Video Inspection Manual

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Introduction

- Video Inspection required for all Storm Drain Pipes and U-drain
- 612529 – Pipe Video Inspection
- 715000 – Perforated Pipe U-drain
- Subdivision Manual
- CCTV Manual

History

- Used for Sanitary Sewers
- DelDOT's problems with sinkholes
  - 1990's
    - $1,000,000.00 / year
  - Rte 4
    - $300,000.00 + 3 months
  - Current Cost
    - $2 mil / year

History

- 1996 – Video required in subdivisions
- Crossroad pipes
- All pipes

+0044.0
CRACKS

WARNING: ANY OBSERVATIONS MADE can-
not BE STORED. PROCEED? (N/Y)

DelDOT

STORM SEWER CCTV MANUAL FOR STORM SEWER ASSESSMENT AND ACCEPTANCE

3/5/2009

DelDOT

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- **INTRODUCTION**
- **PREPARATION**
- **INSPECTION PROCEDURES**
- **DEFECT TERMS**
- **PIPE JOINT ACCEPTANCE CRITERIA**
- **STORM SEWER REPAIR TECHNIQUES**
- **CALIBRATION**

Preparation

- Number pipe runs
- Number Drainage Inlets & Manholes
- Flush pipes if needed

Preparation

- GPS all new structures
- Proper traffic control
- Flow control

Inspection Proceedures

- Schedule inspection
  - Prior to top coat of pavement
- Follow confine space rules
- Inspector must be present

Inspection Proceedures

- Schedule inspection
  - Prior to top coat of pavement
- Follow confine space rules
- Inspector must be present
  - 48 hour notice

Inspection

- Flush upstream & video downstream
- Slow – stopping at every joint
- Control Lighting
- Identify all potential defects

Potential Defects

- Defect Terms
  - Close consistency with
    - NASSCO / PAPC
- Specifically describing storm sewer conditions
- Operators should become familiar w/ these terms

