



Macon and Adair County, Route 63, Job J2P0485



7-30-07, s-227, 24", 2105+00,



7-30-07, s-226, 24", 2098+37,



117.0042



117.0042

30-07, s-225, 24", 2097+00,

Macon and Adair County, Route 63, Job J2P0485



7-30-07, s-223, 15", 2092+00, ran camera

Macon and Adair County, Route 63, Job J2P0485



7-30-07, s-222, 15", 2087+00,



7-30-07, s-221, 24", 2081+00,



7-30-07, s-219, 24", 2077+70



30-07, s-218, 30", 2069+86, 8'-10' of cover.



7-30-07, s-217, 18", 2060+00,



Macon and Adair County, Route 63, Job J2P0485



7-30-07, s-216A&B, 2057+00





7-30-07, s-216A&B, 2057+00



7-30-07, s-215, 18"



7-30-07, s-213, 24", 2047+00



7-30-07, s-211, 15", 2042+00



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7-30-07, s-210, 30", 2038+00, OF FLE Separation 1.5" at bottom!



7-32-07, s-208A, 42" 2023+45, RCP



7-31-07, 15"



7-31-07, s-204, 18", 2011+00





7-31-07, s-203 south 24", north 24",

Macon and Adair County, Route 63, Job J2P0485



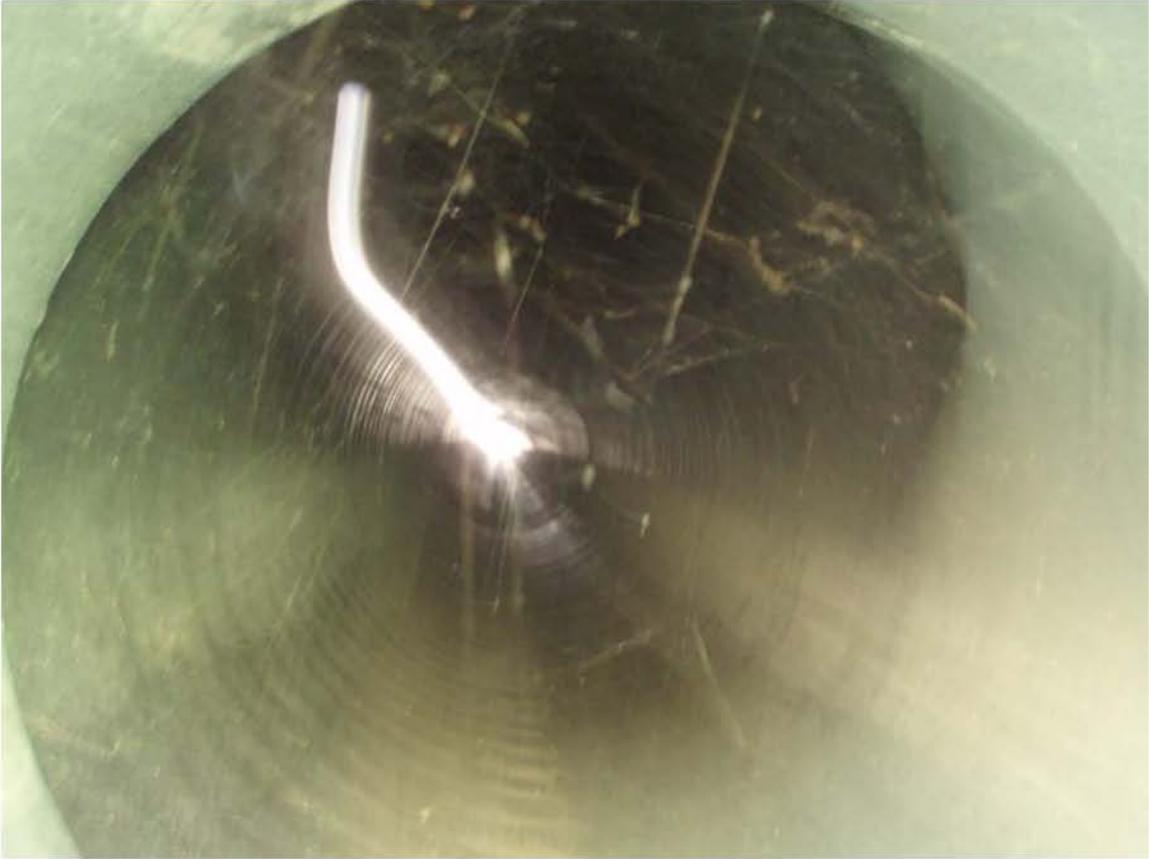
7-31-07, s-202, 24", 1998+91, 4" of dirt all the way,



31-07, p-201, 15", 1994+18, 1" of gravel all the way.



7-31-07, s-200, 30", 1988+00, 18" in median Box Culvert,



7-31-07, s-199, 18", 1984+00



7-31-07, p-198,15", 1978+00



7-31-07, p-197, 15", 1967+48



31-07, s-196, 24", 1967+48

7-



7-31-07, s-195, 24", 1953+00



7-31-07, p-194, 24", 1949+54



7-31-07, s-192, 24", 1993+45



7-31-07, s-191, 42", 1929+15,

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7-31-07-, p-190, 24", 1919+00

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7-31-07, p-189, 24", 1899+00

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7-31-07, p-188, 30", 1890+38,

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7-31-07, s-187, 24", 1886+79, appears deflected but too much debris for video camera or mandrel

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-186, 24", 1884+00

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-184, 30", 1869+37

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-183, 24", 1863+31, Type S Grate

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-181, 15", 1855+00

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-180, 18", 1849+00

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-179, 15", 1836+00

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-178, 18", 1833+00

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-176, 24", 1824+79

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7-31-07, s-174, 30", 1819+80



7-31-07, s-173,

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7-31-07, s-172, 18", 1804+00

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7-31-07, p-171, 18", 1798+00



