

**I-85 / I-385 Interchange Pipe Inventory Summary**

Pipe No.	Alignment	Station	Size	Comments / Deficiencies
A1	I-85 SB	211+30	18"	Existing pipe needs to be cleaned.
A5	I-85 SB	223+30	18"	One separated joint. Okay to retain.
A6	I-85 NB	223+30	18"	Existing pipe needs to be cleaned.
A7	I-85 SB	229+05	15"	Existing pipe can be retained for 70' from median catch basin. 8' prior to outlet shall be replaced.
A8	I-85	231+00	4' x 6'	Culvert needs to be cleaned; cracks and holes grouted.
A10	I-85 SB	241+50	18"	Existing pipe can be retained for 100' from median catch basin. 24' prior to outlet shall be replaced.
A11a	I-85 NBCD	251+20	18"	Minor deficiencies. Okay to retain.
A13	I-85 SB	252+80	18"	Slip line existing pipe due to hole and joint deficiencies.
A14	I-85 SB	255+05	15"	Existing pipe can be retained for 50' from median catch basin. 8' prior to outlet shall be replaced.
A18	I-85 NBCD	264+00	18"	Remove or plug & abandon due to joint separations and hydraulic information.
A19	I-85 NBCD	264+50	18"	Remove or plug & abandon due to joint deficiencies and hydraulic information.
B1	I-85 SB	311+10	18"	Existing pipe needs to be cleaned.
B2	I-85 SBCD	311+70	18"	Slip line existing pipe due to joint deficiencies.
B3	I-85 NB	317+90	18"	Remove or plug & abandon due to joint deficiencies.
B4	I-85 SB	318+40	18"	Slip line existing pipe due to hole and broken pipe.
B5	I-85 SB	322+00	18"	Slip line existing pipe due to joint separations.
B6	I-85 SB	322+00	18"	Slip line existing pipe due to joint deficiencies.
B7	I-85 SB	326+90	15"	Minor deficiencies. Okay to retain.
B8	I-85	328+60	5' x 5'	Minor deficiencies. Okay to retain.
B9	I-85 SB	332+00	18"	Minor deficiencies. Okay to retain.
B10	I-85 NB	332+00	18"	Existing pipe can be retained for 60' from median catch basin. 15' prior to outlet shall be replaced.
B11	I-85 SB	337+00	18"	Existing pipe can be retained for 60' from median catch basin. 25' prior to outlet shall be replaced.
B12	I-85 NB	337+00	18"	Existing pipe needs to be cleaned.
B13	I-85 NB	337+00	18"	Minor deficiencies. Okay to retain.
B14	I-85	342+40	24"	Remove obstruction at median catch basin and clean pipe.
B15	I-85 SB	350+20	15"	Replace 12' of pipe at the outlet. Retain remainder of existing pipe.
B17	I-85 NB	357+00	18"	Slip line existing pipe due to broken pipe.
B18	I-85 SB	362+00	18"	Existing pipe needs to be cleaned.
B24	I-85 NB	381+40	18"	Minor deficiencies. Okay to retain.
B25	I-85 SB	386+00	18"	Existing pipe needs to be cleaned.
B26	I-85	387+10	48"	Slip line existing pipe due to joint deficiencies.
B27	I-85 NB	388+50	15"	Existing pipe can be retained for 68' from median catch basin. 13' prior to outlet shall be replaced.
B29	I-85 NB	397+00	48"	Minor deficiencies. Okay to retain.

**I-85 / I-385 Interchange Pipe Inventory Summary**

Pipe No.	Alignment	Station	Size	Comments / Deficiencies
B30	I-85 SB	401+00	18"	Pipe needs to be cleaned.
B31	I-85 SB	406+80	18"	Slip line existing pipe due to joint separations.
B32	I-85 NB	413+00	15"	Existing pipe needs to be cleaned.
B34	I-85 NB	418+20	15"	Minor deficiencies. Okay to retain.
B36	I-85 SB	427+90	18"	Remove or plug & abandon due joint deficiencies and broken section
B37	I-85 NB	432+30	24"	Minor deficiencies. Okay to retain.
B38	I-85 NB	433+00	18"	Minor deficiencies. Okay to retain.
B39	I-85 SB	433+30	18"	Minor deficiencies. Okay to retain.
C1	I-385 SB	331+90	18"	Minor deficiencies. Okay to retain.
C2	I-385	335+10	30"	Slip line existing pipe due to joint offset and hole.
C3	I-385 SB	338+80	30"	Existing pipe can be retained for 80' from median catch basin. 47' prior to outlet shall be replaced.
C4	I-385 NB	338+90	30"	Minor deficiencies. Okay to retain.
C5	I-385	341+50	30"	Slip line existing pipe due to joint deficiencies.
C7	I-385	345+00	30"	Slip line existing pipe due to joint deficiencies.
C8	I-385	346+20	42"/36"	Remove or plug & abandon due to joint offsets and material change at 49' in the VPI.
C9	I-385 SB	346+70	18"	Remove or plug & abandon due to multiple deficiencies.
C10	I-385 NB	347+90	18"	Remove or plug & abandon due to joint offset deficiencies.
C11	I-385 NB	348+50	18"	Minor deficiencies. Okay to retain.
C12	I-385 SB	351+60	24"	Minor deficiencies. Okay to retain.
C15	I-385 NB	363+40	18"	Repair pipe sections located at 80' and 246' from the upstream inlet.
D1	I-385 SB	423+50	18"	Existing pipe needs to be cleaned.
D2	I-385 NB	423+30	18"	Remove or plug & abandon due to deficiencies.
D3	I-385 NB	431+00	36"	Slip line existing pipe due to joint separations.
D4	I-385 SB	430+50	36"	Slip line existing pipe due to joint deficiencies.
D5	I-385 SB	435+00	15"	Slip line existing pipe due to joint offset and hole.
D6	I-385 SB	448+00	15"	Existing pipe needs to be cleaned.
D8	I-385 NB	451+20	42"	Minor deficiencies. Okay to retain.
D9	I-385 NB	451+00	42"	Minor deficiencies. Okay to retain.
F40	Roper Mt. Rd.	23+20	18"	Broken / Crushed pipe under the pavement structure. Remove or plug & abandon due to joint deficiencies and material change.

**I-85 / I-385 Interchange Pipe Inventory Summary**

<b>Pipe No.</b>	<b>Alignment</b>	<b>Station</b>	<b>Size</b>	<b>Comments / Deficiencies</b>
I2	I-85 SBCD	270+30	18"	Minor deficiencies. Okay to retain.
I3A	I-85 SBCD	271+30	18"	Repair existing pipe section at approx. 73' from the median catch basin due to a guard rail post being driven into the pipe.
I5	I-85 NBCD	273+50	18"	Existing pipe can be retained for 92' from pipe outlet. 8' at the median shall be replaced. (Utilities through pipe and large hole in ceiling)
I6	I-85 SBCD / I-85 SB	278+50	18"	Slip line existing pipe due to a joint separation and several broken sections.
I8	I-85 NBCD	279+80	18"	Remove or plug and abandon due to large joint separations and broken section.
I9	I-85 SBCD	281+00	36"	Slip line existing pipe due to joint separations.
I10	I-85 SBCD / I-85 SB	281+50	36"	Repair existing pipe at the downstream catch basin.
I12	I-85 NBCD	281+55	36"	Minor deficiencies. Okay to retain. Recommend adding a junction box for an existing lateral line.
I13	I-85 NBCD	284+80	36"	Minor deficiencies. Okay to retain.
I15	I-85 SBCD	284+20	15"	Slip line existing pipe due to joint separations.
I16	I-85 SBCD	285+30	18"	Minor deficiencies. Okay to retain.
I17A	Ramp 3	57+50	36"	Slip line existing pipe due to joint deficiencies.
I19	I-85 SBCD	286+00	36"	Minor deficiencies. Okay to retain.
I20	I-385	403+00	30"	Slip line existing pipe due to joint deficiencies.
I21	I-385	405+50	30"	Slip line existing pipe due to joint deficiencies.
I23	I-385 SB	406+80	18"	Slip line existing pipe due to joint offset.
I24	I-385 NB	405+90	18"	Slip line existing pipe due to joint deficiencies.
I25	I-385	409+50	30"	Slip line existing pipe due to joint deficiencies.
I26	I-385 NB	411+10	30"	Retain 72' of existing pipe from the upstream catch basin. Replace remainder pipe due to pipe bend.
I28	I-385 NB	405+50	30"	Slip line existing pipe due to deficiencies.
I29	I-85 SBCD	293+70	18"	Repair broken joint at 3 feet from the upstream catch basin; retain the remainder of the pipe.
I30	I-85 SBCD	295+90	18"	Slip line existing pipe due to joint deficiencies and hole in pipe.
I32	I-85	297+00	18"	Remove or plug and abandon due to joint deficiencies and several holes.
I34	I-85 SBCD	301+60	15"	Slip line existing pipe due to joint deficiencies.
I37	I-85	304+10	18"	Retain 48' existing pipe from the downstream junction box and replace existing pipe from the bad joint to the end of I37
I39	I-385	380+80	54"	Slip line existing pipe due to multiple deficiencies.
I40	I-385	383+20	6' X 7' / 5' x 7'	Needs maintenance; repair culvert at all voids nad exposed rebar.

## PIPE INVENTORY SUMMARY - PIPE A1

### BASIC INFORMATION

Pipe No:   A1        Pipe Size:   18   in.      Pipe Length:   102   LF  
Date Inspected:   6/25/13        Inspection Started:   Outlet    
Road Over Pipe:   I-85 SB    
Alignment & STA:   I-85 STA. 211+30    
Ex. Fill Height:   4   ft      Prop. Fill Height:   4   ft

### HYDRAULIC INFORMATION

Pipe A1 is part of a closed drainage system ranging from Sta. 207+50 to 210+50 along I-85. Hydraulic Information is not available as the Concept Design does not add any extra drainage area to the system.

### DEFICIENCIES

Obstruction (debris) at 75 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe A1 should be cleaned and retained.



Debris at 75 ft

## PIPE INVENTORY SUMMARY - PIPE A5

### BASIC INFORMATION

Pipe No: A5 Pipe Size: 18 in. Pipe Length: 84 LF

Date Inspected: 6/25/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 223+30

Ex. Fill Height: 14 ft Prop. Fill Height: 14 ft

### HYDRAULIC INFORMATION

Pipe is part of a closed drainage system ranging from Sta. 223+35 to Sta. 226+29 on I-85. Existing pipe meets current SCDOT criteria for a closed drainage system.

### DEFICIENCIES

Joint - Separated at 82 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe A5 should be retained.



Joint - Separated at 82 ft

## PIPE INVENTORY SUMMARY - PIPE A6

### BASIC INFORMATION

Pipe No: A6 Pipe Size: 18 in. Pipe Length: 87 LF

Date Inspected: 6/25/13 Inspection Started: CL JB

Road Over Pipe: I-85 NB

Alignment & STA: I-85 STA. 223+30

Ex. Fill Height: 13 ft Prop. Fill Height: 13 ft

### HYDRAULIC INFORMATION

Pipe is part of a closed drainage system ranging from Sta. 223+35 to Sta. 226+29 on I-85. Existing pipe meets current SCDOT criteria for a closed drainage system.

### DEFICIENCIES

Obstruction (debris) at 50 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe A6 should be cleaned and retained.



Debris at 50 ft

## PIPE INVENTORY SUMMARY - PIPE A7

### BASIC INFORMATION

Pipe No: A7 Pipe Size: 15 in. Pipe Length: 79 LF  
Date Inspected: 6/25/13 Inspection Started: Outlet  
Road Over Pipe: I-85 SB  
Alignment & STA: I-85 STA. 229+05  
Ex. Fill Height: 12 ft Prop. Fill Height: 12 ft

### HYDRAULIC INFORMATION

The existing pipe conveys stormwater from a median catch basin to the outfall.  
Existing pipe meets current SCDOT criteria for a closed drainage system.

### DEFICIENCIES

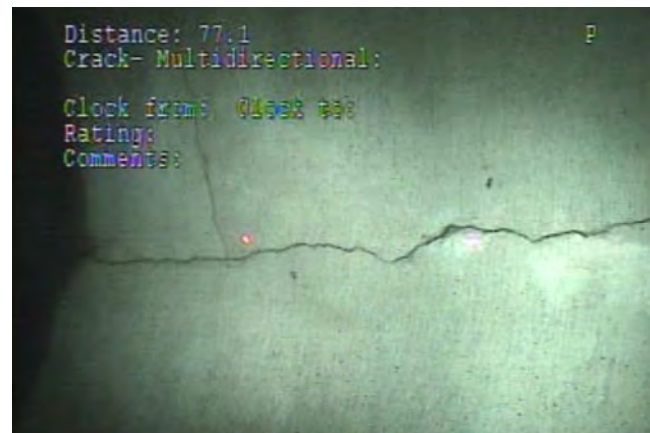
Joint - Separated at 4 ft; Crack - Multidirectional at 77 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, retain 70' of the existing pipe from the median catch basin. Replace the last 8', which is affected by joint separation.



