



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

February 27, 2017

MEMO TO: Jeff Allen, Jonathan Bivens, Stuart Bourne, Larry Brickey, Chris Byers, Chad Curran, Shannon Douglas, Ron Hancock, Bruce Hazle, Brandon Hill, Ryan Ilg, Berry Jenkins, Ben Lanier, Don Lee, Clark Morrison, Glenn Mumford, Michael O'Sheilds, Mark Perkins, Ian Scott, Lamar Sylvester, Kevin Thomas, Brian Webb, Robert Williams

FROM: R. A. Garris, PE  
Contract Officer

SUBJECT: DOT-AGC Roadway Subcommittee Meeting Minutes

The subject committee met on February 23, 2017 at 9:30 a.m. in the Riverwood Conference Room at the Century Center.

*Agenda and Discussion Items:*

**Concrete Mix Design Submittal Process**

**Brian Hunter**

Mr. Hunter followed up on a discussion from the January 2017 AGC-DOT Joint Cooperative Committee meeting on the current process to get mix design approved. M&T has created a general e-mail that will be directed to 2 or 3 folks so approval and assignment can be given within 48 hours. The address is [ConcreteDesigns@ncdot.gov](mailto:ConcreteDesigns@ncdot.gov). Mr. Hunter stated that they are also creating a web site with approved mix designs to be used as a tool. M&T is also getting rid of the Portland Cement Concrete Mix Design Request form 312R and will move the request to HiCAMS.

**Pipe Inspection**

**Todd Whittington**

Mr. Whittington provided a handout for review proposing to move the responsibility of new pipe inspections from NCDOT to the Contractor using NASSCO PAPC Certified Technicians. Such a move would give the Contractor flexibility in the schedule by not waiting on M&T technicians to come out. It will also free up the M&T technicians to do other investigations with limited resources.

Mr. Whittington stated that the certified technicians can be in-house or via third party. Such inspections will be on larger pipe jobs.

Industry asked if there would be a pay item for this work. Mr. Whittington answered that M&T is considering what that would look like if they move in that direction. M&T is also looking for industry feedback on the proposed language and any barriers to this being successful. There was a

question on looking beyond the first 25% of the pipe installed as well as a determination which pipes will be inspected or will it be "random".

Mr. Whittington stated that this provision may or may not make the 2018 spec book.

#### **Reinforced Bridge Approach Fill Standards**

**Joel Howerton/Scott Hidden**

Mr. Howerton provided plan sheet revisions for 422.01 and 422.02, Bridge Approach Fills (Type I and Type II). These will take the place of the current bridge approach fills (422.11) Sub Regional Tier. Type I will be the Standard Approach Fill and follow Drawing No. 422.01, and Type II will be the Modified Approach Fill and follow Drawing No. 422.02. There will be a Type III Reinforced Approach Fill for MSE walls that will be per Standard Detail No. 422.03. Mr. Howerton asked that the subcommittee look the plan revisions over and provide any comments.

Mr. Hidden provided a handout with a draft revision to SP4 R02: Bridge Approach Fills. The draft revision outlines the three bridge type fills and their respective pay items. The draft also removed the use of geomembranes.

#### **Grouting of Large Dia. Utility Encasements**

**Jonathan Bivens**

Mr. Bivens stated that utility companies are asking for encasements to be put in when the contract does not call for them. They would like these for future use, but they do not want to pay for encasements that will be grouted/filled in so they cannot use them. Mr. Bivens stated that typically NCDOT inspectors do not require the encasements to be filled in, but others are requiring it.

Mr. Barclay noted that there are many issues with encasements. Per the current specifications, the encasements do not have to be filled if there is a certification of durability. He also noted that the size of the pipe for fill has been reduced from 36" to 24" for the 2018 spec book and they have added a design life of 100 years along with the certification. Mr. Barclay stated that he will look into industry's concerns.

#### **Rock and Broken Pavement Provision Revision**

**Lamar Sylvester**

Mr. Sylvester handed out a draft revision to the Rock and Broken Pavement Fills provision. The intent of the changes was to take away any references to quarry materials and protect the fabric and the embankment above it. There is currently a line item for breaking of existing concrete pavement that can be used for this provision.

Industry stated that the specification adds risk to the contractor and higher costs to NCDOT as it costs money to crush the concrete and there may still be a need to add quarry material to fill the voids, etc. There is also not a pay item for paying for the fabric.

