

STORM WATER MANAGEMENT PLAN

FOR MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) JURISDICTION GENERAL PERMIT

HASLETT PUBLIC SCHOOLS
HASLETT, MICHIGAN

SME Project Number: 087964.00
2026 revision

AUTHORIZED DISCHARGES, LEGAL AUTHORITY, AND ENFORCEMENT RESPONSE PROCEDURE

The Permit authorizes the District to discharge storm water from the MS4 to waters of the state. Non-storm water discharges and illicit discharges are prohibited on District property. The following non-storm water discharges are not authorized by the Permit, but are not prohibited unless they are considered to be significant contributors of pollutants to the MS4:

- Water line flushing;
- Landscape and irrigation run-off;
- Rising groundwater and natural springs;
- Uncontaminated groundwater infiltration (as defined by 40 CFR 35.2005(20));
- Pumped groundwater (except for remedial groundwater effluent);
- Discharge from potable sources;
- Air conditioning condensate;
- Flows from riparian habitats and wetlands;
- Water from crawl spaces, basement, and foundation drains and sumps;
- Waters from non-commercial car washing;
- Residual street wash waters; and
- Emergency response firefighting activities.

The District has the authority to regulate, inspect, and enforce site access, employee practices, and MS4 discharges as required by the Permit and this SWMP. The District will be responsible for communicating and notifying District staff and their hired contractors of storm water violations. The District has the sole authority to enforce storm water practices by their employees.

The District does not have the authority to enforce storm water violations and illicit discharges of the public, and therefore will rely on local and state for enforcement response. The District will work closely with local police and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to address illegal dumping and enforcement. Details of storm water incidents and response actions (e.g. names, locations, date of incident, date incident was resolved, response activities) shall be kept in the SWMP file. EGLE will be notified if a significant illicit discharge is observed.

ILLICIT DISCHARGE ELIMINATION PROGRAM

1. INTRODUCTION

An Illicit Discharge Elimination Program (IDEP) is a program designed to identify, prioritize, and minimize or eliminate illicit connections to the storm water system, and to prohibit future connections.

2. DEFINITIONS

The following are key IDEP terms:

- **Illicit discharge:** Any discharge (or seepage) to the separate storm water drainage system that is not composed entirely of storm water, uncontaminated groundwater.
- **Illicit connection:** A physical connection to the separate storm water drainage system that primarily conveys illicit discharges into the system and/or is not authorized or permitted by the local authority.
- **Outfall:** The location at which a point source discharge enters the surface waters of the state.
- **Point of Discharge:** the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.
- **Point source discharge (PSD):** An outfall from a drainage system to waters of the state, or a point where a storm water drainage system discharges into a system operated by another public body.
- **Significant illicit discharge:** A discharge that shows evidence of impairing water quality in the receiving stream.

3. PERMIT REQUIREMENTS

There are five permit requirements for developing an IDEP. They include:

1. A listing or map of the storm sewer system (manholes, catch basins, detention basins, etc.) and known storm water point sources and outfalls.
2. A schedule for providing an updated map of the location of each known storm water point source discharge. The drawing must include a description of the conveyances leading to these point source discharges and the respective receiving waters or drainage systems,
3. A program to find, prioritize, investigate, and eliminate illicit connections, and minimize illicit discharges to the MS4 or waters of the state,
4. Legal authority to prohibit discharges into the drainage system.
5. A program to train District grounds, maintenance, and janitorial staff on good housekeeping procedures, storm water awareness, and identifying and reporting illicit connections.

4. ILLICIT CONNECTION IDENTIFICATION

A. NOTICE OF INTENT

Haslett Public Schools submitted a Storm Water Discharge Permit Application Notice of Intent (NOI) on March 10, 2003, and re-submitted the NOI with Appendix A on March 16, 2006.

B. STORM WATER SYSTEM MAPPING

SME visited each facility to review existing drawings, interviewed maintenance staff, and completed a walkover and mapping of the storm water system.

OUTFALL IDENTIFICATION

SME field verified the outfalls identified in the NOI as well as additional outfalls which may have been discovered during the site visits. Outfall identification includes connections to other MS4s. Additionally, each outfall was field-located utilizing a global positioning system (GPS) unit for inclusion on system maps prepared for each facility.

Following this initial step, where outfalls consisted of connections to other MS4s, the down-gradient storm sewer operators were contacted to verify the connections.

Identification of riparian lands that may be located on or traverses District property were also made during this initial assessment.

CONVEYANCES DESCRIPTION

Utilizing existing drawings, interviews with Haslett Public Schools maintenance staff, and field verification techniques, the storm water conveyance system at each facility was compiled onto the site diagrams. Riparian lands were also noted, if present.

C. OUTFALL CONDITION - INITIAL VISUAL SCREENING

An initial visual screening was conducted to note and record outfall conditions, if accessible (e.g., those discharges which do not discharge to a down-gradient MS4). These were conducted during the initial site visit and field verification process in 2006.

D. RECEIVING WATERS CONDITION - INITIAL VISUAL SCREENING

An initial visual screening was conducted to note and record receiving water conditions, if the outfall discharges directly to a water body. This was conducted during the initial site visit and field verification process in 2006.

E. TRAINING

An initial awareness training outline and a questionnaire to survey District maintenance staff regarding operations and potential illicit discharges was developed. Questionnaires were provided to a District custodial/maintenance staff representative from each facility following initial awareness training. Responses to the questionnaires were used to help narrow the focus of the illicit connection/discharge identification process.

Grounds and maintenance staff undergo annual general storm water awareness training and refreshers on recognition of potential illicit connections, discharges, and outfall indicator parameters as part of the PEP. In addition, the IDEP Field Manual provides a checklist for and descriptions of visual signs of illicit connections.

F. DRY WEATHER SCREENING

An initial dry weather visual screening of each identified outfall was conducted to assist in the initial identification of potential illicit connections. The visual screening was documented utilizing the Field Observation Checklist, attached as Appendix B. The screening was conducted at all PSDs, including enclosed discharge points (i.e., connections to down-gradient MS4s) and outfalls to waters of the state. Screening was conducted at least 72 hours after a storm event.

Dry weather screening will be conducted at least once during the permit cycle, thereafter, to assess progress in elimination/minimization of illicit connections/discharges. The annual screening will also

include visual observations of the condition of each outfall and receiving waters at each location. The last dry weather screening event took place in March 2023 during the previous permit cycle.

G. ADDITIONAL ASSESSMENT/CONFIRMATION OF ILLICIT DISCHARGES

Based on the field observations from site visits, document review, interviews, outfall visual observations, and dry weather screening, gaps in conveyance mapping and potential illicit discharges/connections may be identified, which will require additional assessment/confirmation.

Additional assessment may involve tracer dye or smoke testing of storm water conveyances, or sampling of discharges and laboratory analysis of indicator parameters. All available visual methods, including flow monitoring (e.g., introduction of high water volume in specific conveyances in conjunction with visual observation of changes in flow), will be used prior to testing or sampling.

If sources of storm water flow not attributable to rain water or permitted non-storm sources (a.k.a. dry weather flow) cannot be identified, tracer dye testing may be required. Tracer dye testing can only be conducted by permission of EGLE. If tracer dye testing is warranted, HPS will seek coverage to apply and discharge a tracer dye by filing a Notice of Intent (NOI) and following the General Rule 97 Certification of Approval Authorizing Tracer Dyes in Surface Waters process. HPS will apply for tracer dye use within two weeks of observed dry weather flow if the source cannot be determined. A letter will be submitted to EGLE outlining the description and purpose of the dye testing, name and/or type of water body potentially affected, geographic location of testing, dye product/manufacture to be used, the tracer dye Safety Data Sheet (SDS), the estimated concentration in receiving waters, and a date range within which testing will be conducted. HPS will minimize the plume to maximum extent possible, choose an EGLE-approved tracer dye from the Acceptable Michigan Tracer Dye List, apply and mix the tracer dye according to manufacturers' instructions and concentrations, and inform WRD staff and other appropriate agencies at least 48 hours in advance. HPS will retain records the tracer dye test for a minimum of three years. Tracer dye testing will not commence until EGLE authorization is received and will commence within two weeks of receiving authorization.

For potential illicit discharges that may result from a cross-connection with a sanitary wastewater source, confirmation biological sampling will be conducted, including laboratory analysis for E. coli.

For potential illicit discharges that may result from a cross-connection with a process water, or non-rain water source not specifically exempted by the Permit, chemical sampling and analysis will be conducted within 1-2 business days after the initial observation. Analytical parameters will be dependent on the nature of the potential source. Appropriate indicator parameters will be selected on a case-by-case basis in order to confirm the illicit connection. Analytical sampling for E. coli or other indicator parameters will be conducted within two business days of the determination that it is necessary.

In the event a potential illicit discharge cannot be confirmed by a combination of the means described above, consideration will be given to utilizing a televised video assessment.

H. PRIORITIZATION OF POTENTIAL ILLICIT CONNECTIONS

If any illicit connections are identified, a schedule will be developed to eliminate the illicit discharge/connection within 30 days (further discussed in Section 5A below). The illicit connections identified will be prioritized for elimination or minimization based on the level of impact to the surface water quality and the level of effort/fiscal feasibility to implement. Fiscal feasibility is determined by available funds and timing for budgeting implementation in the appropriate school year. Priority will be given to illicit connections/discharges that have the greatest potential to harm down-gradient aquatic habitats.

I. ILLEGAL DUMPING/SPILLS

In the event that Haslett Public Schools observes or is made aware of illegal dumping, the police will be notified immediately. If the District receives complaints regarding illegal dumping, they will promptly be investigated by Haslett Public Schools. Information will be collected regarding the material that was

dumped and the persons responsible. In the event of a spill, a spill kit will be used to help contain the spill and a qualified environmental consultant will be contacted as necessary. If a release of any polluting materials from the MS4 to the surface waters or groundwaters of the state, the District will call the EGLE Lansing District Office, or EGLE 24-Hour Pollution Emergency Alerting System at 800-292-4706.

5. ILLICIT CONNECTION/DISCHARGE ELIMINATION/MINIMIZATION

A. IMPLEMENTATION PLAN

HPS will eliminate illicit connections that have an estimated cost of less than \$50,000 within 30 days. Illicit connections that have an estimated cost of greater than \$50,000 will require school board approval, and thus may take longer than 30 days to eliminate. Illicit connections/discharges that require major capital expenditures to eliminate or minimize the connection/discharge will be prioritized based on available funds and budgeted for implementation in subsequent school years. Those illicit connection elimination projects that have the potential to disrupt school operations or activities will be elected to be postponed by up to 180 days so that elimination can be conducted during weekend, winter holiday, or summer breaks. In these instances in which elimination will be delayed, HPS will implement additional controls, such as temporary rerouting of a conveyance, or modification of the facility or operation that is the source of the illicit connection. If the removal of a connection or discharge is delayed because of weather, capital needs, or other critical factors, Haslett Public Schools will evaluate ways to collect and dispose of the source material so that the discharge is eliminated quickly. An implementation plan will be developed to track the progress of elimination/minimization of confirmed illicit connections/discharges. The plan will allow for progress reporting as well as monitoring of measurable goals (see below).

