Private Property Infiltration & Inflow Investigation

Building Inspection Standard Operating Procedures

Prepared by:

BROWN AND CALDWELL and AECOM

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Chapter One

General Information

Introduction and Purpose

Municipal Infiltration and Inflow (I/I) programs throughout the Milwaukee Metropolitan Sewerage District (MMSD) Sewer Service Area have addressed I/I from public sources dating back, at times, for more than 40 years. Municipalities have gone to great lengths to remove I/I from publicly owned sanitary sewer collection systems in an attempt to limit basement back-up and sanitary sewer overflows (SSOs). However, this public I/I is only part of the I/I problem and sometimes a small percentage. Generally, half of the sewer collection system is made up of public sewers and half of private laterals. Historically, little has been done to address private property I/I. Private inflow from sump pumps, yard drains, downspouts and similar sources can represent a large portion, if not a majority, of total inflow. Private infiltration from deteriorated sewer laterals, foundation drains and other sources can make up a substantial portion of total infiltration. For many municipalities, significant I/I reduction might only be achieved by addressing I/I sources from private property. Just as importantly, it can often be more cost-effective to address private property I/I, than I/I from public sources.

The intent of this standard operating procedure (SOP) is to provide sufficient information and guidance in the collection of data for the identification of potential sources of clear water entry into the sanitary sewer from private property sources. Data collected will enable engineering staff to identify the source and quantity of clear water entering the sanitary sewer system through the plumbing of various buildings throughout the study area. Additionally, this data will enable the engineering staff to select the proper rehabilitation methods for any defects identified.

Public Relations/Information/Initial Contact

In this type of program, contact will be made with a resident in every building in the study area. Residents will be notified of the inspections prior to any site visitations, but for many people, this will be their first personal contact and the conduct of the crew will directly affect the reception and cooperation the crews receive. Bear in mind, news travels fast within a community. For this reason, proper conduct and public relations will be stressed throughout the program.

Equipment

Carrying the correct equipment for each house inspection will ensure additional visits will not be required for the assessment. At a minimum, the following equipment should be available for each house inspection:

1. Identification cards
2. Hand-outs/flyers/official notice to homeowners
3. Reflective Vest
4. Watch
5. Clipboards (for paper forms)
6. Tablet Computer/Data Logger
7. Hard lead pencils
8. Forms
9. Area maps
10. Flashlight and spare batteries
11. Screwdriver
12. Camera with spare battery and download cable
13. Municipal contact list
14. Signed Inspection Authorization Letter/Form
15. List of municipal contact numbers
16. Informational Brochure

Dress Code

First impressions are usually lasting impressions. Therefore a neat and clean appearance is important.

Weather conditions will dictate the appropriate clothing. Dress to be practical and comfortable. Acceptable clothing includes clean blue jeans, cotton pants, short sleeve shirts, polo shirts, and a comfortable pair of walking shoes with socks. Under no circumstances will T-shirts, tank tops, short-shorts, jean shorts, or jogging shorts be allowed. Each team member should wear a reflective vest while conducting the inspections.

Accident Reporting Procedures

In the event of an accident (you are injured by fall, dog bite, banged head, etc) be sure of the following:

1. Seek medical attention if necessary.

2. Complete accident report form. Accurate information concerning address, date, time, explanation of what occurred, names of those present, and all comments.

3. Identify the resident that was witness to the accident, if possible or appropriate.

4. Notify your supervisor as soon as possible.

Damage to Private Property

When conducting the building inspection, care should be taken not to damage private property. Be very careful of rusted plumbing fixtures or when moving something to gain access to a floor drain or sump pump. However, if something is damaged, it is necessary to do the following:

1. Accurately document the damage and the circumstances of the accident on the Damage Report Form and take pictures. In the documentation, it is very important to include what the resident was told and any response from the resident. The best procedure to follow is for both members of the crew to inspect the damage, but only one should discuss the matter with the resident. The other member of the crew should carefully listen and take notes of the conversation. Complete the damage report immediately.

2. Photograph the damage.

3. Assure the resident that you are documenting the damage and will report it to your supervisor.

4. Provide resident with written documentation to include crew members names, date, and time that the damage took place.

5. Identify a contact person, usually the resident, for follow-up.

6. Call your supervisor immediately after completion of the damage report form. Be prepared to read it. The supervisor will advise you to notify the Public Works Department and/or the MMSD and submit a copy of the Damage Report Form for their files. Appropriate action and procedures will then be determined by your supervisor.

Chapter Two

Inspection Procedures

General

1. Each crew should have all the necessary inspection equipment (see page 1).

2. Crew members should dress neatly and cleanly.

3. Crew members should be sure I.D. tags are prominently worn.

4. Crew members should wear reflective vests. This is often an indicator to the resident that you are a municipal employee or working for the municipality.

5. Both crew members must be present when ringing a doorbell and entering a building. Always stay together.

6. Never enter a building without the permission of an adult resident.

7. Look to see if there are any signs concerning the door bell. Signs include "Doorbell Out of Order," "Use Back Entrance," and "Baby is sleeping". As appropriate, follow directions related to alternate access to the house.

8. If a resident requests that you use another entrance, go through the garage, or take your shoes off at the door, as appropriate follow their directions. If a request seems unreasonable or the inspectors are not comfortable with the request, discuss with the resident so that all parties are comfortable upon the inspection team entering the house. If a consensus cannot be reached between the resident and inspection team, apologize to the resident for the inconvenience, notify the resident that you will contact your supervisor to arrange an alternate approach or team to complete the inspection.

9. Keep pace with the resident so they can always see you. Especially remember that it takes more time for the elderly to go down and up stairs.

10. Always attend to inside inspection before doing outside inspection. Prior to completing the outside inspection, discuss with resident and identify any difficulties that may be present. For instance, a loose dog in the back yard or a cat that has free roam of the back yard, but may look to get out through gates being opened by the inspector. Always be respectful of the homeowner's property and pets. Do not proceed without the resident understanding clearly what the inspection team is doing or planning to do.

11. Many people are pet owners. Keep this in mind when approaching a fenced back yard. Make some noise so the dog or other pets can hear you coming. (You don't want to be surprised, nor does the pet.) Be mindful that pets may try to leave a fenced area which you are entering through a gate. If you open a gate, make sure it is properly closed behind you.

12. Use the sidewalk and driveway when approaching and leaving a building. Never cut across lawns to get from building to building. Treat the resident with the utmost respect. Turn off lights and close doors as you finish the inspection operation. Return the inspection site to the condition it was in prior to exiting the site.

13. During the summer, people are sometimes outside gardening or barbecuing. If no one answers the door but you can hear activity from the backyard area, walk along the side of the house and give a pleasant but loud hello to get their attention. Do not startle a resident, so call out as you approach the backyard area.

14. Always be courteous.

Gaining Entrance to Building

1. Ring doorbell or knock on door or both, twice if necessary.

2. If there is no answer, complete the section on the form for first, second or third attempt. Write the crews initials, date, and time, then move on to the next building.

3. When someone answers the door, courteously greet the resident, introduce yourself as working for the municipality and explain to the resident that they should have received a notice either via the mail or as a door hanger explaining the sewer connection inventory. Hand them a copy of the Building Inspection Notice. Explain that you are conducting the sewer connection inventory described in the notice and would like to go into the lowest level of the home.

   An example of your initial contact could be as follows:

   "Good Morning/Afternoon. We are working for the *Municipality Name.* You should have received a notice within the last 2 weeks that a sewer connection survey was being conducted in this area. An authorization form was included with the notice that someone in your residence signed and returned to *Municipality Name*. We are here to conduct the sewer connection survey (hand a copy of the notice to the resident) and need a few minutes of your time to answer a few questions. We would then like to go into the lowest level of your home to check sump pumps, floor drains and piping configuration".

   Begin the resident interview as follows:

   - Verify the name of the homeowner and the address.
   - Ask for the year that the building was constructed.
   - Ask if there have been occurrences of sewer back-ups or basement flooding and note on the inspection form or in the data logger on line 1.
   - Ask when the events occurred.
   - If there have been back-ups or flooding, ask if they can identify where the water entered the house. Note the source of the flooding on the inspection form on line 2. If there has been more than one source of flooding, input R in the data logger or form and write a comment explaining the residents answer.
   - Ask the resident about the depth of the backup/flooding and the area involved.
   - Ask how often the backups or flooding occurs.
   - Ask if the flooding only occurs during a rain event. This last question could be significant as it may identify a lateral problem if flooding occurs at times other than a rain event.

   After the initial discussion with the resident, ask if you could be shown to the basement to begin the sewer connection survey.

4. If the resident is home, but admittance is refused:

   Record on form "admittance was refused" and ask if you may come back at a later time and/or inspect the outside of the building. If refused, apologize for the inconvenience and leave immediately.

