

Bicycle and Pedestrian Facilities at NCDOT Bridges

An Evolving Staff Perspective On Multi-Modal Transportation

- ▶ 1990 – NEGATIVE
 - ▶ 2000 – NEUTRAL
 - ▶ 2014 – NEUTRAL TO PRO
 - ▶ What Caused the Change?
- 

Greenways & Multiuse Trails

- ▶ Greenways Underneath Bridges
 - ▶ Multiuse Trails/Greenways Carried by Bridges
- 

Greenways Underneath Bridges

- ▶ Why would you want a greenway underneath a bridge?
 - Safety
 - Uninterrupted Travel

What factors into a Greenway Underneath a Bridge

- ▶ Volume of Traffic On Main Road
 - ▶ Vertical and Horizontal Clearance
 - ▶ Do we know on which side the greenway is proposed?
 - ▶ Frequency of flooding
 - ▶ Cost to Accommodate
 - Additional Bridge Deck Needed?
 - Additional Right of Way?
 - Additional Utilities?
 - Additional Engineering?
 - ▶ Cost Sharing?
- 

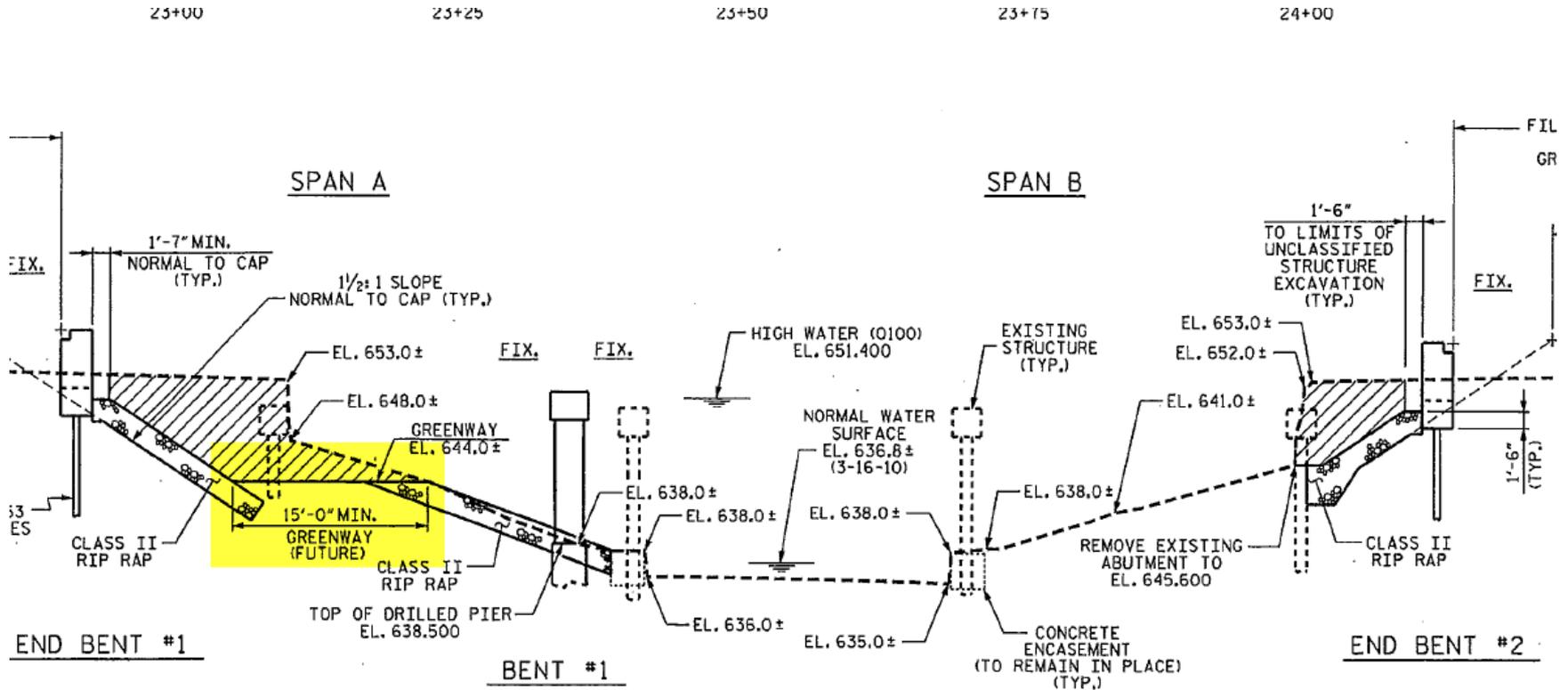
Example 1: Gaston County, NC



There is space under the south side



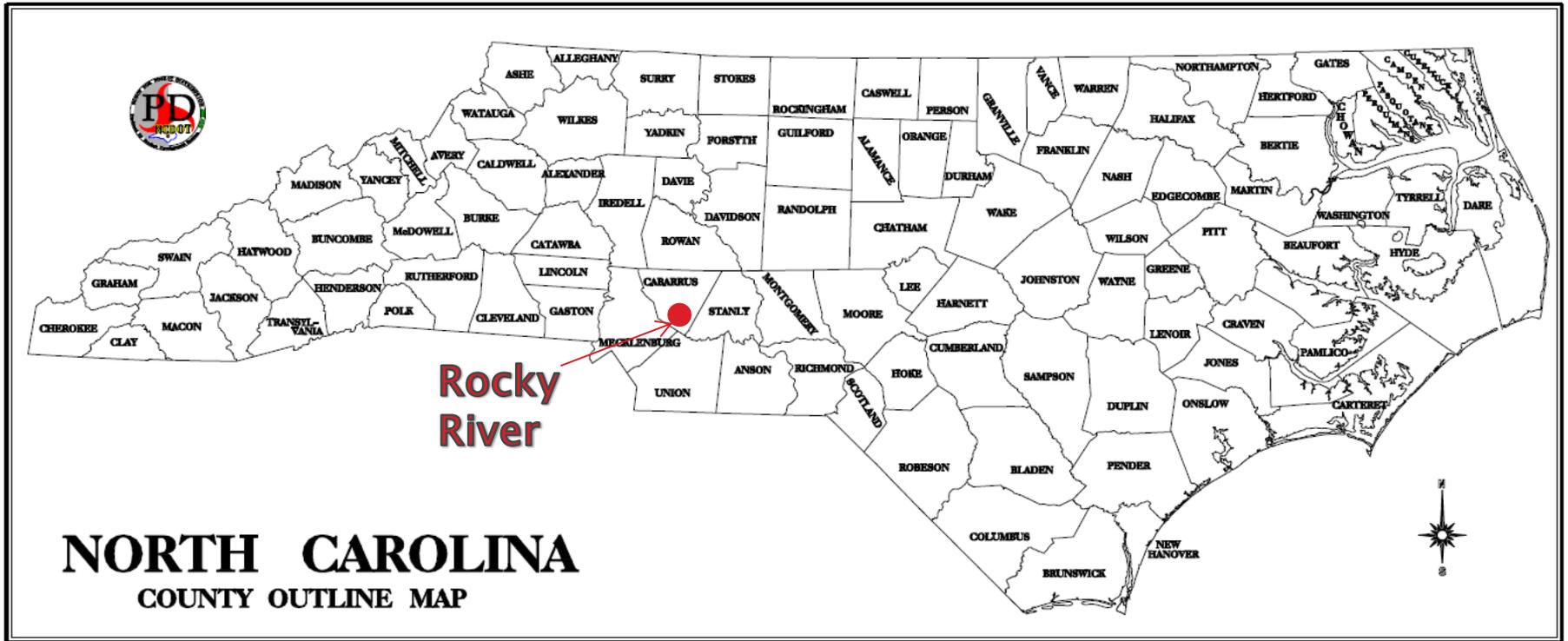
Included space in the plans



New Structure Includes a graded shelf allowing clearance of 15 feet wide and 8 feet high for future greenway.