In the event an illicit cross-connection to a sanitary line is identified, Haslett Public Schools is prepared to comply with the Sanitary Sewer Overflow (SSO) notification and annual reporting requirements for discharge of sewage from illicit sanitary cross-connections. Such an illicit connection will be given highest priority for elimination.

B. EVALUATION AND ASSESSMENT SCHEDULE

The following outlines the proposed schedule for implementation of the IDEP based on major tasks.

SYSTEM MAPPING OF OUTFALLS AND CONVEYANCES

Outfall identification, conveyance descriptions, verification of connections to down-gradient MS4 operators, and development of storm sewer maps was completed within one year of submittal of the Storm Water Management Program written plan (Plan) to the EGLE (approximately August through September, 2006). The storm sewer maps were revised in 2017.

INITIAL SCREENING OF OUTFALLS/RECEIVING WATERS

Initial visual screening of each outfall and receiving waters was completed in 2006.

INTERVIEWS/QUESTIONNAIRES/TRAINING

Interviews with facility maintenance staff, distribution of the questionnaires, and initial awareness training was completed in 2006.

DRY WEATHER SCREENING

The initial dry weather screening was completed in 2006 and additional rounds in 2012, 2018, and 2023. Dry weather screening will be conducted at least once in the permit cycle. The goal of the dry weather screening will be to evaluate the progress in elimination or minimization of illicit connections/discharges (see below).

ADDITIONAL ASSESSMENT/CONFIRMATION/PRIORITIZATION

Additional assessment of potential illicit discharges/connections will be completed twice throughout the permit cycle. The facilities will be grouped based on the gravity of the potential illicit discharge/connection

determined during the initial visual assessment and dry weather screening tasks. Video confirmation, if needed, will be scheduled for the following school year on a case-by-case basis.

SCHEDULE FOR ELIMINATION/MINIMIZATION

Once potential illicit discharges/connections are confirmed, the connections/discharges, if feasible, will be eliminated as soon as possible. Where elimination is impossible, measures to minimize the discharges will be implemented on the same schedule.

C. MEASURABLE GOALS

The following measurable goals will be used to assess the progress of IDEP implementation:

- Number of illicit discharges/connections eliminated versus number found
- Ability to meet the IDEP proposed schedule
- Procedure to monitor new construction to prevent cross connections
- Dry weather flow monitoring
- Selection of indicator parameters to assess quality of discharge (detergents and ammonia – both available in field kits)
- Biennial sampling thereafter, only if initial sampling indicates potential for impact
- Create list of employees required to be at training and track their attendance via a sign-in sheet. Maintain 100% attendance of required employees and attempt to offer make-up session for those that cannot attend.

D. FIELDWORK MANUAL/CHECKLISTS

SME has developed an IDEP Field Manual, consisting of a Field Observation and Sampling Report checklist for conducting wet and dry weather screening/observations and TMDL sampling. The checklist includes guidelines for conducting the observations. SME also has developed Tracer Dye Testing Standard Operating Guidelines.

PUBLIC EDUCATION PROGRAM

1. INTRODUCTION

The purpose of the Public Education Program (PEP) is to promote, publicize, and facilitate education for the purpose of encouraging the “public,” as defined by the District, to reduce the discharge of pollutants in storm water to the maximum extent practicable (MEP).

2. PERMIT REQUIREMENTS

The PEP permit requirements include educating the “public” in the following categories, as appropriate to each facility, the staff mix, and the audience:

- Hazards associated with illicit discharges and improper waste disposal, including prevention of grease and litter discharges to the storm water system by food service staff;
- Potentially impacted water body at each location and stewardship of the watershed;
- Good housekeeping practices including lawn care, pesticide and herbicide application, vehicle and equipment cleaning (power washing), de-icing;
- Availability and location of facilities for the collection and disposal of household hazardous wastes;
- Other maintenance activities as may apply to each facility, such as proper septic system care, management of riparian lands, and the role of vegetation in watershed maintenance.

3. DEFINITION OF PUBLIC

For purposes of this plan, Haslett Public Schools has defined “public” as the Board of Education (Board), school District employees, District students and families, and outside contractors providing services to Haslett Public Schools.

4. AWARENESS PROGRAM

A training program, utilizing the MDEQ-sponsored Storm Water Savvy promotional and training materials, has been developed for this PEP. Haslett Public Schools management personnel will be responsible to disseminate appropriate information to employees whose job functions are directly related to activities that have the potential to affect storm water, including maintenance, grounds, and janitorial staff.

An awareness program has been developed to notify contractors of their responsibilities to adhere to the Storm Water Management Program requirements.

In addition to the SWMP, promotional materials and other pertinent information will be hosted on the the Haslett Public Schools website at ([Facilities and Operations / Stormwater Management \(haslett.k12.mi.us\)](https://haslett.k12.mi.us/Facilities%20and%20Operations%20-%20Stormwater%20Management)) and disseminated to the District students on a periodic basis via Blackboard, generally annually.

Notification will include information on the availability and location of facilities for the collection and disposal of household hazardous wastes and the local governmental unit reporting procedures for discovery of illicit discharges.

Haslett Public Schools will consider coordinating additional PEP activities with the Greater Lansing Regional Committee (GLRC), the watershed permit group associated with watersheds to which District storm water discharges (See Public Involvement/Participation Section).

Haslett Public Schools will evaluate the feasibility of incorporating storm water awareness into the District's curriculum with administration representatives responsible for District curriculum, such as utilizing rain barrels at schools for plant and garden watering and using onsite detention basins and wildlife in environmental science exercises. The administration will be informed of the curriculum

developed by the MDEQ. See Public Involvement/Participation Section for more information on coordination with administration.

The content of the various training/awareness materials have been geared specifically to each audience, and cover the major categories outlined in Section 2 above.

HPS currently has “No Dogs” or “Pick up After Your Pet” signage at the Ralya Elementary School playgrounds, the Haslett High School athletic fields, the cross country course, and property near Mud Lake.

5. SCHEDULE FOR IMPLEMENTATION

Initial awareness training of maintenance staff will be conducted throughout the permit cycle annually (see IDEP). Awareness training for administrative staff (including the Board), will be developed and dissemination begun throughout the permit cycle as needed.

Contractor awareness information will be developed and dissemination throughout the permit cycle as needed.

Notification to students will be made throughout the school year and periodically thereafter in the Blackboard newsletter and, as necessary, on the Haslett Public Schools web site located at <http://haslett.k12.mi.us>. Periodic information will be included in the newsletter or mailed. Coordination with the regional watershed permit group's PEP will commence within the first year of the permit cycle.

Discussions with administration regarding the feasibility of incorporating storm water awareness into the District's curriculum will be done throughout the permit cycle. Finally, HPS currently has “No Dogs Allowed” or “Pick up after your Pet” signage at the Ralya Elementary School playground and Haslett High School athletic fields.

6. EVALUATION/MEASURABLE GOALS

The following measurable goals will be used to assess the progress of PEP implementation, and are generally ordered by priority:

- Track attendance at training for maintenance/janitorial/grounds staff to be conducted throughout the permit cycle.
- Disseminate awareness materials to the "public" annually in newsletter or on web site.
- Haslett Public Schools will coordinate with the regional watershed permit group's PEP to assess students behavior changes after information dissemination by the watershed group.
- Periodic survey of the various groups comprising the District's definition of “public” including maintenance/janitorial/grounds, administration, and contractors, to assess behavior changes after awareness training/information dissemination; an initial survey will be conducted to establish the baseline level of understanding of the staff in the program.
- Record number of signs installed and installation dates.

POLLUTION PREVENTION/GOOD HOUSEKEEPING PROGRAM

1. INTRODUCTION

Haslett Public Schools facility operations cover a wide variety of activities and land uses that are potential sources of storm water pollutants. These include roadway and parking lot maintenance, transportation and equipment garages, open ditches and storm sewers, turf and landscaping activities, and waste handling and disposal activities. The purpose of a comprehensive pollution prevention and good housekeeping program is to document and evaluate current practices, identify opportunities for improvement, and help effect reduction of pollutants entering the storm water system from improper disposal of wastes, spills, and operations and maintenance activities.

2. PERMIT REQUIREMENTS

The permit requires development, implementation, and compliance with a program of operation and maintenance BMPs with the ultimate goal of preventing or reducing pollutant runoff from operations to the maximum extent practicable. This includes ensuring staff:

- Properly handle wastes, recyclables, chemicals, and equipment used on the job;
- Maintain a clean work area;
- Regularly maintain storm water controls; and,
- Identify and report various storm water pollution sources, including illicit discharges, malfunctioning post-construction controls, and poor soil erosion and sedimentation controls at construction sites.

This requirement must be accomplished by providing staff with:

- Guidance or operation manuals;
- Employee training and testing (once during permit cycle or at time of hiring); and
- Equipment and other resources necessary to prevent and reduce storm water pollution.

The permit requires the development and implementation of BMPs covering structural and administrative storm water controls, roadway construction and maintenance activities, fleet maintenance activities, and, turf management (pesticides and fertilizers).

3. OPERATION AND MAINTENANCE

The following are examples of existing O&M activities in place at Haslett Public Schools, potential BMP modifications to those practices, and prioritized facilities based off potential for pollutants to discharge to surface waters:

A. LAWN CHEMICAL MANAGEMENT - LOW

Lawn care is managed and conducted by Haslett Public Schools. HPS only uses ready-to-use fertilizer products and the staff members that apply the fertilizer are certified applicators through the State of Michigan. Generally, turf management chemicals are only applied to athletic fields, and recently the grass football field was replaced with artificial turf. Haslett Public Schools will follow manufacturer recommendations for application of lawn chemicals, including ensuring the materials are not applied when rain is forecast. In addition, if required, aspects of turf management will be added to the annual grounds and maintenance staff training program.

B. PEST MANAGEMENT - LOW

Haslett Public Schools has an Integrated Pest Management Plan (IPM) required by the Michigan Department of Public Health. Pesticide management is contracted. The IPM will be reviewed with respect to potential impacts on storm water quality. If not specifically covered in the IPM, Haslett Public Schools will ensure the contractor won't apply materials when rain is forecast. Haslett Public Schools will require contractors comply with their pollution prevention BMPs.

C. CATCH BASIN MANAGEMENT - MEDIUM

Currently, silt build-up in catch basins is cleaned out by a contractor on an annual basis regardless of the catch basin fullness. The materials are properly disposed off-site and waste manifests are available upon request. Haslett Public Schools' will follow the EGLE's Catch Basin Cleaning Activities Guidance Document. In addition, an evaluation into retrofitting catch basins with inserts will be made (see Post-Construction Storm Water Runoff Control for further discussion and schedule for implementation).