5. Other possibilities:

   - If a child (anyone under 18 years of age) answers the door, ask to speak with an adult. If the child states that an adult is not home or is unavailable, ask if there would be a better time to return and note the return time in the comments section of the form with an explanation. Return at the appropriate time. Remember to be courteous during all public contacts.

   - Resident does not speak English, is deaf, or otherwise does not understand what you are talking about. Note this information in the comments section of the form, courteously thank the resident

and leave the property. Discuss with your supervisor at the end of the day and alternate arrangements will be made to inspect the building.

- Offers of food or drink should be courteously refused.

6. If anyone challenges your identify as an inspector, have the resident call the number on the Building Inspection Notice or give them the non-emergency phone number of the police department. Each crew should carry a list of contact numbers that can be given to the resident.

7. Never use the word illegal. This survey is only an inventory of data. If pressed, say you are looking to see what type of water enters the sump pump and where it discharges. Also, give them an informational brochure, if available.

8. If a resident has any questions or starts to tell you about any other community problem, refer them to City/Village Hall.

9. If a resident states they do not have a sump pump, simply state that the inspection will only take a few minutes. You will locate the floor drain and would like to view the piping configuration. Remember, you will do an internal inspection of each structure whether or not a sump pump is present. This includes homes built on slabs, bi-levels, basements or crawl spaces. Additionally, all crawl spaces will be opened up and inspected.

General Recording Procedures

Because it may be impossible to go back into the building, extreme care must be taken to fill out the forms completely, accurately, and legibly. All lines should have information in the boxes. For the form to be considered complete, Lines 1 to 19 should not have any empty boxes. If you are collecting data utilizing a data logger, the top portion of the form will be pre-loaded. Information should be verified with the resident. The logger consists of dropdown windows or radio buttons for lines 1 to 20. These should all be fully completed, utilizing the comments section for answers of “unknown” or “other”. Guidelines for completion of the paper building inspection form are as follows:

1. Write clearly and legibly with a #2 lead pencil. If a mistake is made, erase and rewrite. Remember that other people will have to be able to read your writing.

2. All data entries must be completed for the inspection report to be complete.

3. Use standard engineering lettering, as indicated below:

   A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   1, 2, 3, 4, 5, 6, 7, 8, 9, Ø

   Special considerations: Use **Ø** for zero
   Use **O** for letter

The following is a description of the top section of the form and how to complete it:

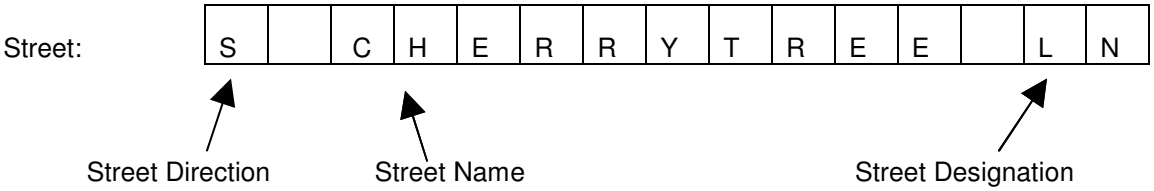
Owner:	G		W	A	S	H	I	N	G	T	O	N

Use the initial of the first name, and write the entire last name.

For the house number, enter the digit in the furthest right hand cells as follows:

House No.:											
							3	2	1	2	Example One Acceptable
					3	2	1	2	-	A	Example Two Acceptable
	3	2	1	2							Example Three Unacceptable

Fill in the end spaces first as in Example One. The computer field of numbers will read and sort this address as three-thousand, two-hundred twelve. If you filled in the beginning spaces such as example three, the computer will read and sort this address as three-billion, two-hundred twelve million (3,212,000,000).



The location should be a complete description utilizing street names. Start in the furthest left hand box and complete moving to the right. Identification should include North, South, East, and West in an abbreviated form as follows:

North – N
South – S
East – E
West – W

The street name should include the correct designation such as Street, Boulevard, Avenue, etc. The following abbreviations are to be used for street designations:

Avenue	AVE	Parkway	PKWY
Boulevard	BLVD	Place	PL
Circle	CIR	Road	RD
Court	CT	State Highway	SH
County Trunk Highway	CTH	Street	ST
Drive	DR	Terrace	TERR
Lane	LN	Trail	TR
		Park	PK

Building use designations are as follows:

Building use:		
	1F	One family
	2F	Two Family
	3F	Three family
	4F	Four family
	C	Commercial
	I	Industrial
	R	Other (Church, School)
	024	24 Unit Apartment, Townhouse, or Condo

These are the only building codes to be used. If “R” for OTHER is used, give an explanation in the comments section. The last code designates the number of units in a building structure. Lines 3 through line 20 on the building inspection form are discussed on the following pages. Coding is the same for both the data loggers and the paper form.

Inside Inspection Procedures

With the resident's permission, enter basement/lowest level of building and begin the inspection procedures. Should the house be built on a slab or for some reason there is only a crawl space beneath the house, investigate entering the crawl space so that the form can be completed. Discuss this with the resident. If for some reason, it appears unsafe or very difficult to enter the crawl space, discuss with the resident about revisiting at a later date with more appropriate equipment (lights, hard hats). Note on the form in the comments section the reasons for not entering the crawl space, possible equipment that would make entering the crawl space safer, and whether the inspection could be completed at a later date.

The interior portion of the building inspection procedures start at line 3 and continue through line 13 on the building inspection form or database. All boxes between line 3 and line 13 should be completed. Comments should be included in the comment section on the form for all boxes with an “R” for OTHE**R** or a “U” for **U**NKNOWN, describing the reasons for the notation.

1. Line 3 to Line 5: Attempt to locate floor drains. The floor drain is generally located near the furnace (utility room) or stationary tub for the laundry. On line 3 of the building inspection form, write in the number of floor drains. If a floor drain is located under a carpet or is otherwise inaccessible, note this in the comments section on the building inspection form or in the database. If there are no floor drains, place an “X” for NONE.

    A. Observe if any plugs or pipe stacks are installed in the floor drain or any other evidence that there has been a sewer backup. A backwater valve could be a length of pipe screwed into the floor drain and sticking into the air, it could be a rubber-metal plug screw tightened into the floor drain, or a loose floating ball type valve underneath the floor drain cover. In the comment section on the building inspection form write your observation.

    B. Look inside the floor drain, with a flashlight if necessary, and identify any pipes entering the floor drain. If there is a nearby laundry tub, run a little water in the laundry tub to determine if the pipe entering the floor drain is from here. If there is a flap valve or any other type of valve on the pipe entering the floor drain, it is most likely from the foundation drain. On line 4, enter the number of pipes entering the floor drain; enter “X” for NONE. On line 5 of the inspection form, enter whether there is a palmer valve with a **Y**ES or **N**O. If there is no floor drain, enter “X” for NONE.

    C. You may have to reach into a pipe entering the floor drain to determine if there is a valve. Be sure to wear protective gloves if reaching into a floor drain.

    D. Any unusual pipes running to the floor drain or any unusual piping configuration should be photographed and clear documentation noted for picture identification.

2. Line 6 to Line 12: Look for sump pumps. If none are present, place an "X" for lines 6 through line 12 on the building inspection form. Sump pumps can be located in basements, bi-levels, crawl spaces and garages. There may be more than one sump pump. The following procedure is used for both types of pumps:

    A. Identify the sump pumps and determine if the sump is a clear water or wastewater crock. Line 6 through line 9 is for clear water sump pumps and line 10 through line 12 is for wastewater sump crocks.

B. Line 6: Clear Water Sump Crock Condition: Remove the cover from the sump crock and note condition (dry, wet, and previously wet). Mark the proper code on building inspection form line 6. If there is no clear water sump crock, place an “X” in the cell for line 6.

C. Line 7: Clear Water Sump Pump is Operable: Check if the sump pump is operable. This can be done by triggering the float, or gently jiggling the discharge pipe. Look to see if pump is plugged in. Be aware that a sump pump runs on electricity and generally sits in water. Be sure there are no exposed wires or other electrical problem before reaching in to trigger the float. Sometimes a pump is missing. If the sump pump is missing, write "X” for NONE on line 7. If it appears unsafe or for some reason you could not operate the sump pump, enter “R” for OTHE**R** and explain in the comments section of the building inspection form. Reasons that you might not operate the sump pump could include: potentially unsafe conditions, sump pump not plugged in, no power to the sump pump electrical outlet (could include a power failure or the power turned off at a circuit breaker panel or the fuse removed). These are the primary reasons you might not be able to operate a sump pump, but be sure a comment is included describing any and all reason the sump pump was not operated.

