

# TSSMU Mileposting Process and Policy Outline

## CREATING MILEPOST DATA

(TQU and above)

- 1) Check if route to be mileposted is an inventoried route in TEAAS. If route IS NOT inventoried:
  - Request route added to the TEAAS by SDM.
  - SDM must be complete valid requests within 1 working day.
- 2) Check if route to be mileposted is mileposted in TEAAS. If route IS mileposted in TEAAS:
  - Print out Features Report.
  - Report will be used to reference and compare new milepost values.
- 3) Check if route to be mileposted is mileposted in MLI1. If route IS mileposted in MLI1
  - Print out MLI1 records.
  - Determine from the MLI1 records the direction that road is mileposted.
  - Report will be used to reference, compare and adjust new milepost values.
  - If the validity of the MLI1 is suspect or appears questionable, document these concerns and advise SDM. If it is determined that the MLI1 data is inaccurate or requires clarification, fill out and submit the TSSMU MLI1 CORRECTION REQUEST form to the current TSSMU MLI1 liaison.
- 4) Calculate the Highest Order Segments
  - Determine what routes coincide with the route to be mileposted.
  - If there are no segments of the route to be mileposted coincide with higher order routes, the higher order route for the section is itself for the entire length.
  - If any sections of the route to be mileposted has coinciding routes of a higher, these sections need to be measured in order to specify the highest order segment. For each section. record the following:
    - a) Highest order route for each section
    - b) Route to be mileposted Starting milepost
    - c) Route to be mileposted Ending milepost
    - d) Highest Order Route, corresponding with starting milepost for section
    - e) Whether or not route to be mileposted is mileposted in the same direction as the highest order route.
  - Enter highest order data into approved worksheets or databases
- 5) Milepost individual features
  - If route is mileposted by MLI1, milepost features following MLI1's mileposting direction, otherwise milepost from South to North and West to East.

- Collect all maps and resource materials. Standard resources in order of accepted level of reliability are: NCDOT county maps (CAD/GIS versions preferred), city maps and commercial mapping software.
  - Milepost all required features including, all intersections, boundaries, bridges, culverts, mile markers and at-grade railroad crossings. See *GUIDELINES FOR MILEPOSTING* section for special cases and examples.
  - If there are any features that intentionally are not mileposted, document with sufficient justification for the omission and advise SDM. An example of a reason for an omission is a roadway change that is not reflected in any of the maps.
  - Enter mileposting data into approved worksheets or databases.
  - If route had already been mileposted in either TEAAS and MLI1, compare new values with either of the two previous milepostings. If any substantial differences between the old milepostings and the new mileposting are found, check to be sure that the newly created mileposting is true and actually should be different than the previous milepostings.
- 6) Run *MP.SQL* program on the mileposted route and printout these initial results. This step is performed in order to initially correct spelling mistakes or add alternate street names as necessary.
- 7) Adjust mileposts to match MLI1 values
- Feature mileposts of created mileposting must match the corresponding milepost value in MLI1. Document any substantial differences or concerns and advise SDM.
  - If an individual MLI1 feature on the mileposting printout is preceded by asterisk, it means that the feature is no longer identified by this name. This usually occurs when a city takes over a Secondary Route (SR) and this feature is no longer officially state maintained. The old name is still shown in the MLI1 for reference. A route normally still exists at this MLI1 point, just it is probably just now a city street name. Using either old maps or SECI, it should be determined what this old state maintained road is now called and appropriately match up the MLI1 mileposts for this location, like would be done for any other MLI1 feature.
  - Ordinarily, the created milepost is adjusted to the MLI1 milepost, by creating a fractional ratio between an MLI1 feature milepost and a feature milepost in the created mileposting. An adjusted feature milepost is created by multiplying the fractional ratio by the feature milepost in the created mileposting. This ratio is applied to every feature at the same milepost value of the MLI1 feature and every feature before this milepost, up until the next MLI1 milepost feature.
- 8) Milepost any coinciding routes**
- **Steps 1-7 are to be completed for ALL coinciding routes.**
  - **Any deviation from this policy MUST be justified and approved by SDM.**
- 9) Submit mileposting packet to SDM for checking and approval. This packet will contain:
- Detailed features mileposting, consistent with current unit practices (Excel spreadsheet)
  - Highest Order Route breakdown (Excel spreadsheet)
  - Original or copies of maps that were used to create the mileposting (optional)
  - Other documentation describing peculiar adjustments and reasoning
  - Milepost Checking Sheet, with general information filled in.