7-31-07, p-168, 42", 1790+92

Macon and Adair County, Route 63, Job J2P0485



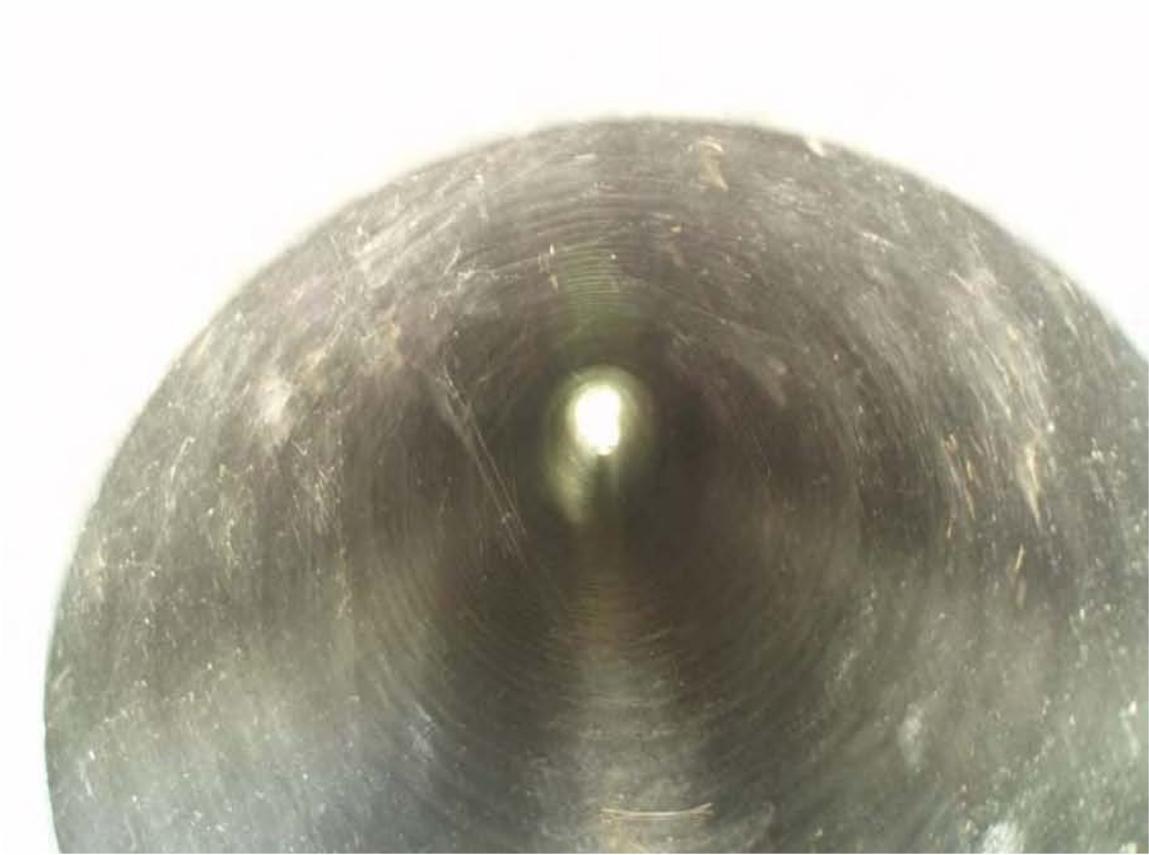
7-31-07, s-166, 18", 1786+00, Type S Grate

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-165, 18", 1779+00, Type S Grate,

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-164, 18", 1763+00

Macon and Adair County, Route 63, Job J2P0485



7-31-07, s-163, 18", 1755+00



7-31-07, s-159, 18" 1749+00,



7-31-07, s-158, 30", 1746+00, Inlet 1" Gap at Bottom, joint with FE section.



7-31-07, s-157, 18", 1739+00, Inlet, Band Broken on plastic FE section, Pipe Good