The catch basin at the bus garage is equipped with an oil/water separator and the water is discharged to the sanitary sewer. The oil/water separator is maintained by Schultz, Inc., which removes material for proper disposal.

Haslett Public Schools will conduct annual inspections of the catch basins at each facility as part of a preventive maintenance program. Haslett Public Schools will utilize the EGLE Catch Basin Cleaning Activities Guidance Document and US EPA Catch Basin Cleaning Fact Sheet for catch basin management activities. More frequent cleaning will be performed at catch basins that are routinely found to be above 40% capacity.

The following table describes the number of various storm water control structures within the District based on site drawings and field observations:

Haslett Facility	CADL/Service Building	High School	Middle School	Murphy	Ralya	Wilkshire	Total
Catch Basins	7	41	12	17	11	22	110
Detention Basins	1	5	0	1	0	0	7
Storm Manholes	6	27	11	14	7	9	74
Roof Drains	3	3	1	3	2	3	15

As Haslett Public Schools conduct dry weather screening and site walkovers, and as facilities and structural storm water controls are added or removed, the inventory of storm water structural controls and storm sewer structure/IDEP figures will be updated. Haslett Public Schools will prioritize the inspection, maintenance, and cleaning of catch basins near fueling areas, detention basins, and areas of siltation.

Long-term operation, maintenance, and runoff control performance standards for water quantity for new structural storm water controls will be taken into consideration with any new construction.

D. ROAD/PARKING LOT MAINTENANCE - MEDIUM

Haslett Public Schools conducts limited maintenance on its roads and parking lots. Parking lot and road sweeping will be conducted on an annual basis by a contractor and sweepings will be disposed of properly. Major reconstruction is contracted out. The CADL and high school parking lots have higher

priority due to the bus fueling operations and increased traffic. All other parking lots have equal priority. The priority level of any newly constructed roads or parking lots will be taken into consideration following their construction.

E. SALT AND SAND/DE-ICING - MEDIUM

Haslett Public Schools stores approximately 2 yards of salt for day use on-site in the Maintenance and Bus Garage Facility during the winter months. Salt for road and parking lot de-icing is obtained from the City of East Lansing. Salt is applied by Haslett Public Schools grounds staff utilizing truck-mounted, calibrated spreaders. Haslett Public Schools will conduct annual calibrations of salt spreading equipment prior to the winter season. Staff and contractors tasked with snow removal and plowing activities will be instructed to stockpile snow on grass-covered areas when possible so that excessive snow melt will be limited to the ground surface. Assessments of the storage and application practices will be made periodically to determine whether reductions in quantities or substitution of materials used, such as pre-wetting material, are feasible, and to assess whether storage practices require corrective actions to prevent spillage from entering the storm system.

F. FLEET MAINTENANCE - LOW

Haslett Public Schools operates a fleet of buses and service vehicles. Vehicle maintenance is contracted off-site, however, quarterly vehicle inspections for leaks will be conducted and promptly repaired. In addition, vehicle headlight maintenance and vehicle washing is conducted in the garage with floor drains that are connected to the sanitary sewer system. See the Maintenance and Bus Garage Facilities SOP for further information and Good Housekeeping procedures.

G. TRASH DUMPSTER MANAGEMENT - LOW

An initial evaluation of solid waste management practices, specifically dumpster handling, including containment or proximity to catch basins, was conducted in 2006. None of the dumpsters in use at Haslett Public Schools are equipped with hydraulic compactors. In addition, the District's cafeteria drains discharge to the sanitary sewer and are generally equipped with grease traps, which are cleaned out periodically by a contractor and the grease removed off-site for disposal. Grease is therefore managed in a manner that does not impact storm water discharge.

HPS Grounds, Maintenance, and Janitorial staff will ensure that dumpster lids are closed and inspect dumpsters annually for rusted areas that would for leakage or exposure to storm water.

H. SWIMMING POOL MAINTENANCE - LOW

Haslett Public Schools operates a swimming pool at the high school that discharges to the Meridian Township sanitary sewer system. Filter backwash is also discharged to the sanitary system.

I. SEPTIC SYSTEM MANAGEMENT - LOW

Haslett Public Schools has no septic systems.

J. FLOOR MAINTENANCE - LOW

Floor scrubber/stripper and carpet cleaning wash water is collected and discharged to the sanitary sewer via janitorial slop sinks.

K. SPORTS FIELD LINE PAINTING EQUIPMENT CLEANING - LOW

The District maintains sports fields and sports field line painting equipment cleaning is conducted. An annual evaluation of the cleaning methods and equipment storage and disposal practices will be made to ensure the discharge is to the sanitary sewer.

L. DETENTION BASINS - MEDIUM

Haslett Public Schools facilities maintenance/grounds staff will conduct annual visual inspections of detention basins for garbage or debris and remove when observed. Maintenance/grounds staff will document the number of trash/debris items recovered, note the presence and/or count the number of wildlife observed (i.e. geese), and note the quality of the water in the detention basin (clarity, presence of algae). The District will also consider planting vegetation that will discourage wildlife from gathering in or near detention basins.

M. TANKS/SECONDARY CONTAINMENT - MEDIUM

Haslett Public Schools will remind employees and fuel delivery contractors to avoid “topping off” vehicle gas tanks when fueling vehicles, to immediately report any spills or evidence of a release to a supervisor, and to have stocked spill kits near all fuel storage/dispensing operations. The District will designate facility maintenance staff to monitor and communicate the fueling procedures to contractors.

4. FACILITY PRIORITY RANKINGS

Haslett Facility	CADL/Service Building	High School	Middle School	Murphy	Ralya	Wilkshire
Priority Rankings	High	Medium	Medium	Low	Low	Low

5. ADDITIONAL BMPS

In addition to implementing improvements to the existing management practices outlined above, consideration will be given to the following BMPs for implementation at Haslett Public Schools:

- Overall District hazardous materials management and spill prevention, including material storage
- Flow diversion installation
- Use of native plants to replace turf grass in selected areas
- Assessing impacts to water quality of new flood management projects (see Post-Construction Run-Off Section)

6. STAFF AND CONTRACTOR TRAINING PROGRAMS

In order to effectively implement improvements to existing operations or implement additional BMPs, specific BMP information is incorporated into the PEP staff training and awareness information dissemination. Haslett Public Schools has an annual training and refresher event for new and existing grounds, maintenance, and janitorial staff in June. Newly hired staff will undergo this training within the first year of employment. An outline of training topics for the maintenance/janitorial/grounds staff is included in Appendix D.

7. IMPLEMENTATION SCHEDULE

Haslett Public Schools will complete the assessment of existing BMPs by the end of the 2024/2025 school year or sooner. BMPs will be ranked by potential for impact to the storm water system. Priority will be given to improving BMPs with the highest potential for improving downstream ambient water quality. Catch basin maintenance procedure modifications will be completed by the end of the 2024/2025 school year. Baseline soil testing for adjustments to fertilizer application will be completed by the end of 2024.

8. EVALUATION/MEASURABLE GOALS

The following measurable goals will be used to assess the progress of Pollution Prevention/Good Housekeeping Program implementation:

- Track the frequency of fertilizer applications and volumes of fertilizer applied to better understand lawn care practices.
- Maintain Certified Applicator licenses on file with HPS and stay current with continuing education and recertification requirements.
- Track the frequency of pesticide applications and request Certified Applicator licenses of contractors.
- Document and track volumes of sediment removed from catch basin and by street sweeping. Attempt to determine the source of the sediment and eliminate erosion by maintaining vegetation cover.
- Document annual calibration of salt spreaders and track salt usage.
- Document annual inspection of dumpsters for lid effectiveness and corrosion to prevent leakage and exposure to storm water.
- Track attendance at training sessions in which grounds, maintenance, and janitorial staff are presented storm water awareness materials, safe storage, use, and disposal of cleaning chemicals, line painting equipment use and cleaning procedures, how to document catch basin cleaning observations during cleaning, and spill reporting requirements.
- Maintenance/grounds staff will document the number of trash/debris items recovered, note the presence and/or count the number of wildlife observed (i.e. geese), and note the quality of the water in the detention basin (clarity, presence of algae).

TMDL IMPLEMENTATION PLAN

Part I.A.4 of the General Permit requires monitoring of the following Total Maximum Daily Loads (TMDLs) and pollutants:

<u>Name of TMDL</u>	<u>Pollutant of Concern</u>
Red Cedar River	<i>E. coli</i>

Water Quality Standard for E. coli:

- Total Body Contact (May 1 - October 31):
Daily Maximum Geometric Mean: 300 E. coli per 100 milliliters (ml)
30-Day Geometric Mean: 130 E. coli per 100 ml
- Partial Body Contact (all year):
Daily Maximum Geometric Mean: 1,000 E. coli per 100 ml

E. COLI

- The District will consider the use of its website to provide the public with information regarding sources of E. coli within the MSR, specifically pet and wildlife waste. Additionally, the District will evaluate current locations of any pet waste awareness signage, dog waste “grab-bag” locations, and popular pet walking paths on District property.
- The District will consider conducting bimonthly inspections of high use parking lot and curb areas and hand clean as needed.
- The District will continue to prohibit, inspect, monitor, and work towards eliminating any illicit discharges; visually inspect storm water structural controls, and remove excessive sediments from removal systems to maintain performance.
- The District will continue to limit its use of fertilizer at all facilities to athletic areas and/or more visible areas designated as “curb appeal”.
- The District will take at least two representative samples of a storm water discharge from at least one outfall from each facility discharging to the Red Cedar river during representative rainfall events (i.e. >0.25” and <1.5”). The sample will be collected within the first 30-45 minutes of the rainfall event to capture the first flush of stormwater runoff. A major discharge point is a pipe or open conveyance measuring 36 inches or more at its widest cross-section. The samples will be analyzed for total E. coli. The monitoring results will be provided in a following Progress Report and posted to the District’s website. These wet-weather monitoring events will be conducted during Year 1 and Year 4 of the permit term.
- To ensure that wet weather screening is completed the following actions will be completed.
 - An annual kick off meeting between Haslett Public Schools and SME will be held to outline permit requirements for the calendar year.
 - Quarterly check-in meetings between Haslett Public Schools and SME will be held to check on progress and ensure permit requirements are on track to be met.
 - SME will work with Mr. Rick Sanchez with Haslett Public Schools to ensure Haslett Public Schools has staff capable of sample collection and has sample containers available.
 - SME will identify a local analytical laboratory to submit the e. coli samples to.

- SME will evaluate the analytical results for BMP effectiveness and share the results with Haslett Public Schools to maintain in their stormwater compliance file. Results will also be included in future progress reports.