- Initial *MP.SQL* printout

## **CHECKING MILEPOST DATA** (SDM)

- 1) Mileposted route documentation is given to an Secondary Data Maintainer (SDM) who reviews and checks the milepost/highest order segments documentation for completeness and accuracy. Items that must be checked by the SDM before initial approval is granted are:
  - General location information such as route and county information
  - Previous TEAAS mileposting to assure that the new version is necessary and actually corrects/enhances the old mileposting.
  - Any applicable MLI1 mileposting and assure that the created mileposting is consistent with the MLI1 features, unless acceptable justification for adjustments are documented.
  - Any applicable MLI1 mileposting for any higher order routes and assure that the created mileposting is consistent with the MLI1 features, unless acceptable justification for adjustments are documented.
  - Highest Order Route breakdown and assure all segments reflect the proper highest order route.
- 2) If documentation is either incomplete or inaccuracies are found, the documentation will be returned to the creator. If the documentation is complete and correct, the Milepost Checking Sheet will be filled in and the milepost packet will be submitted for data entry.
- 3) This initial approval or rejection should be completed within 2 working days of receipt by the SDM.

## **ENTERING MILEPOST DATA** (TQU and above)

- 1) Enter feature milepost data
- 2) Enter Highest Order Segment data
- 3) Printout from TEAAS the Features Report and Highest Order Segments report
- 4) Check that these reports match the data received in the milepost packet.
- 5) Return milepost packet to the SDM that they received the milepost packet from.
- 6) The data entry should be completed within 2 working days of receipt by the data entry personnel.
- 7) Run *MP.SQL* program on the mileposted route again and printout these final results one day after mileposting data has been entered. This step is performed in order to confirm that

crashes are now properly mileposted to the route. If there are any crashes that are not mileposted, correct the mileposting or add alternate street names as necessary. Recheck mileposting the following day to confirm that route is now properly mileposted. See *Mileposted Crashes Minimum Requirements* section for minimum standards required for mileposting.

- 8) On the *MP.SQL* results printout, describe reasons for why EACH unmileposted FROM road did not get mileposted (i.e. Loop road, Does not intersect, Ramp crashes, etc.)

## **FINAL MILEPOSTING CHECK AND RELEASE (SDM)**

- 1) Check the milepost and highest order segment data entry to assure the consistency with the original milepost documentation.
- 2) If entered data is either incomplete or inaccuracies are found, the milepost packet will be returned to the data entry personnel to make appropriate corrections.
- 3) Review *MP.SQL* report to be sure that ALL crashes that should be mileposted are actually mileposted. Reasons for allowing Features/Crashes that deviate from the requirements must be properly explained and described on the *MP.SQL* final results printout.
- 4) Complete Milepost Checking Sheet
- 5) Record completion of mileposting in worklog.
- 6) File mileposting documentation appropriately.
- 7) Inform original creator of the mileposting that the mileposting is complete.
- 8) Final approval or rejection must be completed within 2 working days of receipt by the SDM.
- 9) File the mileposting packet in the appropriate project file. The mileposting packet is to include:
  - Detailed features mileposting, consistent with current unit practices (Excel spreadsheet)
  - Highest Order Route breakdown (Excel spreadsheet)
  - Final results from *MP.SQL* query – for each mileposted route
  - Final results from *MP.SQL* query (optional)
  - Original or copies of maps that were used to create the mileposting (optional)
  - Other documentation describing peculiar adjustments and reasoning
  - Completed Milepost Checking Sheet