Joint - Separated at 4 ft



Multidirectional crack at 77 ft

## PIPE INVENTORY SUMMARY - BOX CULVERT A8

### BASIC INFORMATION

Pipe No: A8 BC Size: 4x6 ft BC Length: 228 LF  
Date Inspected: 12/14/12 Inspection Started: Upstr outlet  
Road Over BC: I-85 NB & I-85 SB  
Alignment & STA: I-85 STA. 231+00  
Ex. Fill Height: 27 ft Prop. Fill Height: 27 ft

### HYDRAULIC INFORMATION

Existing 4' X 6' RCBC conveys offsite runoff under I-85. The Culvert does not meet current SCDOT design criteria as the design head exceeds 1.2 times the height of the culvert. However, the overtopping flood is greater than the 100 year design storm.

### DEFICIENCIES

Cracks at 35, 100, and 152 ft; Joint issue at 71 ft; Corrosion at 198 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, the existing 4' X 6' reinforced concrete box culvert (A8) should be cleaned, cracks and holes (corrosion areas) should be grouted, and culvert should be retained.



Crack at 35 Ft



Corrosion at 198 ft



## PIPE INVENTORY SUMMARY - PIPE A10

### BASIC INFORMATION

Pipe No: A10 Pipe Size: 18 in. Pipe Length: 124 LF

Date Inspected: 6/18/13 Inspection Started: JB

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 241+50

Ex. Fill Height: 13 ft Prop. Fill Height: 13 ft

### HYDRAULIC INFORMATION

Pipe is part of a closed drainage system ranging from median catch basins along I-85 from Sta. 241+57 to Sta. 245+42. A10 is also part of a cross-line (combined with A11). Pipe A10 meets current SCDOT criteria for closed drainage system, but it does not meet current SCDOT criteria for a cross-line. However, the overtopping flood is greater than the 100-year design storm.

### DEFICIENCIES

Joint - Separated at 104 ft; Joint Offset at 109 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, retain 100' of the existing pipe from the median catch basin. Replace the last 24', which is affected by the two areas of joint separation.



Joint - Separated at 104 ft

## PIPE INVENTORY SUMMARY - PIPE A11a

### BASIC INFORMATION

Pipe No: A11a Pipe Size: 18 in. Pipe Length: 68 LF  
Date Inspected: 8/6/13 Inspection Started: Outlet  
Road Over Pipe: I-85 NBCD  
Alignment & STA: I-85 STA. 251+20  
Ex. Fill Height: 3 ft Prop. Fill Height: 3 ft

### HYDRAULIC INFORMATION

Pipe A11a conveys stormwater from a median catch basin to a ditch outside of the pavement. Pipe A11a meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Chip at 17 ft; Joint - Gasket at 49 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe A11a should be retained.



Joint - Gasket at 49 ft

## PIPE INVENTORY SUMMARY - PIPE A13

### BASIC INFORMATION

Pipe No: A13 Pipe Size: 18 in. Pipe Length: 66 LF

Date Inspected: 6/25/13 Inspection Started: JB

Road Over Pipe: Ramp from Woodruff to I-85 SB

Alignment & STA: I-85 STA. 252+80

Ex. Fill Height: 8 ft Prop. Fill Height: 8 ft

### HYDRAULIC INFORMATION

Pipe A13 is part of a closed drainage system ranging from Sta. 252+90 to Sta. 2595+00. Pipe A13 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Hole at 23 ft; Chipped at 40 ft and 48 ft; Joint - Gasket at 40 ft  
Crack - Multidirectional at 48 ft, Joint Offset at 52 ft; Joint - Separated at 60 ft  
Debris at 61 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe A13 should be slip lined if retained due to deficiencies. Capacity should be verified with slip lined pipe.



Hole at 23 ft



Multidirectional crack at 48 ft

## PIPE INVENTORY SUMMARY - PIPE A14

### BASIC INFORMATION

Pipe No: A14 Pipe Size: 15 in. Pipe Length: 58 LF

Date Inspected: 6/25/13 Inspection Started: SB JB

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 255+05

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe A14 is part of a closed drainage system ranging from Sta. 252+90 to Sta. 259+00. Pipe A14 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Chip at 26 ft; Joint - Separated at 53 ft; Debris at end of pipe

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, retain 50' of the existing pipe from the median catch basin. Replace the last 8', which is affected by the joint separation.



Joint - Separated at 53 ft

## PIPE INVENTORY SUMMARY - PIPE A18

### BASIC INFORMATION

Pipe No: A18 Pipe Size: 18 in. Pipe Length: 52 LF

Date Inspected: 6/26/13 Inspection Started: Upstr JB

Road Over Pipe: I-85 NBCD

Alignment & STA: I-85 STA. 264+00

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe A18 is part of a closed drainage system ranging from Sta. 261+00 to Sta. 272+00. Pipe A18 does not meet current SCDOT Design Criteria for a closed drainage system. Concept plans show replacing 18" R.C. Pipe with a 24" Sm. Wall Pipe.

### DEFICIENCIES

Joint - Separated at 8 ft and 40 ft; Crack - Multidirectional at 40 ft;  
Obstruction (debris) at 40 ft; VPI incomplete

### RECOMMENDATION

Based on Hydraulic Information, Pipe A18 should not be used. Concept Plans replace the existing 18" R.C. Pipe with a 24" Smooth Wall Pipe.



Joint - Separated and Multidirectional crack at 40 ft

## PIPE INVENTORY SUMMARY - PIPE A19

### BASIC INFORMATION

Pipe No: A19      Pipe Size: 18 in.      Pipe Length: 98 LF  
Date Inspected: 6/26/13      Inspection Started: Upstr JB  
Road Over Pipe: Loop from Woodruff to I-85 NBCD  
Alignment & STA: I-85 STA. 264+50  
Ex. Fill Height: 5 ft      Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

Pipe A19 is part of a closed drainage system ranging from Sta. 261+00 to Sta. 272+00. Pipe A19 does not meet current SCDOT Design Criteria for a closed drainage system. Concept Plans show replacing 18" R.C. Pipe with a 24" Sm. Wall Pipe

### DEFICIENCIES

Joint Offset at 81 ft; Joint - Separated at 89 ft

### RECOMMENDATION

Based on Hydraulic Information, Pipe A19 should not be used. Concept Plans replace the existing 18" R.C. Pipe with a 24" Smooth Wall Pipe.



Joint - Separated at 89 ft

## PIPE INVENTORY SUMMARY - PIPE B1

### BASIC INFORMATION

Pipe No: B1 Pipe Size: 18 in. Pipe Length: 59 LF  
Date Inspected: 8/5/13 Inspection Started: Downstr JB  
Road Over Pipe: I-85 SB  
Alignment & STA: I-85 STA. 311+10  
Ex. Fill Height: 5 ft Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

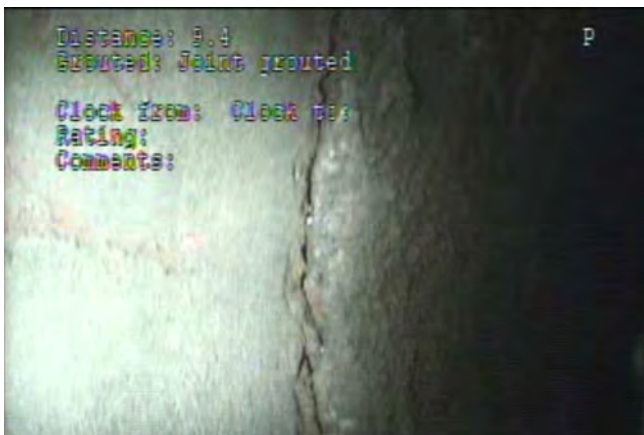
Pipe B1 is part of a closed drainage system. Pipe B1 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Grouted at 9 ft; Debris at 54 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe B1 should be cleaned and retained.



Joint Grouted at 9 ft



Debris at 54 ft

## PIPE INVENTORY SUMMARY - PIPE B2

### BASIC INFORMATION

Pipe No: B2 Pipe Size: 18 in. Pipe Length: 108 LF  
Date Inspected: 8/5/13 Inspection Started: Outlet  
Road Over Pipe: I-85 SBCD  
Alignment & STA: I-85 STA. 311+70  
Ex. Fill Height: 2 ft Prop. Fill Height: 2 ft

### HYDRAULIC INFORMATION

Pipe B2 is part of a closed drainage system ranging from Sta. 311+00 to Sta. 312+25 along I-85. Hydraulic Information is not available as the Concept Plans remove Pipe B2.

### DEFICIENCIES

Crack - Multidirectional at 4 ft and 8 ft; Joint - Separated at 8 ft and 88 ft;  
Debris at 22 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B2 should be slip lined if retained due to deficiencies. Capacity should be verified with slip lined pipe. Concept Plans remove the existing 18" R.C. Pipe.



Multidirectional crack at 4 ft



Joint - Separated and Multidirectional crack at 8 ft



## PIPE INVENTORY SUMMARY - PIPE B3

### BASIC INFORMATION

Pipe No: B3 Pipe Size: 18 in. Pipe Length: 103 LF

Date Inspected: 8/5/13 Inspection Started: Outlet

Road Over Pipe: I-85 NB

Alignment & STA: I-85 STA. 317+90

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe B3 is part of a cross-line and a closed drainage system ranging from Sta.

317+50 to Sta. 322+00. Hydraulic information is not available as the Concept

Plans plug and abandon Pipe B3.

### DEFICIENCIES

Major offset and separation at 6 ft; Pipe not connected at 12 ft;

VPI incomplete; All joints major offset as far as camera will zoom

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B3 should not be used due to deficiencies. Concept Plans plug and abandon the existing 18" R.C. Pipe.



Pipe not connected at 6 ft; All joints major offset as far as camera will zoom

## PIPE INVENTORY SUMMARY - PIPE B4

### BASIC INFORMATION

Pipe No: B4 Pipe Size: 18 in. Pipe Length: 84 LF

Date Inspected: 6/25/13 Inspection Started: SB JB

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 318+40

Ex. Fill Height: 3 ft Prop. Fill Height: 3 ft

### HYDRAULIC INFORMATION

Pipe B4 is part of a cross-line and a closed drainage system ranging from Sta. 317+50 to Sta. 322+00. Pipe B4 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Broken at 11 ft; Hole at 16 ft  
Obstruction at 34 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B4 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe.



Broken above at 11 ft



Hole above at 16 ft

## PIPE INVENTORY SUMMARY - PIPE B5

### BASIC INFORMATION

Pipe No: B5 Pipe Size: 18 in. Pipe Length: 79 LF  
Date Inspected: 6/25/13 Inspection Started: SB JB  
Road Over Pipe: I-85 SB  
Alignment & STA: I-85 STA. 322+00  
Ex. Fill Height: 5 ft Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

Pipe B5 is part of a closed drainage system ranging from Sta. 320+00 to Sta. 322+00.  
Pipe B5 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Joint - Separated at 4, 13, 17, 22, 26, 74, and 77 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B5 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe.



Joint - Separated at 4 ft (left) and 17 ft (right); other joint separations similar

## PIPE INVENTORY SUMMARY - PIPE B6

### BASIC INFORMATION

Pipe No: B6 Pipe Size: 18 in. Pipe Length: 77 LF

Date Inspected: 6/25/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 322+00

Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

Pipe B6 is part of a closed drainage system ranging from Sta. 320+00 to Sta. 322+00.

Hydraulic information is not available as the Concept Plans plug and abandon

Pipe B6.

### DEFICIENCIES

Joint - Separated at 58 ft;

Joint - Angular at 58 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B6 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe. Concept Plans plug and abandon the existing 18" R.C. Pipe.