D. Line 8: Pipes Entering Clear Water Sump Crock: Determine what drains into the sump crock. For a clear water crock, the major possibilities include the following:

   a. Floor drain, to determine if the floor drain is connected to clear water sump crock, pour a bucket of water into the floor drain. Then look into clear crock and watch to see if the water drains into the crock from an inlet. There will be considerable movement in the existing water in the crock. If nothing occurs, then the floor drain is tied directly to a waste crock inlet or to the sanitary sewer. The code for floor drain is "F" for line 8.

   b. Footing tile is another name for the foundation drain system which appears as an inlet inside the crock. Note: There may be more than one pipe from the foundation drain, which should be noted in the comments. The code for footing tile is "T” for line 8.

   c. In some cases, the inlets in a clear crock are for both the floor drain and tile system. In this case, use the code "B" for both in line 8.

   d. Sometimes when clear crocks are located in crawl spaces, there are no inlets inside the crock. The function of these crocks is to allow groundwater seepage to be collected and discharged away from the structure. Use the code "X” for NONE on line 8.

   e. After the inspection of clear water sump pump, replace the crock cover, if necessary, being careful to avoid pinching the float lever.

E. Line 9: Clear Water Sump Discharge Location: Look for the clear crock discharge point. The location of the discharge for the clear water sump pump might not be able to be fully determined until the outside inspection is completed. If the pump discharge hose/pipe exits the house up near the surface of the exterior ground, follow up by investigating the pipe from the exterior inspection and note accordingly on the form. Possible discharge locations are:

   a. To sanitary sewer: the pump discharge could be a pipe leading to the sanitary sewer vent stack, a pipe or rubber hose leading to the laundry tubs or a pipe or hose which will permit the water to run into the floor drain. The code for clear water discharge to sanitary sewer is "A" in line 9. This is an important observation and an additional note should be included in the comments section. Evaluate other possible discharge locations so that should rehabilitation be required, optional discharge locations are identified. Note in the comments section. If the sump pump discharge hose or pipe runs to the sanitary sewer, but there exists a pipe that would allow the discharge to go to the surface outside the house, this should also be noted in the comments section.

b. Outside to surface: The discharge pipe goes through the basement wall. Upon checking outside, it is observed that the pipe discharges outside the building wall to the surface. Additionally, the sump pump discharge pipe may go underground after exiting the building wall. If the final discharge point can be located in the lawn or at the curb, this is a discharge to the surface. Determine how far away the discharge point is away from the building wall. Use code "B" for outside - within 3' of wall, and code "C" for outside- more than 3' from wall for line 9.

c. Outside to Curb: The discharge pipe goes through the basement wall. Upon checking outside, it is observed that the pipe discharges outside the building wall goes underground after exiting the building wall and discharges to the curb or a hole in the curb. Use code "D" to curb for line 9.

d. To storm sewer: the sump pump will discharge to a pipe entering about halfway up the basement wall. Make sure that this pipe is not an overhead sanitary sewer by checking to see if any household plumbing is connected to it. This will probably have to be verified during the exterior inspection. This type of connection is not common and is frequently hard to identify. Use code "E" to storm sewer for line 9.

e. To Area Drain: This is very similar to discharging to the storm sewer and might only be able to be determined by investigating outside area drains while completing the exterior inspection. Use code “F” if it is determined that the sump pump discharges to an area drain.

f. Discharge unknown: If a final discharge point cannot be identified, use the code "G" for Line 9. In most cases, your observation will provide enough information to know the probable discharge point. If you can make a reasonable assumption as to the discharge location, note in the comments “probably discharges to (describe location).”

6. Line 10: Wastewater Sump Crock Condition: Wastewater sump crocks are frequently sealed. If this is the case do not open or unseal the crock. Examine overhead piping to determine what flows into the crock. However, because the sump crock cannot be visually inspected, enter “U” for UNKNOWN and add comments that indicate the crock is sealed and continue in the comments with probable connections. If a gravity sewer exists, as well as a wastewater sump crock, this should be noted in the comments.

7. Line 11: Wastewater Sump Pump is Operable: If the wastewater sump crock is not sealed, the procedures for checking a waste crock are the same as a clear crock, with one exception. There are more possibilities of what drains into a waste crock. First determine if there is gravity flow or overhead sewer. This factor is important in determining what drains into a waste crock. If overhead sewer is present, it indicates that any water or waste source in the basement must drain into the waste crock. Start looking for floor drains, laundry tubs, bar sinks, bathrooms, shower stalls, etc. If gravity sewer is present, then the most likely contributing source will be floor drains, stationary laundry tubs and possible tile. In order to verify all contributing sources, simply turn the water on and let it run for a few minutes. For example, run the water in the stationary tub and in a few minutes, the water will start draining from an inlet into the waste crock. Remember, the further away a contributing source is, the longer you will have to run the water for verification. In homes built during the 1950's and 1960's, you will encounter waste crocks with foundation tile inlets when a clear crock is not present. Homes built in the 1970's and later follow an updated municipal code in which both types of sump pumps are present. In this case, foundation tile inlets will only be found in the clear crocks and never in the waste crocks. Look to see if the pump is plugged in. Be aware that a sump pump runs on electricity and generally sits in water. Be sure there are no exposed wires or other electrical problems before reaching in to trigger the float. If the sump crock is not sealed, check if the sump pump is operable by triggering the float. If the sump pump is operable, enter “Y” for YES on line 11 in the inspection form. If the sump pump does not operate, enter “N” for NO on line 11 and add a comment as to why the wastewater sump crock did not operate. Is the pump plugged in? Is the power or fuse out or a circuit breaker off? Generally, if there is a waste crock, it will operate.

8. Line 12: Wastewater Sump Pump Discharge location: Determine how the wastewater sump crock discharges. If gravity flow, there will be an outlet pipe in the base of the crock and generally water will not be much above the invert of the pipe. If there is a pump in the crock, it will most likely discharge to an overhead or hung pipe in the house prior to entering a gravity sewer either inside the house or to the mainline sewer outside the house. Indicate the appropriate answer on line 12 on the building inspection form.

9. Line 13: Internal Cleanout: Look for cleanouts on the sanitary sewer lateral. They could be in the floor or on the sanitary pipe extending up from the floor. This will aid in determining access to the lateral from inside the house. If you cannot see the pipe or floor in the area where the lateral exits the building, enter "U" for **U**NKNOWN.

The internal inspection is now complete. Pictures should be taken of any questionable observation. If there is no clear water sump crock, take pictures of the area near the walls of the house in which a sump crock could be located. By putting a clear water sump crock in a basement, significant clear water can be removed from the sanitary sewer. Additional pictures documenting existing conditions, potential locations for the sump crock, and available electricity for operating a pump should be included in any pictures and documented in the comments section of the building inspection form. This will be critical for designing the sump pump installation. If the pictures are tied to a data logger, the pictures will automatically relate to the house. However, if the inspection form is completed by hand, good documentation of all photographs taken should be maintained and included in the comments section or on a separate form with the related house number. Starting the photo log with a picture of the written address can be very helpful in keeping track of pictures taken.

Let the resident know that you are finished inside and thank them for their time. Return all moved objects, including sump crock and floor drain covers or lids, to their original position. Clean up any messes that you made. Also let them know that you will walk around the house once to complete the external inspection and then you will leave. Remember to stay close to your partner, and make sure the resident can see you at all times as you leave the house.

Outside Inspection Procedures

As you exit the building, note any stairwell, window well, driveway, patio or other drains that you observe. Again with the resident's permission, walk around the building and observe where all roof downspouts discharge. The exterior inspection will document downspouts and their discharge locations, area drains and cleanouts on the exterior of the house. Exterior inspection documentation starts at line 14 and goes through line 19. All boxes between line 14 and line 19 should be completed. Comments should be included in the comment section on the form for all boxes with an "R" for OTHE**R** or a "U" for **U**NKNOWN, describing the reasons for the notation.

1. Line 14 through Line 16: Downspout information will be documented in these boxes. As you walk around the building, observe all roof downspouts and their discharge locations. Count the total number of downspouts and enter the number on line 14. Count the total number of downspouts that discharge underground and enter that number in line 15. If no downspouts discharge underground, enter "X" for NONE on line 15. Some downspouts may go underground but discharge to the surface in a more practical area in the yard. Always check to see if you can locate a discharge point. On line 16 document the general location of the downspout discharge points. Because there will frequently be more than one discharge point for the various downspouts, include the location of the downspout on the house sketch and identify each discharge location.

2. Line 17: Abandoned Downspout Discharge: A common occurrence throughout the MMSD sewer service area is for the homeowner to disconnect the downspout from discharging underground and then run a downspout extension, so that the discharge for the downspout is to the surface. In many instances, the original discharge pipe is connected to the foundation drain which then runs to the homeowner's sewer lateral or runs directly to the lateral. Removing the downspout from the underground discharge pipe removes a considerable amount of clear water from entering the sanitary sewer. However, the original pipe going underground is frequently left unsealed and can act as an area drain.