7-31-07, s-156, 18", 1732+00



7-31-07, p-155, 36", 1724+67



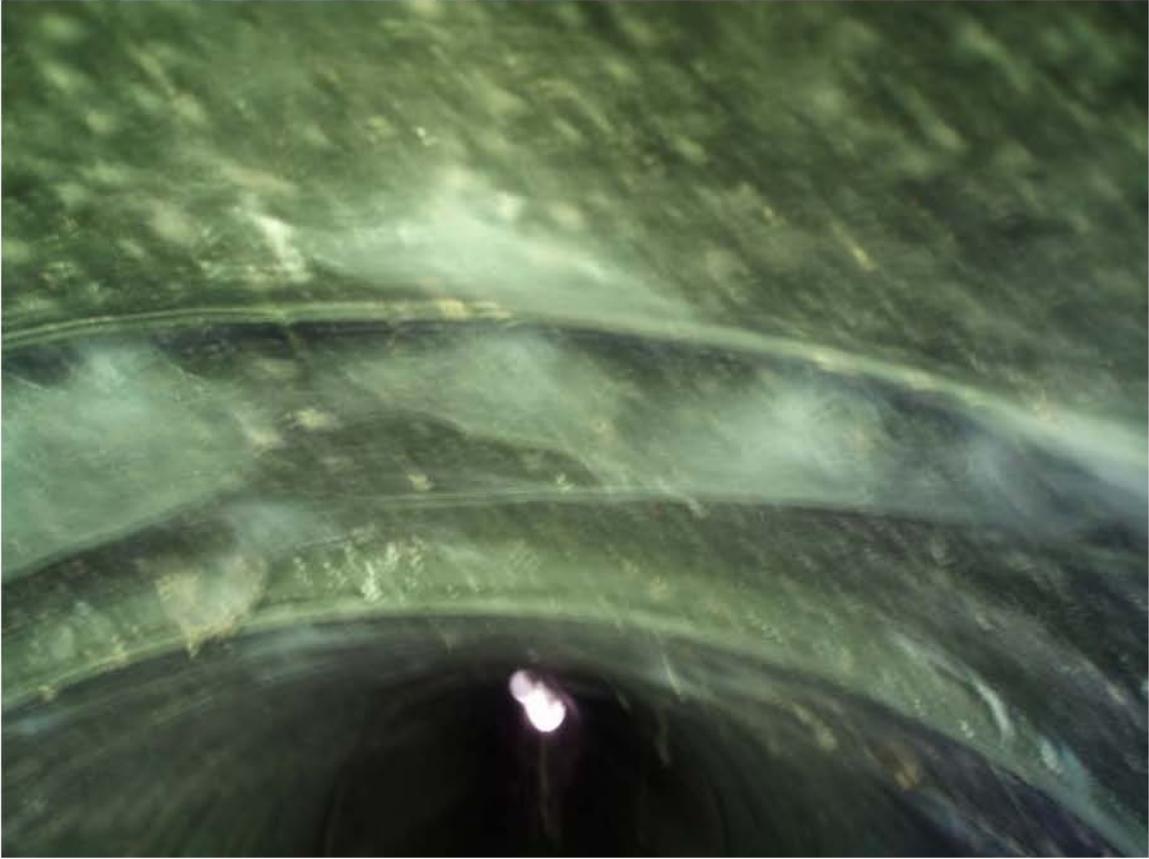
7-31-07, p-154, 18"1720+00



7-31-07, s-151, 24", 1699+00, Mandreled 8-2-07 Good,



7-31-07, p-150, 30", 1690+04, Top of flared section 1" elevation difference.



7-31-07, s-148, 24", 1683+00



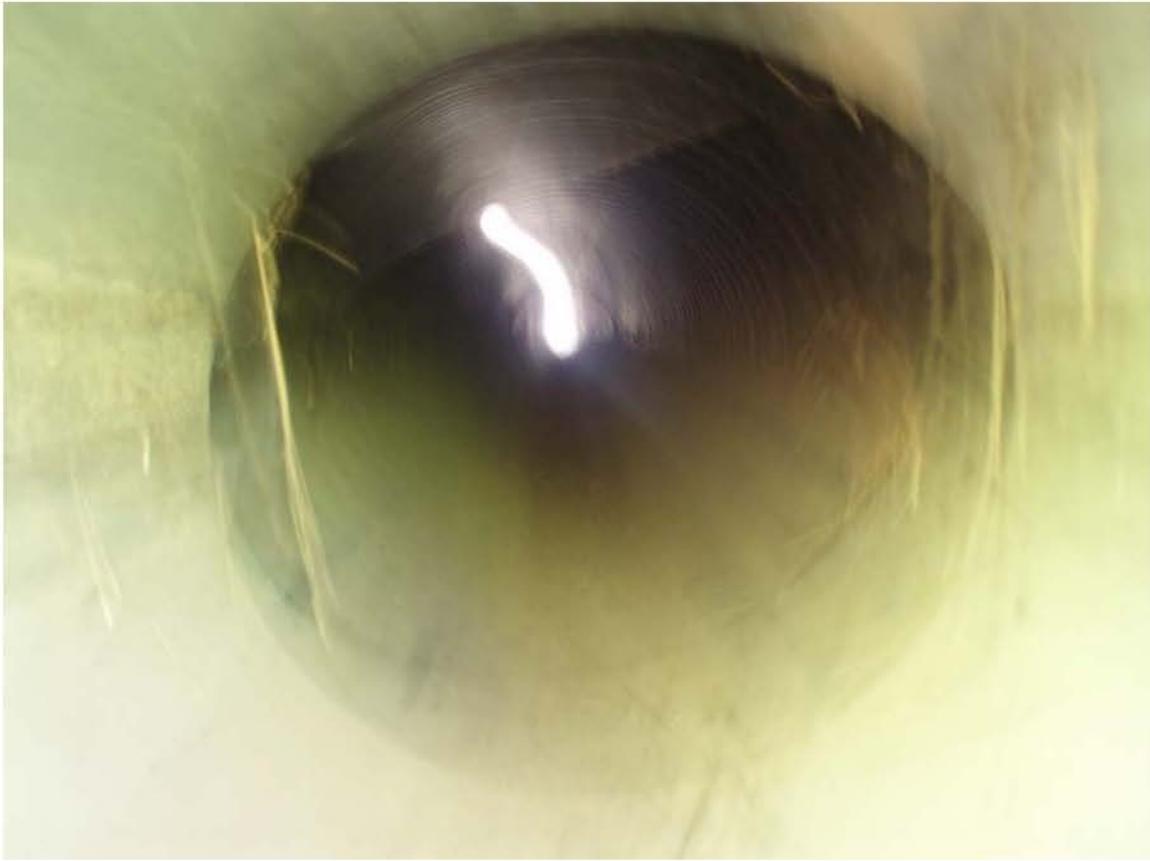
7-31-07, s-145, 15", 1677+00



7-31-07, s-144, 15", 1672+00



7-31-07, s-143, 15", 1667+00



7-31-07, s-142, 18", 1662+00



7-31-07, p-141, 24", 1657+00



7-31-07, s-139, 18", 1643+00,



8-1-07, s-138, 18", 1635+00



8-1-07, s-137, 18", 1627+00



8-1-07, p-136, 24", 1617+78,



8-1-07, p-135, 30", 1604+18



8-1-07, p-132, 24", 1594+79



8-1-07, s-131, 18", 1589+00



8-1-07, s-130, 24", 1585+00



8-1-07, p-129, 30", 1581+29, End flare joint misalignment,



8-1-07, p-126, 30", 1567+00,



8-1-07, p-125, 18", 1575+00



8-1-07, s-124, 24", 1565+00



8-1-07, p-123, 24", 1556+00,



8-1-07, s-122, 24", 1548+00



8-1-07, p-121, 24", 1539+00



8-1-07, p-119, 24", 1530+00



8-1-07, p-118, 24", 1520+00



8-1-07, p-116, 24", 1511+63



8-1-07, p-115, 24", 1507+00



8-1-07, s-113, 18", 1498+00



8-1-07, s-112, 18", 1490+00



8-1-07, s-111, 18", 1483+00



8-1-07, p-109, 24", 1466+00



8-1-07, s-106, 18", 1450+00



8-1-07, p-105, 30", 1443+24,



8-1-07, s-103, 15", 1438+00



8-1-07, s-100, 18", 1427+00



8-1-07, s-099, 24", 1425+00



8-1-07, s-095A, 24", 1411+00



8-1-07, p-094, 24", 1404+94, outlet mower damage,



8-1-07, s-093, 18", 1398+00, 20% debris fill,



8-1-07, s-092, 18", 1391+00



8-1-07, s-091, 24", 1384+00,



8-1-07, s-090, 18", 1367+00



8-1-07, s-089, 18", 1360+00,



8-1-07, s-088, 24", 1353+00



8-1-07, p-087, 30", 1351+32



8-1-07, s-086, 18", 1345+52,



8-1-07, s-084, 18", 1339+00



8-1-07, s-082, 18", 1331+00



8-1-07, s-081, 18", 1326+00



8-1-07, p-079, 30", 1320+68







8-1-07, s-076, under sideroad East, 60"