Joint - Separated and Joint - Angular at 58 ft

## PIPE INVENTORY SUMMARY - PIPE B7

### BASIC INFORMATION

Pipe No:   B7   Pipe Size:   15   in. Pipe Length:   69   LF

Date Inspected:   6/25/13   Inspection Started:   SB JB  

Road Over Pipe:   I-85 SB  

Alignment & STA:   I-85 STA. 326+90  

Ex. Fill Height:   6   ft Prop. Fill Height:   6   ft

### HYDRAULIC INFORMATION

Pipe B7 is part of a median closed drainage system ranging from Sta. 326+00 to Sta. 328+50. Pipe B7 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Joint - Separated at 4 ft and 64 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe B7 should be retained. Concept Plan will eliminate the joint separation at 4' by removing 6' of existing pipe.



Joint - Separated at 4 ft

## PIPE INVENTORY SUMMARY - BOX CULVERT B8

### BASIC INFORMATION

Pipe No: B8 BC Size: 5x5 ft BC Length: 189 LF  
Date Inspected: 6/18/13 Inspection Started: Upstr outlet  
Road Over BC: I-85 NB & I-85 SB  
Alignment & STA: I-85 STA. 328+60  
Ex. Fill Height: 14 ft Prop. Fill Height: 14 ft

### HYDRAULIC INFORMATION

B8 is a 5 X 5 Reinforced Concrete Box Culvert located under I-85 at Sta. 328+60.

Hydraulic Design?

### DEFICIENCIES

Joint issue at 37 ft; Deformed at 37 ft

Deep water at 116 ft; VPI incomplete

### RECOMMENDATION

The Video Pipe Inspection captured approximately 60% of the length finding only minor deficiencies. Based on the Video Pipe Inspection and hydraulic information, the existing 5 X 5 RCBC should be retained.



Joint issues/deformed at 37 ft

## PIPE INVENTORY SUMMARY - PIPE B9

### BASIC INFORMATION

Pipe No: B9 Pipe Size: 18 in. Pipe Length: 63 LF  
Date Inspected: 6/25/13 Inspection Started: Outlet  
Road Over Pipe: I-85 SB  
Alignment & STA: I-85 STA. 332+00  
Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B9 is part of a closed drainage system ranging from Sta. 332+00 to Sta. 334+50 along I-85. Pipe B9 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Root-in-joint at 31 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe B9 should be retained.



Root in joint at 31 ft

## PIPE INVENTORY SUMMARY - PIPE B10

### BASIC INFORMATION

Pipe No: B10 Pipe Size: 18 in. Pipe Length: 75 LF  
Date Inspected: 6/25/13 Inspection Started: CL CB  
Road Over Pipe: I-85 NB  
Alignment & STA: I-85 STA. 332+00  
Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

Pipe B10 is part of a closed drainage system ranging from Sta. 332+00 to Sta. 334+50 along I-85. Pipe B10 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Joint - Separated at 64 ft;  
Obstruction (debris) at 65 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, clean and retain 60' of the existing pipe from the median catch basin. Replace the last 15', which is affected by joint separation, but is not located under the travelway.



Joint - Separated at 64 ft



## PIPE INVENTORY SUMMARY - PIPE B11

### BASIC INFORMATION

Pipe No: B11 Pipe Size: 18 in. Pipe Length: 86 LF

Date Inspected: 6/24/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 337+00

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe B11 is part of a closed drainage system ranging from 337+00 to Sta. 340+00 along I-85. Pipe B11 could also be considered a cross-line pipe under I-85.

Hydraulic information is not available since the concept plan removes Pipe B11.

### DEFICIENCIES

Root-in-joint at 19 ft; Joint Offset at 25 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, 61' of Pipe B11 from the median catch basin can be retained. Replace the last 25', which is affected by joint offset, but is not located under the travelway. Concept Plans remove pipe B11.



Root in joint at 19 ft

## PIPE INVENTORY SUMMARY - PIPE B12

### BASIC INFORMATION

Pipe No: B12 Pipe Size: 18 in. Pipe Length: 64 LF  
Date Inspected: 6/25/13 Inspection Started: Downstr JB  
Road Over Pipe: I-85 NB  
Alignment & STA: I-85 STA. 337+00  
Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe B12 is part of a closed drainage system ranging from 337+00 to Sta. 340+00 along I-85. Pipe B12 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Obstruction (debris) at 29 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and the Hydraulic Information, Pipe B12 should be cleaned and retained.



Debris at 29 ft

## PIPE INVENTORY SUMMARY - PIPE B13

### BASIC INFORMATION

Pipe No: B13 Pipe Size: 18 in. Pipe Length: 37 LF

Date Inspected: 8/5/13 Inspection Started: Outlet

Road Over Pipe: I-85 NB side road

Alignment & STA: I-85 STA. 337+00

Ex. Fill Height: 4 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B13 is part of a closed drainage system ranging from Sta. 337+00 to Sta. 340+00 along I-85. Hydraulic Information is not available as the Concept Plans replace Pipe B13.

### DEFICIENCIES

Grouted at 24 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B13 could be retained. The Concept Plan replaces B13.



Grouted at 24 ft

## PIPE INVENTORY SUMMARY - PIPE B14

### BASIC INFORMATION

Pipe No: B14 Pipe Size: 24 in. Pipe Length: 353 LF

Date Inspected: 6/18/13 Inspection Started: NB Outlet

Road Over Pipe: I-85 SB, I-85 NB, and I-85 NB side road

Alignment & STA: I-85 STA. 342+40

Ex. Fill Height: 25 ft Prop. Fill Height: 25 ft

### HYDRAULIC INFORMATION

Pipe B14 is a Cross-Line located around Sta. 342+40 under I-85. Pipe B14 does not meet current SCDOT Design Criteria for Cross-Lines. However, the overtopping flood is greater than the 100 year design storm.

### DEFICIENCIES

Obstruction (debris) at 154 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, it appears as though the obstruction is located at the median CB and should be able to be removed. Also up until 154', the pipe appears to be in good shape. Remove obstruction at catch basin, clean and retain pipe.



Debris at 154 ft (Left: looking ahead; Right: looking up)

## PIPE INVENTORY SUMMARY - PIPE B15

### BASIC INFORMATION

Pipe No: B15 Pipe Size: 15 in. Pipe Length: 76 LF

Date Inspected: 4/2/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 350+20

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B15 is part of a closed drainage system that ranges from Sta. 347+50 to Sta. 350+40 along I-85. Pipe B15 does meet current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Utility conduit through pipe (broken) at 9 ft

### RECOMMENDATION

Based on Video Pipe Inspection, replace 12' of pipe at the outlet (to fix the broken pipe).



Utility conduit through pipe at 9 ft

## PIPE INVENTORY SUMMARY - PIPE B17

### BASIC INFORMATION

Pipe No: B17 Pipe Size: 18 in. Pipe Length: 87 LF

Date Inspected: 4/2/13 Inspection Started: Outlet

Road Over Pipe: I-85 NB

Alignment & STA: I-85 STA. 357+00

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B17 is part of a closed drainage system ranging from Sta. 353+00 to Sta. 357+00.  
B17 could also be considered a cross-line pipe. Pipe B17 meets current SCDOT  
Design Criteria for a closed drainage system, but does not meet SCDOT Design  
Criteria for a Cross-Line Pipe. However, the overtopping flood is greater than  
the 100-year design storm.

### DEFICIENCIES

Broken (patched) at 66 ft; Crack at 75 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B17 should be slip lined due to  
defficiencies. Capacity should be verified with slip lined pipe.



Broken at 66 ft

## PIPE INVENTORY SUMMARY - PIPE B18

### BASIC INFORMATION

Pipe No: B18 Pipe Size: 18 in. Pipe Length: 74 LF

Date Inspected: 4/2/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 362+00

Ex. Fill Height: 5 ft Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

Pipe B18 is part of closed drainage system with one median catch basin located at Sta. 362+00. Pipe B18 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Obstruction (debris) at 22 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection and the Hydraulic Information, Pipe B18 should be cleaned and retained.



Debris at 22 ft

## PIPE INVENTORY SUMMARY - PIPE B24

### BASIC INFORMATION

Pipe No: B24 Pipe Size: 18 in. Pipe Length: 78 LF

Date Inspected: 4/2/13 Inspection Started: Outlet

Road Over Pipe: I-85 NB

Alignment & STA: I-85 STA. 381+40

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B24 is part of a closed drainage system ranging from Sta. 379+00 to Sta. 381+50 along I-85. Pipe B24 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Joint - Gasket at 43, 47, and 57 ft; Crack at 60 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Analysis, Pipe B24 should be retained.



Joint - Gasket at 43 ft



Crack at 60 ft



## PIPE INVENTORY SUMMARY - PIPE B25

### BASIC INFORMATION

Pipe No: B25 Pipe Size: 18 in. Pipe Length: 77 LF  
Date Inspected: 7/16/13 Inspection Started: Outlet  
Road Over Pipe: I-85 SB  
Alignment & STA: I-85 STA. 386+00  
Ex. Fill Height: 8 ft Prop. Fill Height: 8 ft

### HYDRAULIC INFORMATION

Pipe B25 is part of a closed drainage system ranging from Sta. 383+50 to Sta. 386+00 along I-85. Pipe B25 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Root-in-joint at 4, 12, and 14 ft;  
Obstruction (debris) at 41 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe B25 should be cleaned and retained.



Root in joint at 12 ft

## PIPE INVENTORY SUMMARY - PIPE B26

### BASIC INFORMATION

Pipe No: B26 Pipe Size: 48 in. Pipe Length: 224 LF

Date Inspected: 8/8/13 Inspection Started: N/A

Road Over Pipe: I-85 SB & I-85 NB

Alignment & STA: I-85 STA. 387+10

Ex. Fill Height: 27 ft Prop. Fill Height: 27 ft

### HYDRAULIC INFORMATION

Pipe B26 is a 48" Cross-Line at Sta. 387+10 on I-85. Pipe B26 does not meet current SCDOT Design Criteria for Cross-line pipes. However, the overtopping flood is greater than the 100 year design storm.

### DEFICIENCIES

HAND-HELD VIDEO (start with flow)

Joint alignment, joint-separated, or joint offset at several locations

Deep water; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection, Pipe B26 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe.



Joint Offset

## PIPE INVENTORY SUMMARY - PIPE B27

### BASIC INFORMATION

Pipe No: B27 Pipe Size: 15 in. Pipe Length: 81 LF  
Date Inspected: 7/16/13 Inspection Started: Outlet  
Road Over Pipe: I-85 NB  
Alignment & STA: I-85 STA. 388+50  
Ex. Fill Height: 8 ft Prop. Fill Height: 8 ft

### HYDRAULIC INFORMATION

Pipe B27 is part of a closed drainage system containing one median catch basin and one drop inlet around Sta. 388+50 on I-85. Pipe B29 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Joint Offset at 13 ft; Grouted at 20 ft; Debris at 72 ft;  
Crack at 74 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, 68' from the median catch basin could be cleaned and retained. Replace the last 13', which is affected by the joint offset and not located below the travelway.



Joint Offset at 13 ft



Crack (above) and debris at 72 ft

## PIPE INVENTORY SUMMARY - PIPE B29

### BASIC INFORMATION

Pipe No: B29 Pipe Size: 48 in. Pipe Length: 108 LF  
Date Inspected: 7/16/13 Inspection Started: N/A  
Road Over Pipe: I-85 NB  
Alignment & STA: I-85 STA. 397+00  
Ex. Fill Height: 19 ft Prop. Fill Height: 19 ft

### HYDRAULIC INFORMATION

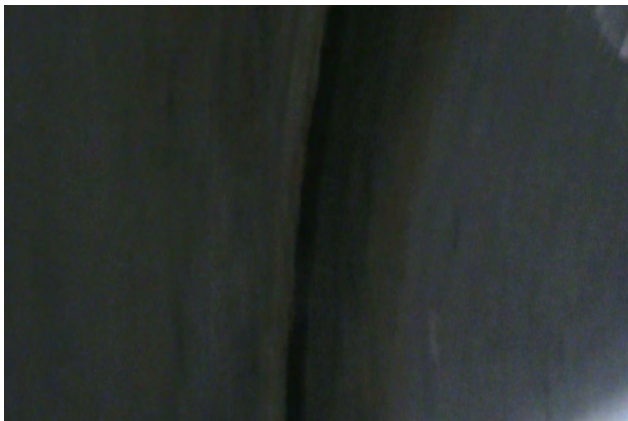
Pipe B29 is part of closed drainage system ranging from Sta. 390+00 to Sta. 397+00 along I-85. Pipe B29 is also classified as a cross-line pipe under I-85. Pipe B29 meets current SCDOT Design Criteria for a closed drainage system. Pipe B29 does not meet current SCDOT Design Criteria for a cross-line pipe. However, the overtopping flood is greater than the 100 year design storm.

