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City of Fife

STANDARDS

**Restoration of Pavement Cuts
Within The
City of Fife
Right of Ways**

August - 1993

Community Development Department

RESTORATION OF PAVEMENT CUTS STANDARDS

The "Restoration of Pavement Cuts" policy is set forth to provide standards for the restoration of pavement cuts in order that the structural integrity and ride quality of paved surfaces can be maintained following the installation of utility facilities within City of Fife right-of-ways. While structural integrity and ride quality are of prime importance, the esthetics of a newly paved surface is also a factor needing consideration.

The following guidelines are used to determine the restoration requirements when cutting any pavement, travelway, driveway, walkway, or shoulder, on city maintained roads. Restoration made under these guidelines will be guaranteed by the utility for a period of time of eight (8) years from the date of final restoration.

Deviations from these standards may be applied for by providing a written request to the City Engineer which outlines justification for the requested deviation.

PROJECT PLAN LIST

The City will make available to the utilities a "Multi-year Street Plan" which outlines proposed projects affecting City maintained roads. The plan will, to the extent possible, provide an advance notice of proposed projects. Utilities affected by changes in the plan allowing less than two years notification shall be informed of the modifications to allow for proper planning on the part of the utility. Adjustments in the restoration requirement for projects with less than a two-year notice may be made by the city.

The utilities can, and should, make use of the "Multi-year Street Plan" developed by the City to take actions that will reduce or eliminate the need to cut new pavement during future utility projects. It is understood that there are varying regulations which may constrain a utility's ability to mitigate its need to cut pavement. The utility may be granted a variance from the most stringent restoration requirements for cross cuts in this policy, on a case by case basis, after all other options have been explored and exhausted.

CUTTING PROHIBITION

No pavements shall be cut for a period of sixty (60) months after the pavement has been constructed or resurfaced. Pushing, hole-hogging, pulling, etc., must be explored on all road crossings regardless of the condition of the road pavement.

UTILITY ALTERNATIVES TO OPEN CUTTING

Every alternative engineering plan shall be exhausted prior to requesting permission to open cut pavement on "good" city maintained roads. Utilities will make every effort to

push road crossings where three (3) or fewer conduits are required at the road crossing. On larger pipe (6 inch and above) where lateral main connections are required, the lateral main connections must be installed at right angles even if this requires asphalt cuts. Wherever an open cut is required, the utility requiring the cut shall contact all other utilities in the area to inquire about their need to use the trench while it is open.

STANDARD PATCH

The standard patch shall be a "T" patch shown in Figure I and Figure II. The *minimum width of the pavement cutback shall be that of the widest portion of the trench.* During excavation, the utility shall not allow the trench to slough away to a width exceeding the depth of the trench. During backfill and compaction, the utility shall cut the pavement back to meet the width of the sloughing. The utility shall cut back the pavement an additional foot on each side of the trench prior to making the permanent patch. *Wherever there is an existing patch within fifteen (15) feet of the new cut, the utility shall incorporate the old patch into the new pavement restoration.* Utilities shall receive written notification of patch failures from the City of Fife Public Works Division. All patch failures will be repaired to City standards within 20 working days of written notification.

CROSS CUTTING

Please refer to Cutting Prohibition.

Asphalt Concrete Pavement

Pavement Condition	Restoration Requirements
<i>Good</i>	<i>No Cutting Permitted*</i>
<i>Medium and Poor</i>	<i>Standard Asphalt Patch (Figure I)</i>

Bituminous Surface Treatment Pavement (BST)

Pavement Condition	Restoration Requirements
<i>Good</i>	<i>No Cutting Permitted*</i>
<i>Medium and Poor</i>	<i>Standard Asphalt Patch (Figure I)</i>

Cement Concrete Pavement

Pavement Condition	Restoration Requirements
<i>Good</i>	<i>No Cutting Permitted*</i>
<i>Medium and Poor</i>	<i>Standard Cement Concrete Patch (Figure II)</i>

LONGITUDINAL CUTTING

Please refer to Cutting Prohibition.