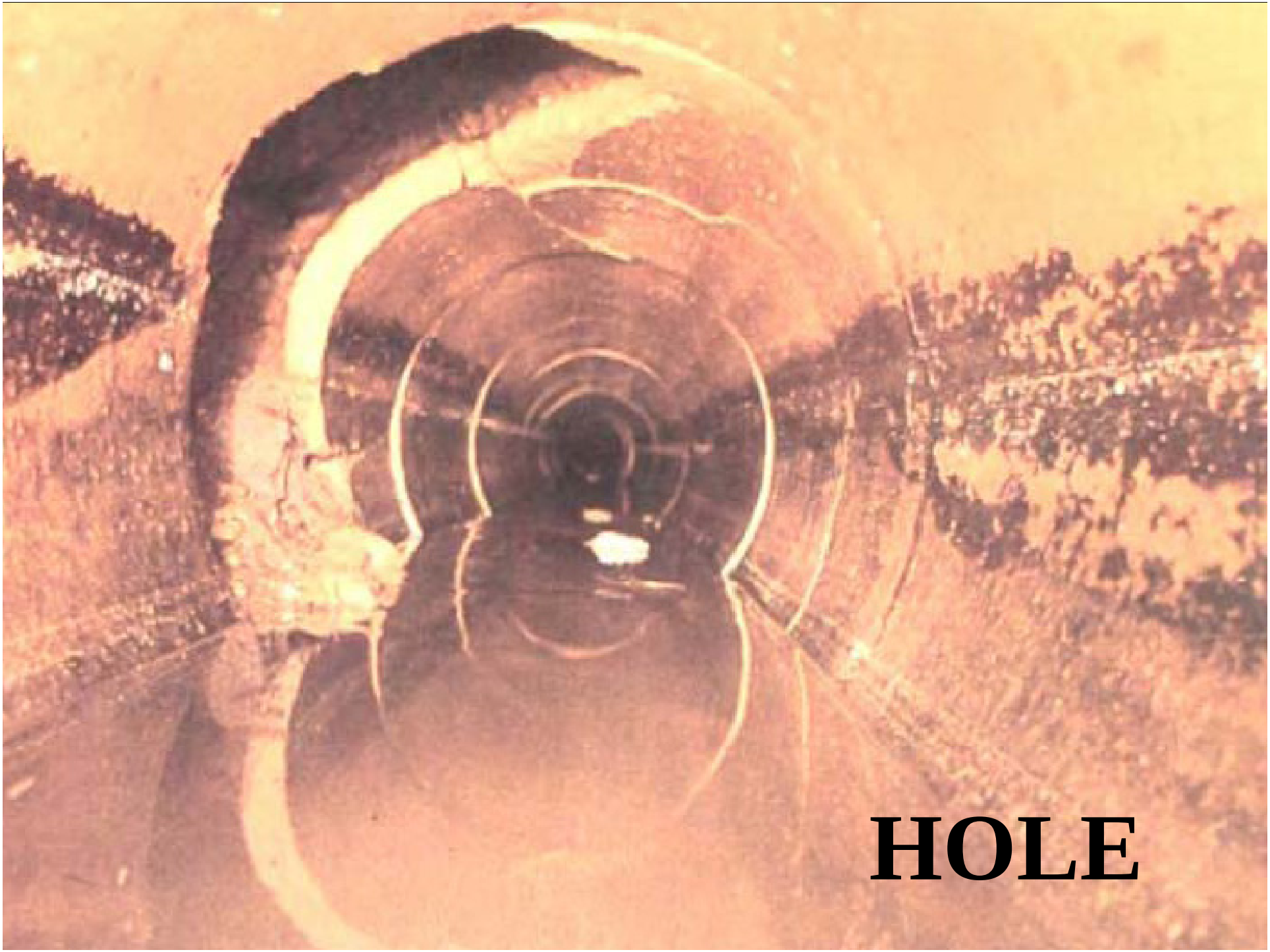
2/9/2009 21

CRACK
Circular
01 06 2004 16:42

CRACK - longitudinal

FRACTURE

BROKEN


HOLE

HOLE

DEFORMED

Deformed Pipe

- Flexible pipe w/ deflection greater than 5% must be corrected
- Determined by visual inspection
- Can be challenged w/ GO-NO-GO mandrel or direct measurement

COLLAPSE

COLLAPSE

JOINT
Offset

JOINT - Open

MASONRY - Displaced

Pipe Joints Acceptance

- Joints greater than manufacturer tolerances are not watertight
- Chapter 7 describes how to measure joints

Reports

- Written report & DVD
  - List form w/ footage

TV Inspection Report

DEL DOT

MH 1 to MH 2

Inspected on Tuesday, May 2, 2006

WO #:	1234		**Date:** 5/2/2006	**Status:**	COMP
Contractor:			**Contract:**		
Address:	ANY STREET				
Owner:	DELDOT				
Inspector:	JOHN DOE			**Type:**	RCP
Operator:	BILL SMITH		**Direction:** DOWNSTREAM		
System:		**Sub. Syst.:**	**JTL:** 8	**Comp:**	S/B
Log:		**Truck:** 24	**Size:** 18IN	**Pipe Length:**	80.0
Up Stream:	1		**Up Dp:** 4		
Down Stream:	2		**Dwn Dp:** 5		
Video Volume:				**Start:**	0000
Video File:					
Vcr:					
Comment 1:	TEST FOR MANUAL				
Comment 2:					
Comment 3:					

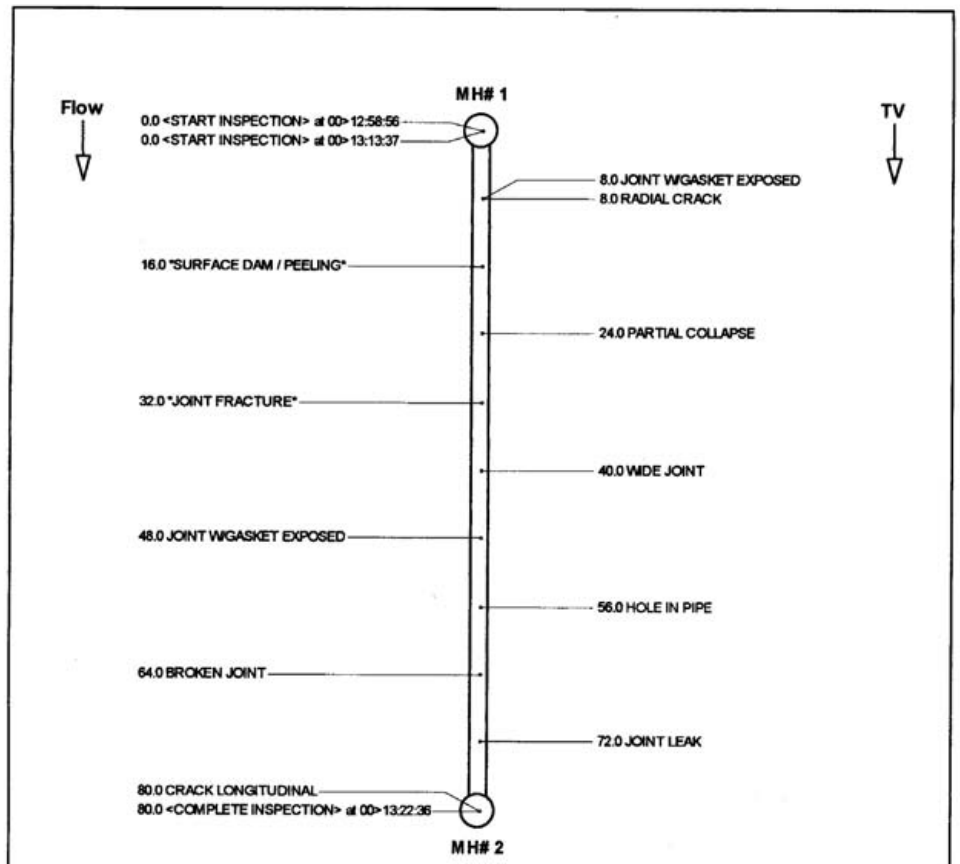
Footage	SF	WRC	Observation	Modifier	Image File	Struct	O&M
0.0		ST	<START INSPECTION>	00>12:58:56			
8.0		GO	"JOINT W/GASKET EXPOSED"				
0.0		ST	<START INSPECTION>	00>13:13:37			
8.0		GO	"RADIAL CRACK"				
16.0		GO	"SURFACE DAM / PEELING"				
24.0		GO	"PARTIAL COLLAPSE"				
32.0		GO	"JOINT FRACTURE"				
40.0		GO	"WIDE JOINT"				
48.0		GO	"JOINT W/GASKET EXPOSED"				
56.0		GO	"HOLE IN PIPE"				
64.0		GO	"BROKEN JOINT"				
72.0		GO	"JOINT LEAK"				
80.0		FH	<COMPLETE INSPECTION>	00>13:22:36			