### DEFICIENCIES

HAND-HELD VIDEO (start with flow)  
Joint offset; all joints grouted  
Deep water; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe B29 could be retained.



Joint Offset



Typical grouted joint

## PIPE INVENTORY SUMMARY - PIPE B30

### BASIC INFORMATION

Pipe No: B30 Pipe Size: 18 in. Pipe Length: 64 LF

Date Inspected: 7/16/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 401+00

Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

Pipe B30 is part of a closed drainage system consisting of one median catch basin.

Pipe B30 meets current SCDOT Design Criterion for closed drainage systems.

### DEFICIENCIES

Obstruction (debris) at 46 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe B30 could be cleaned and retained.



Debris at 46 ft

## PIPE INVENTORY SUMMARY - PIPE B31

### BASIC INFORMATION

Pipe No: B31 Pipe Size: 18 in. Pipe Length: 70 LF

Date Inspected: 6/24/13 Inspection Started: SB JB

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 406+80

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B31 is part of a closed drainage system ranging from Sta. 403+50 to Sta. 407+00 along I-85. B31 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Joint - Separated at 2 ft; Debris at 5 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe B31 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe.



Joint - Separated at 2 ft

## PIPE INVENTORY SUMMARY - PIPE B32

### BASIC INFORMATION

Pipe No: B32 Pipe Size: 15 in. Pipe Length: 78 LF

Date Inspected: 7/16/13 Inspection Started: Outlet

Road Over Pipe: I-85 NB

Alignment & STA: I-85 STA. 413+00

Ex. Fill Height: 9 ft Prop. Fill Height: 9 ft

### HYDRAULIC INFORMATION

Pipe B32 is part of a closed drainage system ranging from Sta. 410+00 to Sta. 413+00 along I-85. Pipe B32 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Root-in-joint at 6 ft;

Obstruction (debris) at 13 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe B32 could be cleaned and retained.



Root in joint at 6 ft; Debris ahead

## PIPE INVENTORY SUMMARY - PIPE B34

### BASIC INFORMATION

Pipe No: B34 Pipe Size: 15 in. Pipe Length: 88 LF

Date Inspected: 6/19/13 Inspection Started: Outlet

Road Over Pipe: I-85 NB

Alignment & STA: I-85 STA. 418+20

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe B34 is part of a closed drainage system ranging from Sta. 417+00 to Sta. 419+00 along I-85. Pipe B34 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Deformed at end of pipe

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe B34 could be retained.



Deformed at end adjacent to junction box



## PIPE INVENTORY SUMMARY - PIPE B36

### BASIC INFORMATION

Pipe No: B36 Pipe Size: 18 in. Pipe Length: 52 LF  
Date Inspected: 6/24/13 Inspection Started: Outlet  
Road Over Pipe: I-85 SB  
Alignment & STA: I-85 STA. 427+90  
Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B36 was part of a closed drainage system connecting a drop inlet to the main system. Based on 1990 Construction plans and field surveys of the area, The catch basin was to be removed, the pipe inlet plugged, and the pipe abandon. Therefore, no hydraulic information is available, since the pipe receives no flow.

### DEFICIENCIES

Joint Offset at 2 ft at 8 ft; Joint - Separated at 4 ft and 13 ft; Broken at 45 ft;

### RECOMMENDATION

The pipe is no longer in use, but based on the video inspection of the pipe, there are large deficiencies under the travelway that could cause future problems. Also, Field surveys noted the presence of large amounts of sediment in the down stream catch basin. Pipe B36 should be removed or plugged & abandoned.



Joint - Separated at 13 ft



Broken at 45 ft

## PIPE INVENTORY SUMMARY - PIPE B37

### BASIC INFORMATION

Pipe No: B37 Pipe Size: 24 in Pipe Length: 133 LF

Date Inspected: 6/19/13 Inspection Started: Outlet

Road Over Pipe: Ramp from I-85 NB to Pelham Rd.

Alignment & STA: I-85 STA. 432+30

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe B37 is part of a closed drainage system ranging from Sta. 431+50 to Sta. 436+25 along I-85. Pipe B37 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Crack - Multidirectional at 27, 39, and 45 ft; Joint - Gasket at 39 ft;

Crack at 127 ft

### RECOMMENDATION

Based on Video Pipe Inspection and the Hydraulic Information, Pipe B37 could be retained.



Cracks at 27 ft (left) and 127 ft (right)

## PIPE INVENTORY SUMMARY - PIPE B38

### BASIC INFORMATION

Pipe No: B38 Pipe Size: 18 in Pipe Length: 72 LF  
Date Inspected: 6/19/13 Inspection Started: NB JB  
Road Over Pipe: I-85 NB  
Alignment & STA: I-85 STA. 433+00  
Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

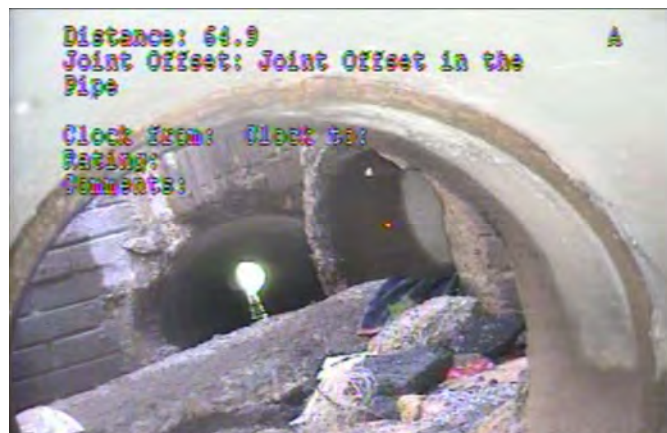
Pipe B38 is part of a closed drainage system ranging from Sta. 431+50 to Sta. 436+25 along I-85. Pipe B38 does not meet the current SCDOT Design Criteria for free surface flow capacity, but meets the other requirements for a closed drainage system.

### DEFICIENCIES

Joint offset at 65 ft

### RECOMMENDATION

Based on Video Pipe Inspection and the Hydraulic Information, Pipe B38 could be retained.



Joint Offset at 65 ft; Also looking at debris in CB

## PIPE INVENTORY SUMMARY - PIPE B39

### BASIC INFORMATION

Pipe No: B39 Pipe Size: 18 in Pipe Length: 80 LF

Date Inspected: 6/19/13 Inspection Started: Outlet

Road Over Pipe: I-85 SB

Alignment & STA: I-85 STA. 433+30

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe B39 is part of a closed drainage system ranging from Sta. 431+50 to Sta. 436+25 along I-85. Pipe B39 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Joint offset at 8 ft

### RECOMMENDATION

Based on Video Pipe Inspection and the Hydraulic Information, Pipe B39 could be retained.



Joint Offset at 8 ft

## PIPE INVENTORY SUMMARY - PIPE C1

### BASIC INFORMATION

Pipe No: C1 Pipe Size: 18 in Pipe Length: 126 LF  
Date Inspected: 6/20/13 Inspection Started: Outlet  
Road Over Pipe: I-385 SB  
Alignment & STA: I-385 STA. 331+90  
Ex. Fill Height: 11 ft Prop. Fill Height: 11 ft

### HYDRAULIC INFORMATION

Pipe C1 is part of a single catch basin closed drainage system. Pipe C1 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Crack - Longitudinal at 30, 38, and 112 ft; Joint Offset at 88 ft and 112 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe C1 should be retained.



Joint Offset and longitudinal crack at 112 ft; other offset and cracks similar

## PIPE INVENTORY SUMMARY - PIPE C2

### BASIC INFORMATION

Pipe No: C2 Pipe Size: 30 in Pipe Length: 200 LF

Date Inspected: 6/21/13 Inspection Started: SB Outlet

Road Over Pipe: I-385 SB and I-385 NB

Alignment & STA: I-385 STA. 335+10

Ex. Fill Height: 18 ft Prop. Fill Height: 18 ft

### HYDRAULIC INFORMATION

Pipe C2 in the existing condition is classified as a cross-line under I-385. However, the Concept Plans change the classification into a closed drainage system.

Pipe C2 meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Crack - Longitudinal at 17, 48, 90, and 105 ft; Joint Offset at 154 ft;

Hole at 158 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe C2 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe.



50-ft long. crack at 48 ft; other cracks similar



Hole at 158 ft

## PIPE INVENTORY SUMMARY - PIPE C3

### BASIC INFORMATION

Pipe No:   C3        Pipe Size:   30   in      Pipe Length:   127   LF  
Date Inspected:   6/21/13        Inspection Started:   Outlet    
Road Over Pipe:   I-385 SB    
Alignment & STA:   I-385 STA. 338+80    
Ex. Fill Height:   23   ft      Prop. Fill Height:   23   ft

### HYDRAULIC INFORMATION

Pipe C3 in the existing condition is classified as a cross-line under I-385. However, the Concept Plans change the classification into a closed drainage system.  
Pipe C3 meets current SCDOT Design guidelines for a closed drainage system.

### DEFICIENCIES

Crack - Longitudinal at 20 ft; Joint Offset at 47 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, retain 80' of the existing pipe from the median catch basin. Replace the last 47', which is affected by joint offset.



Longitudinal crack at 20 ft



Joint Offset at 47 ft

## PIPE INVENTORY SUMMARY - PIPE C4

### BASIC INFORMATION

Pipe No: C4 Pipe Size: 30 in Pipe Length: 82 LF  
Date Inspected: 6/21/13 Inspection Started: JB  
Road Over Pipe: I-385 NB  
Alignment & STA: I-385 STA. 338+90  
Ex. Fill Height: 16 ft Prop. Fill Height: 16 ft

### HYDRAULIC INFORMATION

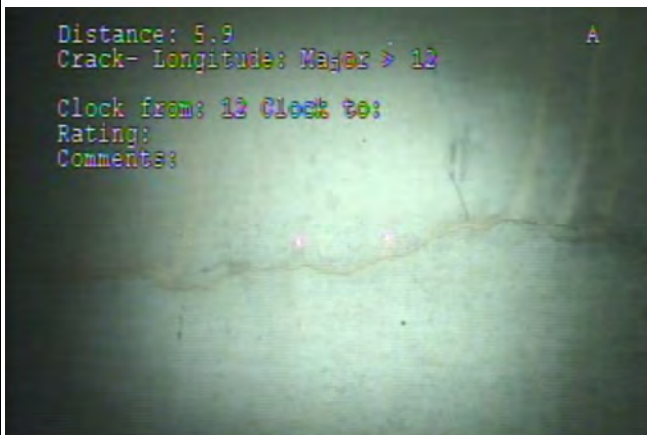
Pipe C4 in the existing condition is classified as a cross-line under I-385. However,  
the Concept Plans change the classification into a closed drainage system.  
Pipe C4 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Crack - Longitudinal at 6 ft and 55 ft; Joint Offset at 28 ft and 76 ft;  
Crack - Multidirectional at 77 ft

### RECOMMENDATION

Based on the video pipe inspection and hydraulic information, Pipe C4 could  
be retained.



Long. crack along top for most of the pipe length



Multidirectional crack at 77 ft



## PIPE INVENTORY SUMMARY - PIPE C5

### BASIC INFORMATION

Pipe No: C5 Pipe Size: 30 in Pipe Length: 225 LF  
Date Inspected: 6/21/13 Inspection Started: NB outlet  
Road Over Pipe: I-385 SB and I-385 NB  
Alignment & STA: I-385 STA. 341+50  
Ex. Fill Height: 25 ft Prop. Fill Height: 25 ft

### HYDRAULIC INFORMATION

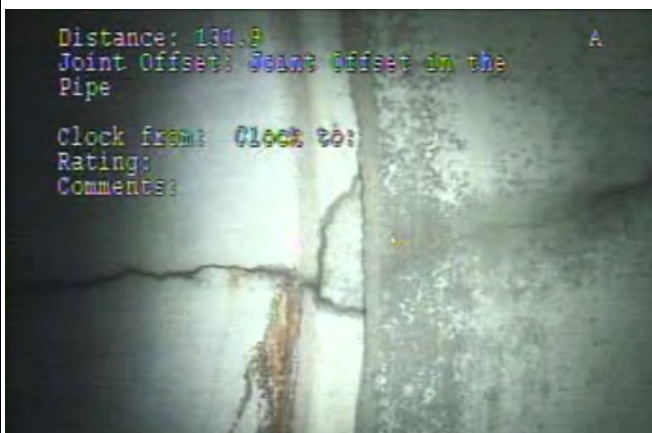
Pipe C5 in the existing condition is classified as a cross-line under I-385. However, the Concept Plans change the classification into a closed drainage system. Also, the Concept Plans only retain section of C5 between 24' and 94'. This section meets current SCDOT Design Criteria for closed drainage systems.