The District has identified high priority outfalls as HHS-001, HM-002, WS-001, and the outfall near the CADL/Service Building. The District will utilize EGLE's numerous E. coli TMDL information and guidance document resources to evaluate and monitor for E. coli. The District will identify potential contaminant sources and downstream receptors to determine necessary monitoring parameters and frequency. The District will collect two samples from an outfall at each facility: 1) determine a baseline E. coli level; and 2) determine if any adjustments to BMPs are eliminating or minimizing the E. coli levels. The monitoring results will be provided in a subsequent Progress Report.

PUBLIC PARTICIPATION PROGRAM

1. INTRODUCTION

Haslett Public Schools would prefer to minimize contact with the general public at large, opting to correspond with local government or organizations for select issues that may affect the general public or the local watershed. Haslett Public Schools prefers to communicate using written correspondence, notices, or distribution of plans.

2. PERMIT REQUIREMENTS

The permit encourages public input in all aspects of the storm water management program. Minimum actions required include following public notice requirements, as appropriate, when notifying the public that a storm water management program must be implemented. Haslett Public Schools also intends to notify appropriate local governments surrounding District facilities and local watershed groups of the availability of the plan for review.

The second requirement includes participation in a citizen advisory committee for the purpose of encouraging public involvement in all aspects of the storm water management program. Again, as the storm water management program is a captive program, input from outside Haslett Public Schools will not be required, however, input from Haslett Public Schools management and staff will be encouraged as the program is implemented.

Finally, cooperation with local stream or watershed protection organizations is encouraged. This involvement can include:

- Informing the organizations such as Greater Lansing Regional Committee (GLRC) of activities under the storm water management program;
- Providing copies of the program written Plan and requesting input on the Plan;
- Seeking volunteer assistance including water quality monitoring assistance; and,
- Seeking ways to meet general permit requirements by assisting the local organizations with their ongoing programs for water resource protection and enhancement.

As discussed above, Haslett Public Schools has elected to communicate with the local organizations using written correspondence, notices, or limited distribution of its Storm Water Management Program written plan, or making the plan available for review under controlled conditions.

3. LOCAL GOVERNMENT/WATERSHED GROUP IDENTIFICATION

Haslett Public Schools discharges storm water into several local government systems and watersheds, however, the District believes there is one regional organization submitting a MS4 watershed permit covering all of Haslett Public Schools receiving waters. The local governments and regional watershed permit groups covering the various receiving waters from Haslett Public Schools discharges will be identified. Haslett Public Schools will identify other organizations for each of its facilities, if they are not within the regional watershed permit group program's geographic area.

4. CORRESPONDENCE WITH LOCAL GOVERNMENT/WATERSHED GROUP

Haslett Public Schools intends to prepare a notification letter to submit to the governmental units and regional watershed permit groups identified above outlining the District's efforts in developing and implementing this Plan.

5. NOTIFICATION TO PUBLIC

As outlined in the PEP, Haslett Public Schools will notify students and staff ("the Public") of its SWMP and other educational and awareness materials by hosting the documents on Blackboard and its website (<https://www.haslett.k12.mi.us>). Periodic awareness information will be included in the newsletter or mailed. Haslett Public Schools allows for the submission of questions, comments, or concerns regarding

it's SWMP to be submitted to Mr. Steve Kioski via email or telephone. Mr. Kioski's email address and telephone number are currently, and will continue to be, available on the District's Stormwater Management Plan webpage. The number and content of these submissions will be tracked and documented by Mr. Kioski. Suggestions and other input will continuously be considered to improve the quality and effectiveness of the SWMP. HPS will publish the final SWMP to its website within approximately one month of permit issuance.

6. COOPERATIVE ARRANGEMENT WITH WATERSHED GROUP

Haslett Public Schools will cooperate with the watershed group for facilitating the watershed group's PEP (e.g., Haslett Public Schools will consider providing facilities for outreach meetings to the greater public by the watershed group).

In addition, Haslett Public Schools staff will periodically attend regional watershed permit group meetings to foster cooperation between the District and the group.

7. ADVISORY COMMITTEE

To achieve the requirement for public participation, and given the District's definition of public, Haslett Public Schools will set up an internal committee made up of Facility and Grounds, and an administration representative with involvement in District curriculum. The purpose of the committee will be to provide input into the implementation of the District's Storm Water Management Program.

8. SCHEDULE FOR IMPLEMENTATION/MEASURABLE GOALS

The following measurable goals will be used to assess the progress of BMP implementation:

- Identification will be completed within the first year of the permit cycle
- Notification will be made within the first year of the permit cycle
- Attend at least one regional watershed permit group meeting per year
- Monitor activities of regional watershed permit group via other means (web site/social media)
- Discuss storm water issues at periodic meetings of the Central Michigan School Maintenance Association
- Conduct one internal advisory committee meeting per school year, beginning within the first year of the permit cycle
- HPS will publish the final SWMP to its website within approximately one month of permit issuance. The number and content of questions, concerns, or suggestions will be tracked and documented by Mr. Kioski and will be continuously considered to improve the quality and effectiveness of the SWMP.

CONSTRUCTION STORM WATER RUNOFF CONTROL

1. INTRODUCTION

Polluted storm water from construction sites often flows to MS4s and ultimately is discharged into the receiving waters or drainage systems operated by others. Pollutants commonly discharged from construction sites can include:

- Sediment;
- Solid and sanitary wastes;
- Oil and grease;
- Concrete truck washout;
- Construction chemicals; and
- Construction debris.

Of these, sediment is the main pollutant of concern. Sediment runoff rates from construction sites are generally 10 to 20 times greater than from agricultural lands, and 1,000 times greater than from forest lands. During a short time, therefore, construction sites can contribute more sediment to waters of the state than are deposited naturally over several decades. Typically, pesticides, nitrogen, and phosphorous are not pollutants of concern at construction sites.

2. PERMIT REQUIREMENTS

The Phase II Final Rule and the permit require control of storm water discharges from construction activity that results in land disturbance of greater than or equal to one acre, or disturb less than one acre but is part of a larger common plan of development or sale that would disturb one acre or more. In addition, Michigan's Soil Erosion and Sedimentation Control statute (Part 91 of Act 451 of 1994) prohibits offsite sedimentation for sites less than one acre if located within 500 feet of a wetland, lake or stream.

Construction projects meeting these requirements, therefore, are subject to soil erosion and sedimentation control (SESC) requirements outlined in the State of Michigan's Part 91 rules, including design and implementation of runoff control measures. The construction site developer or Haslett Public Schools must control waste, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. Each construction site must be regularly inspected by a certified storm water operator (CSWO) during construction as required under the State of Michigan's Permit by Rule (Rule 323.2190) to make sure control measures are enforced. Since the District owns the land that any construction activities will take place on, there should not be a need to advise the landowner. However, the District will notify easement holders, if any, of construction activity when the potential of storm water runoff may occur.

3. EXISTING PROGRAM

The District contracts out all construction projects involving earthwork. Currently, SESC permitting and Certified Storm Water Operator (CSWO) monitoring is the responsibility of the construction manager or the earthwork subcontractor. The District's procurement and contractual process requires the retained company to secure necessary approvals and permits, including SESC permits.

4. ADDITIONAL BMPS

Haslett Public Schools will contractually require Construction managers or contractors be responsible for compliance with Michigan's Part 91 SESC requirements and Permit-by-Rule for construction storm water runoff control for construction disturbing more than one acre. The District will also contractually require construction managers and contractors be responsible for compliance with other environmental

regulations and BMPs for construction (e.g., construction debris, concrete truck washout, and hazardous materials management), if not already included in the contract.

As part of the site plan review process, if required, the District's submittal to Meridian Charter Township will ensure erosion controls have been addressed and a soil erosion and sedimentation control plan has been prepared.

Upon the District being made aware of construction contractors or managers not following SESC permitting requirements, or when soil, sediment, or other pollutants are discharged to the MS4 from a construction activity, the District will inform the EGLE.

5. SCHEDULE FOR IMPLEMENTATION/MEASURABLE GOALS

The following measurable goals will be used to assess the progress of BMP implementation:

- Re-evaluate current contract language and implement contractual requirement within the first year of the permit cycle
- Track compliance of contractors to permit-by-rule requirements for construction sites over one acre and other BMPs outlined above when construction projects involving earthwork are conducted while the current permit is in effect

POST CONSTRUCTION STORM WATER RUNOFF CONTROL

1. INTRODUCTION

Post-construction storm water management in areas undergoing new development or reconstruction is necessary because runoff from these areas has been shown to significantly affect receiving waters. There are generally two types of impacts from post-construction runoff. The first is caused by an increase in the type and quantity of pollutants. As runoff flows over areas altered by development, harmful sediment and substances, such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorous), can become suspended and carried to receiving waters.

The second type occurs by increasing the volume of water delivered to receiving waters during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead large volumes of water is collected from surfaces such as roofs, and asphalt or concrete roads/parking lots, is routed to the drainage system, and quickly flows to the nearest receiving water. This may result in stream bank scouring and downstream flooding, impacting aquatic life and property.

2. PERMIT REQUIREMENTS

The permit requires development and implementation of a comprehensive storm water program for new development and redevelopment projects that outlines development, implementation, and enforcement of controls across the entire urbanized area at each facility to protect the designated uses in all receiving waters from the effects of urbanization.

The common effects of urbanization to be considered by the program include:

- Stream "flashiness" (higher peak flow and lower base flow);
- Stream bank erosion;
- Increased stream temperature and pollutant load;
- Reduced stream bank vegetation; and,
- Degraded fish and aquatic habitat.

Haslett Public Schools does not have the authority to enact ordinances requiring post-construction controls for any entities or storm water discharges that may inadvertently discharge to its MS4. And, the District is not subject to local site plan review, nor does it have control over review of site plans for off-site development. The District does, however, have the authority to develop its own site plans for development or redevelopment at the referenced affected complexes subject to this plan.

3. EXISTING SYSTEMS

A. STRUCTURAL CONTROLS

Haslett Public Schools has conducted an evaluation and compiled an inventory of existing structural controls in place and verified the controls are maintained to ensure effectiveness. Where appropriate, significant structural controls will be noted on the system maps prepared for the IDEP. See the structural storm water controls inventory in the IDEP attachment.

B. NON-STRUCTURAL CONTROLS

As part of the Pollution Prevention/Good Housekeeping evaluation, existing non-structural controls will be evaluated and documented.

4. COORDINATION WITH LOCAL OR REGIONAL STORM WATER MASTER PLANS

Haslett Public Schools will compile a list of local or regional watershed master plans associated with each facility. Haslett Public Schools will take into consideration the local or regional storm water master plan when evaluating new BMPs for post-construction flow controls during new development or renovation planning. Haslett Public Schools will attempt to reduce flow and pollutant loading for discharges to receiving waters that are deemed high priority by the local or regional watershed master plan.

