?

(A) Two Senior Engineering Technicians from Gewalt Hamilton Associates, each with over 20 years of experience in paving projects.

25. Is it (the program projections and sequencing) a "worst first" approach that you've programmed and presented? Did you use a specific dollar per year target? Did you use a specific program length as a target? What if you changed your assumptions e.g., the timeframe?

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(A) We chose the time frame of 15 years based on our experience with other communities going through a similar process.

26. Should we plan to schedule the FAU roads first to be sure we capture federal dollars available under the current program?

(A) We would recommend that the pursuit of Federal funds be moved up in the priority list so as to increase the likelihood to receive those funds.

27. If we went to FAU status on roads-would we have to change road widths, dimensions, etc.?

(A) The minimum pavement width would be 11' lanes with 4' shoulders unless a variance was pursued. The shoulders could be gravel or paved. We would recommend that they be paved.

28. Are there any other changes in development or land use plans in surrounding towns that would impact Village roads?

(A) There are always discussions regarding potential developments on open parcels in this area. There are no definite developments that we are aware of at this time.

29. Does widening a road extend the life of the road?

(A) Having a paved shoulder reduces the chance for the edge to deteriorate and should extend the life and useable quality of the road..

30. Are there any roads that we (Village) could turn over to the State or County? Would they be interested?

(A) None of the Village's roads meet the criteria to become State roads. The Village raised this question to Lake County and they responded that they did not have any interest in accepting any of the Village's roads unless they met their county-wide objective to move traffic throughout the County.

OPEN QUESTIONS. The following nine (9) questions were raised during the workshop and require further follow-up research and additional information or discussion.

31. Can you explain your model's assumptions, particularly the rate of inflation basis used (i.e., 7%)*? How did your model account for commodities and their prices? How did your model account for future economic trends and inflation? How might revenues trend over same time in Village? What about engineering fees as a percentage? Isn't the use of a 7% inflation factor too high?*

(A) Based on recent increases in construction costs a 7% inflation rate was chosen. Our assumption did not factor in specific commodities pricing, but was based on current unit pricing that we have received for similar work. It is not only the commodities that affect the paving cost, but prevailing wage and benefits, liability insurance, etc. We can't comment on revenue trends within the Village. Engineering fees were shown as 8% and the scope provided is detailed in the report.

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32. The pavement condition “PCI rating scale” you used is “foreboding”; the results and findings look very negative. Can you describe how the index is translated? Can you provide a sample and the criteria they use on the rating sheets?
- (A) We have attached samples of sections of roadways that were rated with corresponding photos. Also attached is a separate rating system that shows how the PCI index and PCR index correlate to each other. The index is based on the software that the USACE developed.*
33. What are the soil and pavement cross sections, (surface & subsurface) conditions now? Are soil borings necessary? Did you take into account traffic counts? Did you consider or research when the road was last repaired, and what type of repair, etc.?
- (A) We do not know the existing pavement cross sections. Pavement cores and soil borings will be taken prior to beginning paving rehabilitation methods. We did not evaluate the historical paving repairs as part of this study. GHA to provide samples drawings of cross sections and illustrations of the two primary repair approaches. ADT's were not used as part of the evaluation.*
34. Are there any other assumptions that are part of the PCI Program? Like financing, etc.
- (A) Financial assumptions in terms of front end loading the work were not included as part of this analysis. Once the final workshop is completed, we can address other options if directed.*
35. Can you provide a list of the assumptions used in your report and estimates? Almost all costs are (or seem to be) indexed to the pavement costs-(22% approximately). Can you provide details of the indexing and other criteria or variables?
- (A) cost of \$32/SY was estimated based off recent bid result averages from other Lake County Municipalities on similar jobs. 7% Inflation rate based on observed rise in paving unit prices over the past year and industry expert speculation. A large reduction in the quantity of qualified paving companies due to the recession affects these rates on top of economic trends. Contingency was calculated at 7% of the construction cost. This is a standard rate which is provided to cover unforeseen costs. Lower percentages incur higher risk of a project exceeding the approved budget. Engineering was calculated at 8% of the construction cost. This rate is 2% lower than that paid by the Village in previous years. *FAU routes will incur additional engineering expenses due to coordination, and Federal requirements for plan preparation, studies and documentation.*
36. What aspects of your study will require follow-up? What ideas did you identify for Village options to save dollars? What are the next steps for your work as you understand it?
- (A) Federal funds for FAU roads could save approximately \$1 million. Bidding with other Local Government agencies may save approximately 5%. Pursuit of other grants that address localized drainage issues associated with roadways.*
37. What version of the “Paver Program” (software) do you use?
- (A) PAVER 6.5.7.*