### DEFICIENCIES

Joint Offset at 8, 25, 66, 98 and 132 ft; Crack - Longitudinal at 8, 49, and 95 ft;  
Crack - Circumferential at 61 ft and 95 ft; Crack - Multidirectional at 104 ft and 132 ft; Joint - Separated at 123, 156, 164, and 213 ft

### RECOMMENDATION

Based on Video Pipe Inspection, Pipe C5 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe. The Concept Plan only retains the section of C5 between 24' and 94' in the VPI which shows minimum deficiencies and could be retained.



Multidirectional crack & Joint Offset at 132 ft



Joint - Separated at 213 ft

## PIPE INVENTORY SUMMARY - PIPE C7

### BASIC INFORMATION

Pipe No: C7 Pipe Size: 30 in Pipe Length: 362 LF  
Date Inspected: 6/21/13 Inspection Started: NB JB  
Road Over Pipe: I-385 SB and I-385 NB  
Alignment & STA: I-385 STA. 345+00  
Ex. Fill Height: 7 ft Prop. Fill Height: 10 ft

### HYDRAULIC INFORMATION

Pipe C7 is part of a closed drainage system ranging from Sta. 344+00 to Sta. 346+50.  
Hydraulic Information is not available since the Concept Plans plug & abandon  
Pipe C7.

### DEFICIENCIES

Crack - Longitudinal at 20, 232, 237, 270, and 344 ft; Joint Offset at 34, 82, 124,  
164, 213, and 302 ft; Crack - Circumfrenclal at 103 ft; Joint - Alignment at 107  
and 172 ft; Joint - Separated at 286 and 360 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe C7 should be slip lined due to  
deficiencies. Capacity should be verified with slip lined pipe. The Concept  
Plans plug & abandon the existing 30" R.C. Pipe.



Joint - Alignment at 172 ft



Longitudinal crack at 237 ft

## PIPE INVENTORY SUMMARY - PIPE C8

### BASIC INFORMATION

Pipe No: C8 Pipe Size: 42"/36" Pipe Length: 90 LF  
Date Inspected: 8/6/13 Inspection Started: JB  
Road Over Pipe: None  
Alignment & STA: I-385 STA. 346+20  
Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe C8 is part of a closed drainage system ranging from Sta. 344+00 to Sta. 346+50 along I-385. Pipe C8 does not meet current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

All joints offset; Broken at 7 ft;  
Change from RCP to corrugated pipe at 49 ft - Joint Failure; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe C8 should be replaced and should not be used.



Broken at 7 ft



Change from RCP to CMP at 49 ft

## PIPE INVENTORY SUMMARY - PIPE C9

### BASIC INFORMATION

Pipe No: C9 Pipe Size: 18 in Pipe Length: 202 LF  
Date Inspected: 6/21/13 Inspection Started: Outlet  
Road Over Pipe: I-385 SB  
Alignment & STA: I-385 STA. 346+70  
Ex. Fill Height: 8 ft Prop. Fill Height: 8 ft

### HYDRAULIC INFORMATION

Pipe C9 is the outlet pipe for a closed drainage system near I-385 Sta. 346+70.  
Hydraulic Information is not available for Pipe C9 as the Concept Plans plug &  
abandon the existing 18" R.C. Pipe.

### DEFICIENCIES

Joint - Separated at 7, 24, 31, 48, 57, and 88 ft; Root-in-joint at 8 ft; Collapsed  
at 31 ft and 88 ft; Joint Offset at 40, 72, 81, 102, 128, and 153 ft; Crack - Longi-  
tudinal at 81 ft; Joint - Gasket at 193 ft; Hole at 104 ft and 201 ft; Lateral at 88 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe C9 should not be used. Concept  
Plans plug & abandon the existing 18" R.C. Pipe.



Collapsed at 31 ft



Collapsed at 88 with lateral pipe

## PIPE INVENTORY SUMMARY - PIPE C10

### BASIC INFORMATION

Pipe No: C10 Pipe Size: 18 in Pipe Length: 95 LF

Date Inspected: 6/21/13 Inspection Started: NB JB

Road Over Pipe: I-385 NB

Alignment & STA: I-385 STA. 347+90

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe is part of closed drainage system along I-385. Hydraulic Information is not available as the Concept Plans replace the existing pipe.

### DEFICIENCIES

Lateral at 8.0 ft; Joint Offset at 17 ft

### RECOMMENDATION

Based on Video Pipe Inspection, Pipe C10 should not be used. Concept Plans replace the existing 18" R.C. Pipe.



Lateral at 8.0 ft

## PIPE INVENTORY SUMMARY - PIPE C12

### BASIC INFORMATION

Pipe No: C12 Pipe Size: 24 in Pipe Length: 179 LF

Date Inspected: 7/12/13 Inspection Started: Outlet

Road Over Pipe: Ramp from Woodruff Rd. to I-385 SB

Alignment & STA: I-385 STA. 351+60

Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

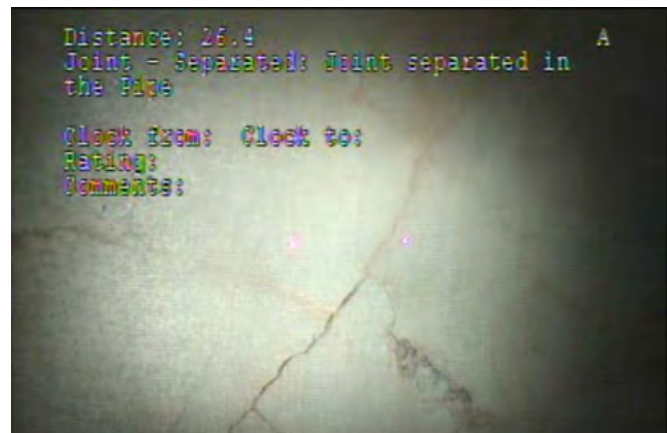
Pipe C12 is part of a closed drainage system ranging from Sta. 351+00 to Sta. 359+00 along I-385. Hydraulic Information is not available as the Concept Plans do not retain the existing 24" R.C. Pipe.

### DEFICIENCIES

Joint - Separated at 26 ft; Crack - Multidirectional at 26 ft; Crack at 43 ft

### RECOMMENDATION

Based on Video Pipe Inspection, Pipe C12 could be retained. Concept Plans remove the existing 24" R.C. Pipe.



Joint - Separated and Multidirectional crack at 26 ft

## PIPE INVENTORY SUMMARY - PIPE C15

### BASIC INFORMATION

Pipe No: C15 Pipe Size: 18 in Pipe Length: 318 LF

Date Inspected: 7/12/13 Inspection Started: Upstr inlet

Road Over Pipe: Ramp from Woodruff Rd. to I-385 NB

Alignment & STA: I-385 STA. 363+40

Ex. Fill Height: 5 ft Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

Pipe is part of closed system draining Woodruff Road ramps on I-385. Hydraulic

Information is not available as the Concept Plans remove the existing 18" R.C.

Pipe.

### DEFICIENCIES

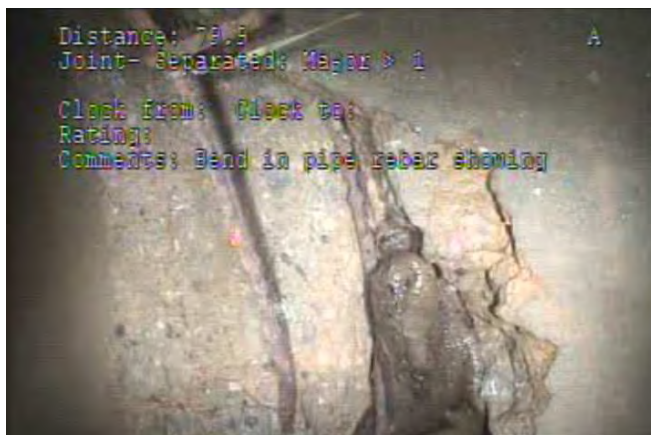
Chip at 24 ft; Joint - Separated at 80 ft (bend in pipe rebar showing)

### RECOMMENDATION

Based on Video Pipe Inspection, Pipe C15 would need to be repaired at 80' and

246' from the upstream inlet or the pipe could be slip lined. The Concept Plans

remove the existing 18" R.C. Pipe.



Joint - Separated at 80 ft

## PIPE INVENTORY SUMMARY - PIPE D1

### BASIC INFORMATION

Pipe No: D1 Pipe Size: 18 in. Pipe Length: 118 LF

Date Inspected: 7/15/13 Inspection Started: JB

Road Over Pipe: I-385 SB and Ramp from I-385 SB to Woodruff or I-85 NB

Alignment & STA: I-385 STA. 423+50

Ex. Fill Height: 5 ft Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

Pipe is part of closed drainage system under I-385 near Sta. 423+30. Hydraulic

Information is not available as the Concept Plans do not use the existing 18"

R.C.Pipe.

### DEFICIENCIES

Obstruction (debris) at 33 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe D1 could be cleaned and retained.

The Concept Plans plug & abandon the existing 18" R.C. Pipe under the travelway and remove outside the travelway.



Debris at 33 ft



## PIPE INVENTORY SUMMARY - PIPE D2

### BASIC INFORMATION

Pipe No:   D2   Pipe Size:   18   in. Pipe Length:   101   LF

Date Inspected:   8/5/13   Inspection Started:   NB JB  

Road Over Pipe:   I-385 NB  

Alignment & STA:   I-385 STA. 423+30  

Ex. Fill Height:   6   ft Prop. Fill Height:   6   ft

### HYDRAULIC INFORMATION

Pipe D2 is part of closed drainage system under I-385 near Sta. 423+30. Existing pipe meets current SCDOT design criteria for a closed drainage system.

### DEFICIENCIES

Broken with major repair issue at 9 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe D2 should not be used due to deficiencies.



Broken at 9 ft

## PIPE INVENTORY SUMMARY - PIPE D3

### BASIC INFORMATION

Pipe No: D3 Pipe Size: 36 in Pipe Length: 74 LF

Date Inspected: 7/11/13 Inspection Started: CL JB

Road Over Pipe: I-385 NB

Alignment & STA: I-385 STA. 431+00

Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

Pipe D3 is part of closed drainage system conveying runoff across I-385. Existing pipe meets current SCDOT Design Criteria.

### DEFICIENCIES

Joint - Separated at 53 ft and 60 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe D3 should be slip lined due to deficiencies. Capacity should be verified with slip lined pipe.



Joint - Separated at 53 ft (left) and 60 ft (right)

## PIPE INVENTORY SUMMARY - PIPE D4

### BASIC INFORMATION

Pipe No:   D4   Pipe Size:   36   in Pipe Length:   109   LF

Date Inspected:   7/11/13   Inspection Started:   CL JB  

Road Over Pipe:   I-385 SB  

Alignment & STA:   I-385 STA. 430+50  

Ex. Fill Height:   5   ft Prop. Fill Height:   5   ft

### HYDRAULIC INFORMATION

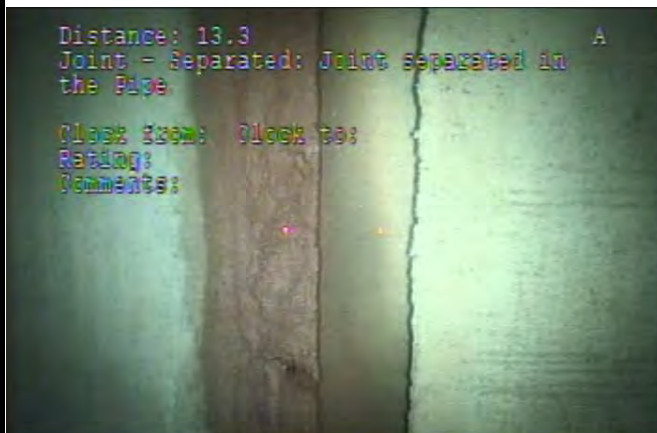
Pipe D4 is part of closed drainage system conveying runoff across I-385. Existing pipe meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Joint - Separated at 13 ft; Joint - Gasket at 22 ft and 30 ft; Grouted at 38 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe D4 should be slip lined due to deficiencies. Capacity should be verified on slip lined pipes.