3. Line 18: Yard or Area Drains: Locate any yard or area drains or catch basins on the property. Driveway drains are usually near garages that are below street level grade. Stairwell and window wells may have drains to keep water from collecting near windows and doors. Parking area drains are usually associated with commercial or industrial parking lots. Lawn drains are drains devised by the homeowner to drain a low area in their lawn. Sometimes there are storm inlets or catch basins located on the lot. In this case, identify exactly what type of drain is observed, write "R" for OTHE**R** on line 18.

4. Line 19; Observable Outdoor Cleanouts: Locate any cleanouts connected to the sanitary sewer lateral by observing the area over the approximate location of the lateral and insert the number of visible cleanouts in line 18. Cleanouts will be frequently located near the property line between the house and mainline sewer, so be sure to check this area. If there are no cleanouts observed, enter “X” for NONE in line 19 and line 20. If there is one cleanout observed, enter 1 on line 18. If there is more than one cleanout, there will typically be one located at the property line and one near the house. Enter the total number of observed cleanouts on line 19.

5. Line 20: Condition of Cleanouts: If there is one cleanout located, enter the condition on line 20 on the building inspection form or in the data logger. If there is more than one cleanout, enter R on line 20 and identify the condition of each cleanout in the comments section. Be sure to include the location of cleanouts with labels on the sketch.

Sketch and Comments

The sketch and comments section of the Building Inspection Form are located on page two or the back of the form. This will not be the case if you are utilizing a data logger for the inspection process. Both the sketch and comments sections should be completed as you conduct each portion of the inspection, from the interview to the exterior walk around the house. Any discrepancies or unusual observations should be included in the sketch and/or comments section with a detailed description of the observation. The sketch and comments may be the most important element for identifying potential rehabilitation for removal of private property I/I.

1. Sketches: The sketch should include a rough layout of the house, with the appropriate orientation. Always include a north arrow on the sketch. For the interior inspection, clear water sump crocks, wastewater sump crocks, and floor drains should be shown and labeled. As much as possible, discharge locations should also be shown on the sketch. The location of the lateral exiting the house should be included on the sketch. Possible locations for the installation of a sump crock, if one does not exist, should be shown and labeled as such.

   All downspouts, discharge locations for downspouts, drains, and cleanouts identified during the exterior inspection should be shown on the sketch. Each downspout should be shown and labeled as to their discharge location. If the downspout discharges directly to the surface, the discharge location does not have to be shown, but the downspout should be labeled “DSS” indicating that the downspout discharges to the surface. Note whether the discharge is within 3 feet of the house or beyond three feet of the house.

   Acceptable abbreviations are as follows:

DS	Downspouts
DSUG	Downspouts Discharge Underground
DSS	Downspouts Discharge to Surface
DSDL	Downspout Discharge Location
FD	Floor Drain
SP - CW	Clear Water Sump Pump/Crock
SP - WW	Wastewater Sump Pump/Crock
SPDL	Sump Pump Discharge Location
Lat	Lateral
CO	Cleanout

Abbreviations for any specific item that turns out to be commonplace can be incorporated into the sketch, but specific definitions of any or all new abbreviations should be included on each form.

If surface drainage appears to run towards the house and subsequently the foundation drain, include flow drainage arrows on the sketch showing the drainage pattern. Label all items shown on the sketch.

If necessary, numerically label items in the sketch and directly relate that number to a number in the comments section.

Here is a brief summary of items to include on the sketch:

- House with correct directional orientation
- All floor drains
- Clear water sump crocks
- Wastewater sump crocks
- Internal lateral location (as it exits the house)
- Yard or area drains
- Downspouts
- Downspout discharge locations
- Cleanouts
- Other pertinent information

2. Comments: The comments section of the Building Inspection Form may be the most important element of the inspection process. The field inspector will have the most knowledge of any conditions that may add clear water to the sanitary sewer. Identify those sources in the comments section and make a preliminary recommendation as to the best way to remove the I/I from the sanitary sewer system or lateral. For instance, if the resident has run the clear water sump pump discharge hose to the sanitary sewer, make an observation and comment to that effect, but also look to see if there is an existing discharge pipe near the top of the house wall. If no pipe exists, try to identify a good location to install a discharge pipe. Bear in mind that the discharge should not discharge directly to a sidewalk, but preferably to a lawn/grassy area. Include these types of notes in the comment or sketch section to assist in the design of the recommended I/I removal for each house.

After completing and recording the data, leave the property by way of sidewalk or driveway and move onto the next building or address. Make sure that the inspection status portion of the form is complete. There should be no blank boxes for line items 1 through 20. The inspection status portion of the form includes crew initials, date, and time. This must always be recorded because it provides a record of the number of attempts with dates and time. It also provides a record of when an inspection was successfully completed.

Review the building inspection form one more time and check it for accuracy and completion. Any question that may arise regarding the inspection should be addressed in the comments section.

Proper Building Inspection Codes

	Items	Codes
1	Previous Basement Flooding	**Y** = Yes **N** = No
2	Source of Previous Basement Flooding	**D** = Floor Drain **S** = Sump Pump **F** = Foundation/Floor **L** = Walls **W** = Window Wells **R** = Other **U** = Unknown **X** = None
3	Floor Drains	**#** = Write in number observed **X** = None
4	Pipes Entering Floor Drain	**#** = Write in number observed **X** = None
5	Palmer Valve in Floor Drain	**Y** = Yes **N** = No **X** = None
6	Clear Water (CW) Sump Crock Condition	**D** = Dry **W** = Wet **P** = Previously wet **X** = None
7	CW Sump Pump Operable	**Y** = Yes **N** = No **R** = Other **X** = None
8	Pipes Into CW Sump Crock	**F** = Floor drain **T** = Footing tile **B** = Floor drain and footing tile **R** = Other **X** = None

9	CW Sump Pump Discharge	**A** = To sanitary sewer **B** = Outside within 3' of wall **C** = Outside-more than 3' from Wall **D** = To curb **E** = To storm sewer **F** = To area drain **G** = Unknown **X** = None
10	Wastewater Sump Crock Condition	**D** = Dry **W** = Wet **P** = Previously wet **U** = Unknown **X** = None
11	WW Sump Pump Operable	**Y** = Yes **N** = No **R** = Other **X** = None
12	WW Sump Pump Discharge Location	**G** = Gravity to Sanitary Sewer **H** = Hung Pipe with Pump
13	Internal Cleanout	**Y** = Yes **N** = No **U** = Unknown
14	Downspouts	**#** = Write in total number observed **X** = None
15	Downspouts Entering Ground	**#** = Write in total number observed **X** = None
16	Downspout Discharge Location	**A** = To sanitary sewer **B** = Ground within 3' of wall **C** = Ground - more than 3' from Wall **D** = To curb **E** = To storm sewer **F** = To area drain **G** = Unknown

17	Abandoned Downspout Discharge	**S** = Sealed **U** = Unsealed **O** = Open **X** = None
18	Yard or Area Drain	**L** = Lawn **D** = Driveway **P** = Parking Area **S** = Stairwell **W** = Window Well **T** = Patio **R** = Other **X** = None
19	Observable Outdoor Cleanouts	**#** = Write in total number observed **X** = None
20	Condition of Cleanouts	**S** = Sealed **U** = Unsealed **M** = Cap Missing **R** = Other **X** = None

Appendix A
Building Inspection Form

MMSD BUILDING INSPECTION	CREW INITIALS:
DATE INSPECTION COMPLETED:	**MUNICIPALITY:**
OWNER	
HOUSE NUMBER	
STREET NAME	
ZIP CODE	-
YEAR BUILT	
BUILDING USE	1F, 2F, 3F, 4F, **C**OMMERCIAL, **I**NDUSTRIAL, OTHE**R** (CHURCH, SCHOOL), # OF APTS