## Mileposted Crashes Minimum Requirements

Using the MP.SQL assure that the following is true:

- 1) 90% of crashes on route must be mileposted
- 2) At a minimum, any FROM RD feature listed more than 3 times must be mileposted. Mileposting other features that can be found, with 2 or less crashes associated with them is preferred.
- 3) Any FROM RD feature that does not have a valid road code associated with it (on MP report they begin with LCL) should be corrected if the spelling is obviously a variation of a valid feature already listed on the route that is mileposted. These corrections can either be made by:
  - a) Adding alternate spellings to valid variations
  - b) Correcting the crash through the CRASH client
- 4) Any crash that has a FROM RD, which is a loop, should have valid road codes listed for ALL the TOWARDS RDs. This will help to get these crashes mileposted.

If there are ANY deviations from these requirements for valid reasons, i.e. loops, then the reasons for these deviations MUST be noted on a final printout of the MP.SQL report. Comments written on the MP.SQL report, besides each feature that deviates from the requirements is desirable. These notes will be reviewed during future mileposting quality control measures to validate any deviations from the above stated requirements.

## GUIDELINES FOR CORRECTING CRASH DATA

Data on crash reports can be fixed in the following cases:

- DMV data entry errors
- Cases when data on front of crash report is clearly erroneous and information provided in the crash diagram is consistent with the actual roadway information.
- The reporting officer made a simple spelling or coding error
- Cases where two roads are provided on the crash report, and the road entered by DMV, causes mileposting problems. If the alternate road provided on the crash report will allow the crash to be mileposted accurately, then alternate road can be used in place of the road originally entered by DMV.

### Examples

On Road text on crash report	Text entered in database	Problem with what is in database	Acceptable Update
ON ROAD: US 70 BUS	US 70	DMV did not enter the business route identifier	US 70 BUS
FROM ROAD: US 25	(LCL) 25	DMV coded a US route as a local route. This road should be recoded as a US route	(US) 25
FROM ROAD: LEE CO LINE	(LCL) LEE CO LINE	DMV coded a county line as a local route. This "road" should be recoded as a county line	(CL) LEE
FROM ROAD: SR 1478	SR 1478	The diagram for the crash report shows that a from road of SR 1487, not SR 1478. SR 1478 does not intersect with the on road, but SR 1487 does and the towards road information given also agrees with the from road truly being SR 1487.	SR 1487
ON ROAD: GOERGETOWN RD	GOERGETOWN RD	Officer transposed the "o" and the "e"	GEORGETOWN RD
US 540	US 540	It was determined that there absolutely is no US 540 in the county that is being worked on, but there is a I 540. This rational should only be used for NC, US and Interstate routes. Do not apply to SR routes.	I 540
ON ROAD:US 74 (TUNNEL RD)	US 74	US 74 was realigned and the road that the crash actually occurred on is now called US 74A, but it is still called Tunnel Rd	TUNNEL RD
FROM ROAD: SR 1201/ SR 1205	SR 1201	SR 1201 and SR 1205 intersect the on road at the same point, but SR 1201 also intersects the on road at another point, thus creating a loop.	SR 1205

Notes about changing crash data:

- Crashes where the changes you are making can be EASILY inferred from the data on the crash report. Even when comparisons with the crash report and maps clearly show that the information provided by the reporting officer is obviously wrong, data should not be changed to the crash report data. The only times changes should be made are when either the change is based on information actually on the crash report OR the proposed change would not require knowledge of the location for *anyone* to come to the same conclusion.
- Inferences from one crash cannot be transferred to another crash. For example, if one crash showed an On Road: US 74 (Tunnel Rd) it would be acceptable to change the on road to Tunnel Rd, if necessary. But if another crash is listed with simply an On Road: US 74 and from looking at both the crash reports it is determined that both crashes obviously occurred at the same intersection, the crash information for the second crash cannot be changed to Tunnel Rd.
- In general very conservative and need changes should be made to the crash data.