8-1-07, s-075, 48", 1317+15, 7<sup>th</sup> joint RCP 4" all the way around, concrete collar around



8-1-07, s-073, 15", 1312+00



8-1-07, s-072, 18", 1308+00



8-1-07, s-071, 24", 1303+00,



8-1-07, s-069, 24", 1291+00, 25% full of sediment, Flat on top,



8-1-07, s-067, 18", 1269+00



8-1-07, s-066, 15", 1265+00



8-1-07, s-065 15" 1259+00



8-1-07, s-064, 24" 1255+00



8-1-07, p-061, 24", 1250 +98,



8-1-07, s-060, 18", 1244+00



8-1-07, s-059, 30", 1236+53,



8-1-07, p-058, 15", 1231+00,



8-1-07, s-011, 15", 1014+40



8-1-07, s-012, 15", 1017+00,



8-1-07, s-015, 24", 1022+00, Video and Mandrel OK,



8-1-07, s-017, 18", Eroded around FLE



8-1-07, s-018, 15", 1038+00



8-1-07, s-022, 24", 1042+00



8-1-07, s-024, 15", 1049+00,



8-1-07, s-030, 24", 1076+00



8-1-07, s-032, 36", 1075+91



8-2-07, s-025, 15", 1053+00



8-2-07, s-026, 15", 1064+00



8-2-07, p-027, 15", 1068+00, 10% debris fill,



8-2-07, s-031, 15", 1084+00,



8-2-07, s-033, 42", 1088+31, calibrated stick tested OK,



8-2-07, s-034, 30", 1098+02



8-2-07, s-035, 18", 1104+00,



8-2-07,s-036, 30",1109+52,



8-2-07, s-037, 18", 1116+00



8-2-07, s-038, 42", 1122+03, 12" vert. Crack covered 1 to 3 o'clock at end of pipe , calibrated stick through – deflection , 5%.



8-2-07, s-040, 18", 1130+00



8-2-07, s-041, 24", 1136+00



8-2-07, s-043, 18", 1139+00



8-2-07, s-046, 42", 1148+95, 6" of water



8-2-07,s-047A, 24" 1155+54, Steel extension at Inflow, OF inspected.