INSIDE	1	PREVIOUS BASEMENT FLOODING		**Y**ES **N**O
	2	SOURCE OF PREVIOUS BASEMENT FLOODING		FLOOR **D**RAIN **S**UMP PUMP **F**OUNDATION/FLOOR WA**L**LS **W**INDOW WELLS OTHE**R** **U**NKNOWN **X**-NONE
	3	FLOOR DRAINS		NUMBER OF FLOOR DRAINS **X**-NONE
	4	PIPES ENTERING FLOOR DRAIN		NUMBER OF PIPES ENTERING FLOOR DRAIN **X**-NONE
	5	PALMER VALVE IN FLOOR DRAIN		**Y**ES **N**O **X**-NONE
	6	CLEAR WATER (CW) SUMP CROCK CONDITION		**D**RY **W**ET **P**REVIOUSLY WET **X**-NONE
	7	CW SUMP PUMP OPERABLE		**Y**ES **N**O OTHE**R** **X**-NONE
	8	PIPES INTO CW SUMP CROCK		**F**LOOR DRAIN FOOTING **T**ILE **B**OTH **O**THER **X**-NONE
	9	CW SUMP PUMP DISCHARGE LOCATION		**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN **X**-NONE
	10	WASTEWATER (WW) SUMP CROCK CONDITION		**D**RY **W**ET **P**REVIOUSLY WET **U**NKNOWN **X**-NONE
	11	WW SUMP PUMP OPERABLE		**Y**ES **N**O OTHE**R** **X**-NONE
	12	WW SUMP PUMP DISCHARGE LOCATION		**G**RAVITY TO SANITARY SEWER **H**UNG PIPE WITH PUMP **X**-NONE
	13	INTERNAL CLEANOUT		**Y**ES **N**O **U**NKNOWN
OUTSIDE	14	DOWNSPOUTS		TOTAL NUMBER OF DOWNSPOUTS **X**-NONE
	15	DOWNSPOUTS ENTERING GROUND		NUMBER OF DOWNSPOUTS ENTERING THE GROUND **X**-NONE
	16	DOWNSPOUT DISCHARGE LOCATION		**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN
	17	ABANDONED DOWNSPOUT DISCHARGE		**S**EALED **U**NSEALED **O**PEN **X**-NONE
	18	YARD OR AREA DRAINS		**L**AWN **D**RIVEWAY **P**ARKING AREA **S**TAIRWELL **W**INDOW WELL PA**T**IO OTHE**R** **X**-NONE
	19	OBSERVABLE OUTDOOR CLEANOUTS		NUMBER OF CLEANOUTS **X**-NONE
	20	CONDITION OF CLEANOUTS		**S**EALED **U**NSEALED CAP **M**ISSING OTHE**R** **X**-NONE

1ST ATTEMPT:	CREW INITIALS:
DATE:	/ /
TIME:	
2ND ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	
3RD ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	

MMSD BUILDING INSPECTION

SKETCH - Include North Arrow

Sketch should include a north arrow, downspout locations, floor drain locations, sump pump crock locations, and location of the lateral as it exits the house. Outside cleanouts, sump pump, and downspout discharge locations should be shown on the sketch.
Front of the house or the street location should be labeled on the sketch.
General abbreviations that are acceptable as notes on the sketch:
DSUG - Downspout goes underground, **CO** - Cleanout, **LAT** - Lateral location, **FD** - Floor drain, **SP** - Sump pump, **DS** - Downspout
DSDL - Downspout discharge location (not needed if the downspout discharges to the surface),
SPDL - Sump pump discharge location
Other abbreviations should include a note in the comments on what the abbreviation stands for.
If drainage runs towards the house, show the location on the map with arrows depicting flow directions

Comments:

House Address:

Appendix B
Damage/Accident Report Form

Damage/Accident Report

Activity: _____

Basin: _____

Owner: _____

Address: _____

Street: _____

Phone No.: _____

Crew Names: _____

Date and Time: _____

Explanation
(including conversations and responses)

Picture Number & Description	

Appendix C
Sample Forms

Example 1: No Sump Crocks

MMSD BUILDING INSPECTION	CREW INITIALS: KAM, DJC
DATE INSPECTION COMPLETED: 5/20/2011	**MUNICIPALITY: Anytown**

OWNER	C		W	H	I	T	E																			
HOUSE NUMBER							3	2	1	2																
STREET NAME	S		B	L	U	E	B	I	R	D		L	N													
ZIP CODE	5	3	2	0	2	-																				
YEAR BUILT	1	9	4	8																						
BUILDING USE		1	F	1F, 2F, 3F, 4F, **C**OMMERCIAL, **I**NDUSTRIAL, OTHE**R** (CHURCH, SCHOOL), # OF APTS																							

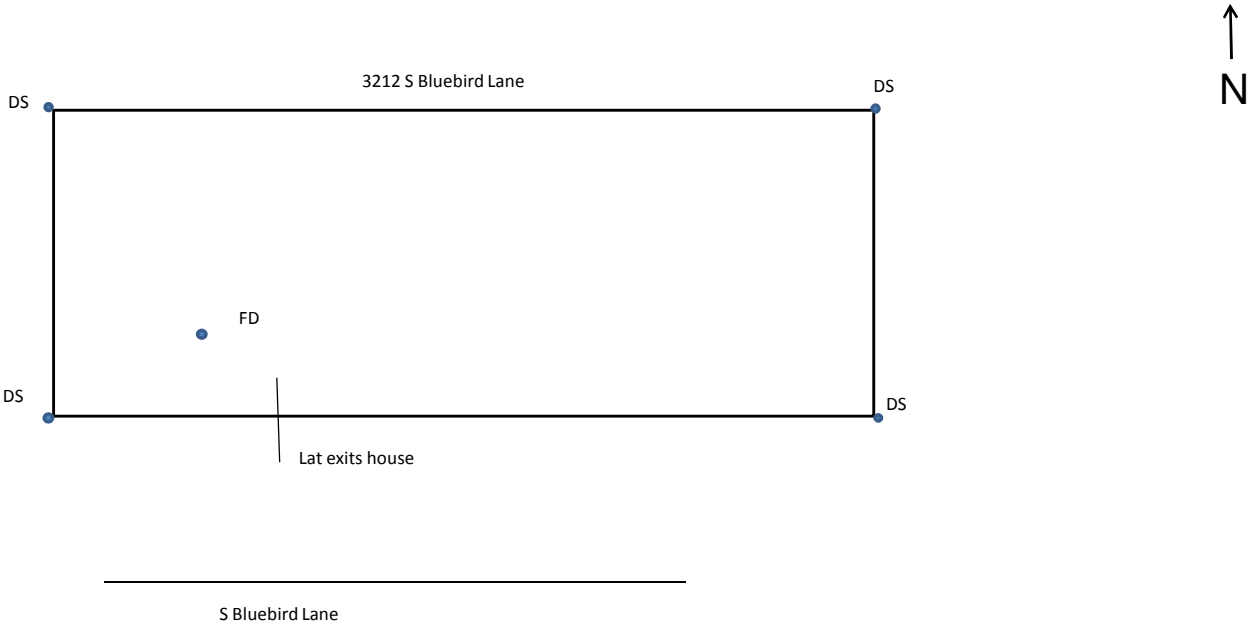
INSIDE	1	PREVIOUS BASEMENT FLOODING	N	**Y**ES **N**O
	2	SOURCE OF PREVIOUS BASEMENT FLOODING	X	FLOOR **D**RAIN **S**UMP PUMP **F**OUNDATION/FLOOR WA**L**LS **W**INDOW WELLS OTHE**R** **U**NKNOWN **X**-NONE
	3	FLOOR DRAINS	1	NUMBER OF FLOOR DRAINS **X**-NONE
	4	PIPES ENTERING FLOOR DRAIN	X	NUMBER OF PIPES ENTERING FLOOR DRAIN **X**-NONE
	5	PALMER VALVE IN FLOOR DRAIN	N	**Y**ES **N**O **X**-NONE
	6	CLEAR WATER (CW) SUMP CROCK CONDITION	X	**D**RY **W**ET **P**REVIOUSLY WET **X**-NONE
	7	CW SUMP PUMP OPERABLE	X	**Y**ES **N**O OTHE**R** **X**-NONE
	8	PIPES INTO CW SUMP CROCK	X	**F**LOOR DRAIN FOOTING **T**ILE **B**OTH **O**THER **X**-NONE
	9	CW SUMP PUMP DISCHARGE LOCATION	X	**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN **X**-NONE
	10	WASTEWATER (WW) SUMP CROCK CONDITION	X	**D**RY **W**ET **P**REVIOUSLY WET **U**NKNOWN **X**-NONE
	11	WW SUMP PUMP OPERABLE	X	**Y**ES **N**O OTHE**R** **X**-NONE
	12	WW SUMP PUMP DISCHARGE LOCATION	X	**G**RAVITY TO SANITARY SEWER **H**UNG PIPE WITH PUMP **X**-NONE
	13	INTERNAL CLEANOUT	Y	**Y**ES **N**O **U**NKNOWN
OUTSIDE	14	DOWNSPOUTS	4	TOTAL NUMBER OF DOWNSPOUTS **X**-NONE
	15	DOWNSPOUTS ENTERING GROUND	X	NUMBER OF DOWNSPOUTS ENTERING THE GROUND **X**-NONE
	16	DOWNSPOUT DISCHARGE LOCATION	C	**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN
	17	ABANDONED DOWNSPOUT DISCHARGE	X	**S**EALED **U**NSEALED **O**PEN **X**-NONE
	18	YARD OR AREA DRAINS	X	**L**AWN **D**RIVEWAY **P**ARKING AREA **S**TAIRWELL **W**INDOW WELL PA**T**IO OTHE**R** **X**-NONE
	19	OBSERVABLE OUTDOOR CLEANOUTS	X	NUMBER OF CLEANOUTS **X**-NONE
	20	CONDITION OF CLEANOUTS	X	**S**EALED **U**NSEALED CAP **M**ISSING OTHE**R** **X**-NONE