# GUIDELINES FOR DECIDING TO MAKE CHANGES TO CRASH DATA OR ADD ROAD CODES IN TEAAS

**Make crash data changes when:**

- Changes are trivial spelling mistakes and does not repeatedly happen
- Additional spaces are included in the road text
- Roads are coded improperly

**Make requests for new road codes when:**

- The spelling of the road is legitimate and a variation of the road text CANNOT be found in TEAAS

**Make requests for alternate spelling when:**

- The spelling of the road is legitimate and a variation of the road text CAN be found in TEAAS.
- A road is commonly misspelled, 3 or more times

**EXAMPLES**

Text entered in database	Why road text did not get a road code in database	Resolved by
JONES DT	DMV entered DT instead of DR	Making crash data changes – DT to DR
MOOSE HAVERN	There is no MOOSE HAVERN road, but MOOSE HAVEN is legitimate	Making crash data changes - MOOSE HAVERN to MOOSE HAVEN
JONES DR	DMV entered an extra space between JONES and DR	Making crash data changes – remove extra space
US 540	US 540 does not exist	Make crash data changes – change route type to Interstate
JOHN TERRY DR	No road code for JOHN TERRY DR, and no close variation to it.	Create new road code of JOHN TERRY, along with create alt spelling JOHN TERRY DR (JOHN TERRY)
C.T. JONES DR	No road code for C.T. JONES DR, and no close variation to it.	Create new road code of C.T. JONES, along with create alt spellings C.T. JONES DR and possibly CT JONES, CT JONES DR (C.T. JONES)
ST. ALBANS	No road code for ST. ALBANS. Could use SAINT ALBANS as alternate spelling	Create alt spelling for ST. ALBANS (SAINT ALBANS)
STONES PL	No road code for STONES. Could use STONE as alternate spelling	Create alt spelling for STONES PL (STONE)
WOOD BRIDGE DR	No road code for WOOD BRIDGE DR. Could use WOODBRIDGE	Create alt spelling for WOOD BRIDGE DR and WOOD BRIDGE (WOODBRIDGE)
MURRIL DR	No road code for MURRIL DR. Could use MURRILL	Create alt spelling for MURRIL DR (MURRILL)
CATE'S FARM DR	No road code for CATE'S FARM DR. Could use CATES FARM as alternate spelling	Create alt spelling for CATE'S FARM DR and CATE'S FARM (CATES FARM)
W FAIRWAY	No road code for W FAIRWAY. Could use FAIRWAY as alternate spelling	Create alt spelling for W FAIRWAY (FAIRWAY)
WESTBEND	No road code for WESTBEND, but since the word "WEST" is used, "BEND" should be the preferred name and there is one for BEND	Create alt spelling for WESTBEND (BEND)
PLANES DR	No road code for PLANES DR. Could use PLAIN as alternate spelling	Create alt spelling for PLANES DR, PLANES and possibly PLANE DR, PLANE (PLAIN)

**New road code/alt spelling request notes:**

- Check for all possible alternate spelling variations, by liberally using wild cards (\*) in text searches
- Be sure to clearly specify EXACTLY the text that you wish to get a road code for. If a request is made to have an alt spelling of "THOMAS DR" added to the preferred name "THOMAS", any crash entered into the database with "THOMAS DR." (notice the period after DR) will not get associated with the preferred name of "THOMAS".
- In most cases, do not spell out the suffixes, STREET, DRIVE, etc. Only give the abbreviations, unless there is a specific need to have a version of the street name that includes the suffix spelled out.
- When requesting new road codes, if you include the suffix (ST, RD, DR, etc), it will be assumed that you want to have both the core name set up as a preferred spelling and an alt spelling which includes the suffix. For example the request for PYLE BRANCH DR would generate both a new road code for PYLE BRANCH and an alt spelling for this road code of PYLE BRANCH DR.
- Group and separate new road code requests from alt spelling requests.
- For alt spelling requests, include the road code of the preferred road name so that it will not be necessary for the road code to be looked up again by the person who will be entering the data
- It is preferred that the actual text that is being requested to get a road code is submitted all in uppercase (i.e. TINDERBOX, not tinderbox or Tinderbox).
- Although it is preferred that all features that occur along a roadway are mileposted, if a street name is found on a mileposted route that does not have a road code AND there are no crashes associated with this feature, a new road code should NOT be requested. This obviously means that this uncoded feature cannot be mileposted. Note, all valid features that have valid road codes, regardless of road length or number of crashes associated with them, should still be mileposted. Exceptions to this rule are in cases such as new road alignments, where it would be expected that future crashes would be referenced to these uncoded features.
- Below is one example of a valid request format. Other basic formats are acceptable, as long as they are organized and provide all the necessary information.

