Excavation Work Plan

BelGioioso Cheese, Inc.
Glenville Business & Technology Park

NYSDEC Site No. 447023

CHA Project Number: 34604

Prepared for:

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LIST OF ACRONYMS & ABBREVIATIONS

1,1,1-TCA	Trichloroethane
AECOM	AECOM Technical Services
AMC	Army Material Command
AMSL	Above Mean Sea Level
Belgioioso	Belgioioso Cheese, Inc.
BGS	Below Ground Surface
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
CDEC	Consolidated Diesel Electric Company
CHA	CHA Consulting, Inc.
CY	Cubic Yards
DER	Division of Remediation
ELAP	Environmental Laboratory Approval Program
ESCs	Erosion and Sediment Controls
EWP	Excavation Work Plan
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GSA	General Services Administration
HASP	Health and Safety Plan
NOI	Notice of Intent
NYCRR	New York Code Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyl's
PCE	Tetrachloroethene
PID	Photoionization Detector
PFAS	Per- and Polyfluoroalkyl Substances
PPM	Parts per Million
PRB	Permeable Reactive Barrier
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SCOs	Soil Cleanup Objectives
SMP	Site Management Plan
SOPs	Standard Operating Procedures
SPDES	State Pollution Discharge Elimination System
SVOC	Semi-volatile Organic Compounds
SWPPP	Stormwater Pollution Prevention Plan
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
USACE	United States Army Corps of Engineers
USEPA	United Stated Environmental Protection Agency

LIST OF ACRONYMS & ABBREVIATIONS
(CONT.)

VOC	Volatile Organic Compounds
ZVI	Zero-Valent Iron

1.0 INTRODUCTION

The proposed BelGioioso Cheese, Inc. (BelGioioso) facility (Site) is part of the Glenville Business and Technology Park located at 2165 Amsterdam Road, in the Town of Glenville, New York. The Site was historically part of the Scotia Depot (Depot), commissioned as a United States Navy facility, and served as a storage and supply depot for naval forces along the Atlantic Coast and Europe, and as a storage and distribution point for National Stockpile materials. The entire former Depot property is currently listed in the New York State Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 447023, which is administered by the New York State Department of Environmental Conservation (NYSDEC). The Site consists of approximately 40.4-acres of the former Depot. A more comprehensive Site history is provided in Section 2.0 below, Figure 1 shows the Site location, and Figure 2 shows the boundaries of the Depot and Site.

1.1 PURPOSE

This Excavation Work Plan (EWP) was prepared to address the management of soils to be excavated during site redevelopment. This document was prepared specifically to address the management of Site soil during the construction of the BelGioioso facility.

This EWP has been divided into five (5) major sections, including:

Section 1: Summarizes the purpose of the EWP, provides anticipated scope of construction, and NYSDEC requirements.

Section 2: Provides the Site background, description and physical setting, and summarizes investigations and remedial actions previously completed at the Site.

Section 3: Excavation Work Plan (for all intrusive Site activities), provides site controls, soil management requirements, stockpiling methods, materials handling, imported material management, and fluids management.

Section 4: Health and Safety Plan requirements (minimum requirements).

Section 5: Summarizes reporting and scheduling requirements.

1.2 SCOPE OF WORK

While detailed Site design plans have been prepared, ground-intrusive activities are currently expected to include the following types of activities:

- Excavations for foundation systems.

- Excavation for subsurface utility installation.
- Cutting and filling activities to grade the Site to support the development.
- Placement and grading of spoils on the Site.
- Off-Site disposal of grossly-impacted media, if necessary.

A copy of the draft Site plans are included in Appendix A.

1.3 NOTIFICATION REQUIREMENTS

Per the requirements in the NYSDEC approved Site Management Plan (SMP) prepared by AECOM Technical Services (AECOM) in October 2017, the Site Owner or Owner's Representative will notify the NYSDEC prior to the start of any soil disturbance activity. Table 1-2 in the SMP provides a complete listing of Site-related contact information, however, at a minimum the contacts from Table 1, below, will be notified.

Table 1. Site Contact List

NAME	TITLE	TELEPHONE NUMBER	EMAIL ADDRESS
Kyle Forster	NYSDEC Project Manager	518-402-8644	kyle.forster@dec.ny.gov
Richard Mustico	NYSDEC Region 4	518-357-2273	richard.mustico@dec.ny.gov
Kelly Lewandowski	Site control	518-402-9553	kelly.lewandowski@dec.ny.gov
Gregory J. Goepfert	USACE Project Manager	917-790-8235	gregory.j.goepfert@usace.army.mil
David C. Baker	GSA Project Manager	212-577-7920	david.baker@gsa.gov
Timothy Cronin	BelGioioso General Manager	518-374-5064	timothy.cronin@belgioioso.com
Keith Cowan	CHA Project Manager	518-453-2899	kcowan@chacompanies.com
Will Pierce	CHA Environmental Site Representative	518-453-8736	wpierce@chacompanies.com

In the event of any environmentally related issue or unplanned occurrence requiring assistance, the Owner or Owner's Representative(s) should contact the appropriate party from the contact list in Table 2, below. For emergencies, appropriate emergency response personnel should be contacted.

The emergency contact list must be maintained in an easily accessible location at the Site. Prompt contact should also be made to CHA Consulting, Inc. (CHA), Belgioioso, and the NYSDEC at the numbers in Table 1.

Table 2. Emergency Contact List

PERSONNEL	CONTACT INFORMATION
Medical, Fire & Police	911
NYSDEC Spills Hotline	(800) 457-7362
National Response Center (for Pollution Toxic Chemical Oil Spills)	(800) 424-8802
Poison Control Center	(800) 222-1222
Dig Safely New York – Utility Clearance (3-day notice required for utility mark-out)	(800) 962-7962 or 811

Note: Contact numbers are subject to change and should be updated as necessary.

2.0 SITE HISTORY AND DESCRIPTION

2.1 SITE HISTORY

The Site is located on a portion of the former Scotia Depot, a 337-acre parcel that served as a storage and supply depot for naval forces along the Atlantic coast and Europe and a storage and distribution point for National Stockpile materials. The Depot stored items such as boilers, turbines, and reduction gears and housed the Navy's Landing craft Maintenance and Battle Damage Program, and the Navy's Automotive Handling Equipment Spare Parts Program. In 1960 the property was turned over to the General Services Administration (GSA) at which time buildings were leased to the United States Army Corps of Engineers (USACE) Army Material Command (AMC) and their contractor, Consolidated Diesel Electric Company (CDEC). The USACE AMC and CDEC utilized the buildings for the fabrication and storage of vehicles and military equipment, open surface dip tank operations, and the preservation, storage and rail loading of trucks.

In the late 1980s, trichloroethene (TCE) was detected in low concentrations in the drinking water well fields in the nearby Town of Rotterdam and City of Schenectady. The New York State Department of Health (NYSDOH) performed sampling of the residents' private water supply wells located hydraulically downgradient of the Depot and observed levels of TCE, 1,1,1-trichloroethane (1,1,1-TCA), and tetrachloroethene (PCE) at detections consistent with those at the Depot.

The NYSDEC approved a Record of Decision (ROD) in March 2010 required a remedy that addresses groundwater contamination at the Depot through the installation of an in-situ permeable reactive barrier (PRB). The PRB was installed through direct injection of zero-valent iron (ZVI) to reduce the mass of on-Site contamination via abiotic degradation and reduce migration of contaminated groundwater off-Site.

2.2 SITE DESCRIPTION AND PHYSICAL SETTING

The Site encompasses approximately 40.4-acres of the Glenville Business & Technology Park, located in the Town of Glenville, Schenectady County, New York. The Mohawk River is located approximately 2,000-feet west-southwest of the Site. The existing Site is predominantly covered with impervious features interspersed with areas of open meadow.

2.2.1 Topographic Mapping

The Site is relatively flat, with a low-lying area located along the northern Site boundary adjacent to the railroad tracks at an average of 293 feet above mean sea level (AMSL), and a high point located near the center of the proposed development, an average 296 feet AMSL. These conclusions are based upon available survey mapping of the Site.

2.2.2 Floodplain Mapping

A review of the *Flood Insurance rate Map* (FIRM) developed for the Site (Community Panels 36093C0153D and 36093C0151D) by the Federal Emergency Management Agency (FEMA), indicate that the Site is located in Zone X. This zone is considered to be a minimal risk area outside the 1-percent and 0.2-percent-annual-chance floodplains.

2.2.3 Site Geology and Hydrology

Information provided in the SMP indicates that the ZVI PRB is installed within the Great Flats Aquifer system, the thickest portion of which is near the Site where sand and gravel deposits are approximately 200 feet thick. The unconsolidated deposits beneath the Site include ice-proximal end moraine and esker gravel units, varying in thickness, and overlie basal till. Groundwater is typically encountered at a depth of 65-feet below ground surface (bgs) and typically flows to the west-southwest towards the Mohawk River.

2.3 HISTORICAL REPORTS

The NYSDEC approved the SMP in November 2017 in accordance with the NYDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10). In summary, the SMP includes the following information for the Site:

- Institutional and Engineering Control Plan
- Monitoring and Sampling Plan
- Operation and Maintenance Plan
- Periodic Assessments/Evaluations
- Reporting Requirements

3.0 EXCAVATION WORK PLAN

As previously indicated, the Site contains potential contamination left after the completion of the installation of the ZVI PRB remedial action. This EWP will be implemented for all intrusive activities at the Site which involve potential exposure to existing Site soils. Specifically, all activities that involve intrusive activities beneath the surface of the Site will necessitate the implementation of this EWP as well as the implementation of the Community Air Monitoring Plan (CAMP) which is attached in Appendix B.

The objective of this EWP is to set guidelines for the management of soil, groundwater, and air quality during construction activities at the Site associated with the redevelopment.

3.1 SUMMARY OF MAJOR WORK TASKS ADDRESSED BY THIS PLAN

The major work tasks addressed by this EWP include; site preparation and foundation demolition, utility trenching and foundation installation, excavation and relocation of arsenic-impacted Site soil, and stormwater control measure installation. Current Site design plans are included as Appendix A of this EWP. Based on the current development, none of the existing monitoring wells are anticipated to be impacted by the proposed development. If any monitoring wells are identified during construction that may be impacted, the NYSDEC will be informed immediately. Additionally, the monitoring well(s) will either be abandoned in accordance with NYSDEC CP-43, or the monitoring well(s) will be protected if it is determined to be outside of the building footprint. All monitoring wells within the current monitoring program governed by the SMP will be protected during construction.

3.1.1 Site Preparation & Foundation Demolition

As part of the initial redevelopment of the Site, the existing foundations may be cut, drilled, and/or removed to facilitate the proposed new construction. The Site will also be re-graded in preparation of the redevelopment work.

3.1.2 Utility Trenching & Foundation Installation

During the redevelopment of the Site, utilities will be installed including electric, water, natural gas, storm/sanitary sewers, etc. Clean corridors as described in the following sections will be installed for the placement of all utilities.

3.1.3 Permanent Stormwater Control Measures Installation

During the Site redevelopment activities permanent stormwater controls will be installed. These measures include catch basins, trenches, and other elements shown in the design drawings (Appendix A).

3.2 SITE CONTROLS

3.2.1 Stormwater Pollution Prevention

Prior to beginning any intrusive activities, appropriate erosion and sediment controls (ESCs) will be installed at the Site. For activities resulting in a disturbance of one (1) acre or more of land, a Notice of Intent (NOI) will be filed with NYSDEC seeking to gain coverage under the State Pollution Discharge Elimination System (SPDES) and a Stormwater Pollution Prevention Plan (SWPPP) describing the intended ESCs will be submitted. A copy of the SWPPP is included in Appendix C for information purposes. Erosion and sediment controls have be designed and installed in accordance with the NYSDEC's Standards and Specifications for Erosion and Sediment Control, dated November 2016 and the SWPPP is being approved by the Town.

3.2.2 Temporary Erosion Control Measures

Temporary erosion control measures will be utilized during the redevelopment activities, including initial re-grading, existing foundation demolition, utility trenching, and new foundation installation. Temporary control measures will follow procedures outlined in the Site SWPPP included in Appendix C.

3.2.3 Work Zone Security

A minimum of a 4-foot tall temporary construction fence will be placed around the perimeter of the active excavation area. Fencing will be erected and maintained as necessary by the Contractor to control access to the portions of the Site where soils with potential remaining contamination are exposed. Additional construction fencing will be used as needed to delineate work zones within the Site boundaries. Work zones, if appropriate, will be clearly marked and reviewed prior to the start of each work day.

3.2.4 Truck Routing

Truck transport routes will be determined taking into the following: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) limiting total distance to major highways; (d) promoting safety in access to highways; and (e) overall safety in transport. The primary point of ingress and egress for truck traffic will be off C Street.

3.2.5 Community Air Monitoring Program

Air monitoring will be performed at the Site during all excavation activities that have the potential to disturb existing Site soils and/or fill in accordance with the NYSDOH *Generic Community Air Monitoring Plan*, and Appendix 1A and 1B of DER-10. A copy of the Site CAMP is provided in Appendix C.

3.2.6 Dust Control Plan

Dust emissions may occur at the project Site during intrusive activities, including but not limited to, excavation and loading activities. Therefore, fugitive dust control measures will be implemented as necessary during all intrusive excavation/construction activities in accordance with the CAMP provided in Appendix B.

3.2.7 Odor Control Plan

Given the nature and type of contamination documented to have existed on the Site, there is minimal potential for odors to emanate from excavations during the redevelopment activities. However, the odor control plan described herein is capable of controlling emissions of nuisance odors off-Site and on-Site if deemed necessary. Specific odor control methods to be used on a routine basis are listed below.

Although not anticipated, if nuisance odors are identified at the Site boundary or if odor complaints are received, work will be halted, and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and related complaints. Implementation of all odor controls, including the halt of work, is the responsibility of the Site owner's or remedial party's environmental professional, and any measures that are implemented will be discussed in Construction Completion Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, the following specific odor control measure will be used if necessary:

1. Limiting the area of open excavations and size of soil stockpiles.
2. Reducing the speed of excavation activities.
3. Shrouding open excavations with tarps and other covers.
4. Consider weather factors when planning daily activities (e.g. wind direction).
5. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include:
    a. Direct load-out of materials, if possible.
    b. Use of odor controlling spray foams to cover odorous soils/materials.
    c. Use of staff to monitor odors in surrounding neighborhoods.

3.3 SOIL MANAGEMENT

All excavated Site soils are anticipated to be reused on Site for backfill or grading purposes. However, given the historical use of the Site, as discussed in previous Sections, there is the potential for contamination to be encountered during excavation activities. The following Sections describe the soil screening and testing methods, sampling requirements, and sampling protocols.

3.3.1 Soil Screening and Testing Methods

A CHA on-Site representative will perform visual, olfactory, and instrument-based soil screening during all excavation activities. Excavated soil will be inspected for staining, discoloration, and consistency with the majority of Site soils, and will be screened for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID). The PID will be calibrated as per the manufacturer's requirements and documented in field logs (Appendix D).

Soil that exhibits no significant contamination AND is consistent with typical Site soil, will be reused on Site. Excavated material that exhibits gross contamination (i.e. staining, discoloration, produces elevated PID readings) or is inconsistent with typical Site soil, will be stockpiled in an area away from the primary work activities and then sampled as indicated below.

Soil That is Inconsistent with Site Soil

Soil that is inconsistent with typical Site soil and exhibits evidence of staining, discoloration or elevated PID readings will be stockpiled in accordance with Section 3.4. This soil may be sampled

for potential reuse on Site in accordance with Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 375 Section 6.7(d) and Table 6.8 (b) Soil Cleanup Objectives (SCOs).

For reuse, soil samples will be collected in accordance with DER-10 Table 5.4(e)10, summarized in Table 3 below, and will be sampled for the following parameters:

- Target Compound List (TCL) VOCs by the United States Environmental Protection Agency (USEPA) Method 8260
- TCL semi-volatile organic compounds (SVOCs) by USEPA Method 8270
- TCL Resource Conservation and Recovery Act (RCRA) 8 Metals by USEPA Method 6010
- TCL Pesticides by USEPA Method 8081
- Total polychlorinated biphenyls (PCBs) by USEPA Method 8082

The samples will be submitted to a laboratory certified under the NYSDOH's Environmental Laboratory Approval Program (ELAP) for analysis following appropriate chain-of-custody protocols in accordance with CHA Standard Operating Procedures (SOPs) included in Appendix F.

As an alternative, the Contractor may elect to sample the soil in accordance with Section 3.3.2 and dispose of off-Site, at a properly permitted facility.

Table 3. Sample Quantities for Inconsistent Site Soil

<table>
<tr><th rowspan="2">Soil Quantity (cubic yards)</th><th>VOCs</th><th colspan="2">SVOCs, Inorganics, & PCBs/Pesticides</th></tr>
<tr><th>Discrete Samples</th><th>Composite</th><th>Discrete Samples/Composite</th></tr>
<tr><td>0-50</td><td>1</td><td>1</td><td rowspan="8">3-5 discrete samples form different locations in the fill being provided will comprise a composite sample for analysis</td></tr>
<tr><td>50-100</td><td>2</td><td>1</td></tr>
<tr><td>100-200</td><td>3</td><td>1</td></tr>
<tr><td>200-300</td><td>4</td><td>1</td></tr>
<tr><td>300-400</td><td>4</td><td>2</td></tr>
<tr><td>400-500</td><td>5</td><td>2</td></tr>
<tr><td>500-800</td><td>6</td><td>2</td></tr>
<tr><td>800-1,000</td><td>7</td><td>2</td></tr>
<tr><td>>1,000</td><td colspan="3">Add an additional 2 VOC and 1 composite for each additional 1,000 cubic yards</td></tr>
</table>

Soil with Staining, Discoloration, and/or Elevated PID Readings

Soil that exhibits staining, discoloration, and/or elevated PID readings will be stockpiled separately from soil that will be reused, or has the potential to be reused on Site, in accordance with Section 3.4. This soil will be characterized for off-Site disposal in accordance with Section 3.3.2.

Arsenic-impacted Soil

Historical soil sampling performed by Parsons in the vicinity of the former lead/zinc open storage area, indicates an area on Site that contains levels of arsenic exceeding the criteria displayed in 6 NYCRR Part 375 Table 375-6.8(b); Industrial Soil Cleanup Criteria. During Site redevelopment, the Contractor will excavate the top 2-feet of soil in a 2-foot wide trench and relocate and spread the soil in the northeast corner of the Site as shown on Figure 3. Soil that is spread in this location will be covered with a sureyed demarcation barrier and a minimum of 1-foot of fill material in accordance with Section 3.10 of this Work Plan.

3.3.2 Waste Characterization Sampling (If Required)

As previously stated, it is anticipated that excavated soil will remain on Site and reused during redevelopment activities. However, soil that is to be removed from the site for off-site disposal will be analyzed for waste characterization purposes in accordance with the quantity and parameters specified by the disposal facility.

The sampling frequency is anticipated to be one (1) sample per every 1,000 cubic yards (cy) of material requiring disposal, at a minimum, but may change depending on disposal facility requirements. The sampling program will require the collection of both, grab samples and composite samples. Unless otherwise specified by the disposal facility, samples collected for VOC analysis will be discrete grab samples and other analyses will be performed on composite samples.

The waste characterization samples will be submitted to a laboratory certified under the NYSDOH's ELAP for analysis following appropriate chain-of-custody protocols in accordance with the CHA SOPs included in Appendix E. The parameters likely required by the waste disposal facility may include the following:

- Toxicity Leaching Characteristic Procedure (TCLP) Extraction for VOCs USEPA Method 8260.
- TCLP SVOCs by USEPA Method 8270
- TCLP RCRA 8 Metals by USEPA Method 6010
- TCLP Pesticides and Herbicides (if the disposal will not waive these analyses based on historical Site use) via USEPA Method 8081

- Total PCBs by USEPA Method 8082
- Hazardous Waste Characteristics as defined under RCRA, including ignitability (flashpoint), corrosivity (pH), and reactivity
- Percent solids

3.3.3 Sampling Protocols

All soil sampling activities will be recorded on either a soil sampling log or the daily log as presented in Appendix D. Other observations (e.g., location, color, PID reading, etc.) will also be noted. Soil sampling will be collected following the sampling and handling protocols described in accordance with the CHA SOPs included in Appendix E.

3.3.4 Excavation Contingency Plan

If underground tanks are discovered during the course of the redevelopment work, excavation activities will be suspended until personnel on the contact list in Table 1 has been notified and proper equipment can be mobilized for the situation. Sampling will be performed on any product discovered, sediment, and surrounding soils as necessary to characterize the material and disposal. Chemical analysis will be performed in accordance with Section 3.3.2. Reportable quantities of petroleum product will also be reported to the NYSDEC Spills Hotline in Table 2.

3.4 STOCKPILE METHODS

Soils which do not exhibit any evidence (visual, olfactory, and/or PID) of contamination can be stockpiled on Site soils without the use of containment pads. Site soils which exhibit evidence of contamination as determined by visual, olfactory, and PID, or is inconsistent with typical Site soil, will be stockpiled on temporary containment pads for characterization as discussed in Sections 3.3.1 and 3.3.2. Soil that is sampled for potential reuse on-Site while awaiting laboratory analytical should be stockpiled separately from soil that exhibits staining, discoloration, or elevated PID readings. All stockpiled soils will be managed in piles 1,000 cubic yards in size or smaller. At a minimum, temporary soil containment pads will include the following:

1. A sufficiently large area with accessibility for trucks and construction equipment. The area will be relatively flat and away from drainage inlets.
2. A 10-mil thick polyethylene sheeting liner with a minimum of two-foot wide overlaps between successive rows will be placed on a subgrade sufficiently free of sharps.
3. A minimum of a one-foot high soil berm will be constructed around the perimeter of each pad to control runoff/run-on from to and from the stockpiles.

4. Soil stockpiles that will remain in place for more than one (1) week will also be continuously encircled with silt fence.
5. Erosion and sediment controls will be installed as needed near catch basins, surface waters, and other discharge points, determined by the Site SWPPP.
6. Stockpiles exhibiting visual, olfactory and/or PID evidence of contamination will be kept covered at all times with appropriately anchored tarps or polyethylene sheeting to reduce rain infiltration. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced. All stockpiles or trenches will be monitored during working hours and after major storm events to verify that covers remain in place and odor controls are still effective. Results of inspections will be recorded in a logbook and maintained by the Site representative, and available for inspection by NYSDEC. If the polyethylene sheeting is deemed to be inadequate at maintaining odor control, odor control practices will be implemented in accordance with Section 3.2.7 of this report.
7. Stockpiles will be maintained at a maximum of 15-feet above surrounding surface subgrade elevation with a maximum slope of 1.5:1 to maintain stability. However, the appropriate slope may vary by material and the contractor performing stockpiling activities will be responsible for determining the safe allowable slopes for each material stockpiled on Site in accordance with all applicable regulations
8. Any soil that is saturated will be placed on a containment pad constructed with a sump area to facilitate dewatering. The collected water from the pad will then be managed in accordance with Section 3.5 of this report.

3.5 FLUIDS MANAGEMENT

Measures will be implemented which reduce and manage Site liquids. Site liquids include water produced from excavation dewatering, decontamination procedures, purge or development fluids from well sampling and construction, and/or water collected in temporary containment pads. Dewatering, purge and development fluids that are removed will be managed off-Site unless prior approval is obtained from NYSDEC under a SPDES permit. Measures to reduce and manage Site liquids includes:

- Covering temporary stockpiles on containment pads with polyethylene sheeting to reduce rain infiltration.
- Construction of sumps on temporary containment and/or decontamination pads to collect all water for off-Site disposal or allow water to infiltrate in existing locations/excavations.
- Implementation of erosion and sediment control measures as outlined in the project SWPPP to avoid off-Site surface water runoff, erosion of Site soils, scour, ponding, or pooling.

3.5.1 On Site Temporary Storage

Water collected from containment/decontamination pads or excavations will be stored in 55-gallon drums or larger containment (e.g. frac tanks) as needed. Water from the containers will be sampled and analyzed for constituents based on disposal facility requirements. Once the containers have been filled (or within 90 days) they will be characterized as required for off-Site disposal. Alternatively, if sampling results indicate that the collected water is not contaminated, the collected water may be discharged under a NYSDEC SPDES Permit.

3.6 MATERIALS EXCAVATION AND LOAD OUT

The following minimum procedures will be implemented for all excavation activities at the Site:

1. Provide a minimum of three (3) working days of notice to Dig Safely New York (1-800-962-7962) for utility clearance.

2. Establish Site Controls, including, but not limited to the following:

   - Installation of appropriate sediment and erosion controls
   - Setup of appropriate work zones
   - Setup of air monitoring stations as required in the CAMP
   - Construction of temporary containment pads as described in Section 3.4, as necessary
   - Construction of decontamination pads as described in Section 3.4

3. Any soil to be stockpiled that is saturated will be placed on a containment pad constructed with a sump area to facilitate dewatering. The collected water from the pad will then be managed in accordance with Section 3.5 of this report.

4. To minimize potential cross-contamination on-Site via tracking and reduce the amount of required decontamination, the following work practices should be implemented:

   - Efforts will be made to advance the excavation face towards the excavator such that the tracks on the machine do not come into contact with the impacted soils.

   - Where possible, all trucks will be loaded adjacent to the excavation or stockpile. Care will be taken so that impacted soil is not spilled on the sides of the trucks as they are loaded and that the trucks do not drive through contaminated soils. If wet soils are encountered, dry soils will be placed near the rear tailgate of the truck and

wetter soils will be placed near the front of the truck. Trucks will be prohibited from transporting saturated soil.

- Efforts will be made to minimize the amount of equipment and machinery that comes into contact with the impacted soils.

5. Excavate Site soils while utilizing field screening procedures. If field screening processes indicate a change in material is encountered (e.g. change in color, noticeable odors, etc.), the newly encountered material should be stockpiled and characterized separately.

3.7 MATERIALS TRANSPORT OFF-SITE

Transport of materials requiring off-Site disposal at a permitted facility will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, and local requirements (and all other applicable transportation requirements).

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas and/or mesh-type truck covers will be prohibited. As previously indicated, trucks will be prohibited from transporting saturated soil. Rather, saturated soil should be placed on a containment pad to facilitate dewatering prior to shipment.

Every effort should be made to keep trucks from coming into contact with potentially contaminated Site soils, however all truck tires that come in contact with potentially contaminated soils will be washed prior to leaving the Site. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site redevelopment. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

3.8 MATERIAL DISPOSAL OFF-SITE

Soil excavated for off-site disposal will be characterized, transported and disposed of at an approved disposal facility in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. Prior to shipment of the material, the waste will be profiled based upon the waste characterization sampling (and historical documentation for the Site) and accepted by the disposal facility. Actual disposal quantities and associated documentation will be maintained and transmitted

to the NYSDEC at he conclusion of the project. This documentation will include; waste profiles, test results, facility acceptance letters, manifests/bills of lading and facility receipts/weight tickets.

3.9 DECONTAMINATION

Decontamination of large equipment (backhoe excavators, bulldozers, etc.) is necessary to prevent cross-contamination and the removal of contaminants from a contaminated Site. Prior to equipment leaving the Site a high pressure rinse of all equipment that has come in contact with potentially contaminated soils is necessary. Decontamination of equipment will take place on a temporary decontamination pad designed to collect all rinsate generated during cleaning. Temporary pads should be lined with a water-impermeable material with no seams and constructed on a level surface. Pads should be constructed so as to facilitate the collection of wastewater with a sump in one corner or side, or with one corner generally lower than others. Where appropriate, side shields should be placed around the decontamination pad to facilitate the collection of any overspray. All rinsate generated from decontamination activities shall be transferred from the decontamination pad to 55-gallon drums for disposal in accordance with Section 3.5 of this report. Decontamination procedures will follow the CHA SOPs included in Appendix E.

3.10 BACKFILL FROM OFF-SITE SOURCES

Materials proposed for import onto the Site will be approved by the Site owner and/or their delegated representative and will be in compliance with provisions outlined in DER-10 prior to receipt at the Site. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site. No off-Site materials meeting the definition of a solid waste as defined in 6 NYCRR Part 360-1.2(a) will be used as backfill. Trucks entering the Site with fine-grained imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered as necessary to prevent release of nuisance dust.

All imported backfill will be sampled, analyzed, and will contain concentrations less than the Soil Cleanup Objectives provided in 6 NYCRR 375-6.7 for the following criteria:

- TCL VOCs by USEPA Method 8260
- TCL SVOCs by USEPA Method 8270
- Total PCBs by USEPA Method 8082
- Pesticides by USEPA Method 8081

- Target Analyte List (TAL) Metals by USEPA Method 6010

Additionally, in accordance with the February 2019 NYSDEC guidance document titled *Sampling for 1,4-Dioxane and Per- and Polyfluoroalkyl Substances Under DEC's Part 375 Remedial Programs*, imported fill will be sampled for:

- 1,4-dioxane
- Per- and Polyfluoroalkyl Substances (PFAS)

Per DER-10, sampling is required for all imported soil for use as backfill or cover material. Sampling frequency will entail a minimum of one sample analyzed from every new source at the following sampling frequency for:

1. Soil or sand imported from a virgin mine/pit, at least one round of characterization samples for the initial 100 cubic yards of material in accordance with the criteria detailed above; or
2. Material sources *other than* a virgin mine/pit (e.g., a former manufacturing site), in accordance with Table 3 of this EWP.

The frequency of sampling described above pertains to imported fine grained soils only. Large grained fill with less than 10 percent fines (such as open-graded stone or rip rap) will not be subject to the above sampling requirements, provided that a letter from the facility is provided which states that the source is a virgin material and the source area was never utilized for commercial/industrial purposes.

4.0 HEALTH AND SAFETY PLAN REQUIREMENTS

The remaining potential contamination still poses a potential risk to work safety when handling the Site soils. In accordance with DER-10 a site-specific Health and Safety Plan (HASP) is required for any person conducting intrusive Site activities that may have the potential to encounter contamination and must be adhered to by all personnel involved in these activities at the site. The HASP is also a requirement of the federal Occupational Safety and Health Administration (OSHA). The minimum health and safety requirement presented in the HASP included in the Site Management Plan will be followed by the contractor performing the work.

5.0 REPORTING AND SCHEDULE

5.1 EXCAVATION SUMMARY REPORT

An Excavation Summary Report will be submitted to the NYSDEC within 30 days after completion of redevelopment. At a minimum the report will include:

- A map depicting the approximate Site boundary and the approximate limits of the final soil excavation operations.
- Copies of daily observation reports;
- A description of activities conducted, a discussion of CAMP data and explanation of any exceedances, quantities and locations of soil excavated, disposal locations for the soil, soil sample results, a description of problems encountered, location and acceptability of analytical results for backfill sources and other pertinent information necessary to document Site activities; and
- A certification that all work activities were conducted in conformance with the EWP.

FIGURES

SOURCE: U.S.G.S. 7.5' Topographic
QUADRANGLE: SCHENECTADY, NY

SCALE: 1"=1000'

CHA
III Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 • www.chacompanies.com

SITE LOCATION MAP

BELGIOIOSO CHEESE, INC.
GLENVILLE BUSINESS & TECHNOLOGY PARK
SCHENECTADY COUNTY, NEW YORK

PROJECT NO. 34604

DATE: 04/2019

FIGURE 1

0 700 1400
Scale in feet

CHA
300 South State Street - Suite 600
Syracuse, NY 13202
315.471.3920 • www.chacompanies.com

SITE BOUNDARY MAP

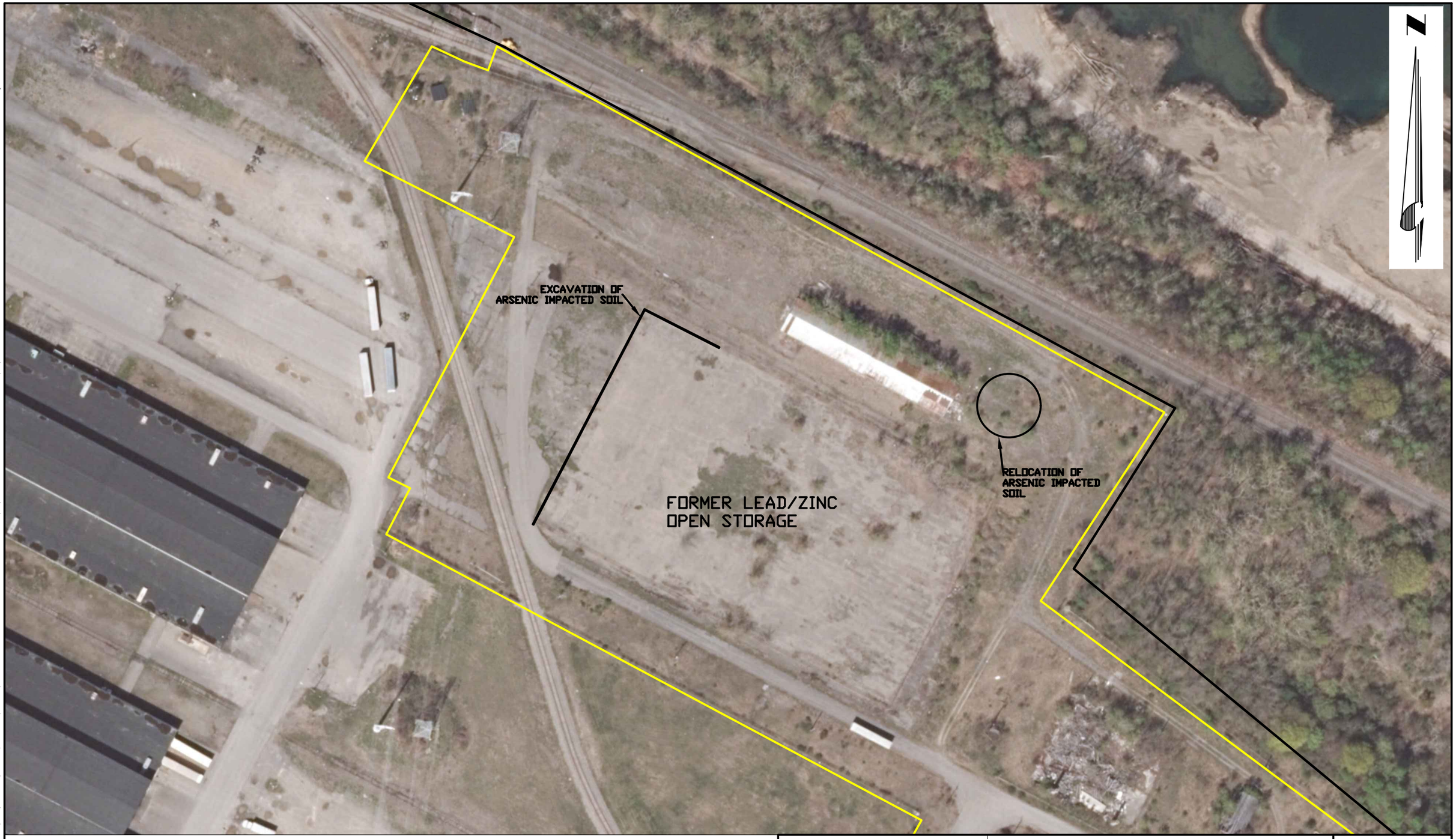
BELGIOIOSO CHEESE, INC.
GLENVILLE BUSINESS & TECHNOLOGY PARK
SCHENECTADY COUNTY, NEW YORK

PROJECT NO. 34604

DATE: 04/2019

FIGURE 2

File: V:\PROJECTS\ANY\K4\34604\CADD_ACAD\ENVP\EXCAVATION WORK PLAN.DWG Saved: 4/4/2019 3:39:43 PM Plotted: 4/4/2019 3:39:59 PM Current User: Miller, Samantha LastSavedBy: 4187



0 100 200

Scale in feet

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ARSENIC IMPACTED SOIL EXCAVATION MAP

BELGIOIOSO CHEESE, INC.
GLENVILLE BUSINESS & TECHNOLOGY PARK
SCHENECTADY COUNTY, NEW YORK

PROJECT NO. 34604

DATE: 05/2019

FIGURE 3

File: V:\PROJECTS\ANY\K4\34604\CADD_ACAD\ENVP\EXCAVATION WORK PLAN.DWG Saved: 5/6/2019 2:05:30 PM Plotted: 5/6/2019 2:08:17 PM Current User: Miller, Samantha LastSavedBy: 4187

APPENDIX A

Draft Site Plans

PROPOSED COMMERCIAL DEVELOPMENT

Glenville Business & Technology Park

Town of Glenville

Schenectady County, NY

for

BELGIOIOSO CHEESE, INC.

OWNER / APPLICANT:

ERRICO AURICCHIO
BELGIOIOSO CHEESE, INC.
4200 MAIN STREET
GREEN BAY, WI 54115
(920) 863-2123

CIVIL ENGINEER:

CHA CONSULTING, INC.
3 WINNERS CIRCLE
ALBANY, NY 12205

ARCHITECT:

C.REINER ARCHITECTS, INC.
348 MAIN AVENUE
DE PERE, WI 54115

Dig Safely. New York Call 811 before you dig

LOCUS MAP

SCALE: NO SCALE

DRAWING INDEX

**FOR MUNICIPAL APPROVAL ONLY.
NOT FOR CONSTRUCTION**

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III Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 • www.chacompanies.com

No.	Submittal / Revision	By	Appd.	Date
1	ISSUED FOR TOWN REVIEW	SHW	MFM	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	SHW	MFM	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO®

TITLE SHEET

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:

C-001

GENERAL NOTES:

1. CONSTRUCTION OF ALL PROPOSED UTILITIES MUST BEGIN AT ITS POINT OF CONNECTION TO THE EXISTING UTILITY OR AT THE LOWEST POINT IN THE SYSTEM. RIMS, GRATES, INVERTS, AND CLEARANCES AT CROSSINGS MUST BE VERIFIED PRIOR TO THE BEGINNING OF CONSTRUCTION.
2. PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION, CONTRACTOR IS TO VERIFY BOTH HORIZONTAL AND VERTICAL POSITION OF THE EXISTING RESPECTIVE SEWERS AT CONNECTION POINTS. CONTRACTOR IS TO CONSTRUCT GRAVITY LINES PROGRESSIVELY FROM DOWNSTREAM TO UPSTREAM, ANY EXCEPTIONS TO THIS MUST BE APPROVED BY THE OWNER. ANY GRADE DISCREPANCIES MUST BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.
3. BEFORE CONSTRUCTING LINES TO CONNECT TO EXISTING UTILITIES, VERIFY EXISTING UTILITY INVERTS AND NOTIFY OWNER IF ANY VARIATION FROM THE PLANS IS REQUIRED.
4. ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER AND THE UTILITY OWNER. NOTIFY THE OWNER AND THE UTILITY OWNER 72 HOURS BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
5. ALL PHYSICAL FEATURES, INDIVIDUAL TREES, LANDSCAPING OR UTILITY LOCATIONS COULD NOT POSSIBLY BE SHOWN ON THE CONTRACT DRAWINGS. EACH BIDDER IS ENCOURAGED TO PERSONALLY INSPECT ALL AREAS OF PROPOSED WORK, IN ORDER TO ENSURE THAT HE IS FAMILIAR WITH THE PHYSICAL LAYOUT OF THE AREA AND THE REQUIREMENTS OF THE WORK.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND COORDINATE WORK WITH ALL SUBCONTRACTORS FOR THE SITE.
7. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
8. THE OWNER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE OWNER.
9. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC.
11. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.
12. ALL PROPOSED UTILITIES AND APPURTENANCES ARE TO BE CONSTRUCTED IN COMPLIANCE WITH THE LOCAL MUNICIPALITIES' CODES AND REGULATIONS GOVERNING THE INSTALLATION OF SUCH UTILITIES.
13. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
14. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF NEW YORK STATE CODE RULE 23 AND OSHA REGULATIONS FOR CONSTRUCTION.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK. WORK SHALL COMPLY WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
16. MAINTAIN FLOW FOR ALL EXISTING UTILITIES.
17. ALL MANHOLES, CASTINGS, VALVE BOXES, ETC. WITHIN PAVED AREAS SHALL HAVE THE TOPS SET FLUSH WITH THE EXISTING PAVEMENT GRADE. IN LANDSCAPED AREAS, ALL FRAMES SHALL BE 0.1' ABOVE GRADE.
18. THE CONTRACTOR SHALL SWEEP COMPLETED WORK AREAS OF LOOSE AGGREGATES, DIRT AND DEBRIS AND REMOVE THEM FROM THE WORK AREA. DUST CONTROL MEASURES SHALL BE EMPLOYED BY THE CONTRACTOR AS NEEDED.
19. ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE OWNER TO MEET EXISTING CONDITIONS.
20. DISTURBED AREAS SHALL BE RESTORED AS WORK PROGRESSES AS DEEMED APPROPRIATE BY THE OWNER.
21. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN OPERATING CONSTRUCTION EQUIPMENT OVER NEW UTILITY TRENCHES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A MINIMUM OF TWO FEET OR MORE, IF REQUIRED, OVER ANY UTILITY LINE SUBJECT TO CONSTRUCTION TRAFFIC.
22. CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE IMMEDIATELY REPAIRED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
23. THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD A CONDITION AS BEFORE BEING DISTURBED AS DETERMINED BY THE OWNER. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
24. WHERE PRACTICAL, ALL EROSION CONTROL MEASURES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING CONSTRUCTION.
25. ALL CONSTRUCTION STAKE OUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. LOCATIONS OF CATCH BASINS, MANHOLES, VAULT STRUCTURES, ETC. SHALL BE STAKED OUT AND APPROVED BY THE TOWN PRIOR TO CONSTRUCTION.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS IN DIGITAL FORMAT FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES, AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADMISSIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED.
27. MISCELLANEOUS WORK NOT SPECIFICALLY SHOWN ON THE CONTRACT DRAWINGS SUCH AS PATCHING, BLOCKING, TRIMMING, ETC., SHALL BE PERFORMED AS REQUIRED TO MAKE THE WORK COMPLETE.
28. UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
29. THE CONTRACTOR SHALL PREPARE A MAINTENANCE AND PROTECTION OF TRAFFIC PLAN THAT INCLUDES, BUT IS NOT LIMITED TO, AN ADVANCED WARNING SIGN LAYOUT PLAN AND A CONSTRUCTION PHASING/SEQUENCING PLAN. BASED ON THEIR PROPOSED WORK PLAN TO EXECUTE THE PROJECT, THE PLAN SHALL BE SUBMITTED FOR APPROVAL BY THE TOWN OF GLENVILLE AND NYSDOT PRIOR TO COMMENCING CONSTRUCTION. THE PLAN SHALL INCLUDE PROVISIONS FOR BOTH LOCAL TRAFFIC AND PEDESTRIAN MOVEMENTS. SAFE VEHICLE AND PEDESTRIAN ACCESS ALONG THE ADJACENT STREETS SHALL BE MAINTAINED AT ALL TIMES. IN ADDITION, THE M&PT PLAN SHALL ADDRESS THE NEED FOR EMERGENCY VEHICLE ACCESS, THE MAINTAINING OF RAIL OPERATIONS AND THE MAINTAINING OF LOCAL VEHICLE/TRUCK TRAFFIC ALONG THE PROJECT FRONTAGE. THE M&PT PLAN SHALL BE IN ACCORDANCE WITH THE NYSDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND TOWN STANDARDS.

SURVEY NOTES:

1. BASE MAPPING PREPARED BY CHA FROM A MAY 2017 FIELD SURVEY.
2. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATION TAKEN AT THE TIME OF THE FIELD SURVEY. MAPPING PREPARED ON NAD83 STATE PLANE COORDINATE SYSTEM – NEW YORK EAST ZONE.
3. ELEVATIONS AND CONTOURS ARE BASED ON NAVD88.
4. CERTAIN UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES HAVE BEEN SHOWN FROM SURFACE LOCATIONS AND MEASUREMENTS OBTAINED FROM A FIELD SURVEY, THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UTILITIES WHICH THE EXISTENCE OF ARE NOT KNOWN. SIZE, TYPE AND LOCATION OF ALL UTILITIES AND STRUCTURES MUST BE VERIFIED PRIOR TO ANY AND ALL CONSTRUCTION.

REFERENCE MAPS:

1. MAP ENTITLED "SUBDIVISION PORTION OF LANDS FORMERLY OF SCOTIA INDUSTRIAL PARK INC. PREPARED FOR GALESI GROUP, TOWN OF GLENVILLE, COUNTY OF SCHENECTADY, N.Y.", AS PREPARED BY C.T. MALE ASSOCIATES, P.C., DATED DECEMBER 14, 1992, LAST REVISED 9/18/95 AND FILED IN THE SCHENECTADY COUNTY CLERK'S OFFICE AS MAP J-54 & 55.
2. MAP ENTITLED "RESUBDIVISION OF PARCEL "C" SURVEY PORTION OF LANDS FORMERLY OF SCOTIA INDUSTRIAL PARK, INC., LANDS OF THE UNITED STATES OF AMERICA SCOTIA GSA/DLA DEPOT, TOWN OF GLENVILLE, SCHENECTADY COUNTY, NEW YORK", AS PREPARED BY GILBERT VAN GUILDER LAND SURVEYOR, PLLC, DATED NOVEMBER 6, 2013, LAST REVISED 11/26/14 AND FILED IN THE SCHENECTADY COUNTY CLERK'S OFFICE AS MAP N-182.
3. MAP ENTITLED "RESUBDIVISION OF PARCEL "C-3" SURVEY PORTION OF LANDS FORMERLY OF SCOTIA INDUSTRIAL PARK, INC., LANDS OF THE UNITED STATES OF AMERICA SCOTIA GSA/DLA DEPOT, TOWN OF GLENVILLE, SCHENECTADY COUNTY, NEW YORK", AS PREPARED BY GILBERT VAN GUILDER LAND SURVEYOR, PLLC, DATED FEBRUARY 10, 2014, LAST REVISED 3/6/14.
4. MAP ENTITLED "RESUBDIVISION OF PARCEL "C-2" SURVEY PORTION OF LANDS FORMERLY OF SCOTIA INDUSTRIAL PARK, INC., LANDS OF THE UNITED STATES OF AMERICA SCOTIA GSA/DLA DEPOT, TOWN OF GLENVILLE, SCHENECTADY COUNTY, NEW YORK", AS PREPARED BY GILBERT VAN GUILDER LAND SURVEYOR, PLLC, DATED FEBRUARY 10, 2014, LAST REVISED 12/18/14.
5. MAP ENTITLED "HIGHWAY DEDICATION MAP PORTION OF LANDS FORMERLY OF SCOTIA INDUSTRIAL PARK INC. TOWN OF GLENVILLE, COUNTY OF SCHENECTADY, N.Y.", AS PREPARED BY C.T. MALE ASSOCIATES, P.C., DATED DECEMBER 16, 1985, LAST REVISED 3/3/86.

CONSTRUCTION NOTES

1. WATER MAINS AND SERVICES: LOCATIONS SHOWN ARE APPROXIMATE AND ARE INDICATED FOR GENERAL REFERENCE ONLY UNLESS OTHERWISE NOTED.
2. ALL EXISTING UNDERGROUND FEATURES ARE APPROXIMATE ONLY AND ARE INDICATED FOR GENERAL REFERENCE AND DESIGN UNLESS OTHERWISE NOTED.
3. WORK IN PRIVATE PROPERTY: THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE OWNER PRIOR TO BEGINNING WORK IN ANY PRIVATELY OWNED AREAS WHICH WILL REQUIRE EASEMENTS FOR CONSTRUCTION.
4. THE CONTRACTOR SHALL COORDINATE ANY REQUIRED GAS SERVICE LINE REPLACEMENTS WITH NATIONAL GRID.
5. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO HAVE THE EXISTING UTILITY POLES HELD AND/OR RELOCATED DURING CONSTRUCTION, AS REQUIRED.

UTILITY NOTES

1. UTILITY CONNECTIONS
   A. THE CONTRACTOR SHALL CONSULT AND REACH AGREEMENT WITH THE AUTHORIZED REPRESENTATIVES OF EACH UTILITY COMPANY AS TO THE LOCATION AND DETAILS OF SERVICE INSTALLATION.
2. TEMPORARY SERVICES
   A. ELECTRICAL POWER – THE CONTRACTOR SHALL PAY ALL COSTS FOR PERMANENT AND TEMPORARY POWER CONNECTIONS, ALL METER DEPOSITS AND THE COSTS OF PERMANENT AND TEMPORARY ELECTRICAL ENERGY SUFFICIENT TO PROVIDE ALL POWER NEEDS THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING TEMPORARY WIRING SYSTEMS FOR LIGHT AND POWER FOR THE USE OF ALL TRADES THROUGHOUT THE CONSTRUCTION PERIOD AS FOLLOWS:
      a. SYSTEMS SHALL BE SOLIDLY GROUNDED. OVER-CURRENT PROTECTION SHALL BE LIMITED TO TWENTY (20) AMPERES ON NO. 12 CONDUCTORS.
      b. WHEN THE CONTRACTOR WORKS AFTER "DUSK", THE CONTRACTOR SHALL PROVIDE ADEQUATE FLOODLIGHTING OF TEN (10) FOOT CANDLES AT THE WORK AREA UNLESS OTHERWISE PROVIDED FOR IN THESE SPECIFICATIONS.
   B. WATER – THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WATER USED IN CONSTRUCTION AND ALL TEMPORARY AND PERMANENT CONNECTIONS. TEMPORARY CONNECTIONS SHALL BE REMOVED WHEN PERMANENT CONNECTIONS ARE MADE.
   C. SANITARY – THE CONTRACTOR SHALL PROVIDE SERVICED CHEMICAL TOILETS.
   D. TELEPHONE – THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TELEPHONE SERVICE AS REQUIRED FOR HIS/HER REQUIREMENTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL PERMITS AND METERING RELATED TO WATER OBTAINED FROM GLENVILLE WATER & SEWER DEPARTMENT FIRE HYDRANTS FOR ALL WATER USAGE.

STORAGE AND STAGING PROVISIONS FOR CONTRACTOR OPERATIONS

1. THE CONTRACTOR SHALL PREPARE A WRITTEN PLAN FOR STAGING PROCEDURES IN CONFORMANCE WITH THE GENERAL OUTLINES SHOWN ON THE DRAWINGS. THE CONTRACTOR IS EXPECTED TO PROVIDE ADDED DETAILING AS APPROPRIATE TO FULLY INFORM THE OWNER AND OWNER'S REPRESENTATIVE OF HIS INTENDED METHOD OF OPERATIONS AND HIS SCHEDULES FOR THE VARIOUS STAGES OF THE WORK.
2. THIS PLAN SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW WITH THE OWNER. FOLLOWING THIS REVIEW AND ANY CORRECTIONS BY THE CONTRACTOR AS A RESULT OF THIS REVIEW, THE PLAN WILL BE RE-CIRCULATED AND APPROVED. THIS APPROVED PLAN WILL THEN FORM THE BASIS OF THE CONTRACTOR'S REQUIREMENTS FOR STAGING PROVISIONS THROUGHOUT THE PROJECT.
3. ALL COSTS ASSOCIATED WITH PREPARING THE STORAGE AND STAGING AREA SITE SHALL BE BORNE BY THE CONTRACTOR. THIS INCLUDES, BUT IS NOT LIMITED TO, CLEARING AND GRADING OF THE SITE, STABILIZATION OF THE WORK YARD SURFACE, CONSTRUCTION OF ALL TEMPORARY UTILITIES, ACCESS ROADS, ALL SECURITY FENCING, AND RESTORATION OF STAGING AREAS (INCLUDING SEEDING AND MULCHING), DISTURBED AREAS, ETC.

LEGEND

DESCRIPTION	EXISTING	PROPOSED
FENCE		
5' OR 10' CONTOUR LINE	250	250
1' OR 2' CONTOUR LINE	202	202
SPOT ELEVATION	120.5 OR x120.5	120.5 OR x120.5
DITCH OR SWALE		
EDGE OF STREAM OR RIVER		
LAKE OR POND		
PROPERTY LINE		
SILT FENCE		SF
EDGE OF PAVEMENT		
CURB		
EDGE OF GRAVEL/DIRT ROAD		
EDGE OF WOODS		
BUILDING		
STORM SEWER	(TYPE) STORM SEWER	ST
SANITARY SEWER	(TYPE) SANITARY SEWER	S
FORCE MAIN	(TYPE) FORCE MAIN	FM
WATER LINE	(TYPE) WATER LINE W	W
GAS LINE	(TYPE) GAS LINE G	GAS
UNDERGROUND ELECTRIC	UNDERGROUND ELECTRIC E	UE
UNDERGROUND TELEPHONE	UNDERGROUND TELEPHONE T	TELE
OVERHEAD TELEPHONE	OVERHEAD WIRES T	TELE
OVERHEAD ELECTRIC	OVERHEAD WIRES E	OE
UNDERDRAIN		UD
GUIDE RAIL		
CLEANOUT		CO
END SECTION		OR
CATCH BASIN		
STORM MANHOLE		
HYDRANT		
WATER VALVE/CONTROL VALVE		
SANITARY SEWER		S OR
TELEPHONE PEDESTAL		
ELECTRIC BOX		PB
ELECTRIC MANHOLE		E
LIGHT POLE, LAMP POST		
POWER POLE / UTILITY POLE		
SIGN – SINGLE FACED		OR
SIGN – DOUBLE FACED		OR
CONCRETE MONUMENT		
IRON ROD, PIN, OR PIPE		
BORING LOCATION	B-1	
WETLAND/MARSH		
DETAIL IDENTIFICATION NO.	X DETAIL TITLE	
TREES, SHRUBS, BUSHES		XX-3 XX-5
DETAIL CALLOUT	X DETAIL IDENTIFICATION NO. X-X SHEET NO. WHERE DETAIL IS SHOWN	

NOTE: SOME FEATURES IN THE LEGEND MAY NOT HAVE BEEN USED

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No.	Submittal / Revision	App'd.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO®

GENERAL NOTES & LEGEND

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-002

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LIMIT OF WORK LINE. CONTRACTOR TO REMOVE EXISTING TREES / BRUSH, ASPHALT / GRAVEL AS DIRECTED BY OWNER WITHIN LIMITS OF WORK AND OUTSIDE DISTURBED AREAS AS WELL

REMOVE CONCRETE PAD

LANDS N/F
PAN AM SOUTHERN LLC

REMOVE 177 LF – 10" WATER MAIN

REMOVE GUIDE RAIL

SAWCUT (TYP)

LANDS N/F
SCOTIA SAND & GRAVEL
BK. 1078 P. 1077

RELOCATE EX. UTILITY POLES AND OVERHEAD LINE, AS NECESSARY FOR CONSTRUCTION

REMOVE FENCE

LANDS N/F
SCHENECTADY COUNTY
INDUSTRIAL DEVELOPMENT
AGENCY
BK. 1084 P. 42

RELOCATE EX. UTILITY POLE AND OVERHEAD LINE, AS NECESSARY FOR CONSTRUCTION

REMOVE EX. BUILDING REMAINS AND FOUNDATION

SAWCUT (TYP)

REMOVE FENCE

REMOVE ASPHALT

PROTECT SECTION OF EX. RETAINING WALL

REMOVE SECTION OF EX. RETAINING WALL, AS NECESSARY FOR CONSTRUCTION

REMOVE EX. 18" RCP STORM PIPING AND EX. CATCH BASIN (TYP.)

PROTECT EX. CATCH BASIN

SAWCUT (TYP)

LANDS N/F
U.S. GOVERNMENT
TAX MAP 29-3-24
(SEE NOTE NO. 7)
AREA = 1,752,844± S.F.
OR 40.24± ACRES

LANDS N/F
ADIRONDACK BEVERAGES CORP.
BK. 1802 P. 554

LANDS N/F
SCHENECTADY COUNTY INDUSTRIAL
DEVELOPMENT AGENCY
BK. 1084 P. 42

LIMIT OF WORK LINE. CONTRACTOR TO RESTORE ALL UTILITY CORRIDOR / TRENCH SURFACES TO EXISTING CONDITIONS.

LANDS N/F
502 SCOTIA INDUSTRIAL PARK, LLC
BK. 1802 P. 549

LANDS N/F
U.S. GOVERNMENT
TAX MAP 29-3-24
(SEE NOTE NO. 7)
AREA = 1,752,844± S.F.
OR 40.24± ACRES

LANDS N/F
U.S. GOVERNMENT
TAX MAP 29-3-16.71

LANDS N/F
SCHENECTADY COUNTY INDUSTRIAL
DEVELOPMENT AGENCY
BK. 1084 P. 42

TEST PIT LEGEND AND NOTES:

TP #X – PROPOSED TEST PIT LOCATION

TEST PIT NOTES:

1. THE TEST PITS SHOWN SHALL BE COMPLETED BY THE CONTRACTOR AND THE RESULTS OF EACH TEST PIT SHALL BE REPORTED TO THE OWNER PRIOR TO THE START OF CONSTRUCTION.

TEST PIT NOTES TABLE	
TEST PIT #	TEST PIT NOTE
TP #1	CONTRACTOR TO PROVIDE DEPTH, LOCATION AND CONFIRM SIZE OF THE EXISTING GAS MAIN

DEMOLITION KEY:

- REMOVE EXISTING BUILDING
- REMOVE EXISTING ASPHALT
- REMOVE EXISTING CONCRETE
- REMOVE UTILITY SERVICE / ABANDONMENT
- REMOVE CURB OR FENCE
- SAWCUT EXISTING SURFACE

0 100 200
Scale in feet

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No.	Submittal / Revision	App'd.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO®

DEMOLITION & REMOVALS PLAN

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-101

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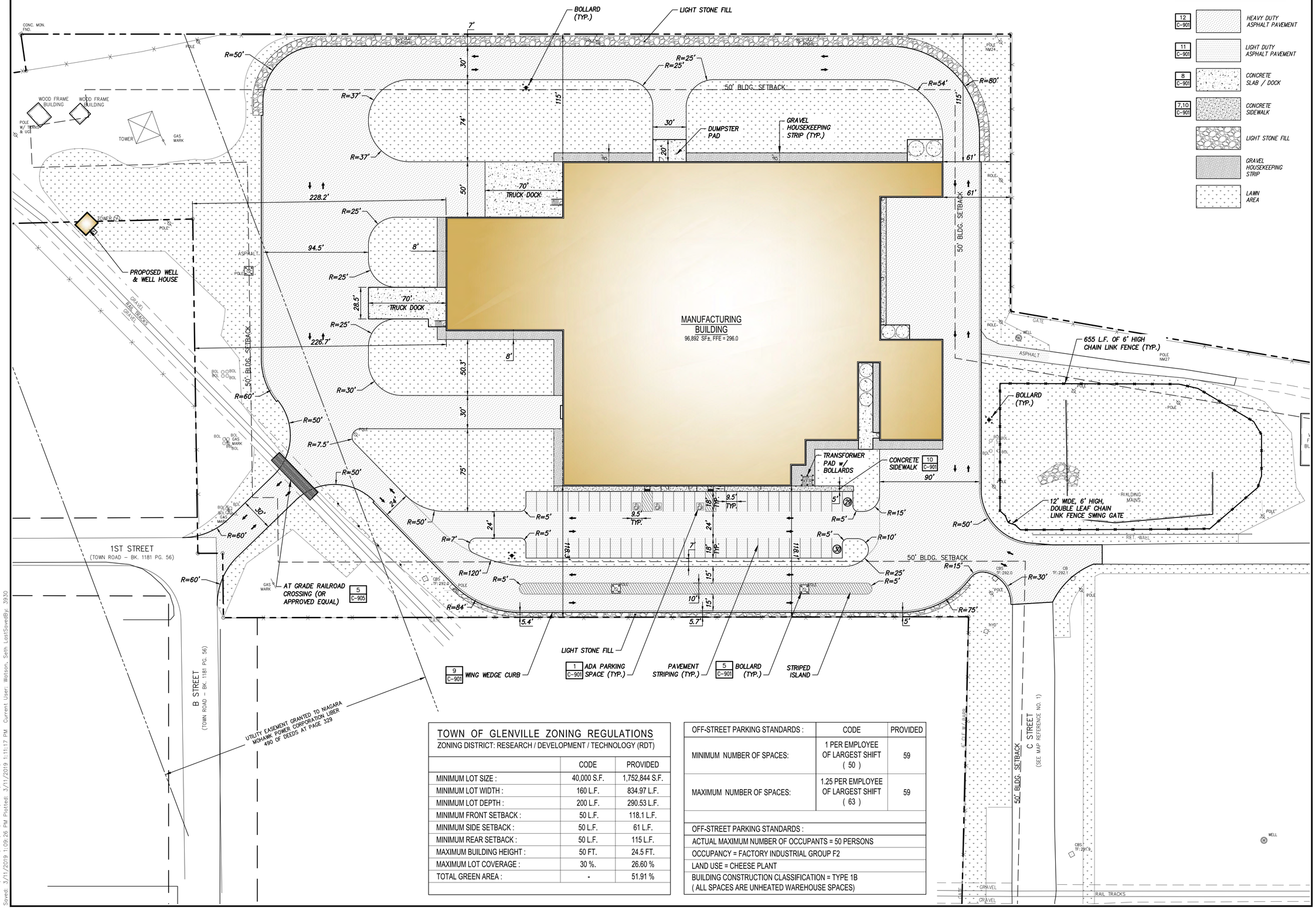

TOWN OF GLENVILLE ZONING REGULATIONS

ZONING DISTRICT: RESEARCH / DEVELOPMENT / TECHNOLOGY (RDT)

	CODE	PROVIDED
MINIMUM LOT SIZE :	40,000 S.F.	1,752,844 S.F.
MINIMUM LOT WIDTH :	160 L.F.	834.97 L.F.
MINIMUM LOT DEPTH :	200 L.F.	290.53 L.F.
MINIMUM FRONT SETBACK :	50 L.F.	118.1 L.F.
MINIMUM SIDE SETBACK :	50 L.F.	61 L.F.
MINIMUM REAR SETBACK :	50 L.F.	115 L.F.
MAXIMUM BUILDING HEIGHT :	50 FT.	24.5 FT.
MAXIMUM LOT COVERAGE :	30 %.	26.60 %
TOTAL GREEN AREA :	-	51.91 %

OFF-STREET PARKING STANDARDS :	CODE	PROVIDED
MINIMUM NUMBER OF SPACES:	1 PER EMPLOYEE OF LARGEST SHIFT (50)	59
MAXIMUM NUMBER OF SPACES:	1.25 PER EMPLOYEE OF LARGEST SHIFT (63)	59

OFF-STREET PARKING STANDARDS :

ACTUAL MAXIMUM NUMBER OF OCCUPANTS = 50 PERSONS

OCCUPANCY = FACTORY INDUSTRIAL GROUP F2

LAND USE = CHEESE PLANT

BUILDING CONSTRUCTION CLASSIFICATION = TYPE 1B (ALL SPACES ARE UNHEATED WAREHOUSE SPACES)

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

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SITE LAYOUT PLAN

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-201

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0 40 80
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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
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Schenectady County, NY

BELGIOIOSO

SITE UTILITIES PLAN - 1

Designed By:	Drawn By:	Checked By:
KMD	KMD	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-301

8" GATE VALVE [2 / C-902]
FULL HYDRANT ASSEMBLY (TYP OF 3) [4 / C-902]
1,834 LF – 8" D.I. WATER MAIN (PROVIDE ALL NECESSARY BENDS, FITTINGS AND THRUST BLOCKS) [1,3 / C-902]
10" WATER MAIN (REC–DISCONNECTED)
[1 / C-902] 12 LF – 6" SDR26 @ 1.0%
INV OUT=291.5
SAN MH 1
RIM=295.88
NW INV=291.38
SW INV=291.28 [1 / C-903]
350 LF – 8" SDR26 @ 0.76% (POST–TREATMENT WASTEWATER) [1 / C-902]
23 LF – 4" D.I. DOMESTIC WATER SERVICE (PROVIDE 8"x8"x4" TEE AT MAIN) [1,3 / C-902]
WALL PACK LIGHTING FIXTURE (TYP) (1 AND 0.5 FT CANDLES SHOWN)
PROPOSED WELL & WELL HOUSE
CLOSED VALVE
MANUFACTURING BUILDING
96,892 SF±, FFE = 296.0
505 LF 6" HDPE DR11 COOLING WATER SERVICE [1 / C-902]
(3) 8" GATE VALVES AT TEE
95 LF – ELECTRIC SERVICE
2" PE GAS SERVICE (TOTAL LENGTH=817 LF)
[1 / C-902] 218 LF – 6" SDR26 @ 1.0%
INV OUT=291.25
[1,9 / C-902,C-903] 30 LF – 4" SDR26 @ 2.0% (PROVIDE CLEANOUT)
120 LF – 8" SDR35 @ 0.45% [1 / C-902]
SAN MH 4
RIM=292.89
NW INV=287.73
SW INV=287.63 [1 / C-903]
TOP OF 18" STORM ±286.5
SAN MH 3
RIM=293.9
NW INV=288.37
NE INV=288.62
SE INV=288.27 [1 / C-903]
TOP OF 24" STORM=287.50
TOP OF 24" STORM=287.00
LIGHT FIXTURE MOUNTED TO EXISTING POLE (TYP OF 2) (1 AND 0.5 FT CANDLES SHOWN)
SAN MH 2
RIM=295.26
NE INV=290.65
SE INV=290.55 [1 / C-903]
1ST STREET (TOWN ROAD – BK. 1181 PG. 56)
B STREET (TOWN ROAD – BK. 1181 PG. 56)
C STREET (SEE MAP REFERENCE NO. 1)
16" WATER MAIN (REC–DISCONNECTED)
8" WATER MAIN (REC)
48" RCP (RD000)
WATER MAIN (REC–DISCONNECTED)
10" WATER MAIN (REC–DISCONNECTED)
APPROXIMATE CENTERLINE LOCATION OF 20' WIDE GAS EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORPORATION LIBER 839 OF DEEDS AT PAGE 437
EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORPORATION LIBER 490 OF DEEDS AT PAGE 329
WOOD FRAME BUILDING
TOWER
GAS MARK
VENT
ASPHALT
GRAVEL
RAIL TRACKS
BUILDING REMAINS
RET. WALL
GATE
CBS TF:292.0
CB TF:292.1
MATCH LINE - SEE SHEET C - 302

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MATCH LINE - SEE SHEET C - 301

UTILITY EASEMENT TO MOHAWK POWER CORP. (SEE DEED BOOK 1181 PG. 56)

1 STY MASONRY BUILDING #202

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

8" WATER MAIN (REC)

GAS MAIN (REC)

1 STY MASONRY BUILDING #203

HDPE PIPE @ 1.0%

INV(SE): 288.75

325 LF – 8" SDR35 @ 0.45%
1 C-902

RESTORATION: CONTRACTOR TO TOPSOIL & SEED AND REPLACE ANY OTHER DISTURBED/DAMAGED FEATURES TO EXISTING CONDITION OR BETTER

2" PE GAS SERVICE (TOTAL LENGTH=823 LF)

4 C-902 FULL HYDRANT ASSEMBLY (TYP)

RAIL TRACKS

SAN MH 5
RIM=292.5
NE INV=286.16 1 C-903
SW INV=286.06

327 LF – 8" SDR35 @ 0.45%
1 C-902

INLET PROTECTION (TYP) 3 C-602

2 C-902 8" GATE VALVE

CLOSED VALVE

1,3 C-902 2,702 LF – 8" D.I. OFF SITE WATER MAIN (PROVIDE ALL NECESSARY BENDS, FITTINGS AND THRUST BLOCKS)

C STREET
(SEE MAP REFERENCE NO. 1)

BENCHMARK
"x" CUT @ NHOA
ELEV. 291.5'

EX. SAN MH
(PER RECORD DWG) 6 C-903
RIM=292.0
W INV=287.07
E INV=285.29
~~N INV=283.62~~ 284.59
S INV=283.62

FFE 293.6'
CONC. STEPS
FFE 293.5'

RAIL TRACKS
RAIL TRACKS

MATCH LINE - SEE SHEET C - 303

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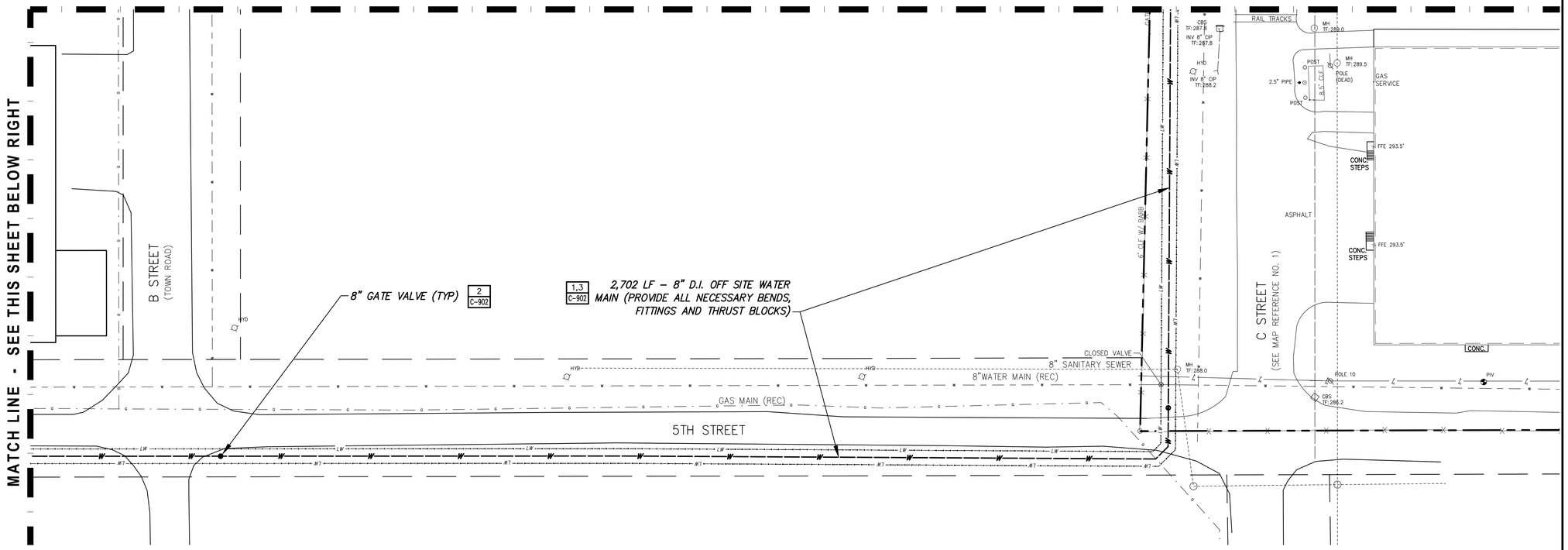
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

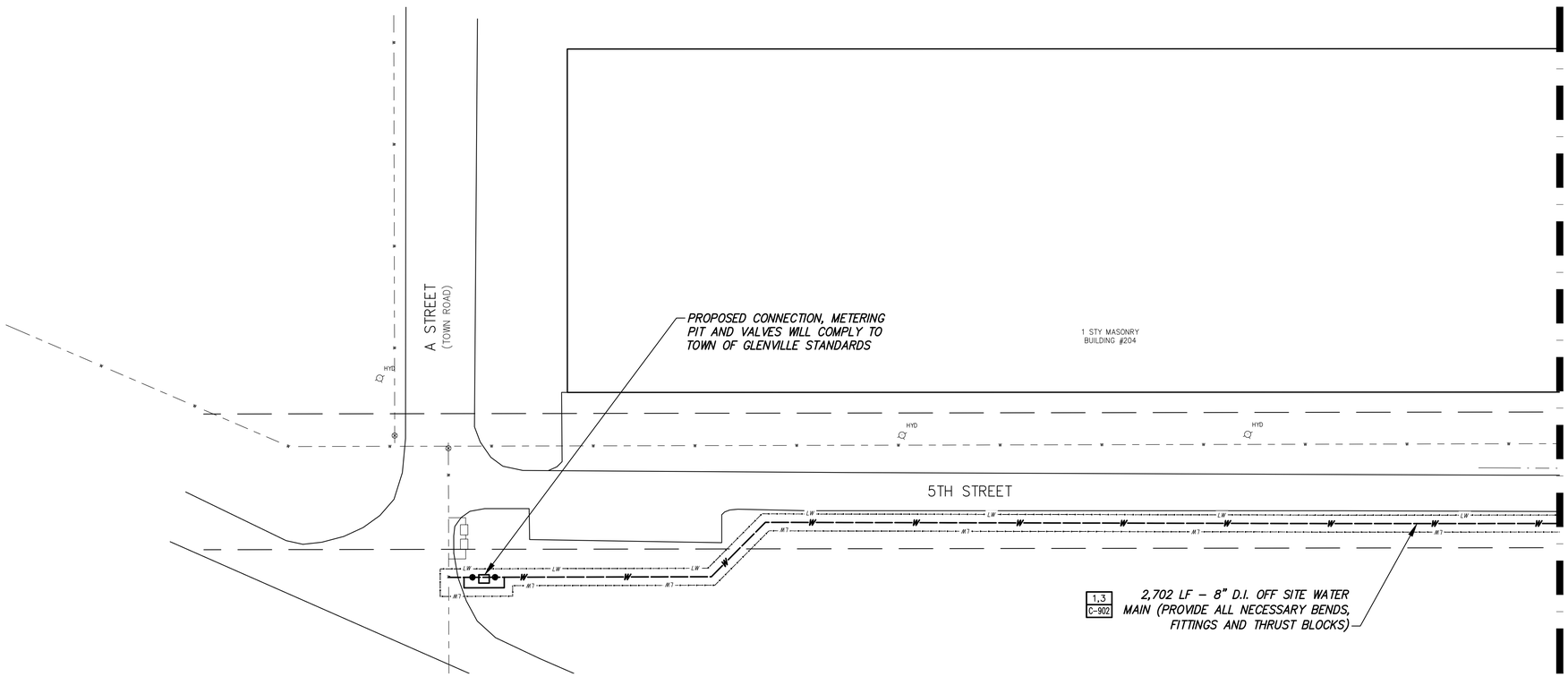
BELGIOIOSO®

SITE UTILITIES PLAN - 2

Designed By:	Drawn By:	Checked By:
KMD	KMD	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-302





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BELGIOIOSO CHEESE, INC.
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SITE UTILITIES PLAN - 3

Designed By:	Drawn By:	Checked By:
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Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-303

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N

0 40 80
Scale in feet

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

GRADING PLAN

Designed By:	Drawn By:	Checked By:
SHW	SHW	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-401

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO

DRAINAGE PLAN - B STREET SYSTEM

Designed By:	Drawn By:	Checked By:
SHW	SHW	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-402

ROOF DOWNSPOUTS @ 20' O.C. TO DAYLIGHT TO GRASS AREA (TYP.)