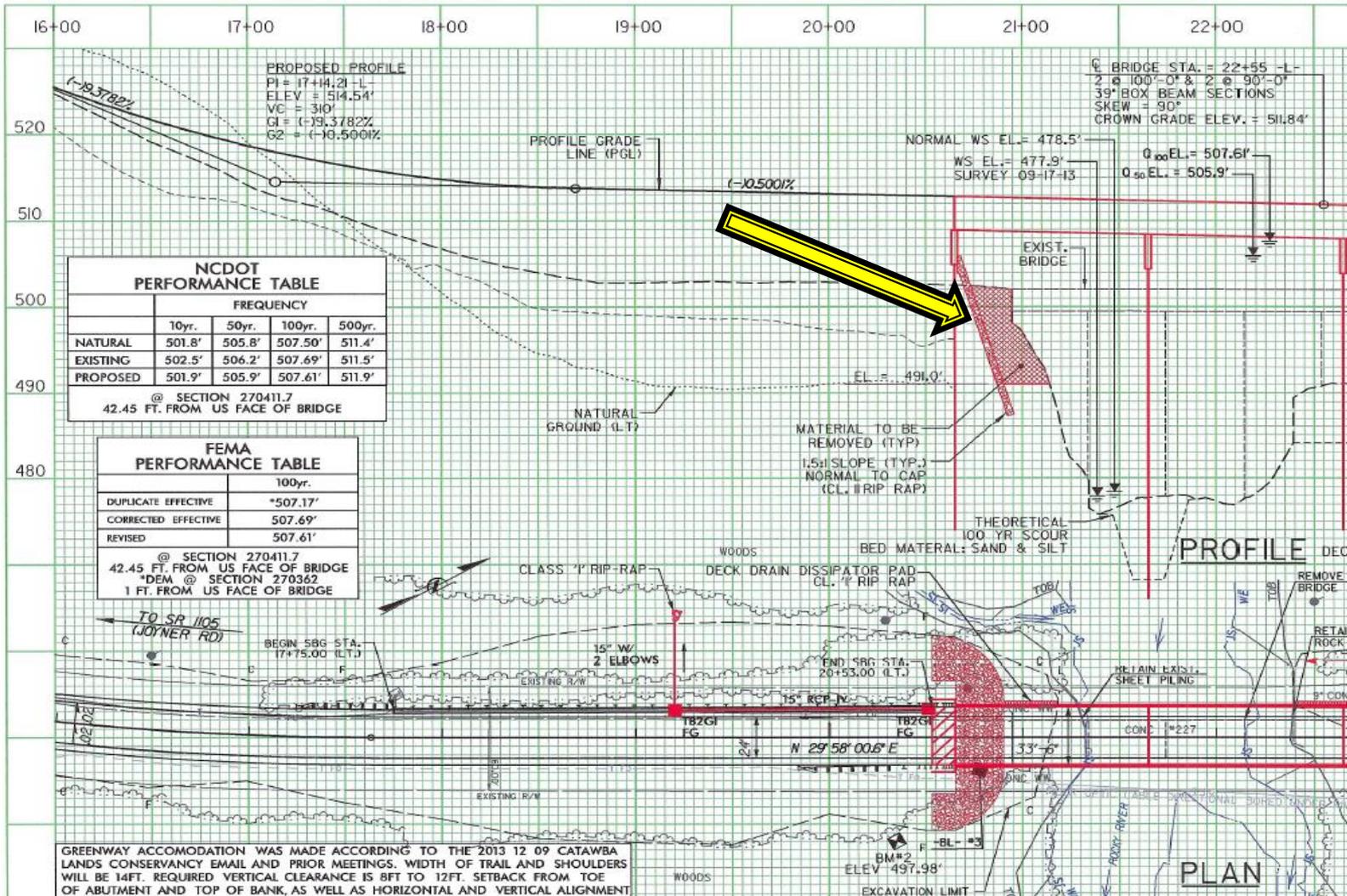
Example 2: Carolina Threadway Trail



Trail to go in on South Side



Shelf Had to Be Cut In to Accommodate Greenway on South Side



\$15,000 Additional Cost

- ▶ There were no written guidelines on determining whether to include accommodation and who would pay.