1ST ATTEMPT:	CREW INITIALS: KAM, DJC
DATE:	05/20/11
TIME:	10:30 AM
2ND ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	
3RD ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	

Example 1: No Sump Crocks

MMSD BUILDING INSPECTION

SKETCH - Include North Arrow



Sketch should include a north arrow, downspout locations, floor drain locations, sump pump crock locations, and location of the lateral as it exits the house. Outside cleanouts, sump pump, and downspout discharge locations should be shown on the sketch.
Front of the house or the street location should be labeled on the sketch.
General abbreviations that are acceptable as notes on the sketch:
DSUG - Downspout goes underground, **CO** - Cleanout, **LAT** - Lateral location, **FD** - Floor drain, **SP** - Sump Pump, **DS** - Downspout
DSDL - Downspout discharge location (not needed if the downspout discharges to the surface),
SPDL - Sump pump discharge location
Other abbreviations should include a note in the comments on what the abbreviation stands for.
If drainage runs towards the house, show the location on the map with arrows depicting flow directions

Comments:
No wastewater or clear water sump crock
Downspouts discharge to surface more than 3 feet from house
House Number: 3212 S Bluebird Lane

Example 2: Clear Water Sump Crock, No Wastewater Sump Crock

MMSD BUILDING INSPECTION	CREW INITIALS: KAM, DJC
DATE INSPECTION COMPLETED: 5/20/2011	**MUNICIPALITY: Anytown**

OWNER	C		W	H	I	T	E																		
HOUSE NUMBER							3	2	1	2															
STREET NAME	S		B	L	U	E	B	I	R	D		L	N												
ZIP CODE	5	3	2	0	2	-																			
YEAR BUILT	1	9	4	8																					
BUILDING USE		1	F	1F, 2F, 3F, 4F, **C**OMMERCIAL, **I**NDUSTRIAL, OTHE**R** (CHURCH, SCHOOL), # OF APTS																					

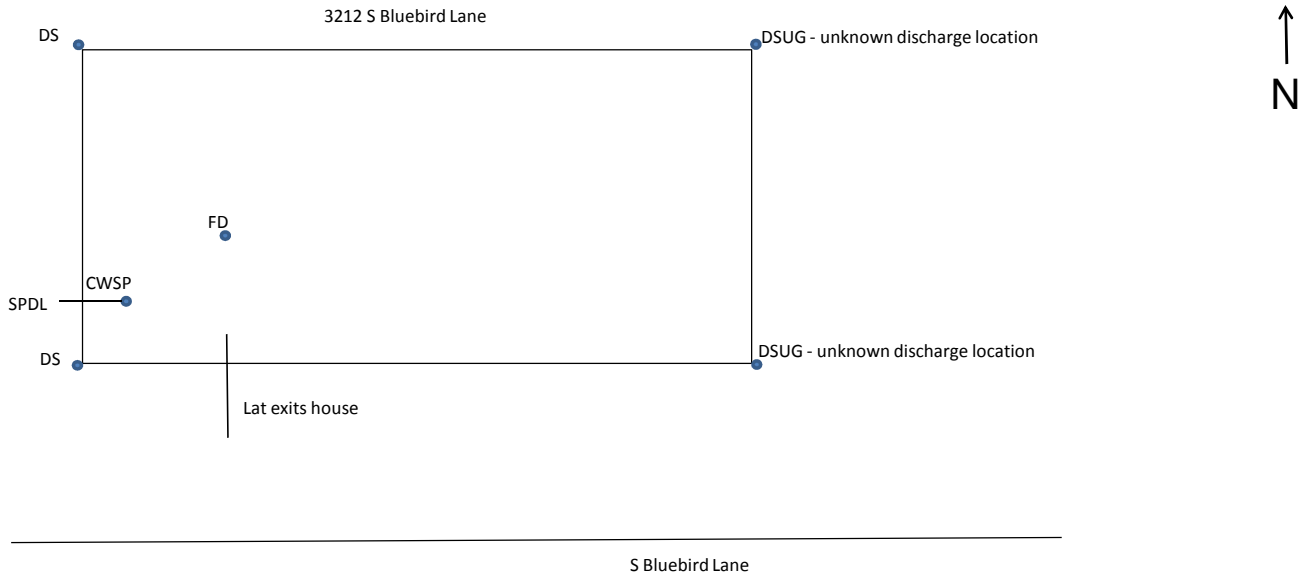
INSIDE	1	PREVIOUS BASEMENT FLOODING	N	**Y**ES **N**O
	2	SOURCE OF PREVIOUS BASEMENT FLOODING	X	FLOOR **D**RAIN **S**UMP PUMP **F**OUNDATION/FLOOR WA**L**LS **W**INDOW WELLS OTHE**R** **U**NKNOWN **X**-NONE
	3	FLOOR DRAINS	1	NUMBER OF FLOOR DRAINS **X**-NONE
	4	PIPES ENTERING FLOOR DRAIN	X	NUMBER OF PIPES ENTERING FLOOR DRAIN **X**-NONE
	5	PALMER VALVE IN FLOOR DRAIN	N	**Y**ES **N**O **X**-NONE
	6	CLEAR WATER (CW) SUMP CROCK CONDITION	W	**D**RY **W**ET **P**REVIOUSLY WET **X**-NONE
	7	CW SUMP PUMP OPERABLE	Y	**Y**ES **N**O OTHE**R** **X**-NONE
	8	PIPES INTO CW SUMP CROCK	T	**F**LOOR DRAIN FOOTING **T**ILE **B**OTH **O**THER **X**-NONE
	9	CW SUMP PUMP DISCHARGE LOCATION	C	**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN **X**-NONE
	10	WASTEWATER (WW) SUMP CROCK CONDITION	X	**D**RY **W**ET **P**REVIOUSLY WET **U**NKNOWN **X**-NONE
	11	WW SUMP PUMP OPERABLE	X	**Y**ES **N**O OTHE**R** **X**-NONE
	12	WW SUMP PUMP DISCHARGE LOCATION	X	**G**RAVITY TO SANITARY SEWER **H**UNG PIPE WITH PUMP **X**-NONE
	13	INTERNAL CLEANOUT	Y	**Y**ES **N**O **U**NKNOWN
OUTSIDE	14	DOWNSPOUTS	4	TOTAL NUMBER OF DOWNSPOUTS **X**-NONE
	15	DOWNSPOUTS ENTERING GROUND	2	NUMBER OF DOWNSPOUTS ENTERING THE GROUND **X**-NONE
	16	DOWNSPOUT DISCHARGE LOCATION	C	**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN
	17	ABANDONED DOWNSPOUT DISCHARGE	X	**S**EALED **U**NSEALED **O**PEN **X**-NONE
	18	YARD OR AREA DRAINS	X	**L**AWN **D**RIVEWAY **P**ARKING AREA **S**TAIRWELL **W**INDOW WELL PA**T**IO OTHE**R** **X**-NONE
	19	OBSERVABLE OUTDOOR CLEANOUTS	X	NUMBER OF CLEANOUTS **X**-NONE
	20	CONDITION OF CLEANOUTS	X	**S**EALED **U**NSEALED CAP **M**ISSING OTHE**R** **X**-NONE

1ST ATTEMPT:	CREW INITIALS: KAM, DJC
DATE:	05/20/11
TIME:	10:30 AM
2ND ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	
3RD ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	

Example 2: Clear Water Sump Crock, No Wastewater Sump Crock

MMSD BUILDING INSPECTION

SKETCH - Include North Arrow



Sketch should include a north arrow, downspout locations, floor drain locations, sump pump crock locations, and location of the lateral as it exits the house. Outside cleanouts, sump pump, and downspout discharge locations should be shown on the sketch.
Front of the house or the street location should be labeled on the sketch.
General abbreviations that are acceptable as notes on the sketch:
DSUG - Downspout goes underground, **CO** - Cleanout, **LAT** - Lateral location, **FD** - Floor drain, **SP** - Sump pump, **DS** - Downspout
DSDL - Downspout discharge location (not needed if the downspout discharges to the surface),
SPDL - Sump pump discharge location
Other abbreviations should include a note in the comments on what the abbreviation stands for.
If drainage runs towards the house, show the location on the map with arrows depicting flow directions

Comments:
2 downspouts on east side of house discharge underground. Could not locate the discharge.
House Address: 3212 S Bluebird Lane