NON-CONTACT COOLING WATER EFFLUENT INV: 290.00

ROOF DOWNSPOUTS @ 40' O.C. (TYP.) TO DAYLIGHT TO GRASS AREA

ROOF DRAIN DOWNSPOUT CONNECTION

ROOF DRAIN DOWNSPOUT CONNECTION

ROOF DOWNSPOUTS @ 20' O.C. (TYP.) TO DAYLIGHT TO GRASS AREA

MANUFACTURING BUILDING
96,892 SF±, FFE = 296.0

CB #28
4' DIA. I.D.
TF: 293.10
INV(NW): 289.10

35 L.F. OF 12" HDPE PIPE @ 1.2%

CB #27
5' DIA. I.D.
TF: 292.75
INV(NE): 288.69
INV(NW): 288.69
INV(SE): 288.44

CB #29
4' DIA. I.D.
TF: 293.10
INV(NW): 289.10

73 L.F. OF 12" HDPE PIPE @ 0.60%

56 L.F. OF 15" HDPE PIPE @ 0.30%

CB #26
5' DIA. I.D. [3 C-904]
TF: 293.25
INV(N): 288.27
INV(SW): 288.17

TEE CONNECTION OF ROOF DRAIN DOWNSPOUTS (20' O.C.) TO 12" HEADER PIPE (TYP.)

CB #25
5' DIA. I.D.
TF: 293.10
INV(SE): 288.12
INV(NW): 288.02

16 L.F. OF 15" HDPE PIPE @ 0.30%

81 L.F. OF 15" HDPE PIPE @ 0.30%

EX. INV OUT: 287.50

[6 C-903] KOR-N-SEAL 24" HDPE INTO EX. CB AT INV: 287.60

5 L.F. OF 24" HDPE PIPE @ 0.60%

CB #20
6' DIA. I.D. [3 C-904]
TF: 293.10
INV(E): 287.91
INV(NW): 287.77
INV(SE): 287.67
INV(W): 287.67

5 L.F. OF 24" HDPE PIPE @ 0.80%

CDS UNIT #1
MODEL CDS3020-6-C
BY CONTECH ES [1 C-904]
TF: 293.20
INV(NW): 287.63
INV(SE): 287.63

CB #21
4' DIA. I.D.
TF: 291.80
INV(SE): 287.90
INV(NW): 287.90

114 L.F. OF 18" HDPE PIPE @ 0.20%

196 L.F. OF 15" [1 C-902] HDPE PIPE @ 0.20%

CB #22
4' I.D. DIA. [3 C-904]
TF: 291.80
INV(NW): 288.30

1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

C STREET
(SEE MAP REFERENCE NO. 1)

10" WATER MAIN (REC-DISCONNECTED)

16" WATER MAIN (REC-DISCONNECTED)

8" WATER MAIN (REC)

WATER MAIN (REC-DISCONNECTED)

8" WATER MAIN (REC)

48" RCP (RECORD)

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO

DRAINAGE PLAN - C STREET SYSTEM

Designed By:	Drawn By:	Checked By:
SHW	SHW	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-403

CB #19
4' DIA. I.D.
TF: 291.50
INV(SW): 287.50

44 L.F. OF 15"
HDPE PIPE @ 0.50%

82 L.F. OF 12"
HDPE PIPE @ 0.50%

CB #17
4' DIA. I.D.
TF: 290.50
INV(S): 287.18

ROOF DOWNSPOUTS
@ 20' O.C. TO
DAYLIGHT TO
GRASS AREA (TYP.)

NON-CONTACT COOLING
WATER EFFLUENT
INV: 290.00

30 L.F. OF 6"
HDPE PIPE @ 1.67%

CB #5
4' DIA. I.D.
TF: 295.45
INV(NW): 289.50
INV(SW): 288.50

76 L.F. OF 12"
HDPE PIPE @ 0.50%

CB #4
4' DIA. I.D.
TF: 294.50
INV(NE): 288.12
INV(SW): 288.02

106 L.F. OF 12"
HDPE PIPE @ 0.50% [1 / C-902]

CB #18
4' DIA. I.D.
[3 / C-904]
TF: 290.50
INV(NE): 287.09
INV(E): 286.99

96 L.F. OF 15"
HDPE PIPE @ 0.50%

CB #15
5' DIA. I.D.
TF: 290.50
INV(NE): 286.51
INV(NW): 286.51
INV(SE): 286.51

70 L.F. OF 15"
HDPE PIPE @ 0.50%

57 L.F. OF 18"
HDPE PIPE @ 0.20%

CB #16
4' DIA. I.D.
TF: 290.50
INV(NE): 286.96
INV(NW): 286.86

CB #14
5' DIA. I.D. [3 / C-904]
TF: 290.80
INV(N): 286.40
INV(S): 286.40

ROOF DOWNSPOUTS
@ 40' O.C. (TYP.)
TO DAYLIGHT TO
GRASS AREA

CB #8
30"x30" I.D.
[3 / C-904]
TF: 295.50
INV(NE): 292.00
INV(SW): 291.83

39 L.F. OF 8"
HDPE PIPE @ 1.0%

CB #7
30"x30" I.D.
TF: 295.50
INV(NE): 291.44
INV(SW): 291.34

MANUFACTURING
BUILDING
96,892 SF±, FFE = 296.0

ROOF DRAIN
DOWNSPOUT
CONNECTION

ROOF DRAIN
DOWNSPOUT
CONNECTION

CB #3
4' DIA. I.D.
TF: 295.17
INV(NW): 291.50
INV(NE): 287.49
INV(SW): 287.24

100 YEAR WSE: 288.6

CDS UNIT #2
MODEL CDS4030-8-C
BY CONTECH ES [1 / C-904]
TF: 295.00
INV(NW): 285.10
INV(SE): 285.10

134 L.F. OF 18"
HDPE PIPE @ 0.20%

MH #13
5' DIA.
TF: 294.95
INV(N): 286.13
INV(SE): 286.13

MH #23
4' DIA. I.D. [1 / C-903]
TF: 295.80
INV(SE): 291.80

TEE CONNECTION OF
ROOF DRAIN
DOWNSPOUTS (20'
O.C.) TO 12"
HEADER PIPE (TYP.)

127 L.F. OF 24"
HDPE PIPE @ 0.20%

196 L.F. OF 12"
HDPE PIPE @ 1.0%

CB #6
4' DIA. I.D.
TF: 295.00
INV(NE): 290.70
INV(NW): 288.98
INV(SE): 286.50

76 L.F. OF 15"
HDPE PIPE @ 1.0%

MH #24
4' DIA. I.D.
TF: 295.80
INV(NW): 289.84
INV(SE): 289.74

205 L.F. OF 24"
HDPE PIPE @ 0.20%

94 L.F. OF 15"
HDPE PIPE @ 0.50%

5 L.F. OF 24"
HDPE PIPE @ 0.20%

84 L.F. OF 18"
HDPE PIPE @ 0.6%

CB #2
6' DIA. I.D.
TF: 295.00
INV(NE): 286.77
INV(NW): 286.00
INV(SW): 285.11
INV(SE): 285.11

50 L.F. OF 24"
HDPE PIPE @ 0.20%

24" FES INV: 285.00

12" HDPE FES WITH 8" ORIFICE CAP
OVER 12" HDPE PIPE END INV: 284.90

15 L.F. OF 12"
HDPE PIPE @ 0.33%

72 L.F. OF 24"
HDPE PIPE @ 0.20%

OUTLET CONTROL
STRUCTURE #1
5'x5' I.D. [2 / C-904]
TF: 289.00
INV(NE): 284.85
INV(SE): 284.85

72 L.F. OF 24"
HDPE PIPE @ 0.20%

KOR-N-SEAL 24"
HDPE INTO EX. CB
AT INV: 284.70 [6 / C-903]

EX. INV OUT: 284.70

MH #12
[1 / C-903]
5' DIA. I.D.
TF: 293.80
INV(N): 285.87
INV(SE): 285.87

MH #11
5' DIA. I.D.
TF: 293.80
INV(N): 285.46
INV(SE): 285.46

103 L.F. OF 24"
HDPE PIPE @ 0.20%

CB #9
6' DIA. I.D.
[3 / C-904]
TF: 293.50
INV(SE): 288.33
INV(NW): 285.25
INV(NE): 285.25

42 L.F. OF 12"
HDPE PIPE @ 1.0%

CB #10
5' DIA. I.D.
TF: 292.75
INV(NW): 288.75
INV(SE): 288.75

1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

C STREET
(SEE MAP REFERENCE NO. 1)

16" WATER MAIN (REC-DISCONNECTED)

10" WATER MAIN (REC-DISCONNECTED)

8" WATER MAIN (REC)

WATER MAIN (REC-DISCONNECTED)

48" RCP (REDGRO)

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
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Schenectady County, NY

EROSION & SEDIMENT CONTROL PLAN

Designed By:	Drawn By:	Checked By:
KMD	KMD	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-601

SILT FENCE (TYP) 2/C-602

MANUFACTURING BUILDING
96,892 SF±, FFE = 296.0

INLET PROTECTION (TYP) 3/C-602

1/C-602 CONSTRUCTION ENTRANCE (TYP)

LIGHT STONE FILL RIP RAP OUTLET PROTECTION (TYP)

1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

C STREET
(SEE MAP REFERENCE #6)

48" RCP (RECORD)

APPROXIMATE CENTERLINE LOCATION OF 20' WIDE GAS EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORPORATION LIBER 839 OF DEEDS AT PAGE 437

UTILITY EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORPORATION LIBER 490 OF DEEDS AT PAGE 329

WOOD FRAME BUILDING
WOOD FRAME BUILDING
TOWER
TOWER
GAS MARK
POLE W/ TRANS & LIGHT
POLE W/ TRANS & UG
ASPHALT
GRAVEL
GATE
WELL
CB
HYD
BUILDING OVERHANG
CONC. MON. FND.

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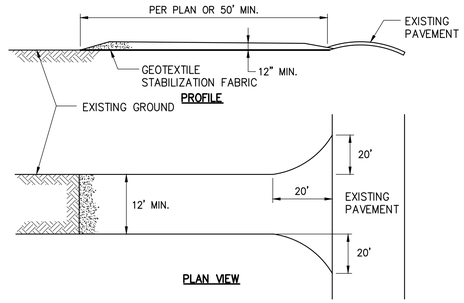
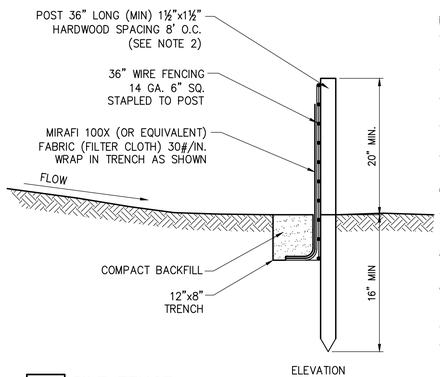
Saved: 3/11/2019 7:30:01 AM Plotted: 3/11/2019 1:12:11 PM Current User: Watson, Seth LastSavedBy: 3930



1. STONE SIZE–USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. THICKNESS–NOT LESS THAN 12".
3. WOVEN GEOTEXTILE FABRIC WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
4. EXISTING ROAD SIDE DRAINAGE SHALL BE MAINTAINED.
5. MAINTENANCE–THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT OR STONE SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
6. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

1 STABILIZED CONSTRUCTION ENTRANCE

SCALE: NO SCALE

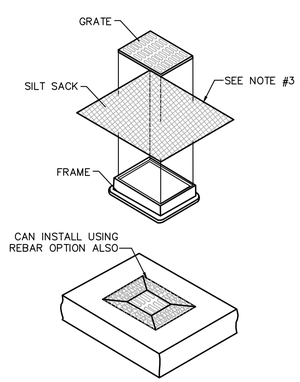


NOTES:

1. TIE FABRIC TO WIRE FENCE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. IF EXTRA STRENGTH FABRIC (GREATER THAN 50#/INCH) IS USED, WIRE CAN BE DELETED IF POST SPACING IS REDUCED TO 6' O.C.
3. AT THE ENDS OF THE FENCING THE FIRST 20' SHALL BE TURNED UP THE SLOPE 2'.
4. POSTS SHOULD BE INCLINED TOWARD THE DIRECTION FLOW CAME FROM.
5. OVERLAP FABRIC A MINIMUM OF 6" AND FOLDED AT JOINO SCALE. ATTACH FILTER FABRIS TO STAKES ALLOWING EXTENSION INTO TRENCH AS SHOWN; SECURE TO STAKES AS NOTED.
6. THE MAXIMUM AREA OF RUNOFF PER 100LF. OF FENCE SHALL NOT EXCEED 0.25 ACRES.
7. MAINTENANCE SHALL BE PERFORMED AS NECESSARY. THE FENCING SHALL BE CHECKED AFTER EVERY STORM TO ENSURE THEIR PROPER FUNCTIONING.
8. WHEN FENCE IS NO LONGER NEEDED, THE ACCUMULATED SILT, THE POSTS AND FABRIC SHALL BE REMOVED AND TRENCH BACK FILLED WITH TOPSOIL AND SEEDED.
9. FENCING SHOULD BE PLACED AS SHOWN ON THE DRAWING OR IF NOT SHOWN, 10' BEYOND THE TOE OF THE OF THE SLOPE AND AT A SPACING IN ACCORDANCE WITH THE TABLE.
10. EXCAVATE TRENCH AS PER DETAIL AND SET POSTS AT 10' O.C.
11. BACKFILL WITH COMPACTED, EXCAVATED SOIL FROM TRENCH.

2 SILT FENCE

SCALE: NO SCALE

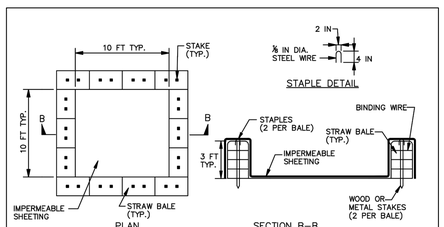


NOTES:

1. CONTRACTOR IS TO TAKE EXTRA CARE WHEN REMOVING OR MAINTAINING INLET PROTECTION FABRIC. NO SEDIMENT IS TO BE ALLOWED TO FALL INTO THE DRAINAGE STRUCTURE. IF ANY SEDIMENT SHOULD FALL INTO THE STRUCTURE, IT SHALL BE REMOVED IMMEDIATELY.
2. CONTRACTOR TO USE SILT SACK BY ACF ENVIRONMENTAL, INC. OR APPROVED EQUAL.
3. CONTRACTOR TO REMOVE/REPLACE INLET PROTECTION FABRIC AS NECESSARY. INLET PROTECTION TO BE INSPECTED ON A WEEKLY BASIS AND AFTER HEAVY STORM EVENTS.
4. INLET PROTECTION TO BE USED ON EXISTING AND NEW STORM STRUCTURES.

3 FILTER FABRIC DROP INLET PROTECTION

SCALE: NO SCALE



WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 30 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET–VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

4 CONCRETE WASHOUT

SCALE: NO SCALE

EROSION & SEDIMENT CONTROL NOTES

ONE WEEK PRIOR TO BEGINNING EARTHWORK OPERATIONS, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH A REPRESENTATIVE FROM THE TOWN TO DISCUSS THE EROSION AND SEDIMENT CONTROL PLAN, AND TO FINALIZE THE PAPER WORK FOR THE STORM WATER POLLUTION PREVENTION PLAN AS SPECIFIED IN THE STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION ACTIVITIES (GP-0-15-002).

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO BEGINNING ANY LAND DISTURBANCE ACTIVITIES. THE DEVICES PROVIDING PROTECTION TO A GIVEN AREA SHALL NOT BE REMOVED UNTIL THE LANDS IN THAT AREA ARE STABILIZED.

NO DISTURBED AREA SHALL REMAIN EXPOSED FOR MORE THAN 14 CALENDAR DAYS.

CONSTRUCTION SEQUENCE:

GENERAL NOTES:

- SILT FENCE SHALL BE INSTALLED AT THE TOE OF SLOPES WITH BUFFER AREAS PER BLUE BOOK GUIDELINES.
- BACKFILL SHALL BE PLACED ON THE UPSTREAM SIDE OF ALL TRENCHES DURING UTILITY CONSTRUCTION.
- PROTECT ALL EXISTING STORM SEWER FACILITIES SURROUNDING THE SITE FROM SEDIMENT TRANSPORT.

SEQUENCE:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES AS SHOWN. LIMIT ALL VEHICULAR TRAFFIC TO THESE ENTRANCES ONLY.
2. INSTALL SILT FENCE AS SHOWN. ADDITIONAL SILT FENCING MAY BE INSTALLED AS NECESSARY.
3. PROTECT EXISTING CATCH BASINS ALONG ADJACENT ROADWAYS.
4. ROUGH GRADE SITE PER DESIGN. DO NOT DISTURB MORE THAN 5 ACRES AT ONE TIME WITHOUT PRIOR PERMISSION FROM THE TOWN AND NYSDEC.
5. PROVIDE SILT FENCING AROUND PERIMETER OF STAGED/STOCKPILED TOP SOIL AND/OR TEMPORARY STAGED PILE OR FILL.
6. CONSTRUCT PROPOSED STORMWATER DETENTION BASIN. INSTALL PERMANENT SEEDING AND STABILIZE ONCE DETENTION BASIN HAS BEEN GRADED.
7. SWALES/DIKES SHALL BE CONSTRUCTED AS NEEDED TO PROVIDE POSITIVE DRAINAGE.
8. INSTALL UTILITIES. TRENCHES SHALL BE BACKFILLED/COMPACTED AND STABILIZED IMMEDIATELY AFTER BACKFILL OPERATION.
9. CONSTRUCT BUILDING.
10. ALL GRADED AREAS ARE TO BE SEEDED AND MULCHED FOR VEGETATIVE COVER IMMEDIATELY UPON COMPLETION OF EARTHWORK OPERATION.
11. CONSTRUCT ACCESS DRIVES AND PARKING LOTS.
12. COMPLETE FINAL GRADING AND INSTALL PERMANENT SEEDING, MULCH AND LANDSCAPING.
13. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND GROUND IS STABILIZED, REMOVE EROSION CONTROL MEASURES AND RESEED ANY DISTURBED AREAS CREATED BY THEIR REMOVAL.

INSPECTION PROCEDURES & MAINTENANCE:

1. DURING CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE TEMPORARY EROSION CONTROL FACILITIES. ALSO, AREAS THAT HAVE BEEN SEEDED WILL BE INSPECTED REGULARLY AFTER SEED GERMINATION TO ENSURE COMPLETE COVERAGE OF EXPOSED AREAS.
2. CONTRACTOR SHALL INSPECTION ALL DEVICES WEEKLY. REPAIRS SHOULD BE COMPLETED IMMEDIATELY UPON DISCOVERY OF DEFICIENCIES.
3. THE DEVELOPER WILL DESIGNATE A QUALIFIED PERSON(S) TO PERFORM THE FOLLOWING INSPECTIONS EVERY 7 CALENDAR DAYS IF DISTURBANCE IS LESS THAN 5 ACRES. IF DISTURBANCE IS GREATER THAN 5 ACRES, INSPECTIONS SHALL BE PERFORMED TWICE PER WEEK WITH A MINIMUM OF 2 DAYS BETWEEN INSPECTIONS:
   A. STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED (80% VIGOROUS GRASS GROWTH), INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT.
   B. STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN, WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. UPON STABILIZATION (80% VIGOROUS GRASS GROWTH) OF THE DISTURBED AREAS, ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE REMOVED.
   C. DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.
   D. CONSTRUCTION ENTRANCES: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.
4. SEDIMENT AROUND THE SILT FENCING SHOULD BE REMOVED AS NEEDED TO MAINTAIN ITS FUNCTIONALITY.
5. ALL SEEDED AREAS SHALL BE MAINTAINED AS FOLLOWS:
   A. IDENTIFY SEEDED AREAS WITH STAKES, STRING AND BRIGHTLY COLORED FLAGGING. PROTECT SEEDED AREAS UNTIL VEGETATION HAS BEEN ESTABLISHED.
   B. IMMEDIATELY RESEED AREAS WHICH DO NOT ESTABLISH VEGETATION.

PERMANENT EROSION CONTROL MEASURES:

PERMANENT STABILIZATION NOTES: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASE SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY WHERE 5 OR MORE ACRES ARE DISTURBED AT ONE TIME. IN AREAS WHERE LESS THAN 5 ACRES ARE DISTURBED, STABILIZATION SHALL OCCUR WITHIN 14 DAYS.

TOPSOIL SHALL HAVE AT LEAST TWO (2) PERCENT BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL, AND NO GREATER THAN SIX (6) PERCENT. MUCK SOIL SHALL NOT BE CONSIDERED TOPSOIL. TOPSOIL SHALL NOT HAVE LESS THAN 20 PERCENT FINE TEXTURES MATERIAL (PASSING THE No. 200 SIEVE) AND NOT MORE THAN 15 PERCENT CLAY. TOPSOIL SHALL BE FREE OF STONES OVER 1.5 INCHES IN DIAMETER, TRASH, NOXIOUS WEEDS SUCH AS NUT SEDGE AND QUACKGRASS, AND WILL HAVE LESS THAN 10 PERCENT GRAVEL BY VOLUME. REFER TO NYS STANDARDS & SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL (BLUE BOOK) PAGES 3.27-3.28 FOR INFORMATION ON TOPSOIL APPLICATION AND GRADING.

THE PERMANENT SEED MIX SHALL BE AS FOLLOWS:

SPECIES	RATE PER ACRE (LBS.)	RATE PER 1,000 SQ.FT. (LBS.)
KENTUCKY BLUEGRASS	115	2.6
PERENNIAL RYE	35	0.8
FINE FESCUE	25	0.6

FERTILIZER SHALL BE COMMERCIAL FERTILIZER (5-10-5) INORGANIC, OR ORGANIC, CONTAINING NOT LESS THAN FIVE (5) PERCENT NITROGEN, TEN (10) PERCENT AVAILABLE PHOSPHORIC ACID, AND FIVE (5) PERCENT WATER SOLUBLE POTASH.

PROVIDE AND INSTALL A MULCH ADEQUATE TO PROTECT THE SEEDING DURING ITS GROWING PERIOD. REFER TO BLUE BOOK (2010) PAGES 3.29-3.31 TO DETERMINE THE APPROPRIATE MULCHING TECHNIQUES FOR THE PARTICULAR SITE CONDITIONS.

CHA
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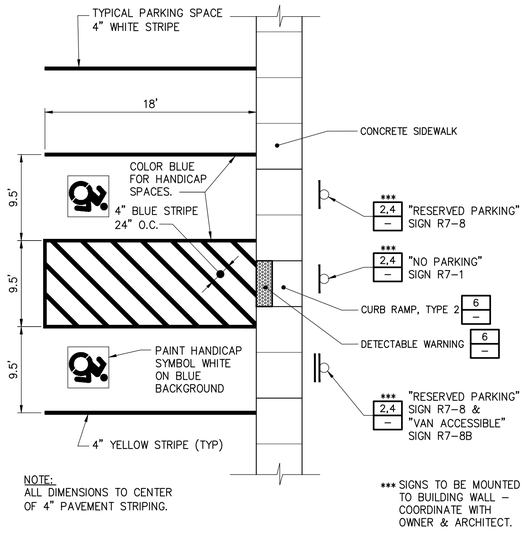
No.	Submittal / Revision	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW 3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

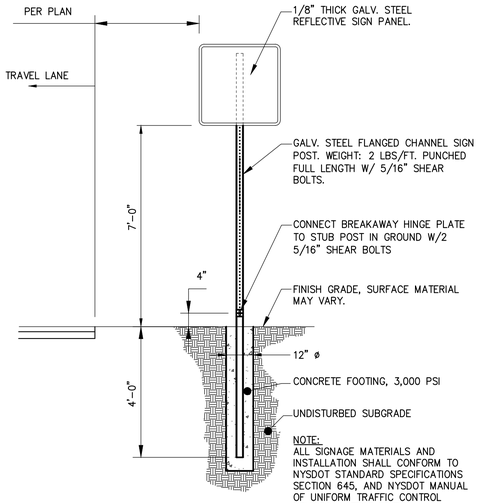
EROSION & SEDIMENT CONTROL DETAILS

Designed By:	Drawn By:	Checked By:
Issue Date: 02/25/2019	Project No: 32984	Scale: AS SHOWN

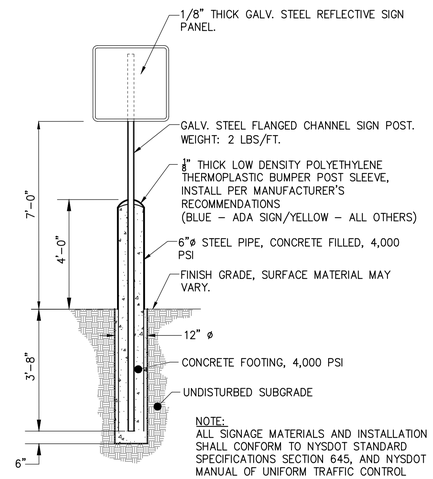
Drawing No: C-602



1 ADA PARKING SPACE & TYPICAL STRIPING DETAIL
SCALE: NO SCALE



2 SITE SIGNAGE W/ BREAKWAY POST
SCALE: NO SCALE

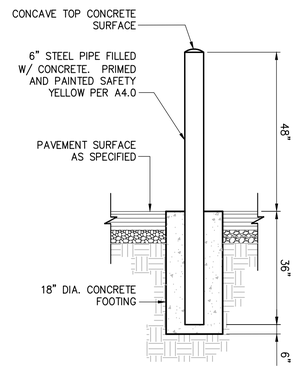


3 SIGN POST W/ BOLLARD
SCALE: NO SCALE

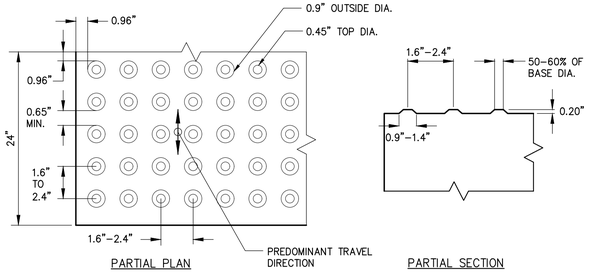
SITE SIGN TABLE

SIGN NO.	DESCRIPTION	M.U.T.C.D. NO./SIZE
1	STOP	R1-1 30"x30"
2	RESERVED PARKING	R7-8 12"x18"
3	VAN ACCESSIBLE	R7-8B 12"x18"
4	NO PARKING	R7-1 12"x18"
5	DO NOT ENTER	R5-1 (30"x30")
6	EMERGENCY VEHICLES ONLY	R5-1 (12"x18")

4 SITE SIGN TABLE
SCALE: NO SCALE



5 BOLLARD DETAIL
SCALE: NO SCALE



PARTIAL PLAN

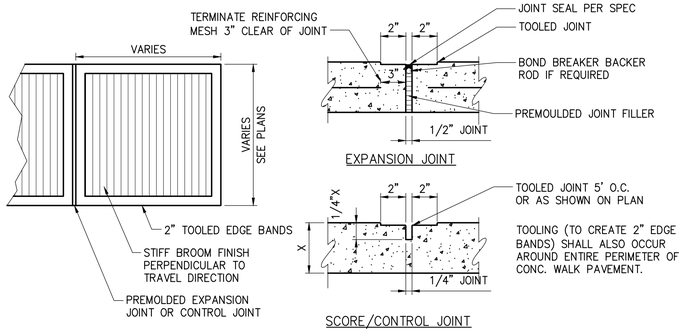
PARTIAL SECTION

NOTES:

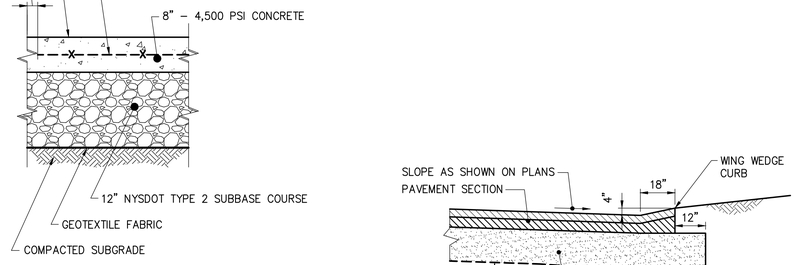
1. THE COLOR OF THE DOMES ARE TO BE RED (NOT ORANGE).
2. DETAIL REFERENCED FROM NYSDOT SS M608-5R1.
3. THE QUANTITY OF DOMES DEPICTED ARE FOR ILLUSTRATION ONLY.
4. THE TRUNCATED DOME SURFACE SHALL CONTRAST VISUALLY WITH ADJOINING WALKING SURFACES. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE TRUNCATED DOME SURFACE.
5. DETECTABLE WARNING SHALL BE LOCATED SO THAT THE EDGE OF WARNING FIELD NEAREST TO THE ROADWAY SURFACE IS 6" TO 9" FROM THE EDGE OF ROADWAY AND FROM THE BACK OF THE DROPPED CURB, WHERE A DROPPED CURB CONTINUES ACROSS THE BOTTOM OF THE SIDEWALK CURB RAMP. THE DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
6. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL.

6 DETECTABLE WARNING SURFACE
SCALE: NO SCALE

EXPANSION JOINTS TO OCCUR 20' O.C. MAX & AT ALL CURBS, WALLS, & VERT. ELEMENTS, AND AS SHOWN ON PLANS



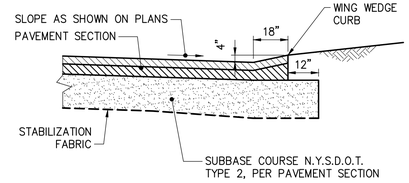
7 CONCRETE SIDEWALK FINISHING AND JOINTS
SCALE: NO SCALE



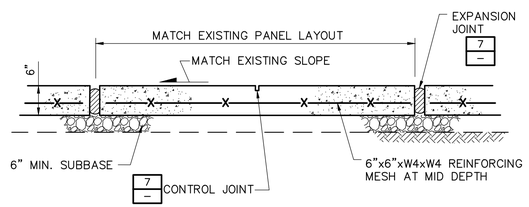
NOTES:

1. EXPANSION JOINTS TO BE PLACED BETWEEN ADJACENT SLABS, AT BUILDING LINE, AT CURBS, OR AT PENETRATING STRUCTURES. MAX. 20'-0" O.C.
2. LOCATE CONTROL JOINTS AS SHOWN ON PLAN. ADJUST TIGHT AREAS TO EQUAL SPACING.

8 CONCRETE DUMPSTER PAD DETAIL
SCALE: NO SCALE



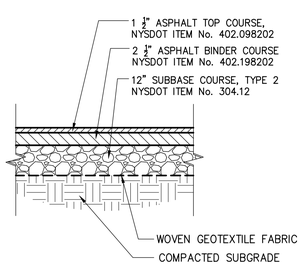
9 WING WEDGE CURB DETAIL
SCALE: No SCALE



NOTES:

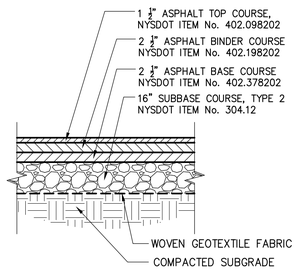
1. THE CONCRETE USED SHALL BE PORTLAND CEMENT, AIR-ENTRAINED, CLASS "A" CONCRETE WITH AN AIR CONTENT OF 5%, MIN., TO 7%, MAX., AND A SLUMP OF 3" MIN. TO 5" MAX.
2. ALL SIDEWALKS SHALL BE FINISHED WITH A STIFF BROOM FINISH UNLESS DIRECTED OTHERWISE BY THE CITY.
3. EXPANSION JOINTS TO BE PLACED BETWEEN ADJACENT SLABS, AT BUILDING LINE, AT CURBS, OR AT PENETRATING STRUCTURES.
4. ALL SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 1.5% AS PER THE NYSDOT 608-01 STANDARD SHEETS 1 THROUGH 9 "SIDEWALK AND CURB RAMP DETAILS".

10 CONCRETE SIDEWALK INSTALLATION DETAIL
SCALE: NO SCALE



NOTE:
TACK COAT SHALL BE APPLIED BETWEEN EACH COURSE OF PAVEMENT - NYSDOT ITEM 407.0103

11 LIGHT DUTY ASPHALT PAVEMENT DETAIL
SCALE: NO SCALE



NOTE:
TACK COAT SHALL BE APPLIED BETWEEN EACH COURSE OF PAVEMENT - NYSDOT ITEM 407.0103

12 HEAVY DUTY ASPHALT PAVEMENT DETAIL
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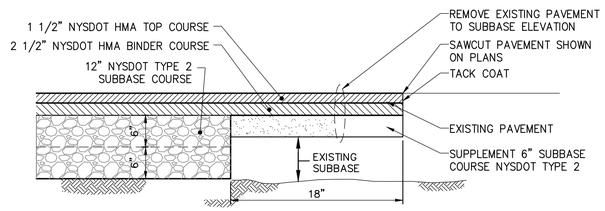

13 ROAD PAVEMENT/TRANSITION DETAILS
SCALE: NO SCALE

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No.	Submittal / Revision	By	App'd.	Date
1	ISSUED FOR TOWN REVIEW	SHW	MFM	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	SHW	MFM	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

DETAILS - 1

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-901

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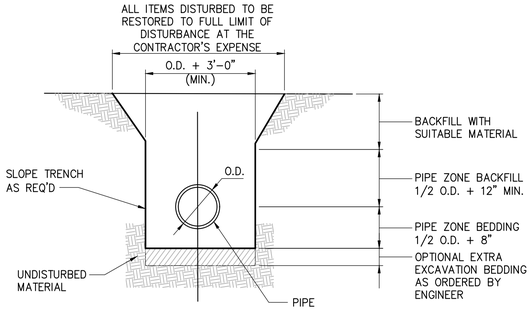
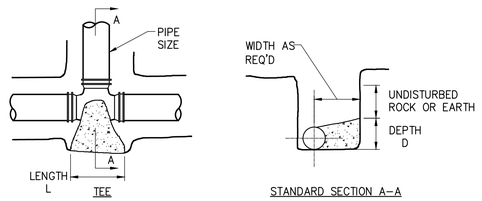


NOTES:

1. PIPE ZONE BEDDING: SELECT MIXTURE OF GRADED CRUSHED STONE, FREE FROM ORGANIC, FROZEN OR OTHER DELETERIOUS MATERIALS, CONFORMING TO THE REQUIREMENTS OF NYSDOT SECTION 703–02 AND MEETING THE GRADATION REQUIREMENTS OF NYSDOT SIZE 2.
2. PIPE ZONE BACKFILL: SOUND, DURABLE SAND, GRAVEL, STONE OR BLENDS OF THESE MATERIALS, FREE FROM ORGANIC, FROZEN OR OTHER DELETERIOUS MATERIALS, CONFORMING TO THE REQUIREMENTS OF NYSDOT SECTION 304 AND MEETING THE GRADATION REQUIREMENTS OF NYSDOT SUBBASE TYPE 4.
3. SUITABLE MATERIAL: SOUND, DURABLE SAND, GRAVEL, STONE OR BLENDS OF THESE MATERIALS, FREE FROM ORGANIC, FROZEN OR OTHER DELETERIOUS MATERIALS, CONFORMING TO THE REQUIREMENTS OF NYSDOT 203–2.02C.
4. ALL PIPE TRENCHES BACKFILL SHALL BE COMPACTED BY TAMPING OR ROLLING TO ACHIEVE A MINIMUM DRY DENSITY OF 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY OF THE MATERIAL USED (ASTM D1557). BACKFILL IN PIPE TRENCHES TO BE COVERED WITH PAVEMENT SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
5. THE CONTRACTOR SHALL PROVIDE EXCAVATION SUPPORT AND PROTECTION AS NECESSARY TO LIMIT DISTURBANCE TO THE SAWCUT LIMITS SHOWN ON THE SITE DEMOLITION PLANS. ANY DISTURBANCE THAT OCCURS BEYOND THE SAWCUT LIMITS AND REMOVAL AREAS SHOWN SHALL BE REPLACED IN–KIND AT THE CONTRACTORS EXPENSE.

1 TYPICAL TRENCH DETAIL
SCALE: NO SCALE



REQUIRED BEARING AREAS & DIMENSIONS FOR CONCRETE THRUST BLOCKS												
PIPE SIZE (IN.)	TEE (SEE NOTE 5)		90° (1/4) BEND		45° (1/8) BEND		22½ (1/16) BEND		11¼ (1/32) BEND			
	AREA (SQ.FT.)	DIMENSION D x L	AREA (SQ.FT.)	DIMEN. D x L	AREA (SQ.FT.)	DIMEN. D x L	AREA (SQ.FT.)	DIMEN. D x L	AREA (SQ.FT.)	DIMEN. D x L		
3 & 4	1.4	1.0 x 1.5	2.0	1.0 x 2.0	1.1	1.0 x 1.5	0.6	0.5 x 1.5	0.3	0.5 x 1.0		
6	3.2	1.5 x 2.5	4.5	2.0 x 2.5	2.4	1.5 x 2.0	1.2	1.0 x 1.5	0.6	1.5 x 1.5		
8	5.7	2.0 x 3.0	8.0	2.0 x 4.0	4.3	2.0 x 2.5	2.2	1.5 x 1.5	1.1	1.0 x 1.5		

THRUST BLOCK NOTES:

1. FOR REQUIRED BEARING AREA DIMENSIONS D & L, SEE TABLE. DIMENSIONS OF D & L OTHER THAN THOSE SHOWN IN THE TABLE MAY BE USED PROVIDED THEY YIELD A BEARING AREA EQUAL TO OR LARGER THAN THAT REQUIRED.
2. CONCRETE NOT TO OVERLAP ANY JOINT.
3. CONCRETE TO BE PLACED SO AS NOT TO INTERFERE WITH REMOVING OR INSTALLING ANY OF THE JOINTING HARDWARE.
4. APPROXIMATE VOLUME OF CONCRETE THRUST BLOCK:

$$V = \frac{LD\ (W + ID) - ID}{27}$$

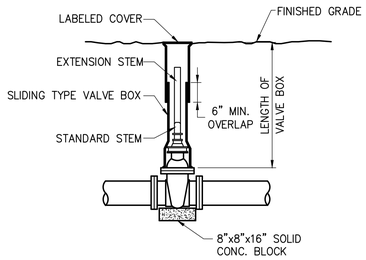
WHERE:
V = VOLUME IN CUBIC YARDS
L = LENGTH OF BLOCK IN FEET
D = DEPTH OF BLOCK IN FEET
W = WIDTH OF BLOCK IN FEET
ID = INSIDE DIAMETER OF PIPE IN FEET

5. VALUES FOR TEE ALSO APPLY TO END PLUGS, CAPS AND TAPPING SLEEVES.
6. REQUIRED BEARING AREAS ARE DUE TO THRUSTS CAUSED BY 150 PSI WORKING PRESSURE PLUS 50% (75 PSI) SURGE ALLOWANCE RESULTING IN 225 PSI TOTAL INTERNAL PRESSURE. NORMAL PIPE DIAMETER USED.
7. REQUIRED BEARING AREAS ARE BASED ON ALLOWABLE SOIL BEARING CAPACITY OF 2,000 LBS/SQUARE FOOT FOR SAND. DUE TO OTHER SOIL CONDITIONS ENCOUNTERED, BEARING AREAS MAY BE MODIFIED BY THE ENGINEER.
8. IN MUCK, PEAT, OR RECENTLY PLACED FILL, ALL THUST SHALL BY RESISTED BY PILES OR TIE RODS TO SOLID FOUNDATIONS, OR BY REMOVAL OF SUCH UNSTABLE MATERIAL AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THE THRUSTS, ALL AS REQUIRED BY THE ENGINEER.

TYPE A BLOCKING FOR 11 ¼° & 22 ½° VERTICAL BENDS						
PIPE SIZE (NOM. DIA. IN.)	VERTICAL BEND (DEGREES)	No. OF CU.FT. OF CONC. BLOCKING SIDE OF CUBE (FT.)		DIA. OF SHACKLE RODS (2)" (IN.)	DEPTH OF RODS IN CONC. (FT.)
4"	11 1/4°	8	2.0	3/4"	1.6
	22 1/2°	16	2.5		
6"	11 1/4°	16	2.5	3/4"	1.6
	22 1/2°	32	3.2		
8"	11 1/4°	28	3.0	3/4"	1.6
	22 1/2°	55	3.8		

TYPE B BLOCKING FOR 45° VERTICAL BENDS					
PIPE SIZE (NOM. DIA. IN.)		No. OF CU.FT. OF CONC. BLOCKING SIDE OF CUBE (FT.)	DIA. OF SHACKLE RODS (2)" (IN.)		DEPTH OF RODS IN CONC. (FT.)
4"		29	3.1		
6"		59	3.9		
8"		102	4.7	3/4"	1.6

3 THRUST BLOCKING DETAIL
SCALE: NO SCALE



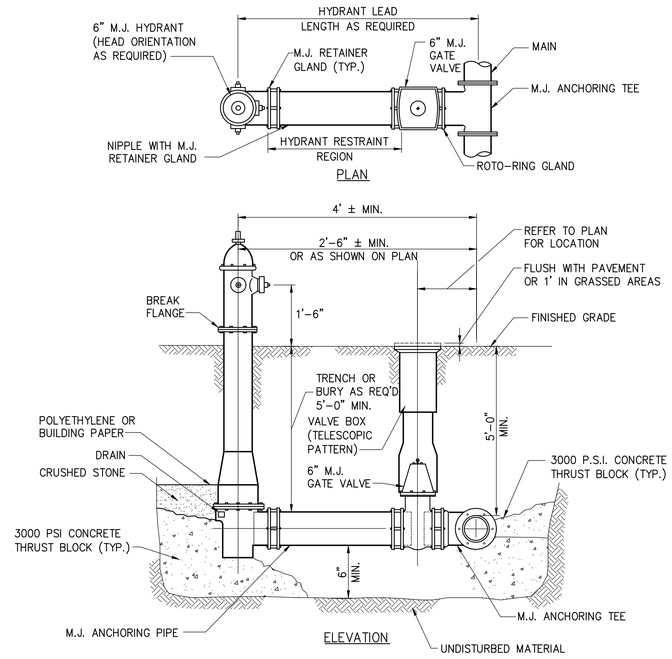
NOTES:

1. GATE VALVES SHALL BE DUCTILE IRON BODY, FULLY BRONZE MOUNTED DOUBLE DISC, PARALLEL SEAT VALVES WITH HOB OR FLANGED ENDS. ALL BURIED VALVES SHALL BE NON–RISING STEM TYPE WITH 2" SQUARE OPERATING UNIT AND ADJUSTABLE DUCTILE IRON VALVE BOXES AND COVERS SUITABLE FOR PIPE COVER OF FIVE FEET.
2. GATE VALVE MUST MEET AWWA C509 REQUIREMENTS
3. GATE VALVES SHALL OPEN COUNTERCLOCKWISE.
4. GATE VALVES SHALL BE EDDY CLOW T–6100 OR APPROVED EQUAL AND SHALL BE SUITABLE FOR WORKING PRESSURE OF 200 POUNDS PER SQUARE INCH AND SHALL BE TESTED AT 400 POUNDS PER SQUARE INCH.
5. VALVE BOXES SHALL CONSIST OF CAST–IRON BASE, CENTER SECTION AND TOP SECTION WITH COVER WHICH SHALL BE MARKED "WATER". THE TOP SECTION SHALL BE ADJUSTABLE FOR ELEVATION AND SHALL BE SET TO ALLOW EQUAL MOVEMENT ABOVE AND BELOW FINISHED GRADE. THE BASE SHALL BE CENTERED OVER THE VALVE AND SHALL REST ON COMPACTED BACKFILL. THE TOP OF THE BASE SECTION SHALL BE APPROXIMATELY ON LINE WITH NUT AT TOP OF VALVE STEM AND THE ENTIRE ASSEMBLY SHALL BE PLUMB.

2 GATE VALVE DETAIL
SCALE: NO SCALE

WATER MAIN TESTING NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND SHALL PERFORM ALL WORK REQUIRED IN CONNECTION WITH THE TESTS.
2. EACH SECTION TESTED SHALL BE SLOWLY FILLED WITH WATER, CARE BEING TAKEN TO EXPEL ALL AIR FROM THE PIPES. IF NECESSARY, THE PIPES SHALL BE TAPPED AT HIGH POINTS TO VENT THE AIR.
3. THE REQUIRED PRESSURE AS MEASURED AT THE POINT OF LOWEST ELEVATION SHALL BE APPLIED FOR NOT LESS THAN ½ HOUR, AND ALL PIPE, FITTINGS, VALVES, HYDRANTS AND JOINTS SHALL BE CAREFULLY EXAMINED FOR DEFECTS. LEAKING LEAD JOINTS SHALL BE REMOVED. OTHER TYPES OF LEAKY JOINTING SHALL BE MADE WATERTIGHT.
4. NO PIPE INSTALLATION WILL BE ACCEPTED UNLESS AND UNTIL LEAKAGE (EVALUATED ON A PRESSURE BASIS OF 150 POUNDS PER SQUARE INCH) IS LESS THAN 100 U.S. GALLONS PER 24 HOURS PER INCH NORMAL DIAMETER FOR PIPE OF TWELVE–FOOT LENGTHS, 75 U.S. GALLONS FOR SIXTEEN–FOOT LENGTHS, AND CORRESPONDINGLY VARIED FOR OTHER LENGTHS OF PIPE.
5. EVALUATION OF THE ACTUAL LEAKAGE TO THE LEAKAGE UNDER THE ASSUMED BASIC PRESSURE OF 150 POUNDS PER SQUARE INCH SHALL BE CALCULATED BY THE APPLICATION OF THE RATIO DETERMINED BY THE SQUARE ROOT OF THE RESPECTIVE PRESSURES.
6. BEFORE BEING PLACED IN SERVICE THE ENTIRE LINE SHALL BE CHLORINATED. CHLORINE MAY BE APPLIED BY THE FOLLOWING METHODS: LIQUID CHLORINE.
7. THE CHLORINATING AGENT SHALL BE APPLIED AT THE BEGINNING OF THE SECTION ADJACENT TO THE FEEDER CONNECTION AND SHALL BE INJECTED THROUGH A CORPORATION COCK, HYDRANT OR OTHER CONNECTION INSURING TREATMENT OF THE ENTIRE LINE.
8. WATER SHALL BE FED SLOWLY INTO NEW LINE WITH CHLORINE APPLIED IN AMOUNTS TO PRODUCE A DOSAGE OF 100 PARTS PER MILLION (PPM). MAINS PREVIOUSLY FILLED SHALL BE TREATED TO A CONCENTRATED DOSAGE AT INTERVALS ALONG THE LINE AND RETAINED FOR A PERIOD OF EIGHT HOURS OR MORE. A RESIDUAL OF NOT LESS THAN FIVE PART PER MILLION (PPM) SHALL BE PRODUCED IN ALL PARTS OF THE LINE.
9. DURING THE CHLORINATION PROCESS, ALL VALVES AND ACCESSORIES SHALL BE OPERATED.
10. AFTER CHLORINATION, THE WATER SHALL BE FLUSHED FROM THE LINE AT ITS EXTREMITIES UNTIL THE REPLACEMENT–WATER TESTS ARE EQUAL, CHEMICALLY AND BACTERIOLOGICALLY, TO THOSE OF THE PERMANENT SOURCE OF SUPPLY.



NOTES:

1. HYDRANTS SHALL BE DUCTILE IRON BODY, FULLY BRONZE MOUNTED, AND SUITABLE FOR WORKING PRESSURE OF 150 POUNDS PER SQUARE INCH AND SHALL BE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE AWWA.
2. HYDRANTS SHALL BE CONSTRUCTED IN A MANNER PERMITTING WITHDRAWAL OF INTERNAL WORKING PARTS WITHOUT DISTURBING BARREL OR CASING. THEY SHALL BE PROVIDED WITH SLIDING FROST CASES OR POROUS FILL AROUND BARREL. VALVE, WHEN SHUT, SHALL BE REASONABLY TIGHT WHEN UPPER PORTION OF BARREL IS BROKEN OFF. VALVE OPENING SHALL BE AT LEAST 4–1/2" IN DIAMETER, WITH NET AREA OF WATERWAY AT SMALLEST PART, WITH VALVES WIDE OPEN, NOT LESS THAN 120% OF VALVE OPENING. THERE SHALL BE NO CHATTERING UNDER ANY CONDITION OF OPERATION.
3. EACH HYDRANT SHALL BE TESTED TO A HYDROSTATIC PRESSURE OF 300 PONDS PER SQUARE INCH WITH VALVE IN BOTH OPEN AND CLOSED POSITIONS.
4. THE DIRECTION OF OPENING SHALL BE COUNTERCLOCKWISE AND CAST ON HEAD OF HYDRANT.
5. ALL HYDRANTS SHALL HAVE TWO 2–1/2" HOSE CONNECTIONS AND ONE 5" STEAMER CONNECTION, AND ONE 6" BOTTOM CONNECTION TO THE MAIN, WHICH SHALL HAVE FIVE FEET OF EARTH COVER.
6. HOSE NIPPLES SHALL BE BRONZE OR NON–CORROSIVE METAL AND THREADS SHALL BE "NATIONAL STANDARD". NIPPLE CAPS SHALL BE SECURELY CHAINED TO THE BARREL.
7. TO PREVENT FREEZING, A NON–CORROSIVE DRIP VALVE MUST BE PROVIDED TO DRAIN THE BARREL OF THE HYDRANT WHEN THE MAIN VALVE IS CLOSED.
8. HYDRANTS SHALL BE PAINTED ONE COAT OF WEATHER–RESISTANT PAINT AND APPROVED BY THE ENGINEER. THE FINAL COAT SHALL BE SONNEBORN'S HYDRANT ENAMEL OR APPROVED EQUAL. THE MAKE SHALL BE EDDY CLOW T–2640 OR APPROVED EQUAL.
9. HYDRANTS SHALL BE SET ON A PRECAST CONCRETE SLAB 15" SQUARE AND 6" THICK. EXTRA SOIL SHALL BE EXCAVATED AROUND AND UNDER THE HYDRANT AND THIS SPACE FILLED WITH ONE INCH STONE OR GRAVEL. THE HYDRANT BOTTOM SHALL BE SECURELY BLOCKED IN POSITION TO PREVENT BLOWING–OFF THE MAIN LINE.

4 HYDRANT AND VALVE ASSEMBLY INSTALLATION DETAIL
SCALE: NO SCALE

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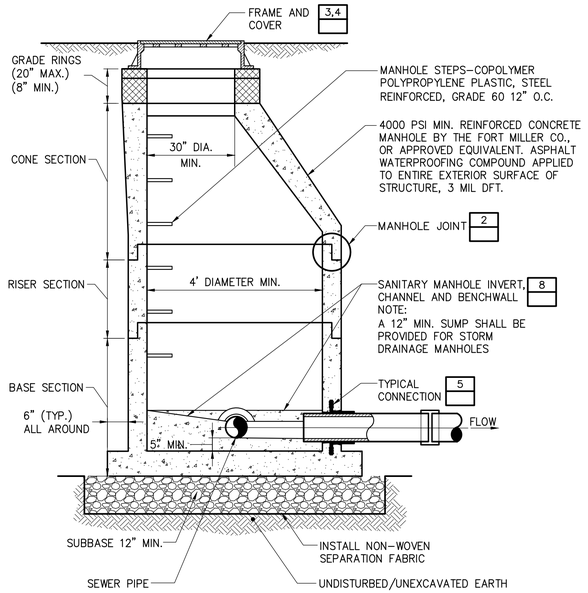
No.	Submittal / Revision	App'd.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

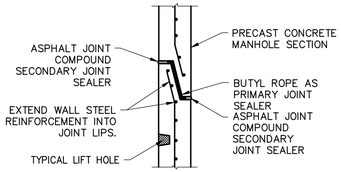
DETAILS - 2

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

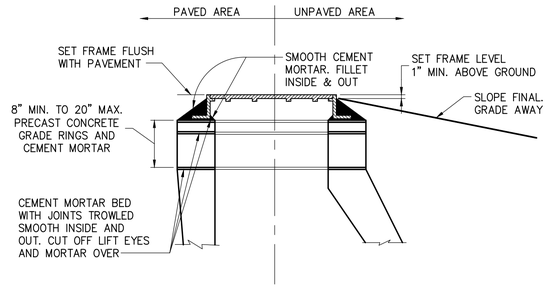
Drawing No:
C-902



1 PRECAST CONCRETE MANHOLE DETAIL
SCALE: NO SCALE



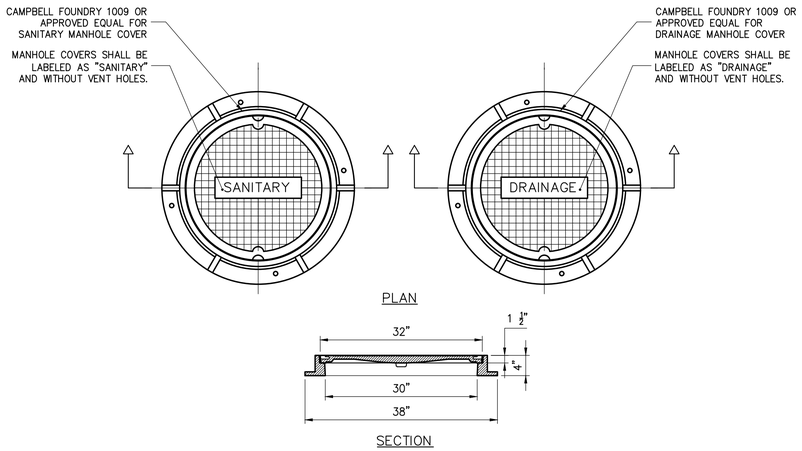
2 MANHOLE JOINT DETAIL
SCALE: NO SCALE



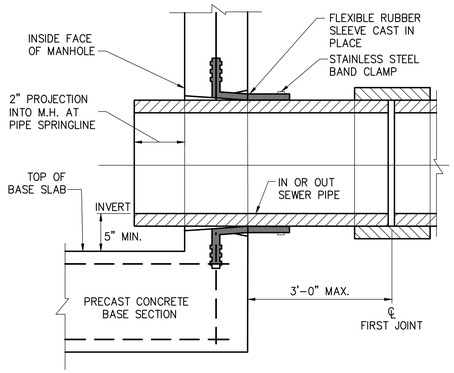
3 MANHOLE COVER INSTALLATION DETAIL
SCALE: NO SCALE

SANITARY TESTING NOTES:

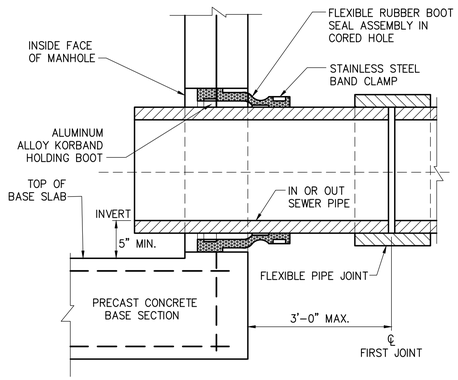
1. PERFORM THE FOLLOWING TESTS AFTER ALL SEWER PIPE HAS BEEN INSTALLED AND PRIOR TO FINAL ACCEPTANCE: DEFLECTION TEST/LOW PRESSURE AIR TEST.
2. PERFORM TESTS PRIOR TO PLACEMENT OF PAVEMENT, OR OTHER CONSTRUCTION WHICH MAY, IN THE OPINION OF THE ENGINEER, BE DETRIMENTALLY EFFECTED BY THE EXCAVATION REQUIRED FOR REPAIRS..
3. PERFORM THE TESTS ONLY AFTER THE BACKFILL HAS BEEN IN PLACE TO ITS FULL DEPTH FOR A MINIMUM OF 30 DAYS.
4. DEFLECTION TEST: DEFLECTION TEST ALL FLEXIBLE SEWER PIPE WITH A "GO/NO–GO" MANDREL WITH A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. MAXIMUM PIPE DEFLECTION SHALL BE 5%.
5. LOW PRESSURE AIR TEST: AIR TEST ALL SEWER PIPE IN CONFORMANCE WITH ASTM F1417.



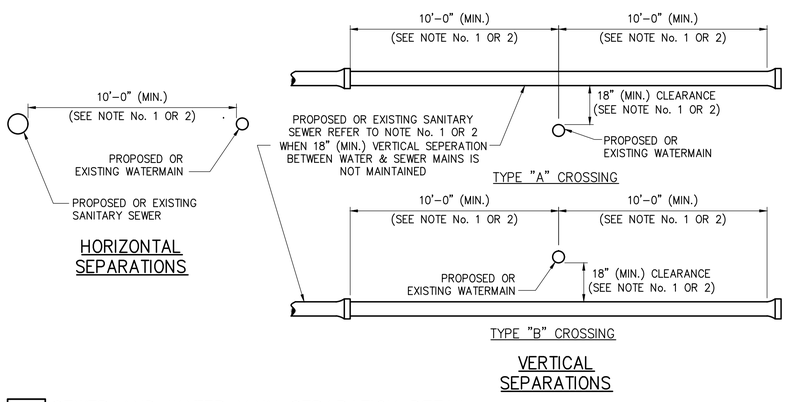
4 MANHOLE COVER DETAIL
SCALE: NO SCALE



5 FLEXIBLE PIPE–TO–MH JOINT DETAIL
SCALE: NO SCALE



6 FLEXIBLE PIPE–TO–M.H. JOINT DETAIL FOR CONNECTION TO EXISTING M.H.
SCALE: NO SCALE

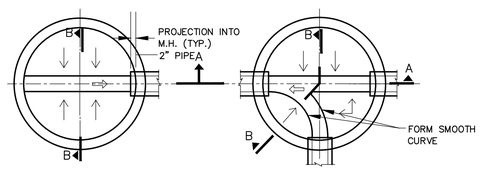


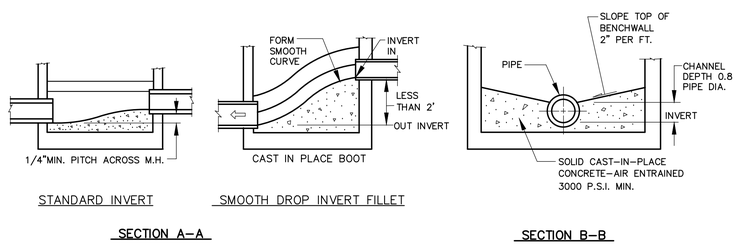
NOTES:

WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPERATION AS STIPULATED ABOVE, ONE OF THE FOLLOWING METHODS MUST BE SPECIFIED:

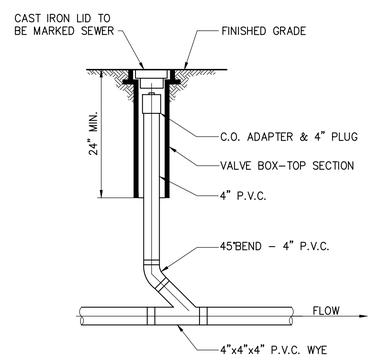
1. THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATERMAIN AND SHALL BE PRESSURE TESTED AT 150 PSI TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.
2. EITHER THE WATERMAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHT CARRIER PIPE WHICH EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATERMAIN. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY THE REVIEW AGENCY FOR USE IN WATERMAIN CONSTRUCTION.