Asphalt Concrete Pavement

Pavement Condition	Restoration Requirements
<i>Good</i>	<i>Standard Asphalt Patch and Overlay (Full lane width)</i>
<i>Medium and Poor</i>	<i>Standard Asphalt Patch</i>

B.S.T. Pavement

Pavement Condition	Restoration Requirements
<i>Good</i>	<i>Standard Asphalt Patch and Overlay (full lane width)</i>
<i>Medium and Poor</i>	<i>Standard Asphalt Patch</i>

Cement Concrete Pavement

Pavement Condition	Restoration Requirements
<i>Good</i>	<i>Cement Concrete Reconstruction</i>
<i>Medium and Poor</i>	<i>Standard Cement Concrete Patch</i>

* In cases of emergency or construction failures, provisions to allow cutting of the pavement may be obtained conditioned on providing a standard asphalt patch and minimum one hundred and fifty (150) foot overlay for asphalt concrete pavement or B.S.T. pavement or standard cement concrete restoration for cement concrete pavements. Utilities which have developed, and are able to document, a program to mitigate the need to cut the pavement may receive a variance from the overlay requirement. Utilities without such a mitigation program may make a special request for "windowing." Windowing is to be allowed after all other design alternatives prove to be undesirable to the City.

INTERSECTION CUTTING

Restoration requirements within the area of any intersection which is cut will be determined based on a combination of Cross Cutting and Longitudinal Cutting requirements. *Any overlay that is required will provide for complete coverage of the affected intersection area, to a point thirty-five (35) feet beyond the outside curb returns (Figure III).* Utilities which have developed, and are able to document, a program to mitigate the need to cut pavement may receive a variance from the overlay requirement.

ASPHALT OVER CEMENT

Restoration requirements for the condition where cement concrete has been previously overlaid shall be similar to those outlined for Asphalt Concrete Pavement. *The existing cement concrete shall be completely removed between joints and restored using standard asphalt patch.*

SPECIFICATIONS - PUSHING

When no cutting is allowed, the guideline for pushing *shall be one foot of depth per one inch of diameter.* However, *a minimum depth of thirty-six (36) inches will be maintained.* The City Engineer may grant a variance based on ground conditions and depth conflicts with existing utilities.

SPECIFICATIONS - CUTS PARALLEL TO ROAD ALIGNMENT

- A. All trench backfill under roadway shall be mechanically compacted to 95% of maximum density as determined by Section 2-03.3(14)D of 1991 Standard Specifications for Road, Bridge and Municipal Construction, except for trenches over eight (8) feet deep, where in backfill at depths *over four (4) feet shall be compacted to 90% maximum density by either water settling or mechanical compaction.* *The top four (4) feet of the trench line shall be mechanically compacted to 95%.*
- B. In any trench in which 95% density *cannot be achieved with existing backfill, the top four feet shall be replaced with gravel base as specified in the WSDOT/APWA Standard Specifications, Section 9-03.10.* This new material shall then be mechanically compacted to 95%
- C. Restoration of an asphalt pavement shall include a *minimum of two (2) inches of crushed surfacing material and two (2) inches of asphalt concrete Class B or comparable surfacing approved by the City Engineer.* Roadway shall then be

overlaid full lane width *with a minimum of one (1) inch compacted asphalt concrete Class B*. Any exceptions to this overlay requirement shall consider the existing conditions of the roadway subject to approval by the City Engineer on a case-by-case basis. Restoration of concrete pavement shall be consistent with Section 5-05 of the WSDOT/APWA Standard Specifications. Any traffic lane affected by the trenching shall be replaced full-width.

SPECIFICATIONS - CUTS TRANSVERSE TO ROAD ALIGNMENT

- A. In general, utility trenching through existing pavement across the road alignment will be discouraged. *It will not be permitted unless it can be shown that alternatives such as boring or jacking are not feasible* or unless the utility can be installed just prior to reconstruction or overlay of the road.
- B. Without exception, the *entire trench shall be backfilled with gravel backfill for pipe bedding or crushed surfacing top course meeting the requirements of Sections 9-03.12(3) and 9-03.9(3) of the WSDOT/APWA Standard Specifications respectively*. Backfill shall be placed and compacted mechanically in lifts as in Figure I and Figure II with a City Inspector present. After backfill and compaction, an immediate cold patch mix shall be placed and maintained in a manner acceptable to the City Engineer. On asphalt pavement, a permanent hot mix patch the same thickness as the original asphalt or two (2) inches, whichever is the greater, shall be placed and sealed with a paving grade asphalt within twenty (20) calendar days. Cement concrete pavement shall be restored with an 8-sack mix, using either Type II or Type III cement, within twenty (20) calendar days.
- C. Roadway overlays, if required for cross cutting, shall be one (1) inch full pavement width over the area adjacent to and over the trench, as directed by the City Engineer, then tapered to provide for smooth ride quality using Class "G" asphalt.

PROCEDURE FOR DETERMINING PAVEMENT CONDITIONS

Rating will generally be determined by the City Engineering Division staff.