8-2-07, s-048, 30", 1161+45



8-2-07, s-049, 15", 1166+00,



8-2-07, s-050, 15" 1176+00



8-2-07, s-051A, 42", 1181+24



8-2-07, s-052, 18", 1187+00



8-2-07, s-053, 18", 1193+00



8-2-07, s-054, 18", 1201+00



8-2-07, s-055, 36", 1207+81,



8-2-07, s-056, 18", 1220+00



8-2-07, s-057, 42", 1224+89

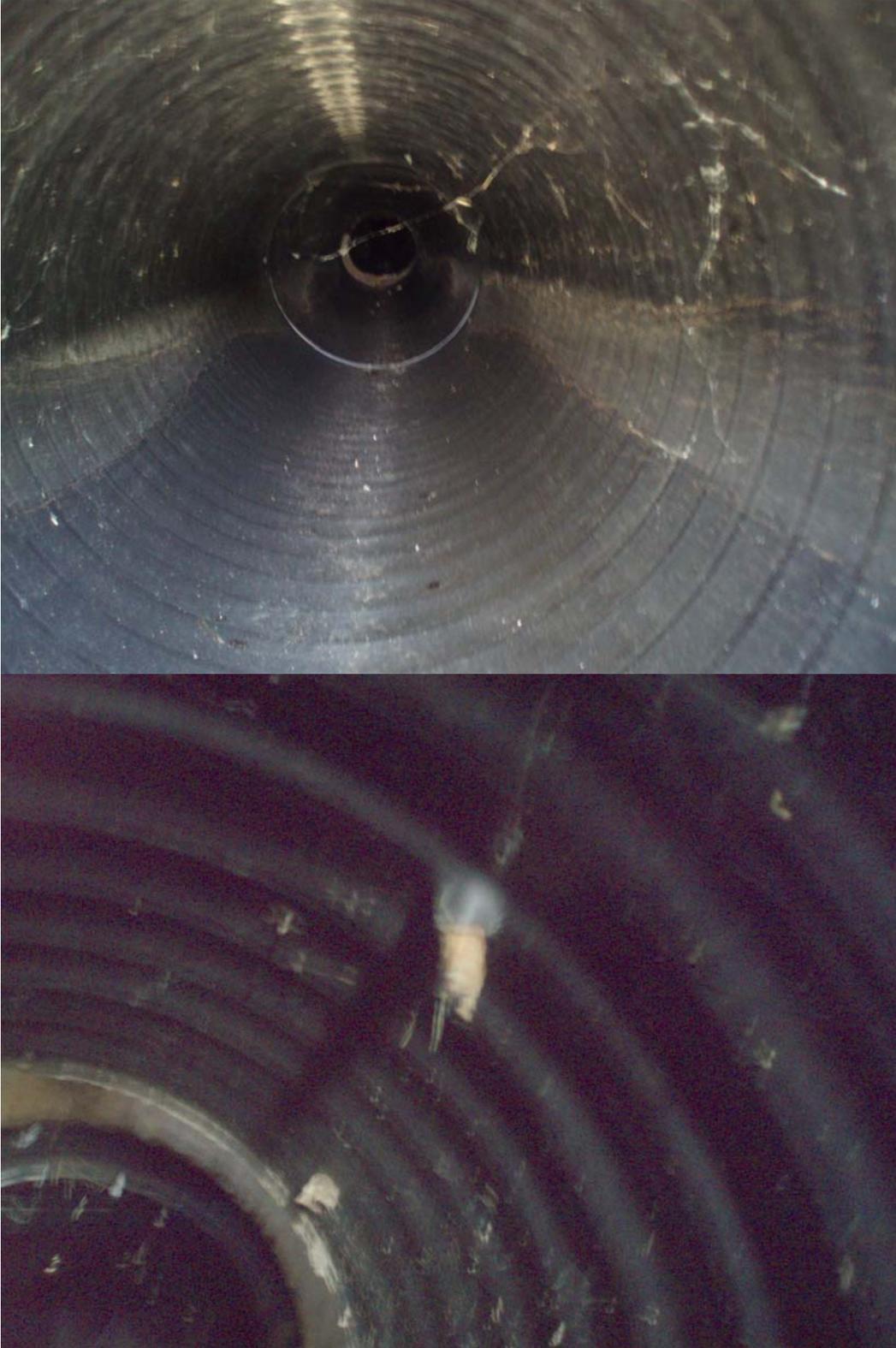


8-2-07, s-057A, 24", 1224+72



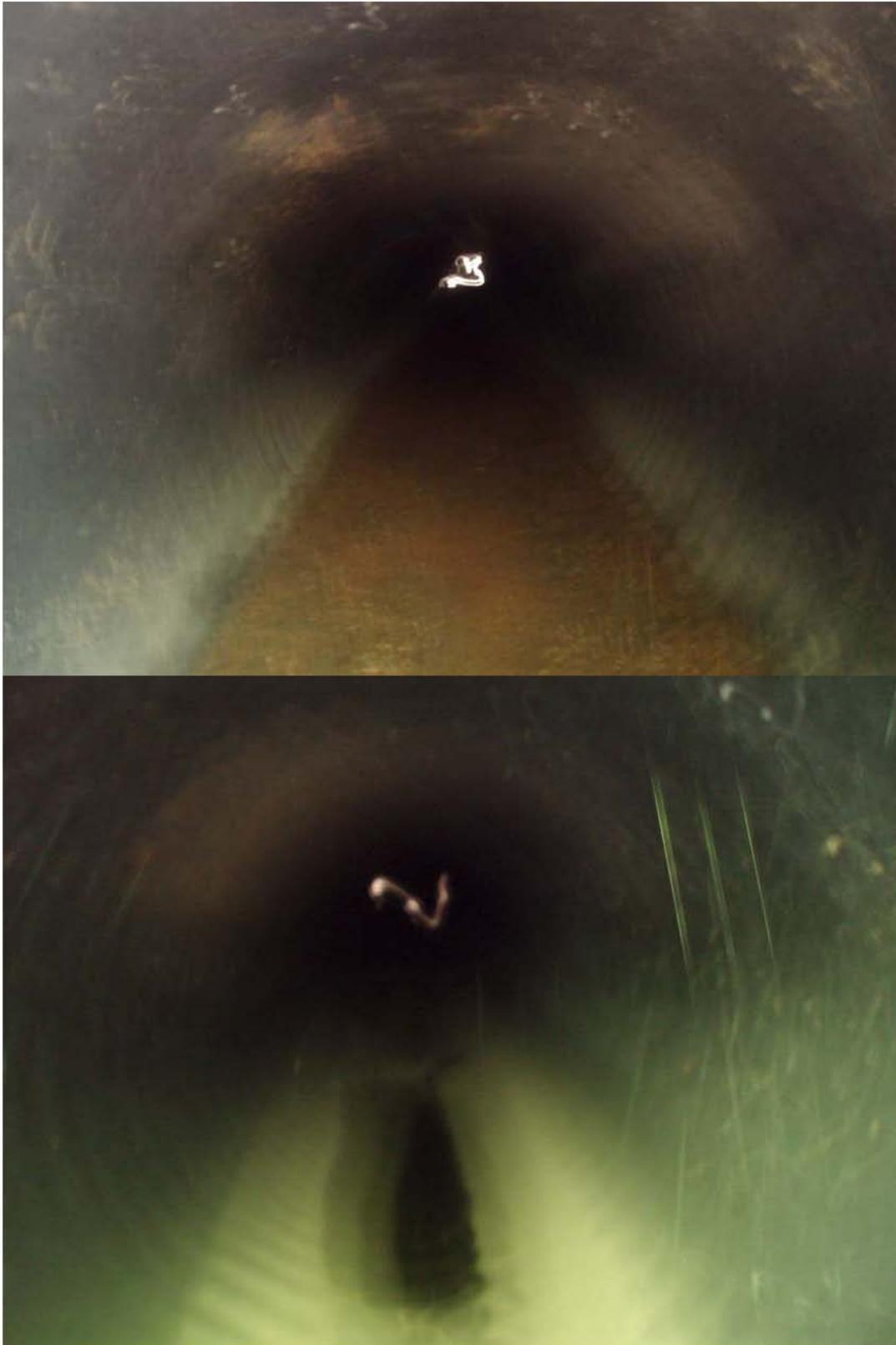
8-2-07, s-057B, 24", 1224+77,

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



8-6-07, 24" DWP (21" RCP on plans), radius under curb at SW quadrant of Rt. CC & Rt. 63 intersection. Note: rebar (possibly from forming curb above) coming through top of pipe.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