7 SEWER AND WATER MAIN SEPARATION DETAIL
SCALE: NO SCALE





8 SANITARY MANHOLE INVERTS/CHANNEL/BENCH DETAIL
SCALE: NO SCALE



9 GRAVITY IN–LINE CLEANOUT
SCALE: NO SCALE

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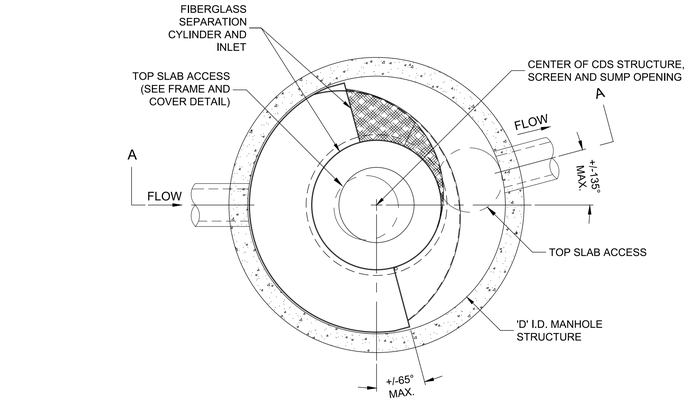
No.	Submittal / Revision	App'd.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

DETAILS - 3

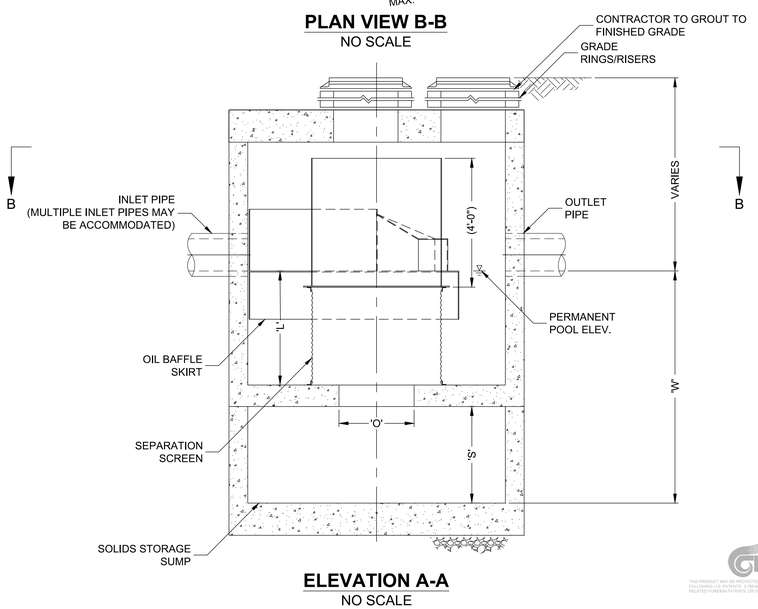
Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-903

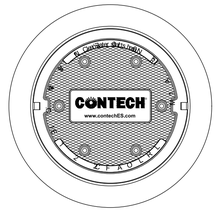


PLAN VIEW B-B
NO SCALE

DIMENSION TABLE		
KEY	CDS3020-6-C	CDS4030-8-C
'D'	72"	96"
'S'	2'-0"	3'-0"
'L'	2'-9"	3'-6½"
'W'	5'-5"	7'-2½"
'O'	1'-9"	2'-4"



ELEVATION A-A
NO SCALE



FRAME AND COVER
(DIAMETER VARIES)
NO SCALE

CDS 3020-6-C AND CDS4030-8-C DESIGN NOTES

THE STANDARD CDS3020-6-C AND CDS4030-8-C CONFIGURATIONS ARE SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			#1
WATER QUALITY FLOW RATE (CFS OR L/s)			2.1
PEAK FLOW RATE (CFS OR L/s)			10.3
RETURN PERIOD OF PEAK FLOW (YRS)			100
SCREEN APERTURE (2400 OR 4700)			2400
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	287.63	HDPE	24"
INLET PIPE 2	-	-	-
OUTLET PIPE	287.63	HDPE	24"
RIM ELEVATION			293.20
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		-	-

NOTES/SPECIAL REQUIREMENTS:
- STRUCTURE TO BE CDS-3020-6-C

* PER ENGINEER OF RECORD

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			#2
WATER QUALITY FLOW RATE (CFS OR L/s)			3.7
PEAK FLOW RATE (CFS OR L/s)			24.9
RETURN PERIOD OF PEAK FLOW (YRS)			100
SCREEN APERTURE (2400 OR 4700)			2400
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	285.10	HDPE	24"
INLET PIPE 2	-	-	-
OUTLET PIPE	285.10	HDPE	24"
RIM ELEVATION			295.00
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		-	-

NOTES/SPECIAL REQUIREMENTS:
- STRUCTURE TO BE CDS-4030-8-C

* PER ENGINEER OF RECORD

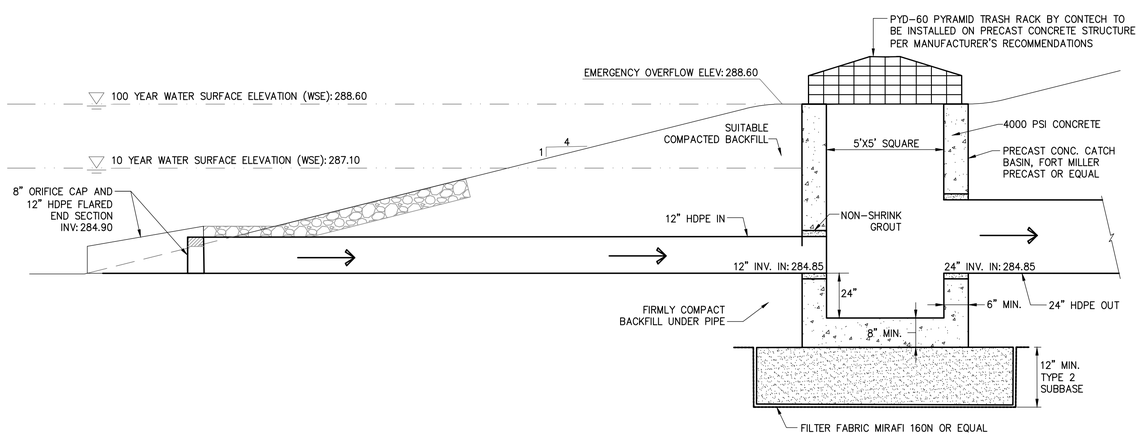
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECHENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

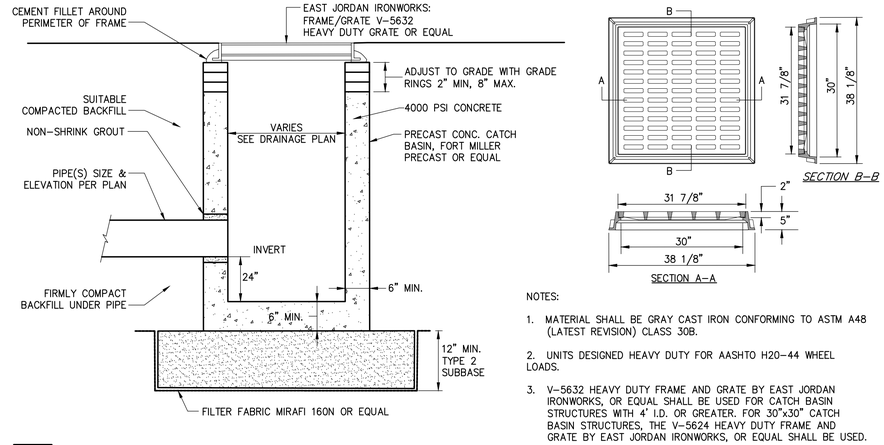
CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS3020-6-C AND CDS4030-8-C
INLINE CDS
STANDARD DETAIL

1 CDS3020-6-C AND CDS4030-8-C TREATMENT UNIT DETAIL
SCALE: NO SCALE



2 OUTLET CONTROL STRUCTURE #1 DETAIL
SCALE: NO SCALE



NOTES:
1. MATERIAL SHALL BE GRAY CAST IRON CONFORMING TO ASTM A48 (LATEST REVISION) CLASS 30B.
2. UNITS DESIGNED HEAVY DUTY FOR AASHTO H20-44 WHEEL LOADS.
3. V-5632 HEAVY DUTY FRAME AND GRATE BY EAST JORDAN IRONWORKS, OR EQUAL SHALL BE USED FOR CATCH BASIN STRUCTURES WITH 4' I.D. OR GREATER. FOR 30"x30" CATCH BASIN STRUCTURES, THE V-5624 HEAVY DUTY FRAME AND GRATE BY EAST JORDAN IRONWORKS, OR EQUAL SHALL BE USED.

3 PRECAST CONCRETE CATCH BASIN DETAIL
SCALE: NO SCALE

CHA
III Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 • www.chacompanies.com

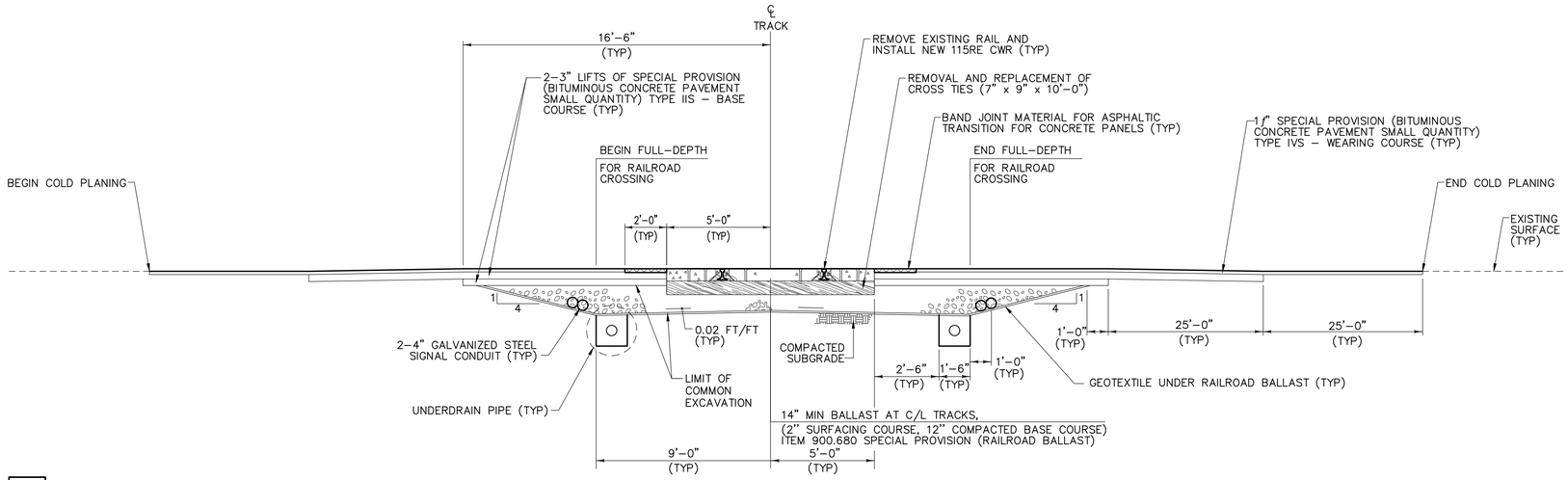
No.	Submittal / Revision	By	App'd	Date
1	ISSUED FOR TOWN REVIEW	SHW	MFM	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	SHW	MFM	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

DETAILS - 4

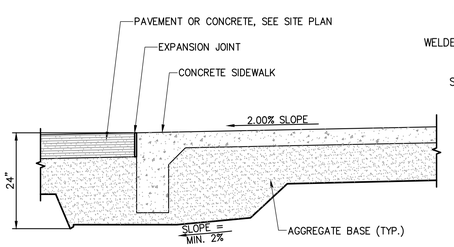
Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-904



1 TYPICAL CONCRETE RAILROAD GRADE CROSSING SECTION

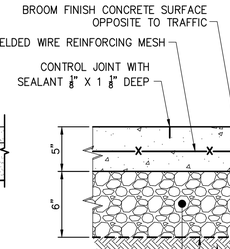
SCALE: NO SCALE



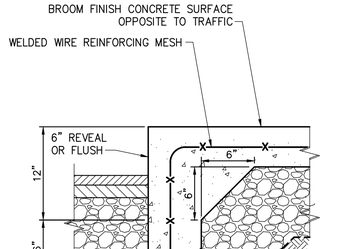
NOTES:
LOCATE CONTROL JOINTS AS SHOWN ON PLAN.

CAST-IN-PLACE CONCRETE SHALL BE 4,500 PSI AT 28 DAYS.

- AIR ENTRAINMENT: ASTM C260 6%±1.5%
- CEMENT: ASTM C150 TYPE I OR II. MINIMUM 611 POUND PER CY.
- SLUMP: 2 TO 4", EXCEPT WHEN A WATER-REDUCING ADMIXTURE IS USED MAXIMUM SLUMP SHALL BE 6" AND WHEN A HIGH RANGE WATER REDUCING ADMIXTURE IS USED MAXIMUM SLUMP SHALL BE 8".
- WATER REDUCING ADMIXTURE: ASTM C494 TYPE A AND ON THE NYSDOT'S CURRENT "APPROVED LIST".
- HIGH RANGE WATER REDUCING ADMIXTURE: ASTM C494 TYPE F AND ON THE NYSDOT'S CURRENT "APPROVED LIST".
- WATER-CEMENT RATIO: 0.45.
- CHEMICAL CURING AND ANTI-SPALLING COMPOUND: ASTM C309, TYPE 1D, CLASS B, CLEAR STYRENE ACRYLATE TYPE LIQUID WITH FUGITIVE DYE, MINIMUM 18 PERCENT TOTAL SOLIDS (BY WEIGHT OF COMPOUND), READY FOR USE BY SPRAY APPARATUS.
- WW FABRIC REINFORCEMENT: ASTM A185, WELDED WIRE FABRIC, FABRICATED INTO FLAT SHEETS UNLESS OTHERWISE INDICATED. 6" X 6" X W2.9 X W2.9 PLACED MID SLAB DEPTH ON SUPPORT CHAIRS.
- SUPPORT CHAIRS: GALVANIZED STEEL OR AISI TYPE 430 STAINLESS STEEL AND WITHOUT PLASTIC TIPS.



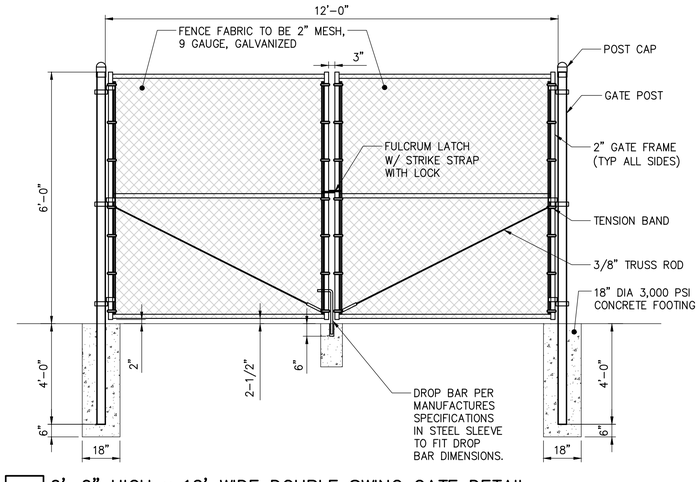
SLAB



THICKENED SLAB EDGE

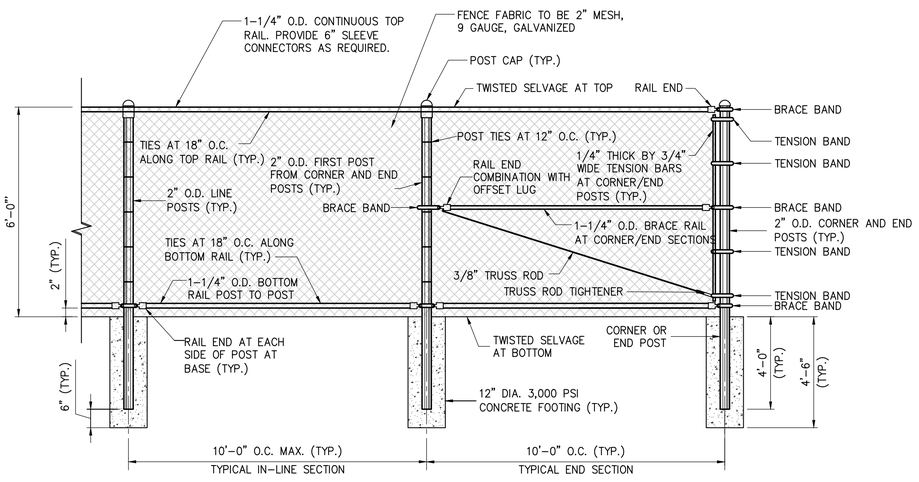
2 INTEGRAL CONCRETE CURB & SIDEWALK DETAIL

SCALE: NO SCALE



4 6'-0" HIGH x 12' WIDE DOUBLE SWING GATE DETAIL

SCALE: NO SCALE



NOTES:

1. ALL POSTS, RAILS, HARDWARE, AND COMPONENTS TO BE GALVANIZED STEEL.
2. ALL TIES TO BE 9 GAUGE.
3. INSTALL BRACE RAIL ASSEMBLIES IN EACH DIRECTION FROM CORNER POSTS, AND AT ALL END POSTS
4. BRACE/TENSION BANDS TO BE 1/8"X1" AND FASTENED WITH 3/8"X1-1/2" CARRIAGE BOLTS.

3 6'-0" HIGH CHAIN LINK FENCE DETAIL

SCALE: NTS

CHA
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Albany, NY 12205-0269
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No.	Submittal / Revision	App'd.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	2/25/2019
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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

DETAILS - 5

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-905

APPENDIX B

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

2165 Amsterdam Road, Town of Glenville, New York

Overview

Air monitoring at the proposed BelGioioso Cheese, Inc. (BelGioioso) facility (Site) located at 2165 Amsterdam Road in the Town of Glenville, New York will be performed during all intrusive activities where there is a potential to come into contact with existing soil in accordance with the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan (CAMP)*, and Appendix 1A and 1B of DER-10. All air monitoring will be conducted on a real-time basis for particulates (i.e. dust) and organic vapors.

The primary contaminants of concern associated with the Site are solvents, which are volatile organic compounds (VOCs). Particulates and VOCs will be monitored concurrently with the DustTrak CAMP monitors, or similar.

All air monitoring readings will be recorded in a logbook and/or recorded by data loggers and made available for review by both the New York State Department of Environmental Conservation (NYSDEC) and NYSDOH. Air monitoring will be performed at one location upwind and at two locations downwind of the designated work areas during test pitting or subsurface drilling, Site grading activities, excavation of Site soils during demolition and new construction activities, and utility trenching. The direction of wind will be monitored daily to determine upwind and downwind location.

Enclosures must be provided for remote air monitoring stations to reduce potential weather-induced performance issues. The enclosures should be located in areas where they are not subject to damage from vehicular traffic and there is minimal potential for tampering in publicly accessible areas. Additionally, all intake ports on the instruments must be equipped with rain guards/shields to minimize the potential for water intrusion.

The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-Site receptors including residences and businesses and on-Site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of demolition and redevelopment construction work activities. Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs and dust at a minimum around the work areas, and supplements to the CAMP may be required depending on the nature of the planned intrusive activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-Site through the air.

"Continuous monitoring" will be required for all ground intrusive activities and during the excavation of contaminated soils. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, utility trenching, and monitoring well decommissioning.

"Periodic monitoring" will be conducted on excavated material and during soil sampling. Excavated soil will be screened for the presence of VOCs with a handheld photoionization detector (PID). Soil may be reused or stockpiled for characterization and off-Site disposal in accordance with the Excavation Work Plan.

In order to ensure the validity of the fugitive dust and VOC measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

Fugitive Dust and Particulate Monitoring, Response Levels, and Actions

Fugitive dust is described as discrete particles, liquid droplets or solids, which become airborne and contribute to air quality as a nuisance and threat to human health and the environment.

The following fugitive dust suppression and particulate monitoring program should be employed at the Site during construction and other intrusive activities which warrant its use:

- Reasonable fugitive dust suppression techniques must be employed during all Site activities which may generate fugitive dust.
- Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on Site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for the placement of clean fill.

Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

- Objects to be measured: Dust, mists or aerosols;
- Measurement Ranges: 0.001 to 400 mg/m³ (1 to 400,000 µg/m³);
- Precision (2-sigma) at constant temperature: +/- 10 g/m³ for one second averaging; and +/- 1.5 g/m³ for sixty second averaging;
- Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mass median diameter (mmd)= 2 to 3; g-2.5, as aerosolized);
- Resolution: 0.1% of reading or 1g/m³, whichever is larger;
- Particle Size Range of Maximum Response: <0.1 to 10 microns (µm);
- Total Number of Data Points in Memory: 10,000 or greater;
- Logged Data: Each data point with average concentration, time/date and data point number

- Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
- Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required. Personnel conducting air monitoring must be immediately notified of any alarms by remote sensors, pagers, or other similar equipment. Utilizing periodic checks of instrumentation in alarm mode only is not acceptable monitoring practice.
- Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
- Operating Temperature: 0 to 50˚ C (14 to 122˚ F);

Particulate levels will be monitored immediately downwind at the working Site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task.

The action level will be established at 150µg/m³ (15 minutes average). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150µg/m³, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 µg/m³ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-Site personnel and implementing additional dust suppression techniques. Should the action level of 150µg/m³ continue to be exceeded work must stop and Project Managers from CHA Consulting, Inc. (CHA), NYSDEC, and NYSDOH must be notified. Contact information is provided in the Site Management Plan and reiterated in the Excavation Work Plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed.

The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- Applying water on haul roads;
- Wetting equipment and excavation faces;

- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped or watertight containers;
- Restricting vehicle speeds to 10 mph;
- Covering excavated areas and material after excavation activity ceases; and
- Reducing the excavation size and/or number of excavations.

When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Volatile Organic Compound Monitoring, Response Levels, and Actions

VOCs must be monitored at the downwind perimeter of the ground intrusive work area on a continuous basis, concurrently with fugitive dust monitoring. The monitoring work should be performed using a 10.6 eV PID. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest

potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area; activities must be shutdown. The NYSDEC, NYSDOH, and the CHA Project Manager will be notified of the situation. Emergency Response Contacts identified in the Health and Safety Plan appended to the Site Management Plan, including the local police and fire departments, will be contacted by CHA.

Air monitoring will be conducted at 15-minute intervals at a 20-foot offset from the exclusion zone. If two successive readings below 25 ppm are measured by the field instrument and documented, the work may resume following the previously described monitoring plan.

All 15-minute readings must be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

APPENDIX C

Stormwater Pollution Prevention Plan

Belgioioso Cheese
Glenville Business & Industrial Park
Redevelopment Project

Stormwater Pollution Prevention Plan

Glenville, New York

Prepared for:

Belgioioso Cheese, Inc.
4200 Main Street
Green Bay, WI 54115

Prepared by:

III Winners Circle
P.O. Box 5269
Albany, New York 12205
(518) 453-4500

CHA Project Number: 32984

March 2019

TABLE OF CONTENTS

Executive Summary:

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the criteria presented in the State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities (GP-0-15-002), the New York State Stormwater Management Design Manual (January 2015), and the New York State Standards and Specifications for Erosion and Sediment Control (November 2016).

The nature of this construction project is selected below:	
	New construction with proposed standard stormwater Best Management Practices (BMPs), Green Infrastructures, and Erosion and Sediment Control (ESC) measures.
	Redevelopment with increase in impervious areas with proposed standard BMPs and ESC measures. Green Infrastructures are encouraged, but not required for redevelopment projects.
X	Redevelopment with no increase in impervious areas with proposed ESC measures only and no standard BMPs.

The proposed Belgioioso Cheese Facility is located in the Glenville Business & Technology Park (Business Park) at 2165 Amsterdam Road (State Highway 5) in Glenville, New York (See Figure 1- Site Location Map). This project involves the redevelopment of an existing 40.4-acre lot where Belgioioso Cheese, Inc. proposes to build a 96,892 square foot industrial cheese production/distribution facility. This SWPPP covers the development of the Belgioioso Cheese facility located the northwest portion of the Lot bounded between B Street to the east, C Street to the west, and 1st Street to the south. The proposed development also includes the associated parking facilities and truck docking area with all ancillary utilities.

The hydrologic model was based on the watershed tributary to the area impacted by the proposed development. For the purposes of the hydrologic analysis, four (4) design points and six (6) sub-areas were defined to characterize the drainage patterns of the contributing watershed. Based on the current land use within the limits of the redevelopment (See site photos in Appendix B), the proposed site improvements will result in a decrease in impervious area. As a result, there are no potential increases in stormwater runoff associated with the redevelopment of the site. Due to changes in the grading of the site, additional runoff is redirected to the storm sewer that serves the Business Park. As such, a capacity analysis was performed to ensure safe conveyance through the existing storm sewer.

A stormwater basin is proposed to mitigate flows to the existing Business Park storm sewer system. Water quality treatment for the project is provided by employing alternative BMPs in the form of two (2) hydrodynamic stormwater treatment units to provide water quality treatment for this project.

Water Quality Volume (WQv) computations were calculated by using the Runoff Frequency Spectrum (RFS) Method, as discussed in the New York State Stormwater Management Design Manual. To meet the full WQv criteria per Chapter 9 Redevelopment,

This SWPPP covers the entire project construction, scheduled to proceed from April 2019 to June 2020.

Project Disturbance Area

Total Disturbed Area:	8.7± acres
Total Existing Impervious Area:	6.7± acres
Total Proposed Impervious Area:	6.2± acres

Project Information:

Project Name and Location	Owner and Operator Name and Address
Belgioioso Cheese Industrial Park Redevelopment Project 2165 Amsterdam Road (Route 5) Glenville, New York 13076	Errico Auricchio Belgioioso Cheese, Inc. 4200 Main Street Green Bay, WI 54115

Project Description:

Purpose and Extent of Proposed Development

The proposed Belgioioso Cheese Facility is located in the Glenville Business & Technology Park (Business Park) at 2165 Amsterdam Road (State Highway 5) in Glenville, New York (See Figure 1- Site Location Map). This project involves the redevelopment of an existing 40.4-acre lot where Belgioioso Cheese, Inc. proposes to build a 96,892 square foot industrial cheese production/distribution facility. The existing site is predominantly covered with impervious features interspersed with areas of open meadow (See site photos in Appendix B). The general site topography is relatively flat with a low-lying area located along the northern property boundary adjacent to the railroad tracks. A high point located near the center of the proposed development represents a drainage divide with flow to the north directed to the low-lying area near the railroad tracks and flow to the south entering the storm sewer that serves the Business Park.

The construction of the Belgioioso Cheese facility will include the demolition and removal of the existing impervious pads and foundations, with construction of a new building with all ancillary utilities, truck docks, turning areas, access drives and parking facilities. The amount of impervious areas replaced for development are expected to be less than existing conditions, and as such, the project does not increase the volume of runoff from the site.

Description and Limitations of On-Site Soils

Past investigations have documented that this site has a history of contaminated soils. Details for the site remediation are documented in the Site Management Plan (SMP) prepared for the U.S. Army Corps of Engineers, which forms the basis of the requirements associated with the management of all disturbed soils and materials for the construction activities.

The soil disturbance for the proposed work is limited to the 8.2 acres and consists of mostly loamy fine sand. Based on a review of the USDA Soil Surveys of Schenectady County, New York, soils on the project site are described in the following list (see Figure 2 – USDA Soils Classification Map). A summary of the soil composition is shown in Table 1.

Table 1 - Soil Analysis Summary

Soil Name	Hydrologic Soil Group
CoA – Colonie loamy fine sand, 0 to 3 percent	A
Gv – Gravel pits	--
HrA – Howard gravelly silt loam, 0 to 3 percent	A
Mg – Made land	C

The Colonie loamy fine sand (CoA) is a deep, well-drained soil. The seasonal high groundwater table is generally at a depth of more than 80 inches. Depth to bedrock is generally greater than 110 inches. Percolation rates are high to very high (1.98 in/hr to 19.98 in/hr). Based on the K-value (0.20) published, this soil exhibits a low to moderate potential for erosion.

The Howard gravely silt loam (CoA) is a deep, well-drained soil. The seasonal high groundwater table is generally at a depth of more than 80 inches. Depth to bedrock is generally greater than 80 inches. Percolation rates are moderately high to high (0.57 in/hr to 5.95 in/hr). Based on the K-value (0.28) published, this soil exhibits a moderate potential for erosion.

The Gravel pits (Gv) is a gravely coarse sand that is deep soil associated with quarry pits and is not rated.

The Made land (Mg) is a gravely loam surface layer over materials and is deep, somewhat-excessively drained soil. The seasonal high groundwater table is generally at a depth of 36 to 72 inches. Depth to bedrock is generally greater than 80 inches. Percolation rates are highly variable moderately low to very high (0.06 in/hr to 19.98 in/hr). Based on the K-value (0.28) published, this soil exhibits a moderate to high potential for erosion.

The Natural Resource Conservation Service (NRCS, formerly known as the SCS), as part of their soil classification system, assigns each soil series to a Hydrologic Soil Group (HSG). The HSG is a four-letter index intended to indicate the minimum rate of infiltration obtained after prolonged wetting, and to indicate the relative potential for a soil type to generate runoff. The infiltration rate is the rate at which water enters the soil at the soil surface. The HSG also indicates the transmission rate – the rate at which water moves within the soil. Soil scientists define the four groups as follows:

- HSG ‘A’ (sand, loamy sand, or sandy loam): Soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission (> than 0.30 inches/hour).

- HSG ‘B’ (silt loam or loam): Soils have moderate infiltration rates when thoroughly wetted, and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to fine texture. These soils have a moderate rate of water transmission (0.15 to 0.30 inches/hour).

- HSG ‘C’ (sandy clay loam): Soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water, and soils with moderately fine to fine texture. These soils have a low rate of water transmission (0.05 to 0.15 inches/hour).

- HSG ‘D’ (clay loam, silty clay loam, sandy clay, silty clay, or clay): Soils have high runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (< 0.05 inches/hour).

- If a soil is classified to a dual hydrologic group (A/D, B/D, or C/D), the first letter represents drained conditions and the second letter represents undrained conditions.

Historic Places

Since this is redevelopment project, the native soils have been previously disturbed where the Naval Depot facilities were built. Note, an environmental review was previously performed by the Town of Glenville for the Master Plan developed for the Glenville Business & Technology Park which determined that the project will not result in any adverse impacts to historical resources.

Sequence of Major Activities:

This SWPPP presents erosion and sediment controls, both temporary and permanent, to assist the operator in compliance with the project's SPDES General Permit for construction activity. To the degree practicable, all temporary erosion and sediment control mitigation measures shall be installed immediately before associated project areas are disturbed. Based upon NYS DEC regulations, the owner or operator of a construction activity shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a regulated, traditional landuse control MS4, the MS4 (provided the MS4 is not the owner or operator of the construction activity).

It is the responsibility of the Contractor to ensure that all soils removed from the project site are spoiled in a manner consistent with the Site Management Plan (SMP) and all local, state, and federal regulations. Appropriate erosion and sediment controls shall be installed at all spoil sites.

This project will be carried out in two (2) construction phases as outlined below, while maintaining the amount of concurrently disturbed soil in compliance with the NYS DEC limit, unless authorization is specifically provided by the Department or MS4.

Construction Sequence Phase 1 (±4.5 acres)

- Establish work area and contractor staging area as shown on plans.
- Install stabilized temporary construction entrance, silt fence, and temporary erosion and sediment control measures as shown on plans. Additional silt fencing may be installed as necessary.
- Protect existing catch basins along adjacent roadways.
- Provide silt fencing around perimeter of staged/stockpiled top soil and/or temporary staged pile or fill.
- Excavate storage basin and stabilize perimeter and side slopes with erosion protective measures.
- Remove existing asphalt pads/buildings as shown on removal plans.
- Rough grade site per design, as necessary for construction of the building foundation.
- Swales and dikes shall be constructed as needed to provide positive drainage.
- Install utilities, stormwater, sewer system, stormwater basin outlet structure, water piping systems as shown on plans.
- Construct building foundation.
- Install topsoil, and seed for stabilization of all disturbed areas.
- When all disturbed areas are permanently stabilized, remove all temporary erosion and sediment controls measures.
-

Construction Sequence Phase 2 (±4.2 acres)

- Install any additional silt fence, and other temporary erosion and sediment control measures as necessary.
- Continue construction of building.
- Construct parking areas, loading dock area and access drives.
- Install topsoil, and seed for stabilization of all disturbed areas.
- When all disturbed areas are permanently stabilized, remove all temporary erosion and sediment controls measures.

Name of Receiving Waters

Stormwater runoff either flows south to the existing storm sewer for the Business Park or north to a low-lying area adjacent to the railroad tracks along property boundary. The storm sewer network within the Business Park

conveys flow to the south across State Route 5 (Amsterdam Road), ultimately discharging to the Mohawk River at Maalwyck Park Road just above Lock 8. The Mohawk River is classified as (Class A, Standards A).

Controls:

Timing of Controls/Measures

The erosion and sediment control measures shall be constructed prior to clearing or grading of any portion of the project. Where land disturbance is necessary, temporary seeding or mulching must be used on areas which will be exposed for more than 14 days. Permanent stabilization should be performed as soon as possible after completion of grading. After the entire project area is stabilized, the accumulated sediment shall be removed from the project area or spread within the site in a manner consistent with the SMP. Erosion control devices shall remain in place until disturbed areas are permanently stabilized. For projects where soil disturbance is greater than five (5) acres, and construction activity has temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York Standards and Specifications for Erosion and Sediment Control.

Erosion and Sediment Controls / Stabilization Practice

Applicable erosion and sediment control measures and details are included in Appendix G.

Temporary Stabilization

Topsoil stockpiles, staging areas and disturbed pervious portions of the project area where construction activity temporarily ceases for at least 14 days shall be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area.

Temporary seed shall be ryegrass applied at the rates specified below:

- If seeding in spring, summer or early fall then seed with annual or perennial rye at a rate of 30 lbs per acre. If area is to remain stabilized over the winter into the following spring use perennial rye only.

- If seeding in late fall or early winter, use certified Aroostook winter rye (cereal rye) at a rate of 90 lbs per acre.

Any seeding method may be used that will provide uniform application of seed to the area and result in relatively good soil to seed contact. Area must be free of large rocks and debris and seeded within 24 hours of disturbance or scarification of the soil surface will be necessary prior to seeding. Fertilizer or lime is not typically used for temporary plantings.

Mulch shall be applied in conjunction with seeding and applied at the rate of 90 lbs per 1000 square feet. Mulch shall be reapplied as necessary. Areas of the project area, which are to be paved, shall be temporarily stabilized by applying temporary gravel subbase until pavement can be applied.

Sediment control fencing shall be installed around the site where depicted on the attached plan sheets. Prior to commencing any earthwork, a stabilized construction entrance shall be installed as indicated on the attached plans. This entrance shall be utilized as the exclusive construction entrance and exit to the construction areas. Construction traffic shall be limited to the construction entrance.

Permanent Stabilization

Disturbed portions of the project area where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity. Construction and maintenance of erosion and siltation control measures are in accordance with the New York Standards and Specifications for Erosion and Sediment Control.

Where construction activity is complete over areas to be permanently vegetated, stabilize with permanent seeding. Verify seeding dates with engineer. If engineer determines that seed cannot be applied due to climate, topsoil shall not be spread and mulching shall be applied to the exposed surface to stabilize soils until the next recommended seeding period. Other project areas shall be permanently stabilized with pavement, concrete, gravel or building structures.

Winter Operations

If construction activities proceed through the winter season, access points should be enlarged and stabilized to provide for snow stockpiling. Drainage structures should be kept open and free of potential snow and ice dams. Inspection and maintenance are necessary to ensure the function of these practices during runoff events. For sites where construction activities temporarily cease, temporary and/or permanent soil stabilization measures shall be installed within seven (7) days from the date the soil disturbing activity ceased. Disturbed areas should be stabilized with seed and mulch, or other approved methods, even if the ground is covered by significant amounts of snow.

Winter Shutdown

Site inspections (by the qualified inspector) may be decreased to a minimum of one (1) time every thirty (30) days for sites where soil disturbing activities have ceased and at least 100% of the site has been stabilized by an approved method. Inlet protection should be installed and/or repaired before shutdown of the site. The owner or operator shall provide written notification to the respective DEC regional office prior to reducing the frequency of any site inspections.

Other Controls

Waste Disposal

Waste materials – All Foreign waste materials shall be collected and stored in a secured area until removal and disposal by a licensed solid waste management company. All trash and construction debris from the project area shall be disposed of in a portable container unit. No foreign waste materials shall be buried within the project area. All personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the project trailer and the individual who manages day-to-day project operations will be responsible for seeing that these procedures are followed.

Petroleum Impacted Waste – During the excavation activities, there is the potential that petroleum impacted soils may be encountered. In the event that field evidence of contamination is identified during the project, potentially contaminated soils will be segregated and stockpiled on polyethylene sheeting and covered in a predetermined staging area. The potentially impacted, stockpiled soils will then be sampled to determine if the soils are suitable for use as clean backfill. In the event that the soils are not suitable for re-use, the contaminated soil will be properly characterized and disposed of at an off-site NYSDEC permitted facility. The excavation will then be backfilled with clean, imported fill.

Hazardous Waste - All hazardous waste materials shall be disposed of in a manner specified by local or state regulations or by the manufacturer. Project personnel shall be instructed in these practices and the individual who manages day-to-day project operations shall be responsible for seeing that these practices are followed.

Sanitary Waste - Any sanitary waste from portable units shall be collected from the portable units by a licensed sanitary waste management contractor, as required by NYS DEC regulations.

Sediment Tracking by Vehicles

A stabilized construction entrance shall be installed (where depicted on attached plan) and maintained as necessary to help reduce vehicular tracking of sediment. The entrance shall be cleaned of sediment and redressed when voids in the crushed stone become filled and vehicular tracking of sediment is occurring. Dump trucks hauling materials to and from the construction project area shall be covered with a tarpaulin to reduce dust. Any sediment and debris tracked from work area along project adjacent roadways shall be immediately removed with a street sweeper or equivalent sweeping method.

Non-Stormwater Discharges

Non-stormwater discharges are not expected to exit the project area during construction.

Certification of Compliance with Federal, State, and Local Regulations

The stormwater pollution prevention plan reflects the New York State requirements for stormwater management and erosion and sediment control. To ensure compliance, this plan was prepared in accordance with New York State Standards. In addition, the management of all onsite soil disturbance shall be conducted in manners consistent with the Final Site Management Plan.

Post-Construction Stormwater Management

Hydrologic Evaluation

Methodology

The proposed project has been designed in accordance with the New York State Stormwater Management Design Manual (January 2015) and the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-15-002, January 2015).

In order to evaluate the potential impacts associated with the re-development of the site, existing and proposed condition hydrographs were generated. The conditions were modeled using the SCS unit hydrograph method using a type II rainfall distribution. Rainfall amounts were referenced from the New York State Stormwater Management Design Manual, January 2015. The 24-hour rainfall amounts for the 1-, 10- and 100-year design storms in the City of Glenville in Schenectady County are 2.2-, 3.6- and 5.9-inches respectively.

Runoff curve numbers were computed using standard NRCS TR-55 methodology. Times of concentration (T_c) were estimated to range from 5 to 20 minutes based on the percentage of pervious area, relative size of the sub-basin and on the assumption that runoff from most of the buildings is not directly connected to the storm sewers. These values are also consistent with the values used in the Bentley StormCAD (Version V8i) analysis discussed in this report with outputs provided.

Additionally, peak stormwater flows and hydrographs for the existing and post-development conditions were computed using the Bentley Pondpack Hydrology Program (Version V8i). The required WQ_v for the watershed area was computed using the Runoff Frequency Spectrum (RFS) Method, discussed in the New York State Stormwater Management Design Manual.

$$WQ_v = \{(P)(R_v)(A)\} / 12$$

Where:

WQ_v = *water quality volume (acre-feet)*
P = *90 % rainfall event (inches)*
R_v = *0.05 + 0.009 (I), where I is percent impervious cover*
A = *watershed area (acres)*

For the Glenville, SchenectadyCounty, 90% of the annual runoff is generated by storms of 1.1 inches of rainfall.

Redevelopment Criteria

Redevelopment of previously developed sites is encouraged from a watershed protection standpoint because it often provides an opportunity to conserve natural resources in less impacted areas by targeting development to areas with existing services and infrastructure. Redevelopment provides an opportunity to correct existing problems and reduce pollutant discharges from previously developed areas that were constructed without effective stormwater pollution controls.

Because the technical standards contained in the New York State Stormwater Management Design Manual were primarily intended for new development projects, compliance with the standards may present a challenge on some redevelopment projects. Therefore, Chapter 9 of the New York State Stormwater Management Design Manual give the following definition for redevelopment activity on page 9-2.

***Redevelopment Activity / Activities* – Disturbance and reconstruction of existing impervious surfaces. This includes impervious surfaces that were removed within the last five (5) years.**

The proposed project involves reconstruction of the existing impervious foundations with the new industrial building, loading docks, access drive and parking. No increase in total impervious area is proposed. As the proposed project meets the criteria listed above, it will be considered as redevelopment activity, and the proposed project is exempt from the green infrastructure and runoff reduction volume (RRv) requirements.

Existing Condition Hydrology

For the purposes of this analysis, the extent of the hydrologic model was limited to those areas impacted by the proposed improvement areas. Based on this evaluation, the contributing watersheds consist of about 12.5 acres. For the purposes of the existing condition analysis, four (4) design points and six (6) contributing sub-areas were defined to characterize the drainage patterns of the watershed (See Figure 3- Existing Watershed Map).

Design Point 1 (DP-1) is located at an existing manhole at B street where a 48" storm pipe conveys stormwater along B Street down to Amsterdam Road (Route 5). An existing 24" RCP storm line is connected from this manhole to an onsite catchbasin on the southwest corner of the site. Runoff from the southwestern quadrant of the site sheets over impervious and open grassy areas to the existing closed storm conveyance system through catch basin(s).

Design Point 2 (DP-2) is located at an existing storm basin/manhole at the C Street and 1st Street intersection. The manhole is connected to 24" RCP storm line conveying stormwater south at C Street into a 48" stormline down to Amsterdam Road (Route 5). Runoff from southeastern quadrant of the site sheets over impervious and open grassy areas to the existing closed storm conveyance system.

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Design Point 3 (DP-3) is located at the northeast corner of the site. Runoff from northern half of the site sheets over impervious and open grassy areas north and east to an undefined swale that conveys runoff eastward along the existing railroad to a depression located in a wooded area.

Design Point 4 (DP-4) is located at the west end of the site. Runoff from a small section of the site sheets over brush and open grass to the west end of the site.

Results from the existing condition analyses are shown in Table 2 below and detailed computations are included in Appendix C.

Table 2 - Existing Condition Analysis Summary

Design Point	Watershed	Area (acres)	T_c (hrs)	Curve Number	Peak Flow Rate (cfs)		
					1-yr	10-yr	100-yr
DP-1	DA-1A	0.81	0.17	93	1.6	3.0	5.2
	DA-1B	1.76	0.25	78	1.2	3.3	7.4
	DA-1C	2.35	0.33	61	0.1	1.2	4.6
	Outfall	4.92	--	--	2.6	6.9	16.3
DP-2	DA-2A	2.01	0.25	73	0.8	2.9	7.3
	Outfall	2.01	--	--	0.8	2.9	7.3
DP-3	DA-3A	4.91	0.33	86	5.1	11.3	22.1
	Outfall	4.91	--	--	5.1	11.3	22.1
DP-4	DA-4A	0.63	0.17	60	0.0	0.4	1.6
	Outfall	0.63	--	--	0.0	0.4	1.6

Proposed Condition Hydrology

The proposed improvements will not increase impervious area and will not alter the permeability of the project site. The existing condition drainage areas have been revised to reflect the proposed development, which results in the redirection and addition of drainage to the stormwater conveyance system along B Street and C Street. For proposed conditions, there are four (4) design points and six (6) contributing sub-areas (See Figure 4 – Proposed Watershed Map).

Design Point 1 (DP-1) is located at an existing manhole at B street where a 48 " storm pipe collects stormwater along B Street down to Amsterdam Road (Route 5). An existing 24" RCP storm line is connected from this manhole to an onsite catchbasin on the southwest corner of the site where the proposed onsite storm line will be connected. Runoff is conveyed to stormlines on the south quadrant of the site from the proposed parking lot and B Street entrance area. Runoff is captured by catchbasins and is treated by an 6-foot diameter CDS unit Model CDS3020-6-C before it is discharged to B Street stormsewer system.

Design Point 2 (DP-2) is located at an existing storm basin/manhole at C Street and 1st Street intersection. The manhole is connected to 24" RCP storm line conveying stormwater south at C Street to a 48" stormline then to Amsterdam Road (Route 5). Runoff is conveyed to stormlines on the east and west quadrants of the site from the truck bay, water tower area and portions of the building roof. In addition, the plant is expected to produce an industrial discharge to the stormsewer at a maximum of 244 gal/min or 0.5 cfs. Runoff is captured by catchbasins and is treated by an 8-foot diameter CDS unit Model CDS4030-8-C before it is discharged to a storage basin with and outlet control structure. The storage basin will provide 0.88 acre feet of storage. Flows will be reduced in the post development conditions to match (or reduce) the 10 year and 100 year site peak flows to existing condition flows before discharging to the C Street stormsewer system.

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Design Point 3 (DP-3) is located at the northeast corner of the site. Runoff sheets from northern half of the building, onto the access driveway behind the building to the undefined swale. The swale conveys runoff eastward along the existing railroad to a depression located in a wooded area. The impervious surfaces draining to the design point have been significantly reduced in the post-construction condition. As such, a water quality treatment credit can be applied to this design point, as there is a 25% reduction of impervious area, per Chapter 9 NYS Stormwater Management Design Manual. Runoff sheets to a swale that conveys runoff eastward along existing rail track to a low area located in the woods.

Design Point 4 (DP-4) is located at the west end of the site. Runoff from a small section of the site sheets over brush and open grass to the west end of the site.

Results of the proposed condition analysis are shown in Table 3 below and detailed hydrology computations are included in Appendix D.

Table 3 – Proposed Condition Analysis Summary

Design Point	Watershed	Area (acres)	T_c (hrs)	Curve Number	Peak Flow Rate (cfs)		
					1-yr	10-yr	100-yr
DP-1	DA-1B	2.67	0.25	75	1.3	4.3	10.3
	DA-1C	2.35	0.33	61	0.1	1.2	4.6
	Outfall	5.02	--	--	1.3	5.3	14.6
DP-2	DA-2A	1.87	0.17	81	1.8	4.5	9.6
	DA-2B	1.32	0.17	97	3.6[1]	5.8[1]	9.3[1]
	DA-2C	0.93	0.17	98	2.5	4.3	7.1
	DA-2D	0.93	0.17	49	0.0	0.1	1.1
	Basin Inflow[1]	5.04	--	--	7.5[1]	13.9[1]	25.7[1]
	Basin Outflow[2]	--	--	--	2.0[1]	2.7[1]	3.5[1]
DP-3	DA-3A	2.29	0.17	75	1.3	4.2	10.0
	Outfall	2.29	--	--	1.3	4.2	10.0
DP-4	DA-4A	0.81	0.17	52	0.0	0.1	1.2
	Outfall	0.81	--	--	0.0	0.1	1.2

[1] Includes a constant rate of 244 gal/min (0.5 cfs) industrial discharge
[2] Flows have been mitigated with a stormwater basin.

Post-Development Stormwater Management Practices

Water Quality

To meet the full stormwater quality (WQv) criteria, two hydrodynamic units, (Contech CDS3020-6-C) and (Contech CDS4030-8-C) will provide up to 2.1 cfs water quality flow treatment at DP-1 (B Street) and 3.7 cfs water quality flow treatment at DP-2 (C Street). A summary of the required and provided water quality volumes (WQv) are shown in Table 4 below and detailed computations are included in Appendix E.

Table 4 - Summary of Water Quality Volumes

Design Point	Total Area (ac)	Percent Impervious Cover	Required WQv (ac-ft)	Required WQf (cfs)	Provided WQf (cfs)	Treatment Practice
DP-1	2.67	59.6	0.108[1]	1.62	2.10	6' CDS Hydrodynamic Unit
DP-2	4.11	83.0	0.225[1]	3.59	3.70	8' CDS Hydrodynamic Unit
DP-3	2.29	72.8	0.000	--	--	25% Reduction
DP-4	0.81	00.0	N/A	N/A	--	NONE

[1] 0.75% of the required WQv per redevelopment criteria for alternative treatment practices.

Runoff Reduction Volume and Green Infrastructure Practices

Chapter 9 of the New York State Stormwater Management Design Manual provides the following definition for redevelopment activity on page 9-2.

***Redevelopment Activity / Activities** – Disturbance and reconstruction of existing impervious surfaces. This includes impervious surfaces that were removed within the last five (5) years.*

No increase in total impervious area is proposed. As the proposed project meets the criteria listed above, it will be considered as redevelopment activity, and the proposed project is exempt from the green infrastructure and runoff reduction volume (RRv) requirements.

Closed Stormsewer System Capacity Analysis

Although the net stormwater peak flow discharges or volumes are not impacted significantly, the proposed project involves redistribution of onsite flows from the north area along the train tracks. This flow is redirected to discharge points entering into the stormsewer collection system in the business park. For the purposes of evaluating the impacts to the stormsewer system by the addition of flows from the site. An analysis model of the onsite system (from the site down to the Mohawk River outfall) is included.

To evaluate the impacts from site discharges to the existing stormsewer system, a closed system storm sewer capacity analysis was performed utilizing Bentley StormCAD (Version V8i). The 10 and 100-year storm events were evaluated. Flows were developed for all downstream areas using the Rational Method. Pervious areas were assigned a C factor of 0.10 (HSG A soils) and impervious areas were assigned a C factor of 0.98. Rainfall

intensity distributions were referenced from the Extreme Precipitation in New York & New England, as required by criteria set forth in the New York State Department of Environmental Conservation (NYSDEC) Stormwater Standards. (See Figures 6A StormCAD Analysis – Existing Conditions and 6B StormCAD Analysis – Proposed Conditions in Appendix A)

The Business Park consists primarily of warehouse buildings arrayed in gridded tracts and covers an area of approximately seven square blocks. The majority of the pipe lengths, sizes and slopes for the stormwater conveyance system was referenced from current surveys and record plans for the site, which date to 1942, when it was originally developed as a Naval Supply Depot. Light Detection and Ranging (LiDAR) data from Schenectady County (2008) was utilized to supplement ground elevations for catchbasins and manholes throughout the Business Park, in conjunction with additional survey coverage from more recent sources. Field survey coverage was collected of the 40.24 acre lot between B, C and D streets in May 2107 which was used as a basis to establish drainage boundaries and the specific grate invert elevations for the pipe networks for the proposed Belgioioso site. An existing topographic and survey boundary plan developed for Parsons Energy and Chemicals group in February 2104 provided further invert/grate and pipe size data along B Street and the lower section of C Street including a section of the stormline between the two streets on Amsterdam Avenue. In addition to this revision, CHA developed parameters for the 66" section of pipe on Maalwyck Park Road that discharges to the Mohawk River from record mapping.

The watershed contributing to the stormsewer network of the business park system is 270.5± acres, with the land use consisting of approximately 2/3 impervious area and 1/3 open space (See Figure 6 in Appendix A). Based on the Natural Resources Conservation Service (NRCS) web application, the majority of the soils in the watershed consist of Howard gravelly silt loam, which is classified as Hydrologic Soil Group (HSG) A, and generally exhibits a low potential for runoff. In addition, due to the minimal change in elevation within the Business Park, times of concentration (T_c) were estimated to range from 5 to 20 minutes based on the percentage of pervious area, relative size of the sub-basin and on the assumption that runoff from most of the buildings is not directly connected to the storm sewers.

Belgioioso Cheese Inc. proposes SPDES-permitted industrial discharge flows into the storm sewer at C Street/ 1st Street intersection (DP-2). The estimated industrial discharge flow is (244 gal/min or 0.54 cfs) to the storm sewer. For the modeling purposes, this flow is added as a constant flow in the StormCAD model and ties to the C Street 24" connection. It should be noted that the industrial discharges account for less than 0.1 percent of the total system flow (during the 10-year design event) in proposed conditions.

Modeling Assumptions:

As mentioned previously the inverts for the storm sewer were developed based on record plan data supplemented with survey data of the system of the Business Park. Other assumptions and conversions made to facilitate the development of the StormCAD model are summarized in the bulleted items below.

- Time of concentration for the subareas ranged from a minimum of 5 minutes to a maximum of 20 minutes. The selected time of concentration is based on the subarea size and the extent of sheet flow component over pervious areas within the sub-basin.
- The runoff coefficients for the Rational Method were based on land use coverage of either pervious or impervious shown on recent aerial imagery. (See Existing and Proposed Site Impervious Area Maps - Figures 7 and 8 in Appendix A).
- The grate elevations outside of the field surveyed areas and data from record plans were determined using 2 ft LiDAR (NAVD 1988) surface data.
- The downstream tailwater condition at the outfall end of the 66-inch outfall pipe under Maalwyck Park Road is not expected to impact the profiles beyond Maalwyck Park Road as the stormsewer system is + 40 feet above the floodplain elevation.

- The existing and future industrial discharge from Belgioioso Cheese site at C Street connection (DP-2) is a batch flow and was assumed to add to the peak stormwater flows to provide a conservative hydraulic evaluation of the system.
- Drainage boundaries are the same between existing and future conditions for the areas outside of the Belgioioso development.
- Survey data on record plans containing vertical datum of NGVD 1929 are converted to NAVD 1988 by a factor of -0.57 feet

StormCAD Analysis Results:

The results of the model indicate reduced flows from the planned development in the 24"/48" collection line along B Street and in the 24"/48" collection line along C Street during the 10-year and 100-year events. Please note, the capacity of the 60"/84"main trunk line along Amsterdam Road (State Route 5) is exceeded during 100 year event during both the existing and proposed conditions. A detention storage area located above C Street and 1st Street intersection will be provided to mitigate flows to the Industrial Park stormsewer system. The hydraulic grade lines (HGL) of the 10-year and 100-year events and peak flow rates are provided at critical points along the conveyance system in the Tables 5 and 6, and the hydraulic profiles for the existing and proposed condition are included in the Technical Appendix F.

StormCAD outputs for the B Street collection, C Street collection and Amsterdam Road main trunk lines are included in the Technical Appendix F. The tailwater condition from the Mohawk River, is not expected to impact the pipe network above the manhole connection at Maalwyck Road/ Amsterdam Road (State Route 5) intersection, as the stormwater of the system is located well above the elevation of the 100-year floodplain.

Table 5 – StormCAD 10 Year Profile Results

Model Location[3]	Invert Elev. (ft)	Ground Elev. (ft)	Existing Condition Results			Proposed Condition Results		
			10-Yr Branch Inflow (cfs)	10-Yr Total Flow [1] (cfs)	HGL [2] (ft)	10-Yr Branch Inflow (cfs)	10-Yr Total Flow [1] (cfs)	HGL [2] (ft)
Belgioioso Site Connection @ Manhole 20 B Street Connection (DP-1)	285.2	293.6	6.3[4]	19.2	287.1	4.3[4]	17.3	287.0
Manhole 18 B Street and State Route 5	273.2	286.6	55.7	120.7	278.9	53.7	118.6	278.7
Belgioioso Site Connection @ CB 170 C Street Connection (DP-2)	284.7	292.1	2.9[4]	4.8	285.6	2.7[5]	4.4	285.5
Manhole 44 C Street and State Route 5	271.5	282.7	36.7	151.8	276.9	36.4	149.5	276.8
Manhole 130 State Route 5 and Maalwyck Park Road	257.4/ ±220.0	272.4	365.5	459.6	235.9	362.8	456.7	235.8

[1] Cumulative System outflow at the referenced manhole or outfall location.
[2] HGL is representative of the cumulative flow at the referenced manhole or outfall.
[3] See Figure maps 9A and 9B StormCAD flow points in Appendix A for descriptions of flow points at model locations.
[4] Flow referenced from Pondpack output flows on Tables 2 and 3
[5] Flow referenced from Proposed Pondpack output flow on Table 3, and includes 0.5 cfs industrial inflow @ C Street.

Table 6 – StormCAD 100 Year Profile Results

Model Location[3]	Invert Elev. (ft)	Ground Elev. (ft)	Existing Condition Results			Proposed Condition Results		
			100-Yr Branch Inflow (cfs)	100-Yr Total Flow [1] (cfs)	HGL [2] (ft)	100-Yr Branch Inflow (cfs)	100-Yr Total Flow [1] (cfs)	HGL [2] (ft)
Belgioioso Site Connection @ Manhole 20 B Street Connection (DP-1)	285.2	293.6	12.6[4]	33.9	290.6	10.3[4]	31.6	290.3[6]
Manhole 18 B Street and State Route 5	273.2	286.6	96.7	207.2	287.4[6]	94.2	204.7	287.4[6]
Belgioioso Site Connection @ CB 170 C Street Connection (DP-2)	284.7	292.1	7.3[4]	10.4	286.1	3.5[5]	5.8	285.7
Manhole 44 C Street and State Route 5	271.5	282.7	64.9	266.0	284.2[6]	60.2	258.8	284.1[6]
Manhole 130 State Route 5 and Maalwyck Park Road	257.4/ ±220.0	272.4	647.2	814.4	250.8[6]	639.3	806.2	250.4[6]

[1] Cumulative System outflow at the referenced manhole or outfall location.
[2] HGL is representative of the cumulative flow at the referenced manhole or outfall.
[3] See Figure maps 9A and 9B StormCAD flow points in Appendix A for descriptions of flow points at model locations.
[4] Flow referenced from Pondpack output flows on Tables 2 and 3
[5] Flow referenced from Proposed Pondpack output flow on Table 3, and includes 0.5 cfs industrial inflow @ C Street.
[6] Potential surcharge conditions during 100 -year event.

Peak Flow Distributions

Based on a comparison between the existing conditions and the proposed peak flow rates, the proposed development will reduce peak flow rates to the stormsewer system at B Street (DP-1) and C Street (DP-2) as well as decrease peak rates at DP-3 and DP-4. Based on typical design standards, it would be expected that the closed drainage system could provide safe conveyance for the 10-year storm event. The analysis shows that this measurement is met for both the existing and proposed conditions. While the system will potentially surcharge along Route 5 during the 100-year event, please note that the contributing flows for the development have been reduced and represent around 3.0% of the total system flows. A summary of the existing conditions peak flow and post-development peak flow comparison is shown in Table 7 below, and detailed computations are included in Appendices C and D.

Table 7 – Existing Condition & Post-Development Peak Flow Comparison

Design Point	Peak Flow Rate (cfs)								
	1-Year Storm			10-Year Storm			100-Year Storm		
	Exist (cfs)	Proposed (cfs)	Δ (cfs)	Exist (cfs)	Proposed (cfs)	Δ (cfs)	Exist (cfs)	Proposed (cfs)	Δ (cfs)
DP-1	2.6	1.3	-1.3	6.9	5.3	-1.6	16.3	14.6	-1.7
DP-2	0.8	2.0[1]	+1.8	2.9	2.7[1]	-0.2	7.3	3.5[1]	-3.8
DP-3	5.1	1.3	-3.8	11.3	4.2	-7.1	22.1	10.0	-12.1
DP-4	0.0	0.0	0.0	0.4	0.1	-0.3	1.6	1.2	-0.4

[1] Includes a constant rate of 244 gal/min (0.5 cfs) industrial discharge

Floodplains

Based on a review of the FEMA Flood Insurance Rate Map for Schenectady County, NY (dated January 8, 2014); the project site is not located in the 100-year floodplain (see Figure 5 – FEMA FIRM).

Maintenance/Inspection Procedures:

Erosion and Sediment Control Inspection and Maintenance Practices

These are the minimum required inspection and maintenance practices that shall be used to maintain erosion and sediment controls:

Owner/Operator Inspection Requirements-

- Prior to construction activity the owner/operator shall have contractors and sub contractors identify a trained individual responsible for the implementation of the SWPPP. The trained individual must be on-site on a daily basis when soil disturbing activities are occurring.
- The owner/operator shall inspect the erosion and sediment control measures as identified in the SWPPP to ensure that they are being maintained in effective operating conditions at all times. Where soil disturbing activities temporarily cease (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the owner/operator can reduce frequency of inspections, but shall maintain a minimum of monthly inspections, and after significant rain storms and snow thaws. The owner/operator shall resume inspections when soil disturbing activities begin again.
- Where soil disturbing activities have ceased with partial project completion, the owner/operator can stop conducting inspections when disturbed areas have reached final stabilization. The qualified inspector shall coordinate and obtain approval from the Owner and Engineer that final stabilization has been achieved. All post construction stormwater management practices required for the completed areas shall have been constructed in conformance with the SWPPP and be fully operational. Final stabilization means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.
- The owner/operator shall notify the DEC Regional Office's stormwater contact person prior to any reduction in the frequency of site inspections.
- The owner/operator shall retain copies of the NOI, NOI acknowledgment letter, SWPPP, MS4 SWPPP acceptance form and any inspection reports submitted in conjunction with this permit and records or all data used to complete the NOI to be covered by this permit for a period of at least five (5) years from the date that the site is finally stabilized.

Qualified Inspector Inspection Requirements-

- The qualified inspector is defined as a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), licensed Landscape Architect, or other Department endorsed individual(s). It may also mean someone working under the direct supervision of the licensed Professional Engineer or licensed Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means the person has received four (4) hours of training endorsed by the Department and shall receive four (4) hours of training every three (3) years after the initial training.
- A site inspection shall be conducted at least once every seven (7) days by the qualified inspector when soil disturbing activities are occurring. A copy of the "Construction Duration Inspection Form" is included in the Appendix H section of this plan.

- All measures shall be maintained in good working order; if any repairs or corrective actions are necessary, it is the responsibility of the qualified inspector to notify the owner/operator and appropriate contractor within one business day. The contactor shall begin implementing the corrective action within one business day of being notified.
- All inspection forms must be signed by a qualified inspector.
- For construction sites where soil disturbing activities are temporarily suspended, temporary stabilization measures shall be applied and the qualified inspector shall conduct a site inspection at least once every thirty (30) calendar days.
- Where soil disturbing activities have ceased with partial project completion the qualified inspector can stop conducting inspections when disturbed areas have reached final stabilization and all post construction stormwater management practices required for the completed areas have been constructed in conformance with the SWPPP and are fully operational.
- Where soil disturbing activities are not resumed within two (2) years, from the date of shut down of partial project completion, the qualified inspector shall perform a final inspection and certify that all disturbed areas have achieved final stabilization, all temporary and permanent erosion control measures have been removed, and post-construction stormwater management practices have been constructed in conformance with the SWPPP. Qualified inspector shall sign the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the Notice of Termination (NOT).

General Requirements

- A copy of the SPDES General Permit (GP-0-15-002), the signed Notice of Intent (NOI), NOI acknowledgement letter, SWPPP, and inspection reports shall be maintained onsite until the site has achieved final stabilization.
- Built up sediment shall be removed from any silt fence when it has reached one-third the height of the fence / dike.
- Sediment fencing and wetland protection barrier shall be inspected for depth of sediment, and tears, to see if fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- The construction entrance shall be cleaned of sediment and redressed when voids in the crushed stone become filled and vehicular tracking of sediment is occurring.
- Dust shall be controlled on access points and other disturbed areas subject to surface dust movement and blowing.
- Stabilization fabric and rock dams shall be inspected to ensure that slopes and swales are not being eroded. Fabric shall be replaced / reinstalled and rock dams added as necessary to prevent any such erosion
- Inspection of diversion swales shall be conducted to check condition of swale.
- The temporary sediment trap shall be inspected to check condition of trap. They shall be cleaned at a minimum frequency of twice a year or immediately once accumulated sediment reaches a depth of 1/3 the depth of the trap.
- Inspection must verify that all practices are adequately operational, maintained properly and that sediment is removed from all control structures.
- Inspection must look for evidence of soil erosion on the site, potential of pollutants entering drainage systems, problems at the discharge points, and signs of soil and mud transport from the site to the public road.

Post-Construction Stormwater Inspection and Maintenance Practices

Belgioioso Cheese, Inc. will maintain ownership of the hydrodynamic units #1 and #2. Long-term inspection forms and long-term maintenance for the stormwater management practices (included in Appendix H of this plan) are referenced from Appendix G of the New York State Stormwater Management Design Manual.

Inventory for Pollution Prevention Plan:

The materials or substances listed below are expected to be within the project area during construction:

- Portland cement concrete.
- Fertilizers / seeding materials.
- Stone.
- Bituminous asphalt.
- Petroleum based products.
- Silt fence fabric.
- Lumber.
- Pavement marking paint.
- PVC and HDPE.

Spill Prevention:

The following are the material management practices that shall be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

Good Housekeeping

The following good housekeeping practices shall be followed within project areas during construction:

- An effort shall be made to store only enough products required to do the job.
- All materials stored within project areas shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products shall be kept in their original containers with the original manufacturer's label.
- Substances shall not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product shall be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal shall be followed.
- The project superintendent shall inspect daily to ensure proper use and disposal of materials.

Hazardous Products

These practices are used to reduce the risks associated with hazardous materials:

- Products shall be kept in original containers unless they are not resealable.
- Original labels and material safety data shall be retained.
- If surplus product must be disposed of, manufacturers' or local and state recommended methods of proper disposal shall be followed.
- Material Safety Data Sheets for all hazardous products shall be within the project area for the duration of construction.