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38. What would happen if we “front loaded” the program and addressed our most critical needs early, or, did a bond issue and did a large number of roads right away? How would it change costs? How would it change pavement life and future maintenance cycles/requirements? Identified for Parking Lot:

(A) A large front end loading of the pavement improvements would obviously reduce the overall costs and time frame associated to complete all the roadways. It would reduce costs by not having to worry as much about potential impacts of inflation. By having a larger Road Program(s) initially, unit prices should be reduced. Future pavement cycles would be not as costly, as there would be less maintenance to occur as roads were waiting to be rehabilitated.

39. Could you speak to the fifteen year cycle you chose? Why not sixteen, eighteen? How would the program change or the pavement conditions change over eighteen years, for example?

(A) Many communities similar to the Village of Long Grove have had difficulty in completing all roads in 10 years financially. Twenty year Road cycle in the current condition is too long based on our experience and the condition of the pavement. A fifteen year cycle seems to be one that is more reasonable. If the Village did pass a bond issue that allowed for a substantial increase in the up front paving costs as well as adequate funding for the remaining streets, the overall time could be reduced substantially. The actual time frame would depend on the dollars that were available.

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PCR vs PCI Rating Graphic

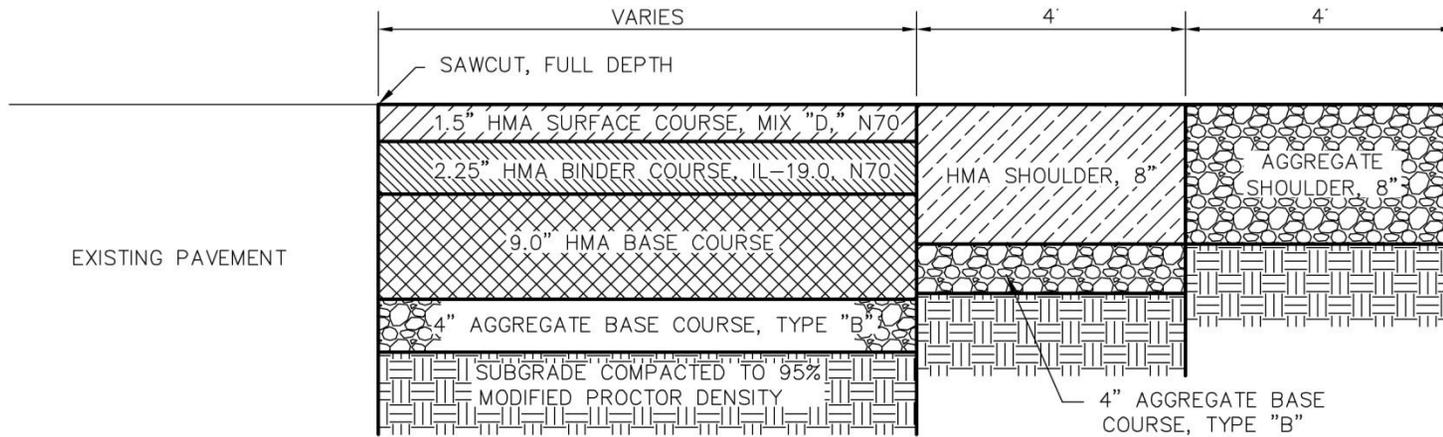
PCR Rating		PCI Rating	
Very Good	91-100	86-100	Good
Good	81-90	71-85	Satisfactory
Fair	66-80	56-70	Fair
Poor	51-65	41-55	Poor
Very Poor	0-50	26-40	Very Poor
		11-25	Serious
		0-10	Failed