8-6-07, 24"NB & 24" SB, Sta. 1310+50

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



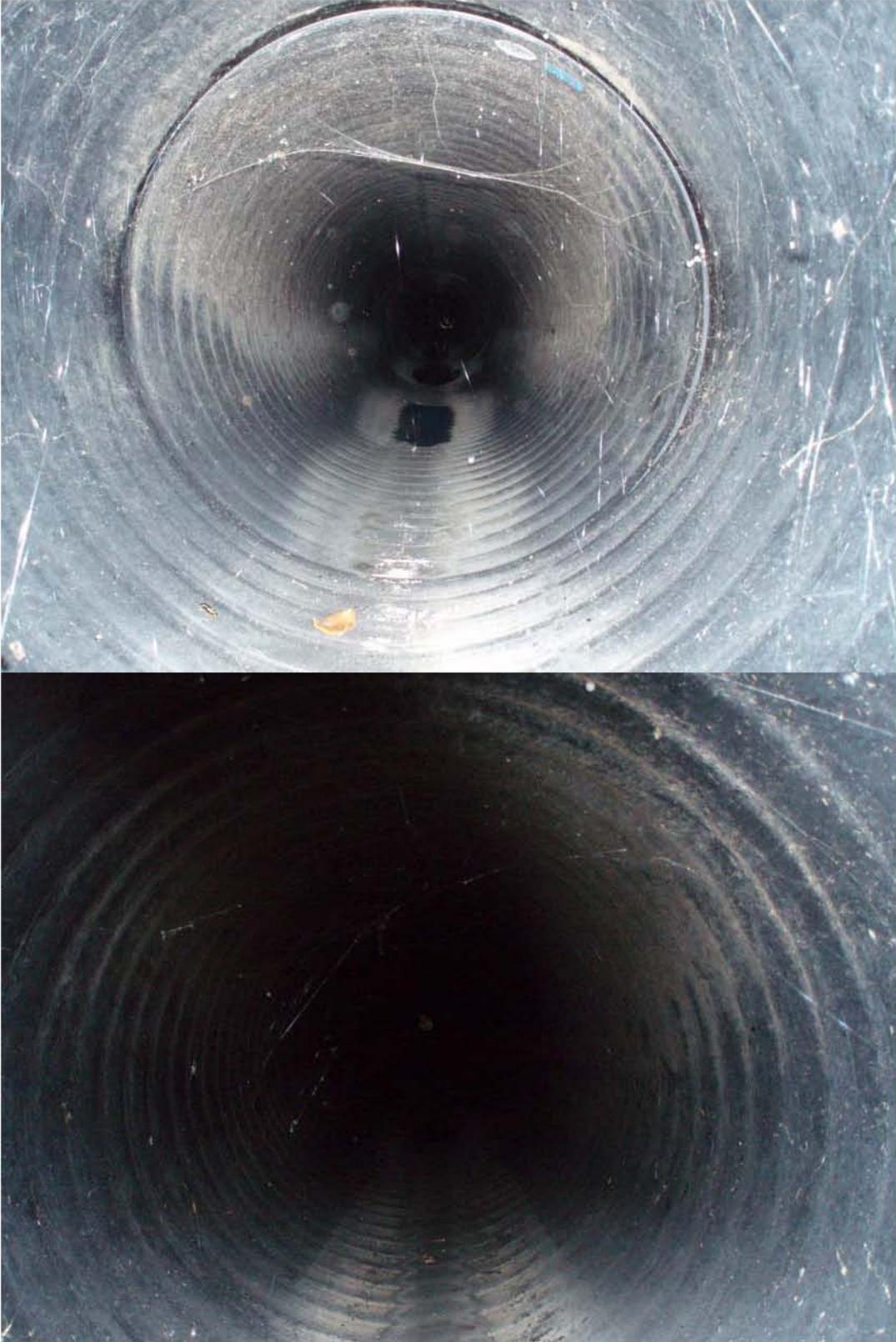
8-6-07, 24"NB & 24" SB, Sta. 1315+00.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



8-6-07, 24" NB & 30" SB, Sta. 1319+36. Put Mandrel through NB pipe – OK,

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



8-6-07, 30" NB & 30" SB, Sta. 1323+25. crawled through all 30" pipe – OK,



8-6-07, 30" NB, Sta. 1324+83, 1<sup>st</sup> outlet is into a Mod. Type D D.I., there is an elbow coming out of to the S. and 5' - 30" HDPE coming out of N. wall of a 6' x6' box culvert. box culvert.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



8-6-07, 15" NB & 15" SB, Sta. 1345+60, pipe looked good but a lot of debris.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, W. Side Rt.63



8-7-07, 18"NB & 12"SB, Sta. 1335+75, debris in invert both directions. Tried to video 12" only went up 10', 18" (pictured) sent video up 100'±.



8-7-07, 15" NB & 12" SB, Sta. 1336+50, couldn't video 12" - 2'-3" debris in invert.



8-7-07, 18"NB & 15" SB, Sta. 1333+50, Deflection appears OK – debris both ways.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, E. Side Rt.63



8-7-07, 24", Sta. 1323+75 to 1325+25 Lt., looks good runs into 6'x6' box culvert at north end, shown.



8-7-07, 48", Sta.1363+58 to 1348+00; just at 5% deflection in top photo at approx. Sta. 1360+50, 1" more than 5% (7.5%  $\pm$ ) at bottom @ Sta. 1361+30. NOTE: each 20' stick of pipe at >5% deflection to Sta. 1356+03, 400'+ of pipe out of specs.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, E. Side Rt.63