Example 3: Clear Water Sump Crock and Wastewater Sump Crock

MMSD BUILDING INSPECTION	CREW INITIALS: KAM, DJC
DATE INSPECTION COMPLETED: 5/20/2011	**MUNICIPALITY: Anytown**

OWNER	C		W	H	I	T	E																			
HOUSE NUMBER							3	2	1	2																
STREET NAME	S		B	L	U	E	B	I	R	D		L	N													
ZIP CODE	5	3	2	0	2	-																				
YEAR BUILT	1	9	4	8																						
BUILDING USE		1	F	1F, 2F, 3F, 4F, **C**OMMERCIAL, **I**NDUSTRIAL, OTHE**R** (CHURCH, SCHOOL), # OF APTS																							

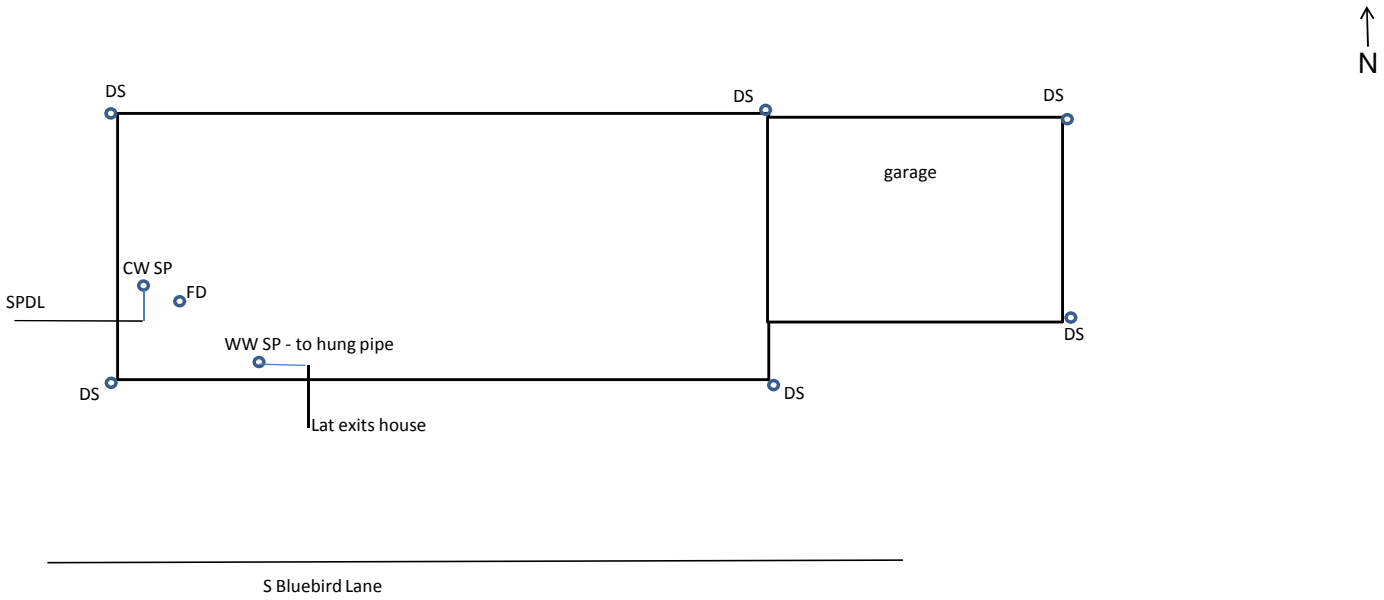
INSIDE	1	PREVIOUS BASEMENT FLOODING	N	**Y**ES **N**O
	2	SOURCE OF PREVIOUS BASEMENT FLOODING	X	FLOOR **D**RAIN **S**UMP PUMP **F**OUNDATION/FLOOR WA**L**LS **W**INDOW WELLS OTHE**R** **U**NKNOWN **X**-NONE
	3	FLOOR DRAINS	1	NUMBER OF FLOOR DRAINS **X**-NONE
	4	PIPES ENTERING FLOOR DRAIN	X	NUMBER OF PIPES ENTERING FLOOR DRAIN **X**-NONE
	5	PALMER VALVE IN FLOOR DRAIN	N	**Y**ES **N**O **X**-NONE
	6	CLEAR WATER (CW) SUMP CROCK CONDITION	W	**D**RY **W**ET **P**REVIOUSLY WET **X**-NONE
	7	CW SUMP PUMP OPERABLE	Y	**Y**ES **N**O OTHE**R** **X**-NONE
	8	PIPES INTO CW SUMP CROCK	T	**F**LOOR DRAIN FOOTING **T**ILE **B**OTH **O**THER **X**-NONE
	9	CW SUMP PUMP DISCHARGE LOCATION	C	**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN **X**-NONE
	10	WASTEWATER (WW) SUMP CROCK CONDITION	W	**D**RY **W**ET **P**REVIOUSLY WET **U**NKNOWN **X**-NONE
	11	WW SUMP PUMP OPERABLE	Y	**Y**ES **N**O OTHE**R** **X**-NONE
	12	WW SUMP PUMP DISCHARGE LOCATION	H	**G**RAVITY TO SANITARY SEWER **H**UNG PIPE WITH PUMP **X**-NONE
	13	INTERNAL CLEANOUT	Y	**Y**ES **N**O **U**NKNOWN
OUTSIDE	14	DOWNSPOUTS	6	TOTAL NUMBER OF DOWNSPOUTS **X**-NONE
	15	DOWNSPOUTS ENTERING GROUND	X	NUMBER OF DOWNSPOUTS ENTERING THE GROUND **X**-NONE
	16	DOWNSPOUT DISCHARGE LOCATION	C	**(A)** TO SANITARY SEWER **(B)** GROUND W / IN 3' (FEET) **(C)** GROUND OUTSIDE 3' (FEET) **(D)** TO CURB **(E)** TO STORM SEWER **(F)** TO AREA DRAIN **(G)** UNKNOWN
	17	ABANDONED DOWNSPOUT DISCHARGE	X	**S**EALED **U**NSEALED **O**PEN **X**-NONE
	18	YARD OR AREA DRAINS	S	**L**AWN **D**RIVEWAY **P**ARKING AREA **S**TAIRWELL **W**INDOW WELL PA**T**IO OTHE**R** **X**-NONE
	19	OBSERVABLE OUTDOOR CLEANOUTS	X	NUMBER OF CLEANOUTS **X**-NONE
	20	CONDITION OF CLEANOUTS	X	**S**EALED **U**NSEALED CAP **M**ISSING OTHE**R** **X**-NONE

1ST ATTEMPT:	CREW INITIALS: KAM, DJC
DATE:	05/20/11
TIME:	10:30 AM
2ND ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	
3RD ATTEMPT	CREW INITIALS:
DATE	/ /
TIME	

Example 3: Clear Water Sump Crock and Wastewater Sump Crock

MMSD BUILDING INSPECTION

SKETCH - Include North Arrow



Sketch should include a north arrow, downspout locations, floor drain locations, sump pump crock locations, and location of the lateral as it exits the house. Outside cleanouts, sump pump, and downspout discharge locations should be shown on the sketch.
Front of the house or the street location should be labeled on the sketch.
General abbreviations that are acceptable as notes on the sketch:
DSUG - Downspout goes underground, **CO** - Cleanout, **LAT** - Lateral location, **FD** - Floor drain, **SP** - Sump pump, **DS** - Downspout
DSDL - Downspout discharge location (not needed if the downspout discharges to the surface),
SPDL - Sump pump discharge location
Other abbreviations should include a note in the comments on what the abbreviation stands for.
If drainage runs towards the house, show the location on the map with arrows depicting flow directions

Comments:
WW - SPDL: Wastewater sump pump discharges to hung pipe
Downspouts all discharge to surface more than 3 feet from house
House Address: 3212 S Bluebird Lane