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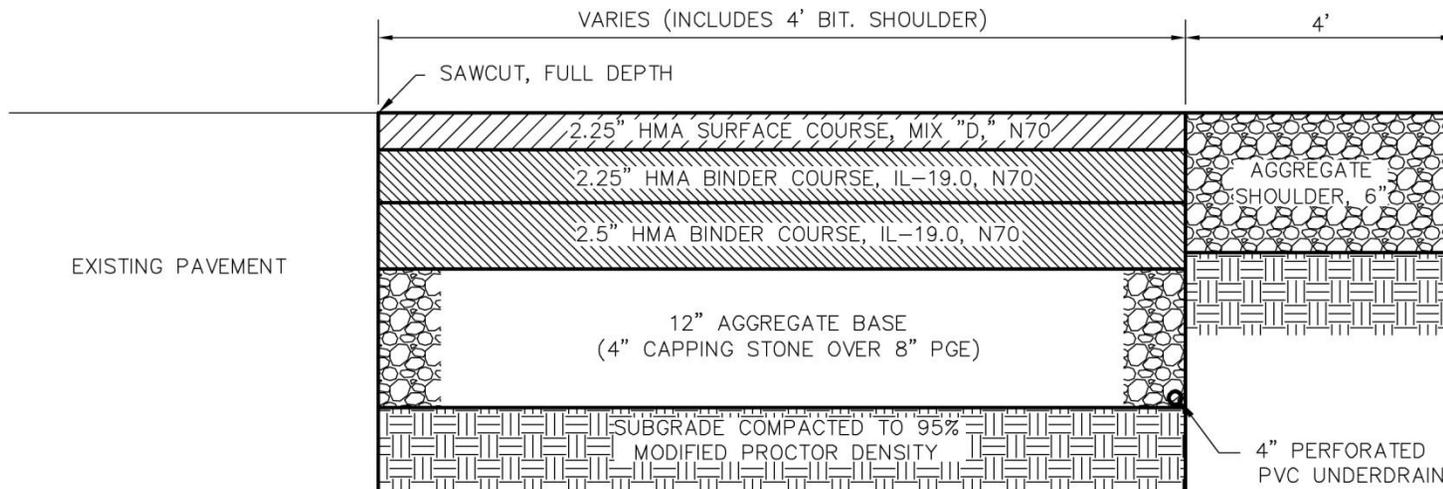
PHOTOGRAPH OF RECLAMATION



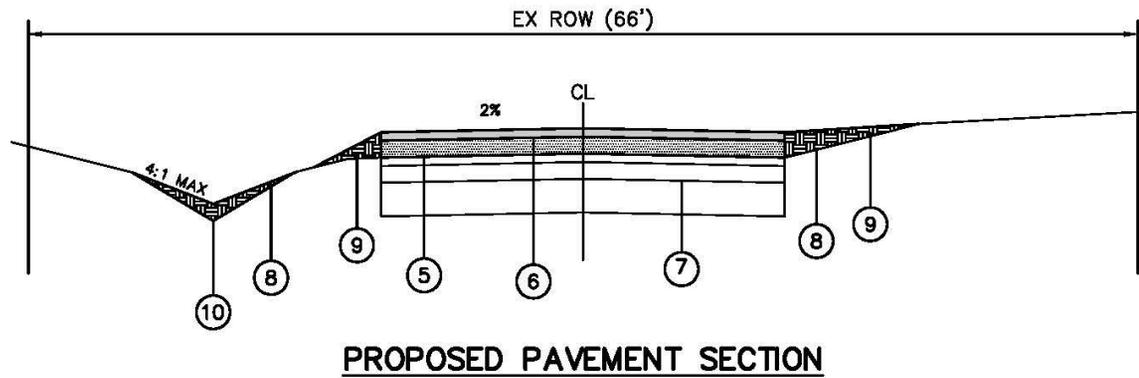
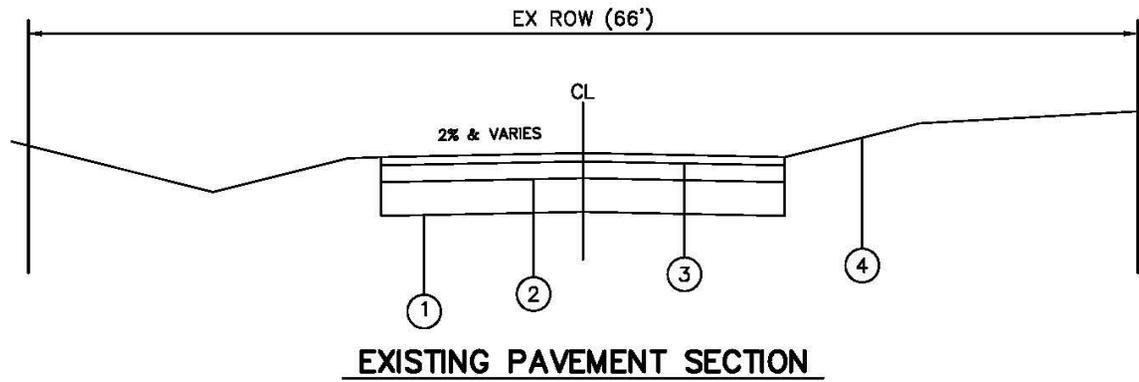
Full Depth Reclamation