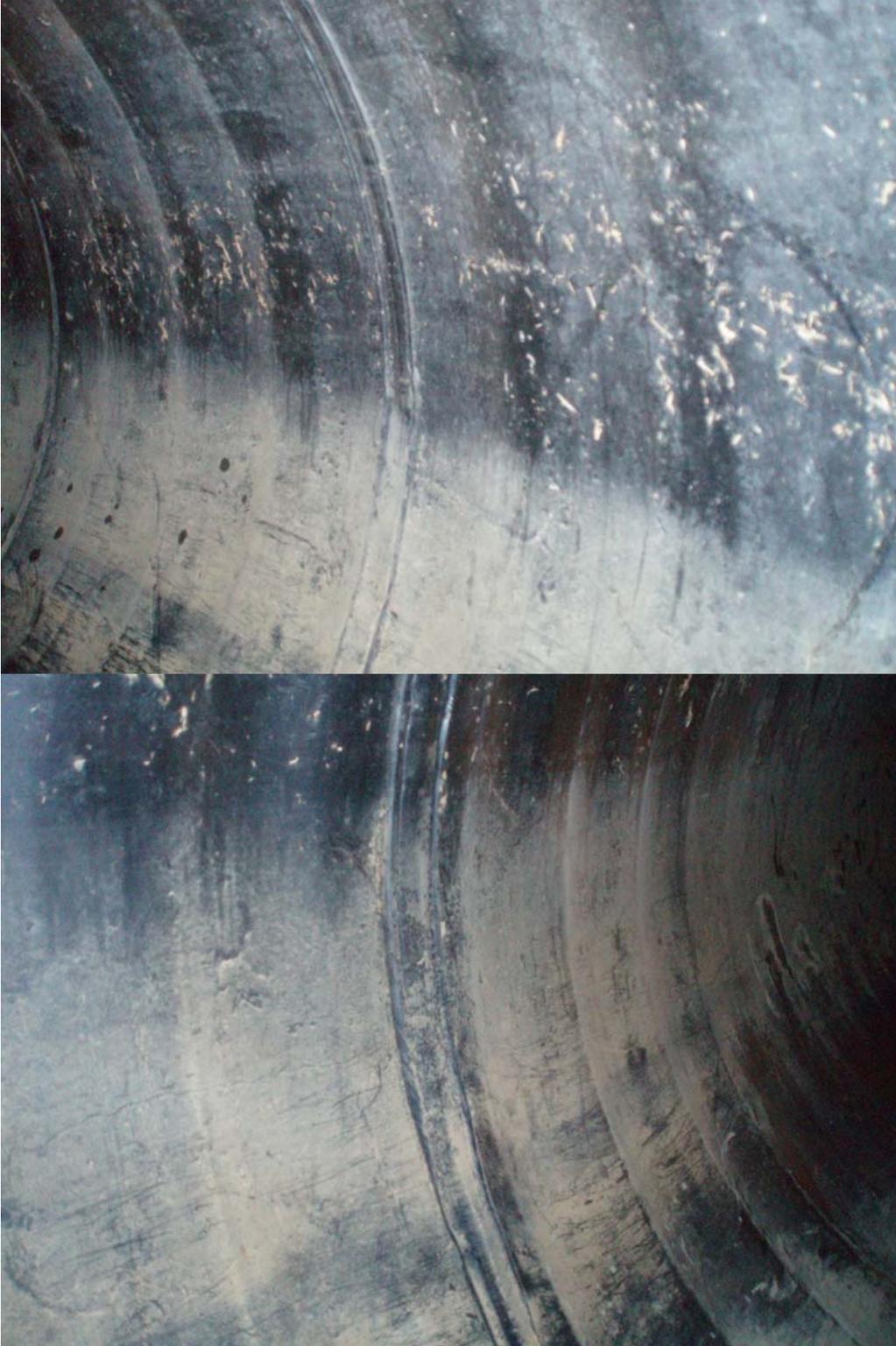




8-7-07, 48", Approx. Sta. 1358+50, repair of transverse cracks made at three locations in 2005 using rubber gaskets and couplers. Rubber gaskets and couplers holding well in 2007. Note: Was some concern there might be water trapped under repair at invert, not shown.

Route 63, Howell Co., project J9P0497, HDPE double wall storm sewer, E. Side Rt.63





8-7-07, 36", NB & EB, Sta. 1340+48.45 to 4+31.81 Broadway St., ADS rep. & MoDOT technician both crawled through whole 444' run to look at 175' Radius section. Bottom 3 photos show welds on HDPE for 6 - 12° bends plus split couplings used. Everything still looks good.

Dist. 7, St. Clair Co. Rt. B. 60' HDPE installed by Maintenance in 2000 Research Project



Dist. 7, St. Clair Co. Rt. B. 60' HDPE installed by Maintenance in 2000 Research Project



8-1-07, Rt. B 3.0 miles west of Rt. 13, 60" DWP (pipe measured 58.27" d. before installed)

Dist. 7, Bates County, Rt. H, HDPE installed by Maintenance



Dist. 7, Bates County, Rt. H, HDPE installed by Maintenance



8-1-07, 1.5 m. E. of Rt. VV, 42", Pipe looks good. Couldn't get measurements.

Dist. 7, Bates County, Rt. H, HDPE installed by Maintenance



Dist. 7, Bates County, Rt. H, HDPE installed by Maintenance



Rt. H 2.7 miles east of Rt. V V, 42" DWP, Pipe looks good. Couldn't get measurements. Pipe has split on the outside at the inlet

Bates County, Rt. O , HDPE Pipe installed by Maintenance



Bates County, Rt. O , HDPE Pipe installed by Maintenance



8-1-07, Rt. O 5.4 miles south of Rt. 52, 24" DWP, Couldn't get a good look inside the pipe, too much curvature.