Product Specific Practices

The following product-specific practices shall be followed within the project areas:

Petroleum Products

All project related vehicles shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used during construction shall be applied according to the manufacturer's recommendations.

Fertilizers

Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to stormwater. Fertilizers shall be stored in a covered or other contained area.

Paints

All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged to the storm sewer system but shall be properly disposed of according to manufacturer's instructions or State regulations.

Concrete Trucks

Concrete trucks shall be allowed to wash out within project areas provided that the contractor provides an area which collects and contains any concrete / slurry material washed from trucks for recovery and disposal at a later time. No concrete / slurry shall be discharged from the property at any time of construction. If such washing is anticipated, the contractor shall submit a plan detailing the control of concrete / slurry to the engineer for approval.

Watercourse Protection

Construction operations shall be conducted in such a manner as to prevent damage to watercourses from pollution of debris, sediment, or other foreign material, or from manipulation, from equipment and/or materials in or near the watercourse. The contractor shall not return directly to the watercourse any water used for wash purposes or other similar operations which may cause the water to become polluted with sand, silt, cement, oil or other impurities. If the contractor uses water from the water course, the contractor shall construct an intake or temporary dam to protect and maintain watercourse water quality.

Spill Control Practices

The contractor will be responsible for preparing a project area specific spill control plan in accordance with local and NYS DEC regulations. At a minimum this plan should:

- Reduce stormwater contact if there is a spill.
- Contain the spill.
- Stop the source of the spill.
- Dispose of contaminated material in accordance with manufactures procedures, and NYS DEC regulations.
- Identify responsible and trained personnel.
- Ensure spill area is well ventilated.

Updating the SWPPP:

The SWPPP shall be updated/revised as conditions merit or as directed by the regulating authority. The attached inspection forms included with this document allows for the certification of any updates/revisions.

SWPPP Certification:

Contracting Firm Information:

Contracting Firm

Address

City/Town *State* *Zip*

Site Location:

Glenville Business & Technology Park (Business Park)
2165 Amsterdam Road (State Highway 5)
Glenville, New York 12302

Contractor's Certification

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Signature (Contractor/Subcontractor) *Date*

For

Responsible For

Signature (Trained Individual) *Date*

For

Responsible For

Signature (Contractor/Subcontractor) *Date*

For

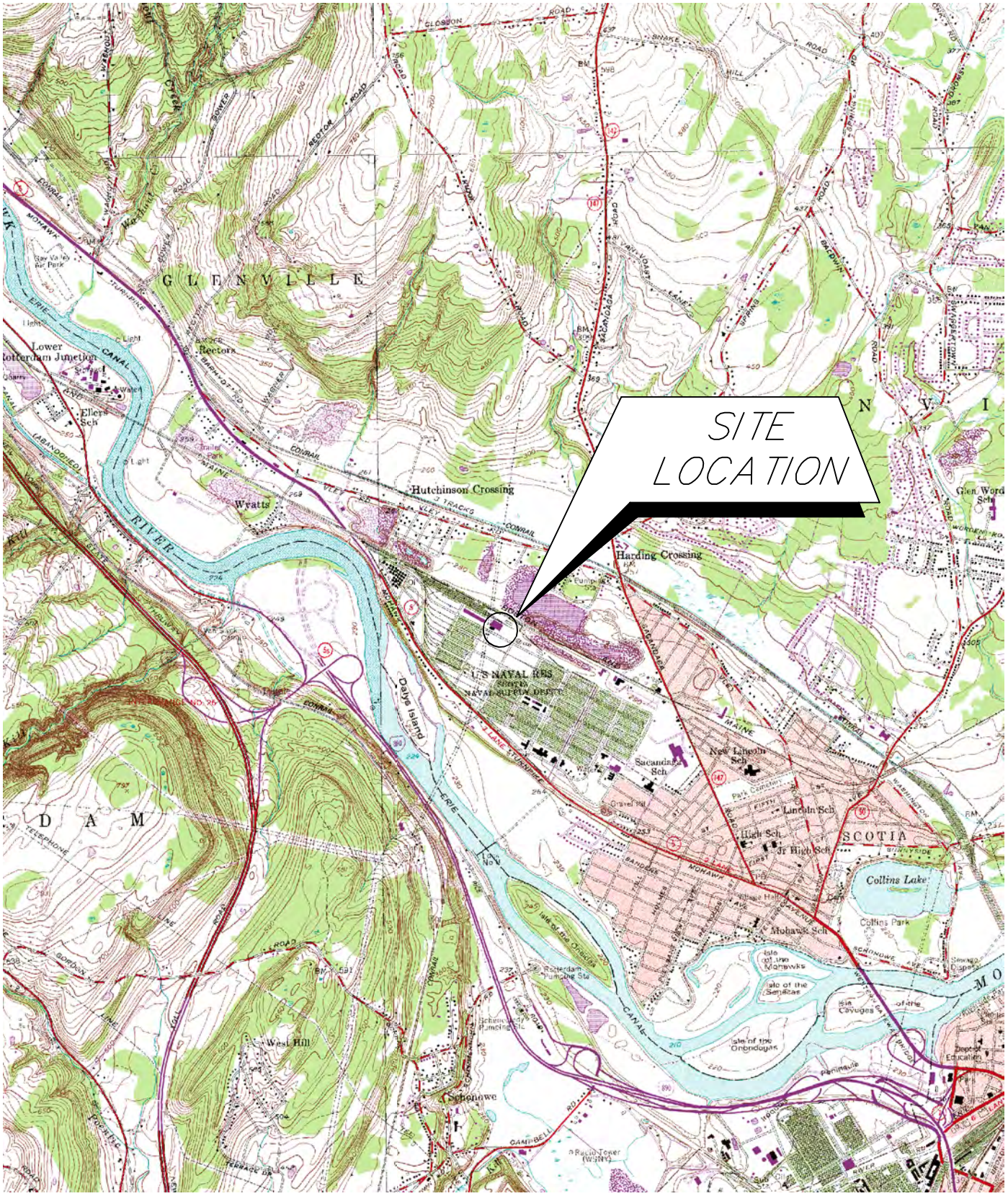
Responsible For

Signature (Trained Individual) *Date*

For

Responsible For

Appendix A
Figures



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SITE LOCATION MAP

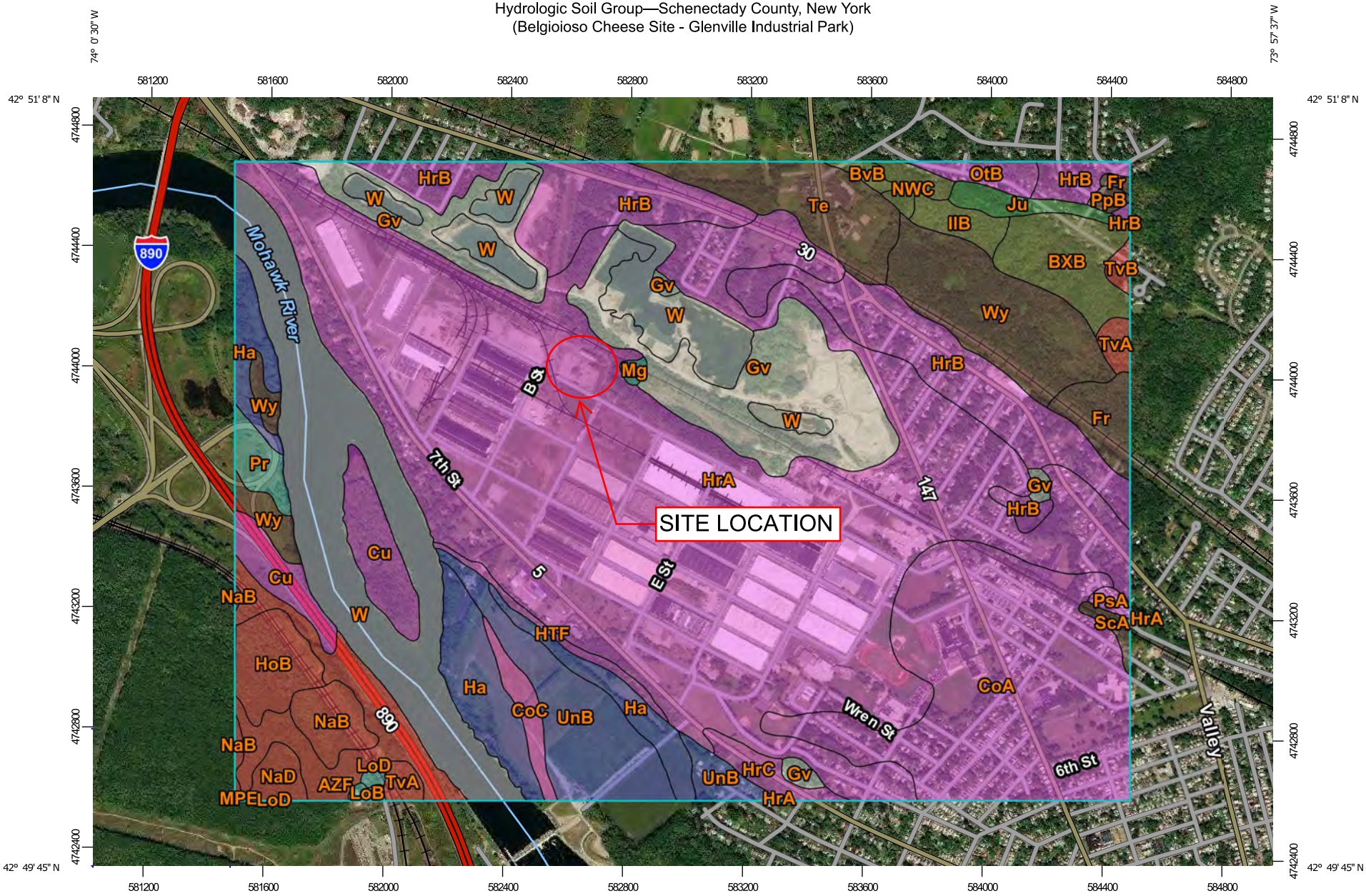
BELGIOIOSO CHEESE, INC.
GLENVILLE BUSINESS & TECHNOLOGY PARK
SCHENECTADY COUNTY, NEW YORK

PROJECT NO. 32984

DATE: 02/25/2019

FIGURE 1

Hydrologic Soil Group—Schenectady County, New York
(Belgioioso Cheese Site - Glenville Industrial Park)



Map Scale: 1:18,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

FIGURE 2
USDA SOILS MAP

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Schenectady County, New York
Survey Area Data: Version 17, Sep 3, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 16, 2009—Oct 19, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AZF	Arnot-Rock outcrop association, very steep	D	38.6	2.5%
BvB	Burdett-Scriba channery silt loams, 3 to 8 percent slopes	C/D	2.7	0.2%
BXB	Burdett-Scriba association, extremely stony, gently sloping	C/D	27.5	1.8%
CoA	Colonie loamy fine sand, 0 to 3 percent slopes	A	154.9	9.8%
CoC	Colonie loamy fine sand, 3 to 15 percent slopes	A	8.5	0.5%
Cu	Cut and fill land	A	31.9	2.0%
Fr	Fredon silt loam	B/D	14.4	0.9%
Gv	Gravel pits		100.7	6.4%
Ha	Hamlin silt loam	B	54.1	3.4%
HoB	Hornell silt loam, 3 to 8 percent slopes	D	19.3	1.2%
HrA	Howard gravelly silt loam, 0 to 3 percent slopes	A	583.0	37.1%
HrB	Howard gravelly silt loam, 3 to 8 percent slopes	A	117.0	7.4%
HrC	Howard gravelly silt loam, 8 to 15 percent slopes	A	8.5	0.5%
HTF	Howard soils, very steep	A	5.7	0.4%
IIB	Ilion silt loam, 3 to 8 percent slopes	C/D	8.4	0.5%
Ju	Junius loamy fine sand	A/D	8.5	0.5%
LoB	Lordstown gravelly silt loam, 3 to 8 percent slopes	C	1.5	0.1%
LoD	Lordstown gravelly silt loam, 15 to 25 percent slopes	C	1.4	0.1%
Mg	Made land	C	1.5	0.1%
MPE	Manlius-Rock outcrop association, steep	C	0.1	0.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NaB	Nassau channery silt loam, 0 to 8 percent slopes	D	14.1	0.9%
NaD	Nassau channery silt loam, 8 to 25 percent slopes	D	7.0	0.4%
NWC	Nunda extremely stony soils, sloping	C/D	6.3	0.4%
OtB	Otisville gravelly loamy sand, 0 to 8 percent slopes	A	7.6	0.5%
PpB	Phelps gravelly loam, 3 to 8 percent slopes	B/D	2.1	0.1%
Pr	Phelps gravelly loam, fan	C	8.6	0.5%
PsA	Plainfield loamy sand, 0 to 3 percent slopes	A	2.2	0.1%
ScA	Scio silt loam, 0 to 3 percent slopes	B/D	3.0	0.2%
Te	Teel silt loam	B/D	38.1	2.4%
TvA	Tuller-Brockport complex, 0 to 3 percent slopes	D	7.8	0.5%
TvB	Tuller-Brockport complex, 3 to 8 percent slopes	D	2.4	0.2%
UnB	Unadilla silt loam, 0 to 8 percent slopes	B	51.5	3.3%
W	Water		169.9	10.8%
Wy	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	B/D	64.3	4.1%
Totals for Area of Interest			**1,573.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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0 40 80
Scale in feet

No.	Submittal / Revision	Appvd.	By	Date

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO

EXISTING CONDITIONS DRAINAGE AREAS MAP

Designed By:	Drawn By:	Checked By:
RKW	AWB	RKW
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:

FIG 3

DP-4
DP-3
DP-1
DP-2

DA-3A
AREA=4.90AC
CN=86
Tc=0.33HR

DA-4A
AREA=0.63AC
CN=60
Tc=0.17HR

DA-1A
AREA=0.81AC
CN=93
Tc=0.17HR

DA-1B
AREA=1.76AC
CN=78
Tc=0.25HR

DA-2A
AREA=2.01AC
CN=73
Tc=0.25HR

DA-1C
AREA=2.35AC
CN=61
Tc=0.33HR

10" WATER MAIN (REC-DISCONNECTED)
16" WATER MAIN (REC-DISCONNECTED)
WATER MAIN (REC)
8" WATER MAIN (REC)
WATER MAIN (REC-DISCONNECTED)
10" WATER MAIN (REC-DISCONNECTED)
CLOSED VALVE
BENCHMARK
DRILL IN HYD
ELEV. 292.1'
1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)
B STREET
(TOWN ROAD - BK. 1181 PG. 56)
C STREET
(SEE MAP REFERENCE NO. 1)
APPROXIMATE CENTERLINE LOCATION OF 20' WIDE GAS EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORPORATION LIBER 839 OF DEEDS AT PAGE 437
UTILITY EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORPORATION LIBER 490 OF DEEDS AT PAGE 329
WOOD FRAME BUILDING
TOWER
ASPHALT
GATE
WELL
BUILDING REMAINS
RET. WALL
GRAVEL
RAIL TRACKS

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0 40 80
Scale in feet

No.	Submittal / Revision	Appr'd. By	Date
1	ISSUED FOR TOWN REVIEW	MFM	BHW 2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	BHW 3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO®

PROPOSED CONDITIONS DRAINAGE AREAS MAP

Designed By:	Drawn By:	Checked By:
RKW	AWB	RKW
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:

FIG 4

DP-1
DP-2
DP-3
DP-4

DA-1A
AREA=0.81AC
CN=52
Tc=0.17HR

DA-1B
AREA=2.67AC
CN=75
Tc=0.25HR

DA-1C
AREA=2.35AC
CN=61
Tc=0.33HR

DA-2A
AREA=1.87AC
CN=81
Tc=0.17HR

DA-2B
AREA=1.54AC
CN=90
Tc=0.17HR

DA-2C
AREA=0.93AC
CN=98
Tc=0.17HR

DA-2D
AREA=0.93AC
CN=49
Tc=0.17HR

DA-3A
AREA=2.29AC
CN=75
Tc=0.17HR

MANUFACTURING BUILDING
96,892 SF±, FFE = 296.0

1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

C STREET
(SEE MAP REFERENCE NO. 1)

16" WATER MAIN (REC-DISCONNECTED)
8" WATER MAIN (REC)
8" WATER MAIN (REC)
WATER MAIN (REC-DISCONNECTED)
10" WATER MAIN (REC-DISCONNECTED)
48" RCP (RECORD)
24" RCP
18" RCP
12" RCP
10" RCP
50' BLDG. SETBACK
CLOSED VALVE
BENCHMARK BOLT ON HH ELEV. 292.1'
WOOD FRAME BUILDING
TOWER
POLE W/ TRANS & LIGHT
RAIL TRACKS

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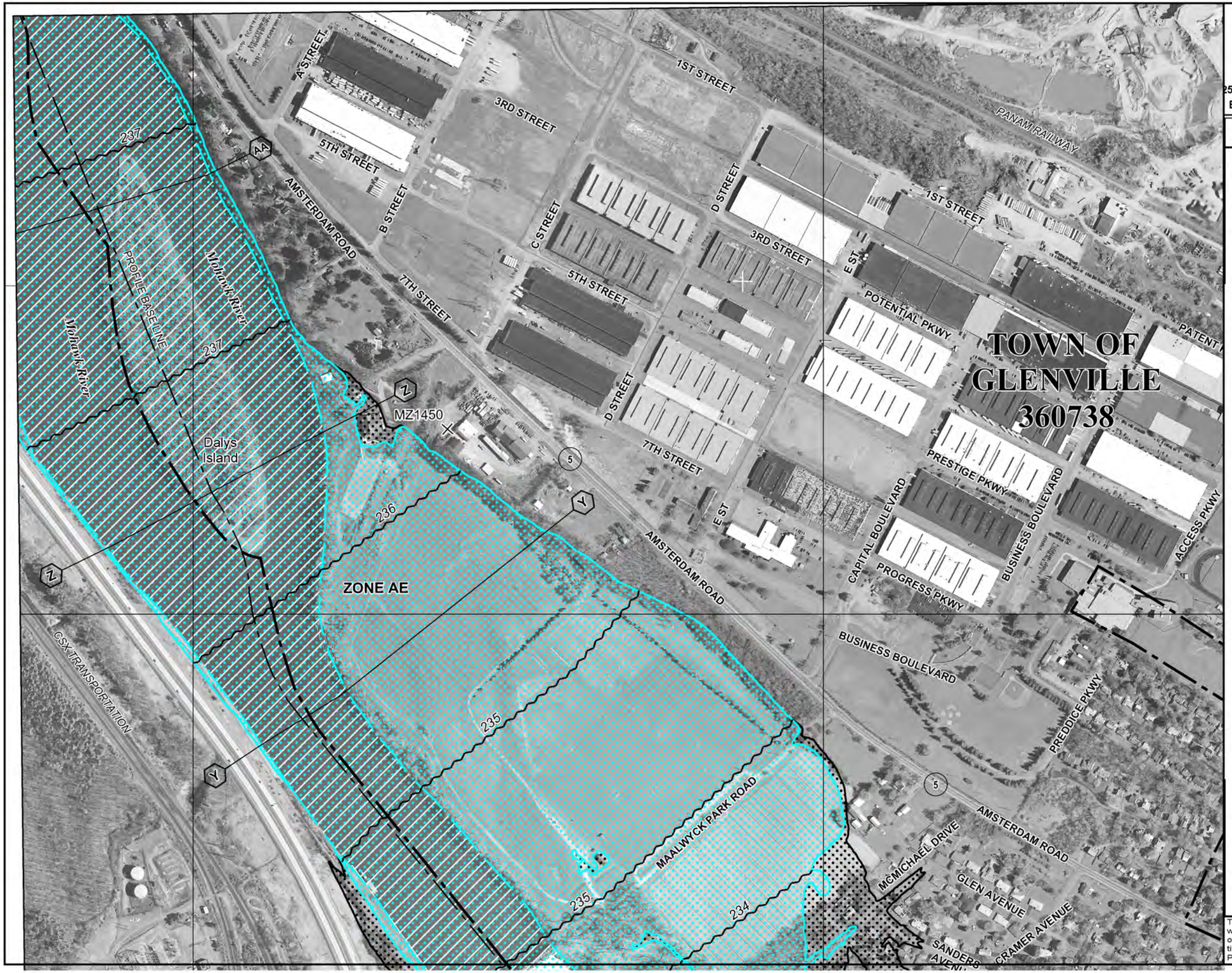


MAP SCALE 1" = 500'

250 0 500 1000

FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0153D

FIRM

FLOOD INSURANCE RATE MAP

for SCHENECTADY COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
GLENVILLE, TOWN OF	360738
ROTTERDAM, TOWN OF	360740
SCOTIA, VILLAGE OF	360742

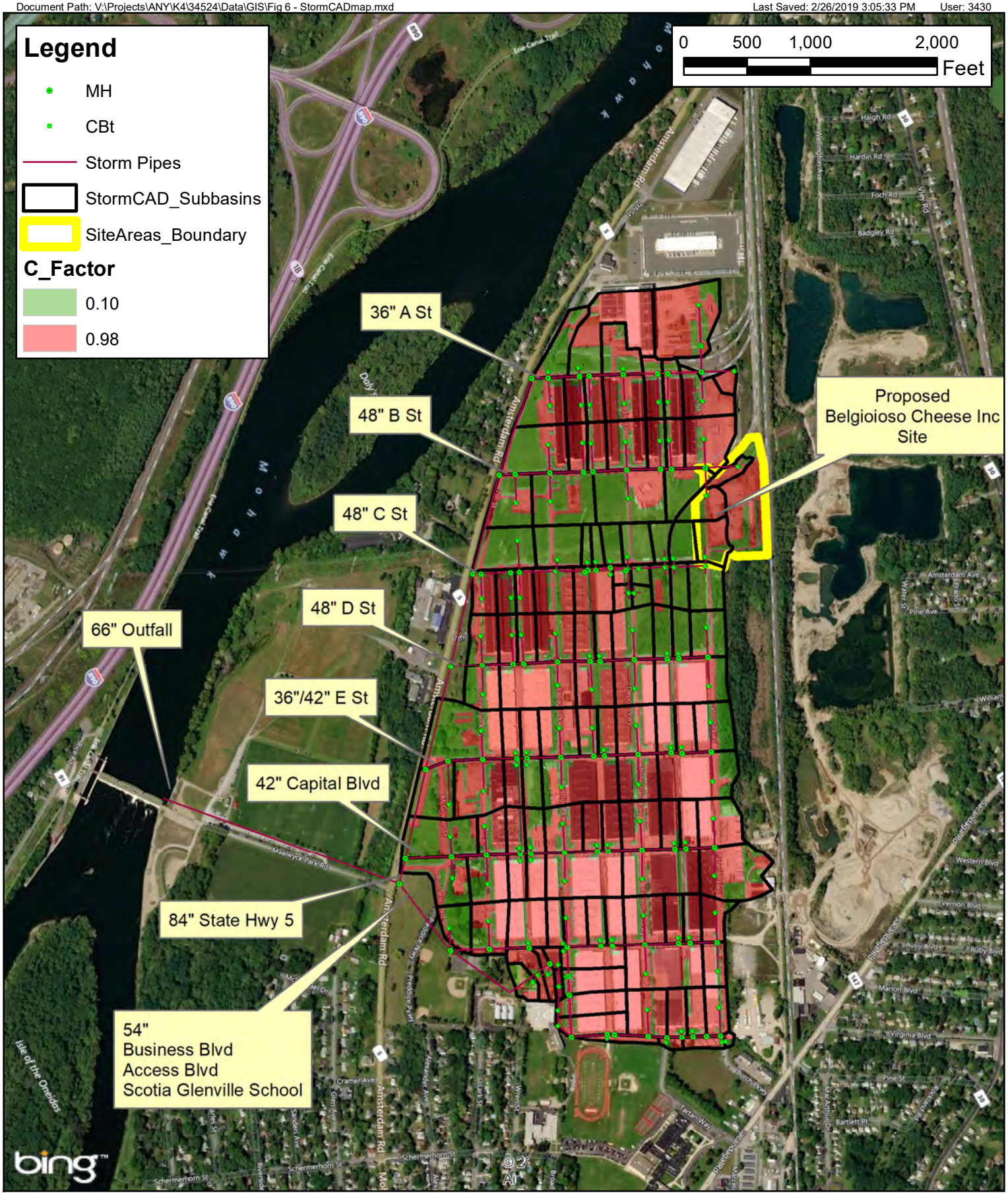
PANEL 153 OF 257
MAP SUFFIX: D
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36093C0153D

EFFECTIVE DATE
JANUARY 8, 2014

Federal Emergency Management Agency



1 inch = 1,000 feet

Watershed Map
Glenville Business Park
StormCAD Analysis - Existing Conditions
City of Glenville, Schenectady County, New York

Issue Date: 2/26/2019 Project No. : 34524

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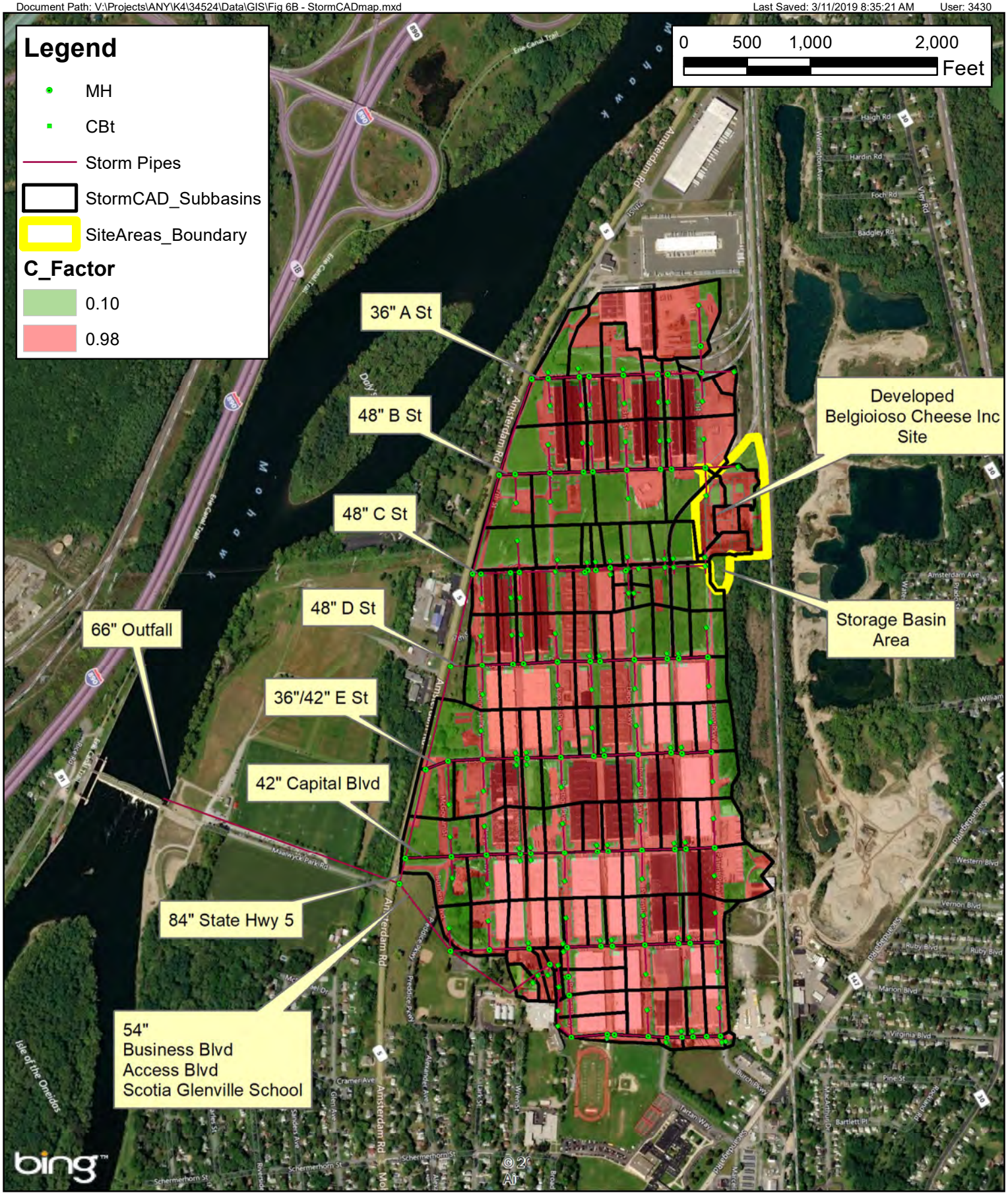
Figure 6A



1 inch = 1,000 feet

Watershed Map
Glenville Business Park
StormCAD Analysis - Proposed Conditions
City of Glenville, Schenectady County, New York

Issue Date: 3/11/2019 Project No. : 34524

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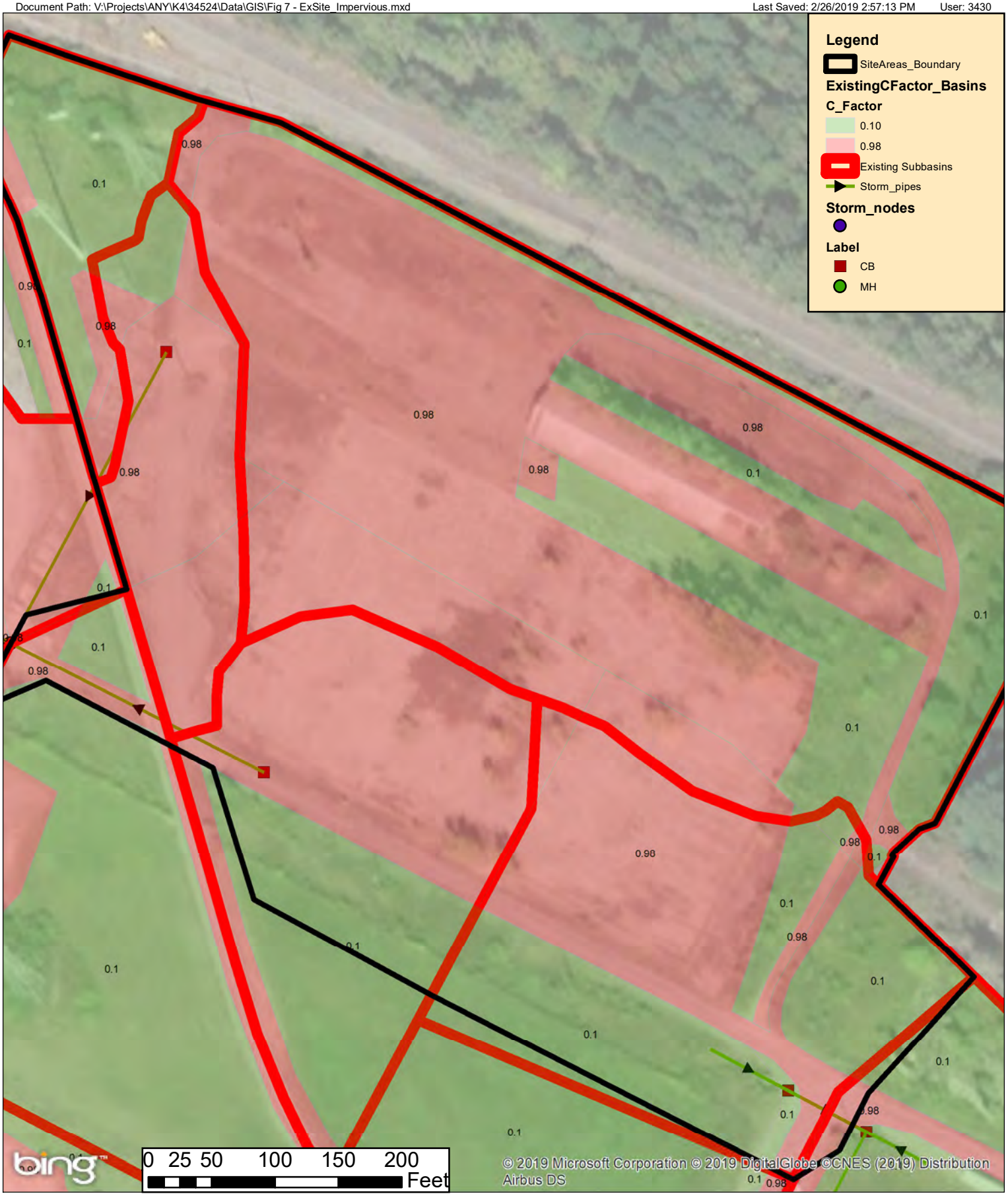
Figure 6B



1 inch = 100 feet

Belgioioso Cheese
Existing Conditions Impervious Coverage

Schenectady County, NY

Issue Date: 2/26/2019 Project No. : 32984

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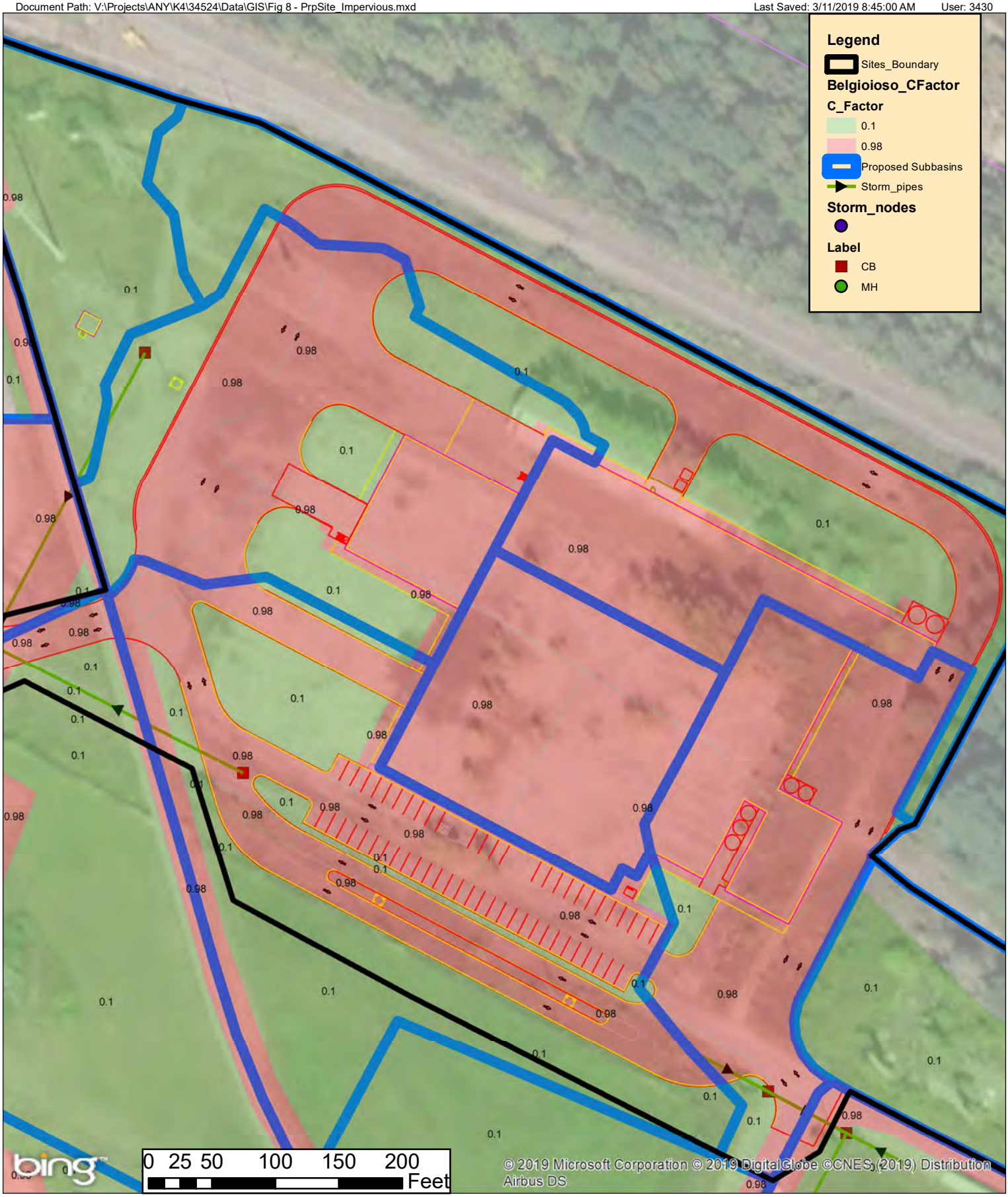
Figure 7



1 inch = 100 feet

Belgioioso Cheese
Proposed Conditions Impervious Coverage

Schenectady County, NY

Issue Date: 3/11/2019 Project No. : 32984

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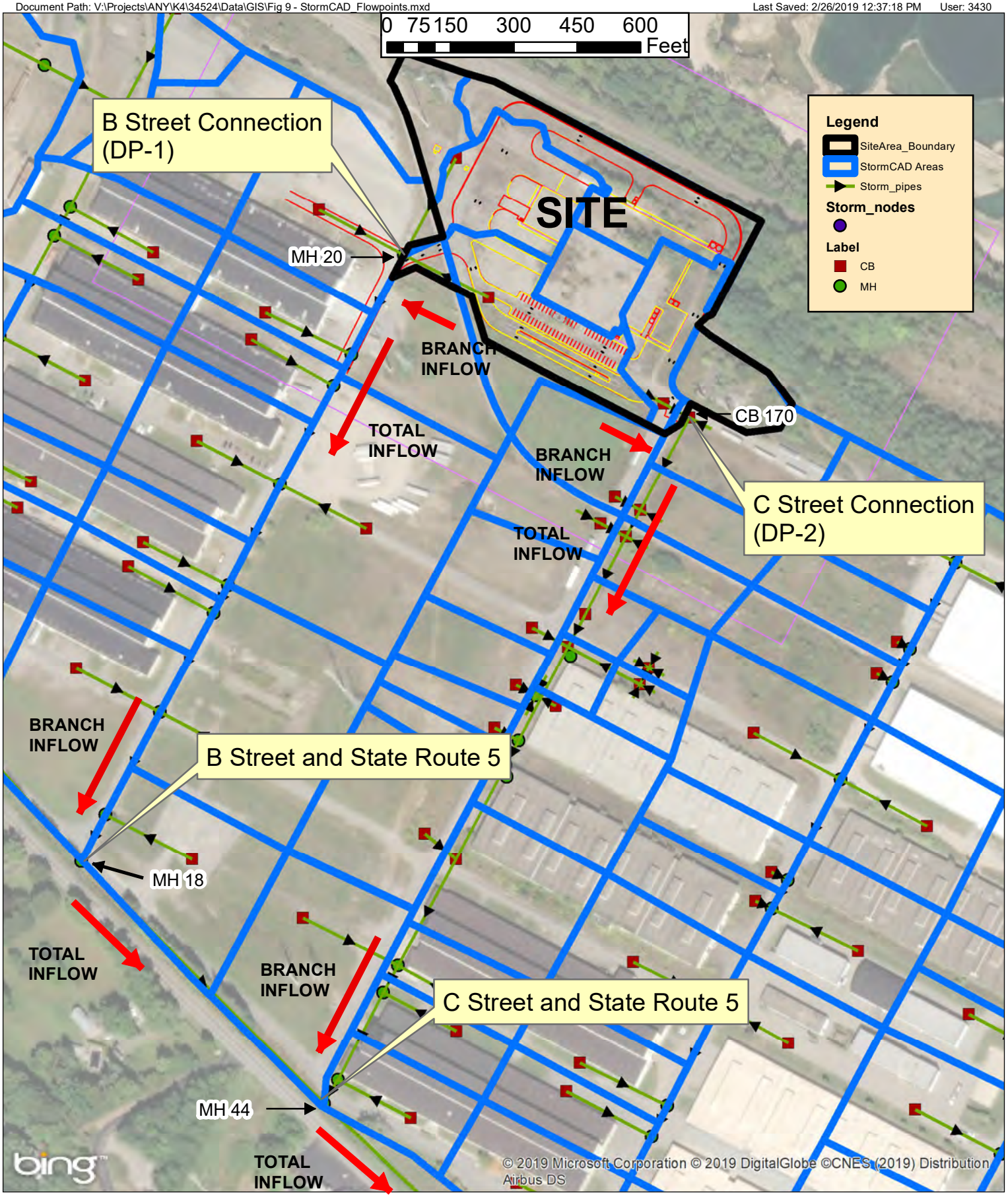
Figure 8



1 inch = 300 feet

Belgioioso Cheese
StormCAD flow points

Schenectady County, NY

Issue Date: 2/26/2019 Project No. : 32984

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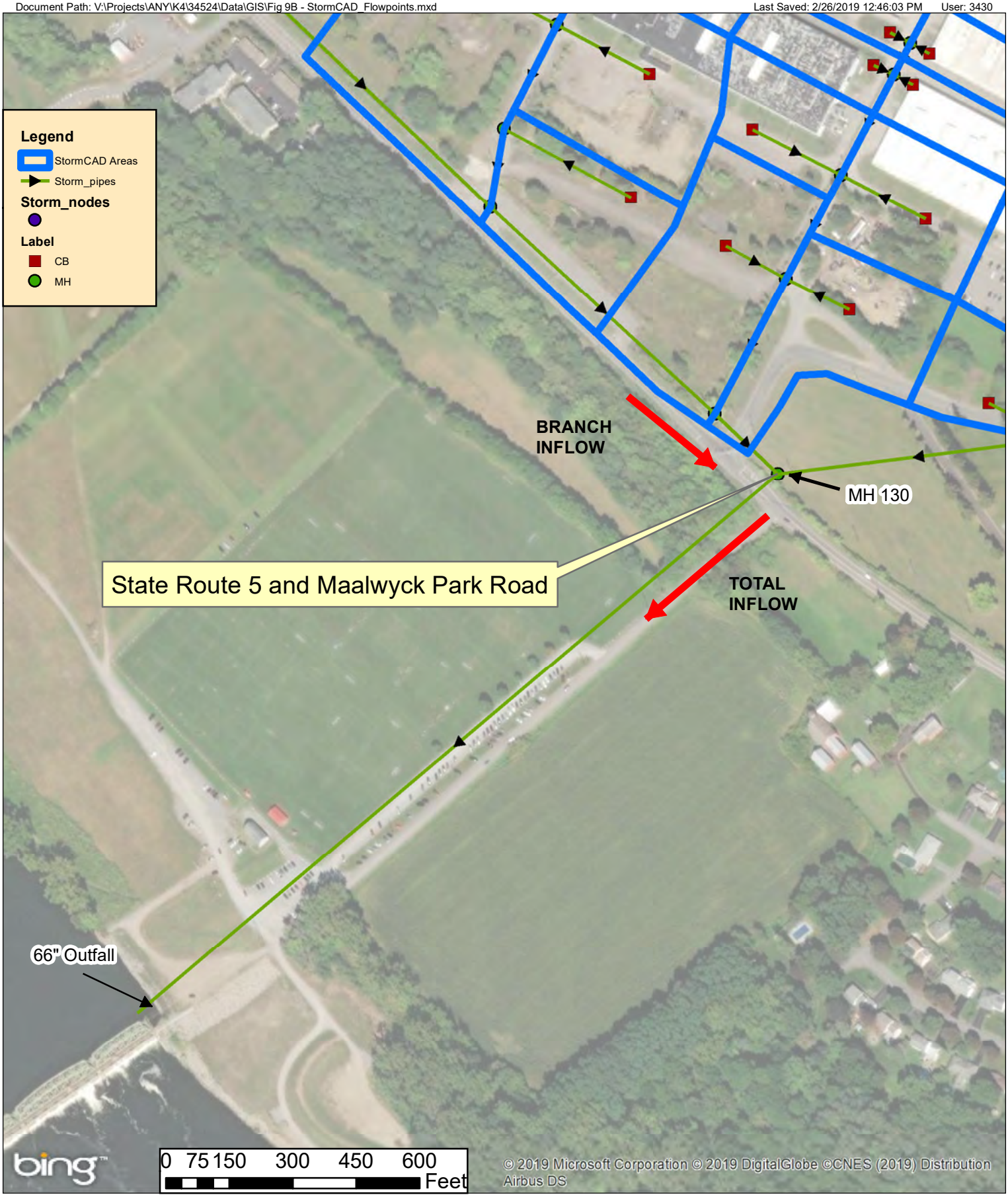
III Winners Circle, P.O. Box 5269 • Albany, NY 12205-0269
Main: (518)453-4500 • www.chacompanies.com

Figure 9A



1 inch = 300 feet

Belgioioso Cheese
StormCAD flow points

Schenectady County, NY

Issue Date: 2/26/2019 Project No. : 32984

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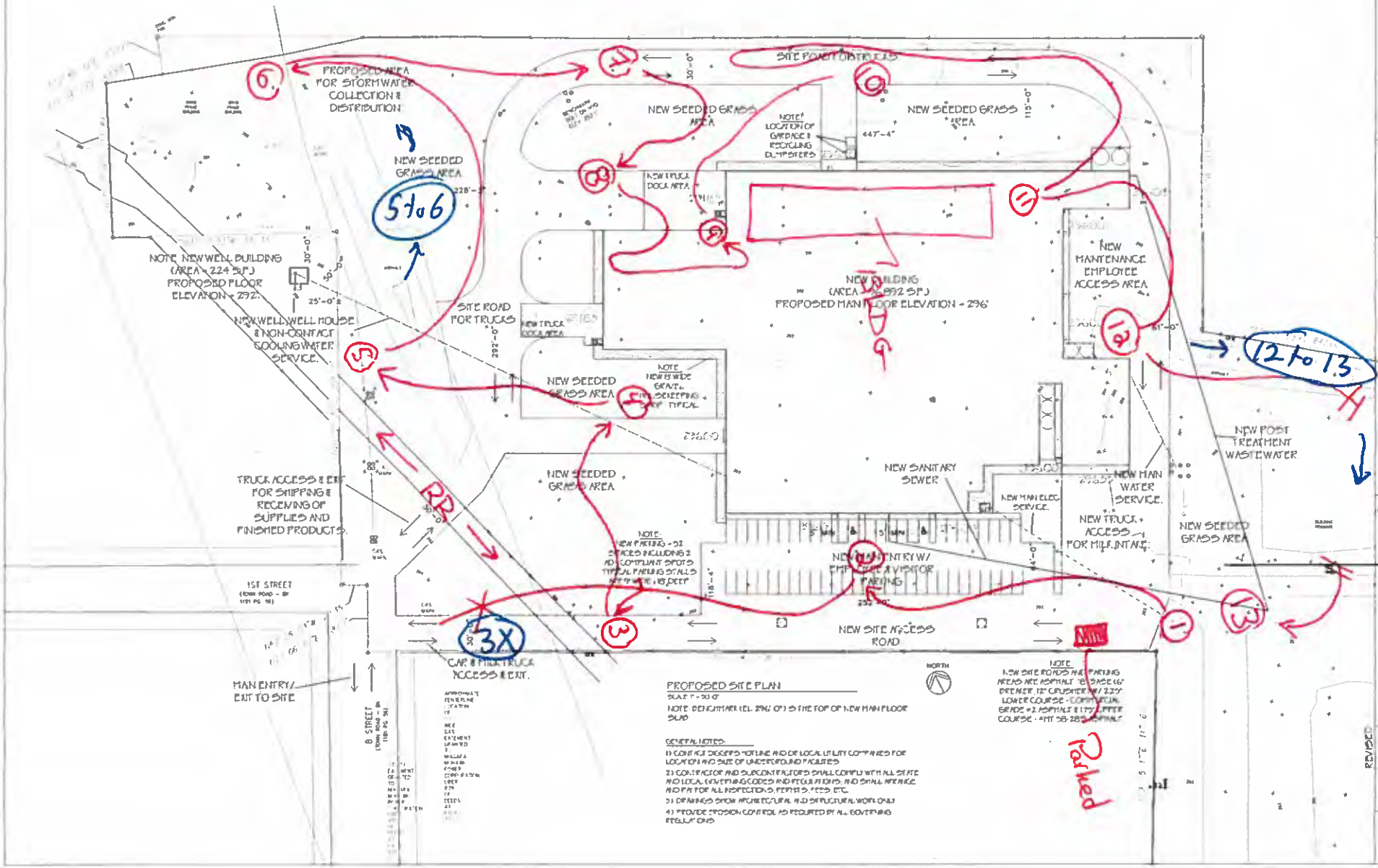
Figure 9B

Appendix B
Site Photos

* CGM Photolog *
Date: 2/11/19



NEW PLANT FOR BELGIOIOSO CHEESE
GLENVILLE, NEW YORK

DRAWN: CGR
CHECKED: CGR

PROPOSED SITE PLAN

C. RENIER ARCHITECTS, INC.
348 MAIN AVENUE
DE PERE, WISCONSIN 54115
PH: (920) 339-4060

REVISED
DATE 1/30/19
COPYRIGHT
SHEET, C1.1
PROJ. NO.

LOCATION 1

LOCATION 2

LOCATION 2

LOCATION 2

LOCATION 3

LOCATION 3

LOCATION 3

LOCATION 4

LOCATION 5

LOCATION 5

LOCATION 5to6

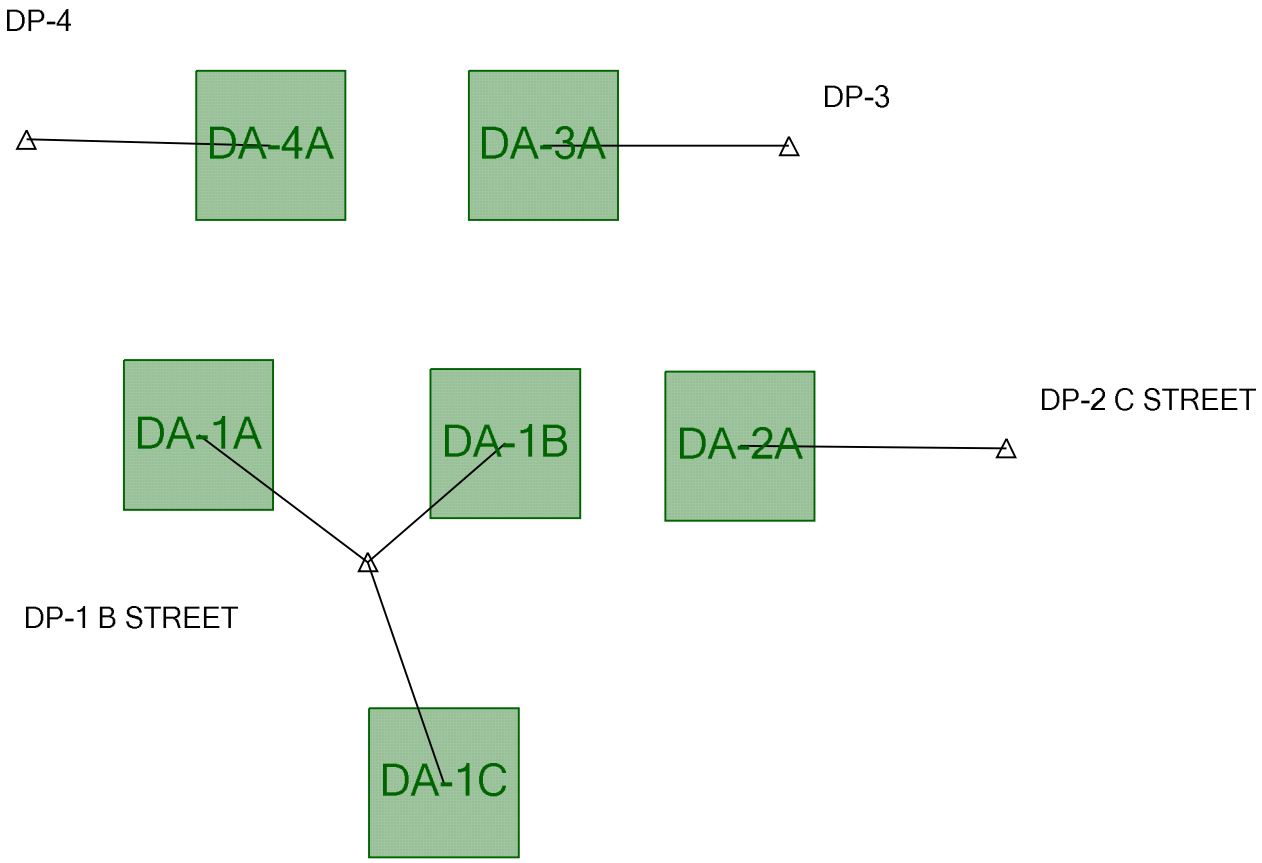
LOCATION 7

LOCATION 7

LOCATION 12

Appendix C
Existing Condition Pondpack Model

Scenario: 100YR



Belgioioso Cheese Stormwater

Project Summary	
Title	Belgioioso Cheese Stormwater
Engineer	RKW
Company	CHA
Date	3/10/2019

Notes	Belgioioso Cheese Stormwater - Existing Conditions Site Flows

Table of Contents

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
DA-1A	1YR	1	0.099	11.980	1.60
DA-1A	10YR	10	0.189	11.980	2.97
DA-1A	25YR	25	0.240	11.980	3.72
DA-1A	100YR	100	0.342	11.980	5.18
DA-4A	1YR	1	0.005	12.360	0.01
DA-4A	10YR	10	0.029	12.040	0.39
DA-4A	25YR	25	0.049	12.030	0.74
DA-4A	100YR	100	0.097	12.020	1.55
DA-1B	1YR	1	0.084	12.070	1.15
DA-1B	10YR	10	0.226	12.040	3.29
DA-1B	25YR	25	0.317	12.040	4.63
DA-1B	100YR	100	0.507	12.040	7.40
DA-2A	1YR	1	0.066	12.070	0.79
DA-2A	10YR	10	0.205	12.060	2.91
DA-2A	25YR	25	0.297	12.060	4.30
DA-2A	100YR	100	0.499	12.040	7.30
DA-3A	1YR	1	0.395	12.090	5.07
DA-3A	10YR	10	0.880	12.090	11.34
DA-3A	25YR	25	1.167	12.090	14.95
DA-3A	100YR	100	1.750	12.090	22.09
DA-1C	1YR	1	0.021	12.400	0.05
DA-1C	10YR	10	0.117	12.130	1.16
DA-1C	25YR	25	0.194	12.130	2.17
DA-1C	100YR	100	0.374	12.090	4.60

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
DP-1 B STREET	1YR	1	0.203	12.030	2.62
DP-1 B STREET	10YR	10	0.533	12.030	6.89
DP-1 B STREET	25YR	25	0.750	12.040	9.85
DP-1 B STREET	100YR	100	1.223	12.040	16.26
DP-4	1YR	1	0.005	12.360	0.01
DP-4	10YR	10	0.029	12.040	0.39
DP-4	25YR	25	0.049	12.030	0.74
DP-4	100YR	100	0.097	12.020	1.55
DP-3	1YR	1	0.395	12.090	5.07
DP-3	10YR	10	0.880	12.090	11.34
DP-3	25YR	25	1.167	12.090	14.95
DP-3	100YR	100	1.750	12.090	22.09
DP-2 C STREET	1YR	1	0.066	12.070	0.79
DP-2 C STREET	10YR	10	0.205	12.060	2.91

Belgioioso Cheese Stormwater

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
DP-2 C STREET	25YR	25	0.297	12.060	4.30
DP-2 C STREET	100YR	100	0.499	12.040	7.30

Time-Depth Curve: 1 Year	
Label	1 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.0	0.0
2.000	0.0	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.1	0.1
5.000	0.1	0.1	0.1	0.1	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.2	0.2	0.2	0.2	0.2
7.500	0.2	0.2	0.2	0.2	0.3
8.000	0.3	0.3	0.3	0.3	0.3
8.500	0.3	0.3	0.3	0.3	0.3
9.000	0.3	0.3	0.3	0.3	0.3
9.500	0.4	0.4	0.4	0.4	0.4
10.000	0.4	0.4	0.4	0.4	0.4
10.500	0.4	0.5	0.5	0.5	0.5
11.000	0.5	0.5	0.5	0.6	0.6
11.500	0.6	0.7	0.8	0.9	1.2
12.000	1.4	1.5	1.5	1.5	1.6
12.500	1.6	1.6	1.6	1.6	1.7
13.000	1.7	1.7	1.7	1.7	1.7
13.500	1.7	1.7	1.7	1.8	1.8
14.000	1.8	1.8	1.8	1.8	1.8
14.500	1.8	1.8	1.8	1.8	1.8
15.000	1.8	1.8	1.9	1.9	1.9
15.500	1.9	1.9	1.9	1.9	1.9
16.000	1.9	1.9	1.9	1.9	1.9
16.500	1.9	1.9	1.9	1.9	1.9

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 1 years
Storm Event: 1 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	1.9	2.0	2.0	2.0	2.0
17.500	2.0	2.0	2.0	2.0	2.0
18.000	2.0	2.0	2.0	2.0	2.0
18.500	2.0	2.0	2.0	2.0	2.0
19.000	2.0	2.0	2.0	2.0	2.0
19.500	2.0	2.0	2.0	2.1	2.1
20.000	2.1	2.1	2.1	2.1	2.1
20.500	2.1	2.1	2.1	2.1	2.1
21.000	2.1	2.1	2.1	2.1	2.1
21.500	2.1	2.1	2.1	2.1	2.1
22.000	2.1	2.1	2.1	2.1	2.1
22.500	2.1	2.1	2.1	2.1	2.1
23.000	2.1	2.1	2.1	2.1	2.1
23.500	2.1	2.2	2.2	2.2	2.2
24.000	2.2	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 10 Year	
Label	10 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.3	0.3	0.3	0.3	0.3
6.000	0.3	0.3	0.3	0.3	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.4	0.4	0.4	0.4	0.4
7.500	0.4	0.4	0.4	0.4	0.4
8.000	0.4	0.4	0.4	0.5	0.5
8.500	0.5	0.5	0.5	0.5	0.5
9.000	0.5	0.5	0.5	0.6	0.6
9.500	0.6	0.6	0.6	0.6	0.6
10.000	0.6	0.7	0.7	0.7	0.7
10.500	0.7	0.7	0.8	0.8	0.8
11.000	0.8	0.9	0.9	0.9	1.0
11.500	1.0	1.1	1.3	1.5	2.0
12.000	2.4	2.4	2.5	2.5	2.6
12.500	2.6	2.7	2.7	2.7	2.7
13.000	2.8	2.8	2.8	2.8	2.8
13.500	2.9	2.9	2.9	2.9	2.9
14.000	2.9	2.9	3.0	3.0	3.0
14.500	3.0	3.0	3.0	3.0	3.0
15.000	3.0	3.1	3.1	3.1	3.1
15.500	3.1	3.1	3.1	3.1	3.1
16.000	3.1	3.1	3.2	3.2	3.2
16.500	3.2	3.2	3.2	3.2	3.2

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.2	3.2	3.2	3.2	3.2
17.500	3.3	3.3	3.3	3.3	3.3
18.000	3.3	3.3	3.3	3.3	3.3
18.500	3.3	3.3	3.3	3.3	3.3
19.000	3.3	3.4	3.4	3.4	3.4
19.500	3.4	3.4	3.4	3.4	3.4
20.000	3.4	3.4	3.4	3.4	3.4
20.500	3.4	3.4	3.4	3.4	3.4
21.000	3.4	3.4	3.5	3.5	3.5
21.500	3.5	3.5	3.5	3.5	3.5
22.000	3.5	3.5	3.5	3.5	3.5
22.500	3.5	3.5	3.5	3.5	3.5
23.000	3.5	3.5	3.5	3.5	3.5
23.500	3.6	3.6	3.6	3.6	3.6
24.000	3.6	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 Year

Time-Depth Curve: 100 Year	
Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.2	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.4	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.6	0.7	0.7	0.7	0.7
8.000	0.7	0.7	0.7	0.7	0.8
8.500	0.8	0.8	0.8	0.8	0.8
9.000	0.9	0.9	0.9	0.9	0.9
9.500	1.0	1.0	1.0	1.0	1.0
10.000	1.1	1.1	1.1	1.1	1.2
10.500	1.2	1.2	1.3	1.3	1.3
11.000	1.4	1.4	1.5	1.5	1.6
11.500	1.7	1.8	2.1	2.5	3.3
12.000	3.9	4.0	4.1	4.2	4.3
12.500	4.3	4.4	4.4	4.5	4.5
13.000	4.5	4.6	4.6	4.6	4.7
13.500	4.7	4.7	4.8	4.8	4.8
14.000	4.8	4.8	4.9	4.9	4.9
14.500	4.9	4.9	5.0	5.0	5.0
15.000	5.0	5.0	5.1	5.1	5.1
15.500	5.1	5.1	5.1	5.1	5.2
16.000	5.2	5.2	5.2	5.2	5.2
16.500	5.2	5.3	5.3	5.3	5.3

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.3	5.3	5.3	5.3	5.3
17.500	5.4	5.4	5.4	5.4	5.4
18.000	5.4	5.4	5.4	5.4	5.5
18.500	5.5	5.5	5.5	5.5	5.5
19.000	5.5	5.5	5.5	5.5	5.5
19.500	5.6	5.6	5.6	5.6	5.6
20.000	5.6	5.6	5.6	5.6	5.6
20.500	5.6	5.6	5.7	5.7	5.7
21.000	5.7	5.7	5.7	5.7	5.7
21.500	5.7	5.7	5.7	5.7	5.7
22.000	5.7	5.8	5.8	5.8	5.8
22.500	5.8	5.8	5.8	5.8	5.8
23.000	5.8	5.8	5.8	5.8	5.8
23.500	5.8	5.9	5.9	5.9	5.9
24.000	5.9	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 25 Year	
Label	25 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.3
6.000	0.3	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.4	0.4	0.4	0.5	0.5
7.500	0.5	0.5	0.5	0.5	0.5
8.000	0.5	0.5	0.5	0.6	0.6
8.500	0.6	0.6	0.6	0.6	0.6
9.000	0.6	0.7	0.7	0.7	0.7
9.500	0.7	0.7	0.7	0.8	0.8
10.000	0.8	0.8	0.8	0.8	0.9
10.500	0.9	0.9	0.9	1.0	1.0
11.000	1.0	1.1	1.1	1.1	1.2
11.500	1.2	1.3	1.5	1.9	2.5
12.000	2.9	3.0	3.0	3.1	3.2
12.500	3.2	3.2	3.3	3.3	3.3
13.000	3.4	3.4	3.4	3.4	3.5
13.500	3.5	3.5	3.5	3.5	3.6
14.000	3.6	3.6	3.6	3.6	3.6
14.500	3.6	3.7	3.7	3.7	3.7
15.000	3.7	3.7	3.7	3.8	3.8
15.500	3.8	3.8	3.8	3.8	3.8
16.000	3.8	3.8	3.8	3.9	3.9
16.500	3.9	3.9	3.9	3.9	3.9

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 25 years
Storm Event: 25 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.9	3.9	3.9	3.9	4.0
17.500	4.0	4.0	4.0	4.0	4.0
18.000	4.0	4.0	4.0	4.0	4.0
18.500	4.0	4.1	4.1	4.1	4.1
19.000	4.1	4.1	4.1	4.1	4.1
19.500	4.1	4.1	4.1	4.1	4.1
20.000	4.1	4.1	4.2	4.2	4.2
20.500	4.2	4.2	4.2	4.2	4.2
21.000	4.2	4.2	4.2	4.2	4.2
21.500	4.2	4.2	4.2	4.2	4.2
22.000	4.2	4.3	4.3	4.3	4.3
22.500	4.3	4.3	4.3	4.3	4.3
23.000	4.3	4.3	4.3	4.3	4.3
23.500	4.3	4.3	4.3	4.3	4.3
24.000	4.4	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: DA-1A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-1A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-1B

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.250 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.250 hours

Subsection: Time of Concentration Calculations
Label: DA-1B

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-1C

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.333 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.333 hours

Subsection: Time of Concentration Calculations
Label: DA-1C

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-2A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.250 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.250 hours

Subsection: Time of Concentration Calculations
Label: DA-2A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-3A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.333 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.333 hours

Subsection: Time of Concentration Calculations
Label: DA-3A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-4A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-4A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Runoff CN-Area
Label: DA-1A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.723	0.0	0.0	98.000
PERVIOUS	49.000	0.088	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.811	(N/A)	(N/A)	92.711

Subsection: Runoff CN-Area
Label: DA-1B

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	1.055	0.0	0.0	98.000
PERVIOUS	49.000	0.703	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.758	(N/A)	(N/A)	78.412

Subsection: Runoff CN-Area
Label: DA-1C

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.596	0.0	0.0	98.000
PERVIOUS	49.000	1.752	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.348	(N/A)	(N/A)	61.442

Subsection: Runoff CN-Area
Label: DA-2A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.969	0.0	0.0	98.000
PERVIOUS	49.000	1.041	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.009	(N/A)	(N/A)	72.620

Subsection: Runoff CN-Area
Label: DA-3A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	3.670	0.0	0.0	98.000
PERVIOUS	49.000	1.238	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	4.907	(N/A)	(N/A)	85.640

Subsection: Runoff CN-Area
Label: DA-4A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.144	0.0	0.0	98.000
PERVIOUS	49.000	0.487	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.631	(N/A)	(N/A)	60.171

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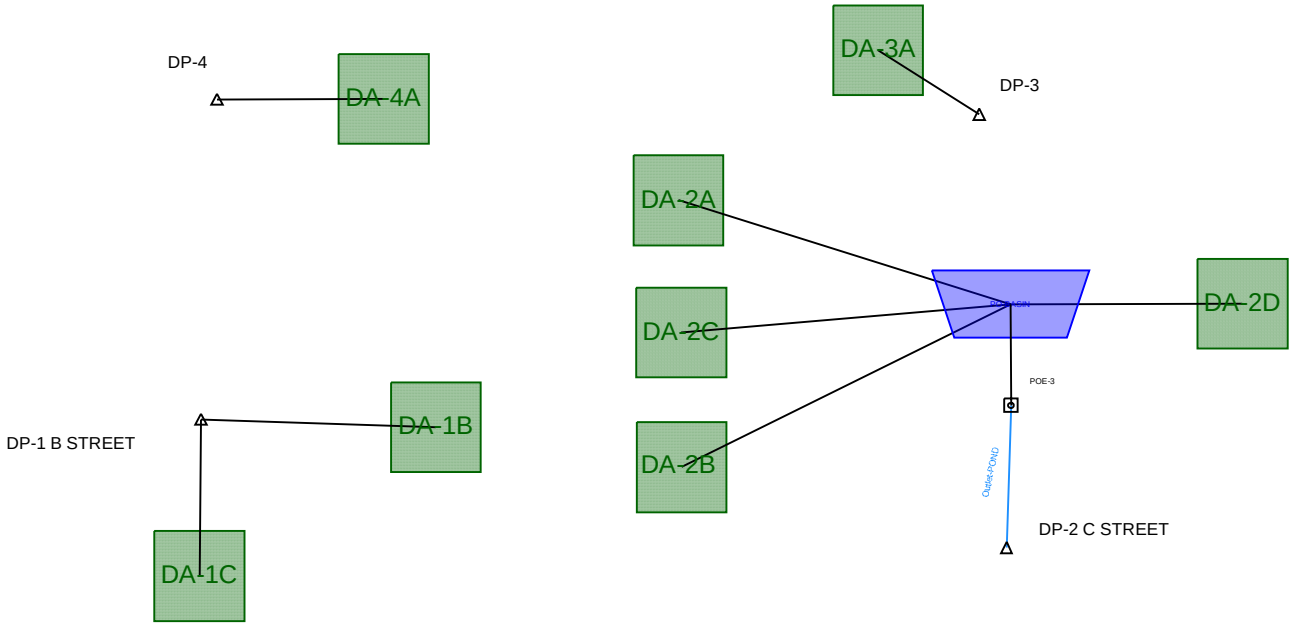
Appendix D
Proposed Condition Pondpack Model