Total Length of Line	**80.0**
Total Length Inspected	**80.0**
Total Upstream Footage	**0.0**

Reports

- Written report & DVD
  - List form w/ footage
  - Map of pipe run in plan view or cross-sectional view

DEL DOT



Address:	**ANY STREET**	**Owner:**	**DEL DOT**
MH:	**1 to 2**		

Contractor:		**Type:**	RCP
WO #:	1234	**Size:**	18IN
Date:	5/2/2006	**Status:**	COMP
Length:	80.00 Feet	☐	=Image Attached
Direction:	DOWNSTREAM	☒	=Video Clip Attached
Comp:	S/B		
Insp/Oper:	JOHN DOE, BILL SMITH		
Truck:	24		
Vcr/Start:	/0000		
Comment 1:	TEST FOR MANUAL		

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DEL DOT

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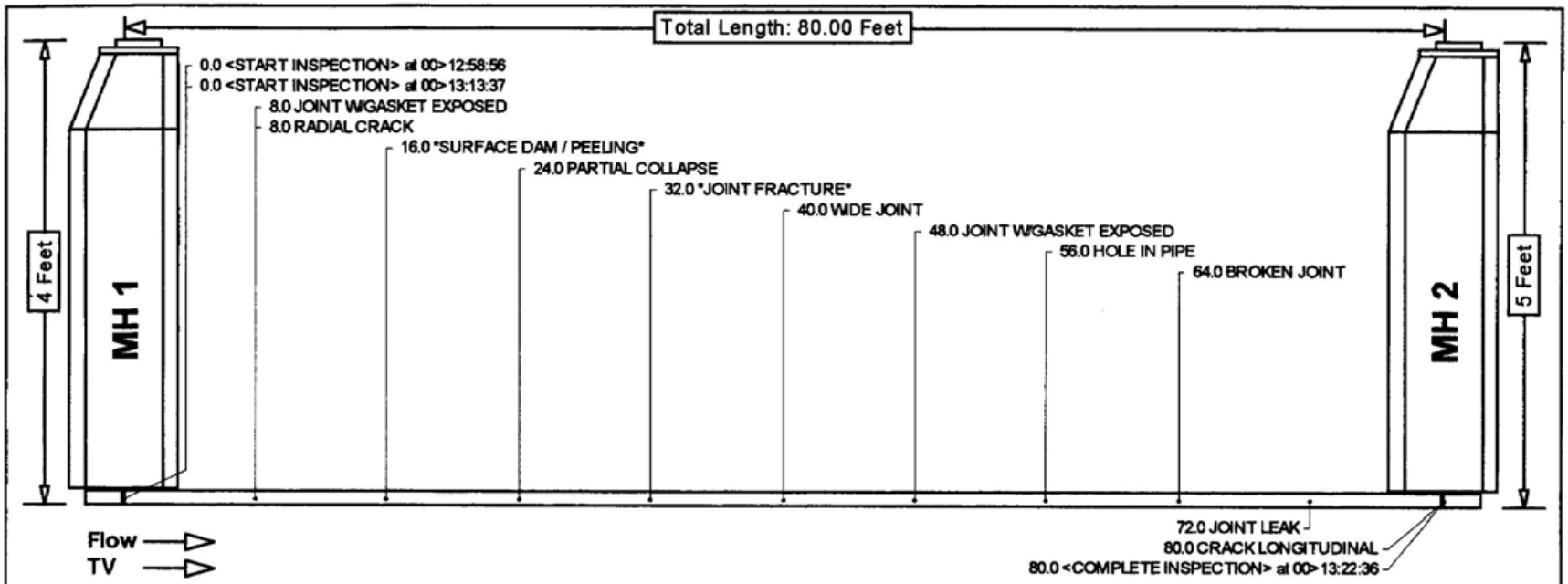

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Reports

- DVD
  - Mpeg format
  - Commentary

Reports

- GPS Report
  - 2 dimensional coordinates
    - Northing and Easting
  - Drainage Inlets, Manholes and intake or outlet ends of pipe
  - NPDES database

Repair Techniques

- Replace or repair
- Trenchless technology
  - Chemical Grouting
  - Cure-in-place lining
  - Fold-N-Form Pipe
  - Slip Lining

THANK YOU

http://www.deldot.gov/information/pubs_forms/manuals/pipe_video/video_pipe_manual_optimized.pdf