Please add the following road codes:

HAGEN JONES DR  
J.R. YATES ST

Please add the following alternate spellings:

SW JONES ST (JONES, 50015722)  
TOAST ST (TOAST, 50030568)  
TOAST ST. (TOAST, 50030568)  
TOAST STREET (TOAST, 50030568)  
PLACID BLVD (PLACID, 50024354)

- From the above information the following data would be entered into TEAAS:

New road code for HAGEN JONES

Alt spelling of HAGEN JONES DR added to HAGEN JONES

New road code for J.R. YATES

Alt spelling of J.R. YATES ST, JR YATES, JR YATES ST added to J.R. YATES

Alt spelling of SW JONES ST added to JONES

Alt spelling of TOAST ST added to TOAST

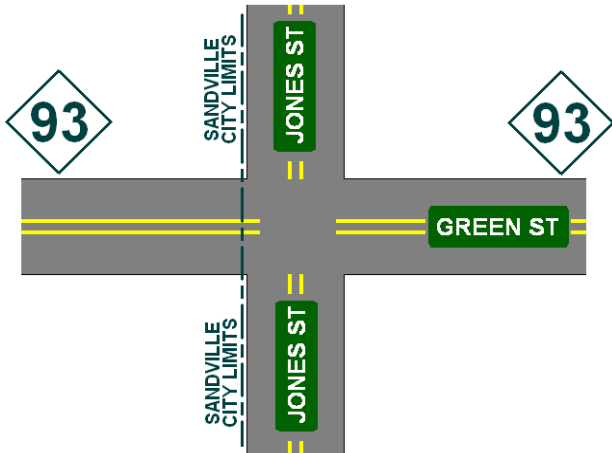
Alt spelling of TOAST ST. added to TOAST

Alt spelling of TOAST STREET added to TOAST

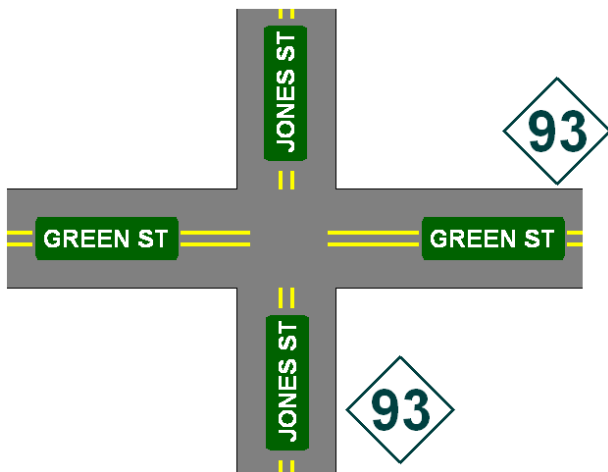
Alt spelling of PLACID BLVD added to PLACID

# GUIDELINES FOR MILEPOSTING FEATURES THAT ARE ALSO COINCIDING ROUTES

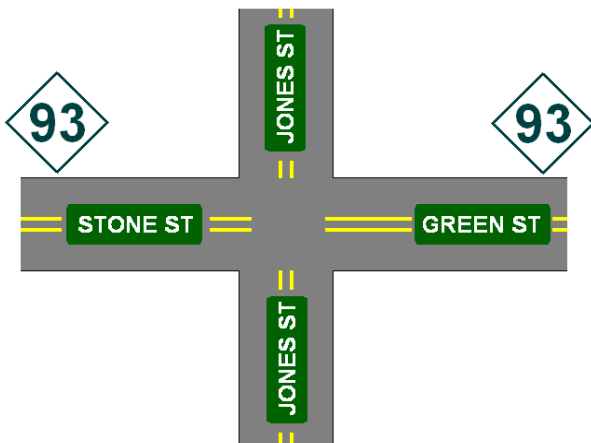
In these situations, if NC 93 was being mileposted, how would GREEN ST be handled.