Mr. Sylvester stated that they will continue to work on the language and how to incorporate the material as well as any quarry material that may be needed to meet the Engineer's approval.

#### **Construction Surveying/Utilization of Hourly Surveying**

**Jonathan Bivens**

Mr. Bivens expressed concern that surveying has gotten more complicated from the original intent and surveyors are not being compensated for the additional work they are doing. Extra work is typically considered incidental by the inspectors on the project. Industry stated that if the work is different than what is in the plans that the surveyor needs to be paid for the re-design.

There is currently a section in the spec book that pays for Supplemental Field Surveying so a supplemental agreement is not needed. Industry stated that NCDOT needs to take the ambiguity out of the spec and clearly define what is supplemental.

Mr. Sylvester stated that he will look at it as they continue to update the Surveying Manual.

## **Open Discussion**

### Shoulder Berm Gutter

Mr. Howerton stated that NCDOT has listened and is willing to look at shoulder berm gutter thicknesses. Per discussions internally, a 6" thickness for the gutter on the pavement edge has been introduced. The final measurements from pavement edge to back up curb would be 6"/5"/9".

Industry asked why the front edge could not be 7" like all the other curbs. This would assist in the stepping down of the paver. Mr. Howerton stated that he will look into it.

### MBE/WBE Division Let Banking

Mr. Jenkins asked if the contractors have been using MBE/WBE banking on the purchase order contracts. The contractors stated that they have been and would like to see the pilot go on longer than the 9 months initially set.

### CEI Utilization

Mr. Jenkins stated that a meeting was held with NCDOT, AGC, ACEC, CAPA and some CEI firms to discuss CEI usage. The conversations centered on CEI personnel not being adequately trained in site safety and the reluctance of making decisions to move the project forward. Mr. Jenkins stated that the CEI firms raised concerns with making decisions and the liability of the decision.

Industry asked if NCDOT provided CEI firms with any guidance or training requirements. They also stated that there needs to be better communication between the three parties (Contractor, NCDOT and the CEI) including a decision resolution procedure so the project does not get held up.

Mr. Sylvester stated that NCDOT is inviting the CEI firms to any workshops that they have and will continue to work with ACEC and the AGC in the development of protocols for CEI.

A suggestion was presented by industry to but the CEI under the contractor via the contract. The contractor would manage the CEI. This was done through some Design Build contracts.

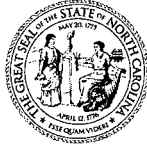
### Borrow Payment

Mr. Sylvester mentioned to the subcommittee that the aggregate industry has been in touch with NCDOT to look into an option that would allow trucks to be weighted as they leave the quarry and convert the tonnage to cubic yards by some agreed upon unit weight factor. The industry expressed concerns with additional wait times as the quarry scales.

## **Next Meeting**

The next meeting is scheduled for April 20, 2017 at 9:30 a.m. in the Riverwood Conference Room at Century Center B.

Cc: Mark Freeman  
John Pilipchuk  
Scott Hidden  
Steve Kite  
Natalie Roskam  
Benjamin Johnson  
Mani Shahidi  
Brian Hunter  
Todd Whittington



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February 20, 2017

MEMO TO: Jeff Allen, Jonathan Bivens, Stuart Bourne, Larry Brickey, Chris Byers, Chad Curran, Shannon Douglas, Ron Hancock, Bruce Hazle, Brandon Hill, Ryan Ilg, Berry Jenkins, Ben Lanier, Don Lee, Clark Morrison, Glenn Mumford, Michael O'Sheilds, Mark Perkins, Ian Scott, Lamar Sylvester, Kevin Thomas, Brian Webb, Robert Williams

FROM: R. A. Garris, PE  
Contract Officer

SUBJECT: DOT-AGC Roadway Subcommittee Meeting 2/23/17 Agenda

The next meeting will be held at the Riverwood Conference Room in the NCDOT Century Center Building B at 9:30 a.m on Thursday, February 23rd. The following is a list of items scheduled for discussion:

- |  |                  |
|--|------------------|
| 1. Concrete Mix Design Submittal Process (update)            | Brian Hunter     |
| 2. Pipe Inspection   | Todd Whittington |
| 3. Reinforced Bridge Approach Fill Standards 422.10 & 422.11 | Joel Howerton    |
| 4. Grouting of Large Dia. Utility Encasements                | Jonathan Bivens  |
| 5. Rock and Broken Pavement Provision Revision               | Lamar Sylvester  |
| 6. Construction Surveying / Utilization of Hourly Surveying  | Jonathan Bivens  |