Guidelines for Greenways Under Bridges

Guidelines for Inclusion of Greenway Accommodations Underneath a Bridge as part of an NCDOT Project

The purpose of these guidelines is to provide the Project Team (the staff from Pre-construction and Division who are developing the project) with authority to approve accommodation for most proposed greenways under a bridge and with the responsibility to pass any accommodations beyond their authority or considered unacceptable to upper management for final consideration.

A) Establishing Need for Greenway Accommodation

The Bicycle and Pedestrian Division in coordination with the appropriate Highway Division will determine if the proposed greenway/multi-use trail underneath a bridge is justified and provide documentation to the Project Team. The Bicycle and Pedestrian Division evaluation will include but is not limited to the following:

1. Is it part of a locally or state adopted plan?
2. Does it have transportation benefit?
3. Is a greenway underneath the bridge the preferred/best crossing in context of the situation?
4. Has the local government requested the greenway accommodation?

B) Project Team Considerations

The Project Team will:

1. Evaluate whether the accommodation for the proposed greenway will result in impacts which from the Project Team's perspective are unacceptable (e.g. major difficulties or costs associated with right of way, utilities, obtaining permits, relocations, etc.).
2. Evaluate if the requested accommodation is acceptable/feasible from an engineering perspective.
3. Have discretion to make accommodations up to:
 - a. Adding 20 feet of bridge length
 - b. Adding up to 3 feet of additional height if Hydraulic requirements can be met.

*Please note that all items (including these) affecting cost will be subject to Section C & D of this document.
4. Ensure all maintenance of the greenway will be the responsibility of the Local Government

If the Project Team recommends that the greenway not be included, the Project Team will provide background and recommendations to the Upper Management Team who will make the final determination. The Upper Management Team is composed of the following members:

1. Roadway Design Unit Head,
2. Director of Bicycle & Pedestrian Division
3. PDEA Unit Head
4. Division Engineer
5. Operations Program Manager (*Daniel Keel*)
6. Program Development Regional Manager (*Ray McIntyre, Mike Stanly and Van Argabright*)
7. Manager of the Program Management Office (*Jimmy Travis*)

C) Cost Responsibility

1. Existing Greenway/Multi-Use Trail

If there is an existing greenway/multi-use trail, NCDOT will pay 100% of all costs to replace the facility in kind. Should there be an improvement requested, the cost of the improvement and responsibility for paying will follow Item 3 below.

2. Accommodating Proposed Greenway – Need Has Not Been Established

If there is a proposed greenway and need for the accommodation has not been justified, then the local interest must pay the full cost (possibly including Right of Way, Utilities, etc.) of the greenway accommodation assuming no unacceptable impacts.

3. Accommodating a Proposed Greenway – Need Has Been Established

If a greenway and accommodation is justified, the cost of the greenway will be established by developing two preliminary designs; one design without the greenway and one design with the greenway.

The cost of the greenway will be established by totaling estimates for right of way, utilities and construction differences in the preliminary designs for the new bridge and its approaches. The betterment cost for each bridge up to 5% of the project cost not to exceed

the betterment cost for each bridge up to 5% of the project cost not to exceed share will be applied for any remaining betterment cost. NCDOT will bear any cost associated with engineering of the accommodation. Unless there are significant differences in the preliminary designs for the new bridge and its approaches, the original estimate will be used to establish any cost share with the locally interested party. The following tables based on whether the greenway is owned/managed by the local government.

Costs (similar to sidewalk policy)

Population	DOT Participation	Local Participation
>100,000	50%	50%
50,000 to 100,000	60%	40%
10,000 to <50,000	70%	30%
< 10,000	80%	20%

Costs for other interested parties will cost share according to the following chart.

County Population	DOT Participation	County Participation
>60,000	60%	40%
40,000 to 60,000	70%	30%
20,000 to <40,000	80%	20%
< 20,000	90%	10%

Costs

for Towns, Villages, etc.) that receive Powell Bill funds in accordance with G.S. 136-41.3, will be allowed to either provide payment for the cost share of the structure with the execution of the municipal agreement or by payment to the County in three (3) equal annual installments, beginning with the execution of the agreement for the structure accommodation.

Counties, or Others that do not receive Powell Bill funds in accordance with G.S. 136-41.3, must provide full payment for the cost share as determined by the local government with the submission of the executed municipal agreement.