**DO NOT MILEPOST GREEN ST**  
(MILEPOST JONES ST AND CITY LIMIT)



**MILEPOST GREEN ST**  
(MILEPOST JONES ST ALSO)

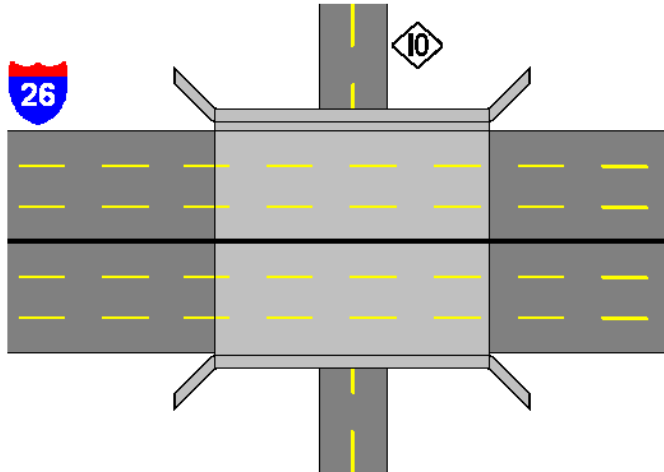


**DO NOT MILEPOST GREEN ST**  
(MILEPOST JONES ST)

These guidelines should be followed except for specific cases where in depth analysis (MP.SQL results, etc.) show that adjusting these guidelines for the specific case is warranted.

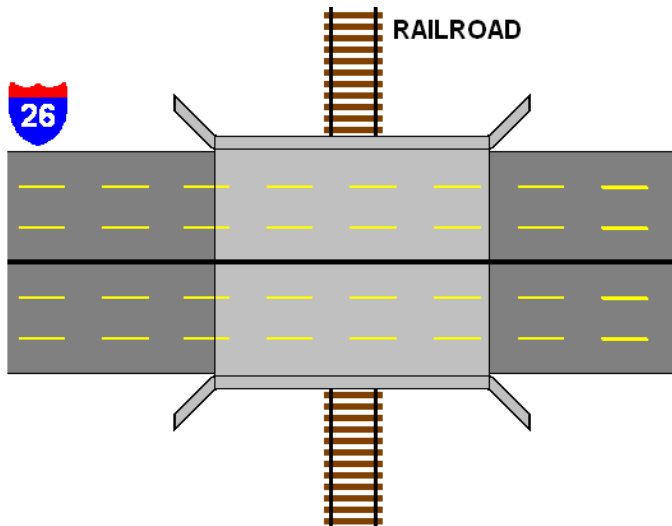
## GUIDELINES FOR MILEPOSTING BRIDGE OVERPASSES/UNDERPASSES

When mileposting a roadway that goes under a bridge, do not milepost the bridge. In these cases only milepost the roadway that is intersected, type "GRADE SEPERATION, NO RAMPS". Do not milepost railroads that are not at grade crossings.