## **Proposed Language for 2018 Spec Book**

### **300 Pipe Culverts**

#### **300-8 Inspection and Maintenance**

The Contractor will randomly visually inspect, using remote access cameras, a minimum of 10% of the pipe installed on the Project for Projects having XXXX Linear Feet, or greater, of pipe that is at least 12" in diameter. The inspection will be performed by a NASSCO PAPC Certified Technician. A written summary of the inspection along with a digital copy of the inspection video (with commentary/notes) will be provided to the Engineer within seven days of the inspection. The report will conform to NASSCO standards. Inspection of the minimum 10% quantity of pipe will be performed after at least 5% of the pipe has been installed and before 25% of the pipe has been installed.

Replace pipes having cracks greater than 0.1" or deflections greater than 7.5%. Repair or replace pipes with cracks greater than 0.01%, exhibiting displacement across a crack, exhibiting bulges, creases, tears, spalls, or delamination. Maintain all pipe installations in a condition such that they will function continuously from the time the pipe is installed until the project is accepted.

## **ROCK AND BROKEN PAVEMENT FILLS:**

(2-246-176)

235

SP2 R85

Revise the 2012 *Standard Specifications* as follows:

**Page 2-22, Article 235-2 MATERIALS**, add the following after line 19:

<b>Item</b>	<b>Section</b>
Geotextile for Rock and Broken Pavement Fills, Type 2	1056

Provide Type 2 geotextile for filtration geotextiles. ~~Use rip rap and No. 57 stone from either a quarry or onsite material to fill voids in rock and broken pavement fills. Provide small and large size rip rap with stone sizes that meet Class A and B in accordance with Table 1042-1 and No. 57 stone with a gradation that meets Table 1005-1 or use similar size onsite material approved by the Engineer.~~

**Page 2-23, Subarticle 235-3(B) Embankment Formation**, lines 18-19, delete the third sentence in the seventh paragraph.

**Page 2-23, Subarticle 235-3(B) Embankment Formation**, lines 21-23, replace the eighth paragraph with the following:

Before placing embankment fill material or filtration geotextiles over rock and broken pavement, fill voids in the top of rock and broken pavement fill with ~~rip rap and No. 57~~ concrete pieces or crushed stone to the satisfaction of the Engineer. Place and compact larger ~~materials~~ rip rap first followed by smaller ~~materials~~ rip rap. Then, fill any remaining voids with ~~No. 57 stone so~~ geotextiles are not torn, ripped or otherwise damaged when installed and covered. Compact ~~rip rap and No. 57~~ concrete pieces and crushed stone with tracked equipment or other approved methods. Install filtration geotextiles on top of rock, broken pavement, ~~rip rap and No. 57~~ concrete pieces and crushed stone in accordance with Article 270-3 before placing remaining embankment fill material.

Remove any rocks, debris or pavement pieces from the roadbed larger than 2" within 12" of the subgrade or finished grade, whichever is lower.

**Page 2-24, Article 235-5 MEASUREMENT AND PAYMENT**, line 13, add the following to the end of the first paragraph:

Payment for ~~materials~~ rip rap, No. 57 stone and geotextiles to construct embankments with rock and broken pavement fills will be considered incidental to the work in Sections 225, 226, 230 and 240.

## **BRIDGE APPROACH FILLS:**

(10-19-10) (Rev. 1-16-18)

422

SP4 R02

### **Description**

Bridge approach fills consist of backfilling behind bridge end bents with select material wrapped in geotextiles or aggregate to support all or portions of bridge approach slabs. Provide drain pipes connected to outlet pipes and pads for drains as required. For bridge approach fills behind end bents with mechanically stabilized earth (MSE) abutment walls, reinforce bridge approach fills with MSE wall reinforcement connected to end bent caps. Construct bridge approach fills in accordance with the contract, accepted submittals and 2018 Roadway Standard Drawing Nos. 422.01 or 422.02 or Roadway Standard Detail No. 422.03.