5. POST CONSTRUCTION FLOW CONTROLS FOR NEW DEVELOPMENT AND REDEVELOPMENT

Although the District is not subject to local site plan review, for construction or re-development projects disturbing greater than or equal to 1 acre, Haslett Public Schools will evaluate, as part of the site planning process, the implementation of BMPs to comply with the local or regional storm water master plan into whose storm water system the District's storm water is discharged. Where the District's development/re-development project discharges directly into a surface water, Haslett Public Schools will evaluate, as part of the site planning process, the feasibility of implementation of BMPs designed to manage storm water run-off from the affected complexes subject to this plan at volumes no greater than levels discharged prior to development/re-development. Some of the BMPs Haslett Public Schools will consider include, but are not limited to, the following:

STRUCTURAL BMPS

- Dry extended detention ponds
- Infiltration basins/trenches
- Porous pavement (when shown to be effective in cold climates)
- Sand filters/filter strips
- Vegetative practices, such as bioswales and rain gardens
- Catch basin inserts

NON-STRUCTURAL BMPS

- Buffer zones
- Open space design
- Urban forestry
- Green parking
- Alternative pavers

In addition, long term erosion control will be facilitated by properly maintaining existing landscaping to prevent soil erosion.

6. SCHEDULE FOR IMPLEMENTATION/MEASURABLE GOALS

The following measurable goals will be used to assess the progress of BMP implementation:

- Assessment/documentation of existing systems by the end of 2024/2025 school year
- Develop a form to track maintenance of implemented BMPs and to identify/schedule BMPs that may need to be renovated or re-engineered
- Tracking BMPs implemented should new construction or renovation be planned while the current permit is in effect

FIELD OBSERVATION AND SAMPLING REPORT
ILLICIT DISCHARGE ELIMINATION: WET AND DRY WEATHER SCREENING
AND TMDL SAMPLING OF OUTFALLS/POINTS OF DISCHARGE

Facility: _____ Date: _____

Outfall Identification: _____ SME Representative: _____

Please describe the physical features of the outfall: (type, size, construction, materials, condition, etc.)

Is dry weather flow visible: ☐ Yes ☐ No Estimated rate: _____

Estimate the discharge water turbidity: _____

Estimate the standing water turbidity: _____

Describe the discharge water clarity and color: _____

Describe the standing water clarity and color: _____

Are the following present at or near the discharge point:

- Foam ☐ Yes ☐ No ☐ Natural ☐ Soapy
- Oil Sheen ☐ Yes ☐ No Estimate extent: _____
- Trash ☐ Yes ☐ No Describe: _____
- Floatable Materials ☐ Yes ☐ No Describe: _____
- Bacterial Sheen ☐ Yes ☐ No Describe: _____
- Slimes ☐ Yes ☐ No Describe: _____
- Staining on the:
 - Banks ☐ Yes ☐ No Color: _____
 - Outfall Structure ☐ Yes ☐ No Color: _____
 - Vegetation ☐ Yes ☐ No Color: _____
- Excessive Vegetative Growth or different from surrounding area ☐ Yes ☐ No
- Odors ☐ Yes ☐ No Describe: _____

If an illicit connection is suspected, describe: _____

Note which TMDL parameters sampled for:

- E. coli ☐ Yes ☐ No
 - Sample ID, date, and time: _____
- Sedimentation, siltation, biota ☐ Yes ☐ No
 - Sample ID, date, and time: _____

Conclusion, additional comments, or follow-up items:

FIELD OBSERVATION AND SAMPLING REPORT
ILLICIT DISCHARGE ELIMINATION: WET AND DRY WEATHER SCREENING
AND TMDL SAMPLING OF OUTFALLS/POINTS OF DISCHARGE

Facility: _____ Date: _____

Outfall Identification: _____ SME Representative: _____

Please describe the physical features of the outfall: (type, size, construction, materials, condition, etc.)

Is dry weather flow visible: ☐ Yes ☐ No Estimated rate: _____

Estimate the discharge water turbidity: _____

Estimate the standing water turbidity: _____

Describe the discharge water clarity and color: _____

Describe the standing water clarity and color: _____

Are the following present at or near the discharge point:

- Foam ☐ Yes ☐ No ☐ Natural ☐ Soapy
- Oil Sheen ☐ Yes ☐ No Estimate extent: _____
- Trash ☐ Yes ☐ No Describe: _____
- Floatable Materials ☐ Yes ☐ No Describe: _____
- Bacterial Sheen ☐ Yes ☐ No Describe: _____
- Slimes ☐ Yes ☐ No Describe: _____
- Staining on the:
 - Banks ☐ Yes ☐ No Color: _____
 - Outfall Structure ☐ Yes ☐ No Color: _____
 - Vegetation ☐ Yes ☐ No Color: _____
- Excessive Vegetative Growth or different from surrounding area ☐ Yes ☐ No
- Odors ☐ Yes ☐ No Describe: _____

If an illicit connection is suspected, describe: _____

Note which TMDL parameters sampled for:

- E. coli ☐ Yes ☐ No
 - Sample ID, date, and time: _____
- Sedimentation, siltation, biota ☐ Yes ☐ No
 - Sample ID, date, and time: _____

Conclusion, additional comments, or follow-up items:

Haslett Public Schools
Field Manual for
Ammonia and Detergent Sampling

Ammonia Sampling

HACH Chemical Company ammonia testing field kit can be purchased for \$58.30 from the HACH Chemical Company at 800 227 4224 (100 samples). The kit identification number is 2428700. The test measures nitrogen ammonia at the concentration range of 0 to 2.5 mg/l. The test uses the method of matching the water sample color with a color wheel to determine the concentration of ammonia. The water sample color is developed through a chemical reaction by the addition of ammonia salicylate with ammonia cyanurate. The color change is proportional to the concentration.

The chemicals added are preloaded powder pillows that are opened in the field and added to the water sample for color development. The color wheel has a stand that allows the water sample to be next to the color wheel for matching color purposes. The concentration of ammonia is read off the color wheel/sample match point.

Procedure

1. Rinse the two glass sample tubes with the water to be tested and fill to the 5-ml mark with the water sample.
2. Use the clippers to open an Ammonia Salicylate Reagent Powder Pillow. Add the contents of the pillow to the sample in one of the tubes, cap the tube and shake until all the powder is dissolved. Wait three (3) minutes.
3. Add the contents of one Ammonia Cyanurate Reagent Powder Pillow to the tube containing the salicylate-treated sample. Recap the tube and shake until all the powder is dissolved. Allow at least 15 minutes for the color to develop fully. The color is stable for several hours if the tube is kept capped.
4. Clean the outsides of both tubes with a dry cloth or tissue.
5. Insert the color-developer into the right-hand opening of the color comparator.
6. Hold the comparator up to a light such as the sky, window or lamp and view through the two openings in the front. Rotate the disc until a color match is obtained.
7. Read and record the concentration of ammonia nitrogen in mg/l through the scale window.

Haslett Public Schools
Field Manual for
Ammonia and Detergent Sampling

Detergents Sampling
LAS/ABS

HACH Chemical Company detergent testing field kit can be purchased for \$197.70 from the HACH Chemical Company at 800 227 4224 (32 samples). The kit identification number is 143203. The test is similar to the ammonia test in that a color development of the water sample is compared to a color wheel for the determination of concentration.

Procedure

1. Fill one of the test tubes to the upper mark (20 ml) with the water to be tested.
2. Add 12 drops of Detergent Test solution and shake to mix.
3. Add chloroform to the lowest mark (5 ml) on the test tube. Stopper, shake vigorously for 30 seconds and allow to stand for one minute to allow chloroform to separate.
4. Using the draw-off pipet, remove only the water from the tube and discard.
5. Refill the test tube to the upper mark with the Wash Water Buffer and, using the draw-off pipet, remove only the Wash Buffer and discard. This step washes away the remaining water sample.
6. Refill the test tube to the upper mark with the Wash Water Buffer, stopper and shake vigorously for 30 seconds. Allow to stand for one minute to allow the chloroform to separate.
7. Insert the test tube containing the prepared sample in the right opening of the color comparator.
8. Fill the other test tube with demineralized water and place it in the left opening of the comparator.
9. Hold the comparator up to the light, such as the sky, a window or a lamp, and view through the two openings in the front. Rotate the Detergents Color Disc until a color match is obtained. Read and record the ppm Detergents (LAS and or ABS) from the scale window.
10. If the color is darker on the highest reading on the color disc, the original sample may be diluted 20 to 1 by adding 1 ml of the sample to the test tube and filling the test tube to the upper mark (20 ml) with demineralized water. Repeat Steps 2 through 9 and multiply the results by 20. Note that if the water sample is turbid, it must be filtered after Step 6 using glass wool which is included in the kit.

HASLETT PUBLIC SCHOOLS STANDARD OPERATING GUIDELINE

TRACER DYE TESTING OF STORM SEWERS FOR ILLICIT CONNECTIONS

ACTIVITY DESCRIPTION

Tracer dye testing may be used as part of the Illicit Discharge Elimination Program to evaluate identified potential illicit connections. Dye testing may also be used as an aid in mapping storm sewers at complicated sites.

OBJECTIVE

The main objective of tracer dye testing is to evaluate previously identified potential illicit connections to a storm sewer system. A secondary objective of dye testing may be as an aid in mapping storm sewers at a complicated site.

Note: The Michigan Department of Environmental Quality, Water Bureau requires permission to conduct tracer dye testing and a minimum 24 hours notice prior commencement of dye testing.

PREPARATION

Preparation for tracer dye testing is necessary prior to mobilization. The sewers must be mapped and the suspected cross connection locations noted. The MDEQ, Water Bureau and local health departments must be notified 24 hours in advance of field services. Please take into consideration that an application/permit is required from the MDEQ Water Bureau prior to dye testing activities. Check with the local Health Department, township or county offices for additionally required applications/permits depending on the requirements of each jurisdiction.

EQUIPMENT LIST

- _____ Field notebook, Waterproof pen
- _____ Tool Kit, including manhole cover puller
- _____ Fluorometric Dye
- _____ Garden hose and water supply
- _____ Water tank with uncontaminated water, if necessary
- _____ Bright light for viewing sewer bottoms
- _____ GPS unit
- _____ Two way radios (enough for all members of the observation team)
- _____ 100 ft. tape measure

PROCEDURES

Dye Placement Procedures

The next sections describe tracer dye testing procedures for evaluating an identified possible cross connection.

Flowing Water from the suspected illicit connection:

This section describes the dye testing procedures when water is flowing from the suspected illicit connection and an additional water source is not required.