Rating Rules

Each individual rating should be an opinion as to the present serviceability of the pavement, based upon the past experience of the rater. However, the following general rules should be observed:

1. The pavement sections should be rated as to present serviceability or quality of

ride of a primary or major highway serving large volumes of high-speed mixed passenger car and truck traffic.

2. The rater should consider only the present condition of the surface and, consequently, may rate a pavement "good" even though he strongly suspects it will fail in the near future.
3. The rating should be based on the fact that the pavement will have to serve large volumes of mixed traffic in all weather conditions.
4. The geometric design features of the section of road being rated should be ignored (i.e. alignment, shoulder width, and pavement width). Sections should be rated as though the geometric design is adequate for heavy mixed traffic on an interurban highway.
5. The skid resistance of the surface should not be considered in rating.
6. The raters should be concerned primarily with holes, bumps, transverse distortion or rutting and with longitudinal distortion of the surface. Large sags resulting from the general settlement of fills should be ignored.
7. The raters should ignore such isolated conditions as rough railway crossings, bumps at bridge abutments, and occasional bumps due to settlement at culverts.
8. In determining the rating, the rater should ask self the following questions:
 - How well would this section of pavement serve the function for which it was built during a 24 hour period if it was located on a primary highway?
 - How well would this pavement serve me if I had to drive on it for eight (8) hours?
 - How would I like to drive over 500 miles on this pavement?
9. In rating a portion of pavement sections, the rater should not refer to completed forms to see what value was assigned to the previous section.

Ratings will be decided, to a very large extent, on structural appearance, riding quality and aesthetics. However, they probably will be influenced considerably by deep rutting, and to some degree, by the amount and appearance of cracking or patching. These conditions should not be mentally weighed to determine the rating. The rater should merely express an overall opinion or impression of the way the pavement is performing at the instant at which it is rated.

DEFINITIONS OF PAVEMENT DISTRESS

1. **Rutting** Longitudinal depression that forms under traffic in the wheel paths and has a minimum length of approximately 20 feet.
2. **Corrugation** Transverse waves at regular intervals in the surface of the pavement, consisting of alternating valleys and crests.
3. **Alligator Cracking** Interconnecting cracks forming a series of small polygons that resemble an alligator's skin.
4. **Raveling** The progressive disintegration from the surface downward, or edges inward, by the dislodgement of aggregate particles.
5. **Flushing** Free asphalt on the surface of the pavement.
6. **Longitudinal Cracking** A crack or break approximately parallel to the pavement centerline which occurs within the travel lane.
7. **Transverse Cracking** A crack approximately at a right angle to the pavement centerline.
8. **Patching** Corrections made to pavement defects by maintenance forces.

PAVEMENT CONDITION RATING MATRIX

The Pavement Condition Rating is based on the method used in the WSDOT Pavement Management System for Counties. In scoring, the quantity of distress is indicated by the row and severity by the column.

Circle the appropriate score for each category.

Restoration of Pavement Cuts - Standards

Rutting Pvmt Wear (inches)	Corrugation % of Roadway	Alligator Cracking Whl/Trk Station	Raveling Flushing	Longitud. Cracking Lineal Ft/Sta	Transverse Cracking No/Station	Patching Area/Sta
(1) .25-.5 (2) .5-.75 (3) >.75	(1) 1-25% (2) 26-75% (3) >75%	(1) 1-24% (2) 25-49% (3) 50-74% (4) 75-100%	(1) Local (2) Whl Path (3) Ent Lane	(1) 1-99 (2) 100-199 (3) >200	(1) 1-4 (2) 5-9 (3) >10	(1) 1-5% (2) 6-25% (3) >25%
	A B C	D E F	G H I	J K L	M N O	P Q R
1	0 1 2	1 3 6	1 2 3	1 2 4	1 2 3	1 2 3
2	1 2 3	3 6 9	2 3 4	2 4 6	2 3 4	2 3 4
3	2 3 4	6 9 12	3 4 5	4 6 8	3 4 5	3 4 5
4		9 12 15				

PAVEMENT CONDITION RATING _____ POINTS

- | | | | |
|---|----------------------|---|---------------------|
| A | 1/8" - 2" Change/10' | J | < 1/4" Wide |
| B | 2" - 4" Change/10' | K | > 1/4" Wide |
| C | > 4" Change/10" | L | Spalled |
| D | Hairline | M | < 1/4" Wide |
| E | Spalled | N | > 1/4" Wide |
| F | Spalling and Pumping | O | Spalled |
| G | Slight | P | 0.10" - 0.50" thick |
| H | Moderate | Q | 0.50" - 1.00" thick |
| I | Severe | R | > 1.00" thick |