Joint - Separated at 13 ft



Joint - Gasket at 22 ft

## PIPE INVENTORY SUMMARY - PIPE D5

### BASIC INFORMATION

Pipe No:   D5   Pipe Size:  15  in. Pipe Length:  106  LF

Date Inspected:  7/15/13  Inspection Started:  Outlet 

Road Over Pipe:  I-385 SB 

Alignment & STA:  I-385 STA. 435+00 

Ex. Fill Height:  5  ft Prop. Fill Height:  5  ft

### HYDRAULIC INFORMATION

Pipe D5 is part of a closed drainage system near Sta. 435+00 along I-385. Pipe D5 meets current SCDOT design criteria for closed drainage systems.

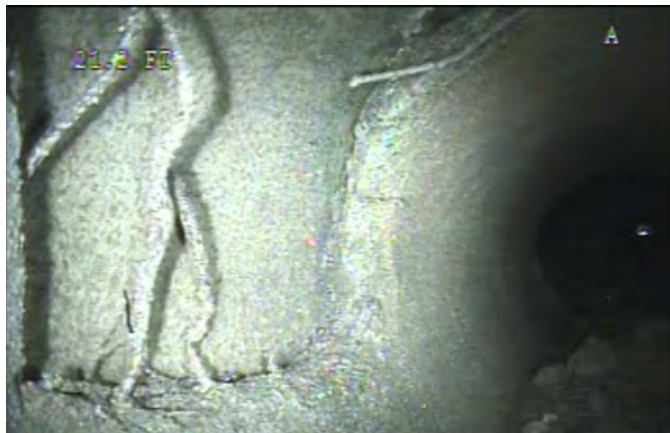
### DEFICIENCIES

Joint Offset at 8 ft; Hole at 22 ft;

Obstruction (debris) at 27 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe D5 should be slip lined due to deficiencies. Capacity should be verified on slip lined pipe.



Hole at 22 ft

## PIPE INVENTORY SUMMARY - PIPE D6

### BASIC INFORMATION

Pipe No: D6 Pipe Size: 15 in. Pipe Length: 111 LF

Date Inspected: 7/13/13 Inspection Started: Outlet

Road Over Pipe: I-385 SB and Ramp from Roper Mountain Rd. to I-385 SB

Alignment & STA: I-385 STA. 448+00

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe D6 is part of a closed drainage system near Sta. 448+00 along I-385. Pipe D6 meets current SCDOT design criteria for closed drainage systems.

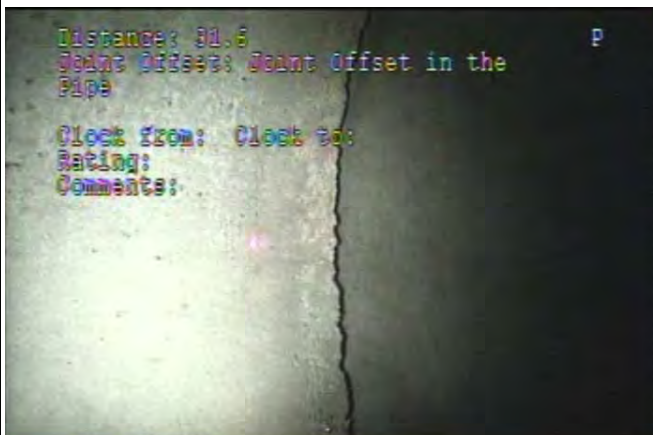
### DEFICIENCIES

Joint Offset at 32 ft;

Obstruction (debris) at 41 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe D6 could be cleaned and retained.



Joint Offset at 32 ft



Debris at 41 ft

## PIPE INVENTORY SUMMARY - PIPE D8

### BASIC INFORMATION

Pipe No:   D8   Pipe Size:   42   in. Pipe Length:   94   LF

Date Inspected:   7/11/13   Inspection Started:   NB JB  

Road Over Pipe:   I-385 NB  

Alignment & STA:   I-385 STA. 451+20  

Ex. Fill Height:   11   ft Prop. Fill Height:   11   ft

### HYDRAULIC INFORMATION

Pipe D8 is part of a closed drainage system near Sta. 451+00 along I-385. Pipe D8 meets current SCDOT Design Criteria for a closed drainage system.

### DEFICIENCIES

Obstruction (Inner ductile pipe) at 55 ft; VPI incomplete

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe D8 could be retained.



Ductile pipe at 55 ft

## PIPE INVENTORY SUMMARY - PIPE D9

### BASIC INFORMATION

Pipe No:   D9        Pipe Size:   42   in      Pipe Length:   102   LF

Date Inspected:   7/11/13        Inspection Started:   Upstr JB  

Road Over Pipe:   Ramp from I-385 NB to Roper Mountain Rd  

Alignment & STA:   I-385 STA. 451+00  

Ex. Fill Height:   13   ft      Prop. Fill Height:   13   ft

### HYDRAULIC INFORMATION

  Pipe D9 is part of a closed drainage system near Sta. 451+00 along I-385. Pipe D9 meets current SCDOT Design Criteria for a closed drainage system.  

### DEFICIENCIES

  Joint Offset at 69 ft  

### RECOMMENDATION

  Based on the Video Pipe Inspection and the Hydraulic Information, Pipe D9 could be retained.  



Joint Offset at 69 ft

## PIPE INVENTORY SUMMARY - PIPE F40

### BASIC INFORMATION

Pipe No: F40 Pipe Size: 18 in Pipe Length: 49 LF  
Date Inspected: 8/6/13 Inspection Started: Outlet  
Road Over Pipe: Roper Mountain Rd.  
Alignment & STA: Roper Mtn. Rd. STA. 23+20  
Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

Hydraulic Information is not available as the Concept Plans remove the existing  
18" R.C. / C.M. Pipe.

### DEFICIENCIES

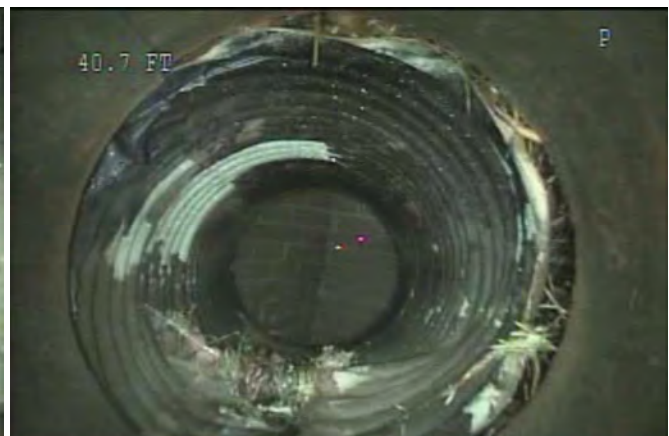
Broken at 18 ft (crushed under road); Joint - Separated at 36 ft and 43 ft;  
Joint failure - Change of pipe type at 43 ft

### RECOMMENDATION

Based on the Video Inspection, Pipe F40 should not be used due to deficiencies.  
At 18', pipe ceiling is crushed and deformed. Pipe F40 should be removed or  
plugged & abandoned. The Concept Plans remove the existing 18" R.C. / C.M.  
Pipe.



Broken at 18 ft



Joint failure at 43 ft



## PIPE INVENTORY SUMMARY - PIPE I2

### BASIC INFORMATION

Pipe No: 12 Pipe Size: 18 in. Pipe Length: 87 LF

Date Inspected: 8/6/13 Inspection Started: Downstr JB

Road Over Pipe: Ramp from I-85 SBCD to Woodruff

Alignment & STA: I-85 STA. 270+30

Ex. Fill Height: 3 ft Prop. Fill Height: 11 ft

### HYDRAULIC INFORMATION

Pipe I2 is part of the closed drainage system from I-85 Sta. 265+00 to 273+00.

Hydraulic Information is not available as the Concept Plans remove the existing 18" R.C. Pipe.

### DEFICIENCIES

Joint Offset at 46, 51, and 59 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I2 could be retained. However, the Concept Plans remove the existing 18" R.C. Pipe.



Joint Offset at 59 ft; other Joint Offset issues similar

## PIPE INVENTORY SUMMARY - PIPE I3A

### BASIC INFORMATION

Pipe No: I3A Pipe Size: 18 in. Pipe Length: 96 LF

Date Inspected: 4/3/13 Inspection Started: CL JB

Road Over Pipe: I-85 SBCD

Alignment & STA: I-85 STA. 271+30

Ex. Fill Height: 4 ft Prop. Fill Height: 4 ft

### HYDRAULIC INFORMATION

Pipe I3A is part of the closed drainage system from I-85 Sta. 265+00 to 273+00.

Hydraulic Information is not available as the Concept Plans remove the existing 18" R.C. Pipe.

### DEFICIENCIES

Broken at 73 ft where guard rail post was driven through pipe

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I3A would need to be repaired at approximately 73 ft from the median catch basin due to the guard rail post driven into the pipe. The rest of Pipe I3A could be retained. The Concept Plans plug & abandon existing 18" R.C. Pipe.



Guardrail post driven through pipe at 73 ft

## PIPE INVENTORY SUMMARY - PIPE I5

### BASIC INFORMATION

Pipe No: 15 Pipe Size: 18 in. Pipe Length: 101 LF

Date Inspected: 4/3/13 Inspection Started: Outlet

Road Over Pipe: I-85 NBCD

Alignment & STA: I-85 STA. 273+50

Ex. Fill Height: 3 ft Prop. Fill Height: 3 ft

### HYDRAULIC INFORMATION

Pipe is outfall pipe for closed system, I-85 Sta. 265+00 to 273+00.

Existing pipe meets current SCDOT design criteria.

### DEFICIENCIES

Utility conduit through pipe at 95 ft; Broken at 98 ft (near end of pipe)

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, retain 92' from the outlet. Replace 8' at median catch basin due to deficiencies.



Thru pipe at 95 ft



Broken (above) at 100 ft

## PIPE INVENTORY SUMMARY - PIPE I6

### BASIC INFORMATION

Pipe No: 16 Pipe Size: 18 in. Pipe Length: 118 LF

Date Inspected: 12/13/12 Inspection Started: Inlet

Road Over Pipe: I-85 SBCD and I-85 SB

Alignment & STA: I-85 STA. 278+50

Ex. Fill Height: 5 ft Prop. Fill Height: 5 ft

### HYDRAULIC INFORMATION

Pipe I6 is part of a closed drainage system at I-85 Sta. 278+00. Hydraulic

Information is not available as the Concept Plans do not retain existing 18"

R.C. Pipe.

### DEFICIENCIES

Joint - Separated at 20 ft; Broken at 28, 37, and 45 ft; Crack at 69 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I6 should be slip lined to be retained

due to deficiencies. Capacity should be verified for slip lined pipe. Concept

Plans do not retain existing 18" R.C. Pipe, and show removing outside of

pavement and plug & abandon under the travelway.



Broken at 37 ft (left) and 45 ft (right)

## PIPE INVENTORY SUMMARY - PIPE I8

### BASIC INFORMATION

Pipe No: 18 Pipe Size: 18 in. Pipe Length: 95 LF

Date Inspected: 4/3/13 Inspection Started: Outlet

Road Over Pipe: I-85 NBCD

Alignment & STA: I-85 STA. 279+80

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe I8 is the outfall pipe for closed drainage system from I-85 Sta. 275+00 to 278+00. Existing pipe meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Joint - Separated at 58 ft;

Broken at 65 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I8 should not be used due to deficiencies under the travelway.



Broken at 65 ft

## PIPE INVENTORY SUMMARY - PIPE I9

### BASIC INFORMATION

Pipe No:   I9   Pipe Size:   36   in. Pipe Length:   174   LF

Date Inspected:   12/13/12   Inspection Started:   JB  

Road Over Pipe:   Ramp from I-385 SB to I-85 SBCD  

Alignment & STA:   I-85 STA. 281+00  

Ex. Fill Height:   3   ft Prop. Fill Height:   3   ft

### HYDRAULIC INFORMATION

Pipe I9 is part of closed drainage system from I-85 Sta. 281+50. Hydraulic Information is not available as the Concept Plans remove the existing 36" R.C. Pipe.

### DEFICIENCIES

Cracked at 12, 42, and 143 ft; Joint - Separated at 42, 143, and 156 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I9 should be slip lined to be retained due to deficiencies. Capacity should be verified for slip lined pipe. Concept Plans remove the existing 36" R.C. Pipe.



Joint - Separated and cracked at 42 ft (left) and 143 ft (right)

## PIPE INVENTORY SUMMARY - PIPE I10

### BASIC INFORMATION

Pipe No: 110 Pipe Size: 36 in. Pipe Length: 120 LF

Date Inspected: 12/13/12 Inspection Started: SBCD JB

Road Over Pipe: I-85 SBCD and I-85 SB

Alignment & STA: I-85 STA. 281+50

Ex. Fill Height: 3 ft Prop. Fill Height: 3 ft

### HYDRAULIC INFORMATION

Pipe I10 is part of closed drainage system from I-85 Sta. 281+50. Hydraulic Information is not available as the Concept Plans do not use the existing 36" R.C. Pipe.