1. Locate and open the suspected illicit connection, open the storm sewer viewing areas (man holes) at the points nearest the suspected illicit connection, record all the observation locations and observations made, and record the dye injection point. Record field data specific to the project (i.e. date, project name and number, location identification, sewer diameters and material) in the field note book.
2. Estimate the rate of flow in the suspected illicit connection.
3. Calculate dose of dye needed to be visible at furthest observation point.
4. Position all observers and make sure communication is operational.
5. Release the dye as a single slug at the suspected illicit connection point.
6. Monitor the observation locations for a minimum of twice the time estimated for the dye to reach the furthest observation point.
7. Record the approximate quantity of dye used for the slug.
8. Record whether dye was observed at the observation points.

No Flow in the Suspected Illicit Connection but the Storm Sewer has flow:

This section describes tracer dye testing procedures with no flow in the suspected illicit connection, which will require the addition of water and flow. Please note that if there is no flow in either system the dye will not be required on the input of fresh water.

1. Locate and open the suspected illicit connection, open the storm sewer viewing areas (man holes) at the points nearest the suspected illicit connection, record all the observation locations and observations made, and record the dye injection point. Record field data specific to the project (i.e. date, project name and number, location identification, sewer diameters and material) in the field note book.
2. Calculate the volume of water necessary to create flow in the system.
3. Calculate dose of dye needed to be visible at furthest observation point.
4. Position all observers and make sure communication is operational.
5. Set up and begin addition of water to create flow.
6. Release the dye as a single slug at the suspected illicit connection point.

7. Record the approximate quantity of dye used for the slug.
8. Monitor the observation locations for a minimum of twice the time estimated for the dye to reach the furthest observation point.
9. Record whether dye was observed at the observation points.
10. Record the volume of water used to in the process of dye testing.

Mapping Complicated Storm Sewers Procedures

In this case the SME team will be in the field testing and observing only the storm sewer. This testing is best done during the wet season at a time when moderate flow is available.

1. Locate and open the storm sewer upstream dye injection point, open the storm sewer downstream observation points (man holes) at points nearest the injection point, record all the observation locations and observations made, and record the dye injection point. Record field data specific to the project (i.e. date, project name and number, location identification, sewer diameters and material) in the field note book.
2. Estimate the flow in the sewer at the time of testing or calculate the volume of water necessary to create flow in the system.
3. Calculate dose of dye needed to be visible at furthest observation point.
4. Position all observers and make sure communication is operational.
5. Set up and begin addition of water to create flow if necessary.
6. Release the dye as a single slug at the point where mapping is necessary.
7. Record the approximate quantity of dye used for the slug.
8. Monitor the observation locations for a minimum of twice the time estimated for the dye to reach the furthest observation point.
9. Record whether dye was observed at the observation points.
10. Record the volume of water used to in the process of dye testing.

Note: The dye slug should not exceed approximately 2 ounces of dye without prior calculations in a sewer system indicating high flow.

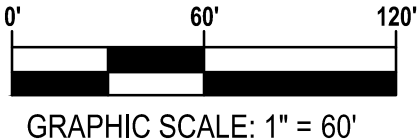
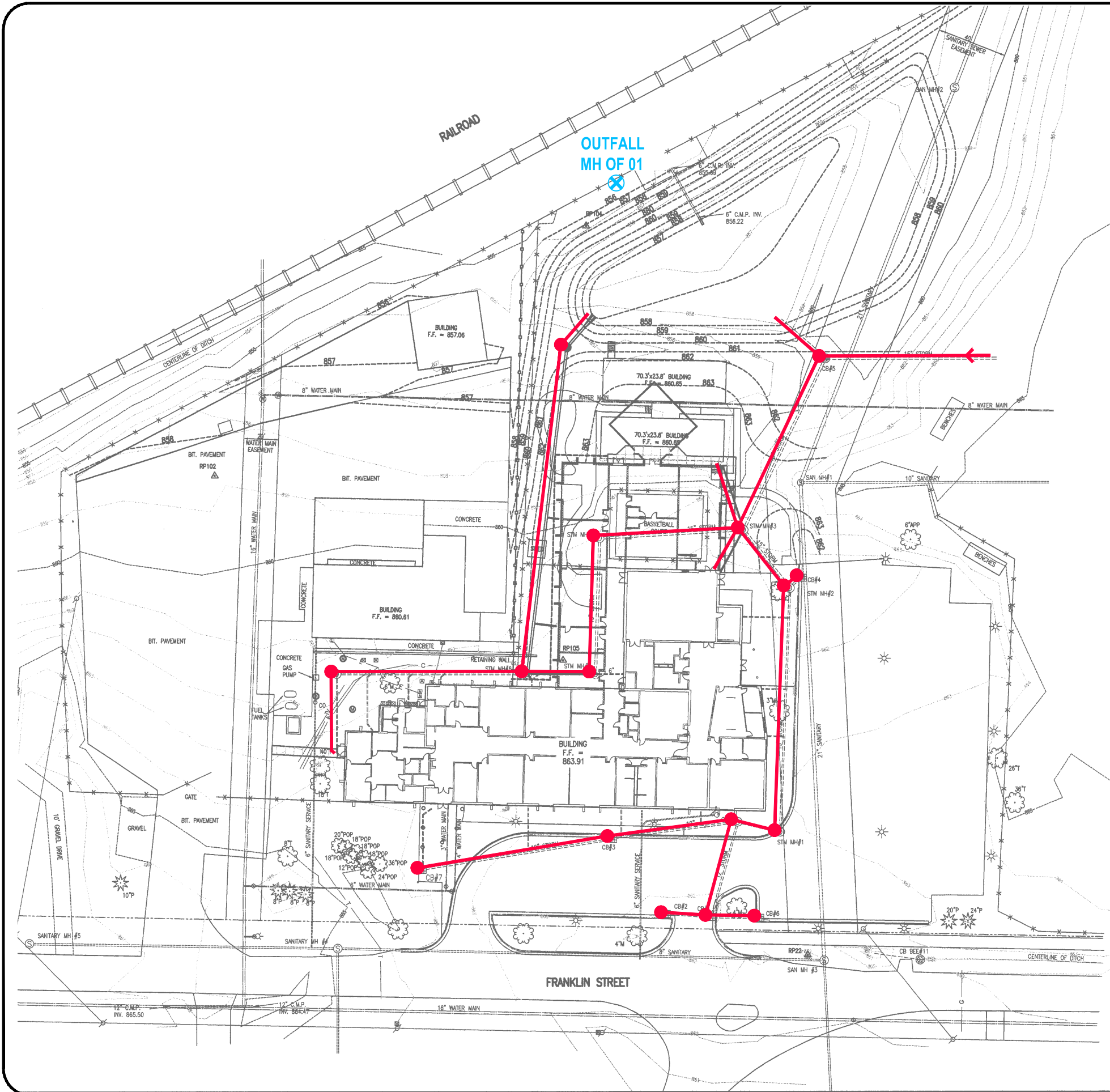
REFERENCES

Jacques Whitford Environment Limited and Natech Environmental Services, Inc.
Revised Technical Guidance on How to Conduct Effluent Plume Delineation Studies,
National Environmental Effects Monitoring Office, National Water Research Institute,
Environment Canada

HEALTH AND SAFETY

THE HEALTH AND SAFETY CHECKLIST (HASCL) OR SITE SPECIFIC HEALTH AND SAFETY PLAN (HASP) FOR THE PROJECT SHOULD BE REVIEWED PRIOR TO PERFORMING FIELD ACTIVITIES. APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AND FIRST AID SUPPLIES SHOULD BE TAKEN INTO THE FIELD, AS SPECIFIED IN THE HASCL OR HASP, AND USED AS APPROPRIATE. IF A HASCL OR HASP HAS NOT BEEN SUPPLIED, CONSULT THE PERSON-IN-RESPONSIBLE CHARGE.

Mar 24, 2017 - 3:18pm - MANDRILA FILE LOCATION: \\sme-inc\p2\WIP\075921.00\CADD\DWGS\rev\075921.00-Haslett Community Education Center-Figure1.dwg PLOT DATE:



LEGEND

- ⊗ OUTFALL
- STORM SEWER STRUCTURE
- STORM SEWER PIPE

NOTE:
DRAWING INFORMATION TAKEN FROM
PROPOSED SITE PLAN BY TMP
ARCHITECTURE, DATED 3-31-03



www.sme-usa.com

Project
**CAPITAL AREA
DISTRICT LIBRARY
HASLETT/SERVICE
BUILDING**

Project Location
**HASLETT,
MI 48840**

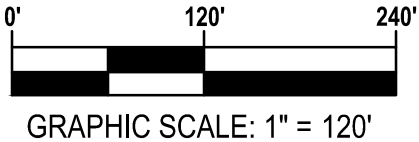
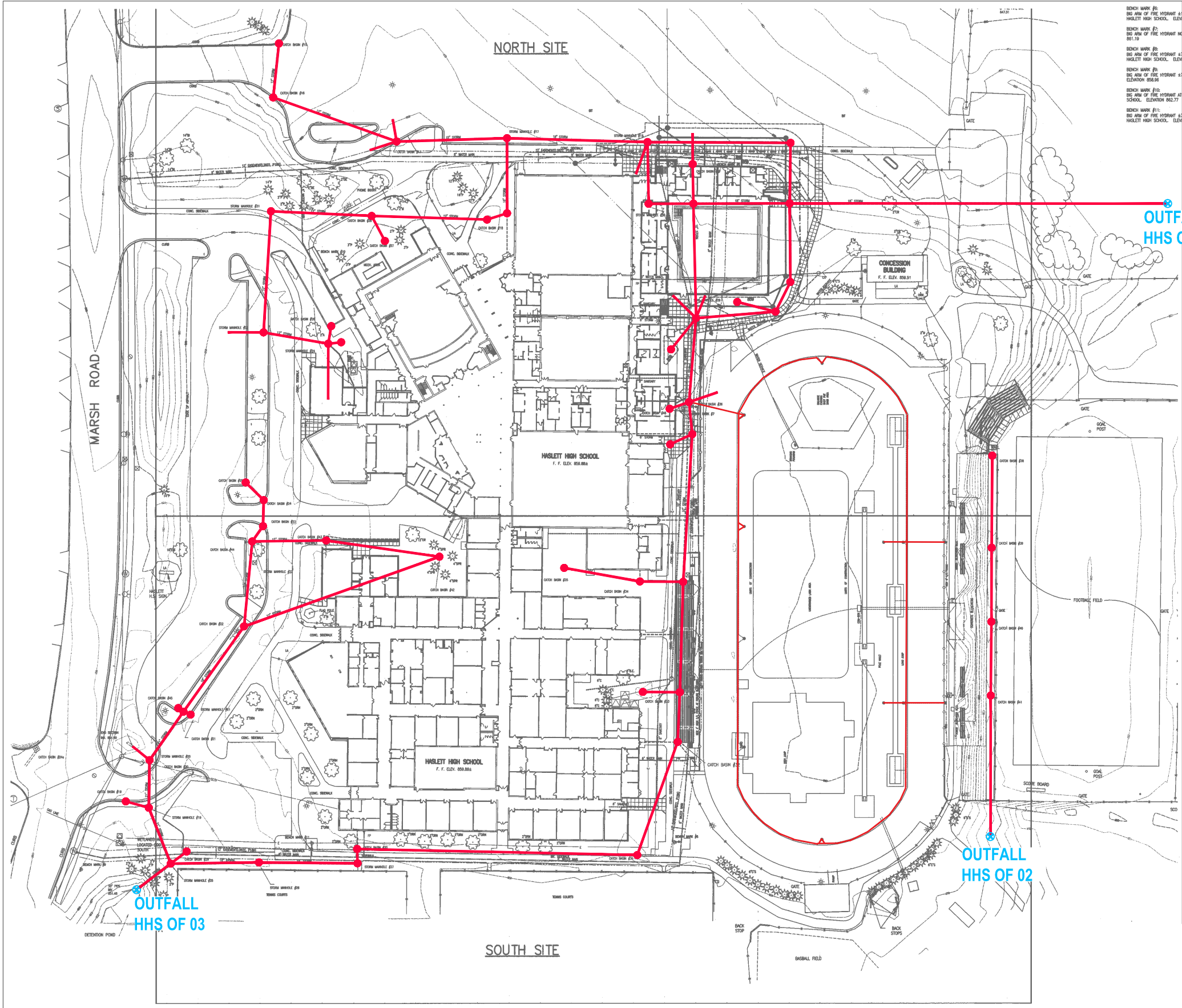
Sheet Name
**STORM SEWER
OUTFALL DIAGRAM**