Scenario: 100YR



Belgioioso Cheese Stormwater

Project Summary	
Title	Belgioioso Cheese Stormwater
Engineer	RKW
Company	CHA
Date	3/10/2019

Notes	Belgioioso Cheese Stormwater - Proposed Conditions Site Flows

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Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
DA-4A	1YR	1	0.001	23.980	0.00
DA-4A	10YR	10	0.018	12.070	0.14
DA-4A	25YR	25	0.036	12.050	0.42
DA-4A	100YR	100	0.083	12.030	1.22
DA-1B	1YR	1	0.102	12.070	1.31
DA-1B	10YR	10	0.299	12.060	4.31
DA-1B	25YR	25	0.429	12.040	6.23
DA-1B	100YR	100	0.705	12.040	10.32
DA-2A	1YR	1	0.110	12.010	1.77
DA-2A	10YR	10	0.274	12.000	4.51
DA-2A	25YR	25	0.376	11.980	6.17
DA-2A	100YR	100	0.586	11.980	9.55
DA-2B	1YR	1	0.200	11.980	3.06
DA-2B	10YR	10	0.353	11.980	5.23
DA-2B	25YR	25	0.438	11.980	6.41
DA-2B	100YR	100	0.606	11.980	8.73
DA-3A	1YR	1	0.088	12.030	1.31
DA-3A	10YR	10	0.258	12.000	4.20
DA-3A	25YR	25	0.369	12.000	6.07
DA-3A	100YR	100	0.607	12.000	9.97
DA-1C	1YR	1	0.021	12.400	0.05
DA-1C	10YR	10	0.117	12.130	1.16
DA-1C	25YR	25	0.194	12.130	2.17
DA-1C	100YR	100	0.374	12.090	4.60
DA-2C	1YR	1	0.149	11.920	2.54
DA-2C	10YR	10	0.257	11.920	4.27
DA-2C	25YR	25	0.317	11.920	5.22
DA-2C	100YR	100	0.435	11.920	7.08
DA-2D	1YR	1	0.000	24.000	0.00
DA-2D	10YR	10	0.014	12.090	0.05
DA-2D	25YR	25	0.031	12.070	0.30
DA-2D	100YR	100	0.078	12.040	1.09

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
DP-1 B STREET	1YR	1	0.123	12.070	1.33
DP-1 B STREET	10YR	10	0.417	12.070	5.32
DP-1 B STREET	25YR	25	0.622	12.070	8.22
DP-1 B STREET	100YR	100	1.080	12.060	14.63
DP-4	1YR	1	0.001	23.980	0.00
DP-4	10YR	10	0.018	12.070	0.14

Belgioioso Cheese Stormwater

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
DP-4	25YR	25	0.036	12.050	0.42
DP-4	100YR	100	0.083	12.030	1.22
DP-2 C STREET	1YR	1	0.441	12.260	1.38
DP-2 C STREET	10YR	10	0.869	12.350	2.06
DP-2 C STREET	25YR	25	1.126	12.400	2.35
DP-2 C STREET	100YR	100	1.657	12.490	2.85
DP-3	1YR	1	0.088	12.030	1.31
DP-3	10YR	10	0.258	12.000	4.20
DP-3	25YR	25	0.369	12.000	6.07
DP-3	100YR	100	0.607	12.000	9.97

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
PO-BASIN (IN)	1YR	1	0.459	11.960	6.94	(N/A)	(N/A)
PO-BASIN (OUT)	1YR	1	0.441	12.260	1.38	286.13	0.191
PO-BASIN (IN)	10YR	10	0.899	11.960	13.35	(N/A)	(N/A)
PO-BASIN (OUT)	10YR	10	0.869	12.350	2.06	287.10	0.386
PO-BASIN (IN)	25YR	25	1.162	11.960	17.15	(N/A)	(N/A)
PO-BASIN (OUT)	25YR	25	1.126	12.400	2.35	287.61	0.508
PO-BASIN (IN)	100YR	100	1.705	11.960	25.19	(N/A)	(N/A)
PO-BASIN (OUT)	100YR	100	1.657	12.490	2.85	288.60	0.770

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 1 years
Storm Event: 1 Year

Time-Depth Curve: 1 Year	
Label	1 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.0	0.0
2.000	0.0	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.1	0.1
5.000	0.1	0.1	0.1	0.1	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.2	0.2	0.2	0.2	0.2
7.500	0.2	0.2	0.2	0.2	0.3
8.000	0.3	0.3	0.3	0.3	0.3
8.500	0.3	0.3	0.3	0.3	0.3
9.000	0.3	0.3	0.3	0.3	0.3
9.500	0.4	0.4	0.4	0.4	0.4
10.000	0.4	0.4	0.4	0.4	0.4
10.500	0.4	0.5	0.5	0.5	0.5
11.000	0.5	0.5	0.5	0.6	0.6
11.500	0.6	0.7	0.8	0.9	1.2
12.000	1.4	1.5	1.5	1.5	1.6
12.500	1.6	1.6	1.6	1.6	1.7
13.000	1.7	1.7	1.7	1.7	1.7
13.500	1.7	1.7	1.7	1.8	1.8
14.000	1.8	1.8	1.8	1.8	1.8
14.500	1.8	1.8	1.8	1.8	1.8
15.000	1.8	1.8	1.9	1.9	1.9
15.500	1.9	1.9	1.9	1.9	1.9
16.000	1.9	1.9	1.9	1.9	1.9
16.500	1.9	1.9	1.9	1.9	1.9

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 1 years
Storm Event: 1 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	1.9	2.0	2.0	2.0	2.0
17.500	2.0	2.0	2.0	2.0	2.0
18.000	2.0	2.0	2.0	2.0	2.0
18.500	2.0	2.0	2.0	2.0	2.0
19.000	2.0	2.0	2.0	2.0	2.0
19.500	2.0	2.0	2.0	2.1	2.1
20.000	2.1	2.1	2.1	2.1	2.1
20.500	2.1	2.1	2.1	2.1	2.1
21.000	2.1	2.1	2.1	2.1	2.1
21.500	2.1	2.1	2.1	2.1	2.1
22.000	2.1	2.1	2.1	2.1	2.1
22.500	2.1	2.1	2.1	2.1	2.1
23.000	2.1	2.1	2.1	2.1	2.1
23.500	2.1	2.2	2.2	2.2	2.2
24.000	2.2	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 Year

Time-Depth Curve: 10 Year	
Label	10 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.3	0.3	0.3	0.3	0.3
6.000	0.3	0.3	0.3	0.3	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.4	0.4	0.4	0.4	0.4
7.500	0.4	0.4	0.4	0.4	0.4
8.000	0.4	0.4	0.4	0.5	0.5
8.500	0.5	0.5	0.5	0.5	0.5
9.000	0.5	0.5	0.5	0.6	0.6
9.500	0.6	0.6	0.6	0.6	0.6
10.000	0.6	0.7	0.7	0.7	0.7
10.500	0.7	0.7	0.8	0.8	0.8
11.000	0.8	0.9	0.9	0.9	1.0
11.500	1.0	1.1	1.3	1.5	2.0
12.000	2.4	2.4	2.5	2.5	2.6
12.500	2.6	2.7	2.7	2.7	2.7
13.000	2.8	2.8	2.8	2.8	2.8
13.500	2.9	2.9	2.9	2.9	2.9
14.000	2.9	2.9	3.0	3.0	3.0
14.500	3.0	3.0	3.0	3.0	3.0
15.000	3.0	3.1	3.1	3.1	3.1
15.500	3.1	3.1	3.1	3.1	3.1
16.000	3.1	3.1	3.2	3.2	3.2
16.500	3.2	3.2	3.2	3.2	3.2

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.2	3.2	3.2	3.2	3.2
17.500	3.3	3.3	3.3	3.3	3.3
18.000	3.3	3.3	3.3	3.3	3.3
18.500	3.3	3.3	3.3	3.3	3.3
19.000	3.3	3.4	3.4	3.4	3.4
19.500	3.4	3.4	3.4	3.4	3.4
20.000	3.4	3.4	3.4	3.4	3.4
20.500	3.4	3.4	3.4	3.4	3.4
21.000	3.4	3.4	3.5	3.5	3.5
21.500	3.5	3.5	3.5	3.5	3.5
22.000	3.5	3.5	3.5	3.5	3.5
22.500	3.5	3.5	3.5	3.5	3.5
23.000	3.5	3.5	3.5	3.5	3.5
23.500	3.6	3.6	3.6	3.6	3.6
24.000	3.6	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 Year

Time-Depth Curve: 100 Year	
Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.2	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.4	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.6	0.7	0.7	0.7	0.7
8.000	0.7	0.7	0.7	0.7	0.8
8.500	0.8	0.8	0.8	0.8	0.8
9.000	0.9	0.9	0.9	0.9	0.9
9.500	1.0	1.0	1.0	1.0	1.0
10.000	1.1	1.1	1.1	1.1	1.2
10.500	1.2	1.2	1.3	1.3	1.3
11.000	1.4	1.4	1.5	1.5	1.6
11.500	1.7	1.8	2.1	2.5	3.3
12.000	3.9	4.0	4.1	4.2	4.3
12.500	4.3	4.4	4.4	4.5	4.5
13.000	4.5	4.6	4.6	4.6	4.7
13.500	4.7	4.7	4.8	4.8	4.8
14.000	4.8	4.8	4.9	4.9	4.9
14.500	4.9	4.9	5.0	5.0	5.0
15.000	5.0	5.0	5.1	5.1	5.1
15.500	5.1	5.1	5.1	5.1	5.2
16.000	5.2	5.2	5.2	5.2	5.2
16.500	5.2	5.3	5.3	5.3	5.3

Belgioioso Cheese Stormwater

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.3	5.3	5.3	5.3	5.3
17.500	5.4	5.4	5.4	5.4	5.4
18.000	5.4	5.4	5.4	5.4	5.5
18.500	5.5	5.5	5.5	5.5	5.5
19.000	5.5	5.5	5.5	5.5	5.5
19.500	5.6	5.6	5.6	5.6	5.6
20.000	5.6	5.6	5.6	5.6	5.6
20.500	5.6	5.6	5.7	5.7	5.7
21.000	5.7	5.7	5.7	5.7	5.7
21.500	5.7	5.7	5.7	5.7	5.7
22.000	5.7	5.8	5.8	5.8	5.8
22.500	5.8	5.8	5.8	5.8	5.8
23.000	5.8	5.8	5.8	5.8	5.8
23.500	5.8	5.9	5.9	5.9	5.9
24.000	5.9	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 25 years
Storm Event: 25 Year

Time-Depth Curve: 25 Year	
Label	25 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.3
6.000	0.3	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.4	0.4	0.4	0.5	0.5
7.500	0.5	0.5	0.5	0.5	0.5
8.000	0.5	0.5	0.5	0.6	0.6
8.500	0.6	0.6	0.6	0.6	0.6
9.000	0.6	0.7	0.7	0.7	0.7
9.500	0.7	0.7	0.7	0.8	0.8
10.000	0.8	0.8	0.8	0.8	0.9
10.500	0.9	0.9	0.9	1.0	1.0
11.000	1.0	1.1	1.1	1.1	1.2
11.500	1.2	1.3	1.5	1.9	2.5
12.000	2.9	3.0	3.0	3.1	3.2
12.500	3.2	3.2	3.3	3.3	3.3
13.000	3.4	3.4	3.4	3.4	3.5
13.500	3.5	3.5	3.5	3.5	3.6
14.000	3.6	3.6	3.6	3.6	3.6
14.500	3.6	3.7	3.7	3.7	3.7
15.000	3.7	3.7	3.7	3.8	3.8
15.500	3.8	3.8	3.8	3.8	3.8
16.000	3.8	3.8	3.8	3.9	3.9
16.500	3.9	3.9	3.9	3.9	3.9

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 25 years
Storm Event: 25 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.9	3.9	3.9	3.9	4.0
17.500	4.0	4.0	4.0	4.0	4.0
18.000	4.0	4.0	4.0	4.0	4.0
18.500	4.0	4.1	4.1	4.1	4.1
19.000	4.1	4.1	4.1	4.1	4.1
19.500	4.1	4.1	4.1	4.1	4.1
20.000	4.1	4.1	4.2	4.2	4.2
20.500	4.2	4.2	4.2	4.2	4.2
21.000	4.2	4.2	4.2	4.2	4.2
21.500	4.2	4.2	4.2	4.2	4.2
22.000	4.2	4.3	4.3	4.3	4.3
22.500	4.3	4.3	4.3	4.3	4.3
23.000	4.3	4.3	4.3	4.3	4.3
23.500	4.3	4.3	4.3	4.3	4.3
24.000	4.4	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: DA-1B

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.250 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.250 hours

Subsection: Time of Concentration Calculations
Label: DA-1B

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-1C

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.333 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.333 hours

Subsection: Time of Concentration Calculations
Label: DA-1C

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-2A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-2A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-2B

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-2B

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-2C

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Subsection: Time of Concentration Calculations
Label: DA-2C

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-2D

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-2D

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-3A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-3A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: DA-4A

Return Event: 100 years
Storm Event: 1 Year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.167 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.167 hours

Subsection: Time of Concentration Calculations
Label: DA-4A

Return Event: 100 years
Storm Event: 1 Year

= = = = User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Runoff CN-Area
Label: DA-1B

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	1.396	0.0	0.0	98.000
PERVIOUS	49.000	1.274	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.670	(N/A)	(N/A)	74.625

Subsection: Runoff CN-Area
Label: DA-1C

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.584	0.0	0.0	98.000
PERVIOUS	49.000	1.764	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.348	(N/A)	(N/A)	61.187

Subsection: Runoff CN-Area
Label: DA-2A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	1.203	0.0	0.0	98.000
PERVIOUS	49.000	0.665	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.868	(N/A)	(N/A)	80.552

Subsection: Runoff CN-Area
Label: DA-2B

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	1.285	0.0	0.0	98.000
PERVIOUS	49.000	0.032	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.318	(N/A)	(N/A)	96.799

Subsection: Runoff CN-Area
Label: DA-2C

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.926	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.926	(N/A)	(N/A)	98.000

Subsection: Runoff CN-Area
Label: DA-2D

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Pervious	49.000	0.931	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.931	(N/A)	(N/A)	49.000

Subsection: Runoff CN-Area
Label: DA-3A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	1.236	0.0	0.0	98.000
PERVIOUS	49.000	1.058	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.294	(N/A)	(N/A)	75.403

Subsection: Runoff CN-Area
Label: DA-4A

Return Event: 100 years
Storm Event: 1 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
IMPERVIOUS	98.000	0.053	0.0	0.0	98.000
PERVIOUS	49.000	0.759	0.0	0.0	49.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.812	(N/A)	(N/A)	52.197

Subsection: Elevation vs. Volume Curve
Label: PO-BASIN

Return Event: 100 years
Storm Event: 1 Year

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
284.90	0.000
285.00	0.005
286.00	0.166
287.00	0.364
288.00	0.601
289.00	0.880
289.50	1.037
290.00	1.206
291.00	1.578

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: 1 Year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	284.90 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	291.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 2	289.00	291.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 2	284.90	291.00
Culvert-Circular	Culvert - 2	Forward	TW	284.84	291.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: 1 Year

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	289.00 ft
Orifice Area	20.0 ft²
Orifice Coefficient	0.600
Weir Length	20.00 ft
Weir Coefficient	3.30 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: 1 Year

Structure ID: Culvert - 2 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.0 in
Length	330.00 ft
Length (Computed Barrel)	330.00 ft
Slope (Computed)	0.003 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.159
T2 ratio (HW/D)	1.306
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	287.16 ft	T1 Flow	15.55 ft^3/s
T2 Elevation	287.45 ft	T2 Flow	17.77 ft^3/s

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: 1 Year

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	284.90 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: 1 Year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
284.90	0.00	(N/A)	0.00
285.00	0.03	(N/A)	0.00
285.10	0.11	(N/A)	0.00
285.20	0.23	(N/A)	0.00
285.30	0.36	(N/A)	0.00
285.40	0.52	(N/A)	0.00
285.50	0.70	(N/A)	0.00
285.60	0.88	(N/A)	0.00
285.70	0.99	(N/A)	0.00
285.80	1.09	(N/A)	0.00
285.90	1.18	(N/A)	0.00
286.00	1.27	(N/A)	0.00
286.10	1.36	(N/A)	0.00
286.20	1.44	(N/A)	0.00
286.30	1.52	(N/A)	0.00
286.40	1.60	(N/A)	0.00
286.50	1.67	(N/A)	0.00
286.60	1.74	(N/A)	0.00
286.70	1.81	(N/A)	0.00
286.80	1.87	(N/A)	0.00
286.90	1.94	(N/A)	0.00
287.00	2.00	(N/A)	0.00
287.10	2.06	(N/A)	0.00
287.20	2.12	(N/A)	0.00
287.30	2.18	(N/A)	0.00
287.40	2.24	(N/A)	0.00
287.50	2.29	(N/A)	0.00
287.60	2.35	(N/A)	0.00
287.70	2.40	(N/A)	0.00
287.80	2.46	(N/A)	0.00
287.90	2.51	(N/A)	0.00
288.00	2.56	(N/A)	0.00
288.10	2.61	(N/A)	0.00
288.20	2.66	(N/A)	0.00
288.30	2.70	(N/A)	0.00
288.40	2.75	(N/A)	0.00
288.50	2.80	(N/A)	0.00
288.60	2.85	(N/A)	0.00
288.70	2.89	(N/A)	0.00
288.80	2.94	(N/A)	0.00
288.90	2.98	(N/A)	0.00
289.00	3.02	(N/A)	0.00
289.10	5.01	(N/A)	0.00

Belgioioso Cheese Stormwater

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: 1 Year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
289.20	8.65	(N/A)	0.00	(no Q: Riser - 1,Orifice - 1,Culvert - 2)
289.30	13.31	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
289.40	18.15	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
289.50	20.46	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
289.60	20.72	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
289.70	20.98	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
289.80	21.23	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
289.90	21.48	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.00	21.73	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.10	21.97	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.20	22.22	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.30	22.46	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.40	22.70	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.50	22.94	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.60	23.17	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.70	23.41	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.80	23.64	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
290.90	23.87	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)
291.00	24.10	(N/A)	0.00	Orifice - 1,Culvert - 2 (no Q: Riser - 1)

Composite Outflow Summary

Contributing Structures
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 2 (no Q: Riser - 1)
Riser - 1,Orifice - 1,Culvert - 2
Riser - 1,Orifice - 1,Culvert - 2
Riser - 1,Orifice - 1,Culvert - 2
Riser - 1,Orifice - 1,Culvert - 2
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)
Riser - 1,Culvert - 2 (no Q: Orifice - 1)

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 1 years
Label: PO-BASIN Storm Event: 1 Year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	284.90 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.010 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
284.90	0.00	0.000	0.000	0.00	0.00	0.00
285.00	0.03	0.005	0.000	0.00	0.03	12.13
285.10	0.11	0.021	0.000	0.00	0.11	51.12
285.20	0.23	0.037	0.000	0.00	0.23	90.16
285.30	0.36	0.053	0.000	0.00	0.36	129.20
285.40	0.52	0.069	0.000	0.00	0.52	168.27
285.50	0.70	0.085	0.000	0.00	0.70	207.37
285.60	0.88	0.101	0.000	0.00	0.88	246.46
285.70	0.99	0.118	0.000	0.00	0.99	285.48
285.80	1.09	0.134	0.000	0.00	1.09	324.50
285.90	1.18	0.150	0.000	0.00	1.18	363.51
286.00	1.27	0.166	0.000	0.00	1.27	402.51
286.10	1.36	0.186	0.000	0.00	1.36	450.44
286.20	1.44	0.205	0.000	0.00	1.44	498.36
286.30	1.52	0.225	0.000	0.00	1.52	546.29
286.40	1.60	0.245	0.000	0.00	1.60	594.21
286.50	1.67	0.265	0.000	0.00	1.67	642.12
286.60	1.74	0.284	0.000	0.00	1.74	690.04
286.70	1.81	0.304	0.000	0.00	1.81	737.95
286.80	1.87	0.324	0.000	0.00	1.87	785.86
286.90	1.94	0.344	0.000	0.00	1.94	833.76
287.00	2.00	0.364	0.000	0.00	2.00	881.67
287.10	2.06	0.387	0.000	0.00	2.06	939.14
287.20	2.12	0.411	0.000	0.00	2.12	996.60
287.30	2.18	0.435	0.000	0.00	2.18	1,054.06
287.40	2.24	0.458	0.000	0.00	2.24	1,111.52
287.50	2.29	0.482	0.000	0.00	2.29	1,168.97
287.60	2.35	0.506	0.000	0.00	2.35	1,226.43
287.70	2.40	0.530	0.000	0.00	2.40	1,283.89

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 1 years

Label: PO-BASIN Storm Event: 1 Year

Elevation (ft)	Outflow (ft^3/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
287.80	2.46	0.553	0.000	0.00	2.46	1,341.34
287.90	2.51	0.577	0.000	0.00	2.51	1,398.80
288.00	2.56	0.601	0.000	0.00	2.56	1,456.25
288.10	2.61	0.629	0.000	0.00	2.61	1,523.94
288.20	2.66	0.657	0.000	0.00	2.66	1,591.63
288.30	2.70	0.685	0.000	0.00	2.70	1,659.32
288.40	2.75	0.713	0.000	0.00	2.75	1,727.00
288.50	2.80	0.740	0.000	0.00	2.80	1,794.69
288.60	2.85	0.768	0.000	0.00	2.85	1,862.37
288.70	2.89	0.796	0.000	0.00	2.89	1,930.06
288.80	2.94	0.824	0.000	0.00	2.94	1,997.74
288.90	2.98	0.852	0.000	0.00	2.98	2,065.42
289.00	3.02	0.880	0.000	0.00	3.02	2,133.11
289.10	5.01	0.912	0.000	0.00	5.01	2,210.99
289.20	8.65	0.943	0.000	0.00	8.65	2,290.52
289.30	13.31	0.974	0.000	0.00	13.31	2,371.06
289.40	18.15	1.006	0.000	0.00	18.15	2,451.80
289.50	20.46	1.037	0.000	0.00	20.46	2,530.00
289.60	20.72	1.071	0.000	0.00	20.72	2,611.86
289.70	20.98	1.104	0.000	0.00	20.98	2,693.72
289.80	21.23	1.138	0.000	0.00	21.23	2,775.58
289.90	21.48	1.172	0.000	0.00	21.48	2,857.43
290.00	21.73	1.206	0.000	0.00	21.73	2,939.28
290.10	21.97	1.243	0.000	0.00	21.97	3,029.74
290.20	22.22	1.280	0.000	0.00	22.22	3,120.20
290.30	22.46	1.317	0.000	0.00	22.46	3,210.67
290.40	22.70	1.355	0.000	0.00	22.70	3,301.12
290.50	22.94	1.392	0.000	0.00	22.94	3,391.58
290.60	23.17	1.429	0.000	0.00	23.17	3,482.03
290.70	23.41	1.467	0.000	0.00	23.41	3,572.48
290.80	23.64	1.504	0.000	0.00	23.64	3,662.93
290.90	23.87	1.541	0.000	0.00	23.87	3,753.38
291.00	24.10	1.578	0.000	0.00	24.10	3,843.82

Belgioioso Cheese Stormwater

Index

Appendix E
Water Quality Volume Calculations

WATER QUALITY FLOW SPREAD SHEET
Yellow requires user input value

TYPE II RAINFALL DISTRIBUTION ONLY
Water Quality Volume

	INPUT		
P	1.1	inches	see 90% Rainfall Contour Plan
A	2.6698	**acres**	site area (contributing area)
I	59.63		
Rv	0.5866694	A minimum Rv of 0.2 will be applied to regulated sites	
Rv =	0.05 + 0.009(I) where I is the percent impervious cover		

example: all pavement = 100% = 100

FORMULA *

Water Quality Volume formula has been adjusted based on Redevelopment Criteria
presented in Chapter 9 of the New York State Stormwater Management Design Manual
Alternative practices require treatment of 75% of the water quality volume

$$WQv = \frac{(P)(Rv)(A)}{12} = 0.1077 \text{ **acre-feet** } *$$

Curve Number

P = 1.1 from above

$$Q = \frac{WQv}{A} = 0.040334 \text{ ft} = 0.4840 \text{ inches}$$

$$CN = \frac{1000}{[10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{1/2}]} = 92$$

Therefore, use limit of **92**

Peak Discharge

Read Ia from table 4-1 using the compute curve number — Ia = 0.174
Ia/P = 0.158181818
Determine the Time of Concentration — Tc(mins) = 10

	INPUT	
qu	800	from exhibit 4-II
A	0.0041716	from above acres converted to sq-miles
Q	0.4840	from above

FORMULA

$$Qp = (qu)(A)(Q) = \boxed{1.615} \text{ cfs}$$

WATER QUALITY FLOW SPREAD SHEET
Yellow requires user input value

TYPE II RAINFALL DISTRIBUTION ONLY
Water Quality Volume

	INPUT		
P	1.1	inches	see 90% Rainfall Contour Plan
A	4.1106	**acres**	site area (contributing area)
I	83.03		
Rv	0.7972632	A minimum Rv of 0.2 will be applied to regulated sites	
Rv =	0.05 + 0.009(I) where I is the percent impervious cover		

example: all pavement = 100% = 100

FORMULA *

Water Quality Volume formula has been adjusted based on Redevelopment Criteria
presented in Chapter 9 of the New York State Stormwater Management Design Manual
Alternative practices require treatment of 75% of the water quality volume

$$WQv = \frac{(P)(Rv)(A)}{12} = 0.2253 \text{ **acre-feet** } *$$

Curve Number

P 1.1 from above

$$Q = \frac{WQv}{A} \quad 0.054812 \text{ ft} \quad 0.6577 \text{ inches}$$

$$CN = \frac{1000}{[10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{1/2}]} = 95$$

Therefore, use limit of **95**

Peak Discharge

Read Ia from table 4-1 using the compute curve number Ia = 0.105
Ia/P = 0.095454545
Determine the Time of Concentration Tc(mins) = 10

	INPUT	
qu	850	from exhibit 4-II
A	0.0064228	from above acres converted to sq-miles
Q	0.6577	from above

FORMULA

$$Qp = (qu)(A)(Q) = \boxed{3.591} \text{ **cfs**}$$

New York Stormwater Sizing Criteria
Redevelopment Water Quality Volume Computations

Water Quality Volume (WQ_v) Equation Based on the 90% Rule

$$WQ_V = \frac{(P)(R_V)(A)}{12}$$

Where:

WQ_v = Water Quality Volume (Ac-Ft)
P = 90% Rainfall Event (In)
R_v = 0.05 + 0.009(I), where I is % Impervious Cover
A = Disturbed Area (Ac) - When sizing the practice, structures should be designed based on the contributing drainage area.

Rainfall Data:

P = 1.1 in

Site Specific Data:

Design Point	Drainage Basin	Contributing Area (Ac)	Impervious Area (Ac)	% Impervious	R_v	Adjusted Rv	WQv (Ac-Ft)	Adjusted WQv: Standard Practice* (Ac-Ft)	Adjusted WQv: Alternative Practice** (Ac-Ft)	Chapter 9 Redevelopment Imp reduction: % Reduced	Chapter 9 Redevelopment Imp reduction: Standard Practice* (Ac-Ft)	Chapter 9 Redevelopment Imp reduction: Alternative Practice** (Ac-Ft)
DP-1		2.6698	1.592	59.6	0.59	0.59	0.144	0.036	0.108	0.000	0.036	**0.108**
DP-2		4.1106	3.413	83.0	0.80	0.80	0.300	0.075	0.225	0.000	0.075	**0.225**
DP-3		2.2942	1.289	56.2	0.56	0.56	0.117	#DIV/0!	0.088	25.000	**0.000**	**0.000**
DP-4		N/A										

Impervious Cover (Ac)			
Existing	1.592	3.413	1.751
Total Post Construction	1.592	3.413	1.289
New	0	0	-0.4617

*=(0.25(% of existing imp to total prop imp)+(% of new imp to total prop imp))(WQv)

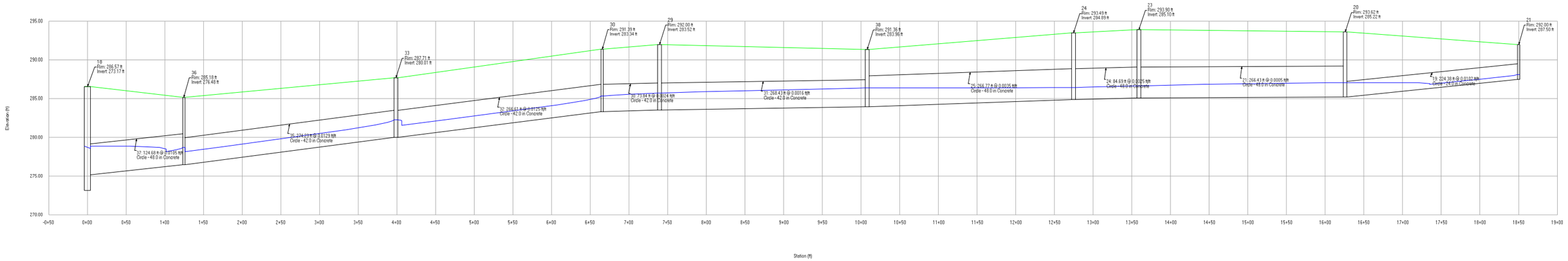
**=(0.75(% of existing imp to total prop imp)+(% of new imp to total prop imp))(WQv)

Appendix F
StormCAD
Output

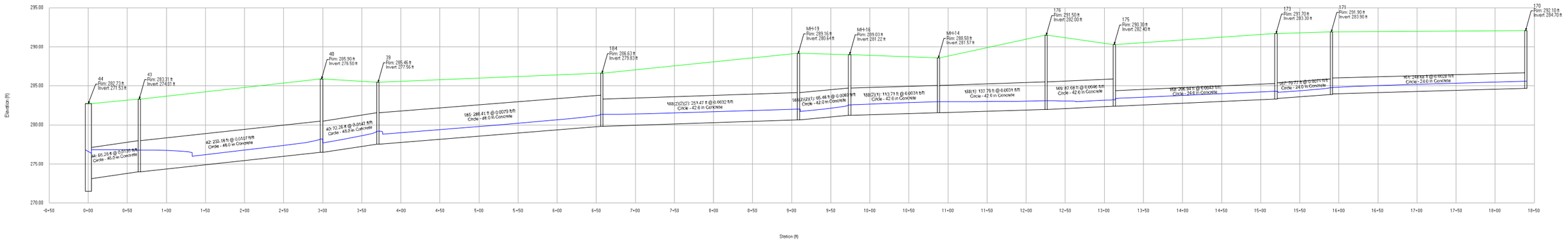
10 year
StormCAD
Output

Scenario: 10 YR

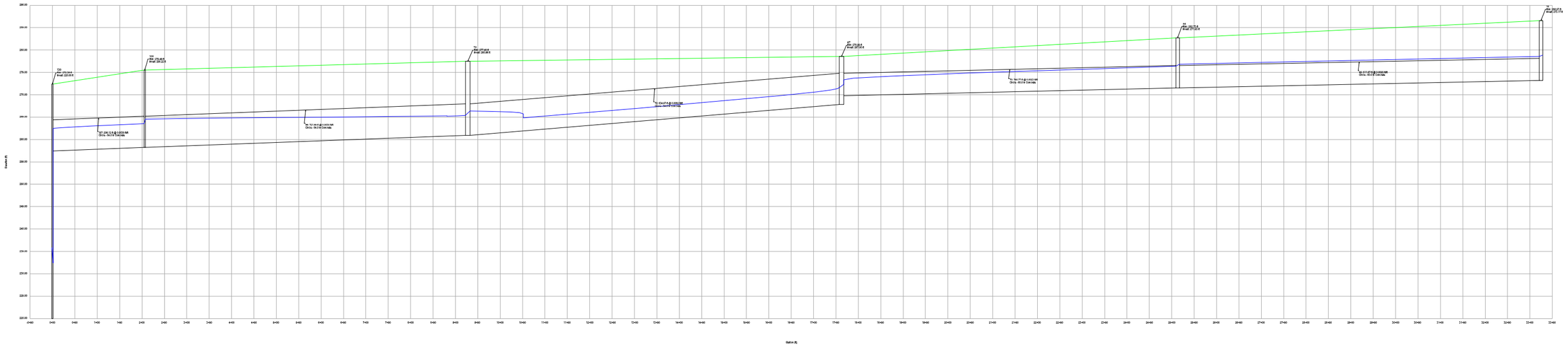
Profile Report
Engineering Profile - B STREET (BelgioioseCheese_ExistingFinal.stsw)



Profile Report
Engineering Profile - C STREET (BelgioioseCheese_ExistingFinal.stsw)



Profile Report
Engineering Profile - ROUTE5 (BelgioioseCheese_ExistingFinal.stsw)



FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
19	21	287.50	20	285.22	224.38	0.0102	24.0			3.29	22.80	14.4
21	20	285.22	23	285.10	266.43	0.0005	48.0			19.21	30.48	63.0
24	23	285.10	24	284.89	84.69	0.0025	48.0			22.81	71.52	31.9
25	24	284.89	38	283.96	266.77	0.0035	48.0			23.59	84.81	27.8
31	38	283.96	29	283.52	268.43	0.0016	42.0			36.21	40.73	88.9
30	29	283.52	30	283.34	73.84	0.0024	42.0			38.71	49.67	77.9
32	30	283.34	33	280.01	266.61	0.0125	42.0			42.09	112.43	37.4
35	33	280.01	36	276.48	274.23	0.0129	42.0			52.40	114.14	45.9
37	36	276.48	18	275.17	124.68	0.0105	48.0			55.74	147.23	37.9

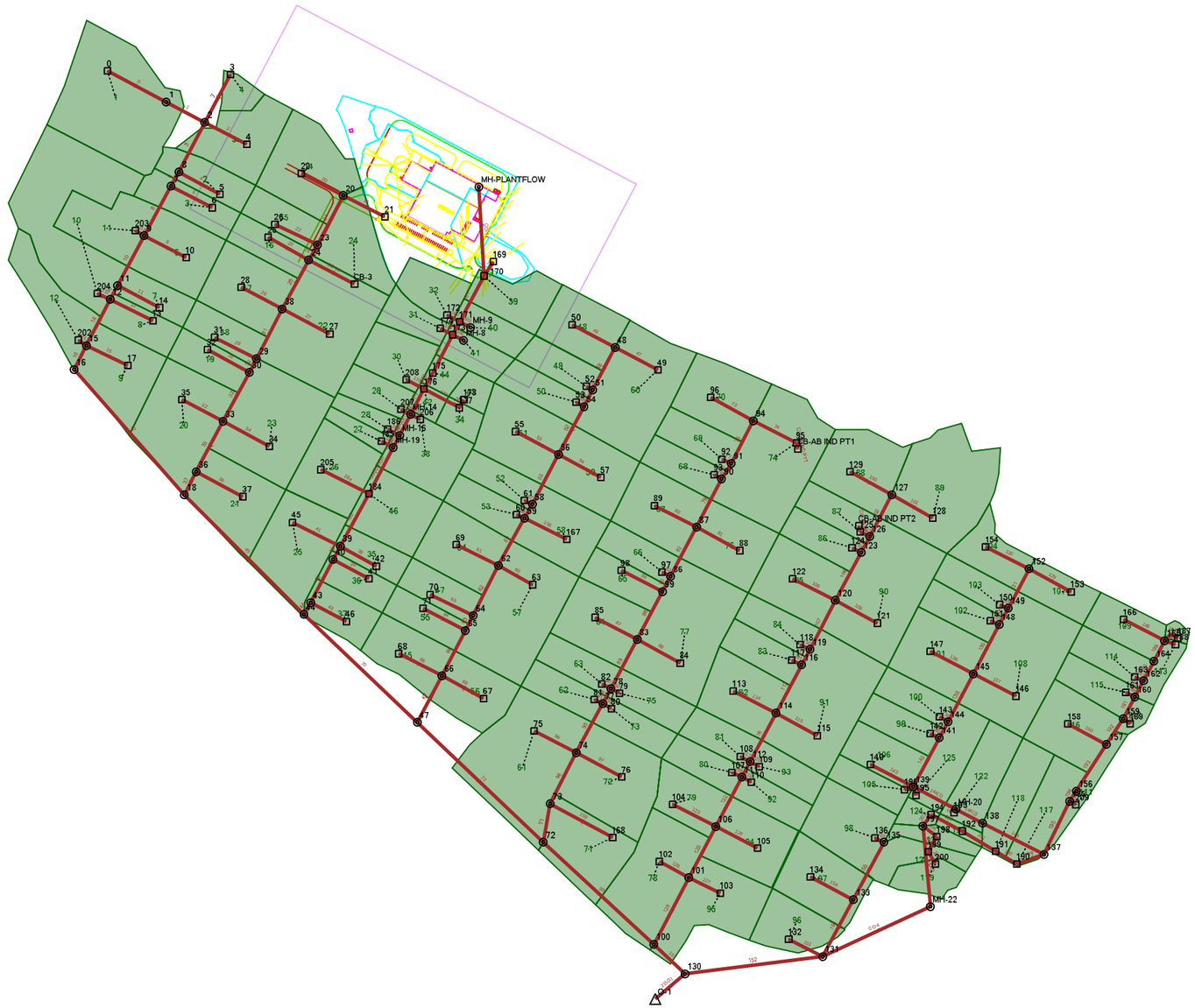
FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
161	170	284.70	171	284.00	248.68	0.0028	24.0			4.84	12.00	40.3
167	171	283.90	173	283.40	70.77	0.0071	24.0			6.09	19.01	32.1
168	173	283.30	175	282.40	206.94	0.0043	24.0			7.59	14.92	50.9
169	175	282.40	176	282.00	87.08	0.0046	42.0			7.98	68.18	11.7
188(1)	176	282.00	MH-14	281.57	137.79	0.0031	42.0			11.76	56.20	20.9
188(2)(1)	MH-14	281.57	MH-16	281.22	113.71	0.0031	42.0			18.92	55.81	33.9
188(2)(2)(1)	MH-16	281.22	MH-19	280.64	65.48	0.0089	42.0			19.10	94.68	20.2
188(2)(2)(2)	MH-19	280.64	184	279.83	251.47	0.0032	42.0			19.33	57.10	33.8
185	184	279.83	39	277.56	286.41	0.0079	48.0			26.27	127.87	20.5
40	39	277.56	40	276.50	72.26	0.0147	48.0			31.20	173.97	17.9
42	40	276.50	43	274.01	233.18	0.0107	48.0			33.38	148.43	22.5
44	43	274.01	44	273.13	65.28	0.0135	48.0			36.72	166.76	22.0

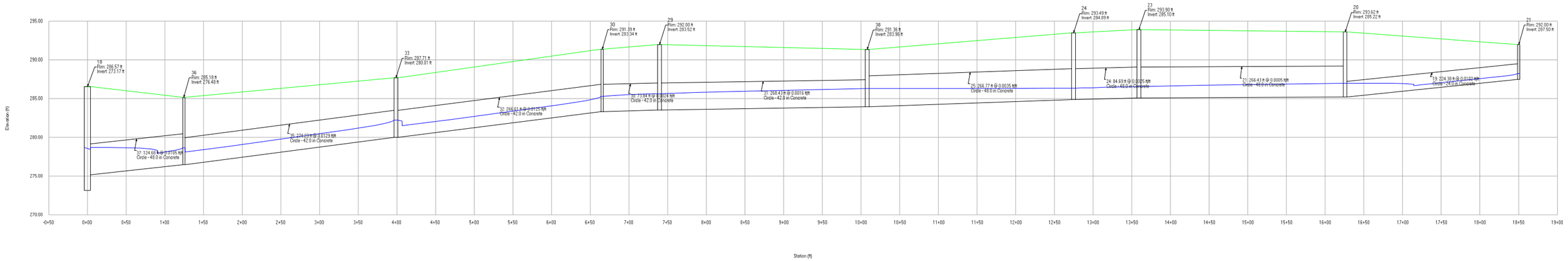
FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
45	18	273.17	44	271.55	811.67	0.0020	60.0			120.69	116.35	103.7
70	44	271.53	47	269.80	750.77	0.0023	60.0			151.84	125.01	121.5
72	47	267.80	72	260.96	834.57	0.0082	84.0			209.33	578.31	36.2
99	72	260.96	100	258.22	721.65	0.0038	84.0			285.79	393.62	72.6
157	100	258.22	130	257.43	206.12	0.0038	84.0			365.54	395.48	92.4

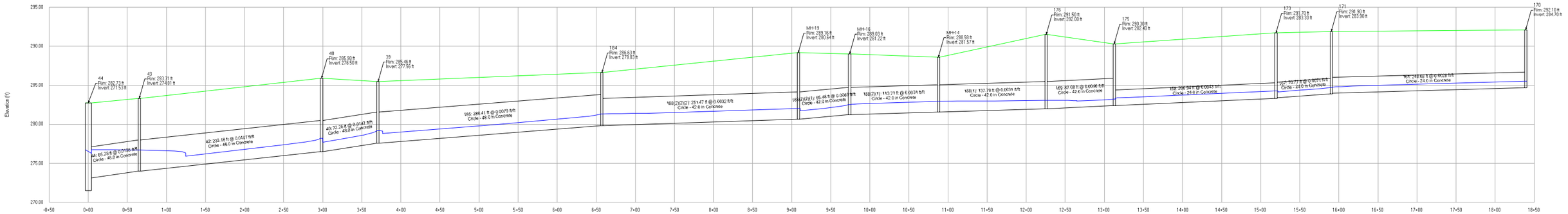
Scenario: 10 YR



Profile Report
Engineering Profile - B STREET (BelgioioseCheese_ProposedFinal.stsw)

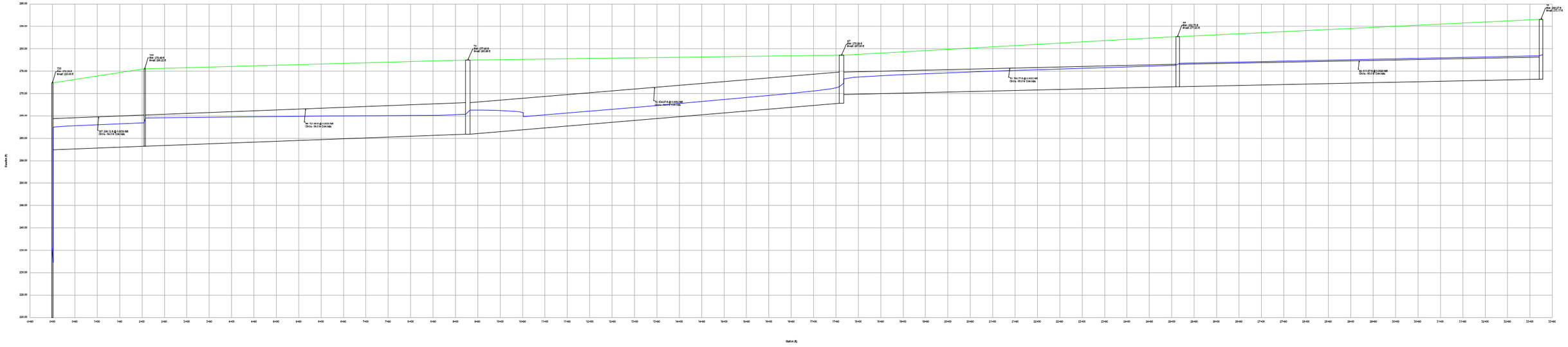


Profile Report
Engineering Profile - C STREET (BelgioioseCheese_ProposedFinal.stsw)



Profile Report

Engineering Profile - ROUTE 5 (BelgioioseCheese_ProposedFinal.stsw)



FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
19	21	287.50	20	285.22	224.38	0.0102	24.0			4.31	22.80	18.9
21	20	285.22	23	285.10	266.43	0.0005	48.0			17.26	30.48	56.6
24	23	285.10	24	284.89	84.69	0.0025	48.0			20.83	71.52	29.1
25	24	284.89	38	283.96	266.77	0.0035	48.0			21.61	84.81	25.5
31	38	283.96	29	283.52	268.43	0.0016	42.0			34.22	40.73	84.0
30	29	283.52	30	283.34	73.84	0.0024	42.0			36.72	49.67	73.9
32	30	283.34	33	280.01	266.61	0.0125	42.0			40.09	112.43	35.7
35	33	280.01	36	276.48	274.23	0.0129	42.0			50.38	114.14	44.1
37	36	276.48	18	275.17	124.68	0.0105	48.0			53.72	147.23	36.5

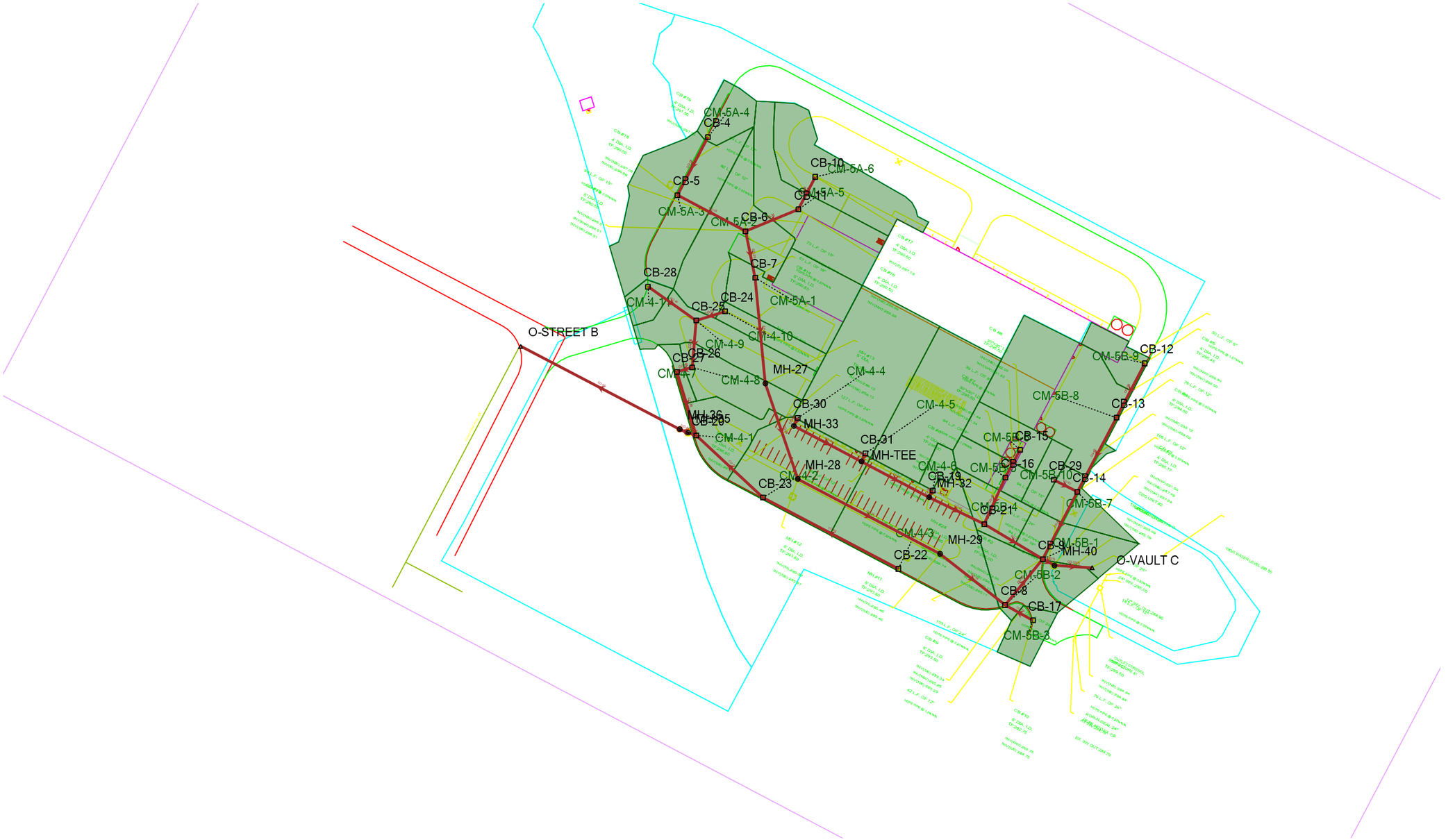
FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
161	170	284.70	171	284.00	248.68	0.0028	24.0			4.44	12.00	37.0
167	171	283.90	173	283.40	70.77	0.0071	24.0			5.76	19.01	30.3
168	173	283.30	175	282.40	206.94	0.0043	24.0			7.25	14.92	48.6
169	175	282.40	176	282.00	87.08	0.0046	42.0			7.64	68.18	11.2
188(1)	176	282.00	MH-14	281.57	137.79	0.0031	42.0			11.42	56.20	20.3
188(2)(1)	MH-14	281.57	MH-16	281.22	113.71	0.0031	42.0			18.58	55.81	33.3
188(2)(2)(1)	MH-16	281.22	MH-19	280.64	65.48	0.0089	42.0			18.76	94.68	19.8
188(2)(2)(2)	MH-19	280.64	184	279.83	251.47	0.0032	42.0			18.99	57.10	33.3
185	184	279.83	39	277.56	286.41	0.0079	48.0			25.93	127.87	20.3
40	39	277.56	40	276.50	72.26	0.0147	48.0			30.86	173.97	17.7
42	40	276.50	43	274.01	233.18	0.0107	48.0			33.03	148.43	22.3
44	43	274.01	44	273.13	65.28	0.0135	48.0			36.37	166.76	21.8

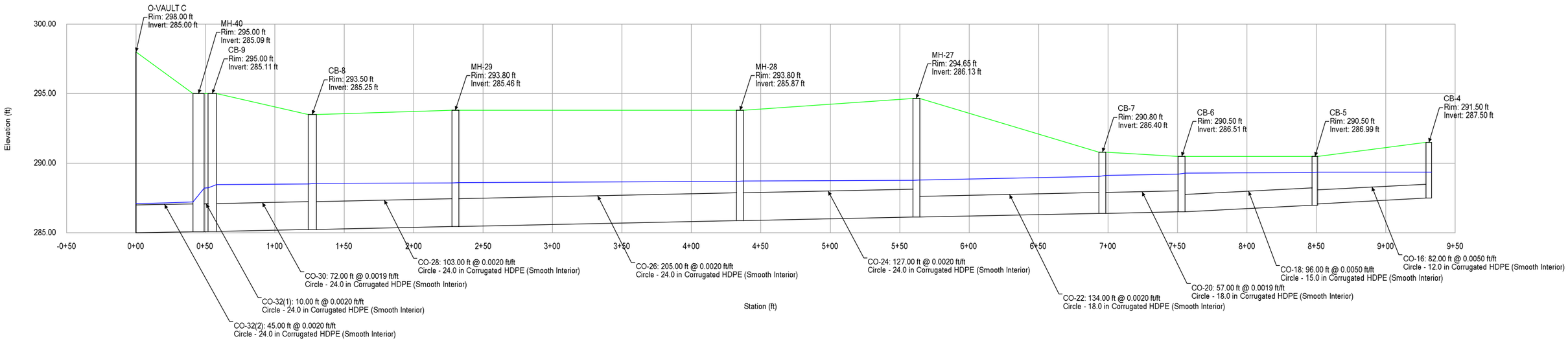
FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
45	18	273.17	44	271.55	811.67	0.0020	60.0			118.60	116.35	101.9
70	44	271.53	47	269.80	750.77	0.0023	60.0			149.46	125.01	119.6
72	47	267.80	72	260.96	834.57	0.0082	84.0			206.82	578.31	35.8
99	72	260.96	100	258.22	721.65	0.0038	84.0			283.18	393.62	71.9
157	100	258.22	130	257.43	206.12	0.0038	84.0			362.83	395.48	91.7

Scenario: 10 YR

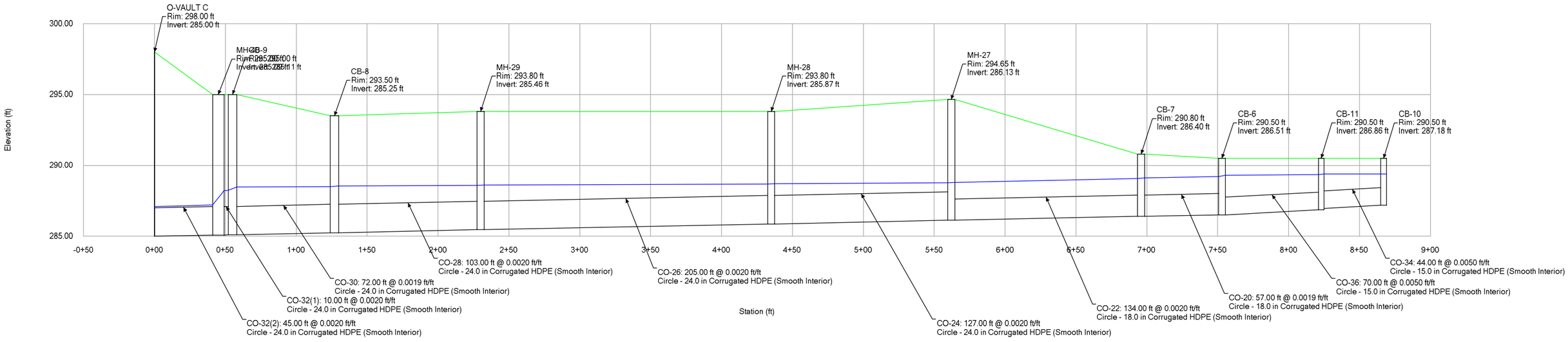


Profile Report
Engineering Profile - BASIN to CB 4 Truck Bay (BelgioioseCheese_OnsiteProposed.stsw)



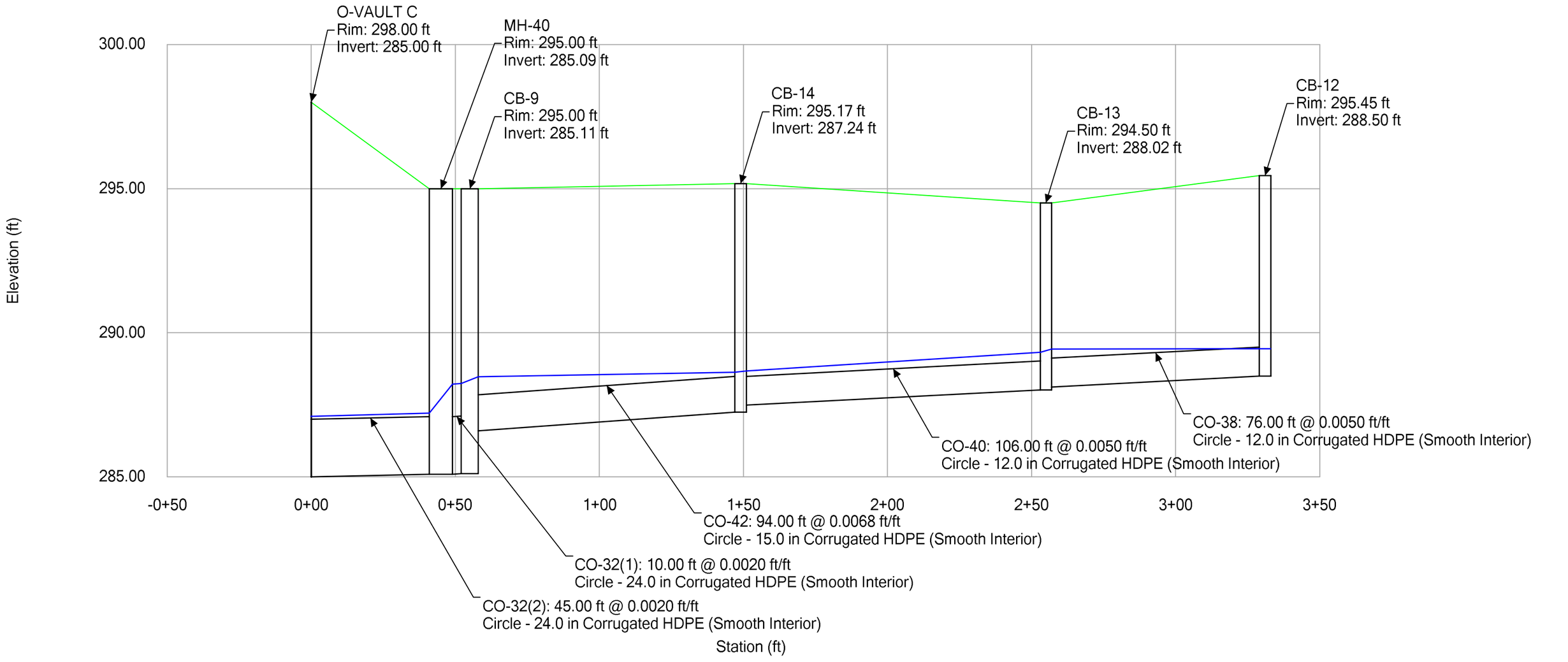
Profile Report

Engineering Profile - BASIN to CB 10 Truck Bay (BelgioioseCheese_OnsiteProposed.stsw)



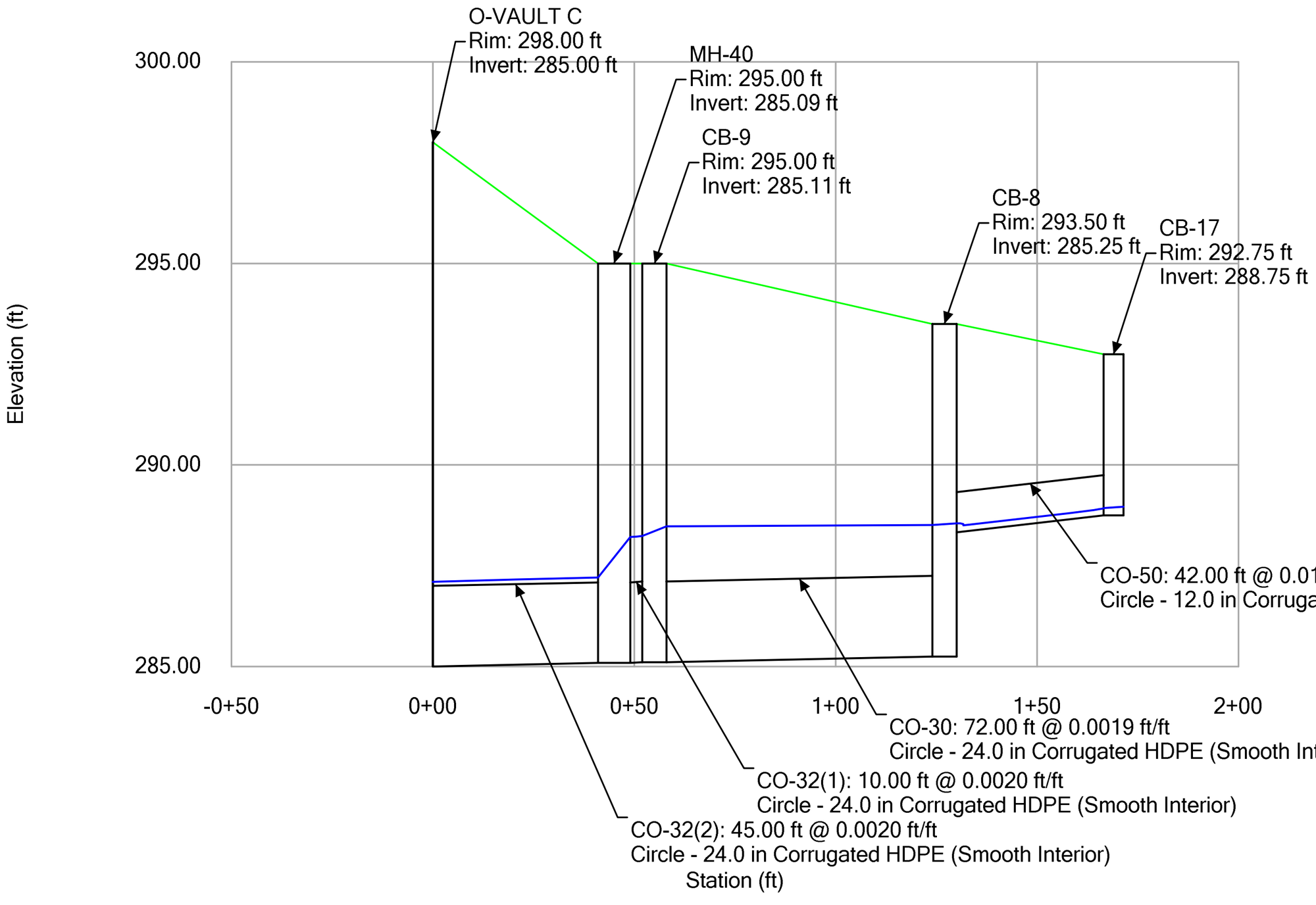
Profile Report

Engineering Profile - BASIN to CB 12 (BelgioioseCheese_OnsiteProposed.stsw)



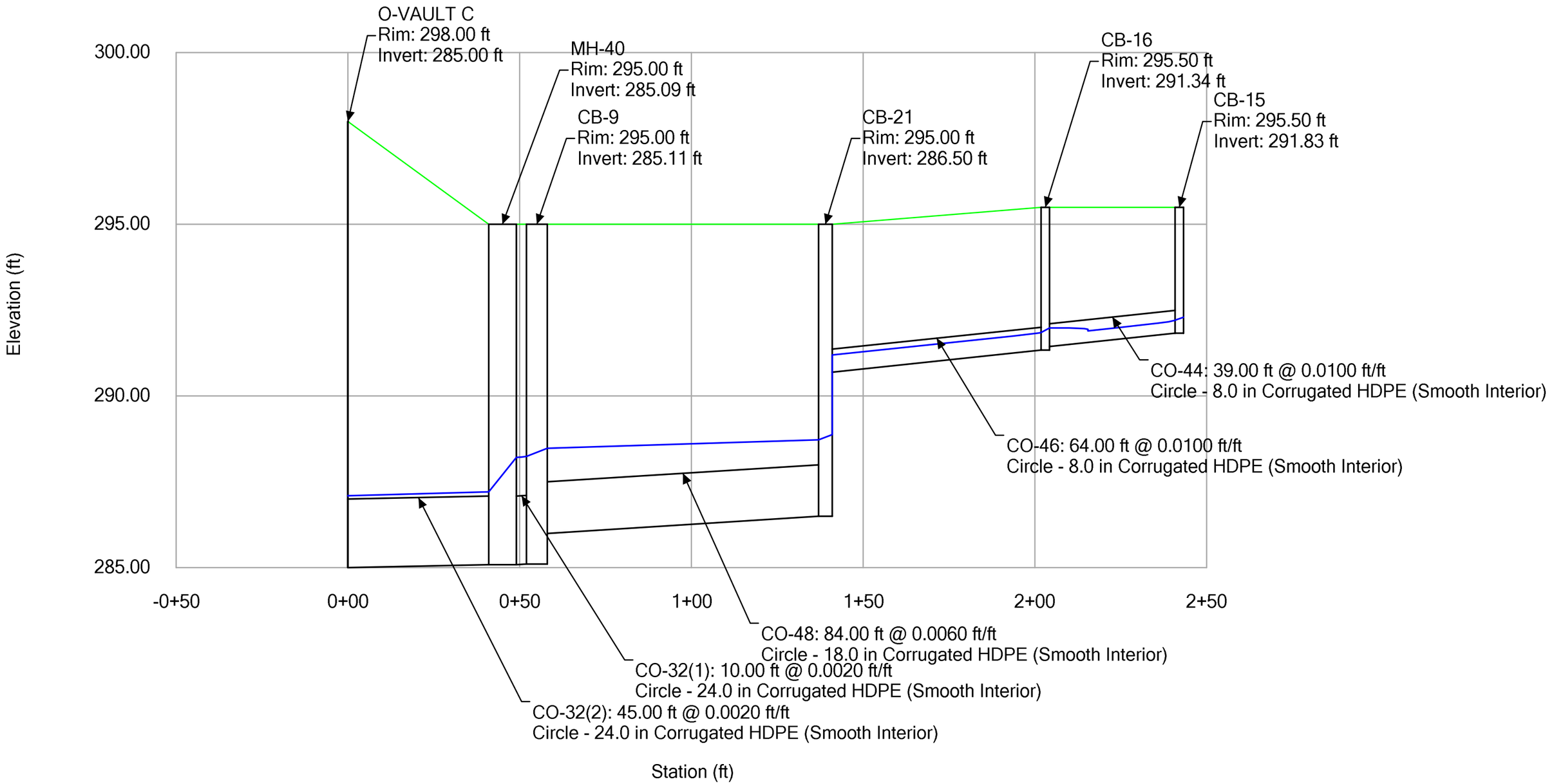
Profile Report

Engineering Profile - BASIN to CB 17 (BelgioioseCheese_OnsiteProposed.stsw)