### DEFICIENCIES

Cracked at 7, 13, 29, 39, and 76 ft; Joint - Separated at 13 ft; Broken at 119 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, the broken pipe at 119' appears to be a hole created for the median catch basin to flow into the pipe (similar to 180' on the same VPI). However, the hole is clogged, which would affect the drainage at the median. Recommend replacing the drainage structure at the median to prevent clogging as seen in the VPI. Pipe I10 could be retained. Concept Plans remove existing 36" R.C. Pipe outside of the pavement structure and plug & abandon under the pavement structure.



Joint - Separated and cracked (top) at 13 ft



Broken at 119 ft

## PIPE INVENTORY SUMMARY - PIPE I12

### BASIC INFORMATION

Pipe No:   I12        Pipe Size:   36   in.      Pipe Length:   100   LF

Date Inspected:   12/13/12        Inspection Started:   JB  

Road Over Pipe:   I-85 NBCD and Ramp from I-85 NBCD to I-385 SB  

Alignment & STA:   I-85 STA. 281+55  

Ex. Fill Height:   8   ft      Prop. Fill Height:   8   ft

### HYDRAULIC INFORMATION

Pipe I12 is part of closed drainage system from I-85 Sta. 281+50. Pipe I12 meets current SCDOT design criteria for a closed drainage system.

### DEFICIENCIES

Joint - Separated at 11 ft and 71 ft; Lateral at 30 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe I12 could be retained. However, a junction box should be placed at approximately 30 feet from the upstream side to remove the deficiencies found around the lateral line tie-in.



Joint - Separated at 11 ft



Lateral at 30 ft



## PIPE INVENTORY SUMMARY - PIPE I13

### BASIC INFORMATION

Pipe No: 113 Pipe Size: 36 in. Pipe Length: 163 LF  
Date Inspected: 8/6/13 Inspection Started: Outlet  
Road Over Pipe: I-85 NBCD and Ramp from I-85 NBCD to I-385 SB  
Alignment & STA: I-85 STA. 284+80  
Ex. Fill Height: 24 ft Prop. Fill Height: 30 ft

### HYDRAULIC INFORMATION

Pipe I13 is part of closed drainage system from I-85 Sta. 285+00. Pipe I13 meets current SCDOT design criteria for a closed drainage system.

### DEFICIENCIES

Joint Offset at 19 ft (in report but not in video)  
Deep water at 125 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection and the Hydraulic Information, Pipe I13 could be retained. Deep water at 125' in the VPI is most likely from the stream at the existing outfall.



Deep water at 125 ft

## PIPE INVENTORY SUMMARY - PIPE I15

### BASIC INFORMATION

Pipe No: 115 Pipe Size: 15 in. Pipe Length: 125 LF

Date Inspected: 12/13/12 Inspection Started: SBCD inlet

Road Over Pipe: I-85 SBCD

Alignment & STA: I-85 STA. 284+20

Ex. Fill Height: 6 ft Prop. Fill Height: 6 ft

### HYDRAULIC INFORMATION

Pipe I15 is part of closed drainage system from I-385 Sta. 392+00 to 412+00.

Hydraulic Information is not available as the Concept Plan removes the existing  
15" R.C. Pipe.

### DEFICIENCIES

Joint - Separated at 15, 80, 104, and 112 ft; Cracked at 15 ft and 23 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I15 should be slip lined if retained.

Capacity should be verified with slip lined pipe. Concept Plans remove existing  
15" R.C. Pipe.



Joint - Separated and cracked at 14 ft



Joint - Separated at 112 ft

## PIPE INVENTORY SUMMARY - PIPE I16

### BASIC INFORMATION

Pipe No: 116 Pipe Size: 18 in. Pipe Length: 130 LF

Date Inspected: 12/13/12 Inspection Started: Upstr JB

Road Over Pipe: I-85 SBCD

Alignment & STA: I-85 STA. 285+30

Ex. Fill Height: 16 ft Prop. Fill Height: 16 ft

### HYDRAULIC INFORMATION

Pipe I16 is part of closed drainage system from I-385 Sta. 392+00 to 412+00.

Hydraulic Information is not available as the Concept Plans remove the existing 18" R.C. Pipe.

### DEFICIENCIES

Joint - Separated at 109 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I16 could be retained. Concept Plans remove existing 18" R.C. Pipe.



Joint - Separated at 109 ft

## PIPE INVENTORY SUMMARY - PIPE I17A

### BASIC INFORMATION

Pipe No: I17A Pipe Size: 36 in. Pipe Length: 290 LF

Date Inspected: 7/9/13 Inspection Started: Outlet

Road Over Pipe: Ramp from I-85 NBCD to I-385 SB

Alignment & STA: Prop. Ramp 3 STA 57+50

Ex. Fill Height: 32 ft Prop. Fill Height: 52 ft

### HYDRAULIC INFORMATION

Pipe is part of closed drainage system from I-385 Sta. 392+00 to 412+00. Pipe I17A meets current SCDOT design criteria for closed drainage system. Concept Plans will replace the existing 36" R.C. Pipe due to the additional fill added by the current proposed design.

### DEFICIENCIES

All joints separated; Joint Offset at 119 ft; Crack at 206 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I17A should be slip lined if retained. Capacity should be verified on slip lined pipe. One point of concern from the VPI is the standing water at the end of the VPI on I17A, which should be further investigated if retained (17B-17D). Concept Plans replace the existing 36" R.C. Pipe due to the additional fill added by the current proposed design.



Joint - Separated at 45 ft



Crack at 206 ft

## PIPE INVENTORY SUMMARY - PIPE I19

### BASIC INFORMATION

Pipe No: 119 Pipe Size: 36 in. Pipe Length: 110 LF

Date Inspected: 12/13/12 Inspection Started: Loop JB

Road Over Pipe: Loop from I-85 SBCD to I-385 SB

Alignment & STA: I-85 STA. 286+00

Ex. Fill Height: 15 ft Prop. Fill Height: 15 ft

### HYDRAULIC INFORMATION

Pipe I19 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Hydraulic Information is not available as the Concept Plans remove the existing 36" R.C. Pipe.

### DEFICIENCIES

Joint - Separated at 106 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I19 could be retained. Concept Plans remove the existing 36" R.C. Pipe.



Joint - Separated at 106 ft

## PIPE INVENTORY SUMMARY - PIPE I20

### BASIC INFORMATION

Pipe No: 120 Pipe Size: 30 in. Pipe Length: 132 LF

Date Inspected: 12/13/12 Inspection Started: Upstr JB

Road Over Pipe: None

Alignment & STA: I-385 STA. 403+00

Ex. Fill Height: 3 ft Prop. Fill Height: 24 ft

### HYDRAULIC INFORMATION

Pipe I20 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Hydraulic Information is not available as the Concept Plans remove the existing 30" R.C. Pipe.

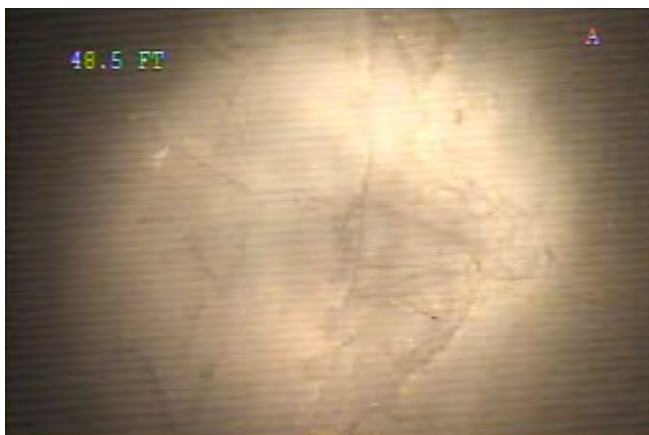
### DEFICIENCIES

Joint issues at 2, 4, 36, and 106 ft; Joint - Separated at 122 ft;

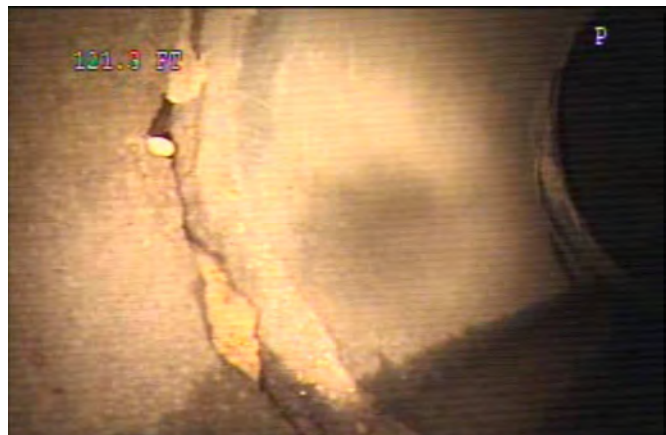
Crack at 2 ft and 49 ft

### RECOMMENDATION

Based on Video Pipe Inspections, Pipe I20 should be slip lined if retained due to the joint deficiencies. Capacity should be verified for slip lined pipe. Concept Plans remove existing 30" R.C. Pipe.



Crack at 49 ft



Joint - Separated at 122 ft

## PIPE INVENTORY SUMMARY - PIPE I21

### BASIC INFORMATION

Pipe No:   I21   Pipe Size:   30   in. Pipe Length:   407   LF

Date Inspected:   12/13/12   Inspection Started:   Downstr JB  

Road Over Pipe:   Loop from I-85 SBCD to I-385 SB  

Alignment & STA:   I-385 STA. 405+50  

Ex. Fill Height:   8   ft Prop. Fill Height:   24   ft

### HYDRAULIC INFORMATION

Pipe I21 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Hydraulic Information is not available as the Concept Plans remove the existing 30" R.C. Pipe.

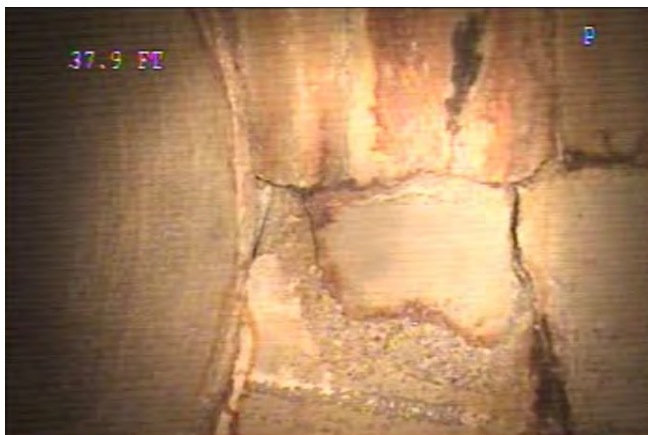
### DEFICIENCIES

Joint - Separated 15 ft and 201 ft; Joint Offset at 387 ft and 404 ft;

Crack at 39, 46, 80, 129, 331, 333, and 404 ft; Broken at 38 ft

### RECOMMENDATION

Based on Video Pipe Inspections, Pipe I21 should be slip lined if retained due to the joint deficiencies. Capacity should be verified for slip lined pipe. Concept Plans remove existing 30" R.C. Pipe.



Crack (broken) at 39 ft



Joint Offset and crack at 404 ft

## PIPE INVENTORY SUMMARY - PIPE I23

### BASIC INFORMATION

Pipe No: 123 Pipe Size: 18 in. Pipe Length: 119 LF

Date Inspected: 8/5/13 Inspection Started: CL JB

Road Over Pipe: I-385 SB

Alignment & STA: I-385 STA. 406+80

Ex. Fill Height: 7 ft Prop. Fill Height: 7 ft

### HYDRAULIC INFORMATION

Pipe I23 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Pipe I23 meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Crack - Multidirectional at 65 ft; Joint Offset at 97 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe I23 should be slip lined if retained due to deficiencies. Capacity should be verified on slip lined pipe.



Multidirectional crack at 65 ft



Joint Offset at 97 ft



## PIPE INVENTORY SUMMARY - PIPE I24

### BASIC INFORMATION

Pipe No: 124 Pipe Size: 18 in. Pipe Length: 166 LF

Date Inspected: 8/5/13 Inspection Started: Upstr. Inlet

Road Over Pipe: I-385 NB

Alignment & STA: I-385 STA. 405+90

Ex. Fill Height: 10 ft Prop. Fill Height: 10 ft

### HYDRAULIC INFORMATION

Pipe I24 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Pipe I24 meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Joint - Separated at 16 ft; Joint Offset at 106 ft and 138 ft; Crack at 138 ft;

Chip at 162 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe I24 should be slip lined if retained due to deficiencies. Capacity should be verified on slip lined pipe.