TYPICAL IDOT WIDENING DETAIL



TYPICAL LCDOT WIDENING DETAIL



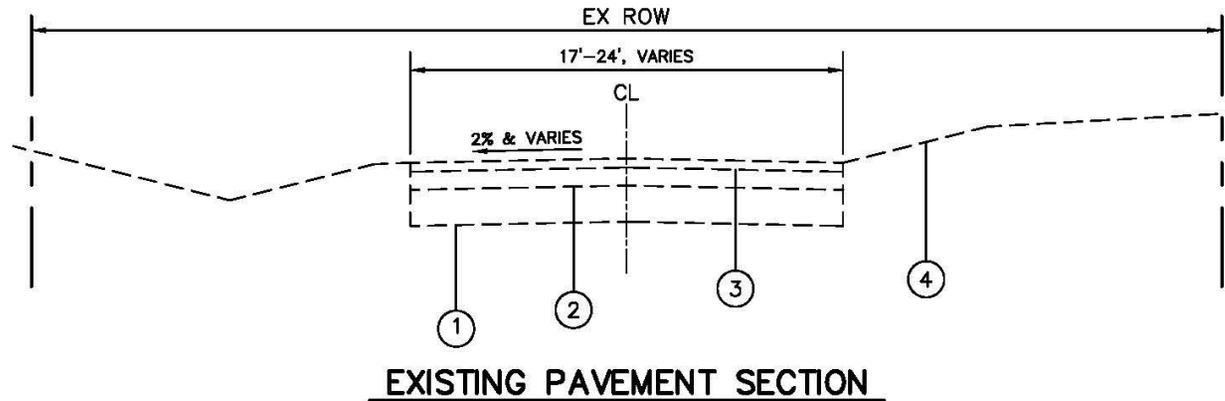
LEGEND

- ① EXISTING AGG BASE COURSE, VARIES
- ② EXISTING HMA BINDER, VARIES
- ③ EXISTING HMA SURFACE, VARIES
- ④ EXISTING SHOULDER/GRADE
- ⑤ PROPOSED HMA BINDER, IL-19.0, N50, 2 1/4"
- ⑥ PROPOSED HMA SURFACE, MIX D, 2"
- ⑦ FULL-DEPTH RECLAMATION (PULVERIZATION), 10"
- ⑧ PROPOSED RESTORATION, DEPTH AND WIDTH VARIES
(PULV TOPSOIL, CL 1A SEED, NAG S75 ECB)
- ⑨ REMOVAL AND DISPOSAL OF EX. AGG. SHOULDERS
REPLACE WITH BULK TOPSOIL
- ⑩ PROPOSED CL DITCH W/MAX 4:1 SLOPES