No.	Revision Date

Date	03-24-17
CADD	GM
Designer	PAG
Scale	1" = 60'
Project	075921.00
Figure No.	1

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR 11" X 17"
AND WILL SCALE INCORRECTLY IF PRINTED ON ANY
OTHER SIZE MEDIA
NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR
CONSENT OF SME
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Mar 24, 2017 - 1:10pm - MANDRILA FILE LOCATION: \\sme-inc\pz\WIP\075921.00\CADD\DWGS\rev\075921.00-Haslett High School-1-Figure2.dwg PLOT DATE:



LEGEND

- ⊗ OUTFALL
- STORM SEWER STRUCTURE
- STORM SEWER PIPE

NOTE:
DRAWING INFORMATION TAKEN FROM
PROPOSED SITE PLAN BY TMP
ARCHITECTURE, DATED 3-31-03



www.sme-usa.com

Project
**HASLETT
HIGH SCHOOL
5450 MARSH ROAD**

Project Location

**HASLETT,
MI 48840**

Sheet Name

**STORM SEWER
OUTFALL DIAGRAM**

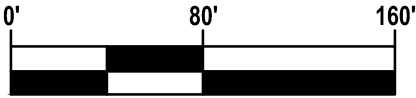
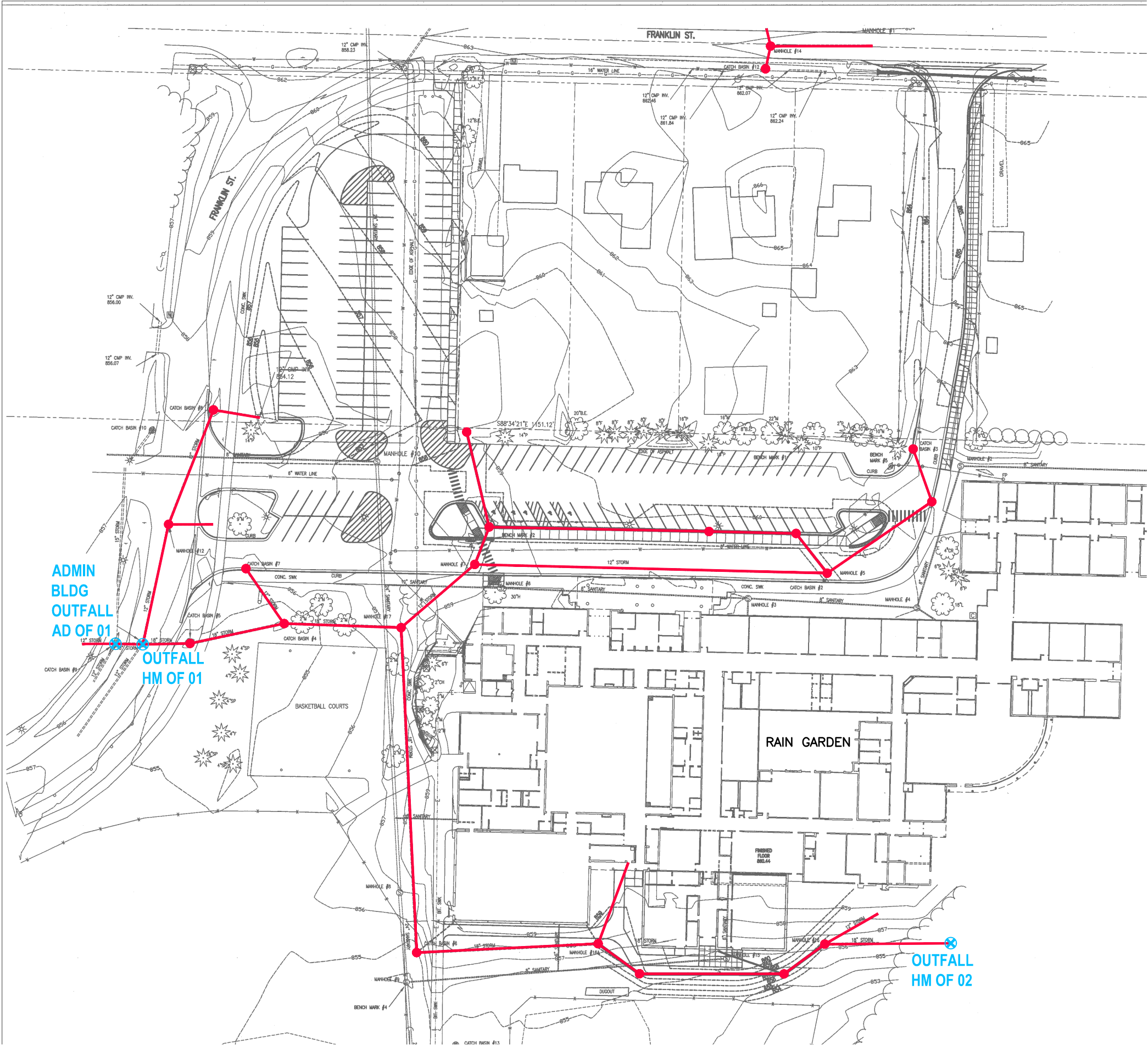
No.	Revision Date

Date	03-24-17
CADD	GM
Designer	PAG
Scale	1" = 120'
Project	075921.00
Figure No.	2

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PLOT DATE:



GRAPHIC SCALE: 1" = 80'