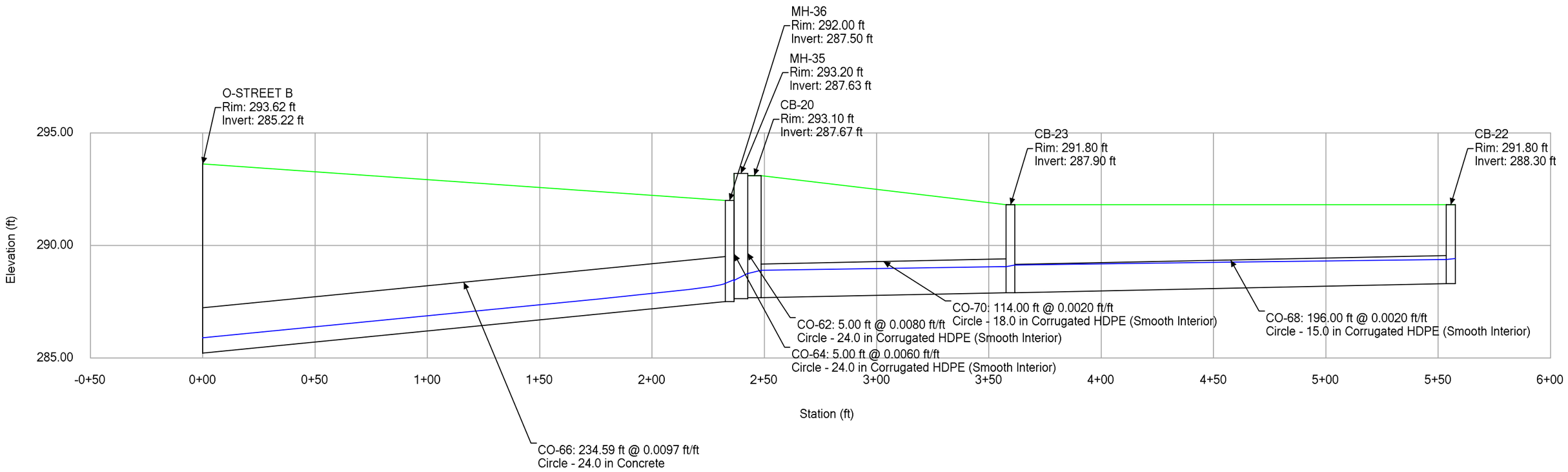
Profile Report

Engineering Profile - BASIN to CB15 BUILDING (BelgioioseCheese_OnsiteProposed.stsw)



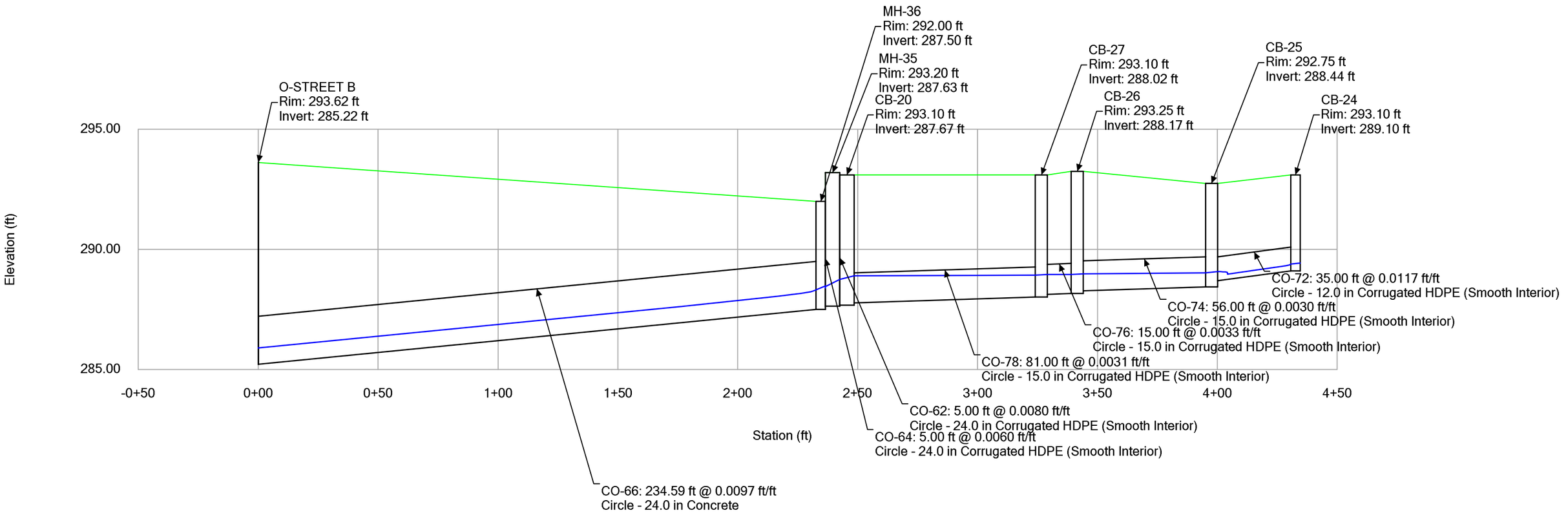
Profile Report

Engineering Profile - STREET B to CB 22 Parking (BelgioioseCheese_OnsiteProposed.stsw)



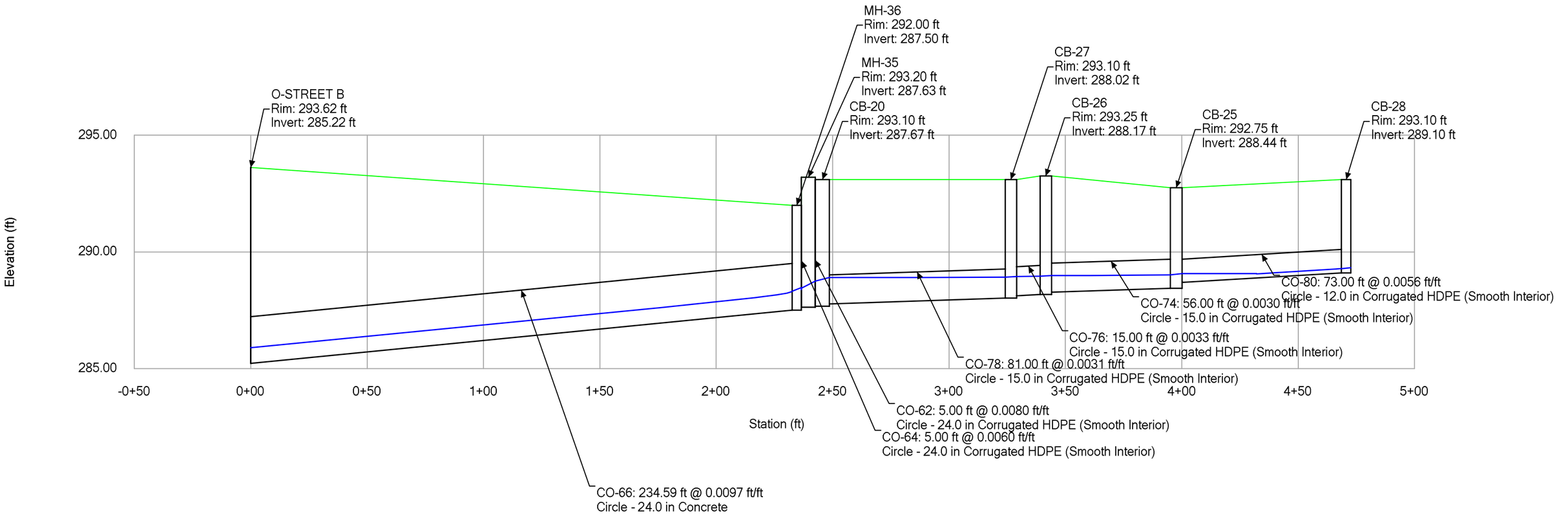
Profile Report

Engineering Profile - STREET B to CB 24 Entrance (BelgioioseCheese_OnsiteProposed.stsw)



Profile Report

Engineering Profile - STREET B to CB 28 Entrance (BelgioioseCheese_OnsiteProposed.stsw)



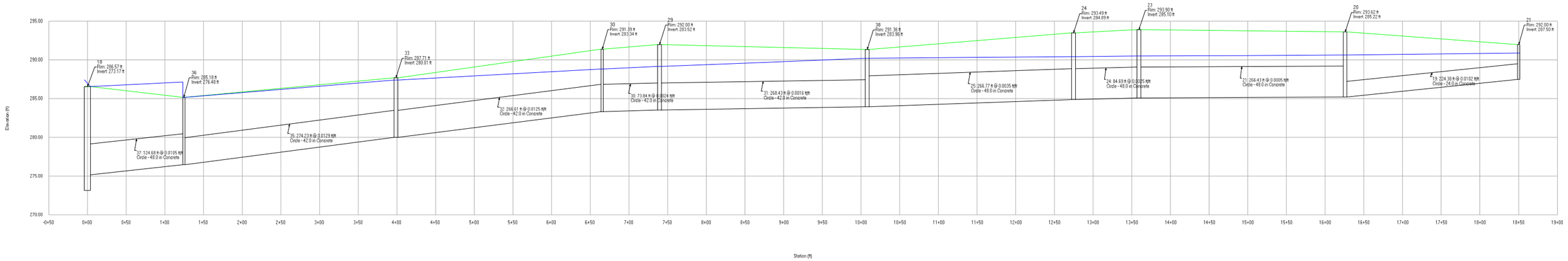
FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (User Defined) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
CO-50	CB-17	288.75	CB-8	288.33	42.00	41.61	0.0100	12.0			0.20	3.86	5.2
CO-54	CB-19	292.00	MH-32	291.90		10.05	0.0100	8.0			0.20	1.31	15.4
CO-80	CB-28	289.10	CB-25	288.69	73.00	77.11	0.0056	12.0			0.21	2.89	7.1
CO-82	CB-29	292.00	CB-14	291.50		34.89	0.0143	8.0			0.31	1.57	20.0
CO-16	CB-4	287.50	CB-5	287.09	82.00	85.97	0.0050	12.0			0.37	2.73	13.6
CO-38	CB-12	288.50	CB-13	288.12	76.00	79.99	0.0050	12.0			0.45	2.73	16.5
CO-72	CB-24	289.10	CB-25	288.69	35.00	39.49	0.0117	12.0			0.47	4.18	11.2
CO-44	CB-15	291.83	CB-16	291.44	39.00	41.02	0.0100	8.0			0.66	1.31	50.7
CO-34	CB-10	287.18	CB-11	286.96	44.00	47.87	0.0050	15.0			0.79	4.95	16.1
CO-46	CB-16	291.34	CB-21	290.70	64.00	66.63	0.0100	8.0			1.18	1.31	90.0
CO-74	CB-25	288.44	CB-26	288.27	56.00	61.44	0.0030	15.0			1.21	3.86	31.4
CO-76	CB-26	288.17	CB-27	288.12	15.00	20.94	0.0033	15.0			1.30	4.04	32.2
CO-18	CB-5	286.99	CB-6	286.51	96.00	100.73	0.0050	15.0			1.40	4.95	28.3
CO-78	CB-27	288.02	CB-20	287.77	81.00	86.72	0.0031	15.0			1.42	3.89	36.5
CO-86	CB-31	292.00	MH-TEE	291.90		11.76	0.0085	8.0			2.02	1.21	167.0
CO-36	CB-11	286.86	CB-6	286.51	70.00	74.80	0.0050	15.0			2.09	4.95	42.1
CO-68	CB-22	288.30	CB-23	287.90	196.00	200.04	0.0020	15.0			2.66	3.16	84.3
CO-88	MH-33	291.80	MH-TEE	290.82	98.00	99.97	0.0100	12.0			2.71	3.86	70.1
CO-84	CB-30	292.00	MH-33	291.90		11.40	0.0088	8.0			2.71	1.23	221.1
CO-42	CB-14	287.24	CB-9	286.60	94.00	98.93	0.0068	15.0			2.86	5.77	49.6
CO-40	CB-13	288.02	CB-14	287.49	106.00	109.50	0.0050	12.0			3.00	2.73	110.1
CO-70	CB-23	287.90	CB-20	287.67	114.00	119.30	0.0020	18.0			4.24	5.11	83.1
CO-20	CB-6	286.51	CB-7	286.40	57.00	61.97	0.0019	18.0			4.47	5.00	89.5
CO-90	MH-TEE	290.82	MH-32	289.84	98.00	100.16	0.0100	12.0			4.64	3.86	120.1
CO-28	MH-29	285.46	CB-8	285.25	103.00	108.25	0.0020	24.0			4.71	11.07	42.6
CO-92	MH-32	289.74	CB-21	288.98	76.00	80.15	0.0100	15.0			4.75	7.00	67.9
CO-26	MH-28	285.87	MH-29	285.46	205.00	209.94	0.0020	24.0			4.89	10.96	44.7
CO-24	MH-27	286.13	MH-28	285.87	127.00	131.95	0.0020	24.0			5.01	11.09	45.2
CO-22	CB-7	286.40	MH-27	286.13	134.00	138.71	0.0020	18.0			5.13	5.11	100.5
CO-30	CB-8	285.25	CB-9	285.11	72.00	77.50	0.0019	24.0			5.33	10.81	49.3
CO-66	MH-36	287.50	O-STREET B	285.22		234.59	0.0097	24.0			5.37	22.30	24.1
CO-64	MH-35	287.63	MH-36	287.60	5.00	11.92	0.0060	24.0			5.37	18.98	28.3
CO-62	CB-20	287.67	MH-35	287.63	5.00	11.09	0.0080	24.0			5.38	21.92	24.5
CO-48	CB-21	286.50	CB-9	286.00	84.00	89.08	0.0060	18.0			6.16	8.78	70.2
CO-32(2)	MH-40	285.09	O-VAULT C	285.00	45.00	49.16	0.0020	24.0			12.28	10.96	112.1
CO-32(1)	CB-9	285.11	MH-40	285.09	10.00	17.43	0.0020	24.0			12.30	10.96	112.3

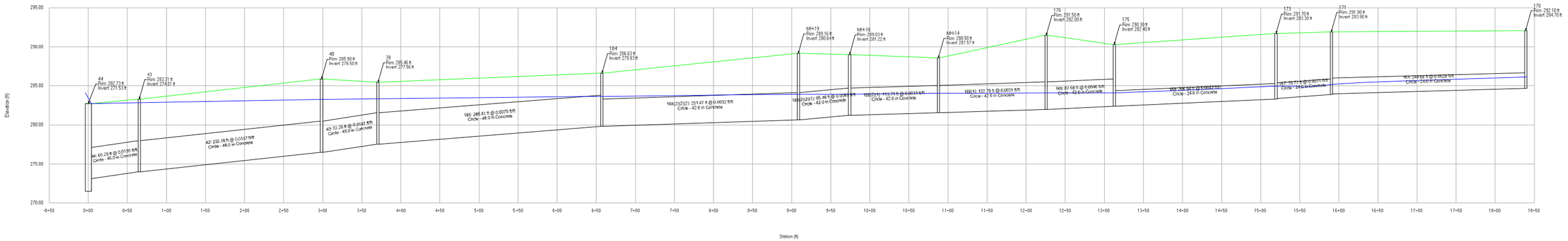
100 Year
StormCAD
Output

Scenario: 100 YR

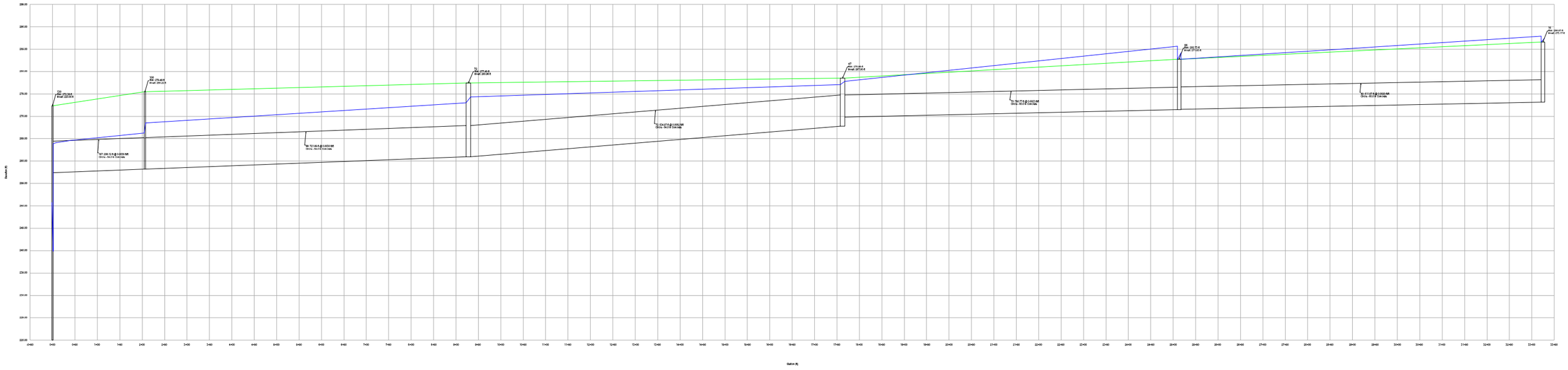
Profile Report
Engineering Profile - B STREET (BelgioioseCheese_ExistingFinal.stsw)



Profile Report
Engineering Profile - C STREET (BelgioioseCheese_ExistingFinal.stsw)



Profile Report
Engineering Profile - ROUTE5 (BelgioioseCheese_ExistingFinal.stsw)



FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
19	21	287.50	20	285.22	224.38	0.0102	24.0			7.40	22.80	32.5
21	20	285.22	23	285.10	266.43	0.0005	48.0			33.88	30.48	111.1
24	23	285.10	24	284.89	84.69	0.0025	48.0			40.00	71.52	55.9
25	24	284.89	38	283.96	266.77	0.0035	48.0			41.56	84.81	49.0
31	38	283.96	29	283.52	268.43	0.0016	42.0			62.84	40.73	154.3
30	29	283.52	30	283.34	73.84	0.0024	42.0			67.44	49.67	135.8
32	30	283.34	33	280.01	266.61	0.0125	42.0			73.22	112.43	65.1
35	33	280.01	36	276.48	274.23	0.0129	42.0			90.84	114.14	79.6
37	36	276.48	18	275.17	124.68	0.0105	48.0			96.66	147.23	65.7

FlexTable: Conduit Table

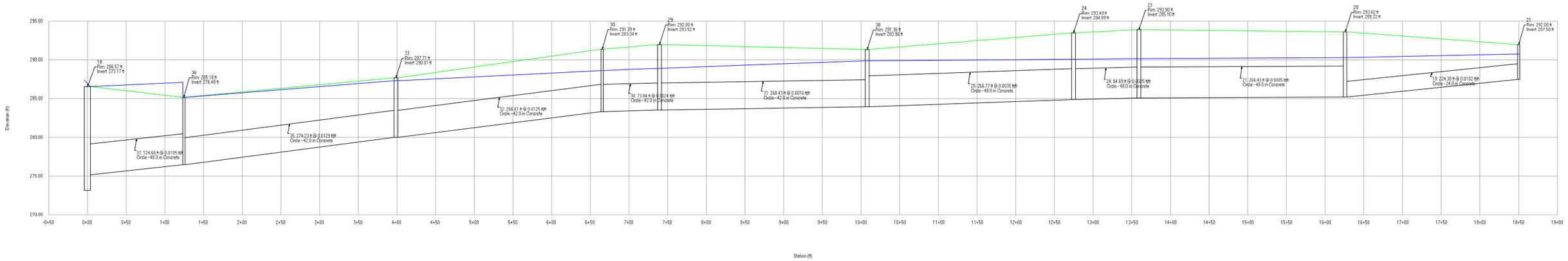
Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
161	170	284.70	171	284.00	248.68	0.0028	24.0			10.43	12.00	86.9
167	171	283.90	173	283.40	70.77	0.0071	24.0			12.61	19.01	66.3
168	173	283.30	175	282.40	206.94	0.0043	24.0			15.11	14.92	101.3
169	175	282.40	176	282.00	87.08	0.0046	42.0			15.80	68.18	23.2
188(1)	176	282.00	MH-14	281.57	137.79	0.0031	42.0			22.15	56.20	39.4
188(2)(1)	MH-14	281.57	MH-16	281.22	113.71	0.0031	42.0			34.24	55.81	61.4
188(2)(2)(1)	MH-16	281.22	MH-19	280.64	65.48	0.0089	42.0			34.59	94.68	36.5
188(2)(2)(2)	MH-19	280.64	184	279.83	251.47	0.0032	42.0			34.99	57.10	61.3
185	184	279.83	39	277.56	286.41	0.0079	48.0			46.87	127.87	36.7
40	39	277.56	40	276.50	72.26	0.0147	48.0			55.38	173.97	31.8
42	40	276.50	43	274.01	233.18	0.0107	48.0			59.11	148.43	39.8
44	43	274.01	44	273.13	65.28	0.0135	48.0			64.93	166.76	38.9

FlexTable: Conduit Table

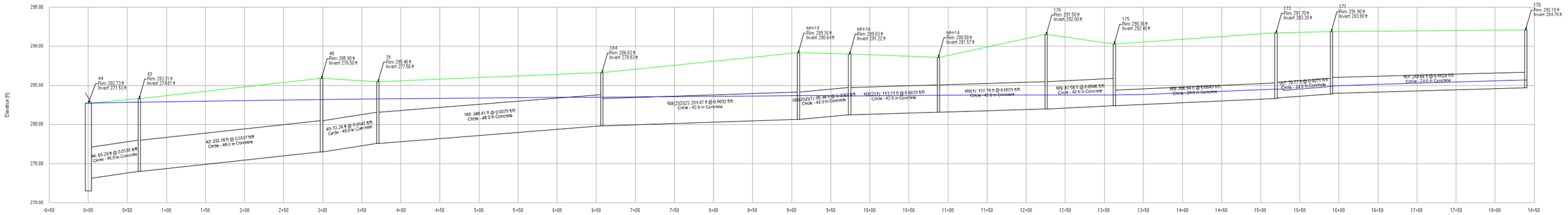
Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
45	18	273.17	44	271.55	811.67	0.0020	60.0			207.23	116.35	178.1
70	44	271.53	47	269.80	750.77	0.0023	60.0			266.00	125.01	212.8
72	47	267.80	72	260.96	834.57	0.0082	84.0			368.83	578.31	63.8
99	72	260.96	100	258.22	721.65	0.0038	84.0			504.27	393.62	128.1
157	100	258.22	130	257.43	206.12	0.0038	84.0			647.17	395.48	163.6

Scenario: 100 YR

Profile Report
Engineering Profile - B STREET (BelgioioseCheese_ProposedFinal.stsw)

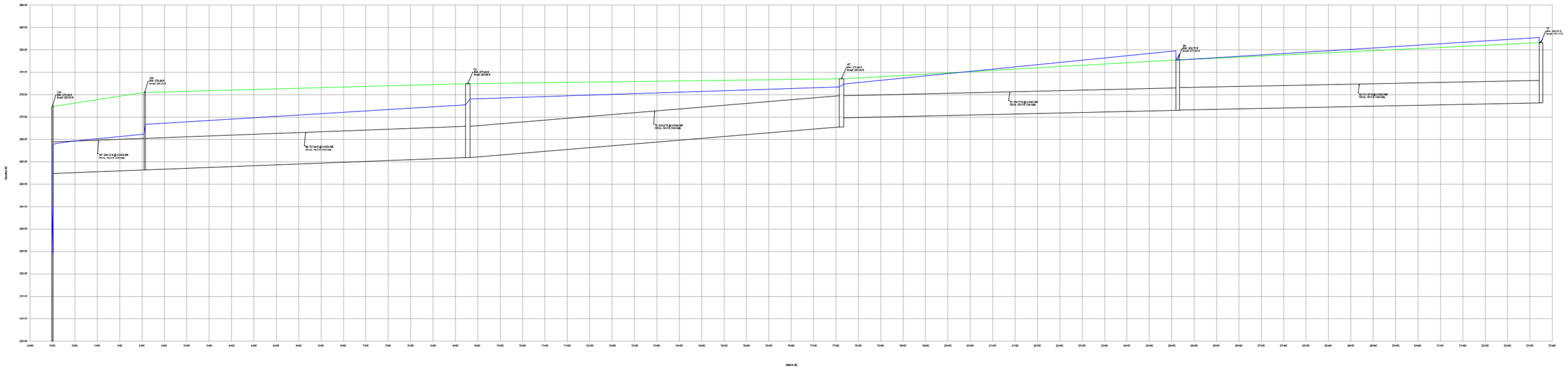


Profile Report
Engineering Profile - C STREET (BelgioioseCheese_ProposedFinal.stsw)



Profile Report

Engineering Profile - ROUTE 5 (BelgioioseCheese_ProposedFinal.stsw)



FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
19	21	287.50	20	285.22	224.38	0.0102	24.0			10.32	22.80	45.3
21	20	285.22	23	285.10	266.43	0.0005	48.0			31.62	30.48	103.7
24	23	285.10	24	284.89	84.69	0.0025	48.0			37.77	71.52	52.8
25	24	284.89	38	283.96	266.77	0.0035	48.0			39.25	84.81	46.3
31	38	283.96	29	283.52	268.43	0.0016	42.0			60.51	40.73	148.6
30	29	283.52	30	283.34	73.84	0.0024	42.0			65.08	49.67	131.0
32	30	283.34	33	280.01	266.61	0.0125	42.0			70.85	112.43	63.0
35	33	280.01	36	276.48	274.23	0.0129	42.0			88.44	114.14	77.5
37	36	276.48	18	275.17	124.68	0.0105	48.0			94.26	147.23	64.0

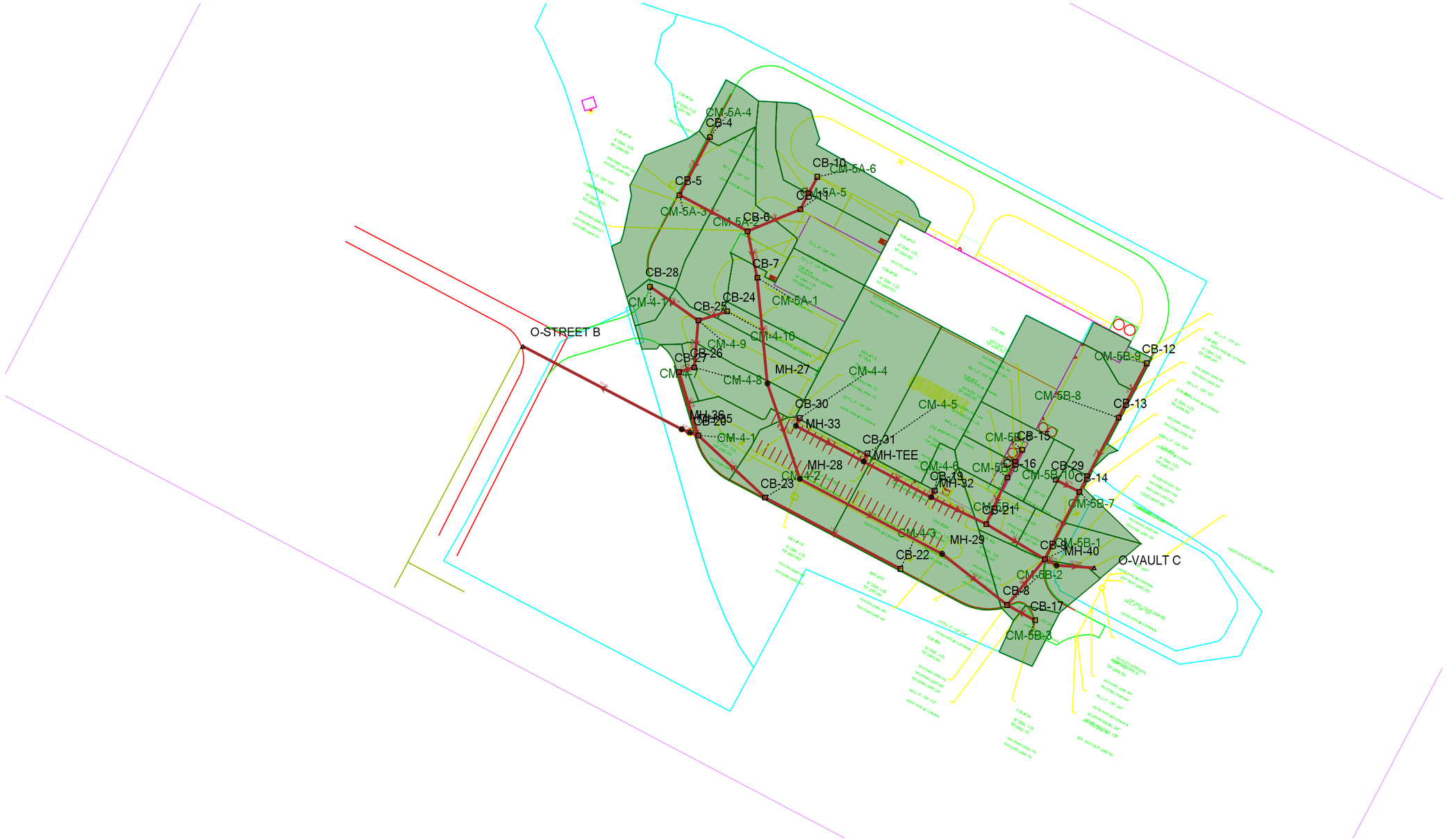
FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
161	170	284.70	171	284.00	248.68	0.0028	24.0			5.81	12.00	48.4
167	171	283.90	173	283.40	70.77	0.0071	24.0			8.08	19.01	42.5
168	173	283.30	175	282.40	206.94	0.0043	24.0			10.58	14.92	70.9
169	175	282.40	176	282.00	87.08	0.0046	42.0			11.26	68.18	16.5
188(1)	176	282.00	MH-14	281.57	137.79	0.0031	42.0			17.60	56.20	31.3
188(2)(1)	MH-14	281.57	MH-16	281.22	113.71	0.0031	42.0			29.66	55.81	53.1
188(2)(2)(1)	MH-16	281.22	MH-19	280.64	65.48	0.0089	42.0			30.01	94.68	31.7
188(2)(2)(2)	MH-19	280.64	184	279.83	251.47	0.0032	42.0			30.41	57.10	53.3
185	184	279.83	39	277.56	286.41	0.0079	48.0			42.24	127.87	33.0
40	39	277.56	40	276.50	72.26	0.0147	48.0			50.71	173.97	29.1
42	40	276.50	43	274.01	233.18	0.0107	48.0			54.43	148.43	36.7
44	43	274.01	44	273.13	65.28	0.0135	48.0			60.22	166.76	36.1

FlexTable: Conduit Table

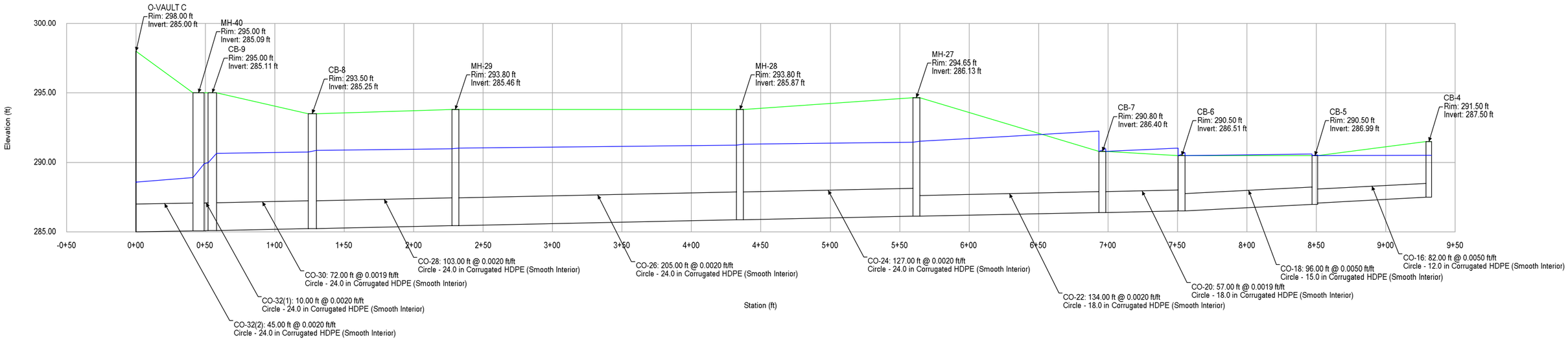
Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
45	18	273.17	44	271.55	811.67	0.0020	60.0			204.69	116.35	175.9
70	44	271.53	47	269.80	750.77	0.0023	60.0			258.80	125.01	207.0
72	47	267.80	72	260.96	834.57	0.0082	84.0			361.53	578.31	62.5
99	72	260.96	100	258.22	721.65	0.0038	84.0			496.73	393.62	126.2
157	100	258.22	130	257.43	206.12	0.0038	84.0			639.29	395.48	161.6

Scenario: 100 YR



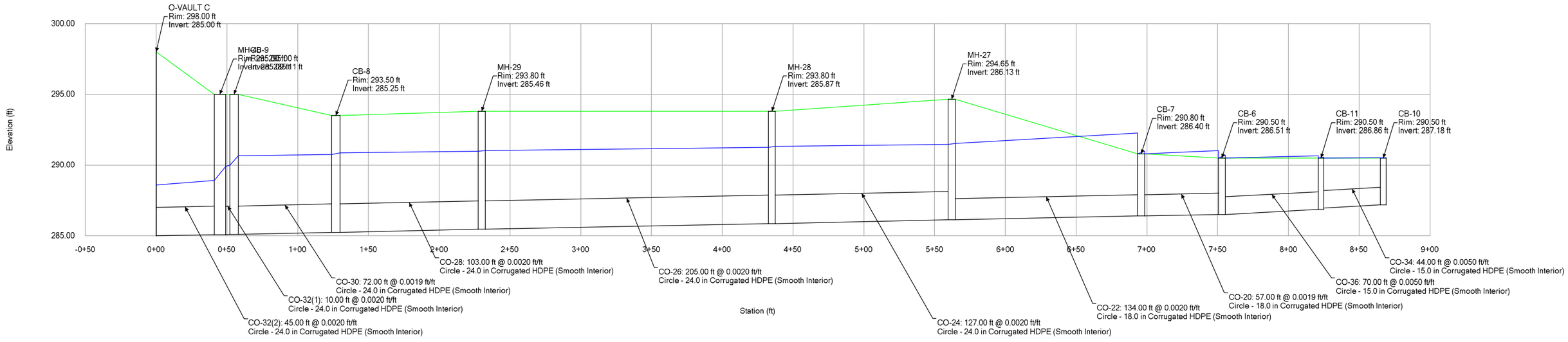
Profile Report

Engineering Profile - BASIN to CB 4 Truck Bay (BelgioioseCheese_OnsiteProposed.stsw)

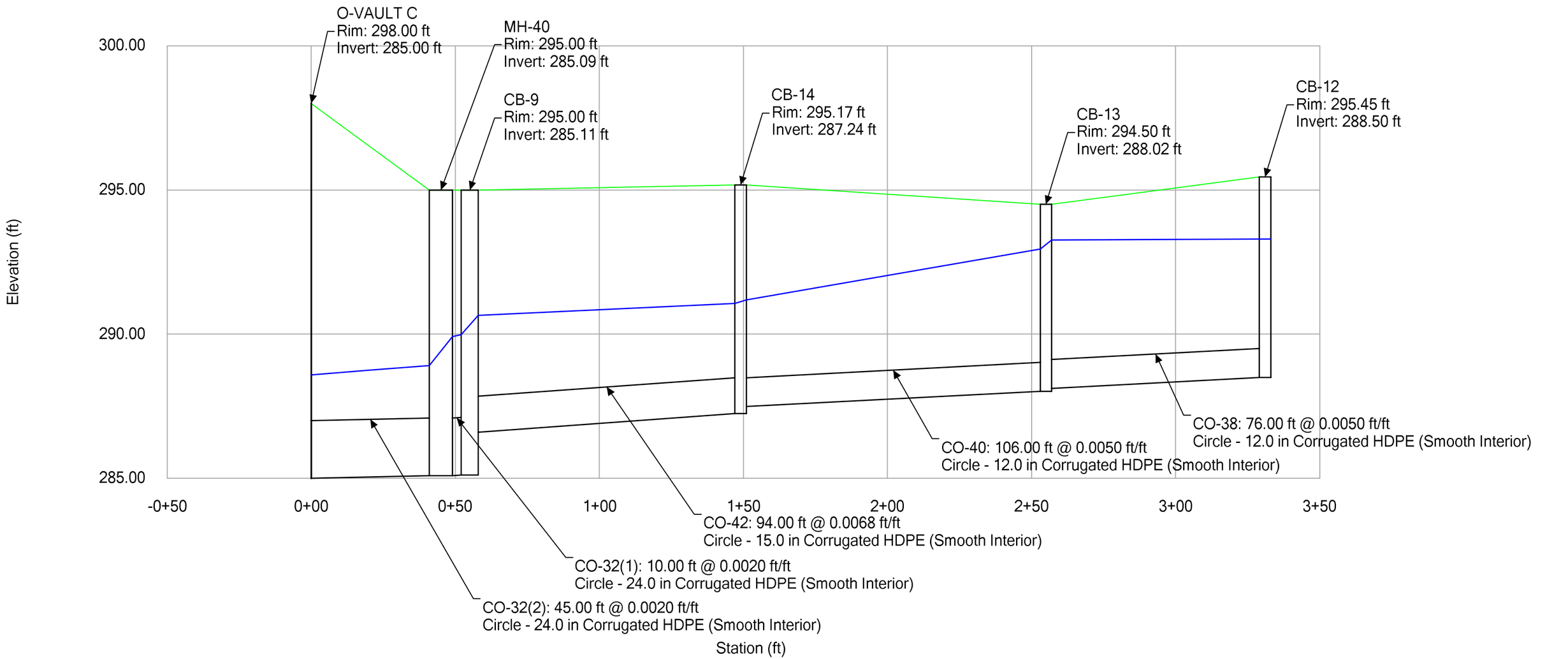


Profile Report

Engineering Profile - BASIN to CB 10 Truck Bay (BelgioioseCheese_OnsiteProposed.stsw)

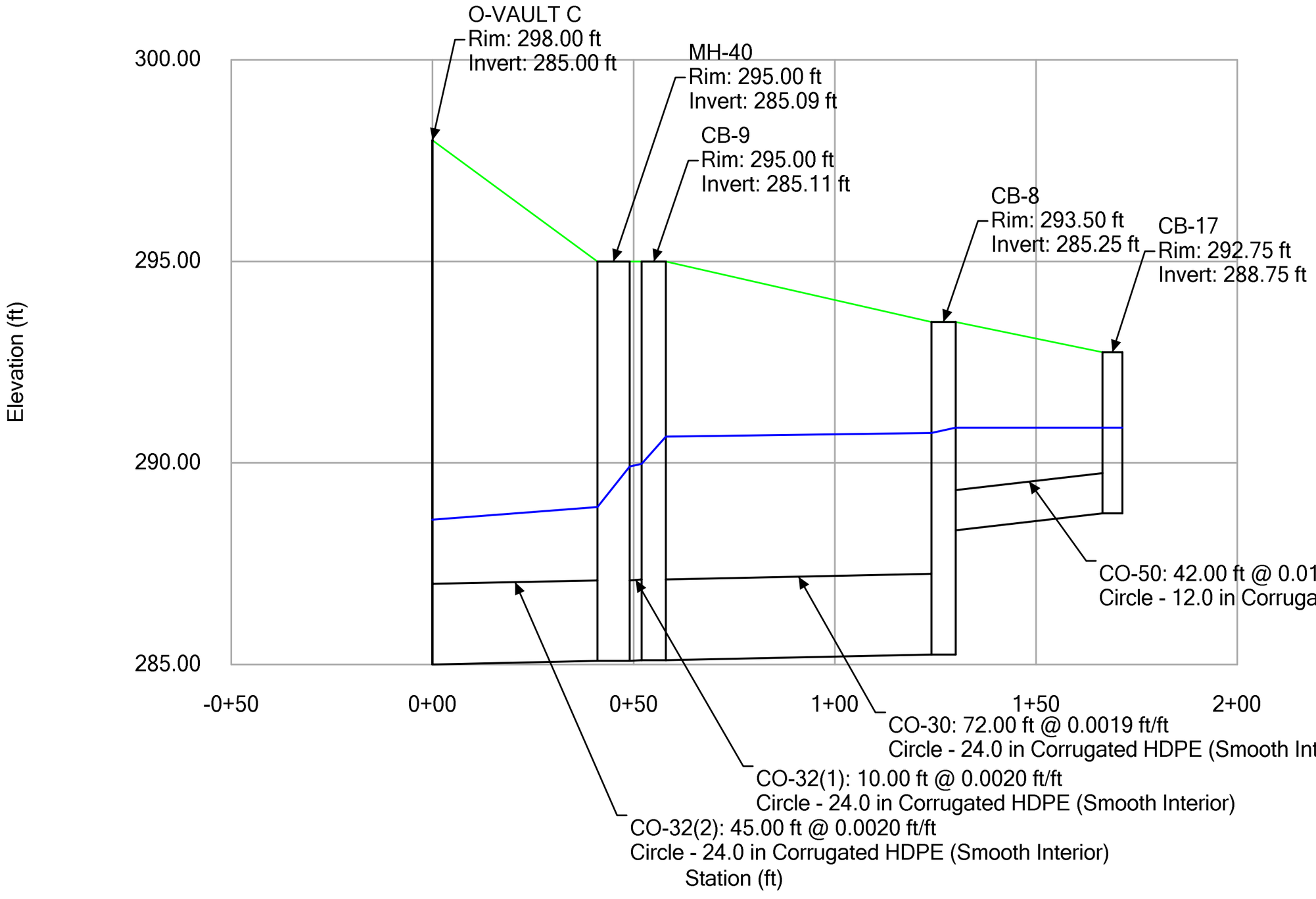


Profile Report
Engineering Profile - BASIN to CB 12 (BelgioioseCheese_OnsiteProposed.stsw)



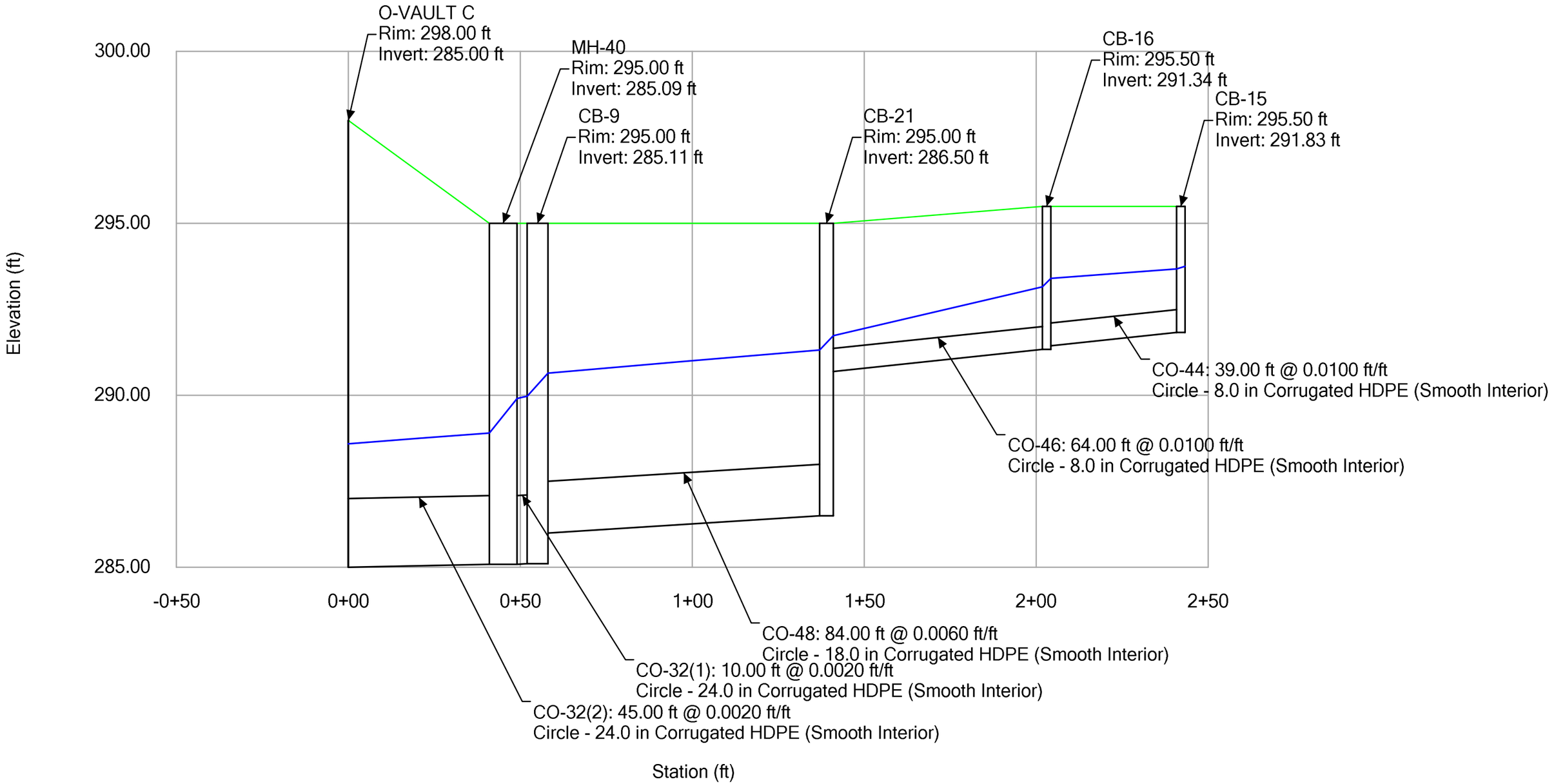
Profile Report

Engineering Profile - BASIN to CB 17 (BelgioioseCheese_OnsiteProposed.stsw)

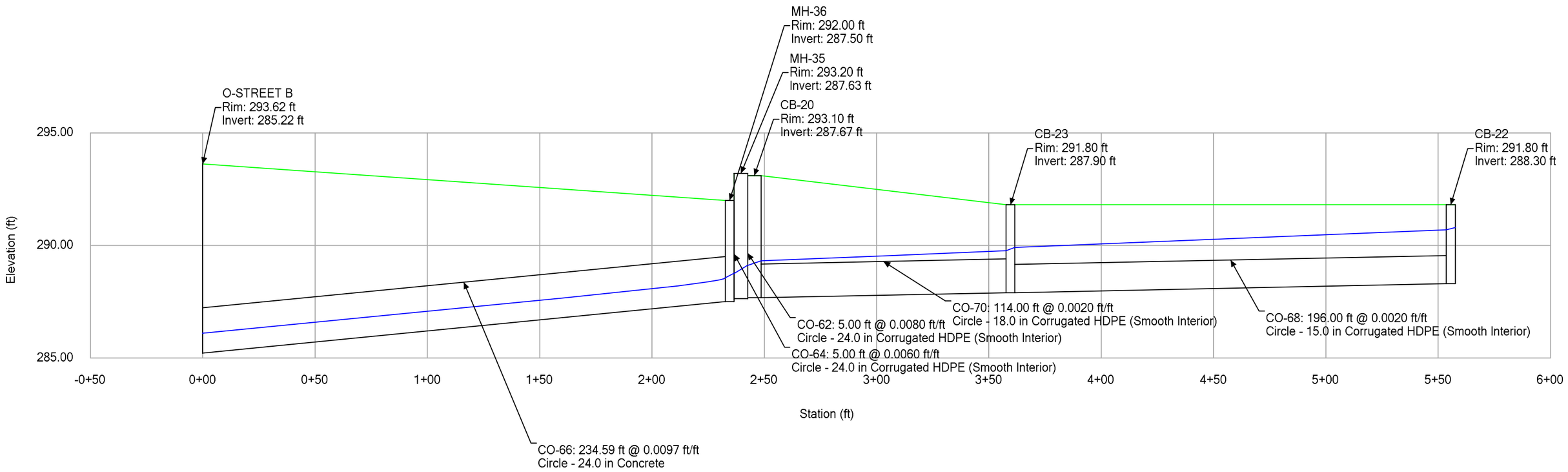


Profile Report

Engineering Profile - BASIN to CB15 BUILDING (BelgioioseCheese_OnsiteProposed.stsw)

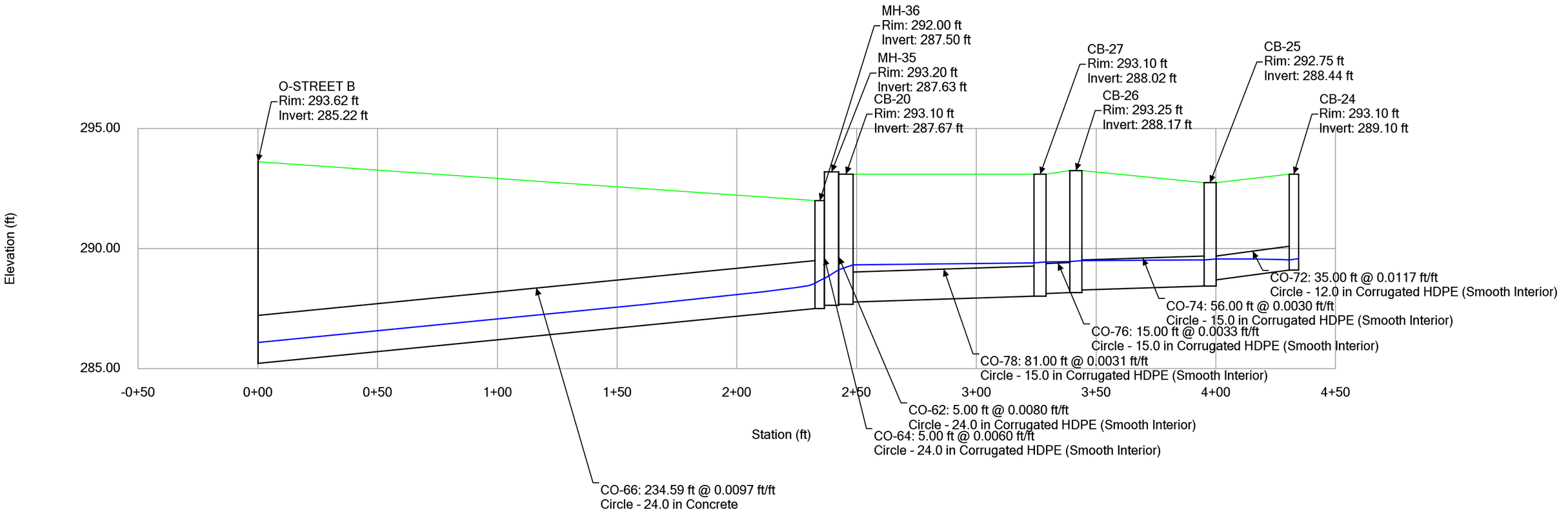


Profile Report
Engineering Profile - STREET B to CB 22 Parking (BelgioioseCheese_OnsiteProposed.stsw)



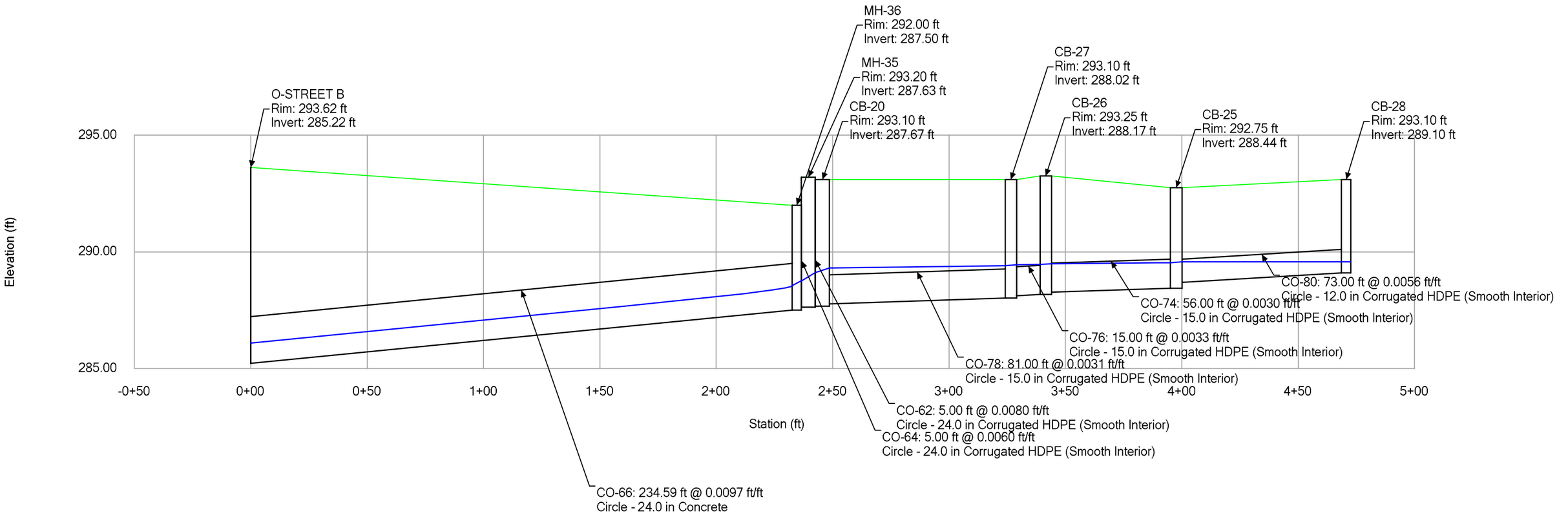
Profile Report

Engineering Profile - STREET B to CB 24 Entrance (BelgioioseCheese_OnsiteProposed.stsw)



Profile Report

Engineering Profile - STREET B to CB 28 Entrance (BelgioioseCheese_OnsiteProposed.stsw)



FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (User Defined) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Rise (ft)	Span (ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
CO-50	CB-17	288.75	CB-8	288.33	42.00	41.61	0.0100	12.0			0.33	3.86	8.5
CO-54	CB-19	292.00	MH-32	291.90		10.05	0.0100	8.0			0.33	1.31	25.5
CO-80	CB-28	289.10	CB-25	288.69	73.00	77.11	0.0056	12.0			0.34	2.89	11.8
CO-82	CB-29	292.00	CB-14	291.50		34.89	0.0143	8.0			0.52	1.57	33.2
CO-16	CB-4	287.50	CB-5	287.09	82.00	85.97	0.0050	12.0			0.61	2.73	22.5
CO-38	CB-12	288.50	CB-13	288.12	76.00	79.99	0.0050	12.0			0.74	2.73	27.3
CO-72	CB-24	289.10	CB-25	288.69	35.00	39.49	0.0117	12.0			0.78	4.18	18.6
CO-44	CB-15	291.83	CB-16	291.44	39.00	41.02	0.0100	8.0			1.10	1.31	84.0
CO-34	CB-10	287.18	CB-11	286.96	44.00	47.87	0.0050	15.0			1.30	4.95	26.3
CO-46	CB-16	291.34	CB-21	290.70	64.00	66.63	0.0100	8.0			1.95	1.31	149.1
CO-74	CB-25	288.44	CB-26	288.27	56.00	61.44	0.0030	15.0			1.99	3.86	51.5
CO-76	CB-26	288.17	CB-27	288.12	15.00	20.94	0.0033	15.0			2.11	4.04	52.3
CO-18	CB-5	286.99	CB-6	286.51	96.00	100.73	0.0050	15.0			2.28	4.95	46.1
CO-78	CB-27	288.02	CB-20	287.77	81.00	86.72	0.0031	15.0			2.31	3.89	59.4
CO-86	CB-31	292.00	MH-TEE	291.90		11.76	0.0085	8.0			3.34	1.21	276.7
CO-36	CB-11	286.86	CB-6	286.51	70.00	74.80	0.0050	15.0			3.42	4.95	69.1
CO-68	CB-22	288.30	CB-23	287.90	196.00	200.04	0.0020	15.0			4.41	3.16	139.6
CO-88	MH-33	291.80	MH-TEE	290.82	98.00	99.97	0.0100	12.0			4.49	3.86	116.3
CO-84	CB-30	292.00	MH-33	291.90		11.40	0.0088	8.0			4.49	1.23	366.3
CO-42	CB-14	287.24	CB-9	286.60	94.00	98.93	0.0068	15.0			4.66	5.77	80.8
CO-40	CB-13	288.02	CB-14	287.49	106.00	109.50	0.0050	12.0			4.99	2.73	182.9
CO-70	CB-23	287.90	CB-20	287.67	114.00	119.30	0.0020	18.0			7.11	5.11	139.1
CO-20	CB-6	286.51	CB-7	286.40	57.00	61.97	0.0019	18.0			7.30	5.00	146.1
CO-90	MH-TEE	290.82	MH-32	289.84	98.00	100.16	0.0100	12.0			7.69	3.86	199.2
CO-28	MH-29	285.46	CB-8	285.25	103.00	108.25	0.0020	24.0			7.86	11.07	71.0
CO-92	MH-32	289.74	CB-21	288.98	76.00	80.15	0.0100	15.0			7.93	7.00	113.3
CO-26	MH-28	285.87	MH-29	285.46	205.00	209.94	0.0020	24.0			8.11	10.96	74.0
CO-24	MH-27	286.13	MH-28	285.87	127.00	131.95	0.0020	24.0			8.27	11.09	74.6
CO-22	CB-7	286.40	MH-27	286.13	134.00	138.71	0.0020	18.0			8.40	5.11	164.5
CO-66	MH-36	287.50	O-STREET B	285.22		234.59	0.0097	24.0			8.77	22.30	39.3
CO-64	MH-35	287.63	MH-36	287.60	5.00	11.92	0.0060	24.0			8.78	18.98	46.2
CO-62	CB-20	287.67	MH-35	287.63	5.00	11.09	0.0080	24.0			8.78	21.92	40.1
CO-30	CB-8	285.25	CB-9	285.11	72.00	77.50	0.0019	24.0			8.93	10.81	82.6
CO-48	CB-21	286.50	CB-9	286.00	84.00	89.08	0.0060	18.0			10.18	8.78	115.9
CO-32(2)	MH-40	285.09	O-VAULT C	285.00	45.00	49.16	0.0020	24.0			20.64	10.96	188.4
CO-32(1)	CB-9	285.11	MH-40	285.09	10.00	17.43	0.0020	24.0			20.66	10.96	188.6

Appendix G
Grading and Erosion and Sediment Control Plans and Details

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N

0 40 80
Scale in feet

No.	Submittal / Revision	By	Appd.	Date
1	ISSUED FOR TOWN REVIEW	SHW	MFM	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	SHW	MFM	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

GRADING PLAN

Designed By:	Drawn By:	Checked By:
SHW	SHW	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-401

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO

DRAINAGE PLAN - B STREET SYSTEM

Designed By:	Drawn By:	Checked By:
SHW	SHW	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:

C-402

ROOF DOWNSPOUTS @ 20' O.C. TO DAYLIGHT TO GRASS AREA (TYP.)

NON-CONTACT COOLING WATER EFFLUENT INV: 290.00

ROOF DOWNSPOUTS @ 40' O.C. (TYP.) TO DAYLIGHT TO GRASS AREA

ROOF DRAIN DOWNSPOUT CONNECTION

ROOF DRAIN DOWNSPOUT CONNECTION

ROOF DOWNSPOUTS @ 20' O.C. (TYP.) TO DAYLIGHT TO GRASS AREA

MANUFACTURING BUILDING
96,892 SF±, FFE = 296.0

CB #28
4' DIA. I.D.
TF: 293.10
INV(NW): 289.10

35 L.F. OF 12" HDPE PIPE @ 1.2%

CB #27
5' DIA. I.D.
TF: 292.75
INV(NE): 288.69
INV(NW): 288.69
INV(SE): 288.44

CB #29
4' DIA. I.D.
TF: 293.10
INV(NW): 289.10

73 L.F. OF 12" HDPE PIPE @ 0.60%

56 L.F. OF 15" HDPE PIPE @ 0.30%

CB #26
5' DIA. I.D. [3 C-904]
TF: 293.25
INV(N): 288.27
INV(SW): 288.17

TEE CONNECTION OF ROOF DRAIN DOWNSPOUTS (20' O.C.) TO 12" HEADER PIPE (TYP.)

CB #25
5' DIA. I.D.
TF: 293.10
INV(SE): 288.12
INV(NW): 288.02

16 L.F. OF 15" HDPE PIPE @ 0.30%

81 L.F. OF 15" HDPE PIPE @ 0.30%

EX. INV OUT: 287.50

[6 C-903] KOR-N-SEAL 24" HDPE INTO EX. CB AT INV: 287.60

5 L.F. OF 24" HDPE PIPE @ 0.60%

CB #20
6' DIA. I.D. [3 C-904]
TF: 293.10
INV(E): 287.91
INV(NW): 287.77
INV(SE): 287.67
INV(W): 287.67

5 L.F. OF 24" HDPE PIPE @ 0.80%

CDS UNIT #1
MODEL CDS3020-6-C
BY CONTECH ES [1 C-904]
TF: 293.20
INV(NW): 287.63
INV(SE): 287.63

CB #21
4' DIA. I.D.
TF: 291.80
INV(SE): 287.90
INV(NW): 287.90

114 L.F. OF 18" HDPE PIPE @ 0.20%

196 L.F. OF 15" [1 C-902] HDPE PIPE @ 0.20%

CB #22
4' I.D. DIA. [3 C-904]
TF: 291.80
INV(NW): 288.30

1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

C STREET
(SEE MAP REFERENCE NO. 1)

10" WATER MAIN (REC-DISCONNECTED)

16" WATER MAIN (REC-DISCONNECTED)

8" WATER MAIN (REC)

WATER MAIN (REC-DISCONNECTED)

10" WATER MAIN (REC-DISCONNECTED)

8" WATER MAIN (REC)

24" RCP (RECORD)

BENCHMARK
BOLT-ON HYD
ELEV. 292.1'

WOOD FRAME BUILDING

TOWER

CLOSED VALVE

ASPHALT

GATE WELL

BUILDING

WALL

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BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

BELGIOIOSO

DRAINAGE PLAN - C STREET SYSTEM

Designed By:	Drawn By:	Checked By:
SHW	SHW	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-403

CB #19
4' DIA. I.D.
TF: 291.50
INV(SW): 287.50

44 L.F. OF 15" HDPE PIPE @ 0.50%

82 L.F. OF 12" HDPE PIPE @ 0.50%

CB #17
4' DIA. I.D.
TF: 290.50
INV(S): 287.18

ROOF DOWNSPOUTS @ 20' O.C. TO DAYLIGHT TO GRASS AREA (TYP.)

NON-CONTACT COOLING WATER EFFLUENT
INV: 290.00

30 L.F. OF 6" HDPE PIPE @ 1.67%

CB #5
4' DIA. I.D.
TF: 295.45
INV(NW): 289.50
INV(SW): 288.50

76 L.F. OF 12" HDPE PIPE @ 0.50%

CB #4
4' DIA. I.D.
TF: 294.50
INV(NE): 288.12
INV(SW): 288.02

106 L.F. OF 12" HDPE PIPE @ 0.50% [1 / C-902]

CB #18
4' DIA. I.D.
TF: 290.50
INV(NE): 287.09
INV(E): 286.99
[3 / C-904]

70 L.F. OF 15" HDPE PIPE @ 0.50%

57 L.F. OF 18" HDPE PIPE @ 0.20%

CB #16
4' DIA. I.D.
TF: 290.50
INV(NE): 286.96
INV(NW): 286.86

CB #8
30"x30" I.D.
TF: 295.50
INV(NE): 292.00
INV(SW): 291.83
[3 / C-904]

96 L.F. OF 15" HDPE PIPE @ 0.50%

CB #14
5' DIA. I.D.
TF: 290.80
INV(N): 286.40
INV(S): 286.40
[3 / C-904]

ROOF DOWNSPOUTS @ 40' O.C. (TYP.) TO DAYLIGHT TO GRASS AREA

39 L.F. OF 8" HDPE PIPE @ 1.0%

CB #7
30"x30" I.D.
TF: 295.50
INV(NE): 291.44
INV(SW): 291.34

MANUFACTURING BUILDING
96,892 SF±, FFE = 296.0

ROOF DRAIN DOWNSPOUT CONNECTION

ROOF DRAIN DOWNSPOUT CONNECTION

CB #3
4' DIA. I.D.
TF: 295.17
INV(NW): 291.50
INV(NE): 287.49
INV(SW): 287.24

100 YEAR WSE: 288.6

CDS UNIT #2
MODEL CDS4030-8-C
BY CONTECH ES
TF: 295.00
INV(NW): 285.10
INV(SE): 285.10
[1 / C-904]

CB #15
5' DIA. I.D.
TF: 290.50
INV(NE): 286.51
INV(NW): 286.51
INV(SE): 286.51

134 L.F. OF 18" HDPE PIPE @ 0.20%

MH #13
5' DIA.
TF: 294.95
INV(N): 286.13
INV(SE): 286.13

MH #23
4' DIA. I.D.
TF: 295.80
INV(SE): 291.80
[1 / C-903]

CB #6
4' DIA. I.D.
TF: 295.00
INV(NE): 290.70
INV(NW): 288.98
INV(SE): 286.50

94 L.F. OF 15" HDPE PIPE @ 0.50%

5 L.F. OF 24" HDPE PIPE @ 0.20%

50 L.F. OF 24" HDPE PIPE @ 0.20%

24" FES INV: 285.00

12" HDPE FES WITH 8" ORIFICE CAP OVER 12" HDPE PIPE END INV: 284.90

15 L.F. OF 12" HDPE PIPE @ 0.33%

TEE CONNECTION OF ROOF DRAIN DOWNSPOUTS (20' O.C.) TO 12" HEADER PIPE (TYP.)