Define bridge approach fill types as follows:

*Approach Fills* – Bridge approach fills in accordance with 2018 Roadway Standard Drawing Nos. 422.01 or 422.02 or Roadway Standard Detail No. 422.03,

*Standard Approach Fill* – Type I Standard Bridge Approach Fill in accordance with 2018 Roadway Standard Drawing No. 422.01,

*Modified Approach Fill* – Type II Modified Bridge Approach Fill in accordance with 2018 Roadway Standard Drawing No. 422.02 and

*Reinforced Approach Fill* – Type III Reinforced Bridge Approach Fill in accordance with Roadway Standard Detail No. 422.03.

### **Materials**

Refer to Division 10 of the 2018 *Standard Specifications*.

<b>Item</b>	<b>Section</b>
Geotextiles, Type 1	1056
Portland Cement Concrete, Class B	1000
Select Materials	1016
Subsurface Drainage Materials	1044

Provide Type 1 geotextile for filtration geotextiles and Class B concrete for outlet pads. Use Class III, Type 1, Class V or Class VI select material for standard and modified approach fills. For an approach fill behind a bridge end bent with an MSE abutment wall, backfill the reinforced approach fill with the same aggregate type approved for the reinforced zone in the accepted MSE wall submittal. For MSE wall aggregate, reinforcement and connector materials, see the *Mechanically Stabilized Earth Retaining Walls* provision. Provide PVC pipes, fittings and outlet pipes for subsurface drainage materials. For PVC drain pipes, use pipes with perforations that meet AASHTO M 278.

### **Construction Methods**

Excavate as necessary for approach fills in accordance with the contract. Notify the Engineer when foundation excavation is complete. Do not place filtration geotextiles or aggregate until approach fill dimensions and foundation material are approved.



For reinforced approach fills, cast MSE wall reinforcement or connectors into end bent cap backwalls within 3" of locations shown in accepted MSE wall submittals. Install MSE wall reinforcement with the orientation, dimensions and number of layers shown in accepted MSE wall submittals. Pull geosynthetic reinforcement taut so that it is in tension and free of kinks, folds, wrinkles or creases.

Attach filtration geotextiles to end bent cap backwalls and wing walls with adhesives, tapes or other approved methods. Overlap adjacent filtration geotextiles at least 18" with seams oriented parallel to the roadway centerline. Hold geotextiles in place with wire staples or anchor pins as needed. Contact the Engineer when existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with filtration geotextiles.

Install continuous perforated PVC drain pipes with perforations pointing down in accordance with 2018 Roadway Standard Drawing Nos. 422.01 or 422.02. Connect drain pipes to outlet pipes just beyond wing walls. Connect PVC pipes, fittings and outlet pipes with solvent cement in accordance with Article 815-3 of the *2018 Standard Specifications* and construct outlet pads in accordance with 2018 Roadway Standard Drawing No. 815.03.

Install drain pipes so that water drains towards outlets. If the groundwater elevation is above drain pipe elevations, raise drains up to maintain positive drainage towards outlets. Place pipe sleeves in or under wing walls so drains maintain positive drainage. Use sleeves that can withstand wing wall loads. When backfilling standard or modified approach fills with Class III, Type I select material, cover drain pipes with Class V or VI select material and surround stone with filtration geotextiles.

Place select material or aggregate in 8" to 10" thick lifts. Compact Class III, Type I select material for standard or modified approach fills and fine aggregate for reinforced approach fills in accordance with Subarticle 235-3(C) of the *2018 Standard Specifications*. Compact Class V and Class VI select material for standard or modified approach fills and coarse aggregate for reinforced approach fills with a vibratory compactor to the satisfaction of the Engineer. Do not displace or damage geosynthetics, MSE wall reinforcement or drains when placing and compacting select material or aggregate. End dumping directly on geosynthetics is not permitted. Do not operate heavy equipment on geosynthetics or drain pipes until they are covered with at least 8" of select material or aggregate. Replace any damaged geosynthetics or drains to the satisfaction of the Engineer.

### **Measurement and Payment**

*Type I Standard Approach Fill, Station \_\_\_\_\_, Type II Modified Approach Fill, Station \_\_\_\_\_ and Type III Reinforced Approach Fill, Station \_\_\_\_\_* will be paid at the contract lump sum price. The lump sum price for each approach fill type will be full compensation for providing labor, tools, equipment and approach fill materials, excavating, backfilling, hauling and removing excavated materials, installing geotextiles and drains, compacting backfill and supplying select material, aggregate, filtration geotextiles, drain pipes, pipe sleeves, outlet pipes and pads and any incidentals necessary to construct approach fills behind bridge end bents.