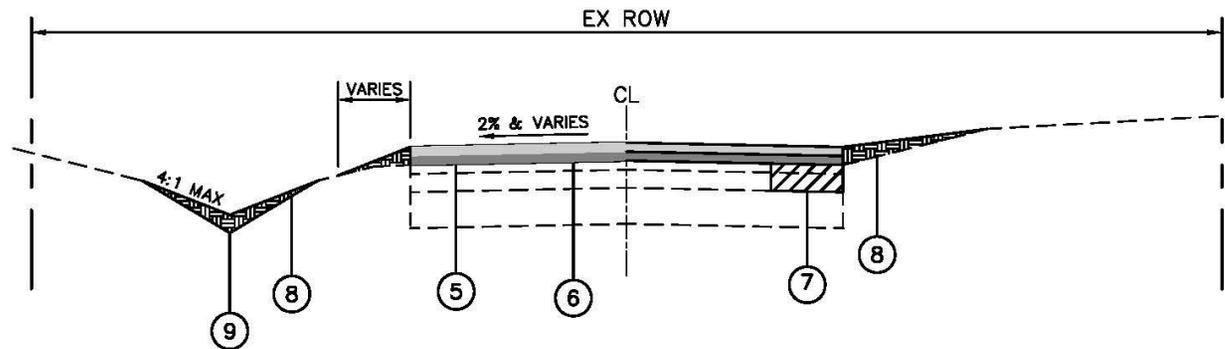
HMA - MIXTURE REQUIREMENTS

MIXTURE TYPE	AIR VOIDS @ Ndes
HMA Surface Course, Mix D, N50	4% @ 50 Gyr.
HMA Binder Course, IL-19.0, N50	4% @ 50 Gyr.

1. The unit weight used to calculate all HMA Surface Mixtures is 112 lb/sy/in
2. Local Agency may use surface and binder N30 L (Low ESAL) for ADT <700 and 10% trucks or less (3% Air Voids @ 30 Gyr.) with written approval by the Engineer.
3. The "AC Type" shall be PG 64-22
4. When RAP exceeds 20%, the new asphalt binder in the mix shall be PG 58-22.



EXISTING PAVEMENT SECTION



PROPOSED PAVEMENT SECTION

LEGEND

- ① EXISTING AGG BASE COURSE, VARIES
- ② EXISTING HMA BINDER, VARIES
- ③ EXISTING HMA SURFACE, VARIES
- ④ EXISTING SHOULDER/GRADE
- ⑤ PROPOSED HMA LEVEL BINDER, N50, 1"
- ⑥ PROPOSED HMA SURFACE, MIX D, 2"
- ⑦ PROPOSED CLASS D PATCHES
- ⑧ PROPOSED RESTORATION, DEPTH AND WIDTH VARIES
(PULV TOPSOIL, CL 1A SEED, NAG DS75 ECB)
- ⑨ PROPOSED CL DITCH W/MAX 4:1 SLOPES

HMA – MIXTURE REQUIREMENTS

MIXTURE TYPE	AIR VOIDS @ Ndes
HMA Surface Course, Mix D, N50	4% @ 50 Gyr.
Leveling Binder (MM), N50	4% @ 50 Gyr.
HMA Binder Course, IL-19.0, N50	4% @ 50 Gyr.
Class D Patches, TY I-IV, 10"	4% @ 50 Gyr.

1. The unit weight used to calculate all HMA Surface Mixtures is 112 lb/sy/in
2. Local Agency may use surface and binder N30 L (Low ESAL) for ADT <700 and 10% trucks or less (3% Air Voids @ 30 Gyr.) with written approval by the Engineer.
3. The "AC Type" shall be PG 64-22
4. When RAP exceeds 20%, the new asphalt binder in the mix shall be PG 58-22.

CUBA RD (S. KRUEGER RD. TO LAKERIDGE CT)

$$L \quad 1406' + 1407' = 2813' \div 2 = 1407'$$

$$W \quad 22' + 22' + 23' = 67' \div 3 = 22'$$

$$A \quad 30,954SF$$

SAMPLE AREA #1 (E LAKERIDGE CT)

$$N \quad 42^\circ 10.955' \quad L \quad 250'$$

$$W \quad 88^\circ 02.254' \quad W \quad 22'$$

$$A \quad 5500SF$$

DISTRESS	L	M	H
10	55'	69'	203'
13			11EA
T	37'	187'	150'
1	1393SF	602SF	1054SF
15	862SF	791SF	
3	110SF	500SF	

P.15

$$1(M) \quad (11 \times 3) + (4 \times 25) + (6 \times 27) + (37 \times 6) + (17 \times 5) = 602SF$$