76 L.F. OF 15" HDPE PIPE @ 1.0%

84 L.F. OF 18" HDPE PIPE @ 0.6%

127 L.F. OF 24" HDPE PIPE @ 0.20%

196 L.F. OF 12" HDPE PIPE @ 1.0%

MH #24
4' DIA. I.D.
TF: 295.80
INV(NW): 289.84
INV(SE): 289.74

205 L.F. OF 24" HDPE PIPE @ 0.20%

CB #2
6' DIA. I.D.
TF: 295.00
INV(NE): 286.77
INV(NW): 286.00
INV(SW): 285.11
INV(SE): 285.11

72 L.F. OF 24" HDPE PIPE @ 0.20%

OUTLET CONTROL STRUCTURE #1
5'x5' I.D.
TF: 289.00
INV(NE): 284.85
INV(SE): 284.85
[2 / C-904]

72 L.F. OF 24" HDPE PIPE @ 0.20%

KOR-N-SEAL 24" HDPE INTO EX. CB AT INV: 284.70
[6 / C-903]

EX. INV OUT: 284.70

MH #12
5' DIA. I.D.
TF: 293.80
INV(N): 285.87
INV(SE): 285.87
[1 / C-903]

MH #11
5' DIA. I.D.
TF: 293.80
INV(N): 285.46
INV(SE): 285.46

103 L.F. OF 24" HDPE PIPE @ 0.20%

CB #9
6' DIA. I.D.
TF: 293.50
INV(SE): 288.33
INV(NW): 285.25
INV(NE): 285.25
[3 / C-904]

42 L.F. OF 12" HDPE PIPE @ 1.0%

CB #10
5' DIA. I.D.
TF: 292.75
INV(NW): 288.75
INV(SE): 288.75

1ST STREET
(TOWN ROAD - BK. 1181 PG. 56)

B STREET
(TOWN ROAD - BK. 1181 PG. 56)

C STREET
(SEE MAP REFERENCE NO. 1)

10" WATER MAIN (REC-DISCONNECTED)

16" WATER MAIN (REC-DISCONNECTED)

8" WATER MAIN (REC)

WATER MAIN (REC-DISCONNECTED)

48" RCP (REDGRO)

BENCHMARK
BOLT ON HYD
ELEV. 292.1'

WOOD FRAME BUILDING

TOWER

ASPHALT

CLOSED VALVE

GAS MARK

BOL

HYD

POLE

WELL

GATE

WALL

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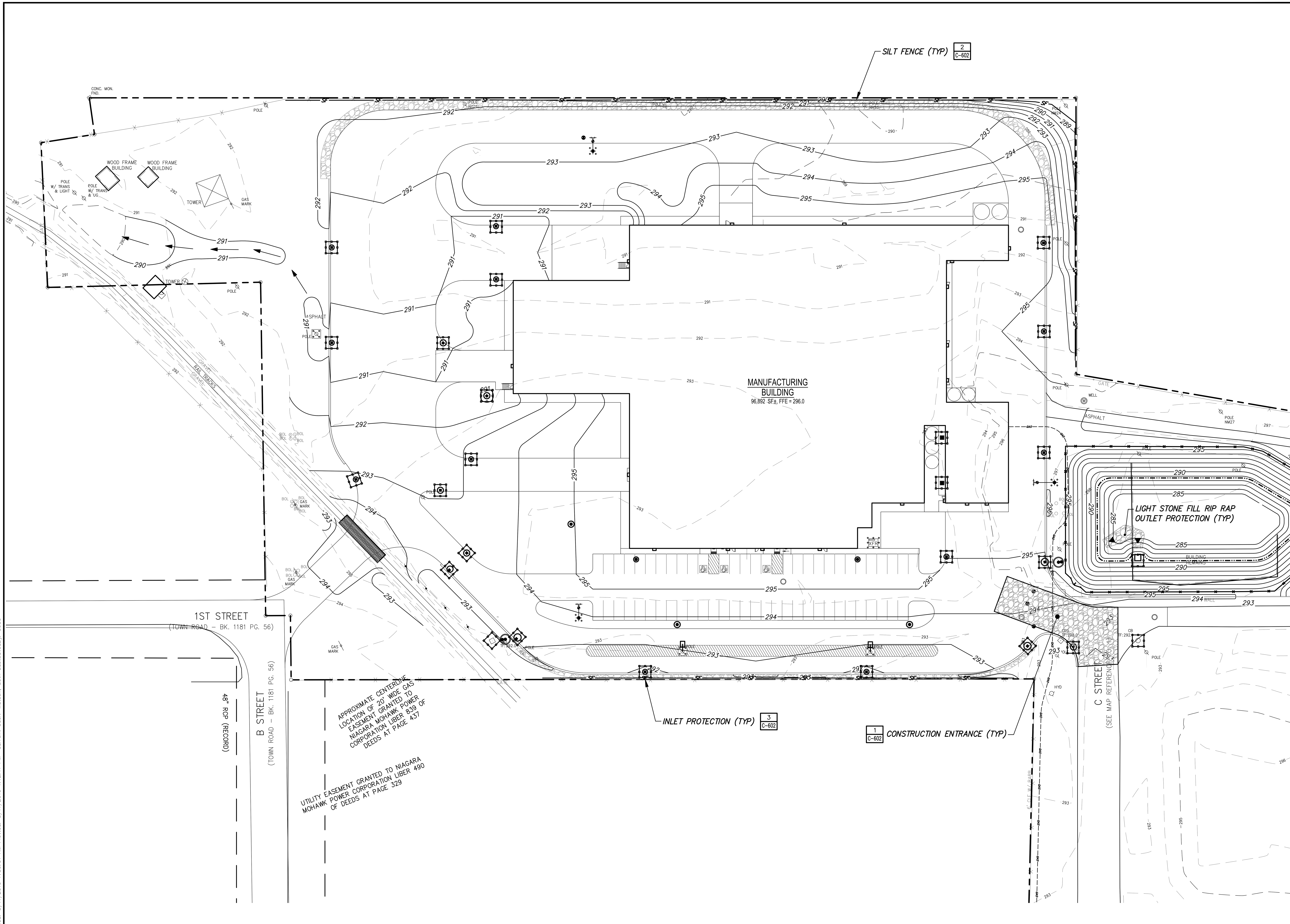

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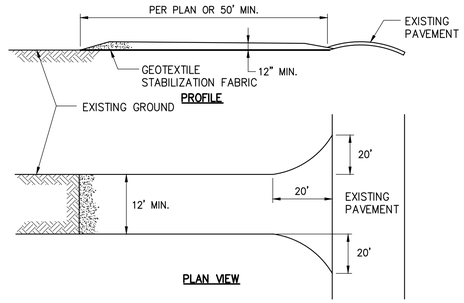
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

EROSION & SEDIMENT CONTROL PLAN

Designed By:	Drawn By:	Checked By:
KMD	KMD	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

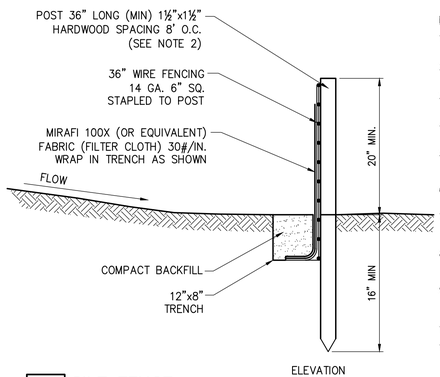
Drawing No:
C-601



1. STONE SIZE–USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. THICKNESS–NOT LESS THAN 12".
3. WOVEN GEOTEXTILE FABRIC WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
4. EXISTING ROAD SIDE DRAINAGE SHALL BE MAINTAINED.
5. MAINTENANCE–THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT OR STONE SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
6. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

1 STABILIZED CONSTRUCTION ENTRANCE

SCALE: NO SCALE

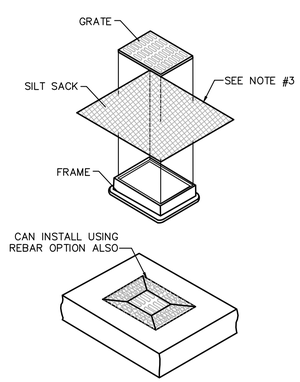


NOTES:

1. TIE FABRIC TO WIRE FENCE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. IF EXTRA STRENGTH FABRIC (GREATER THAN 50#/INCH) IS USED, WIRE CAN BE DELETED IF POST SPACING IS REDUCED TO 6' O.C.
3. AT THE ENDS OF THE FENCING THE FIRST 20' SHALL BE TURNED UP THE SLOPE 2'.
4. POSTS SHOULD BE INCLINED TOWARD THE DIRECTION FLOW CAME FROM.
5. OVERLAP FABRIC A MINIMUM OF 6" AND FOLDED AT JOINO SCALE. ATTACH FILTER FABRIS TO STAKES ALLOWING EXTENSION INTO TRENCH AS SHOWN; SECURE TO STAKES AS NOTED.
6. THE MAXIMUM AREA OF RUNOFF PER 100LF. OF FENCE SHALL NOT EXCEED 0.25 ACRES.
7. MAINTENANCE SHALL BE PERFORMED AS NECESSARY. THE FENCING SHALL BE CHECKED AFTER EVERY STORM TO ENSURE THEIR PROPER FUNCTIONING.
8. WHEN FENCE IS NO LONGER NEEDED, THE ACCUMULATED SILT, THE POSTS AND FABRIC SHALL BE REMOVED AND TRENCH BACK FILLED WITH TOPSOIL AND SEEDED.
9. FENCING SHOULD BE PLACED AS SHOWN ON THE DRAWING OR IF NOT SHOWN, 10' BEYOND THE TOE OF THE OF THE SLOPE AND AT A SPACING IN ACCORDANCE WITH THE TABLE.
10. EXCAVATE TRENCH AS PER DETAIL AND SET POSTS AT 10' O.C.
11. BACKFILL WITH COMPACTED, EXCAVATED SOIL FROM TRENCH.

2 SILT FENCE

SCALE: NO SCALE

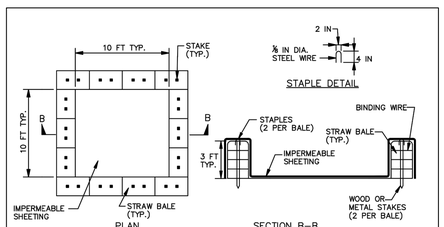


NOTES:

1. CONTRACTOR IS TO TAKE EXTRA CARE WHEN REMOVING OR MAINTAINING INLET PROTECTION FABRIC. NO SEDIMENT IS TO BE ALLOWED TO FALL INTO THE DRAINAGE STRUCTURE. IF ANY SEDIMENT SHOULD FALL INTO THE STRUCTURE, IT SHALL BE REMOVED IMMEDIATELY.
2. CONTRACTOR TO USE SILT SACK BY ACF ENVIRONMENTAL, INC. OR APPROVED EQUAL.
3. CONTRACTOR TO REMOVE/REPLACE INLET PROTECTION FABRIC AS NECESSARY. INLET PROTECTION TO BE INSPECTED ON A WEEKLY BASIS AND AFTER HEAVY STORM EVENTS.
4. INLET PROTECTION TO BE USED ON EXISTING AND NEW STORM STRUCTURES.

3 FILTER FABRIC DROP INLET PROTECTION

SCALE: NO SCALE



WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 30 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET–VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

4 CONCRETE WASHOUT

SCALE: NO SCALE

EROSION & SEDIMENT CONTROL NOTES

ONE WEEK PRIOR TO BEGINNING EARTHWORK OPERATIONS, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH A REPRESENTATIVE FROM THE TOWN TO DISCUSS THE EROSION AND SEDIMENT CONTROL PLAN, AND TO FINALIZE THE PAPER WORK FOR THE STORM WATER POLLUTION PREVENTION PLAN AS SPECIFIED IN THE STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION ACTIVITIES (GP-0-15-002).

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO BEGINNING ANY LAND DISTURBANCE ACTIVITIES. THE DEVICES PROVIDING PROTECTION TO A GIVEN AREA SHALL NOT BE REMOVED UNTIL THE LANDS IN THAT AREA ARE STABILIZED.

NO DISTURBED AREA SHALL REMAIN EXPOSED FOR MORE THAN 14 CALENDAR DAYS.

CONSTRUCTION SEQUENCE:

GENERAL NOTES:

- SILT FENCE SHALL BE INSTALLED AT THE TOE OF SLOPES WITH BUFFER AREAS PER BLUE BOOK GUIDELINES.
- BACKFILL SHALL BE PLACED ON THE UPSTREAM SIDE OF ALL TRENCHES DURING UTILITY CONSTRUCTION.
- PROTECT ALL EXISTING STORM SEWER FACILITIES SURROUNDING THE SITE FROM SEDIMENT TRANSPORT.

SEQUENCE:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES AS SHOWN. LIMIT ALL VEHICULAR TRAFFIC TO THESE ENTRANCES ONLY.
2. INSTALL SILT FENCE AS SHOWN. ADDITIONAL SILT FENCING MAY BE INSTALLED AS NECESSARY.
3. PROTECT EXISTING CATCH BASINS ALONG ADJACENT ROADWAYS.
4. ROUGH GRADE SITE PER DESIGN. DO NOT DISTURB MORE THAN 5 ACRES AT ONE TIME WITHOUT PRIOR PERMISSION FROM THE TOWN AND NYSDEC.
5. PROVIDE SILT FENCING AROUND PERIMETER OF STAGED/STOCKPILED TOP SOIL AND/OR TEMPORARY STAGED PILE OR FILL.
6. CONSTRUCT PROPOSED STORMWATER DETENTION BASIN. INSTALL PERMANENT SEEDING AND STABILIZE ONCE DETENTION BASIN HAS BEEN GRADED.
7. SWALES/DIKES SHALL BE CONSTRUCTED AS NEEDED TO PROVIDE POSITIVE DRAINAGE.
8. INSTALL UTILITIES. TRENCHES SHALL BE BACKFILLED/COMPACTED AND STABILIZED IMMEDIATELY AFTER BACKFILL OPERATION.
9. CONSTRUCT BUILDING.
10. ALL GRADED AREAS ARE TO BE SEEDED AND MULCHED FOR VEGETATIVE COVER IMMEDIATELY UPON COMPLETION OF EARTHWORK OPERATION.
11. CONSTRUCT ACCESS DRIVES AND PARKING LOTS.
12. COMPLETE FINAL GRADING AND INSTALL PERMANENT SEEDING, MULCH AND LANDSCAPING.
13. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND GROUND IS STABILIZED, REMOVE EROSION CONTROL MEASURES AND RESEED ANY DISTURBED AREAS CREATED BY THEIR REMOVAL.

INSPECTION PROCEDURES & MAINTENANCE:

1. DURING CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE TEMPORARY EROSION CONTROL FACILITIES. ALSO, AREAS THAT HAVE BEEN SEEDED WILL BE INSPECTED REGULARLY AFTER SEED GERMINATION TO ENSURE COMPLETE COVERAGE OF EXPOSED AREAS.
2. CONTRACTOR SHALL INSPECTION ALL DEVICES WEEKLY. REPAIRS SHOULD BE COMPLETED IMMEDIATELY UPON DISCOVERY OF DEFICIENCIES.
3. THE DEVELOPER WILL DESIGNATE A QUALIFIED PERSON(S) TO PERFORM THE FOLLOWING INSPECTIONS EVERY 7 CALENDAR DAYS IF DISTURBANCE IS LESS THAN 5 ACRES. IF DISTURBANCE IS GREATER THAN 5 ACRES, INSPECTIONS SHALL BE PERFORMED TWICE PER WEEK WITH A MINIMUM OF 2 DAYS BETWEEN INSPECTIONS:
   A. STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED (80% VIGOROUS GRASS GROWTH), INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT.
   B. STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN, WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. UPON STABILIZATION (80% VIGOROUS GRASS GROWTH) OF THE DISTURBED AREAS, ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE REMOVED.
   C. DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.
   D. CONSTRUCTION ENTRANCES: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.
4. SEDIMENT AROUND THE SILT FENCING SHOULD BE REMOVED AS NEEDED TO MAINTAIN ITS FUNCTIONALITY.
5. ALL SEEDED AREAS SHALL BE MAINTAINED AS FOLLOWS:
   A. IDENTIFY SEEDED AREAS WITH STAKES, STRING AND BRIGHTLY COLORED FLAGGING. PROTECT SEEDED AREAS UNTIL VEGETATION HAS BEEN ESTABLISHED.
   B. IMMEDIATELY RESEED AREAS WHICH DO NOT ESTABLISH VEGETATION.

PERMANENT EROSION CONTROL MEASURES:

PERMANENT STABILIZATION NOTES: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASE SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY WHERE 5 OR MORE ACRES ARE DISTURBED AT ONE TIME. IN AREAS WHERE LESS THAN 5 ACRES ARE DISTURBED, STABILIZATION SHALL OCCUR WITHIN 14 DAYS.

TOPSOIL SHALL HAVE AT LEAST TWO (2) PERCENT BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL, AND NO GREATER THAN SIX (6) PERCENT. MUCK SOIL SHALL NOT BE CONSIDERED TOPSOIL. TOPSOIL SHALL NOT HAVE LESS THAN 20 PERCENT FINE TEXTURES MATERIAL (PASSING THE No. 200 SIEVE) AND NOT MORE THAN 15 PERCENT CLAY. TOPSOIL SHALL BE FREE OF STONES OVER 1.5 INCHES IN DIAMETER, TRASH, NOXIOUS WEEDS SUCH AS NUT SEDGE AND QUACKGRASS, AND WILL HAVE LESS THAN 10 PERCENT GRAVEL BY VOLUME. REFER TO NYS STANDARDS & SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL (BLUE BOOK) PAGES 3.27-3.28 FOR INFORMATION ON TOPSOIL APPLICATION AND GRADING.

THE PERMANENT SEED MIX SHALL BE AS FOLLOWS:

SPECIES	RATE PER ACRE (LBS.)	RATE PER 1,000 SQ.FT. (LBS.)
KENTUCKY BLUEGRASS	115	2.6
PERENNIAL RYE	35	0.8
FINE FESCUE	25	0.6

FERTILIZER SHALL BE COMMERCIAL FERTILIZER (5-10-5) INORGANIC, OR ORGANIC, CONTAINING NOT LESS THAN FIVE (5) PERCENT NITROGEN, TEN (10) PERCENT AVAILABLE PHOSPHORIC ACID, AND FIVE (5) PERCENT WATER SOLUBLE POTASH.

PROVIDE AND INSTALL A MULCH ADEQUATE TO PROTECT THE SEEDING DURING ITS GROWING PERIOD. REFER TO BLUE BOOK (2010) PAGES 3.29-3.31 TO DETERMINE THE APPROPRIATE MULCHING TECHNIQUES FOR THE PARTICULAR SITE CONDITIONS.

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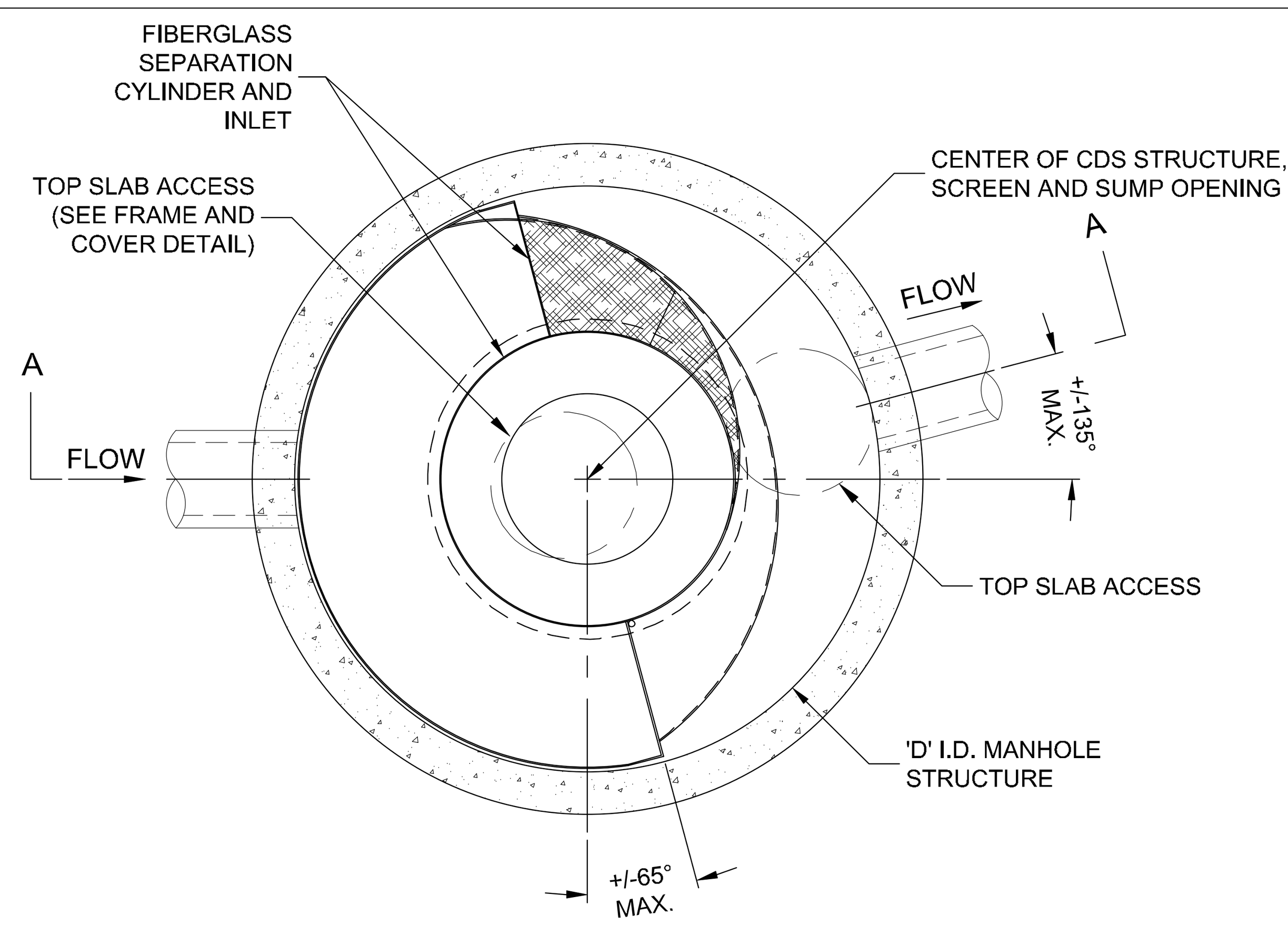
No.	Submittal / Revision	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW 3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

EROSION & SEDIMENT CONTROL DETAILS

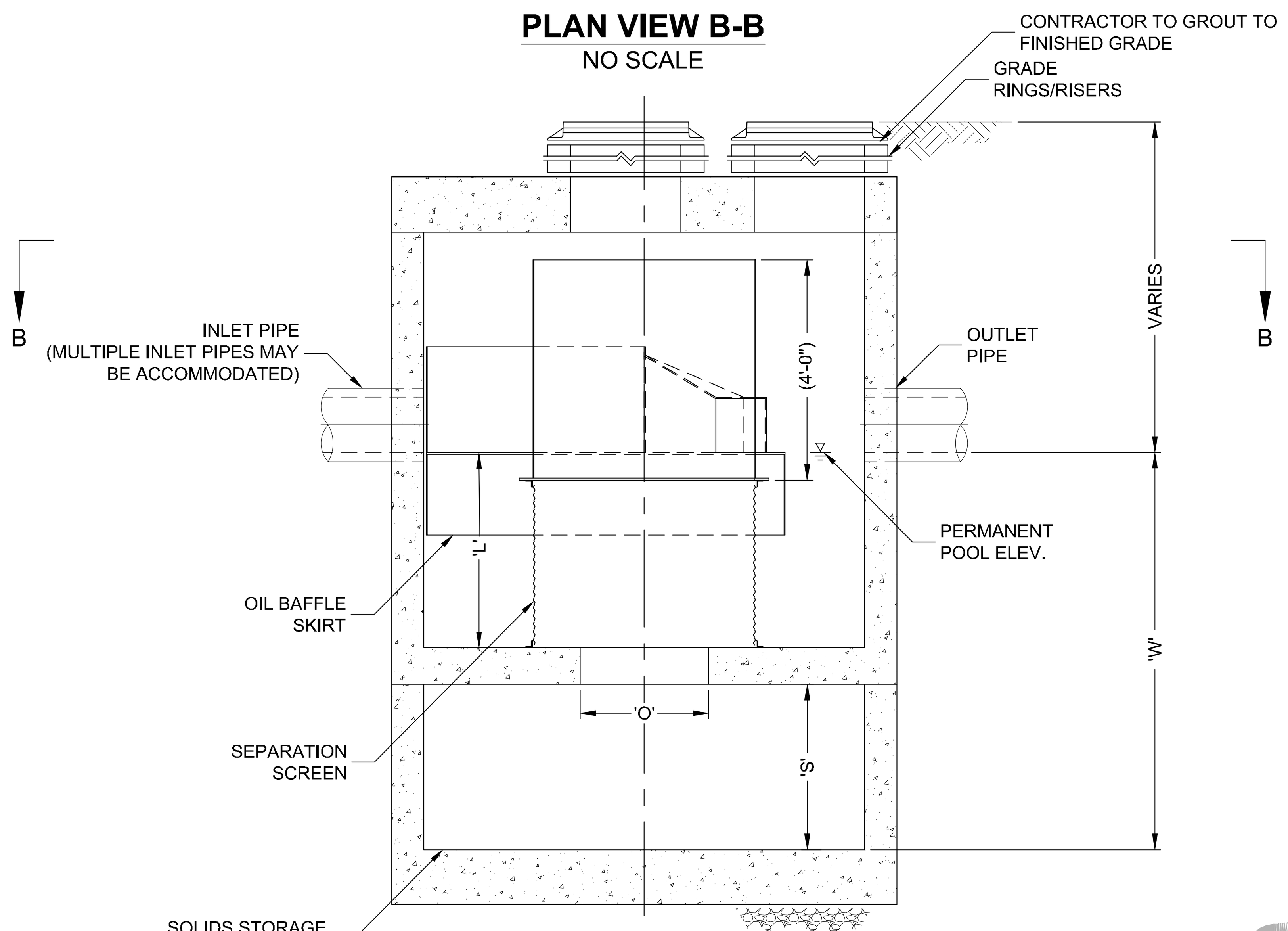
Designed By:	Drawn By:	Checked By:
Issue Date: 02/25/2019	Project No: 32984	Scale: AS SHOWN

Drawing No: C-602



PLAN VIEW B-B
NO SCALE

DIMENSION TABLE		
KEY	CDS3020-6-C	CDS4030-8-C
'D'	72"	96"
'S'	2'-0"	3'-0"
'L'	2'-9"	3'-6½"
'W'	5'-5"	7'-2½"
'O'	1'-9"	2'-4"

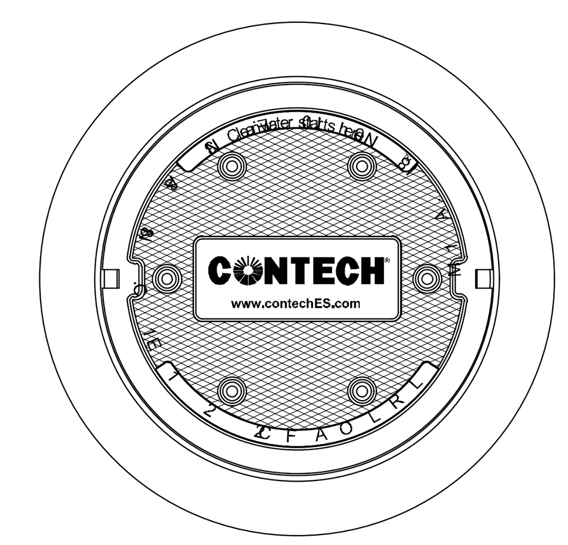


ELEVATION A-A
NO SCALE

CDS 3020-6-C AND CDS4030-8-C DESIGN NOTES

THE STANDARD CDS3020-6-C AND CDS4030-8-C CONFIGURATIONS ARE SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
NO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			#1
WATER QUALITY FLOW RATE (CFS OR L/s)			2.1
PEAK FLOW RATE (CFS OR L/s)			10.3
RETURN PERIOD OF PEAK FLOW (YRS)			100
SCREEN APERTURE (2400 OR 4700)			2400
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	287.63	HDPE	24"
INLET PIPE 2	-	-	-
OUTLET PIPE	287.63	HDPE	24"
RIM ELEVATION			293.20
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		-	-
NOTES/SPECIAL REQUIREMENTS: - STRUCTURE TO BE CDS-3020-6-C * PER ENGINEER OF RECORD			

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			#2
WATER QUALITY FLOW RATE (CFS OR L/s)			3.7
PEAK FLOW RATE (CFS OR L/s)			24.9
RETURN PERIOD OF PEAK FLOW (YRS)			100
SCREEN APERTURE (2400 OR 4700)			2400
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	285.10	HDPE	24"
INLET PIPE 2	-	-	-
OUTLET PIPE	285.10	HDPE	24"
RIM ELEVATION			295.00
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		-	-
NOTES/SPECIAL REQUIREMENTS: - STRUCTURE TO BE CDS-4030-8-C * PER ENGINEER OF RECORD			

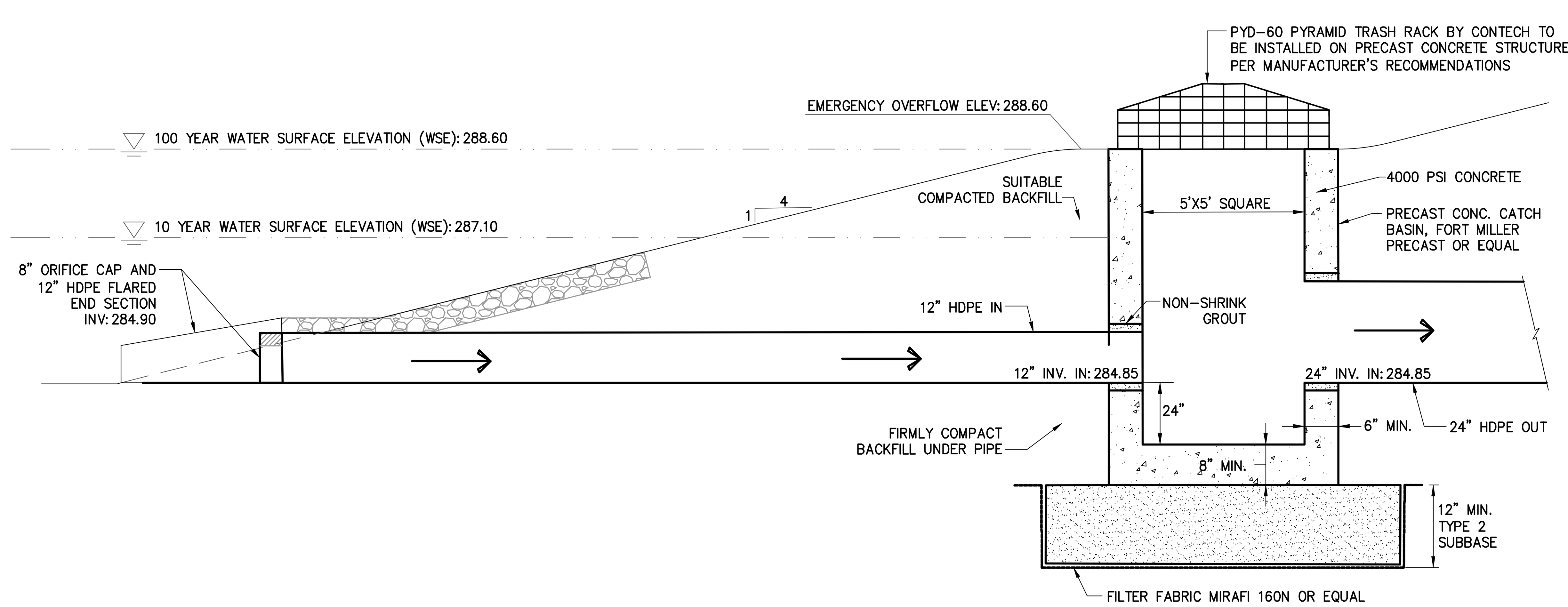
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECHENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

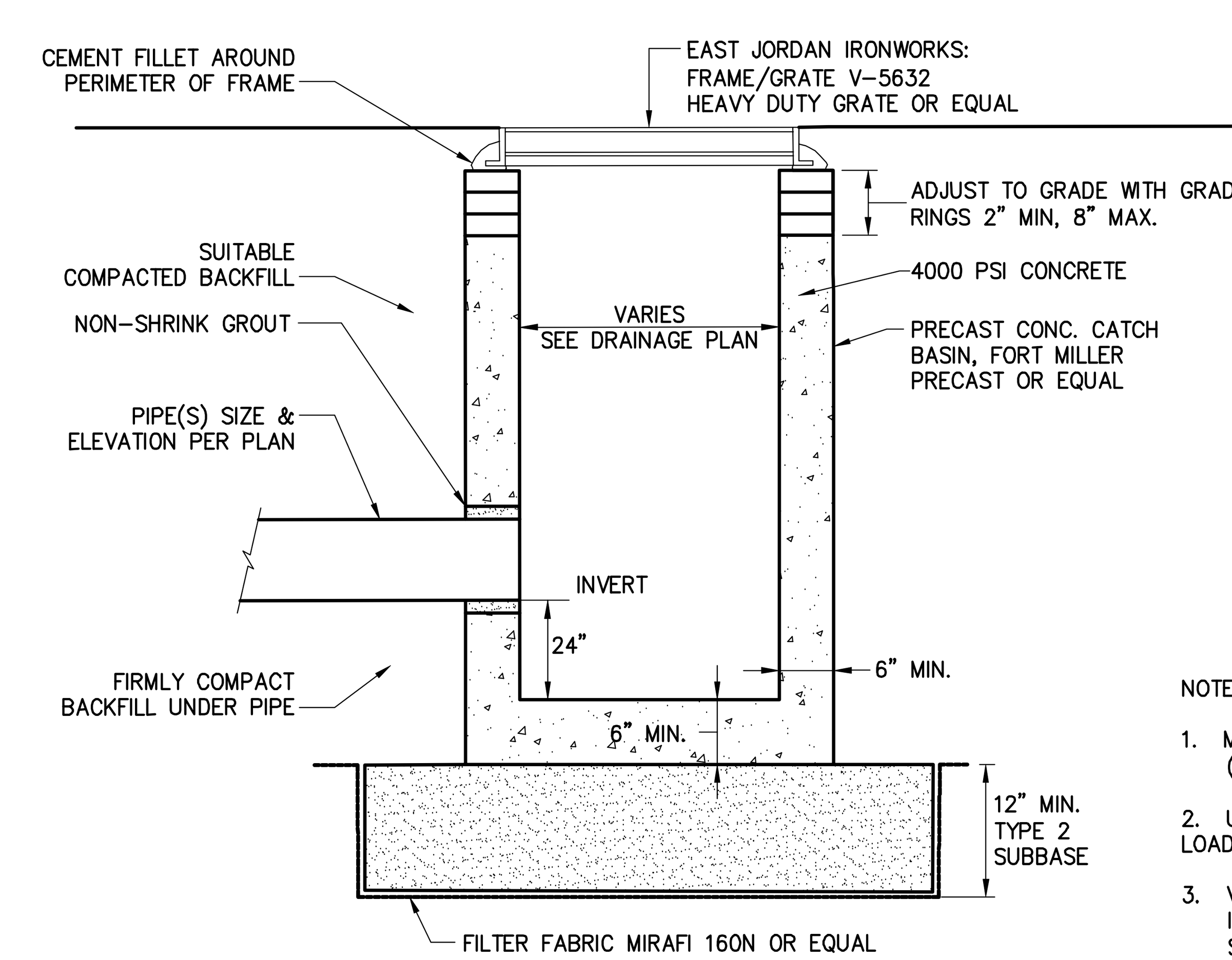
CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

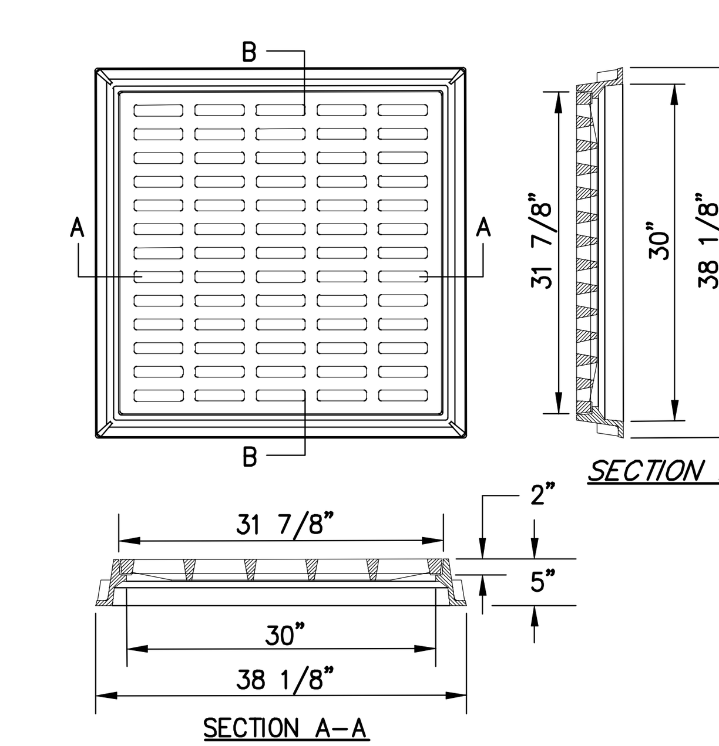
CDS3020-6-C AND CDS4030-8-C
INLINE CDS
STANDARD DETAIL

1 CDS3020-6-C AND CDS4030-8-C TREATMENT UNIT DETAIL
SCALE: NO SCALE



2 OUTLET CONTROL STRUCTURE #1 DETAIL
SCALE: NO SCALE





NOTES:
1. MATERIAL SHALL BE GRAY CAST IRON CONFORMING TO ASTM A48 (LATEST REVISION) CLASS 30B.
2. UNITS DESIGNED HEAVY DUTY FOR AASHTO H20-44 WHEEL LOADS.
3. V-5632 HEAVY DUTY FRAME AND GRATE BY EAST JORDAN IRONWORKS, OR EQUAL SHALL BE USED FOR CATCH BASIN STRUCTURES WITH 4' I.D. OR GREATER. FOR 30"x30" CATCH BASIN STRUCTURES, THE V-5624 HEAVY DUTY FRAME AND GRATE BY EAST JORDAN IRONWORKS, OR EQUAL SHALL BE USED.

3 PRECAST CONCRETE CATCH BASIN DETAIL
SCALE: NO SCALE

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No.	Submittal / Revision	Appr.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	2/25/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	3/11/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

DETAILS - 4

Designed By:	Drawn By:	Checked By:
PFK	PFK	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
C-904

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INSTALL WATER MAIN (±0.17 ACRE WITH 4' WIDE TRENCH)

SILT FENCE (TYP) 2 / C-602

REMOVE BUILDING (±0.08 ACRE)

REMOVE PORTION OF EXISTING WATERMAIN

INSTALL SANITARY SEWER (±0.07 ACRE WITH 4' WIDE TRENCH)

CONTRACTOR TO GRADE FOR BUILDING PAD. INSTALL BUILDING FOUNDATIONS. (±2.9 ACRES)

INSTALL GAS SERVICE (±0.03 ACRE WITH 4' WIDE TRENCH)

CONSTRUCT STORMWATER DETENTION AREA (±0.61 ACRE)

INSTALL WATER MAIN & PUMP HOUSE (±0.06 ACRE WITH 4' WIDE TRENCH)

INSTALL STORM SEWER (±0.24 ACRE WITH 4' WIDE TRENCH)

INLET PROTECTION (TYP) 3 / C-602

REMOVE ASPHALT DRIVES (TYP) (±0.53 ACRE)

CONSTRUCTION ENTRANCE (USE EXISTING ASPHALT IF FEASIBLE)

REMOVE EXISTING STORM SEWER STRUCTURE AND PIPING

1ST STREET (TOWN ROAD – BK. 1181 PG. 56)

B STREET (TOWN ROAD – BK. 1181 PG. 56)

C STREET (SEE MAP REFERENCE NO. 1)

10" WATER MAIN (REC–DISCONNECTED)

16" WATER MAIN (REC–DISCONNECTED)

8" WATER MAIN (REC)

WATER MAIN (REC–DISCONNECTED)

10" WATER MAIN (REC–DISCONNECTED)

50' BLDG. SETBACK

RET. WALL

CONSTRUCTION SEQUENCE PHASE 1:

1. ESTABLISH WORK AREAS AND CONTRACTOR STAGING AREA AS SHOWN ON PLANS.
2. INSTALL STABILIZED TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE, AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLANS. ADDITIONAL SILT FENCING MAY BE INSTALLED AS NECESSARY
3. PROTECT EXISTING CATCH BASINS.
4. REMOVE EXISTING PADS/BUILDINGS AS SHOWN ON REMOVAL PLANS.
5. ROUGH GRADE SITE PER DESIGN, AS NECESSARY FOR CONSTRUCTION OF THE BUILDING FOUNDATION.
6. INSTALL UTILITIES, STORMWATER, SEWER SYSTEM, WATER PIPING SYSTEMS AS SHOWN ON PLANS.
7. CONSTRUCT BUILDING FOUNDATION.
8. INSTALL TOPSOIL AND SEED FOR STABILIZATION OF ALL DISTURBED AREAS.
9. WHEN ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
10. THIS PHASE DISTURBANCE SHALL NOT EXCEED 5 ACRES. AS SHOWN HERE, DISTURBANCE IS ±4.5 ACRES.

0 40 80
Scale in feet

No.	Submittal / Revision	App'd.	By	Date
1	ISSUED FOR TOWN REVIEW	MFM	SHW	3/11/2019
2	REVISED PER TOWN REVIEW COMMENTS	MFM	SHW	5/25/2019

BELGIOIOSO CHEESE, INC.

Glenville Business & Technology Park
Town of Glenville Schenectady County, NY

CONSTRUCTION PHASING PLAN - 1

Designed By:	Drawn By:	Checked By:
KMD	KMD	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:

CP-1

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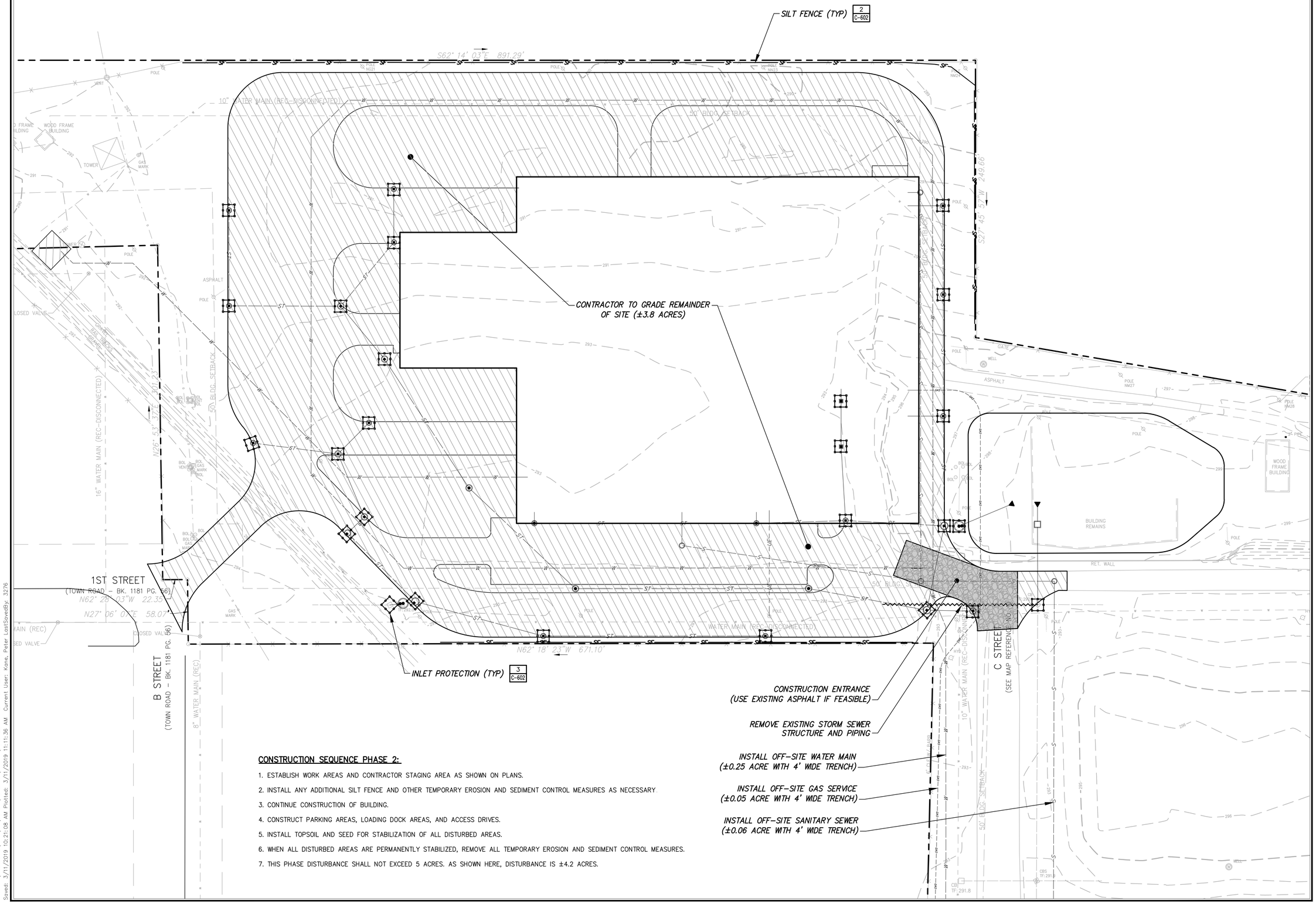

CONSTRUCTION SEQUENCE PHASE 2:

1. ESTABLISH WORK AREAS AND CONTRACTOR STAGING AREA AS SHOWN ON PLANS.
2. INSTALL ANY ADDITIONAL SILT FENCE AND OTHER TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY.
3. CONTINUE CONSTRUCTION OF BUILDING.
4. CONSTRUCT PARKING AREAS, LOADING DOCK AREAS, AND ACCESS DRIVES.
5. INSTALL TOPSOIL AND SEED FOR STABILIZATION OF ALL DISTURBED AREAS.
6. WHEN ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
7. THIS PHASE DISTURBANCE SHALL NOT EXCEED 5 ACRES. AS SHOWN HERE, DISTURBANCE IS ±4.2 ACRES.

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0 40 80
Scale in feet

No.	Submittal / Revision	By	Appd.	Date
1	ISSUED FOR TOWN REVIEW	SHW	MFM	3/11/2019
2	REVISED PER TOWN REVIEW COMMENTS	SHW	MFM	2/25/2019

BELGIOIOSO CHEESE, INC.
Glenville Business & Technology Park
Town of Glenville
Schenectady County, NY

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CONSTRUCTION PHASING PLAN - 2

Designed By:	Drawn By:	Checked By:
KMD	KMD	JPR
Issue Date:	Project No:	Scale:
02/25/2019	32984	AS SHOWN

Drawing No:
CP-2

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New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

5. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. ☐ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP.
***Date final stabilization completed** (month/year): _____

9b. ☐ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. ☐ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? ☐ yes ☐ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? ☐ yes ☐ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? ☐ yes ☐ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- ☐ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- ☐ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- ☐ For post-construction stormwater management practices that are privately owned, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.
- ☐ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? ☐ yes ☐ no
(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2010)

Appendix H
Inspection Forms

PERMIT NUMBER: **INSPECTION REPORT #__ :**

Location	**Date and Time of Inspection**
Qualified Inspector (name and title)	**Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the following forms is accurate and complete.

☐ **Weekly Inspection**

Current Phase of Construction (if applicable):

Estimated Current Total Disturbed Area:

IMMEDIATE ACTION ITEMS / INSPECTION SUMMARY:

It is the responsibility of the Qualified Inspector to notify the owner/operator and appropriate contractor of any corrective actions that need to be taken within one (1) business day of the completion of an inspection. It is the responsibility of the contractor (subcontractor) to begin implementing the corrective actions within one (1) business day of this notification and complete the corrective action within a reasonable time frame. If there are action items from the previous inspection which have not been addressed, so note.

Per the GP-0-15-002, Digital photographs with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions shall be included with each inspection report. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The qualified inspector shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. Paper color copies of these digital photographs shall be attached to the inspection report, documenting the completion of the corrective action work within seven (7) calendar days of that inspection.

1. GENERAL HOUSEKEEPING

Includes description of the weather and soil conditions (e.g. dry, wet, saturated) during the time of the inspection, a description of the condition of the runoff at all points of discharge from the construction site (including identification of any discharges of sediments from construction site), inspection for stream/pond turbidity, oil and floating substances, visible oil film, or globules or grease, contractor preparedness for implementation of erosion and sediment control, impact on adjacent property, and dust control.

Yes **No**

☐ ☐ Is there immediate action required regarding General Housekeeping?

Notes:

2. EXCAVATION DEWATERING

Includes inspection ensuring that clean water from upstream pool is being pumped to the downstream pool, that sediment laden water from work area is being discharged to a silt-trapping device, and that constructed upstream berm has one-foot minimum freeboard.

Yes **No**

☐ ☐ Is there immediate action required regarding Excavation Dewatering?

Notes:

3. INTERCEPTOR DIKES AND SWALES

Includes inspection ensuring that dikes and swales are installed per plan with minimum side slopes 2H:1V or flatter, are stabilized by geotextile fabric, seed, or mulch with no erosion occurring, and that sediment-laden runoff is directed to sediment trapping structure.

Yes **No**

☐ ☐ Is there immediate action required regarding an Interceptor Dike or Swale?

Notes:

4. EROSION & SEDIMENT CONTROL

Includes inspection ensuring that erosion and sediment control practices are located and installed correctly, BMPs are maintained per specifications, stockpiles are stabilized and contained, de-watering operations prevent direct discharges to sensitive features, and that clearing and grading operations are divided into stages for large areas. Identification of all erosion and sediment control practices that need repair or maintenance.

Yes **No**

☐ ☐ Is there immediate action required regarding Erosion & Sediment Control?

Notes:

5. AREAS OF DISTURBANCE

Includes description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since last inspection.

Yes **No**

☐ ☐ Is there immediate action required regarding stabilizing disturbed areas?

Notes:

6. STABILIZED CONSTRUCTION ENTRANCE

Includes inspection ensuring that stone is clean enough to effectively remove mud from vehicles, is installed per standards and specifications, that all traffic use the stabilized entrance to enter and leave site, and that adequate drainage is provided to prevent ponding at entrance.

Yes **No**

☐ ☐ Is there immediate action required regarding a Stabilized Construction Entrance?

Notes:

7. REINFORCED SILT FENCE

Includes inspection ensuring that silt fence is installed on contour, 10 feet from toe of slope, joints are constructed by wrapping the two ends together for continuous support, steel posts installed (if applicable), installed on downstream side of slope, maximum 6' intervals with 6 x 6 inch 14 gage wire, fabric is buried minimum of 6 inches, posts are stable, fabric is tight and without rips or frayed areas, and that sediment accumulation is less than 1/3 the height of the silt fence.

Yes **No**

☐ ☐ Is there immediate action required regarding Silt Fence?

Notes:

8. STONE CHECK DAM

Includes inspection ensuring that stone check dam channels are without erosion (i.e., flow is not eroding soil underneath or around the structure), that check dam is in good condition (i.e., rocks have not been displaced and no permanent pools behind the structure), and that sediment accumulation is less than design capacity.

Yes **No**

☐ ☐ Is there immediate action required regarding a Stone Check Dam?

Notes:

9. FILTER FABRIC (DROP) INLET PROTECTION

Includes inspection ensuring that protection is installed with 2-inch x 4-inch wood frame and wood posts, with maximum 3-foot spacing, is buried a minimum of 8 inches and secured to frame/posts with staples at max 8-inch spacing, has posts with 3-foot maximum spacing between posts, has posts that are stable, fabric is tight and without rips or frayed areas, and that sediment accumulation is within design capacity.

Yes **No**

☐ ☐ Is there immediate action required regarding Filter Fabric (Drop) Inlet Protection?

Notes:

10. SILTSACK® INLET PROTECTION

Includes inspection ensuring that protection is installed per manufacturers specifications and is maintained per manufacturers recommendations.

Yes **No**

☐ ☐ Is there immediate action required regarding the Inlet Protection?

Notes:

11. TEMPORARY SEDIMENT TRAP

Includes inspection ensuring that outlet structure is constructed per the approved plan or drawing, that geotextile fabric has been placed beneath rock fill, and that sediment accumulation is within design capacity.

Yes **No**

☐ ☐ Is there immediate action required regarding Temporary Sediment Traps?

Notes:

12. CONCRETE WASHOUT

Includes inspection ensuring that the concrete washout is constructed and maintained per the approved plan or drawing.

Yes **No**

☐ ☐ Is there immediate action required regarding Concrete Washouts?

Notes:

13. STORMWATER BASIN

Includes inspection ensuring that Permanent Stormwater Basins are installed per plans and specifications.

Yes	No	
☐	☐	Is there immediate action required regarding Stormwater Basins?

Notes:

14.CURRENT PHASE OF POST-CONSTRUCTION STORMWATER PRACTICES

Includes inspection of current phase of all post-construction stormwater management practices, identification of all construction that is not in conformance with the SWPPP and technical standards, identify corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices, and to correct deficiencies identified with the construction of post-construction stormwater management practice(s).

Yes	No	
☐	☐	Is there immediate action required regarding the current phase of post-construction stormwater management practices?

Notes:

ADDITIONAL NOTES / MODIFICATIONS

Belgioioso Cheese Glenville Business & Industrial Park Redevelopment Project

PERMIT NUMBER: NYR-

PRE-CONSTRUCTION MEETING DOCUMENTS

Project Name _____

GP-0-15-002 Permit No. _____ **Date of Authorization** _____

Name of Owner/Operator _____

General Contractor _____

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

Site Assessment and Inspections -

a. The Owner or Operator agrees to have a Qualified Inspector[1] conduct an assessment of the site prior to the commencement of construction. The Qualified Inspector shall certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

b. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the owner or operator can stop conducting inspections. The owner or operator shall resume inspections as soon as soil disturbance activities are reinitiated.

c. For construction sites where soil disturbance activities have been shut down with partial project completion, the owner or operator can stop conducting inspections if all areas disturbed (as of the project shutdown date) have achieved final stabilization and all post-construction stormwater management practices, required for the completed portion of the project, have been constructed in conformance with the SWPPP and are operational.

d. Following the commencement of construction, site inspections shall be conducted by the Qualified Inspector to ensure that erosion and sediment controls are being maintained in effective operating condition at all times. Inspections shall occur at least: (i) once every 7 calendar days for construction sites where soil disturbance activities are occurring; (ii) twice every 7 calendar days for construction sites where soil disturbance activities are occurring and the Owner/Operator has received authorization to disturb greater than five (5) acres of soil at any one time; (iii) once every thirty (30) calendar days for construction sites where soil disturbance activities have been temporarily suspended and temporary stabilization measures have been applied to all disturbed areas; and (iv) for construction sites where soil disturbance activities have been shut down with partial project completion, the Qualified Inspector can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization, and all post-construction stormwater management practices for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

e. The owner or operator shall notify the Regional Office stormwater contact person in writing prior to reducing the frequency of any inspections.

f. The Owner/Operator shall maintain a record of all inspection reports in the site log book. The site log book shall be maintained on site and be made available to the permitting authorities upon request. Prior to the commencement of construction,[2] the Owner/Operator shall certify in the site log book that the SWPPP is prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

g. Prior to filing of the Notice of Termination or the end of permit term, the Owner/Operator shall have the Qualified Inspector perform a final site inspection. The Qualified Inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed.

[1]"Qualified Inspector" means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed Professional Engineer (PE), licensed Landscape Architect, or other Department endorsed individual(s). It may also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or soil scientist provided that person has training in the principles and practices of erosion and sediment control. Training means that person has received four (4) hours of training endorsed by the Department and shall receive four (4) hours of training every three (3) years after the initial training session.
[2]"Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
[3]"Final stabilization" means that all soil disturbance activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established, or equivalent stabilization measures (such as the use of mulches or geotextiles, rock rip-rap or washed/crushed stone) have been employed on all disturbed areas that are not covered by permanent structures, concrete or pavement.

Belgioioso Cheese Glenville Business & Industrial Park Redevelopment Project

PRE-CONSTRUCTION SITE ASSESSMENT FORM

Inspector Name and Title	**Date and Time of Inspection**
Qualified Inspector	**Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the following forms is accurate and complete.

a. Notice of Intent, SWPPP, and Contractors' Certification:

Yes	No	NA	
☐	☐	☐	Has a Notice of Intent been filed with the NYS Department of Conservation?
☐	☐	☐	Is the SWPPP on-site? Where? _____
☐	☐	☐	Is the Plan current? What is the latest revision date? _____
☐	☐	☐	Have all contractors involved with implementing the erosion and sediment control portions of the SWPPP signed the contractor's certification?

b. Resource Protection

Yes	No	NA	
☐	☐	☐	Are construction limits clearly flagged or fenced?
☐	☐	☐	Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, etc. have been flagged for protection.
☐	☐	☐	Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

c. Surface Water Protection

Yes	No	NA	
☐	☐	☐	Clean stormwater runoff has been diverted away from areas to be disturbed.
☐	☐	☐	Bodies of water located either on site or in the vicinity of the site have been identified and protected.
☐	☐	☐	Appropriate practices to protect on-site or downstream surface waters are installed.

d. Stabilized Construction Entrance

Yes	No	NA	
☐	☐	☐	A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
☐	☐	☐	Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
☐	☐	☐	Sediment tracked onto public streets is removed or cleaned on a regular basis.

e. Perimeter Sediment Controls

Yes	No	NA	
☐	☐	☐	Silt fence material and installation comply with the standard drawing and specifications.
☐	☐	☐	Silt fences are installed at appropriate spacing intervals
☐	☐	☐	Sediment/detention basin was installed
☐	☐	☐	Sediment traps and barriers are installed.

Appendix I
Post Construction Operation and Maintenance

CONTECH®
ENGINEERED SOLUTIONS

CDS Guide
Operation, Design, Performance and Maintenance

CDS®

Using patented continuous deflective separation technology, the CDS system screens, separates and traps debris, sediment, and oil and grease from stormwater runoff. The indirect screening capability of the system allows for 100% removal of floatables and neutrally buoyant material without blinding. Flow and screening controls physically separate captured solids, and minimize the re-suspension and release of previously trapped pollutants. Inline units can treat up to 6 cfs, and internally bypass flows in excess of 50 cfs (1416 L/s). Available precast or cast-in-place, offline units can treat flows from 1 to 300 cfs (28.3 to 8495 L/s). The pollutant removal capacity of the CDS system has been proven in lab and field testing.

Operation Overview

Stormwater enters the diversion chamber where the diversion weir guides the flow into the unit's separation chamber and pollutants are removed from the flow. All flows up to the system's treatment design capacity enter the separation chamber and are treated.

Swirl concentration and screen deflection force floatables and solids to the center of the separation chamber where 100% of floatables and neutrally buoyant debris larger than the screen apertures are trapped.

Stormwater then moves through the separation screen, under the oil baffle and exits the system. The separation screen remains clog free due to continuous deflection.

During the flow events exceeding the treatment design capacity, the diversion weir bypasses excessive flows around the separation chamber, so captured pollutants are retained in the separation cylinder.

Design Basics

There are three primary methods of sizing a CDS system. The Water Quality Flow Rate Method determines which model size provides the desired removal efficiency at a given flow rate for a defined particle size. The Rational Rainfall Method™ or the and Probabilistic Method is used when a specific removal efficiency of the net annual sediment load is required.

Typically in the Unites States, CDS systems are designed to achieve an 80% annual solids load reduction based on lab generated performance curves for a gradation with an average particle size (d50) of 125 microns (μm). For some regulatory environments, CDS systems can also be designed to achieve an 80% annual solids load reduction based on an average particle size (d50) of 75 microns (μm) or 50 microns (μm).

Water Quality Flow Rate Method

In some cases, regulations require that a specific treatment rate, often referred to as the water quality design flow (WQQ), be treated. This WQQ represents the peak flow rate from either an event with a specific recurrence interval, e.g. the six-month storm, or a water quality depth, e.g. 1/2-inch (13 mm) of rainfall.

The CDS is designed to treat all flows up to the WQQ. At influent rates higher than the WQQ, the diversion weir will direct most flow exceeding the WQQ around the separation chamber. This allows removal efficiency to remain relatively constant in the separation chamber and eliminates the risk of washout during bypass flows regardless of influent flow rates.

Treatment flow rates are defined as the rate at which the CDS will remove a specific gradation of sediment at a specific removal efficiency. Therefore the treatment flow rate is variable, based on the gradation and removal efficiency specified by the design engineer.

Rational Rainfall Method™

Differences in local climate, topography and scale make every site hydraulically unique. It is important to take these factors into consideration when estimating the long-term performance of any stormwater treatment system. The Rational Rainfall Method combines site-specific information with laboratory generated performance data, and local historical precipitation records to estimate removal efficiencies as accurately as possible.

Short duration rain gauge records from across the United States and Canada were analyzed to determine the percent of the total annual rainfall that fell at a range of intensities. US stations' depths were totaled every 15 minutes, or hourly, and recorded in 0.01-inch increments. Depths were recorded hourly with 1-mm resolution at Canadian stations. One trend was consistent at all sites; the vast majority of precipitation fell at low intensities and high intensity storms contributed relatively little to the total annual depth.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Rainfall Method. Since most sites are relatively small and highly impervious, the Rational Rainfall Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS system are

determined. Performance efficiency curve determined from full scale laboratory tests on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Probabilistic Rational Method

The Probabilistic Rational Method is a sizing program Contech developed to estimate a net annual sediment load reduction for a particular CDS model based on site size, site runoff coefficient, regional rainfall intensity distribution, and anticipated pollutant characteristics.

The Probabilistic Method is an extension of the Rational Method used to estimate peak discharge rates generated by storm events of varying statistical return frequencies (e.g. 2-year storm event). Under the Rational Method, an adjustment factor is used to adjust the runoff coefficient estimated for the 10-year event, correlating a known hydrologic parameter with the target storm event. The rainfall intensities vary depending on the return frequency of the storm event under consideration. In general, these two frequency dependent parameters (rainfall intensity and runoff coefficient) increase as the return frequency increases while the drainage area remains constant.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Method. Since most sites are relatively small and highly impervious, the Rational Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS are determined. Performance efficiency curve on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Treatment Flow Rate

The inlet throat area is sized to ensure that the WQQ passes through the separation chamber at a water surface elevation equal to the crest of the diversion weir. The diversion weir bypasses excessive flows around the separation chamber, thus preventing re-suspension or re-entrainment of previously captured particles.

Hydraulic Capacity

The hydraulic capacity of a CDS system is determined by the length and height of the diversion weir and by the maximum allowable head in the system. Typical configurations allow hydraulic capacities of up to ten times the treatment flow rate. The crest of the diversion weir may be lowered and the inlet throat may be widened to increase the capacity of the system at a given water surface elevation. The unit is designed to meet project specific hydraulic requirements.

Performance

Full-Scale Laboratory Test Results

A full-scale CDS system (Model CDS2020-5B) was tested at the facility of University of Florida, Gainesville, FL. This CDS unit was evaluated under controlled laboratory conditions of influent flow rate and addition of sediment.

Two different gradations of silica sand material (UF Sediment & OK-110) were used in the CDS performance evaluation. The particle size distributions (PSDs) of the test materials were analyzed using standard method "Gradation ASTM D-422 "Standard Test Method for Particle-Size Analysis of Soils" by a certified laboratory.

UF Sediment is a mixture of three different products produced by the U.S. Silica Company: "Sil-Co-Sil 106", "#1 DRY" and "20/40 Oil Frac". Particle size distribution analysis shows that the UF Sediment has a very fine gradation (d50 = 20 to 30 μm) covering a wide size range (Coefficient of Uniformity, C averaged at 10.6). In comparison with the hypothetical TSS gradation specified in the NJDEP (New Jersey Department of Environmental Protection) and NJCAT (New Jersey Corporation for Advanced Technology) protocol for lab testing, the UF Sediment covers a similar range of particle size but with a finer d50 (d50 for NJDEP is approximately 50 μm) (NJDEP, 2003).

The OK-110 silica sand is a commercial product of U.S. Silica Sand. The particle size distribution analysis of this material, also included in Figure 1, shows that 99.9% of the OK-110 sand is finer than 250 microns, with a mean particle size (d50) of 106 microns. The PSDs for the test material are shown in Figure 1.

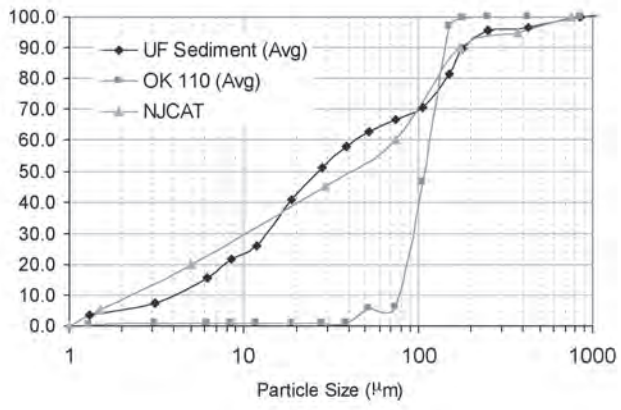


Figure 1. Particle size distributions

Tests were conducted to quantify the performance of a specific CDS unit (1.1 cfs (31.3-L/s) design capacity) at various flow rates, ranging from 1% up to 125% of the treatment design capacity of the unit, using the 2400 micron screen. All tests were conducted with controlled influent concentrations of approximately 200 mg/L. Effluent samples were taken at equal time intervals across the entire duration of each test run. These samples were then processed with a Dekaport Cone sample splitter to obtain representative sub-samples for Suspended Sediment Concentration (SSC) testing using ASTM D3977-97 "Standard Test Methods for Determining Sediment Concentration in Water Samples", and particle size distribution analysis.

Results and Modeling

Based on the data from the University of Florida, a performance model was developed for the CDS system. A regression analysis was used to develop a fitting curve representative of the scattered data points at various design flow rates. This model, which demonstrated good agreement with the laboratory data, can then be used to predict CDS system performance with respect

to SSC removal for any particle size gradation, assuming the particles are inorganic sandy-silt. Figure 2 shows CDS predictive performance for two typical particle size gradations (NJCAT gradation and OK-110 sand) as a function of operating rate.

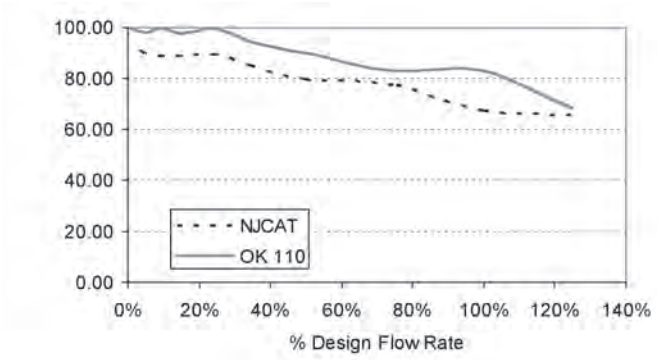


Figure 2. CDS stormwater treatment predictive performance for various particle gradations as a function of operating rate.

Many regulatory jurisdictions set a performance standard for hydrodynamic devices by stating that the devices shall be capable of achieving an 80% removal efficiency for particles having a mean particle size (d50) of 125 microns (e.g. Washington State Department of Ecology — WASDOE - 2008). The model can be used to calculate the expected performance of such a PSD (shown in Figure 3). The model indicates (Figure 4) that the CDS system with 2400 micron screen achieves approximately 80% removal at the design (100%) flow rate, for this particle size distribution (d50 = 125 μm).