Joint - Separated at 16 ft



Joint Offset and crack at 138 ft

## PIPE INVENTORY SUMMARY - PIPE I25

### BASIC INFORMATION

Pipe No:   I25        Pipe Size:   30   in.      Pipe Length:   401   LF

Date Inspected:   7/10/13        Inspection Started:   NB JB  

Road Over Pipe:   I-385 NB and I-385 SB  

Alignment & STA:   I-385 STA. 409+50  

Ex. Fill Height:   10   ft      Prop. Fill Height:   10   ft

### HYDRAULIC INFORMATION

Pipe I25 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Existing pipe meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Joint issues at 11 and 118 ft; Joint - Separated at 12 ft; Joint Offset at 51 ft;

Crack at 6 ft and 203 ft; Chip at 118, 173, and 353 ft

### RECOMMENDATION

Based on Video Pipe Inspection and Hydraulic Information, Pipe I25 should be slip lined if retained due to deficiencies. Capacity should be verified on slip lined pipe.



Joint - Separated (broken) at 12 ft



Joint Offset and chipped at 118 ft

## PIPE INVENTORY SUMMARY - PIPE I26

### BASIC INFORMATION

Pipe No: 126 Pipe Size: 30 in. Pipe Length: 78 LF

Date Inspected: 7/10/13 Inspection Started: Upstr JB

Road Over Pipe: Ramp from I-85 SBCD to I385 NB

Alignment & STA: I-385 STA. 411+10

Ex. Fill Height: 8 ft Prop. Fill Height: 8 ft

### HYDRAULIC INFORMATION

Pipe I26 is part of a closed drainage system from I-385 Sta. 392+00 to 412+00.

Pipe I26 meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

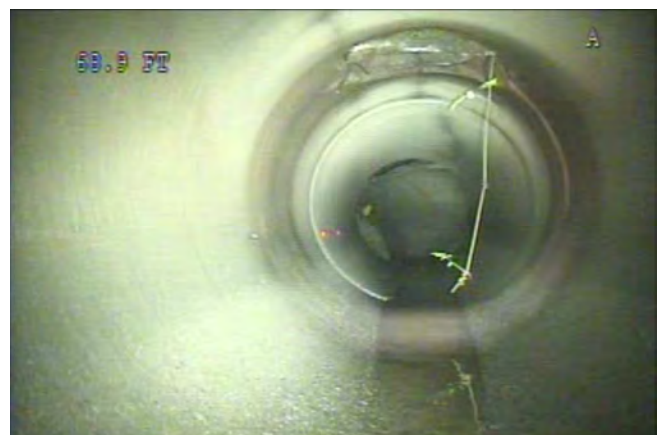
Crack at 14 ft; Hole at 74 ft (not in report)

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, retain 72' from the upstream catch basin. The hole located at 74' allows the drop inlet to drain to the pipe. The pipe does not turn at the drop inlet, instead I26 bends to I25. Replace pipe from 72' to bend and place a structure to tie to I25.



Crack at 14 ft (runs for 63 ft length)



Hole above at 74 ft

## PIPE INVENTORY SUMMARY - PIPE I28

### BASIC INFORMATION

Pipe No: 128 Pipe Size: 18 in. Pipe Length: 350 LF  
Date Inspected: 7/12/13 Inspection Started: Upstr outlet  
Road Over Pipe: Ramp from I-385 NB to I-85 NB  
Alignment & STA: I-385 STA. 393+50  
Ex. Fill Height: 9 ft Prop. Fill Height: 45 ft

### HYDRAULIC INFORMATION

Pipe I28 is part of a closed drainage system near Ramp 4 Sta. 54+00. Pipe I28 meets current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Joint - Separated at 12 ft; Joint Offset at 20 ft;  
Obstruction (rock) at 207 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Informaion, Pipe I28 should be slip lined if retained. Capacity should be checked on slip lined pipe. However, the structural integrity of the pipe should also be verified as the Concept Plans add approx. 36' of fill which would require the pipe not to be used. Concept Plans replace the existing 18" R.C. Pipe due to the additional fill.



Joint - Separated at 12 ft



Joint Offset at 20 ft

## PIPE INVENTORY SUMMARY - PIPE I29

### BASIC INFORMATION

Pipe No:   I29   Pipe Size:   18   in. Pipe Length:   83   LF

Date Inspected:   12/13/12   Inspection Started:   Loop inlet  

Road Over Pipe:   Loop from I-385 NB to I-85 SBCD  

Alignment & STA:   I-85 STA. 293+70  

Ex. Fill Height:   5   ft Prop. Fill Height:   5   ft

### HYDRAULIC INFORMATION

  Pipe I29 is part of closed drainage system from I-85 Sta. 292+00 to 297+00.  

  Pipe I29 meets current SCDOT design criteria for a closed drainage system.  

### DEFICIENCIES

  Joint - Separated at 3 ft  

### RECOMMENDATION

  Based on the Video Pipe Inspection and the Hydraulic Information, fix the joint    
  seperation at 3 ft in the VPI and retain the rest of the pipe.  



Joint - Separated at 3 ft

## PIPE INVENTORY SUMMARY - PIPE I30

### BASIC INFORMATION

Pipe No:   I30   Pipe Size:   18   in. Pipe Length:   48   LF

Date Inspected:   7/15/13   Inspection Started:   SBCD JB  

Road Over Pipe:   I-85 SBCD  

Alignment & STA:   I-85 STA. 295+90  

Ex. Fill Height:   5   ft Prop. Fill Height:   5   ft

### HYDRAULIC INFORMATION

Pipe I30 is part of closed drainage system from I-85 Sta. 292+00 to 297+00.

Pipe I30 does not meet current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

Crack - Multidirectional at 7 ft; Joint Offset at 7 ft and 23 ft; Hole at 31 ft;

Joint - Separated at 39 ft; Crack at 39 ft

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I30 should be slip lined if retained due to deficiencies. Capacity should be verified on slip lined pipe. Pipe I30 does not meet the free surface flow capacity, but meets all other SCDOT design criteria.



Hole at 31 ft



Joint - Separated and crack at 39 ft

## PIPE INVENTORY SUMMARY - PIPE I32

### BASIC INFORMATION

Pipe No:   I32        Pipe Size:   18   in.      Pipe Length:   203   LF

Date Inspected:   7/13/13        Inspection Started:   SBCD JB  

Road Over Pipe:   I-85 SBCD, I-85 SB, and I-85 NB  

Alignment & STA:   I-85 STA. 297+00  

Ex. Fill Height:   10   ft      Prop. Fill Height:   10   ft

### HYDRAULIC INFORMATION

Pipe I32 is part of closed drainage system from I-85 Sta. 292+00 to 297+00.

Pipe I32 does not meet current SCDOT design criteria for closed drainage systems.

### DEFICIENCIES

All joints grouted; Joint Offset at 6, 13, 22, 182, and 190 ft;

2 Holes at 170 ft; Joint - Separated at 177 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and the Hydraulic Information, Pipe I32 should not be used due to severe joint offsets and other deficiencies.



Joint Offset at 177 ft; other Joint Offsets similar



1 hole at 170 ft; other hole similar

## PIPE INVENTORY SUMMARY - PIPE I34

### BASIC INFORMATION

Pipe No: 134 Pipe Size: 15 in. Pipe Length: 433 LF  
Date Inspected: 12/13/12 Inspection Started: Upstr outlet  
Road Over Pipe: I-85 SBCD  
Alignment & STA: I-85 STA. 301+60  
Ex. Fill Height: 3 ft Prop. Fill Height: 3 ft

### HYDRAULIC INFORMATION

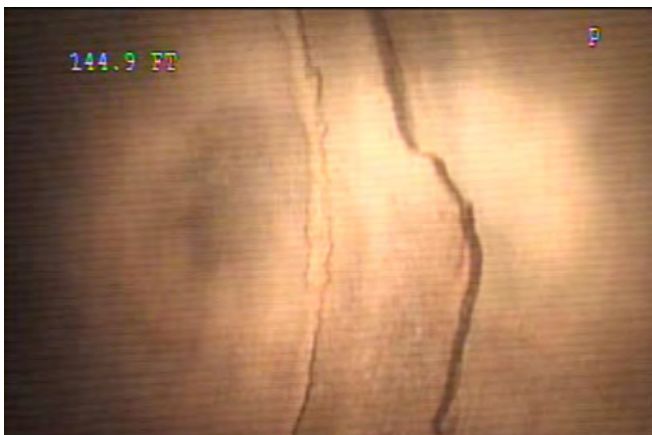
Pipe I34 is located at upstream end of the closed drainage system from I-85 Sta. 300+00 to 305+00. Hydraulic Information is not available as the Concept Plans do not retain existing 15" R.C. Pipe.

### DEFICIENCIES

Crack at 50, 145, and 161 ft; Joint - Separated at 89, 162, and 194 ft;  
Joint Offset at 145 ft;  
Obstruction (rock) at 200 ft; VPI incomplete

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I34 should be slip lined if retained due to joint deficiencies. Capacity should be verified on slip lined pipe.  
Concept Plans remove existing 15" R.C. Pipe.



Joint Offset at 145 ft



Joint - Separated and cracked at 162 ft



## PIPE INVENTORY SUMMARY - PIPE I37

### BASIC INFORMATION

Pipe No: 137 Pipe Size: 18 in. Pipe Length: 68 LF

Date Inspected: 4/2/13 Inspection Started: Downstr JB

Road Over Pipe: None

Alignment & STA: I-85 STA. 304+10

Ex. Fill Height: 4 ft Prop. Fill Height: 9 ft

### HYDRAULIC INFORMATION

Pipe I37 is part of a closed drainage system ranging from Sta. 300+00 to Sta. 305+00 on I-85. Existing pipe meets current SCDOT criteria for a closed drainage system.

### DEFICIENCIES

Joint - Alignment at 51 ft

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, retain 48' from the downstream junction box and replace from the bad joint to the end of I37.



Joint - Alignment at 51 ft

## PIPE INVENTORY SUMMARY - PIPE I39

### BASIC INFORMATION

Pipe No:   I39        Pipe Size:   54   in.      Pipe Length:   374   LF  
Date Inspected:   7/10/13        Inspection Started:   N/A    
Road Over Pipe:   I-385 NB & I-385 SB    
Alignment & STA:   I-385 STA. 380+80    
Ex. Fill Height:   55   ft      Prop. Fill Height:   55   ft

### HYDRAULIC INFORMATION

Pipe I39 is a cross line located near Sta. 380+80 on I-385. <Hydraulic Information?>

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### DEFICIENCIES

HAND HELD VIDEO (start with flow)

Joint-separated in several locations, chipped everywhere, many longitudinal cracks, circumfrenical crack, bottom of pipe is broken with rebar exposed for most of the pipe length

### RECOMMENDATION

Based on the Video Pipe Inspection, Pipe I39 should be slip lined if retained due to deficiencies. Capacity should be verified on slip lined pipe.



Typical broken piece at bottom



Typical cracking/chipping along side

## PIPE INVENTORY SUMMARY - BOX CULVERT I40

### BASIC INFORMATION

Pipe No: I40 BC Size: 6x7 to 5x7 BC Length: 430 LF  
Date Inspected: 10/7/13 Inspection Started: Upstream  
Road Over BC: I-385 NB & I-385 SB  
Alignment & STA: I-385 STA. 383+20  
Ex. Fill Height: 53 ft Prop. Fill Height: 53 ft

### HYDRAULIC INFORMATION

Pipe I40 is a 7' X 6' Box Culvert located near Sta. 383+20 on I-385. Pipe I40 does not meet current SCDOT design criteria for a cross-line. However, the overtopping flow is greater than the 100 year design storm.

Note: BC changes from 6x7 to 5x7 after around 30 ft. Transition is in good condition.

### DEFICIENCIES

HAND HELD VIDEO (start with flow)

Chipped or scaled at a few locations; Rebar exposed at a two locations

(corrosion in one spot due to void)

### RECOMMENDATION

Based on the Video Pipe Inspection and Hydraulic Information, Pipe I40 could be retained with maintenance. Repair culvert at all voids and exposed rebar.



Typical chipping/scaling



Corroded rebar due to void