The contract lump sum price for *Type III Reinforced Approach Fill*, Station \_\_\_\_ will also be full compensation for providing and connecting MSE wall reinforcement to end bent caps but not designing MSE wall reinforcement and connectors. The cost of designing MSE wall reinforcement and connectors for reinforced approach fills behind bridge end bents with MSE abutment walls will be considered incidental to the contract unit price for *MSE Retaining Wall* No. \_\_\_\_.

Payment will be made under:

**Pay Item**

Type I Standard Approach Fill, Station \_\_\_\_

Type II Modified Approach Fill, Station \_\_\_\_

Type III Reinforced Approach Fill, Station \_\_\_\_

**Pay Unit**

Lump Sum

Lump Sum

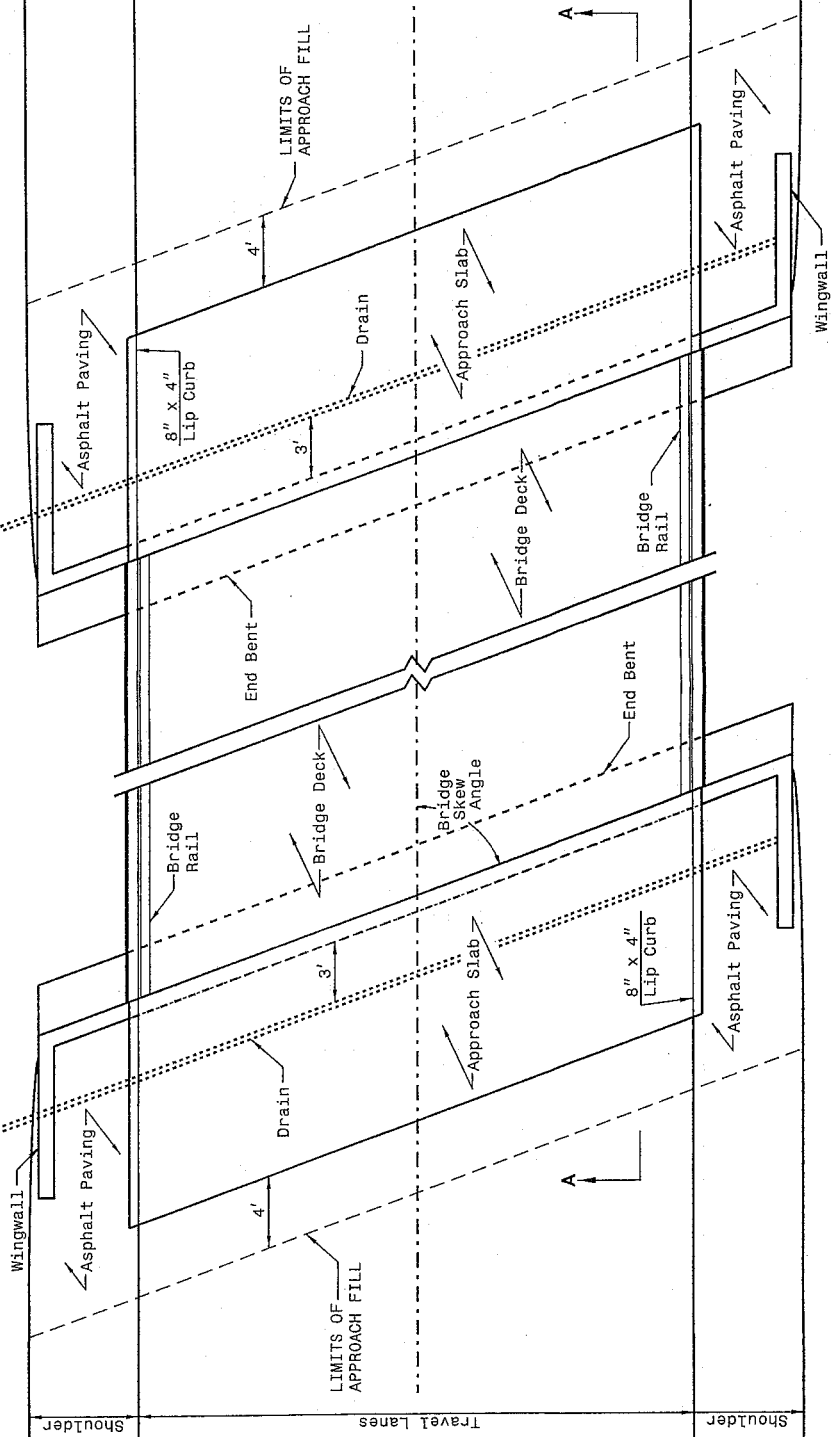
Lump Sum

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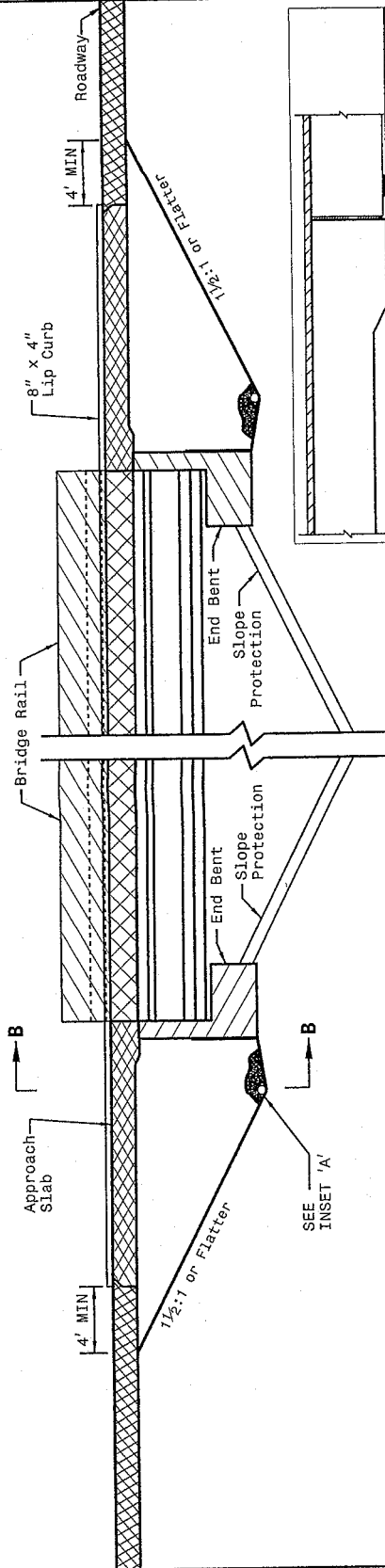
Outlet Pad  
Std. Dwg. 815.03