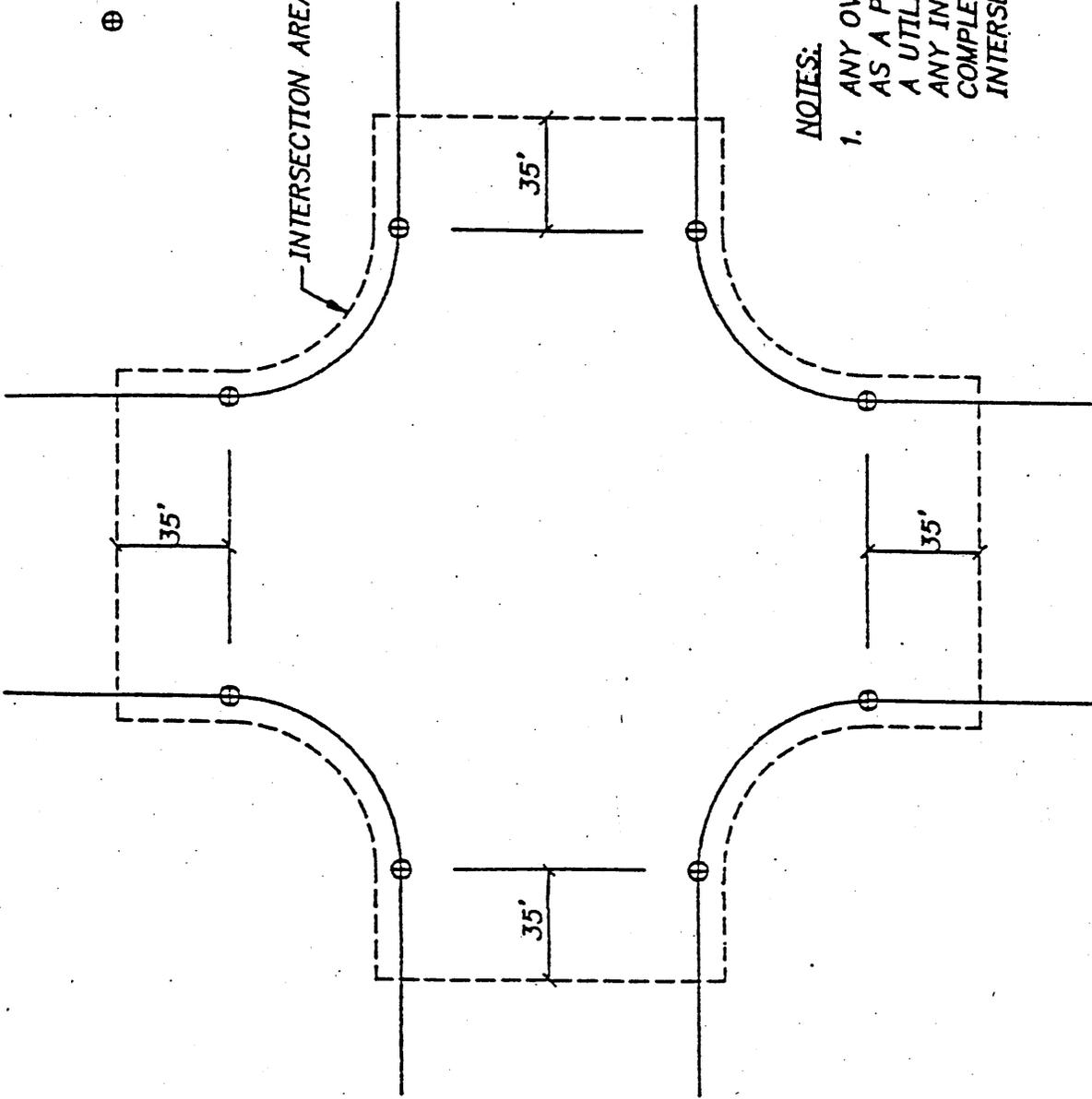
PAVEMENT CONDITION	RATING
Good	0 - 20 Points
Medium	21 - 35 Points
Poor	36 - 45 Points

9/23/91

LEGEND

⊕ CURB RETURN (TYP.)

INTERSECTION AREA BOUNDARY



NOTES:

1. ANY OVERLAY WHICH IS REQUIRED AS A PART OF THE RESTORATION OF A UTILITY CUT WITHIN THE AREA OF ANY INTERSECTION WILL PROVIDE FOR COMPLETE COVERAGE OF THE AFFECTED INTERSECTION AREA.

UTILITY OVERLAY DETAIL
FOR ALL UTILITY ROAD CUTS
FIGURE III

DATE	REVISIONS	APPROVED	DRAWN