Dist. 2, Schuyler Co., culvert replacements by Maintenance with HDPE pipe



Dist. 2, Schuyler Co., culvert replacements by Maintenance with HDPE pipe



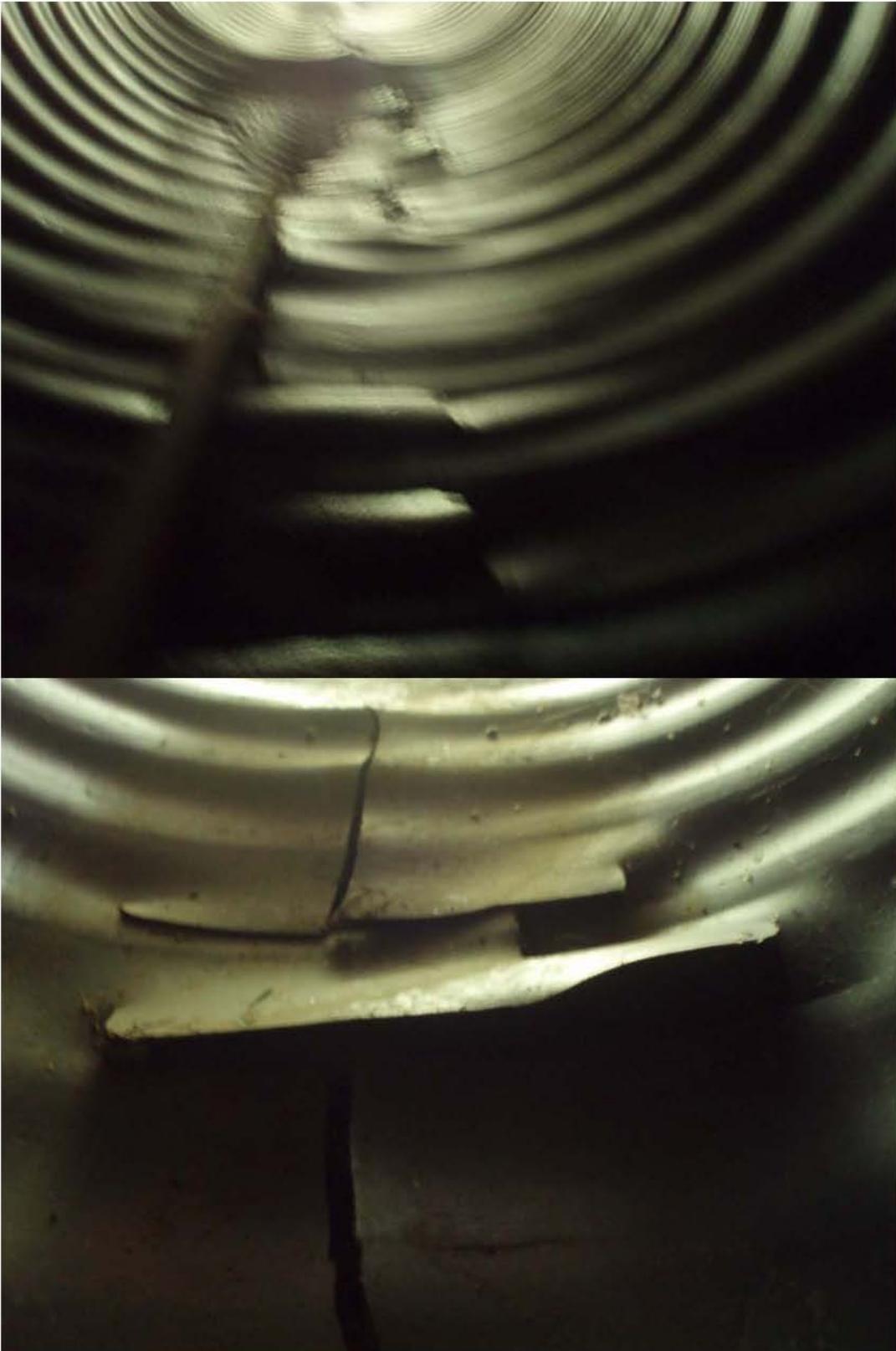
8-2-07, RT. AA, 1.0 m. w. of Rt. 63, 18", Installed 2000±, vert. Deflection, top and bottom longitudinal fractures, mower damage at outlet.

Dist. 2, Schuyler Co., culvert replacements by Maintenance with HDPE pipe



8-2-07, RT. AA, 1.0 m. w. of Rt. 63, steel pipe nearby, good condition.

Dist. 2, Schuyler Co., culvert replacements by Maintenance with HDPE pipe



8-2-07, Rt. AA, 1.5 m. W. of Rt. 63, built 2000?, cracked 15' on bottom, transverse and L-cracking

Dist. 2, Schuyler Co., culvert replacements by Maintenance with HDPE pipe



8-2-07, Rt. AA, 15", 0.9m. W. of Rt. 63

Dist. 2, Schuyler County, HDPE Culvert Pipe



8-3-07, Rt. W, 1.18 W. of Rt. 63, 30", 2' long crack & 5' long crack, smaller Transverse cracks.

Dist. 2, Schuyler County, HDPE Culvert Pipe



8-3-07, Rt. W, 2.43 m. W. of Rt. 63, Inlet vert. Deflection at shoulder, as installed.

Dist. 2, Schuyler County, HDPE Culvert Pipe



8-3-07, Rt. W, 2.43 m. W. of Rt. 63, CMP at outlet at ROW line, close up of condition inside.

Dist. 2, Schuyler County, HDPE Culvert Pipe



8-3-07, Rt. W., 2.55 m. W. of Rt. 63,15", view from Inlet and Outlet

Dist. 2, Linn County, Maintenance installed HDPE culvert pipe



8-3-07, Rt. P - 0.6 m. W. of Rt. M, X-road 42" CMP installed in last 5-10 yrs., 40' long  $\pm$ , measured 38" under center line of roadway for deflection of 4" or 10.5%.

Dist. 2, Linn County, Maintenance installed HDPE culvert pipe



8-3-07, Rt. P, 1.4 W. of Rt. M, 24", view at inflow, possible 1"-2" (4%-8%) deflection @ CL of roadway, approximately 3' overfill.

Dist. 2, Linn County, Maintenance installed HDPE culvert pipe



8-3-07, Rt. P, 1.5 m. W of Rt. M, 24", 2"+ deflection @ inflow, measured at other end 18.5"(5 1/2" d.) and 15.5" (9" defl.) under N. Shoulder.

Dist. 2, Linn County, Maintenance installed HDPE culvert pipe



8-3-07, Rt. P, 3.5 m. W. of Rt. M, Inflow – small deflection ½ way in @ 11 o'clock, maybe a rock in backfill.

Dist. 2, Linn County, Maintenance installed HDPE culvert pipe



8-3-07, Rt. P, 0.2 m. E of Rt. 5, 15", looking from outflow, other end can not be seen because of horizontal curvature of pipe.

Dists. 9., culvert replacements by Maintenance with HDPE pipe



8-8-07, Rt. M Texas Co., 7.1 m. S. of Rt. YY, 18", no change since installed 1/13/02.

Dists. 9., culvert replacements by Maintenance with HDPE pipe



8-8-07, Rt. 38 teas Co., 0.225 m. N of Rt. M, 18", no change since installed 1-22-02.

Dists. 9., culvert replacements by Maintenance with HDPE pipe



Dists. 9., culvert replacements by Maintenance with HDPE pipe



Dists. 9., culvert replacements by Maintenance with HDPE pipe



8-8-07, Rt. 142 Ripley Co., under Kelsey Ave. in Naylor, MO, 40% full of sediment, 1 joint separated a hands width (4"), steel FE section damaged.