Outlet Pad  
Std. Dwg. 815.03



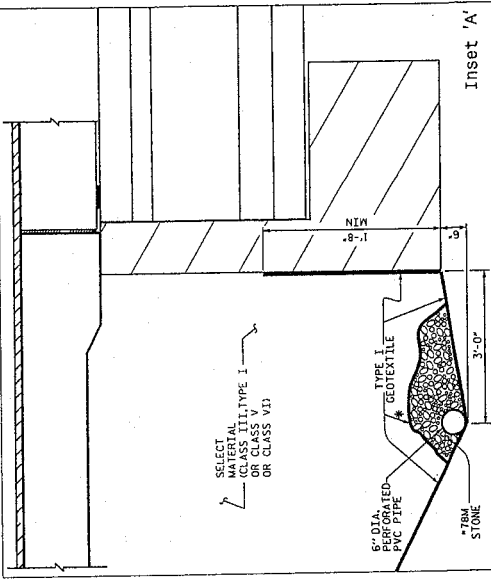
**PLAN VIEW  
APPROACH SLAB**

1-18

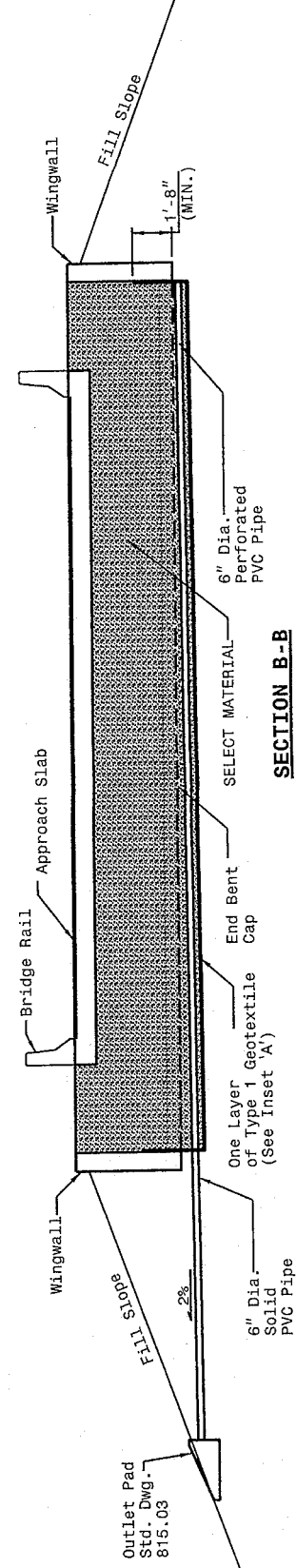


SECTION A-A