$$1(H) \quad (167 \times 5) + (28 \times 6) + (17 \times 3) = 1054SF$$

$$15(L) \quad (4 \times 25) + (3 \times 28) + (14 \times 3) + (169 \times 3) + (3 \times 43) = 862SF$$

$$15(M) \quad (4 \times 167) + (3 \times 27) + (3 \times 14) = 791SF$$

$$1(L) \quad (3 \times 30) + (3 \times 33) + (169 \times 6) + (38 \times 5) = 1393SF$$

$$3(M) \quad (15 \times 4) + (6 \times 31) + (8 \times 28) = 500SF$$

$$3(L) \quad (10 \times 11) = 110SF$$



Cuba Road

ESTATE LN (INDIAN CREEK RD TO TERMINUS)

$$L \quad 1506' + 1589' = 3175' \div 2 = 1588'$$

$$W \quad 29' + 22' = 46' \div 2 = 23'$$

$$A \quad 36,524sf$$

SAMPLE AREA #1 (6733 ESTATE LN)

$$N \quad 42^{\circ}14.002' \quad L \quad 250'$$

$$W \quad 88^{\circ}0.255' \quad W \quad 21'$$

$$A \quad 5250sf$$

DISTRESS

$$10 \quad L \quad 101' \quad M \quad 153' \quad H \quad 97'$$

$$7 \quad L \quad 14' \quad M \quad 100'$$

$$17 \quad H \quad 140sf$$

$$1 \quad M \quad 204sf$$

$$17(H) \quad (14 \times 10) = 140sf$$

$$1(M) \quad (4 \times 17) + (6 \times 36) = 204sf$$



Estate Lane

SCHAEFFER RD. (11 PT 53 TO HOLLY CT)

$$L \quad 3660' + 3658' = 7318' \div 2 = 3659'$$

$$W \quad 28' + 23' + 23' + 23' = 97' \div 4 = 24'$$

$$A \quad 87,816 \text{ SF}$$

SAMPLE AREA #1 (c MANASSAS LN)

$$N \quad 42^\circ 10.226' \quad L \quad 250'$$

$$W \quad 87^\circ 59.969' \quad W \quad 23'$$

$$A \quad 5750 \text{ SF}$$

DISTRESS	L	M	H
4	16'	41'	
7		196'	
13	III 3EA		
11		183 SF	
1	178 SF	278 SF	2593 SF
17		96 SF	
3	386 SF	695 SF	
15	812 SF		

$$11(M) \quad (6 \times 3) + (69 \times 2) + (3 \times 9) = 183 \text{ SF}$$

$$1(H) \quad (4 \times 38) + (5 \times 38) + (5 \times 44) + (9 \times 7) + (5 \times 6) + (42 \times 6) \\ (4 \times 22) + (8 \times 7) + (97 \times 4) + (33 \times 6) + (8 \times 5) + (126 \times 2) \\ (57 \times 2) + (22 \times 2) + (4 \times 21) + (3 \times 12) + (33 \times 8) + (3 \times 13) \\ (4 \times 5) + (7 \times 4) + (5 \times 7) = 2593 \text{ SF}$$

$$17(M) \quad (6 \times 16) = 96 \text{ SF}$$

$$1(M) \quad (3 \times 5) + (4 \times 4) + (3 \times 8) + (3 \times 33) + (4 \times 7) + (4 \times 9) \\ (4 \times 11) + (4 \times 4) = 278 \text{ SF}$$

$$3(L) \quad (4 \times 33) + (20 \times 4) + (6 \times 29) = 386 \text{ SF}$$

$$3(M) \quad (37 \times 11) + (32 \times 9) = 695 \text{ SF}$$

$$1(L) \quad (3 \times 42) + (2 \times 26) = 178 \text{ SF}$$

$$15(L) \quad (128 \times 3) + (107 \times 4) = 812 \text{ SF}$$



Schaeffer Road