LEGEND

- ⊗ OUTFALL
- STORM SEWER STRUCTURE
- STORM SEWER PIPE

NOTE:
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PROPOSED SITE PLAN BY TMP
ARCHITECTURE, DATED 3-31-03



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Project

**HASLETT
MIDDLE SCHOOL
1535 FRANKLIN
STREET**

Project Location

**HASLETT,
MI 48840**

Sheet Name

**STORM SEWER
OUTFALL DIAGRAM**

No.	Revision Date

Date **03-24-17**

CADD **GM**

Designer **PAG**

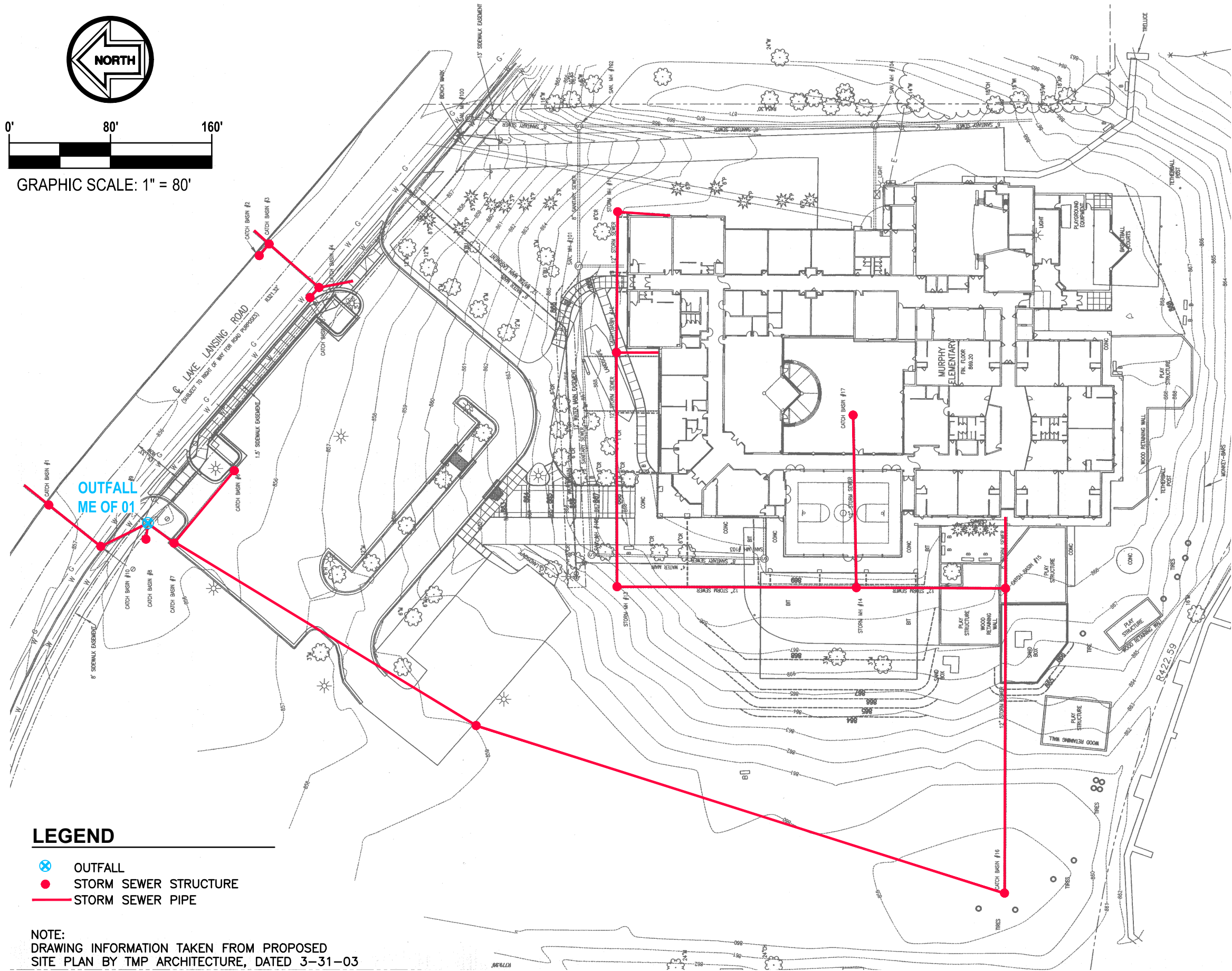
Scale **1" = 80'**

Project **075921.00**

Figure No.
3

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LEGEND

- ⊗ OUTFALL
- STORM SEWER STRUCTURE
- STORM SEWER PIPE

NOTE:
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Project

**MURPHY
ELEMENTARY
SCHOOL
1875 LAKE LANSING**

Project Location

**HASLETT,
MI 48840**

Sheet Name

**STORM SEWER
OUTFALL DIAGRAM**

No.	Revision Date

Date **03-24-17**

CADD **GM**

Designer **PAG**

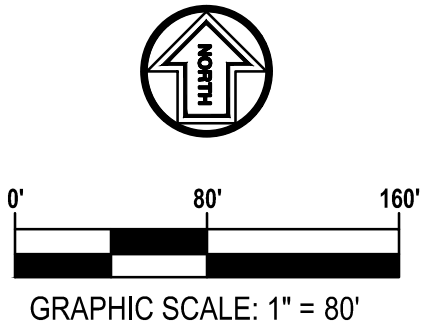
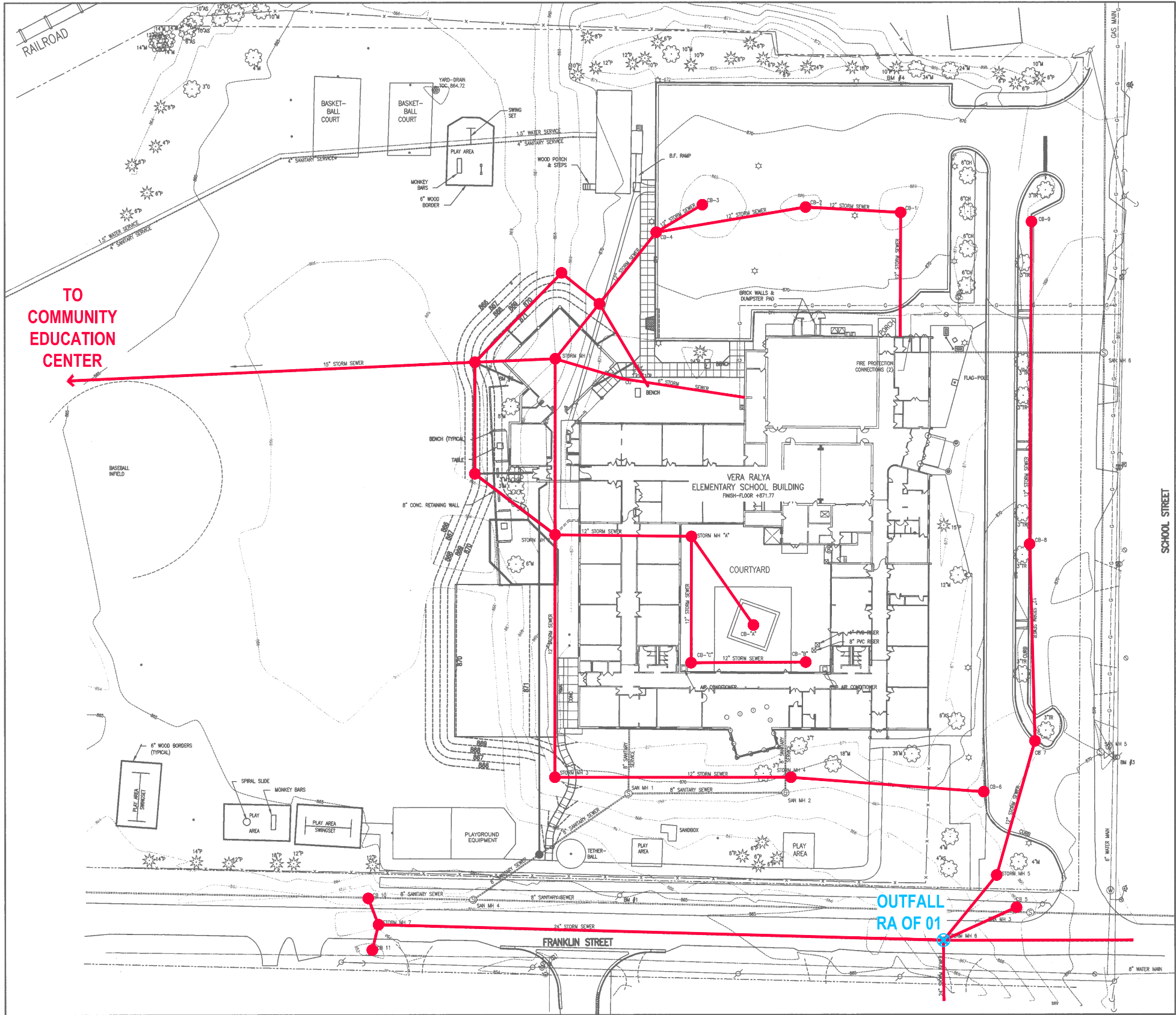
Scale **1" = 80'**

Project **075921.00**

Figure No. **4**

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LEGEND

- ⊗ OUTFALL
- STORM SEWER STRUCTURE
- STORM SEWER PIPE

NOTE:
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Project

**RALYA
ELEMENTARY
SCHOOL
5645 SCHOOL
STREET**

Project Location

**HASLETT,
MI 48840**

Sheet Name

**STORM SEWER
OUTFALL DIAGRAM**

No.	Revision Date

Date **03-24-17**

CADD **GM**

Designer **PAG**

Scale **1" = 80'**

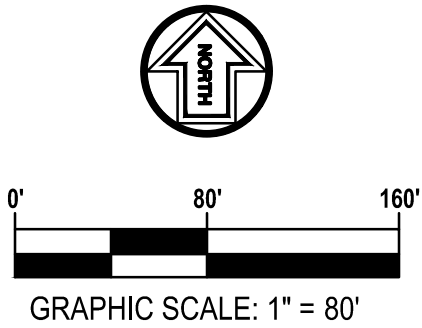
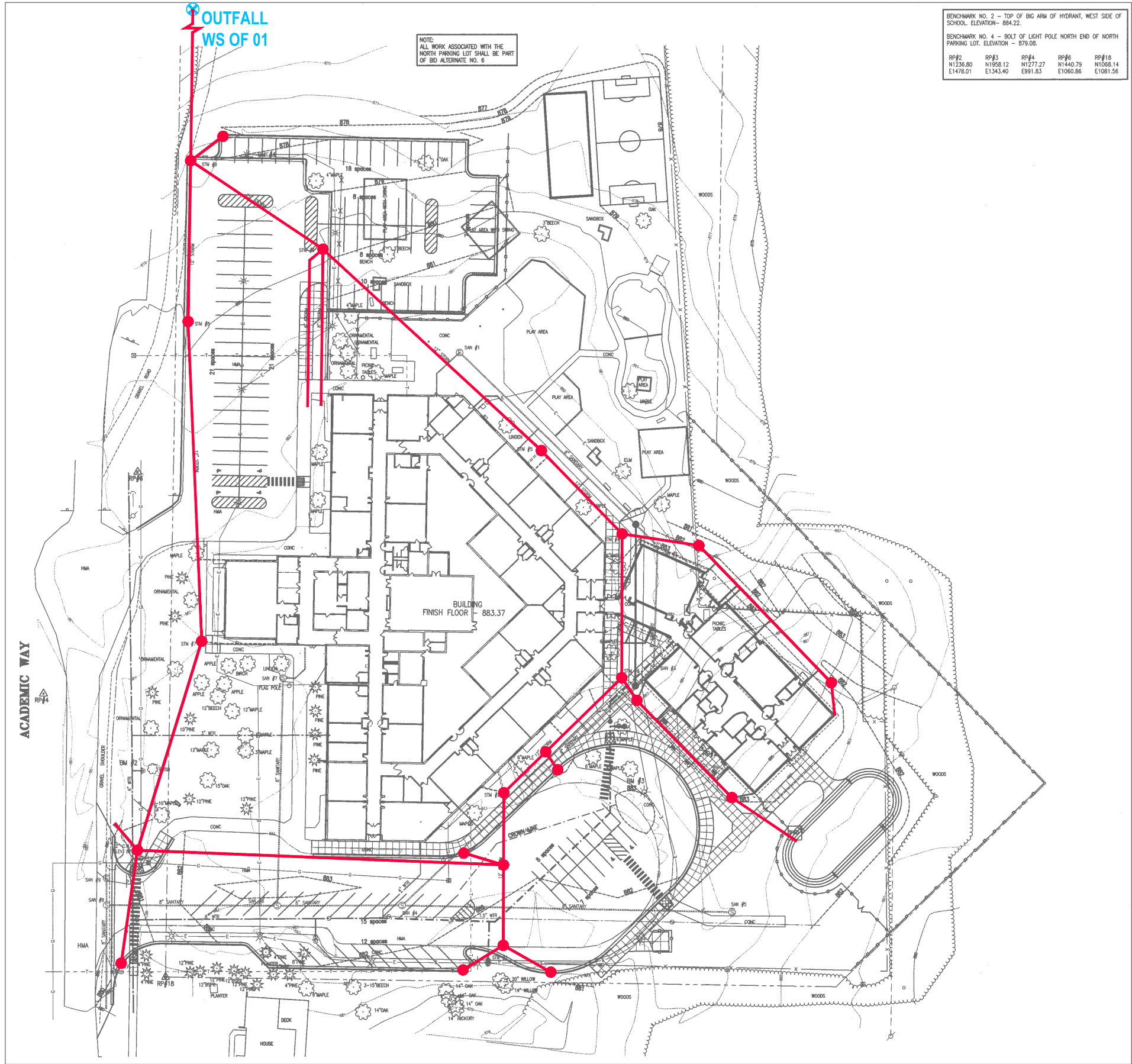
Project **075921.00**

Figure No. **5**

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LEGEND

- ⊗ OUTFALL
- STORM SEWER STRUCTURE
- STORM SEWER PIPE

NOTE:
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Project

**WILKSHIRE
ELEMENTARY
SCHOOL
5750 ACADEMIC
WAY**

Project Location

**HASLETT,
MI 48840**

Sheet Name

**STORM SEWER
OUTFALL DIAGRAM**

No.	Revision Date

Date **03-24-17**

CADD **GM**

Designer **PAG**

Scale **1" = 80'**

Project **075921.00**

Figure No. **6**

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