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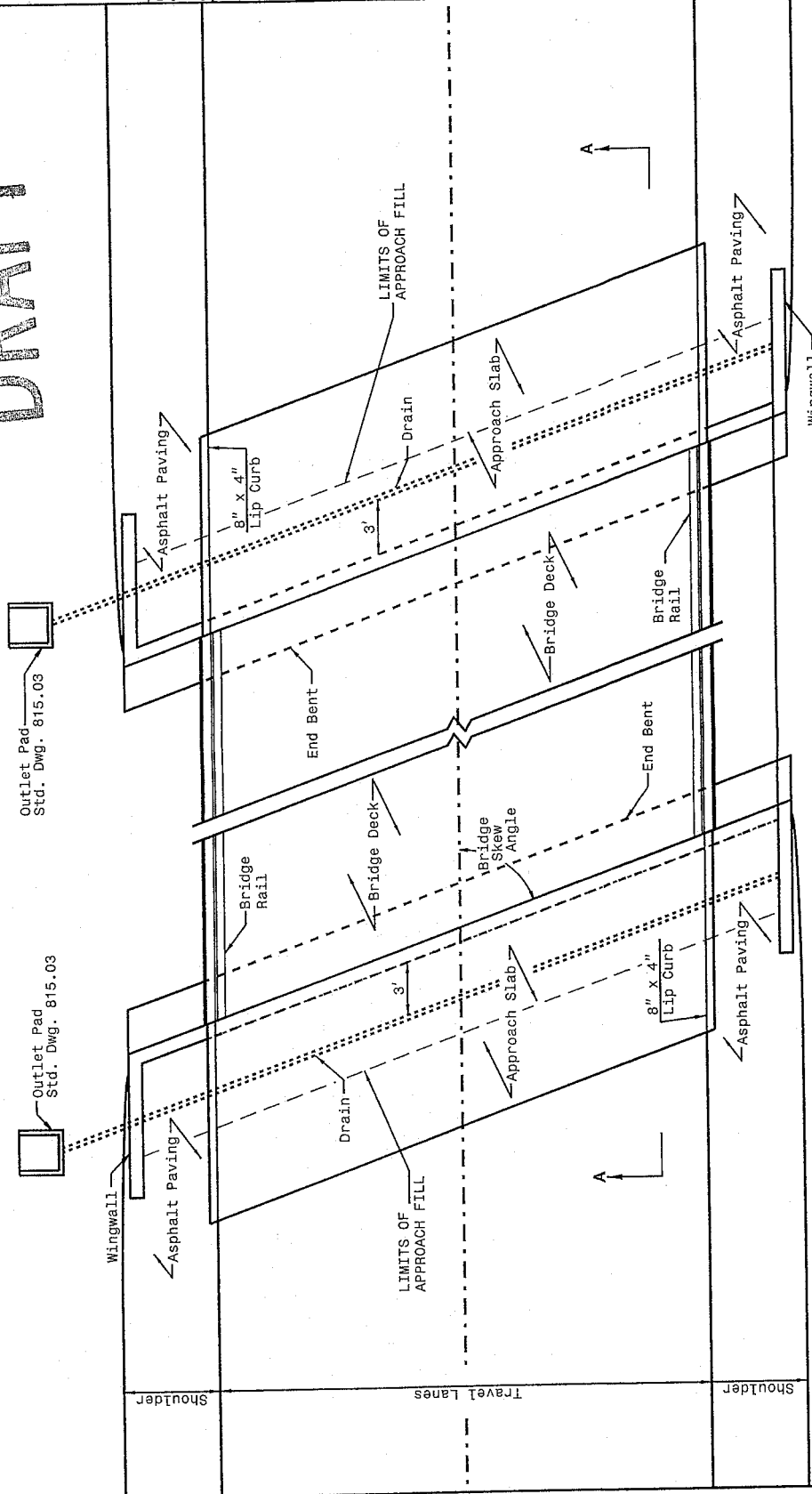
\* TYPE 1 GEOTEXTILE IS ONLY NEEDED  
AROUND THE PIPE WHEN SELECT MATERIAL IS  
CLASS III, TYPE I OR CLASS VI