Changing Culture

Guidelines for Inclusion of Greenway Accommodations Underneath a Bridge as part of an NCDOT Project

The purpose of these guidelines is to provide the Project Team (the staff from Pre-construction and Division who are developing the project) with authority to approve accommodation for most proposed greenways under a bridge and with the responsibility to pass any accommodations beyond their authority or considered unacceptable to upper management for final consideration.

Establishing Need

A) **Establishing Need for Greenway Accommodation**

The **Bicycle and Pedestrian Division** in coordination with the appropriate **Highway Division** will determine if the proposed greenway/multi-use trail underneath a bridge is justified and provide documentation to the Project Team. The Bicycle and Pedestrian Division evaluation will include but is not limited to the following:

1. Is it part of a locally or state adopted plan?
2. Does it have transportation benefit?
3. Is a greenway underneath the bridge the preferred/best crossing in context of the situation?
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Project Considerations

B) Project Team Considerations

The Project Team will:

1. Evaluate whether the accommodation for the proposed greenway will result in impacts which from the Project Team's perspective are unacceptable (e.g. major difficulties or costs associated with right of way, utilities, obtaining permits, relocatees, etc.).
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Who Pays?

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If there is a proposed greenway and need for the accommodation has not been justified, then the local interest must pay the full cost (possibly including Right of Way, Utilities, etc.) of the greenway accommodation assuming no unacceptable impacts.

3. Accommodating a Proposed Greenway – Need Has Been Established

If there is a **proposed greenway and accommodation is justified**, the cost of the greenway accommodation will be established by developing two preliminary designs; one design without the greenway and one design with the greenway. Betterment costs will be established by totaling estimates for right of way, utilities and construction based on the cost differences in the preliminary designs for the new bridge and its approaches. NCDOT will pay the betterment cost for each bridge up to 5% of the project cost not to exceed \$50,000 per bridge.

A sliding scale cost share will be applied for any remaining betterment cost. NCDOT will bear any additional costs associated with engineering of the accommodation. Unless there are significant changes to the scope of the accommodation, there was a significant oversight in developing cost estimates, or the actual bid prices result in a cost that varies significantly from the original estimate, the preliminary design estimate will be used to establish any cost share with the locally interested party. Choose one of the following tables based on whether the greenway is owned/managed by the county or municipality.

a. Municipalities (similar to sidewalk policy)

Population	DOT Participation	Local Participation
>100,000	50%	50%
50,000 to 100,000	60%	40%
10,000 to <50,000	70%	30%
< 10,000	80%	20%

b. Counties or other interested parties will cost share according to the following chart.

County Population	DOT Participation	County Participation
>60,000	60%	40%
40,000 to 60,000	70%	30%
20,000 to <40,000	80%	20%
< 20,000	90%	10%

Multiuise Trails / Greenways Carried By Bridges

Example: Neuse River, Raleigh, NC

Neuse
River



Old Falls of Neuse Road over Neuse River





Falls Lake

NC GRID NAD 83/95

Old Falls of Neuse Rd.

Neuse River



Falls Lake

NC GRID NAD 83/95

Old Falls of Neuse Rd.