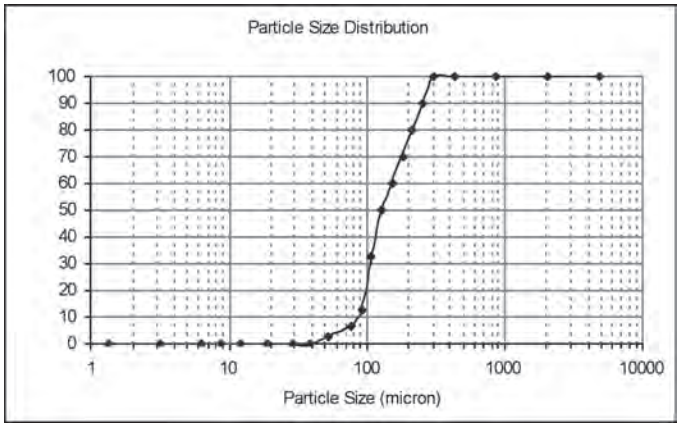


Figure 3. WASDOE PSD

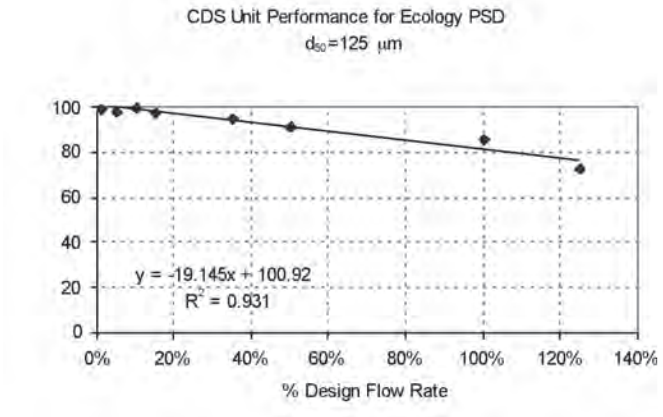


Figure 4. Modeled performance for WASDOE PSD.

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified

during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

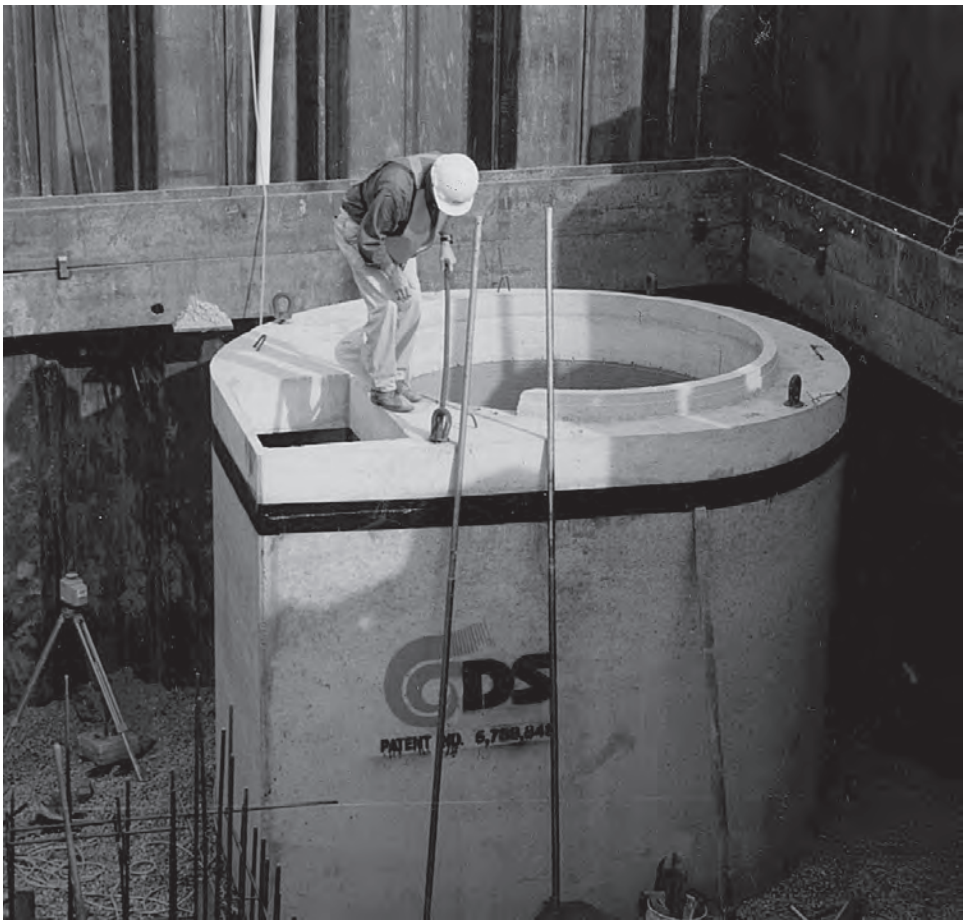
In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be cleaned to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	yd3	m3
CDS2015-4	4	1.2	3.0	0.9	0.5	0.4
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Note: To avoid underestimating the volume of sediment in the chamber, carefully lower the measuring device to the top of the sediment pile. Finer silty particles at the top of the pile may be more difficult to feel with a measuring stick. These finer particles typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.



CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than eighteen inches the system should be cleaned out. **Note: To avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

7

Support

- Drawings and specifications are available at www.ContechES.com/urbangreen.
- Site-specific design support is available from our engineers.

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www.ContechES.com/urbangreen

Contech Engineered Solutions provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater products. For information on other Contech division offerings, visit www.ContechES.com or call 800.338.1122

The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; related foreign patents or other patents pending.

A. Hydrodynamic Water Quality Units

Description: Manufactured device that moves stormwater runoff in a circular, centrifugal manner to accelerate the separation and deposition of floatables (sediment, debris, and oil) and other pollutants from stormwater.

Structural Features: Inflow, internal bypass weir, vortex separator, outflow.

Maintenance:

- Cleaning and removal of debris and litter per manufacture's recommendations and maintenance guidance.

Inspection:

Inspect for:

- Periodic inspections per manufacture's recommendations and maintenance guidance.

Appendix I
Notice of Intent (NOI) and
SPDES GP-0-15-002

Notice of Intent (NOI)

0644089821

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
BELGIOIOSO CHEESE, INC.

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
AURICCHIO

Owner/Operator Contact Person First Name
ERRICO

Owner/Operator Mailing Address
4200 MAIN STREET

City
GREEN BAY

State
WI

Zip
54115 -

Phone (Owner/Operator)
___ - ___ - ____

Fax (Owner/Operator)
___ - ___ - ____

Email (Owner/Operator)

FED TAX ID
__ - _____ (not required for individuals)

Project Site Information

Project/Site Name
BELGIOIOSO CHEESE GLENVILLE BUSINESS

Street Address (NOT P.O. BOX)
2165 AMSTERDAM ROAD

Side of Street
○ North ○ South ○ East ○ West

City/Town/Village (THAT ISSUES BUILDING PERMIT)
GLENVILLE

State: NY
Zip: 13076-
County: SCHENECTADY
DEC Region: 4

Name of Nearest Cross Street
AMSTERDAM ROAD/MAALWYCK PARK ROAD

Distance to Nearest Cross Street (Feet)
3900

Project In Relation to Cross Street
● North ○ South ○ East ○ West

Tax Map Numbers
Section-Block-Parcel

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 582580

Y Coordinates (Northing): 4744086

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

● **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ● INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ● INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
40.4	8.2	6.8	6.3

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
100 %	%	%	%

7. Is this a phased project? ● **Yes** ○ **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 04/01/2019 - **End Date** 06/01/2020

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

MOHAWK RIVER

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ● **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ● **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

TOWN OF GLENVILLE

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ● Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer

CHA

Contact Name (Last, Space, First)

MILLER MICHAEL F.

Mailing Address

III WINNERS CIRCLE

City

ALBANY

State NY Zip 12205-0269

Phone 518-453-3910 Fax ---

Email

mmiller@chacompanies.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name MICHAEL **MI** F

Last Name MILLER

Signature

Date 03/11/2019

25. Has a construction sequence schedule for the planned management practices been prepared? ◉ Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ◉ Silt Fence
- ◉ Stabilized Construction Entrance
- ◉ Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ◉ Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ◉ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ◉ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ◉ Riprap Slope Protection
- ◉ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ● **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.303333 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4)	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
● Hydrodynamic	4.99
○ Wet Vault	
○ Media Filter	
○ Other	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name: CDS Units

Manufacturer: CONTECH ENGINEERED SOLUTIONS

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.0 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.0 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.0333 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.0333

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required . **acre-feet**

CPv Provided . **acre-feet**

36a. The need to provide channel protection has been waived because:

● Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development . **CFS**

Post-development . **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development . **CFS**

Post-development . **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- (●) Site discharges directly to tidal waters or a fifth order or larger stream.
- (○) Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? (●) Yes (○) No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

BELGIOIOSO CHEESE, INC.

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

25% REDUCTION APPLIED TO REMAINING 1.289 ACRES OF IMPERVIOUS + 4.993 ACRES REDEVELOPED TO ALTERNATIVE PRACTICES (2 CDS UNITS) GIVING A TOTAL SITE IMPERVIOUS OF 6.291 ACRES WITHIN 9.8 ACRES DISTURBED AREA.

EXISTING IMPERVIOUS AREAS:
1.763 ACRES + 1.578 ACRES + 3.415 ACRES = 6.756 ACRES

PROPOSED IMPERVIOUS ACRES
1.289 ACRES (25% REDUCTION) + 1.578 ACRES (CDS UNIT#1) + 3.415 ACRES (CDS UNIT #2) = 6.291ACRES

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ● Individual SPDES
- ○ SPDES Multi-Sector GP NYR
- ○ Other
- ○ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. .

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ○ **Yes** ● **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. NYR

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

ERRICO

MI

Print Last Name

AURICCHIO

Owner/Operator Signature

Date

/ /

SPDES GP-0-15-002

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

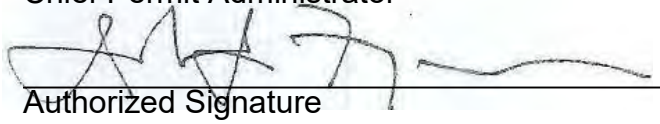
CONSTRUCTION ACTIVITY

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2015 Expiration Date: January 28, 2020

John J. Ferguson
Chief Permit Administrator



1 / 12 / 15

Authorized Signature Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES
FROM CONSTRUCTION ACTIVITIES

(Part I)

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan ("SWPPP") the reason(s) for the deviation or alternative design and provide information

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from dewatering activities, including *discharge*s

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharge*s.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. ***Sizing Criteria* for *New Development***

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv

that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

b. ***Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed**

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

c. ***Sizing Criteria* for *Redevelopment Activity***

(Part I.C.2.c.i)

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

d. ***Sizing Criteria*** **for Combination of** ***Redevelopment Activity*** **and** ***New Development***

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharge*s from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharge*s from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharge*s must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb one or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb two or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
      (i) No Affect
      (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. OBTAINING PERMIT COVERAGE

A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

NOTICE OF INTENT
NYS DEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

(ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

(iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. The Department may suspend or deny an *owner's or operator's* coverage

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

   a. The *owner or operator* shall

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

D. Permit Coverage for Discharges Authorized Under GP-0-10-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of *a construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

E. Change of *Owner or Operator*

2. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

III. Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

   b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   > "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

   In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

trained contractor responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project;

   b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

   c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

   d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Include the reason for the deviation or alternative design

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

   b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

   c. A Stormwater Modeling and Analysis Report that includes:

      (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

      (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

      (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

      (iv) Summary table, with supporting calculations, which demonstrates

(Part III.B.2.c.iv)

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

IV. Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

V. Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

   b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

   c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

   d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

VI. Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

(Part VII)

VII. Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

(Part VII.E)

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

   a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      (i) a president, secretary, treasurer, or vice-president of the

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

(Part VII.H.2.b)

individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharge*r authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharge*r in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

VIII. **APPENDIX A**

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

***Construction Activity*(ies) -** means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State
or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made
channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a *combined sewer*; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

New Development – means any land disturbance that does meet the definition of Redevelopment Activity included in this appendix.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture ("USDA") Soil Survey for the County where the disturbance will occur.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

IX. APPENDIX B

Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

X. APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

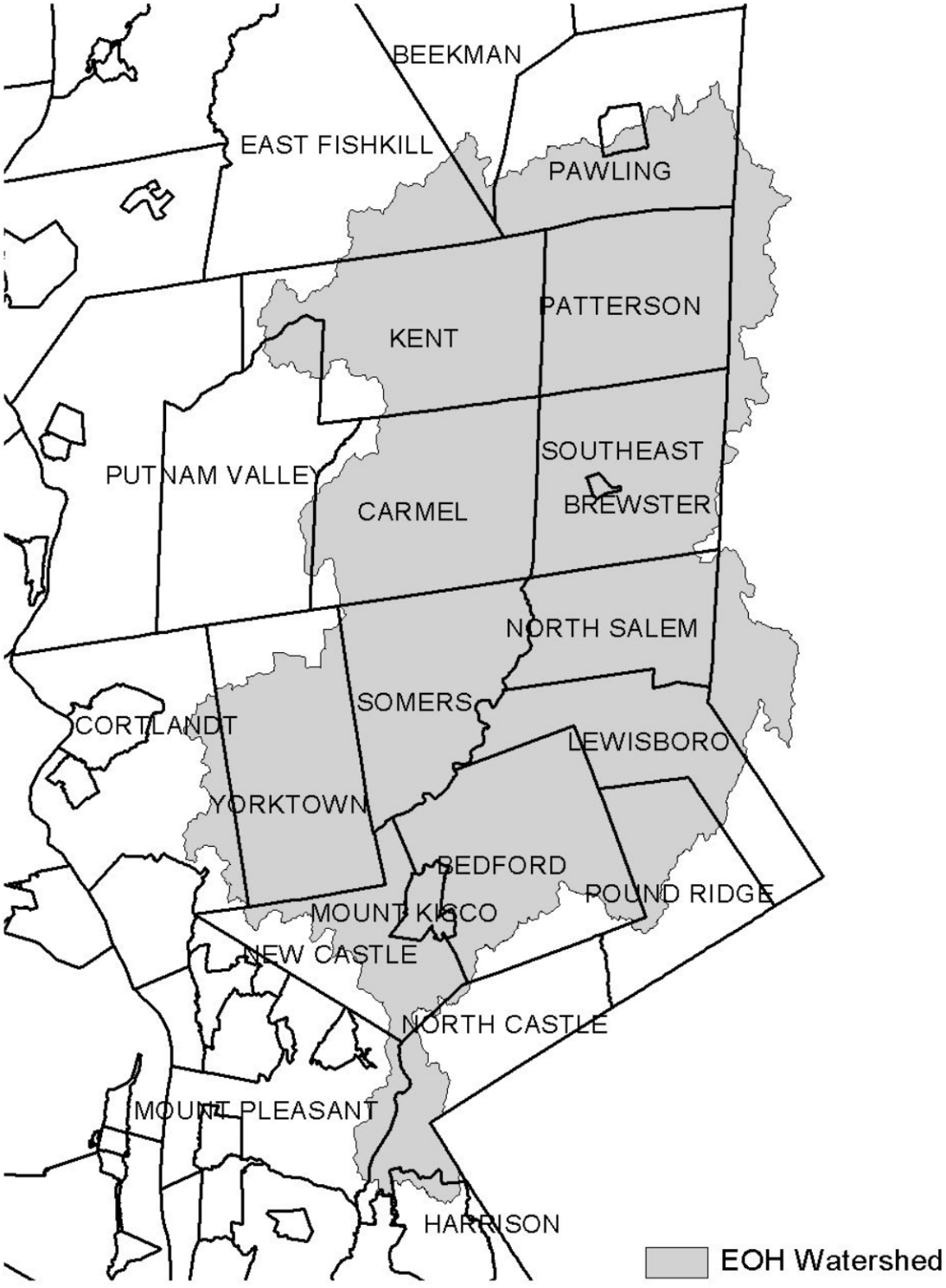


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

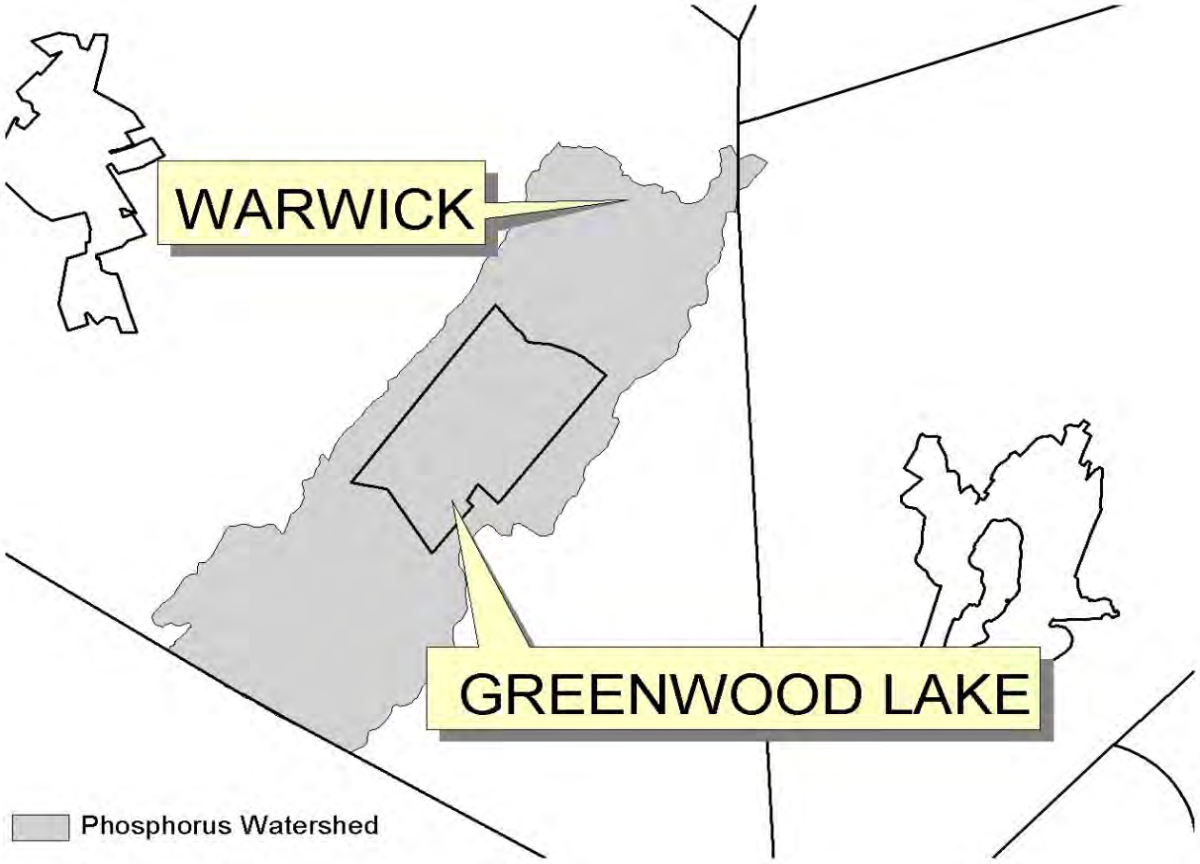


Figure 4 - Oscawana Lake Watershed

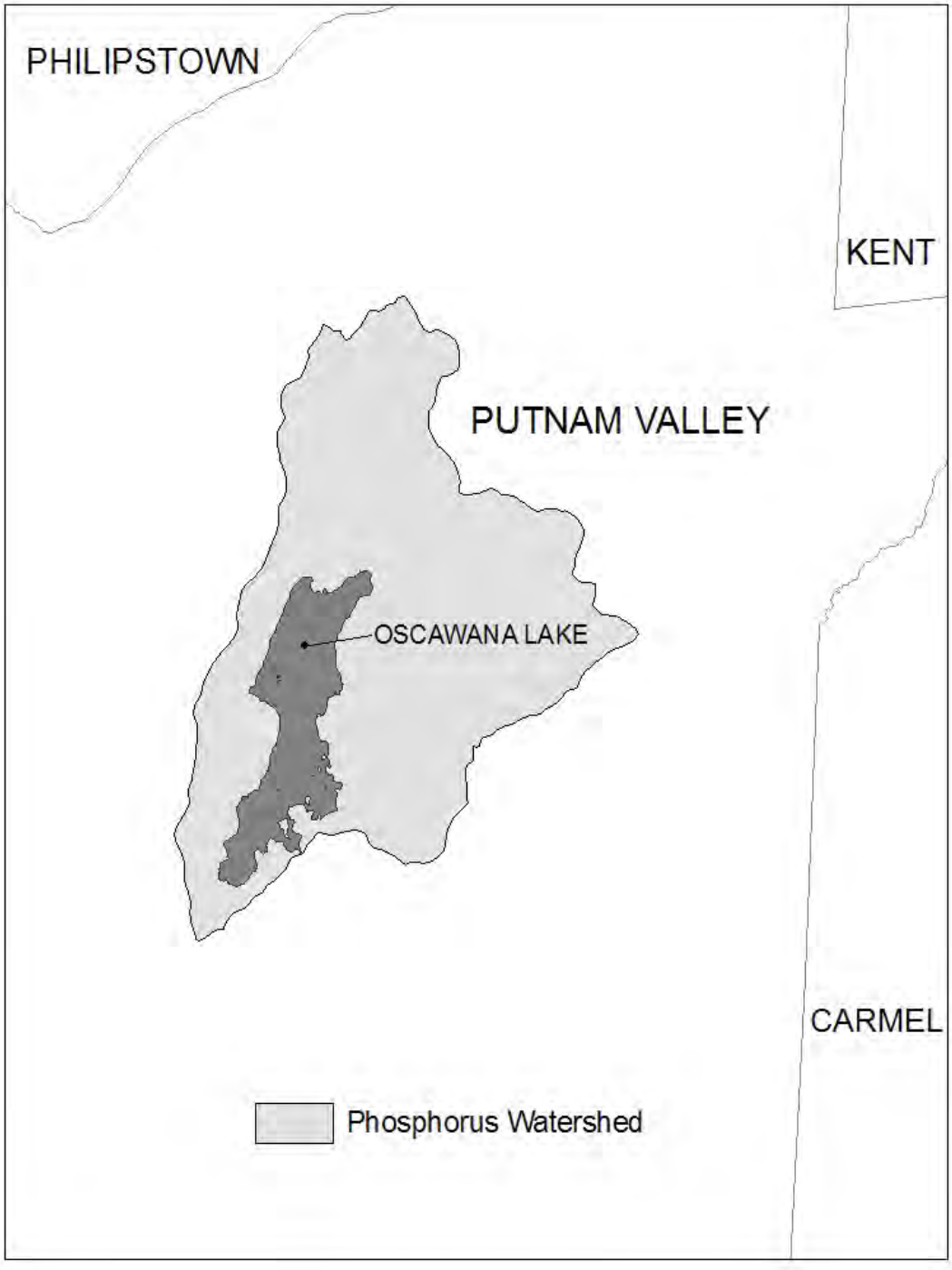
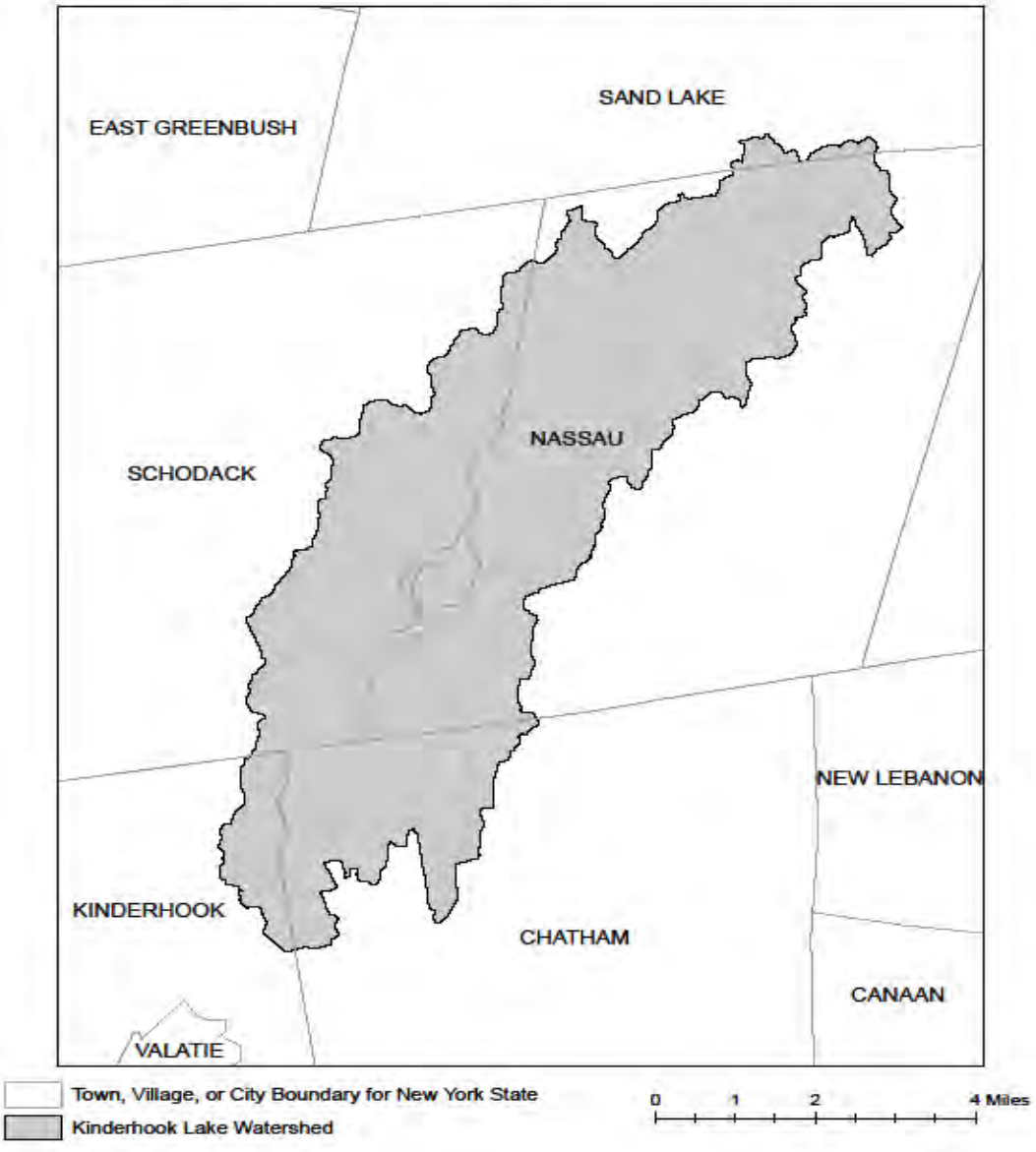


Figure 5: Kinderhook Lake Watershed



XI. APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

XII. APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond
Albany	Basic Creek Reservoir
Allegheny	Amity Lake, Saunders Pond
Bronx	Van Cortlandt Lake
Broome	Whitney Point Lake/Reservoir
Broome	Fly Pond, Deer Lake
Broome	Minor Tribs to Lower Susquehanna (north)
Cattaraugus	Allegheny River/Reservoir
Cattaraugus	Case Lake
Cattaraugus	Linlyco/Club Pond
Cayuga	Duck Lake
Chautauqua	Chautauqua Lake, North
Chautauqua	Chautauqua Lake, South
Chautauqua	Bear Lake
Chautauqua	Chadakoin River and tribs
Chautauqua	Lower Cassadaga Lake
Chautauqua	Middle Cassadaga Lake
Chautauqua	Findley Lake
Clinton	Great Chazy River, Lower, Main Stem
Columbia	Kinderhook Lake
Columbia	Robinson Pond
Dutchess	Hillside Lake
Dutchess	Wappinger Lakes
Dutchess	Fall Kill and tribs
Erie	Green Lake
Erie	Scajaquada Creek, Lower, and tribs
Erie	Scajaquada Creek, Middle, and tribs
Erie	Scajaquada Creek, Upper, and tribs
Erie	Rush Creek and tribs
Erie	Ellicott Creek, Lower, and tribs
Erie	Beeman Creek and tribs
Erie	Murder Creek, Lower, and tribs
Erie	South Branch Smoke Cr, Lower, and tribs
Erie	Little Sister Creek, Lower, and tribs
Essex	Lake George (primary county: Warren)
Genesee	Black Creek, Upper, and minor tribs
Genesee	Tonawanda Creek, Middle, Main Stem
Genesee	Oak Orchard Creek, Upper, and tribs
Genesee	Bowen Brook and tribs
Genesee	Bigelow Creek and tribs
Genesee	Black Creek, Middle, and minor tribs
Genesee	LeRoy Reservoir
Greene	Schoharie Reservoir
Greene	Sleepy Hollow Lake
Herkimer	Steele Creek tribs
Kings	Hendrix Creek
Lewis	Mill Creek/South Branch and tribs
Livingston	Conesus Lake
Livingston	Jaycox Creek and tribs
Livingston	Mill Creek and minor tribs
Livingston	Bradner Creek and tribs
Livingston	Christie Creek and tribs
Monroe	Lake Ontario Shoreline, Western
Monroe	Mill Creek/Blue Pond Outlet and tribs
Monroe	Rochester Embayment - East
Monroe	Rochester Embayment - West
Monroe	Unnamed Trib to Honeoye Creek
Monroe	Genesee River, Lower, Main Stem
Monroe	Genesee River, Middle, Main Stem
Monroe	Black Creek, Lower, and minor tribs
Monroe	Buck Pond
Monroe	Long Pond
Monroe	Cranberry Pond
Monroe	Mill Creek and tribs
Monroe	Shipbuilders Creek and tribs
Monroe	Minor tribs to Irondequoit Bay
Monroe	Thomas Creek/White Brook and tribs
Nassau	Glen Cove Creek, Lower, and tribs
Nassau	LI Tribs (fresh) to East Bay
Nassau	East Meadow Brook, Upper, and tribs
Nassau	Hempstead Bay
Nassau	Hempstead Lake
Nassau	Grant Park Pond
Nassau	Beaver Lake
Nassau	Camaans Pond
Nassau	Halls Pond
Nassau	LI Tidal Tribs to Hempstead Bay
Nassau	Massapequa Creek and tribs
Nassau	Reynolds Channel, east
Nassau	Reynolds Channel, west
Nassau	Silver Lake, Lofts Pond
Nassau	Woodmere Channel
Niagara	Hyde Park Lake
Niagara	Lake Ontario Shoreline, Western
Niagara	Bergholtz Creek and tribs
Oneida	Ballou, Nail Creeks
Onondaga	Ley Creek and tribs
Onondaga	Onondaga Creek, Lower and tribs

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake		
Putnam	Palmer Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Lake Carmel	Ulster	Esopus Creek, Middle, and minor tribs
Queens	Jamaica Bay, Eastern, and tribs (Queens)		
Queens	Bergen Basin	Warren	Lake George
Queens	Shellbank Basin	Warren	Tribs to L.George, Village of L George
Rensselaer	Nassau Lake		
Rensselaer	Snyders Lake	Warren	Huddle/Finkle Brooks and tribs
Richmond	Grasmere, Arbutus and Wolfes Lakes	Warren	Indian Brook and tribs
Rockland	Congers Lake, Swartout Lake	Warren	Hague Brook and tribs
Rockland	Rockland Lake	Washington	Tribs to L.George, East Shr Lk George
Saratoga	Ballston Lake		
Saratoga	Round Lake	Washington	Cossayuna Lake
Saratoga	Dwaas Kill and tribs	Washington	Wood Cr/Champlain Canal, minor tribs
Saratoga	Tribs to Lake Lonely		
Saratoga	Lake Lonely	Wayne	Port Bay
Schenectady	Collins Lake	Wayne	Marbletown Creek and tribs
Schenectady	Duane Lake	Westchester	Lake Katonah
Schenectady	Mariaville Lake	Westchester	Lake Mohegan
Schoharie	Engleville Pond	Westchester	Lake Shenorock
Schoharie	Summit Lake	Westchester	Reservoir No.1 (Lake Isle)
Schuyler	Cayuta Lake	Westchester	Saw Mill River, Middle, and tribs
St. Lawrence	Fish Creek and minor tribs	Westchester	Silver Lake
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Teatown Lake
Steuben	Lake Salubria	Westchester	Truesdale Lake
Steuben	Smith Pond	Westchester	Wallace Pond
Suffolk	Millers Pond	Westchester	Peach Lake
Suffolk	Mattituck (Marratooka) Pond	Westchester	Mamaroneck River, Lower
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Mamaroneck River, Upp, and tribs
Suffolk	Canaan Lake	Westchester	Sheldrake River and tribs
Suffolk	Lake Ronkonkoma	Westchester	Blind Brook, Lower
Suffolk	Beaverdam Creek and tribs	Westchester	Blind Brook, Upper, and tribs
Suffolk	Big/Little Fresh Ponds	Westchester	Lake Lincolndale
Suffolk	Fresh Pond	Westchester	Lake Meahaugh
Suffolk	Great South Bay, East	Wyoming	Java Lake
Suffolk	Great South Bay, Middle	Wyoming	Silver Lake

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

XIII. APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX D

Field Observation Logs

CONSTRUCTION OBSERVATION REPORT

REPORT NO.	
PAGE NO.	OF
DATE:	

PROJECT _____

LOCATION _____

WEATHER	TEMPERATURE
	HIGH
	LOW

PPE Levels Utilized Today:
☐ Level B ☐ Level C ☐ Modified D ☐ Level D

PROJECT # | | | | | | | | | | | | | | |

SPECIFY: LOCATION, NATURE OF WORK BY CONTRACTOR & SUB-CONTRACTOR FOR EACH OPERATION.

DESCRIPTION OF WORK PERFORMED AND OBSERVED:

Site Control Issues Observed:

(Provide details in observations section)

☐ None	☐ Site Housekeeping	☐ Decontamination Operations	☐ Odor Controls
☐ Erosion & Sediment Controls	☐ Site Security	☐ Work Zones	☐ Dust Controls
☐ Tracking off-site	☐ Groundwater Management	☐ Community Air Monitoring	☐ Stockpiles Covered

Site Visitors:

Name:	Representing:	Purpose of Visit:

Sampling & Testing:

Sample ID	Sample Type	Analyses	Collected By

Work Completed:

Item No.	Description	Quantity	Item No.	Description	Quantity

Workers: *(Number, type, etc.)*

Equipment Used Today: *(Number, type, etc.)*

THE ABOVE DESCRIBED WORK WAS INCORPORATED INTO THE PROJECT & WAS OBSERVED BY:

_____
OBSERVER's SIGNATURE

TIME CHARGED TO PROJECT: _____

MILEAGE CHARGED TO PROJECT: _____

☐ **ADDITIONAL SHEETS USED** **CHECK INITIALS** _____

FORM #1

CONSTRUCTION OBSERVATION REPORT

REPORT NO.	
PAGE NO.	**OF**
DATE:	

Summarize all observations, progress made for each operation, key conversations and decisions made, quantities measured, design changes, testing or sampling performed, issues, delays, etc.:

PID Calibration Log

Meter Make and Model:			Serial Number:			
Name of Person Performing Calibration:			CHA Project Number:			
Test Type (Bump/full cal.)	**Gas Tested**	**Calibration Parameters**	**Results**	**Pass/Fail**	**Date/Time**	**Signature**

CHA
design/construction solutions

APPENDIX E

Standard Operating Procedures

FIELD LOGBOOK AND PHOTOGRAPHS

A. PURPOSE/SCOPE:

To produce an accurate and reliable record of all field activities, including field observations, sample collection activities, etc.

All pertinent field survey and sampling information shall be recorded in a logbook or on field logs during each day of the field effort.

In addition to keeping logs, photographs will be taken to provide a physical record to augment the field worker's written observations. They can be valuable to the field team during future inspections, informal meetings, and hearings. Photographs should be taken with a camera-lens system having a perspective similar to that afforded by the naked eye. A photograph must be documented if it is to be a valid representation of an existing situation.

B. EQUIPMENT/MATERIALS:

- Bound Field Book (with waterproof paper) or Field Logs
- Chain-of-Custody, Other Appropriate Forms
- Indelible Ink Pens
- Digital Camera with 50 mm lens or similar.

C. PROCEDURE:

1. At a minimum, entries in a logbook shall include:
    a. Date and time of starting work
    b. Names of all personnel at site
    c. Summary of key conversations with contractors, agency representatives, etc.
    d. Purpose of proposed work effort
    e. Sampling equipment to be used
    f. Field calibration of equipment or documentation of calibration of rented equipment
    g. Description of work area
    h. Location of work area, including map reference. Document sample locations with references to fixed landmarks (e.g., 10 feet from southwest corner of building).
    i. Details of work effort, particularly any deviation from the field operations plan or standard operating procedures
    j. Field observations and field measurements (e.g., pH)
    k. Field laboratory analytical results
    l. Personnel and equipment decontamination procedures
    m. Daily health and safety entries, including levels of protection
    n. Type and number of samples

FIELD LOGBOOK AND PHOTOGRAPHS

o. Sampling method, particularly deviations from the standard operating procedures

p. Sample location and number

q. Sample handling, packaging, labeling, and shipping information (including destination)

r. Time of leaving site.

For each photograph taken, several items shall be recorded in the field logbooks:

a. Date and time – Camera set to record on photo

b. Name of photographer

c. General direction faced and description of the subject

d. Sequential number of the photograph

e. Always attempt to include an object in the photograph that helps show scale

f. Always try to shoot at approximately 50mm focal length (what human eye sees).

2. Each day's entries will be initialed and dated at the end by the author, and a line will be drawn through the remainder of the page.

D. QA/QC REQUIREMENTS:

All entries in the logbook shall be made in indelible ink. All corrections shall consist of single line-out deletions that are initialed.

The field task leader shall be responsible for ensuring that sufficient detail is recorded in the logbooks, and shall review the site logbooks daily.

E. SPECIAL CONDITIONS:

Photographs should be downloaded from the camera to the project folder and notes regarding the photographs should accompany the photos. Photographs should be no larger than 2 MB each unless they are being utilized for presentation purposes. CHA has software available to decrease file sizes if necessary.

As noted above, if a bound logbook is not used, then a field observation form must be used and information above should be captured on the form.

F. REFERENCES:

None

G. APPENDICES/FORMS:

Not Applicable

END OF SOP
Final Check by C. Burns 10/2/15

Author: Sarah Benson
Reviewer(s): Keith Cowan
Sandy Warner

SAMPLE NAMING AND NUMBERING

A. PURPOSE/SCOPE:

The success of large environmental programs is greatly affected by the efficiency of data management and analysis. When performing environmental sampling, one of the most critical steps is appropriately naming or numbering samples so that they are uniquely identified and can be distinguished from all other samples by all future users.

Some of the potential benefits that can be obtained by adopting a naming convention include the following:

a. To ensure that every sample collected at a site has a unique identifier

b. To enhance clarity in cases of potential ambiguity

c. To help avoid "naming collisions" that might occur when the data is imported into our Equis or other databases; and

d. To provide meaningful data to be used in project handovers.

Note that many of our sampling programs are performed at sites with previously established sample locations and in these cases, we would not change sample names. Additionally, this process shall be applied at larger, more complex sites, and/or sites that are required to follow a site- specific QAAP. Simpler naming conventions may be implemented for small, simple sites.

B. EQUIPMENT/MATERIALS:

- Field Logbook
- Field Sample Login Sheet
- Site Map/ Work Plan
- Sampling Forms
- Chain-of-Custody
- Sample Containers with Labels

C. PROCEDURE:

1. Each sample shall be uniquely defined by a multi-field name. In general, three fields are required: [Project # or Name] – [Media Type] – [Location Name/Sequential Number].
2. If using a site name, abbreviate to 2-3 letters. (e.g., Congress St site would be “CS”).
3. Use the following abbreviations for media types:

Subsurface Soil	SOIL
Surface Soil	SURF
Sediment	SED
Groundwater	GW
Surface Water	SW
Waste Water	WW
Soil Vapor	SV
Storm Water	STORM

SAMPLE NAMING AND NUMBERING

4. All samples collected at a site shall be numbered sequentially for each media type, regardless of the field event or project phase. The use of hyphens to separate segments of a sample name is beneficial for sample name readability. It is also beneficial to use enough leading zeros to accommodate the Sequential Number (or sys_loc_code) portion of the sample name, which will assist in sorting sample IDs in the data management program or database (see EQUIS discussion below).
5. Do not include information such as time, sample depths, etc. in the name. This information should be recorded as defined in Section F (below).
6. In no cases shall the multi-field name be longer than 30 characters, including dashes. Ensure that each name is clearly written on both the sample label as well as the Chain of Custody.
7. Do not use special characters (e.g. #, ‘, “, @, !) when naming samples. Including such characters in the Serial Number (sys_loc_codes) or Sample Number (sys_sample_codes) can be incompatible with the database.
8. For QA/QC blank samples use the following abbreviations in place of the media type:

Trip Blank	TB
Equipment Rinse (Field Blank)	FB
Duplicate	DUP
Matrix Spike	MS
Matrix Spike Duplicate	SD

For Duplicate and MS/MSD samples we need to make sure we include the parent sample name. Add the DUP, MS or MSD indicator after the Sequential Number.

For Blind Duplicate samples, use the CHA indicator in place of the Sequential Number. The location should be recorded in the field logs for our evaluation purposes. For example, a blind duplicate sample number for soil collected at the 005 location would be “CS-SOIL-CHA-1.”

You would record in the field log that the blind soil duplicate CHA-1 has SOIL-12345-005 as its parent sample.

9. Option to Include the Sample Collection Date - As an option, the date may be included in the sample name. NYS Electronic Data Deliverable guidance suggests using dates in the YYYYDDMM format. Placing the year first provides for ease of sorting data in the database:

   However, adding the date adds 9 characters to the sample name thus increasing the complexity of sample numbering. The date is captured on the Chain-of-Custody and in field records.

D. QA/QC REQUIREMENTS:

All data must be documented on field data sheets or within site logbooks.

Field personnel should verify that all sample data and supporting information in log books is correct prior to leaving the site.

SAMPLE NAMING AND NUMBERING

E. SPECIAL CONDITIONS:

NYSDEC EQUIS Considerations:

NYSDEC uses EQuIS for data management and generally requires data to be submitted in EQuIS format. EQuIS has three different sample name related fields, a sample_name, a sys_sample_code and a location_ name. Location_name will almost always be simplified to something like SW-1, GW-2 etc. and is usually the last field of the sample name.

In terms of the other two, sample_name is what we record in the field. That is limited to 30 characters of text.

The laboratory generates the sys_sample_code by taking the sample_name field and adding another qualifier, such as the sample delivery group or work order number. EQuIS requires that the sys_sample_code field be unique within a database. This is limited to 40 characters of text so it typically will be the sample name plus up to 10 characters.

It is recommended to keep the CHA sample name as short as possible to work with the EQuIS format. The basic sample names identified above are 14 to 17 characters long. If the optional date format is used, sample names will be 23 to 26 characters which is near the limit for what EQuIS can accommodate (and you may have issues physically fitting the sample names legibly into the COC form).

F. REFERENCES:

NYSDEC, DER-10, Technical Guidance for Site Investigation and Remediation, May 2010, http://www.dec.ny.gov/docs/remediation_hudson_pdf/der10.pdf

NYSDEC, Electronic Data Delivery Manual, January 2013, http://www.dec.ny.gov/docs/remediation_hudson_pdf/eddmanual.pdf

New Jersey Department of Environmental Protection, August 2005, Field Sampling Procedures Manual, Chap. 6, http://www.nj.gov/dep/srp/guidance/fspm/

G. APPENDICES/FORMS:

Not Applicable

END OF SOP

Final Check by C. Burns 12/2/15

Author: Sarah Newell, Mark Corey
Reviewer: Keith Cowan, Sandy Warner

COMPLETING A CHAIN-OF-CUSTODY RECORD

A. PURPOSE/SCOPE:

This protocol provides a standard operating procedure (SOP) for initiating and maintaining a Chain of Custody (COC) document. A COC is a legal document designed to track persons who are responsible for the preparation of the sample container, sample collection, sample delivery, sample storage, and sample analysis. A COC is an appropriate format to record important data associated with each individual sample. In general, a sample requiring a COC will follow a path as follows:

Sample Collector → Sample Courier/Operator → Sample Custodian

Verification of who has possessed the samples and data and where the samples have been is completed when staff follow chain-of-custody procedures.

B. EQUIPMENT/MATERIALS:

- Chain of Custody form
- Ball-point, permanent pens
- Gallon-Sized Ziploc Bag (to keep COC dry)
- Field Logbook
- Custody seals
- Padlock(s) (optional)

C. PROCEDURE:

1. Once a sample has been determined to require a COC, the Sample Collector must initiate the COC. The Sample Collector must fill in the fields provided on the COC. The words "Chain of Custody" must be located in a conspicuous location at the top of the document.
2. The form is generally a three-page carbon copy document, including a white, yellow and pink sheet. While CHA generally uses COCs provided by the applicable laboratory, it is important to ensure that the COC from each lab contains places for all necessary information.
3. The COC at that time should include the fourteen-digit CHA project number and phase, the project name and location.
4. The Client Information Section must be completed. In most cases the "client" will be CHA Consulting, Inc.
5. The first field of information is the Sample Identification or Sample Identification Number. This identification/number must match the identification/number located on the sample container.
6. An information line for the date, time, phone number, printed name of Sample Collector, signature of Sample Collector, organization name (no acronyms), organization's full mailing address, and sample description must also be included.
7. Sampling personnel should enter the sample number(s) (which should correspond with a unique number on a sample container [SOP #103] if applicable, and parameters to be analyzed. The "Sample ID" must be included and must match the number on the sample.

COMPLETING A CHAIN-OF-CUSTODY RECORD

8. Subsequent fields must be provided to allow for documentation of information about any subsequent Sample Couriers/Operators or Sample Custodians. These fields must contain the date, time, phone number, printed name of person taking custody of sample, signature of person taking custody of sample and organization name (no acronyms).
9. Field Information - The COC must contain places to enter the following field information: sample number, sampling date, and type of sample. Other field information may be recorded as specified in the field sampling plan or proposal for the project. It is imperative that there be only one sample with a particular sample number per project/study so as to prevent duplicates in Excel files and EQuIS databases.
10. Laboratory Information - Once the sample is delivered to the lab, the laboratory personnel will sign and date the "received by" line located at the bottom of the COC. Other laboratory information may be recorded as specified in the project/study work plan/proposal.
11. Signatures - The COC must contain places for all people who handle the sample to sign his/her name. This is a record of persons who had custody of the sample during all steps of the process from container preparation, sample collection, sample storage and transport, and sample analysis. There should be signature lines to relinquish custody of the sample and to receive custody of the sample.

D. QA/QC REQUIREMENTS:

The Field Team Leader or senior person on the sampling team will review the completed COC form to verify that all fields are properly completed. For purposes of this SOP, signing the form under Collected/Delivered by is considered evidence that the COC form has been checked for accuracy and completeness.

E. SPECIAL CONDITIONS:

Whenever samples are split with a source or government agency, a separate chain of custody form should be completed for the samples and the relinquisher (sampler) and recipient should sign. If a representative is unavailable or refuses to sign for the samples, this can be noted in the “remarks” area of the form. When appropriate, as in the case where the representative is unavailable, the custody record should contain a statement that the samples were delivered to the designated location at the designated time. A copy of the chain of custody form for split samples must be kept with the project file.

Samples may require short term storage in field locations prior to delivery to the laboratory for analyses. The storage may be in vehicles or lodging locations. The samples must be secured to limit access to them. A locked vehicle is considered controlled access. However, simply a locked lodging room is not secure due to potential custodial access. If an unattended lodging room is used for sample storage, the samples must be further secured. This may entail a padlock on the ice chest, samples in an ice chest secured in an inner bag with a custody seal on it, and/or ice chest taped shut with custody seal on the outside of it.

F. REFERENCES:

Sampling Guidelines and Protocols, NYSDEC, http://www.dec.ny.gov/regulations/2636.html
Chain of Custody Protocol is in Appendix 5X.2.

COMPLETING A CHAIN-OF-CUSTODY RECORD

Chain of Custody Procedures for Samples and Data, EPA 50 minute Self Instructional Course:
http://www.epa.gov/apti/coc/

SOP for Chain of Custody, EPA Region 1:
http://www.epa.gov/region6/qa/qadevtools/mod5_sops/misc_docs/r1_chain-of-custody.pdf

G. APPENDICES/FORMS:

CHA COC Form

END OF SOP
Final Check by C. Burns 10/7/15

SURFACE SOIL SAMPLING

A. PURPOSE/SCOPE:

The following SOP presents a description of the methods generally employed for the collection of surface soil samples. Surface soils are generally collected to determine risk associated with exposure to potentially contaminated surface soils or to determine whether contaminants are present above applicable standards.

Surficial soil sampling is generally conducted in potentially contaminated areas of concern, whether relating to former or current uses of the site, to determine whether contaminants are present above applicable standards. Locations should be biased to suspected areas of greatest contamination including stressed vegetation, soil discoloration, odor, etc. Sample locations are also chosen based on area specific requirements. This includes sampling in locations that includes past or present usage or hazardous substances or wastes, discharge points of past or present processes, and former and current containers that may contain or previously contained hazardous substances or waste.

B. EQUIPMENT/MATERIALS:

The equipment needed for this task will vary depending on the exact nature of the project but needed supplies may include:

- Stainless steel trowel or scoop
- Stainless steel spatula
- Shovel
- Stainless steel bowls
- Wooden stakes and flagging, or wire flags
- Hammer or mallet
- Indelible ink pens (sharpies)
- Measuring tape (length appropriate for the project)
- Appropriate sample jars
- Field logs
- GPS unit for referencing sample locations
- Latex or nitrile gloves
- Non-phosphate detergent, distilled water, and paper towels.

C. PROCEDURE:

1. Use the shovel to clear any surface debris from the sampling location, including grasses or other vegetation.
2. If appropriate to the investigation, screen the soil with a PID or FID and record the results on the Field Log.
3. Sampling Procedure:

   Discrete Sample Collection:

   a. Collect the sample from 0-6 inches depth (or as specified by the project). In instances where a soil is collected for VOC analysis as well as other non-VOC parameters, the soil for VOC analysis must be collected first to minimize volatilization and biodegradation.

SURFACE SOIL SAMPLING

b. When analyzing for VOCs, the soil sample must be collected directly from the soil sample location into the sample container without disturbing the matrix structure.

c. Once VOC soil sampling is complete, the remaining soil to be analyzed for non-VOC parameters such as SVOCs, pesticides, PCBs, metals, or cyanide must be homogenized to create a representative sample. Prior to homogenization, twigs, roots, leaves, rocks, and miscellaneous debris should be removed from the sample using the decontaminated stainless steel spoon or spatula. The soil should be mixed, quartered (divided into 4), and mixed again until a consistent physical appearance over the homogenized soil has been obtained. The soil should be transferred into the appropriate sample container using the decontaminated stainless steel spoon or spatula.

Composite Sampling:

a. For Composite Sampling (applicable to non-VOC's only) where several discrete samples (of equal volume) are mixed together, collect the sample from 0-6 inches depth (or as specified by the project) from the first composite point. Cover the stainless steel bowl with aluminum foil and proceed to the next sampling point. Repeat between locations. If VOC samples are also being collected at each discrete point, the stainless steel spoon/trowel should be decontaminated between locations (Refer to Step 8). Once equal volumes of soil have been collected from each point which will make up the composite sample, the soil must be homogenized to create a representative sample. Prior to homogenization, twigs, roots, leaves, rocks, and miscellaneous debris should be removed from the sample using the stainless steel spoon or spatula. The soil should be mixed, quartered (divided into 4), and mixed again until a consistent physical appearance over the homogenized soil has been obtained. The soil should be transferred into the appropriate sample container using the stainless steel spoon or spatula.

4. Label the sample bottles (if the bottles are not pre-printed) with the sample location name, collection time, project name, analysis to be performed, and any other field required on the label.

5. Place the properly labeled sample bottles in a cooler with ice and maintain at 4ºC for the duration of the sampling and transportation period. Do not allow samples to freeze.

   Describe and record the following properties of the sample: basic soil type (e.g., sand, gravel, and clay), structure, texture, sorting, grain size, and grain shape, degree of saturation, color, odor, staining, and presence of foreign material. Refer to SOP#301, Field Description of Soils.

6. After sampling is completed, the sampling location should be marked by a wooden stake and flagging and/or wire flag. The station number and date of sampling should be written on the stake using a permanent marker or other waterproof ink. A properly calibrated GPS unit should be used to mark the sample location (Refer to SOP#107).

7. Decontaminate the sampling equipment as specified in SOP #501 and move to the next sampling location. Repeat steps 1 through 7 for subsequent sampling locations.

8. Soil samples should be packed and shipped/prepared for courier pick up according to SOP#607. The Chain of Custody (COC) document should be completed according to SOP#105.

SURFACE SOIL SAMPLING

D. QA/QC REQUIREMENTS:

When possible, the samples should be collected using the same type of equipment and in the same manner to ensure comparability of data. Field quality control samples must be prepared the same as regular investigation samples with regard to sample volume, containers, and preservation.

QA/QC samples should be collected following the same procedures as described above. The type and quantity of QA/QC samples is to be determined by the project scope, and in accordance with SOP# 605.

E. SPECIAL CONDITIONS:

If testing will be performed for metals, it must be recognized that metals can be present naturally and can be present from man-made sources. Moreover, different metals will be present in different concentrations depending on the soil type. Another class of compounds, polycyclic aromatic compounds, can be widely distributed in urban environments. To determine the natural concentrations of metals and PAHs in a particular area, it is important to collect background samples. At a minimum, one background sample should be collected from an area that is near the site, has similar soil types and similar topography. For some applications (e.g., human health risk assessment), it may be necessary to collect three background samples to provide sufficient statistical information.

F. REFERENCES:

New Jersey Department of Environmental Protection (August 2005), *Field Sampling Procedures Manual*, Chap. 6, retrieved January 5, 2009 from http://www.nj.gov/dep/srp/guidance/fspm/.

G. APPENDICES/FORMS:

Surface Soil Sampling Log

END OF SOP
Final Check by C. Burns 11/3/15

SMALL EQUIPMENT DECONTAMINATION

A. PURPOSE/SCOPE:

Proper decontamination of small equipment prevents cross-contamination of samples, introduction of contaminants to clean sites, and the mixture of incompatible substances. Equipment decontamination also assures the health and safety of all equipment users. Procedures for decontamination procedures vary depending on the matrix sampled, level of contamination, type of contaminants, and the target analytes of the sampling event. The procedure outlined in this SOP is a general procedure for field/ warehouse decontamination of equipment associated with water, soil and other surficial sampling activities.

Decontamination should be performed before sampling work commences and after each sampling event. Decontaminated equipment should be protected from contact with surroundings during storage and transport, and should be handled as little as possible before its use and always with disposable gloves. Note that all waste generated by decontamination procedures including liquids, solids, rags, gloves, etc., will be collected and disposed of properly according to the procedures outlined in SOP #507.

B. EQUIPMENT/MATERIALS:

- Alconox®
- Tap water
- Distilled and deionized water
- 10% Nitric acid rinse
- Acetone (or other pesticide grade organic solvent)
- 1-Gallon pressure spray bottles
- Long-handled brushes
- 5-Gallon plastic buckets

C. PROCEDURE:

Note that if it is logistically impractical/ impossible to complete all steps listed below at the field site, Steps 1-4 should be performed prior to transport of equipment to a facility where all steps can be completed if required. All field decontamination should take place over a container and liquids should be properly disposed of.

1. Disassemble equipment as necessary.
2. Remove gross contamination from equipment by scraping, brushing and rinsing with tap water
3. Wash with Alconox® or other laboratory grade detergent to remove all visible particulate matter and residual oils and grease.
4. Rinse with tap water to remove detergent.
5. Rinse with distilled and deionized water.
6. Field personnel will use a new pair of outer gloves before handling sample equipment after it is cleaned.
7. If equipment will not be used immediately, wrap in aluminum foil (unless sampling for metals analysis) or seal in plastic bags (unless sampling for organics analysis) and store.
8. Record the date and method of decontamination on foil/bag and equipment log.

SMALL EQUIPMENT DECONTAMINATION

D. QA/QC REQUIREMENTS:

When necessary, field equipment rinsate blanks will be collected by pouring analyte-free water over decontaminated equipment and submitting them to the lab with the other blanks and samples. These blanks are used to assess the quality of equipment decontamination.

E. SPECIAL CONDITIONS:

Reusable PPE such as respirators, chemical-resistant overboots and gloves shall also undergo the equipment decontamination sequence. See SOP #505 for related information on Personnel decontamination.

If acetone is a known or expected contaminant another solvent may be substituted. Note that methanol cannot be used for decontamination when sampling gasoline or its by-products.

Additional decontamination procedures may be required for particular contaminants or when samples are to be analyzed at very low concentrations. Identify methods as needed but see for example Wilde, 2004.

F. REFERENCES:

New Jersey Department of Environmental Protection, August 2005. *Field Sampling Procedures Manual*.

USEPA, 1994. Sampling Equipment Decontamination. Environmental Response Team SOP #2006, Revision #0.0. Edison, NJ. http://www.ert.org.

USEPA, 1996. *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*. Region 4, Science and Ecosystem Support Division. Athens, GA. http://www.epa.gov/region04/sesd/eisopqam/eisopqam.html

Wilde, F.D., ed., 2004. *Cleaning of Equipment for water sampling (ver. 2.0)*: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chap. A3, April, accessed January 5, 2009 at http://pubs.water.usgs.gov/twri9A3/

G. APPENDICES/FORMS:

Not Applicable

END OF SOP

Final Check by C. Burns 10/27/15

DECONTAMINATION OF PERSONNEL

A. PURPOSE/SCOPE:

The objective of decontamination is to prevent the transmission of contaminants to personnel and equipment and to prevent the spread of contaminants off-site. Decontamination is performed as a quality assurance measure and as a safety precaution during sampling. The following SOP outlines general decontamination procedures that apply to personal protection Level C. Projects that necessitate higher levels of protection (Levels B or A) require site-specific decontamination plans as part of the project's Health and Safety Plan.

The decontamination area must be set up before any entry into contaminated areas or the Exclusion Zone. All personnel must undergo decontamination prior to leaving the site. Sites with relatively low contamination levels and no Exclusion Zone activities (Level D PPE) still may require decontamination. At Level D activity sites, decontamination should be provided for the following: washing of boots, or the removal and disposal of boot covers (booties); removal and disposal of disposable coveralls; removal and disposal of outer and inner gloves; and the washing of hands, arms and face prior to leaving the site, or taking any breaks for eating, drinking, etc.

B. EQUIPMENT/MATERIALS:

- Decontamination pad
- Brushes
- Polyethylene
- Tap water
- Detergent
- Appropriate decontamination solutions
- 55-Gallon drum
- Shallow wash buckets

C. PROCEDURE:

1. Maximum and minimum decontamination procedures for Level C protection are described in detail in Tables 1 and 2 on the following pages, and the procedure sequence is shown on associated flow-charts.
2. Arrange disposal of all waste generated during decontamination procedures according to guidelines in SOP #507. Check that all reusable PPE has been adequately decontaminated for future use.

D. QA/QC REQUIREMENTS:

Not Applicable

E. SPECIAL CONDITIONS:

Note that decontamination procedures will vary between sites depending on contaminants present.

DECONTAMINATION OF PERSONNEL

F. REFERENCES:

New Jersey Department of Environmental Protection *Field Sampling Procedures Manual*, August, 2005.

NIOSH, OSHA, USCG, EPA, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, DHHS (NIOSH) Publication No. 85-115, October, 1985.

G. APPENDICES/FORMS:

Associated Flow Charts - The following Tables are included:

- Table 1. Maximum Measures for Level C Decontamination and Procedure Sequence
- Table 2. Minimum Measures for Level C Decontamination and Procedure Sequence

END OF SOP

Final Check by C. Burns 10/22/15

DECONTAMINATION OF PERSONNEL

Table 1. Maximum Measures for Level C Decontamination

Station	1:	Segregated Equipment Drop	1.	Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
Station	2:	Boot Cover and Glove Wash	2.	Scrub outer boot covers and gloves with decon solution or detergent and water.
Station	3:	Boot Cover and Glove Rinse	3.	Rinse off decon solution from station 2 using copious amounts of water.
Station	4:	Tape Removal	4.	Remove tape around boots and gloves and deposit in container with plastic liner.
Station	5:	Boot Cover Removal	5.	Remove boot covers and deposit in containers with plastic liner.
Station	6:	Outer Glove Removal	6.	Remove outer gloves and deposit in container with plastic liner.
Station	7:	Suit and Boot Wash	7.	Wash splash suit, gloves, and safety boots. Scrub with long-handle scrub brush and decon solution.
Station	8:	Suit and Boot, and Glove Rinse	8.	Rinse off decon solution using water. Repeat as many times as necessary.
Station	9:	Canister or Mask Change	9.	If worker leaves exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, and joints taped worker returns to duty.
Station	10:	Safety Boot Removal	10.	Remove safety boots and deposit in container with plastic liner.
Station	11:	Splash Suit Removal	11.	With assistance of helper, remove splash suit. Deposit in container with plastic liner.
Station	12:	Inner Glove Rinse	12.	Wash inner gloves with decon solution.
Station	13:	Inner Glove Wash	13.	Rinse inner gloves with water.
Station	14:	Face Piece Removal	14.	Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.

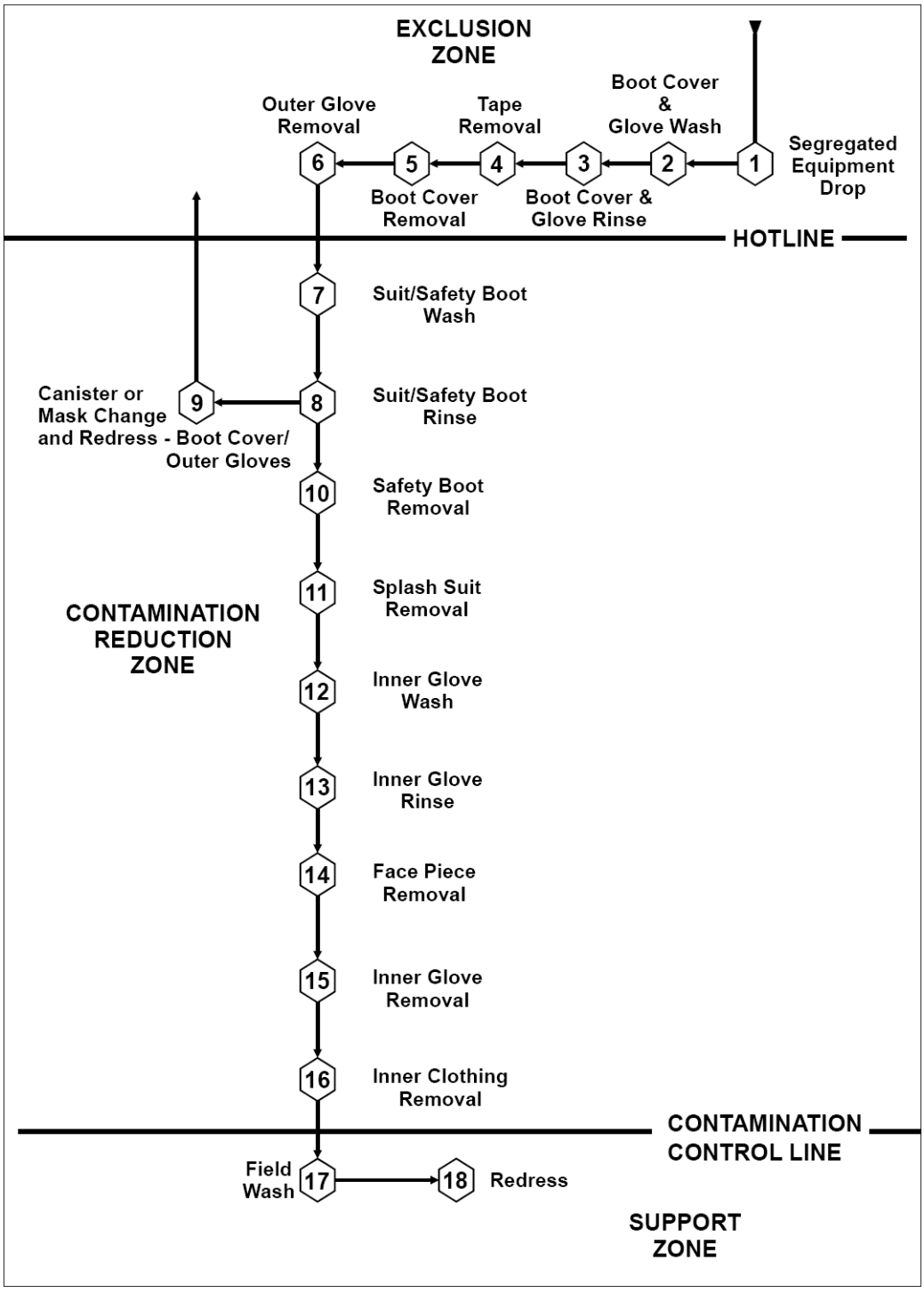
DECONTAMINATION OF PERSONNEL

Table 1. Maximum Measures for Level C Decontamination continued

Station	15:	Inner Glove Removal	15.	Remove inner glove and deposit in lined container.
Station	16:	Inner Clothing Removal	16.	Remove clothing soaked with perspiration and place in lined container. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulating suit.
Station	17:	Field Wash	17.	Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station	18:	Redress	18.	Put on clean clothes.

DECONTAMINATION OF PERSONNEL

Maximum Measures for Level C Decontamination



DECONTAMINATION OF PERSONNEL

Table 2. Minimum Measures for Level C Decontamination

Station	1:	Equipment Drop	1.	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
Station	2:	Outer Garment, Boots, and Gloves Wash and Rinse	2.	Scrub outer boots, outer gloves and splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station	3:	Outer Boot and Glove Removal	3.	Remove outer boots and gloves. Deposit in container with plastic liner.
Station	4:	Canister or Mask Change	4.	If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, joints taped, and worker returns to duty.
Station	5:	Boot, Gloves and Outer Garment Removal	5.	Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station	6:	Face Piece Removal	6.	Facepiece is removed. Avoid touching face with fingers. Facepiece deposited on plastic sheet.
Station	7:	Field Wash	7.	Hands and face are thoroughly washed. Shower as soon as possible.

DECONTAMINATION OF PERSONNEL

Minimum Measures for Level C Decontamination