SECTION B-B

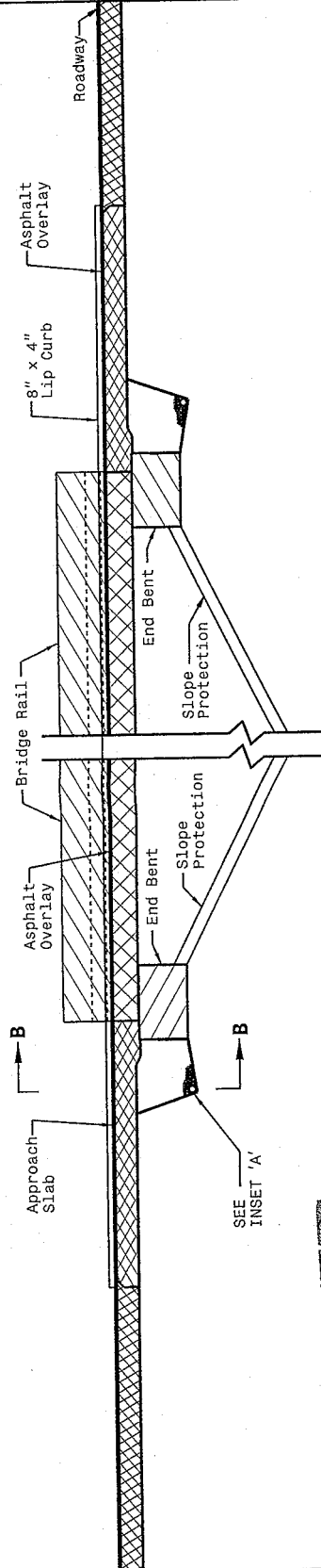
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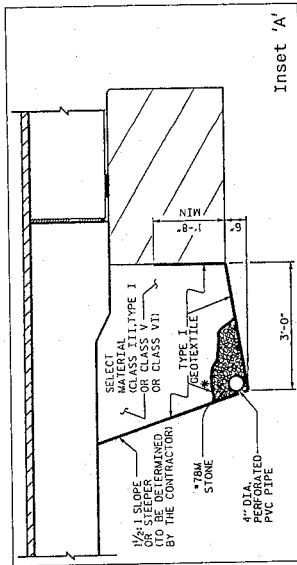
**PLAN VIEW  
APPROACH SLAB**

1-18

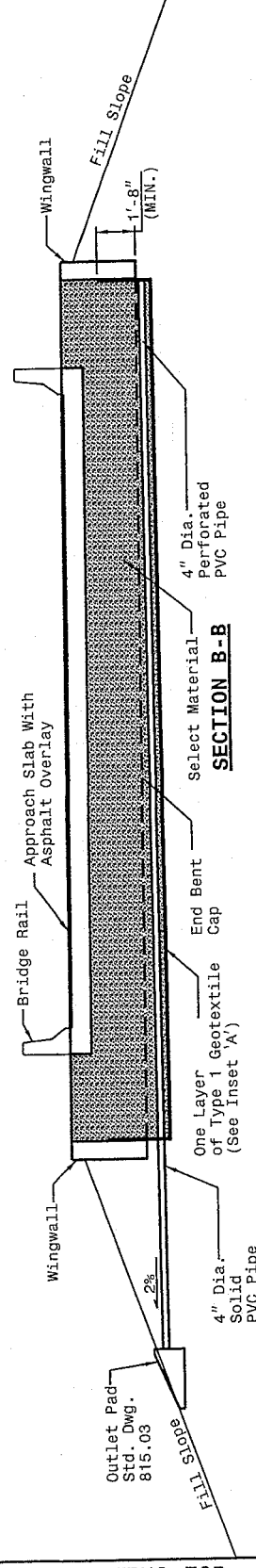


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**SECTION A-A**



\* TYPE 1 GEOTEXTILE IS ONLY NEEDED  
AROUND THE PIPE WHEN SELECT MATERIAL IS  
CLASS III, TYPE I OR CLASS VI



**SECTION B-B**

1-18