Proposed Neuse River Greenway

Neuse River



Falls Lake

NC GRID NAD 83/95

Old Falls of Neuse Rd

Future Park

Proposed Neuse River Greenway

Neuse River



Falls Lake

NC GRID NAD 83/95

Proposed Multi-Use Path

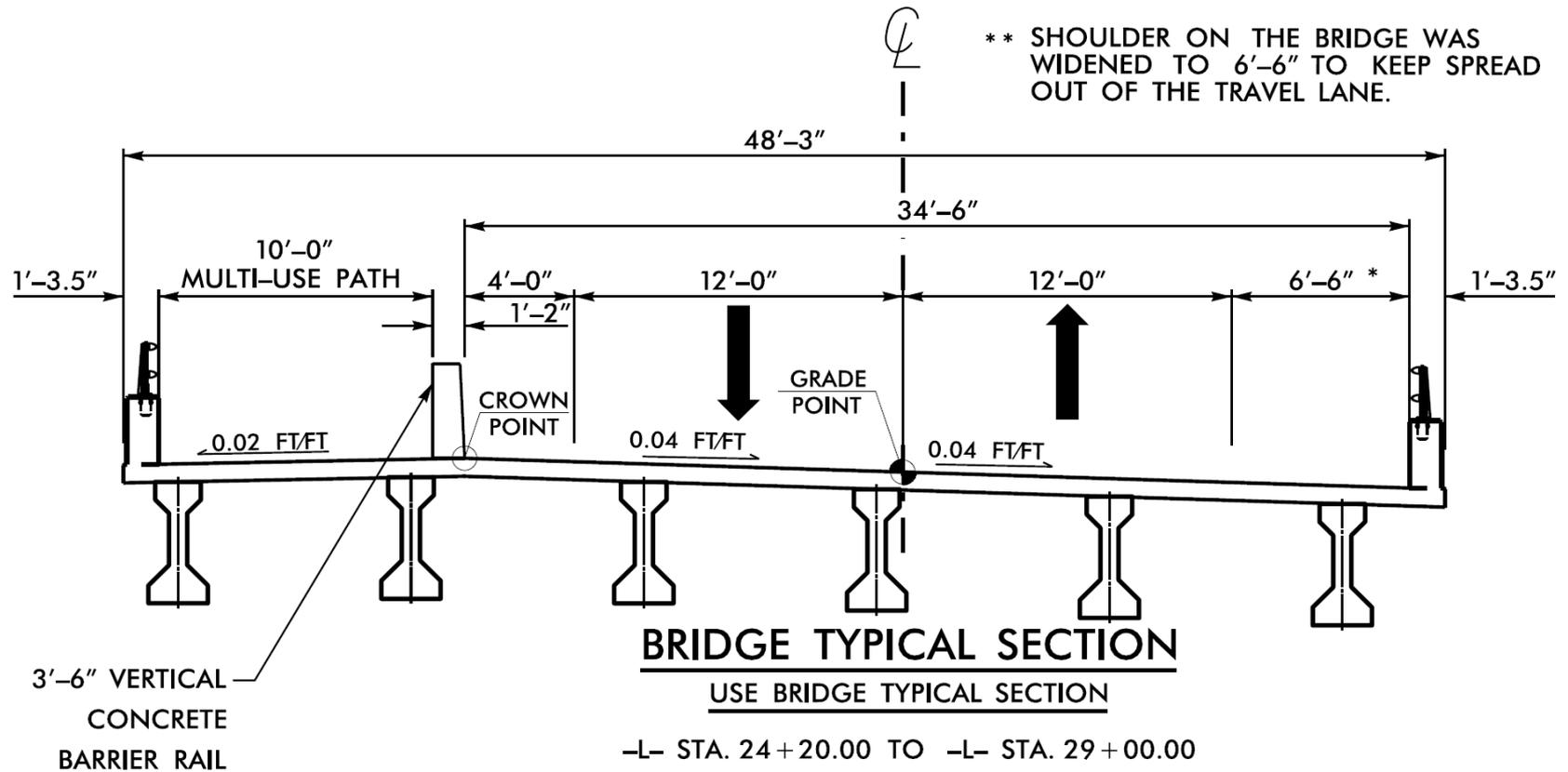
Future Park

Old Falls of Neuse Rd.

Proposed Neuse River Greenway

Neuse River

Requested Typical Section











Multiuse Trails/Greenways Carried By Bridges

- ▶ How is this different from a greenway under a bridge?
 - Ownership and Maintenance of facility
- ▶ Who pays
 - If it's replacing a pre-existing facility, NCDOT pays in kind 100%.
 - If it is new facility, the first 5.5 feet is treated like a sidewalk in that the concrete itself is cost shared but the deck width is paid entirely by NCDOT (e.g.. 100 foot long bridge at 5.5 feet additional bridge width = 550 square feet of bridge deck at \$110/sf = \$60,500 paid by NCDOT. Any additional deck width or sidewalk is treated as a betterment and paid for by the requesting party.
 - The Barrier Rail is treated as a betterment and paid for 100% by the requesting party



The End!