Appendix D
Photos

FLOOR DRAINS ARE USUALLY LOCATED NEAR
UTILITIES AND/OR LAUNDRY FACILITIES

FLOOR DRAINS ARE USUALLY LOCATED NEAR
UTILITIES AND/OR LAUNDRY FACILITIES

CLOSEUP OF STORM INLET

STORM INLET LOCATED IN SLOPED REAR YARD

CLOSEUP OF DRAIN

CATCH BASIN DRAIN LOCATED IN BACK YARD

DRIVEWAY DRAIN NEAR GARAGE

DRIVEWAY DRAIN NEAR GARAGE

DOWNSPOUT EXTENSION

DOWNSPOUT DISCHARGING UNDERGROUND

STAIRWELL WITH DRAIN

STAIRWELL WITH DRAIN

WINDOW WELL WITH DRAIN

CLEAR WATER CROCK WITH TILE INLET

CLEAR WATER CROCK WITH TILE INLET

CLEAR WATER CROCK COLLECTS GROUNDWATER SEEPAGE

CLEAR WATER CROCK LOCATED IN A UTILITY ROOM
OF A BI-LEVEL HOME

ACCESS INTO A CRAWL SPACE

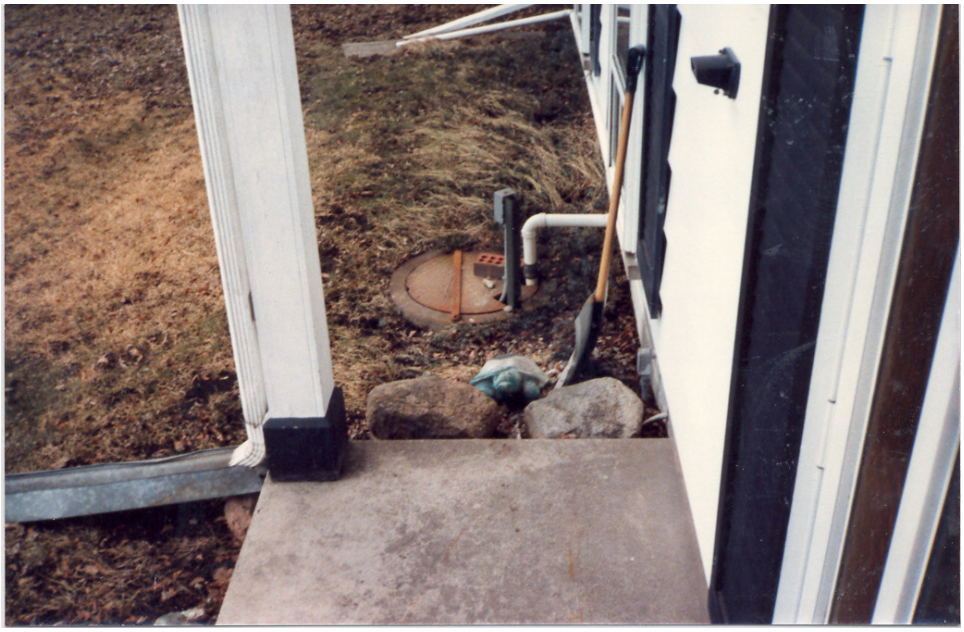
ACCESS INTO A CRAWL SPACE

ENTRANCE TO A CRAWL SPACE

CRAWL SPACE WITH A CLEAR WATER SUMP PUMP

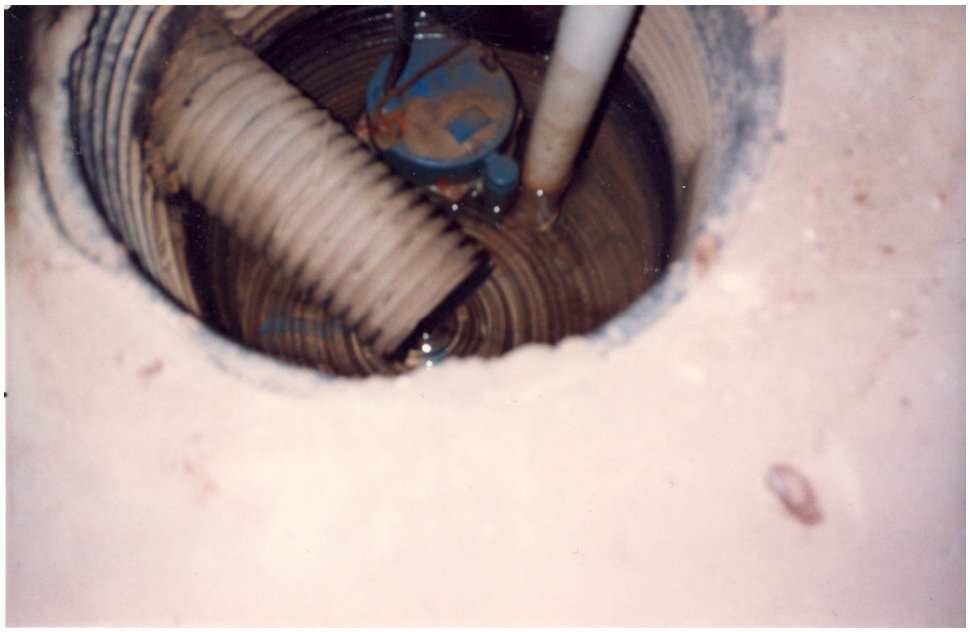
CRAWL SPACE WITH A CLEAR WATER SUMP PUMP

CLEAR WATER CROCK WITH A TILE INLET LOCATED IN CRAWL SPACE



CLEAR WATER SUMP PUMP LOCATED OUTSIDE OF HOME.
DISCHARGES MORE THAN 3' FROM WALL

CLEAR WATER SUMP PUMP LOCATED OUTSIDE OF HOME.
DISCHARGES MORE THAN 3' FROM WALL



CLEAR WATER CROCK WITH TILE INLET

CLEAR WATER SUMP. DISCHARGE TO OUTSIDE DISCONNECTED AND REROUTED.

CLEAR WATER SUMP DISCHARGE CONNECTED TO SANITARY SEWER.

CLEAR WATER SUMP DISCHARGE OUTSIDE – WITHIN 3’ OF WALL

CLEAR WATER SUMP DISCHARGE OUTSIDE – MORE THAN 3’ FROM WALL

CLEAR WATER SUMP DISCHARGE OUTSIDE – MORE THAN 3’ FROM WALL

CLEAR WATER SUMP DISCHARGE OUTSIDE – MORE THAN 3’ FROM WALL

CLEAR WATER SUMP DISCHARGE APPEARS TO GO UNDERGROUND.
NOTE 90° BEND IN OUTLET PIPE

FURTHER INVESTIGATION SHOWS THAT THE OUTLET PIPE
DISCHARGES MID-YARD

DOWNSPOUT AND SUMP PUMP OUTLET TIED TOGETHER

OUTLET PIPE FOR DOWNSPOUT AND CLEAR WATER SUMP SURFACES IN BACKYARD

CLOSEUP OF OUTLET COVER

A WASTE CROCK AND A CLEAR WATER CROCK

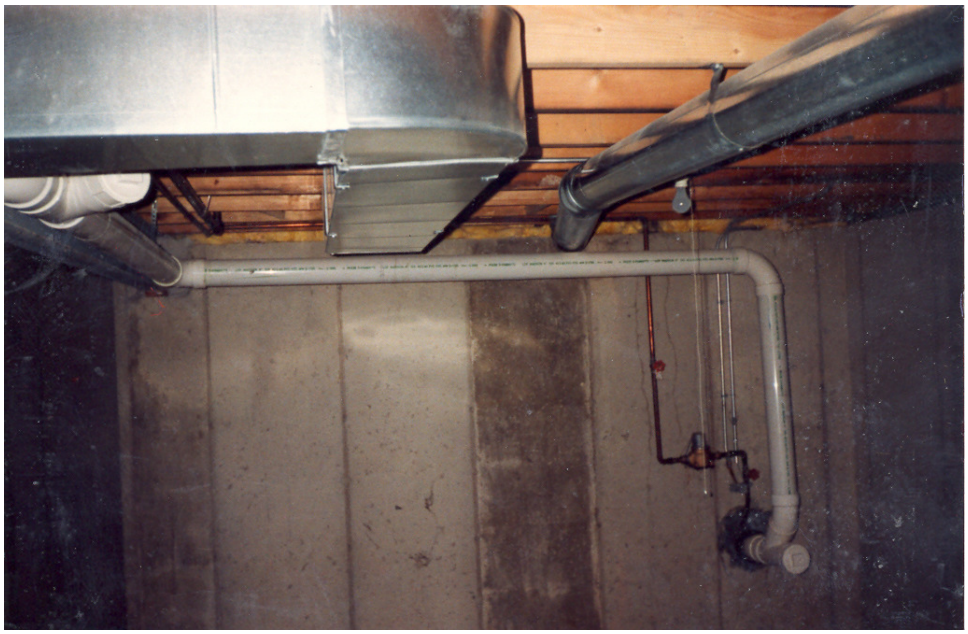
WASTE CROCK THAT TAKES IN STATIONARY TUB AND FLOOR DRAIN

WASTE CROCK TAKES IN LAUNDRY, FLOOR DRAIN, AND SHOWER

CLOSEUP OF WASTE CROCK SHOWS PLUMBING FOR LAUNDRY DRAINING INTO IT

CLOSEUP OF WASTE CROCK SHOWS INLET FOR SHOWER AND FLOOR DRAIN

THIS BASEMENT HAS A CLEARWATER SUMP IN ADDITION TO A WASTE CROCK



“OVERHEAD” OR “HUNG” SANITARY SEWER

MODEL HOME WITH WASTE CROCK