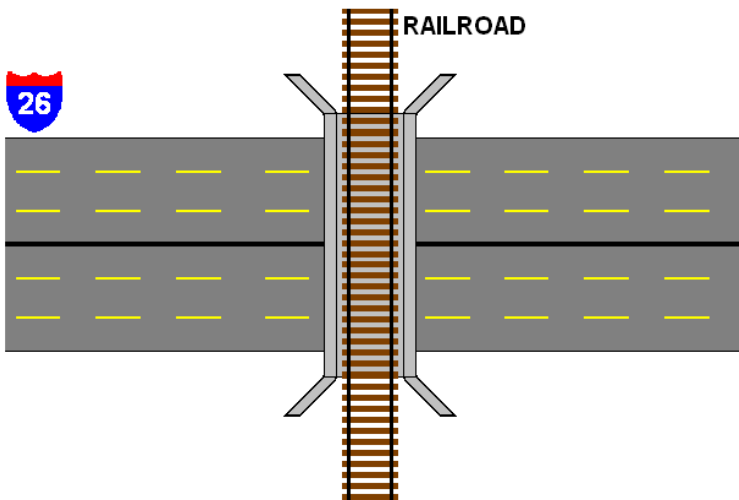


If mileposting I-26, milepost following features:  
- NC 10, GRADE SEPERATION, NO RAMPS  
- Bridge

If mileposting NC 10, milepost following features  
- I-26, GRADE SEPERATION, NO RAMPS



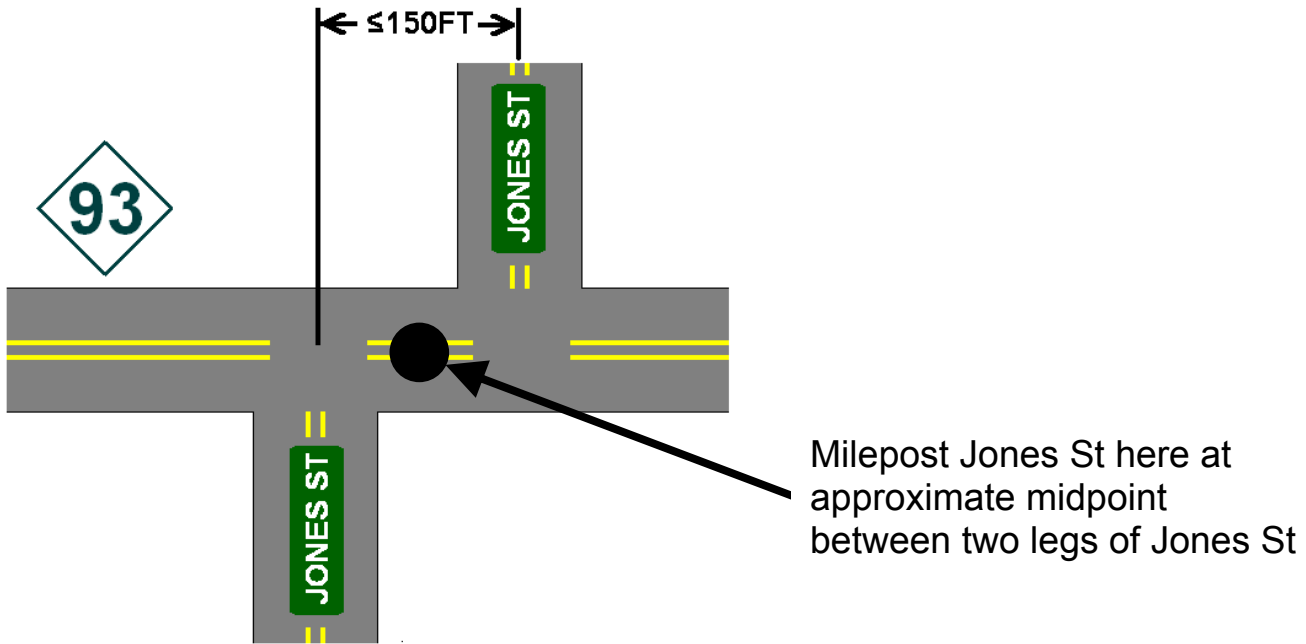
If mileposting I-26, milepost following features:  
- Bridge



If mileposting I-26, milepost following features:  
*None*

## GUIDELINES FOR MILEPOSTING OFFSET ROADS

When distance between legs of roads is less or equal to 150 feet, milepost as shown below. (Note roads do not necessarily have to be the same name)



When distance between legs of roads is greater than 150 feet, milepost as shown below. (Note roads do not necessarily have to be the same name)

